

# FCC Test Report

Report No.: AGC10540201201FE06

**FCC ID** : GSS-VS18189

**APPLICATION PURPOSE** : Original Equipment

**PRODUCT DESIGNATION** : ViewBoard Cast Button

**BRAND NAME** : ViewSonic

**MODEL NAME** : VS18189

**APPLICANT** : ViewSonic Corporation

**DATE OF ISSUE** : Dec. 21, 2020

**STANDARD(S)** : FCC Part 15.407

**TEST PROCEDURE(S)** : KDB 789033 D02 v02r01

**REPORT VERSION** : V1.0

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## REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 21, 2020	Valid	Initial Release

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## 1. VERIFICATION OF CONFORMITY

<b>Applicant</b>	ViewSonic Corporation
<b>Address</b>	10 Pointe Drive, Suite 200, Brea, CA 92821, United States
<b>Manufacturer</b>	ViewSonic Corporation
<b>Address</b>	10 Pointe Drive, Suite 200, Brea, CA 92821, United States
<b>Factory</b>	Global Brands Manufacture (Dong Guan) Ltd.
<b>Address</b>	Yue Yuen Industrial Estate. Huang Jiang Town, Dong Guan City, Guang Dong Province, China Zip: 523758.
<b>Product Designation</b>	ViewBoard Cast Button
<b>Brand Name</b>	ViewSonic
<b>Test Model</b>	VS18189
<b>Date of test</b>	Dec. 09, 2020 to Dec. 21, 2020
<b>Deviation</b>	No any deviation from the test method
<b>Condition of Test Sample</b>	Normal
<b>Test Result</b>	Pass
<b>Report Template</b>	AGCRT-US-BGN/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Prepared By

*Sky Dong*

Sky Dong  
(Project Engineer)

Dec. 21, 2020

Reviewed By

*Max Zhang*

Max Zhang  
(Reviewer)

Dec. 21, 2020

Approved By

*Forrest Lei*

Forrest Lei  
(Authorized Officer)

Dec. 21, 2020

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## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

The EUT is designed as “ViewBoard Cast Button”. It is designed by way of utilizing the OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

<b>Operation Frequency</b>	5150 MHz~5250MHz; 5725 MHz~5850MHz
<b>Output Power</b>	IEEE 802.11a20:15.47dBm; IEEE 802.11n(20):15.12dBm; IEEE802.11n(40):15.55dBm; IEEE 802.11ac(20):14.97dBm; IEEE 802.11ac(40):14.80dBm; IEEE 802.11ac(80):15.65dBm
<b>Modulation</b>	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM,OFDM
<b>Number of channels</b>	15
<b>Hardware Version</b>	V1.4
<b>Software Version</b>	V1.10.17
<b>Antenna Designation</b>	FPC Antenna(Comply with requirements of the FCC part 15.203)
<b>Antenna Gain</b>	3dBi
<b>Power Supply</b>	DC 5V by PC

**Note:**

1. The EUT is designed as indoor access point operating without radar detection.
2. The device do not support TPC.

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## 2.2. TABLE OF CARRIER FREQUENCIES

Frequency Band	Channel Number	Frequency	Frequency Band	Channel Number	Frequency
5150 GHz~ 5250GHz	36	5180 MHz	5725 GHz~ 5850GHz	149	5745 MHz
	38	5190 MHz		151	5755 MHz
	40	5200 MHz		153	5765 MHz
	42	5210 MHz		155	5775MHz
	44	5220 MHz		157	5785 MHz
	46	5230 MHz		159	5795 MHz
	48	5240 MHz		161	5805 MHz
				165	5825MHz

Note: For 20MHZ bandwidth system use Channel 36,40,44,48,149,153,157,161,165; For 40MHZ bandwidth system use Channel 38,46,151,159. For 80MHZ bandwidth system use Channel 42,155.

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### 2.3. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: GSS-VS18189** filing to comply with the FCC Part 15 requirements.

### 2.4. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013).

Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.407 rules KDB 789033 D02

### 2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

### 2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

### 2.7. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

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### 3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in measurement” (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission,  $U_c = \pm 3.2$  dB
- Uncertainty of Radiated Emission below 1GHz,  $U_c = \pm 3.9$  dB
- Uncertainty of Radiated Emission above 1GHz,  $U_c = \pm 4.8$  dB

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#### 4. DESCRIPTION OF TEST MODES

Mode	Available channel	Tested channel	Modulation	Date rate(Mbps)
802.11a/n/ac20	36,40,44,48,149,153,157,161,165	36,40, 48,149,157,165	OFDM	6Mbps/MCS0
802.11n/ac40	38,46,151,159	38,46, 151,159	OFDM	MCS0
802.11ac80	42, 155	42, 155	OFDM	MCS0

##### Note:

1. The EUT has been set to operate continuously on tested channel individually, and the EUT is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
3. The test software is the WL Command which can set the EUT into the individual test modes.

