RF TEST REPORT

Applicant	Nokia Shanghai Bell Co., Ltd.
FCC ID	2ADZRBEACON31
Product	NOKIA WiFi Beacon 3.1
Brand	NOKIA
Model	Beacon 3.1
Report No.	R2308A0899-R2
Issue Date	October 19, 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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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: August 7, 2023 ~ September 26, 2023 Date of Sample Received: August 7, 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
Post code:	201201
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Nokia Shanghai Bell Co., Ltd.
Applicant address	No.388, Ningqiao Rd, Pilot Free Trade Zone, Shanghai, 201206 P.R. China
Manufacturer	Nokia of America Corporation.
Manufacturer address	2301 Sugar Bush Road, Raleigh, North Carolina, 27612, United States of America

2.2. General information

<table>
<tr><th colspan="4">EUT Description</th></tr>
<tr><td>Model</td><td colspan="3">Beacon 3.1</td></tr>
<tr><td>SN</td><td>Conducted</td><td colspan="2">ALCLB299643A</td></tr>
<tr><td>Lab internal SN</td><td>Radiated</td><td colspan="2">R2308A0899/S01</td></tr>
<tr><td>Hardware Version</td><td colspan="3">PEM1</td></tr>
<tr><td>Software Version</td><td colspan="3">3TN00626</td></tr>
<tr><td>Power Supply</td><td colspan="3">AC adapter</td></tr>
<tr><td>Antenna Type</td><td colspan="3">Internal Antenna</td></tr>
<tr><td>Antenna Connector</td><td colspan="3">A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)</td></tr>
<tr><td rowspan="10">Directional Gain</td><td colspan="3">AOT</td></tr>
<tr><td rowspan="2">Frequency</td><td>Power (dBi)</td><td>PSD (dBi)</td></tr>
<tr><td colspan="2">MIMO/ with Beamforming</td></tr>
<tr><td>U-NII-1
U-NII-2A</td><td>3.10</td><td>3.80</td></tr>
<tr><td>U-NII-2C</td><td>2.90</td><td>4.40</td></tr>
<tr><td>U-NII-3</td><td>2.90</td><td>4.40</td></tr>
<tr><td colspan="3">DZZ</td></tr>
<tr><td rowspan="2">Frequency</td><td>Power (dBi)</td><td>PSD (dBi)</td></tr>
<tr><td colspan="2">MIMO/ with Beamforming</td></tr>
<tr><td>U-NII-1
U-NII-2A</td><td>2.64</td><td>3.88</td></tr>
<tr><td>U-NII-2C</td><td>2.84</td><td>3.78</td></tr>
<tr><td>U-NII-3</td><td>2.76</td><td>3.94</td></tr>
<tr><td>Operating Frequency Range(s)</td><td colspan="3">U-NII-1: 5150MHz-5250MHz
U-NII-2A: 5250MHz -5350MHz
U-NII-2C: 5470MHz-5725MHz
U-NII-3: 5725MHz -5850MHz</td></tr>
<tr><td>Modulation Type</td><td colspan="3">802.11a: OFDM
802.11n (HT20/HT40): OFDM
802.11ac (VHT20/VHT40/VHT80/VHT160): OFDM</td></tr>
</table>

	802.11ax (HE20/ HE40/ HE80/HE160): OFDM
Max. Output Power	29.04 dBm
Testing temperature range	-20 ° C to 50° C
Operating temperature range	-5 ° C to 45° C
Operating voltage range	10 V to 14 V
State DC voltage	12 V
EUT Accessory	
Adapter 1	Manufacturer: Ruide Model: RD1201500-C55-198MG Part Number: BW120150-UC6C-LL04
Adapter 2	Manufacturer: FuHua Model: UES18LU-120150SPA Part Number: UE230418DGNA1RI
Antenna 1	Manufacturer: ANTENNA OF THINGS Model: AOT
Antenna 2	Manufacturer: Shenzhen be-comfortable Technology Co. Ltd. Model: DZZ

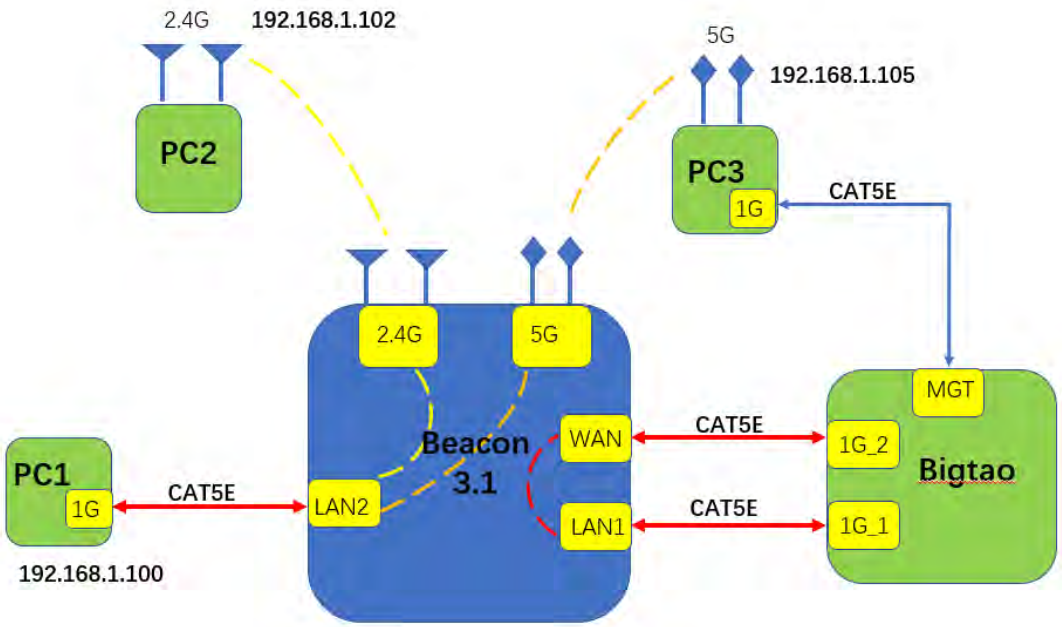
Note:
1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.
2. This device support automatically discontinue transmission, while the device is not transmitting any information, the device can automatically discontinue transmission and become standby 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.

Hardware code information

Mnemonic	KIT Code	EMA Code	Part Description
Beacon 3.1	3TN00511****(* Can be any capital letter from A to Z)	3TN00512****(* Can be any capital letter from A to Z)	Beacon 3.1, 1G WAN,2x1G LAN, WIFI6 2+2

Information of Configuration:

Beacon 3.1 is a WIFI router, has 1 WAN port, 2 LAN ports, it supports 2.4G&5G dual band 2*2 WIFI.
The test environment in normal room condition as below.



Run 2.4G WIFI stream between PC1 and PC2 use iperf, the throughput should be higher than 50Mbps.
Run 5G WIFI stream between PC1 and PC3 use iperf, the throughput should be higher than 100Mbps.
Bigtao run stream between port 1G_1 and 1G_2, the throughput should be wire speed.

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 (Y 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.

Worst-case data rates are shown as following table.

Mode	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS8
802.11n HT40	MCS8
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0
802.11ax HE160	MCS0

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

Test Cases	CDD/MIMO	Beamforming
Average conducted output power	O	O
Occupied bandwidth	O	--
Frequency stability	O	--
Power Spectral Density	O	O
Unwanted Emissions	O	--
Conducted Emissions	O	--
Note: “O”: test all bands		

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
		160 MHz	50	5250MHz
	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
		160 MHz	114	5570MHz
	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

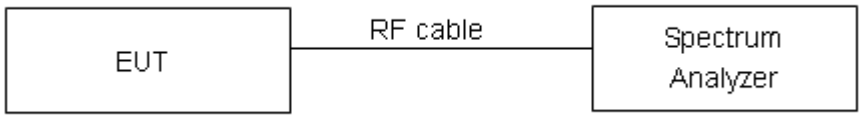
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 ≈1% OCB kHz, VBW ≥ 3 × 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 ≥ 3 × 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	16.393	18.825	PASS
	5200	16.393	18.637	PASS
	5240	16.393	18.499	PASS
802.11n HT20	5180	17.568	19.463	PASS
	5200	17.565	19.697	PASS
	5240	17.568	19.524	PASS
802.11n HT40	5190	36.070	39.246	PASS
	5230	36.066	39.256	PASS
802.11ac VHT20	5180	17.580	19.271	PASS
	5200	17.578	19.309	PASS
	5240	17.577	19.279	PASS
802.11ac VHT40	5190	36.107	40.710	PASS
	5230	36.122	39.672	PASS
802.11ac VHT80	5210	75.954	84.511	PASS
802.11ax HE20	5180	18.905	20.408	PASS
	5200	18.926	20.184	PASS
	5240	18.875	20.341	PASS
802.11ax HE40	5190	37.864	39.930	PASS
	5230	37.744	39.937	PASS
802.11ax HE80	5210	77.049	81.039	PASS

U-NII-2A

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.397	18.638	PASS
	5300	16.395	18.621	PASS
	5320	16.410	18.921	PASS
802.11n HT20	5260	17.585	19.607	PASS
	5300	17.565	19.581	PASS
	5320	17.567	19.716	PASS
802.11n HT40	5270	36.101	39.578	PASS
	5310	36.077	39.276	PASS
802.11ac VHT20	5260	17.566	19.393	PASS
	5300	17.558	19.321	PASS
	5320	17.568	19.387	PASS
802.11ac VHT40	5270	36.087	39.458	PASS
	5310	36.102	39.197	PASS
802.11ac VHT80	5290	75.963	84.390	PASS
802.11ac VHT160	5250	155.341	165.593	PASS
802.11ax HE20	5260	18.925	20.178	PASS
	5300	18.898	20.139	PASS
	5320	18.930	20.153	PASS
802.11ax HE40	5270	37.755	40.131	PASS
	5310	37.805	39.961	PASS
802.11ax HE80	5290	77.033	81.394	PASS
802.11ax HE160	5250	156.758	163.100	PASS

U-NII-2C

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.436	19.751	PASS
	5600	16.452	19.910	PASS
	5700	16.401	18.341	PASS
	5720	16.390	18.477	PASS
802.11n HT20	5500	17.585	19.713	PASS
	5600	17.563	19.775	PASS
	5700	17.568	19.574	PASS
	5720	17.565	19.713	PASS
802.11n HT40	5510	36.088	39.318	PASS
	5590	36.090	39.352	PASS
	5670	36.084	39.304	PASS
	5710	36.086	39.531	PASS
802.11ac VHT20	5500	17.578	19.435	PASS
	5600	17.575	19.365	PASS
	5700	17.550	19.248	PASS
	5720	17.549	19.359	PASS
802.11ac VHT40	5510	36.036	38.685	PASS
	5590	36.030	38.748	PASS
	5670	36.089	39.071	PASS
	5710	36.076	38.868	PASS
802.11ac VHT80	5530	75.963	85.249	PASS
	5610	75.992	85.126	PASS
	5690	75.877	85.082	PASS
802.11ac VHT160	5570	155.537	165.999	PASS
802.11ax HE20	5500	18.929	20.145	PASS
	5600	18.904	20.208	PASS
	5700	18.896	20.256	PASS
	5720	18.910	20.217	PASS
802.11ax HE40	5510	37.758	40.035	PASS
	5590	37.759	40.038	PASS
	5670	37.832	39.967	PASS
	5710	37.821	39.974	PASS
802.11ax HE80	5530	77.175	81.019	PASS
	5610	77.138	80.828	PASS
	5690	77.022	80.996	PASS
802.11ax HE160	5570	156.974	163.292	PASS

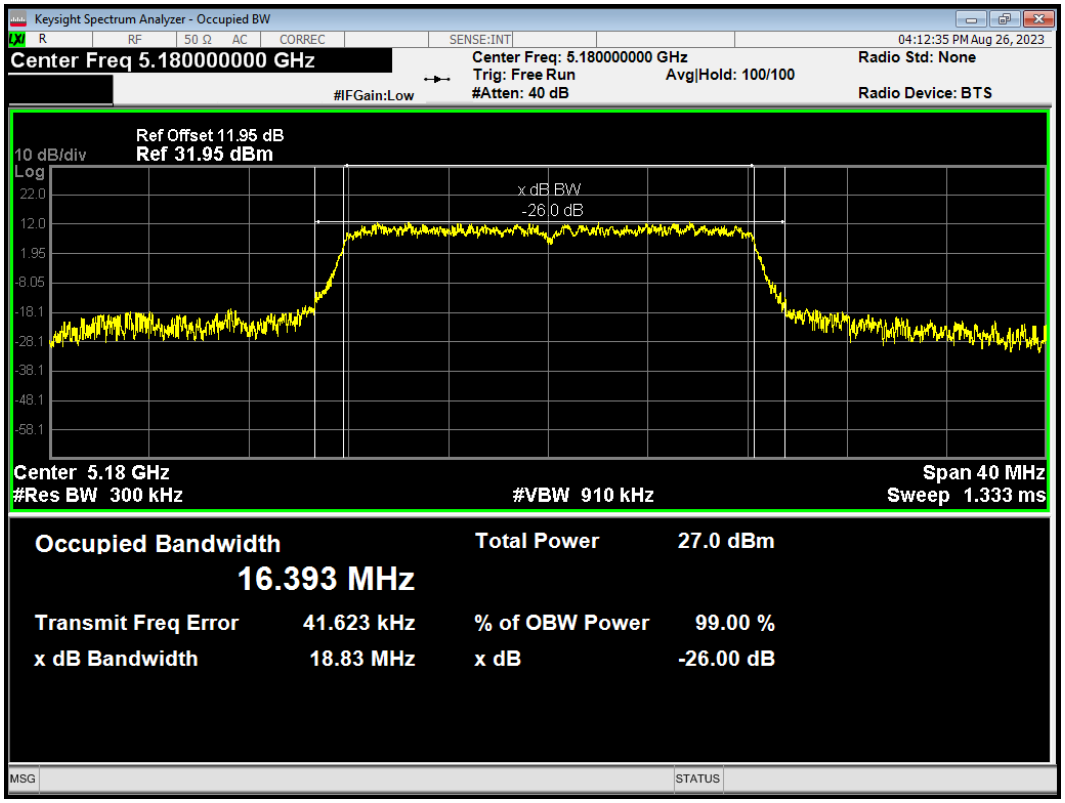
U-NII-3

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5720	16.431	16.319	500	PASS
	5745	16.394	16.324	500	PASS
	5785	16.396	16.309	500	PASS
	5825	16.387	16.324	500	PASS
802.11n HT20	5720	17.566	17.275	500	PASS
	5745	17.546	17.549	500	PASS
	5785	17.569	17.563	500	PASS
	5825	17.577	17.555	500	PASS
802.11n HT40	5710	36.138	35.872	500	PASS
	5755	36.135	36.048	500	PASS
	5795	36.117	35.611	500	PASS
802.11ac VHT20	5720	17.563	17.540	500	PASS
	5745	17.541	17.177	500	PASS
	5785	17.558	17.136	500	PASS
	5825	17.557	17.522	500	PASS
802.11ac VHT40	5710	36.117	35.731	500	PASS
	5755	36.079	35.700	500	PASS
	5795	36.067	35.834	500	PASS
802.11ac VHT80	5690	75.980	75.377	500	PASS
	5775	75.763	75.739	500	PASS
802.11ax HE20	5720	18.882	17.500	500	PASS
	5745	18.907	18.528	500	PASS
	5785	18.918	18.506	500	PASS
	5825	17.559	17.154	500	PASS
802.11ax HE40	5710	37.790	37.559	500	PASS
	5755	37.852	37.423	500	PASS
	5795	37.891	37.446	500	PASS
802.11ax HE80	5690	77.179	77.244	500	PASS
	5775	77.190	77.169	500	PASS

