RF TEST REPORT

Applicant	MeiG Smart Technology Co., Ltd
FCC ID	2APJ4-SNM909
Product	Smart Module
Brand	MEIGLink
Model	SNM909
Report No.	R2410A1558-R3
Issue Date	November 8, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Xu Ying *Approved by: Xu Kai*

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TABLE OF CONTENT

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
Date of Testing: October 29, 2024 ~ November 7, 2024 Date of Sample Received: October 21, 2024			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

1. Test Laboratory

1.1. Notes of the test report

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

1.2. Test facility

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

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

CAB ID: CN0002

IC (recognition number is 8510A)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform measurement.

A2LA (Certificate Number: 3857.01)

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

1.3. Testing Location

Company:	Eurofins TA Technology (Shanghai) Co., Ltd.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
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Website:	https://www.eurofins.com/electrical-and-electronics
E-mail:	Kain.Xu@cpt.eurofinscn.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	MeiG Smart Technology Co., Ltd
Applicant address	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen City.
Manufacturer	MeiG Smart Technology Co., Ltd
Manufacturer address	2nd Floor, Office Building, No.5 Lingxia Road, Fenghuang, Fuyong Street, Bao'an District, Shenzhen City.

2.2. General information

EUT Description			
Model	SNM909		
SN	M90943AAYC112800629		
Hardware Version	V1.00		
Software Version	T16		
Power Supply	External power supply		
Antenna Type	External Antenna		
Antenna Connector	SMA-J antenna (meet with the standard FCC Part 15.203 requirement)		
Antenna Gain	Band	Antenna 1	Antenna 2
	U-NII-1	1.46 dBi	1.46 dBi
	U-NII-2A	1.52 dBi	1.52 dBi
	U-NII-2C	1.48 dBi	1.48 dBi
	U-NII-3	1.48 dBi	1.48 dBi
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A: 5250MHz -5350MHz U-NII-2C: 5470MHz-5725MHz U-NII-3: 5725MHz -5850MHz		
Modulation Type	802.11a: OFDM 802.11n (HT20/HT40): OFDM 802.11ac (VHT20/VHT40/VHT80): OFDM		
Max. Output Power	16.89 dBm		
Operating temperature range	-35 ° C to 75 ° C		
Operating voltage range	3.55 VDC to 4.40 VDC		
Testing temperature range	-30 ° C to 50° C		
Testing voltage range	3.55 VDC - 4 VDC – 4.4 VDC		
State voltage	4 VDC		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.			

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

3. Applied Standards

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

Test standards:

FCC CFR47 Part 15E (2023) 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.

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		
	Antenna 1	Antenna 2	MIMO
802.11a	6 Mbps	6 Mbps	6 Mbps
802.11n HT20	MCS0	MCS0	MCS8
802.11n HT40	MCS0	MCS0	MCS8
802.11ac VHT20	MCS0	MCS0	MCS0
802.11ac VHT40	MCS0	MCS0	MCS0
802.11ac VHT80	MCS0	MCS0	MCS0

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

Test Cases	Antenna 1	Antenna 2	MIMO
Average conducted output power	O	O	O
Occupied bandwidth	O	--	--
Frequency stability	O	--	--
Power Spectral Density	O	O	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
	U-NII-2A	20 MHz	52	5260MHz
			56	5280MHz
			60	5300MHz
			64	5320MHz
		40 MHz	54	5270MHz
			62	5310MHz
		80 MHz	58	5290MHz
	U-NII-2C	20 MHz	100	5500MHz
			104	5520MHz
			108	5540MHz
			112	5560MHz
			116	5580MHz
			120	5600MHz
			124	5620MHz
			128	5640MHz
			132	5660MHz
			136	5680MHz
			140	5700MHz
			144	5720MHz
		40 MHz	102	5510MHz
			110	5550MHz
			118	5590MHz
			126	5630MHz
			134	5670MHz
			142	5710MHz
		80 MHz	106	5530MHz
			122	5610MHz
			138	5690MHz
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz

			157	5785MHz
			161	5805MHz
			165	5825MHz
		40 MHz	151	5755MHz
			159	5795MHz
		80 MHz	155	5775MHz
Does this device support TPC Function? ☐Yes ☒No				
Does this device support TDWR Band? ☒Yes ☐No				

5. Test Case Results

5.1. Occupied Bandwidth

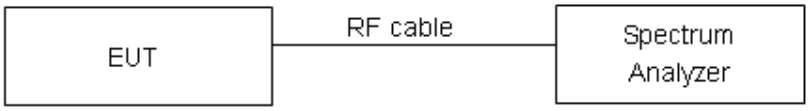
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.
For U-NII-1/U-NII-2A/U-NII-2C, set RBW ≈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	16.673	23.242	PASS
	5200	16.656	23.103	PASS
	5240	16.682	22.988	PASS
802.11n HT20	5180	17.823	23.850	PASS
	5200	17.828	23.798	PASS
	5240	17.833	23.339	PASS
802.11n HT40	5190	36.354	41.273	PASS
	5230	36.292	41.274	PASS
802.11ac VHT20	5180	17.838	23.158	PASS
	5200	17.796	24.055	PASS
	5240	17.844	23.886	PASS
802.11ac VHT40	5190	36.300	41.824	PASS
	5230	36.293	42.119	PASS
802.11ac VHT80	5210	75.872	84.292	PASS

U-NII-2A

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.673	23.036	PASS
	5300	16.662	22.863	PASS
	5320	16.684	22.676	PASS
802.11n HT20	5260	17.826	23.072	PASS
	5300	17.850	23.417	PASS
	5320	17.834	23.260	PASS
802.11n HT40	5270	36.315	41.646	PASS
	5310	36.348	41.460	PASS
802.11ac VHT20	5260	17.825	23.526	PASS
	5300	17.825	22.804	PASS
	5320	17.773	23.096	PASS
802.11ac VHT40	5270	36.300	42.295	PASS
	5310	36.291	42.229	PASS
802.11ac VHT80	5290	75.915	83.731	PASS

U-NII-2C

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.674	22.316	PASS
	5600	16.705	22.561	PASS
	5700	16.683	22.752	PASS
	5720	16.697	22.115	PASS
802.11n HT20	5500	17.854	23.344	PASS
	5600	17.852	23.407	PASS
	5700	17.835	23.627	PASS
	5720	17.809	24.974	PASS
802.11n HT40	5510	36.390	42.155	PASS
	5590	36.350	41.940	PASS
	5670	36.315	42.081	PASS
	5710	36.334	41.448	PASS
802.11ac VHT20	5500	17.812	23.120	PASS
	5600	17.844	23.911	PASS
	5700	17.844	23.742	PASS
	5720	17.820	23.715	PASS
802.11ac VHT40	5510	36.335	41.125	PASS
	5590	36.323	41.667	PASS
	5670	36.306	41.276	PASS
	5710	36.256	41.242	PASS
802.11ac VHT80	5610	75.892	83.527	PASS
	5690	75.749	84.103	PASS

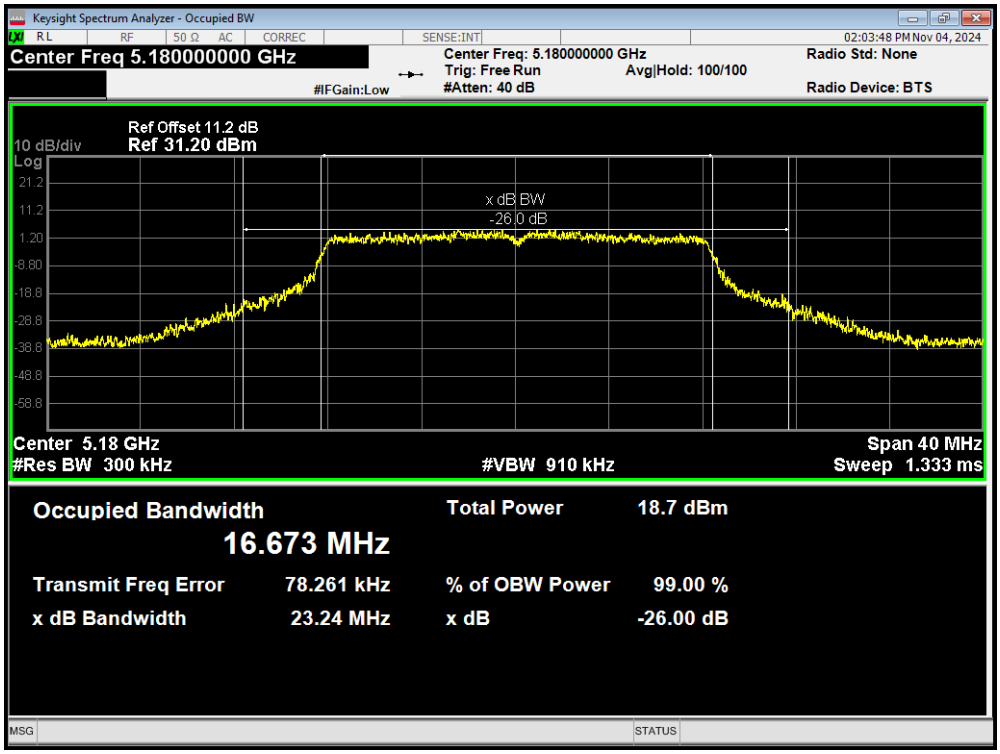
U-NII-3

Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5720	16.672	17.549	500	PASS
	5745	16.690	13.845	500	PASS
	5785	16.640	15.035	500	PASS
	5825	16.668	15.060	500	PASS
802.11n HT20	5720	17.803	15.149	500	PASS
	5745	17.819	16.297	500	PASS
	5785	17.814	15.831	500	PASS
	5825	17.824	15.337	500	PASS
802.11n HT40	5710	36.270	35.429	500	PASS
	5755	36.262	36.013	500	PASS
	5795	36.305	35.164	500	PASS
802.11ac VHT20	5720	17.802	15.083	500	PASS
	5745	17.821	15.690	500	PASS
	5785	17.832	15.808	500	PASS
	5825	17.853	16.283	500	PASS
802.11ac VHT40	5710	36.267	35.088	500	PASS
	5755	36.293	35.899	500	PASS
	5795	36.301	35.295	500	PASS
802.11ac VHT80	5690	75.681	75.143	500	PASS
	5775	75.774	75.038	500	PASS

99% bandwidth

U-NII-1

OBW 802.11a 5180MHz



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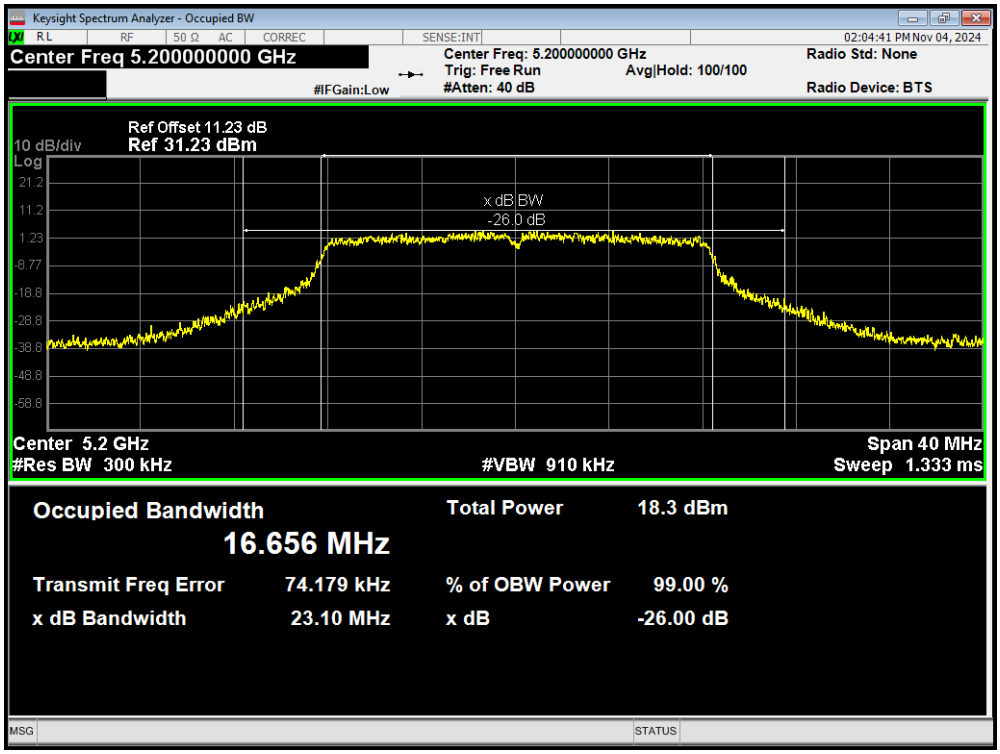

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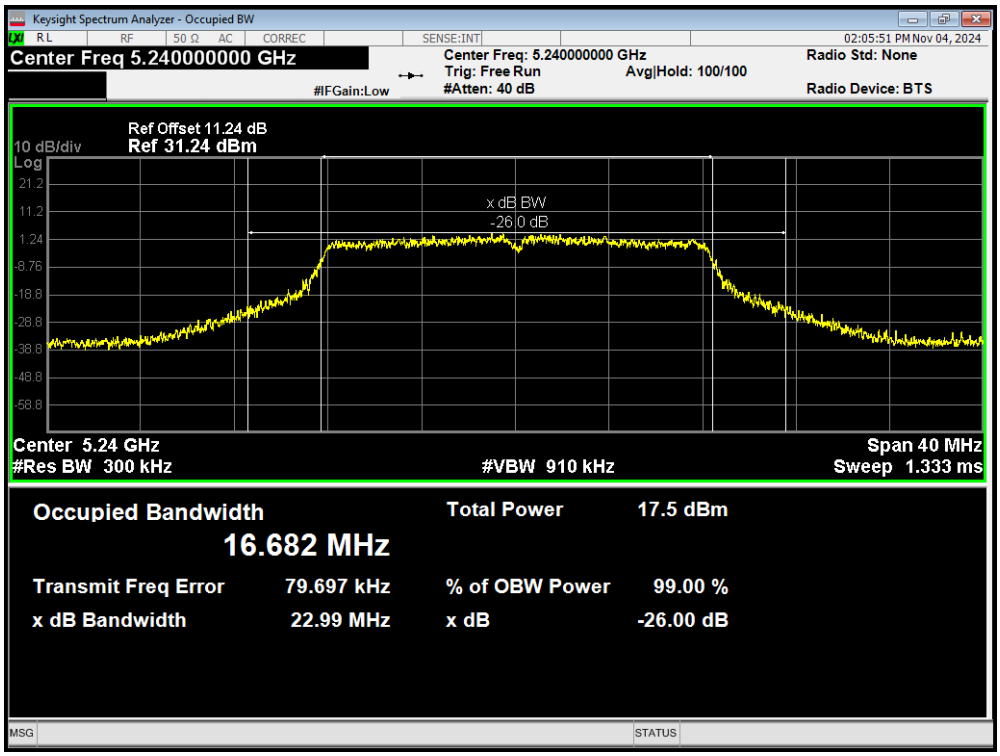
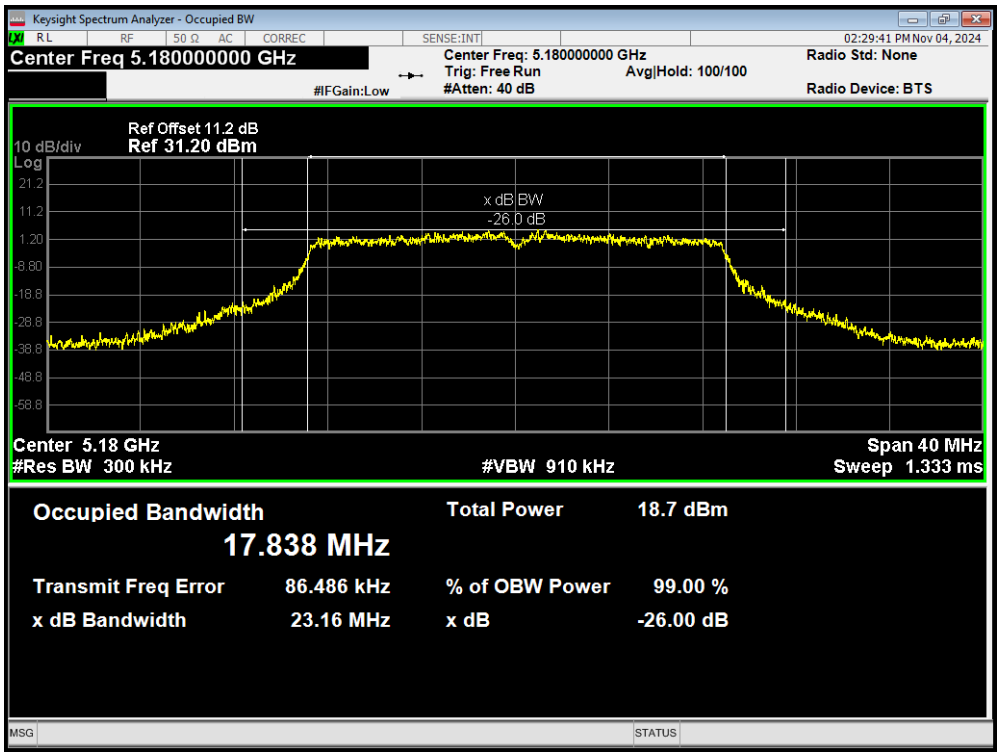


OBW 802.11ac(VHT20) 5180MHz



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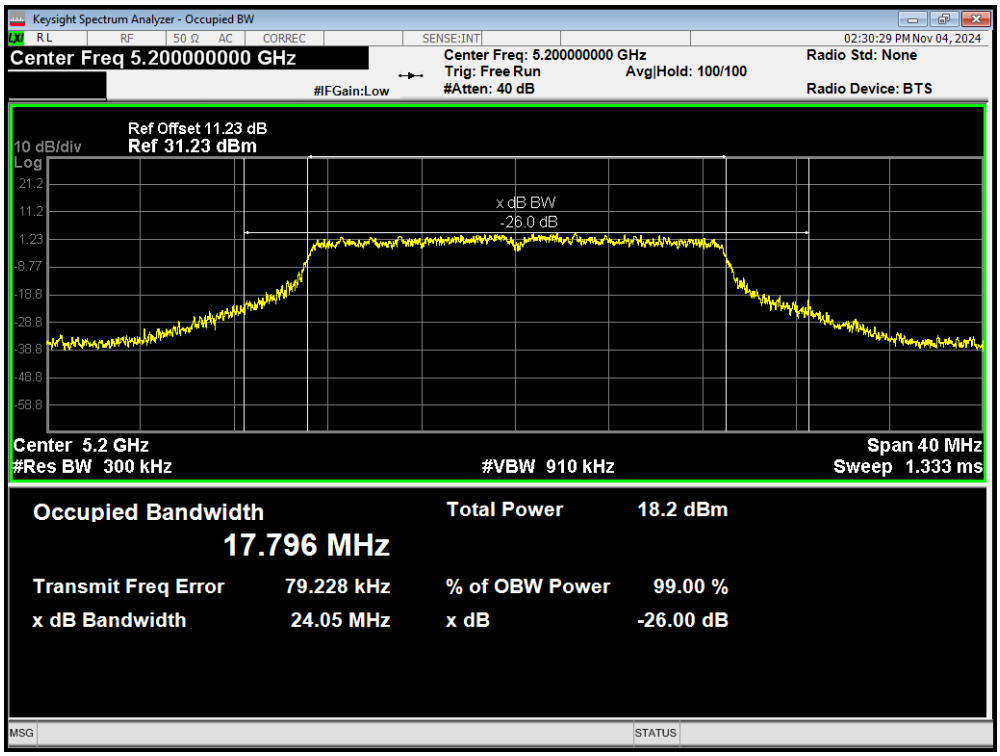

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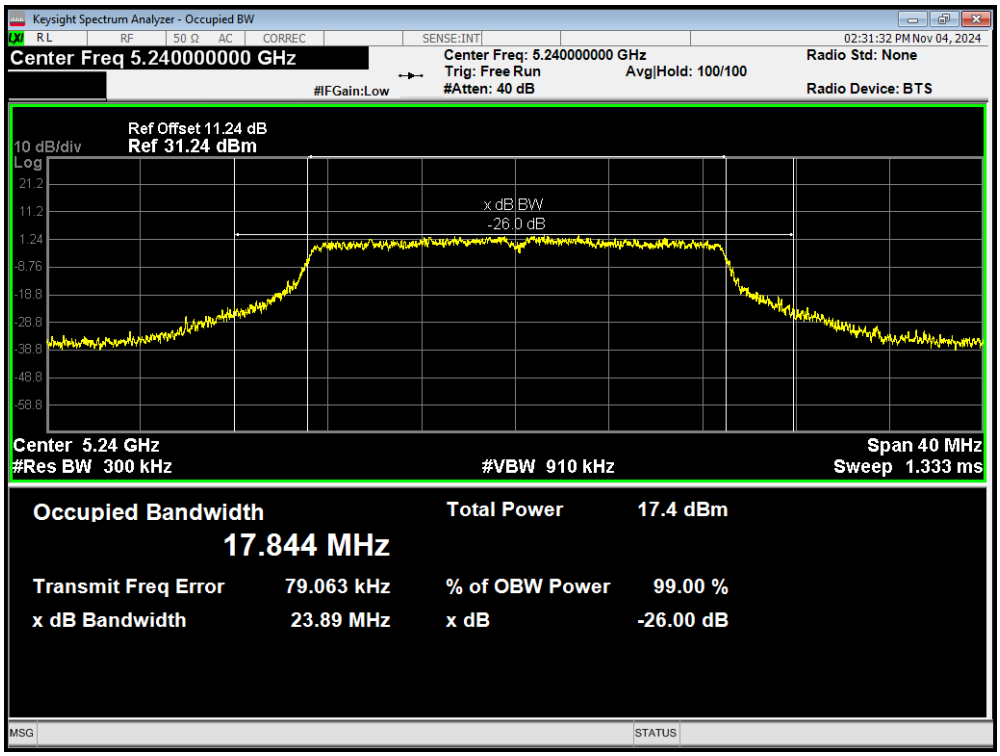

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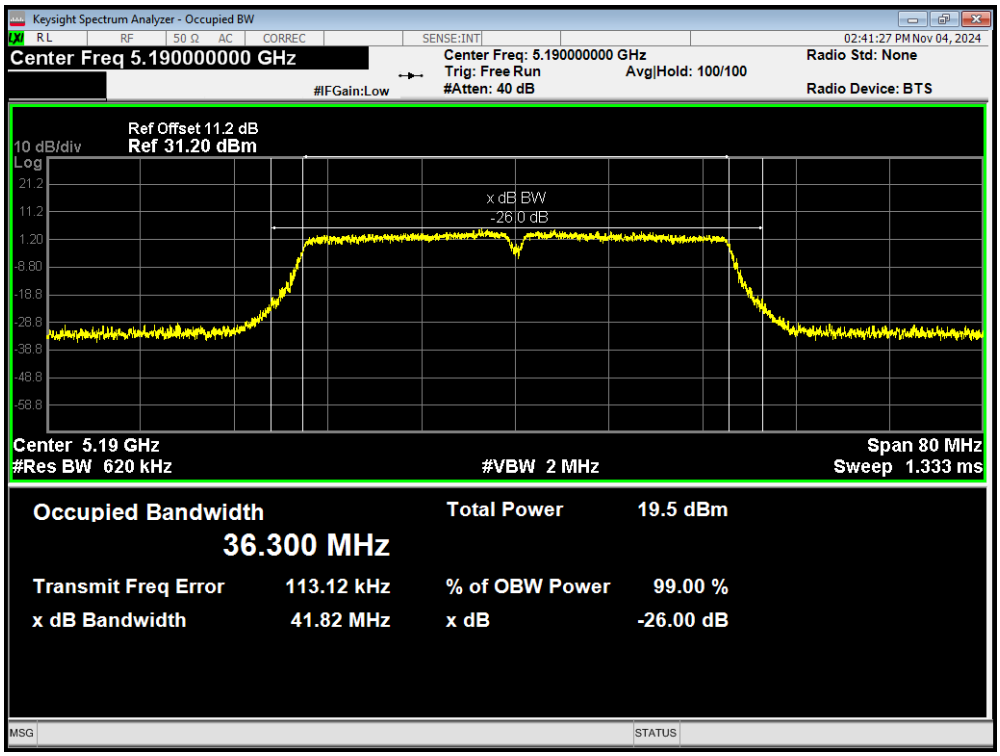

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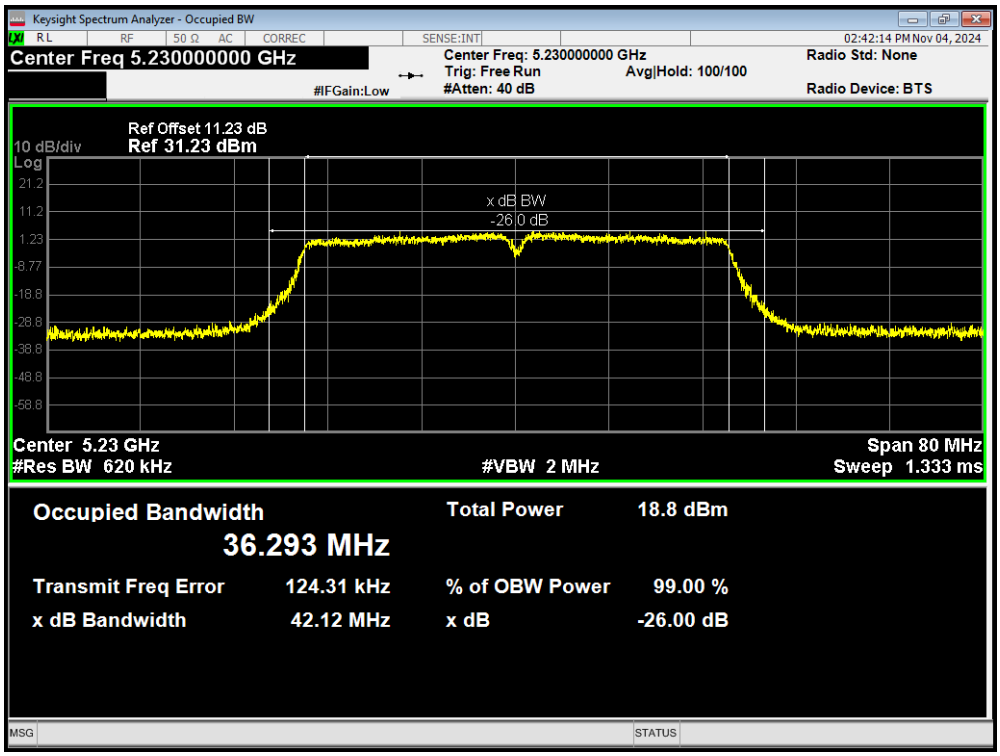

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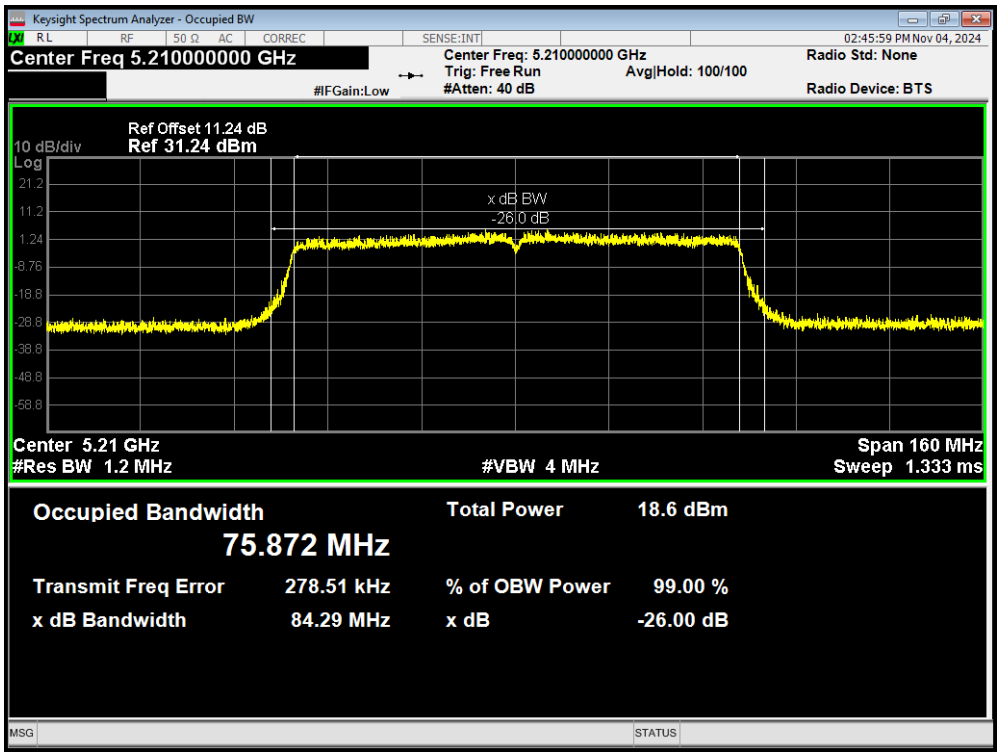

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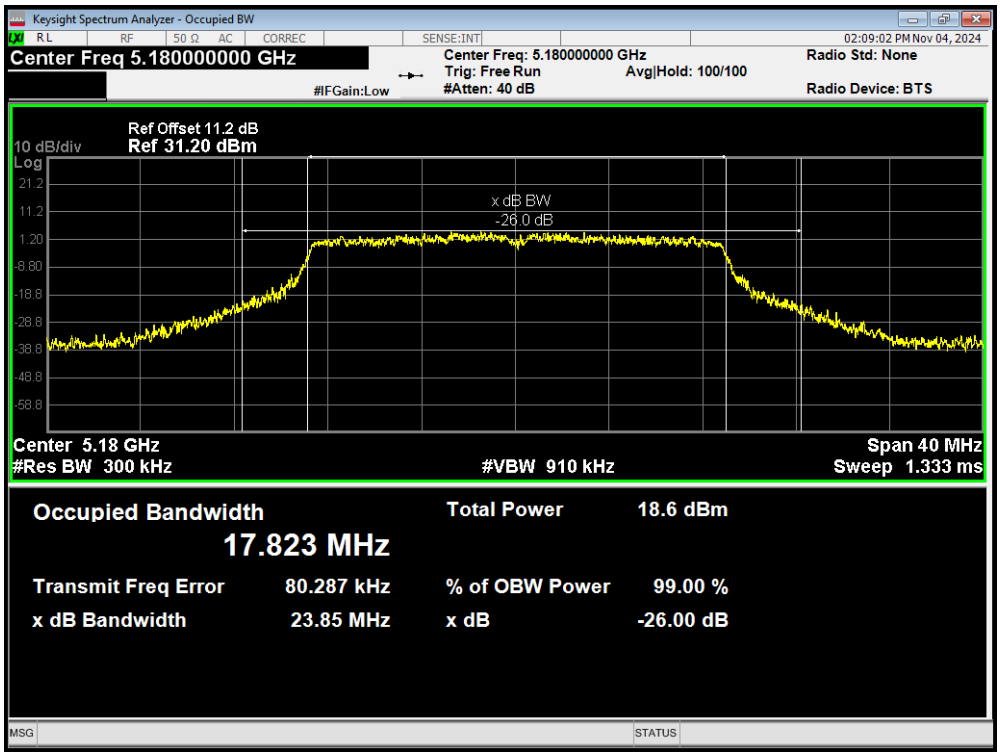

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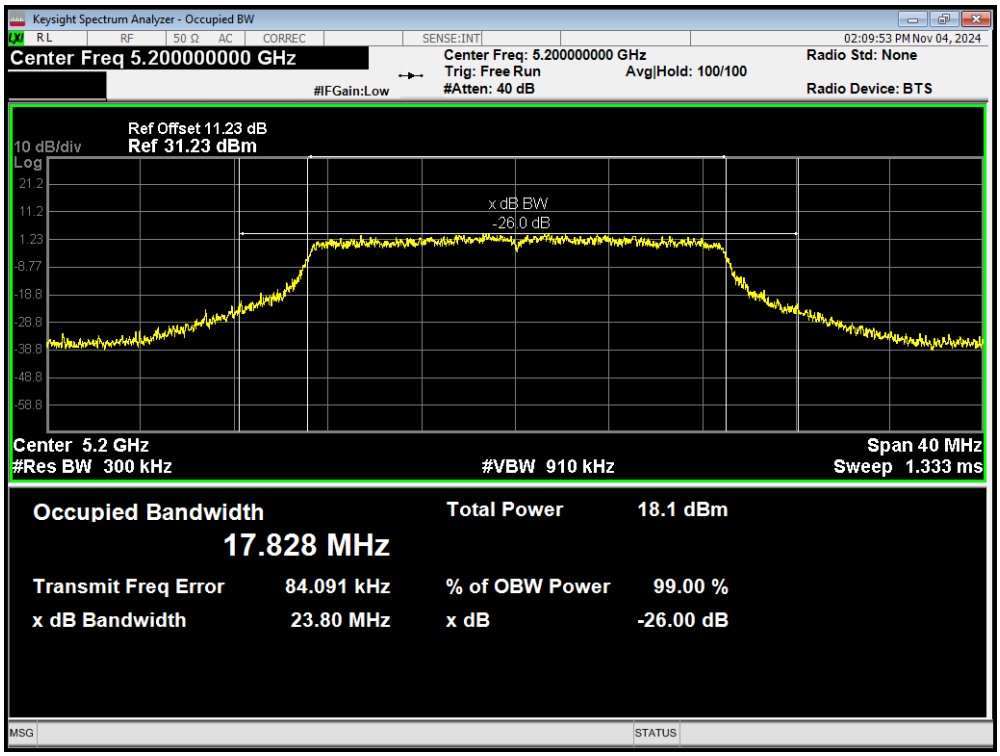

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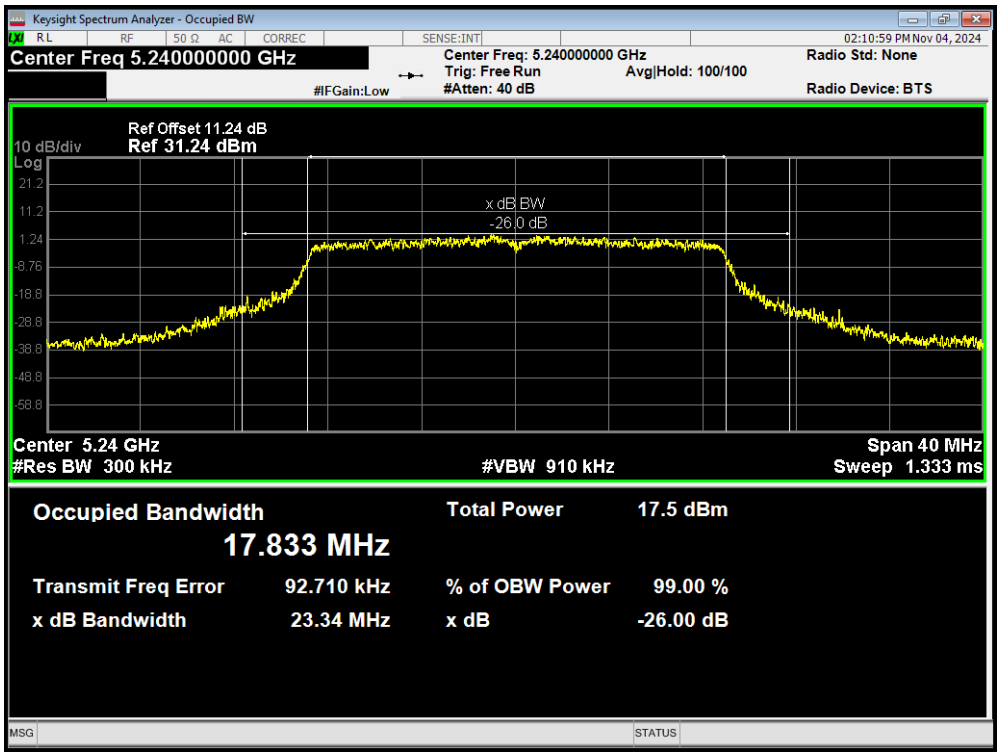

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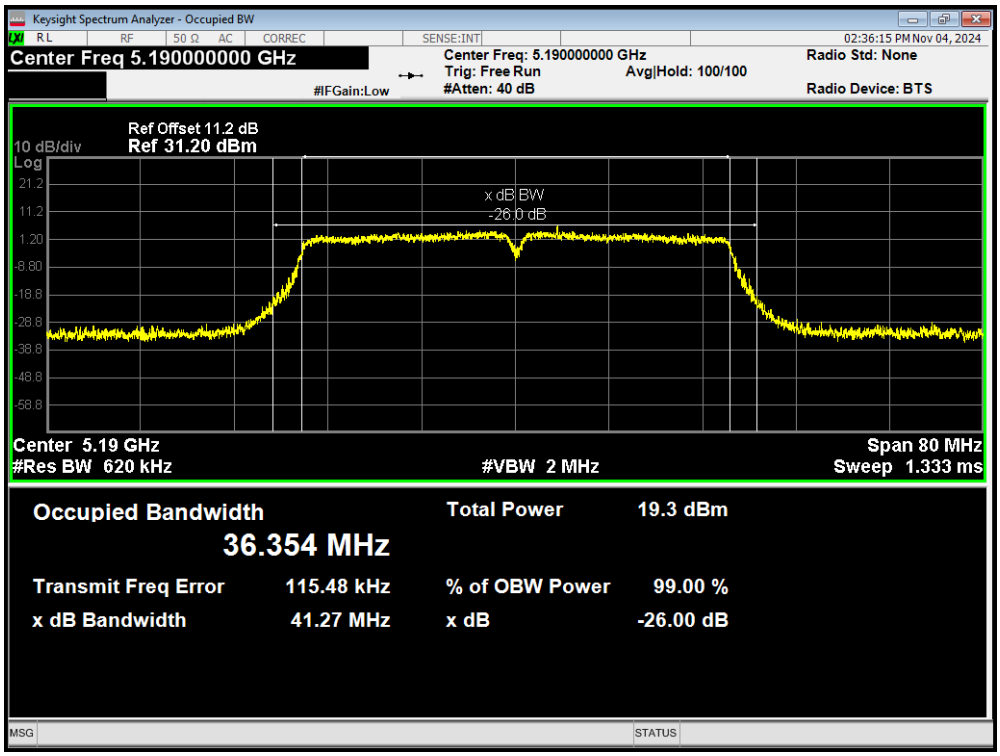