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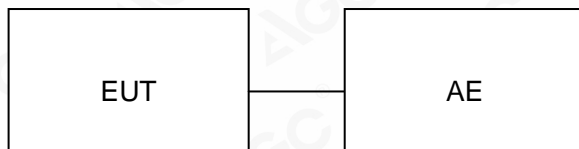
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## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	ViewBoard Cast Button	VS18189	GSS-VS18189	EUT
2	PC	Nbl-WAQ9R	DC 5V	AE

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.407	6dB Bandwidth	Compliant
§15.407	Emission Bandwidth	Compliant
§15.407	Maximum conducted output power	Compliant
§15.407	Conducted Spurious Emission	Compliant
§15.407	Maximum Conducted Output Power Density	Compliant
§15.209	Radiated Emission	Compliant
§15.407	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

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## 6. TEST FACILITY

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<b>Designation Number</b>	CN1259
<b>FCC Test Firm Registration Number</b>	975832
<b>A2LA Cert. No.</b>	5054.02
<b>Description</b>	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

### TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	May 15, 2020	May 14, 2021
LISN	R&S	ESH2-Z5	100086	Jul. 03,2020	Jul. 02,2021
Test software	R&S	ES-K1 (Ver V1.71)	N/A	N/A	N/A

### TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 07, 2020	Dec. 06, 2021
Power sensor	Aglient	U2021XA	MY54110007	Jun. 08, 2020	Jun. 07, 2021
2.4GHz Fliter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep.21, 2019	Sep. 20, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Sep. 20, 2019	Sep. 19, 2021
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

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## 7. MAXIMUM CONDUCTED OUTPUT POWER

### 7.1. MEASUREMENT PROCEDURE

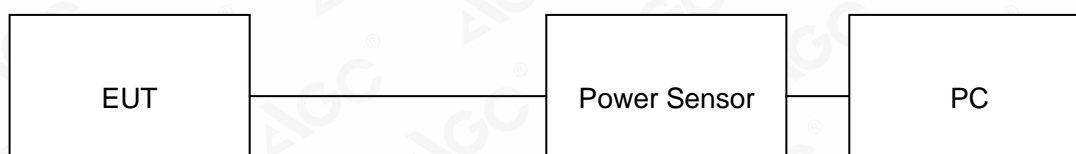
For average power test:

1. Connect EUT RF output port to power sensor through an RF attenuator.
2. Connect the power sensor to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Record the maximum power from the software.

**Note :** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

### 7.2. TEST SET-UP

#### AVERAGE POWER SETUP



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### 7.3. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION			
Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
5180	15.47	30	Pass
5200	15.01	30	Pass
5240	14.50	30	Pass
5745	14.93	30	Pass
5785	14.68	30	Pass
5825	14.69	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION			
Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
5180	15.12	30	Pass
5200	14.84	30	Pass
5240	13.86	30	Pass
5745	14.45	30	Pass
5785	14.63	30	Pass
5825	14.85	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N40 MODULATION			
Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
5190	15.13	30	Pass
5230	13.03	30	Pass
5755	15.55	30	Pass
5795	15.02	30	Pass

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LIMITS AND MEASUREMENT RESULT FOR 802.11AC20 MODULATION			
Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
5180	14.97	30	Pass
5200	13.93	30	Pass
5240	13.49	30	Pass
5745	14.97	30	Pass
5785	14.74	30	Pass
5825	14.11	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC40 MODULATION			
Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
5190	13.68	30	Pass
5230	13.04	30	Pass
5755	14.69	30	Pass
5795	14.80	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION			
Frequency (MHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
5210	14.02	30	Pass
5775	15.65	30	Pass

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## 8. 6dB BANDWIDTH

### 8.1. MEASUREMENT PROCEDURE

#### 8.1.1 -6dB BANDWIDTH MEASUREMENT PROCEDURE

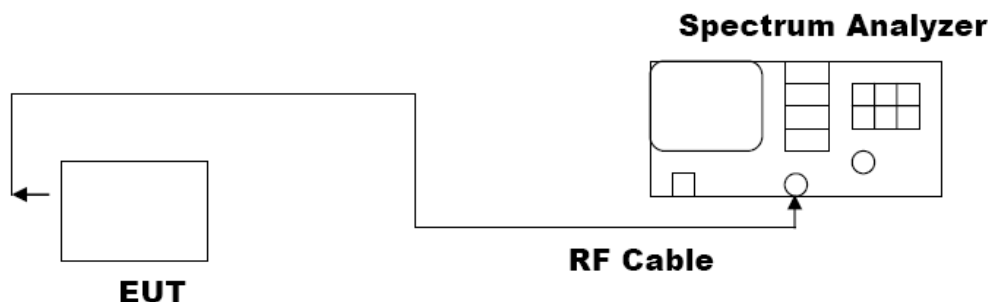
1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 100kHz.
4. Set the VBW  $\geq 3 \times$  RBW. Detector = Peak. Trace mode = max hold.
5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.