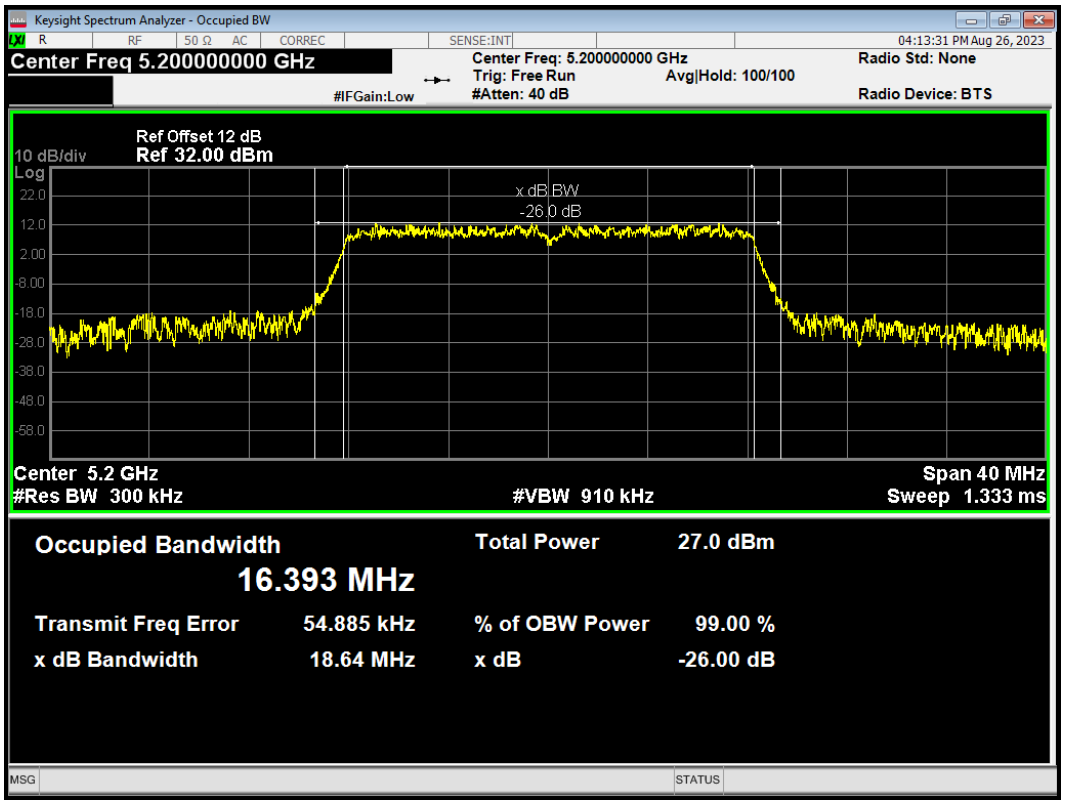
99% bandwidth

U-NII-1

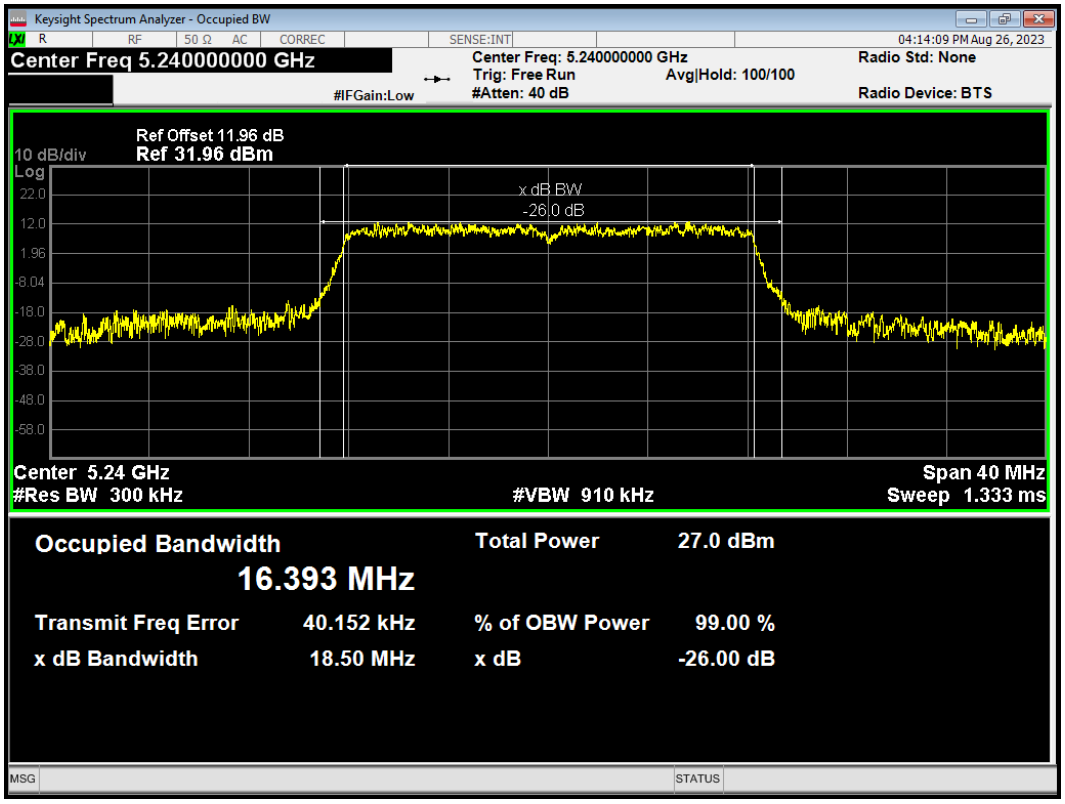
OBW 802.11a 5180MHz



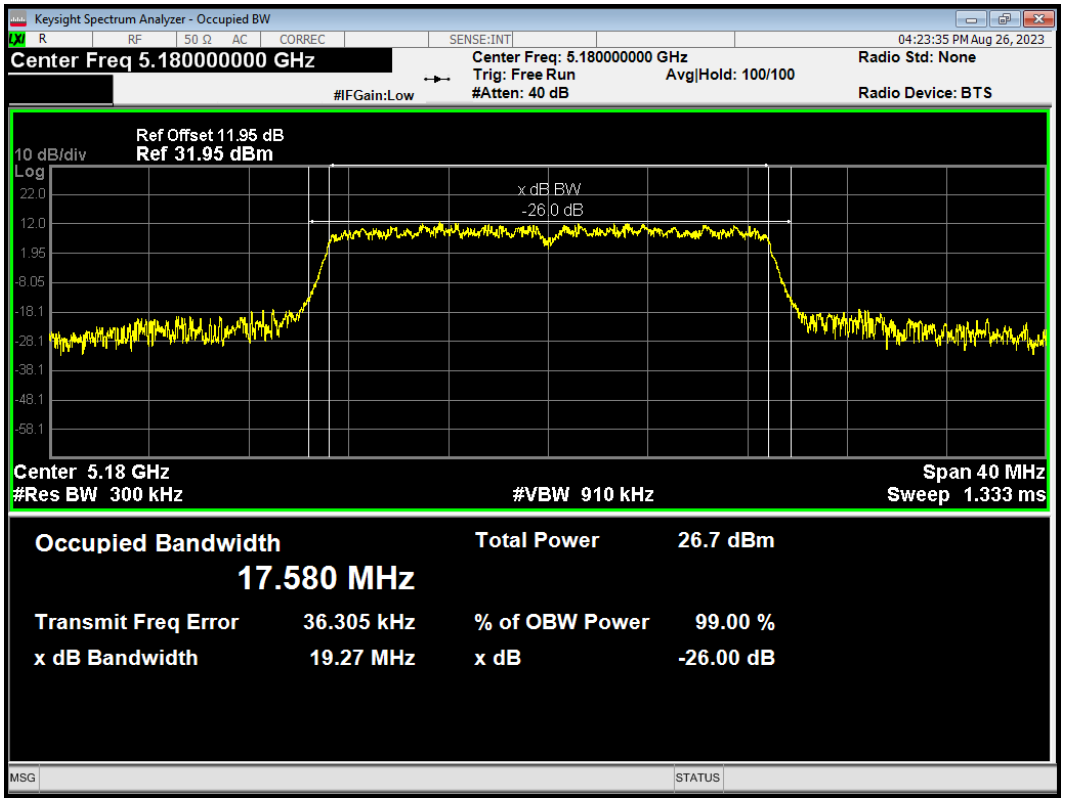
OBW 802.11a 5200MHz



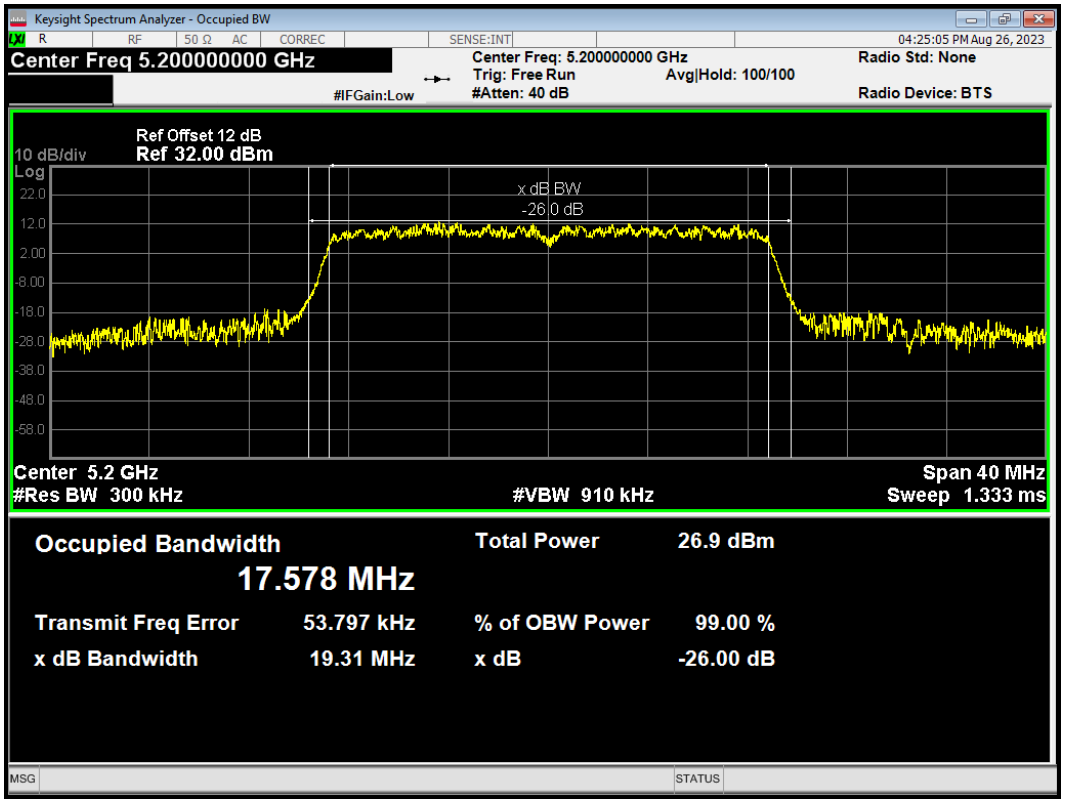
OBW 802.11a 5240MHz



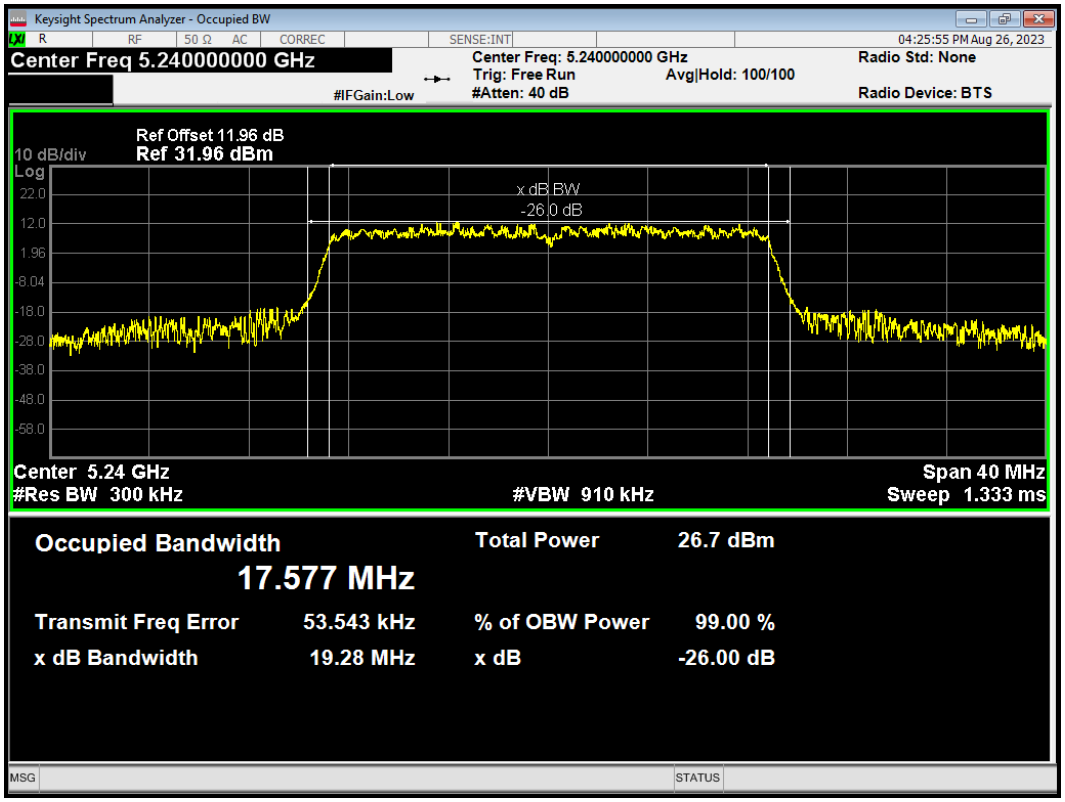
OBW 802.11ac(VHT20) 5180MHz



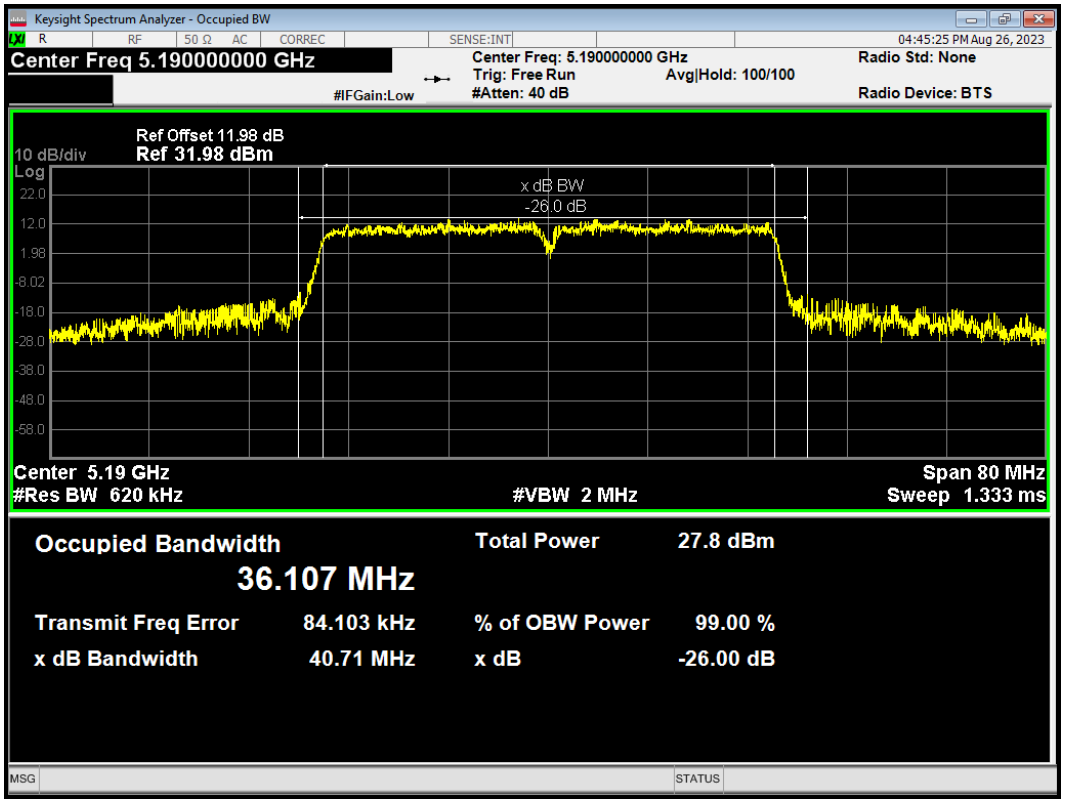
OBW 802.11ac(VHT20) 5200MHz



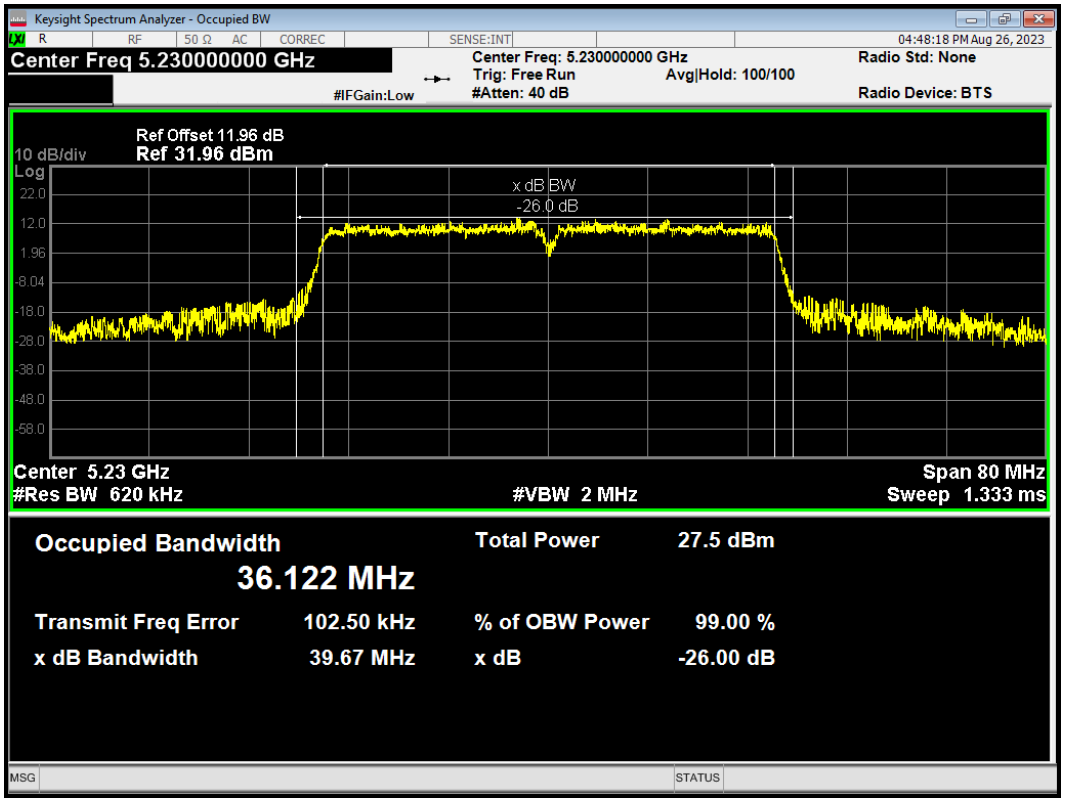
OBW 802.11ac(VHT20) 5240MHz



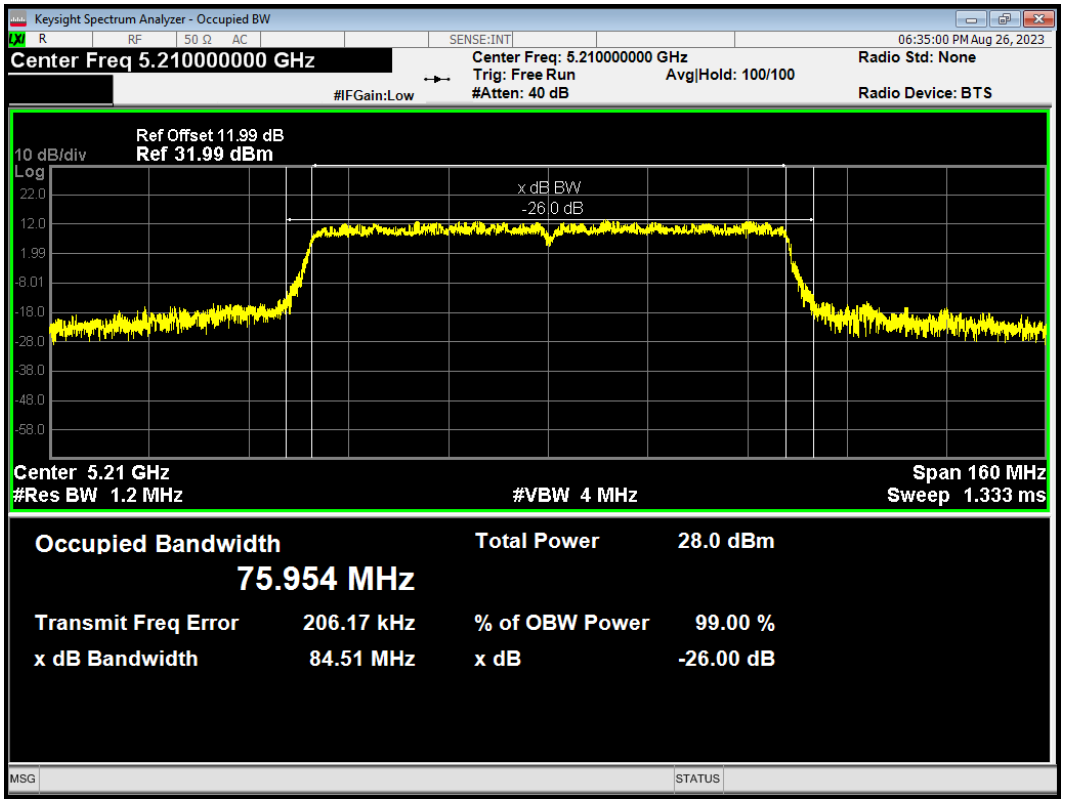
OBW 802.11ac(VHT40) 5190MHz



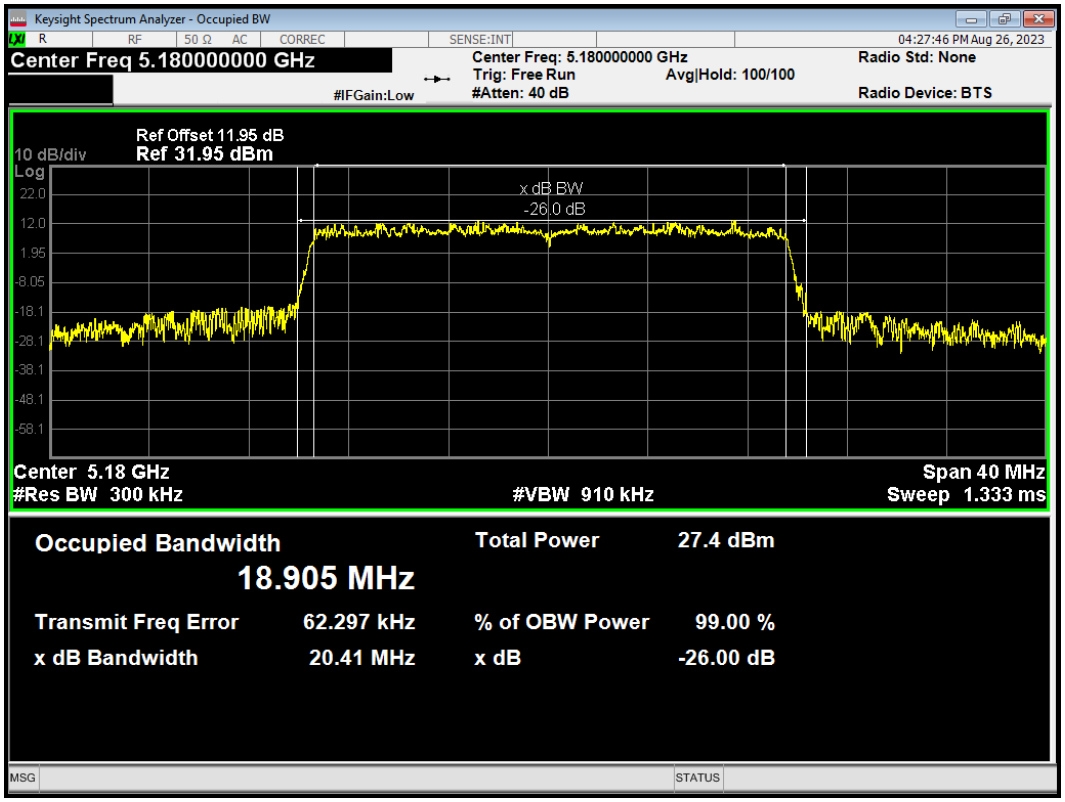
OBW 802.11ac(VHT40) 5230MHz



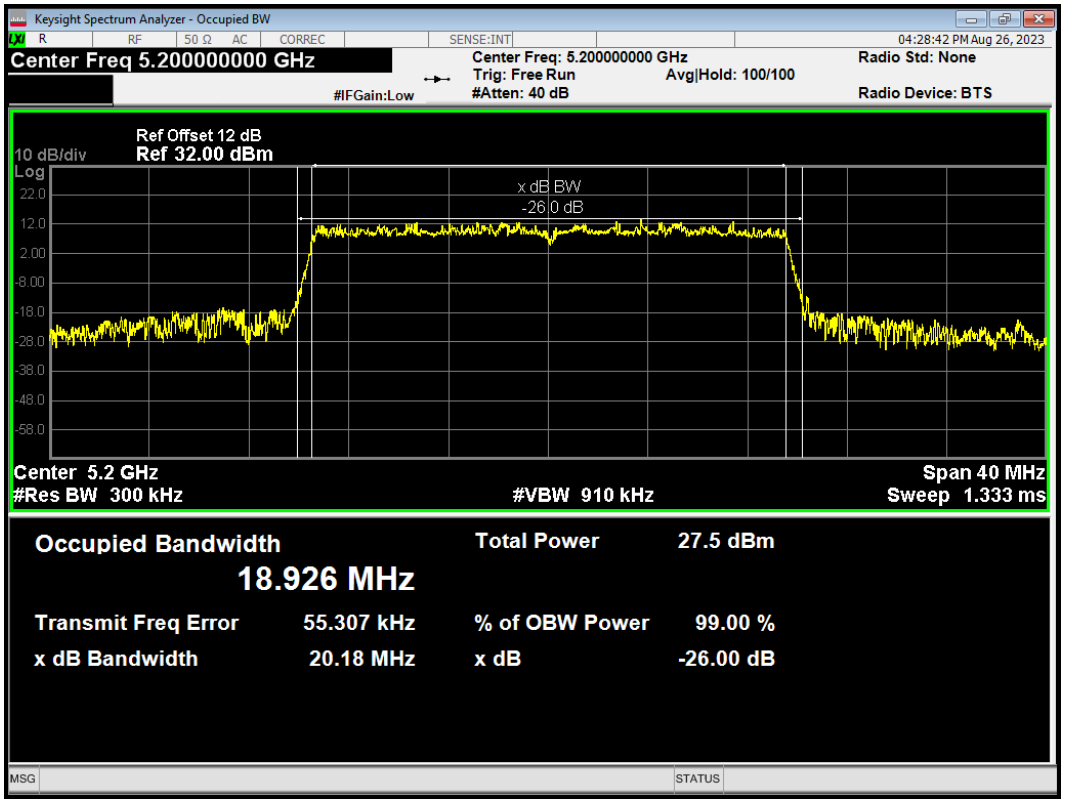
OBW 802.11ac(VHT80) 5210MHz



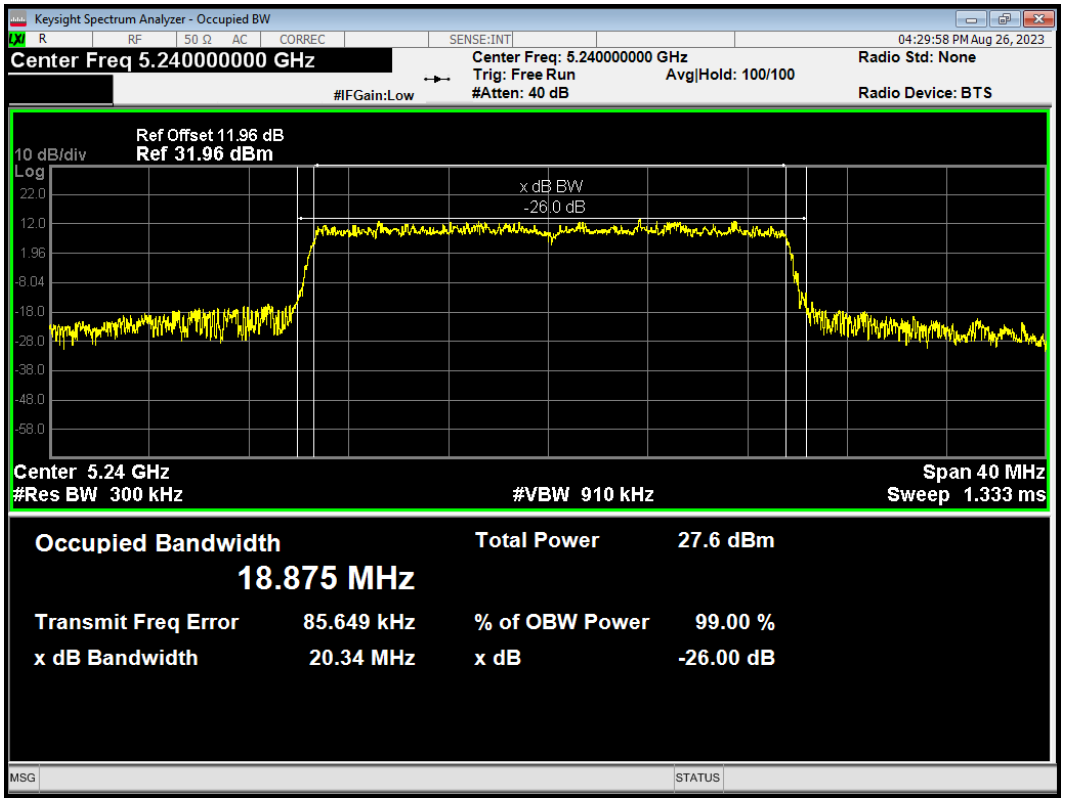
OBW 802.11ax(HE20) 5180MHz



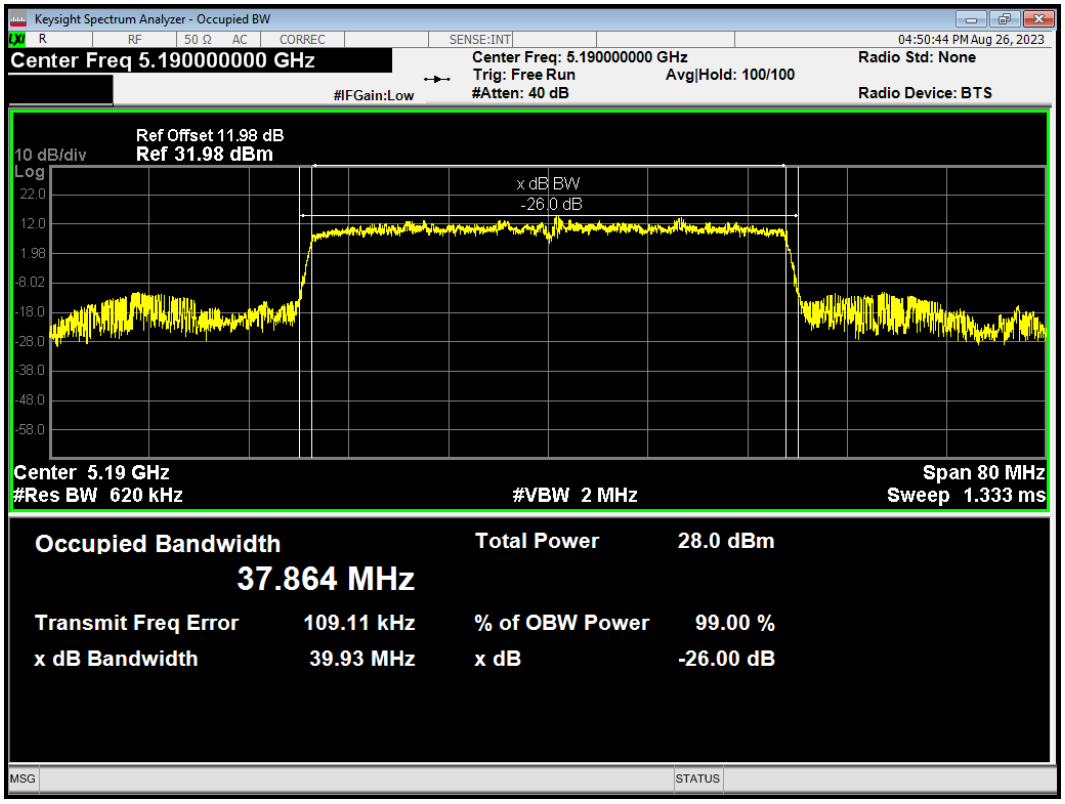
OBW 802.11ax(HE20) 5200MHz



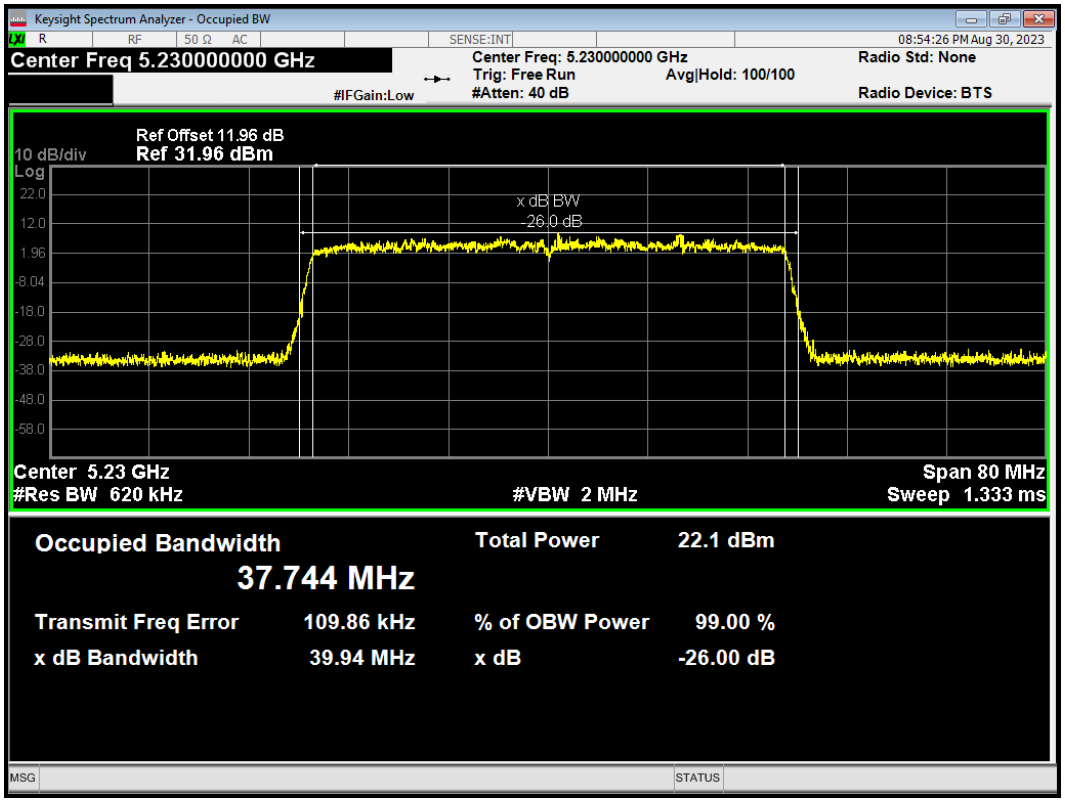
OBW 802.11ax(HE20) 5240MHz



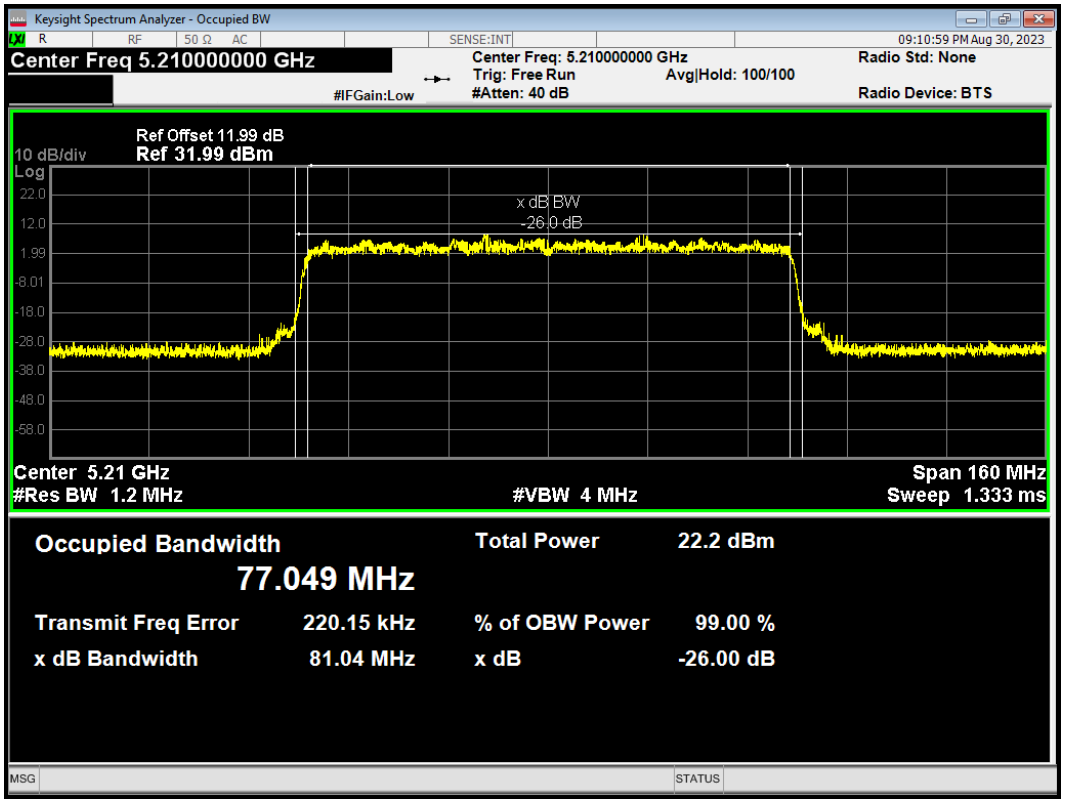
OBW 802.11ax(HE40) 5190MHz



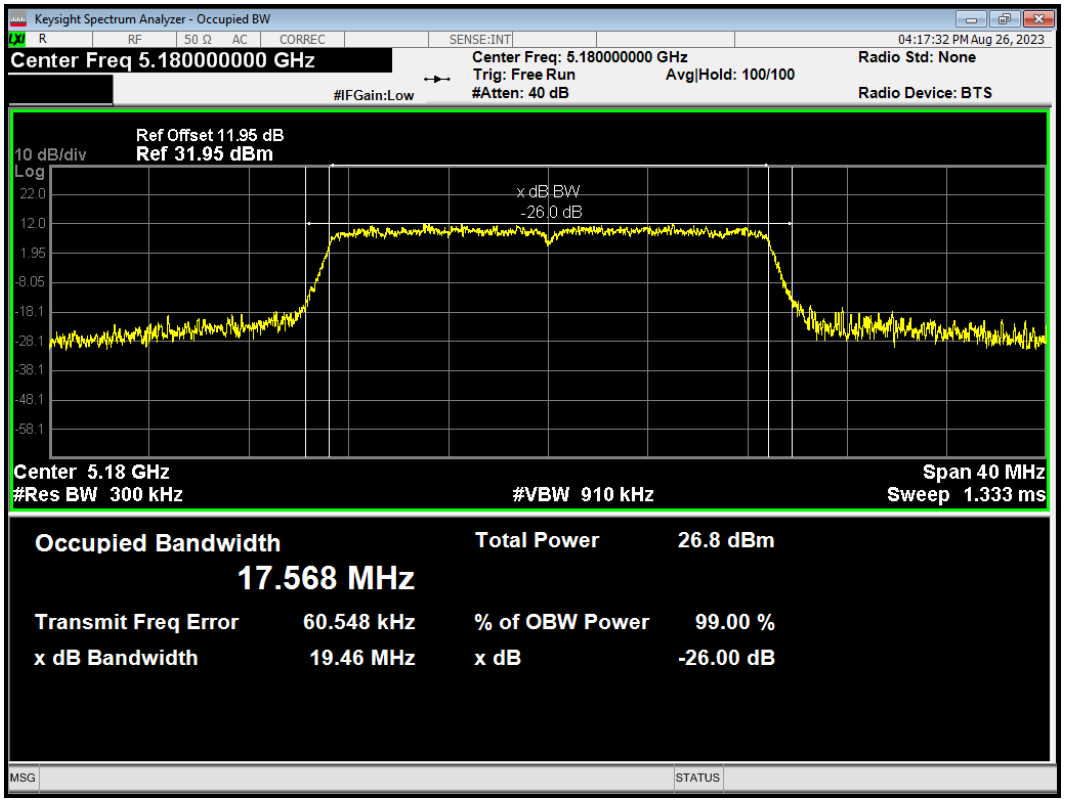
OBW 802.11ax(HE40) 5230MHz



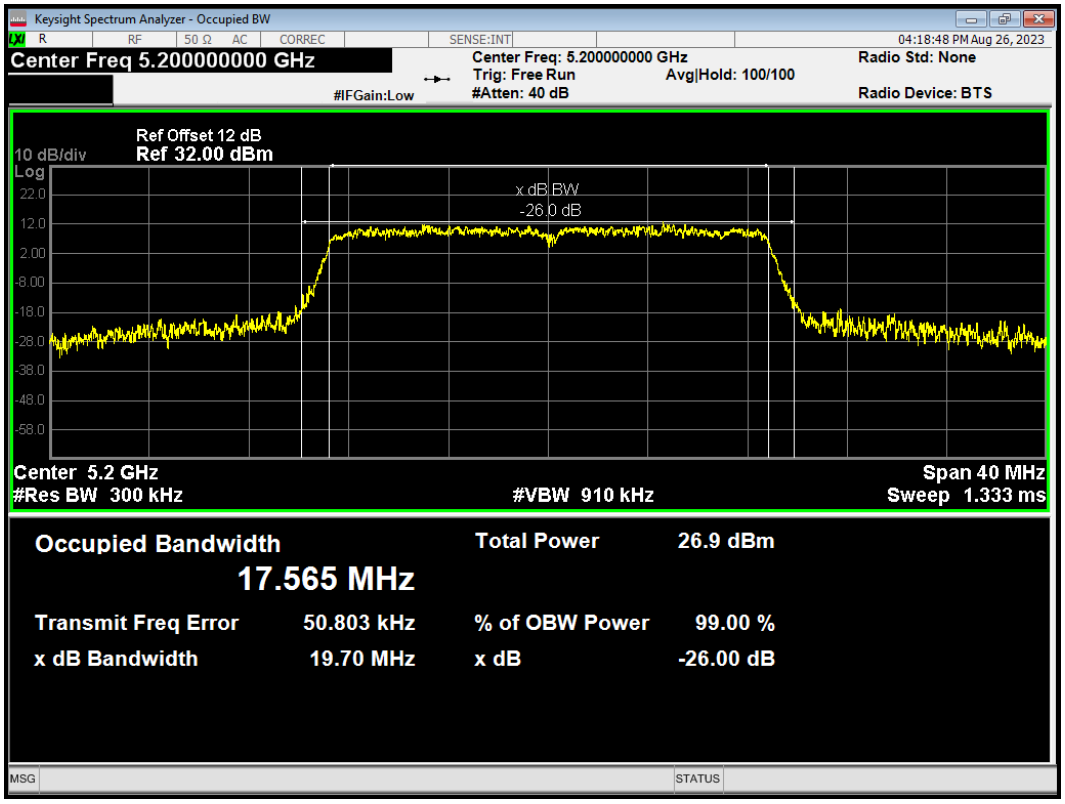
OBW 802.11ax(HE80) 5210MHz



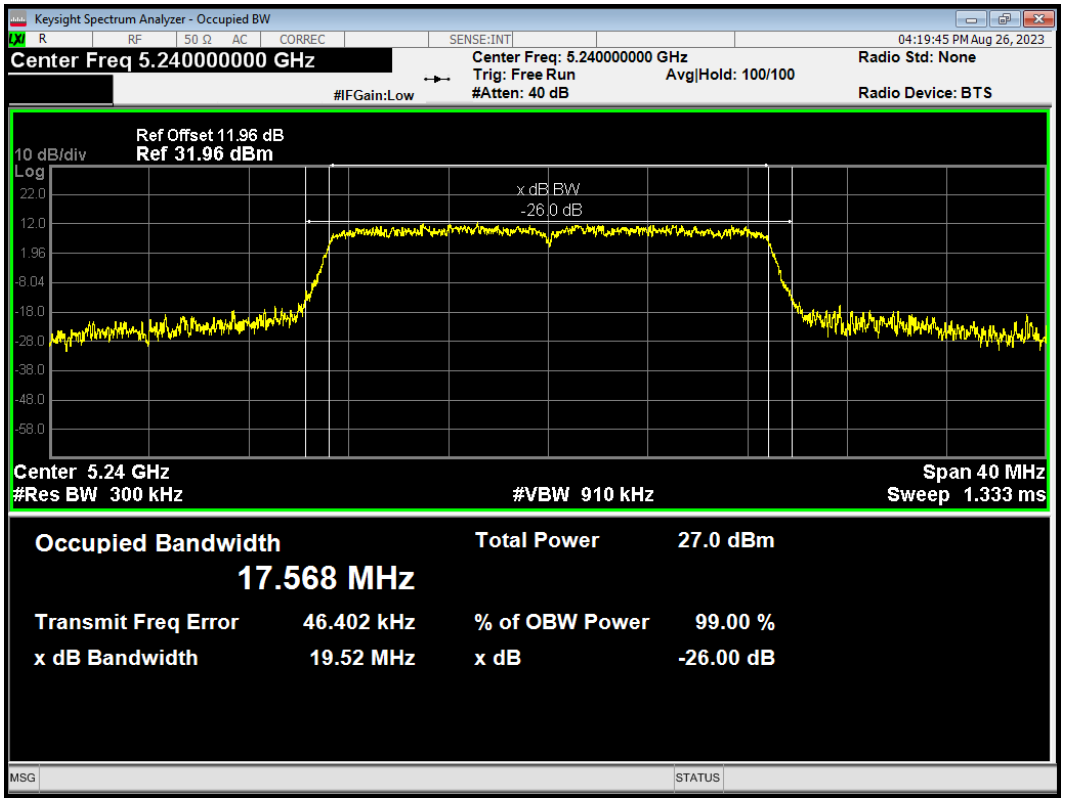
OBW 802.11n(HT20) 5180MHz



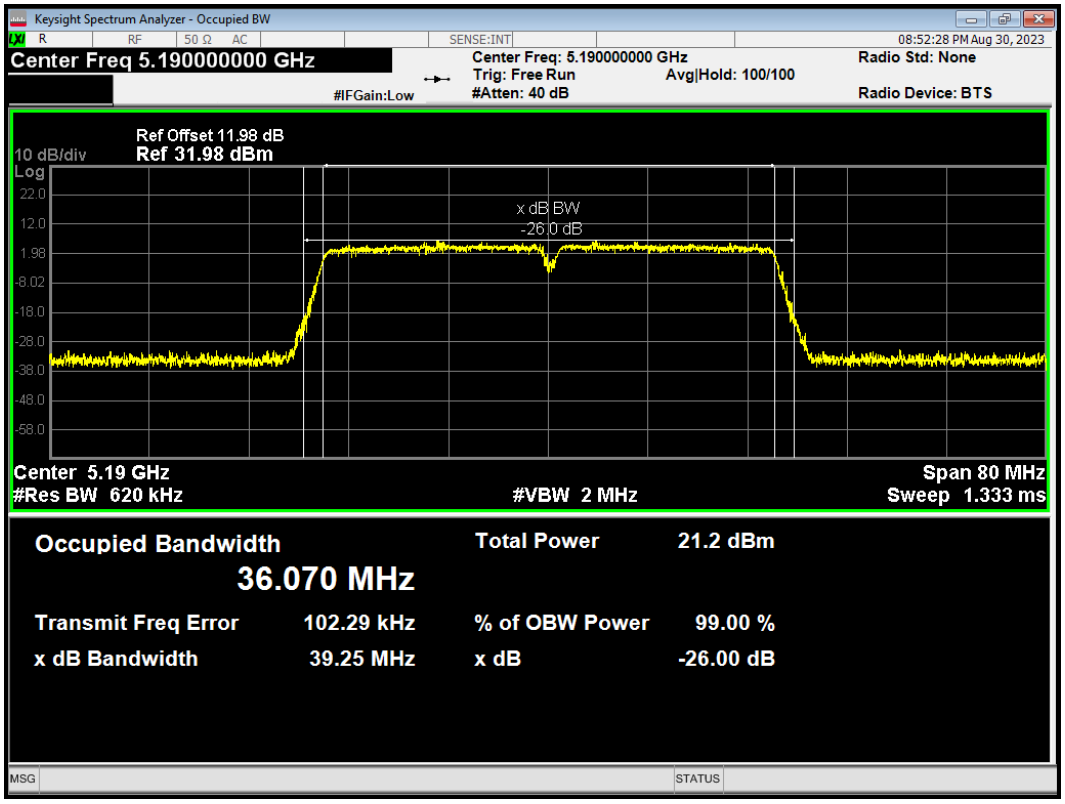
OBW 802.11n(HT20) 5200MHz



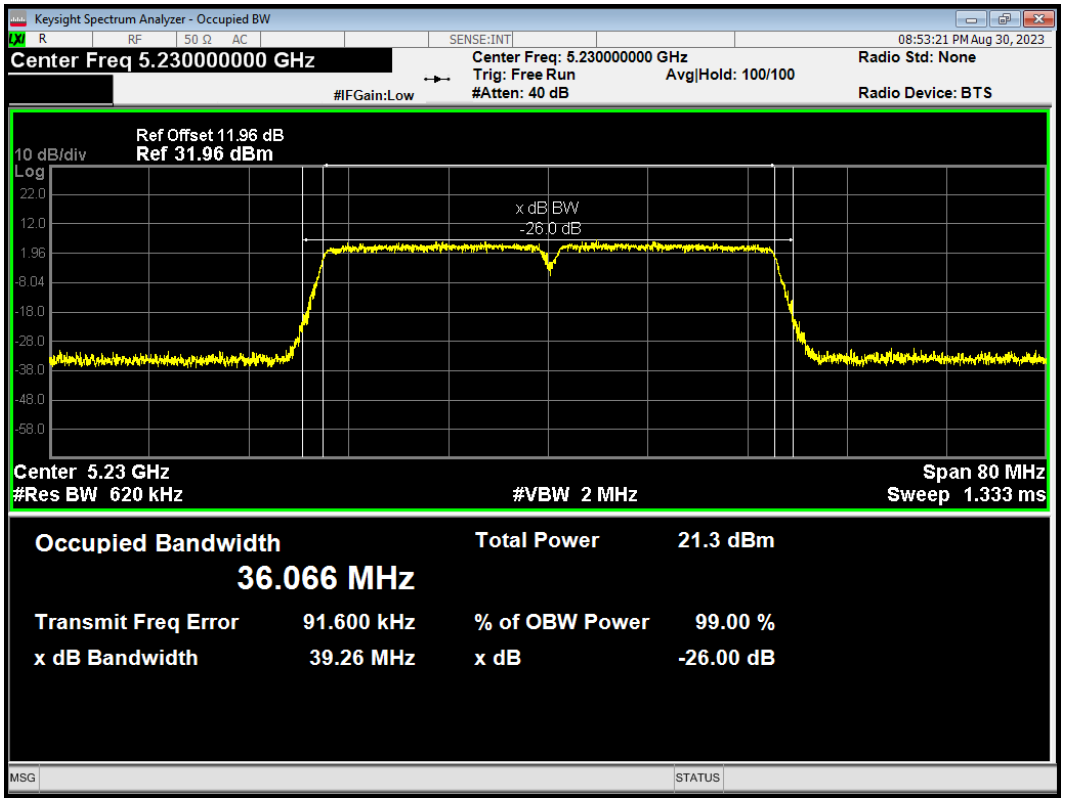
OBW 802.11n(HT20) 5240MHz



OBW 802.11n(HT40) 5190MHz

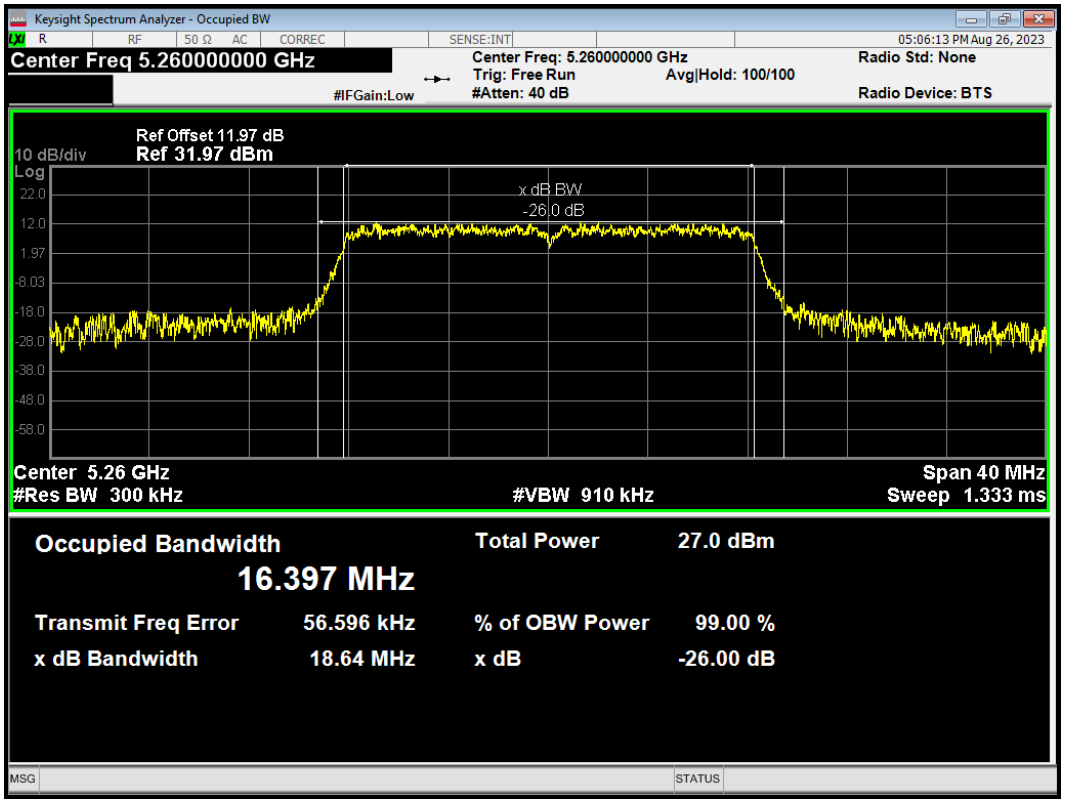


OBW 802.11n(HT40) 5230MHz

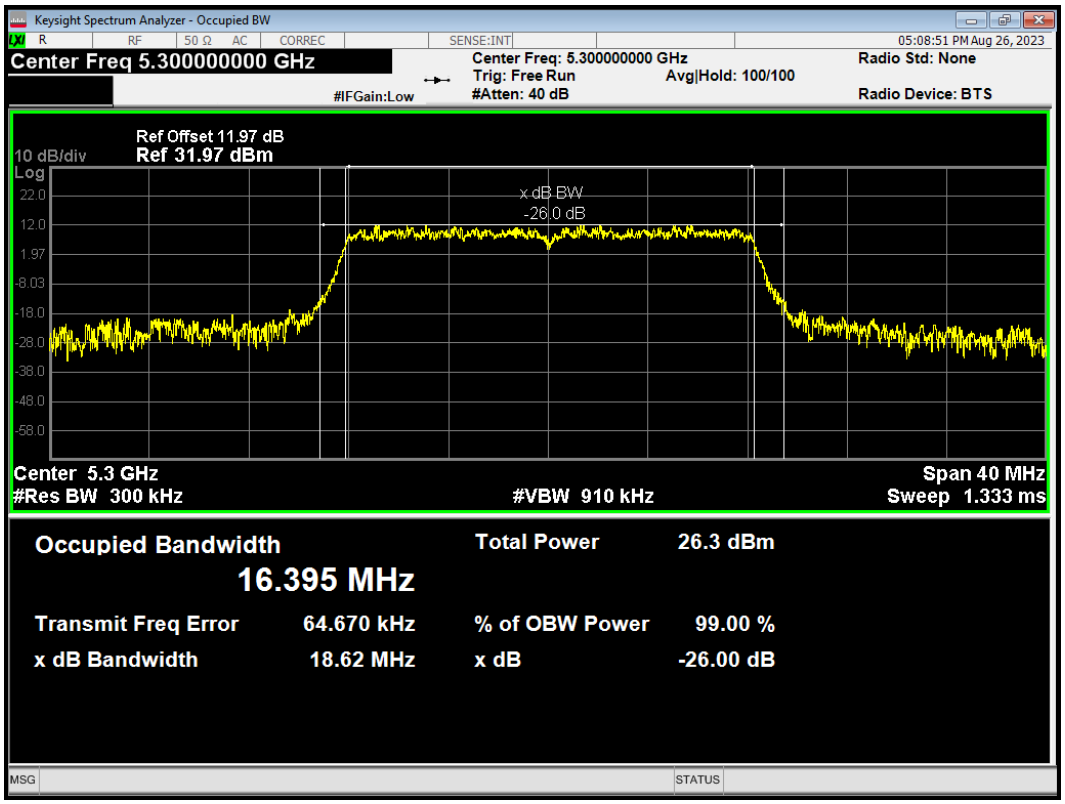


U-NII-2A

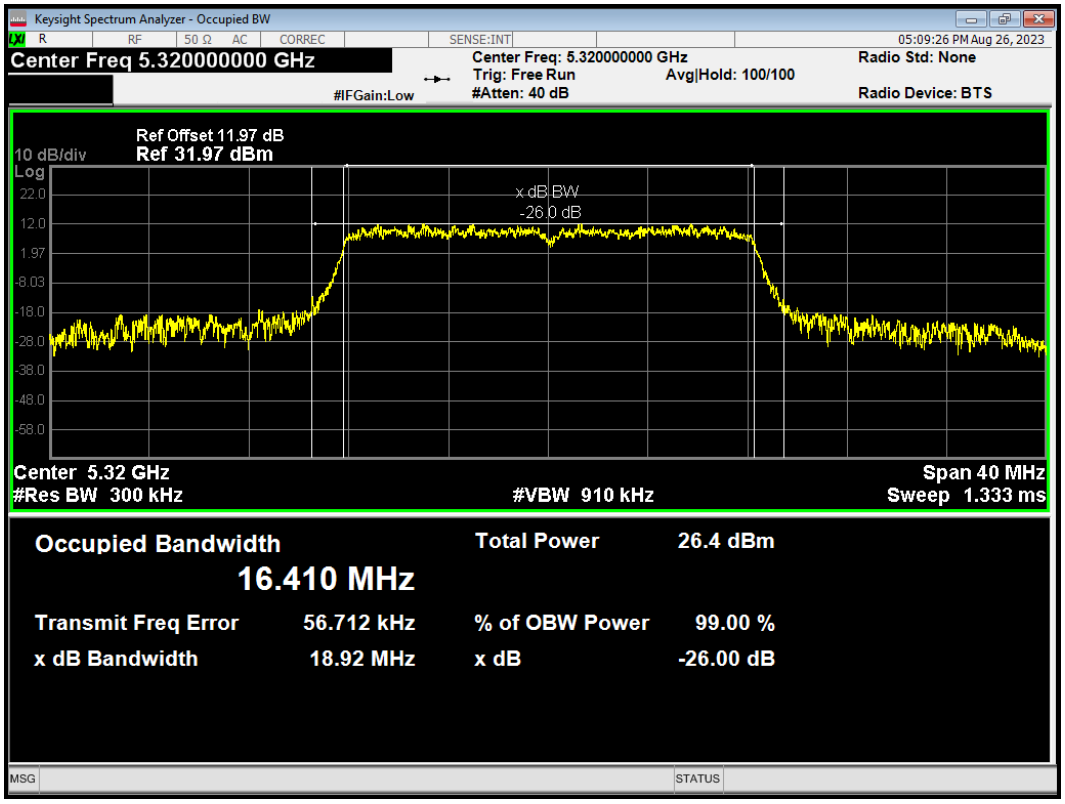
OBW 802.11a 5260MHz



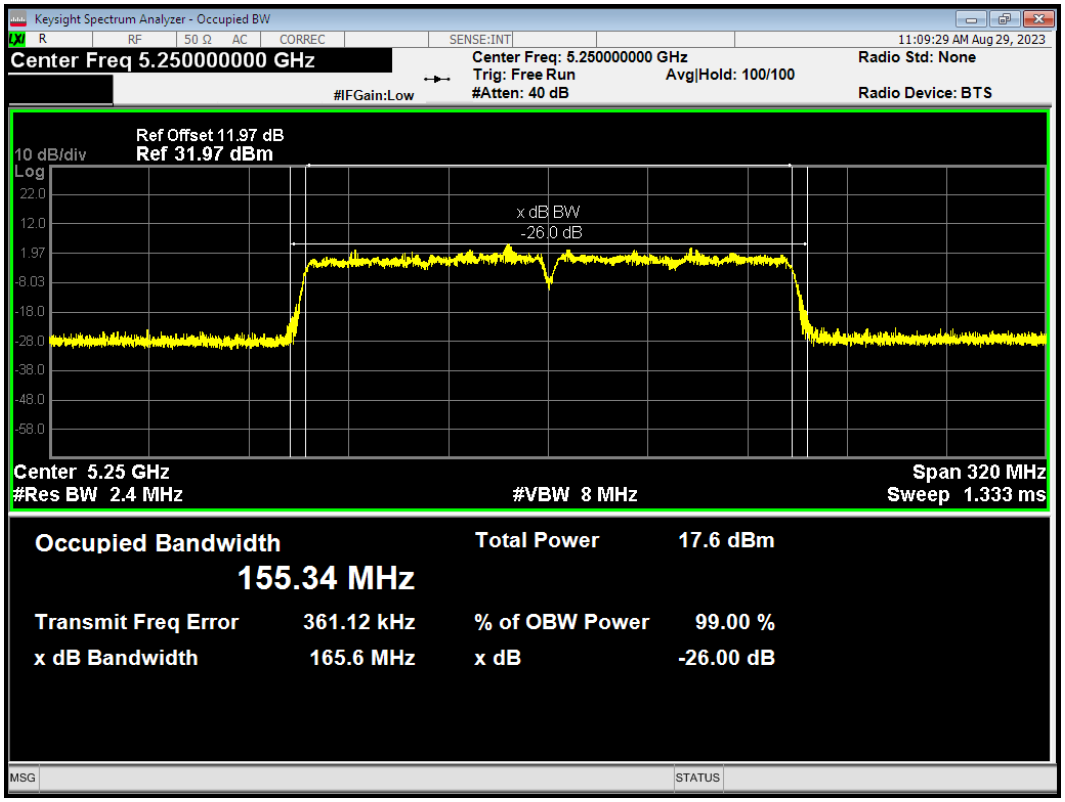
OBW 802.11a 5300MHz



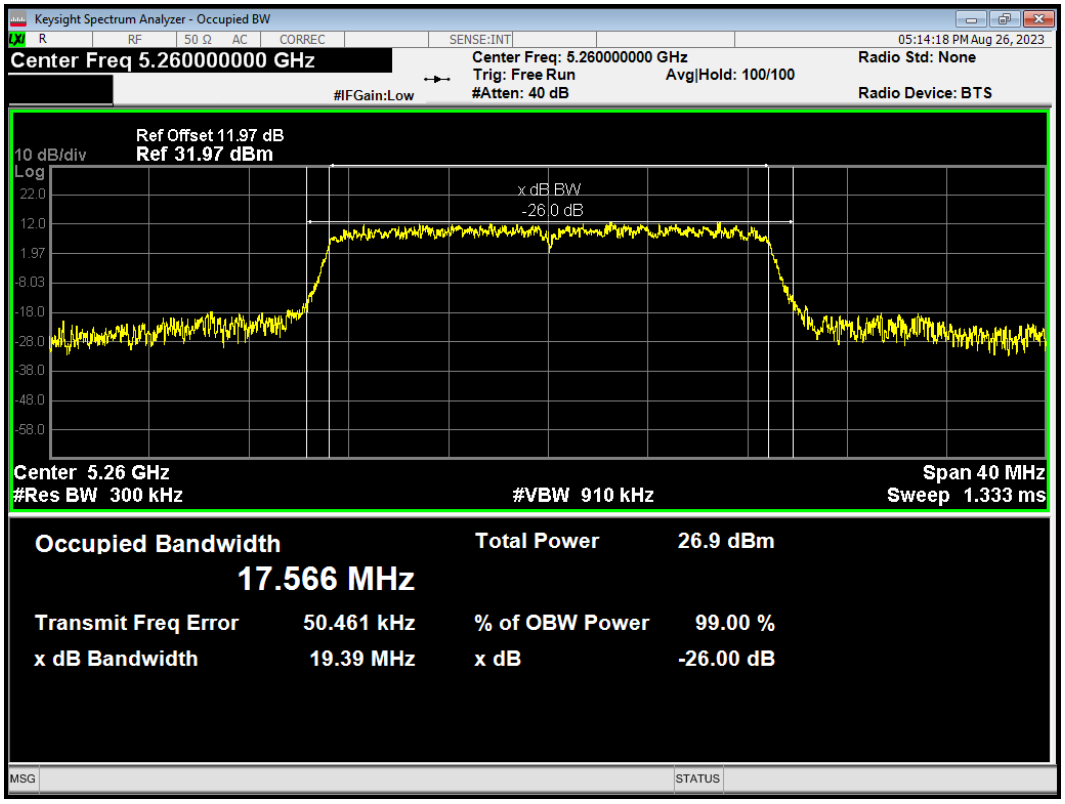
OBW 802.11a 5320MHz



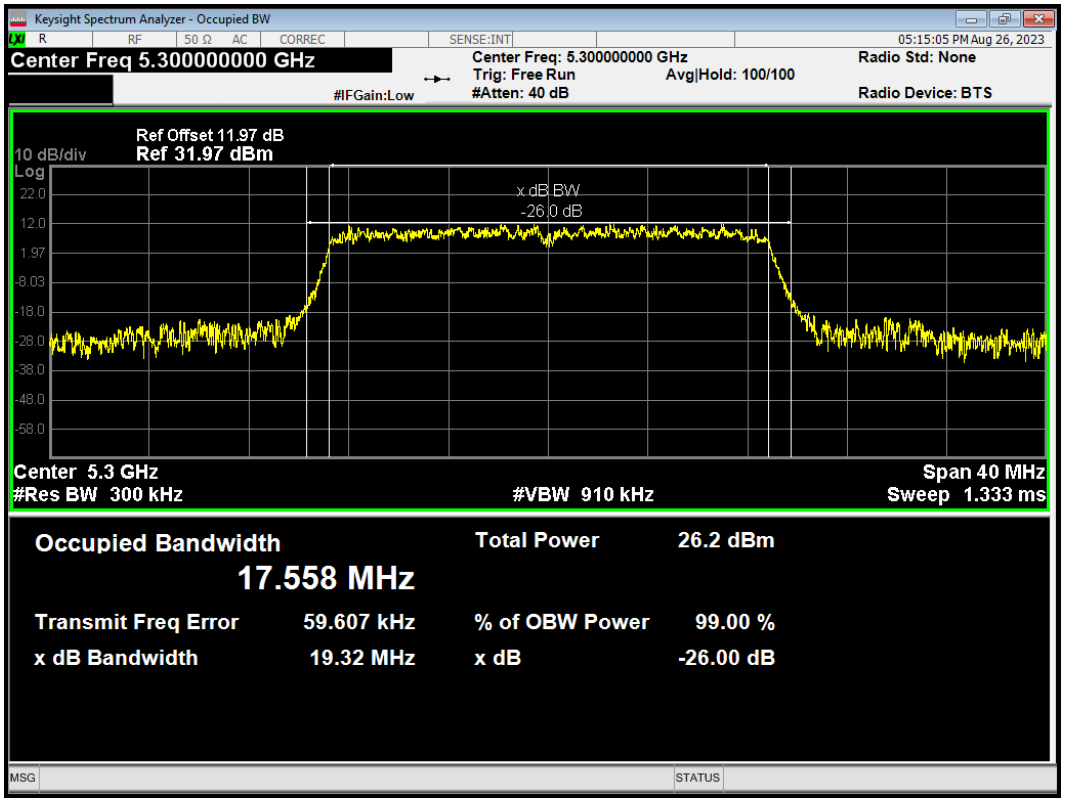
OBW 802.11ac(VHT160) 5250MHz



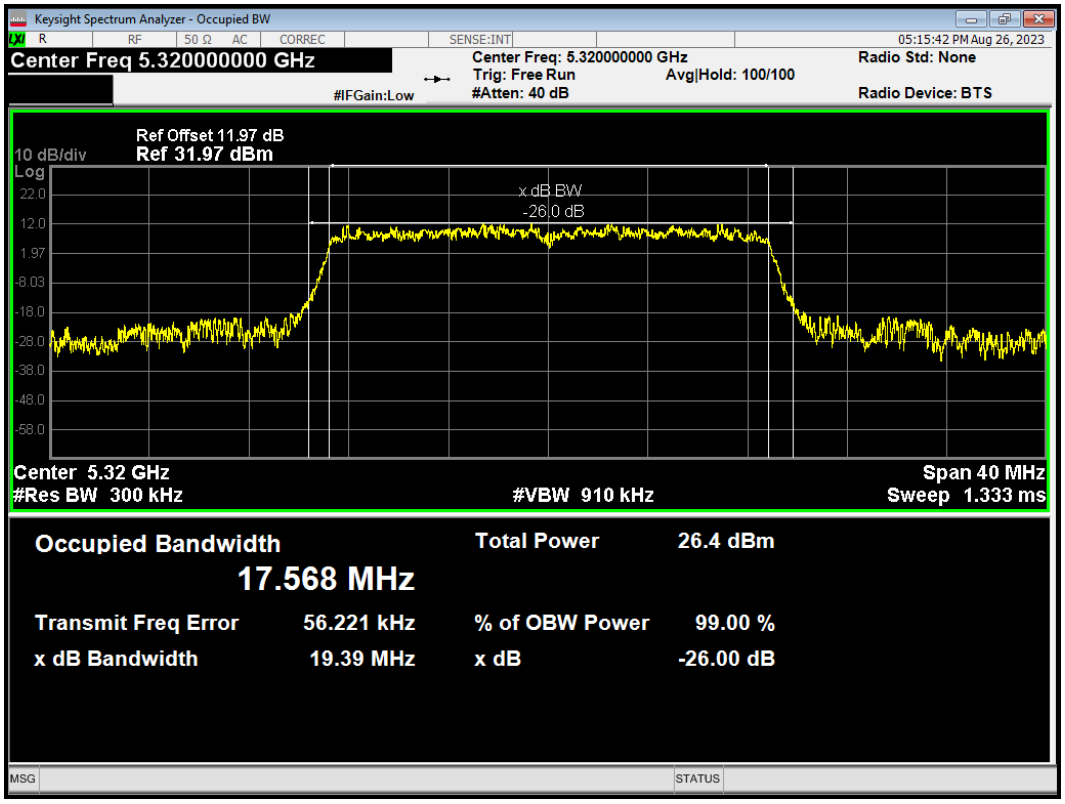
OBW 802.11ac(VHT20) 5260MHz



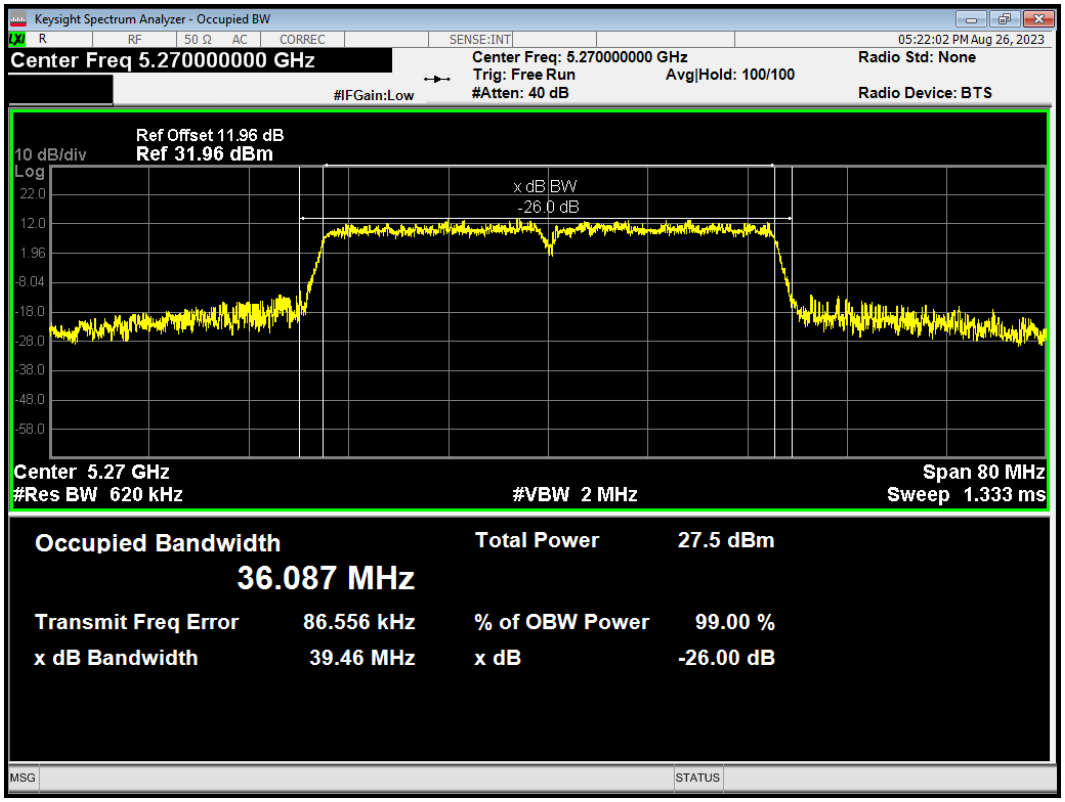
OBW 802.11ac(VHT20) 5300MHz



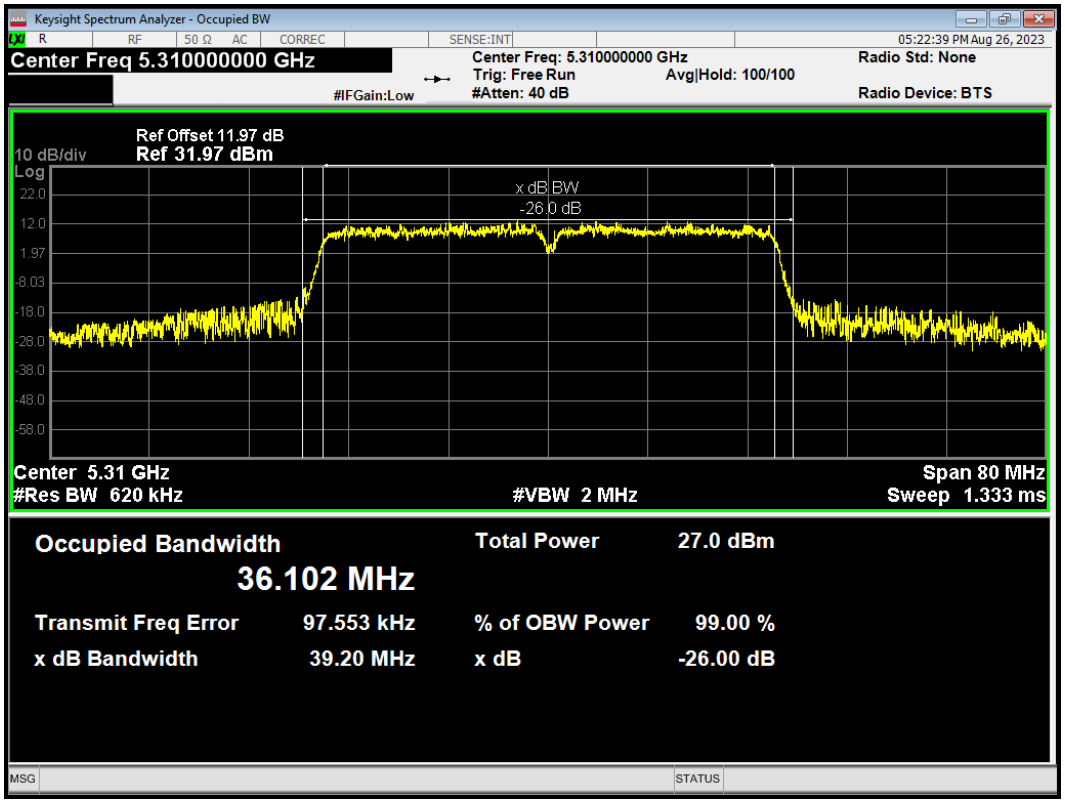
OBW 802.11ac(VHT20) 5320MHz



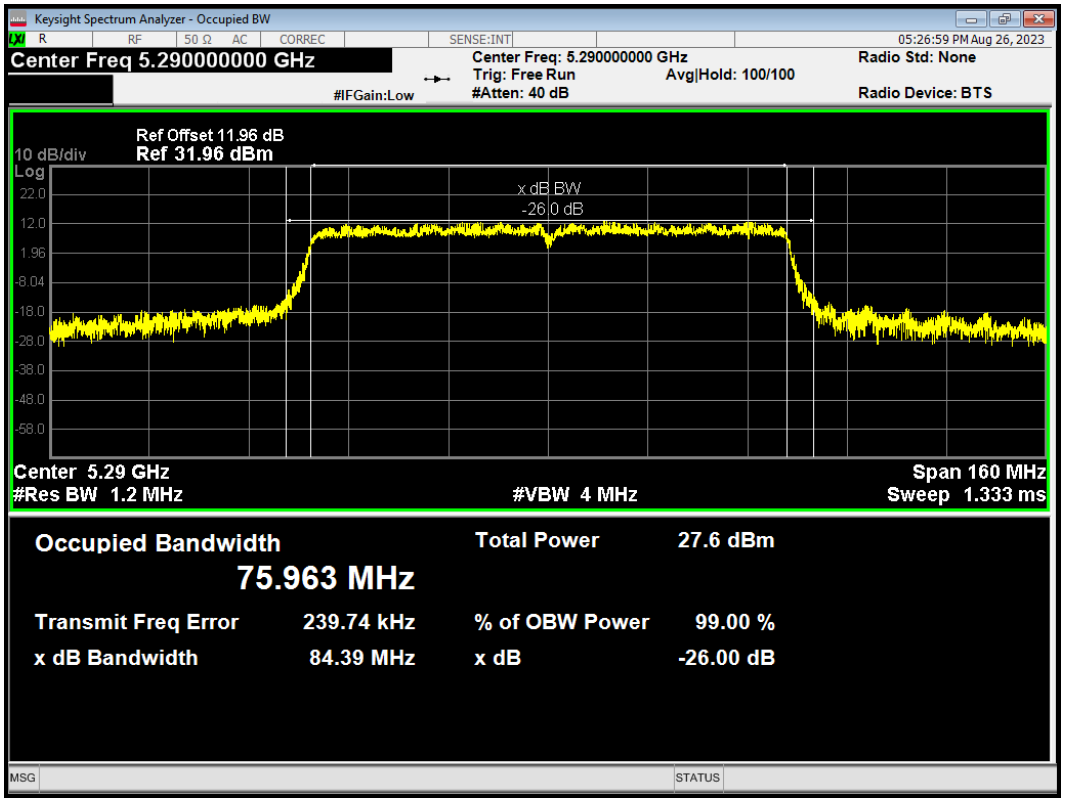
OBW 802.11ac(VHT40) 5270MHz



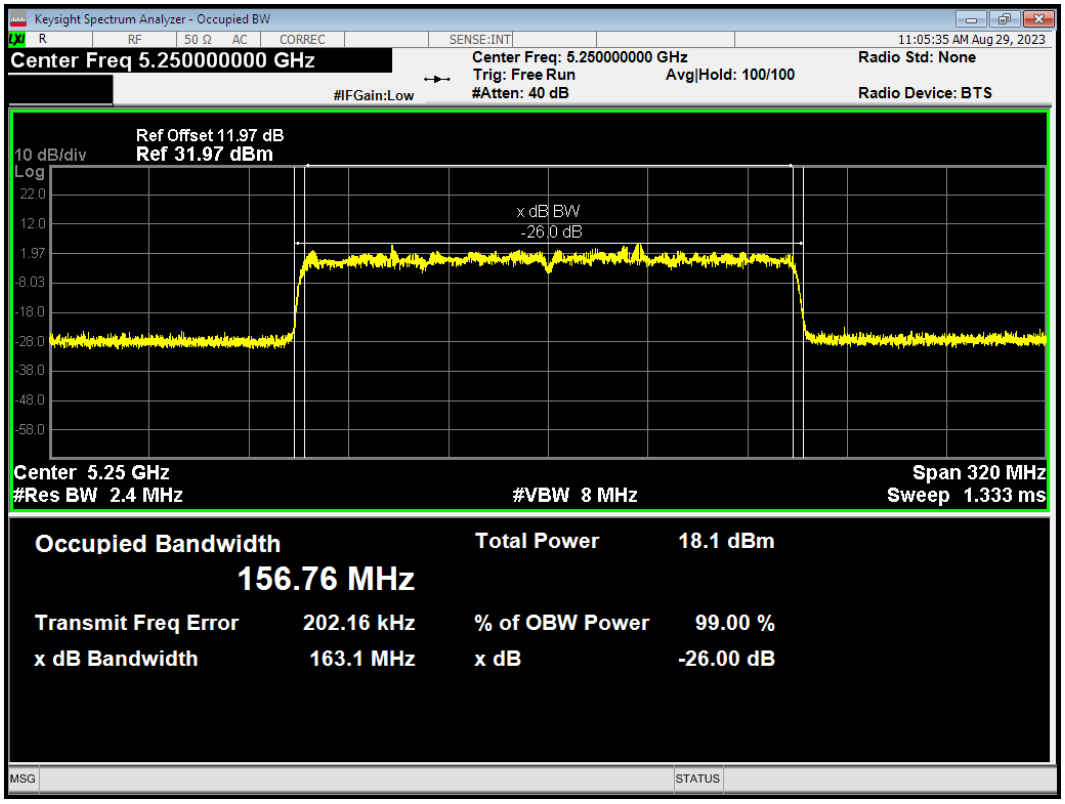
OBW 802.11ac(VHT40) 5310MHz



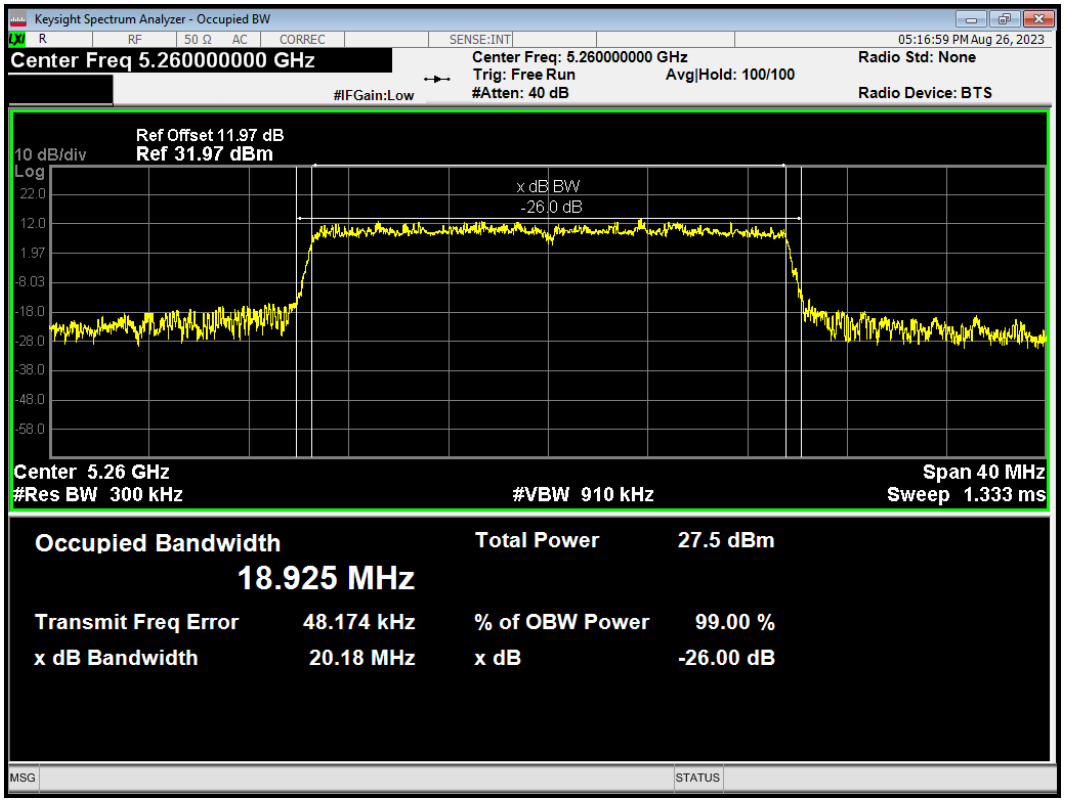
OBW 802.11ac(VHT80) 5290MHz



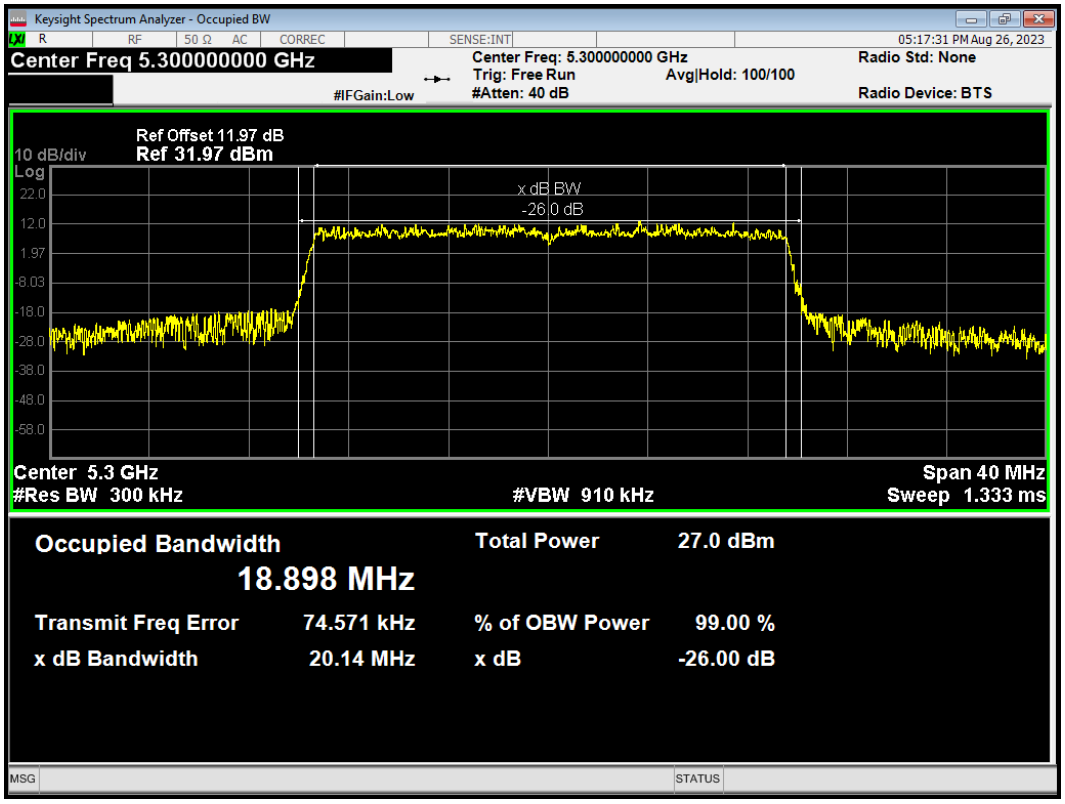
OBW 802.11ax(HE160) 5250MHz



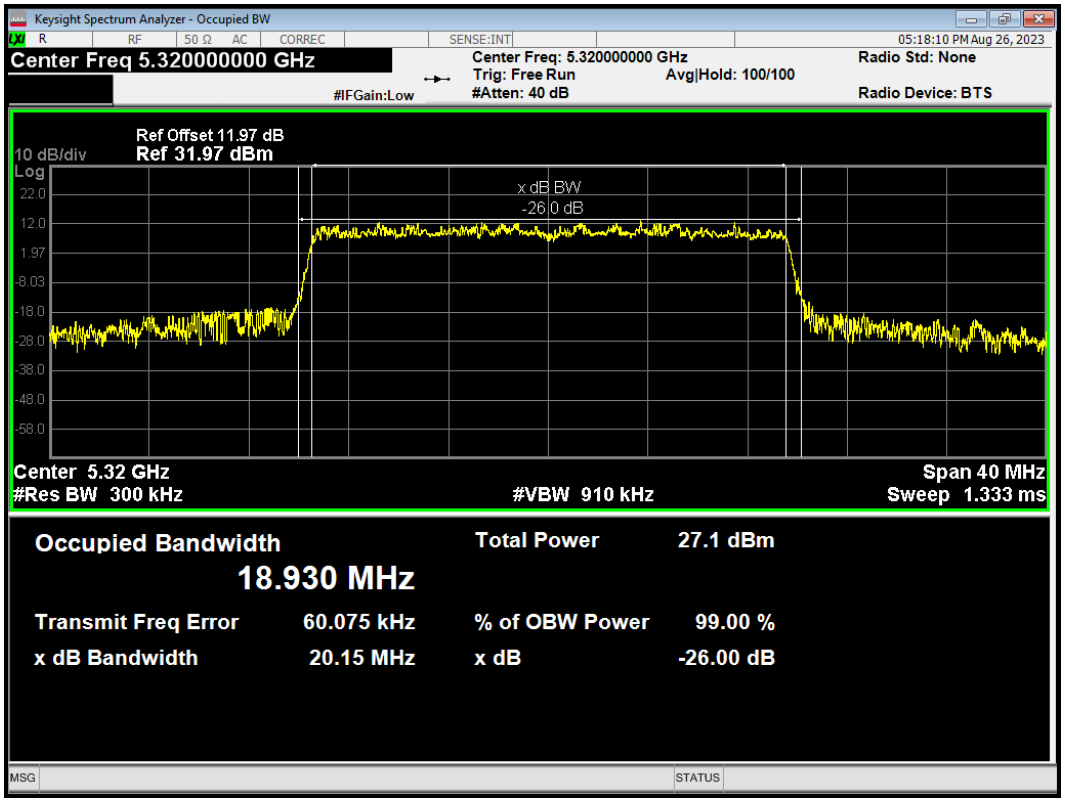
OBW 802.11ax(HE20) 5260MHz



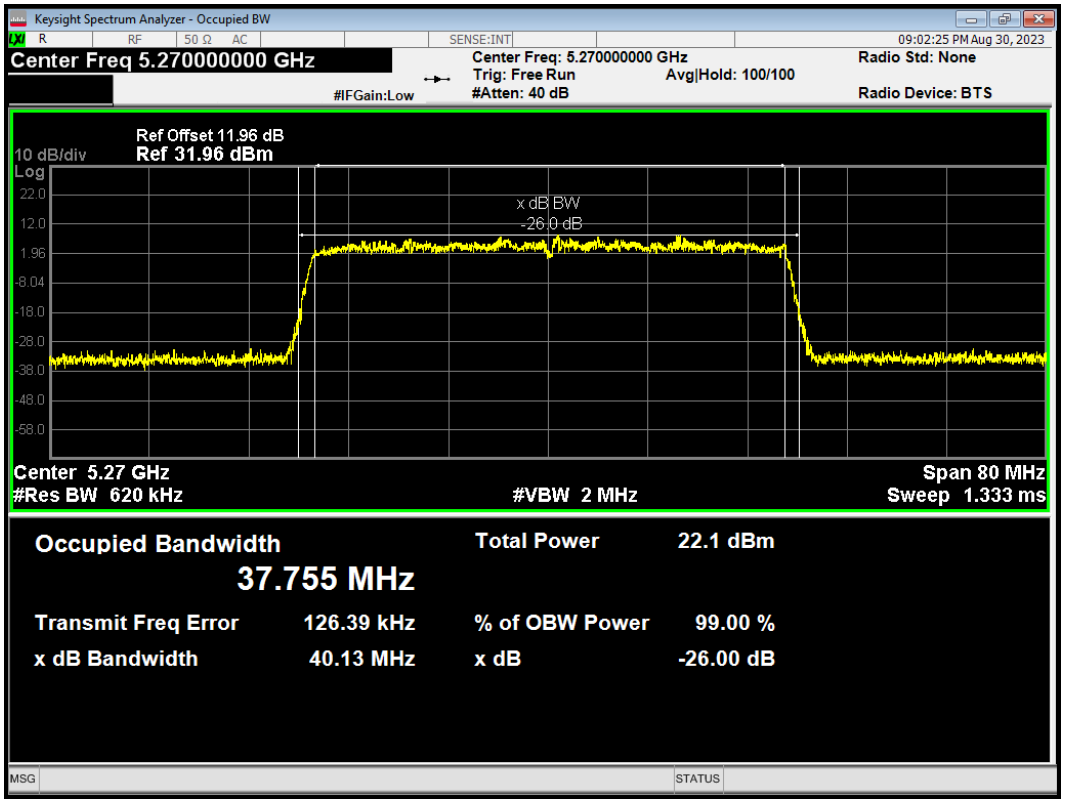
OBW 802.11ax(HE20) 5300MHz



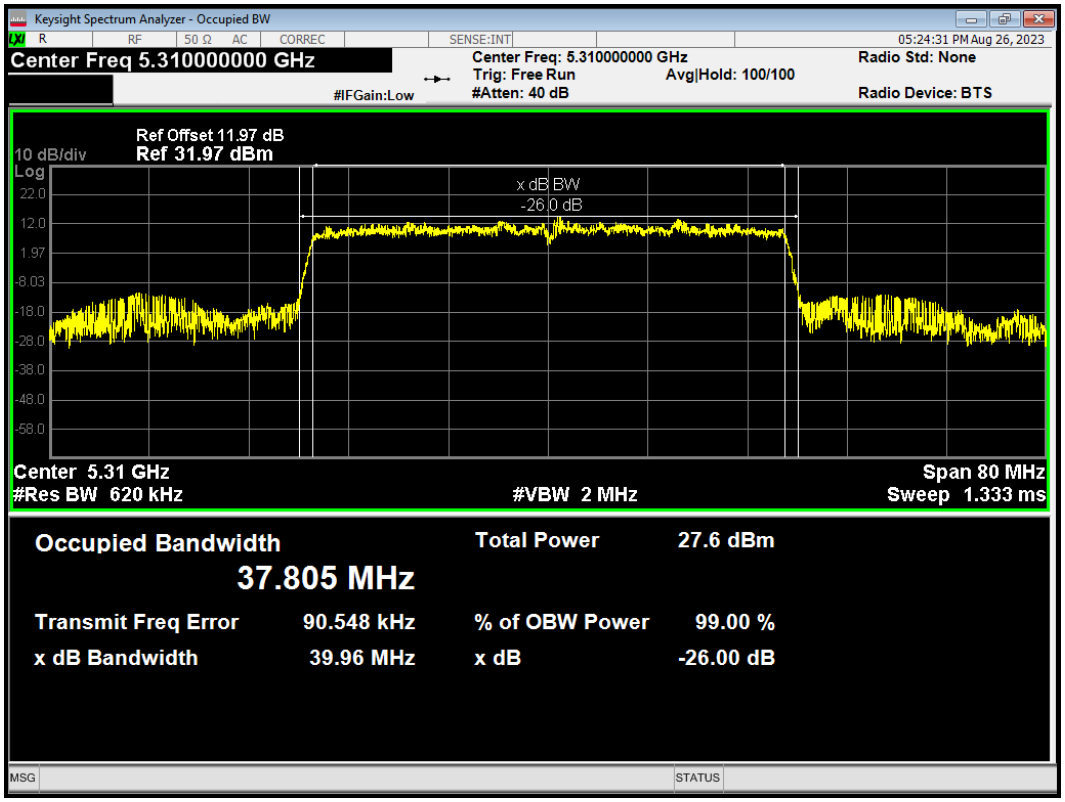
OBW 802.11ax(HE20) 5320MHz



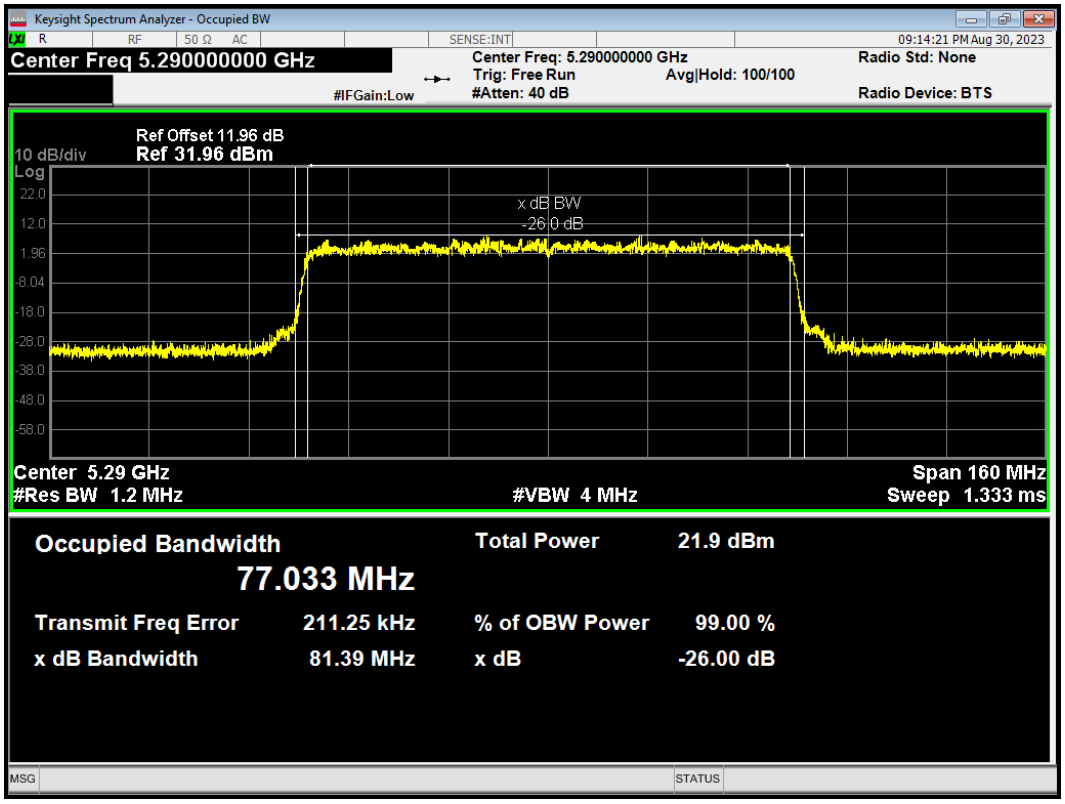
OBW 802.11ax(HE40) 5270MHz



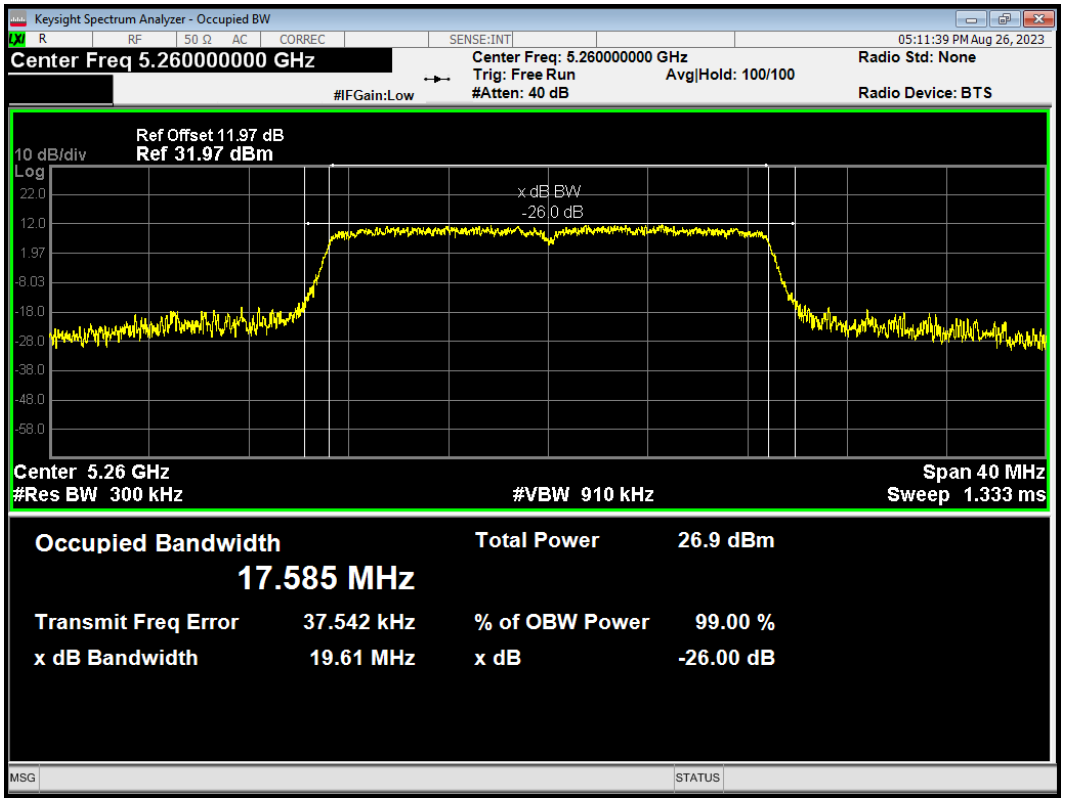
OBW 802.11ax(HE40) 5310MHz



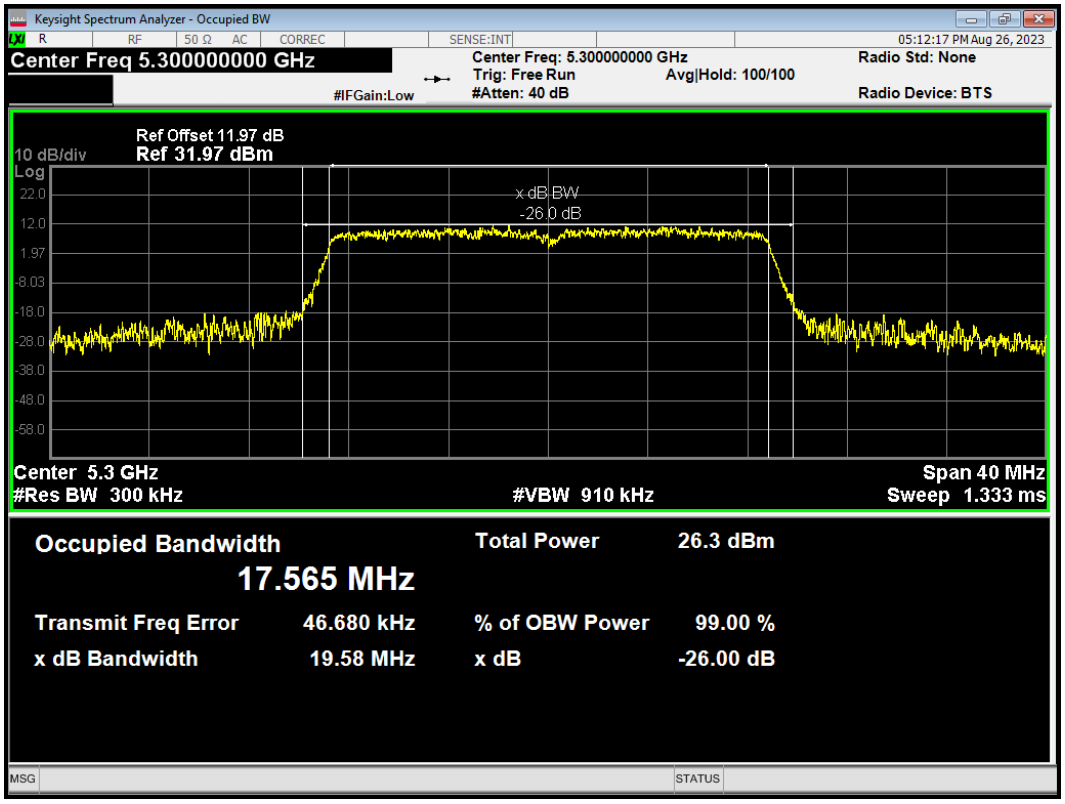
OBW 802.11ax(HE80) 5290MHz



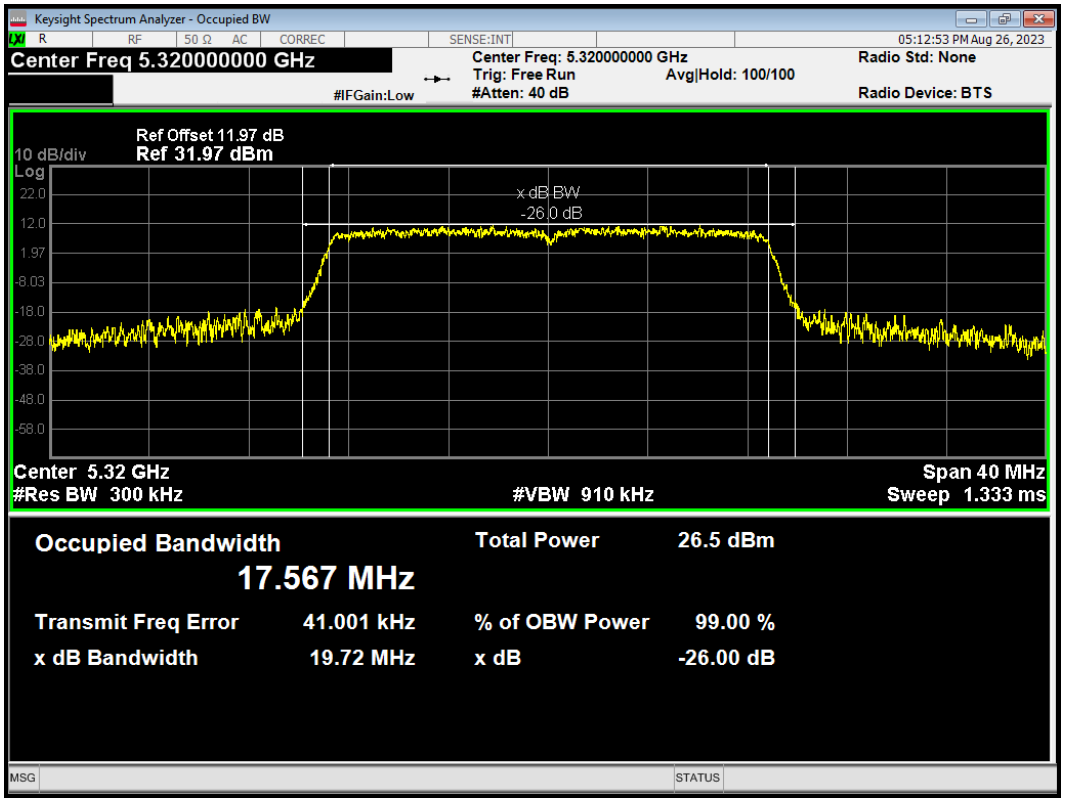
OBW 802.11n(HT20) 5260MHz



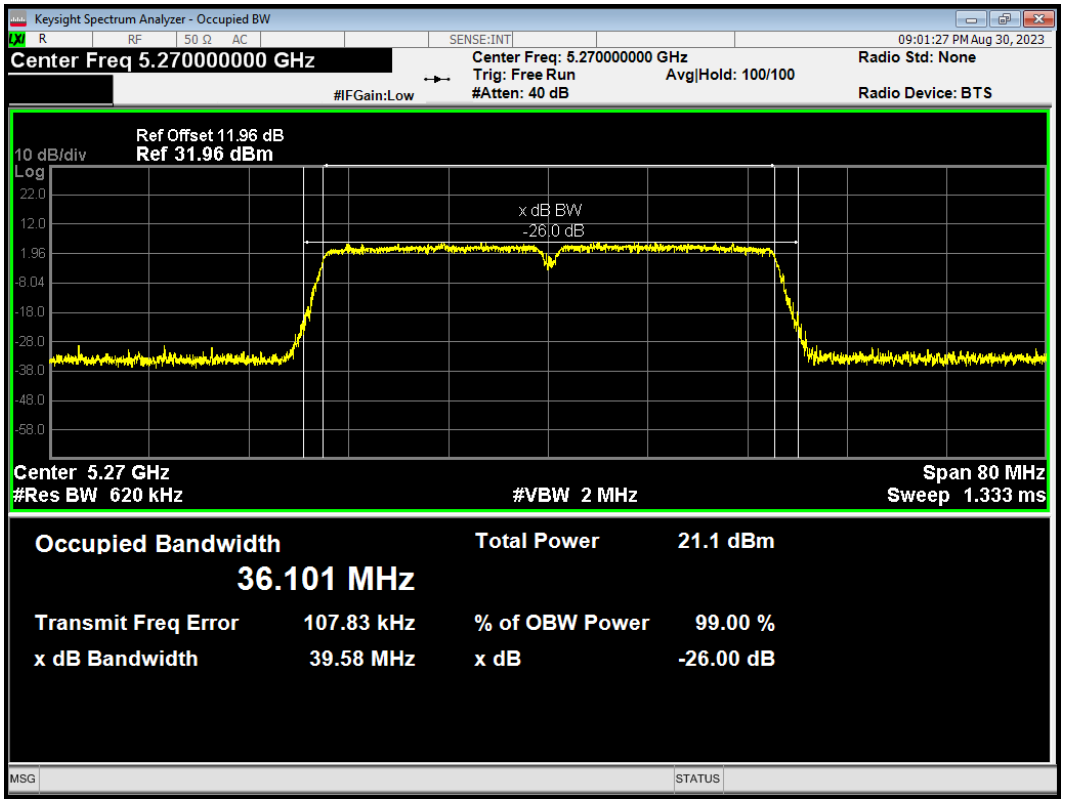
OBW 802.11n(HT20) 5300MHz



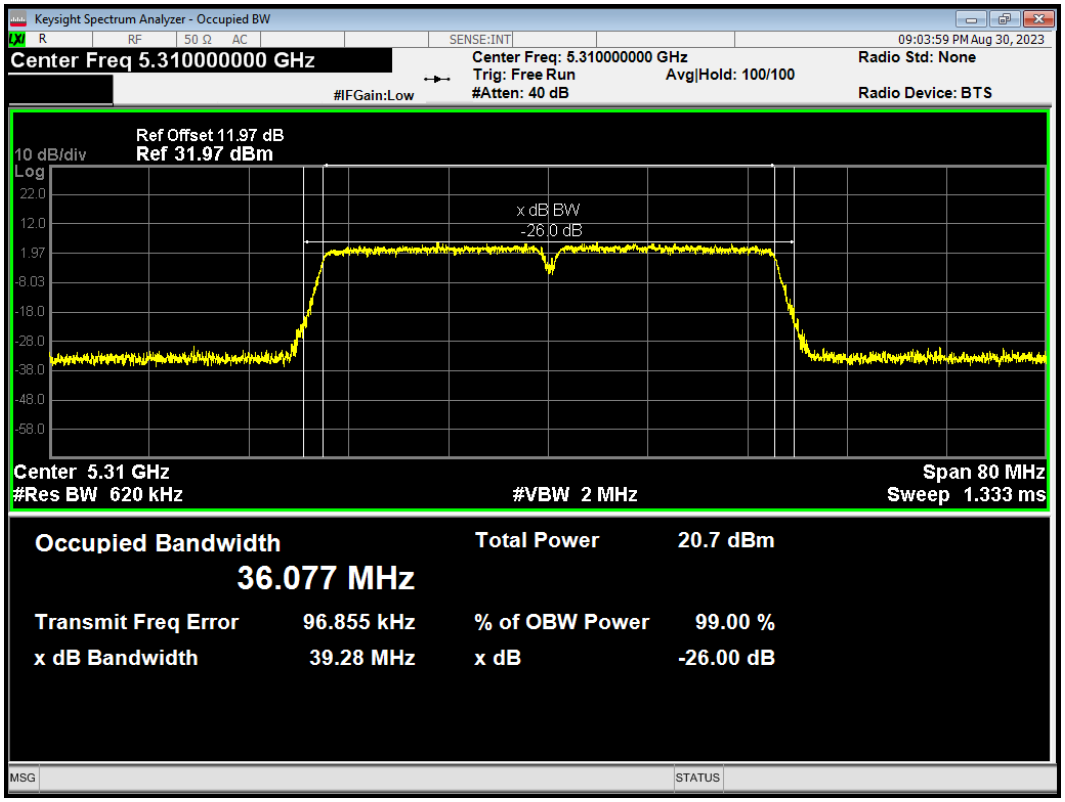
OBW 802.11n(HT20) 5320MHz



OBW 802.11n(HT40) 5270MHz

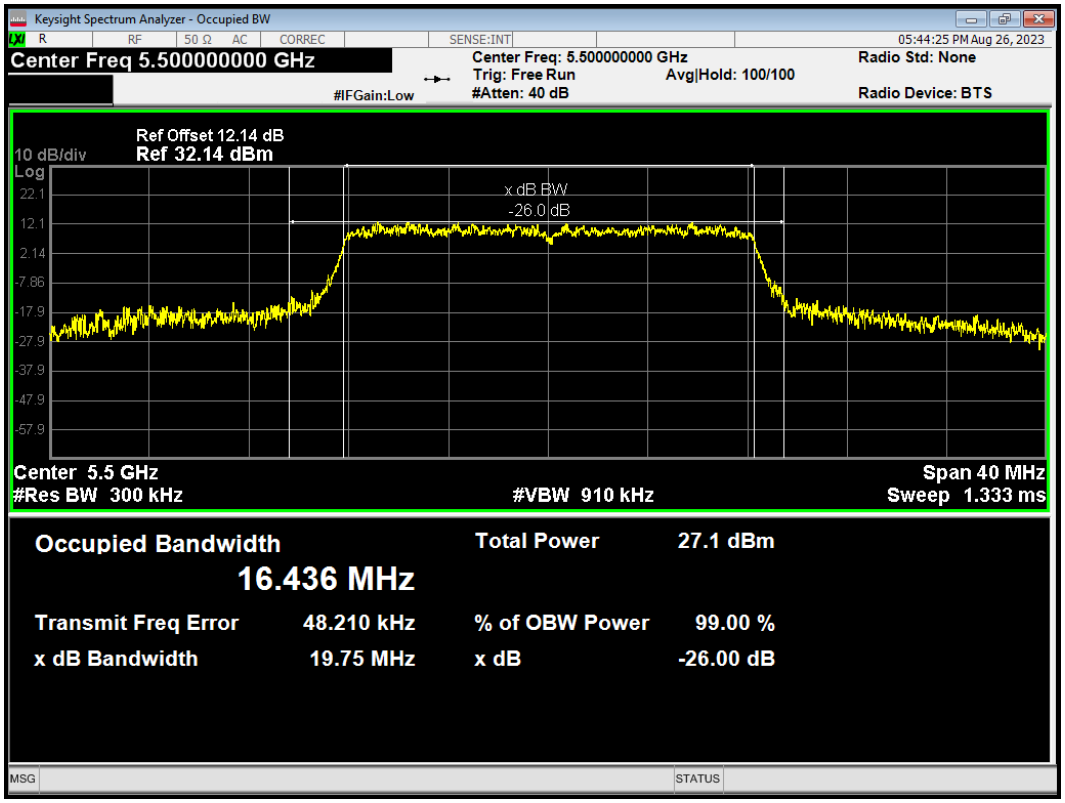


OBW 802.11n(HT40) 5310MHz

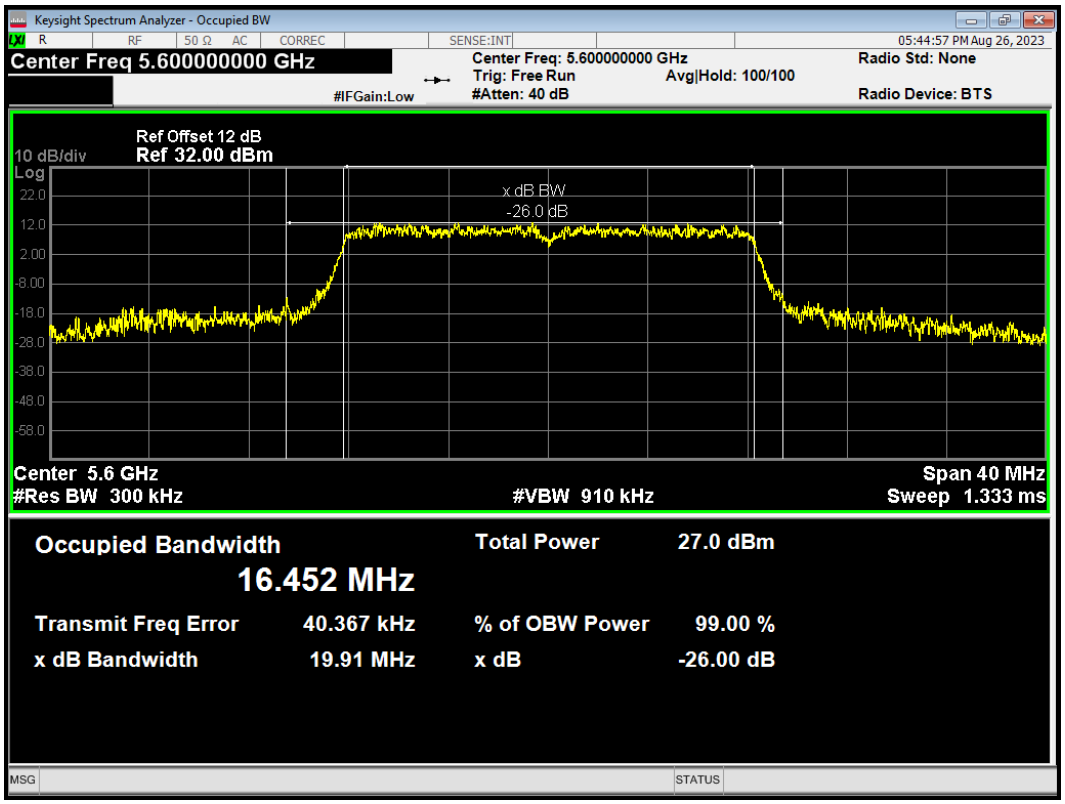


U-NII-2C

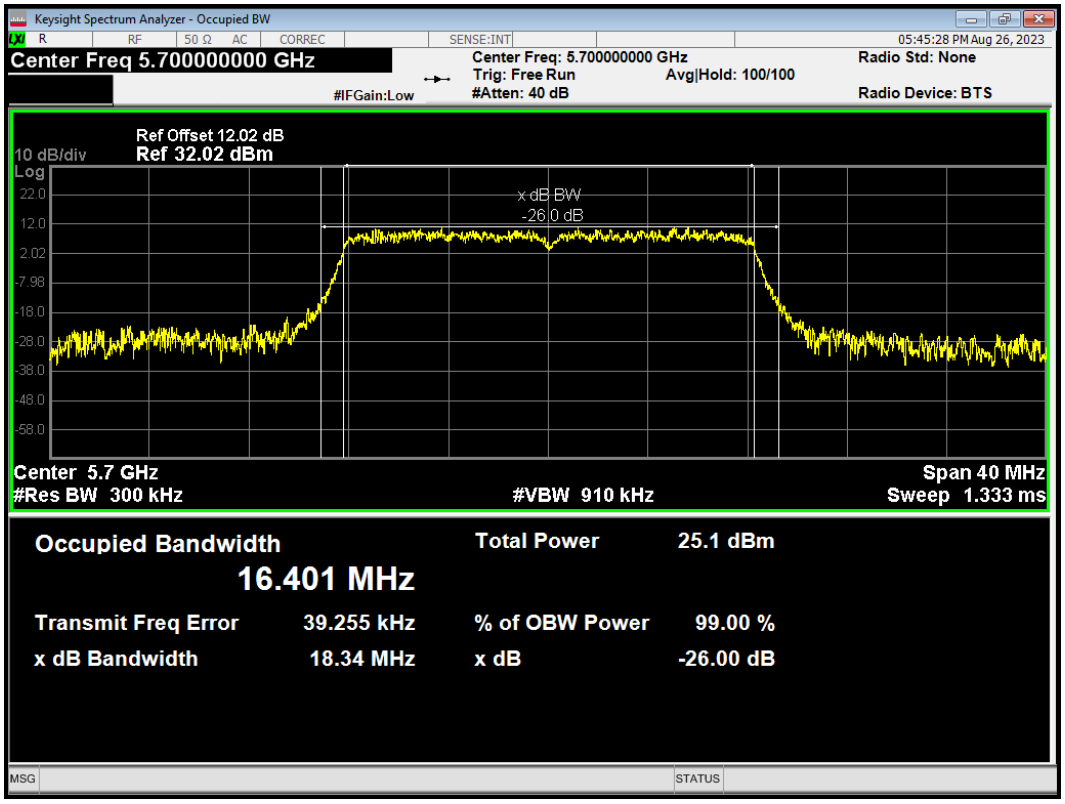
OBW 802.11a 5500MHz



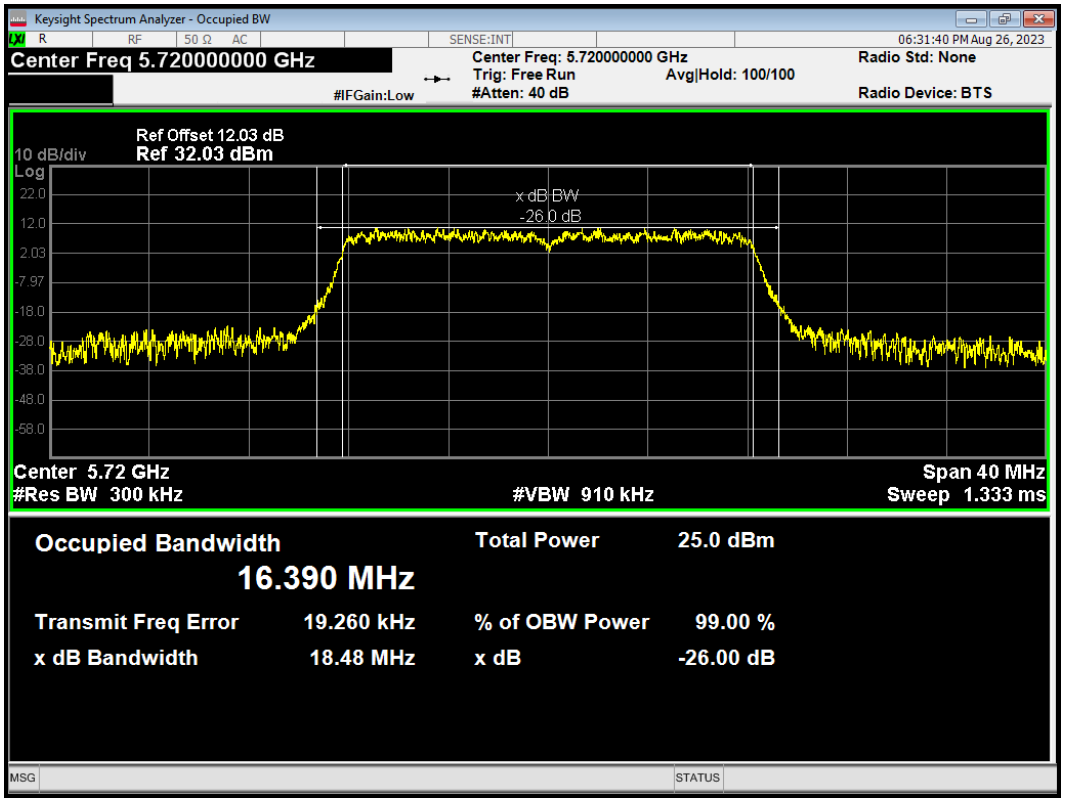
OBW 802.11a 5600MHz



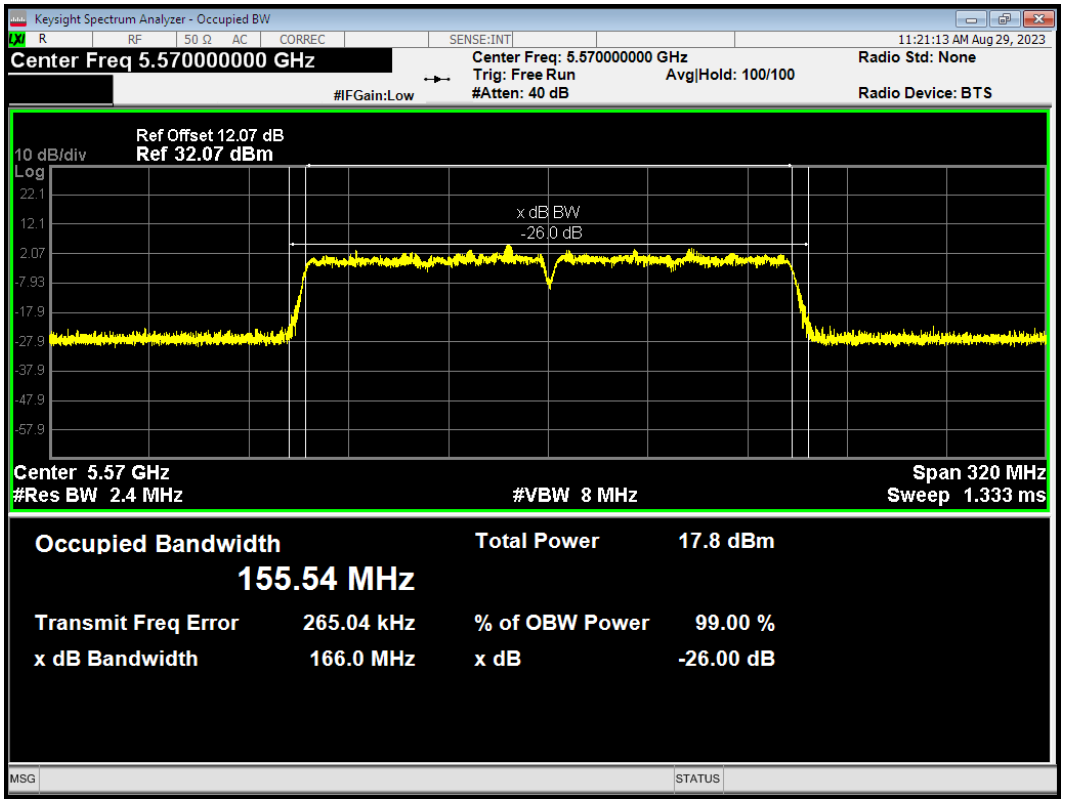
OBW 802.11a 5700MHz



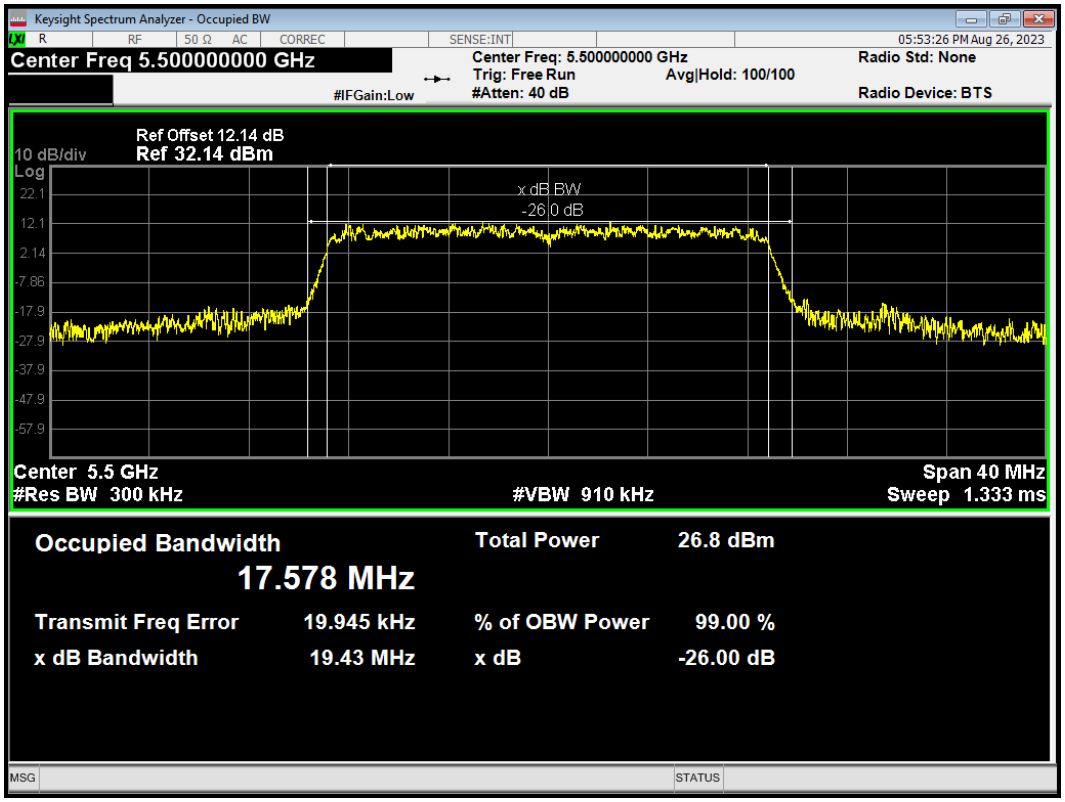
OBW 802.11a 5720MHz



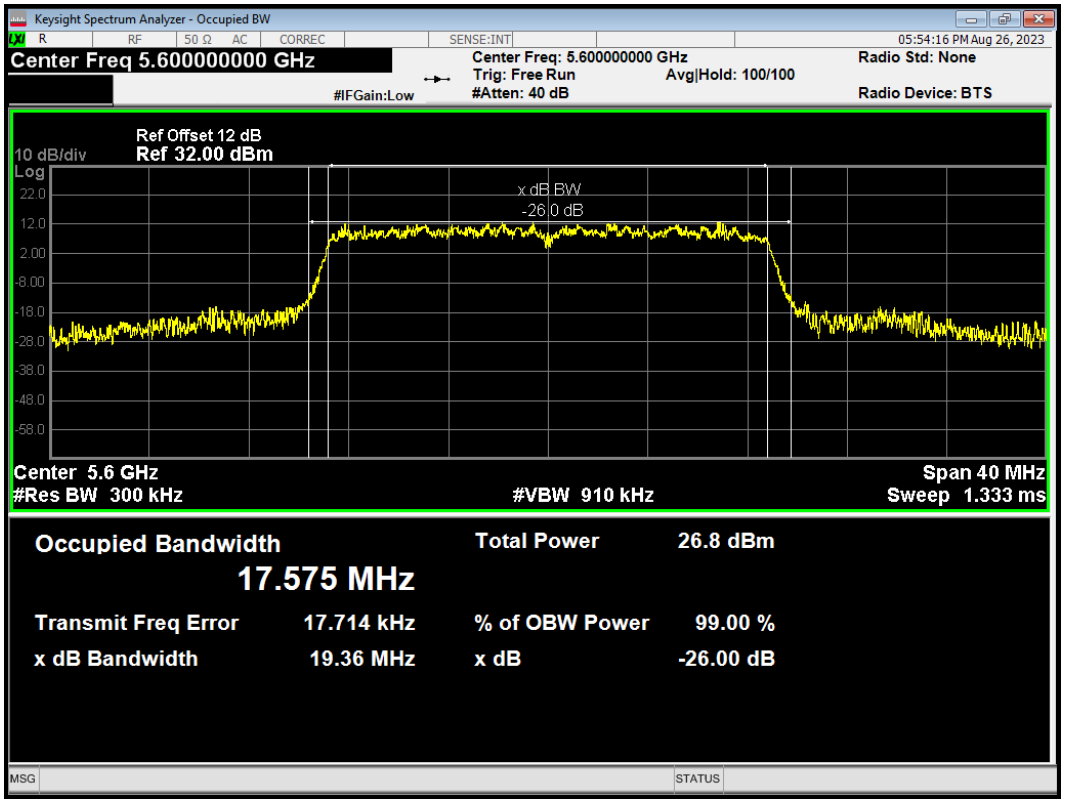
OBW 802.11ac(VHT160) 5570MHz



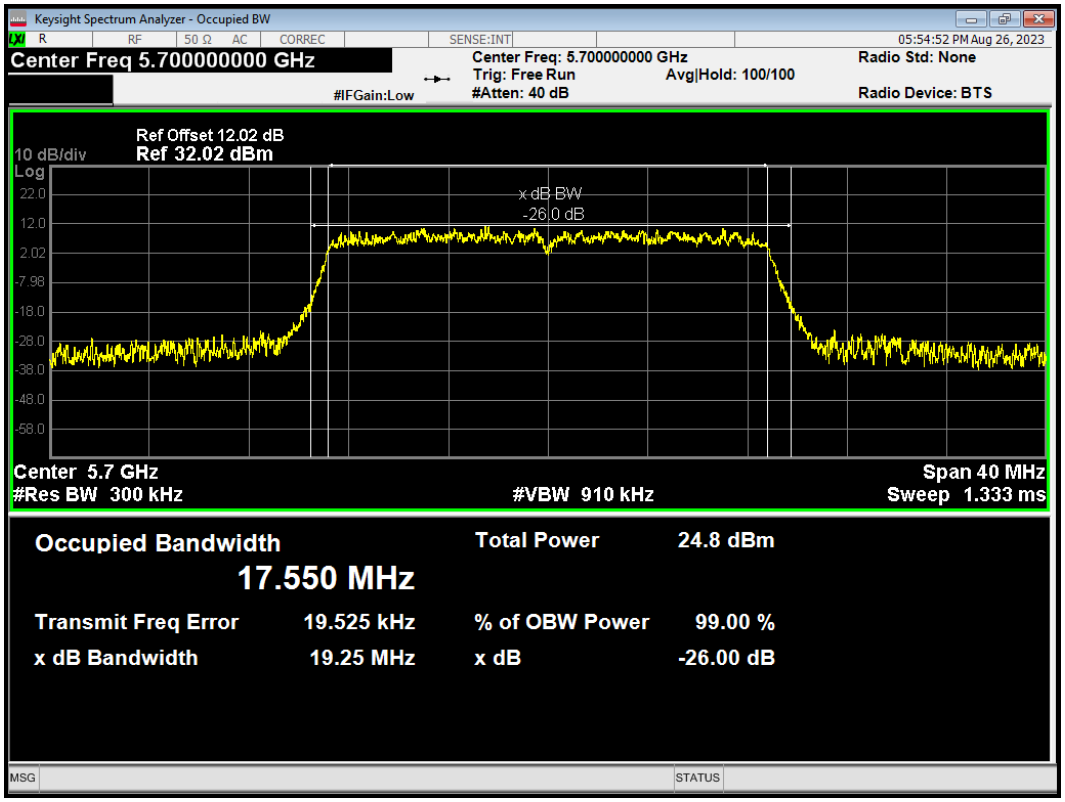
OBW 802.11ac(VHT20) 5500MHz



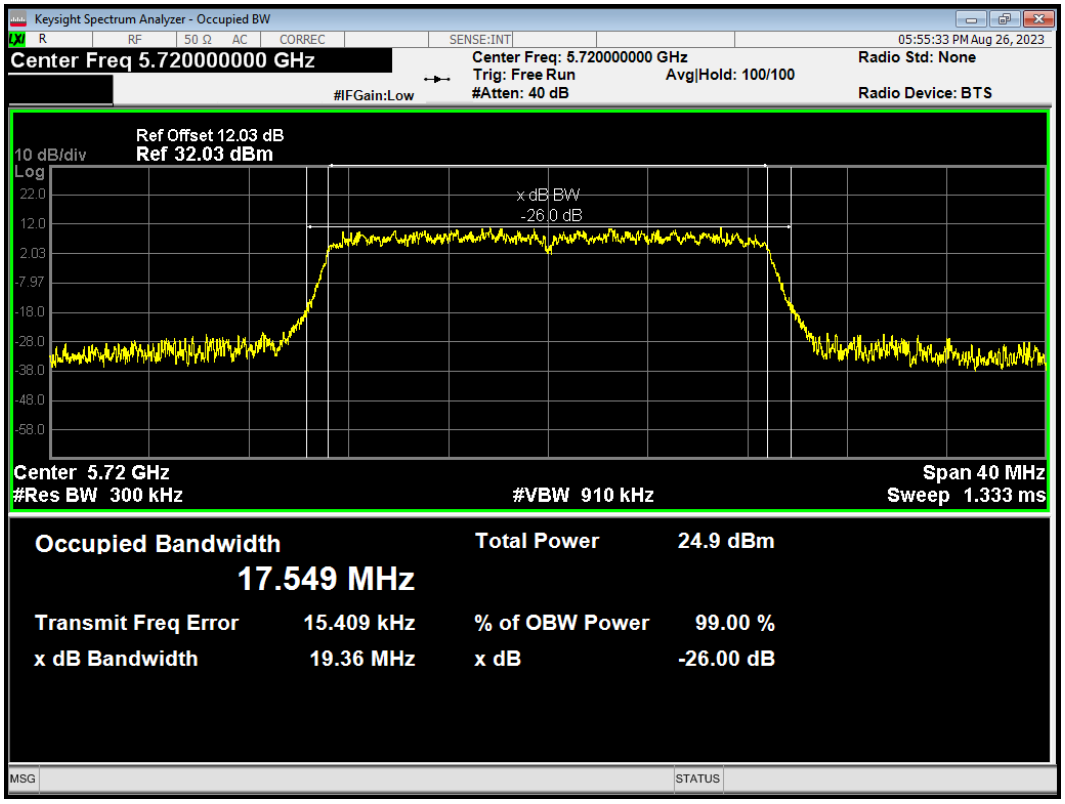
OBW 802.11ac(VHT20) 5600MHz



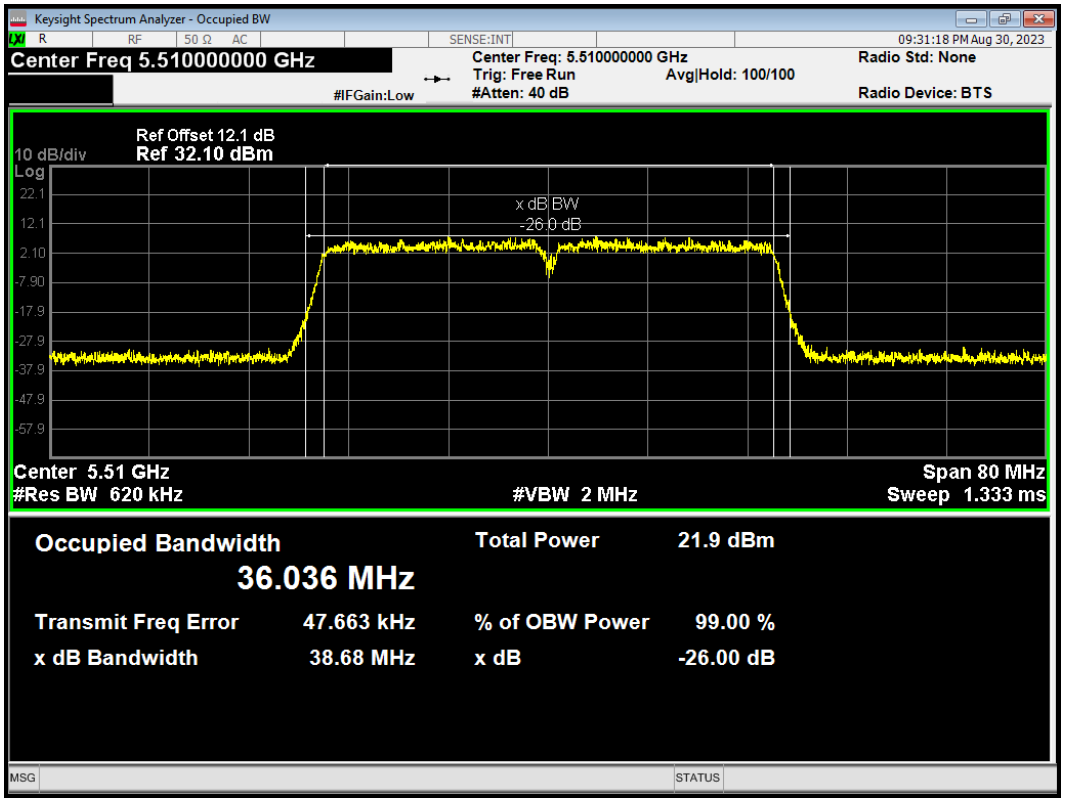
OBW 802.11ac(VHT20) 5700MHz



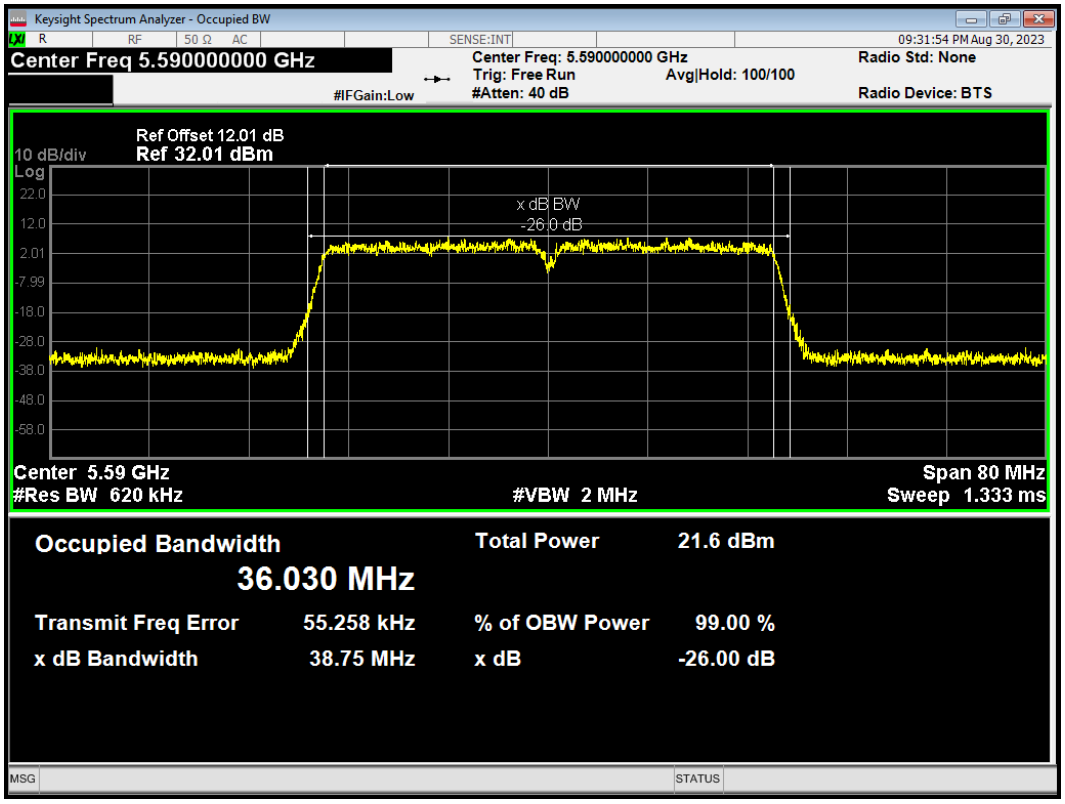
OBW 802.11ac(VHT20) 5720MHz



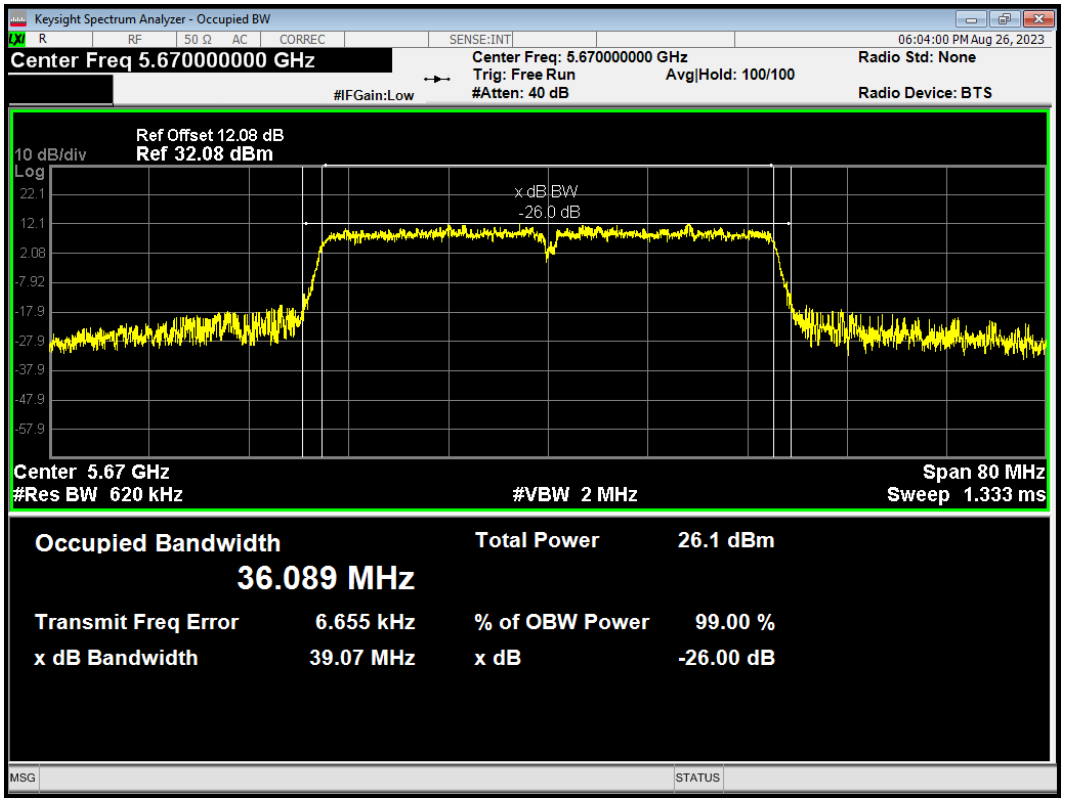
OBW 802.11ac(VHT40) 5510MHz



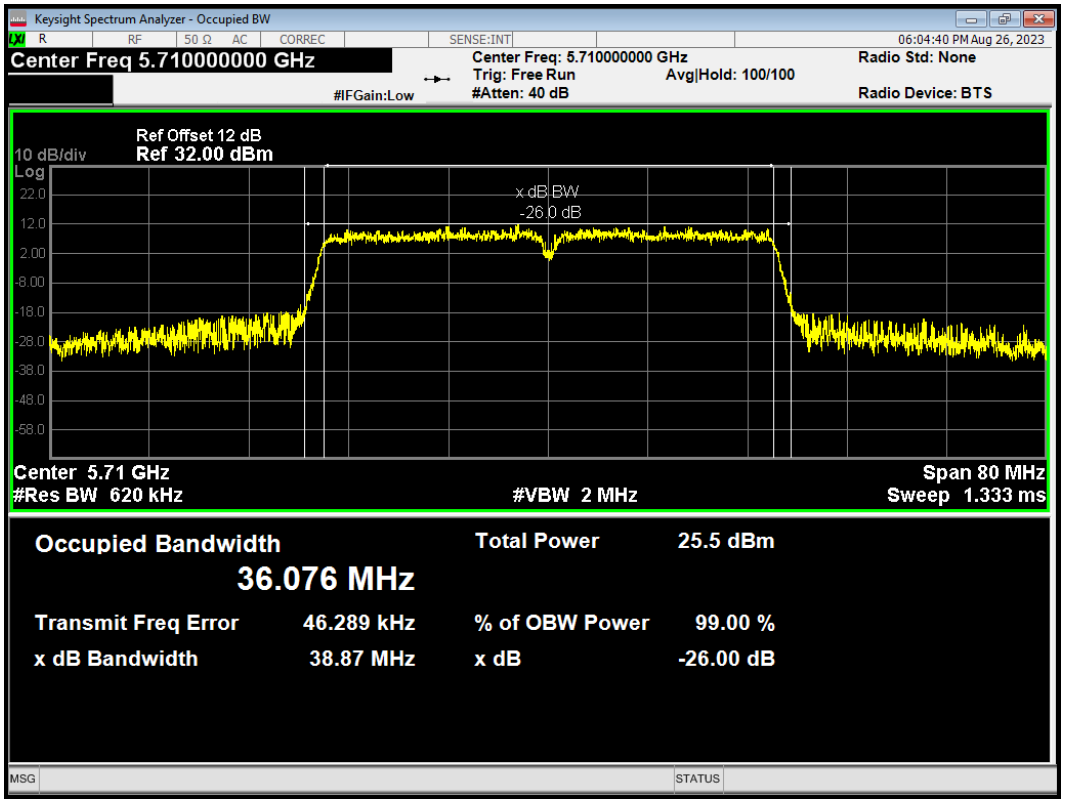
OBW 802.11ac(VHT40) 5590MHz



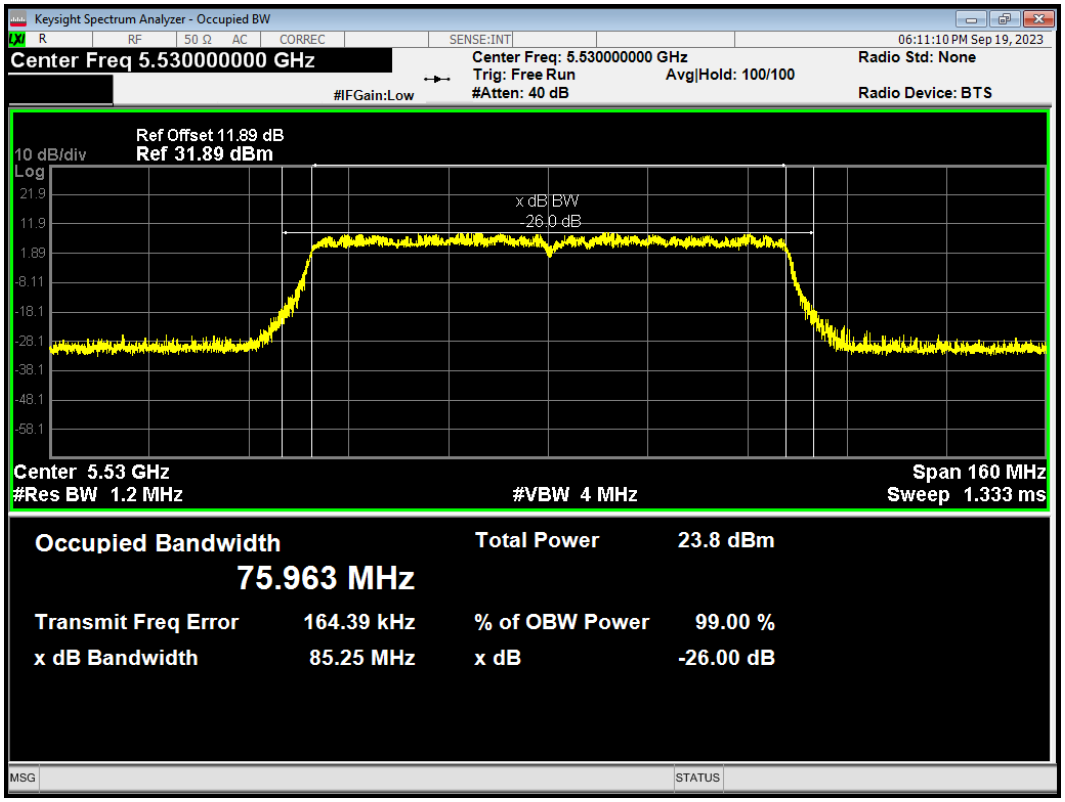
OBW 802.11ac(VHT40) 5670MHz



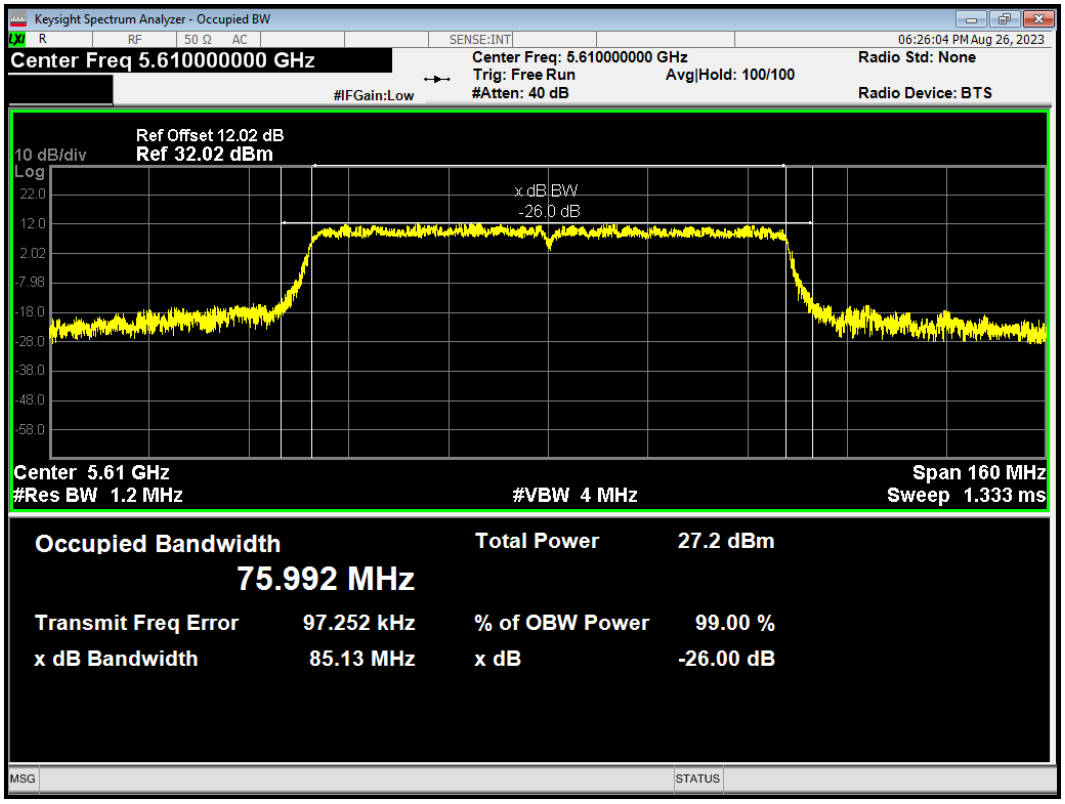
OBW 802.11ac(VHT40) 5710MHz



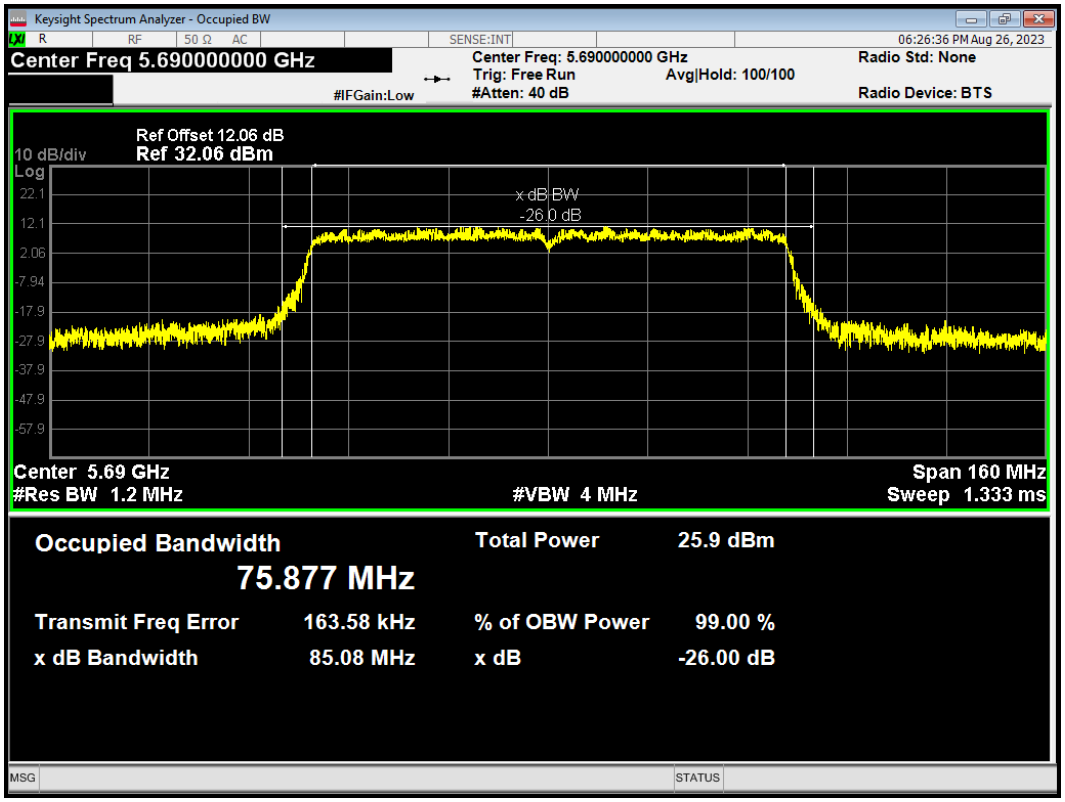
OBW 802.11ac(VHT80) 5530MHz



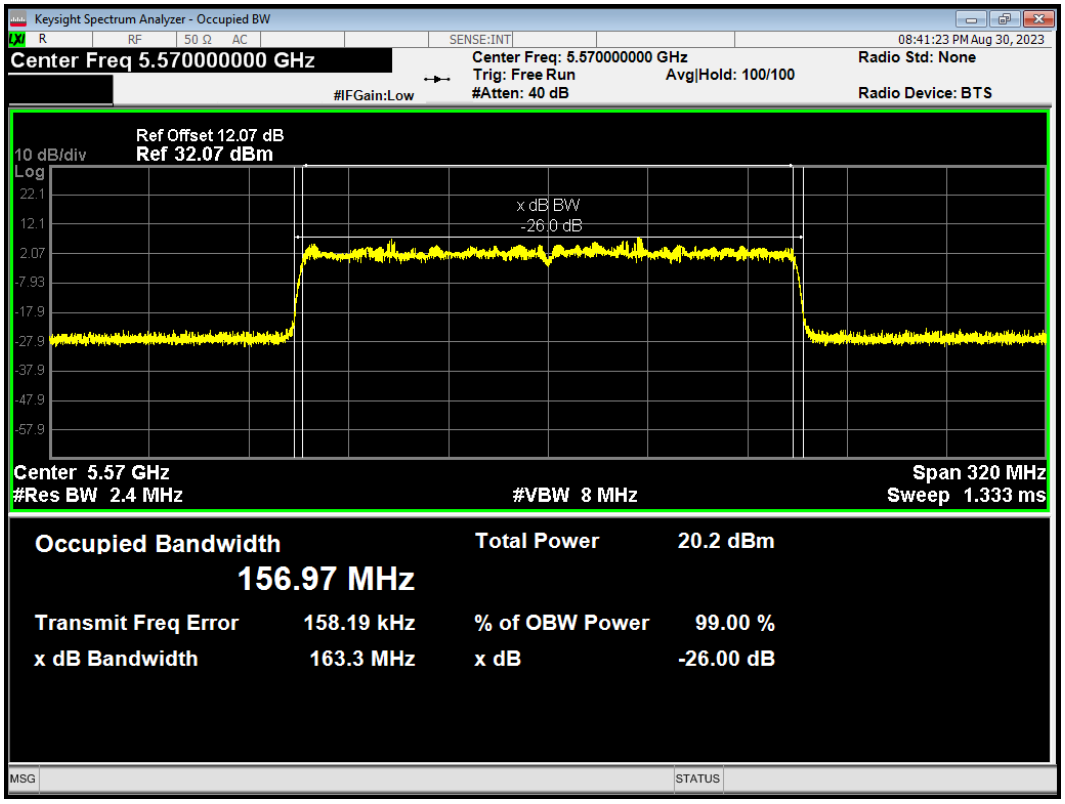
OBW 802.11ac(VHT80) 5610MHz



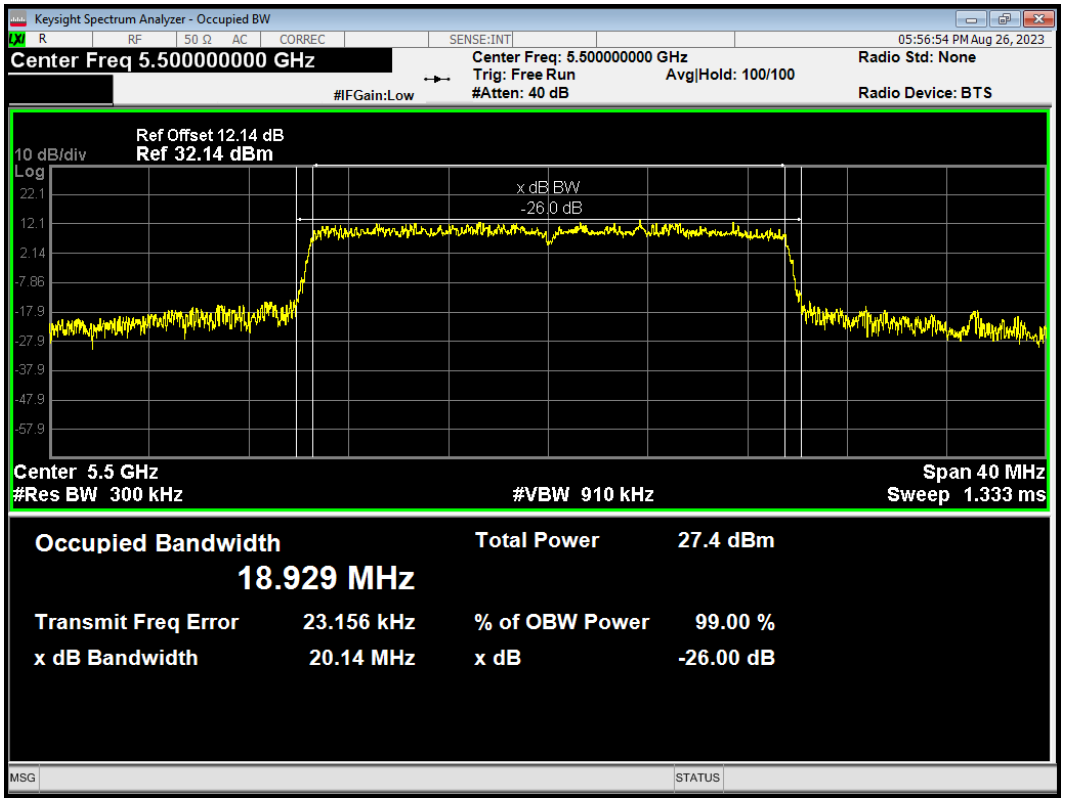
OBW 802.11ac(VHT80) 5690MHz



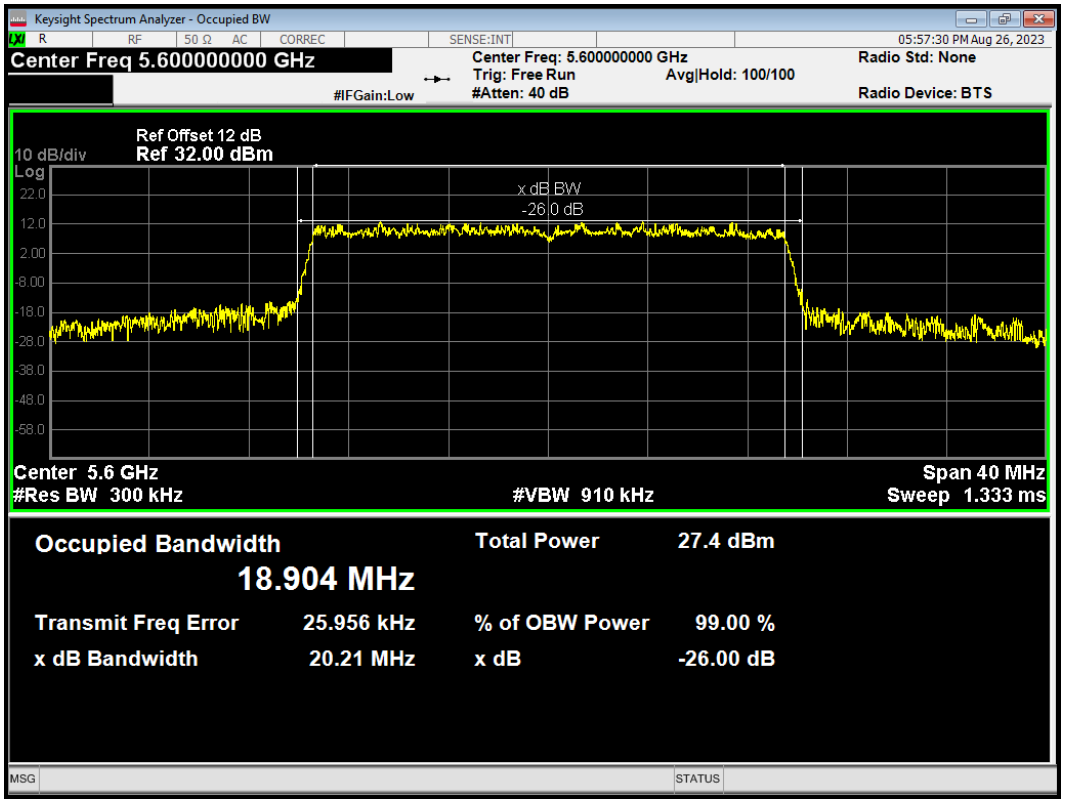
OBW 802.11ax(HE160) 5570MHz



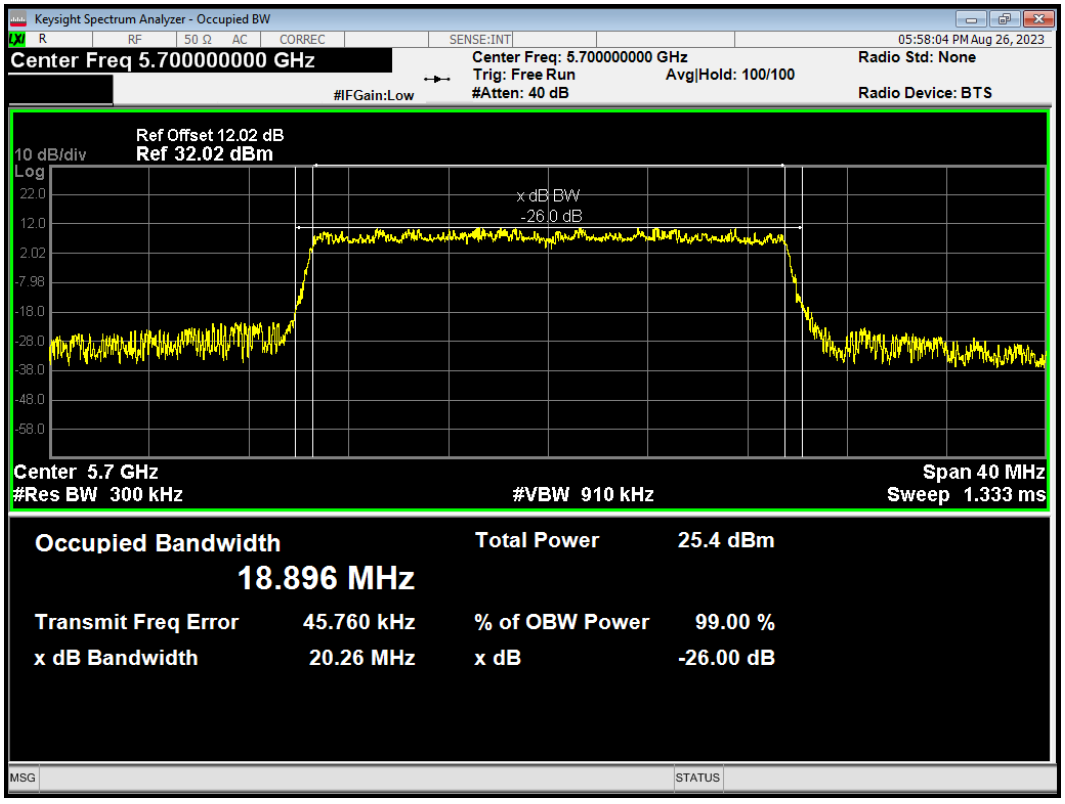
OBW 802.11ax(HE20) 5500MHz



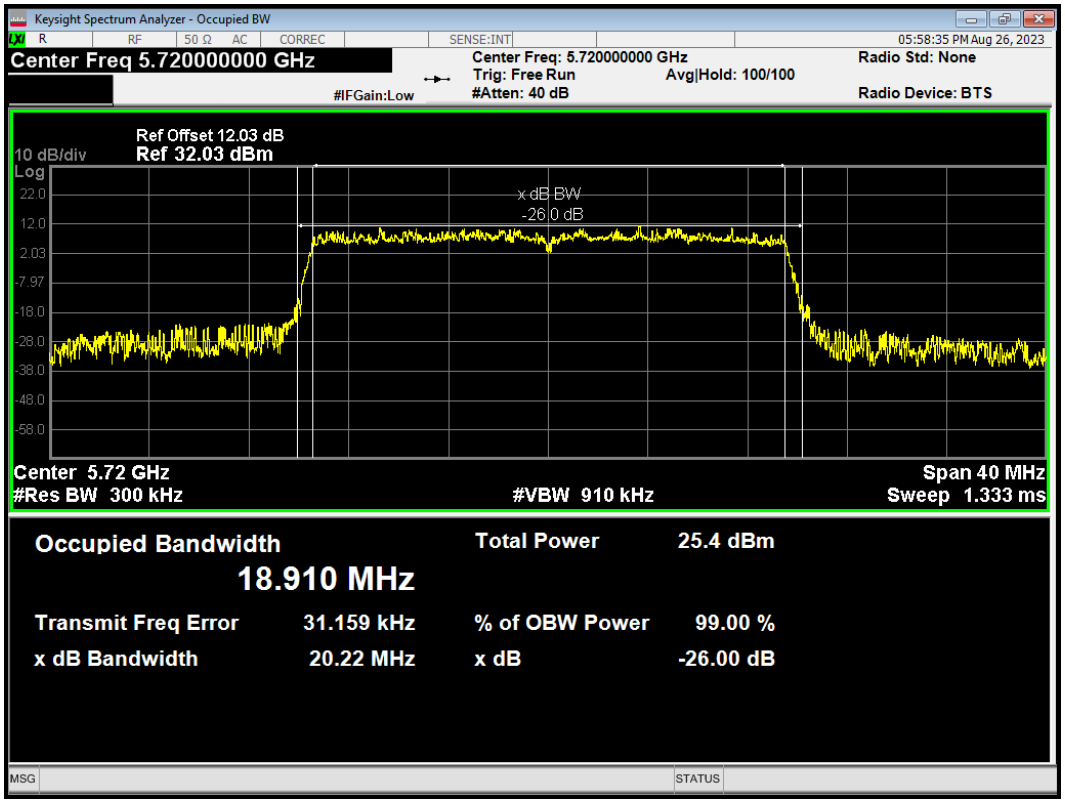
OBW 802.11ax(HE20) 5600MHz



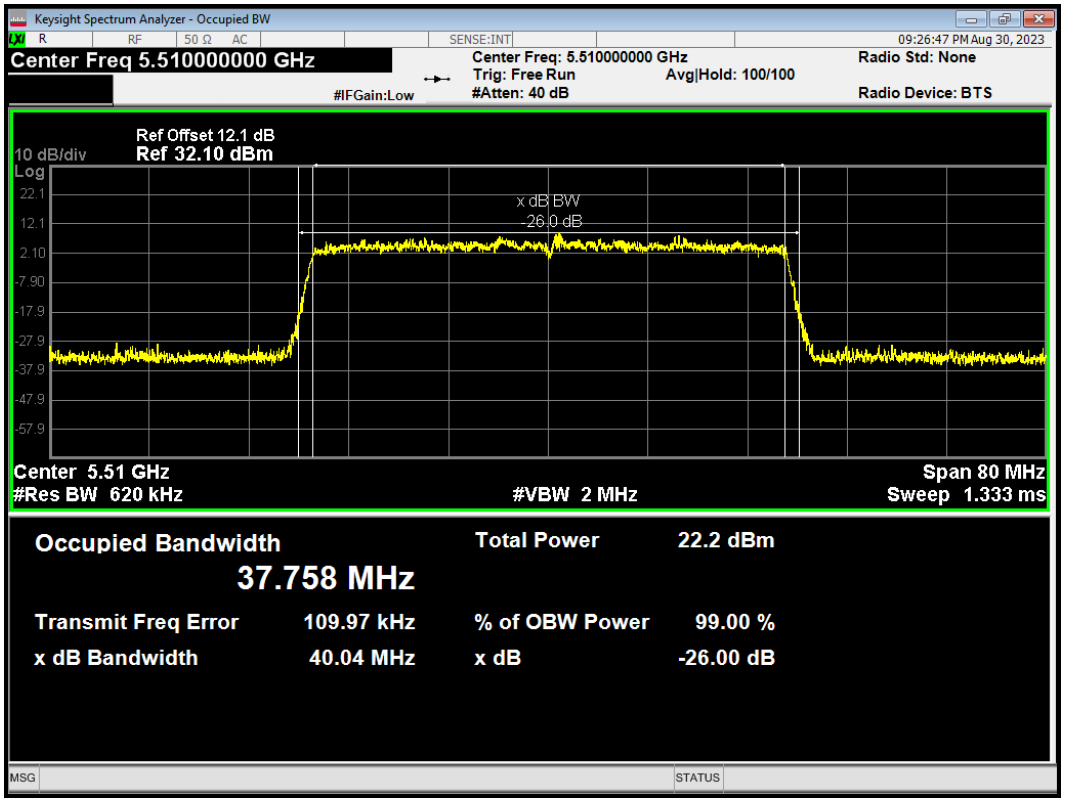
OBW 802.11ax(HE20) 5700MHz



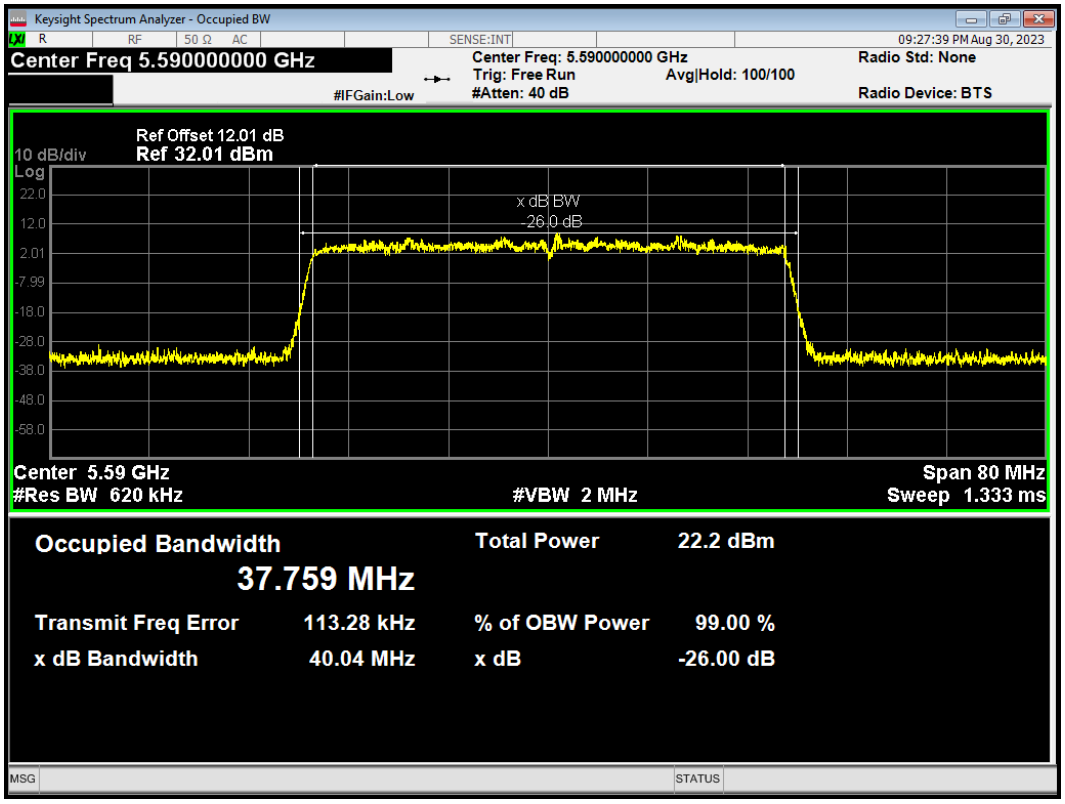
OBW 802.11ax(HE20) 5720MHz



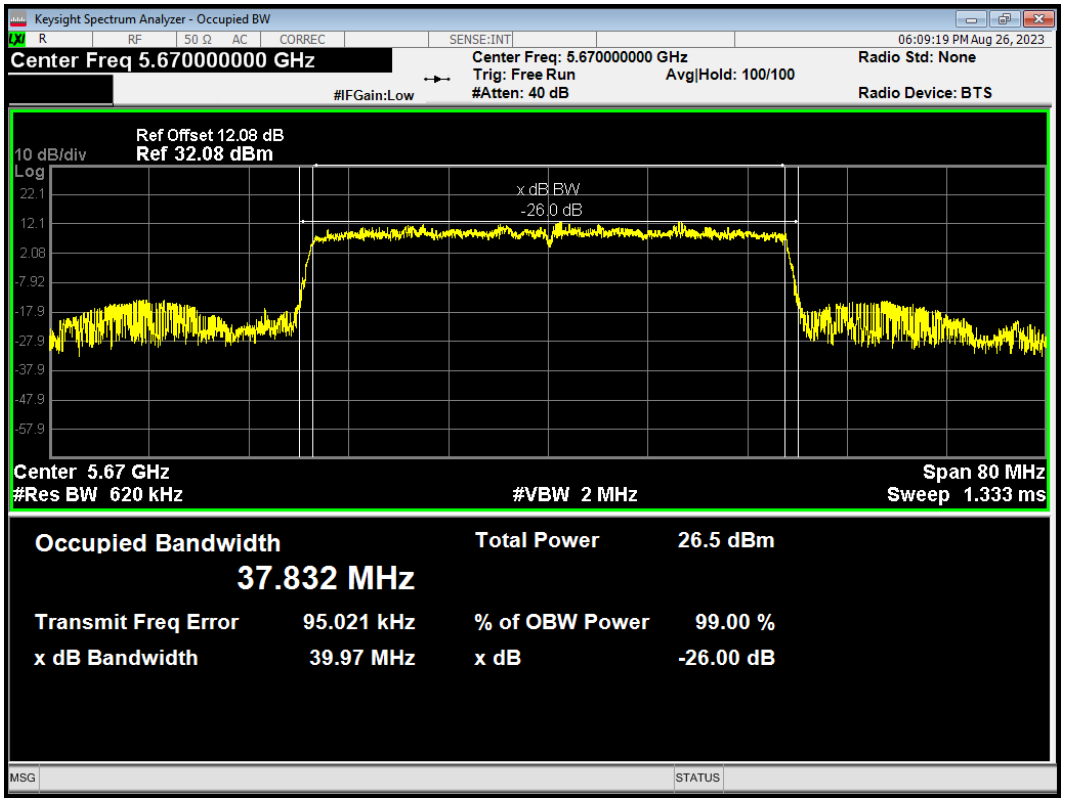
OBW 802.11ax(HE40) 5510MHz



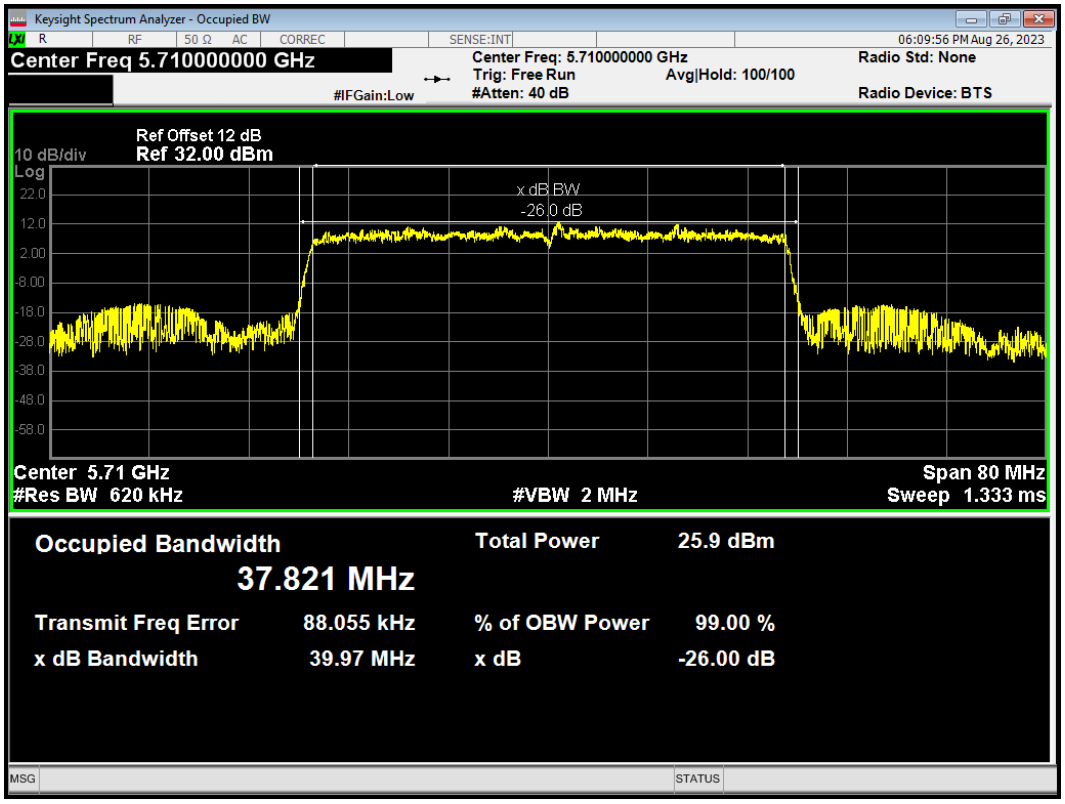
OBW 802.11ax(HE40) 5590MHz



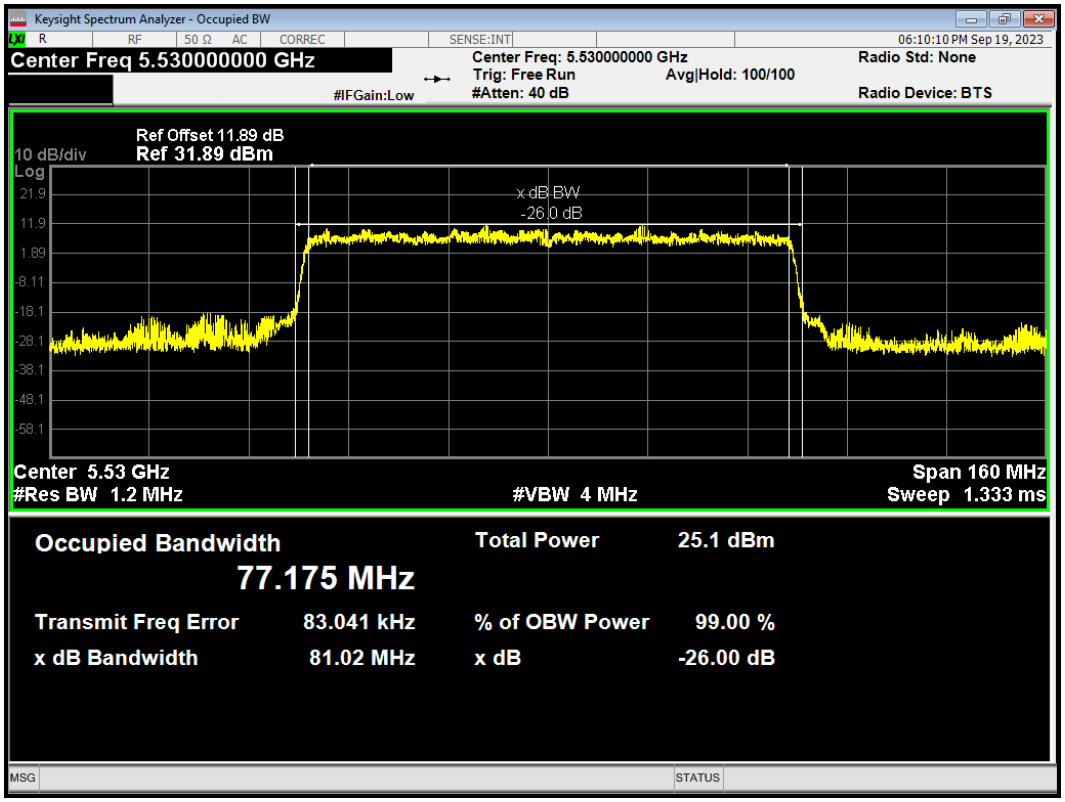
OBW 802.11ax(HE40) 5670MHz



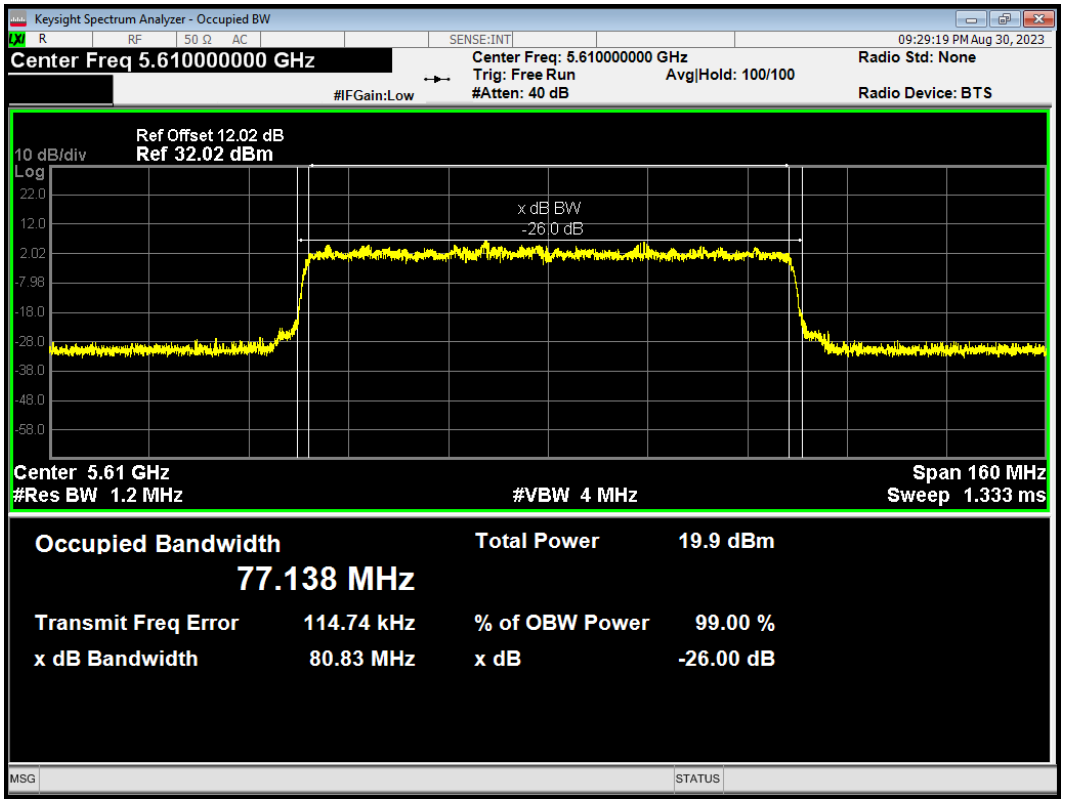
OBW 802.11ax(HE40) 5710MHz



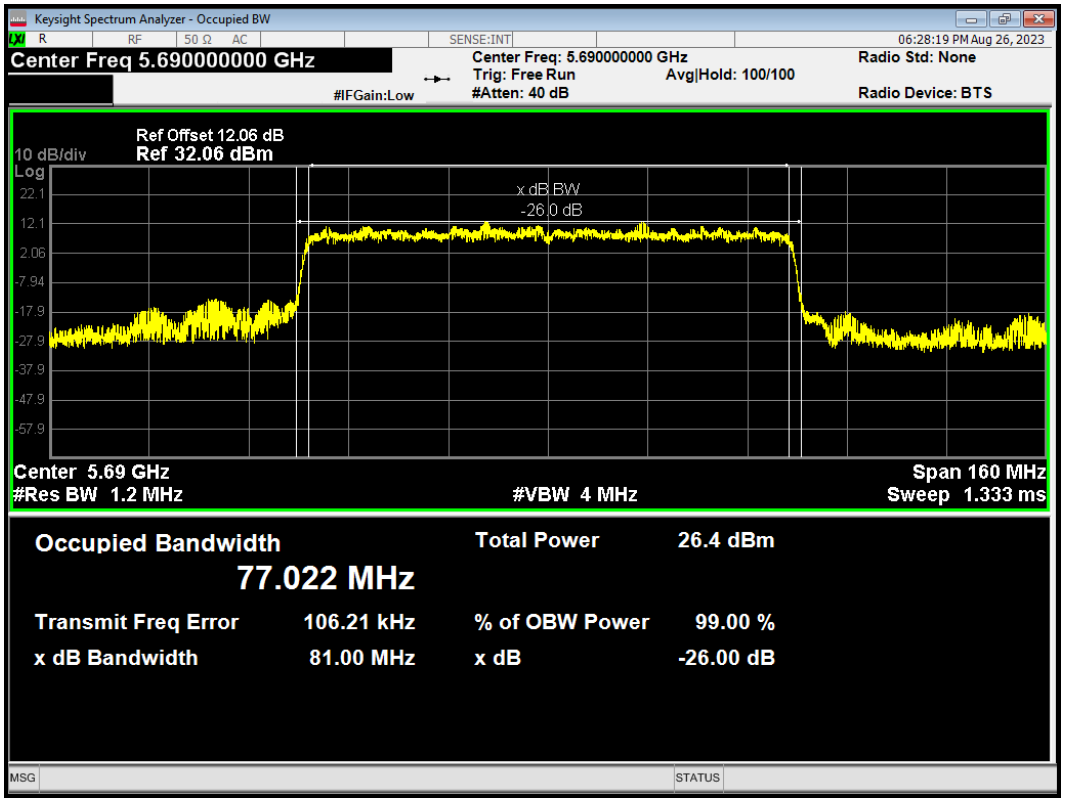
OBW 802.11ax(HE80) 5530MHz



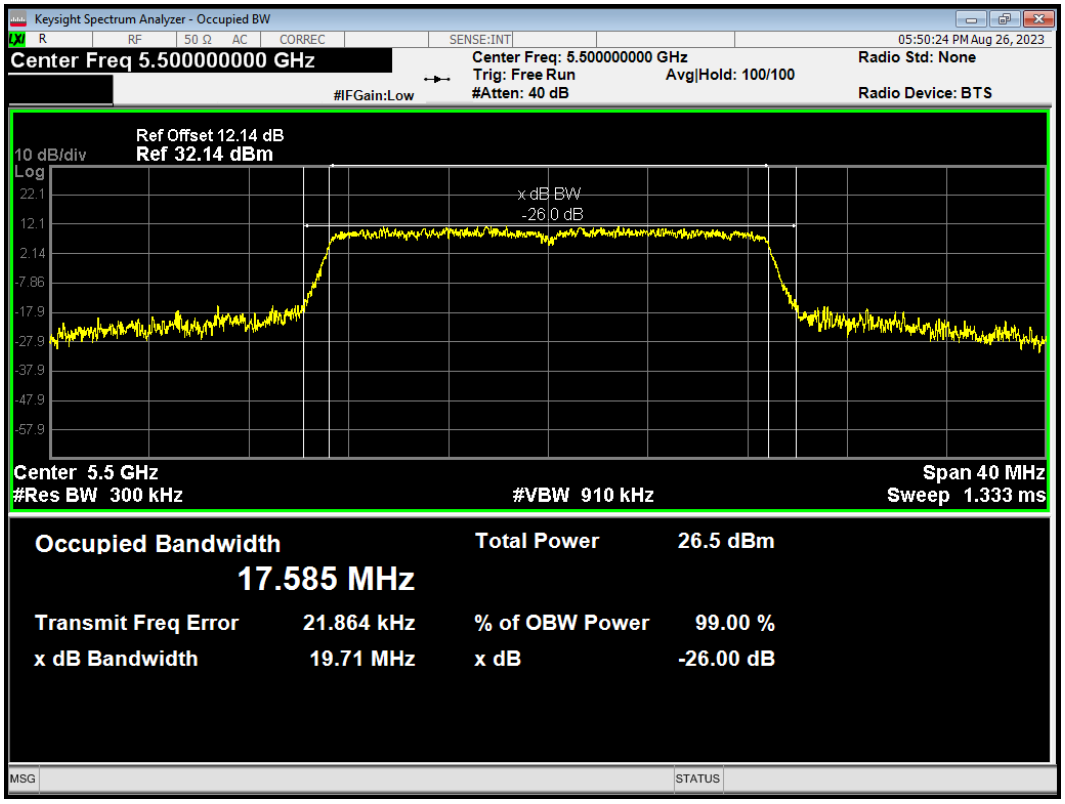
OBW 802.11ax(HE80) 5610MHz



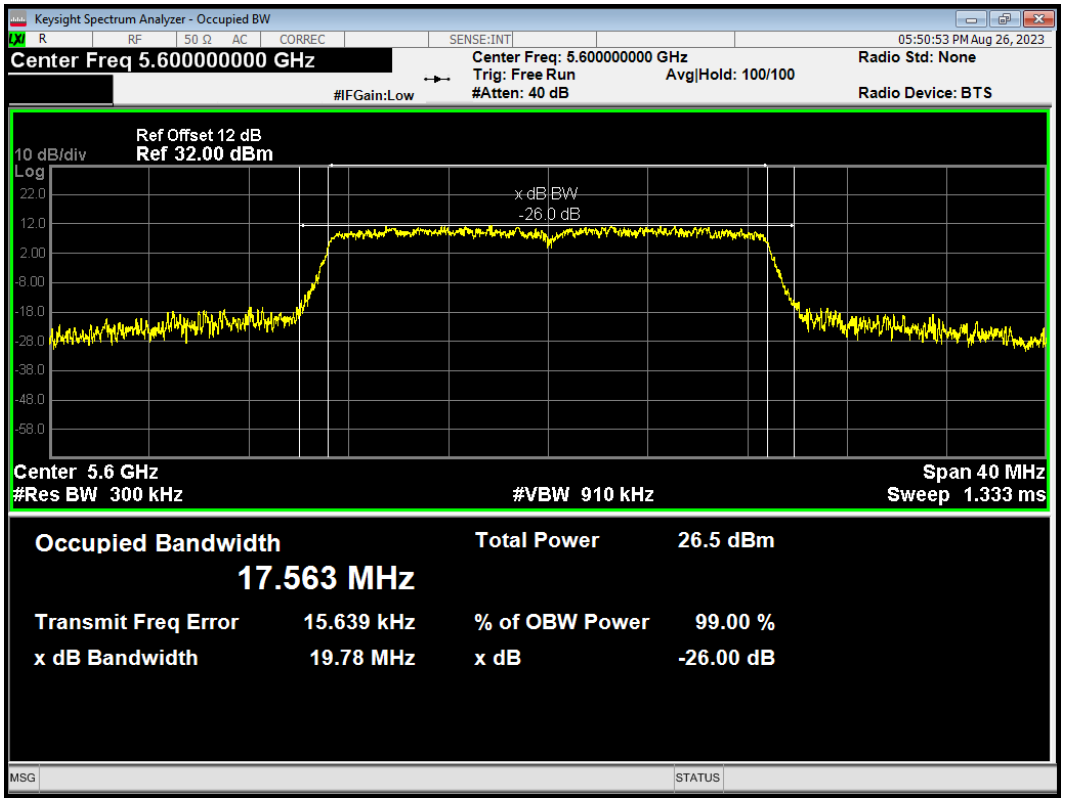
OBW 802.11ax(HE80) 5690MHz



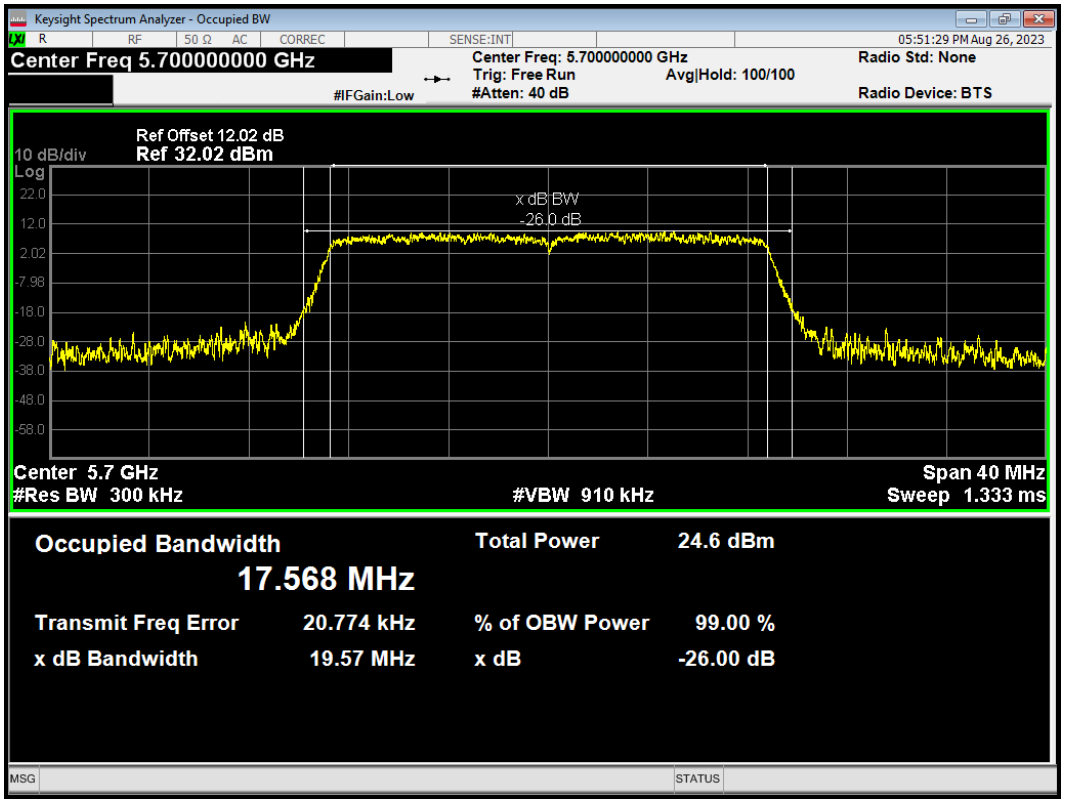
OBW 802.11n(HT20) 5500MHz



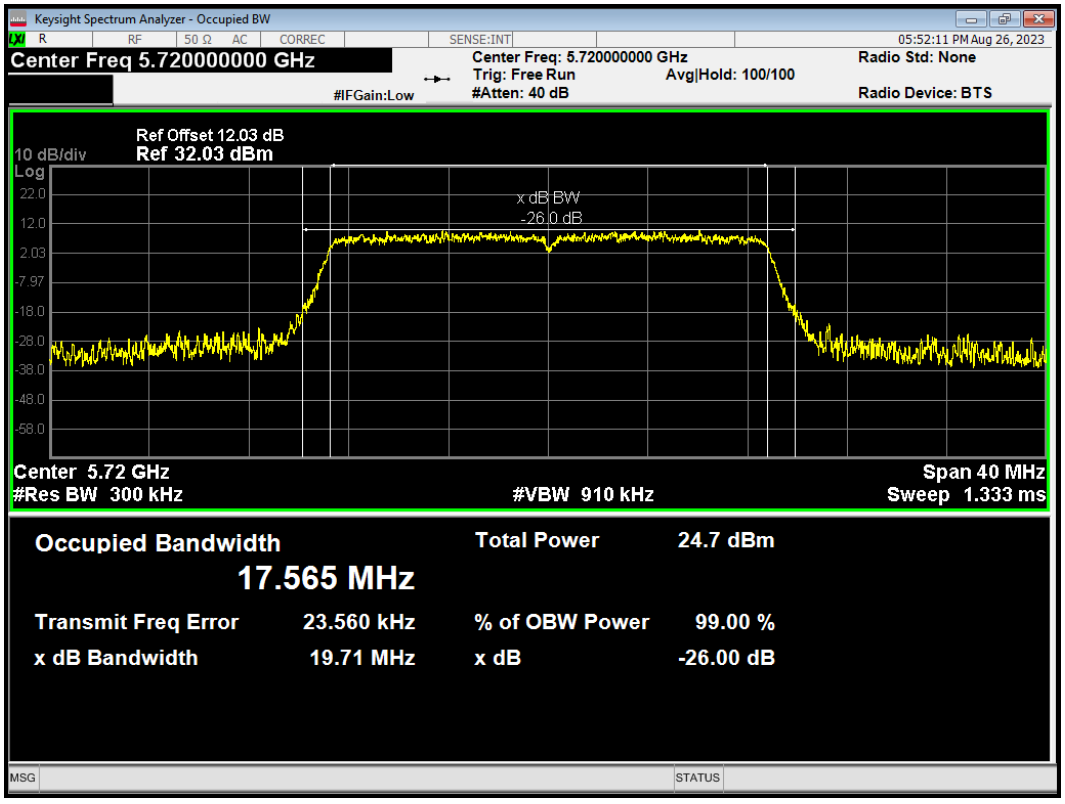
OBW 802.11n(HT20) 5600MHz



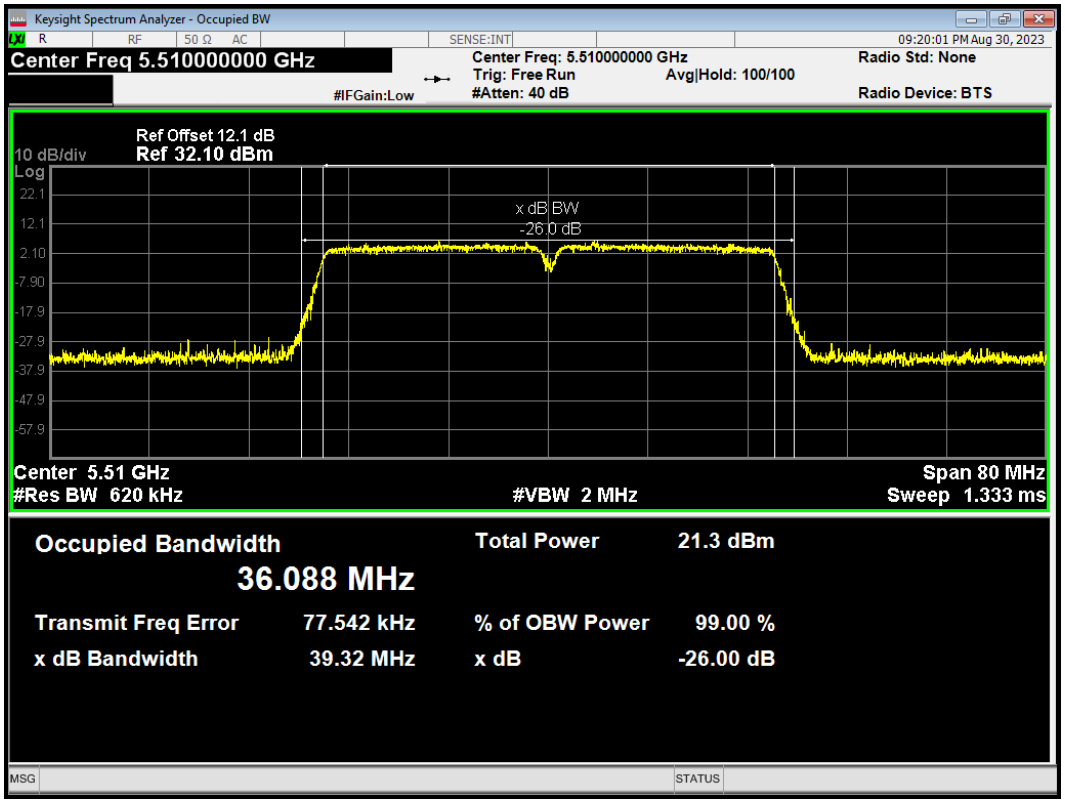
OBW 802.11n(HT20) 5700MHz



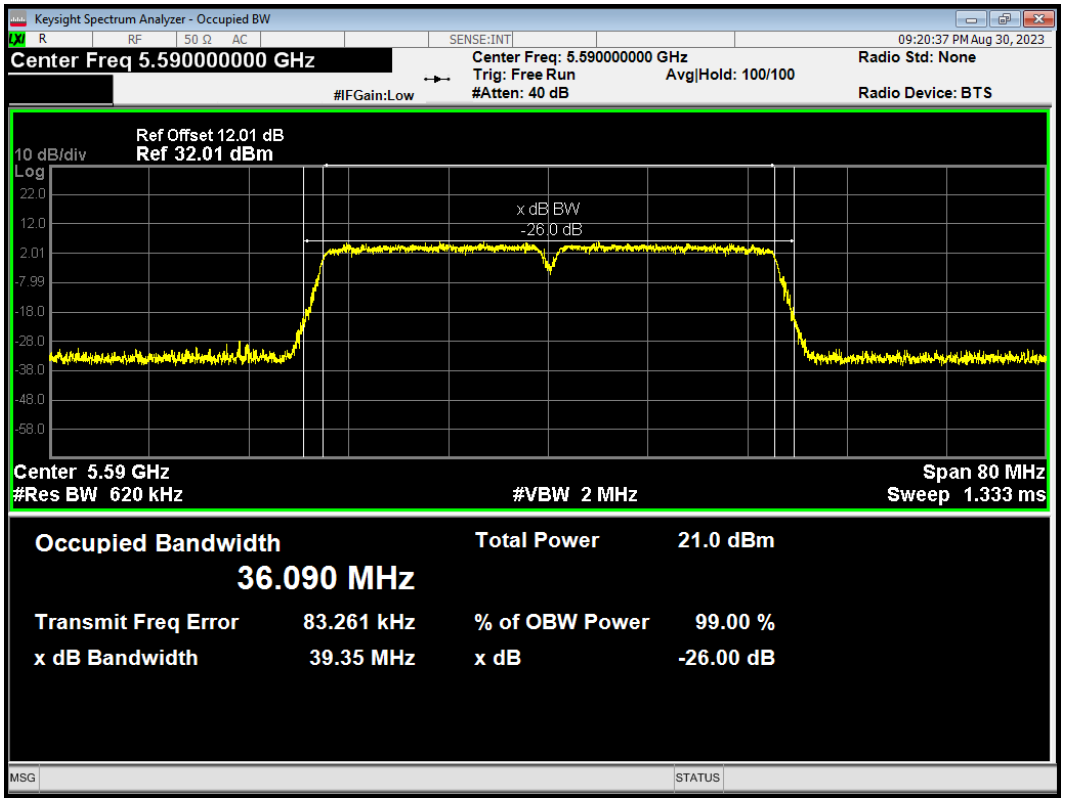
OBW 802.11n(HT20) 5720MHz



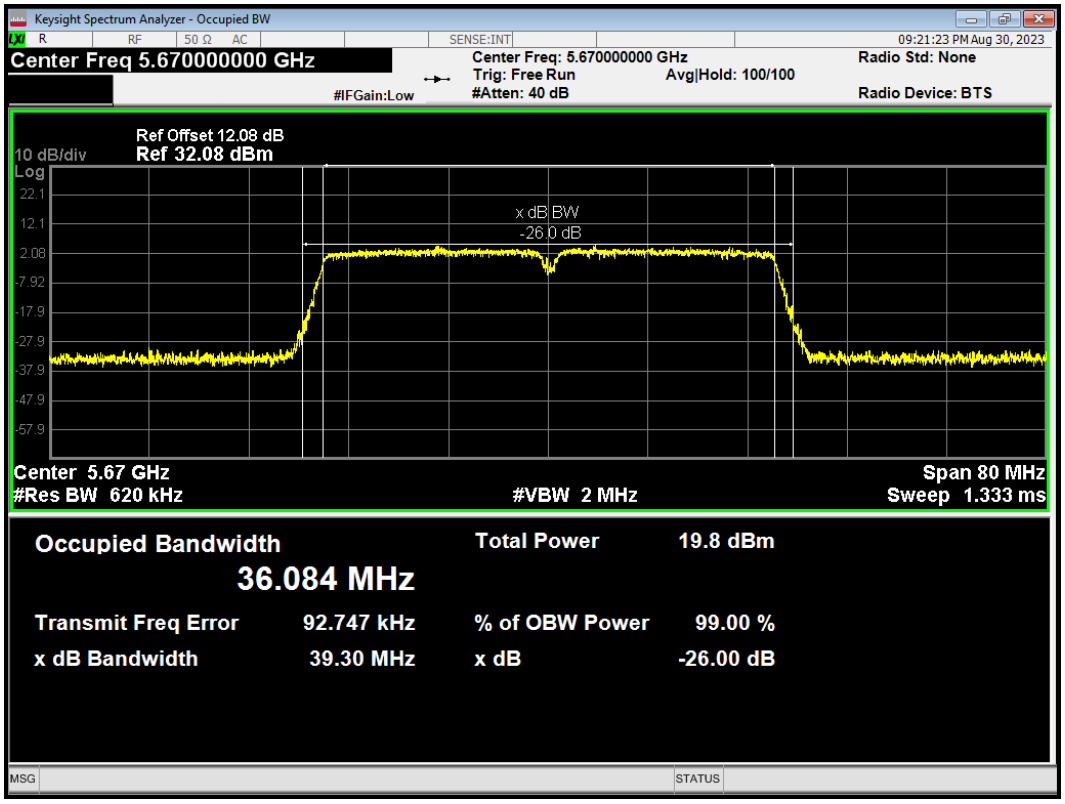
OBW 802.11n(HT40) 5510MHz



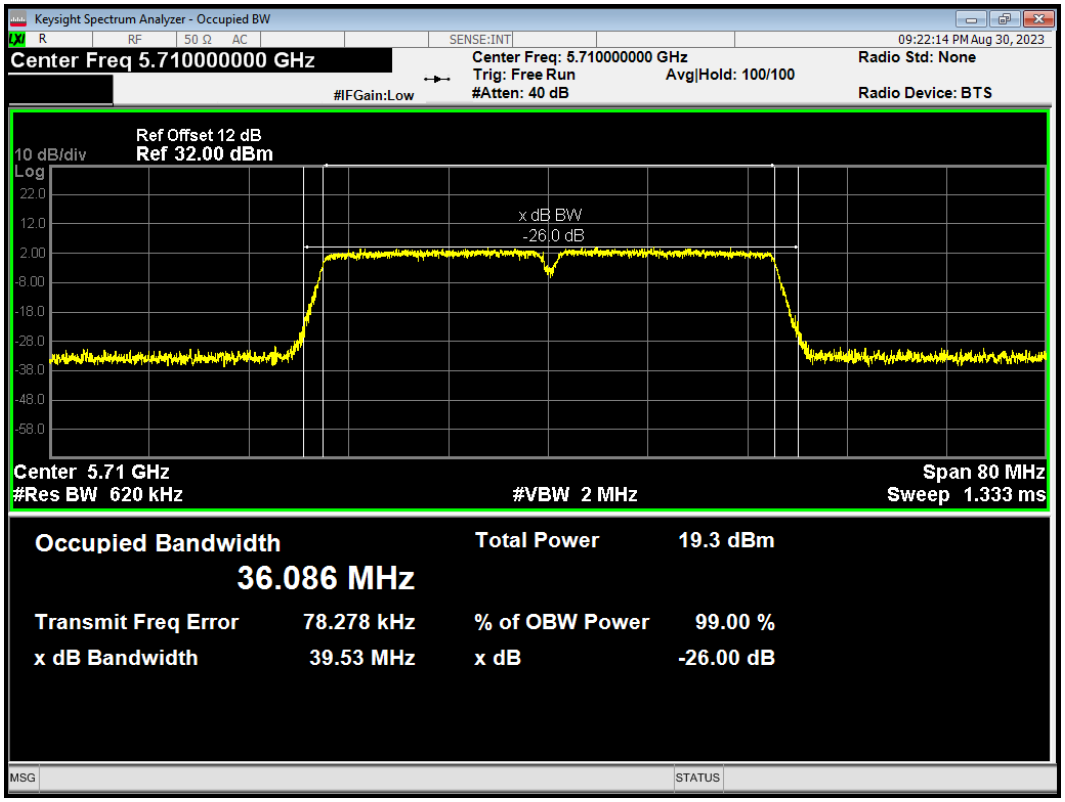