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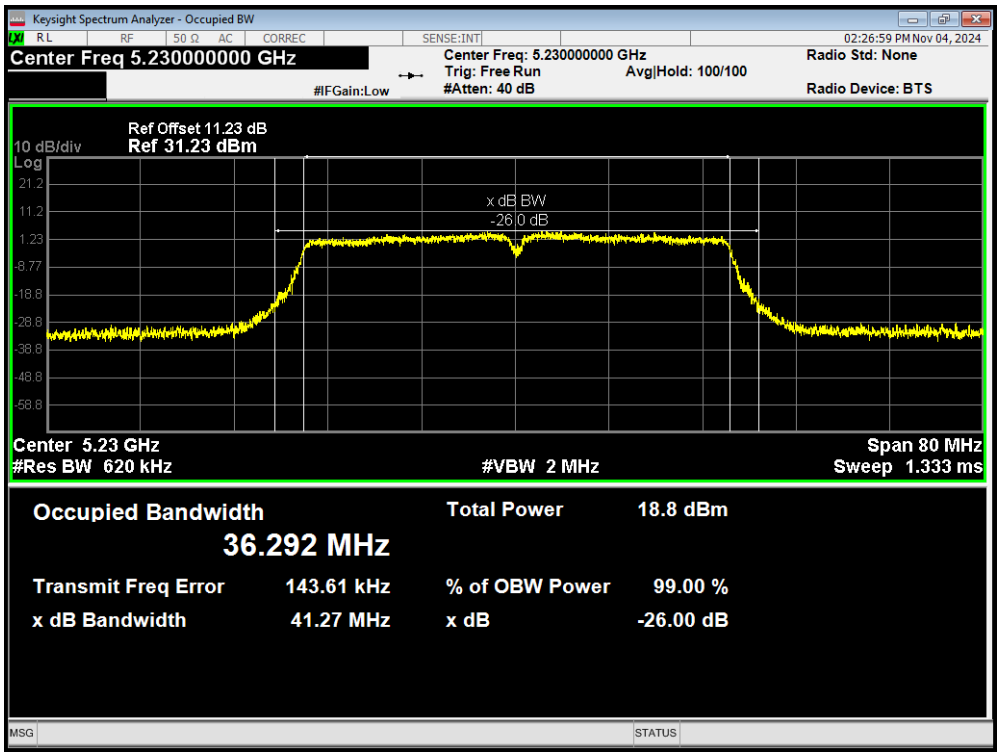
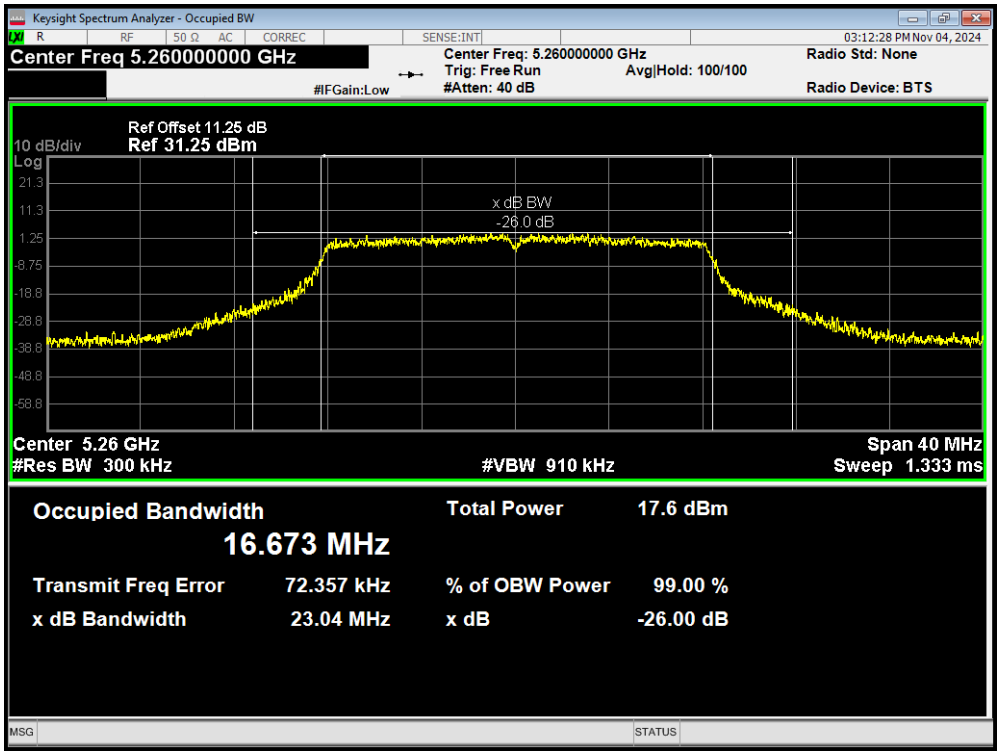


U-NII-2A

OBW 802.11a 5260MHz



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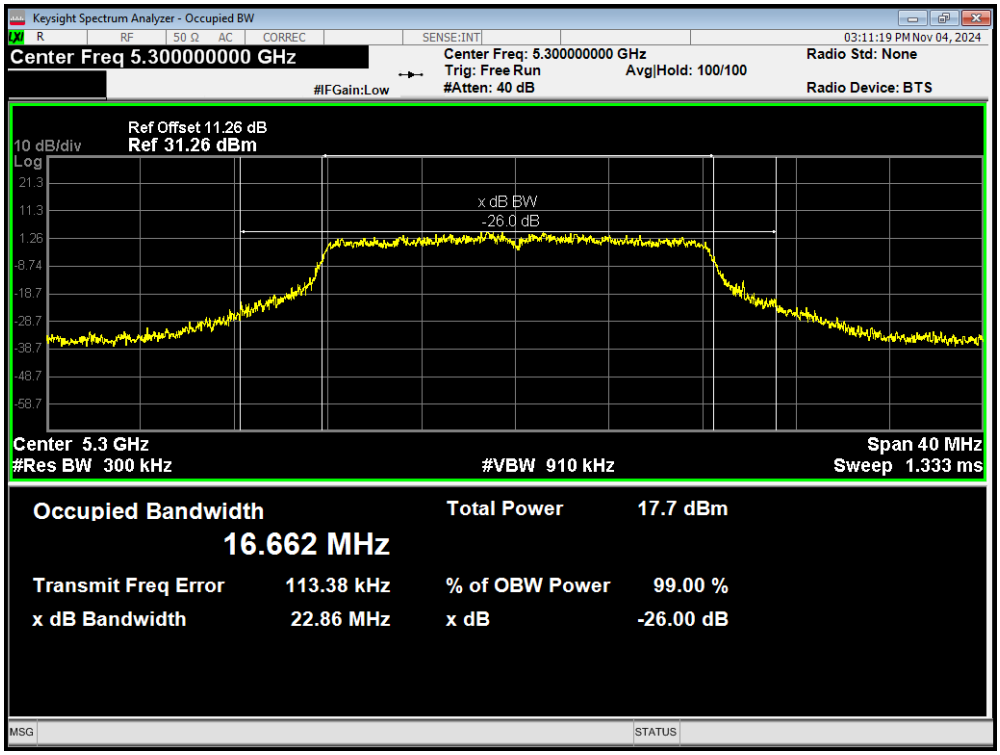

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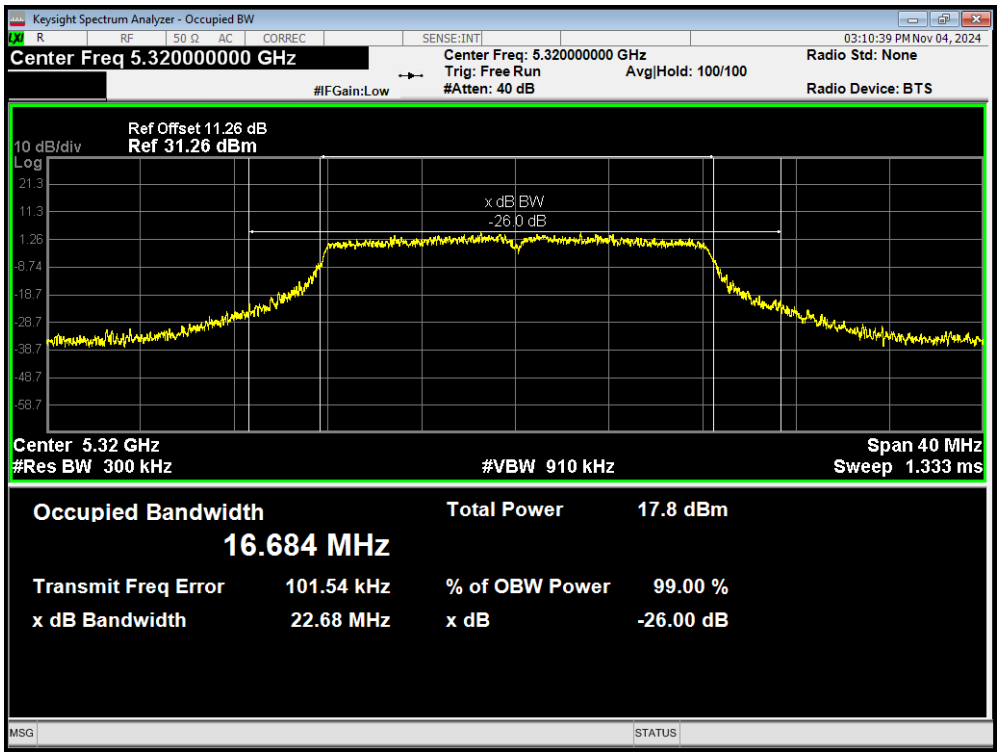
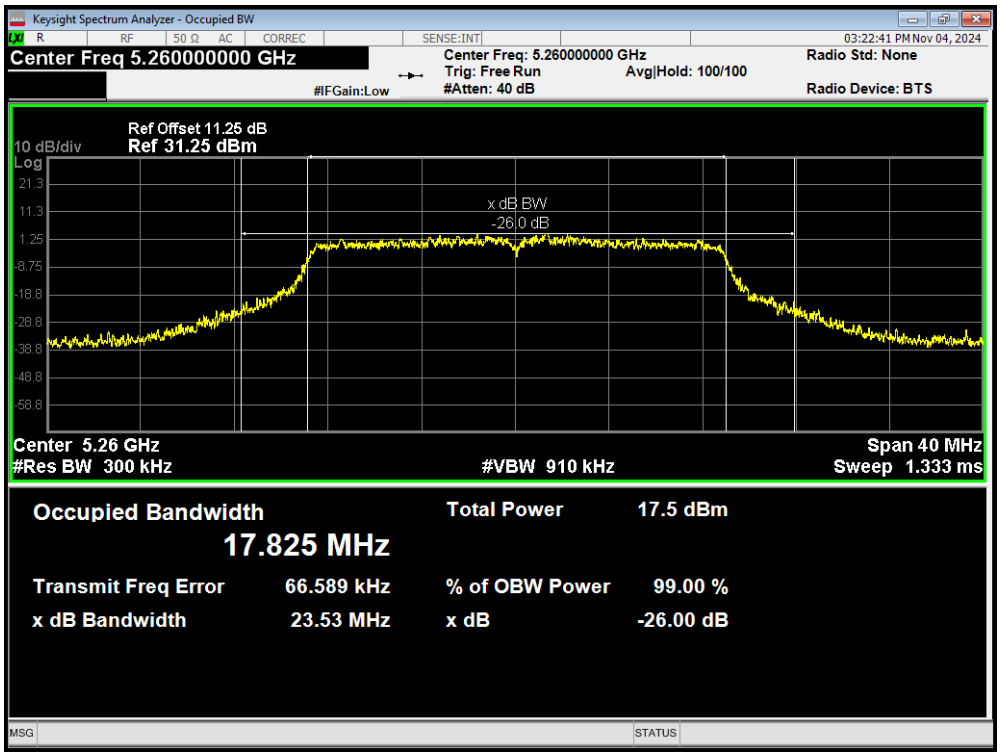


OBW 802.11ac(VHT20) 5260MHz



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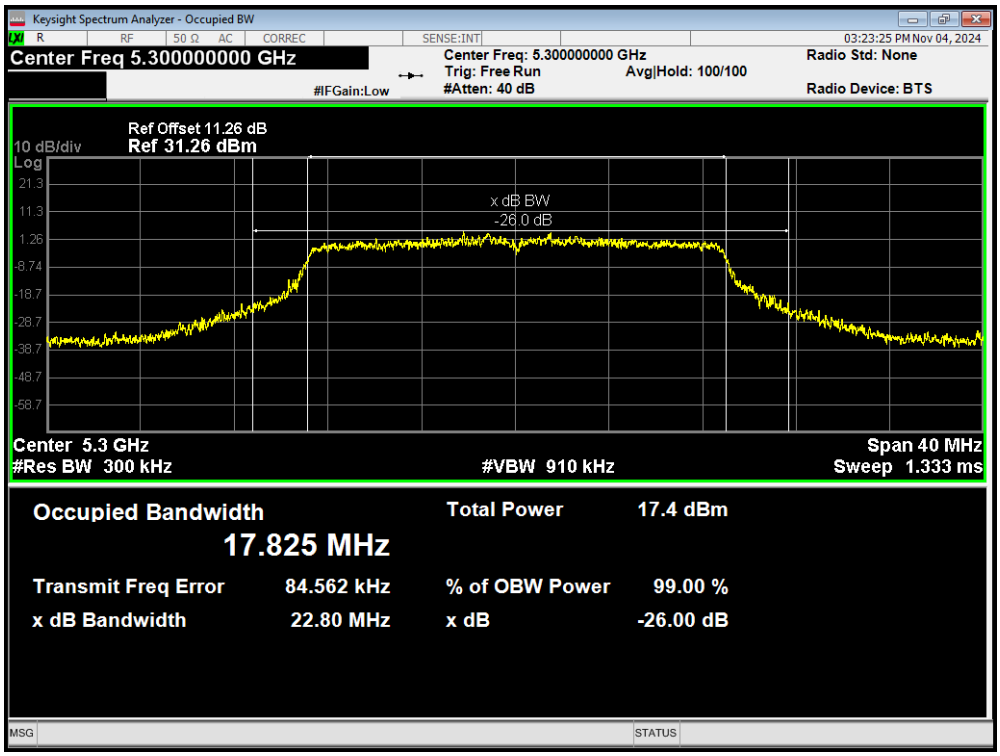

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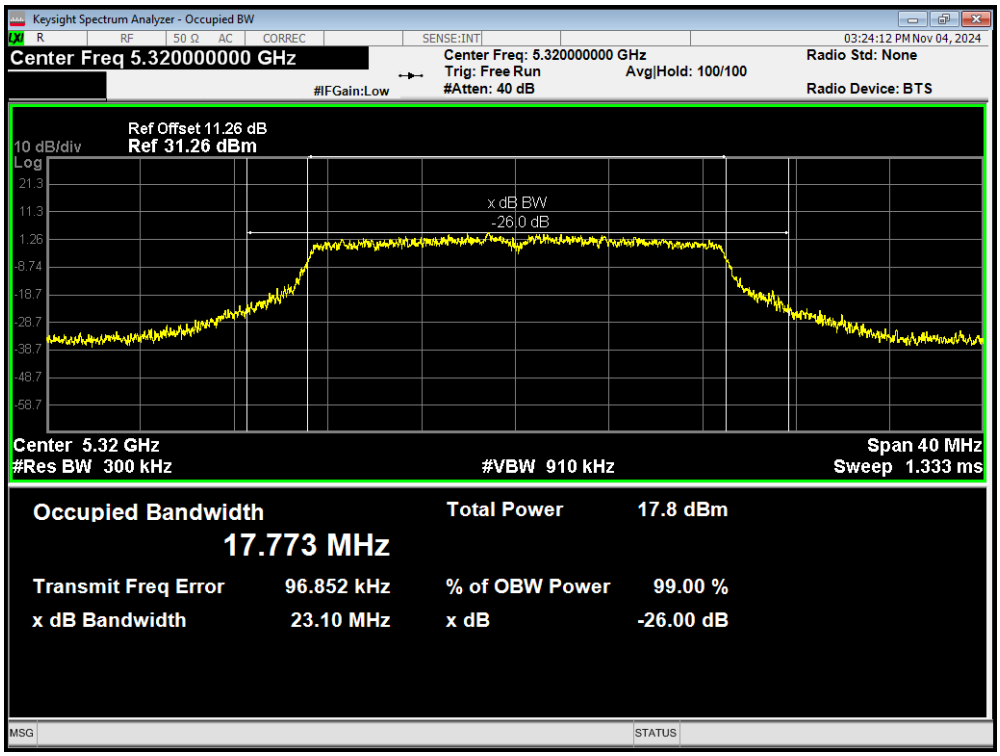

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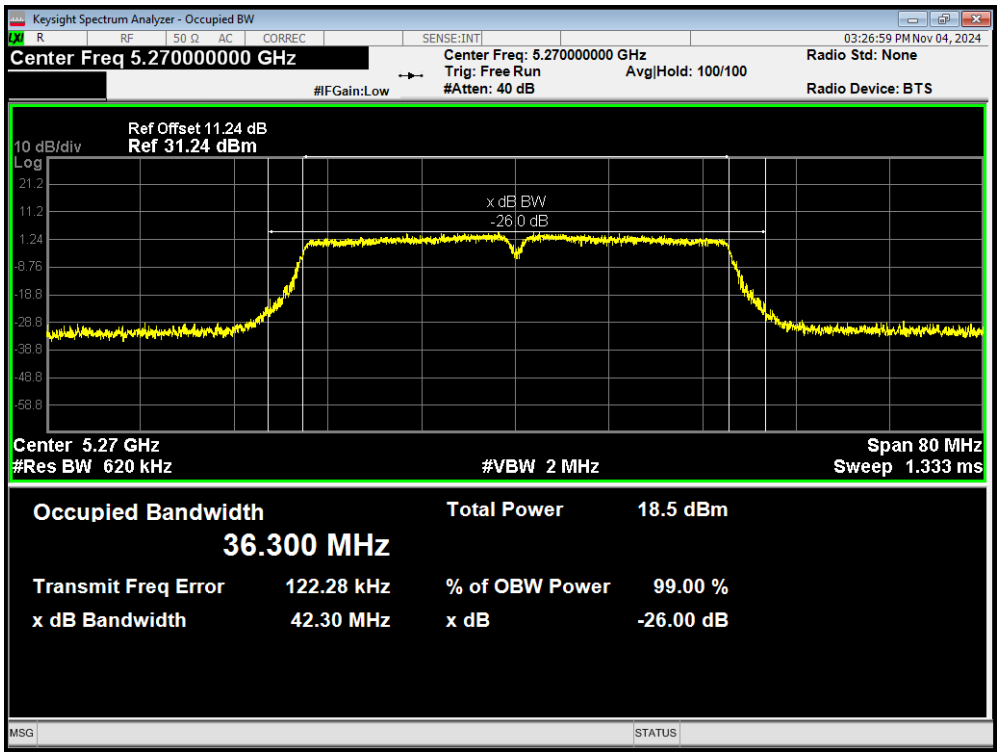

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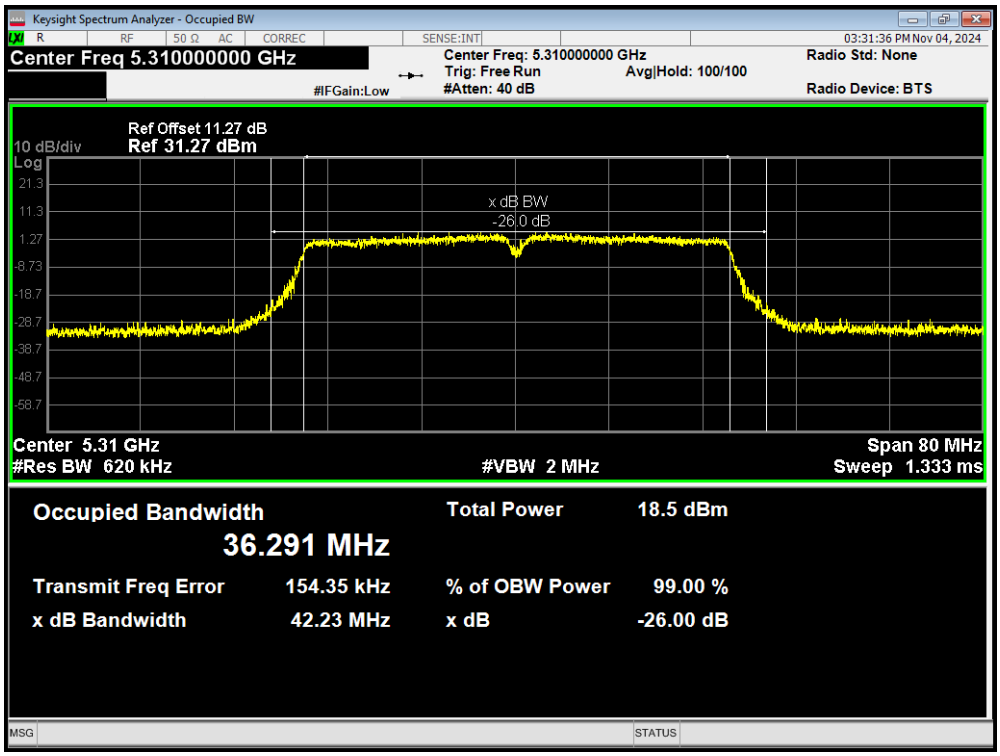

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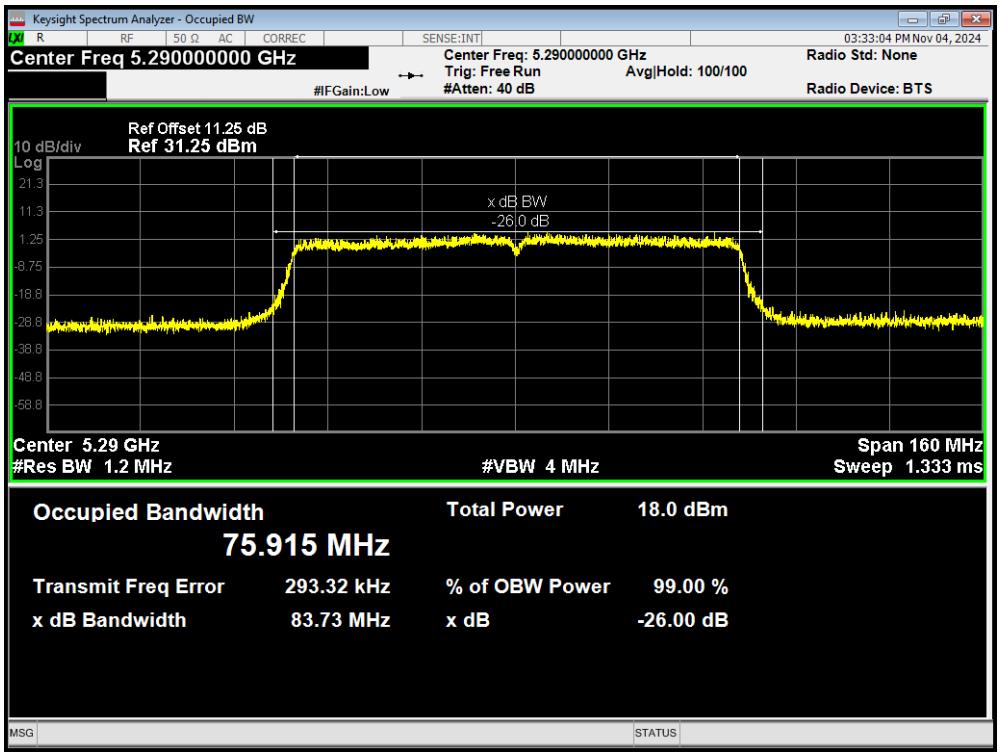
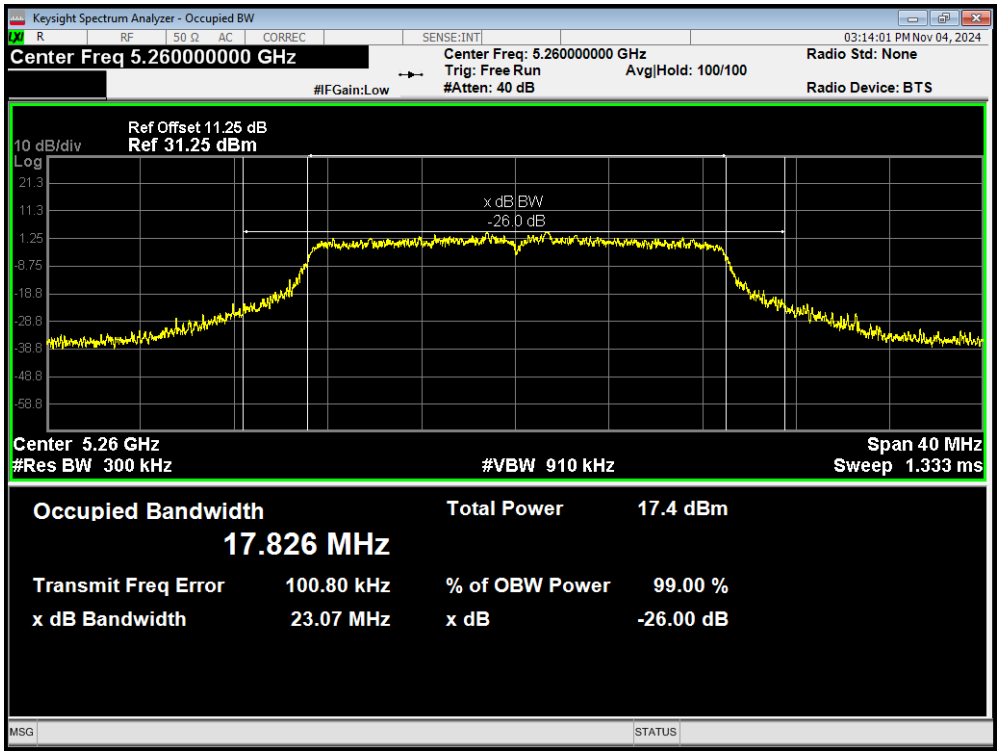
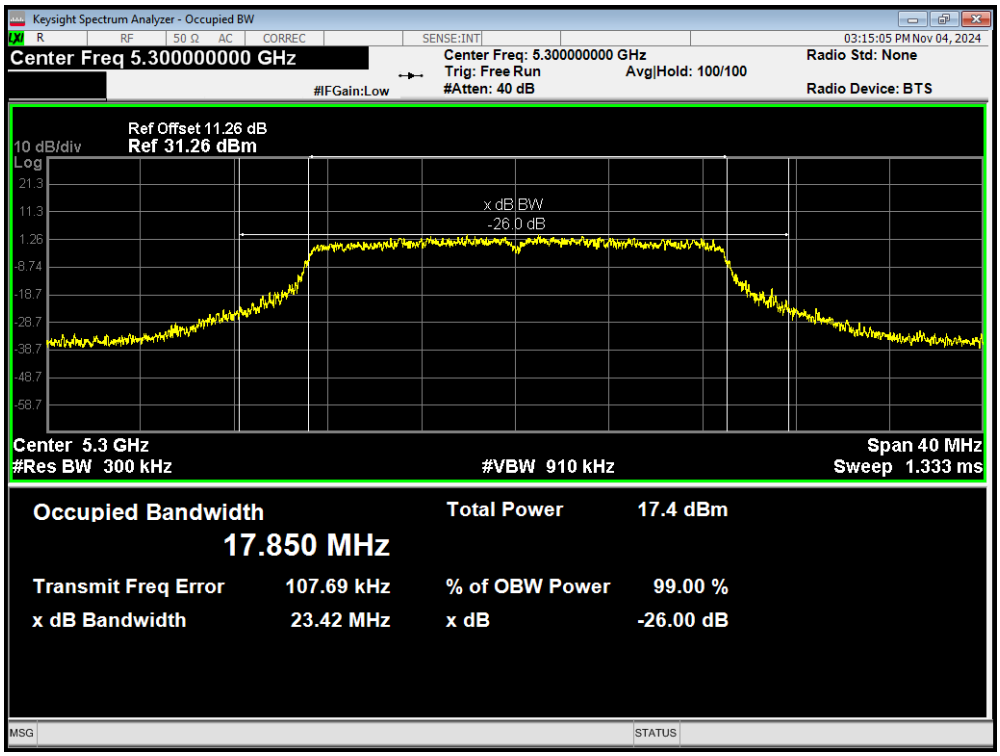