#### 8.1.2 99% OCCUPIED BANDWIDTH

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 1.5 to 5 times the OBW, centered on a nominal channel  
The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
4. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



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### 8.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-6dB Bandwidth	99.00% Occupied Bandwidth	
>500KHZ	5745MHz	16.32	16.492	PASS
	5785MHz	16.30	16.508	PASS
	5825MHz	16.34	16.475	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-6dB Bandwidth	99.00% Occupied Bandwidth	
>500KHZ	5745MHz	16.79	17.570	PASS
	5785MHz	16.74	17.603	PASS
	5825MHz	16.80	17.571	PASS
	5755MHz	35.42	36.234	PASS
	5795MHz	35.30	36.239	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20/40/80 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-6dB Bandwidth	99.00% Occupied Bandwidth	
>500KHZ	5745MHz	16.92	17.591	PASS
	5785MHz	16.76	17.588	PASS
	5825MHz	17.17	17.575	PASS
	5755MHz	35.79	36.180	PASS
	5795MHz	35.43	36.233	PASS
	5775MHz	75.19	75.431	PASS

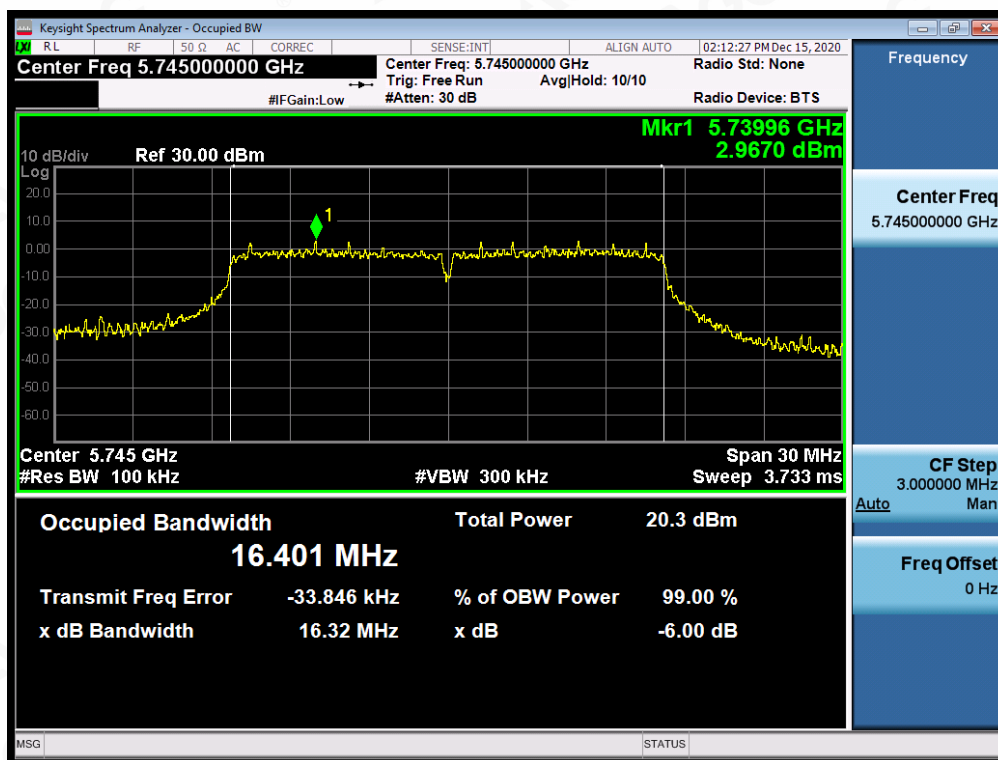
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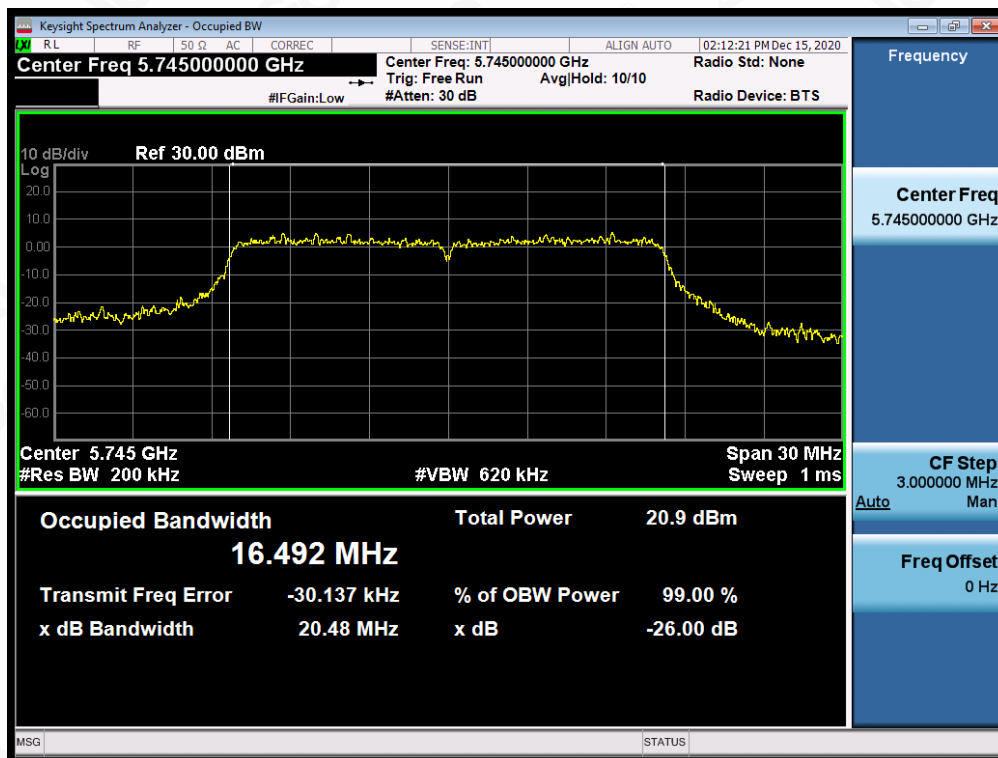