OBW 802.11n(HT40) 5590MHz



OBW 802.11n(HT40) 5670MHz

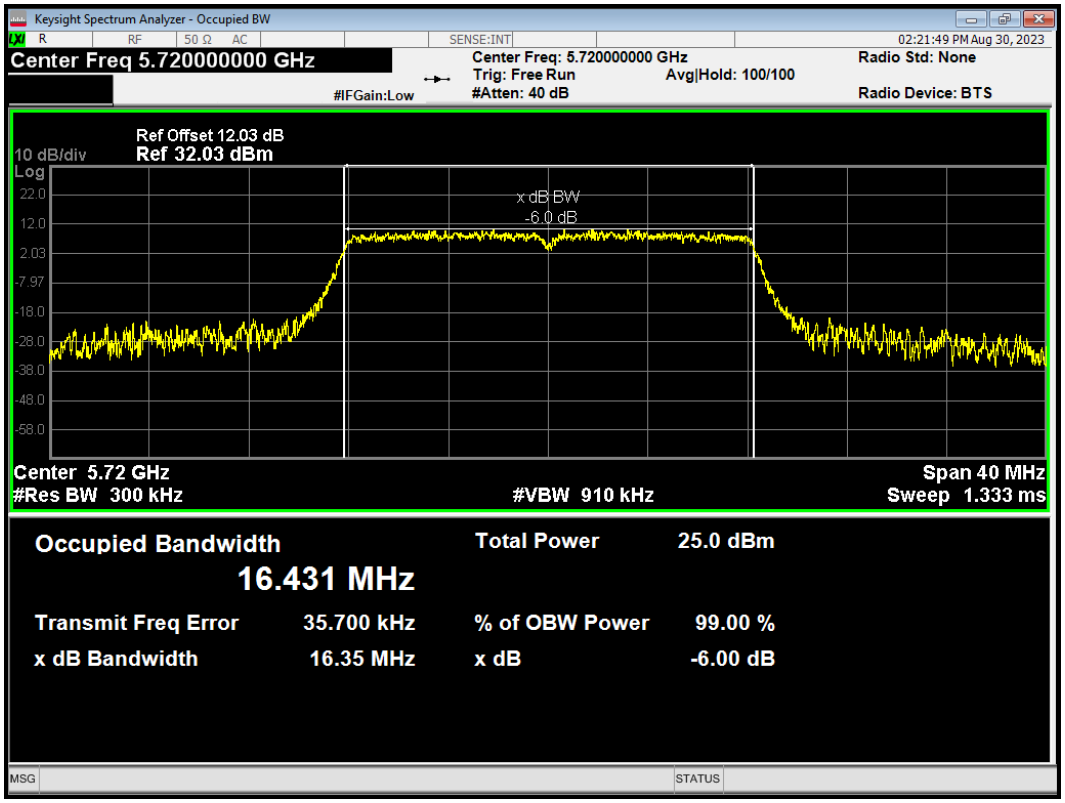


OBW 802.11n(HT40) 5710MHz

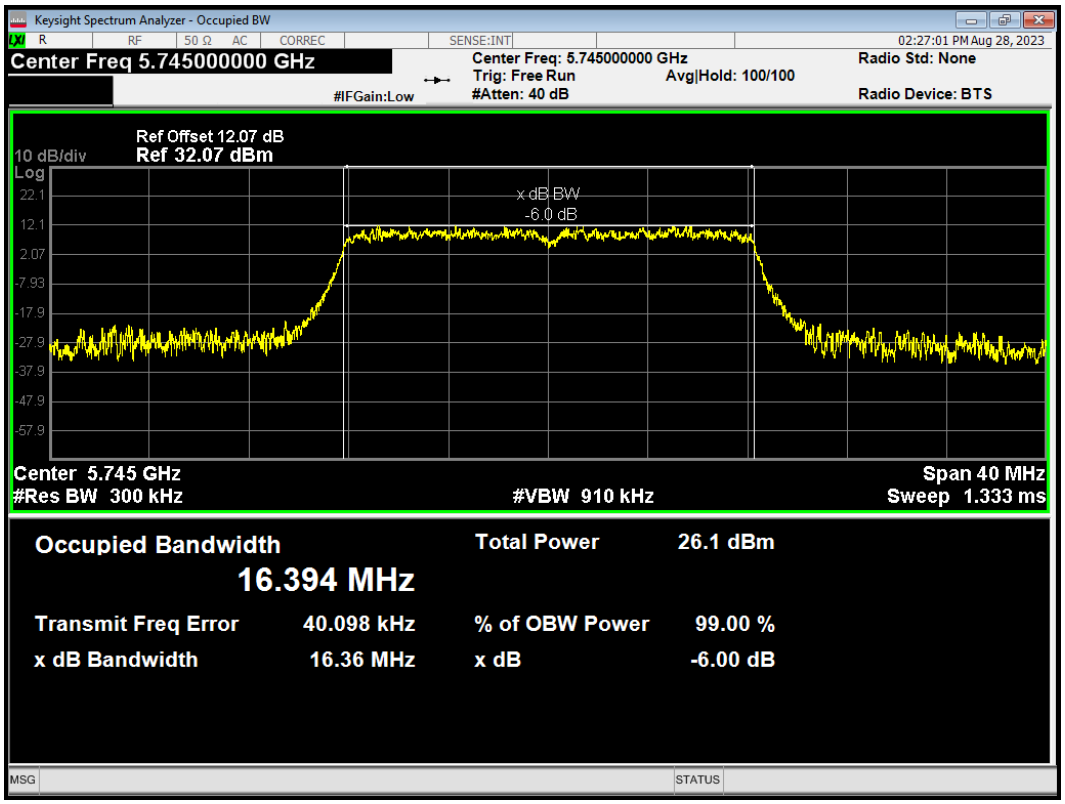


U-NII-3

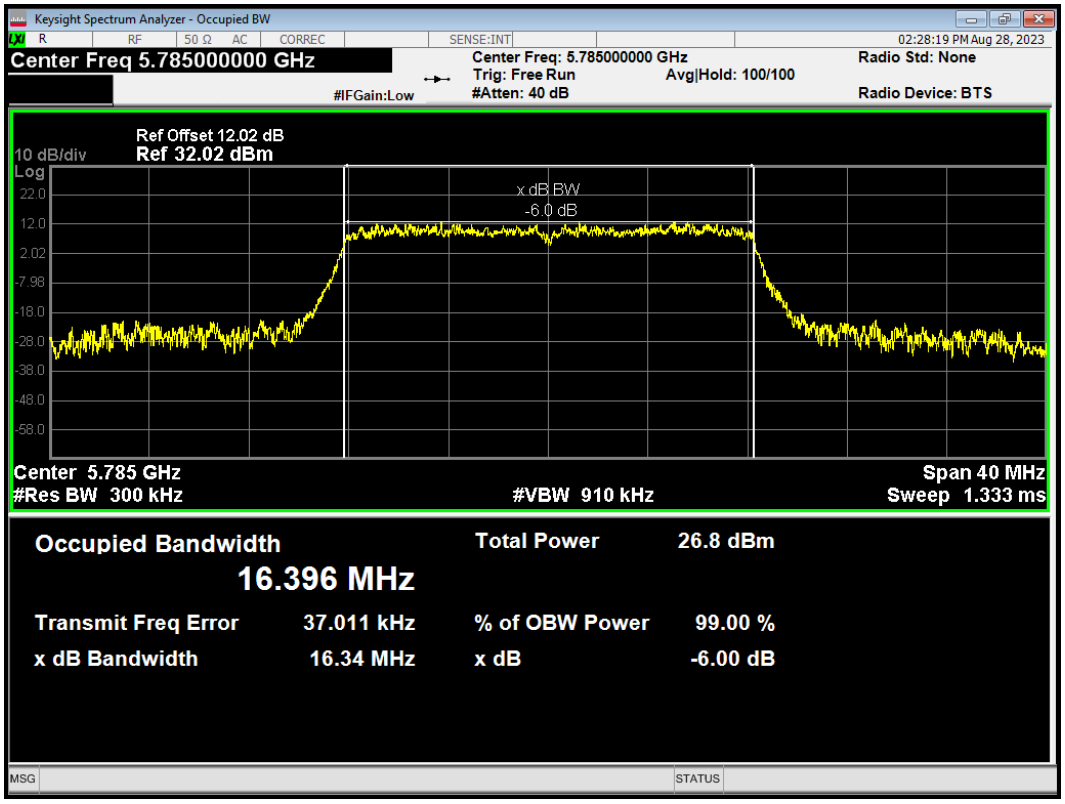
OBW 802.11a 5720MHz



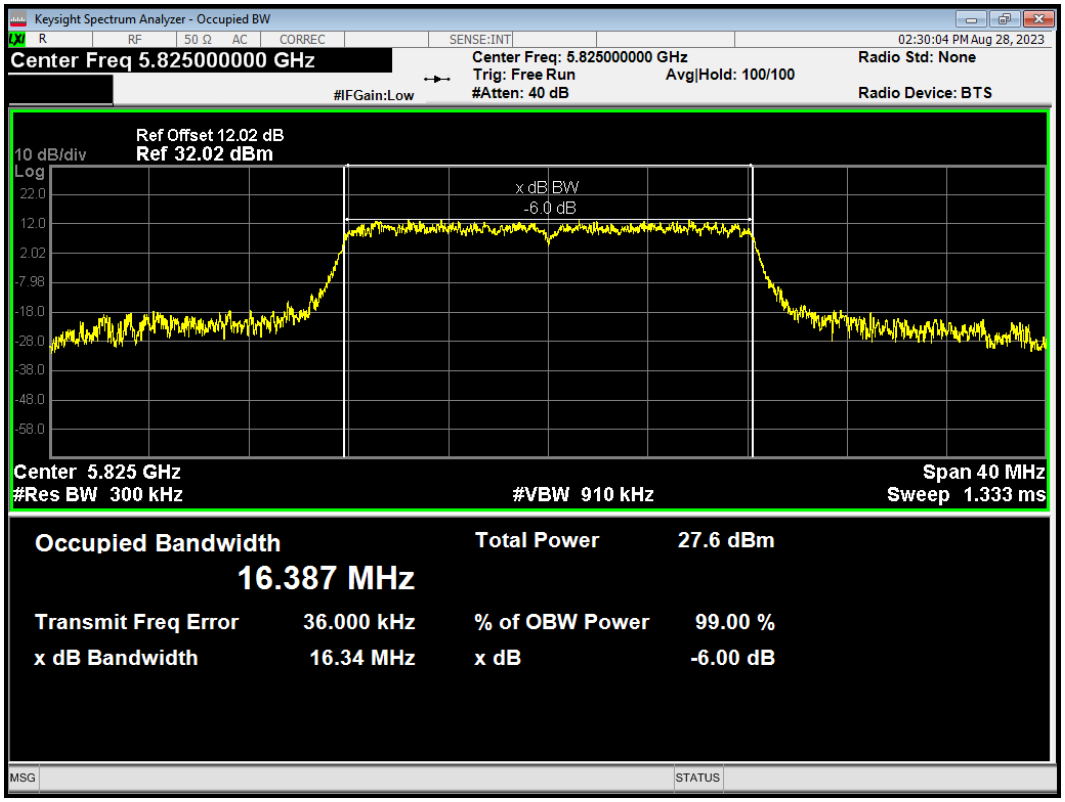
OBW 802.11a 5745MHz



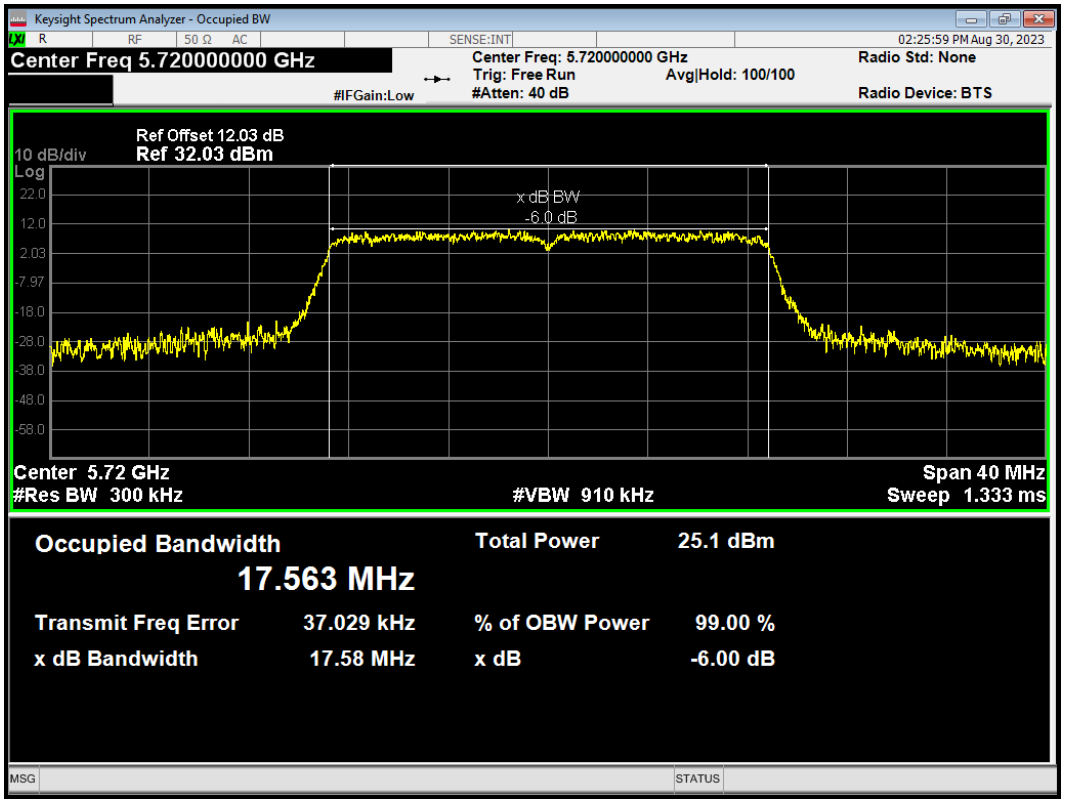
OBW 802.11a 5785MHz



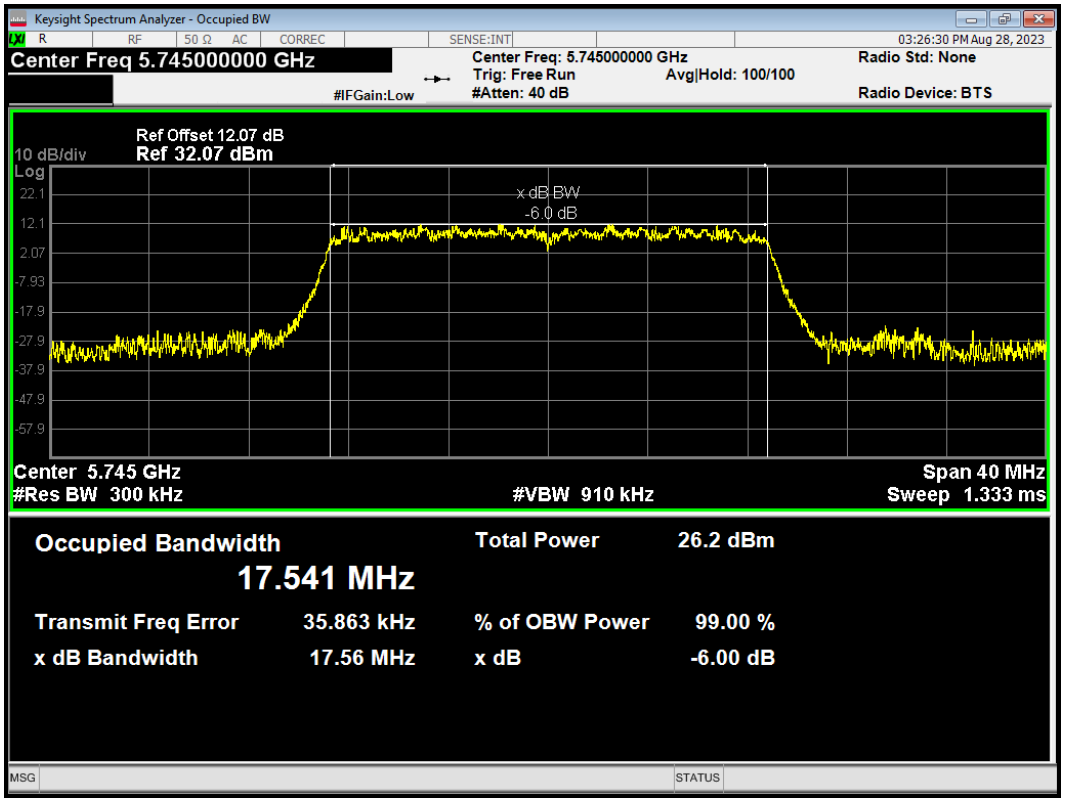
OBW 802.11a 5825MHz



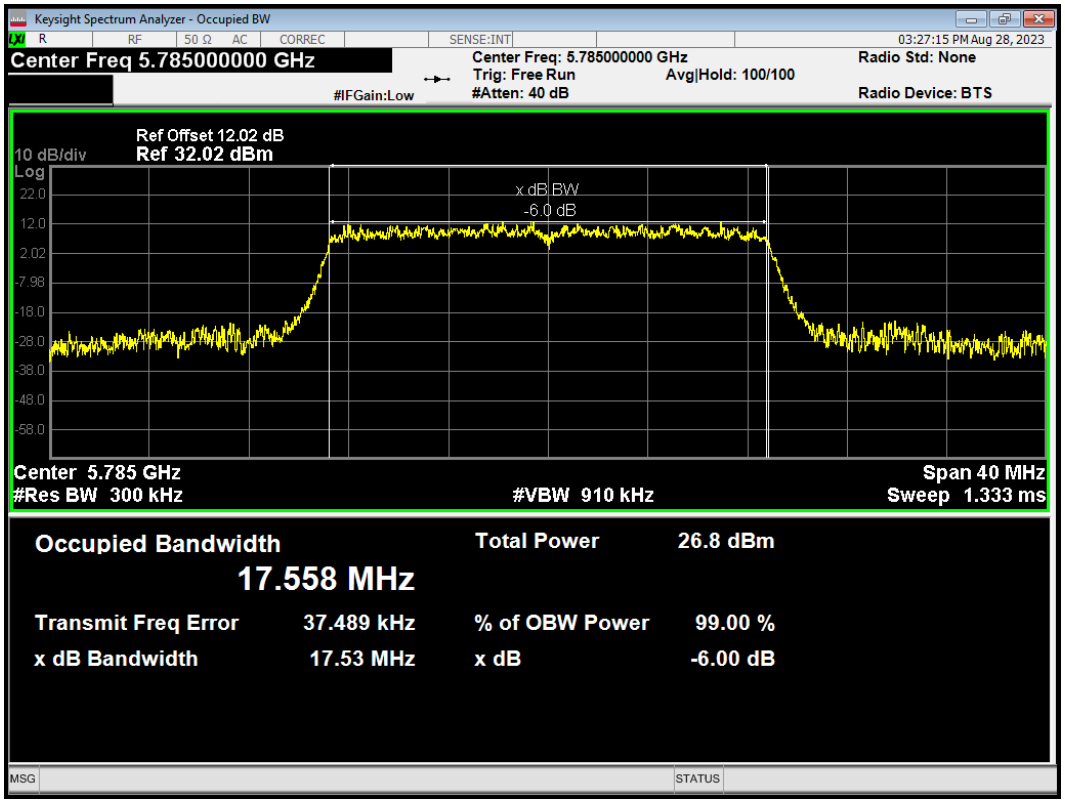
OBW 802.11ac(VHT20) 5720MHz



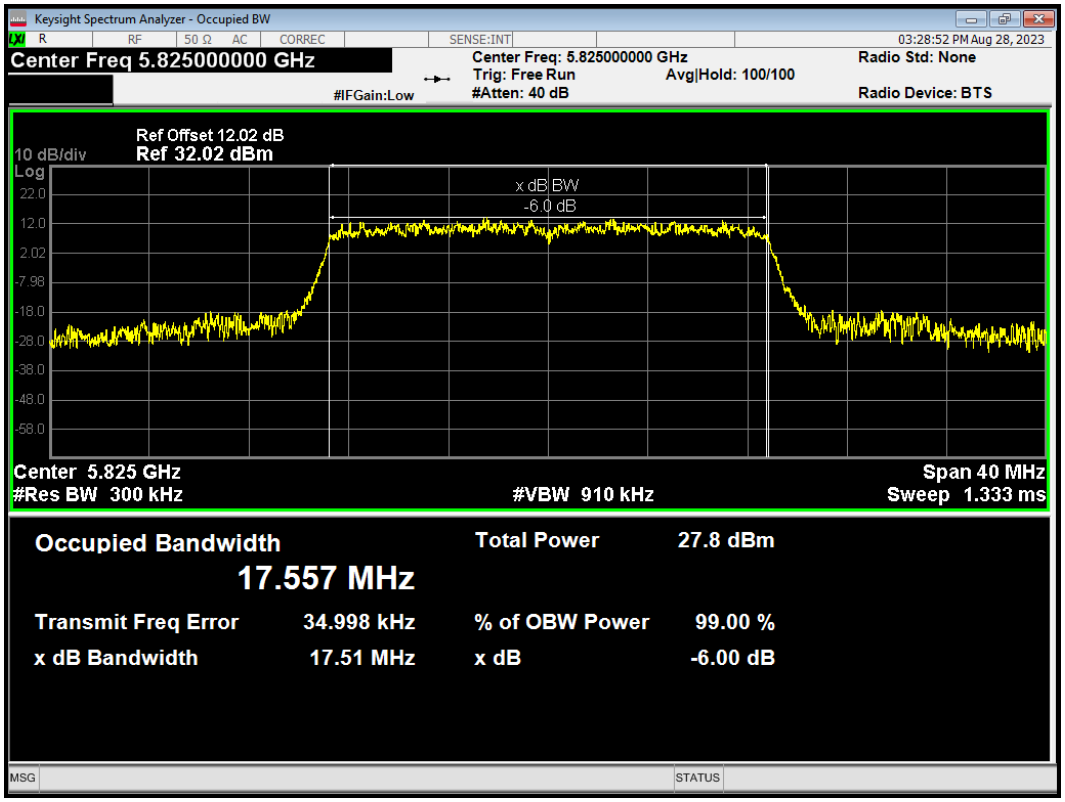
OBW 802.11ac(VHT20) 5745MHz



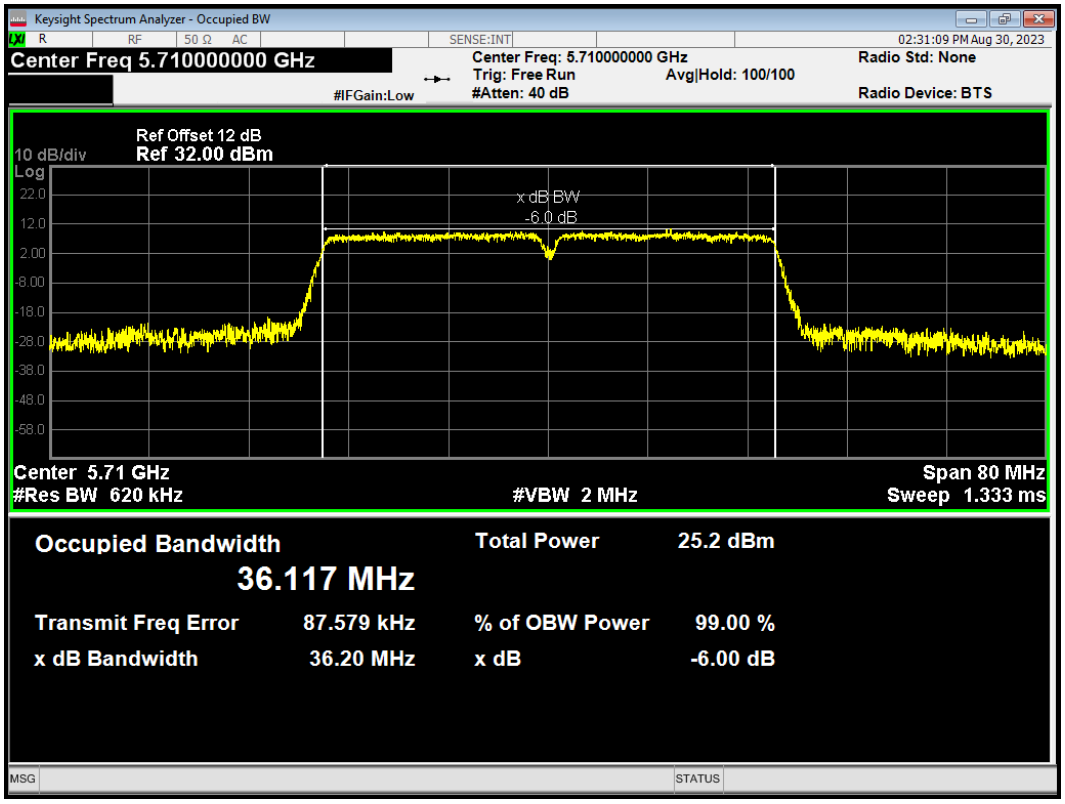
OBW 802.11ac(VHT20) 5785MHz



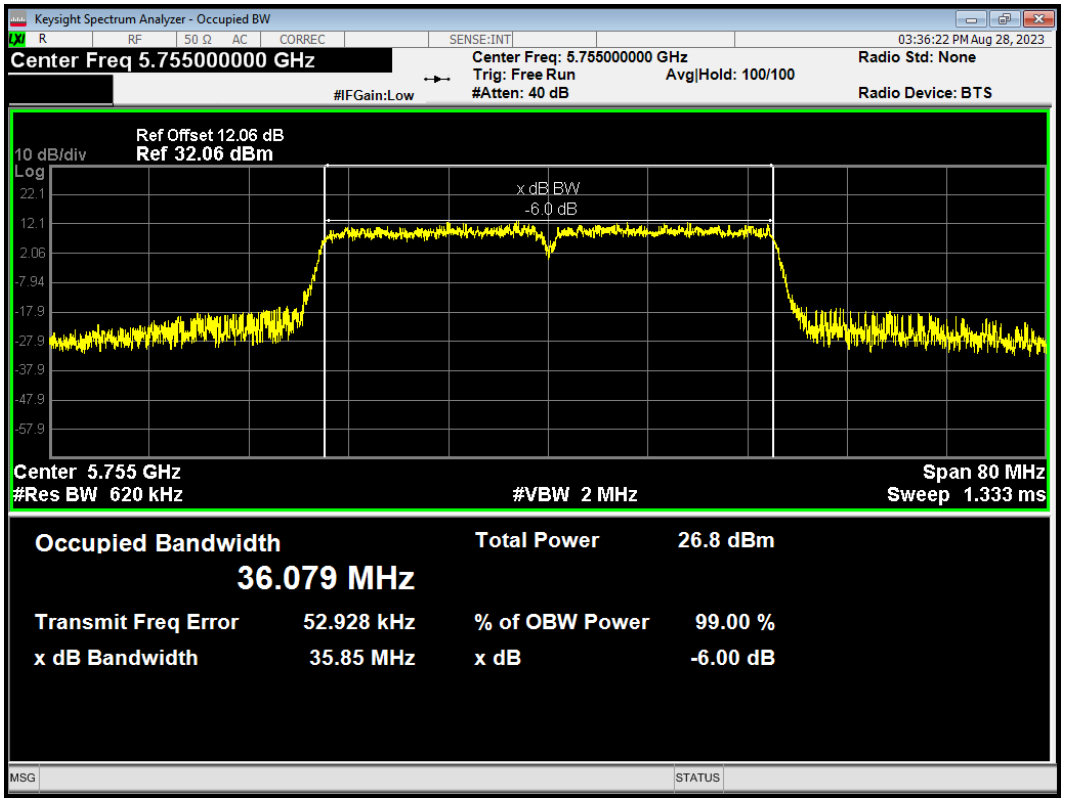
OBW 802.11ac(VHT20) 5825MHz



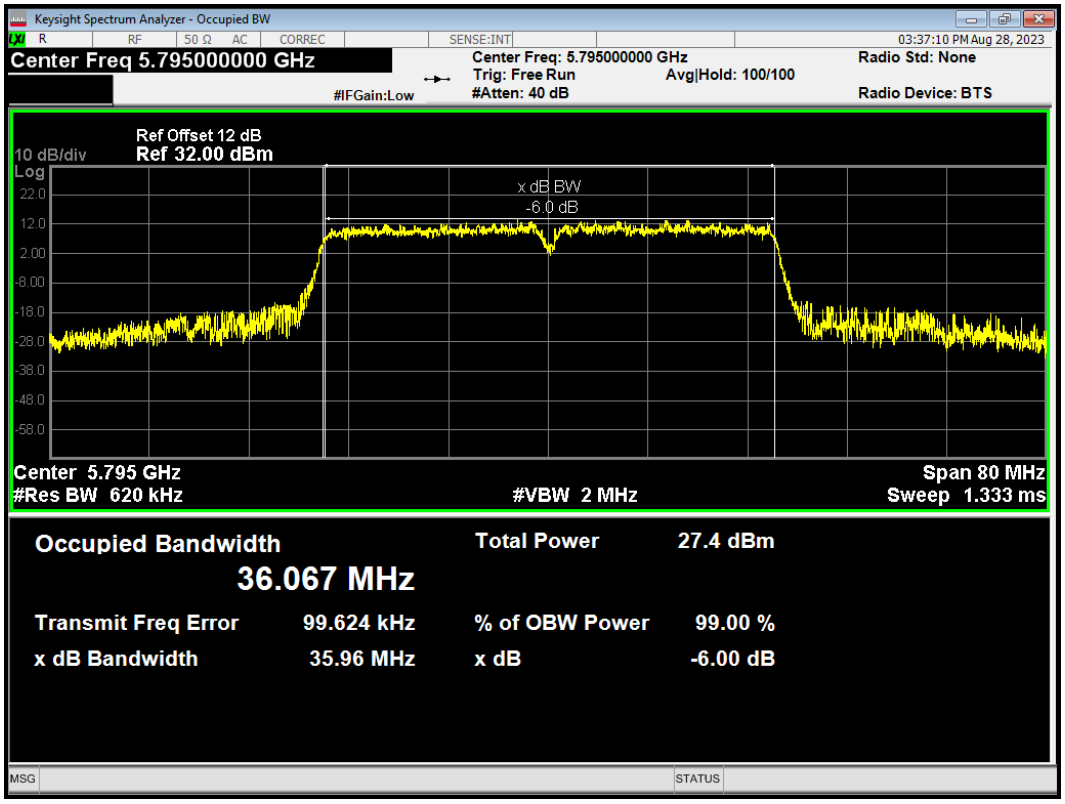
OBW 802.11ac(VHT40) 5710MHz



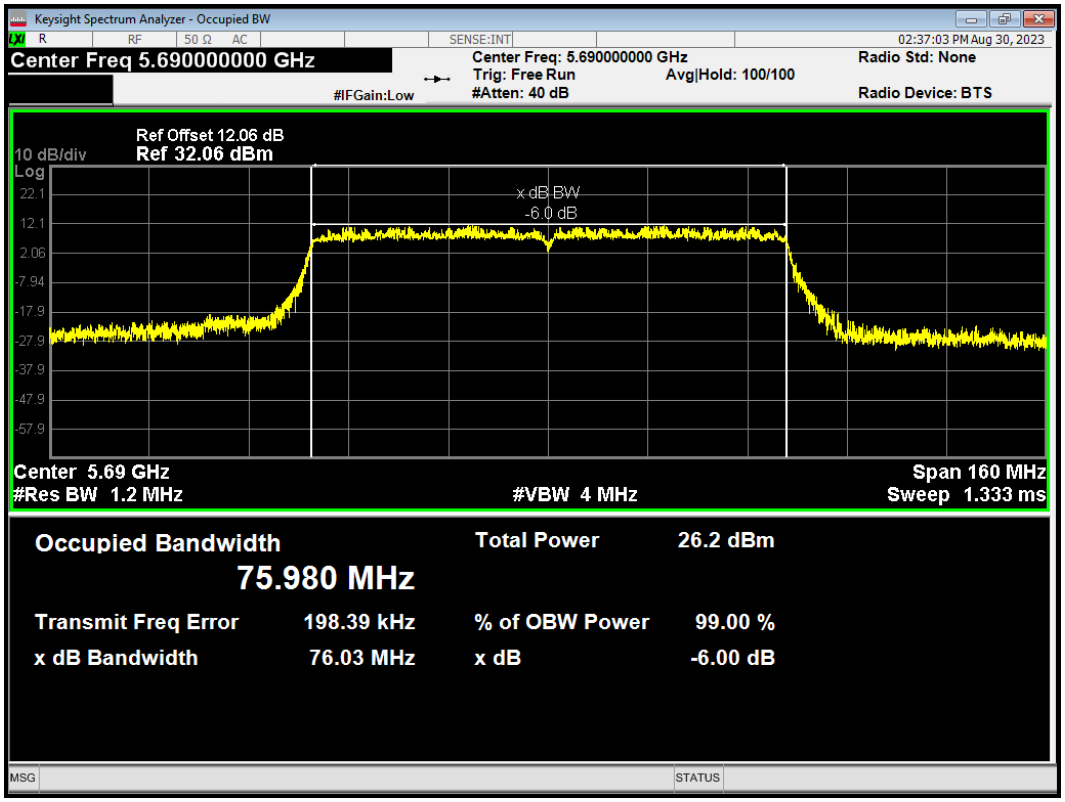
OBW 802.11ac(VHT40) 5755MHz



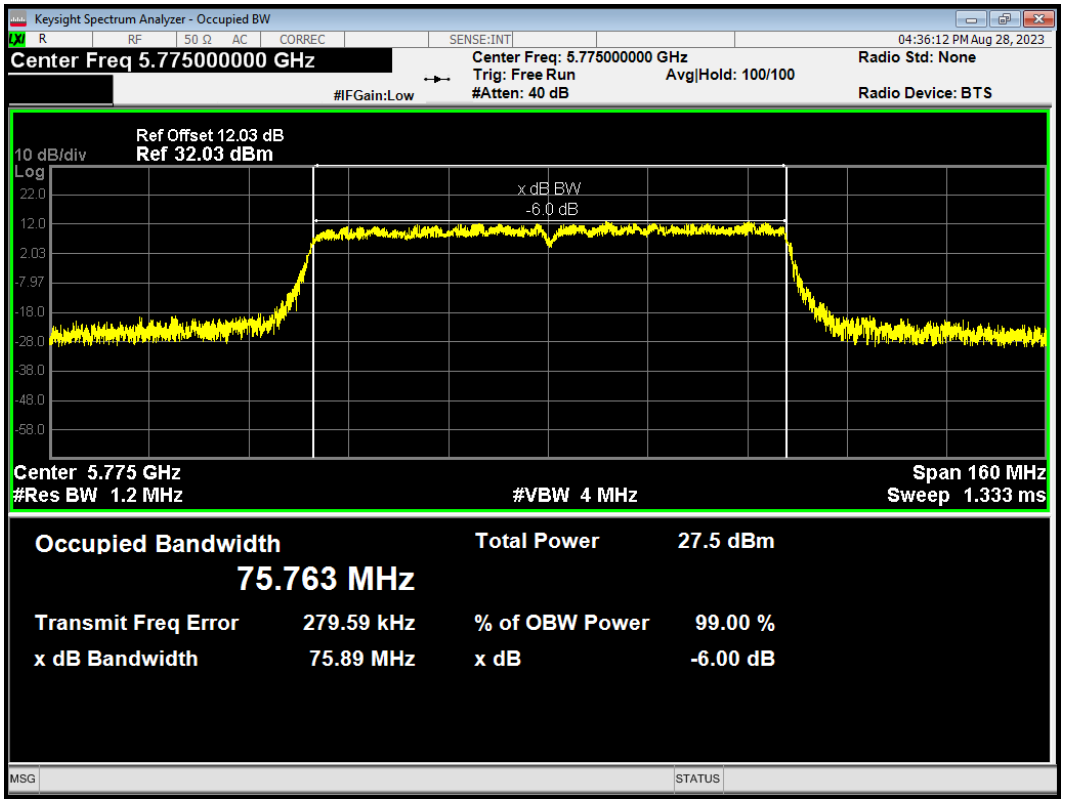
OBW 802.11ac(VHT40) 5795MHz



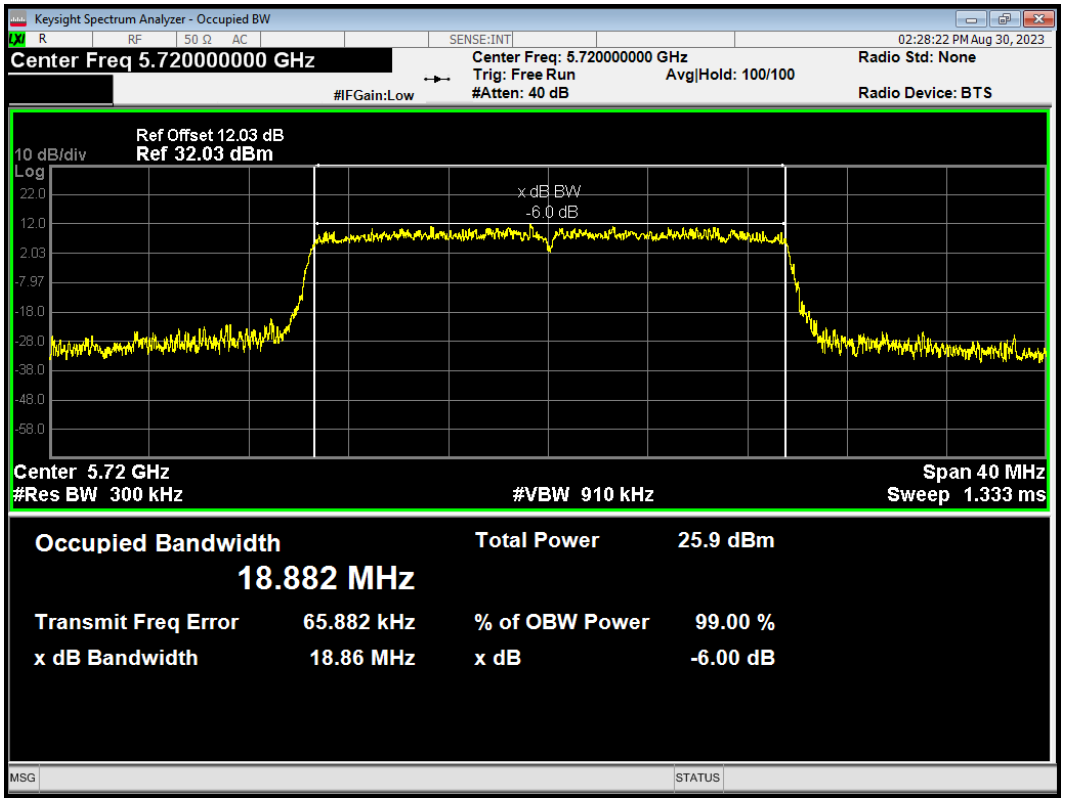
OBW 802.11ac(VHT80) 5690MHz



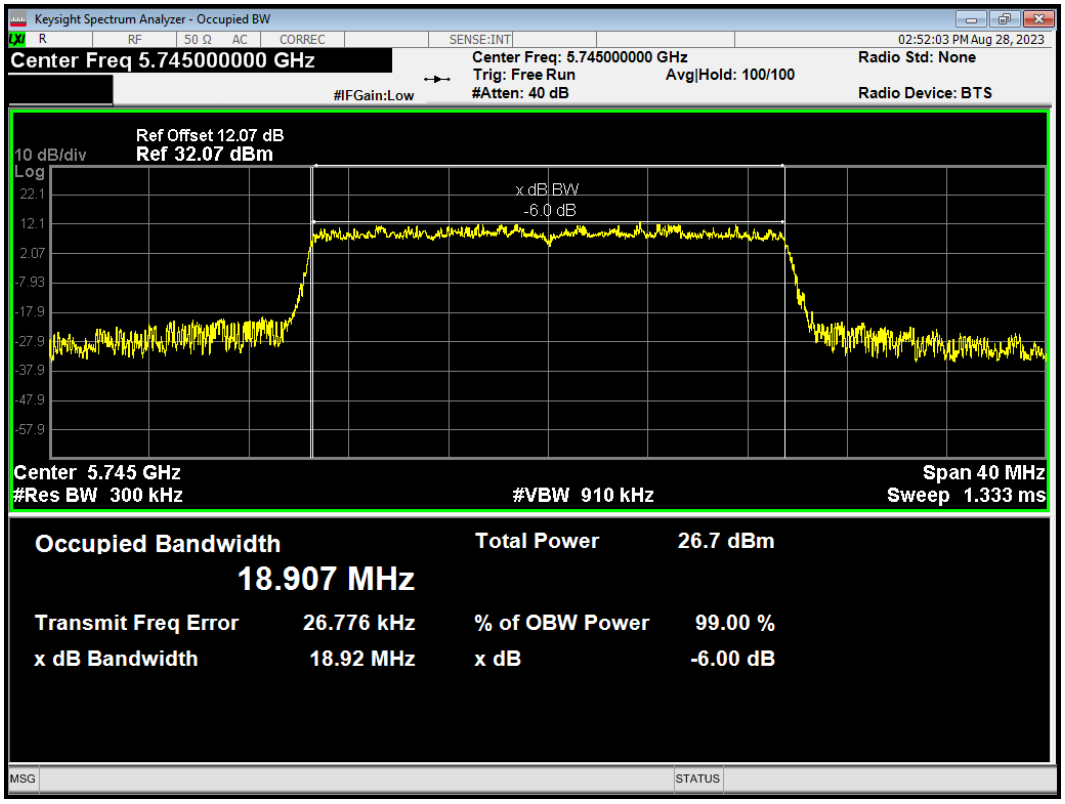
OBW 802.11ac(VHT80) 5775MHz



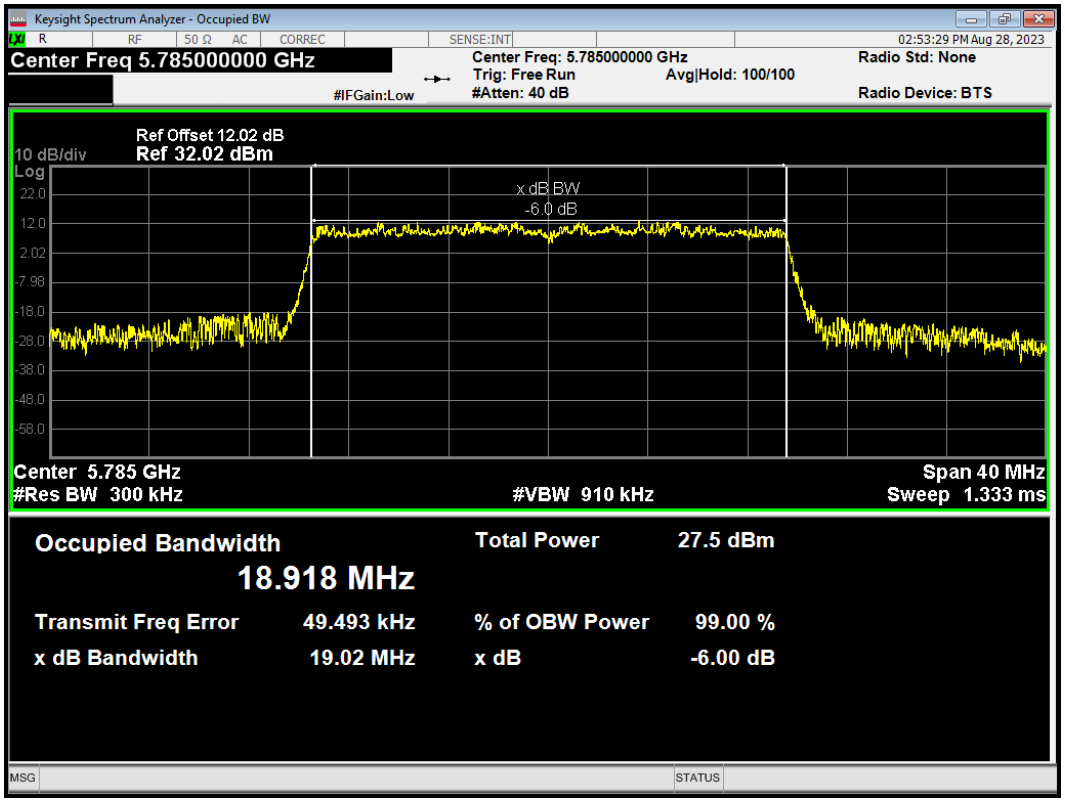
OBW 802.11ax(HE20) 5720MHz



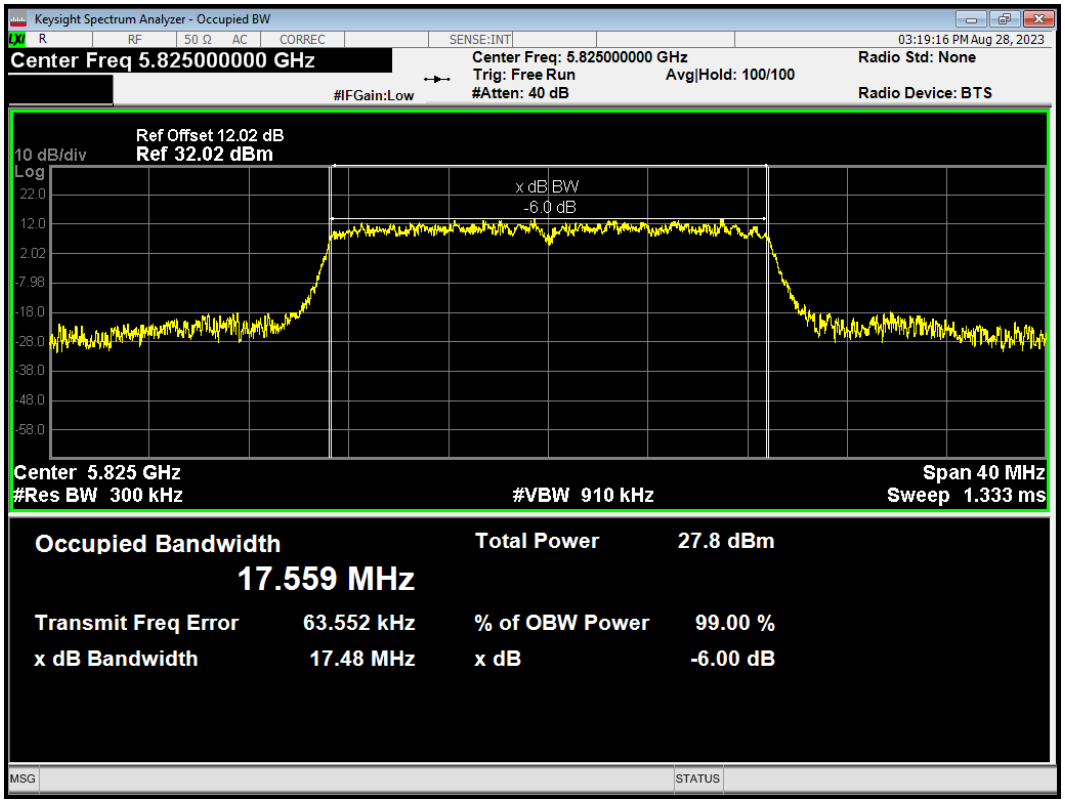
OBW 802.11ax(HE20) 5745MHz



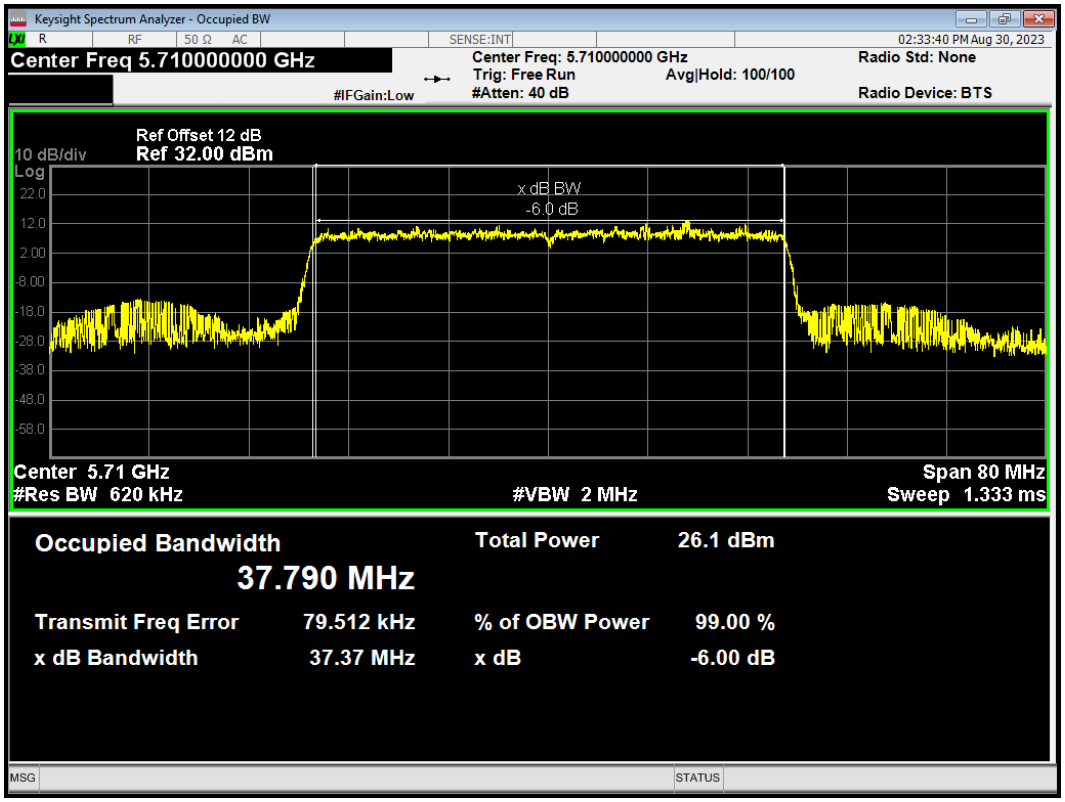
OBW 802.11ax(HE20) 5785MHz



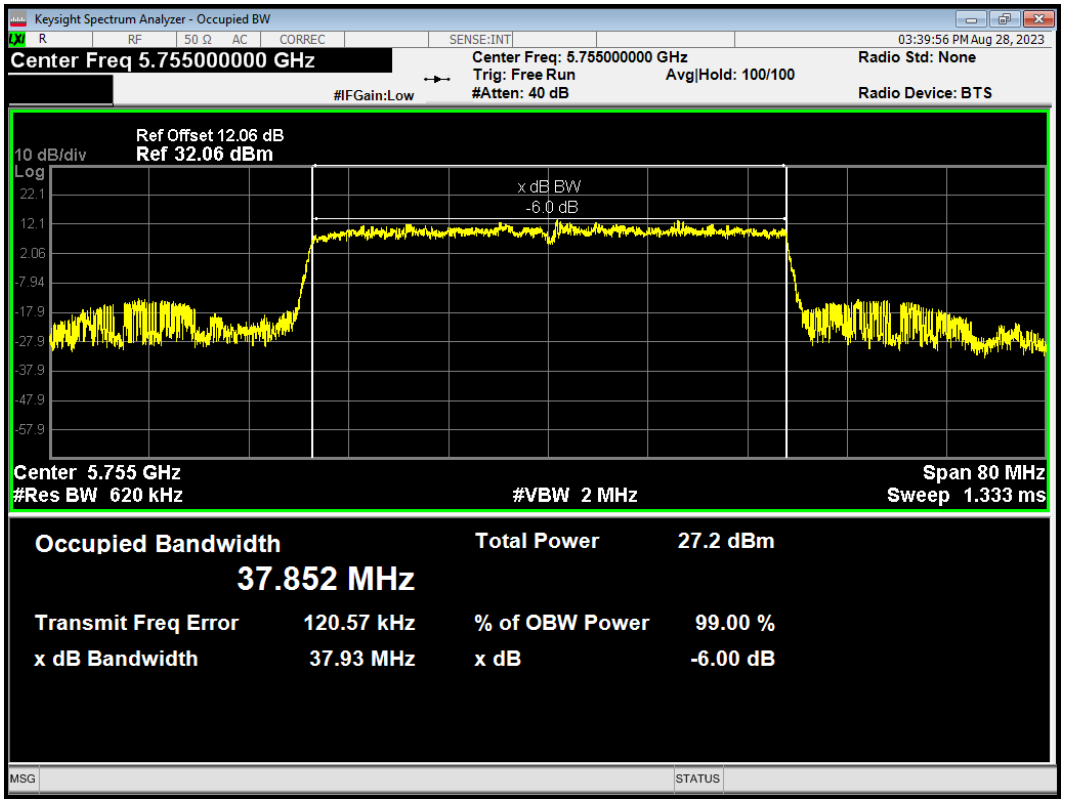
OBW 802.11ax(HE20) 5825MHz



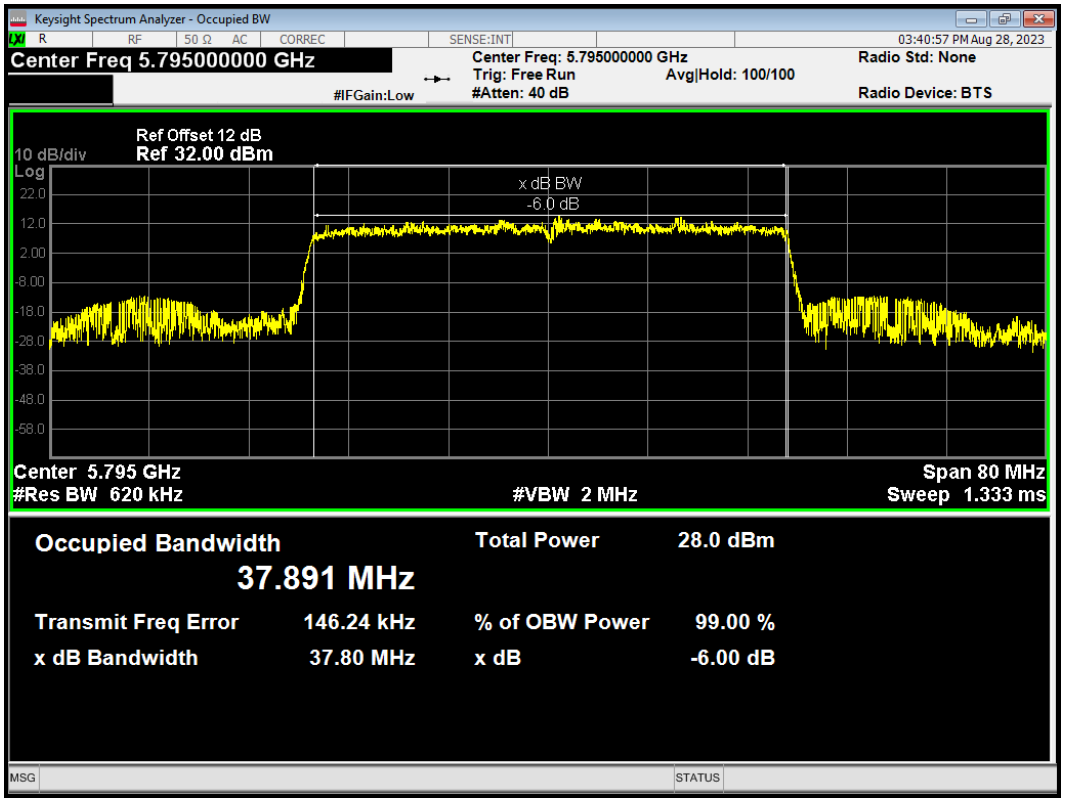
OBW 802.11ax(HE40) 5710MHz



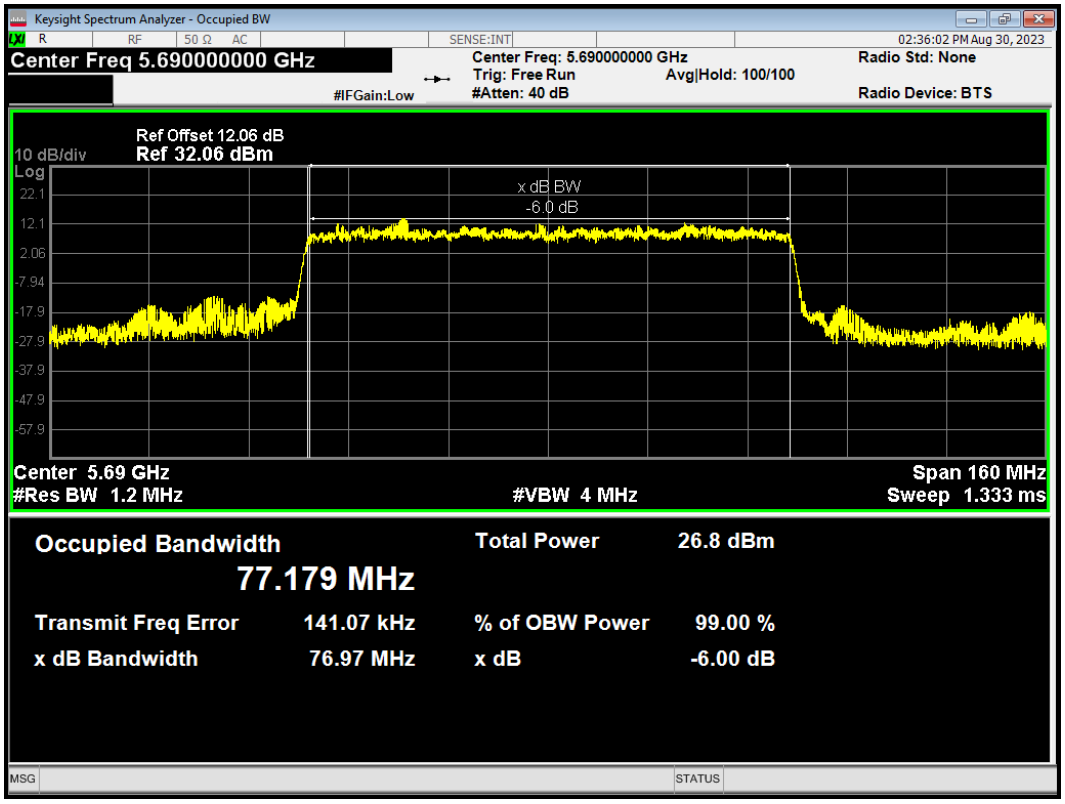
OBW 802.11ax(HE40) 5755MHz



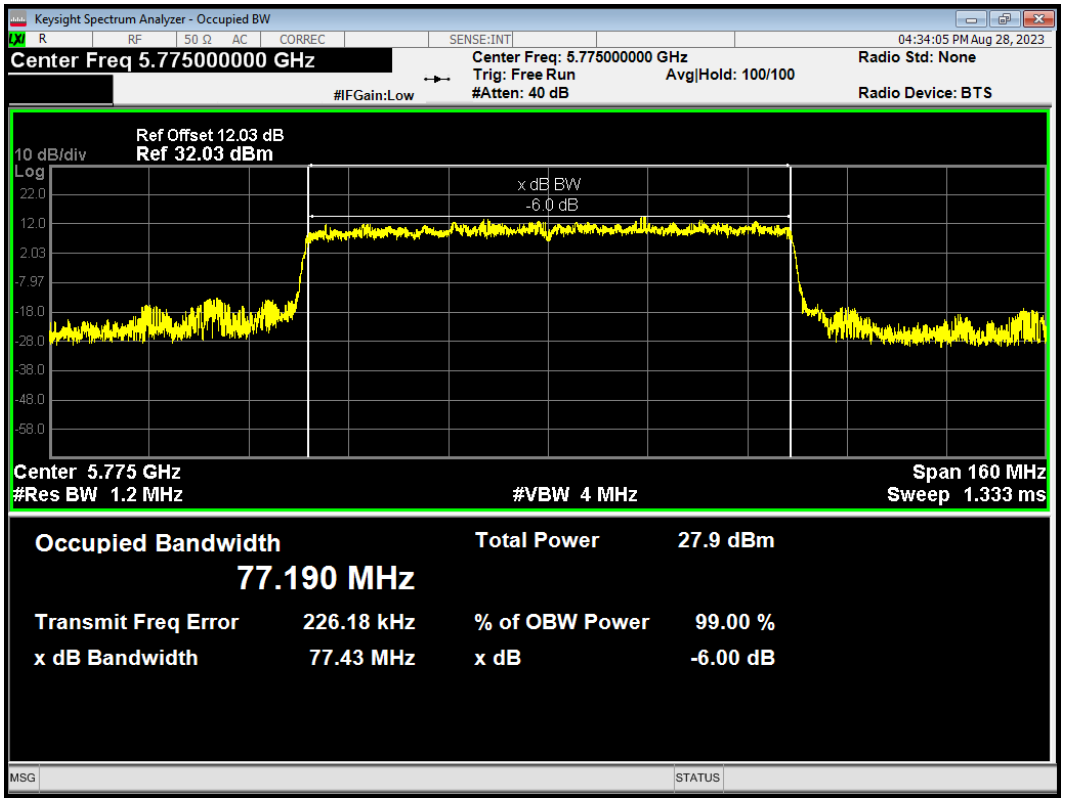
OBW 802.11ax(HE40) 5795MHz



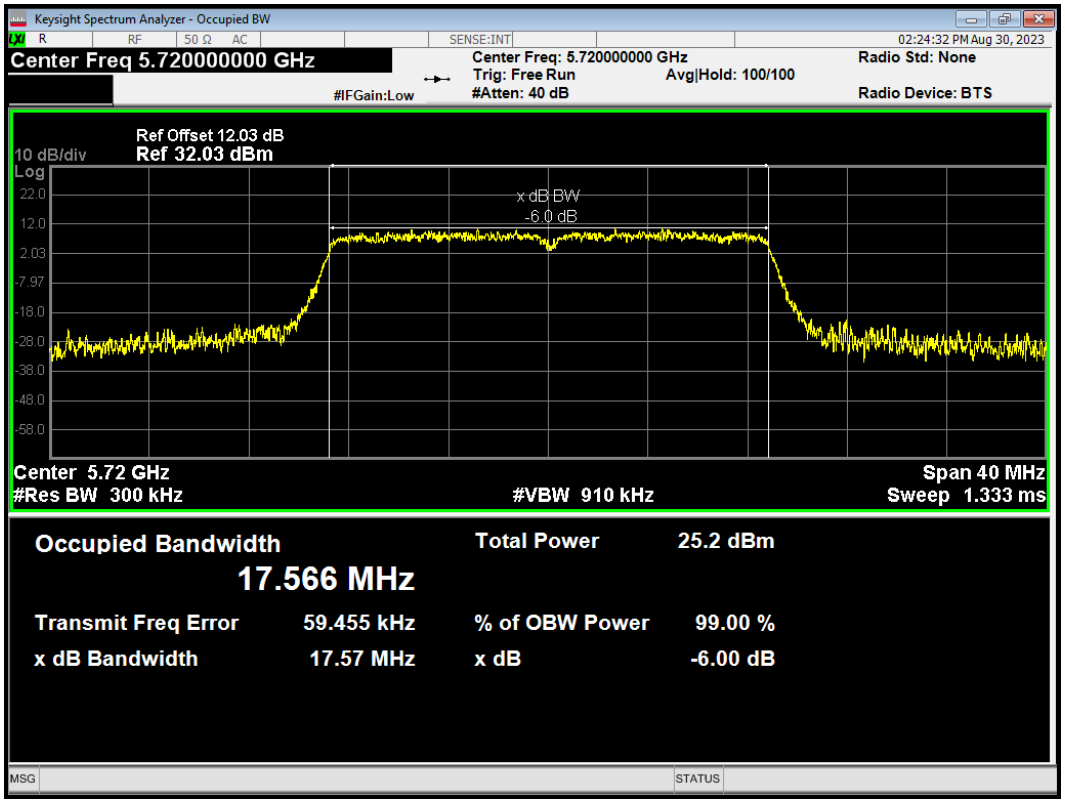
OBW 802.11ax(HE80) 5690MHz



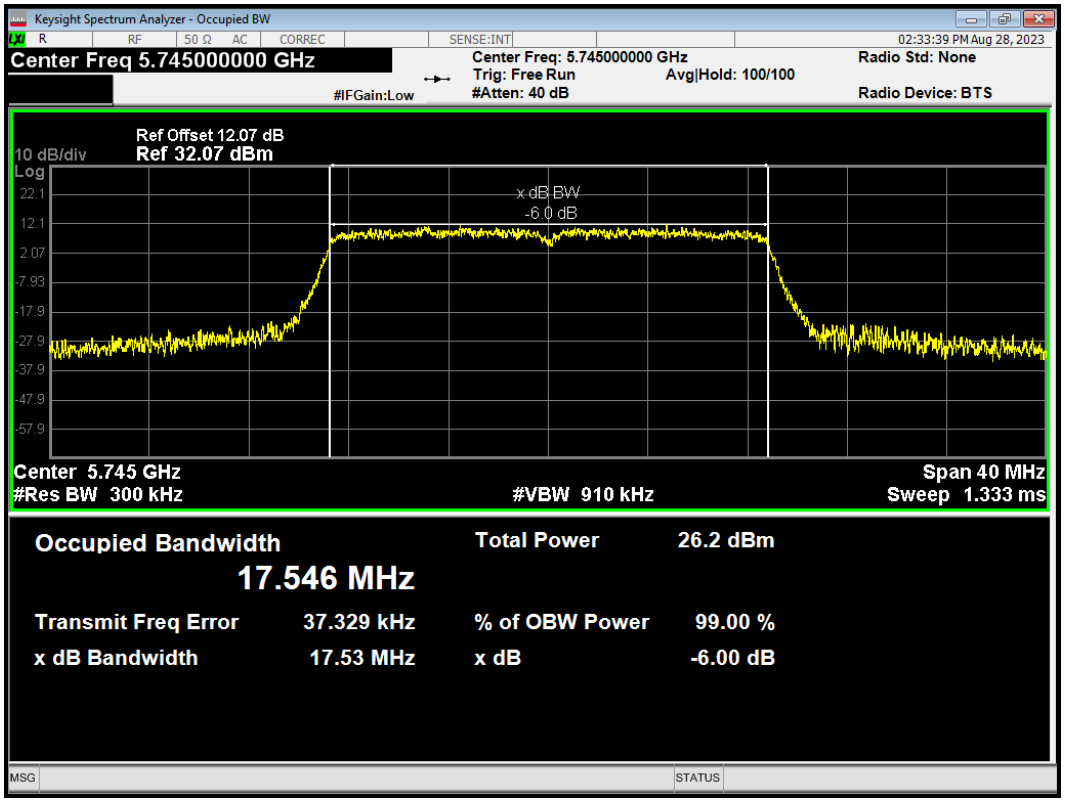
OBW 802.11ax(HE80) 5775MHz



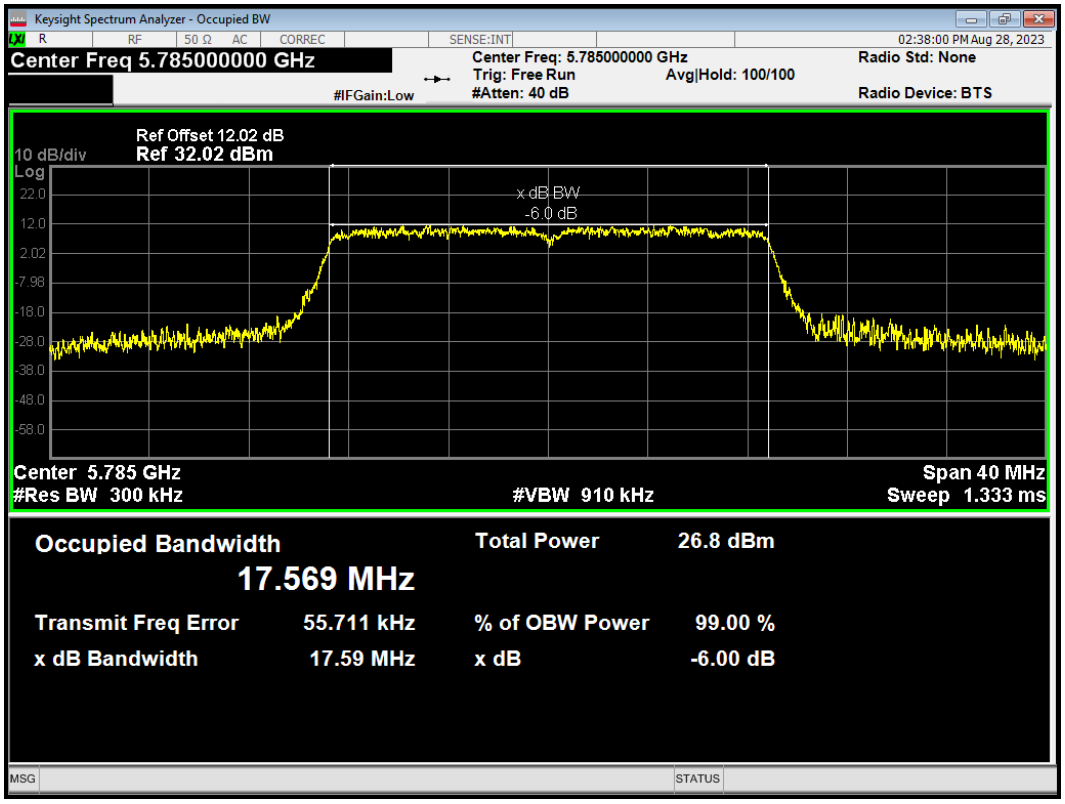
OBW 802.11n(HT20) 5720MHz



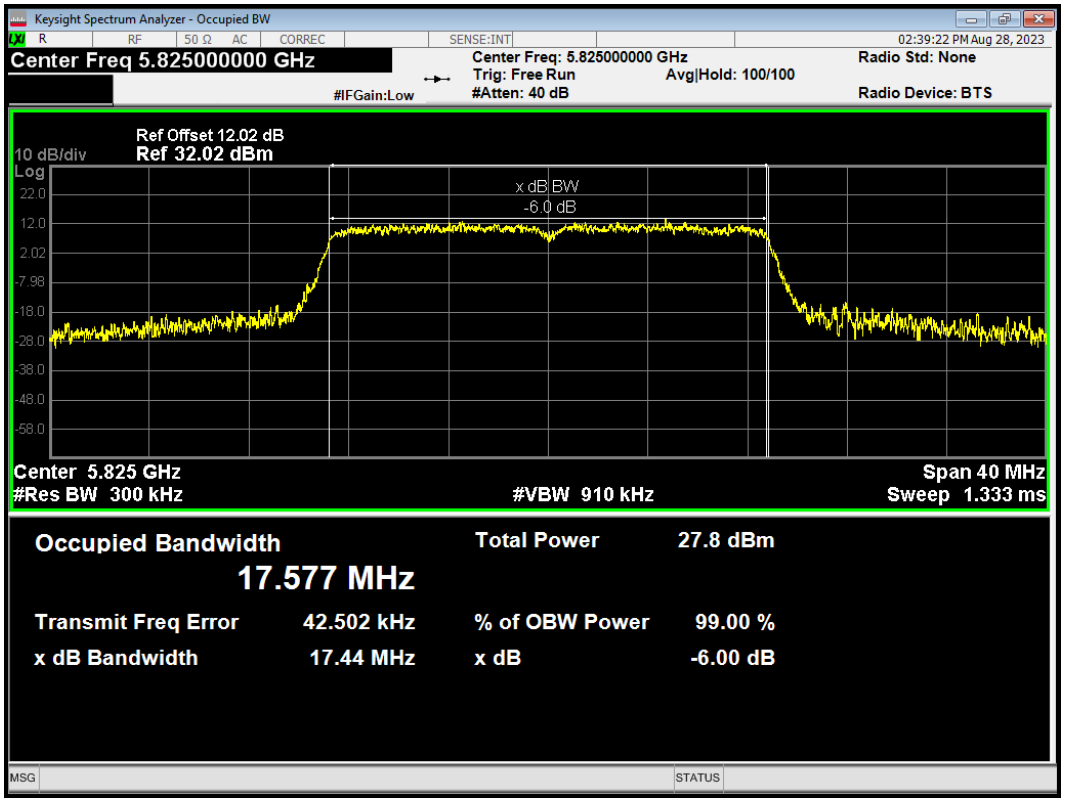
OBW 802.11n(HT20) 5745MHz



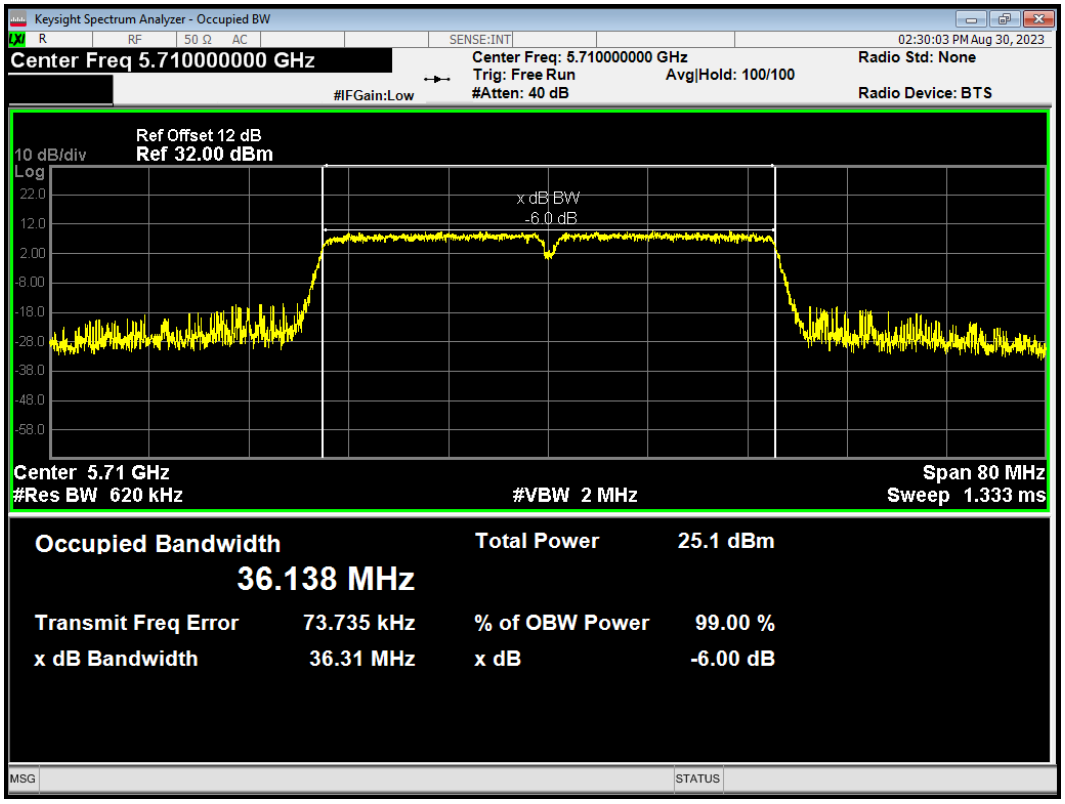
OBW 802.11n(HT20) 5785MHz



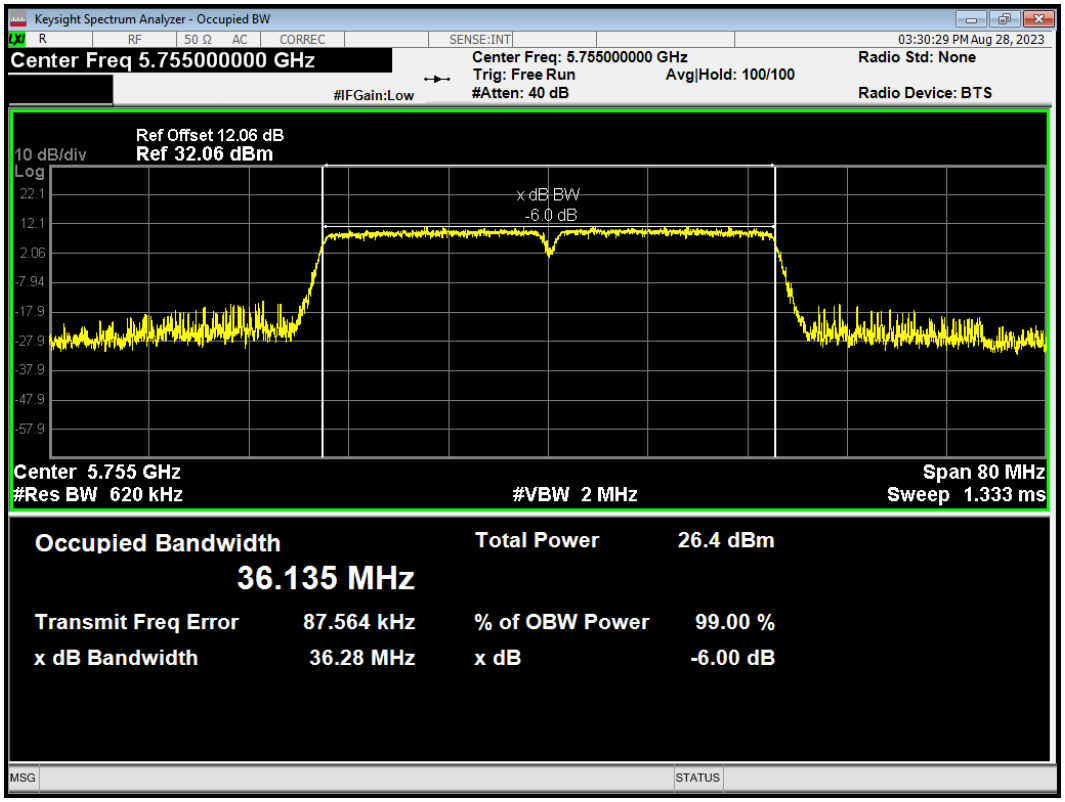
OBW 802.11n(HT20) 5825MHz



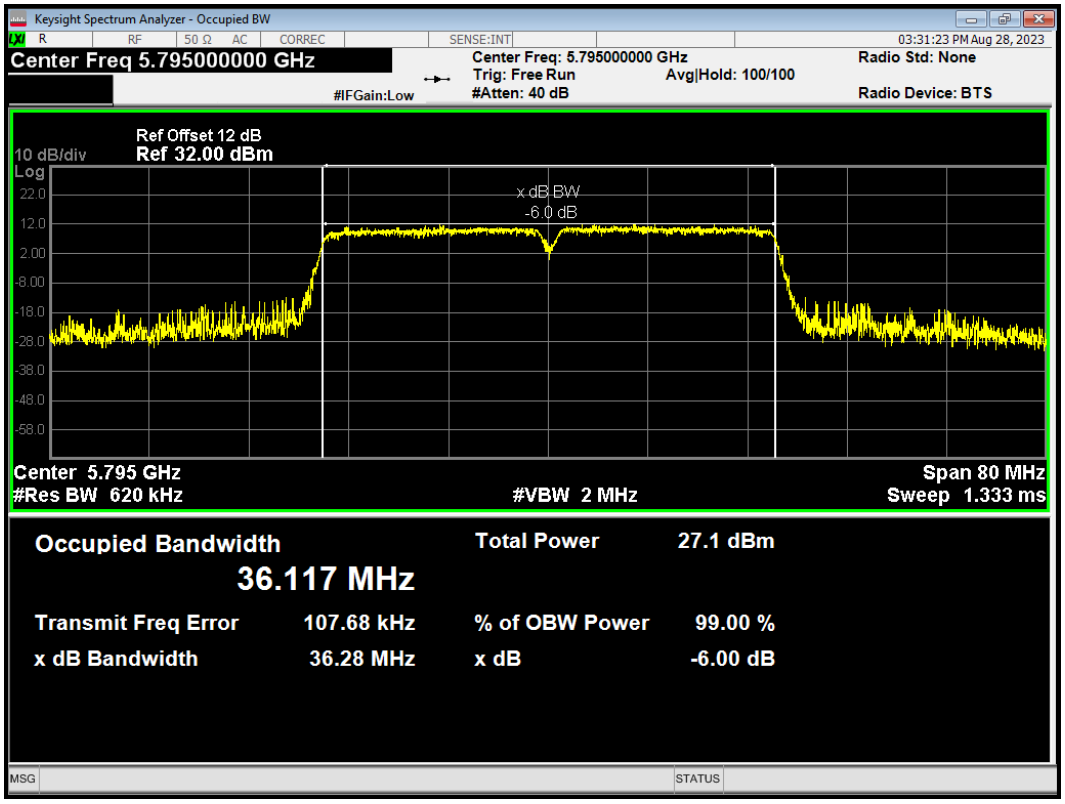
OBW 802.11n(HT40) 5710MHz



OBW 802.11n(HT40) 5755MHz



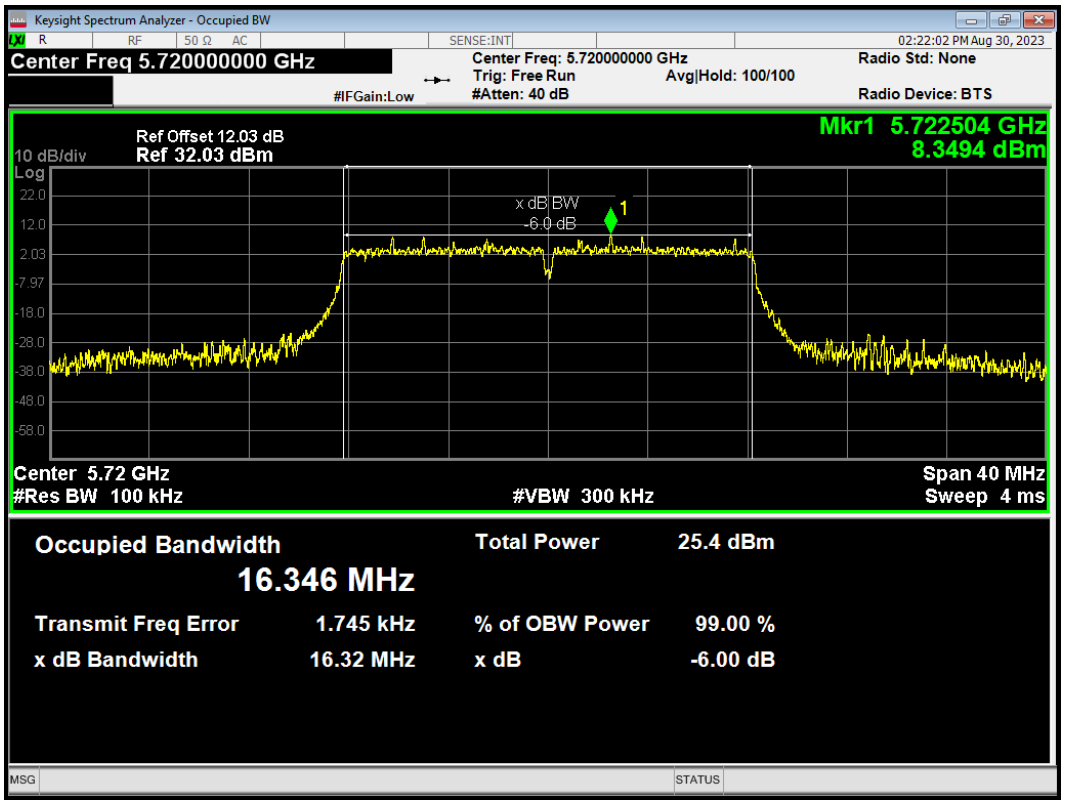
OBW 802.11n(HT40) 5795MHz



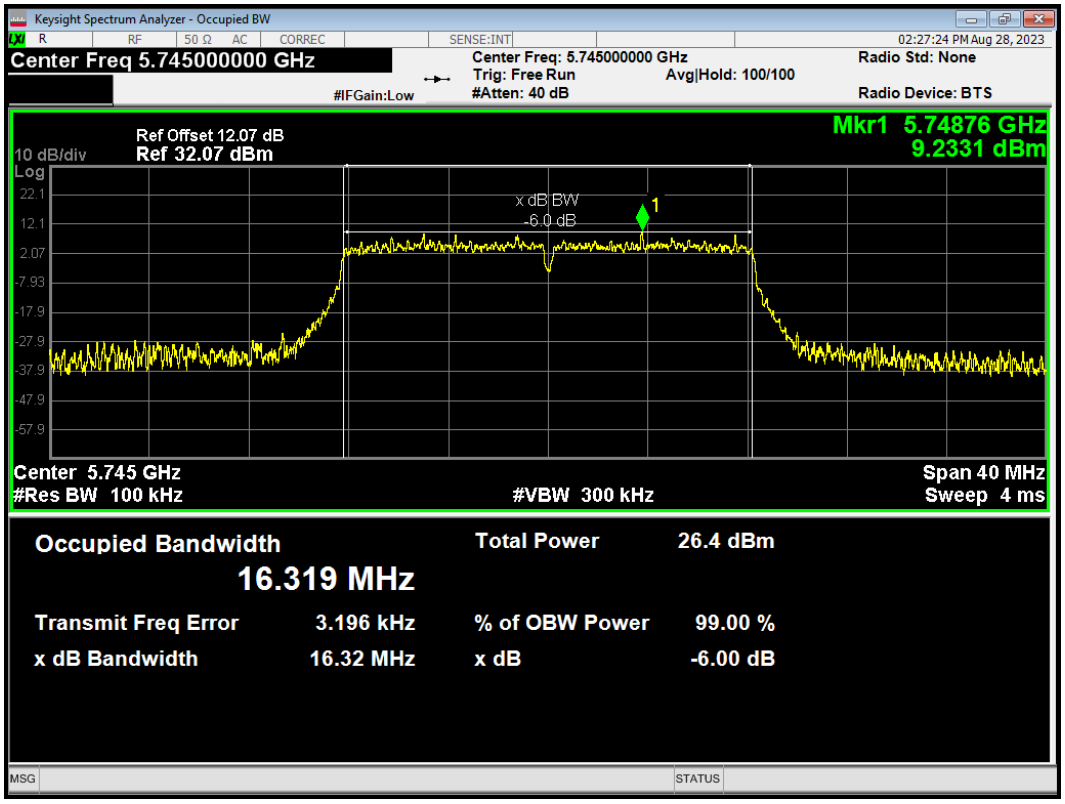
Minimum 6 dB bandwidth

U-NII-3

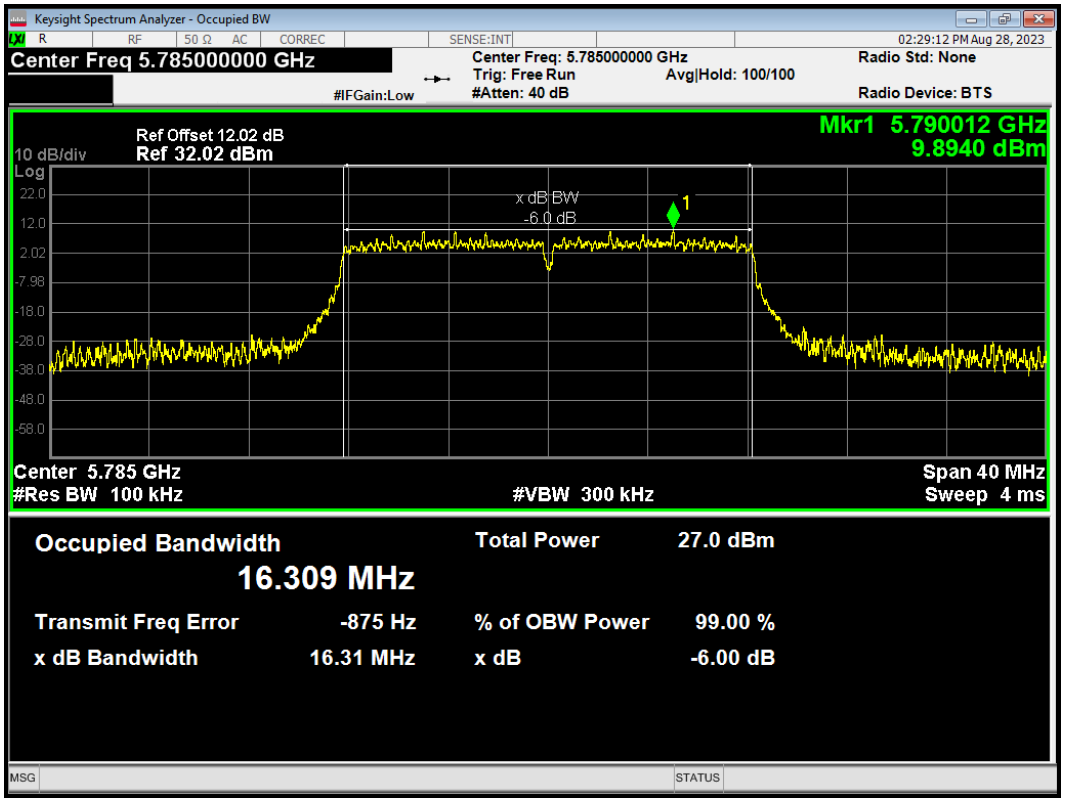
-6dB Bandwidth 802.11a 5720MHz



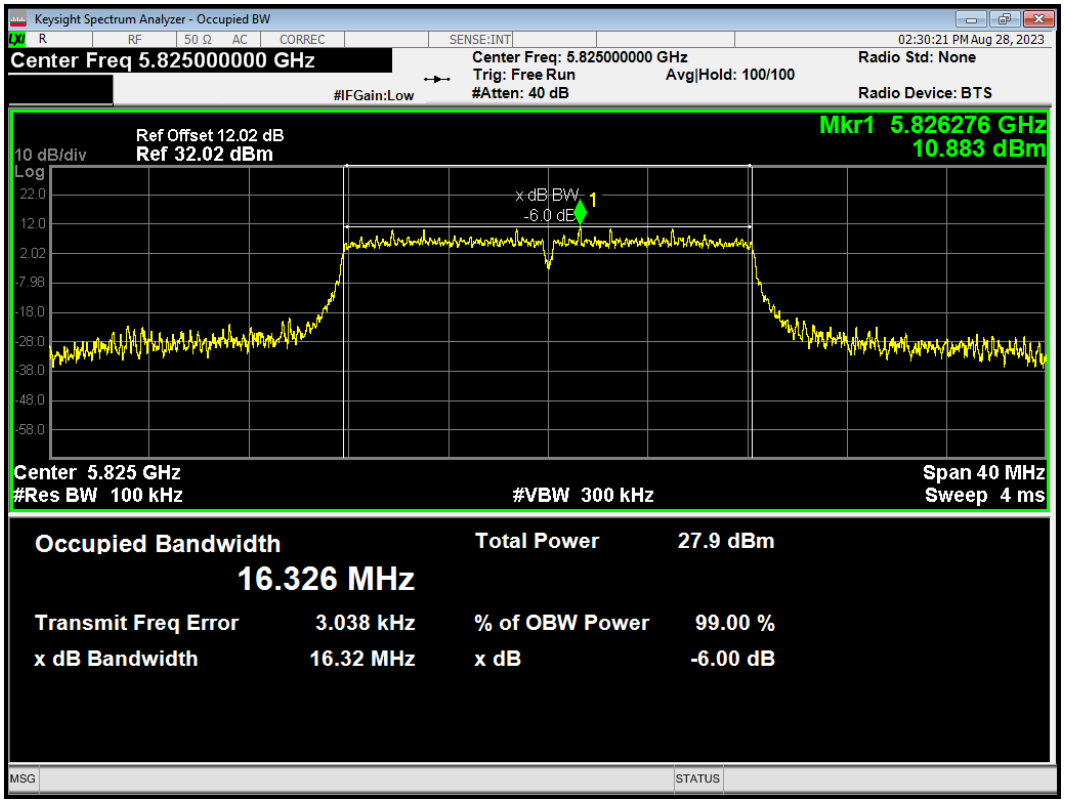
-6dB Bandwidth 802.11a 5745MHz



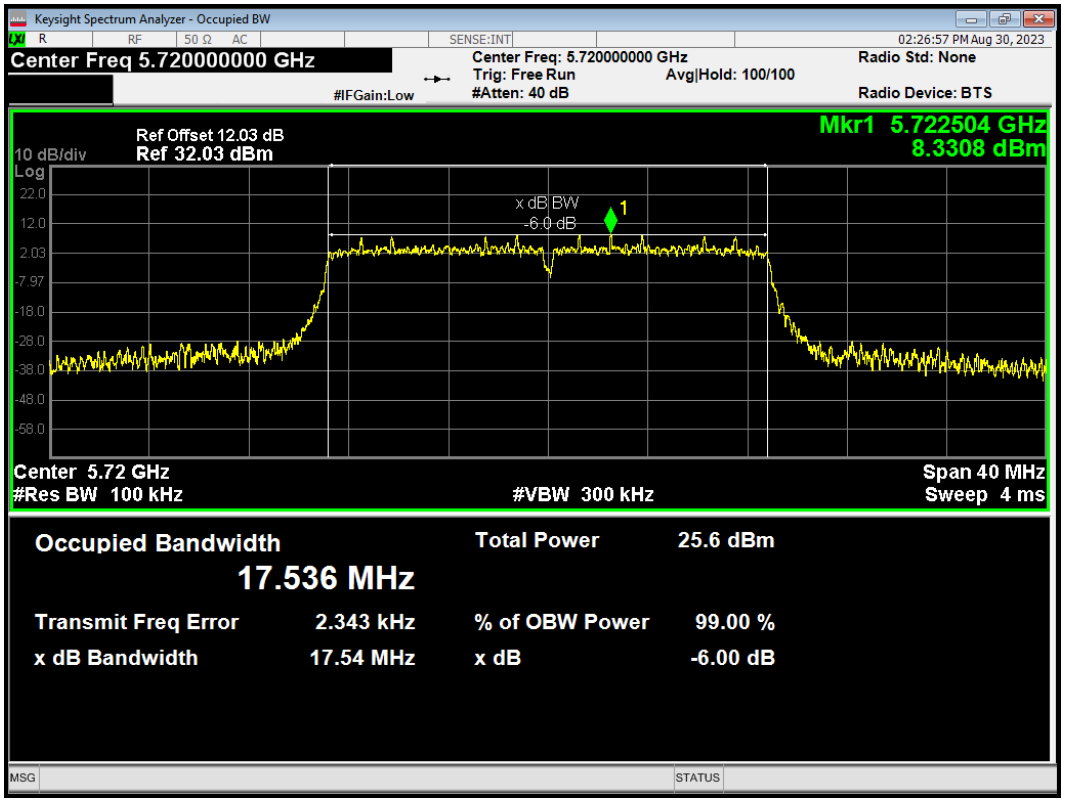
-6dB Bandwidth 802.11a 5785MHz



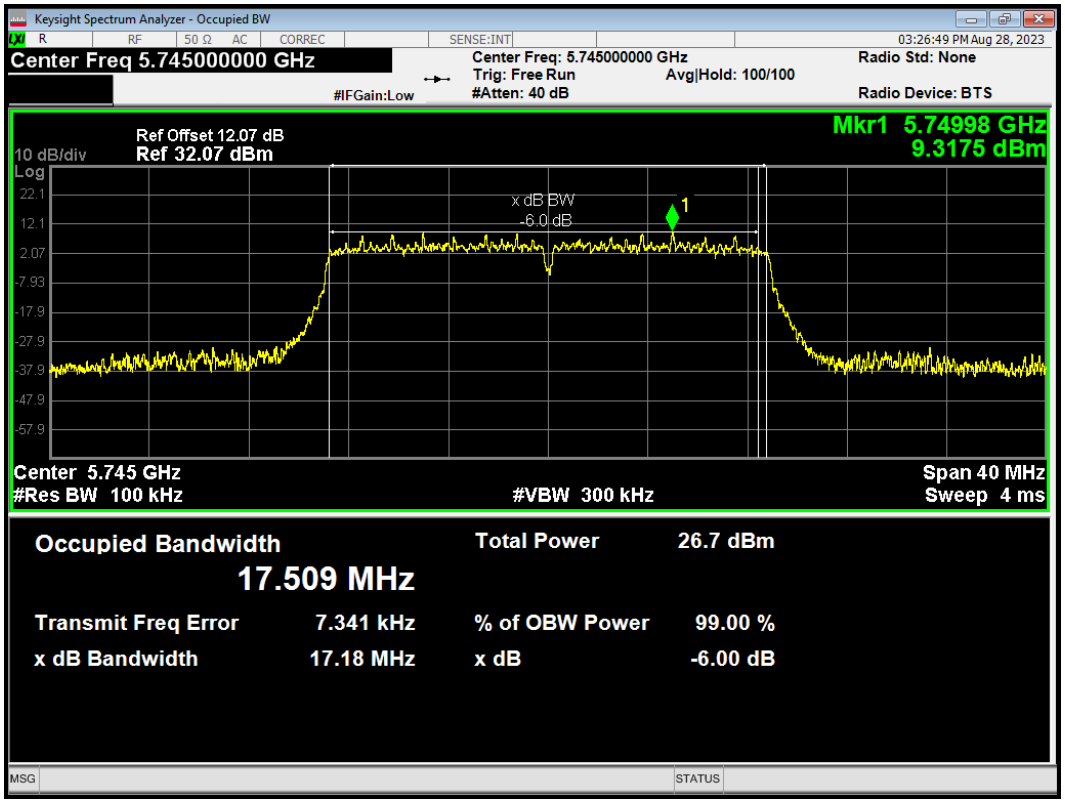
-6dB Bandwidth 802.11a 5825MHz



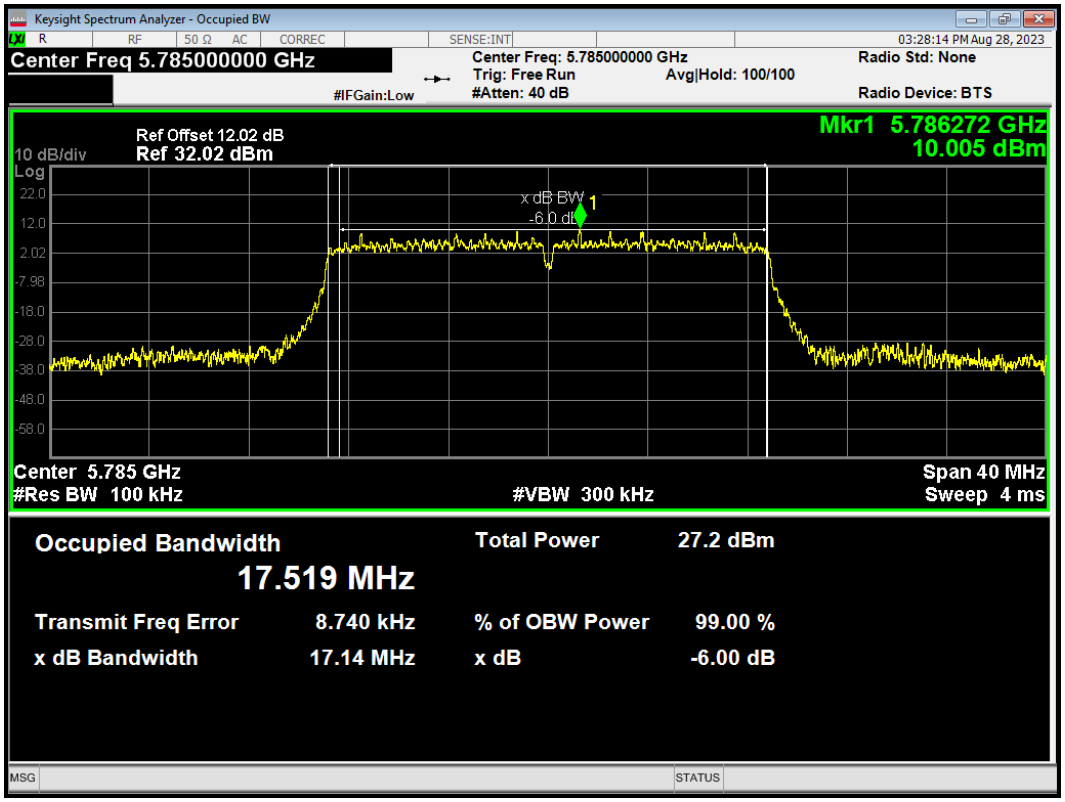
-6dB Bandwidth 802.11ac(VHT20) 5720MHz



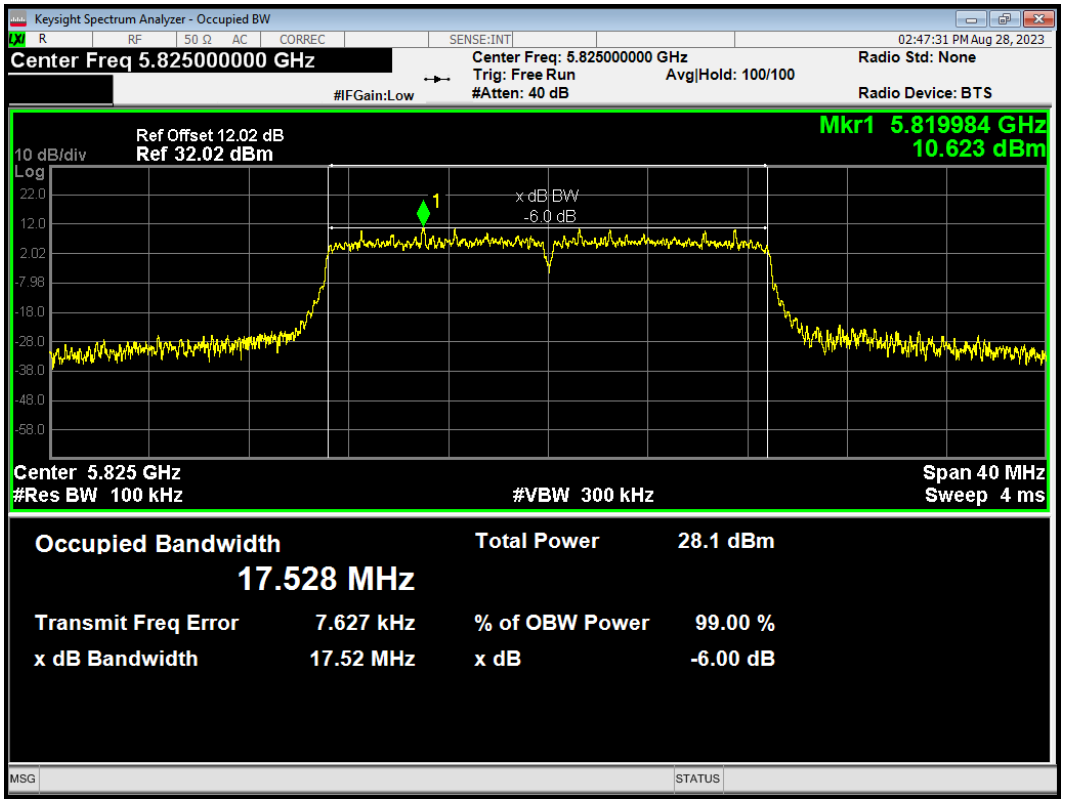
-6dB Bandwidth 802.11ac(VHT20) 5745MHz



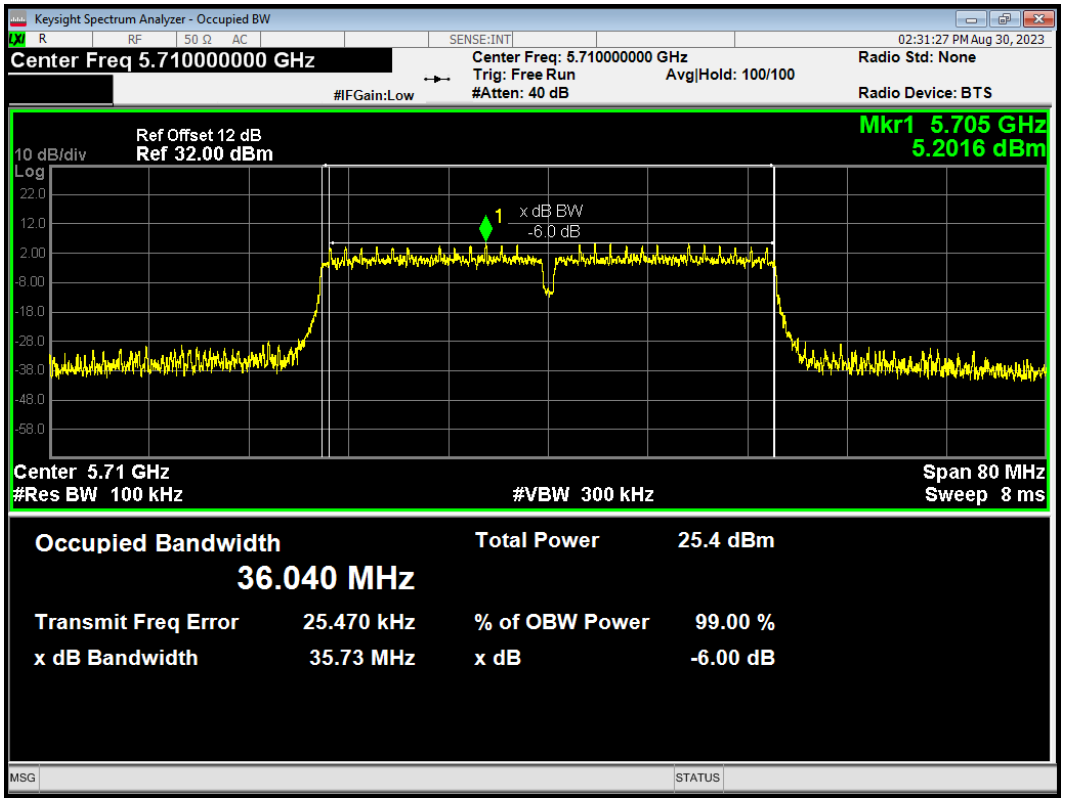
-6dB Bandwidth 802.11ac(VHT20) 5785MHz



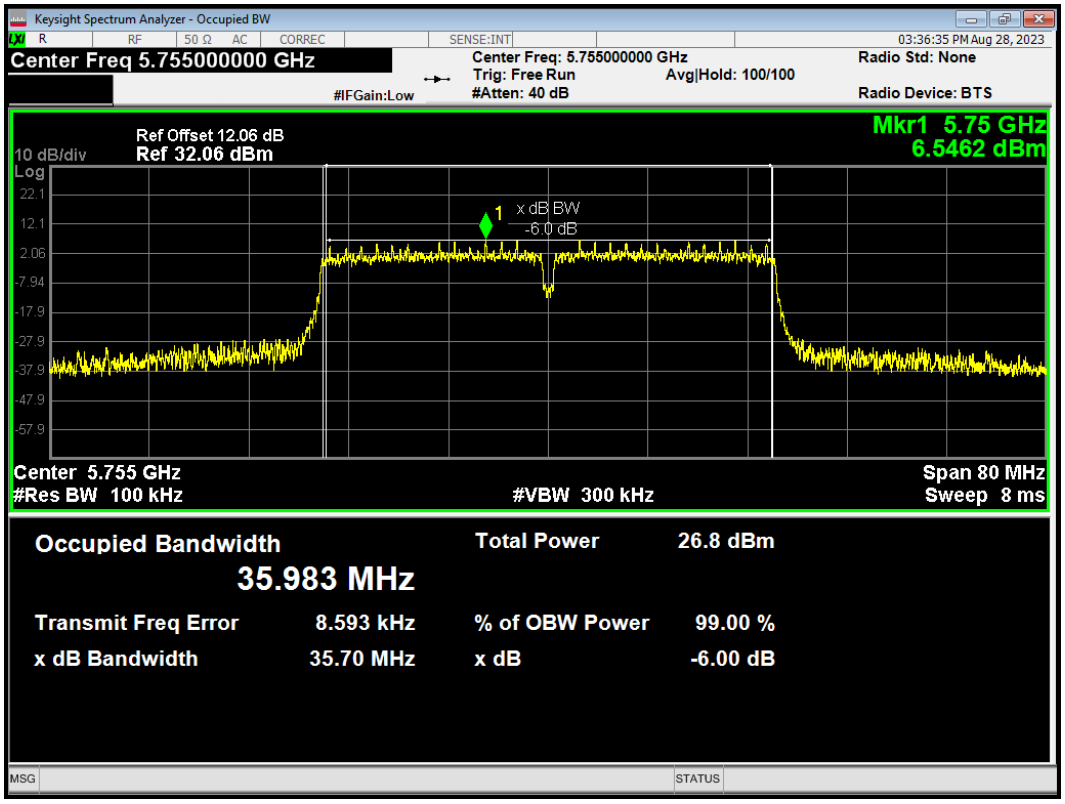
-6dB Bandwidth 802.11ac(VHT20) 5825MHz



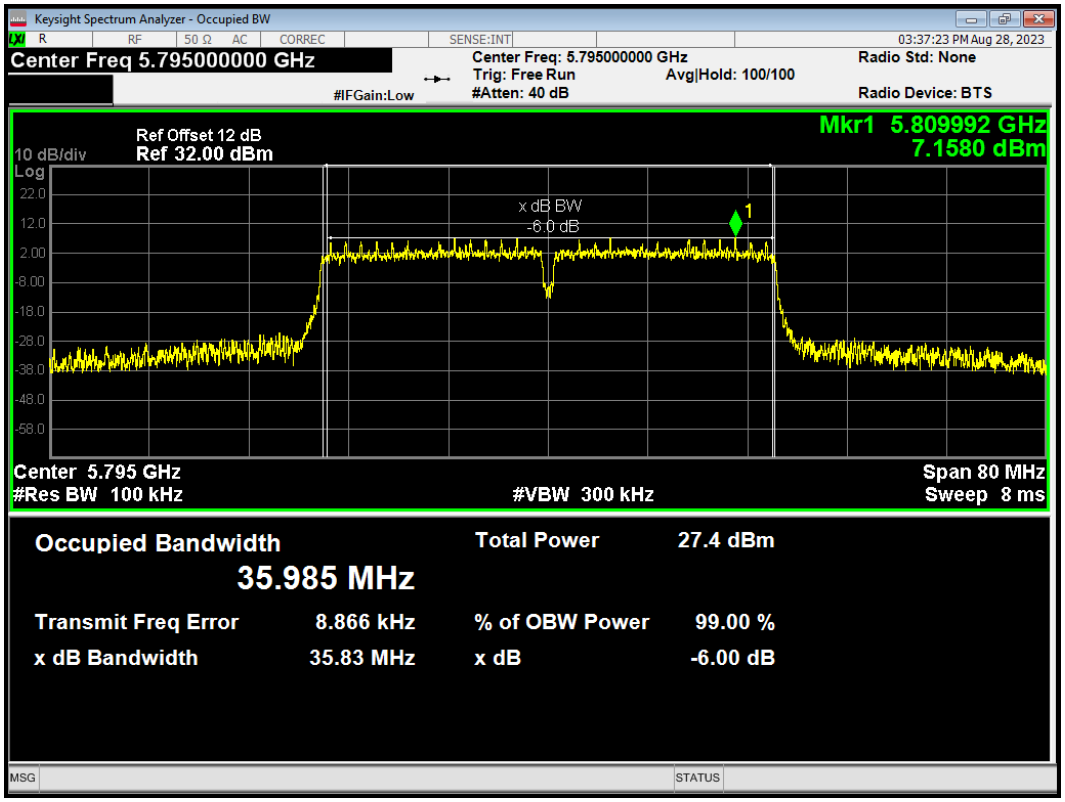
-6dB Bandwidth 802.11ac(VHT40) 5710MHz



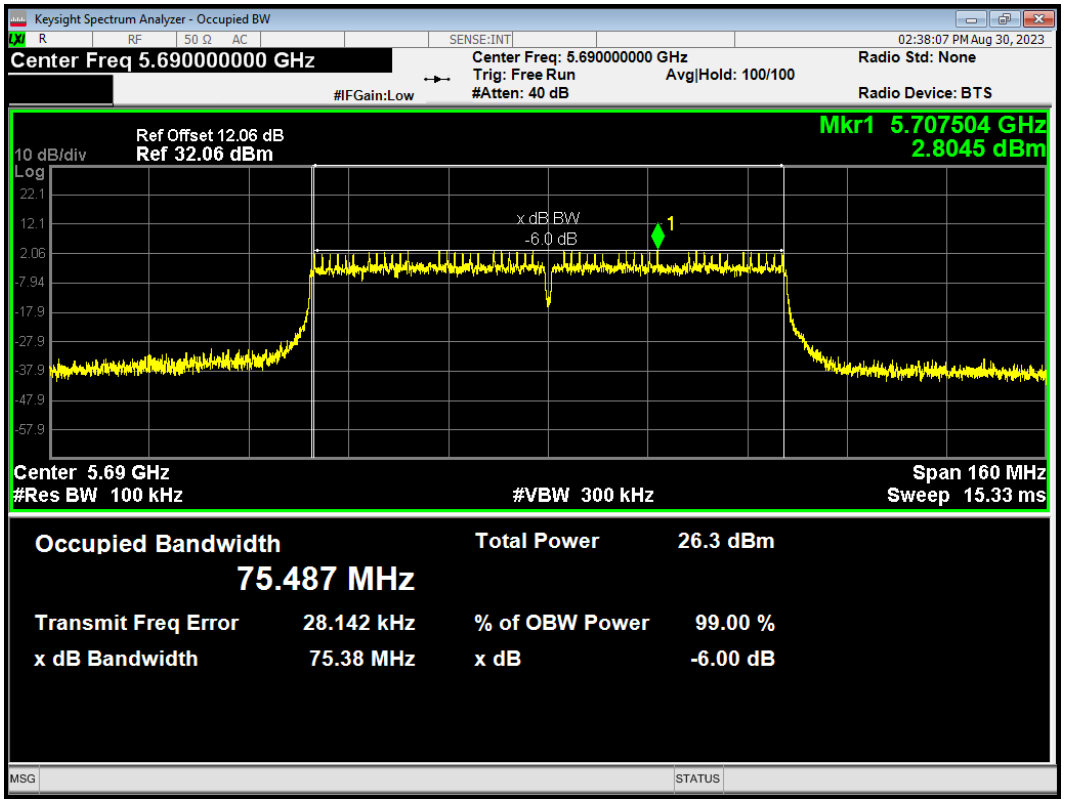
-6dB Bandwidth 802.11ac(VHT40) 5755MHz



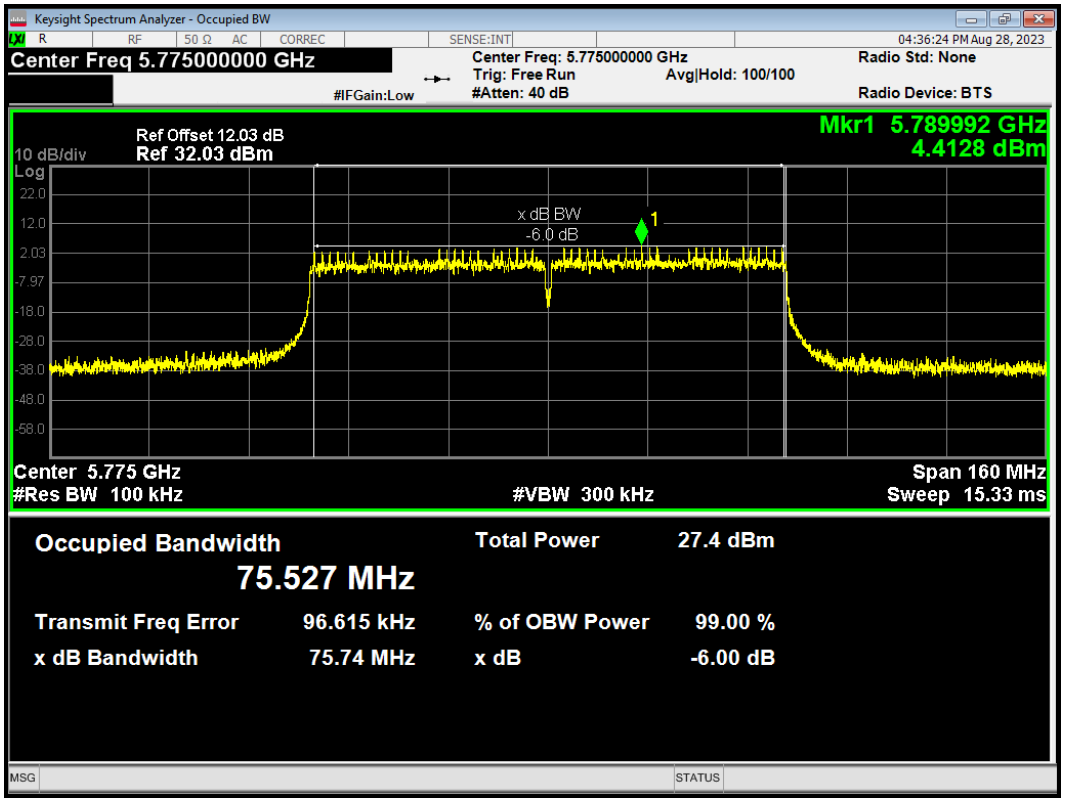
-6dB Bandwidth 802.11ac(VHT40) 5795MHz



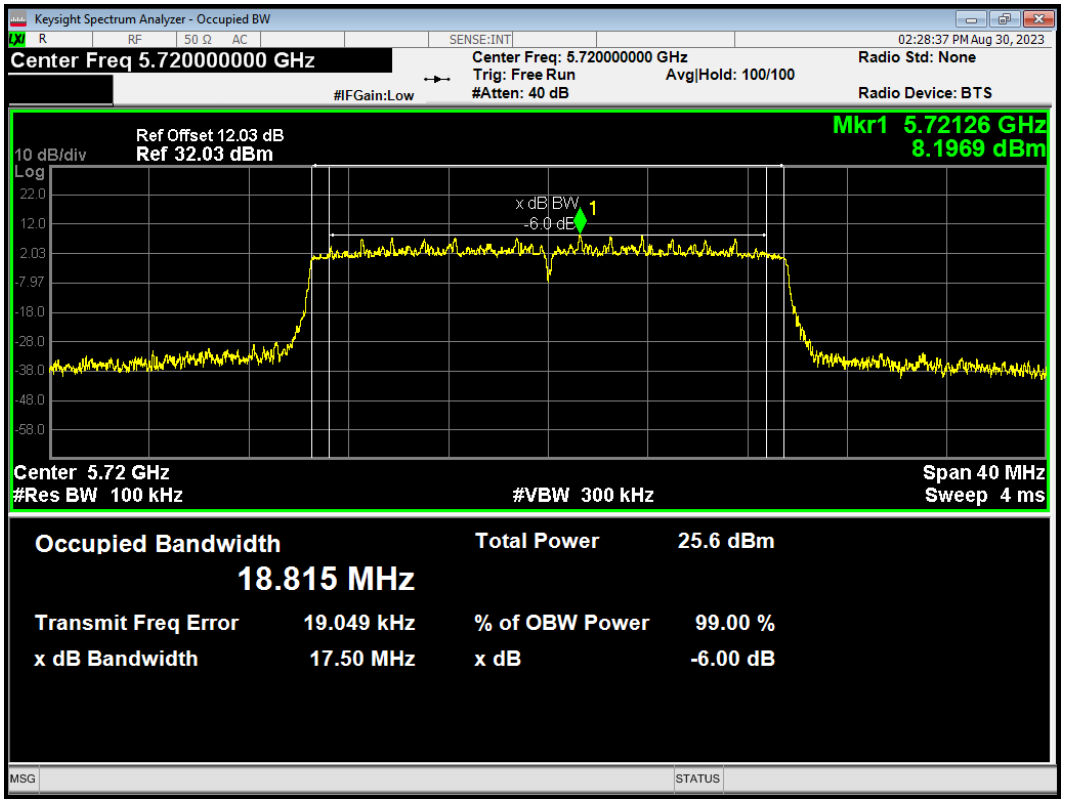
-6dB Bandwidth 802.11ac(VHT80) 5690MHz



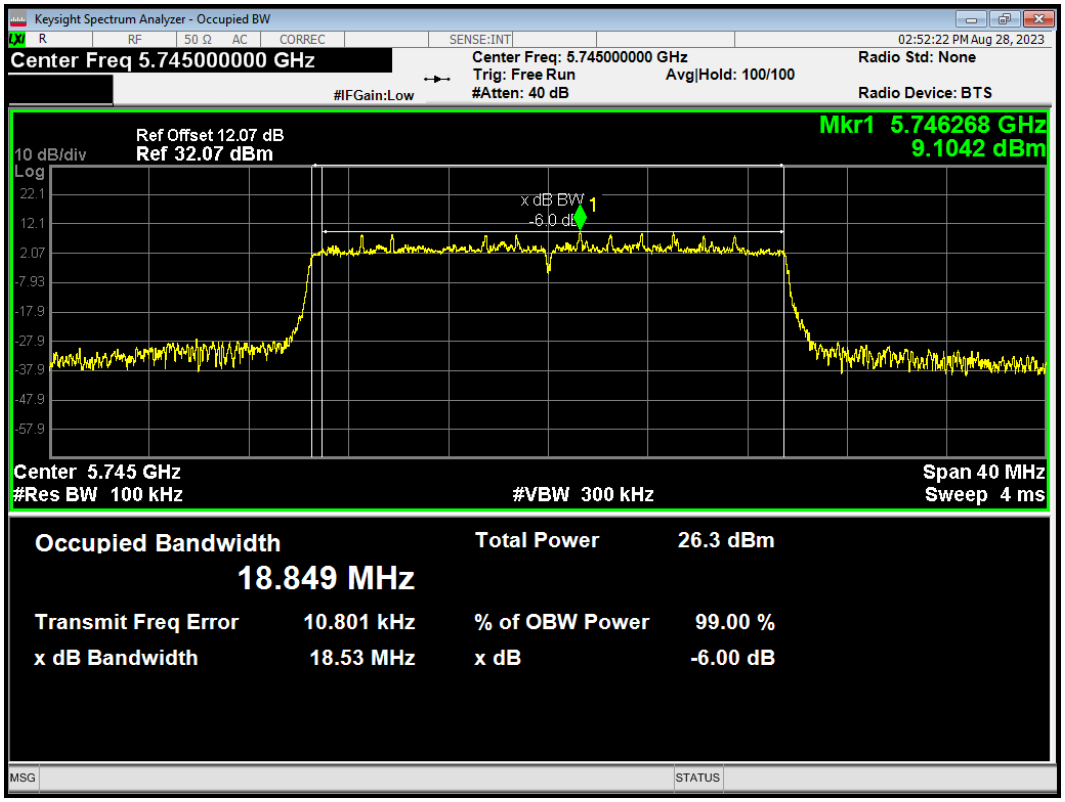
-6dB Bandwidth 802.11ac(VHT80) 5775MHz



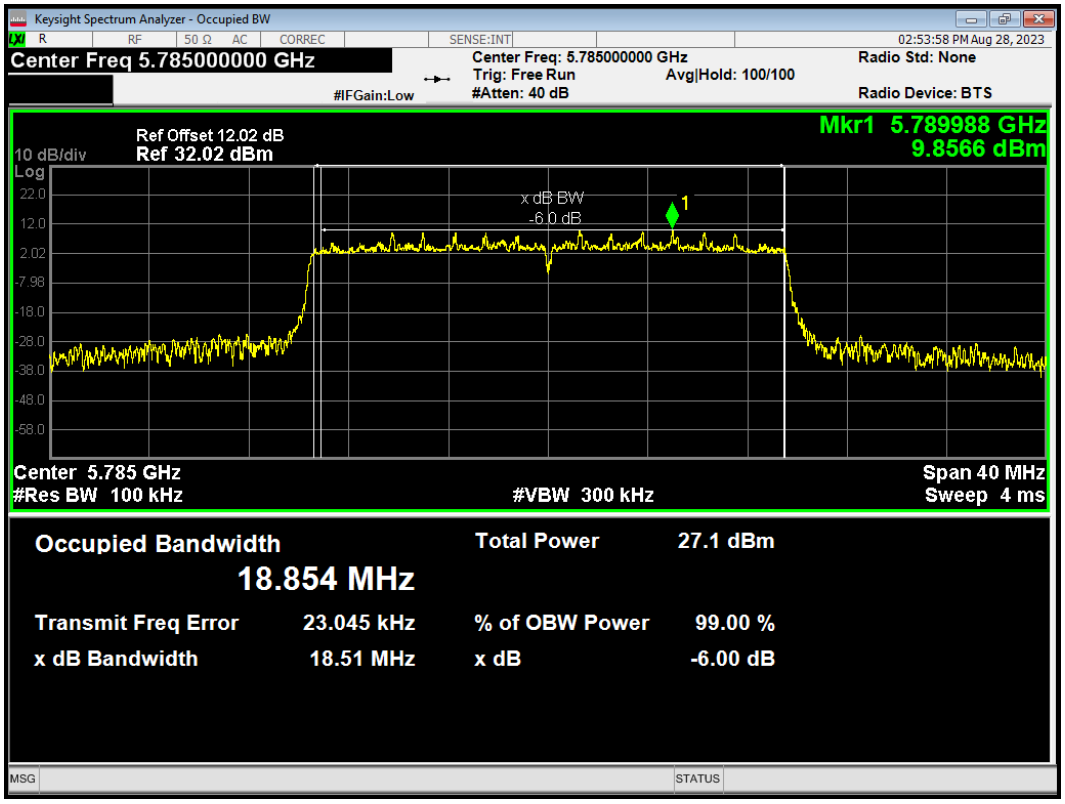
-6dB Bandwidth 802.11ax(HE20) 5720MHz



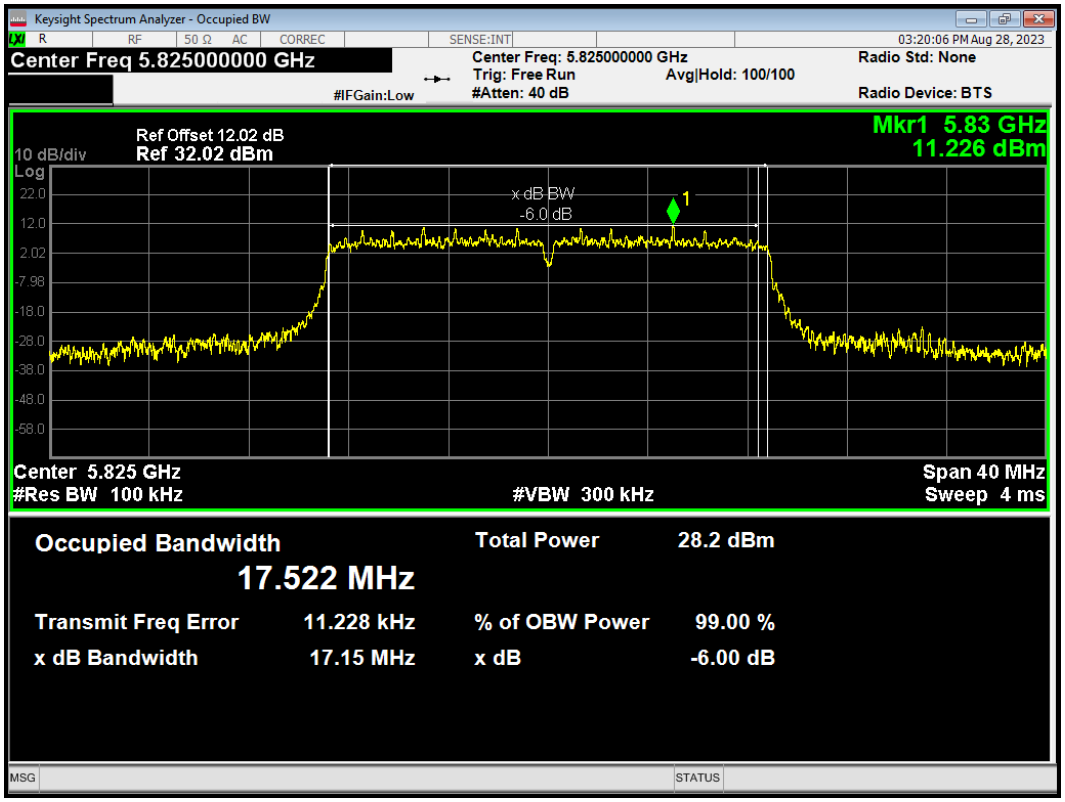
-6dB Bandwidth 802.11ax(HE20) 5745MHz



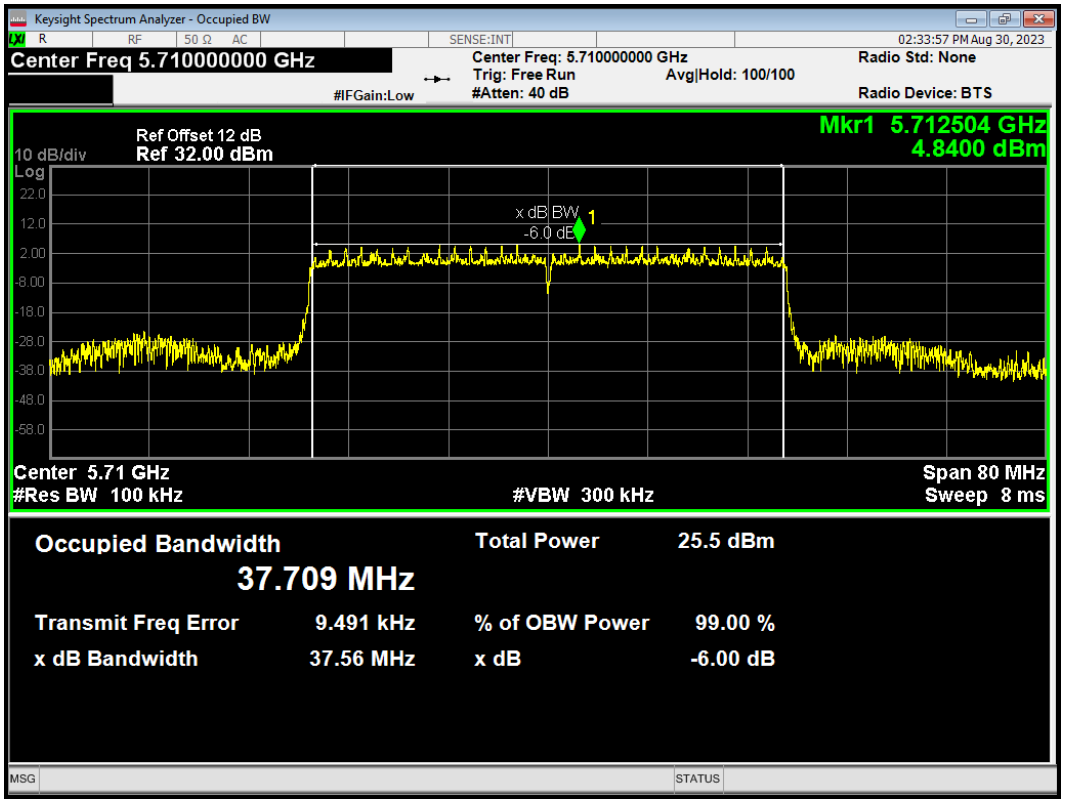
-6dB Bandwidth 802.11ax(HE20) 5785MHz



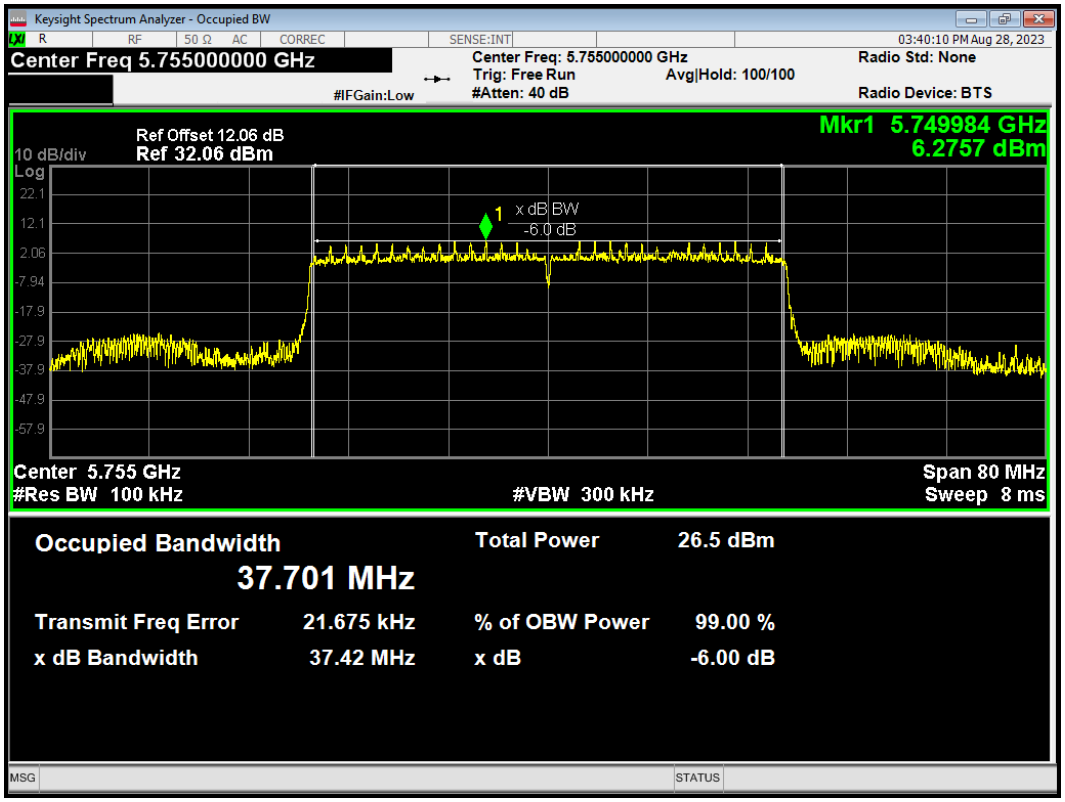
-6dB Bandwidth 802.11ax(HE20) 5825MHz



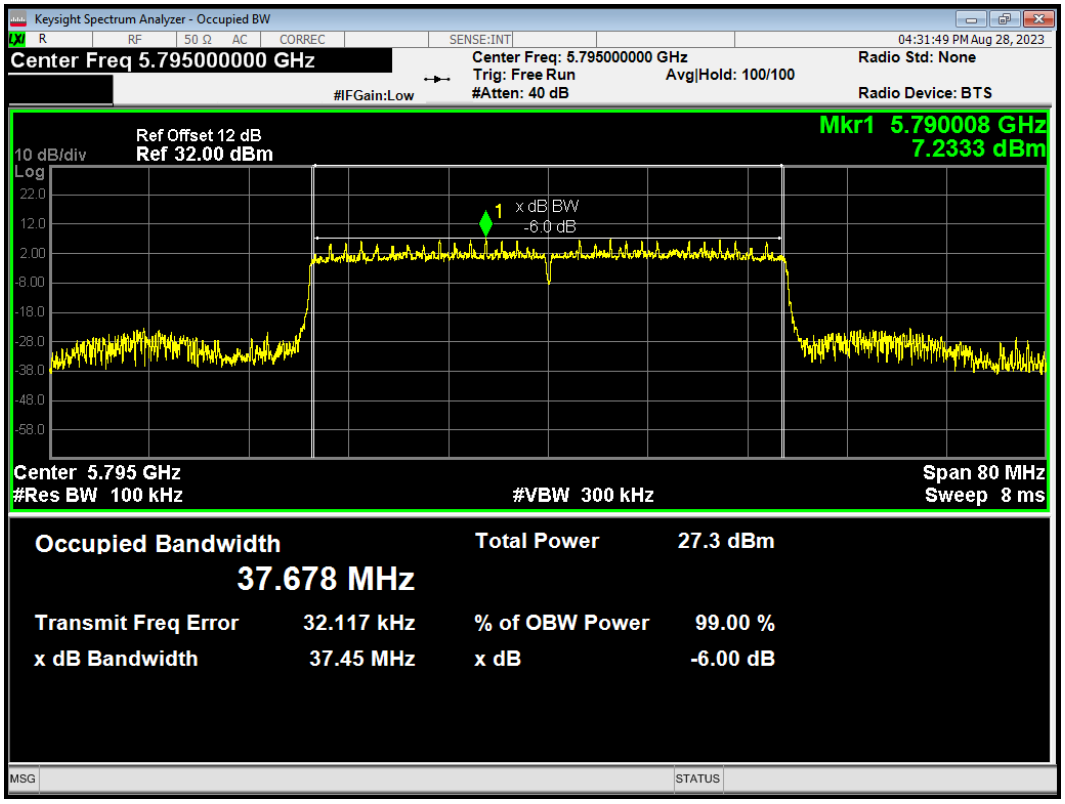
-6dB Bandwidth 802.11ax(HE40) 5710MHz



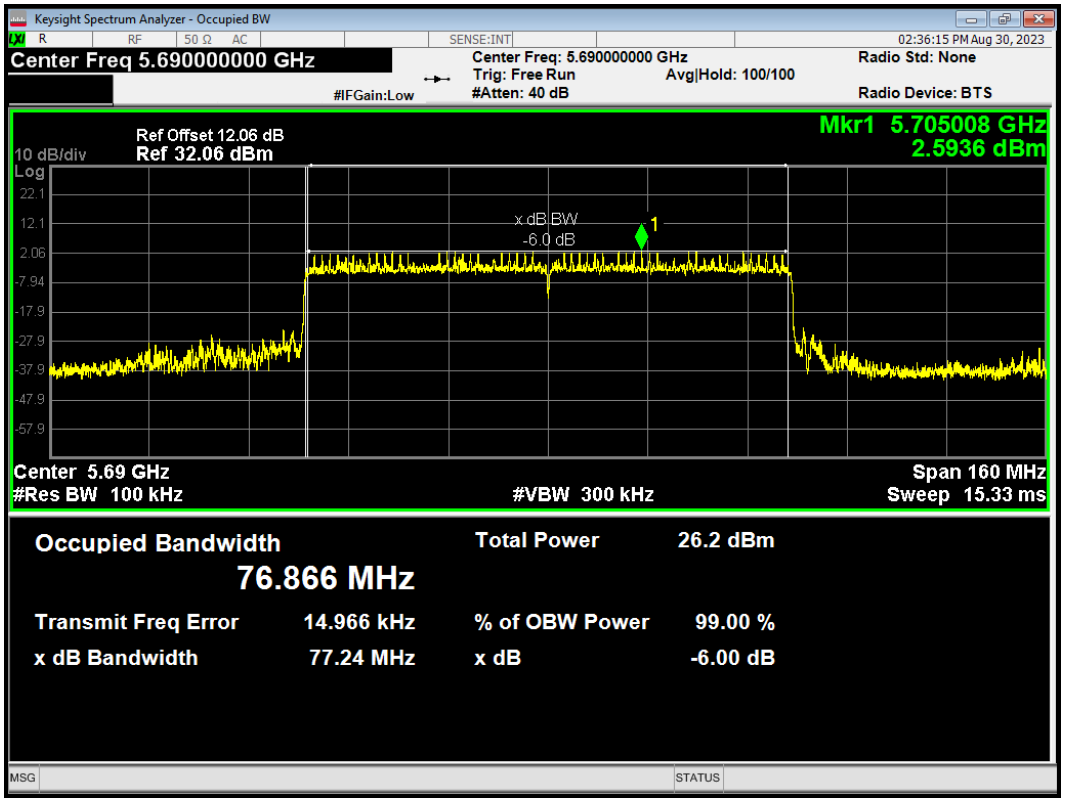
-6dB Bandwidth 802.11ax(HE40) 5755MHz



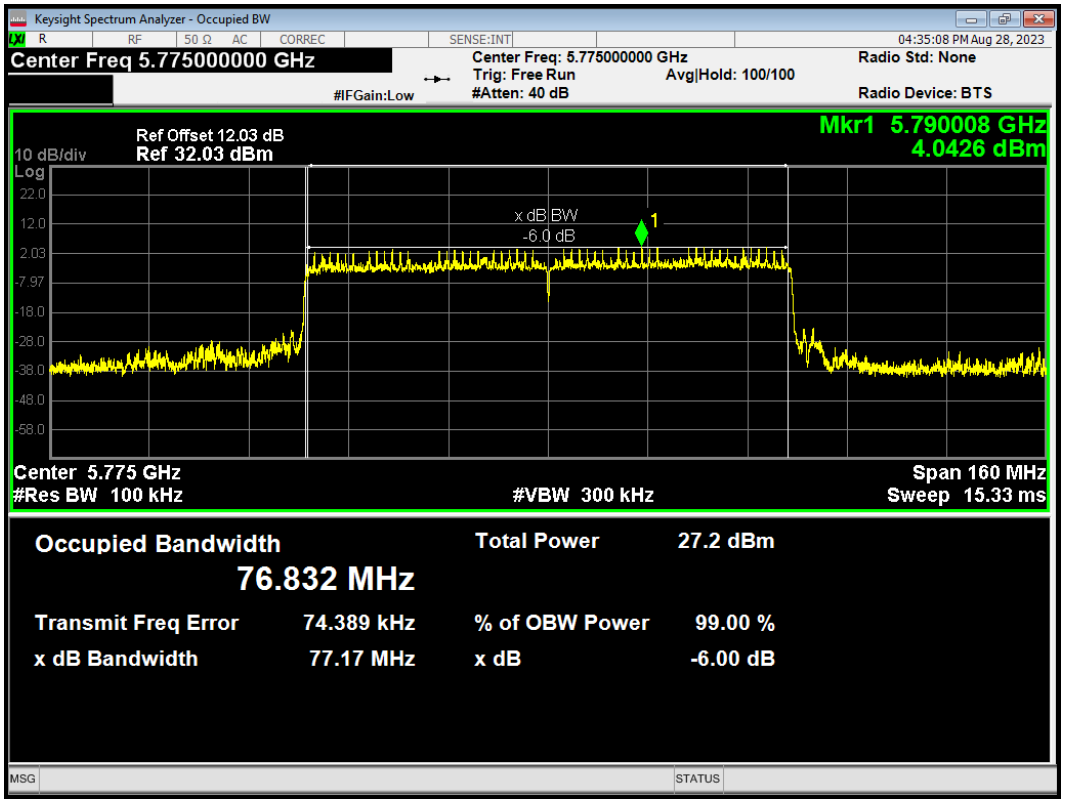
-6dB Bandwidth 802.11ax(HE40) 5795MHz



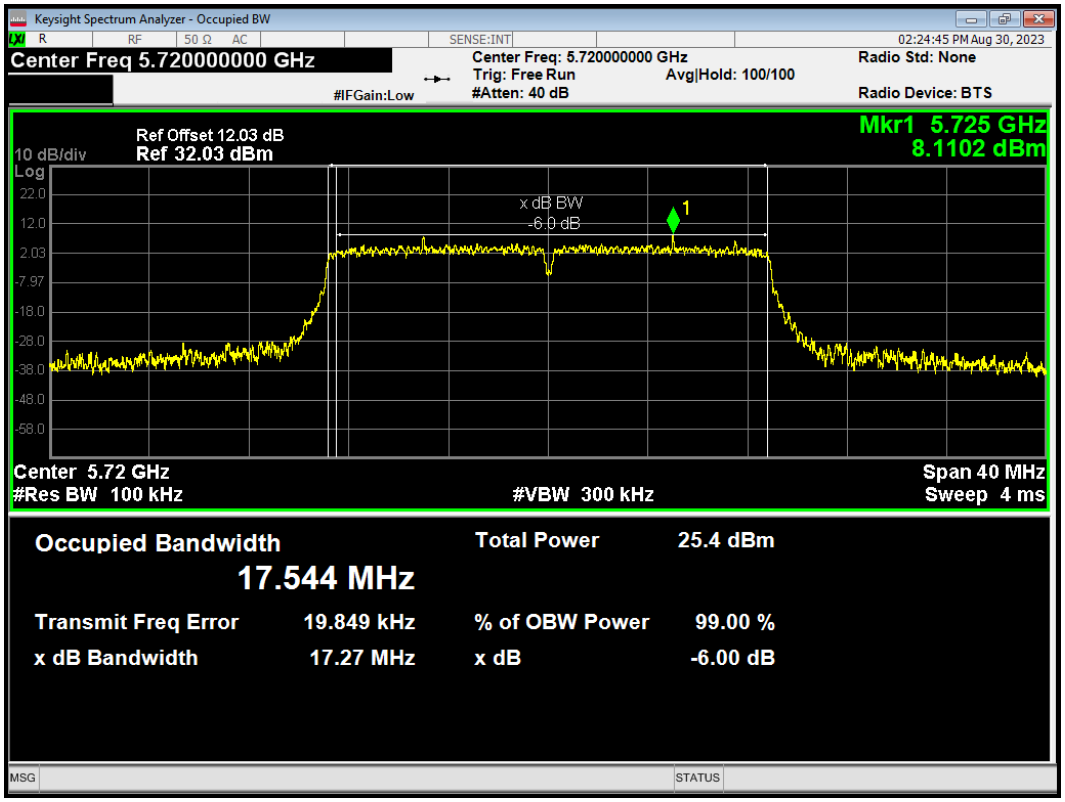
-6dB Bandwidth 802.11ax(HE80) 5690MHz



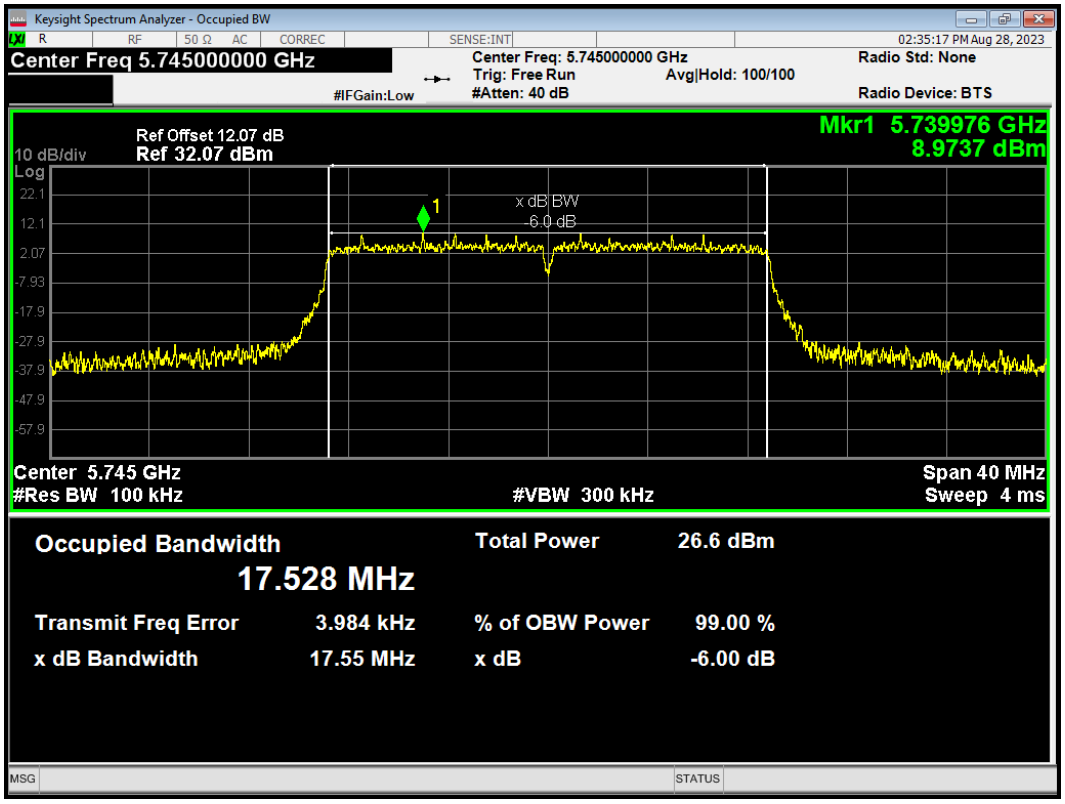
-6dB Bandwidth 802.11ax(HE80) 5775MHz



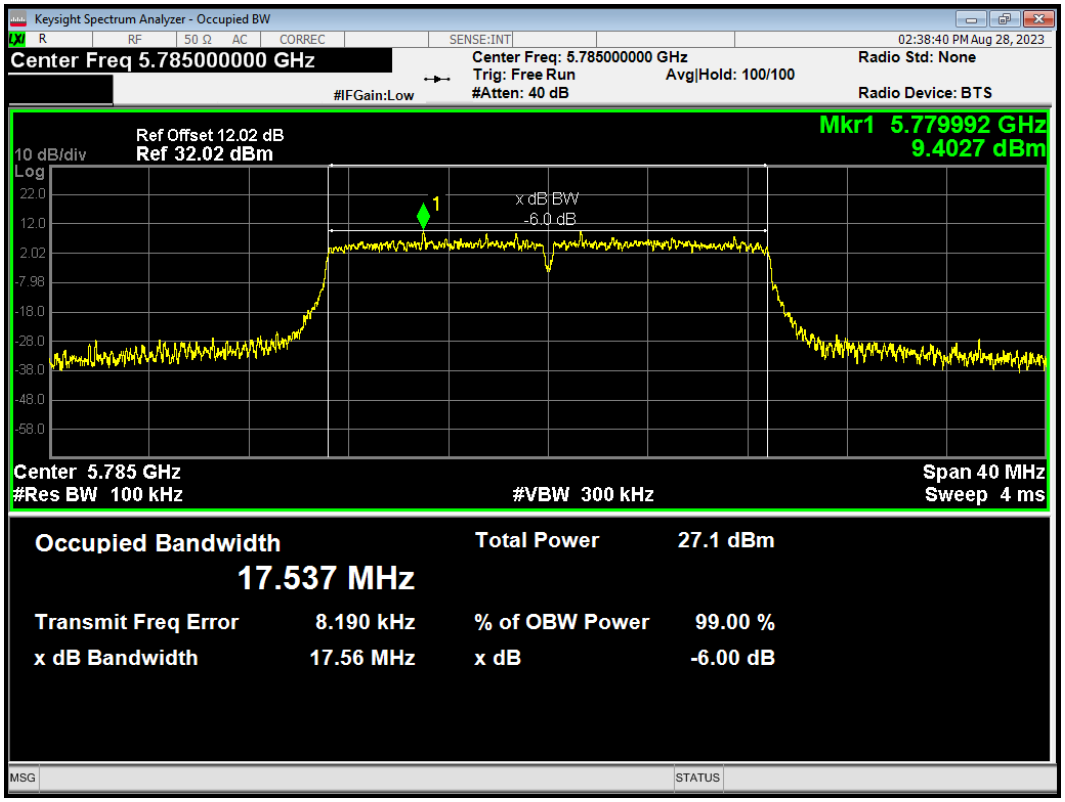
-6dB Bandwidth 802.11n(HT20) 5720MHz



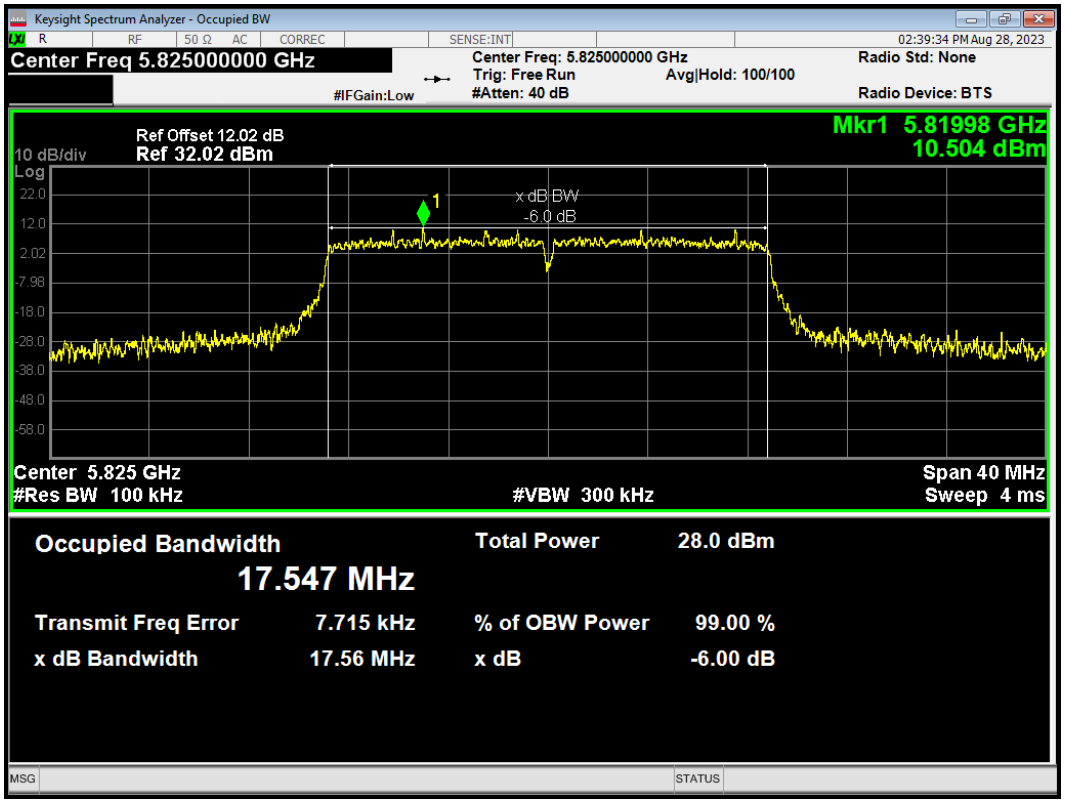
-6dB Bandwidth 802.11n(HT20) 5745MHz



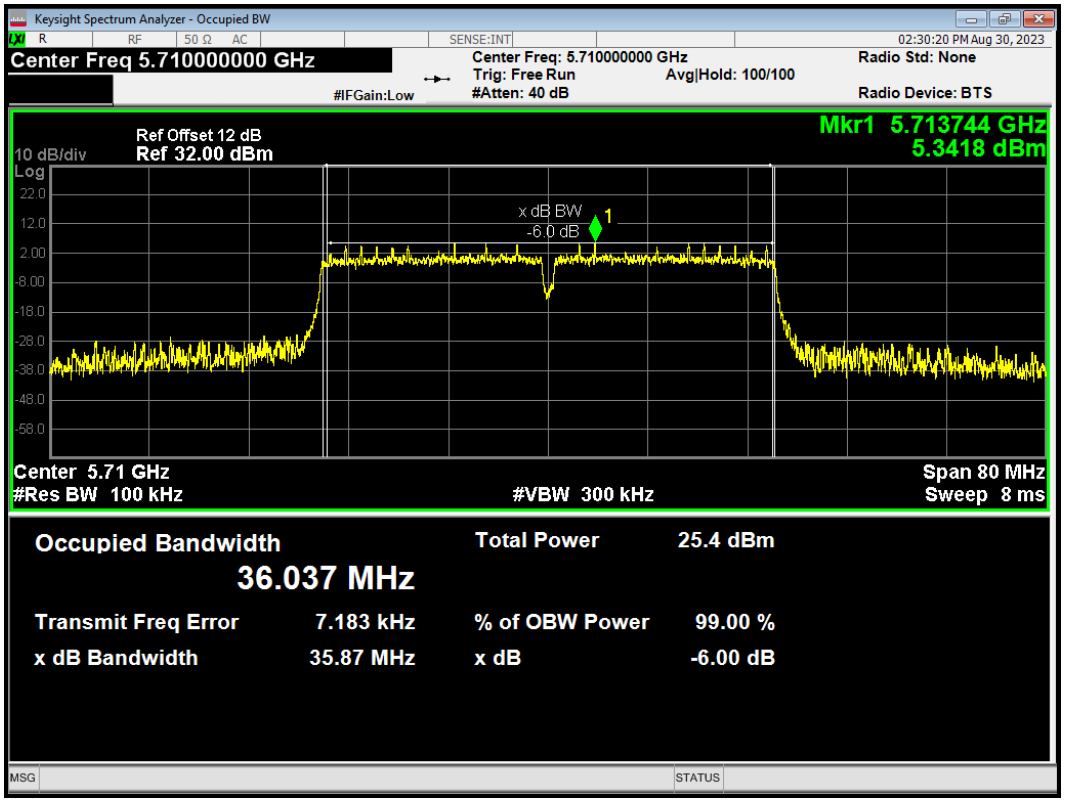
-6dB Bandwidth 802.11n(HT20) 5785MHz



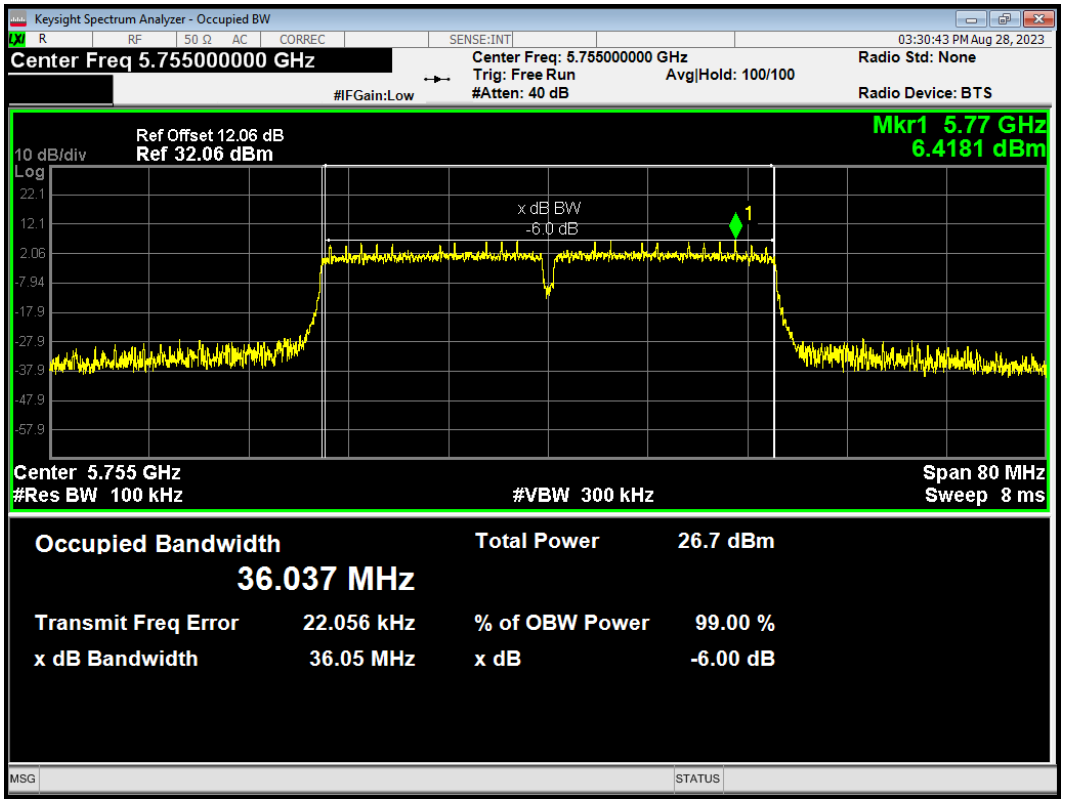
-6dB Bandwidth 802.11n(HT20) 5825MHz



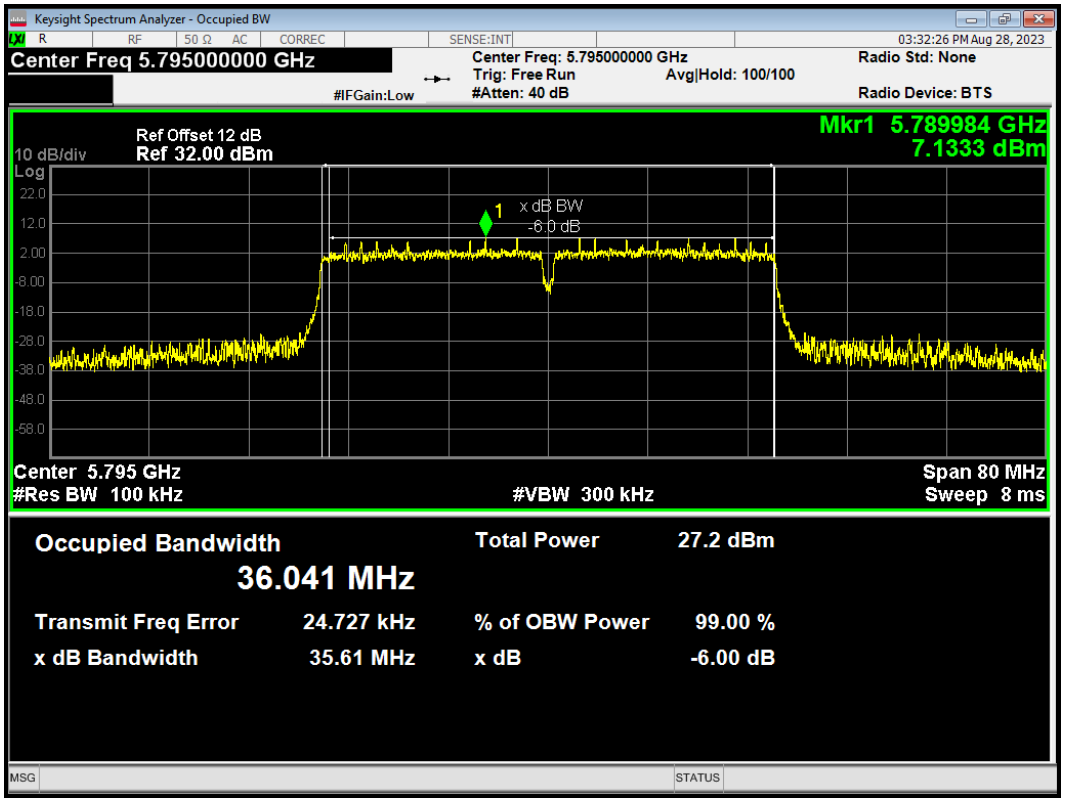
-6dB Bandwidth 802.11n(HT40) 5710MHz



-6dB Bandwidth 802.11n(HT40) 5755MHz



-6dB Bandwidth 802.11n(HT40) 5795MHz



5.2. Average Power Output

Ambient condition

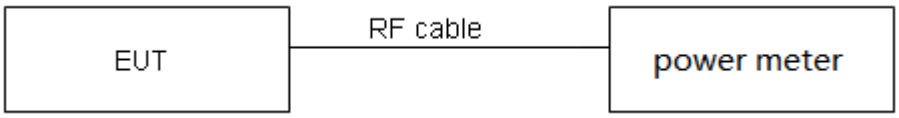
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the average power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum average Conducted Output Power Level Method in KDB789033 for this test

The conducted Power is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test Setup



Limits

Rule FCC Part 15.407(a)(1) / FCC Part 15.407(a) (2) / FCC Part 15.407(a) (3)
(1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 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.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 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 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23

dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. 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.