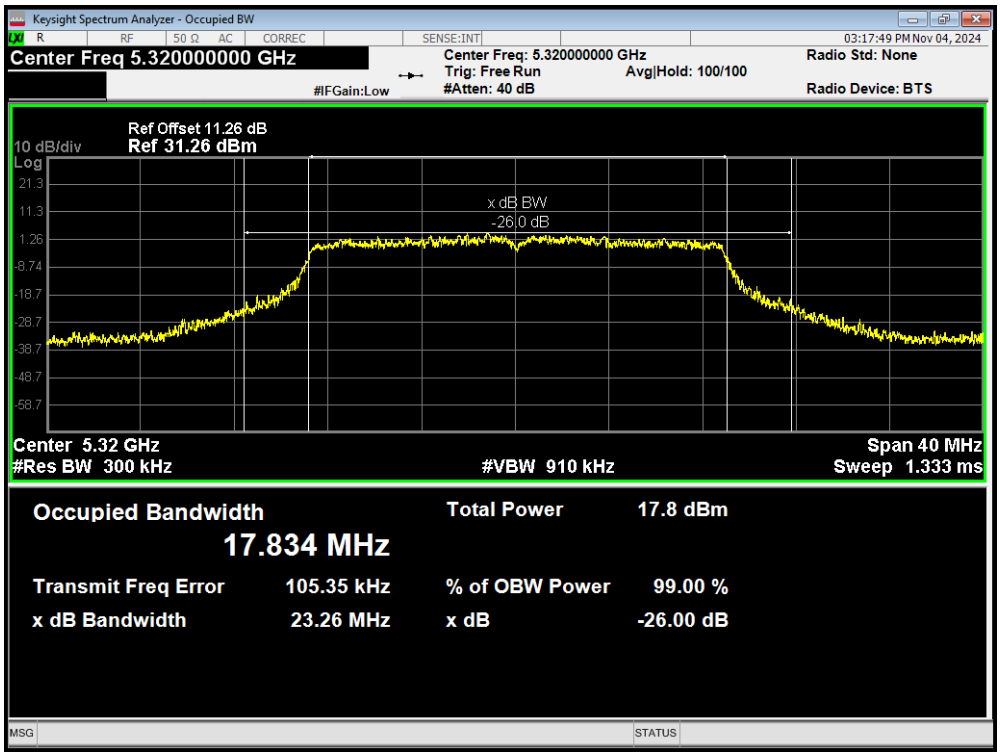
OBW 802.11n(HT20) 5260MHz



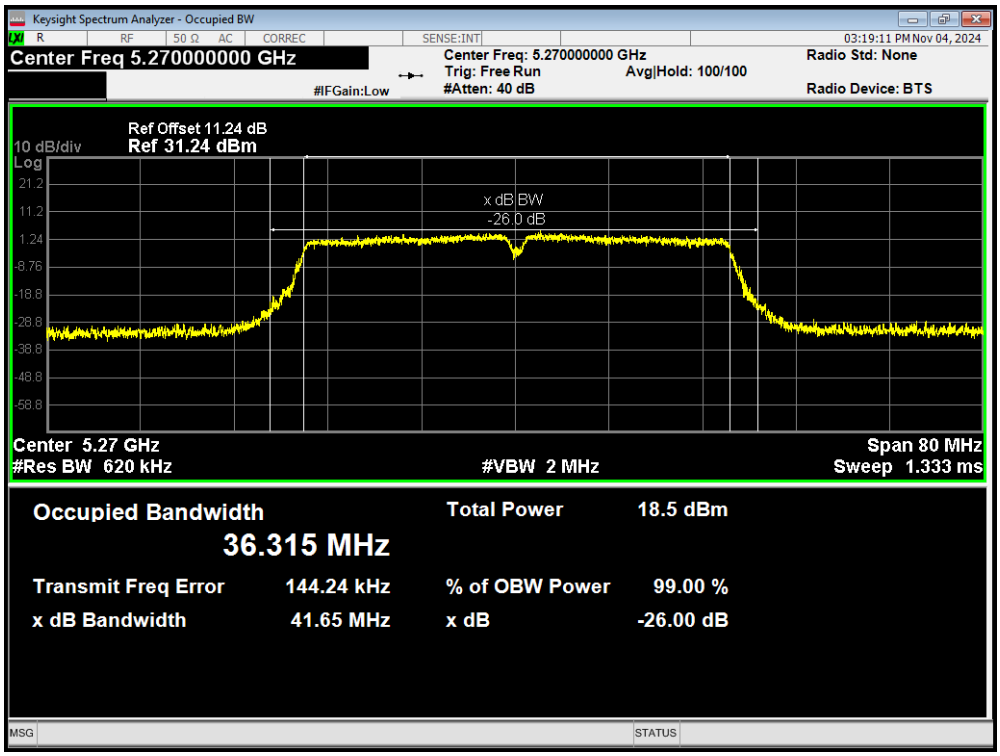
OBW 802.11n(HT20) 5300MHz



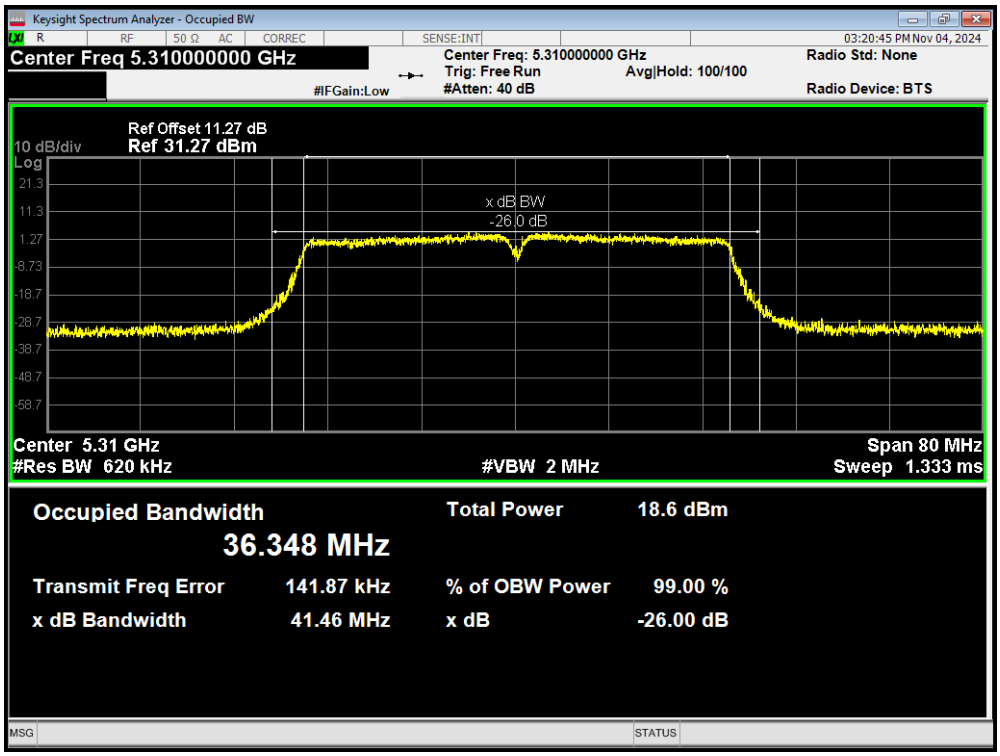
OBW 802.11n(HT20) 5320MHz



OBW 802.11n(HT40) 5270MHz

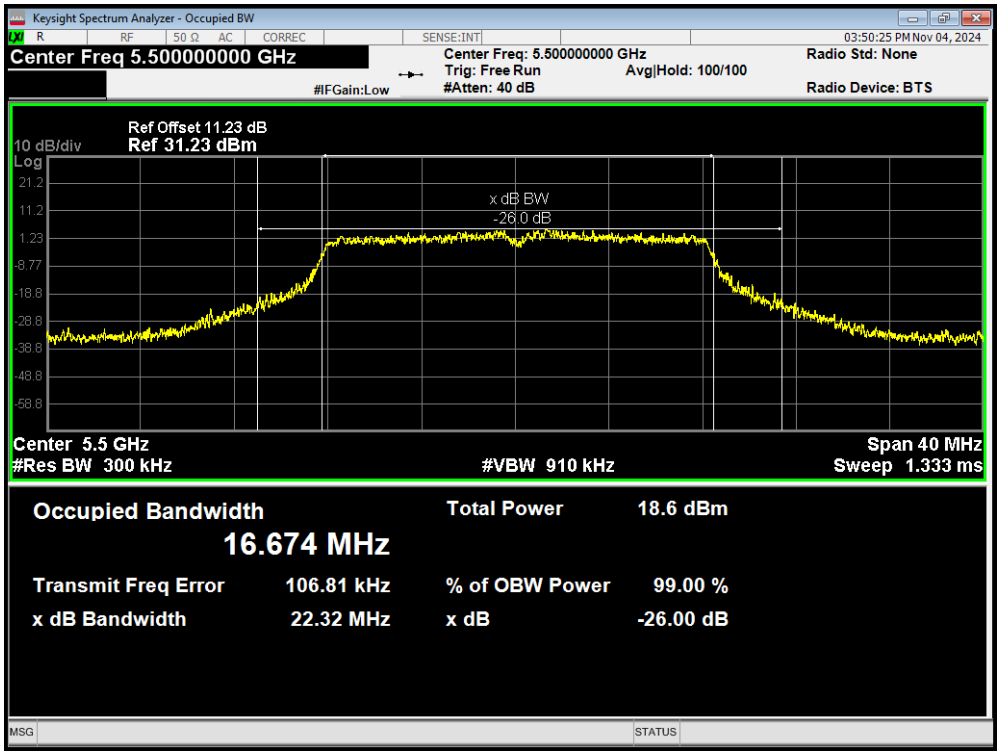


OBW 802.11n(HT40) 5310MHz

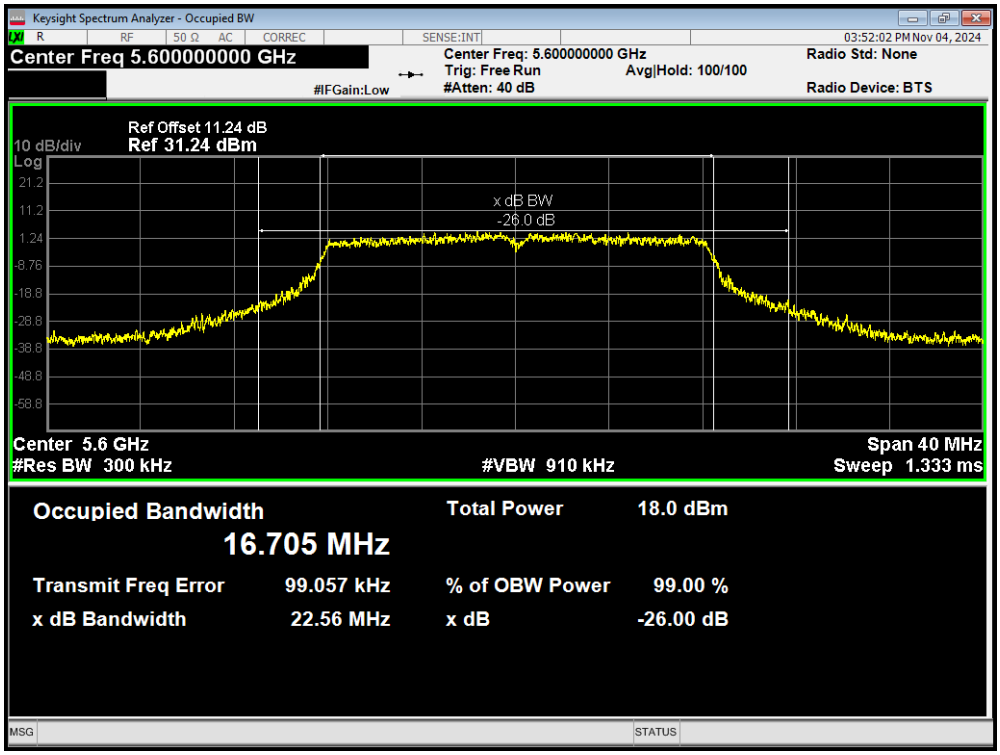


U-NII-2C

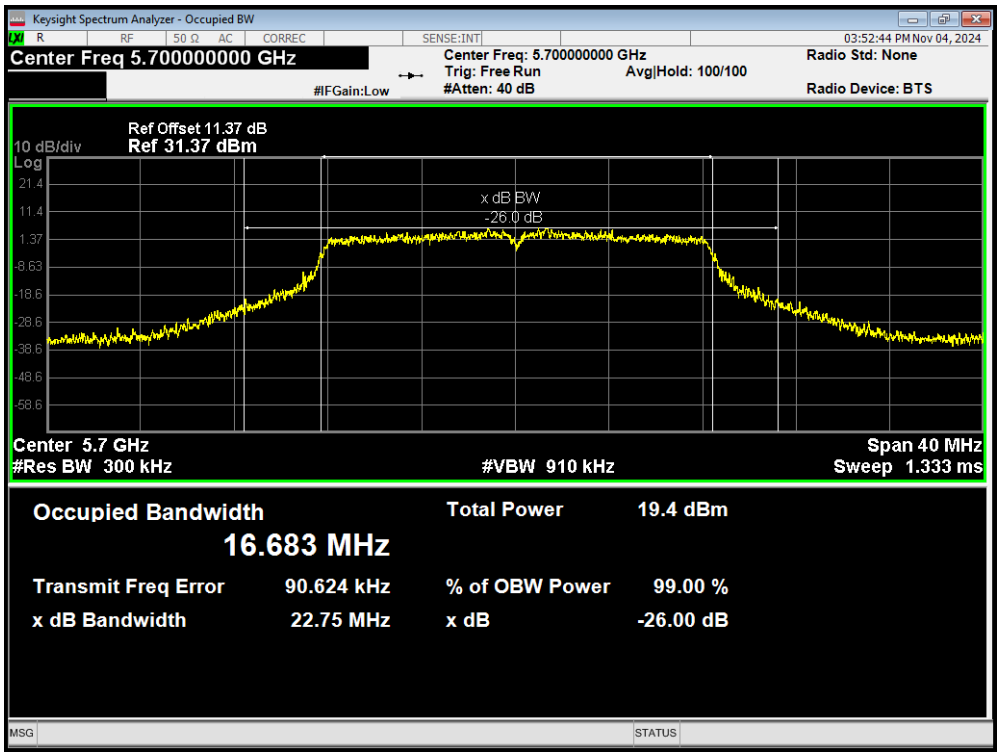
OBW 802.11a 5500MHz



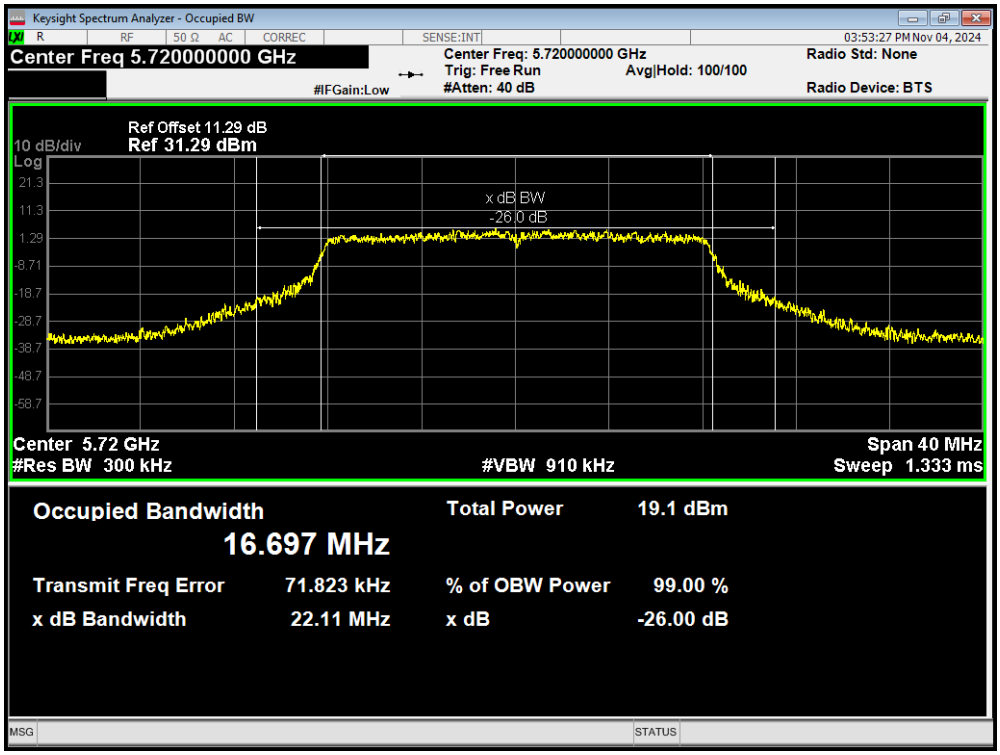
OBW 802.11a 5600MHz



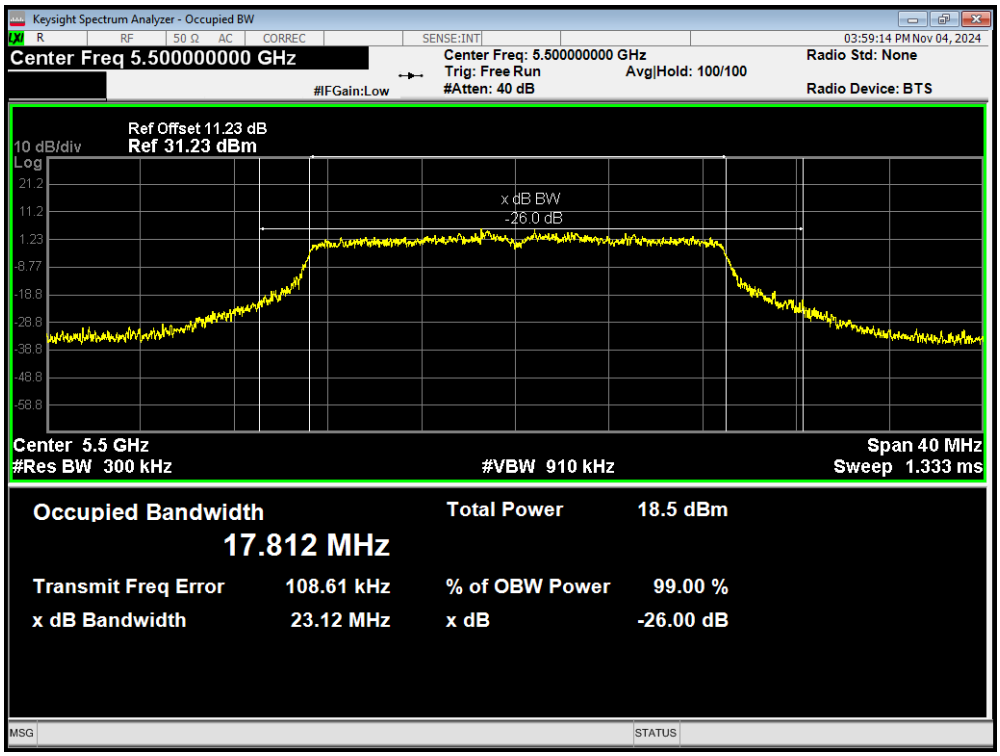
OBW 802.11a 5700MHz



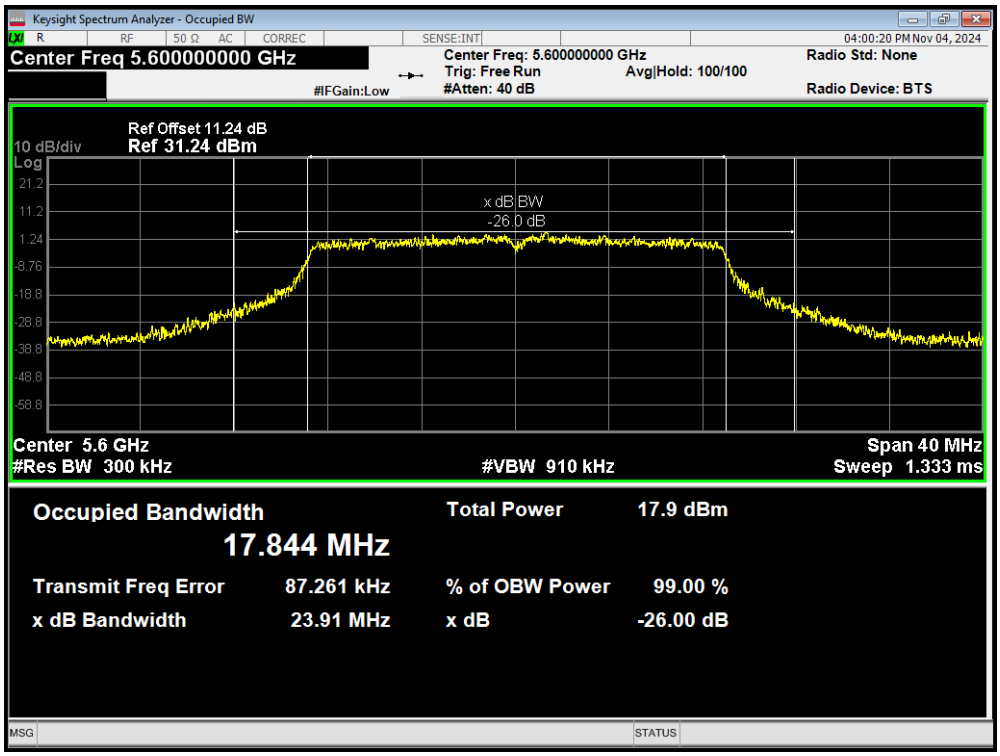
OBW 802.11a 5720MHz



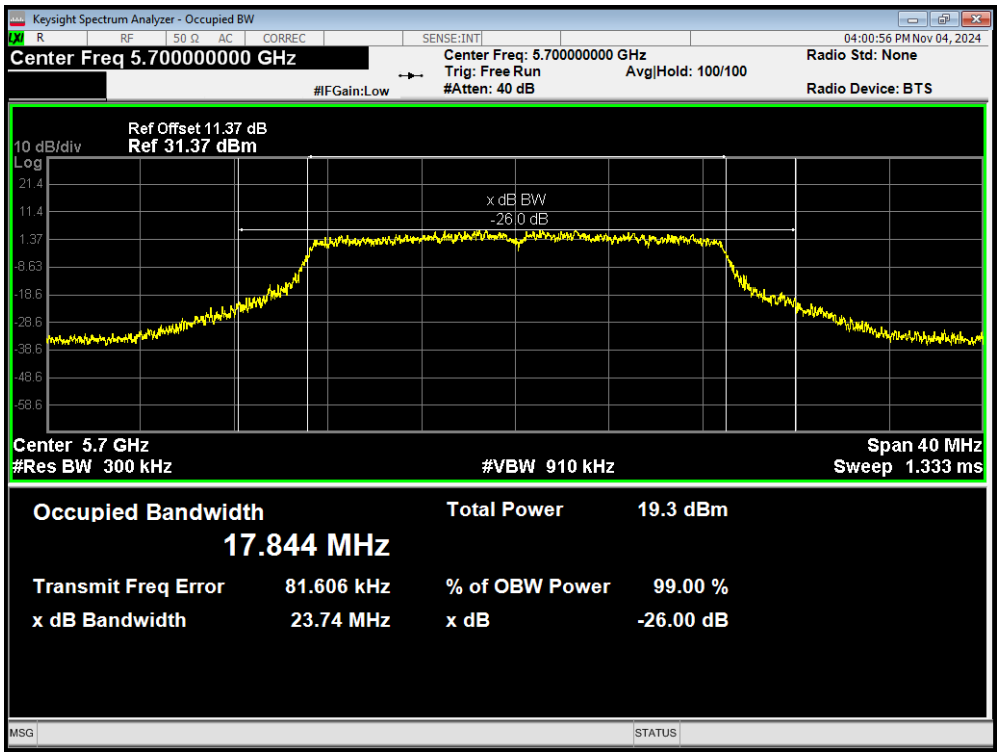
OBW 802.11ac(VHT20) 5500MHz



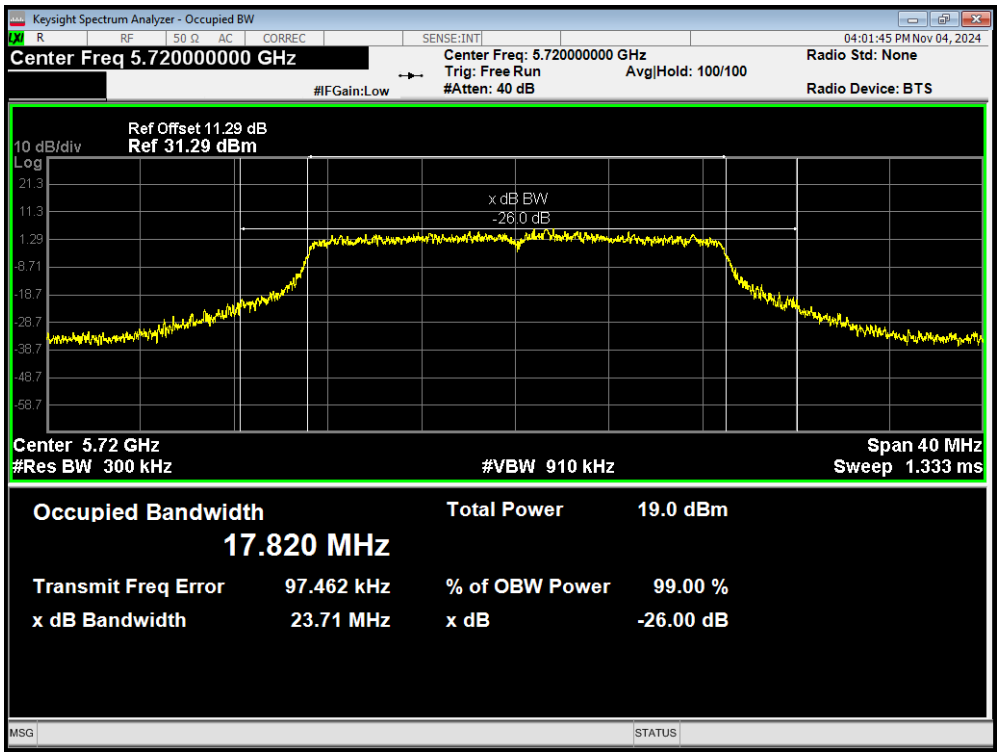
OBW 802.11ac(VHT20) 5600MHz



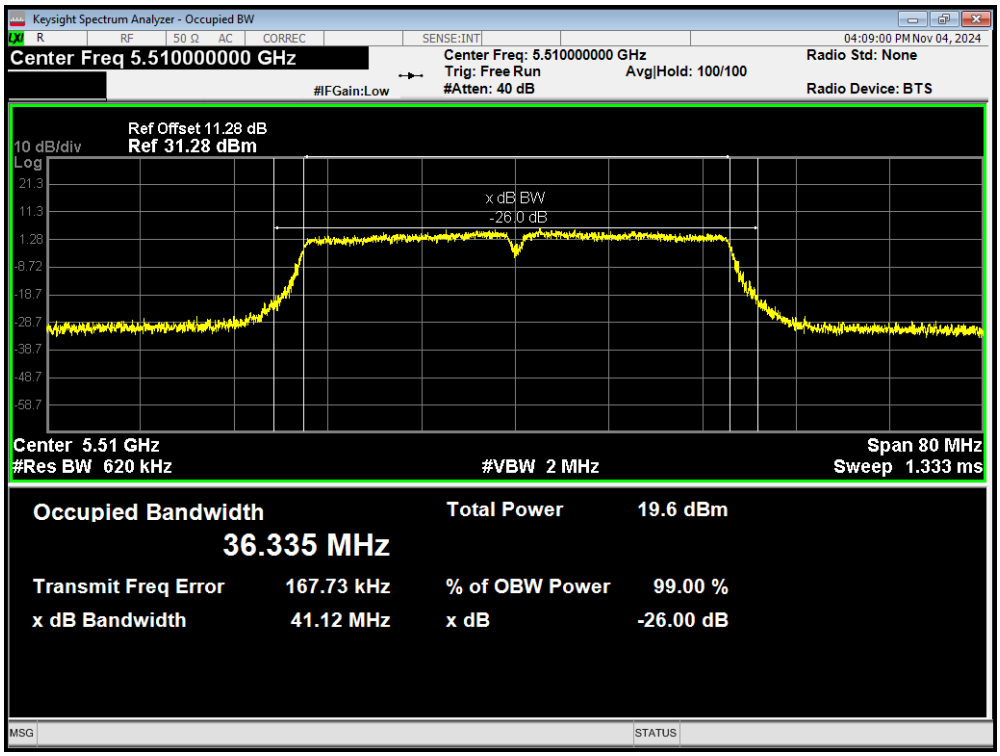
OBW 802.11ac(VHT20) 5700MHz



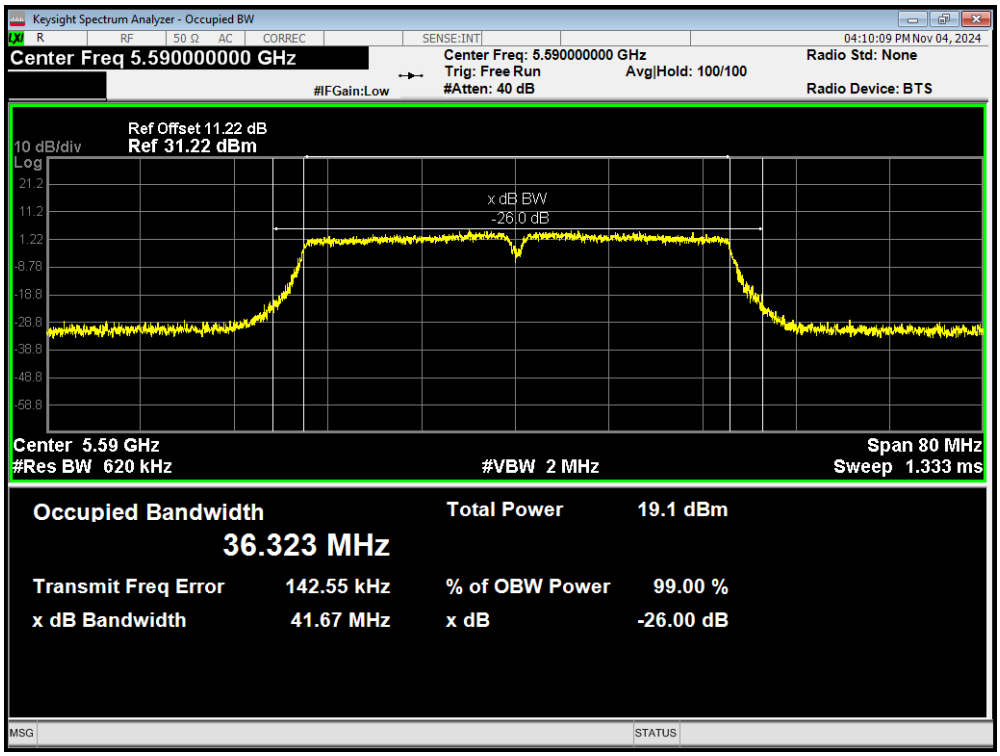
OBW 802.11ac(VHT20) 5720MHz



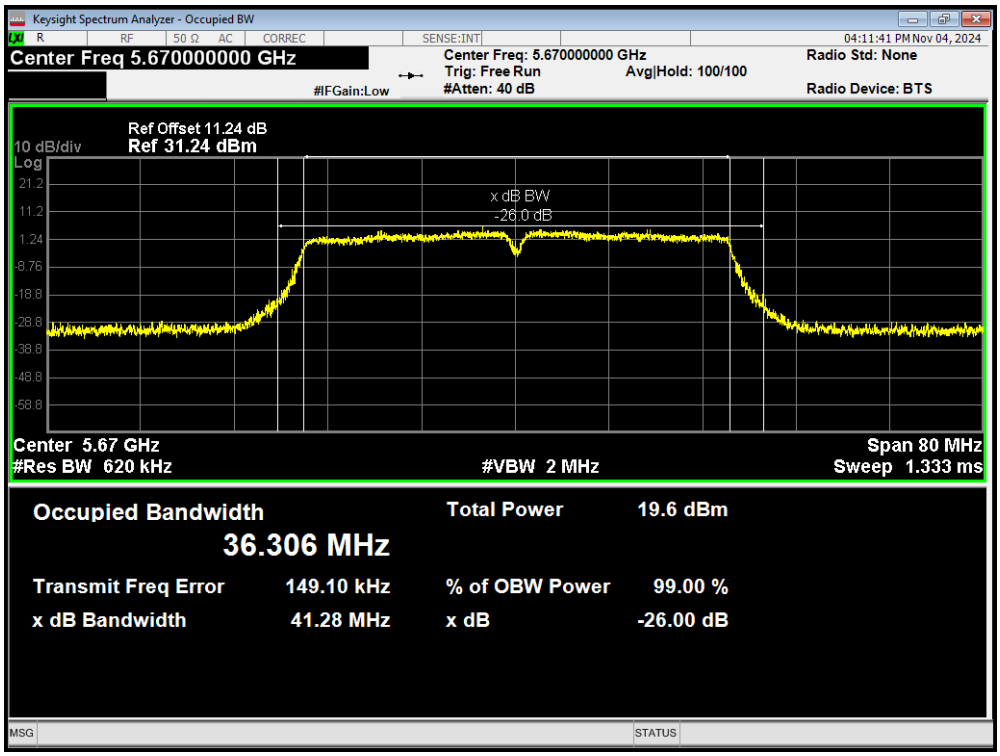
OBW 802.11ac(VHT40) 5510MHz



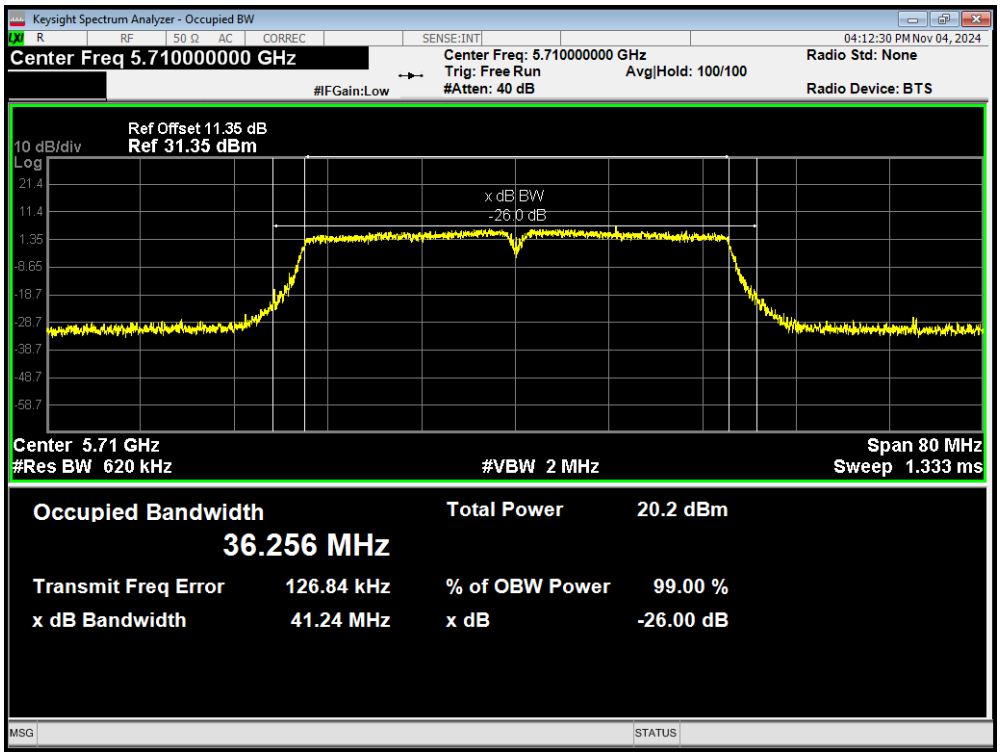
OBW 802.11ac(VHT40) 5590MHz



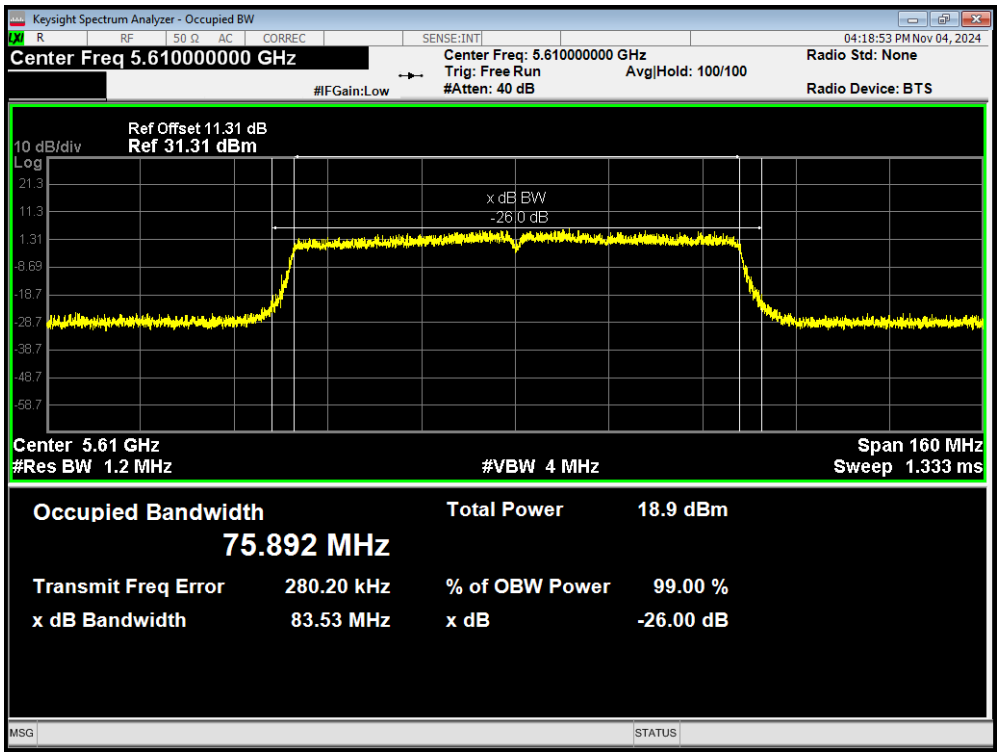
OBW 802.11ac(VHT40) 5670MHz



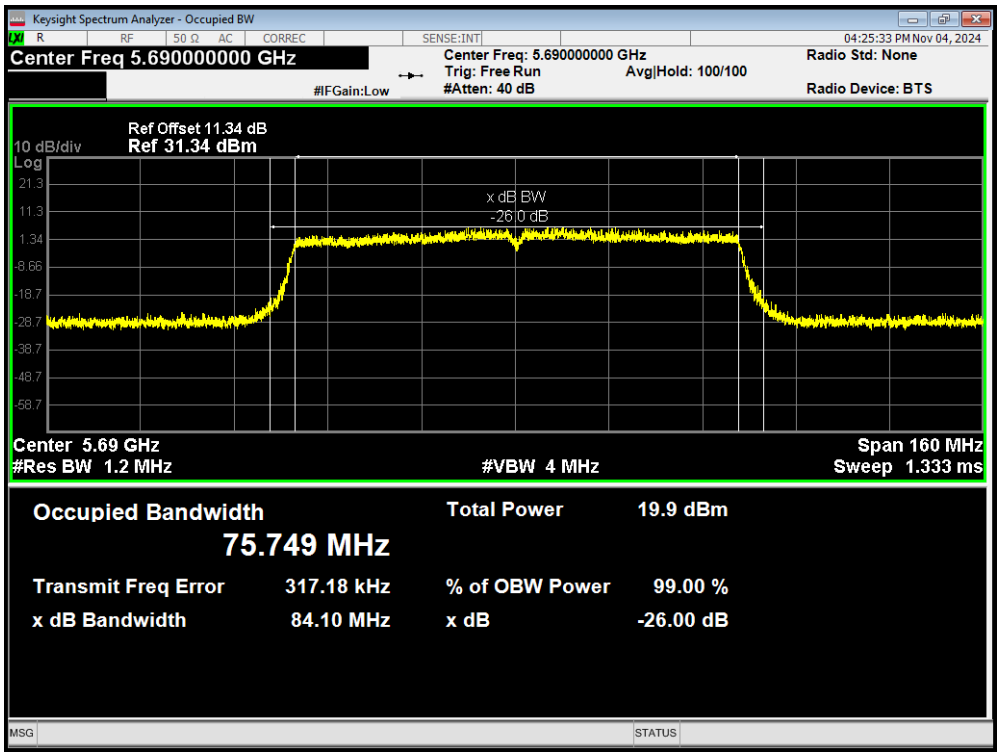
OBW 802.11ac(VHT40) 5710MHz



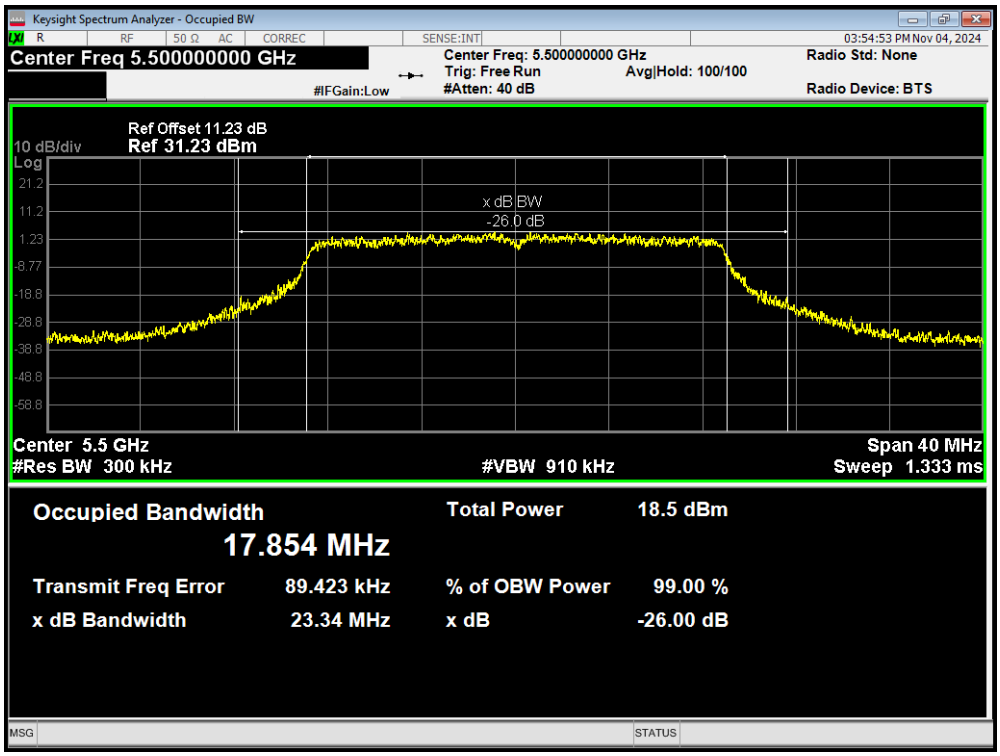
OBW 802.11ac(VHT80) 5610MHz



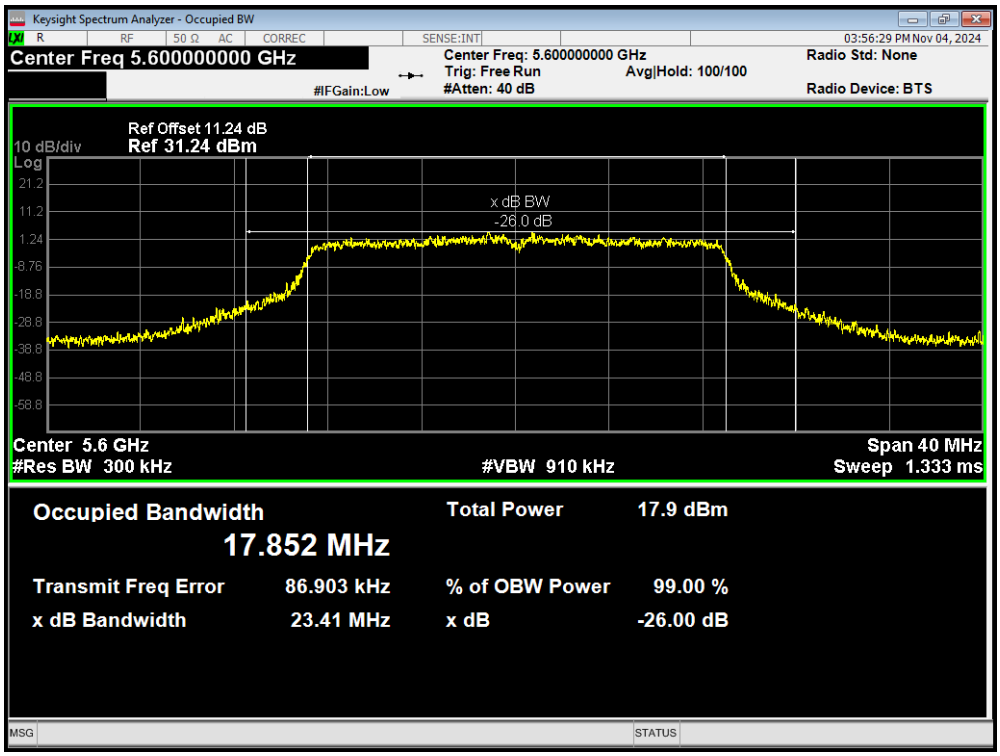
OBW 802.11ac(VHT80) 5690MHz



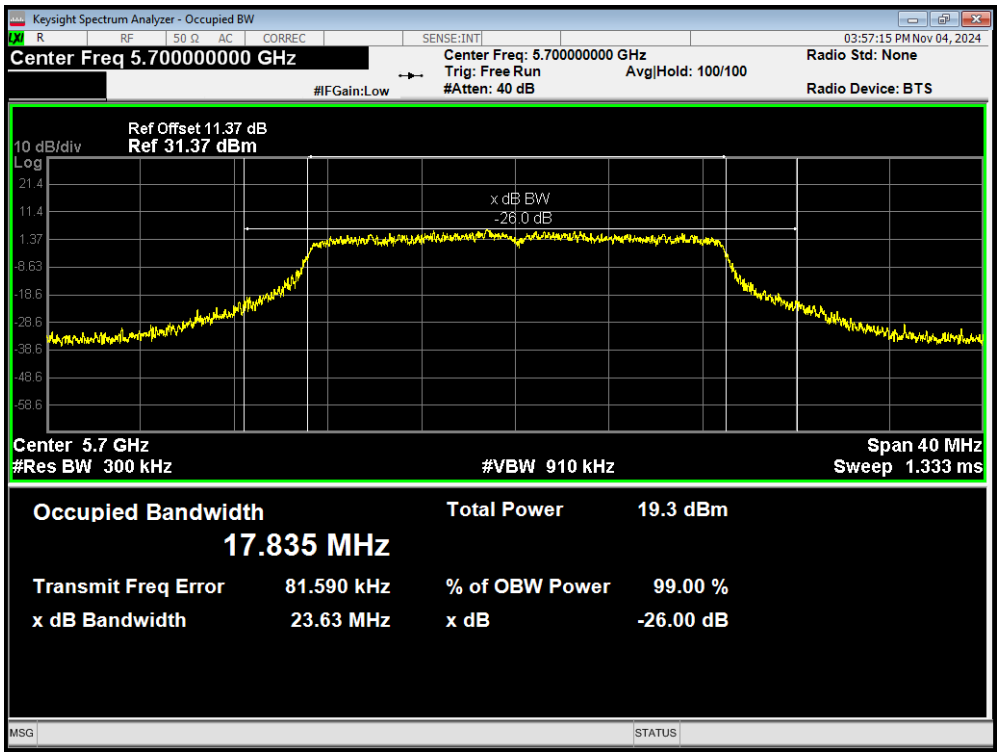
OBW 802.11n(HT20) 5500MHz



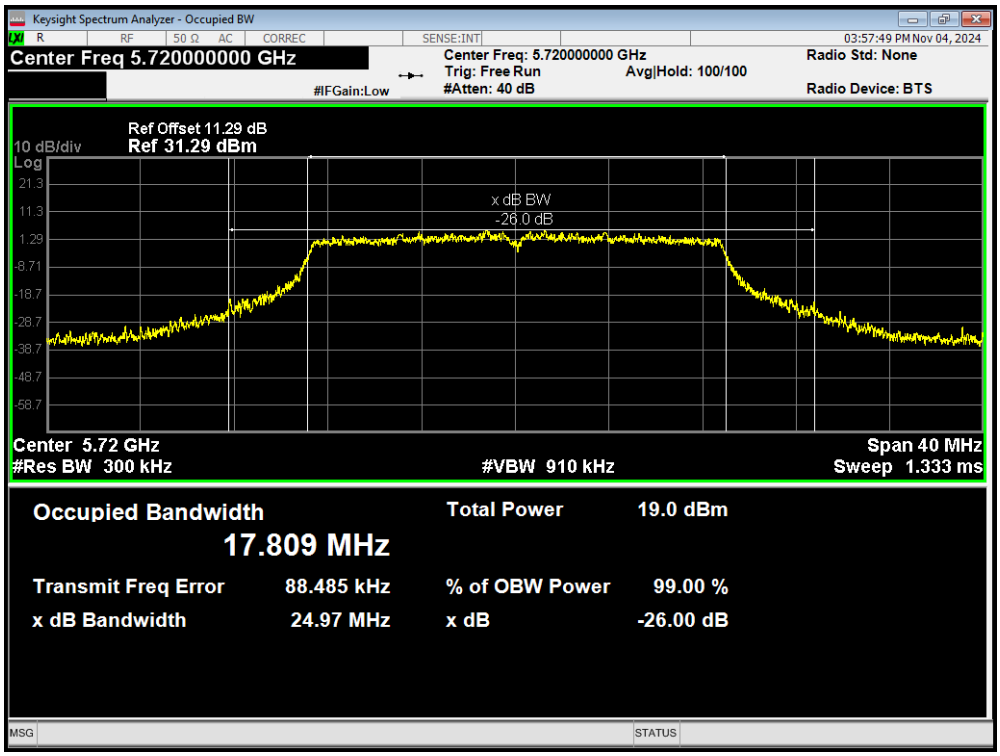
OBW 802.11n(HT20) 5600MHz



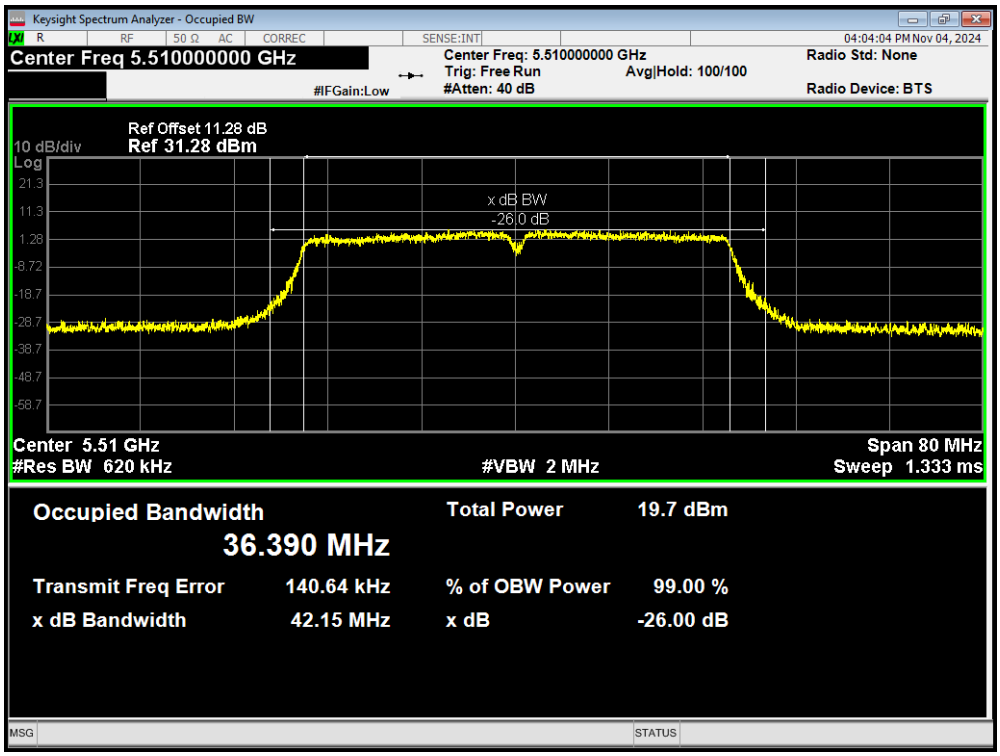
OBW 802.11n(HT20) 5700MHz



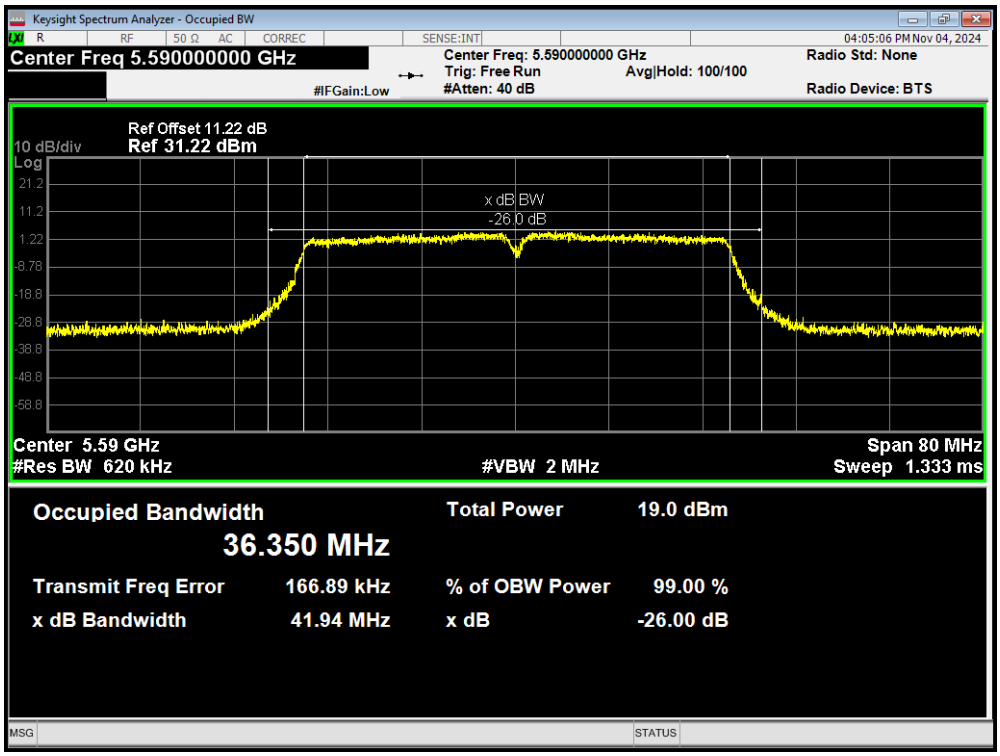
OBW 802.11n(HT20) 5720MHz



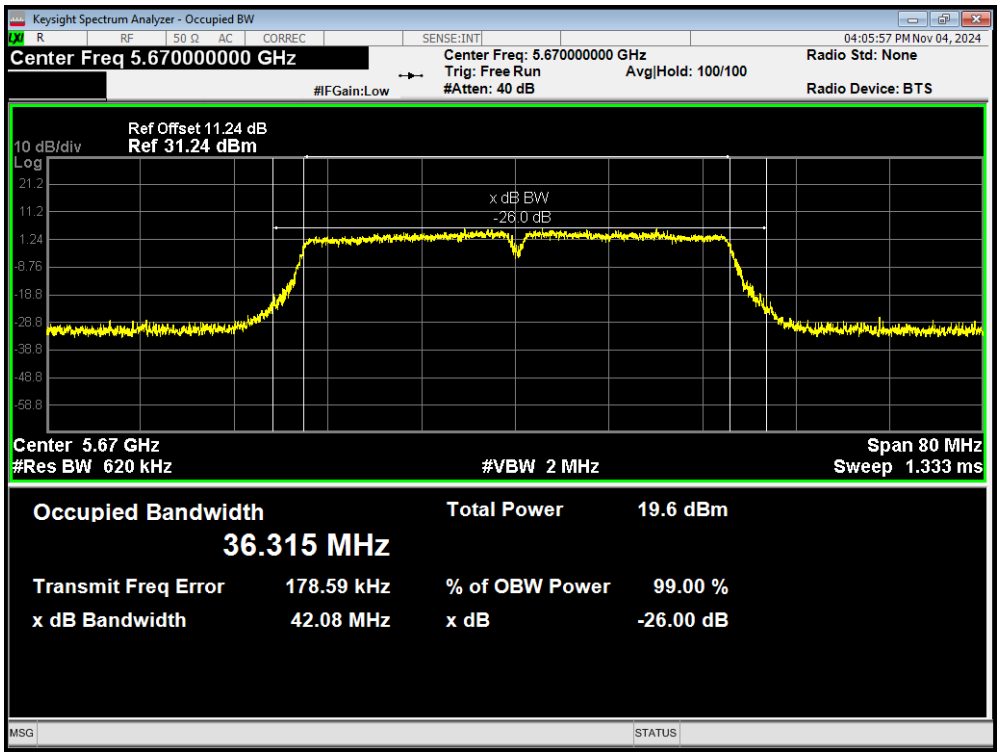
OBW 802.11n(HT40) 5510MHz



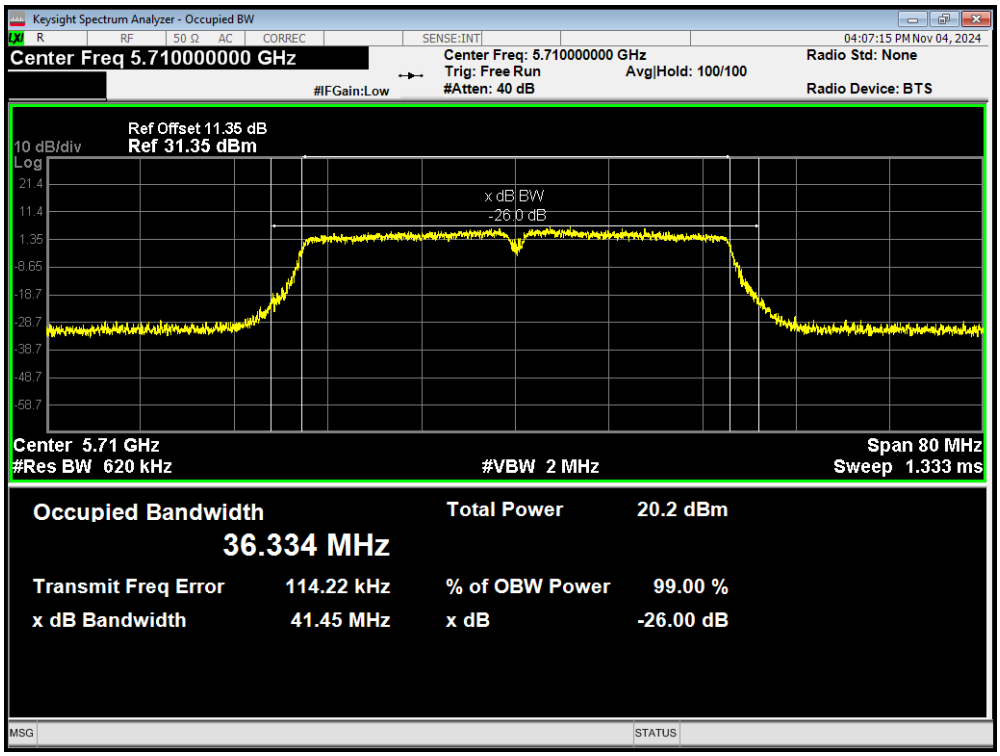
OBW 802.11n(HT40) 5590MHz



OBW 802.11n(HT40) 5670MHz

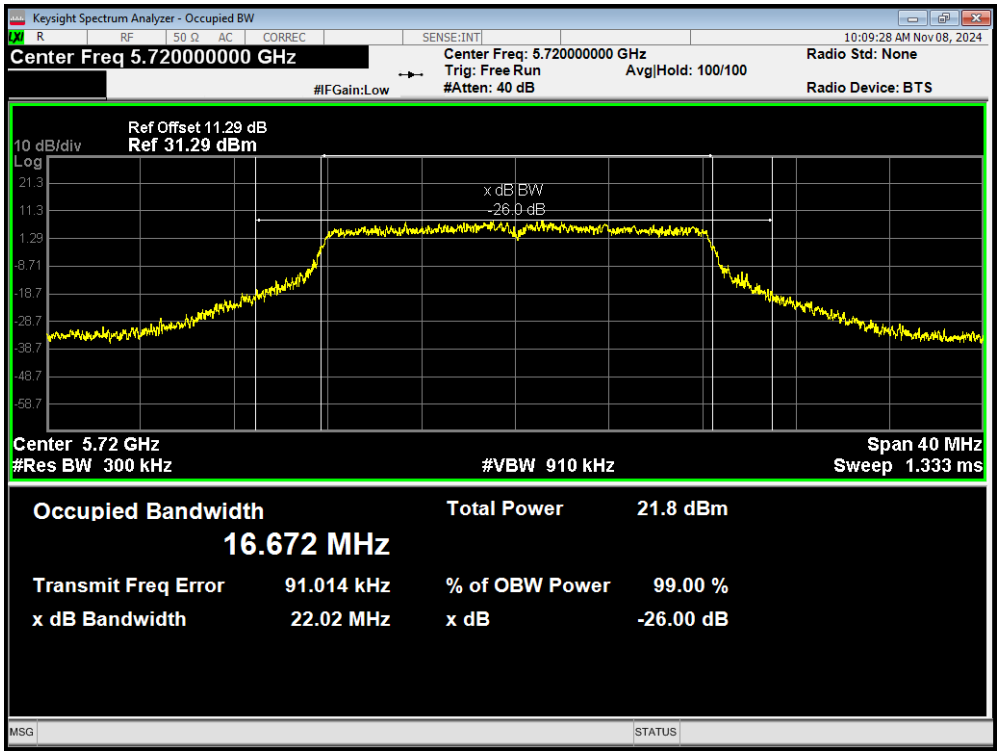


OBW 802.11n(HT40) 5710MHz

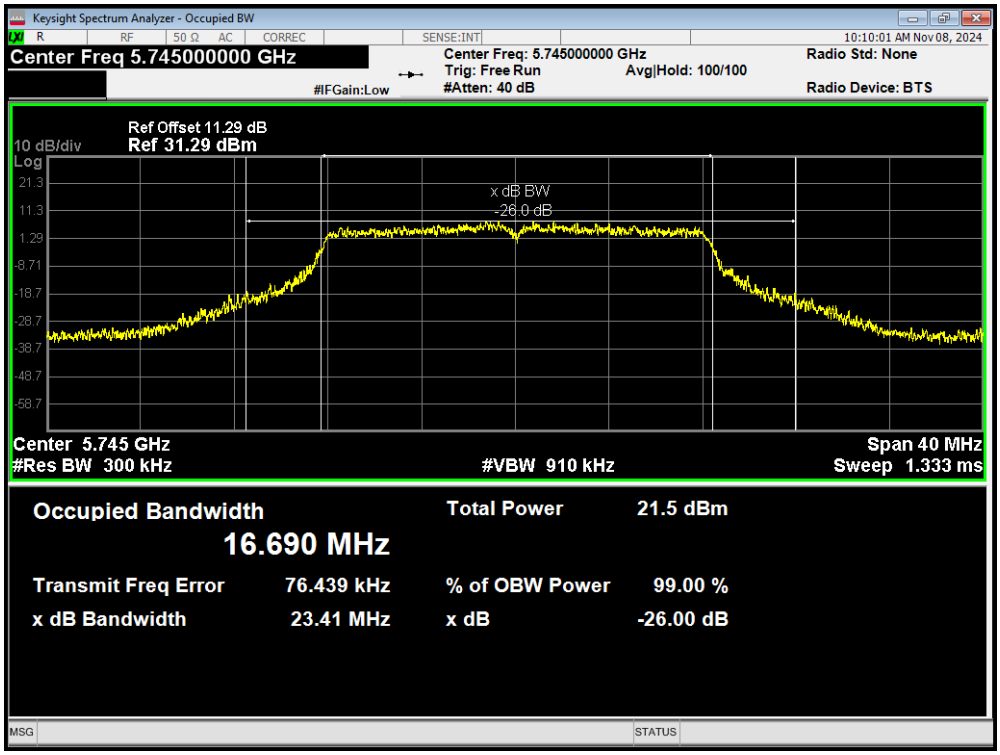


U-NII-3

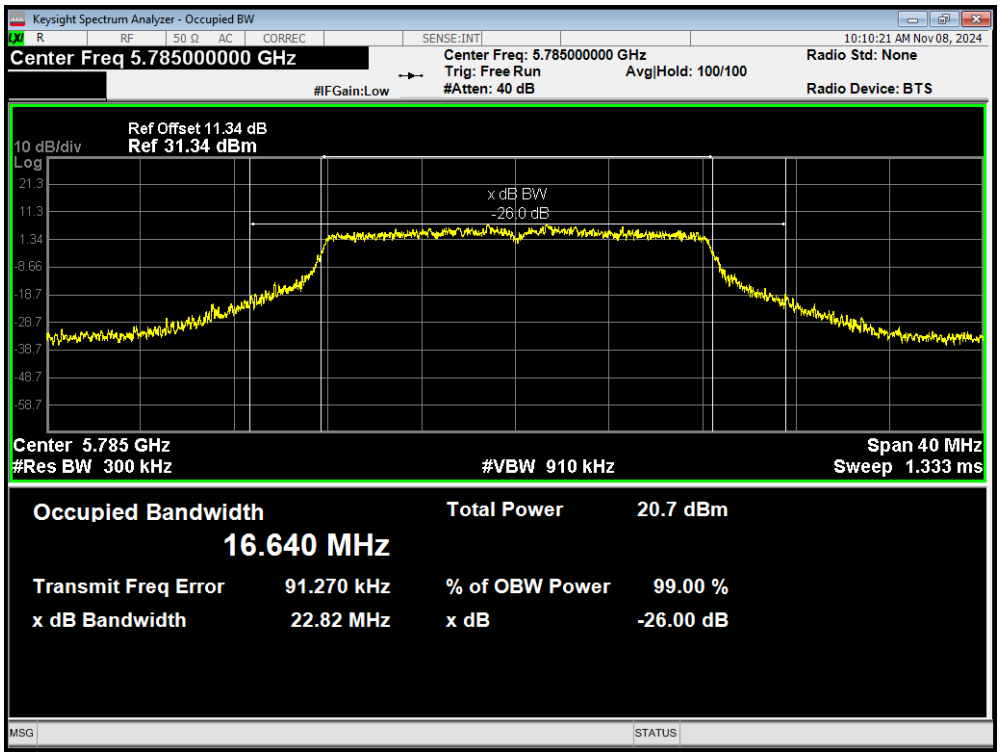
OBW 802.11a 5720MHz



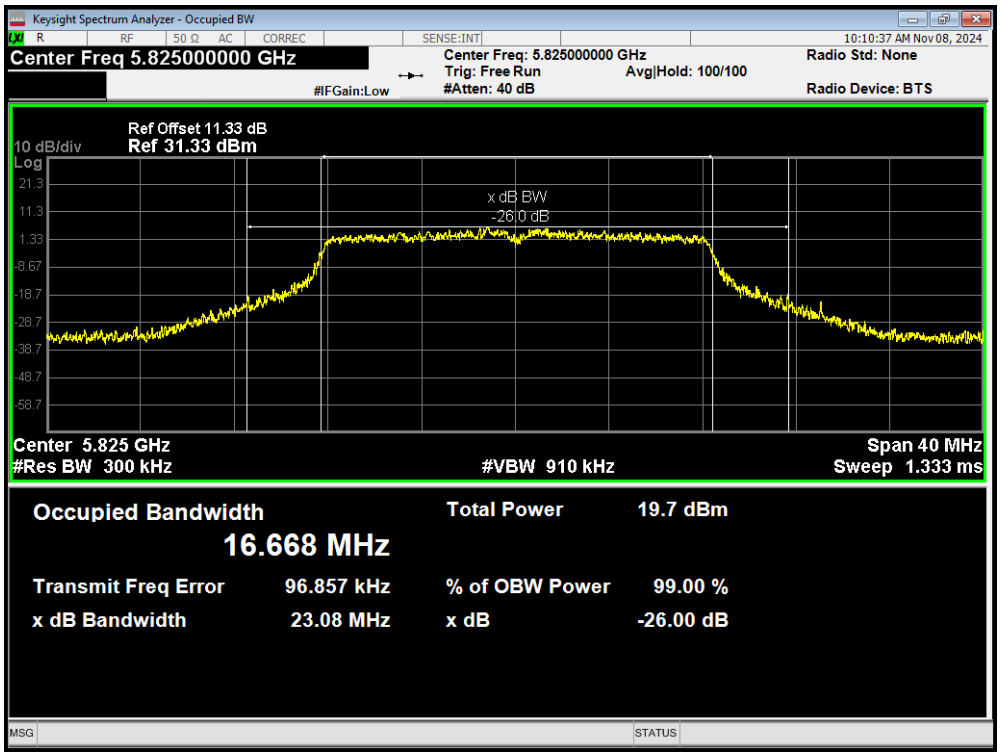
OBW 802.11a 5745MHz



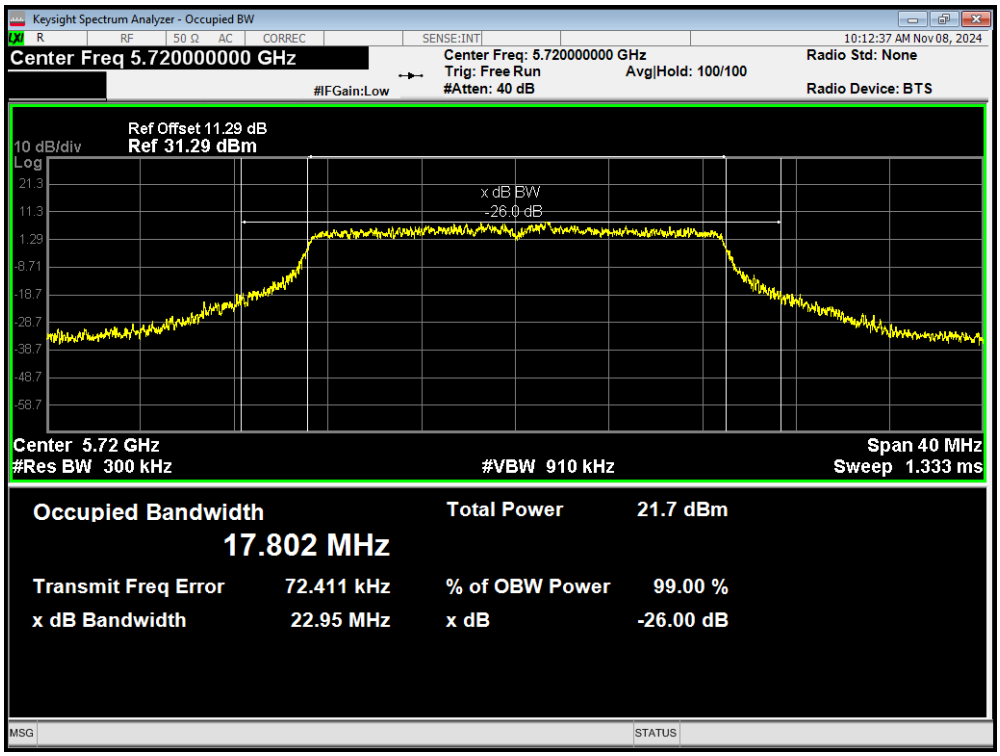
OBW 802.11a 5785MHz



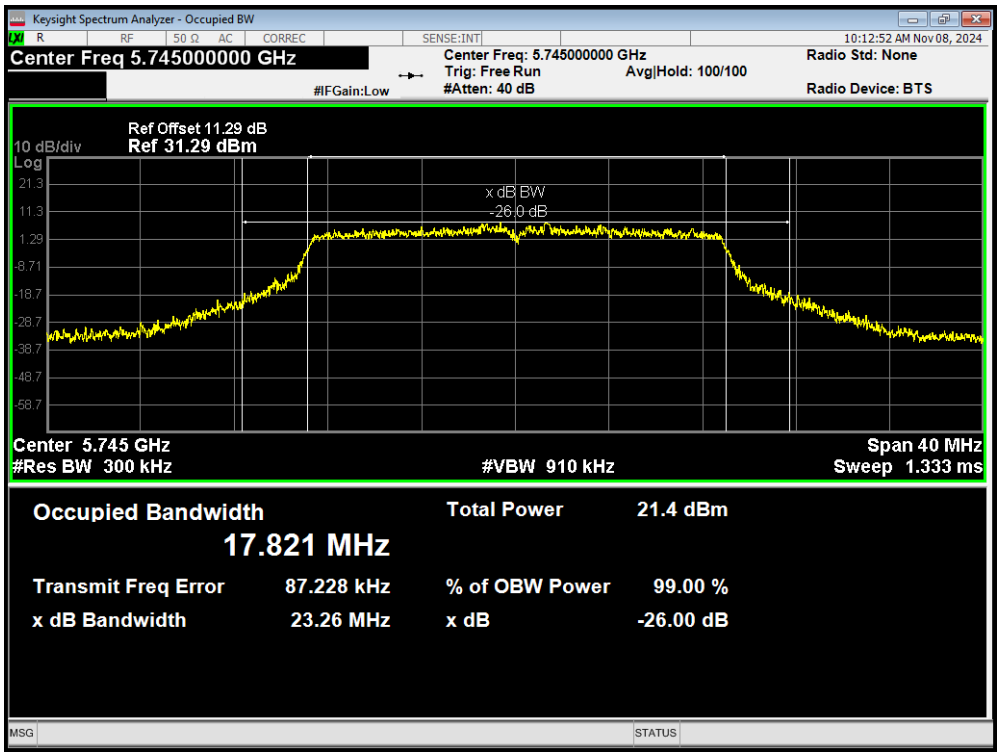
OBW 802.11a 5825MHz



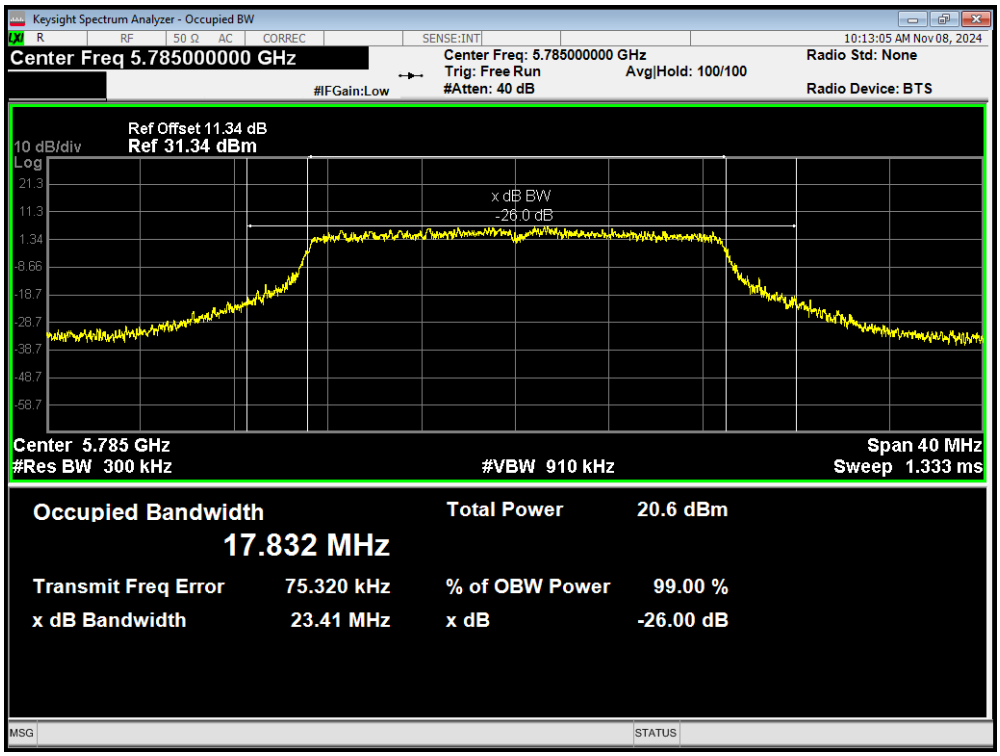
OBW 802.11ac(VHT20) 5720MHz



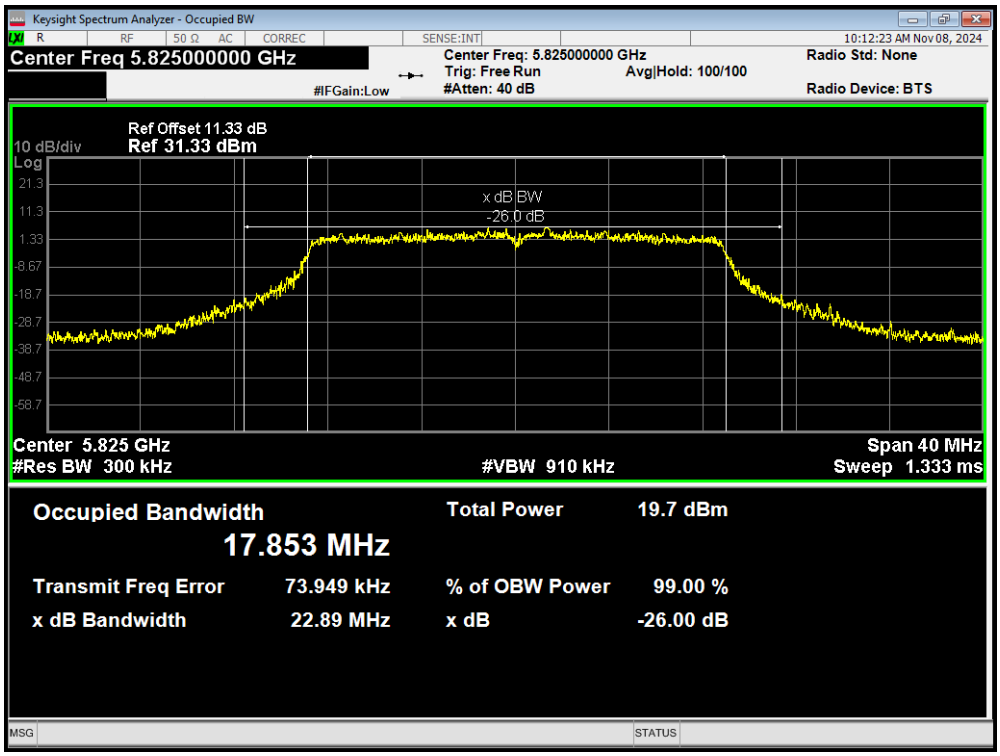
OBW 802.11ac(VHT20) 5745MHz



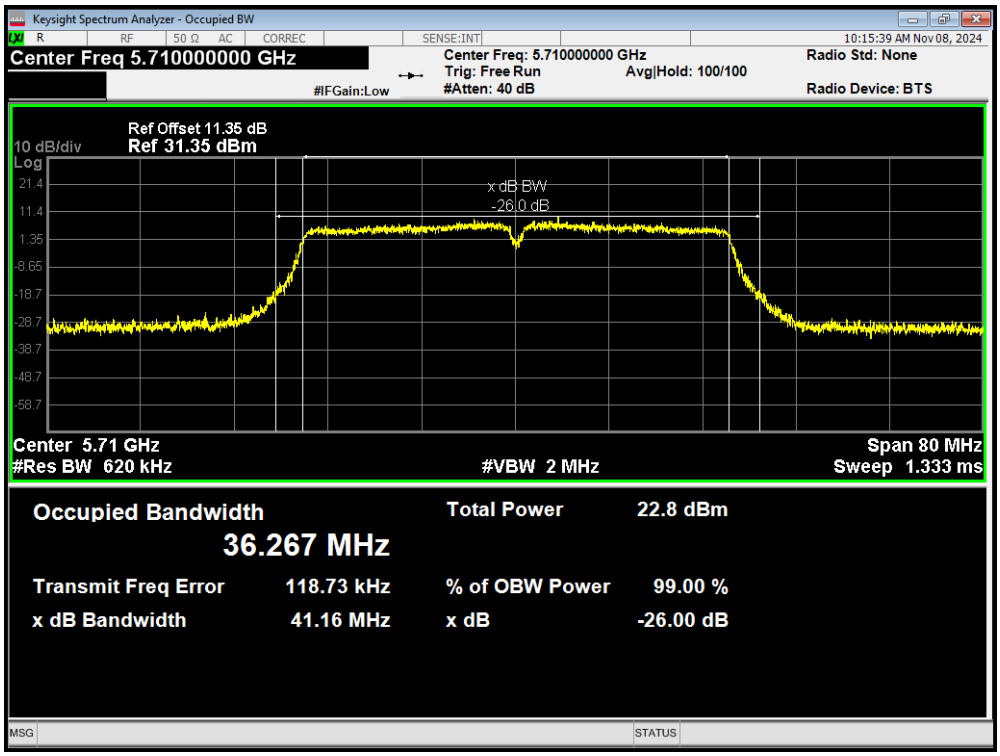
OBW 802.11ac(VHT20) 5785MHz



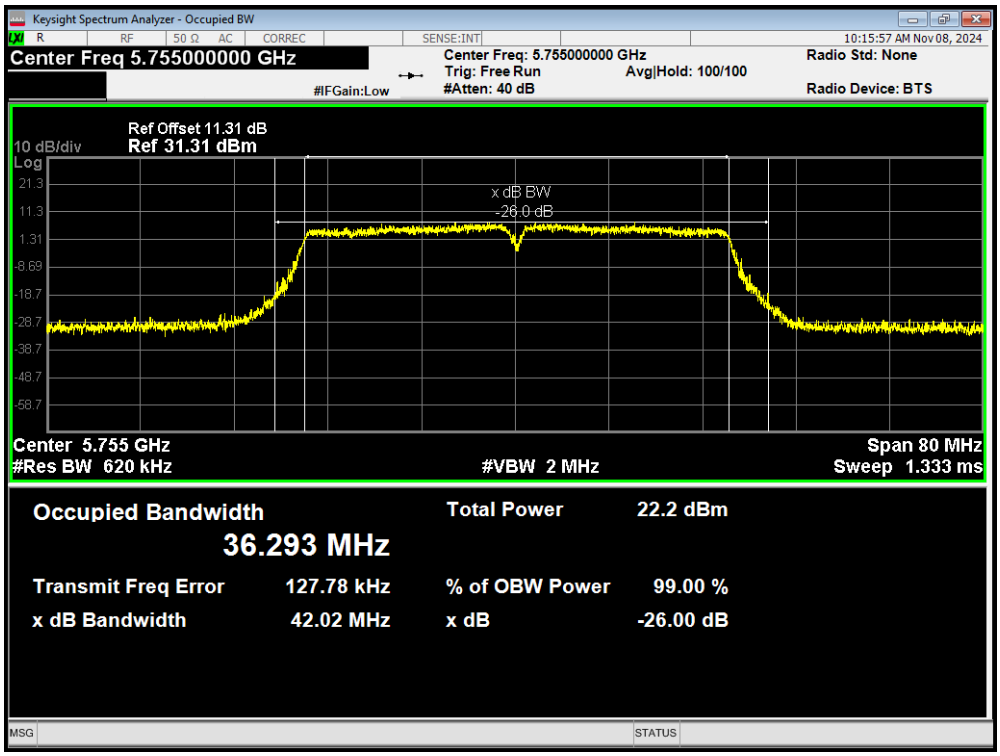
OBW 802.11ac(VHT20) 5825MHz



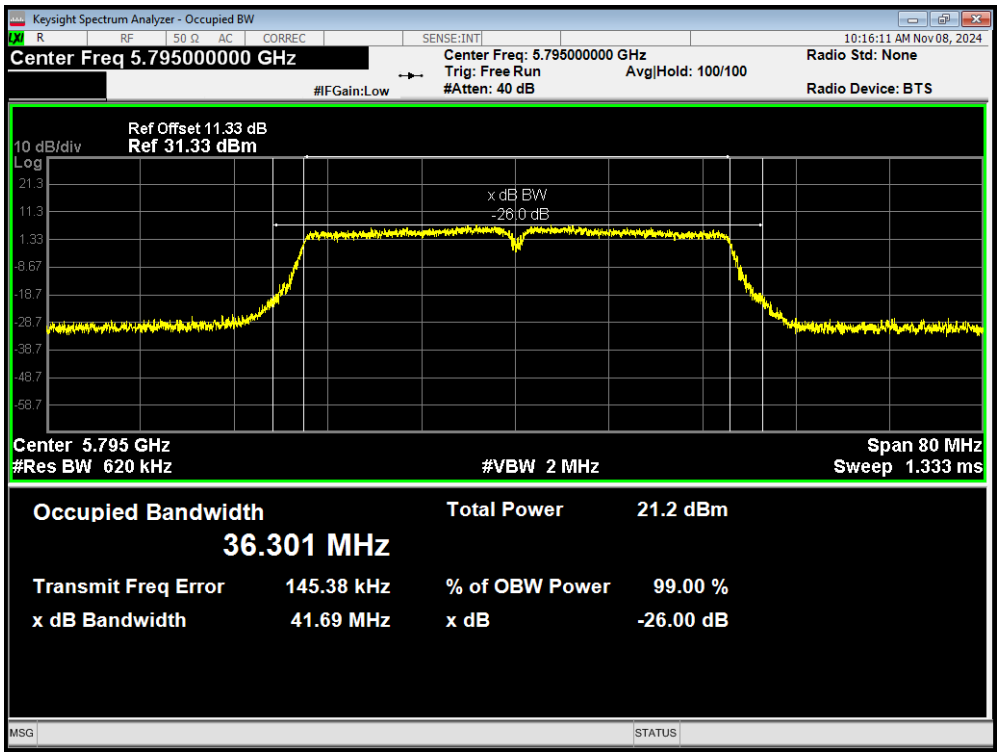
OBW 802.11ac(VHT40) 5710MHz



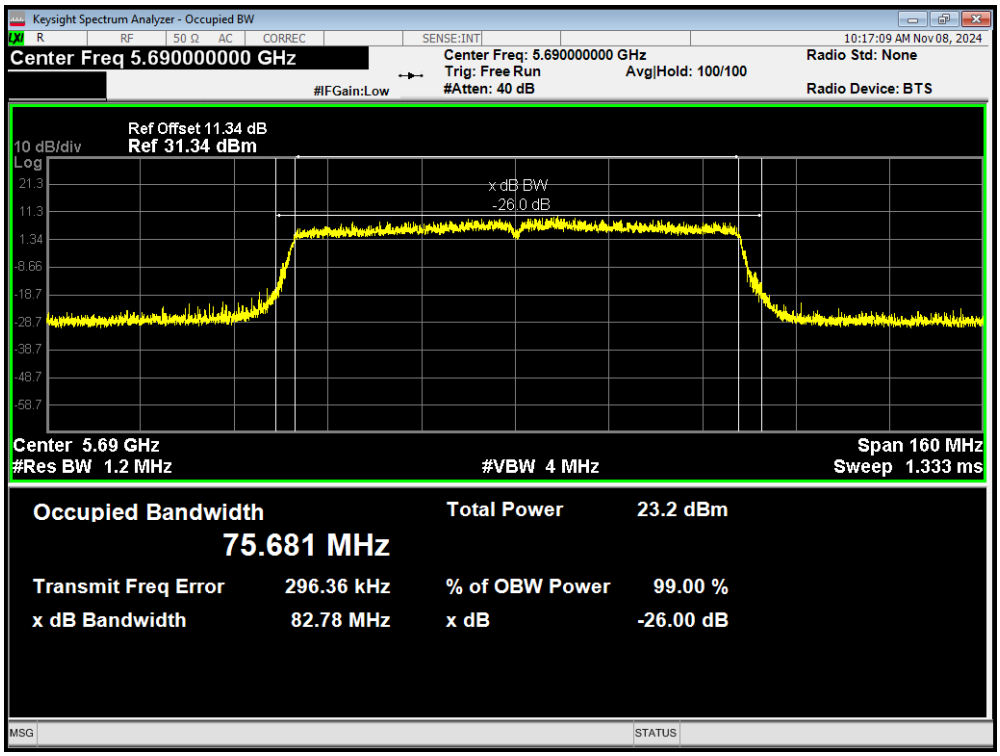
OBW 802.11ac(VHT40) 5755MHz



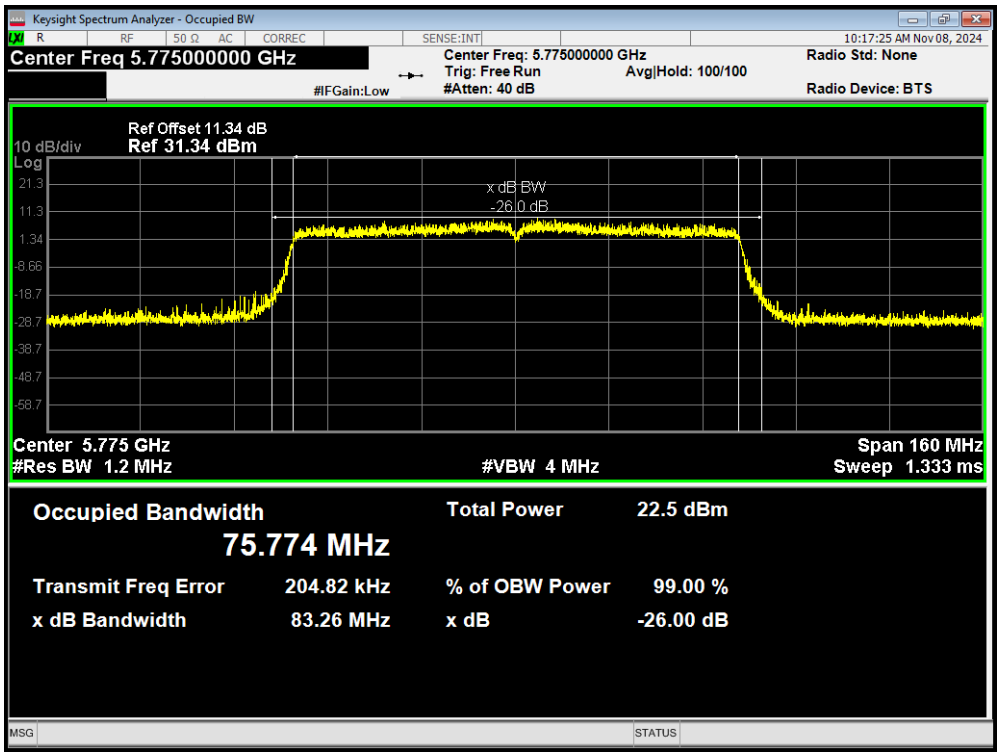
OBW 802.11ac(VHT40) 5795MHz



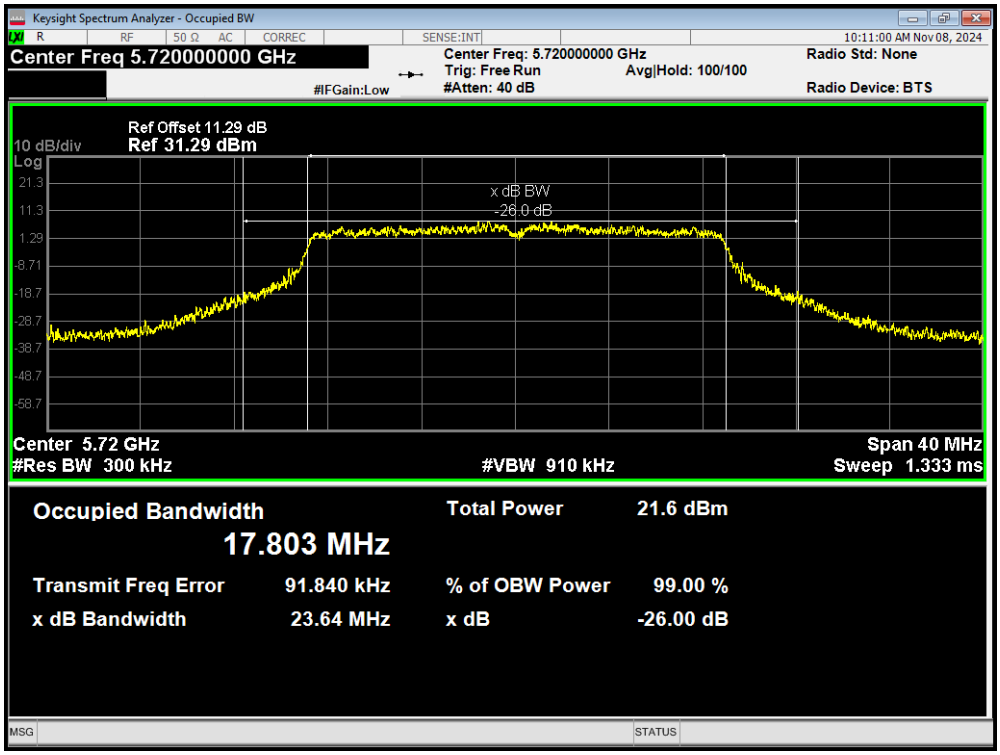
OBW 802.11ac(VHT80) 5690MHz



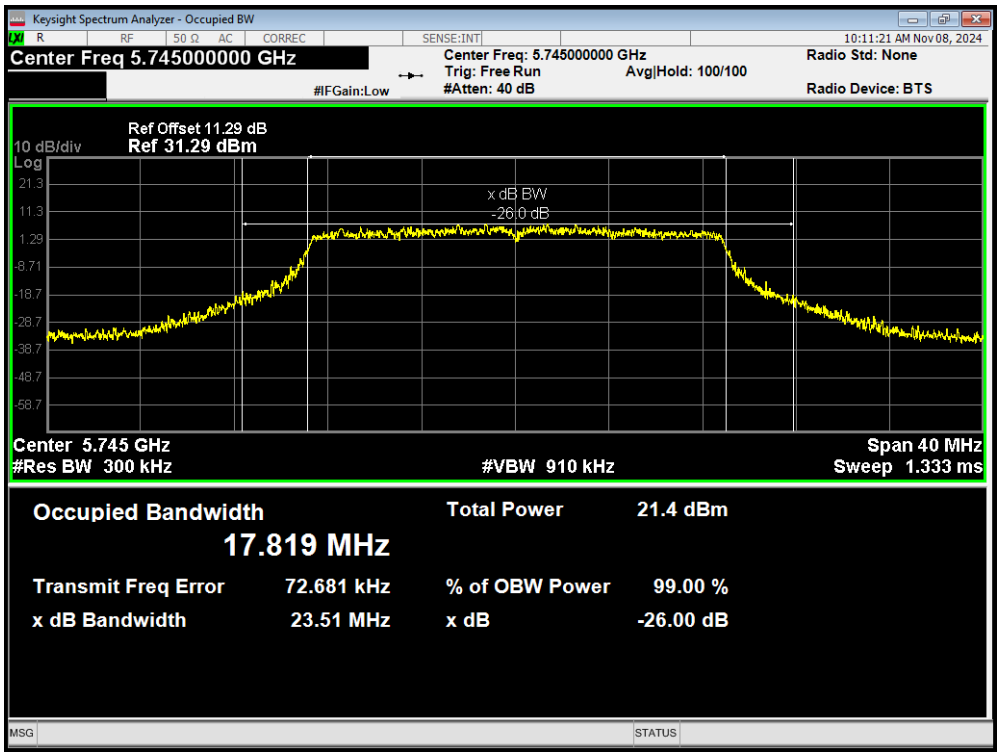
OBW 802.11ac(VHT80) 5775MHz



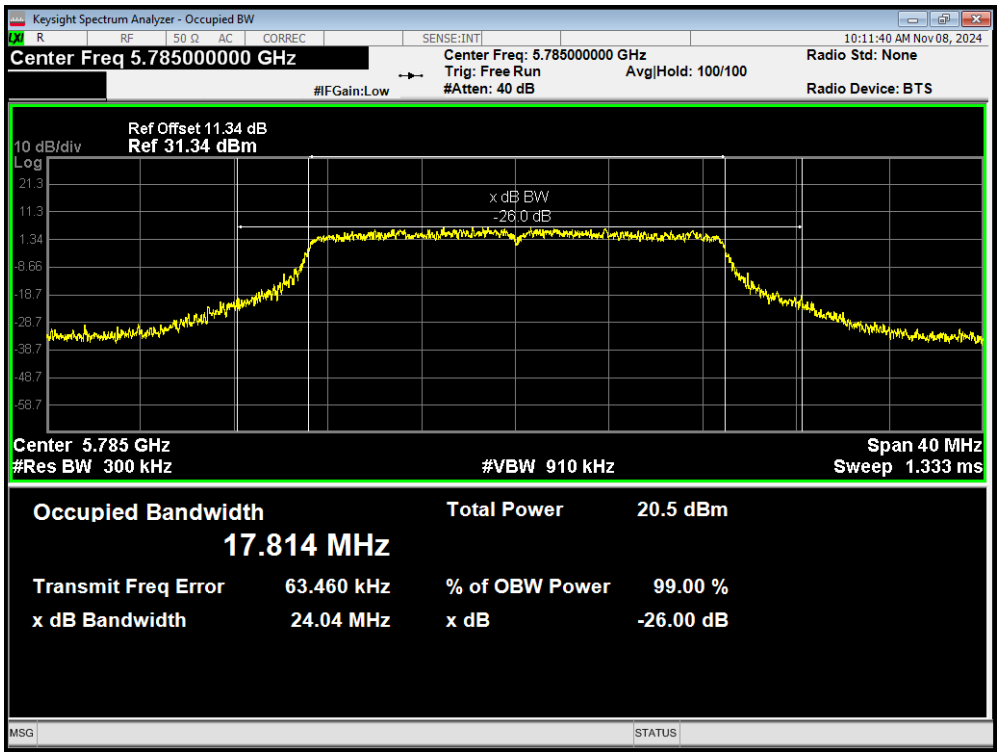
OBW 802.11n(HT20) 5720MHz



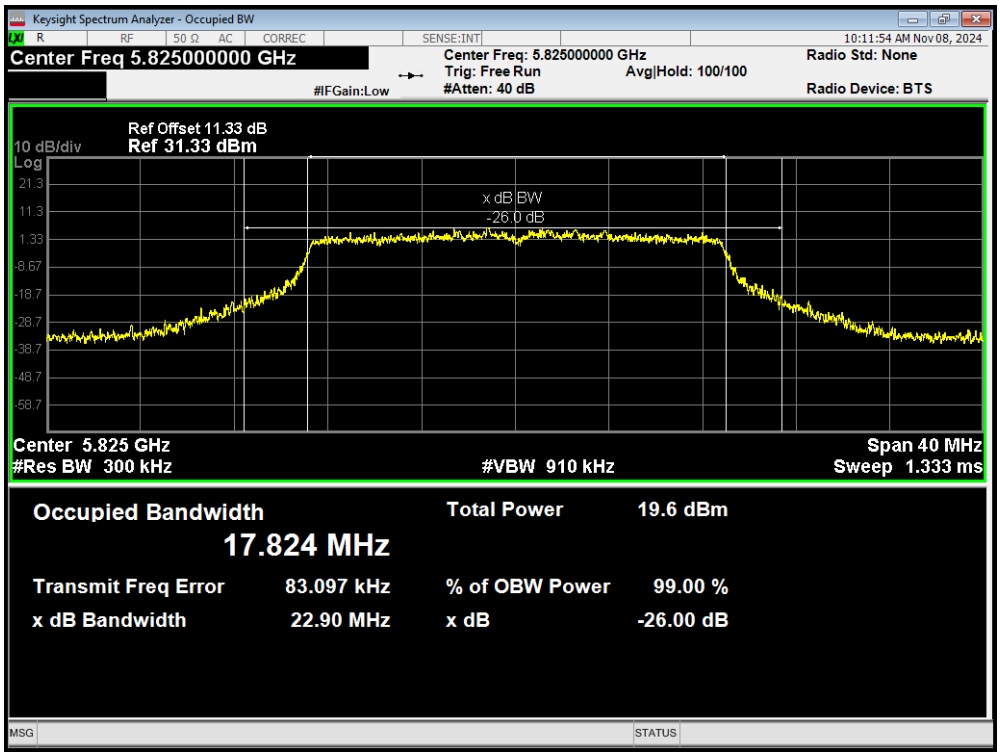
OBW 802.11n(HT20) 5745MHz



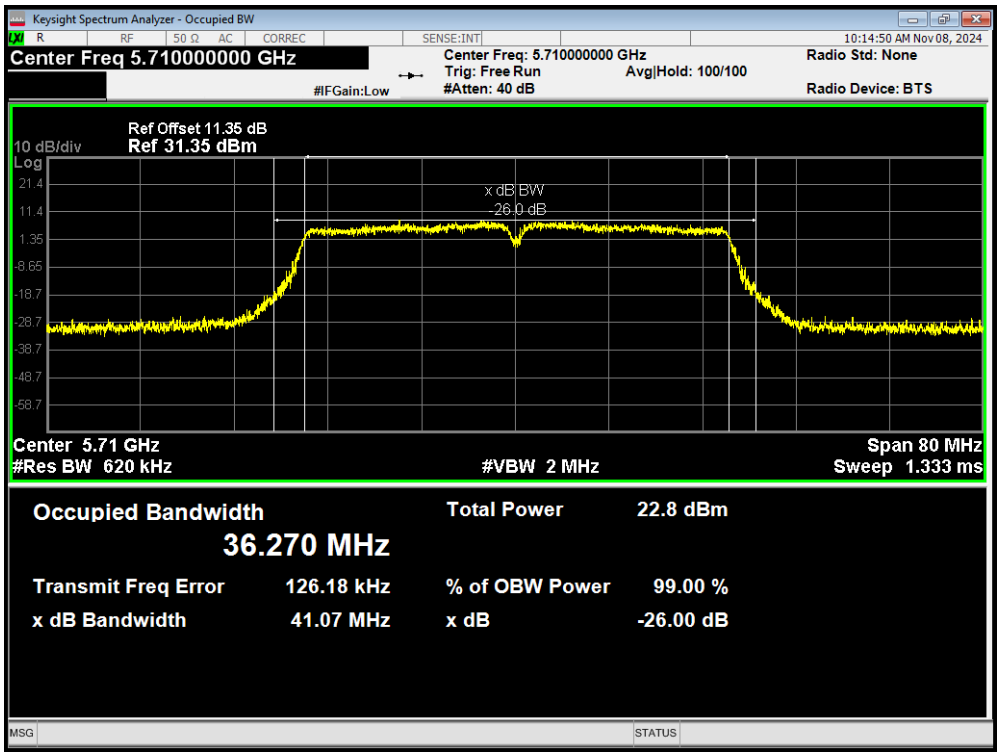
OBW 802.11n(HT20) 5785MHz



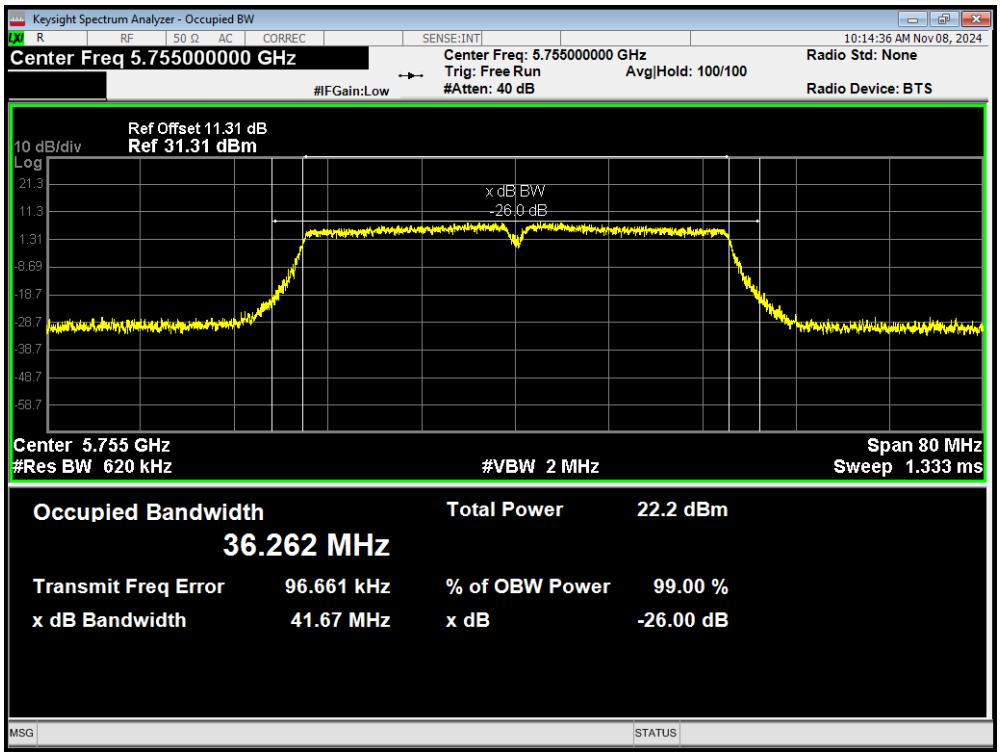
OBW 802.11n(HT20) 5825MHz



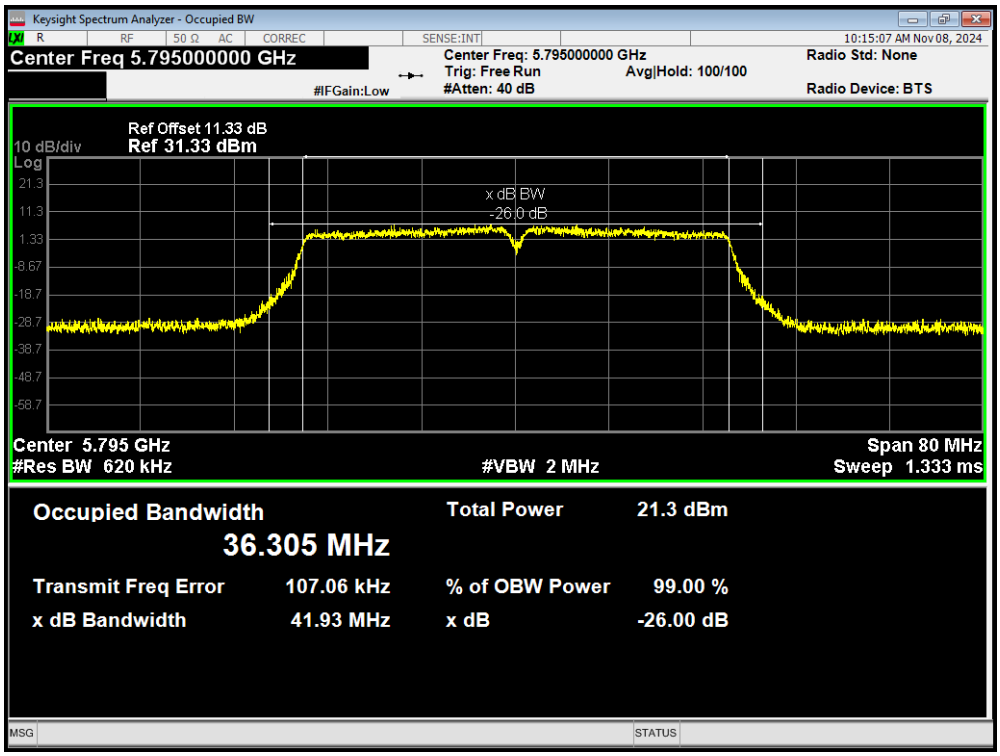
OBW 802.11n(HT40) 5710MHz



OBW 802.11n(HT40) 5755MHz



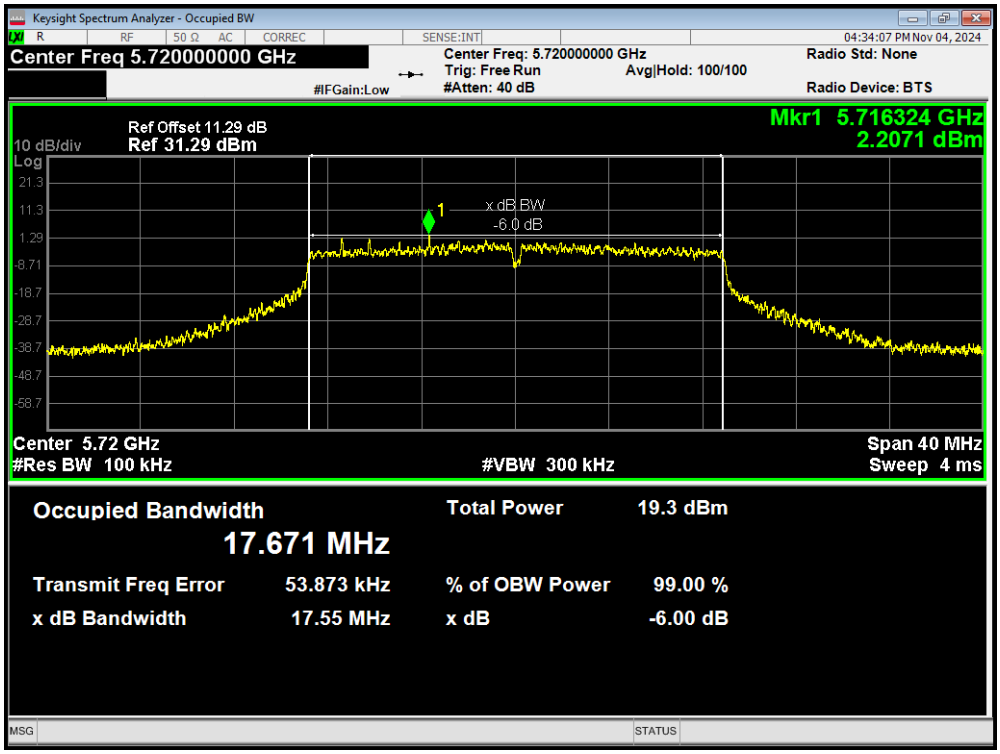
OBW 802.11n(HT40) 5795MHz



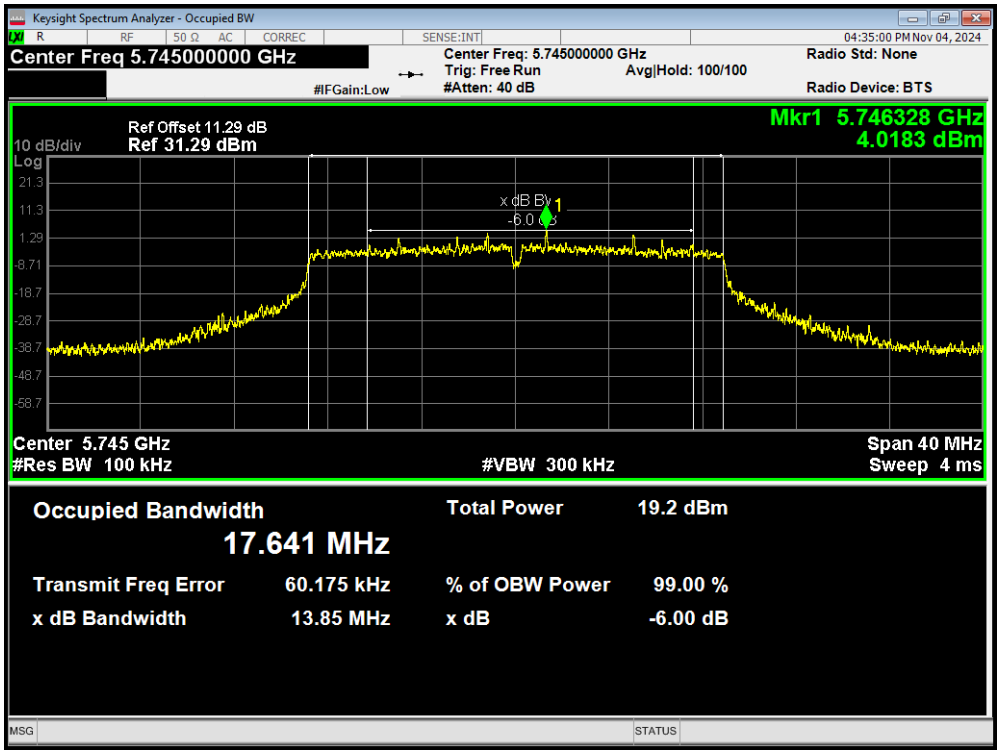
Minimum 6 dB bandwidth

U-NII-3

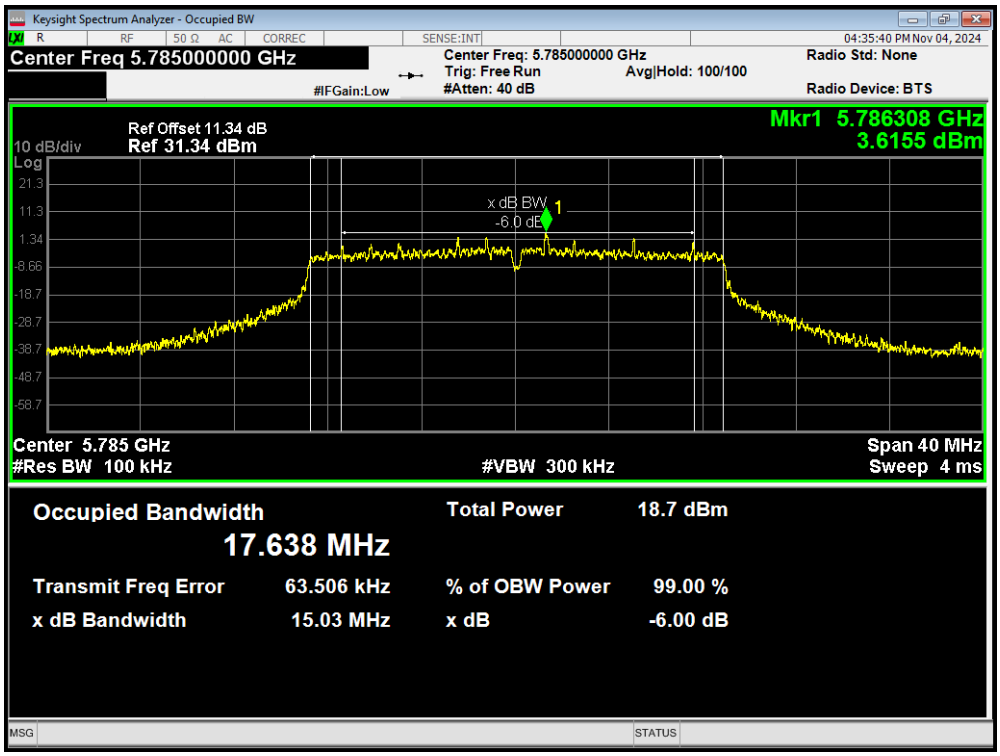
-6dB Bandwidth 802.11a 5720MHz



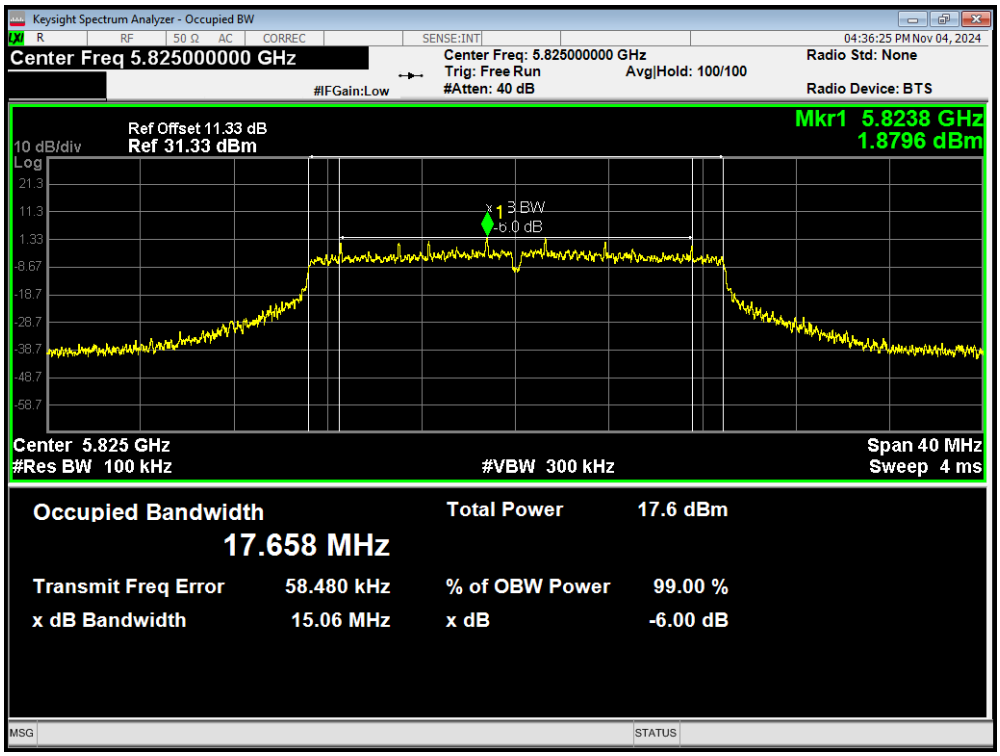
-6dB Bandwidth 802.11a 5745MHz



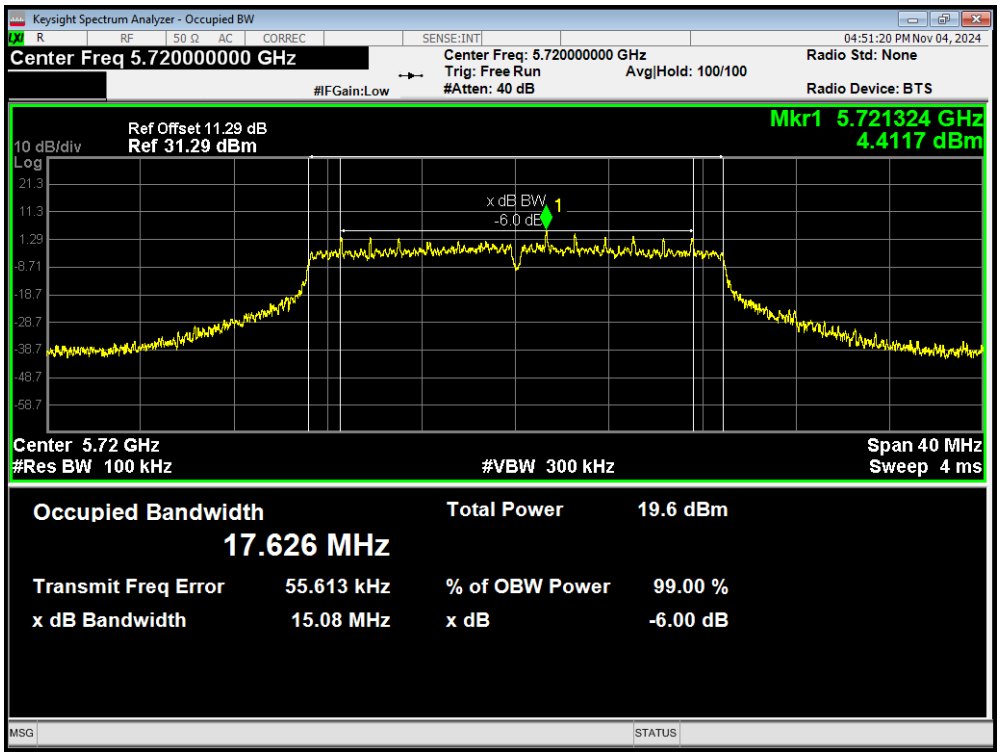
-6dB Bandwidth 802.11a 5785MHz



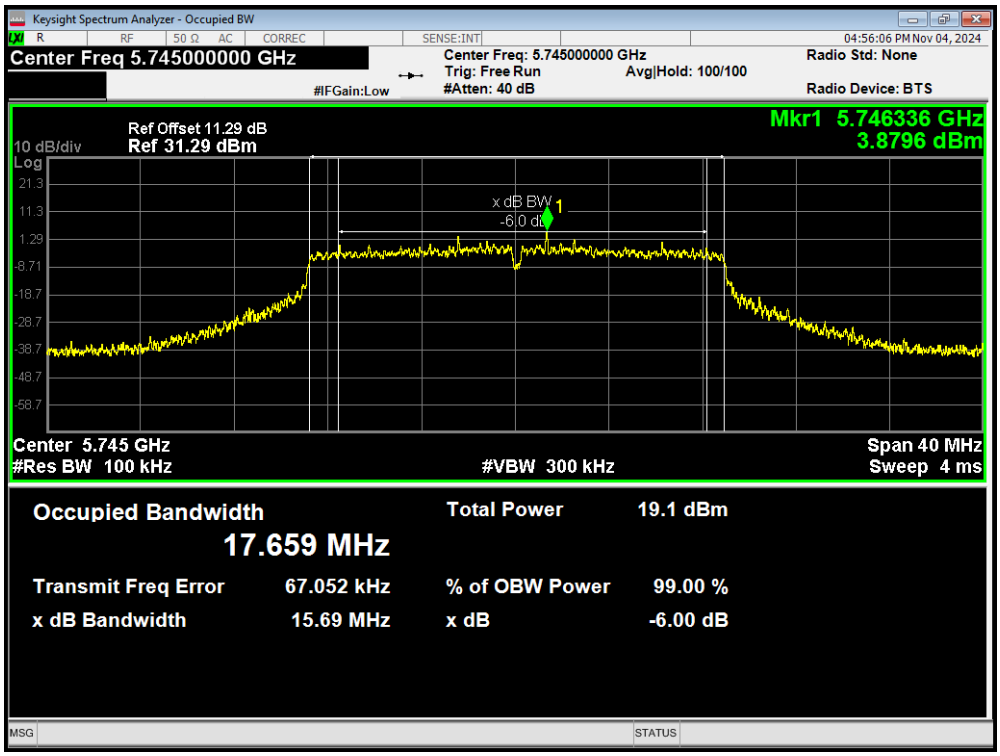
-6dB Bandwidth 802.11a 5825MHz



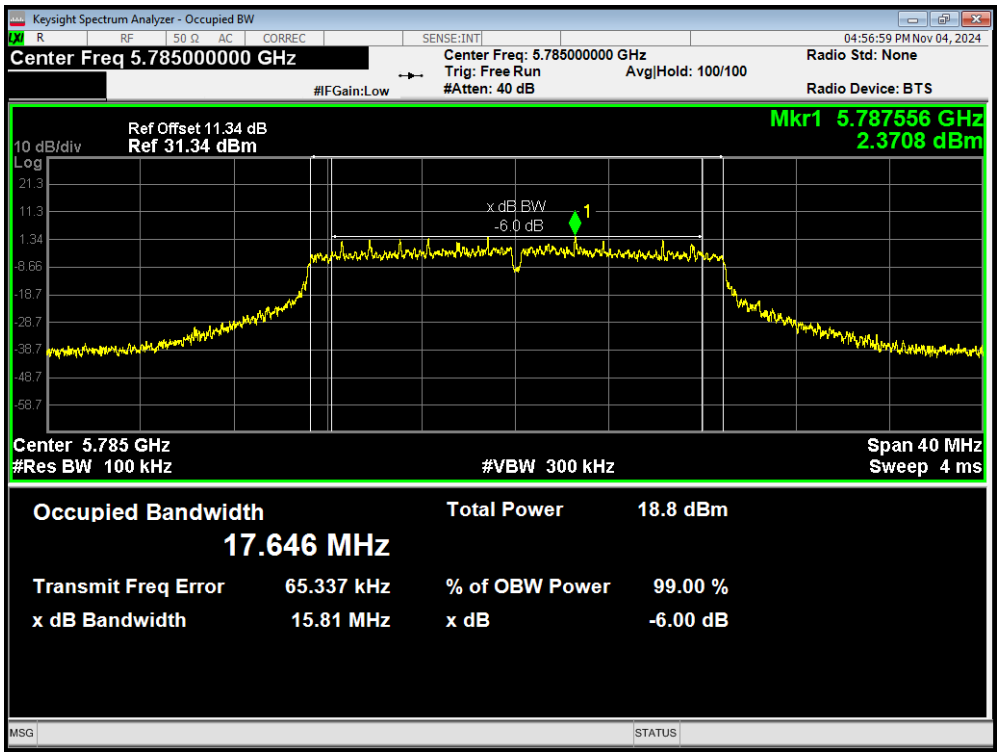
-6dB Bandwidth 802.11ac(VHT20) 5720MHz



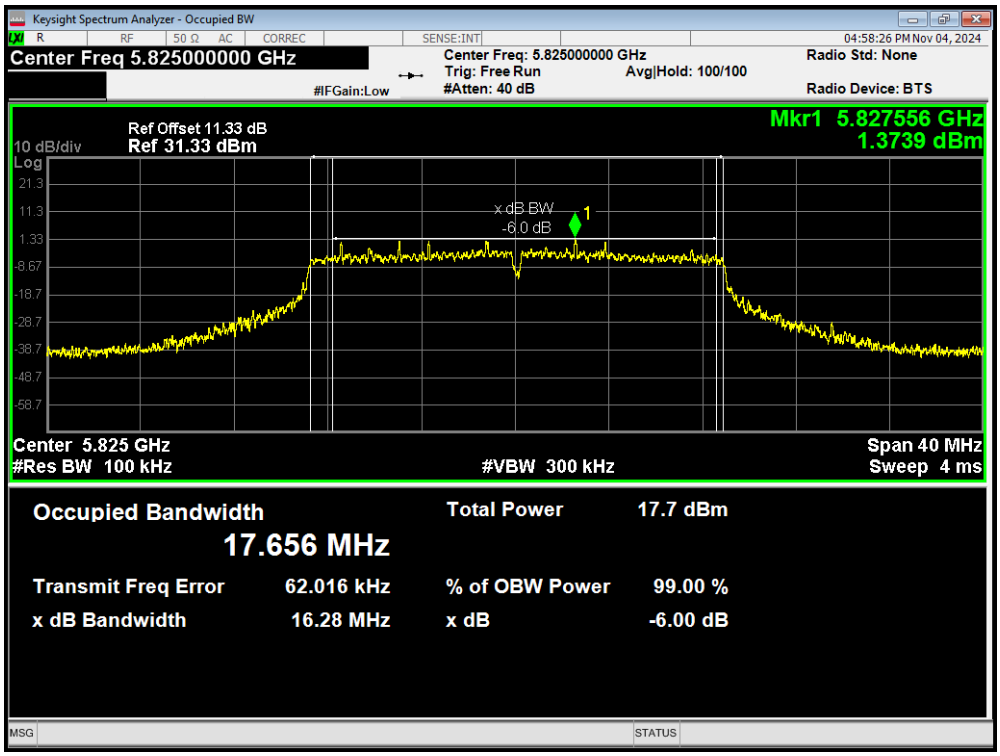
-6dB Bandwidth 802.11ac(VHT20) 5745MHz



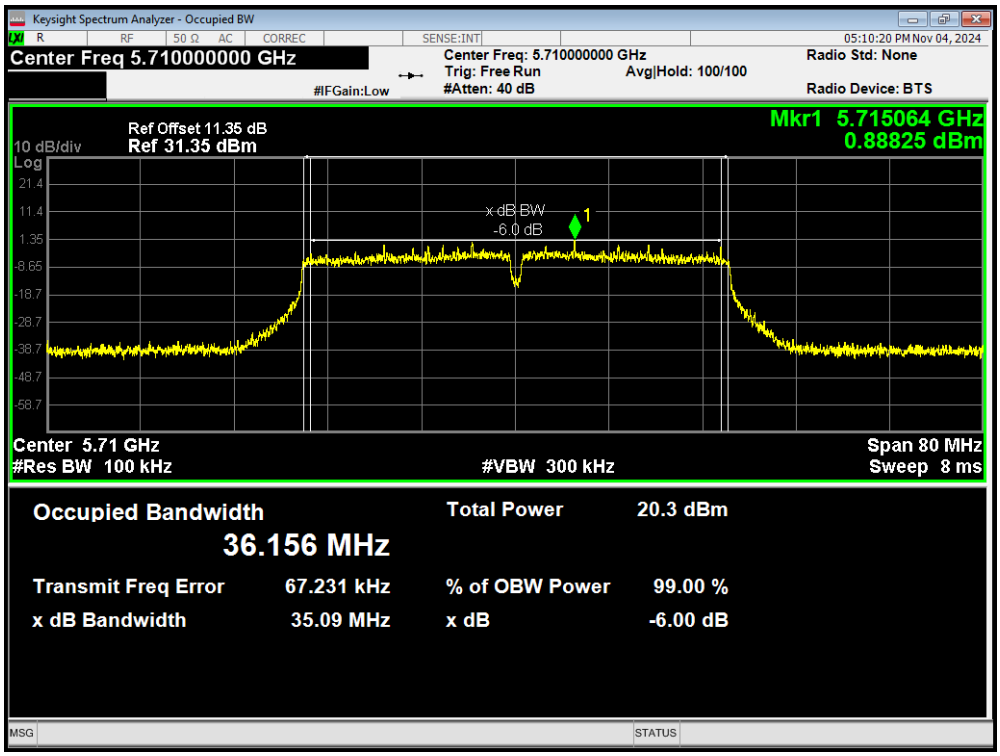
-6dB Bandwidth 802.11ac(VHT20) 5785MHz



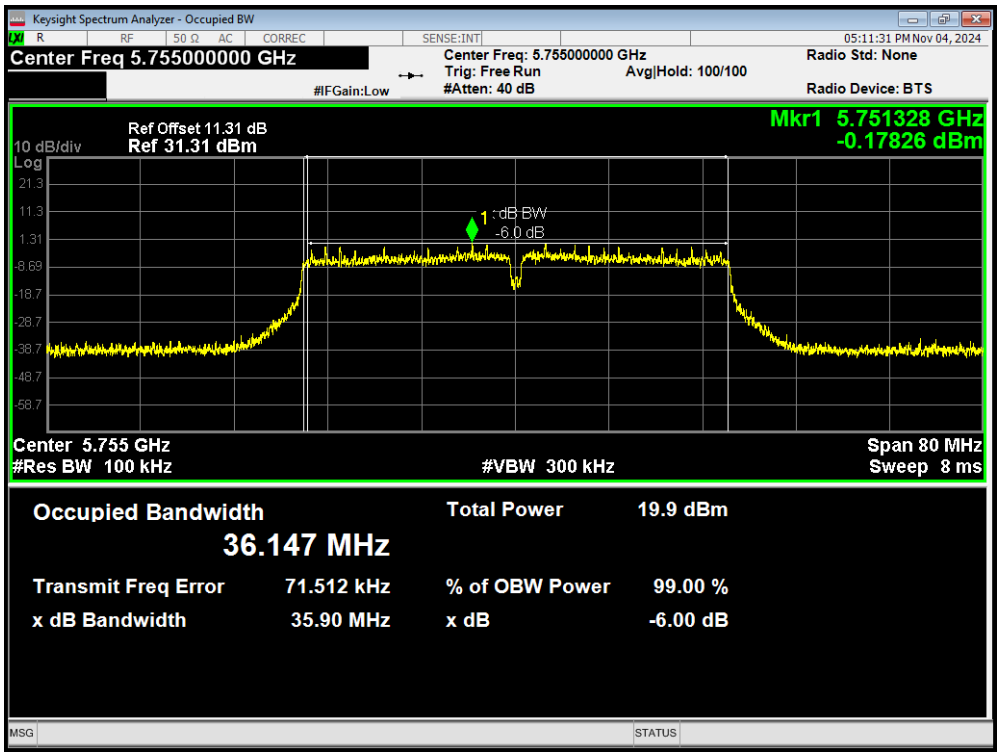
-6dB Bandwidth 802.11ac(VHT20) 5825MHz



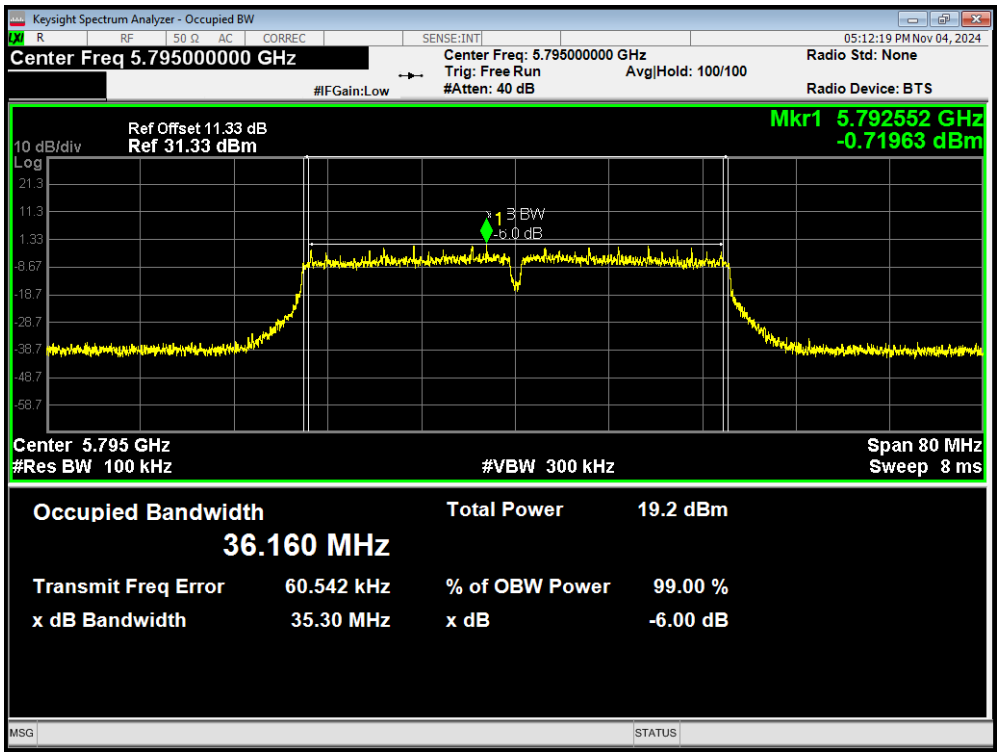
-6dB Bandwidth 802.11ac(VHT40) 5710MHz



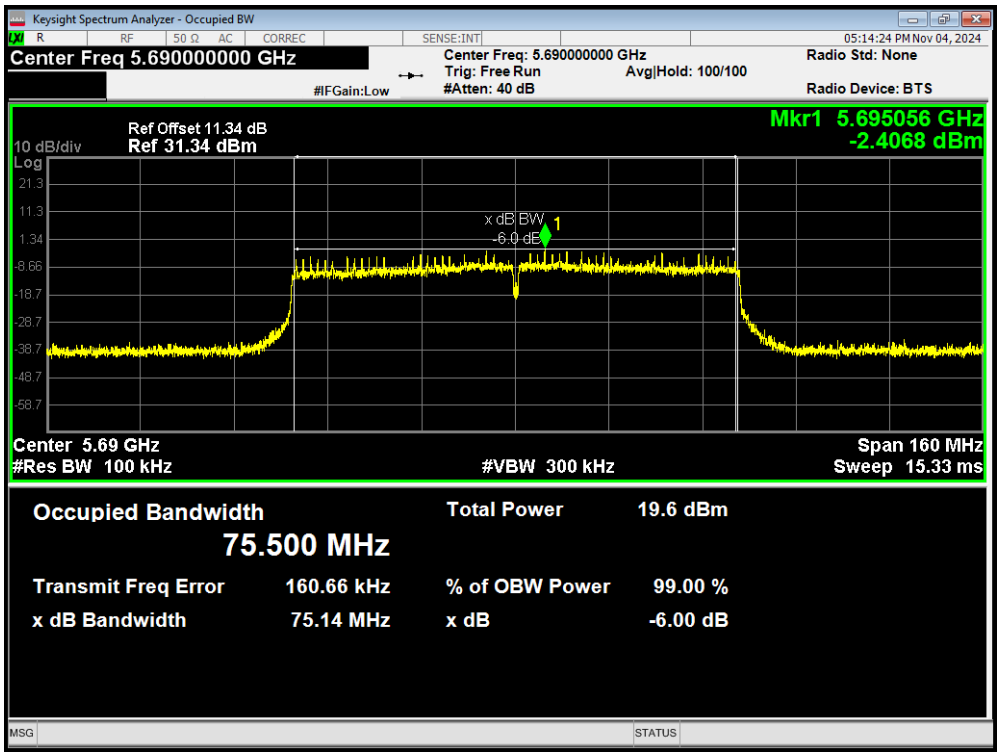
-6dB Bandwidth 802.11ac(VHT40) 5755MHz



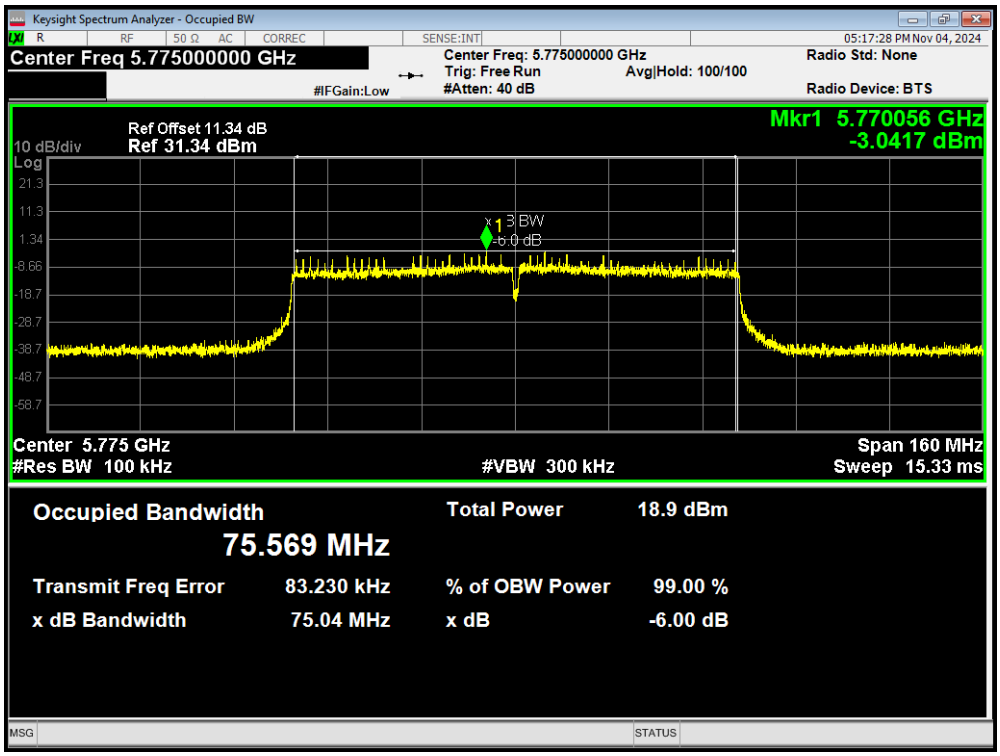
-6dB Bandwidth 802.11ac(VHT40) 5795MHz



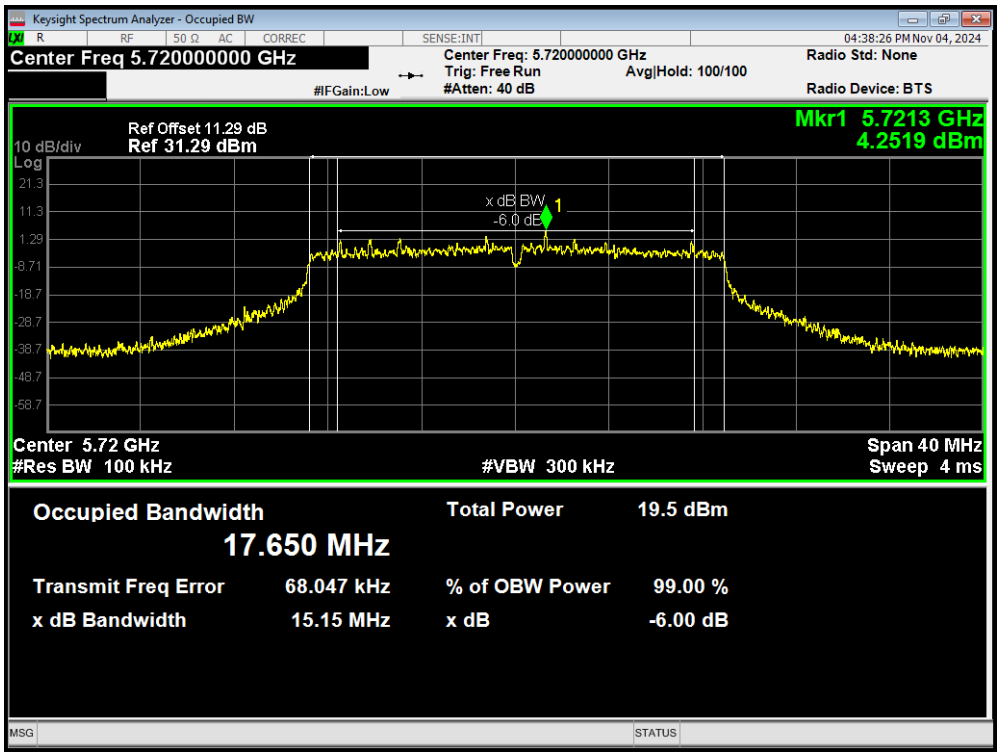
-6dB Bandwidth 802.11ac(VHT80) 5690MHz



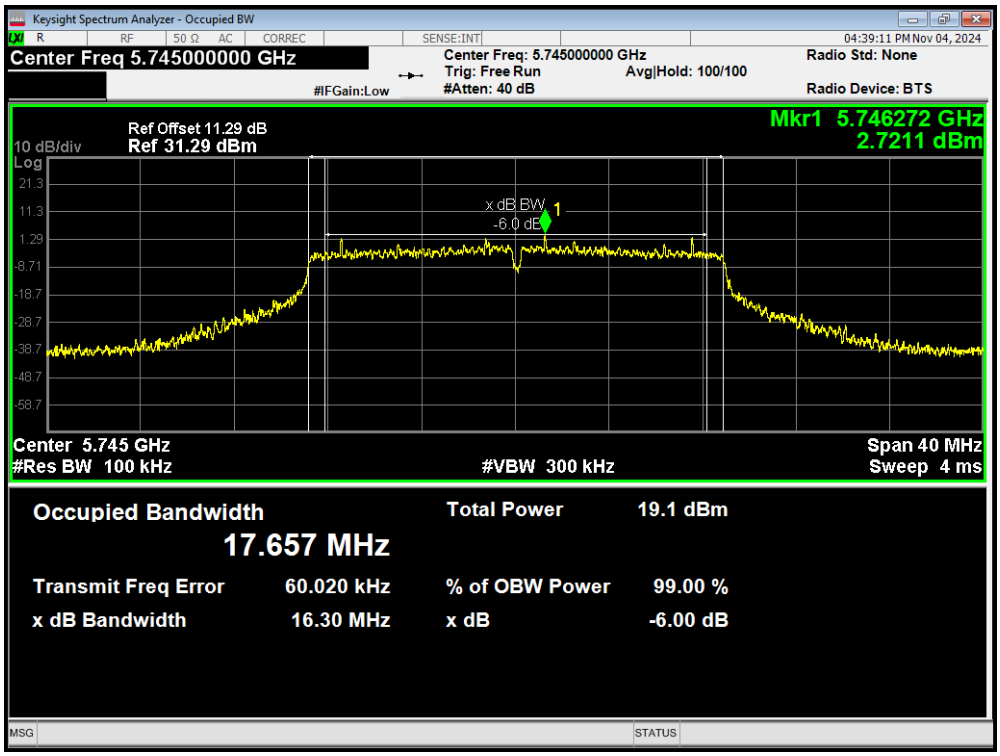
-6dB Bandwidth 802.11ac(VHT80) 5775MHz



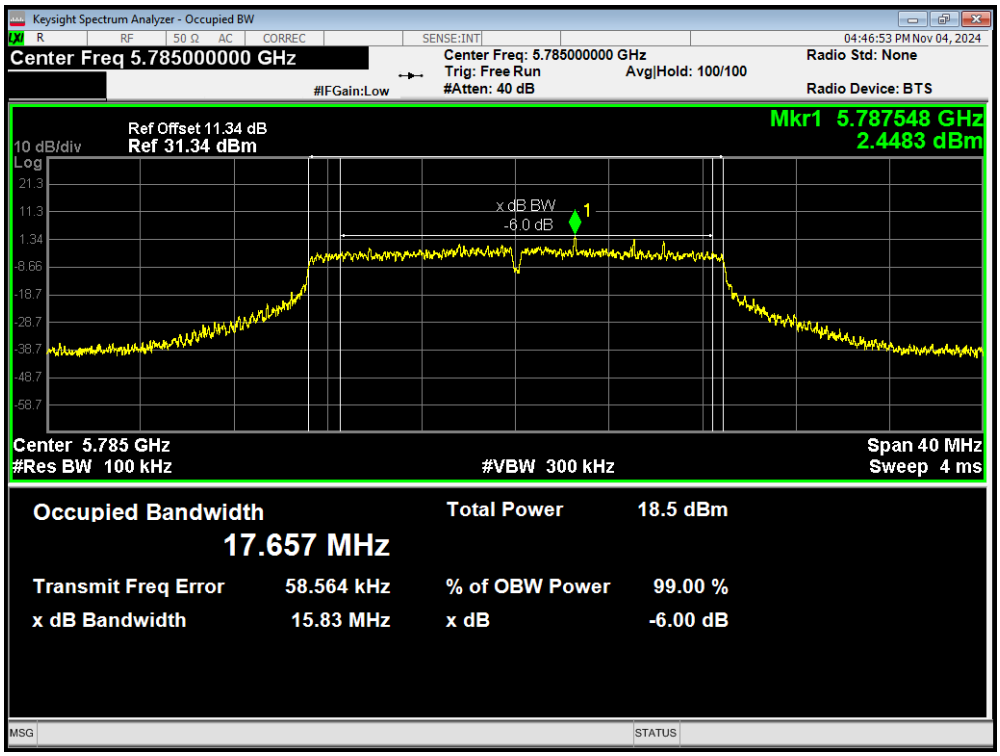
-6dB Bandwidth 802.11n(HT20) 5720MHz



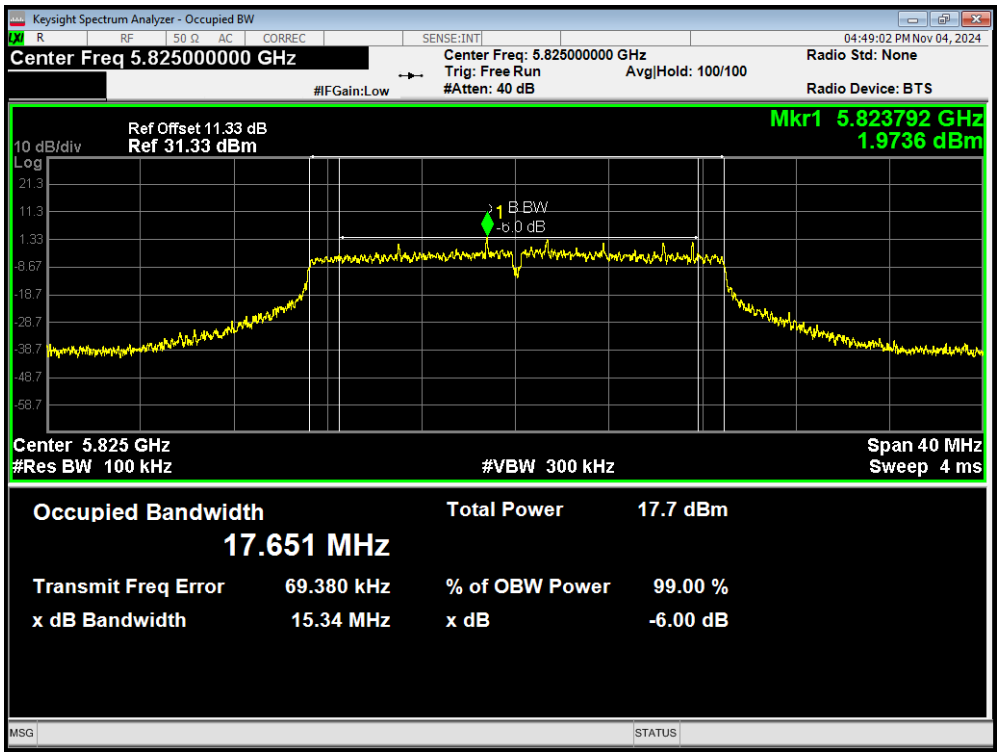
-6dB Bandwidth 802.11n(HT20) 5745MHz



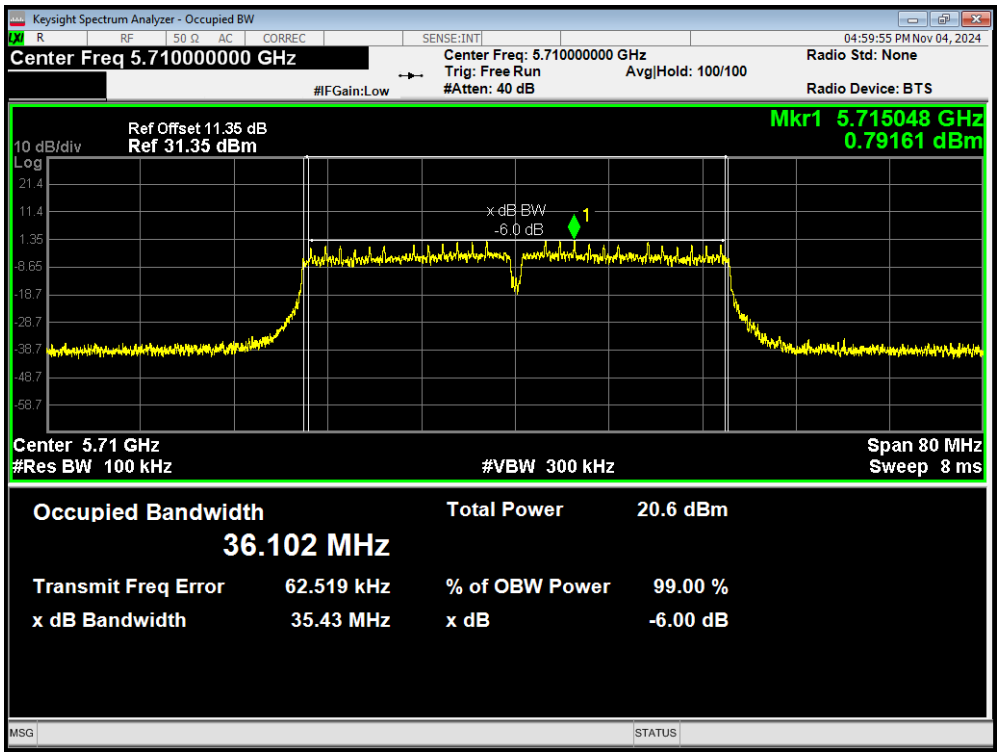
-6dB Bandwidth 802.11n(HT20) 5785MHz



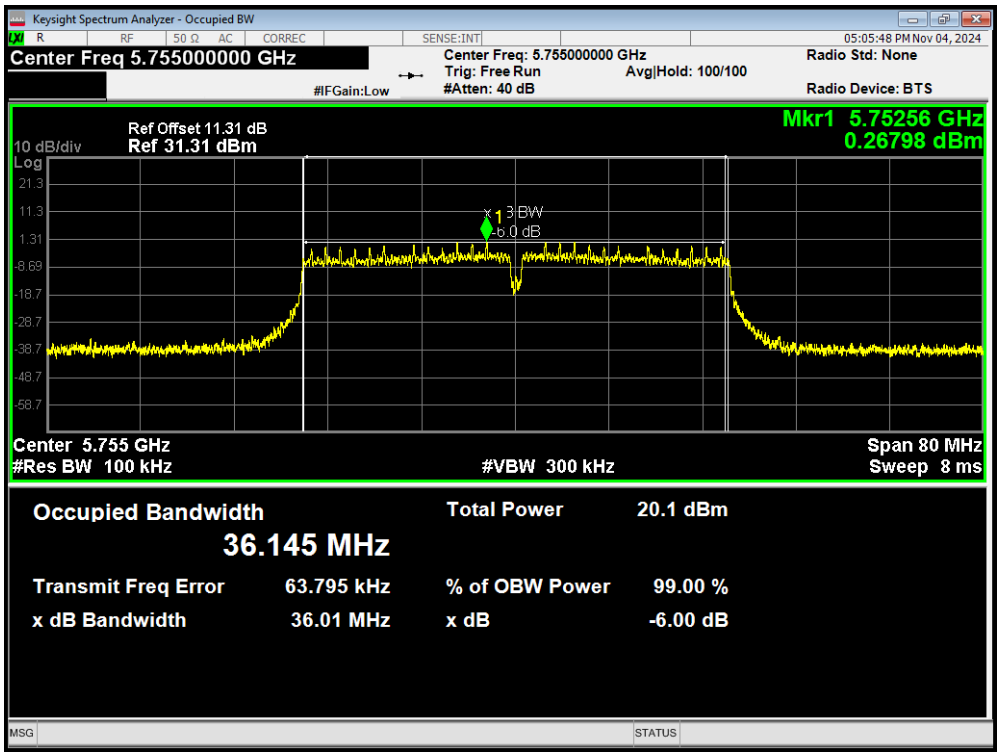
-6dB Bandwidth 802.11n(HT20) 5825MHz



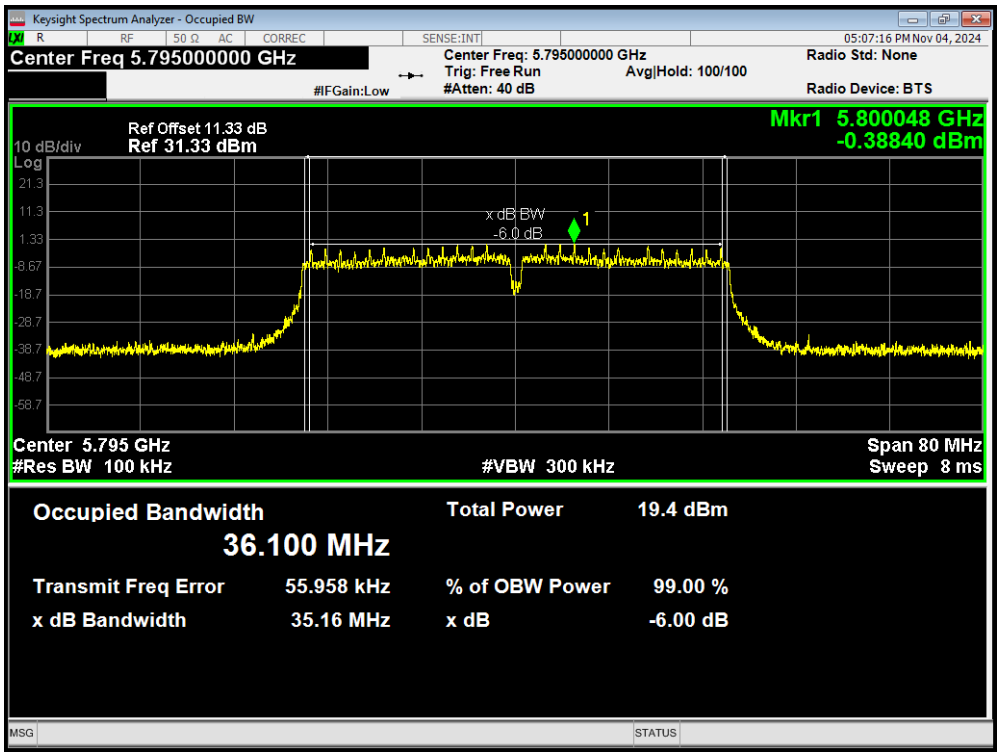
-6dB Bandwidth 802.11n(HT40) 5710MHz



-6dB Bandwidth 802.11n(HT40) 5755MHz



-6dB Bandwidth 802.11n(HT40) 5795MHz



5.2. Average Power Output

Ambient condition

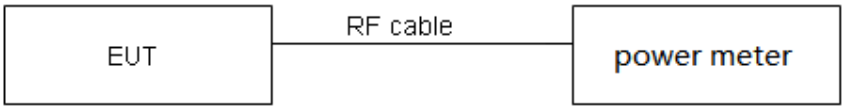
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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	0.983	0.00
802.11n HT20	0.980	0.00
802.11n HT40	0.962	0.17
802.11ac VHT20	0.980	0.00