(iv) For 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 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.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

Test Results

Mode	Duty cycle	Duty cycle correction Factor (dB)
802.11a	0.963	0.16
802.11n HT20	0.961	0.17
802.11n HT40	0.924	0.34
802.11ac VHT20	0.928	0.32
802.11ac VHT40	0.869	0.61
802.11ac VHT80	0.776	1.10
802.11ac VHT160	0.692	1.60
802.11ax HE20	0.911	0.41
802.11ax HE40	0.849	0.71
802.11ax HE80	0.768	1.15
802.11ax HE160	0.693	1.59
Note: when Duty cycle≥0.98, Duty cycle correction Factor not required.		

Test Mode		Channel/ Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit (dBm)
U-NII-2A	802.11a	52/5260	18.638	23.70<24	23.70
		60/5300	18.621	23.70<24	23.70
		64/5320	18.921	23.77<24	23.77
	802.11n HT20	52/5260	19.607	23.92<24	23.92
		60/5300	19.581	23.92<24	23.92
		64/5320	19.716	23.95<24	23.95
	802.11n HT40	54/5270	39.578	26.97>24	24.00
		62/5310	39.276	26.94>24	24.00
	802.11ac VHT20	52/5260	19.393	23.88<24	23.88
		60/5300	19.321	23.86<24	23.86
		64/5320	19.387	23.88<24	23.88
	802.11ac VHT40	54/5270	39.458	26.96>24	24.00
		62/5310	39.197	26.93>24	24.00
	802.11ac VHT80	58/5290	84.390	30.26>24	24.00
	802.11ac VHT160	50/5250	165.593	33.19>24	24.00
	802.11ax HE20	52/5260	20.178	24.05>24	24.00
		60/5300	20.139	24.04>24	24.00
		64/5320	20.153	24.04>24	24.00
	802.11ax HE40	54/5270	40.131	27.03>24	24.00
		62/5310	39.961	27.02>24	24.00
	802.11ax HE80	58/5290	81.394	30.11>24	24.00

	802.11ax HE160	50/5250	163.100	33.12>24	24.00
U-NII-2C	802.11a	100/5500	19.751	23.96<24	23.96
		120/5600	19.910	23.99<24	23.99
		140/5700	18.341	23.63<24	23.63
		144/5720	18.477	23.67<24	23.67
	802.11n HT20	100/5500	19.713	23.95<24	23.95
		120/5600	19.775	23.96<24	23.96
		140/5700	19.574	23.92<24	23.92
		144/5720	19.713	23.95<24	23.95
	802.11n HT40	102/5510	39.318	26.95>24	24.00
		118/5590	39.352	26.95>24	24.00
		134/5670	39.304	26.94>24	24.00
		142/5710	39.531	26.97>24	24.00
	802.11ac VHT20	100/5500	19.435	23.89<24	23.89
		120/5600	19.365	23.87<24	23.87
		140/5700	19.248	23.84<24	23.84
		144/5720	19.359	23.87<24	23.87
	802.11ac VHT40	102/5510	38.685	26.88>24	24.00
		118/5590	38.748	26.88>24	24.00
		134/5670	39.071	26.92>24	24.00
		142/5710	38.868	26.90>24	24.00
	802.11ac VHT80	106/5530	85.249	30.31>24	24.00
		122/5610	85.126	30.30>24	24.00
		138/5690	85.082	30.30>24	24.00
	802.11ac VHT160	114/5570	165.999	33.20>24	24.00
	802.11ax HE20	100/5500	20.145	24.04>24	24.00
		120/5600	20.208	24.06>24	24.00
		140/5700	20.256	24.07>24	24.00
		144/5720	20.217	24.06>24	24.00
	802.11ax HE40	102/5510	40.035	27.02>24	24.00
		118/5590	40.038	27.02>24	24.00
		134/5670	39.967	27.02>24	24.00
		142/5710	39.974	27.02>24	24.00
	802.11ax HE80	106/5530	81.019	30.09>24	24.00
		122/5610	80.828	30.08>24	24.00
		138/5690	80.996	30.08>24	24.00
	802.11ax HE160	114/5570	163.292	33.13>24	24.00
Note: 250mW=24dBm					

Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor

MIMO

AOT

U-NII-1

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	36/5180	20.40	20.56	20.54	20.70	23.64	30.00	PASS
	44/5220	24.60	24.76	24.55	24.71	27.74	30.00	PASS
	48/5240	23.96	24.12	24.19	24.35	27.25	30.00	PASS
802.11n HT20	36/5180	20.74	20.91	21.06	21.23	24.08	30.00	PASS
	44/5220	23.96	24.13	24.24	24.41	27.28	30.00	PASS
	48/5240	23.95	24.12	24.26	24.43	27.29	30.00	PASS
802.11n HT40	38/5190	17.20	17.54	17.41	17.75	20.65	30.00	PASS
	46/5230	25.42	25.76	25.95	26.29	29.04	30.00	PASS
802.11ac VHT20	36/5180	20.65	20.97	20.81	21.13	24.06	30.00	PASS
	44/5220	23.94	24.26	24.05	24.37	27.32	30.00	PASS
	48/5240	23.86	24.18	24.00	24.32	27.26	30.00	PASS
802.11ac VHT40	38/5190	16.94	17.55	17.24	17.85	20.71	30.00	PASS
	46/5230	25.25	25.86	25.53	26.14	29.02	30.00	PASS
802.11ac VHT80	42/5210	17.10	18.20	17.05	18.15	21.19	30.00	PASS
802.11ax HE20	36/5180	21.16	21.57	21.19	21.60	24.60	30.00	PASS
	44/5220	23.85	24.26	23.95	24.36	27.32	30.00	PASS
	48/5240	23.80	24.21	24.02	24.43	27.33	30.00	PASS
802.11ax HE40	38/5190	19.00	19.71	19.00	19.71	22.72	30.00	PASS
	46/5230	25.10	25.81	25.44	26.15	28.99	30.00	PASS
802.11ax HE80	42/5210	17.57	18.72	17.56	18.71	21.72	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.

2. The manufacturer declared that the directional gain = 3.10dBi<6dBi. So the power limit is 30dBm.

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	52/5260	17.83	17.99	18.12	18.28	21.15	23.70	PASS
	60/5300	17.68	17.84	18.09	18.25	21.06	23.70	PASS
	64/5320	17.78	17.94	18.18	18.34	21.16	23.77	PASS
802.11n HT20	52/5260	18.26	18.43	18.51	18.68	21.57	23.92	PASS
	60/5300	18.44	18.61	18.38	18.55	21.59	23.92	PASS
	64/5320	18.42	18.59	18.54	18.71	21.66	23.95	PASS
802.11n HT40	54/5270	20.32	20.66	20.83	21.17	23.93	24.00	PASS
	62/5310	16.63	16.97	16.96	17.30	20.15	24.00	PASS
802.11ac VHT20	52/5260	17.51	17.83	17.92	18.24	21.05	23.88	PASS
	60/5300	17.91	18.23	18.35	18.67	21.47	23.86	PASS
	64/5320	17.71	18.03	17.73	18.05	21.05	23.88	PASS
802.11ac VHT40	54/5270	20.04	20.65	20.60	21.21	23.95	24.00	PASS
	62/5310	16.41	17.02	16.66	17.27	20.16	24.00	PASS
802.11ac VHT80	58/5290	16.73	17.83	16.85	17.95	20.90	24.00	PASS
802.11ac VHT160	50/5250	14.14	15.74	14.16	15.76	18.76	24.00	PASS
802.11ax HE20	52/5260	18.04	18.45	18.18	18.59	21.53	24.00	PASS
	60/5300	18.01	18.42	18.20	18.61	21.53	24.00	PASS
	64/5320	18.15	18.56	18.22	18.63	21.60	24.00	PASS
802.11ax HE40	54/5270	20.23	20.94	20.29	21.00	23.98	24.00	PASS
	62/5310	17.78	18.49	18.00	18.71	21.61	24.00	PASS
802.11ax HE80	58/5290	17.69	18.84	17.90	19.05	21.95	24.00	PASS
802.11ax HE160	50/5250	14.62	16.21	14.84	16.43	19.33	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.

2. The manufacturer declared that the directional gain = 3.10dBi<6dBi.

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	100/5500	17.95	18.11	17.75	17.91	21.02	23.96	PASS
	120/5600	18.50	18.66	17.88	18.04	21.37	23.99	PASS
	140/5700	18.48	18.64	17.77	17.93	21.31	23.63	PASS
	144/5720	17.64	17.80	16.93	17.09	20.47	23.67	PASS
802.11n HT20	100/5500	18.71	18.88	18.54	18.71	21.81	23.95	PASS
	120/5600	18.23	18.40	17.57	17.74	21.10	23.96	PASS
	140/5700	19.00	19.17	18.28	18.45	21.83	23.92	PASS
	144/5720	17.54	17.71	16.94	17.11	20.43	23.95	PASS
802.11n HT40	102/5510	15.36	15.70	15.22	15.56	18.64	24.00	PASS
	118/5590	20.84	21.18	20.04	20.38	23.81	24.00	PASS
	134/5670	18.54	18.88	17.82	18.16	21.54	24.00	PASS
	142/5710	20.82	21.16	20.00	20.34	23.78	24.00	PASS
802.11ac VHT20	100/5500	18.30	18.62	18.12	18.44	21.54	23.89	PASS
	120/5600	18.29	18.61	17.65	17.97	21.31	23.87	PASS
	140/5700	18.39	18.71	17.56	17.88	21.32	23.84	PASS
	144/5720	17.38	17.70	16.68	17.00	20.37	23.87	PASS
802.11ac VHT40	102/5510	15.06	15.67	14.94	15.55	18.62	24.00	PASS
	118/5590	20.41	21.02	19.99	20.60	23.83	24.00	PASS
	134/5670	18.11	18.72	17.61	18.22	21.49	24.00	PASS
	142/5710	20.43	21.04	19.79	20.40	23.74	24.00	PASS
802.11ac VHT80	106/5530	15.47	16.57	15.30	16.40	19.50	24.00	PASS
	122/5610	20.00	21.10	19.22	20.32	23.74	24.00	PASS
	138/5690	20.18	21.28	19.15	20.25	23.80	24.00	PASS
802.11ac VHT160	144/5720	13.44	15.04	13.00	14.60	17.83	24.00	PASS
802.11ax HE20	100/5500	17.69	18.10	17.60	18.01	21.07	24.00	PASS
	120/5600	18.70	19.11	17.89	18.30	21.73	24.00	PASS
	140/5700	18.79	19.20	17.65	18.06	21.68	24.00	PASS
	144/5720	17.65	18.06	16.61	17.02	20.58	24.00	PASS
802.11ax HE40	102/5510	16.86	17.57	16.99	17.70	20.65	24.00	PASS
	118/5590	20.31	21.02	19.94	20.65	23.85	24.00	PASS
	134/5670	18.52	19.23	18.05	18.76	22.01	24.00	PASS
	142/5710	20.34	21.05	19.64	20.35	23.72	24.00	PASS
802.11ax HE80	106/5530	15.59	16.74	15.27	16.42	19.59	24.00	PASS
	122/5610	18.97	20.12	18.63	19.78	22.96	24.00	PASS

	138/5690	20.05	21.20	19.12	20.27	23.77	24.00	PASS
802.11ax HE160	114/5570	14.47	16.06	13.93	15.52	18.81	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$).

2. The manufacturer declared that the directional gain = 2.90dBi<6dBi.

U-NII-3

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	144/5720	11.28	11.44	10.90	11.06	14.26	30.00	PASS
	149/5745	23.64	23.80	23.02	23.18	26.51	30.00	PASS
	157/5785	24.10	24.26	23.67	23.83	27.06	30.00	PASS
	165/5825	24.22	24.38	23.94	24.10	27.25	30.00	PASS
802.11n HT20	144/5720	11.87	12.04	11.08	11.25	14.67	30.00	PASS
	149/5745	23.75	23.92	23.28	23.45	26.70	30.00	PASS
	157/5785	25.39	25.56	24.28	24.45	28.05	30.00	PASS
	165/5825	24.32	24.49	24.21	24.38	27.44	30.00	PASS
802.11n HT40	142/5710	10.28	10.62	9.63	9.97	13.32	30.00	PASS
	151/5755	23.04	23.38	22.54	22.88	26.15	30.00	PASS
	159/5795	24.51	24.85	24.44	24.78	27.82	30.00	PASS
802.11ac VHT20	144/5720	11.16	11.48	11.03	11.35	14.43	30.00	PASS
	149/5745	23.99	24.31	23.56	23.88	27.11	30.00	PASS
	157/5785	25.21	25.53	24.22	24.54	28.08	30.00	PASS
	165/5825	24.42	24.74	24.25	24.57	27.67	30.00	PASS
802.11ac VHT40	142/5710	10.00	10.61	9.34	9.95	13.30	30.00	PASS
	151/5755	23.30	23.91	22.81	23.42	26.68	30.00	PASS
	159/5795	24.42	25.03	24.12	24.73	27.90	30.00	PASS
802.11ac VHT80	138/5690	6.80	7.90	5.81	6.91	10.44	30.00	PASS
	155/5775	20.74	21.84	20.88	21.98	24.92	30.00	PASS
802.11ax HE20	144/5720	12.10	12.51	11.80	12.21	15.37	30.00	PASS
	149/5745	23.85	24.26	23.21	23.62	26.96	30.00	PASS
	157/5785	24.30	24.71	23.87	24.28	27.51	30.00	PASS
	165/5825	24.45	24.86	24.15	24.56	27.72	30.00	PASS
802.11ax HE40	142/5710	10.38	11.09	9.96	10.67	13.90	30.00	PASS
	151/5755	23.04	23.75	22.42	23.13	26.46	30.00	PASS
	159/5795	24.75	25.46	23.95	24.66	28.09	30.00	PASS
802.11ax	138/5690	6.60	7.75	6.38	7.53	10.65	30.00	PASS

HE80	155/5775	19.88	21.03	20.21	21.36	24.21	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.
2. The manufacturer declared that the directional gain = 2.90dBi<6dBi. So the power limit is 30dBm.

Beamforming

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	36/5180	20.36	20.52	20.26	20.42	23.48	30.00	PASS
	44/5220	23.87	24.03	24.01	24.17	27.11	30.00	PASS
	48/5240	23.82	23.98	24.05	24.21	27.11	30.00	PASS
802.11n HT20	36/5180	20.71	20.88	20.77	20.94	23.92	30.00	PASS
	44/5220	23.75	23.92	24.04	24.21	27.08	30.00	PASS
	48/5240	23.67	23.84	24.12	24.29	27.08	30.00	PASS
802.11n HT40	38/5190	17.15	17.49	17.09	17.43	20.47	30.00	PASS
	46/5230	25.12	25.46	25.83	26.17	28.84	30.00	PASS
802.11ac VHT20	36/5180	20.54	20.86	20.66	20.98	23.93	30.00	PASS
	44/5220	23.66	23.98	23.91	24.23	27.12	30.00	PASS
	48/5240	23.52	23.84	23.95	24.27	27.07	30.00	PASS
802.11ac VHT40	38/5190	16.94	17.55	16.97	17.58	20.57	30.00	PASS
	46/5230	25.16	25.77	25.34	25.95	28.87	30.00	PASS
802.11ac VHT80	42/5210	17.03	18.13	16.75	17.85	21.00	30.00	PASS
802.11ax HE20	36/5180	20.94	21.35	21.02	21.43	24.40	30.00	PASS
	44/5220	23.66	24.07	23.84	24.25	27.17	30.00	PASS
	48/5240	23.46	23.87	23.86	24.27	27.08	30.00	PASS
802.11ax HE40	38/5190	18.73	19.44	18.76	19.47	22.46	30.00	PASS
	46/5230	25.03	25.74	25.33	26.04	28.90	30.00	PASS
802.11ax HE80	42/5210	17.28	18.43	17.42	18.57	21.51	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.
2. The manufacturer declared that the directional gain = 3.10dBi<6dBi. So the power limit is 30dBm.