802.11ac VHT40	0.964	0.16
802.11ac VHT80	0.922	0.35
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	23.04	24.62 >24	24
		60/5300	22.86	24.59 >24	24
		64/5320	22.68	24.56 >24	24
	802.11n HT20	52/5260	23.07	24.63 >24	24
		60/5300	23.42	24.70 >24	24
		64/5320	23.26	24.67 >24	24
	802.11n HT40	54/5270	41.65	27.20 >24	24
		62/5310	41.46	27.18 >24	24
	802.11ac VHT20	52/5260	23.53	24.72 >24	24
		60/5300	22.80	24.58 >24	24
		64/5320	23.10	24.64 >24	24
	802.11ac VHT40	54/5270	42.30	27.26 >24	24
		62/5310	42.23	27.26 >24	24
	802.11ac VHT80	58/5290	83.73	30.23 >24	24
U-NII-2C	802.11a	100/5500	22.32	24.49 >24	24
		120/5600	22.56	24.53 >24	24
		140/5700	22.75	24.57 >24	24
		144/5720	22.12	24.45 >24	24
	802.11n HT20	100/5500	23.34	24.68 >24	24
		120/5600	23.41	24.69 >24	24
		140/5700	23.63	24.73 >24	24
		144/5720	24.97	24.97 >24	24
	802.11n HT40	102/5510	42.16	27.25 >24	24
		118/5590	41.94	27.23 >24	24
		134/5670	42.08	27.24 >24	24
		142/5710	41.45	27.18 >24	24
	802.11ac VHT20	100/5500	23.12	24.64 >24	24
		120/5600	23.91	24.79 >24	24

		140/5700	23.74	24.76 >24	24
		144/5720	23.72	24.75 >24	24
	802.11ac VHT40	102/5510	41.13	27.14 >24	24
		118/5590	41.67	27.20 >24	24
		134/5670	41.28	27.16 >24	24
		142/5710	41.24	27.15 >24	24
	802.11ac VHT80	122/5610	83.53	30.22 >24	24
		138/5690	84.10	30.25 >24	24
Note: 250mW=24dBm					

U-NII-1

Network Standards	Carrier frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	36/5180	12	12	12
	40/5200	12	12	12
	48/5240	12	12	12
802.11n HT20	36/5180	12	12	12
	40/5200	12	12	12
	48/5240	12	12	12
802.11n HT40	38/5190	12	12	12
	46/5230	12	12	12
802.11ac VHT20	36/5180	12	12	12
	40/5200	12	12	12
	48/5240	12	12	12
802.11ac VHT40	38/5190	12	12	12
	46/5230	12	12	12
802.11ac VHT80	42/5210	11	11	11

U-NII-2A

Network Standards	Carrier frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	52/5260	12	12	12
	60/5300	12	12	12
	64/5320	12	12	12
802.11n HT20	52/5260	12	12	12
	60/5300	12	12	12
	64/5320	12	12	12
802.11n HT40	54/5270	12	12	12
	62/5310	12	12	12
802.11ac VHT20	52/5260	12	12	12
	60/5300	12	12	12
	64/5320	12	12	12
802.11ac VHT40	54/5270	12	12	12
	62/5310	12	12	12
802.11ac VHT80	58/5290	11	11	11

U-NII-2C

Network Standards	Carrier frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	100/5500	12	12	12
	120/5600	12	12	12
	140/5700	12	12	12
	144/5720	12	12	12
802.11n HT20	100/5500	12	12	12
	120/5600	12	12	12
	140/5700	12	12	12
	144/5720	12	12	12
802.11n HT40	102/5510	12	12	11
	118/5590	12	12	12
	134/5670	12	12	12
	142/5710	12	12	12
802.11ac VHT20	100/5500	12	12	12
	120/5600	12	12	12