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	52/5260	17.64	17.80	18.04	18.20	21.02	23.70	PASS
	60/5300	17.57	17.73	18.02	18.18	20.97	23.70	PASS
	64/5320	17.60	17.76	18.21	18.37	21.09	23.77	PASS
802.11n HT20	52/5260	17.91	18.08	18.56	18.73	21.42	23.92	PASS
	60/5300	18.00	18.17	18.55	18.72	21.46	23.92	PASS
	64/5320	17.97	18.14	18.60	18.77	21.47	23.95	PASS
802.11n HT40	54/5270	20.05	20.39	20.78	21.12	23.78	24.00	PASS
	62/5310	16.36	16.70	16.99	17.33	20.04	24.00	PASS
802.11ac VHT20	52/5260	17.29	17.61	17.80	18.12	20.88	23.88	PASS
	60/5300	17.91	18.23	18.29	18.61	21.43	23.86	PASS
	64/5320	17.49	17.81	17.77	18.09	20.96	23.88	PASS
802.11ac VHT40	54/5270	19.92	20.53	20.56	21.17	23.87	24.00	PASS
	62/5310	16.28	16.89	16.69	17.30	20.11	24.00	PASS
802.11ac VHT80	58/5290	16.53	17.63	16.95	18.05	20.86	24.00	PASS
802.11ac VHT160	50/5250	13.95	15.55	14.27	15.87	18.72	24.00	PASS
802.11ax HE20	52/5260	17.84	18.25	18.16	18.57	21.42	24.00	PASS
	60/5300	17.87	18.28	18.11	18.52	21.41	24.00	PASS
	64/5320	17.80	18.21	18.25	18.66	21.45	24.00	PASS
802.11ax HE40	54/5270	19.83	20.54	20.46	21.17	23.87	24.00	PASS
	62/5310	17.55	18.26	17.98	18.69	21.49	24.00	PASS
802.11ax HE80	58/5290	17.53	18.68	17.96	19.11	21.91	24.00	PASS
802.11ax HE160	50/5250	14.49	16.08	14.79	16.38	19.25	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.

2. The manufacturer declared that the directional gain = 3.10dBi<6dBi.

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	100/5500	17.77	17.93	17.56	17.72	20.83	23.96	PASS
	120/5600	18.17	18.33	17.67	17.83	21.10	23.99	PASS
	140/5700	18.14	18.30	17.55	17.71	21.03	23.63	PASS
	144/5720	17.20	17.36	16.64	16.80	20.09	23.67	PASS
802.11n HT20	100/5500	18.10	18.27	17.98	18.15	21.22	23.95	PASS
	120/5600	18.11	18.28	17.44	17.61	20.97	23.96	PASS
	140/5700	16.01	16.18	15.51	15.68	18.95	23.92	PASS
	144/5720	14.88	15.05	14.79	14.96	18.02	23.95	PASS
802.11n HT40	102/5510	15.18	15.52	14.90	15.24	18.39	24.00	PASS
	118/5590	20.34	20.68	19.92	20.26	23.49	24.00	PASS
	134/5670	18.29	18.63	17.41	17.75	21.22	24.00	PASS
	142/5710	20.26	20.60	19.74	20.08	23.36	24.00	PASS
802.11ac VHT20	100/5500	18.16	18.48	17.76	18.08	21.30	23.89	PASS
	120/5600	17.90	18.22	17.44	17.76	21.01	23.87	PASS
	140/5700	17.88	18.20	17.30	17.62	20.93	23.84	PASS
	144/5720	16.78	17.10	16.36	16.68	19.91	23.87	PASS
802.11ac VHT40	102/5510	14.99	15.60	14.60	15.21	18.42	24.00	PASS
	118/5590	20.18	20.79	19.71	20.32	23.57	24.00	PASS
	134/5670	17.90	18.51	17.19	17.80	21.18	24.00	PASS
	142/5710	19.88	20.49	19.46	20.07	23.30	24.00	PASS
802.11ac VHT80	106/5530	15.38	16.48	15.30	16.40	19.45	24.00	PASS
	122/5610	19.78	20.88	19.28	20.38	23.65	24.00	PASS
	138/5690	19.70	20.80	19.16	20.26	23.55	24.00	PASS
802.11ax HE160	114/5570	13.44	15.04	12.61	14.21	17.66	24.00	PASS
802.11ax HE20	100/5500	17.64	18.05	17.13	17.54	20.81	24.00	PASS
	120/5600	18.42	18.83	17.86	18.27	21.57	24.00	PASS
	140/5700	18.33	18.74	17.73	18.14	21.46	24.00	PASS
	144/5720	17.14	17.55	16.70	17.11	20.35	24.00	PASS
802.11ax HE40	102/5510	16.90	17.61	16.51	17.22	20.43	24.00	PASS
	118/5590	20.15	20.86	19.70	20.41	23.65	24.00	PASS
	134/5670	18.39	19.10	17.75	18.46	21.80	24.00	PASS
	142/5710	19.85	20.56	19.44	20.15	23.37	24.00	PASS
802.11ax HE80	106/5530	15.32	16.47	15.14	16.29	19.39	24.00	PASS
	122/5610	18.77	19.92	18.33	19.48	22.71	24.00	PASS
	138/5690	19.70	20.85	19.16	20.31	23.60	24.00	PASS
802.11ax HE160	114/5570	14.27	15.86	13.52	15.11	18.51	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}$).
2. The manufacturer declared that the directional gain = 2.90dBi<6dBi.

U-NII-3

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	144/5720	10.96	11.12	10.38	10.54	13.85	30.00	PASS
	149/5745	23.53	23.69	22.82	22.98	26.36	30.00	PASS
	157/5785	23.91	24.07	23.19	23.35	26.74	30.00	PASS
	165/5825	23.68	23.84	23.27	23.43	26.65	30.00	PASS
802.11n HT20	144/5720	11.10	11.27	10.96	11.13	14.21	30.00	PASS
	149/5745	23.96	24.13	23.11	23.28	26.73	30.00	PASS
	157/5785	24.62	24.79	23.88	24.05	27.45	30.00	PASS
	165/5825	23.88	24.05	23.24	23.41	26.75	30.00	PASS
802.11n HT40	142/5710	9.67	10.01	9.65	9.99	13.01	30.00	PASS
	151/5755	23.03	23.37	22.14	22.48	25.96	30.00	PASS
	159/5795	24.24	24.58	23.45	23.79	27.21	30.00	PASS
802.11ac VHT20	144/5720	11.15	11.47	10.65	10.97	14.24	30.00	PASS
	149/5745	23.56	23.88	22.74	23.06	26.49	30.00	PASS
	157/5785	24.46	24.78	23.57	23.89	27.37	30.00	PASS
	165/5825	23.97	24.29	23.44	23.76	27.04	30.00	PASS
802.11ac VHT40	142/5710	9.55	10.16	9.63	10.24	13.21	30.00	PASS
	151/5755	23.00	23.61	22.03	22.64	26.16	30.00	PASS
	159/5795	24.17	24.78	23.79	24.40	27.60	30.00	PASS
802.11ac VHT80	138/5690	5.95	7.05	5.89	6.99	10.03	30.00	PASS
	155/5775	20.66	21.76	20.54	21.64	24.71	30.00	PASS
802.11ax HE20	144/5720	11.81	12.22	11.36	11.77	15.01	30.00	PASS
	149/5745	23.15	23.56	22.32	22.73	26.18	30.00	PASS
	157/5785	23.83	24.24	23.02	23.43	26.87	30.00	PASS
	165/5825	24.30	24.71	24.00	24.41	27.58	30.00	PASS
802.11ax HE40	142/5710	9.94	10.65	10.06	10.77	13.72	30.00	PASS
	151/5755	22.95	23.66	22.52	23.23	26.46	30.00	PASS
	159/5795	24.30	25.01	24.16	24.87	27.95	30.00	PASS
802.11ax HE80	138/5690	6.25	7.40	5.80	6.95	10.19	30.00	PASS
	155/5775	19.68	20.83	19.94	21.09	23.97	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}+10^{(\text{Power antenna2 in dBm/10})}$).
2. The manufacturer declared that the directional gain = 2.90dBi<6dBi. So the power limit is 30dBm.