	140/5700	12	12	12
	144/5720	12	12	12
802.11ac VHT40	102/5510	12	12	11
	118/5590	12	12	12
	134/5670	12	12	12
	142/5710	12	12	12
802.11ac VHT80	122/5610	11	11	11
	138/5690	11	11	11

U-NII-3

Network Standards	Carrier frequency (MHz)	Power Index		
		SISO Antenna 1	SISO Antenna 2	MIMO
802.11a	144/5720	12	12	12
	149/5745	12	12	12
	157/5785	12	12	12
	165/5825	12	12	12
802.11n HT20	144/5720	12	12	12
	149/5745	12	12	12
	157/5785	12	12	12
	165/5825	12	12	12
802.11n HT40	142/5710	12	12	12
	151/5755	12	11	12
	159/5795	12	12	12
802.11ac VHT20	144/5720	12	12	12
	149/5745	12	12	12
	157/5785	12	12	12
	165/5825	12	12	12
802.11ac VHT40	142/5710	12	12	12
	151/5755	12	11	12
	159/5795	12	12	12
802.11ac VHT80	138/5690	11	11	11
	155/5775	11	10	11

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	12.93	12.93	24	PASS
	40/5200	12.44	12.44	24	PASS
	48/5240	11.73	11.73	24	PASS
802.11n HT20	36/5180	12.78	12.78	24	PASS
	40/5200	12.18	12.18	24	PASS
	48/5240	11.61	11.61	24	PASS
802.11n HT40	38/5190	13.17	13.34	24	PASS
	46/5230	12.64	12.81	24	PASS
802.11ac VHT20	36/5180	12.84	12.84	24	PASS
	40/5200	12.28	12.28	24	PASS
	48/5240	11.62	11.62	24	PASS
802.11ac VHT40	38/5190	13.18	13.34	24	PASS
	46/5230	12.53	12.69	24	PASS
802.11ac VHT80	42/5210	11.63	11.98	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	11.82	11.82	24	PASS
	60/5300	11.75	11.75	24	PASS
	64/5320	12.10	12.10	24	PASS
802.11n HT20	52/5260	11.61	11.61	24	PASS
	60/5300	11.54	11.54	24	PASS
	64/5320	11.84	11.84	24	PASS
802.11n HT40	54/5270	12.28	12.45	24	PASS
	62/5310	12.39	12.56	24	PASS
802.11ac VHT20	52/5260	11.60	11.60	24	PASS
	60/5300	11.52	11.52	24	PASS
	64/5320	11.93	11.93	24	PASS
802.11ac VHT40	54/5270	12.23	12.39	24	PASS
	62/5310	12.29	12.45	24	PASS
802.11ac VHT80	58/5290	10.87	11.22	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	12.74	12.74	24	PASS
	120/5600	12.23	12.23	24	PASS
	140/5700	13.60	13.60	24	PASS
	144/5720	12.49	12.49	24	PASS
802.11n HT20	100/5500	12.63	12.63	24	PASS
	120/5600	11.99	11.99	24	PASS
	140/5700	13.38	13.38	24	PASS
	144/5720	12.16	12.16	24	PASS
802.11n HT40	102/5510	13.44	13.61	24	PASS
	118/5590	12.75	12.92	24	PASS
	134/5670	13.42	13.59	24	PASS
	142/5710	13.64	13.81	24	PASS
802.11ac VHT20	100/5500	12.60	12.60	24	PASS
	120/5600	12.07	12.07	24	PASS
	140/5700	13.37	13.37	24	PASS
	144/5720	12.15	12.15	24	PASS
802.11ac VHT40	102/5510	13.42	13.58	24	PASS
	118/5590	12.87	13.03	24	PASS
	134/5670	13.40	13.56	24	PASS
	142/5710	13.65	13.81	24	PASS
802.11ac VHT80	122/5610	11.79	12.14	24	PASS
	138/5690	12.50	12.85	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-3