DZZ

U-NII-1

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	36/5180	20.90	21.06	21.11	21.27	24.18	30.00	PASS
	44/5220	24.60	24.76	24.55	24.71	27.74	30.00	PASS
	48/5240	23.96	24.12	24.19	24.35	27.25	30.00	PASS
802.11n HT20	36/5180	24.03	24.20	24.16	24.33	27.28	30.00	PASS
	44/5220	23.96	24.13	24.24	24.41	27.28	30.00	PASS
	48/5240	23.95	24.12	24.26	24.43	27.29	30.00	PASS
802.11n HT40	38/5190	18.33	18.67	18.40	18.74	21.72	30.00	PASS
	46/5230	25.42	25.76	25.95	26.29	29.04	30.00	PASS
802.11ac VHT20	36/5180	23.78	24.10	23.99	24.31	27.22	30.00	PASS
	44/5220	23.94	24.26	24.05	24.37	27.32	30.00	PASS
	48/5240	23.86	24.18	24.00	24.32	27.26	30.00	PASS
802.11ac VHT40	38/5190	17.93	18.54	18.21	18.82	21.69	30.00	PASS
	46/5230	25.25	25.86	25.53	26.14	29.02	30.00	PASS
802.11ac VHT80	42/5210	18.04	19.14	18.20	19.30	22.23	30.00	PASS
802.11ax HE20	36/5180	21.71	22.12	21.82	22.23	25.19	30.00	PASS
	44/5220	23.85	24.26	23.95	24.36	27.32	30.00	PASS
	48/5240	23.80	24.21	24.02	24.43	27.33	30.00	PASS
802.11ax HE40	38/5190	18.49	19.20	18.49	19.20	22.21	30.00	PASS
	46/5230	25.10	25.81	25.44	26.15	28.99	30.00	PASS
802.11ax HE80	42/5210	17.64	18.79	17.54	18.69	21.75	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.

2. The manufacturer declared that the directional gain = 2.64dBi<6dBi. So the power limit is 30dBm.

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	52/5260	17.83	17.99	18.12	18.28	21.15	23.70	PASS
	60/5300	17.68	17.84	18.09	18.25	21.06	23.70	PASS
	64/5320	17.78	17.94	18.18	18.34	21.16	23.77	PASS
802.11n HT20	52/5260	18.26	18.43	18.51	18.68	21.57	23.92	PASS
	60/5300	18.44	18.61	18.38	18.55	21.59	23.92	PASS
	64/5320	18.42	18.59	18.54	18.71	21.66	23.95	PASS
802.11n HT40	54/5270	20.32	20.66	20.83	21.17	23.93	24.00	PASS
	62/5310	17.52	17.86	17.76	18.10	20.99	24.00	PASS
802.11ac VHT20	52/5260	17.51	17.83	17.92	18.24	21.05	23.88	PASS
	60/5300	17.91	18.23	18.35	18.67	21.47	23.86	PASS
	64/5320	17.71	18.03	17.73	18.05	21.05	23.88	PASS
802.11ac VHT40	54/5270	20.04	20.65	20.60	21.21	23.95	24.00	PASS
	62/5310	17.40	18.01	17.48	18.09	21.06	24.00	PASS
802.11ac VHT80	58/5290	19.13	20.23	19.25	20.35	23.30	24.00	PASS
802.11ac VHT160	50/5250	15.98	17.58	15.92	17.52	20.56	24.00	PASS
802.11ax HE20	52/5260	18.04	18.45	18.18	18.59	21.53	24.00	PASS
	60/5300	18.01	18.42	18.20	18.61	21.53	24.00	PASS
	64/5320	18.15	18.56	18.22	18.63	21.60	24.00	PASS
802.11ax HE40	54/5270	20.23	20.94	20.29	21.00	23.98	24.00	PASS
	62/5310	17.42	18.13	17.40	18.11	21.13	24.00	PASS
802.11ax HE80	58/5290	18.11	19.26	18.19	19.34	22.31	24.00	PASS
802.11ax HE160	50/5250	16.12	17.71	16.07	17.66	20.69	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.

2. The manufacturer declared that the directional gain = 2.64dBi<6dBi.

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	100/5500	17.95	18.11	17.75	17.91	21.02	23.96	PASS
	120/5600	18.50	18.66	17.88	18.04	21.37	23.99	PASS
	140/5700	18.48	18.64	17.77	17.93	21.31	23.63	PASS
	144/5720	17.64	17.80	16.93	17.09	20.47	23.67	PASS
802.11n HT20	100/5500	18.71	18.88	18.54	18.71	21.81	23.95	PASS
	120/5600	18.23	18.40	17.57	17.74	21.10	23.96	PASS
	140/5700	19.00	19.17	18.28	18.45	21.83	23.92	PASS
	144/5720	17.54	17.71	16.94	17.11	20.43	23.95	PASS
802.11n HT40	102/5510	16.43	16.77	16.07	16.41	19.60	24.00	PASS
	118/5590	20.84	21.18	20.04	20.38	23.81	24.00	PASS
	134/5670	20.33	20.67	19.64	19.98	23.35	24.00	PASS
	142/5710	20.82	21.16	20.00	20.34	23.78	24.00	PASS
802.11ac VHT20	100/5500	18.30	18.62	18.12	18.44	21.54	23.89	PASS
	120/5600	18.29	18.61	17.65	17.97	21.31	23.87	PASS
	140/5700	18.39	18.71	17.56	17.88	21.32	23.84	PASS
	144/5720	17.38	17.70	16.68	17.00	20.37	23.87	PASS
802.11ac VHT40	102/5510	16.11	16.72	15.89	16.50	19.62	24.00	PASS
	118/5590	20.41	21.02	19.99	20.60	23.83	24.00	PASS
	134/5670	19.98	20.59	19.49	20.10	23.36	24.00	PASS
	142/5710	20.43	21.04	19.79	20.40	23.74	24.00	PASS
802.11ac VHT80	106/5530	18.53	19.63	18.44	19.54	22.60	24.00	PASS
	122/5610	20.00	21.10	19.22	20.32	23.74	24.00	PASS
	138/5690	20.18	21.28	19.15	20.25	23.80	24.00	PASS
802.11ac VHT160	144/5720	16.74	18.34	16.47	18.07	21.22	24.00	PASS
802.11ax HE20	100/5500	18.28	18.69	18.04	18.45	21.58	24.00	PASS
	120/5600	18.70	19.11	17.89	18.30	21.73	24.00	PASS
	140/5700	18.79	19.20	17.65	18.06	21.68	24.00	PASS
	144/5720	17.65	18.06	16.61	17.02	20.58	24.00	PASS
802.11ax HE40	102/5510	16.97	17.68	16.91	17.62	20.66	24.00	PASS
	118/5590	20.31	21.02	19.94	20.65	23.85	24.00	PASS
	134/5670	18.89	19.60	18.57	19.28	22.45	24.00	PASS
	142/5710	20.34	21.05	19.64	20.35	23.72	24.00	PASS
802.11ax HE80	106/5530	17.49	18.64	17.43	18.58	21.62	24.00	PASS
	122/5610	19.93	21.08	19.25	20.40	23.76	24.00	PASS

	138/5690	20.05	21.20	19.12	20.27	23.77	24.00	PASS
802.11ax HE160	114/5570	16.33	17.92	16.06	17.65	20.79	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$).
2. The manufacturer declared that the directional gain = 2.84dBi<6dBi.

U-NII-3

Test Mode	Channel/ Frequency (MHz)	MIMO Antenna 1		MIMO Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	144/5720	11.28	11.44	10.90	11.06	14.26	30.00	PASS
	149/5745	23.64	23.80	23.02	23.18	26.51	30.00	PASS
	157/5785	24.10	24.26	23.67	23.83	27.06	30.00	PASS
	165/5825	24.22	24.38	23.94	24.10	27.25	30.00	PASS
802.11n HT20	144/5720	11.87	12.04	11.08	11.25	14.67	30.00	PASS
	149/5745	23.75	23.92	23.28	23.45	26.70	30.00	PASS
	157/5785	25.39	25.56	24.28	24.45	28.05	30.00	PASS
	165/5825	24.32	24.49	24.21	24.38	27.44	30.00	PASS
802.11n HT40	142/5710	10.28	10.62	9.63	9.97	13.32	30.00	PASS
	151/5755	23.04	23.38	22.54	22.88	26.15	30.00	PASS
	159/5795	24.51	24.85	24.44	24.78	27.82	30.00	PASS
802.11ac VHT20	144/5720	11.16	11.48	11.03	11.35	14.43	30.00	PASS
	149/5745	23.99	24.31	23.56	23.88	27.11	30.00	PASS
	157/5785	25.21	25.53	24.22	24.54	28.08	30.00	PASS
	165/5825	24.42	24.74	24.25	24.57	27.67	30.00	PASS
802.11ac VHT40	142/5710	10.00	10.61	9.34	9.95	13.30	30.00	PASS
	151/5755	23.30	23.91	22.81	23.42	26.68	30.00	PASS
	159/5795	24.42	25.03	24.12	24.73	27.90	30.00	PASS
802.11ac VHT80	138/5690	6.80	7.90	5.81	6.91	10.44	30.00	PASS
	155/5775	20.74	21.84	20.88	21.98	24.92	30.00	PASS
802.11ax HE20	144/5720	12.10	12.51	11.80	12.21	15.37	30.00	PASS
	149/5745	23.85	24.26	23.21	23.62	26.96	30.00	PASS
	157/5785	24.30	24.71	23.87	24.28	27.51	30.00	PASS
	165/5825	24.45	24.86	24.15	24.56	27.72	30.00	PASS
802.11ax HE40	142/5710	10.38	11.09	9.96	10.67	13.90	30.00	PASS
	151/5755	23.04	23.75	22.42	23.13	26.46	30.00	PASS
	159/5795	24.75	25.46	23.95	24.66	28.09	30.00	PASS
802.11ax	138/5690	6.60	7.75	6.38	7.53	10.65	30.00	PASS

HE80	155/5775	19.88	21.03	20.21	21.36	24.21	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.
2. The manufacturer declared that the directional gain = 2.76dBi<6dBi. So the power limit is 30dBm.

Beamforming

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	36/5180	20.79	20.95	20.85	21.01	23.99	30.00	PASS
	44/5220	23.75	23.91	24.08	24.24	27.09	30.00	PASS
	48/5240	23.70	23.86	24.23	24.39	27.14	30.00	PASS
802.11n HT20	36/5180	23.71	23.88	24.09	24.26	27.08	30.00	PASS
	44/5220	23.66	23.83	24.20	24.37	27.12	30.00	PASS
	48/5240	23.58	23.75	24.15	24.32	27.05	30.00	PASS
802.11n HT40	38/5190	18.16	18.50	18.09	18.43	21.48	30.00	PASS
	46/5230	25.13	25.47	26.06	26.40	28.97	30.00	PASS
802.11ac VHT20	36/5180	23.45	23.77	24.06	24.38	27.09	30.00	PASS
	44/5220	23.48	23.80	24.03	24.35	27.09	30.00	PASS
	48/5240	23.37	23.69	24.03	24.35	27.04	30.00	PASS
802.11ac VHT40	38/5190	17.96	18.57	17.95	18.56	21.57	30.00	PASS
	46/5230	24.98	25.59	25.79	26.40	29.03	30.00	PASS
802.11ac VHT80	42/5210	17.98	19.08	17.83	18.93	22.01	30.00	PASS
802.11ax HE20	36/5180	21.54	21.95	21.53	21.94	24.95	30.00	PASS
	44/5220	23.60	24.01	24.03	24.44	27.24	30.00	PASS
	48/5240	23.43	23.84	24.01	24.42	27.15	30.00	PASS
802.11ax HE40	38/5190	18.21	18.92	18.44	19.15	22.05	30.00	PASS
	46/5230	24.85	25.56	25.71	26.42	29.02	30.00	PASS
802.11ax HE80	42/5210	17.33	18.48	17.42	18.57	21.54	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =$10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.
2. The manufacturer declared that the directional gain = 2.64dBi<6dBi. So the power limit is 30dBm.

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	52/5260	17.64	17.80	18.04	18.20	21.02	23.70	PASS
	60/5300	17.57	17.73	18.02	18.18	20.97	23.70	PASS
	64/5320	17.60	17.76	18.21	18.37	21.09	23.77	PASS
802.11n HT20	52/5260	17.91	18.08	18.56	18.73	21.42	23.92	PASS
	60/5300	18.00	18.17	18.55	18.72	21.46	23.92	PASS
	64/5320	17.97	18.14	18.60	18.77	21.47	23.95	PASS
802.11n HT40	54/5270	20.05	20.39	20.78	21.12	23.78	24.00	PASS
	62/5310	17.63	17.97	17.76	18.10	21.05	24.00	PASS
802.11ac VHT20	52/5260	17.29	17.61	17.80	18.12	20.88	23.88	PASS
	60/5300	17.91	18.23	18.29	18.61	21.43	23.86	PASS
	64/5320	17.49	17.81	17.77	18.09	20.96	23.88	PASS
802.11ac VHT40	54/5270	19.92	20.53	20.56	21.17	23.87	24.00	PASS
	62/5310	17.26	17.87	17.62	18.23	21.06	24.00	PASS
802.11ac VHT80	58/5290	18.98	20.08	19.51	20.61	23.37	24.00	PASS
802.11ac VHT160	50/5250	15.77	17.37	16.29	17.89	20.65	24.00	PASS
802.11ax HE20	52/5260	17.84	18.25	18.16	18.57	21.42	24.00	PASS
	60/5300	17.87	18.28	18.11	18.52	21.41	24.00	PASS
	64/5320	17.80	18.21	18.25	18.66	21.45	24.00	PASS
802.11ax HE40	54/5270	19.83	20.54	20.46	21.17	23.87	24.00	PASS
	62/5310	17.04	17.75	17.49	18.20	20.99	24.00	PASS
802.11ax HE80	58/5290	17.96	19.11	18.49	19.64	22.40	24.00	PASS
802.11ax HE160	50/5250	15.85	17.44	16.29	17.88	20.68	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power $=10\log(10^{(\text{Power antenna1 in dBm}/10)}+10^{(\text{Power antenna2 in dBm}/10)})$.

2. The manufacturer declared that the directional gain = 2.64dBi<6dBi.

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	100/5500	17.77	17.93	17.56	17.72	20.83	23.96	PASS
	120/5600	18.17	18.33	17.67	17.83	21.10	23.99	PASS
	140/5700	18.14	18.30	17.55	17.71	21.03	23.63	PASS
	144/5720	17.20	17.36	16.64	16.80	20.09	23.67	PASS
802.11n HT20	100/5500	18.10	18.27	17.98	18.15	21.22	23.95	PASS
	120/5600	18.11	18.28	17.44	17.61	20.97	23.96	PASS
	140/5700	16.01	16.18	15.51	15.68	18.95	23.92	PASS
	144/5720	14.88	15.05	14.79	14.96	18.02	23.95	PASS
802.11n HT40	102/5510	16.32	16.66	15.83	16.17	19.44	24.00	PASS
	118/5590	20.34	20.68	19.92	20.26	23.49	24.00	PASS
	134/5670	20.02	20.36	19.52	19.86	23.13	24.00	PASS
	142/5710	20.26	20.60	19.74	20.08	23.36	24.00	PASS
802.11ac VHT20	100/5500	18.16	18.48	17.76	18.08	21.30	23.89	PASS
	120/5600	17.90	18.22	17.44	17.76	21.01	23.87	PASS
	140/5700	17.88	18.20	17.30	17.62	20.93	23.84	PASS
	144/5720	16.78	17.10	16.36	16.68	19.91	23.87	PASS
802.11ac VHT40	102/5510	15.84	16.45	15.32	15.93	19.21	24.00	PASS
	118/5590	20.18	20.79	19.71	20.32	23.57	24.00	PASS
	134/5670	19.88	20.49	19.23	19.84	23.19	24.00	PASS
	142/5710	19.88	20.49	19.46	20.07	23.30	24.00	PASS
802.11ac VHT80	106/5530	18.46	19.56	18.07	19.17	22.38	24.00	PASS
	122/5610	19.78	20.88	19.28	20.38	23.65	24.00	PASS
	138/5690	19.70	20.80	19.16	20.26	23.55	24.00	PASS
802.11ax HE160	114/5570	16.73	18.33	16.02	17.62	21.00	24.00	PASS
802.11ax HE20	100/5500	18.01	18.42	17.52	17.93	21.19	24.00	PASS
	120/5600	18.42	18.83	17.86	18.27	21.57	24.00	PASS
	140/5700	18.33	18.74	17.73	18.14	21.46	24.00	PASS
	144/5720	17.14	17.55	16.70	17.11	20.35	24.00	PASS
802.11ax HE40	102/5510	16.71	17.42	16.29	17.00	20.22	24.00	PASS
	118/5590	20.15	20.86	19.70	20.41	23.65	24.00	PASS
	134/5670	18.81	19.52	18.09	18.80	22.18	24.00	PASS
	142/5710	19.85	20.56	19.44	20.15	23.37	24.00	PASS
802.11ax HE80	106/5530	17.29	18.44	16.94	18.09	21.28	24.00	PASS
	122/5610	19.77	20.92	19.25	20.40	23.68	24.00	PASS
	138/5690	19.70	20.85	19.16	20.31	23.60	24.00	PASS
802.11ax HE160	114/5570	16.24	17.83	15.50	17.09	20.48	24.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$).
2. The manufacturer declared that the directional gain = 2.84dBi<6dBi.

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Test Mode	Channel/ Frequency (MHz)	Beamforming Antenna 1		Beamforming Antenna 2		Total Power (dBm)	Limit (dBm)	Conclusion
		Average Power Measured (dBm)	Average Power with duty factor (dBm)	Average Power Measured (dBm)	Average Power with duty factor (dBm)			
802.11a	144/5720	10.96	11.12	10.38	10.54	13.85	30.00	PASS
	149/5745	23.53	23.69	22.82	22.98	26.36	30.00	PASS
	157/5785	23.91	24.07	23.19	23.35	26.74	30.00	PASS
	165/5825	23.68	23.84	23.27	23.43	26.65	30.00	PASS
802.11n HT20	144/5720	11.10	11.27	10.96	11.13	14.21	30.00	PASS
	149/5745	23.96	24.13	23.11	23.28	26.73	30.00	PASS
	157/5785	24.62	24.79	23.88	24.05	27.45	30.00	PASS
	165/5825	23.88	24.05	23.24	23.41	26.75	30.00	PASS
802.11n HT40	142/5710	9.67	10.01	9.65	9.99	13.01	30.00	PASS
	151/5755	23.03	23.37	22.14	22.48	25.96	30.00	PASS
	159/5795	24.24	24.58	23.45	23.79	27.21	30.00	PASS
802.11ac VHT20	144/5720	11.15	11.47	10.65	10.97	14.24	30.00	PASS
	149/5745	23.56	23.88	22.74	23.06	26.49	30.00	PASS
	157/5785	24.46	24.78	23.57	23.89	27.37	30.00	PASS
	165/5825	23.97	24.29	23.44	23.76	27.04	30.00	PASS
802.11ac VHT40	142/5710	9.55	10.16	9.63	10.24	13.21	30.00	PASS
	151/5755	23.00	23.61	22.03	22.64	26.16	30.00	PASS
	159/5795	24.17	24.78	23.79	24.40	27.60	30.00	PASS
802.11ac VHT80	138/5690	5.95	7.05	5.89	6.99	10.03	30.00	PASS
	155/5775	20.66	21.76	20.54	21.64	24.71	30.00	PASS
802.11ax HE20	144/5720	11.81	12.22	11.36	11.77	15.01	30.00	PASS
	149/5745	23.15	23.56	22.32	22.73	26.18	30.00	PASS
	157/5785	23.83	24.24	23.02	23.43	26.87	30.00	PASS
	165/5825	24.30	24.71	24.00	24.41	27.58	30.00	PASS
802.11ax HE40	142/5710	9.94	10.65	10.06	10.77	13.72	30.00	PASS
	151/5755	22.95	23.66	22.52	23.23	26.46	30.00	PASS
	159/5795	24.30	25.01	24.16	24.87	27.95	30.00	PASS
802.11ax HE80	138/5690	6.25	7.40	5.80	6.95	10.19	30.00	PASS
	155/5775	19.68	20.83	19.94	21.09	23.97	30.00	PASS

Note: 1. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),
The Total Power =10log($10^{(\text{Power antenna1 in dBm/10})}$+$10^{(\text{Power antenna2 in dBm/10})}$).
2. The manufacturer declared that the directional gain = 2.76dBi<6dBi. So the power limit is 30dBm.

5.3. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10°C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15°C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
c) Measure the frequency at each of the frequencies specified in 5.6.
d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Measurement Uncertainty

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

Test Results

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
12	-20	5199.997436	5199.990069	5199.988896	5199.982926
12	-10	5199.991368	5199.989055	5199.979375	5199.978906
12	0	5199.985900	5199.986473	5199.972116	5199.975335
12	10	5199.982622	5199.985459	5199.965588	5199.969499
12	20	5199.976202	5199.980155	5199.958644	5199.968015
12	30	5199.974249	5199.971629	5199.948685	5199.960975
12	40	5199.966806	5199.964757	5199.940455	5199.954867
12	50	5199.964607	5199.956851	5199.932191	5199.954646
10	20	5199.961933	5199.952212	5199.923629	5199.948985
14	20	5199.957873	5199.949021	5199.914721	5199.947743
Max. ΔMHz		-0.042127	-0.050979	-0.085279	-0.052257
PPM		-8.101346	-9.803654	-16.399808	-10.049423

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
12	-20	5300.002292	5300.000190	5299.994793	5299.988501
12	-10	5299.998917	5299.997847	5299.991309	5299.980211
12	0	5299.997722	5299.990183	5299.989110	5299.974599
12	10	5299.992003	5299.985713	5299.985512	5299.969083
12	20	5299.989135	5299.979461	5299.981893	5299.966032
12	30	5299.987317	5299.977314	5299.973663	5299.961513
12	40	5299.985443	5299.968502	5299.967896	5299.956052
12	50	5299.983655	5299.960595	5299.965442	5299.954872
10	20	5299.975825	5299.956219	5299.963428	5299.950378
14	20	5299.968284	5299.954158	5299.956649	5299.944820
Max. ΔMHz		-0.031716	-0.045842	-0.043351	-0.055180
PPM		-5.984151	-8.649434	-8.179434	-10.411321

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
12	-20	5580.006134	5580.005829	5580.005826	5580.000419
12	-10	5580.000602	5580.005565	5580.004789	5579.999627
12	0	5579.991871	5580.000712	5580.003518	5579.990085
12	10	5579.987581	5579.999080	5579.997466	5579.984426
12	20	5579.987309	5579.993345	5579.991553	5579.978127
12	30	5579.987278	5579.991366	5579.988409	5579.977984
12	40	5579.985550	5579.983377	5579.981963	5579.970308
12	50	5579.984079	5579.977360	5579.977902	5579.970227
10	20	5579.983306	5579.968029	5579.970897	5579.967593
14	20	5579.979064	5579.964084	5579.964331	5579.960086
Max. ΔMHz		-0.020936	-0.035916	-0.035669	-0.039914
PPM		-3.751971	-6.436559	-6.392294	-7.153047

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
12	0	5785.005713	5785.001115	5784.991280	5784.989538
12	5	5784.999366	5784.995132	5784.987094	5784.985920
12	10	5784.996038	5784.988698	5784.986123	5784.980352
12	15	5784.993613	5784.986680	5784.985239	5784.970839
12	20	5784.991442	5784.980161	5784.978150	5784.965919
12	25	5784.984299	5784.978420	5784.971659	5784.957427
12	30	5784.981621	5784.977435	5784.970906	5784.953116
12	35	5784.978183	5784.970758	5784.969816	5784.952861
10	20	5784.969189	5784.969068	5784.965631	5784.949531
14	20	5784.968400	5784.963647	5784.961051	5784.945012
Max. ΔMHz		-0.031600	-0.036353	-0.038949	-0.054988
PPM		-5.462403	-6.284010	-6.732757	-9.505272

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

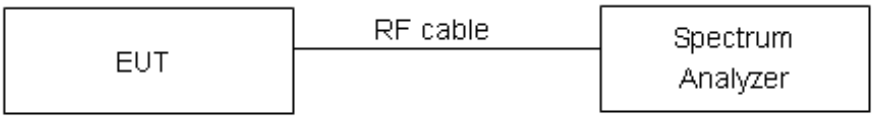
Method of Measurement

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

Set RBW = 1MHz, VBW =3MHz for the band 5.150-5.250GHz, 5.250-5.350GHz, 5.470-5.725GHz.
Set RBW = 470kHz, VBW =1.5MHz for the band 5.725-5.850GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule FCC Part 15.407(a)(1)/ FCC Part 15.407(a)(2) / FCC Part 15.407(a)(3)
For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 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.
For 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.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, 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.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band. If transmittingantennas 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.

Frequency Bands/GHz	Limits
5.15-5.25	17/11dBm/MHz
5.25-5.35 and 5.47-5.725	11dBm/MHz
5.725-5.85	30dBm/500kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

Test Results:

MIMO

AOT

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	36/5180	9.75	9.91	10.04	10.20	13.07	17	PASS
	40/5200	13.49	13.65	13.61	13.77	16.72	17	PASS
	48/5240	13.80	13.96	13.75	13.91	16.95	17	PASS
802.11n HT20	36/5180	9.94	10.11	10.58	10.75	13.45	17	PASS
	40/5200	13.28	13.45	13.75	13.92	16.70	17	PASS
	48/5240	13.51	13.68	13.48	13.65	16.68	17	PASS
802.11n HT40	38/5190	3.40	3.74	3.97	4.31	7.04	17	PASS
	46/5230	11.66	12.00	12.22	12.56	15.30	17	PASS
802.11ac VHT20	36/5180	9.99	10.31	10.50	10.82	13.58	17	PASS
	40/5200	13.32	13.64	13.59	13.91	16.79	17	PASS
	48/5240	13.06	13.38	13.64	13.96	16.69	17	PASS
802.11ac VHT40	38/5190	3.63	4.24	3.95	4.56	7.41	17	PASS
	46/5230	12.01	12.62	11.90	12.51	15.58	17	PASS
802.11ac VHT80	42/5210	0.61	1.71	0.56	1.66	4.70	17	PASS
802.11ax HE20	36/5180	10.14	10.55	10.50	10.91	13.74	17	PASS
	40/5200	13.36	13.77	13.32	13.73	16.76	17	PASS
	48/5240	12.89	13.30	13.15	13.56	16.44	17	PASS
802.11ax HE40	38/5190	5.05	5.76	5.23	5.94	8.86	17	PASS
	46/5230	11.59	12.30	11.75	12.46	15.39	17	PASS
802.11ax HE80	42/5210	0.75	1.90	1.06	2.21	5.07	17	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. The manufacturer declared that the directional gain =3.80dBi<6dBi. So the PSD limit is 17dBm.

U-NII-2A

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	52/5260	7.33	7.49	7.44	7.60	10.56	11	PASS
	60/5300	7.26	7.42	7.51	7.67	10.56	11	PASS
	64/5320	7.33	7.49	7.75	7.91	10.72	11	PASS
802.11n HT20	52/5260	7.27	7.44	7.74	7.91	10.69	11	PASS
	60/5300	7.52	7.69	7.69	7.86	10.79	11	PASS
	64/5320	7.79	7.96	7.69	7.86	10.92	11	PASS
802.11n HT40	54/5270	6.63	6.97	7.06	7.40	10.20	11	PASS
	62/5310	2.82	3.16	3.67	4.01	6.62	11	PASS
802.11ac VHT20	52/5260	7.05	7.37	7.41	7.73	10.56	11	PASS
	60/5300	7.16	7.48	8.03	8.35	10.95	11	PASS
	64/5320	7.02	7.34	7.30	7.62	10.49	11	PASS
802.11ac VHT40	54/5270	6.44	7.05	7.00	7.61	10.35	11	PASS
	62/5310	2.82	3.43	3.24	3.85	6.66	11	PASS
802.11ac VHT80	58/5290	-0.29	0.81	0.13	1.23	4.04	11	PASS
802.11ac VHT160	50/5250	-5.47	-3.87	-4.90	-3.30	-0.57	11	PASS
802.11ax HE20	52/5260	7.29	7.70	7.24	7.65	10.69	11	PASS
	60/5300	7.43	7.84	7.42	7.83	10.85	11	PASS
	64/5320	7.33	7.74	7.64	8.05	10.91	11	PASS
802.11ax HE40	54/5270	6.27	6.98	6.86	7.57	10.30	11	PASS
	62/5310	3.83	4.54	4.40	5.11	7.84	11	PASS
802.11ax HE80	58/5290	1.11	2.26	1.30	2.45	5.37	11	PASS
802.11ac VHT160	50/5250	-4.98	-3.39	-4.55	-2.96	-0.16	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. The manufacturer declared that the directional gain =3.80dBi<6. So the PSD limit is 11dBm

U-NII-2C

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	100/5500	7.47	7.63	7.45	7.61	10.63	11	PASS
	116/5580	8.01	8.17	7.48	7.64	10.92	11	PASS
	140/5700	8.32	8.48	7.19	7.35	10.96	11	PASS
	144/5720	8.07	8.23	7.36	7.52	10.90	11	PASS
802.11n HT20	100/5500	8.11	8.28	7.35	7.52	10.93	11	PASS
	116/5580	7.70	7.87	7.02	7.19	10.55	11	PASS
	140/5700	8.14	8.31	7.26	7.43	10.90	11	PASS
	144/5720	7.70	7.87	7.46	7.63	10.76	11	PASS
802.11n HT40	102/5510	1.39	1.73	1.65	1.99	4.87	11	PASS
	110/5550	7.43	7.77	6.36	6.70	10.28	11	PASS
	134/5670	4.63	4.97	3.92	4.26	7.64	11	PASS
	142/5710	7.21	7.55	6.75	7.09	10.34	11	PASS
802.11ac VHT20	100/5500	7.58	7.90	7.40	7.72	10.82	11	PASS
	116/5580	7.46	7.78	7.13	7.45	10.63	11	PASS
	140/5700	7.70	8.02	7.21	7.53	10.79	11	PASS
	144/5720	7.58	7.90	7.15	7.47	10.70	11	PASS
802.11ac VHT40	102/5510	1.24	1.85	1.19	1.80	4.84	11	PASS
	110/5550	6.83	7.44	6.41	7.02	10.25	11	PASS
	134/5670	4.20	4.81	4.28	4.89	7.86	11	PASS
	142/5710	7.14	7.75	6.49	7.10	10.45	11	PASS
802.11ac VHT80	106/5530	-1.14	-0.04	-1.10	0.00	2.99	11	PASS
	122/5610	3.37	4.47	2.65	3.75	7.14	11	PASS
	138/5690	3.43	4.53	3.14	4.24	7.40	11	PASS
802.11ac VHT160	114/5570	-5.50	-3.90	-6.15	-4.55	-1.20	11	PASS
802.11ax HE20	100/5500	6.96	7.37	6.74	7.15	10.27	11	PASS
	120/5600	7.75	8.16	7.12	7.53	10.87	11	PASS
	140/5700	8.05	8.46	7.01	7.42	10.98	11	PASS
	144/5720	7.85	8.26	7.02	7.43	10.88	11	PASS
802.11ax HE40	102/5510	3.21	3.92	2.96	3.67	6.81	11	PASS
	118/5590	6.49	7.20	6.16	6.87	10.05	11	PASS
	134/5670	4.52	5.23	4.29	5.00	8.13	11	PASS
	142/5710	7.06	7.77	6.43	7.14	10.48	11	PASS
802.11ax HE80	106/5530	-1.29	-0.14	-1.29	-0.14	2.87	11	PASS
	122/5610	2.11	3.26	2.43	3.58	6.43	11	PASS
	138/5690	3.73	4.88	2.36	3.51	7.26	11	PASS
802.11ax HE160	114/5570	-5.14	-3.55	-5.20	-3.61	-0.57	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(PSD\ antenna\ 1\ in\ dBm/10)}$+$10^{(PSD\ antenna\ 2\ in\ dBm/10)}$

3. The manufacturer declared that the directional gain =4.40dBi<6. So the PSD limit is 11dBm

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)			
802.11a	144/5720	4.39	4.82	3.80	4.23	7.55	30.00	PASS
	149/5745	9.25	9.68	8.44	8.87	12.30	30.00	PASS
	157/5785	10.31	10.74	9.81	10.24	13.51	30.00	PASS
	165/5825	10.39	10.82	9.92	10.35	13.60	30.00	PASS
802.11n HT20	144/5720	4.40	4.84	3.27	3.71	7.32	30.00	PASS
	149/5745	9.70	10.14	9.48	9.92	13.04	30.00	PASS
	157/5785	11.13	11.57	10.29	10.73	14.18	30.00	PASS
	165/5825	10.16	10.60	9.98	10.42	13.52	30.00	PASS
802.11n HT40	142/5710	3.35	3.96	2.93	3.54	6.77	30.00	PASS
	151/5755	5.99	6.60	5.55	6.16	9.40	30.00	PASS
	159/5795	7.32	7.93	7.17	7.78	10.87	30.00	PASS
802.11ac VHT20	144/5720	3.59	4.18	3.64	4.23	7.22	30.00	PASS
	149/5745	10.13	10.72	9.72	10.31	13.53	30.00	PASS
	157/5785	10.84	11.43	10.06	10.65	14.07	30.00	PASS
	165/5825	10.11	10.70	10.21	10.80	13.76	30.00	PASS
802.11ac VHT40	142/5710	2.83	3.71	2.88	3.76	6.75	30.00	PASS
	151/5755	6.37	7.25	6.10	6.98	10.13	30.00	PASS
	159/5795	7.79	8.67	7.32	8.20	11.45	30.00	PASS
802.11ac VHT80	138/5690	-0.45	0.92	-0.03	1.34	4.15	30.00	PASS
	155/5775	1.00	2.37	1.72	3.09	5.76	30.00	PASS
802.11ax HE20	144/5720	4.16	4.84	4.11	4.79	7.83	30.00	PASS
	149/5745	9.53	10.21	9.08	9.76	13.00	30.00	PASS
	157/5785	10.09	10.77	9.62	10.30	13.55	30.00	PASS
	165/5825	10.26	10.94	9.97	10.65	13.81	30.00	PASS
802.11ax HE40	142/5710	3.48	4.46	2.41	3.39	6.97	30.00	PASS
	151/5755	5.71	6.69	5.39	6.37	9.54	30.00	PASS
	159/5795	7.86	8.84	6.72	7.70	11.32	30.00	PASS
802.11ax HE80	138/5690	-0.42	1.00	-0.79	0.63	3.83	30.00	PASS
	155/5775	0.41	1.83	0.78	2.20	5.03	30.00	PASS

Note: 1. Power Spectral Density = Read Value+Duty cycle correction factor +10*log (500/470).

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(PSD\ antenna\ 1\ in\ dBm/10)}$+$10^{(PSD\ antenna\ 2\ in\ dBm/10)}$

3. The manufacturer declared that the directional gain =4.40dBi<6dBi. So the PSD limit is 30dBm

Beamforming

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	36/5180	9.77	9.93	9.84	10.00	12.98	17	PASS
	40/5200	13.62	13.78	13.68	13.84	16.82	17	PASS
	48/5240	13.61	13.77	13.63	13.79	16.79	17	PASS
802.11n HT20	36/5180	9.92	10.09	10.23	10.40	13.26	17	PASS
	40/5200	13.09	13.26	13.37	13.54	16.41	17	PASS
	48/5240	12.80	12.97	13.57	13.74	16.38	17	PASS
802.11n HT40	38/5190	3.31	3.65	3.44	3.78	6.73	17	PASS
	46/5230	11.58	11.92	12.02	12.36	15.16	17	PASS
802.11ac VHT20	36/5180	9.93	10.25	10.24	10.56	13.42	17	PASS
	40/5200	13.02	13.34	13.56	13.88	16.63	17	PASS
	48/5240	12.88	13.20	13.27	13.59	16.41	17	PASS
802.11ac VHT40	38/5190	3.12	3.73	3.58	4.19	6.98	17	PASS
	46/5230	11.35	11.96	11.87	12.48	15.24	17	PASS
802.11ac VHT80	42/5210	0.11	1.21	0.44	1.54	4.39	17	PASS
802.11ax HE20	36/5180	10.09	10.50	10.37	10.78	13.65	17	PASS
	40/5200	13.06	13.47	12.95	13.36	16.43	17	PASS
	48/5240	12.71	13.12	13.20	13.61	16.38	17	PASS
802.11ax HE40	38/5190	5.03	5.74	5.19	5.90	8.83	17	PASS
	46/5230	11.24	11.95	11.75	12.46	15.22	17	PASS
802.11ax HE80	42/5210	0.54	1.69	1.48	2.63	5.20	17	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. The manufacturer declared that the directional gain =3.80dBi<6. So the PSD limit is 17dBm.

U-NII-2A

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	52/5260	7.26	7.42	7.63	7.79	10.62	11	PASS
	60/5300	7.19	7.35	7.43	7.59	10.48	11	PASS
	64/5320	7.19	7.35	7.52	7.68	10.53	11	PASS
802.11n HT20	52/5260	7.16	7.33	8.27	8.44	10.93	11	PASS
	60/5300	7.21	7.38	7.98	8.15	10.79	11	PASS
	64/5320	7.23	7.40	7.86	8.03	10.74	11	PASS
802.11n HT40	54/5270	6.42	6.76	7.00	7.34	10.07	11	PASS
	62/5310	2.67	3.01	3.21	3.55	6.30	11	PASS
802.11ac VHT20	52/5260	6.74	7.06	7.44	7.76	10.43	11	PASS
	60/5300	7.05	7.37	7.85	8.17	10.80	11	PASS
	64/5320	6.50	6.82	7.63	7.95	10.43	11	PASS
802.11ac VHT40	54/5270	6.36	6.97	7.25	7.86	10.45	11	PASS
	62/5310	2.51	3.12	3.09	3.70	6.43	11	PASS
802.11ac VHT80	58/5290	-0.17	0.93	0.51	1.61	4.29	11	PASS
802.11ac VHT160	50/5250	-5.39	-3.79	-4.90	-3.30	-0.53	11	PASS
802.11ax HE20	52/5260	7.04	7.45	7.47	7.88	10.68	11	PASS
	60/5300	7.14	7.55	7.57	7.98	10.78	11	PASS
	64/5320	7.09	7.50	7.53	7.94	10.74	11	PASS
802.11ax HE40	54/5270	6.66	7.37	6.84	7.55	10.47	11	PASS
	62/5310	3.77	4.48	4.57	5.28	7.91	11	PASS
802.11ax HE80	58/5290	0.80	1.95	1.61	2.76	5.38	11	PASS
802.11ax HE160	50/5250	-4.49	-2.90	-3.97	-2.38	0.38	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. The manufacturer declared that the directional gain =3.80dBi<6dBi. So the PSD limit is 11dBm

U-NII-2C

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	100/5500	7.44	7.60	6.75	6.91	10.28	11	PASS
	120/5600	7.61	7.77	7.44	7.60	10.70	11	PASS
	140/5700	7.63	7.79	7.03	7.19	10.51	11	PASS
	144/5720	7.55	7.71	7.31	7.47	10.60	11	PASS
802.11n HT20	100/5500	7.74	7.91	7.10	7.27	10.61	11	PASS
	120/5600	7.38	7.55	6.95	7.12	10.35	11	PASS
	140/5700	5.29	5.46	4.62	4.79	8.15	11	PASS
	144/5720	5.47	5.64	4.59	4.76	8.23	11	PASS
802.11n HT40	102/5510	1.33	1.67	0.89	1.23	4.47	11	PASS
	118/5590	6.89	7.23	6.18	6.52	9.90	11	PASS
	134/5670	4.26	4.60	3.70	4.04	7.34	11	PASS
	142/5710	6.53	6.87	6.42	6.76	9.83	11	PASS
802.11ac VHT20	100/5500	7.34	7.66	6.88	7.20	10.45	11	PASS
	120/5600	7.26	7.58	6.70	7.02	10.32	11	PASS
	140/5700	7.12	7.44	6.49	6.81	10.15	11	PASS
	144/5720	7.13	7.45	6.73	7.05	10.26	11	PASS
802.11ac VHT40	102/5510	1.45	2.06	1.11	1.72	4.90	11	PASS
	118/5590	6.63	7.24	6.04	6.65	9.97	11	PASS
	134/5670	4.16	4.77	3.79	4.40	7.60	11	PASS
	142/5710	6.60	7.21	6.33	6.94	10.09	11	PASS
802.11ac VHT80	106/5530	-0.84	0.26	-1.42	-0.32	2.99	11	PASS
	122/5610	3.08	4.18	2.61	3.71	6.96	11	PASS
	138/5690	3.22	4.32	2.74	3.84	7.10	11	PASS
802.11ac VHT160	114/5570	-5.71	-4.11	-6.57	-4.97	-1.51	11	PASS
802.11ax HE20	100/5500	6.94	7.35	6.16	6.57	9.99	11	PASS
	120/5600	7.68	8.09	7.03	7.44	10.79	11	PASS
	140/5700	7.48	7.89	6.91	7.32	10.62	11	PASS
	144/5720	7.66	8.07	7.08	7.49	10.80	11	PASS
802.11ax HE40	102/5510	3.02	3.73	2.60	3.31	6.54	11	PASS
	118/5590	6.69	7.40	5.82	6.53	10.00	11	PASS
	134/5670	5.23	5.94	4.09	4.80	8.42	11	PASS
	142/5710	6.54	7.25	5.89	6.60	9.95	11	PASS
802.11ax HE80	106/5530	-1.49	-0.34	-1.57	-0.42	2.63	11	PASS
	122/5610	1.99	3.14	1.49	2.64	5.91	11	PASS
	138/5690	2.89	4.04	2.54	3.69	6.88	11	PASS
802.11ax HE160	114/5570	-5.18	-3.59	-5.47	-3.88	-0.72	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(\text{PSD antenna 1 in dBm/10})}$+$10^{(\text{PSD antenna 2 in dBm/10})}$)

3. The manufacturer declared that the directional gain =4.40dBi<6dBi. So the PSD limit is 11dBm

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)			
802.11a	144/5720	3.93	4.36	3.59	4.02	7.20	30	PASS
	149/5745	9.26	9.69	8.26	8.69	12.23	30	PASS
	157/5785	9.30	9.73	8.60	9.03	12.40	30	PASS
	165/5825	8.88	9.31	8.87	9.30	12.32	30	PASS
802.11n HT20	144/5720	3.33	3.77	3.32	3.76	6.78	30	PASS
	149/5745	9.32	9.76	8.87	9.31	12.55	30	PASS
	157/5785	9.44	9.88	8.60	9.04	12.49	30	PASS
	165/5825	9.36	9.80	8.94	9.38	12.61	30	PASS
802.11n HT40	142/5710	2.73	3.34	2.30	2.91	6.14	30	PASS
	151/5755	5.10	5.71	4.50	5.11	8.43	30	PASS
	159/5795	6.81	7.42	5.98	6.59	10.04	30	PASS
802.11ac VHT20	144/5720	3.44	4.03	3.07	3.66	6.86	30	PASS
	149/5745	8.97	9.56	8.41	9.00	12.30	30	PASS
	157/5785	10.19	10.78	9.95	10.54	13.67	30	PASS
	165/5825	9.43	10.02	9.00	9.59	12.82	30	PASS
802.11ac VHT40	142/5710	2.97	3.85	2.52	3.40	6.64	30	PASS
	151/5755	5.49	6.37	4.77	5.65	9.04	30	PASS
	159/5795	6.62	7.50	6.29	7.17	10.35	30	PASS
802.11ac VHT80	138/5690	-0.94	0.43	-0.75	0.62	3.54	30	PASS
	155/5775	1.05	2.42	0.53	1.90	5.18	30	PASS
802.11ax HE20	144/5720	4.05	4.73	3.41	4.09	7.43	30	PASS
	149/5745	8.72	9.40	8.21	8.89	12.16	30	PASS
	157/5785	10.06	10.74	9.48	10.16	13.47	30	PASS
	165/5825	9.92	10.60	9.60	10.28	13.45	30	PASS
802.11ax HE40	142/5710	2.55	3.53	3.20	4.18	6.88	30	PASS
	151/5755	5.65	6.63	5.03	6.01	9.34	30	PASS
	159/5795	7.15	8.13	7.17	8.15	11.15	30	PASS
802.11ax HE80	138/5690	-0.76	0.66	-0.78	0.64	3.66	30	PASS
	155/5775	-0.29	1.13	0.29	1.71	4.44	30	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor+10*log(500/470).

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(\text{PSD antenna 1 in dBm/10})}$+$10^{(\text{PSD antenna 2 in dBm/10})}$

3. The manufacturer declared that the directional gain =4.40dBi<6dBi. So the PSD limit is 30dBm

DZZ

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	36/5180	10.31	10.47	10.58	10.74	13.62	17	PASS
	40/5200	13.49	13.65	13.61	13.77	16.72	17	PASS
	48/5240	13.80	13.96	13.75	13.91	16.95	17	PASS
802.11n HT20	36/5180	13.27	13.44	13.72	13.89	16.68	17	PASS
	40/5200	13.28	13.45	13.75	13.92	16.70	17	PASS
	48/5240	13.51	13.68	13.48	13.65	16.68	17	PASS
802.11n HT40	38/5190	4.29	4.63	4.88	5.22	7.95	17	PASS
	46/5230	11.66	12.00	12.22	12.56	15.30	17	PASS
802.11ac VHT20	36/5180	13.39	13.71	13.48	13.80	16.77	17	PASS
	40/5200	13.32	13.64	13.59	13.91	16.79	17	PASS
	48/5240	13.06	13.38	13.64	13.96	16.69	17	PASS
802.11ac VHT40	38/5190	4.30	4.91	4.64	5.25	8.09	17	PASS
	46/5230	12.01	12.62	11.90	12.51	15.58	17	PASS
802.11ac VHT80	42/5210	1.30	2.40	1.52	2.62	5.52	17	PASS
802.11ax HE20	36/5180	10.80	11.21	10.98	11.39	14.31	17	PASS
	40/5200	13.36	13.77	13.32	13.73	16.76	17	PASS
	48/5240	12.89	13.30	13.15	13.56	16.44	17	PASS
802.11ax HE40	38/5190	4.69	5.40	4.95	5.66	8.54	17	PASS
	46/5230	11.59	12.30	11.75	12.46	15.39	17	PASS
802.11ax HE80	42/5210	1.07	2.22	1.19	2.34	5.29	17	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. The manufacturer declared that the directional gain =3.88dBi<6dBi. So the PSD limit is 17dBm.

U-NII-2A

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	52/5260	7.33	7.49	7.44	7.60	10.56	11	PASS
	60/5300	7.26	7.42	7.51	7.67	10.56	11	PASS
	64/5320	7.33	7.49	7.75	7.91	10.72	11	PASS
802.11n HT20	52/5260	7.27	7.44	7.74	7.91	10.69	11	PASS
	60/5300	7.52	7.69	7.69	7.86	10.79	11	PASS
	64/5320	7.79	7.96	7.69	7.86	10.92	11	PASS
802.11n HT40	54/5270	6.63	6.97	7.06	7.40	10.20	11	PASS
	62/5310	3.74	4.08	4.22	4.56	7.34	11	PASS
802.11ac VHT20	52/5260	7.05	7.37	7.41	7.73	10.56	11	PASS
	60/5300	7.16	7.48	8.03	8.35	10.95	11	PASS
	64/5320	7.02	7.34	7.30	7.62	10.49	11	PASS
802.11ac VHT40	54/5270	6.44	7.05	7.00	7.61	10.35	11	PASS
	62/5310	3.94	4.55	3.91	4.52	7.55	11	PASS
802.11ac VHT80	58/5290	2.64	3.74	2.41	3.51	6.64	11	PASS
802.11ac VHT160	50/5250	-3.47	-1.87	-3.20	-1.60	1.28	11	PASS
802.11ax HE20	52/5260	7.29	7.70	7.24	7.65	10.69	11	PASS
	60/5300	7.43	7.84	7.42	7.83	10.85	11	PASS
	64/5320	7.33	7.74	7.64	8.05	10.91	11	PASS
802.11ax HE40	54/5270	6.27	6.98	6.86	7.57	10.30	11	PASS
	62/5310	3.69	4.40	3.82	4.53	7.48	11	PASS
802.11ax HE80	58/5290	1.48	2.63	1.33	2.48	5.57	11	PASS
802.11ac VHT160	50/5250	-3.09	-1.50	-3.13	-1.54	1.49	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

3. The manufacturer declared that the directional gain =3.88dBi<6. So the PSD limit is 11dBm

U-NII-2C

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	100/5500	7.47	7.63	7.45	7.61	10.63	11	PASS
	116/5580	8.01	8.17	7.48	7.64	10.92	11	PASS
	140/5700	8.32	8.48	7.19	7.35	10.96	11	PASS
	144/5720	8.07	8.23	7.36	7.52	10.90	11	PASS
802.11n HT20	100/5500	8.11	8.28	7.35	7.52	10.93	11	PASS
	116/5580	7.70	7.87	7.02	7.19	10.55	11	PASS
	140/5700	8.14	8.31	7.26	7.43	10.90	11	PASS
	144/5720	7.70	7.87	7.46	7.63	10.76	11	PASS
802.11n HT40	102/5510	2.74	3.08	2.23	2.57	5.84	11	PASS
	110/5550	7.43	7.77	6.36	6.70	10.28	11	PASS
	134/5670	6.49	6.83	5.92	6.26	9.56	11	PASS
	142/5710	7.21	7.55	6.75	7.09	10.34	11	PASS
802.11ac VHT20	100/5500	7.58	7.90	7.40	7.72	10.82	11	PASS
	116/5580	7.46	7.78	7.13	7.45	10.63	11	PASS
	140/5700	7.70	8.02	7.21	7.53	10.79	11	PASS
	144/5720	7.58	7.90	7.15	7.47	10.70	11	PASS
802.11ac VHT40	102/5510	2.24	2.85	2.50	3.11	5.99	11	PASS
	110/5550	6.83	7.44	6.41	7.02	10.25	11	PASS
	134/5670	6.12	6.73	6.08	6.69	9.72	11	PASS
	142/5710	7.14	7.75	6.49	7.10	10.45	11	PASS
802.11ac VHT80	106/5530	1.94	3.04	1.73	2.83	5.95	11	PASS
	122/5610	3.37	4.47	2.65	3.75	7.14	11	PASS
	138/5690	4.09	5.19	3.43	4.53	7.88	11	PASS
802.11ac VHT160	114/5570	-1.97	-0.37	-2.96	-1.36	2.17	11	PASS
802.11ax HE20	100/5500	7.51	7.92	6.81	7.22	10.59	11	PASS
	120/5600	7.75	8.16	7.12	7.53	10.87	11	PASS
	140/5700	8.05	8.46	7.01	7.42	10.98	11	PASS
	144/5720	7.85	8.26	7.02	7.43	10.88	11	PASS
802.11ax HE40	102/5510	3.16	3.87	3.25	3.96	6.93	11	PASS
	118/5590	6.49	7.20	6.16	6.87	10.05	11	PASS
	134/5670	5.05	5.76	5.03	5.74	8.76	11	PASS
	142/5710	7.06	7.77	6.43	7.14	10.48	11	PASS
802.11ax HE80	106/5530	0.71	1.86	0.82	1.97	4.93	11	PASS
	122/5610	3.32	4.47	2.38	3.53	7.04	11	PASS

	138/5690	3.73	4.88	2.36	3.51	7.26	11	PASS
802.11ax HE160	114/5570	-3.10	-1.51	-3.53	-1.94	1.29	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})}$

3. The manufacturer declared that the directional gain =3.78dBi<6. So the PSD limit is 11dBm

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)			
802.11a	144/5720	4.39	4.82	3.80	4.23	7.55	30	PASS
	149/5745	9.25	9.68	8.44	8.87	12.30	30	PASS
	157/5785	10.31	10.74	9.81	10.24	13.51	30	PASS
	165/5825	10.39	10.82	9.92	10.35	13.60	30	PASS
802.11n HT20	144/5720	4.40	4.84	3.27	3.71	7.32	30	PASS
	149/5745	9.70	10.14	9.48	9.92	13.04	30	PASS
	157/5785	11.13	11.57	10.29	10.73	14.18	30	PASS
	165/5825	10.16	10.60	9.98	10.42	13.52	30	PASS
802.11n HT40	142/5710	3.35	3.96	2.93	3.54	6.77	30	PASS
	151/5755	5.99	6.60	5.55	6.16	9.40	30	PASS
	159/5795	7.32	7.93	7.17	7.78	10.87	30	PASS
802.11ac VHT20	144/5720	3.59	4.18	3.64	4.23	7.22	30	PASS
	149/5745	10.13	10.72	9.72	10.31	13.53	30	PASS
	157/5785	10.84	11.43	10.06	10.65	14.07	30	PASS
	165/5825	10.11	10.70	10.21	10.80	13.76	30	PASS
802.11ac VHT40	142/5710	2.83	3.71	2.88	3.76	6.75	30	PASS
	151/5755	6.37	7.25	6.10	6.98	10.13	30	PASS
	159/5795	7.79	8.67	7.32	8.20	11.45	30	PASS
802.11ac VHT80	138/5690	-0.45	0.92	-0.03	1.34	4.15	30	PASS
	155/5775	1.00	2.37	1.72	3.09	5.76	30	PASS
802.11ax HE20	144/5720	4.16	4.84	4.11	4.79	7.83	30	PASS
	149/5745	9.53	10.21	9.08	9.76	13.00	30	PASS
	157/5785	10.09	10.77	9.62	10.30	13.55	30	PASS
	165/5825	10.26	10.94	9.97	10.65	13.81	30	PASS
802.11ax HE40	142/5710	3.48	4.46	2.41	3.39	6.97	30	PASS
	151/5755	5.71	6.69	5.39	6.37	9.54	30	PASS
	159/5795	7.86	8.84	6.72	7.70	11.32	30	PASS
802.11ax HE80	138/5690	-0.42	1.00	-0.79	0.63	3.83	30	PASS
	155/5775	0.41	1.83	0.78	2.20	5.03	30	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor+10*log(500/470).

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),
the power spectral density=10log($10^{(PSD\ antenna\ 1\ in\ dBm/10)}$+$10^{(PSD\ antenna\ 2\ in\ dBm/10)}$
3. The manufacturer declared that the directional gain =3.94dBi<6dBi. So the PSD limit is 30dBm.

Beamforming

U-NII-1

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	36/5180	10.31	10.47	10.54	10.70	13.60	17	PASS
	40/5200	13.19	13.35	13.67	13.83	16.61	17	PASS
	48/5240	13.47	13.63	13.76	13.92	16.79	17	PASS
802.11n HT20	36/5180	12.77	12.94	13.54	13.71	16.35	17	PASS
	40/5200	13.03	13.20	13.29	13.46	16.34	17	PASS
	48/5240	12.90	13.07	13.77	13.94	16.54	17	PASS
802.11n HT40	38/5190	4.35	4.69	4.51	4.85	7.78	17	PASS
	46/5230	11.24	11.58	12.55	12.89	15.29	17	PASS
802.11ac VHT20	36/5180	12.76	13.08	13.20	13.52	16.32	17	PASS
	40/5200	12.93	13.25	13.59	13.91	16.60	17	PASS
	48/5240	12.76	13.08	13.74	14.06	16.61	17	PASS
802.11ac VHT40	38/5190	4.14	4.75	4.46	5.07	7.92	17	PASS
	46/5230	11.33	11.94	12.19	12.80	15.40	17	PASS
802.11ac VHT80	42/5210	1.02	2.12	1.26	2.36	5.25	17	PASS
802.11ax HE20	36/5180	10.66	11.07	10.92	11.33	14.21	17	PASS
	40/5200	12.63	13.04	13.29	13.70	16.39	17	PASS
	48/5240	12.83	13.24	13.00	13.41	16.34	17	PASS
802.11ax HE40	38/5190	4.43	5.14	4.78	5.49	8.33	17	PASS
	46/5230	10.99	11.70	12.06	12.77	15.28	17	PASS
802.11ax HE80	42/5210	0.65	1.80	0.57	1.72	4.77	17	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor
2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),
the power spectral density=10log($10^{(PSD\ antenna\ 1\ in\ dBm/10)}$+$10^{(PSD\ antenna\ 2\ in\ dBm/10)}$)
3. The manufacturer declared that the directional gain =3.88dBi<6. So the PSD limit is 17dBm.

U-NII-2A

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	52/5260	7.26	7.42	7.63	7.79	10.62	11	PASS
	60/5300	7.19	7.35	7.43	7.59	10.48	11	PASS
	64/5320	7.19	7.35	7.52	7.68	10.53	11	PASS
802.11n HT20	52/5260	7.16	7.33	8.27	8.44	10.93	11	PASS
	60/5300	7.21	7.38	7.98	8.15	10.79	11	PASS
	64/5320	7.23	7.40	7.86	8.03	10.74	11	PASS
802.11n HT40	54/5270	6.42	6.76	7.00	7.34	10.07	11	PASS
	62/5310	3.60	3.94	4.37	4.71	7.35	11	PASS
802.11ac VHT20	52/5260	6.74	7.06	7.44	7.76	10.43	11	PASS
	60/5300	7.05	7.37	7.85	8.17	10.80	11	PASS
	64/5320	6.50	6.82	7.63	7.95	10.43	11	PASS
802.11ac VHT40	54/5270	6.36	6.97	7.25	7.86	10.45	11	PASS
	62/5310	3.46	4.07	4.10	4.71	7.41	11	PASS
802.11ac VHT80	58/5290	1.99	3.09	2.73	3.83	6.49	11	PASS
802.11ac VHT160	50/5250	-3.54	-1.94	-2.84	-1.24	1.43	11	PASS
802.11ax HE20	52/5260	7.04	7.45	7.47	7.88	10.68	11	PASS
	60/5300	7.14	7.55	7.57	7.98	10.78	11	PASS
	64/5320	7.09	7.50	7.53	7.94	10.74	11	PASS
802.11ax HE40	54/5270	6.66	7.37	6.84	7.55	10.47	11	PASS
	62/5310	3.26	3.97	3.78	4.49	7.25	11	PASS
802.11ax HE80	58/5290	1.27	2.42	1.49	2.64	5.54	11	PASS
802.11ax HE160	50/5250	-3.14	-1.55	-2.91	-1.32	1.58	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=$10\log(10^{(\text{PSD antenna 1 in dBm}/10)}+10^{(\text{PSD antenna 2 in dBm}/10)})$

3. The manufacturer declared that the directional gain =3.88dBi<6dBi. So the PSD limit is 11dBm

U-NII-2C

Mode	Channel /Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11a	100/5500	7.44	7.60	6.75	6.91	10.28	11	PASS
	120/5600	7.61	7.77	7.44	7.60	10.70	11	PASS
	140/5700	7.63	7.79	7.03	7.19	10.51	11	PASS
	144/5720	7.55	7.71	7.31	7.47	10.60	11	PASS
802.11n HT20	100/5500	7.74	7.91	7.10	7.27	10.61	11	PASS
	120/5600	7.38	7.55	6.95	7.12	10.35	11	PASS
	140/5700	5.29	5.46	4.62	4.79	8.15	11	PASS
	144/5720	5.47	5.64	4.59	4.76	8.23	11	PASS
802.11n HT40	102/5510	2.25	2.59	2.14	2.48	5.55	11	PASS
	118/5590	6.89	7.23	6.18	6.52	9.90	11	PASS
	134/5670	6.37	6.71	5.51	5.85	9.31	11	PASS
	142/5710	6.53	6.87	6.42	6.76	9.83	11	PASS
802.11ac VHT20	100/5500	7.34	7.66	6.88	7.20	10.45	11	PASS
	120/5600	7.26	7.58	6.70	7.02	10.32	11	PASS
	140/5700	7.12	7.44	6.49	6.81	10.15	11	PASS
	144/5720	7.13	7.45	6.73	7.05	10.26	11	PASS
802.11ac VHT40	102/5510	2.48	3.09	1.97	2.58	5.85	11	PASS
	118/5590	6.63	7.24	6.04	6.65	9.97	11	PASS
	134/5670	6.21	6.82	5.77	6.38	9.62	11	PASS
	142/5710	6.60	7.21	6.33	6.94	10.09	11	PASS
802.11ac VHT80	106/5530	1.55	2.65	1.41	2.51	5.59	11	PASS
	122/5610	3.08	4.18	2.61	3.71	6.96	11	PASS
	138/5690	3.22	4.32	2.74	3.84	7.10	11	PASS
802.11ax HE160	114/5570	-2.27	-0.67	-3.08	-1.48	1.95	11	PASS
802.11ax HE20	100/5500	7.33	7.74	6.88	7.29	10.53	11	PASS
	120/5600	7.68	8.09	7.03	7.44	10.79	11	PASS
	140/5700	7.48	7.89	6.91	7.32	10.62	11	PASS
	144/5720	7.66	8.07	7.08	7.49	10.80	11	PASS
802.11ax HE40	102/5510	3.14	3.85	2.44	3.15	6.52	11	PASS
	118/5590	6.69	7.40	5.82	6.53	10.00	11	PASS
	134/5670	5.00	5.71	4.30	5.01	8.38	11	PASS
	142/5710	6.54	7.25	5.89	6.60	9.95	11	PASS
802.11ax HE80	106/5530	0.51	1.66	-0.06	1.09	4.39	11	PASS
	122/5610	3.15	4.30	2.78	3.93	7.13	11	PASS
	138/5690	2.89	4.04	2.54	3.69	6.88	11	PASS
802.11ax HE160	114/5570	-3.30	-1.71	-3.69	-2.10	1.11	11	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(\text{PSD antenna 1 in dBm/10})}$+$10^{(\text{PSD antenna 2 in dBm/10})}$)

3. The manufacturer declared that the directional gain =3.78dBi<6dBi. So the PSD limit is 11dBm

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Antenna 2		Total PSD (dBm/ 500kHz)		
		Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)	Read Value (dBm/ 470kHz)	PSD (dBm/ 500kHz)			
802.11a	144/5720	3.93	4.36	3.59	4.02	7.20	30	PASS
	149/5745	9.26	9.69	8.26	8.69	12.23	30	PASS
	157/5785	9.30	9.73	8.60	9.03	12.40	30	PASS
	165/5825	8.88	9.31	8.87	9.30	12.32	30	PASS
802.11n HT20	144/5720	3.33	3.77	3.32	3.76	6.78	30	PASS
	149/5745	9.32	9.76	8.87	9.31	12.55	30	PASS
	157/5785	9.44	9.88	8.60	9.04	12.49	30	PASS
	165/5825	9.36	9.80	8.94	9.38	12.61	30	PASS
802.11n HT40	142/5710	2.73	3.34	2.30	2.91	6.14	30	PASS
	151/5755	5.10	5.71	4.50	5.11	8.43	30	PASS
	159/5795	6.81	7.42	5.98	6.59	10.04	30	PASS
802.11ac VHT20	144/5720	3.44	4.03	3.07	3.66	6.86	30	PASS
	149/5745	8.97	9.56	8.41	9.00	12.30	30	PASS
	157/5785	10.19	10.78	9.95	10.54	13.67	30	PASS
	165/5825	9.43	10.02	9.00	9.59	12.82	30	PASS
802.11ac VHT40	142/5710	2.97	3.85	2.52	3.40	6.64	30	PASS
	151/5755	5.49	6.37	4.77	5.65	9.04	30	PASS
	159/5795	6.62	7.50	6.29	7.17	10.35	30	PASS
802.11ac VHT80	138/5690	-0.94	0.43	-0.75	0.62	3.54	30	PASS
	155/5775	1.05	2.42	0.53	1.90	5.18	30	PASS
802.11ax HE20	144/5720	4.05	4.73	3.41	4.09	7.43	30	PASS
	149/5745	8.72	9.40	8.21	8.89	12.16	30	PASS
	157/5785	10.06	10.74	9.48	10.16	13.47	30	PASS
	165/5825	9.92	10.60	9.60	10.28	13.45	30	PASS
802.11ax HE40	142/5710	2.55	3.53	3.20	4.18	6.88	30	PASS
	151/5755	5.65	6.63	5.03	6.01	9.34	30	PASS
	159/5795	7.15	8.13	7.17	8.15	11.15	30	PASS
802.11ax HE80	138/5690	-0.76	0.66	-0.78	0.64	3.66	30	PASS
	155/5775	-0.29	1.13	0.29	1.71	4.44	30	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor+10*log(500/470).

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),

the power spectral density=10log($10^{(\text{PSD antenna 1 in dBm/10})}$+$10^{(\text{PSD antenna 2 in dBm/10})}$

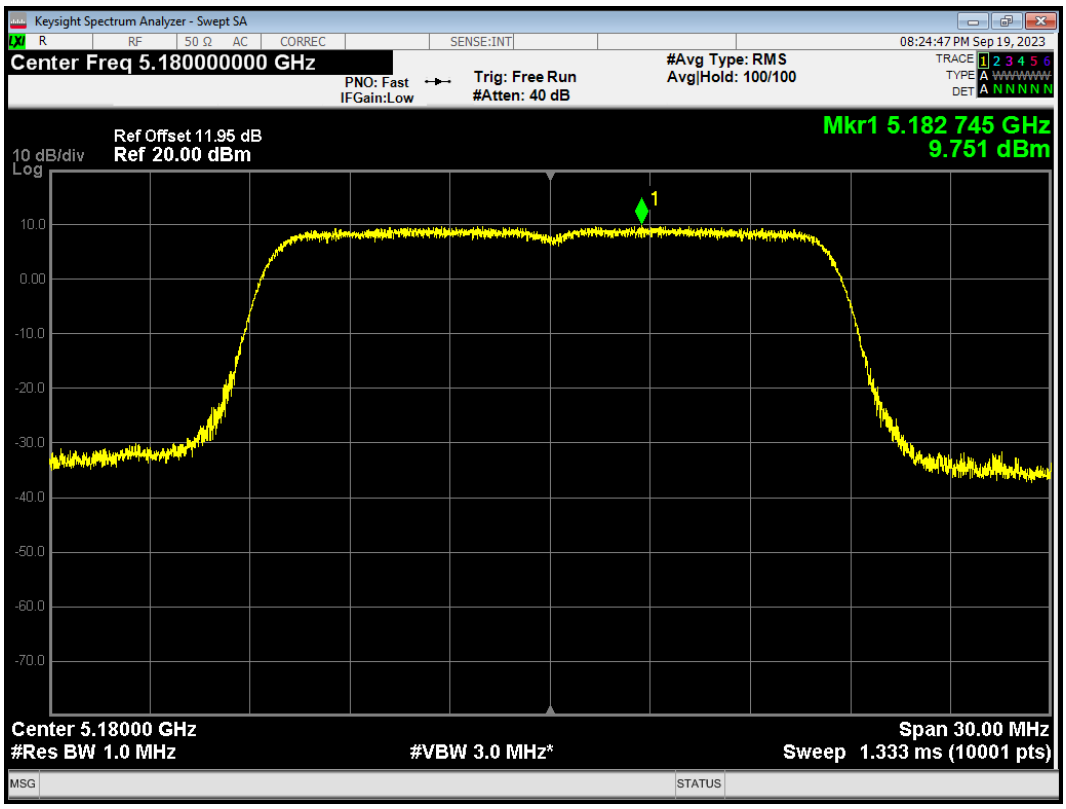
3. The manufacturer declared that the directional gain =3.94dBi<6dBi. So the PSD limit is 30dBm

AOT

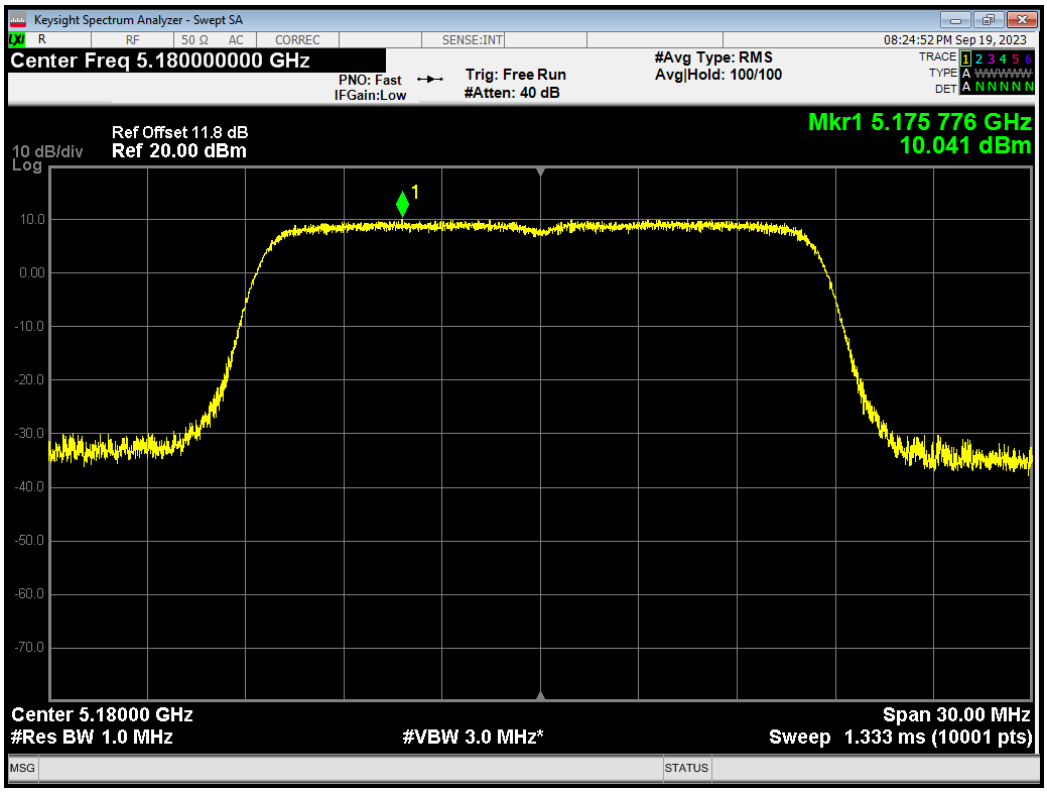
MIMO

U-NII-1

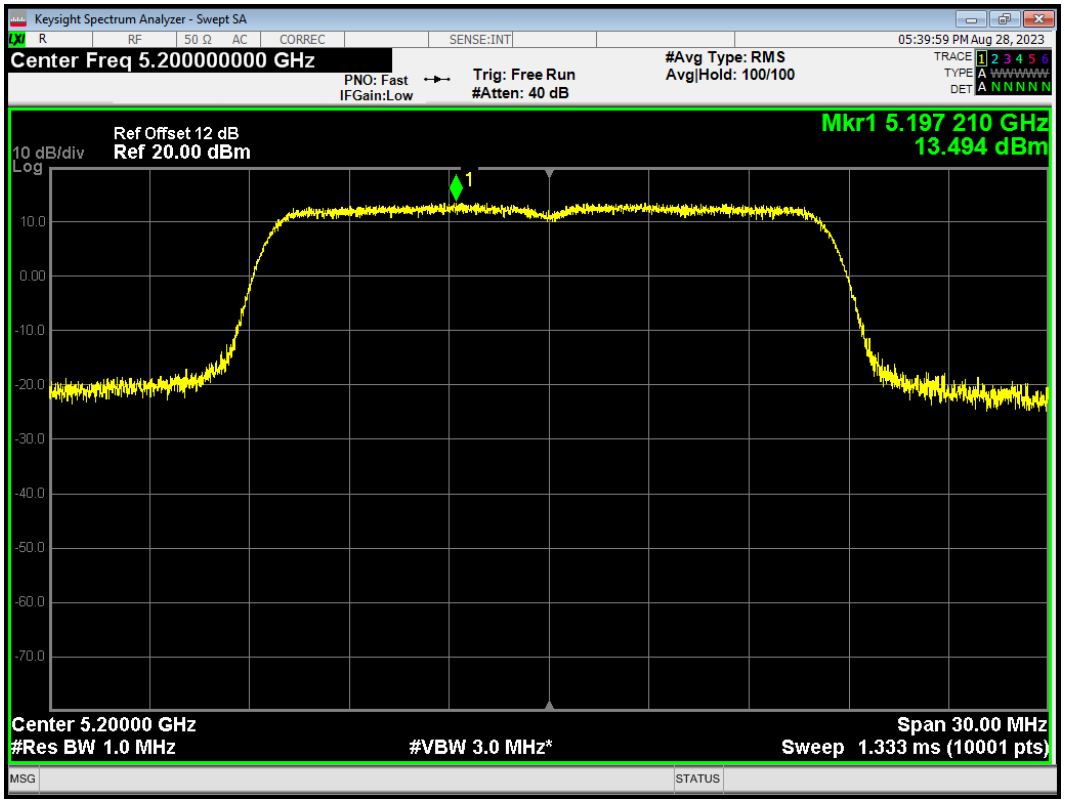
PSD 802.11a 5180MHz Ant1



PSD 802.11a 5180MHz Ant2



PSD 802.11a 5200MHz Ant1



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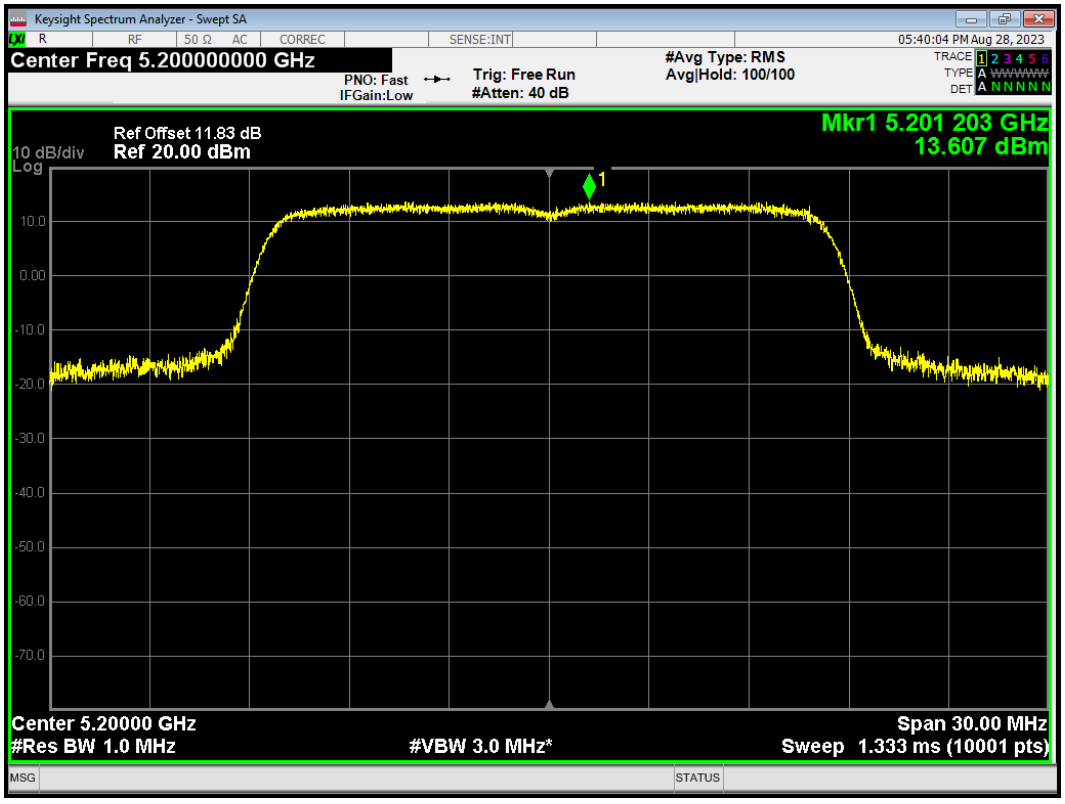

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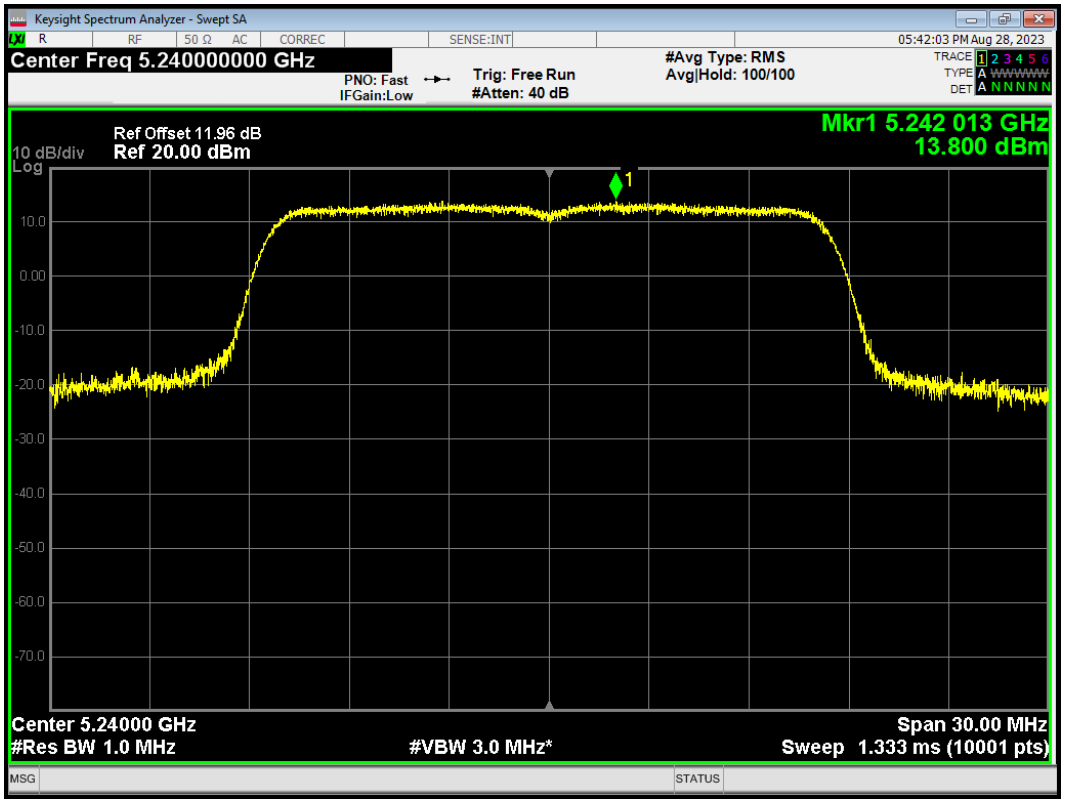

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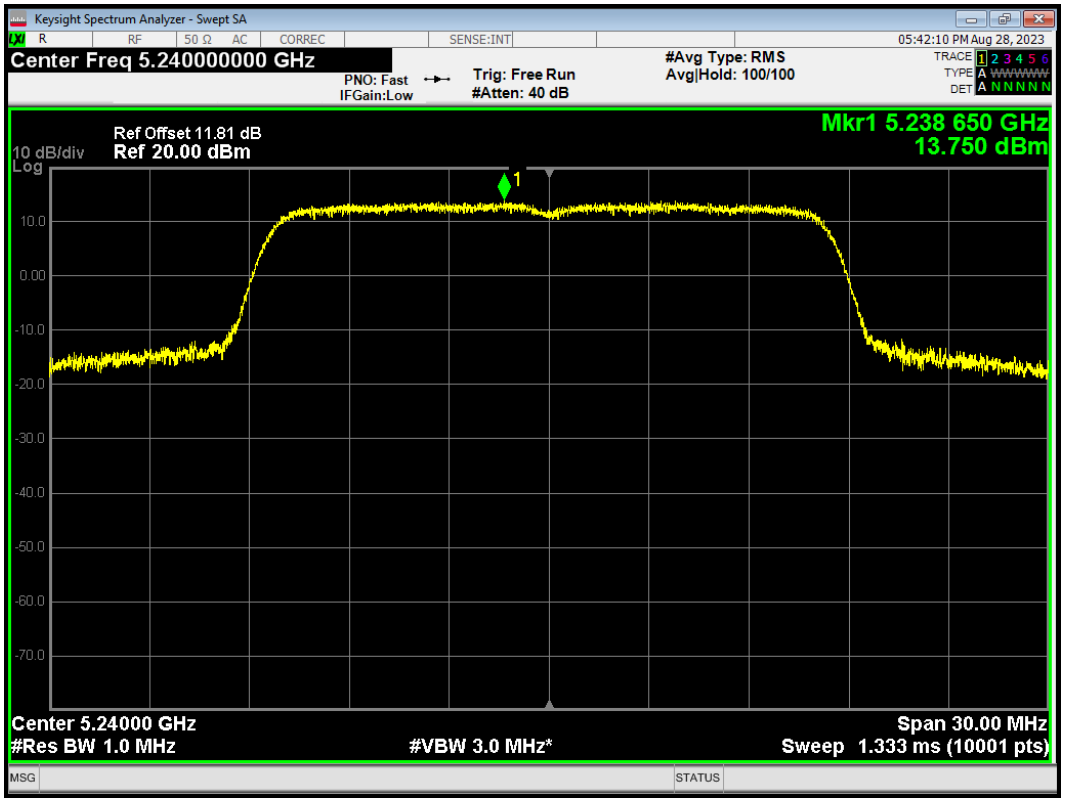
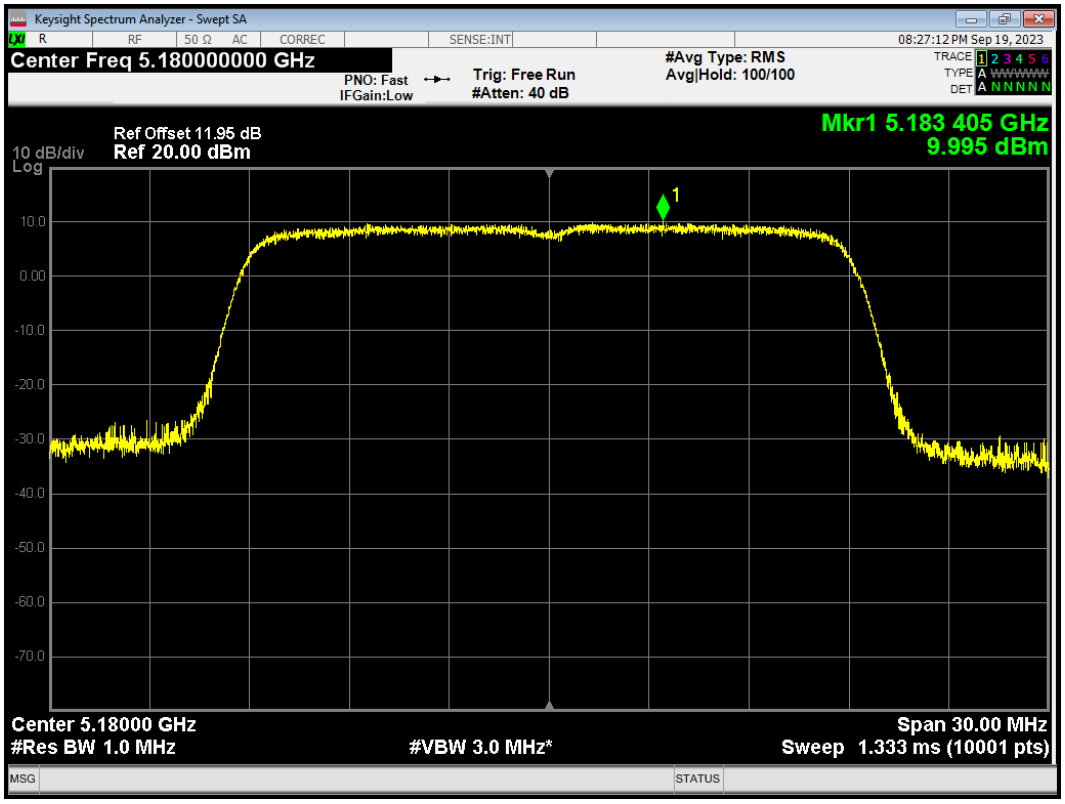


PSD 802.11ac(VHT20) 5180MHz Ant1



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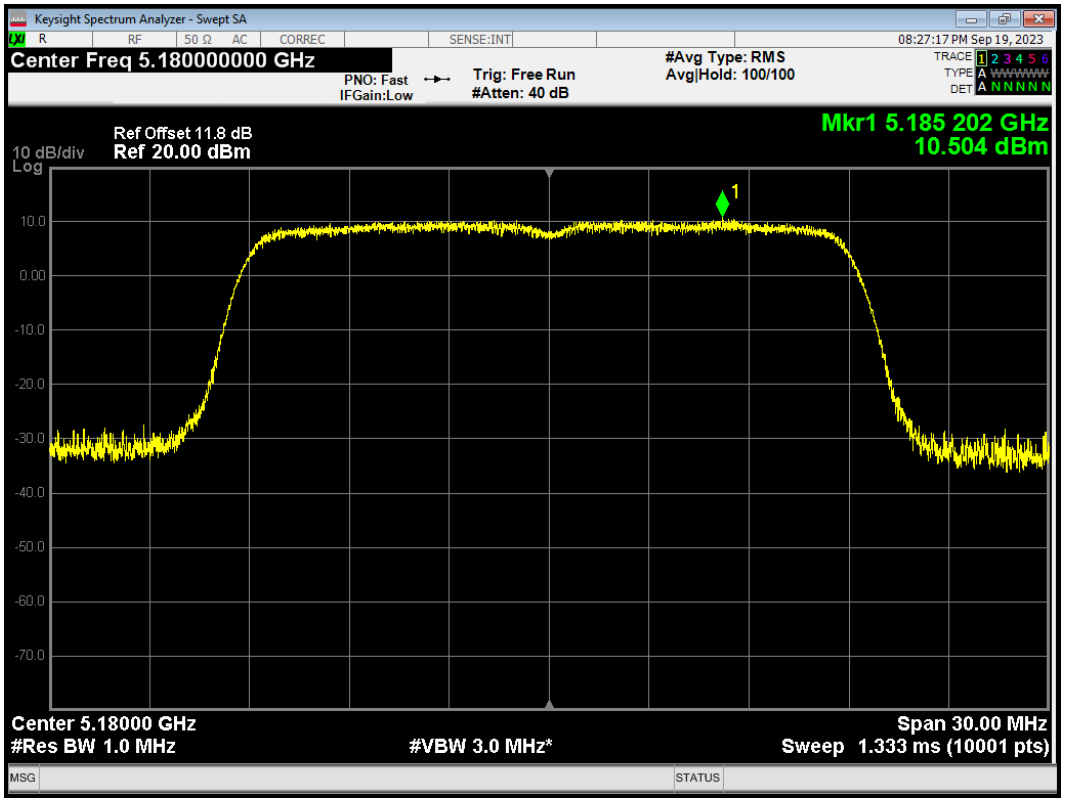

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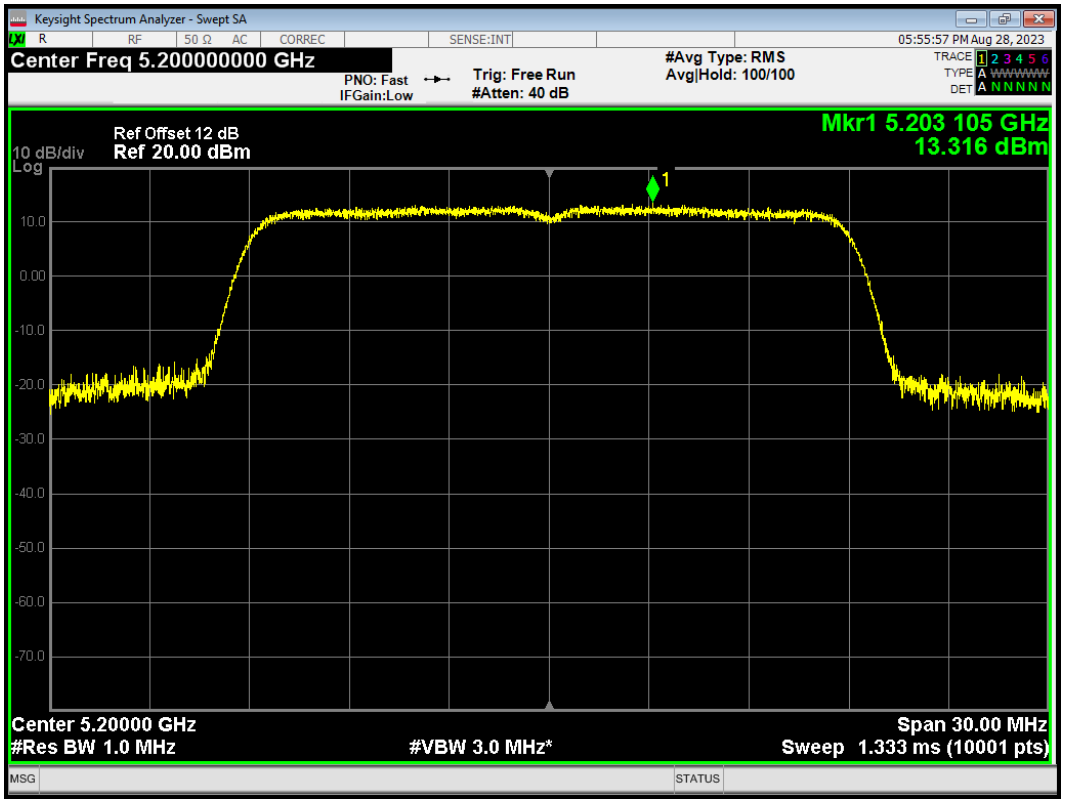

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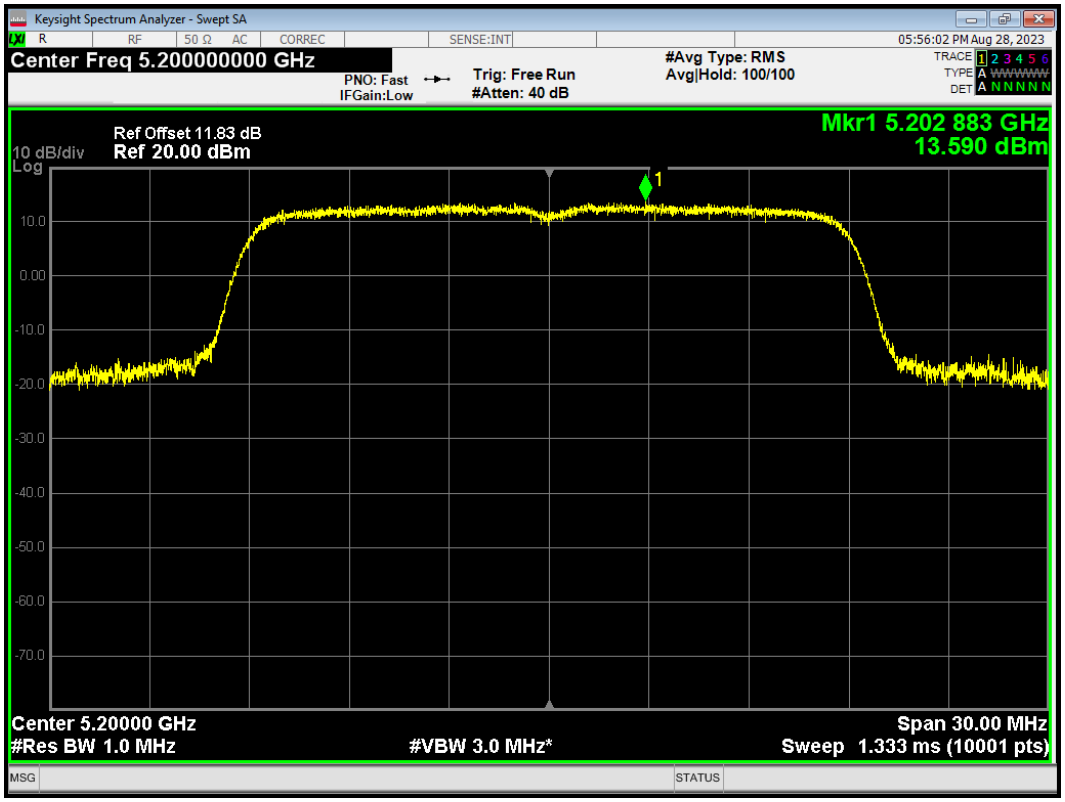

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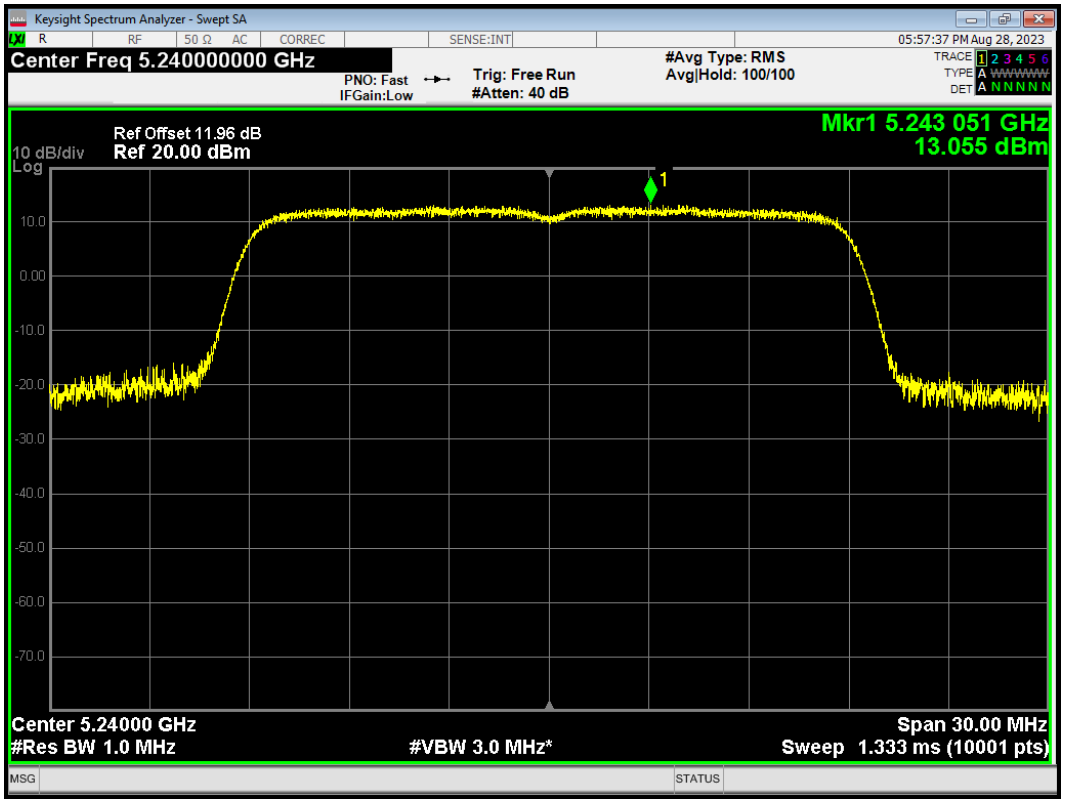

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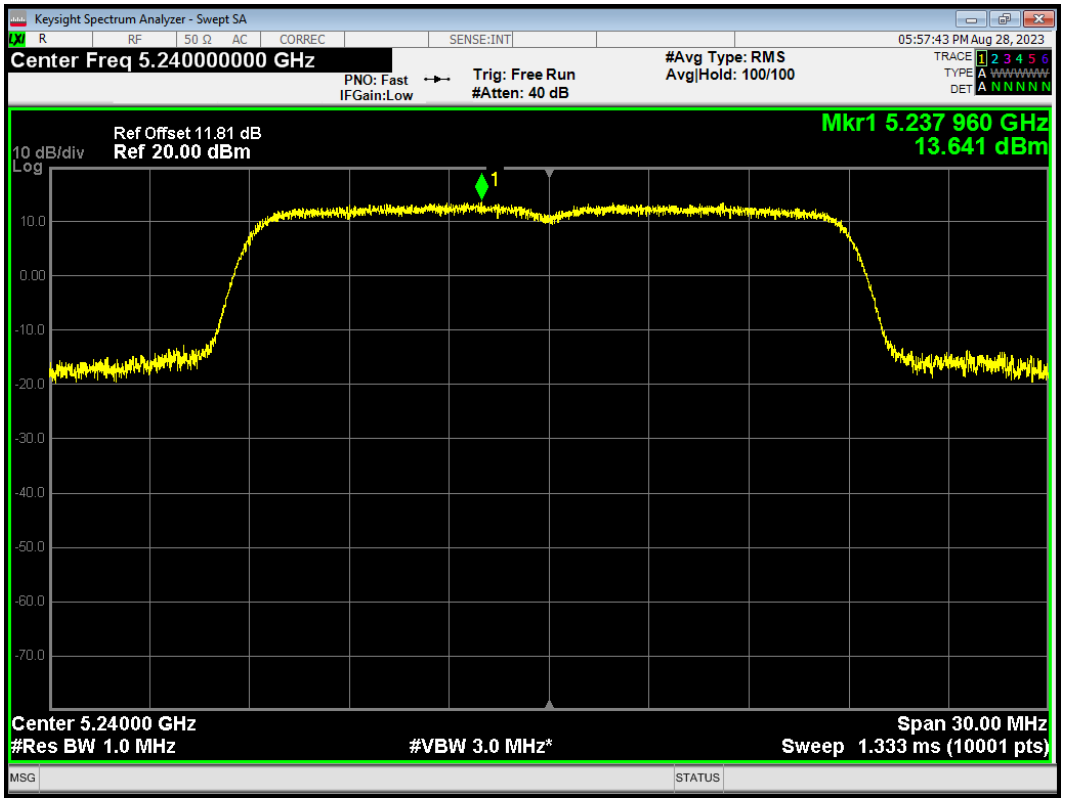
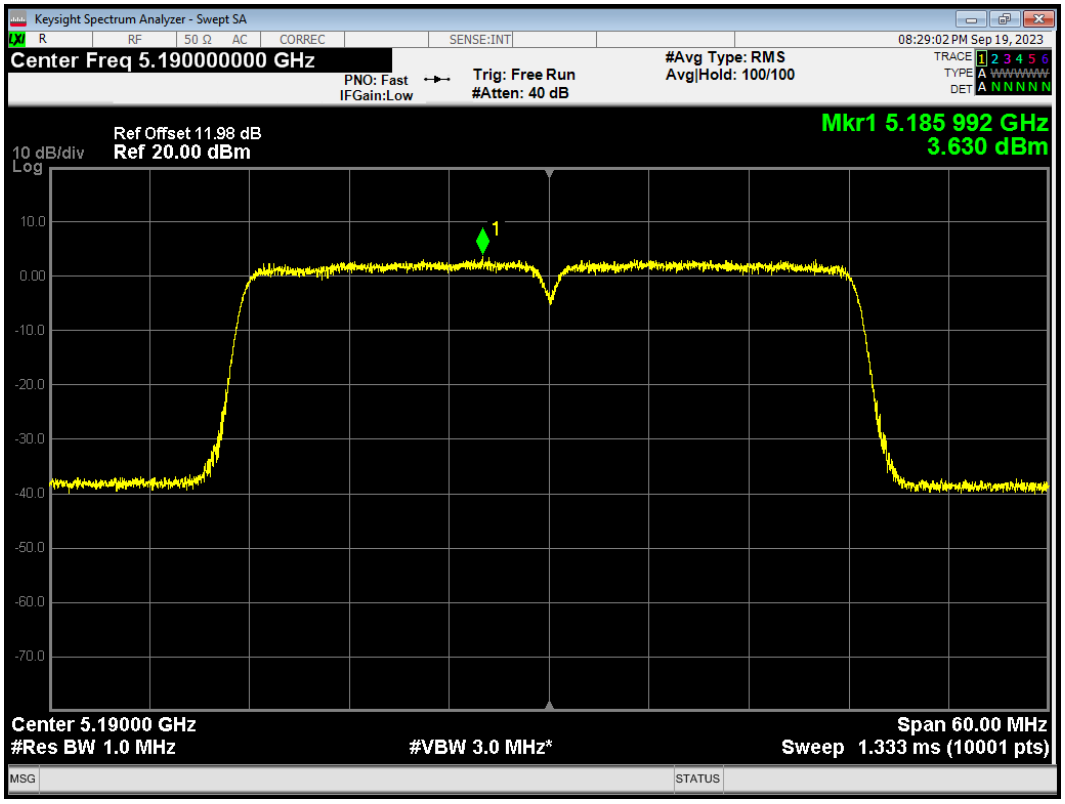
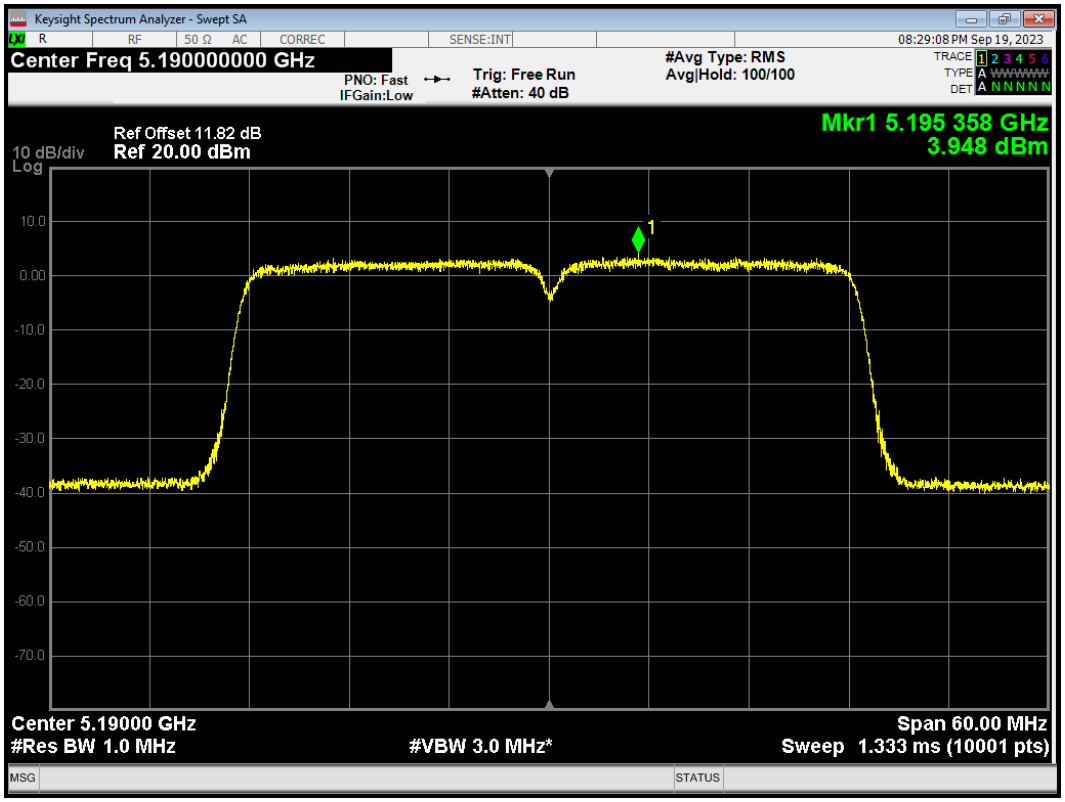


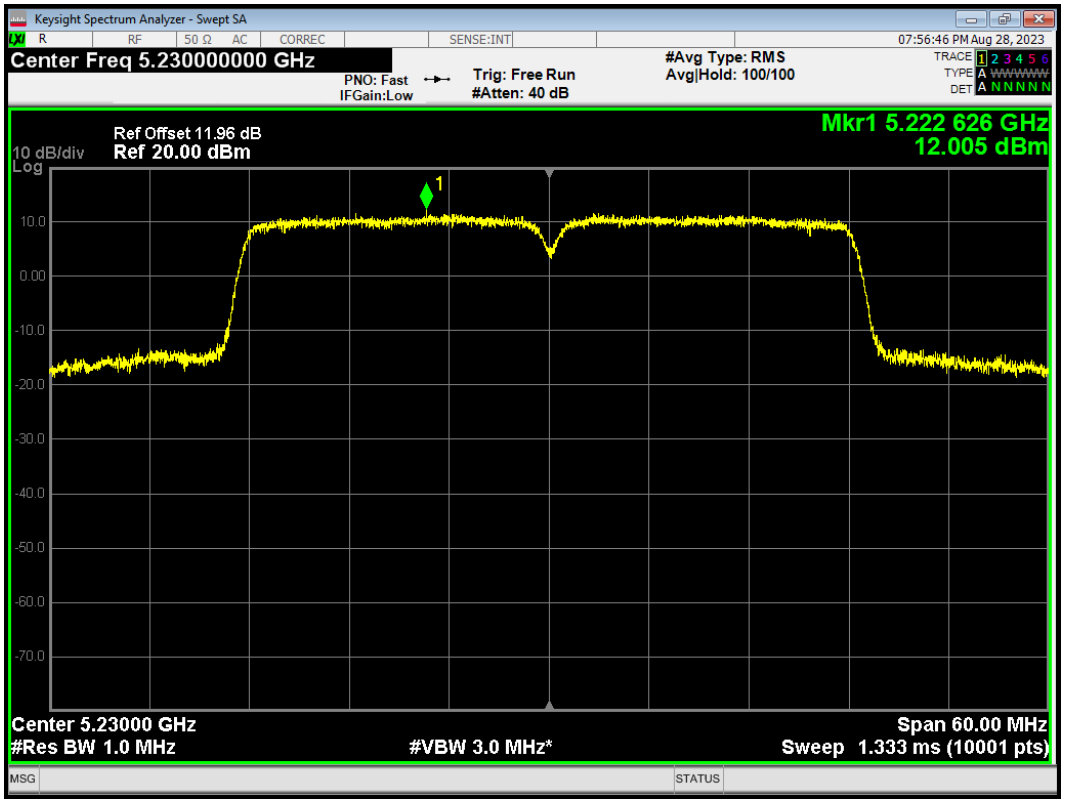
PSD 802.11ac(VHT40) 5190MHz Ant1



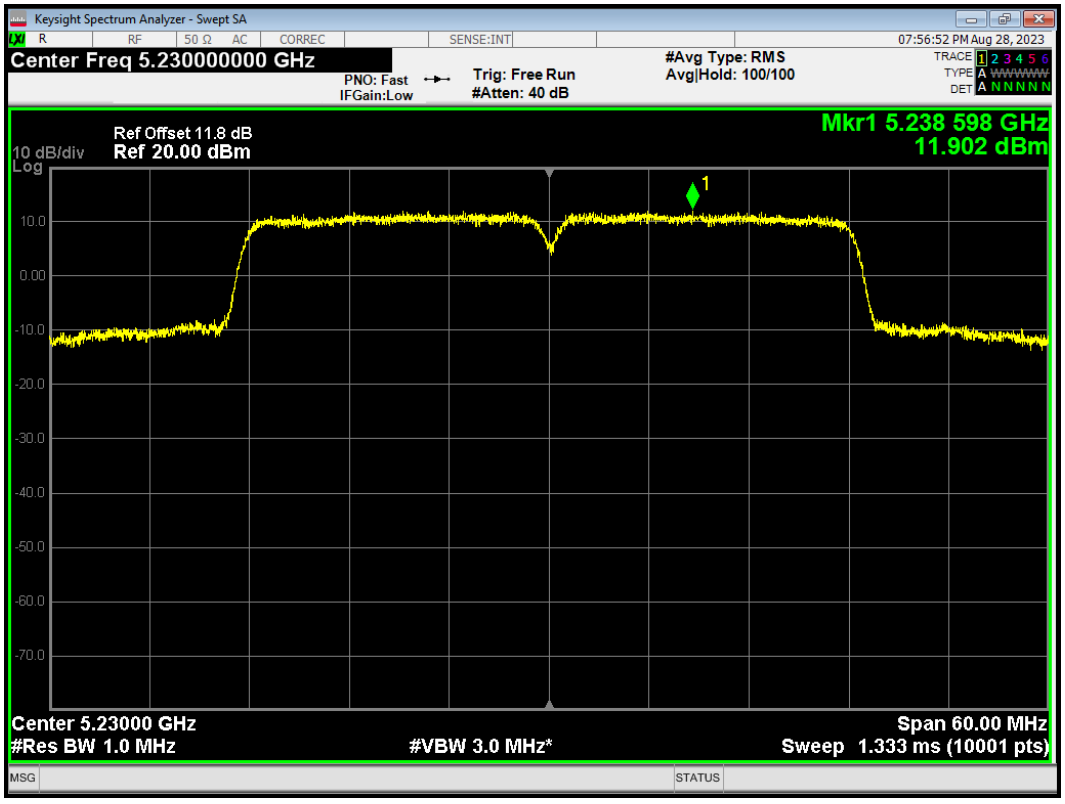
PSD 802.11ac(VHT40) 5190MHz Ant2



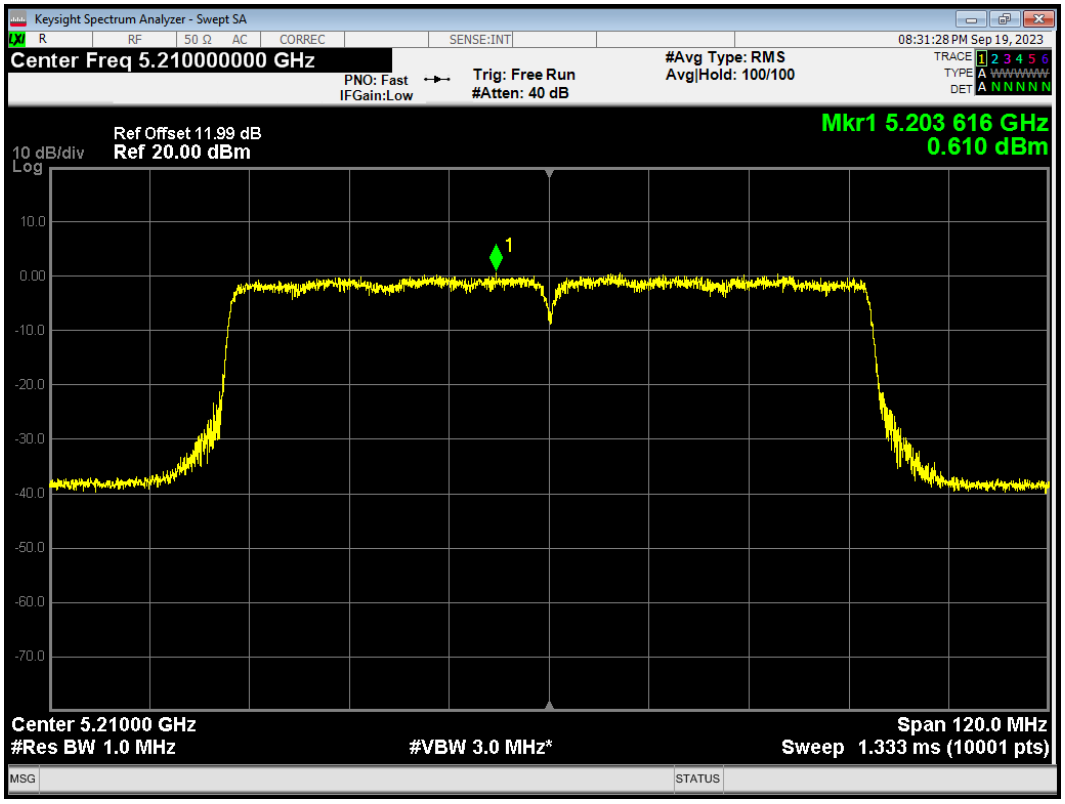
PSD 802.11ac(VHT40) 5230MHz Ant1



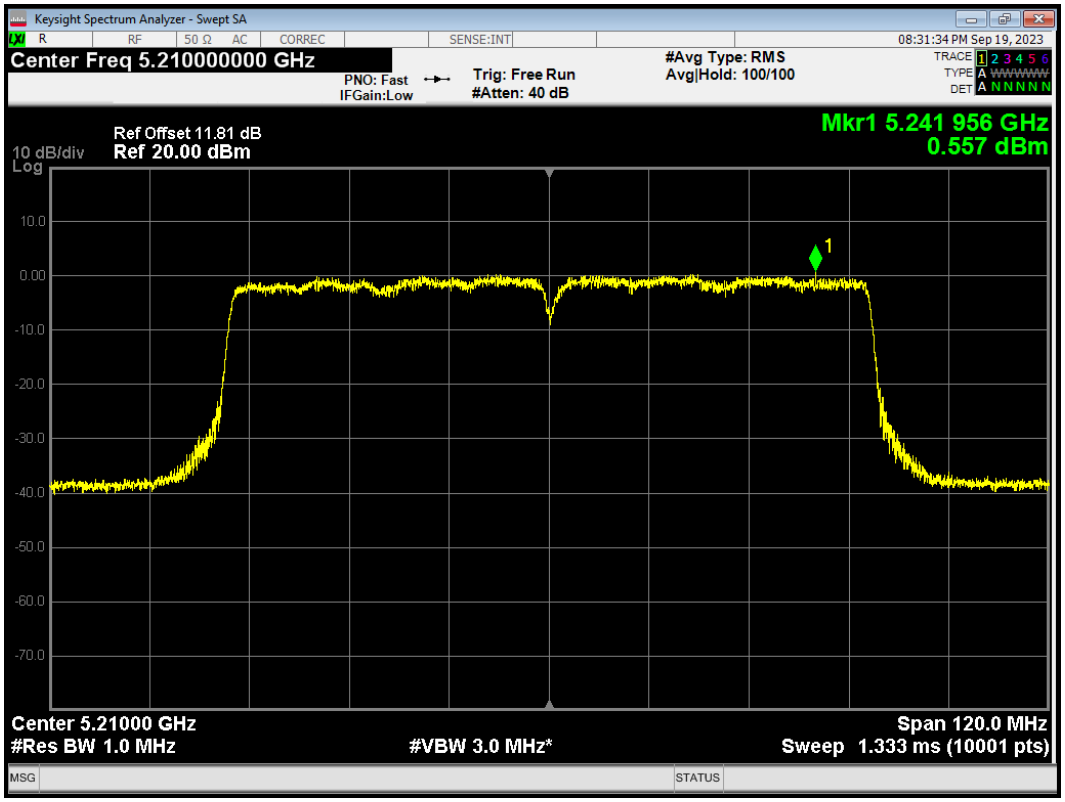
PSD 802.11ac(VHT40) 5230MHz Ant2



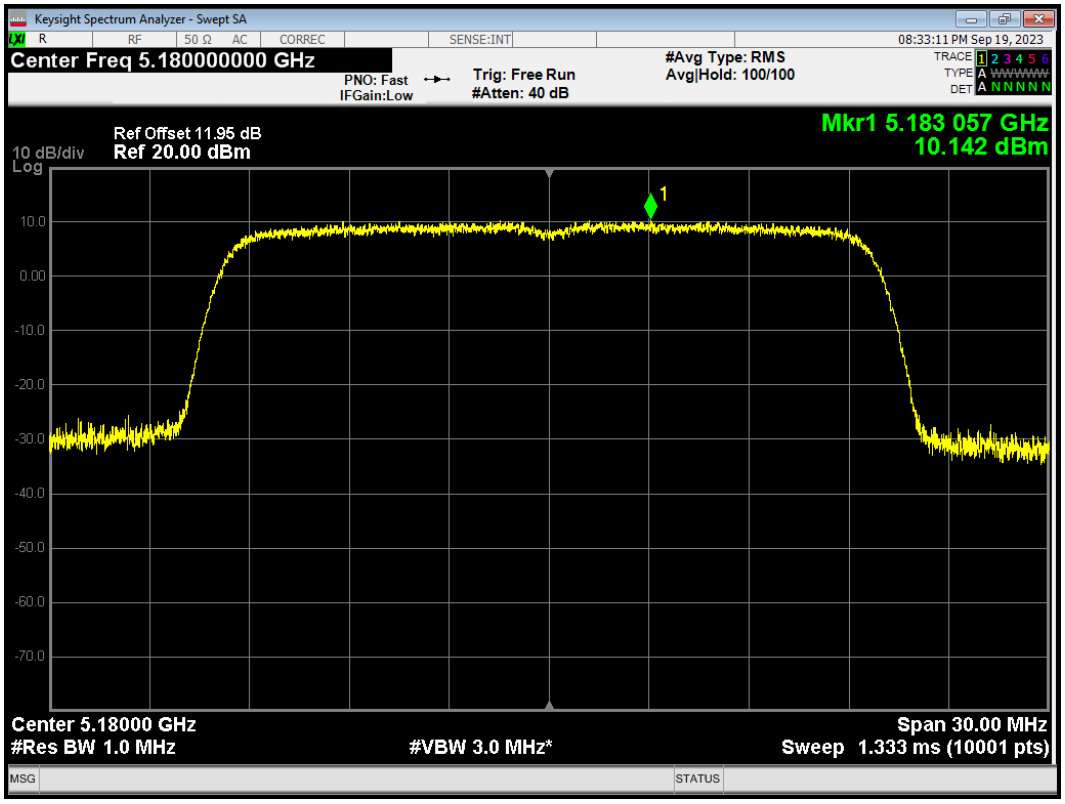
PSD 802.11ac(VHT80) 5210MHz Ant1



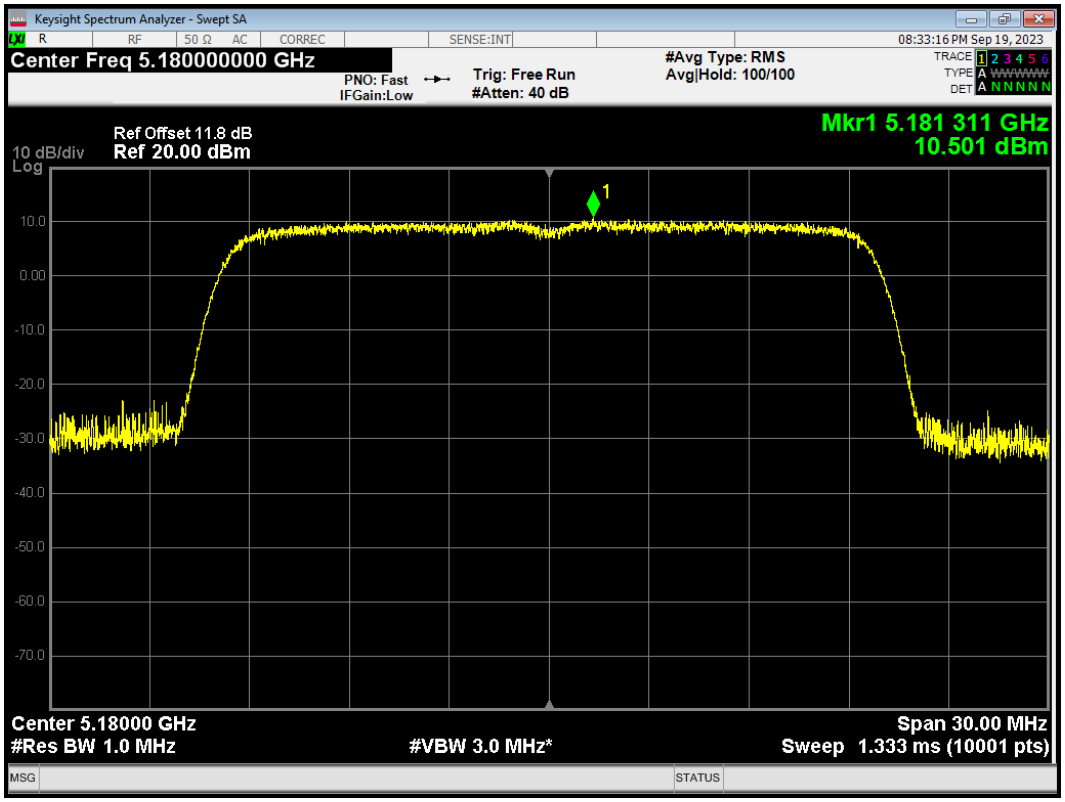
PSD 802.11ac(VHT80) 5210MHz Ant2



PSD 802.11ax(HE20) 5180MHz Ant1



PSD 802.11ax(HE20) 5180MHz Ant2



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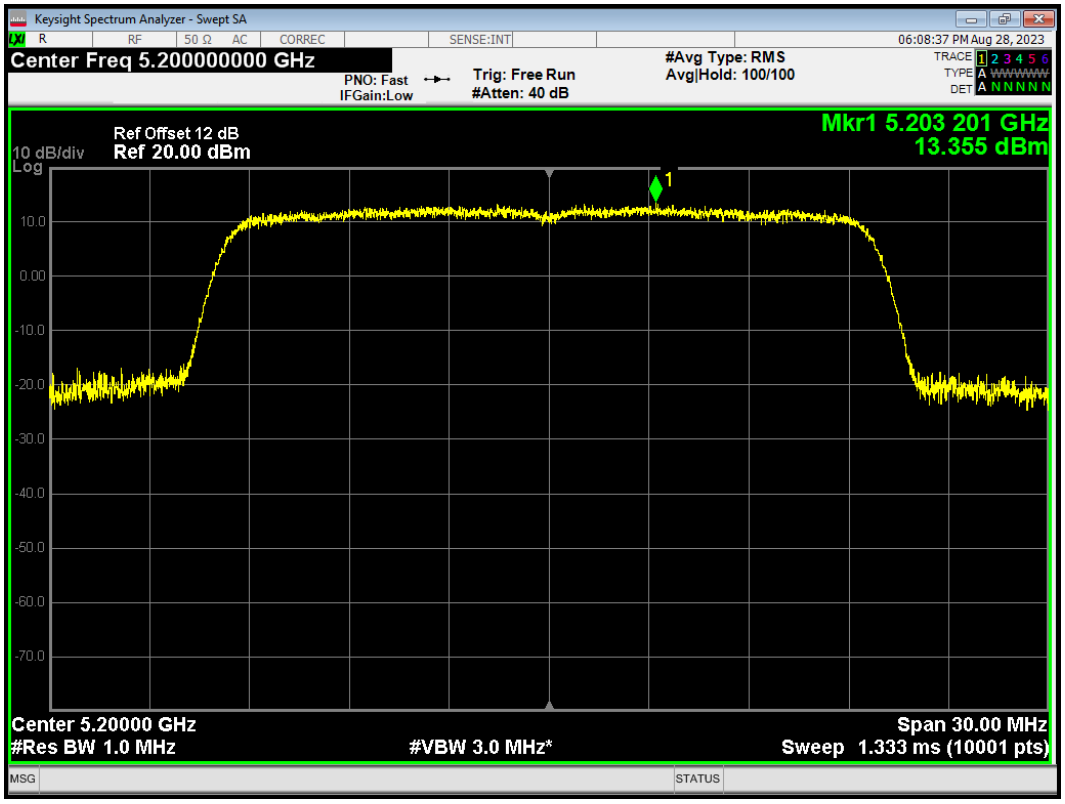

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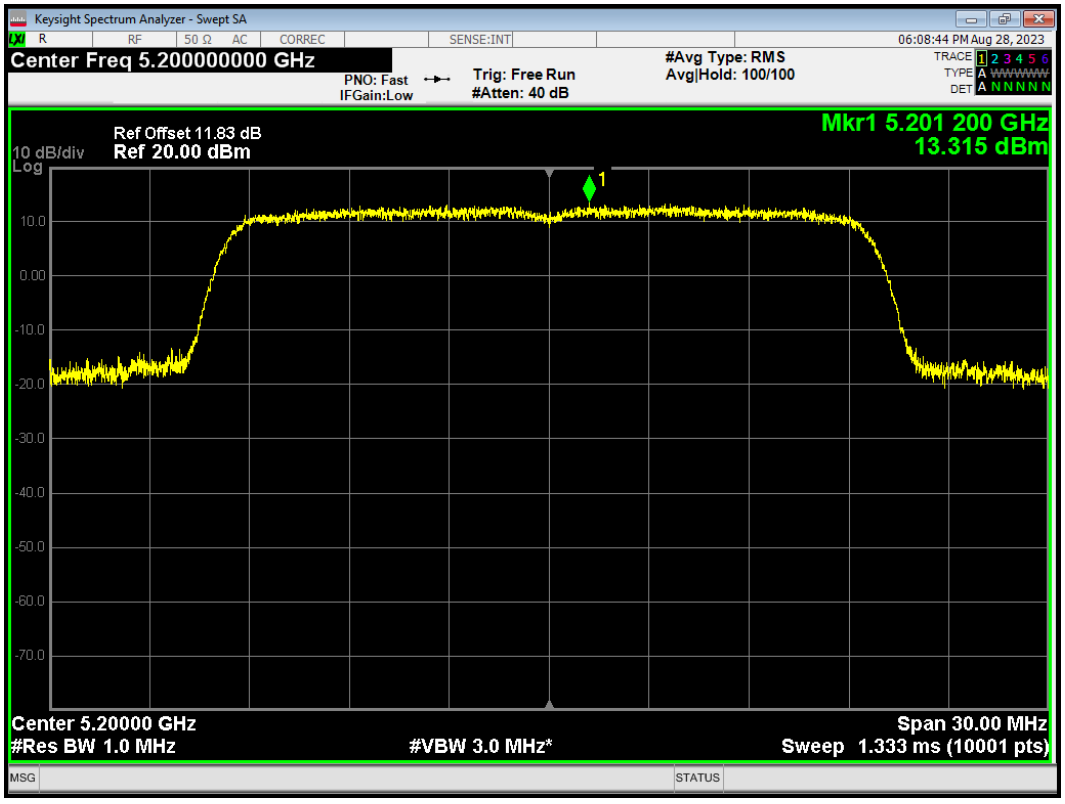
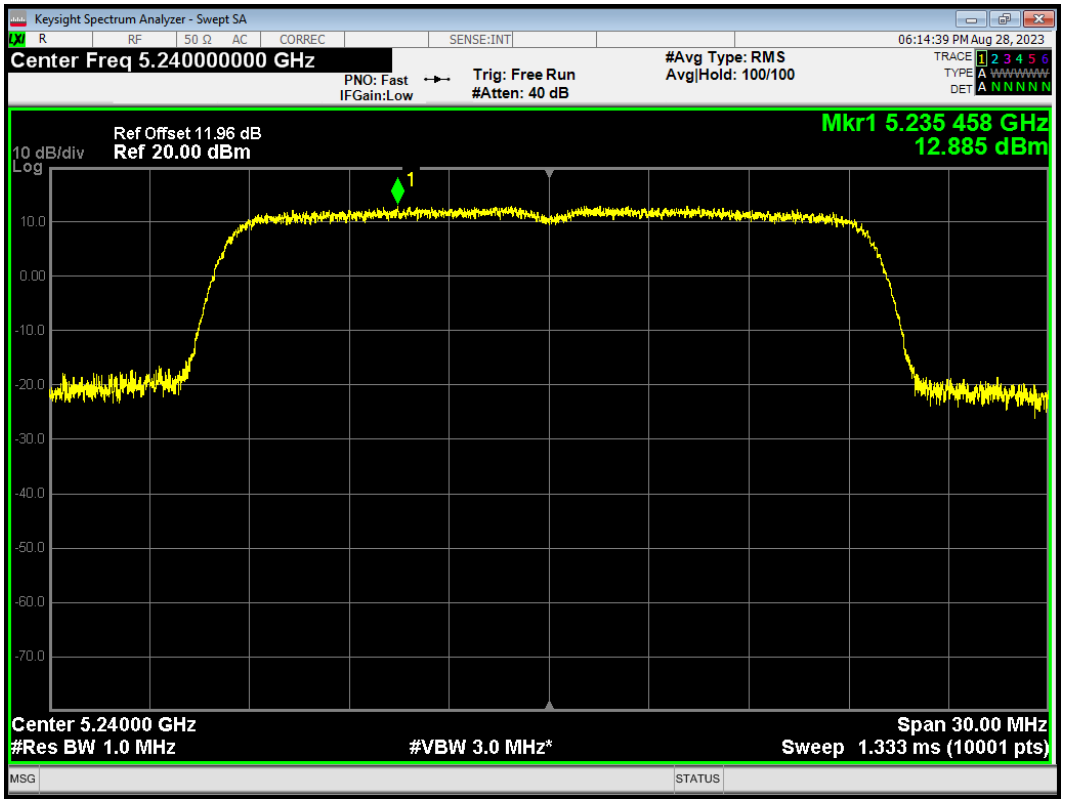
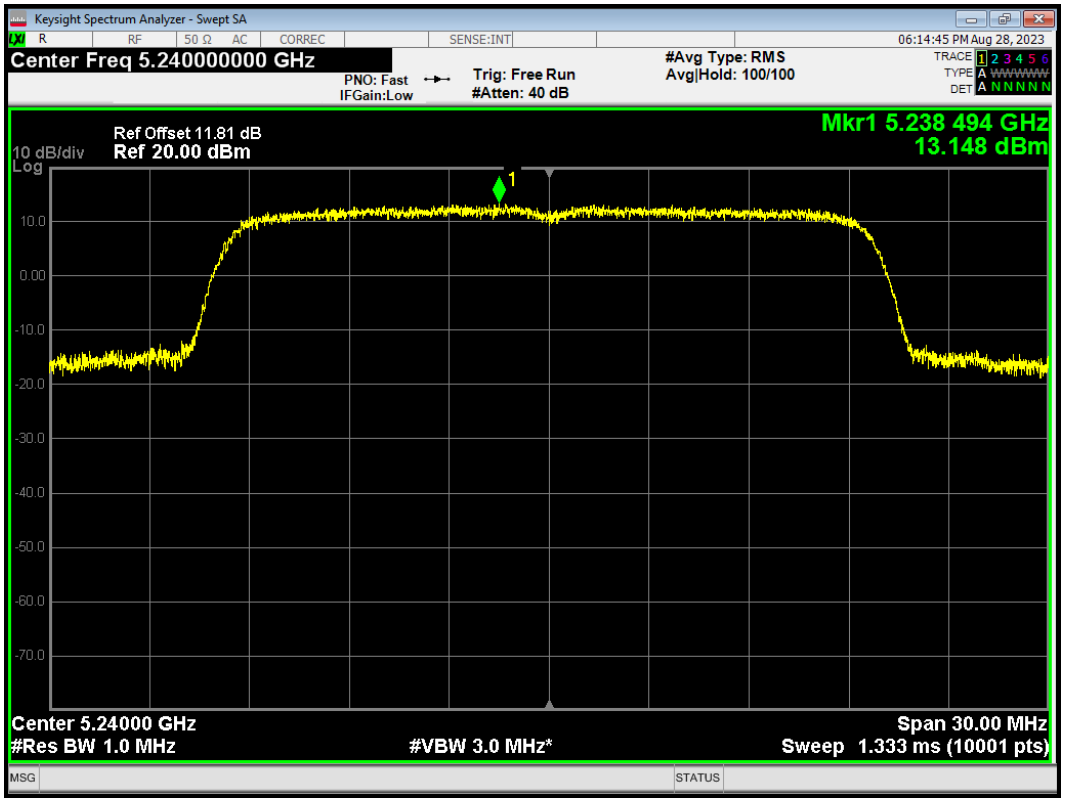


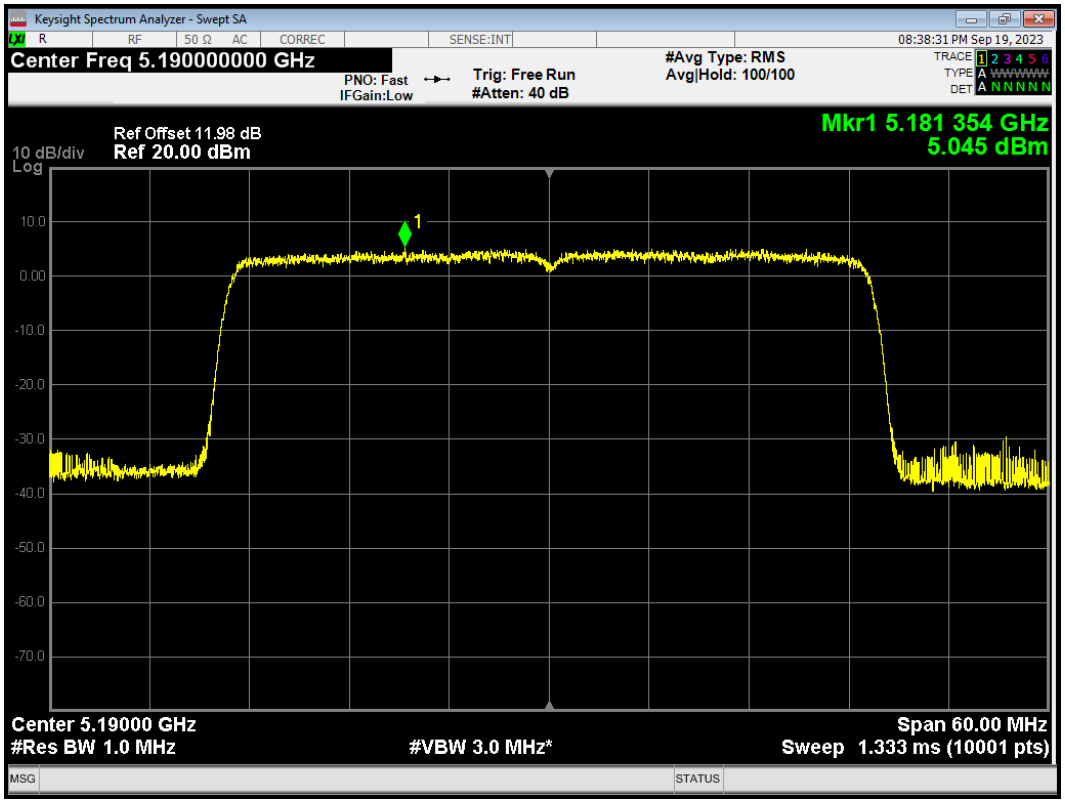
PSD 802.11ax(HE20) 5240MHz Ant1



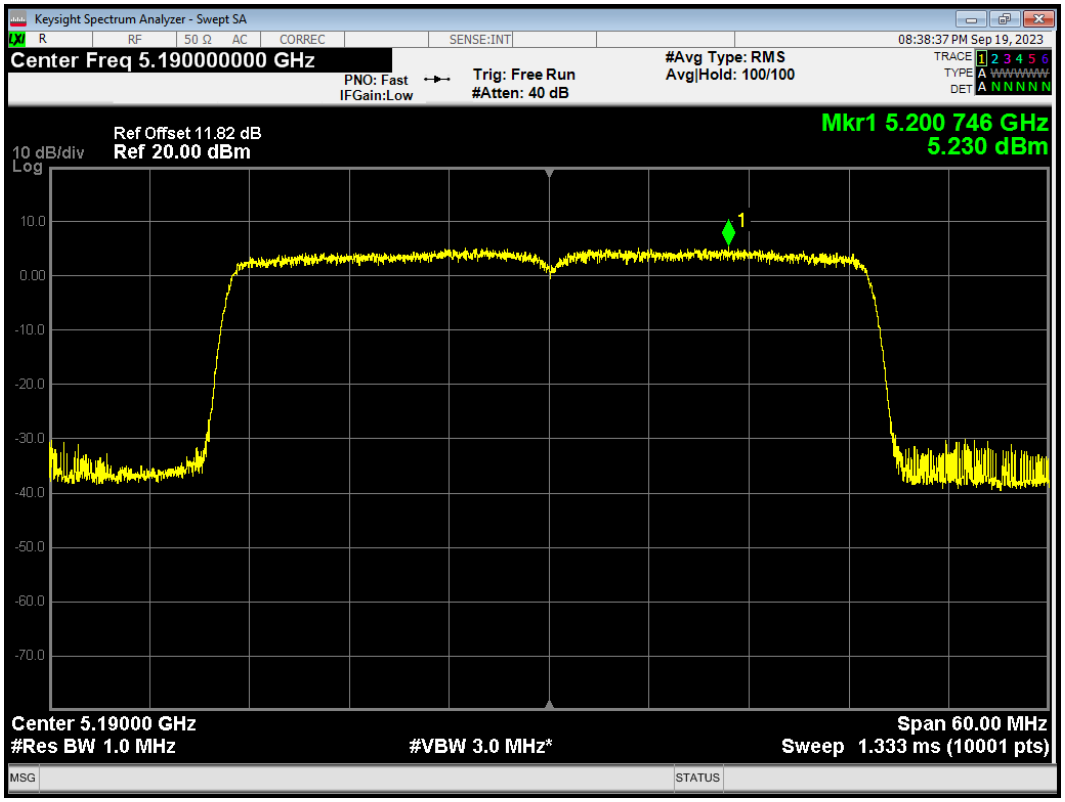
PSD 802.11ax(HE20) 5240MHz Ant2



PSD 802.11ax(HE40) 5190MHz Ant1



PSD 802.11ax(HE40) 5190MHz Ant2



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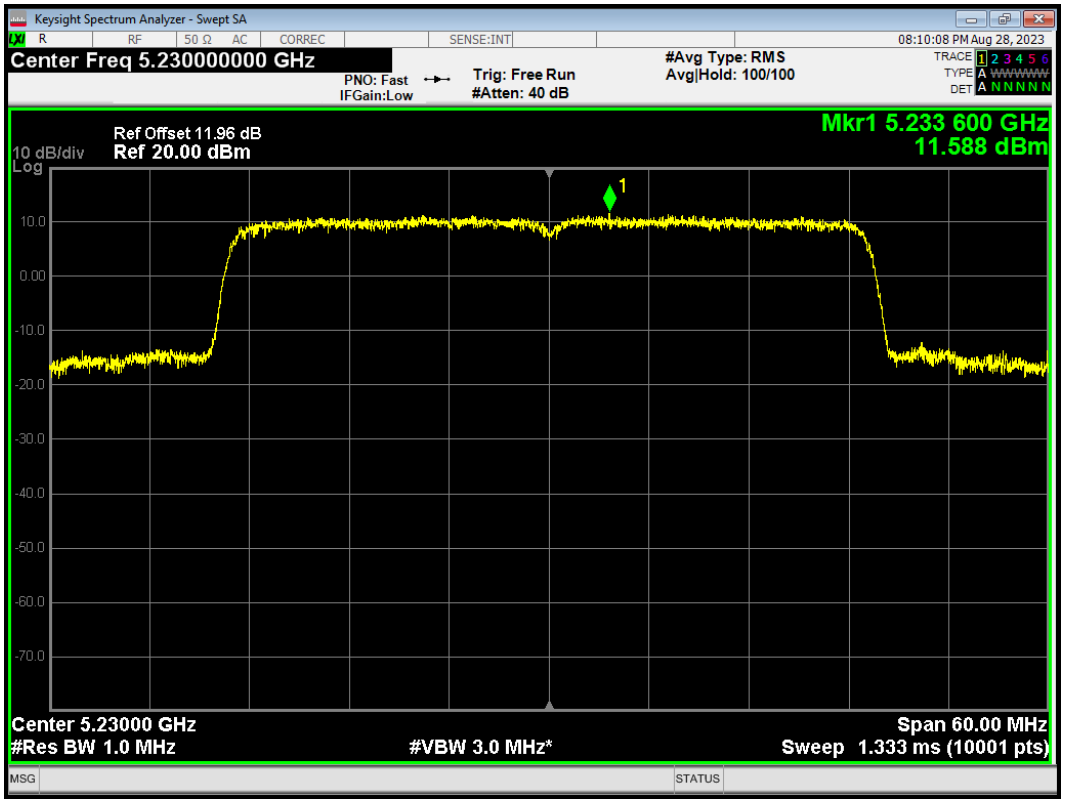

PSD 802.11ax(HE40) 5230MHz Ant2