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	144/5720	6.08	6.08	30	PASS
	149/5745	12.93	12.93	30	PASS
	157/5785	12.37	12.37	30	PASS
	165/5825	11.39	11.39	30	PASS
802.11n HT20	144/5720	6.12	6.12	30	PASS
	149/5745	12.95	12.95	30	PASS
	157/5785	12.35	12.35	30	PASS
	165/5825	11.42	11.42	30	PASS
802.11n HT40	142/5710	2.41	2.58	30	PASS
	151/5755	12.91	13.08	30	PASS
	159/5795	12.32	12.49	30	PASS
802.11ac VHT20	144/5720	6.12	6.12	30	PASS
	149/5745	12.93	12.93	30	PASS
	157/5785	12.38	12.38	30	PASS
	165/5825	11.41	11.41	30	PASS
802.11ac VHT40	142/5710	3.01	3.17	30	PASS
	151/5755	13.47	13.63	30	PASS
	159/5795	12.80	12.96	30	PASS
802.11ac VHT80	138/5690	-0.62	-0.27	30	PASS
	155/5775	12.03	12.38	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

SISO Antenna 2

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	13.44	13.44	24	PASS
	40/5200	13.39	13.39	24	PASS
	48/5240	12.76	12.76	24	PASS
802.11n HT20	36/5180	13.24	13.24	24	PASS
	40/5200	13.26	13.26	24	PASS
	48/5240	12.65	12.65	24	PASS
802.11n HT40	38/5190	13.73	13.90	24	PASS
	46/5230	13.35	13.52	24	PASS
802.11ac VHT20	36/5180	13.29	13.29	24	PASS
	40/5200	13.25	13.25	24	PASS
	48/5240	12.61	12.61	24	PASS
802.11ac VHT40	38/5190	13.76	13.92	24	PASS
	46/5230	13.19	13.35	24	PASS
802.11ac VHT80	42/5210	12.50	12.85	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	12.02	12.02	24	PASS
	60/5300	12.03	12.03	24	PASS
	64/5320	12.30	12.30	24	PASS
802.11n HT20	52/5260	11.83	11.83	24	PASS
	60/5300	11.96	11.96	24	PASS
	64/5320	12.14	12.14	24	PASS
802.11n HT40	54/5270	12.37	12.54	24	PASS
	62/5310	12.79	12.96	24	PASS
802.11ac VHT20	52/5260	11.92	11.92	24	PASS
	60/5300	11.94	11.94	24	PASS
	64/5320	12.19	12.19	24	PASS
802.11ac VHT40	54/5270	12.35	12.51	24	PASS
	62/5310	12.75	12.91	24	PASS
802.11ac VHT80	58/5290	11.70	12.05	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2C

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	12.41	12.41	24	PASS
	120/5600	12.47	12.47	24	PASS
	140/5700	13.69	13.69	24	PASS
	144/5720	13.13	13.13	24	PASS
802.11n HT20	100/5500	12.24	12.24	24	PASS
	120/5600	12.28	12.28	24	PASS
	140/5700	13.47	13.47	24	PASS
	144/5720	12.81	12.81	24	PASS
802.11n HT40	102/5510	13.15	13.32	24	PASS
	118/5590	12.81	12.98	24	PASS
	134/5670	13.39	13.56	24	PASS
	142/5710	13.82	13.99	24	PASS
802.11ac VHT20	100/5500	12.20	12.20	24	PASS
	120/5600	12.27	12.27	24	PASS
	140/5700	13.47	13.47	24	PASS
	144/5720	12.80	12.80	24	PASS
802.11ac VHT40	102/5510	13.18	13.34	24	PASS
	118/5590	12.85	13.01	24	PASS
	134/5670	13.39	13.55	24	PASS
	142/5710	13.79	13.95	24	PASS
802.11ac VHT80	122/5610	11.74	12.09	24	PASS
	138/5690	12.43	12.78	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-3

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	144/5720	6.30	6.30	30	PASS
	149/5745	13.82	13.82	30	PASS
	157/5785	13.48	13.48	30	PASS
	165/5825	12.47	12.47	30	PASS
802.11n HT20	144/5720	6.58	6.58	30	PASS
	149/5745	13.67	13.67	30	PASS
	157/5785	13.29	13.29	30	PASS
	165/5825	12.32	12.32	30	PASS
802.11n HT40	142/5710	3.26	3.43	30	PASS
	151/5755	13.24	13.41	30	PASS
	159/5795	13.61	13.78	30	PASS
802.11ac VHT20	144/5720	6.60	6.60	30	PASS
	149/5745	13.68	13.68	30	PASS
	157/5785	13.31	13.31	30	PASS
	165/5825	12.29	12.29	30	PASS
802.11ac VHT40	142/5710	3.29	3.45	30	PASS
	151/5755	13.27	13.43	30	PASS
	159/5795	13.62	13.78	30	PASS
802.11ac VHT80	138/5690	-0.96	-0.61	30	PASS
	155/5775	12.11	12.46	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

MIMO

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	12.92	12.92	13.49	13.49	16.23	24	PASS
	40/5200	12.35	12.35	13.47	13.47	15.96	24	PASS
	48/5240	11.71	11.71	13.00	13.00	15.41	24	PASS
802.11n HT20	36/5180	12.81	12.81	13.32	13.32	16.08	24	PASS
	40/5200	11.88	11.88	13.36	13.36	15.70	24	PASS
	48/5240	11.58	11.58	12.84	12.84	15.27	24	PASS
802.11n HT40	38/5190	13.09	13.26	13.91	14.08	16.70	24	PASS
	46/5230	12.33	12.50	13.70	13.87	16.25	24	PASS
802.11ac VHT20	36/5180	12.49	12.49	13.40	13.40	15.98	24	PASS
	40/5200	11.92	11.92	13.39	13.39	15.73	24	PASS
	48/5240	11.65	11.65	12.88	12.88	15.32	24	PASS
802.11ac VHT40	38/5190	13.06	13.22	13.95	14.11	16.70	24	PASS
	46/5230	12.43	12.59	13.61	13.77	16.23	24	PASS
802.11ac VHT80	42/5210	12.47	12.82	13.80	14.15	16.55	24	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 the transmitter output signals is CDD mode And $N_{ss}=2$. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So directional gain = G_{ANT} + Array Gain =1.46+0=1.46 dBi<6dBi. So the power limit is 24dBm.

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	11.67	11.67	12.46	12.46	15.09	24	PASS
	60/5300	11.52	11.52	12.69	12.69	15.16	24	PASS
	64/5320	11.87	11.87	12.94	12.94	15.45	24	PASS
802.11n HT20	52/5260	11.27	11.27	12.38	12.38	14.87	24	PASS
	60/5300	11.18	11.18	12.51	12.51	14.91	24	PASS
	64/5320	11.50	11.50	12.77	12.77	15.19	24	PASS
802.11n HT40	54/5270	12.08	12.25	12.93	13.10	15.70	24	PASS
	62/5310	12.13	12.30	13.44	13.61	16.02	24	PASS
802.11ac VHT20	52/5260	11.52	11.52	12.29	12.29	14.93	24	PASS
	60/5300	11.47	11.47	12.50	12.50	15.03	24	PASS
	64/5320	11.55	11.55	12.81	12.81	15.23	24	PASS
802.11ac VHT40	54/5270	12.13	12.29	12.89	13.05	15.70	24	PASS
	62/5310	12.11	12.27	13.52	13.68	16.04	24	PASS
802.11ac VHT80	58/5290	10.78	11.13	12.37	12.72	15.01	24	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 the transmitter output signals is CDD mode And $N_{ss}=2$. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So directional gain = G_{ANT} + Array Gain =1.52+0=1.52dBi<6dBi. So the power limit is 24dBm.

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	12.87	12.87	13.81	13.81	16.38	24	PASS
	120/5600	12.10	12.10	13.25	13.25	15.72	24	PASS
	140/5700	13.54	13.54	13.38	13.38	16.47	24	PASS
	144/5720	12.40	12.40	12.91	12.91	15.67	24	PASS
802.11n HT20	100/5500	12.72	12.72	13.60	13.60	16.19	24	PASS
	120/5600	12.24	12.24	13.05	13.05	15.67	24	PASS
	140/5700	13.21	13.21	13.12	13.12	16.18	24	PASS
	144/5720	12.22	12.22	12.67	12.67	15.46	24	PASS
802.11n HT40	102/5510	12.41	12.58	13.29	13.46	16.05	24	PASS
	118/5590	12.78	12.95	13.58	13.75	16.38	24	PASS
	134/5670	13.26	13.43	13.43	13.60	16.52	24	PASS
	142/5710	13.57	13.74	13.52	13.69	13.69	24	PASS
802.11ac VHT20	100/5500	12.69	12.69	13.55	13.55	16.16	24	PASS
	120/5600	11.86	11.86	12.89	12.89	15.42	24	PASS
	140/5700	13.26	13.26	13.14	13.14	16.21	24	PASS
	144/5720	12.26	12.26	12.67	12.67	15.48	24	PASS
802.11ac VHT40	102/5510	12.48	12.64	13.28	13.44	16.07	24	PASS
	118/5590	12.73	12.89	13.56	13.72	16.34	24	PASS
	134/5670	13.28	13.44	13.41	13.57	16.52	24	PASS
	142/5710	13.55	13.71	13.51	13.67	16.70	24	PASS
802.11ac VHT80	122/5610	11.55	11.90	12.28	12.63	15.29	24	PASS
	138/5690	12.51	12.86	12.30	12.65	15.77	24	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 the transmitter output signals is CDD mode And $N_{ss}=2$. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So directional gain = G_{ANT} + Array Gain =1.48+0=1.48 dBi<6dBi. So the power limit is 24dBm.

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	5.63	5.63	6.07	6.07	8.86	30	PASS
	149/5745	12.98	12.98	13.65	13.65	16.34	30	PASS
	157/5785	12.56	12.56	13.38	13.38	16.00	30	PASS
	165/5825	11.39	11.39	12.44	12.44	14.96	30	PASS
802.11n HT20	144/5720	6.02	6.02	6.60	6.60	9.33	30	PASS
	149/5745	12.83	12.83	13.61	13.61	16.25	30	PASS
	157/5785	12.30	12.30	13.00	13.00	15.67	30	PASS
	165/5825	11.24	11.24	12.06	12.06	14.68	30	PASS
802.11n HT40	142/5710	3.05	3.22	3.15	3.32	6.28	30	PASS
	151/5755	13.46	13.63	13.94	14.11	16.89	30	PASS
	159/5795	12.73	12.90	13.48	13.65	16.30	30	PASS
802.11ac VHT20	144/5720	5.93	5.93	6.30	6.30	9.13	30	PASS
	149/5745	12.92	12.92	13.60	13.60	16.28	30	PASS
	157/5785	12.30	12.30	13.02	13.02	15.69	30	PASS
	165/5825	11.24	11.24	12.36	12.36	14.85	30	PASS
802.11ac VHT40	142/5710	2.81	2.97	3.22	3.38	6.19	30	PASS
	151/5755	13.43	13.59	13.91	14.07	16.85	30	PASS
	159/5795	12.77	12.93	13.49	13.65	16.32	30	PASS
802.11ac VHT80	138/5690	-1.00	-0.65	-0.98	-0.63	2.37	30	PASS
	155/5775	12.02	12.37	12.72	13.07	15.74	30	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 the transmitter output signals is CDD mode And $N_{ss}=2$. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain,

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \geq 5$.

So directional gain = G_{ANT} + Array Gain =1.48+0=1.48 dBi<6dBi. So the power limit is 30dBm.

5.3. Frequency Stability

Ambient condition

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

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
4	-30	5200.003485	5200.003382	5200.001972	5199.995646
4	-20	5200.008900	5199.999220	5199.995695	5199.994373
4	-10	5200.010230	5199.993059	5199.985721	5199.992655
4	0	5200.003920	5199.989572	5199.992260	5199.987657
4	10	5199.997882	5199.979798	5199.991266	5199.984604
4	20	5199.989004	5199.972853	5199.988687	5199.979976
4	30	5199.981810	5199.972140	5199.984302	5199.978620
4	40	5199.976056	5199.971494	5199.982132	5199.973392
4	50	5199.975786	5199.971420	5199.972955	5199.972117
3.55	20	5199.969632	5199.965213	5199.969149	5199.966594
4.4	20	5199.968609	5199.962256	5199.966944	5199.957028
Max. ΔMHz		-0.031391	-0.037744	-0.033056	-0.042972
PPM		-6.036731	-7.258462	-6.356923	-8.263846

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
4	-30	5299.991695	5299.986799	5299.983248	5299.974576
4	-20	5299.988753	5299.986021	5299.975671	5299.965958
4	-10	5299.981701	5299.983015	5299.970356	5299.957505
4	0	5299.986847	5299.980856	5299.971996	5299.962725
4	10	5299.980452	5299.974373	5299.968201	5299.960658
4	20	5299.971377	5299.974204	5299.964086	5299.954631
4	30	5299.964601	5299.964981	5299.955913	5299.953102
4	40	5299.963278	5299.959378	5299.952511	5299.944614
4	50	5299.960976	5299.951748	5299.943249	5299.941089
3.55	20	5299.959470	5299.946296	5299.942397	5299.941022
4.4	20	5299.952200	5299.939754	5299.938869	5299.939617
Max. ΔMHz		-0.047800	-0.060246	-0.061131	-0.060383
PPM		-9.018868	-11.367170	-11.534151	-11.393019

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
4	-30	5579.995970	5579.988552	5579.980994	5579.973372
4	-20	5579.992539	5579.979021	5579.973347	5579.965926
4	-10	5579.988822	5579.977224	5579.965236	5579.958469
4	0	5579.985320	5579.976998	5579.972501	5579.963552
4	10	5579.980146	5579.972250	5579.964994	5579.953907
4	20	5579.973988	5579.963977	5579.960594	5579.946178
4	30	5579.972414	5579.957448	5579.956537	5579.939499
4	40	5579.963199	5579.955446	5579.951487	5579.933251
4	50	5579.960334	5579.953979	5579.942438	5579.929620
3.55	20	5579.957616	5579.953935	5579.937503	5579.928121
4.4	20	5579.951692	5579.947557	5579.934468	5579.925783
Max. ΔMHz		-0.048308	-0.052443	-0.065532	-0.074217
PPM		-8.657348	-9.398387	-11.744086	-13.300538

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
4	-30	5784.994197	5784.986400	5784.985610	5784.985298
4	-20	5784.989193	5784.980231	5784.982604	5784.977949
4	-10	5784.986391	5784.976981	5784.981454	5784.977180
4	0	5784.980231	5784.977677	5784.978422	5784.970658
4	10	5784.977747	5784.969782	5784.974243	5784.968248
4	20	5784.969457	5784.967040	5784.972863	5784.962375
4	30	5784.965569	5784.958061	5784.966672	5784.955567
4	40	5784.960331	5784.950144	5784.965287	5784.946670
4	50	5784.959102	5784.940687	5784.959229	5784.944587
3.55	20	5784.951771	5784.937197	5784.957598	5784.942754
4.4	20	5784.948407	5784.934239	5784.949729	5784.935968
Max. ΔMHz		-0.051593	-0.065761	-0.050271	-0.064032
PPM		-8.918410	-11.367502	-8.689888	-11.068626

5.4. Power Spectral Density

Ambient condition

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

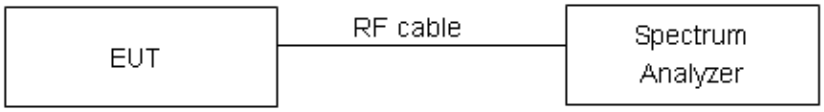
Method of Measurement

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

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	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:

SISO Antenna 1

U-NII-1

Mode	Channel/ Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	2.78	2.78	11	PASS
	40/5200	2.82	2.82	11	PASS
	48/5240	2.23	2.23	11	PASS
802.11n HT20	36/5180	2.68	2.68	11	PASS
	40/5200	2.16	2.16	11	PASS
	48/5240	1.33	1.33	11	PASS
802.11n HT40	38/5190	-0.07	0.10	11	PASS
	46/5230	-0.61	-0.44	11	PASS
802.11ac VHT20	36/5180	2.49	2.49	11	PASS
	40/5200	2.50	2.50	11	PASS
	48/5240	1.42	1.42	11	PASS
802.11ac VHT40	38/5190	0.01	0.17	11	PASS
	46/5230	-0.47	-0.31	11	PASS
802.11ac VHT80	42/5210	-4.92	-4.57	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-2A

Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52/5260	1.81	1.81	11	PASS
	60/5300	2.09	2.09	11	PASS
	64/5320	1.99	1.99	11	PASS
802.11n HT20	52/5260	1.48	1.48	11	PASS
	60/5300	1.37	1.37	11	PASS
	64/5320	1.86	1.86	11	PASS
802.11n HT40	54/5270	-1.06	-0.89	11	PASS
	62/5310	-0.85	-0.68	11	PASS
802.11ac VHT20	52/5260	1.54	1.54	11	PASS
	60/5300	1.30	1.30	11	PASS
	64/5320	1.58	1.58	11	PASS
802.11ac VHT40	54/5270	-0.95	-0.79	11	PASS
	62/5310	-0.73	-0.57	11	PASS
802.11ac VHT80	58/5290	-5.41	-5.06	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-2C

Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100/5500	2.80	2.80	11	PASS
	120/5600	2.34	2.34	11	PASS
	140/5700	3.71	3.71	11	PASS
	144/5720	3.54	3.54	11	PASS
802.11n HT20	100/5500	2.30	2.30	11	PASS
	120/5600	1.69	1.69	11	PASS
	140/5700	2.99	2.99	11	PASS
	144/5720	3.34	3.34	11	PASS
802.11n HT40	102/5510	0.11	0.28	11	PASS
	118/5590	-0.48	-0.31	11	PASS
	134/5670	0.17	0.34	11	PASS
	142/5710	0.89	1.06	11	PASS
802.11ac VHT20	100/5500	2.38	2.38	11	PASS
	120/5600	2.00	2.00	11	PASS
	140/5700	3.50	3.50	11	PASS
	144/5720	2.71	2.71	11	PASS
802.11ac VHT40	102/5510	0.65	0.81	11	PASS
	118/5590	-0.19	-0.03	11	PASS
	134/5670	0.16	0.32	11	PASS
	142/5710	0.95	1.11	11	PASS
802.11ac VHT80	122/5610	-4.49	-4.14	11	PASS
	138/5690	-3.59	-3.24	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-3

Mode	Channel /Frequency (MHz)	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	144/5720	-1.91	-1.64	30	PASS
	149/5745	-0.63	-0.36	30	PASS
	157/5785	-0.75	-0.48	30	PASS
	165/5825	-2.11	-1.84	30	PASS
802.11n HT20	144/5720	-2.04	-1.77	30	PASS
	149/5745	-0.57	-0.30	30	PASS
	157/5785	-0.97	-0.70	30	PASS
	165/5825	-1.92	-1.65	30	PASS
802.11n HT40	142/5710	-4.28	-3.84	30	PASS
	151/5755	-3.38	-2.94	30	PASS
	159/5795	-3.87	-3.43	30	PASS
802.11ac VHT20	144/5720	-2.01	-1.74	30	PASS
	149/5745	-0.66	-0.39	30	PASS
	157/5785	-1.11	-0.84	30	PASS
	165/5825	-2.16	-1.89	30	PASS
802.11ac VHT40	142/5710	-4.28	-3.85	30	PASS
	151/5755	-2.54	-2.11	30	PASS
	159/5795	-3.94	-3.51	30	PASS
802.11ac VHT80	138/5690	-8.03	-7.41	30	PASS
	155/5775	-7.46	-6.84	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

SISO Antenna 2

U-NII-1

Mode	Channel/ Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36/5180	3.68	3.68	11	PASS
	40/5200	3.56	3.56	11	PASS
	48/5240	2.98	2.98	11	PASS
802.11n HT20	36/5180	3.02	3.02	11	PASS
	40/5200	3.11	3.11	11	PASS
	48/5240	2.43	2.43	11	PASS
802.11n HT40	38/5190	0.79	0.96	11	PASS
	46/5230	0.05	0.22	11	PASS
802.11ac VHT20	36/5180	3.23	3.23	11	PASS
	40/5200	3.13	3.13	11	PASS
	48/5240	2.47	2.47	11	PASS
802.11ac VHT40	38/5190	0.47	0.63	11	PASS
	46/5230	0.06	0.22	11	PASS
802.11ac VHT80	42/5210	-3.78	-3.43	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-2A

Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52/5260	2.20	2.20	11	PASS
	60/5300	2.19	2.19	11	PASS
	64/5320	2.35	2.35	11	PASS
802.11n HT20	52/5260	1.59	1.59	11	PASS
	60/5300	1.70	1.70	11	PASS
	64/5320	2.21	2.21	11	PASS
802.11n HT40	54/5270	-0.91	-0.74	11	PASS
	62/5310	-0.50	-0.33	11	PASS
802.11ac VHT20	52/5260	1.77	1.77	11	PASS
	60/5300	1.84	1.84	11	PASS
	64/5320	2.21	2.21	11	PASS
802.11ac VHT40	54/5270	-0.96	-0.80	11	PASS
	62/5310	-0.58	-0.42	11	PASS
802.11ac VHT80	58/5290	-4.80	-4.45	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-2C

Mode	Channel /Frequency (MHz)	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100/5500	2.53	2.53	11	PASS
	120/5600	2.48	2.48	11	PASS
	140/5700	3.67	3.67	11	PASS
	144/5720	4.00	4.00	11	PASS
802.11n HT20	100/5500	1.99	1.99	11	PASS
	120/5600	2.29	2.29	11	PASS
	140/5700	3.50	3.50	11	PASS
	144/5720	3.97	3.97	11	PASS
802.11n HT40	102/5510	0.07	0.24	11	PASS
	118/5590	-0.39	-0.22	11	PASS
	134/5670	0.22	0.39	11	PASS
	142/5710	0.85	1.02	11	PASS
802.11ac VHT20	100/5500	1.85	1.85	11	PASS
	120/5600	2.06	2.06	11	PASS
	140/5700	3.45	3.45	11	PASS
	144/5720	3.51	3.51	11	PASS
802.11ac VHT40	102/5510	0.04	0.20	11	PASS
	118/5590	-0.16	0.00	11	PASS
	134/5670	-0.01	0.15	11	PASS
	142/5710	0.99	1.15	11	PASS
802.11ac VHT80	122/5610	-4.36	-4.01	11	PASS
	138/5690	-3.93	-3.58	11	PASS
Note: Power Spectral Density =Read Value+Duty cycle correction factor					

U-NII-3

Mode	Channel /Frequency (MHz)	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	144/5720	-0.83	-0.56	30	PASS
	149/5745	0.79	1.06	30	PASS
	157/5785	0.28	0.55	30	PASS
	165/5825	-0.89	-0.62	30	PASS
802.11n HT20	144/5720	-1.51	-1.24	30	PASS
	149/5745	0.24	0.51	30	PASS
	157/5785	-0.12	0.15	30	PASS
	165/5825	-1.09	-0.82	30	PASS
802.11n HT40	142/5710	-4.06	-3.62	30	PASS
	151/5755	-3.33	-2.89	30	PASS
	159/5795	-3.08	-2.64	30	PASS
802.11ac VHT20	144/5720	-1.22	-0.95	30	PASS
	149/5745	0.26	0.53	30	PASS
	157/5785	-0.12	0.15	30	PASS
	165/5825	-1.17	-0.90	30	PASS
802.11ac VHT40	142/5710	-4.12	-3.69	30	PASS
	151/5755	-3.16	-2.73	30	PASS
	159/5795	-2.80	-2.37	30	PASS
802.11ac VHT80	138/5690	-8.53	-7.91	30	PASS
	155/5775	-7.57	-6.95	30	PASS
Note: PSD=Read Value+Duty cycle correction factor +10*log(500/470)					

MIMO

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	3.11	3.11	3.57	3.57	6.36	11	PASS
	40/5200	2.51	2.51	3.61	3.61	6.11	11	PASS
	48/5240	2.02	2.02	3.45	3.45	5.80	11	PASS
802.11n HT20	36/5180	2.84	2.84	3.06	3.06	5.96	11	PASS
	40/5200	1.50	1.50	3.05	3.05	5.35	11	PASS
	48/5240	1.75	1.75	2.87	2.87	5.36	11	PASS
802.11n HT40	38/5190	0.13	0.30	0.79	0.96	3.65	11	PASS
	46/5230	-0.90	-0.73	0.26	0.43	2.90	11	PASS
802.11ac VHT20	36/5180	2.22	2.22	3.08	3.08	5.68	11	PASS
	40/5200	1.62	1.62	3.09	3.09	5.43	11	PASS
	48/5240	1.61	1.61	2.72	2.72	5.21	11	PASS
802.11ac VHT40	38/5190	-0.35	-0.19	0.71	0.87	3.38	11	PASS
	46/5230	-0.29	-0.13	0.46	0.62	3.27	11	PASS
802.11ac VHT80	42/5210	-3.74	-3.39	-2.42	-2.07	0.33	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 the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

so directional gain=G_{ANT}+Array Gain=1.46+10log(2/1)=4.47<6 dBi. So the PSD limit is 11dBm

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	1.93	1.93	2.73	2.73	5.36	11	PASS
	60/5300	1.79	1.79	2.80	2.80	5.33	11	PASS
	64/5320	2.35	2.35	3.09	3.09	5.75	11	PASS
802.11n HT20	52/5260	0.94	0.94	1.78	1.78	4.39	11	PASS
	60/5300	0.79	0.79	2.23	2.23	4.58	11	PASS
	64/5320	1.54	1.54	2.92	2.92	5.29	11	PASS
802.11n HT40	54/5270	-1.27	-1.10	-0.18	-0.01	2.49	11	PASS
	62/5310	-0.69	-0.52	0.36	0.53	3.05	11	PASS
802.11ac VHT20	52/5260	1.79	1.79	2.35	2.35	5.09	11	PASS
	60/5300	1.43	1.43	2.47	2.47	4.99	11	PASS
	64/5320	1.37	1.37	2.47	2.47	4.97	11	PASS
802.11ac VHT40	54/5270	-0.81	-0.65	-0.34	-0.18	2.60	11	PASS
	62/5310	-0.92	-0.76	0.36	0.52	2.94	11	PASS
802.11ac VHT80	58/5290	-5.66	-5.31	-3.93	-3.58	-1.35	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 the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

So directional gain=G_{ANT}+Array Gain=1.52+10log(2/1)=4.53 dBi<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	3.16	3.16	4.04	4.04	6.63	11	PASS
	120/5600	2.37	2.37	3.49	3.49	5.98	11	PASS
	140/5700	3.61	3.61	3.67	3.67	6.65	11	PASS
	144/5720	3.37	3.37	3.81	3.81	6.61	11	PASS
802.11n HT20	100/5500	2.57	2.57	3.19	3.19	5.90	11	PASS
	120/5600	2.12	2.12	2.82	2.82	5.49	11	PASS
	140/5700	3.19	3.19	2.79	2.79	6.00	11	PASS
	144/5720	3.29	3.29	3.42	3.42	6.37	11	PASS
802.11n HT40	102/5510	-0.60	-0.43	0.27	0.44	3.04	11	PASS
	118/5590	-0.68	-0.51	0.25	0.42	2.99	11	PASS
	134/5670	0.27	0.44	0.63	0.80	3.63	11	PASS
	142/5710	0.86	1.03	0.72	0.89	3.97	11	PASS
802.11ac VHT20	100/5500	2.60	2.60	3.23	3.23	5.94	11	PASS
	120/5600	1.60	1.60	2.60	2.60	5.14	11	PASS
	140/5700	2.65	2.65	3.05	3.05	5.86	11	PASS
	144/5720	3.19	3.19	3.89	3.89	6.56	11	PASS
802.11ac VHT40	102/5510	-0.52	-0.36	0.11	0.27	2.98	11	PASS
	118/5590	-0.57	-0.41	0.37	0.53	3.10	11	PASS
	134/5670	-0.20	-0.04	0.44	0.60	3.30	11	PASS
	142/5710	0.65	0.81	0.76	0.92	3.88	11	PASS
802.11ac VHT80	122/5610	-4.77	-4.42	-3.57	-3.22	-0.77	11	PASS
	138/5690	-3.47	-3.12	-3.90	-3.55	-0.32	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 the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB,

So directional gain =G_{ANT}+Array Gain=1.48+10log(2/1)=4.49 dBi<6dBi. So the PSD limit is 11dBm

U-NII-3

Mode	Channel/ Frequency (MHz)	Power Spectral Density				Total Power (dBm/500kHz)	Limit (dBm/ 500kHz)	Conclusion
		Antenna 1		Antenna 2				
		Read Value (dBm/470kHz)	PSD (dBm/500kHz)	Read Value (dBm/470kHz)	PSD (dBm/500kHz)			
802.11a	144/5720	-1.73	-1.46	-1.36	-1.09	1.74	30	PASS
	149/5745	0.19	0.46	0.65	0.92	3.71	30	PASS
	157/5785	-0.45	-0.18	0.25	0.52	3.19	30	PASS
	165/5825	-1.46	-1.19	-0.82	-0.55	2.15	30	PASS
802.11n HT20	144/5720	-1.82	-1.55	-1.22	-0.95	1.77	30	PASS
	149/5745	-0.36	-0.09	0.23	0.50	3.23	30	PASS
	157/5785	-1.16	-0.89	-0.52	-0.25	2.45	30	PASS
	165/5825	-2.08	-1.81	-1.52	-1.25	1.49	30	PASS
802.11n HT40	142/5710	-4.46	-4.02	-4.22	-3.78	-0.89	30	PASS
	151/5755	-3.26	-2.82	-2.50	-2.06	0.59	30	PASS
	159/5795	-3.56	-3.12	-2.83	-2.39	0.27	30	PASS
802.11ac VHT20	144/5720	-2.07	-0.39	-1.63	-1.36	2.16	30	PASS
	149/5745	-0.66	-0.39	0.23	0.50	3.09	30	PASS
	157/5785	-1.35	-1.08	-0.46	-0.19	2.40	30	PASS
	165/5825	-2.15	-1.88	-0.98	-0.71	1.75	30	PASS
802.11ac VHT40	142/5710	-4.73	-4.30	-4.04	-3.61	-0.93	30	PASS
	151/5755	-3.40	-2.97	-2.51	-2.08	0.51	30	PASS
	159/5795	-3.57	-3.14	-2.87	-2.44	0.23	30	PASS
802.11ac VHT80	138/5690	-8.57	-7.95	-8.22	-7.60	-4.76	30	PASS
	155/5775	-7.53	-6.91	-6.65	-6.03	-3.44	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=$10\log(10^{(\text{PSD antenna 1 in dBm/10})}+10^{(\text{PSD antenna 2 in dBm/10})})$

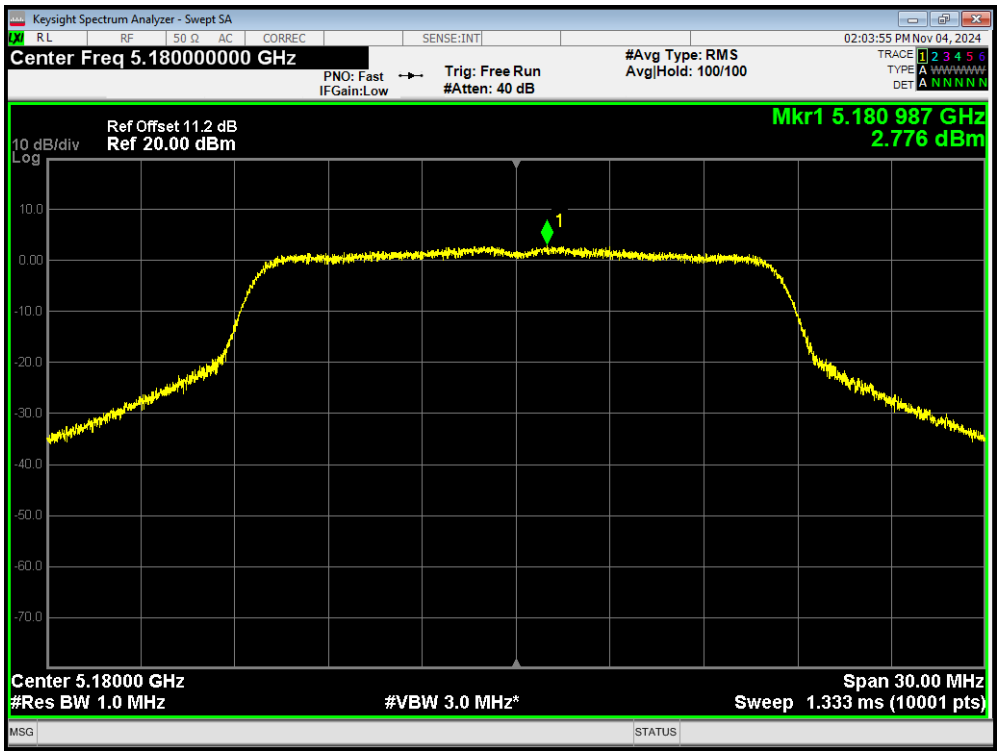
3. The manufacturer declared the transmitter output signals is CDD mode And Nss=1. According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)f)(i): If all antennas have the same gain, Directional gain = G_{ANT} + Array Gain, For PSD measurements on all devices, Array Gain=10log(Nant/Nss)dB.

So directional gain=G_{ANT}+Array Gain=1.48+10log(2/1)=4.49<6 dBi. So the PSD limit is 30dBm

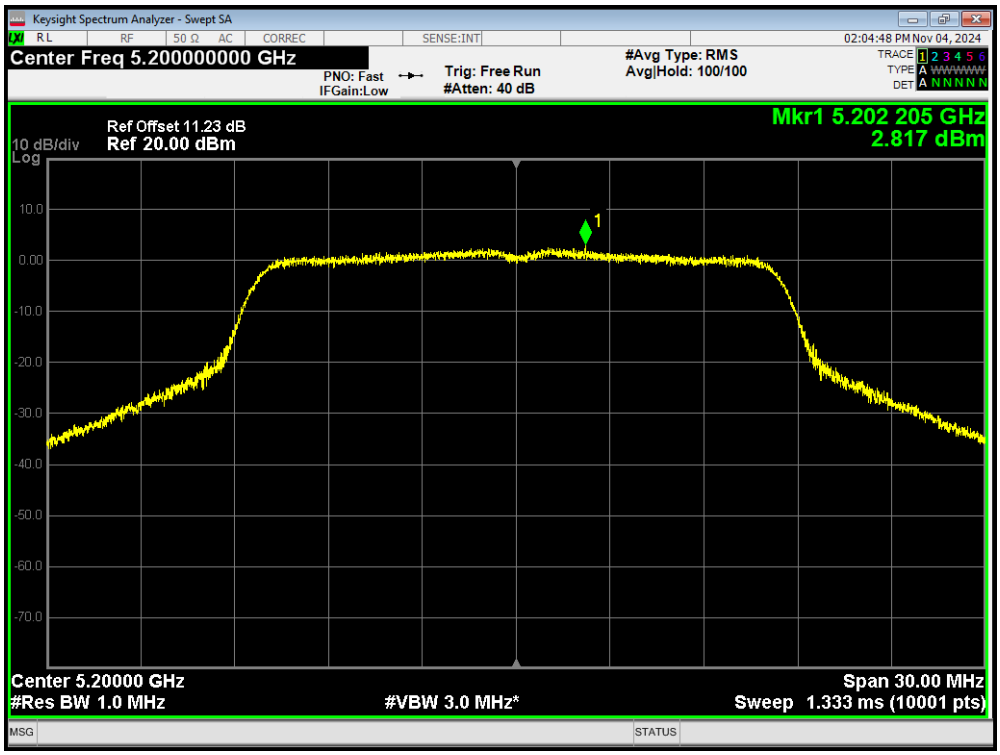
SISO Antenna 1

U-NII-1

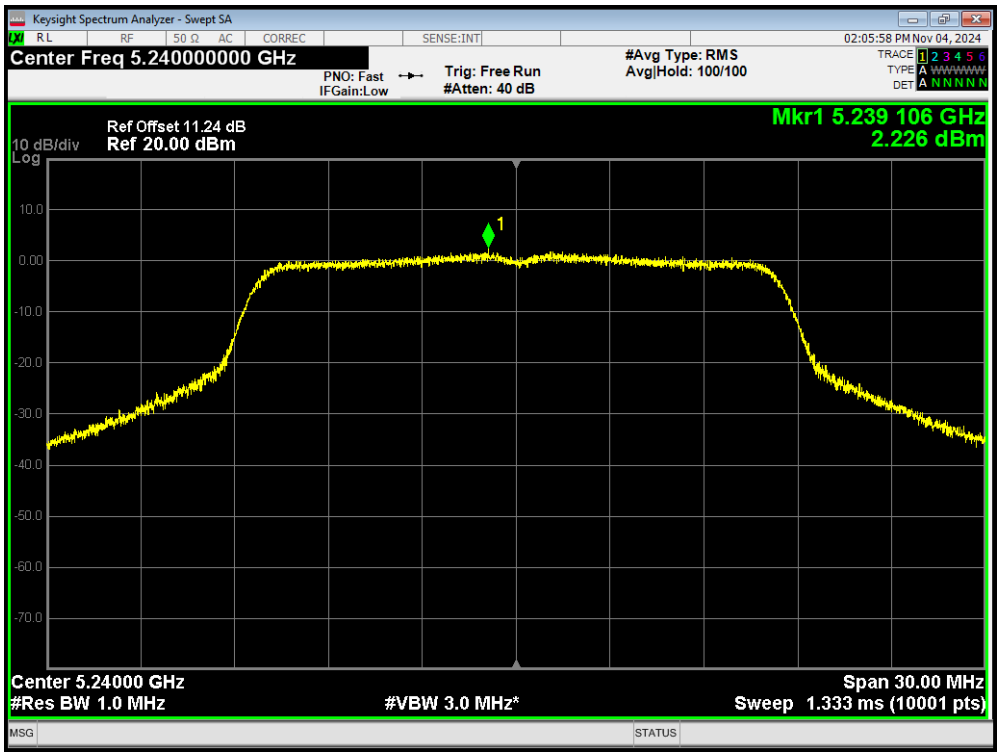
PSD 802.11a 5180MHz



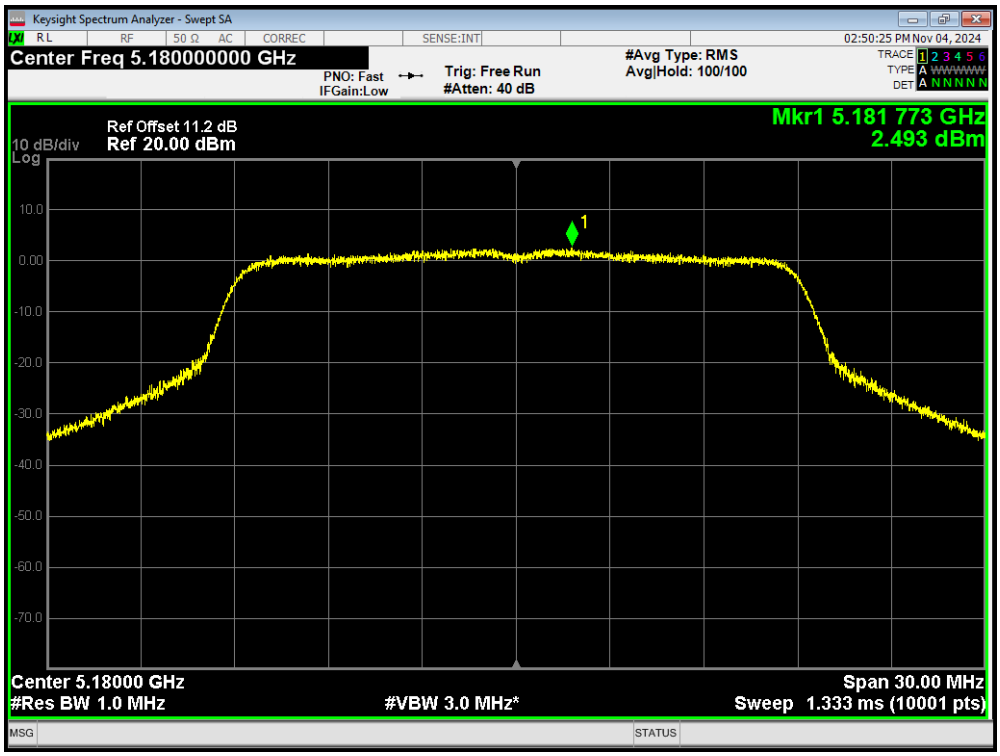
PSD 802.11a 5200MHz



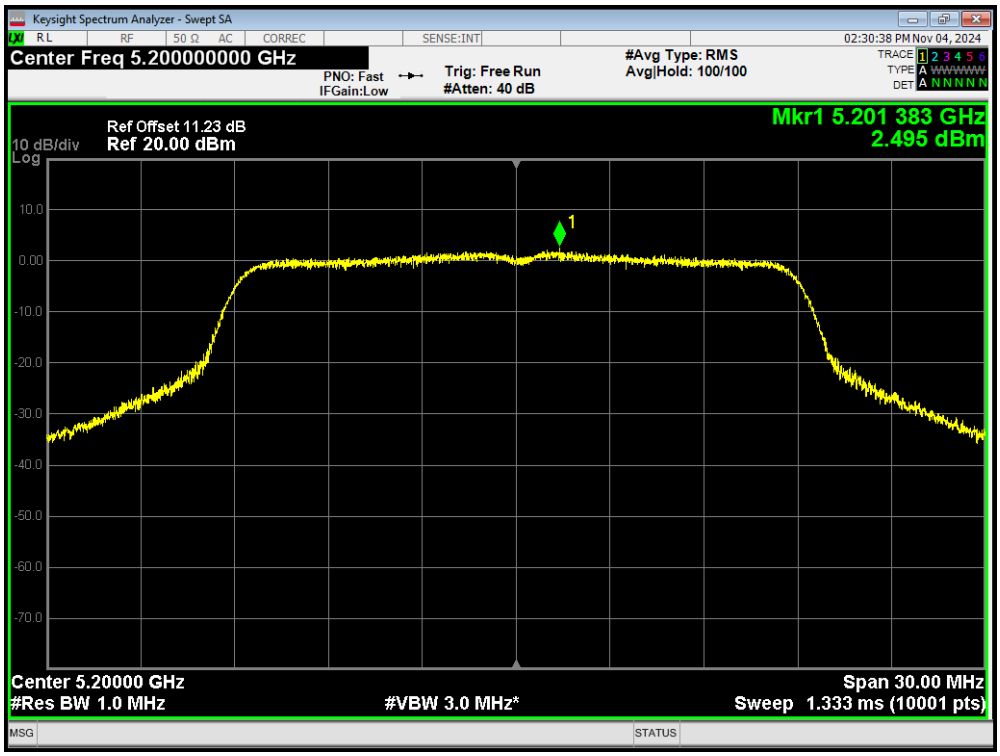
PSD 802.11a 5240MHz



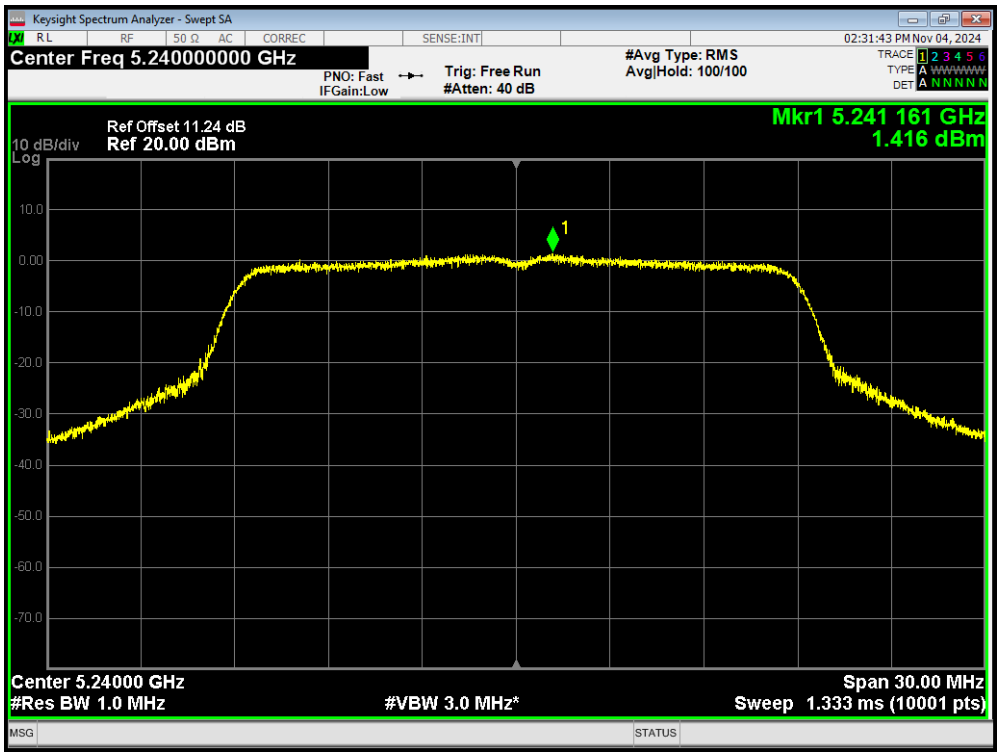
PSD 802.11ac(VHT20) 5180MHz



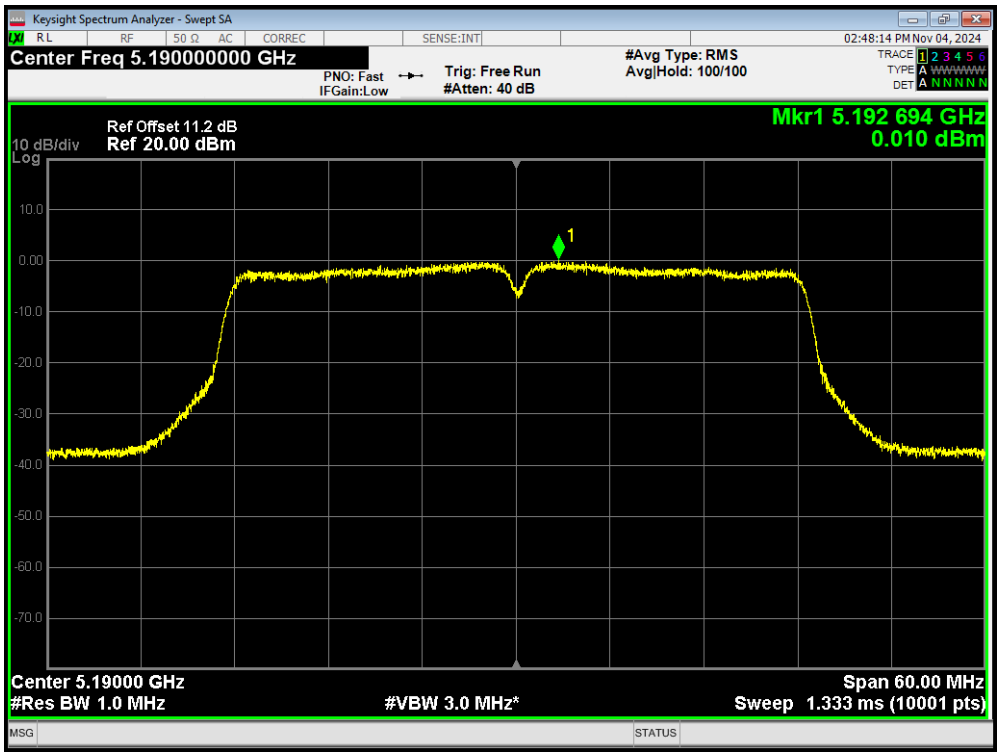
PSD 802.11ac(VHT20) 5200MHz



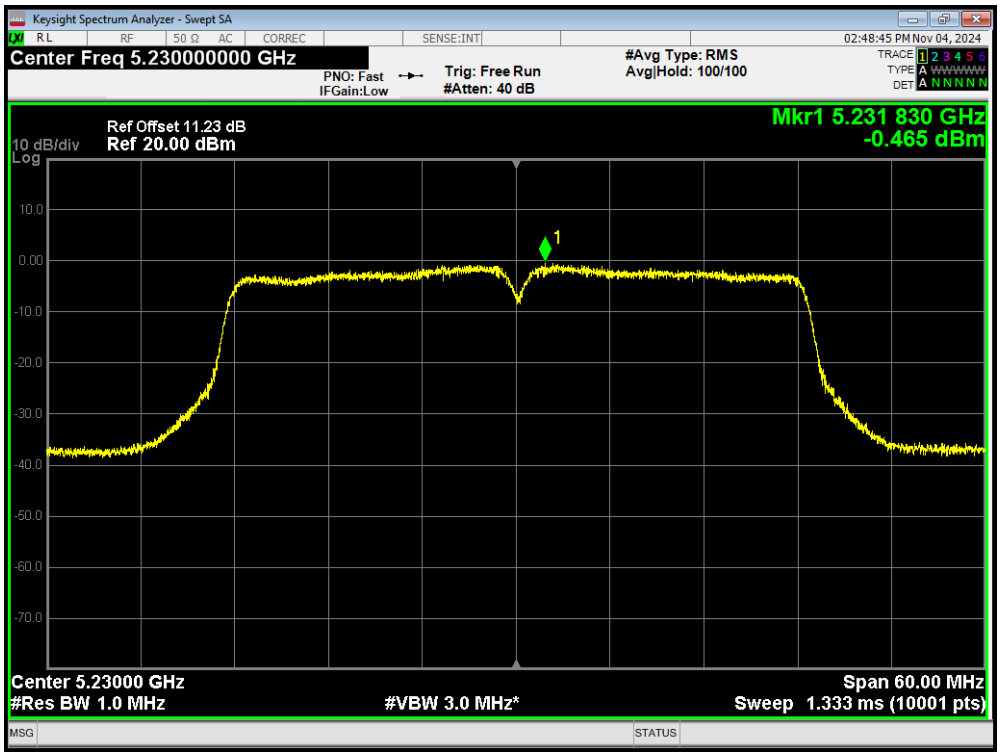
PSD 802.11ac(VHT20) 5240MHz



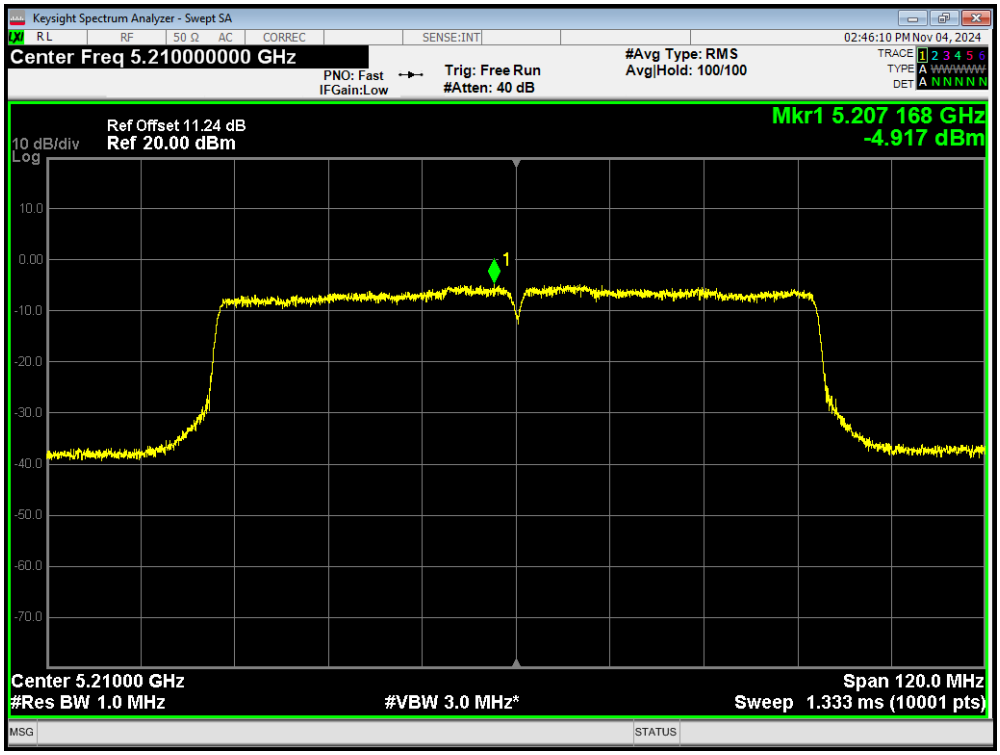
PSD 802.11ac(VHT40) 5190MHz



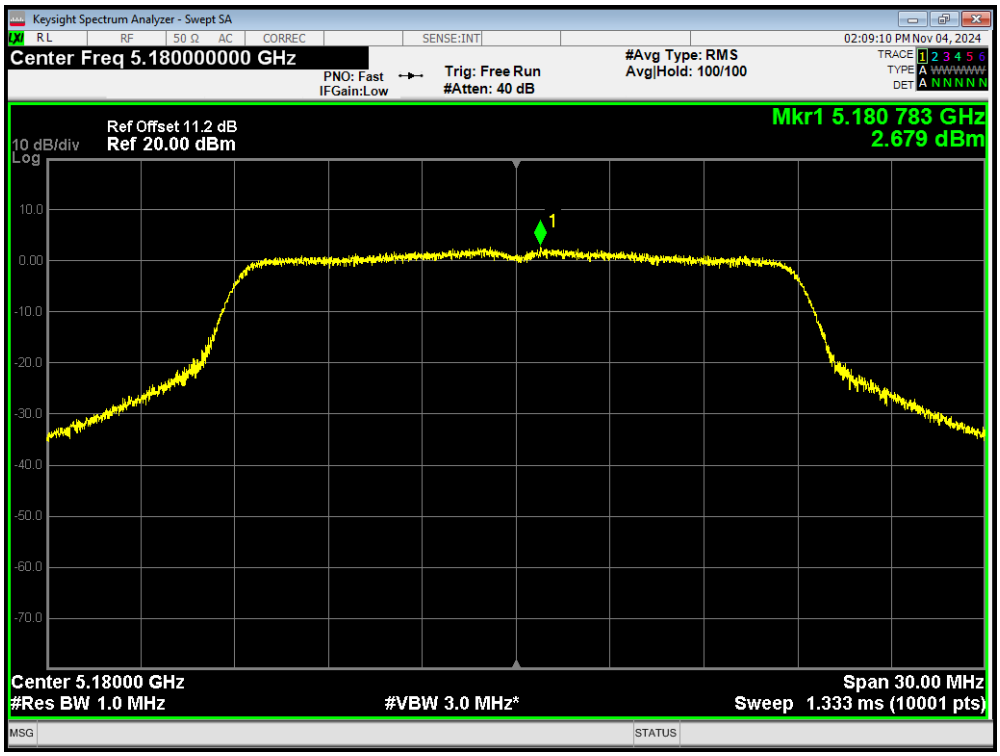
PSD 802.11ac(VHT40) 5230MHz



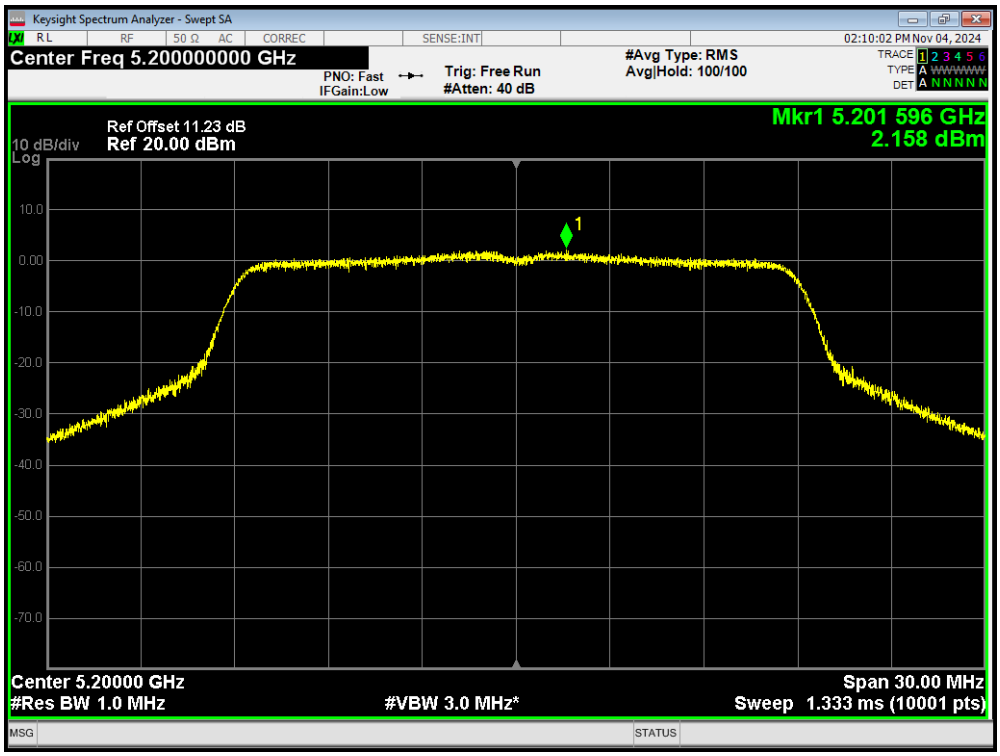
PSD 802.11ac(VHT80) 5210MHz



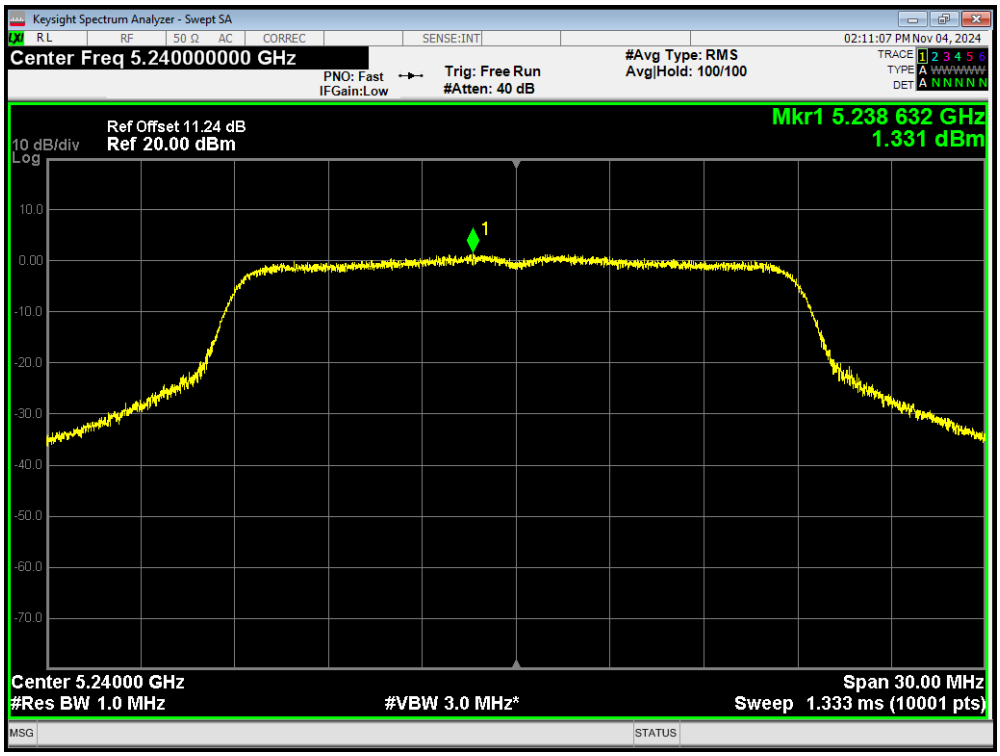
PSD 802.11n(HT20) 5180MHz



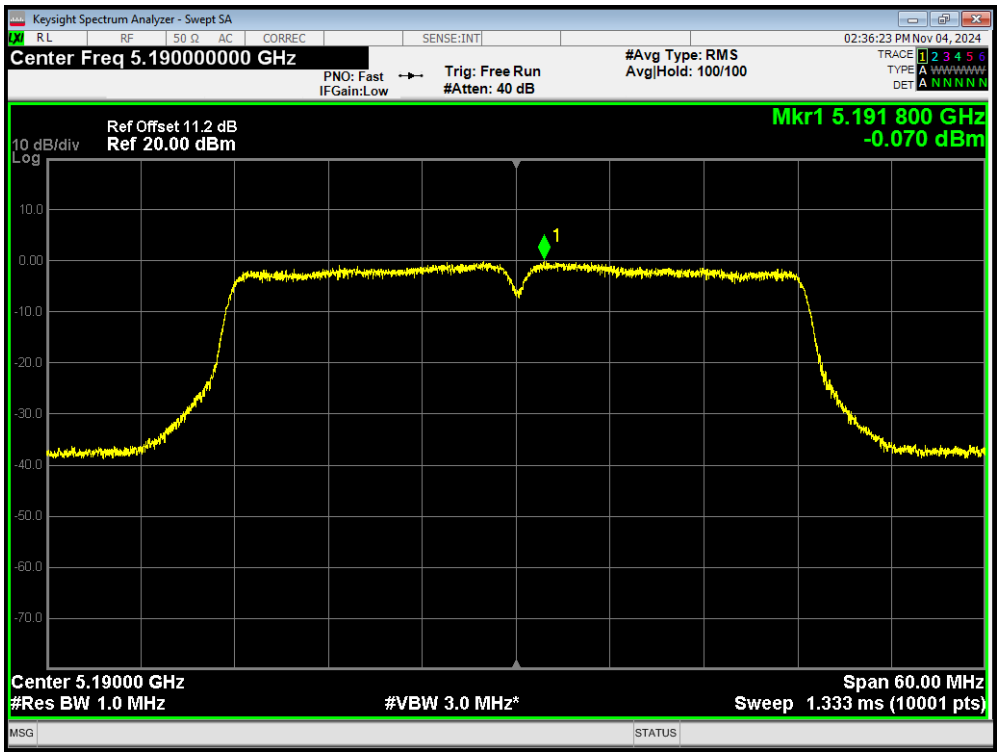
PSD 802.11n(HT20) 5200MHz



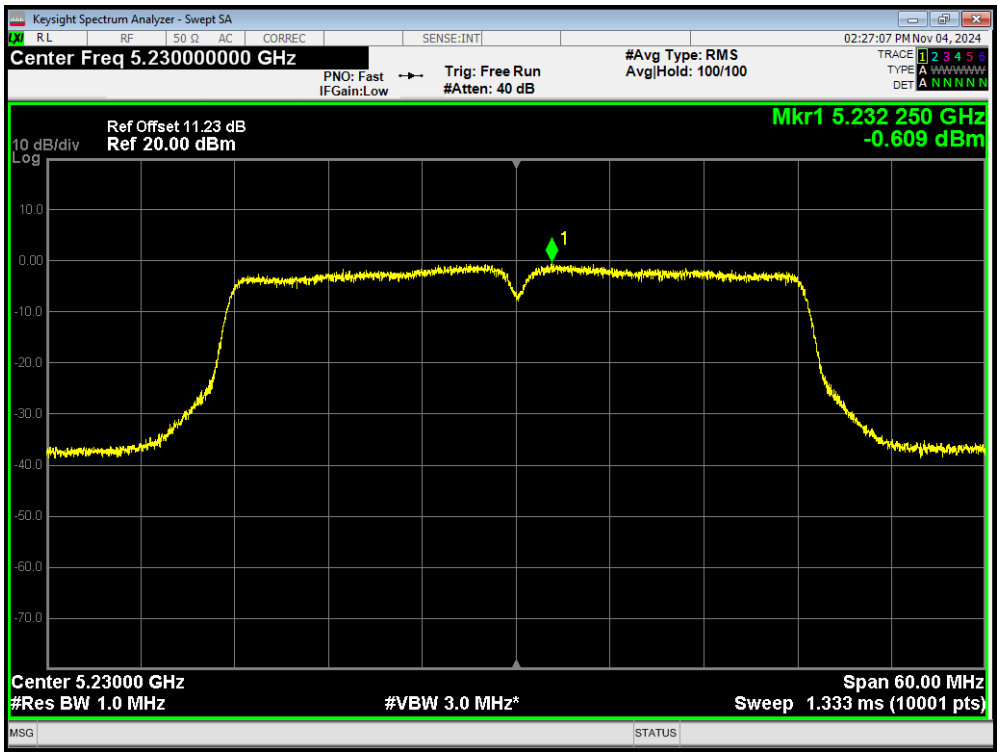
PSD 802.11n(HT20) 5240MHz



PSD 802.11n(HT40) 5190MHz

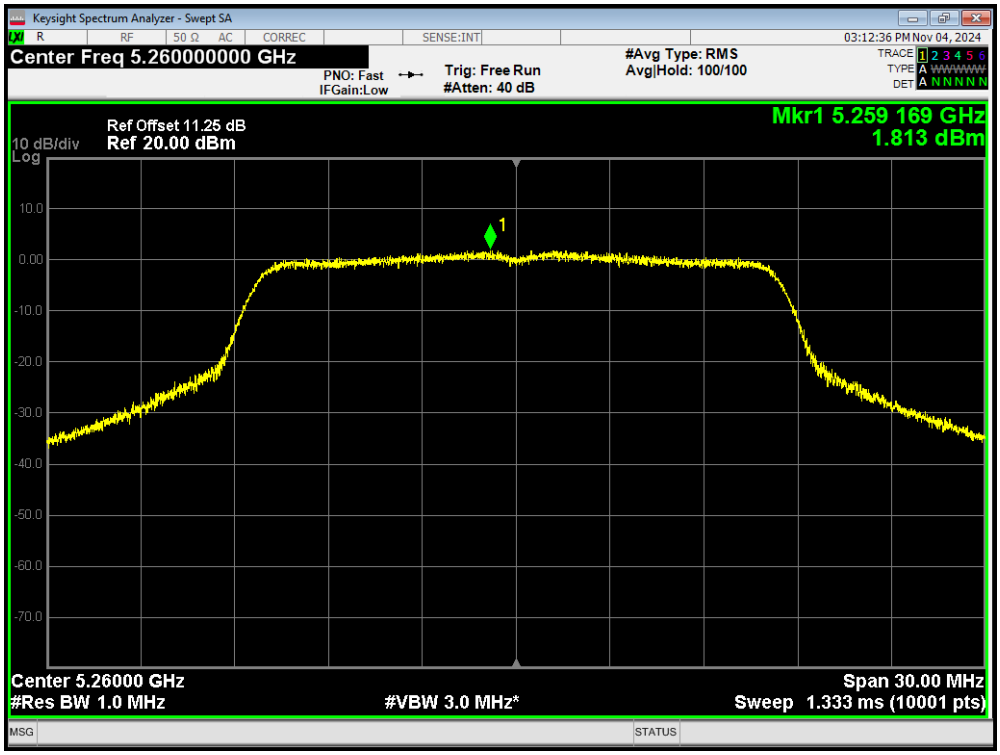


PSD 802.11n(HT40) 5230MHz

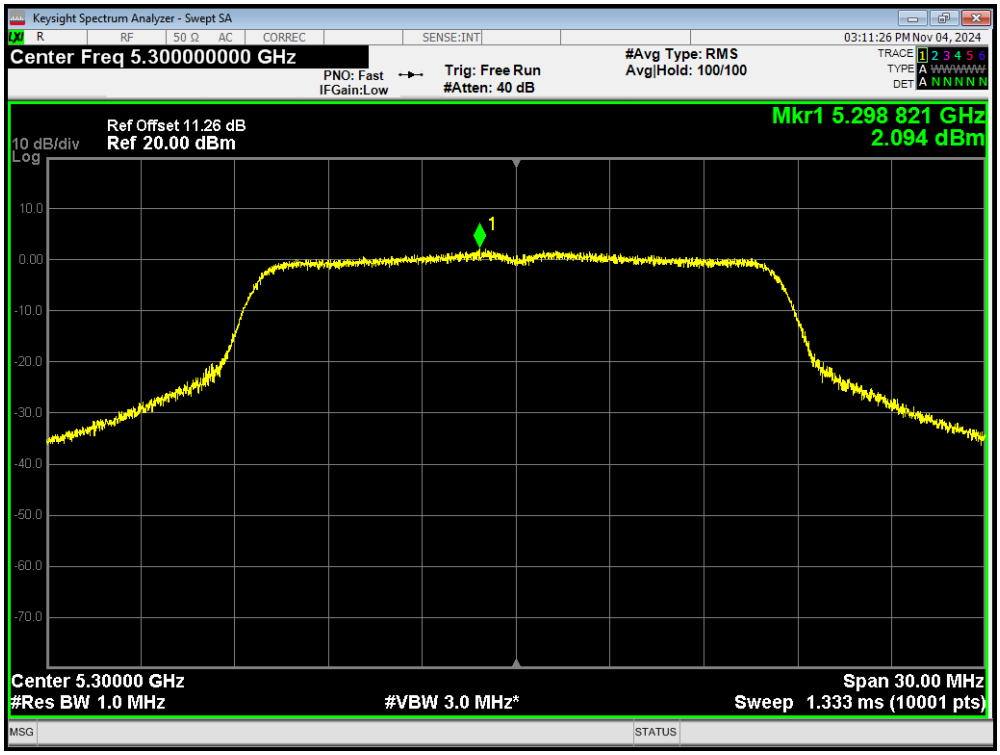


U-NII-2A

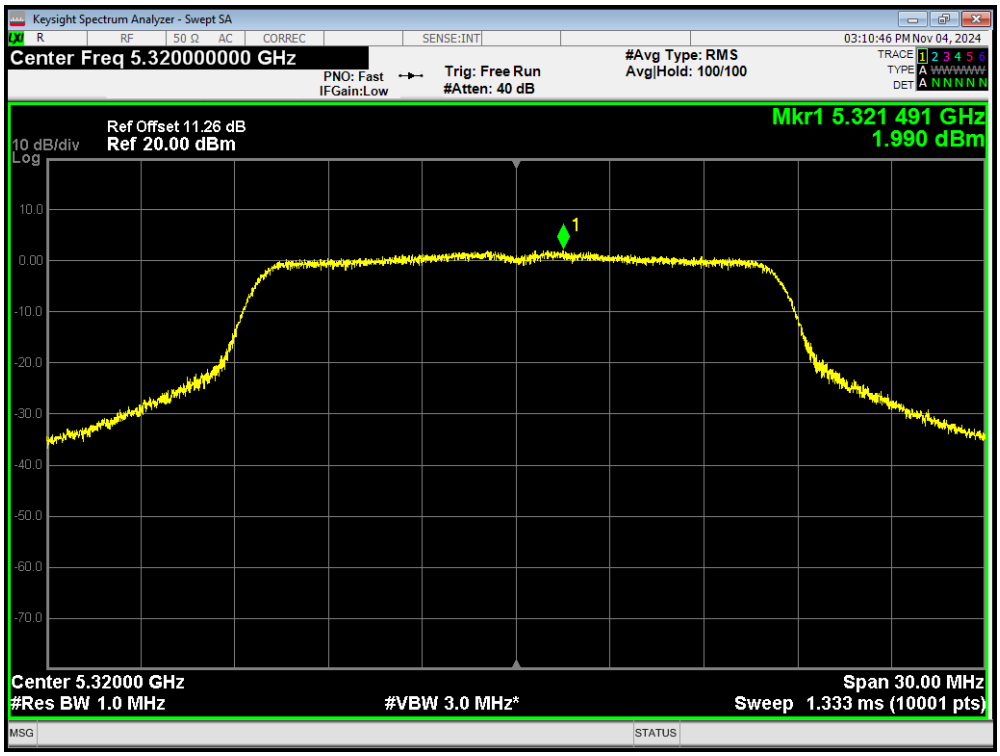
PSD 802.11a 5260MHz



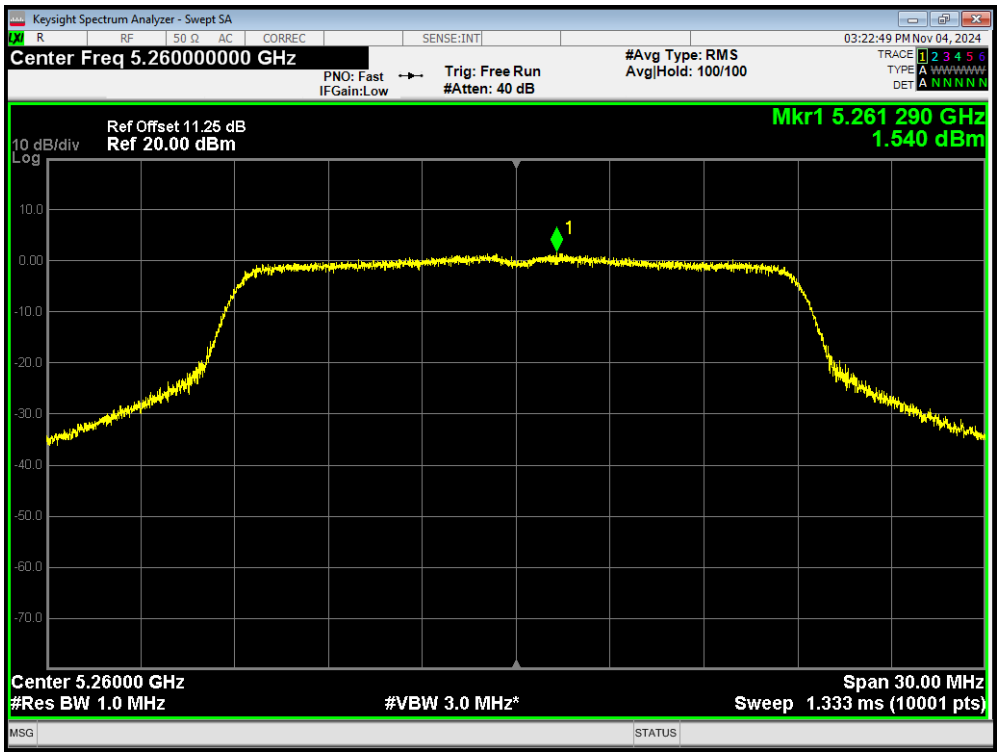
PSD 802.11a 5300MHz



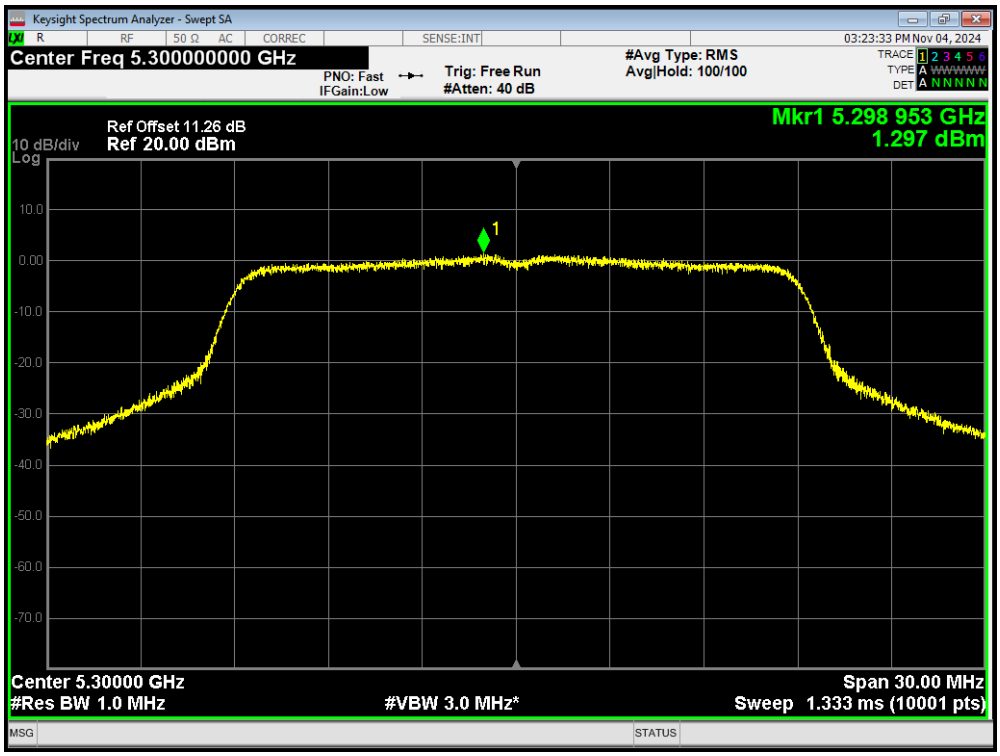
PSD 802.11a 5320MHz



PSD 802.11ac(VHT20) 5260MHz



PSD 802.11ac(VHT20) 5300MHz



PSD 802.11ac(VHT20) 5320MHz