## 802.11a20 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5745MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5745MHz (99% BANDWIDTH)



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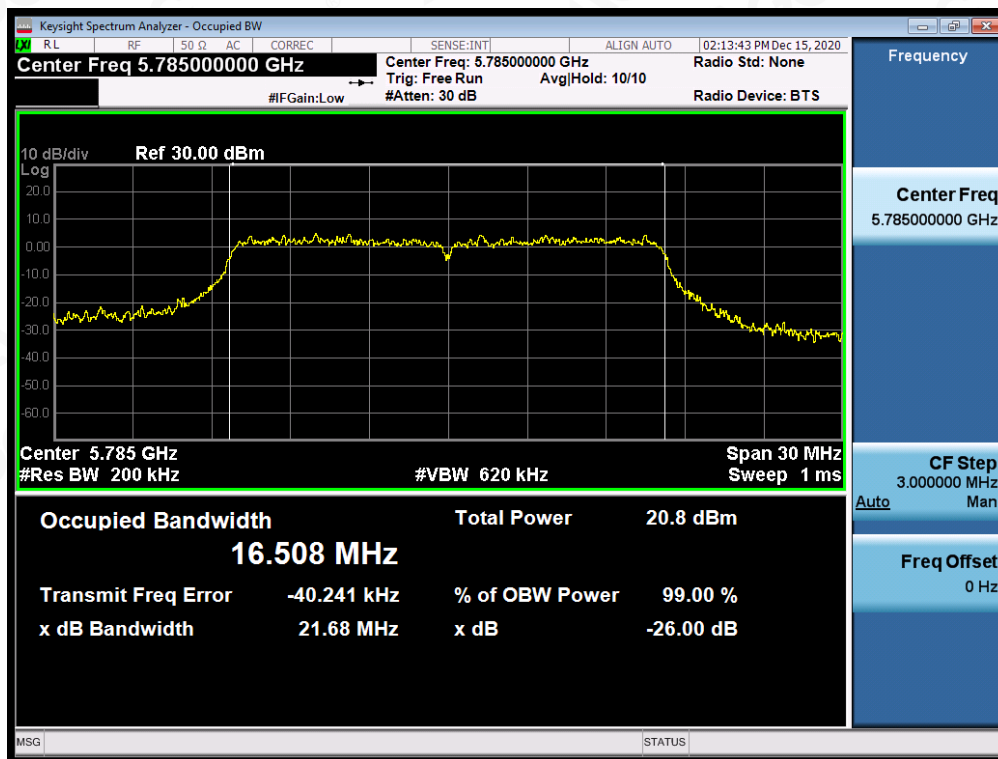
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### TEST PLOT OF BANDWIDTH FOR 5785MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5785MHz (99% BANDWIDTH)

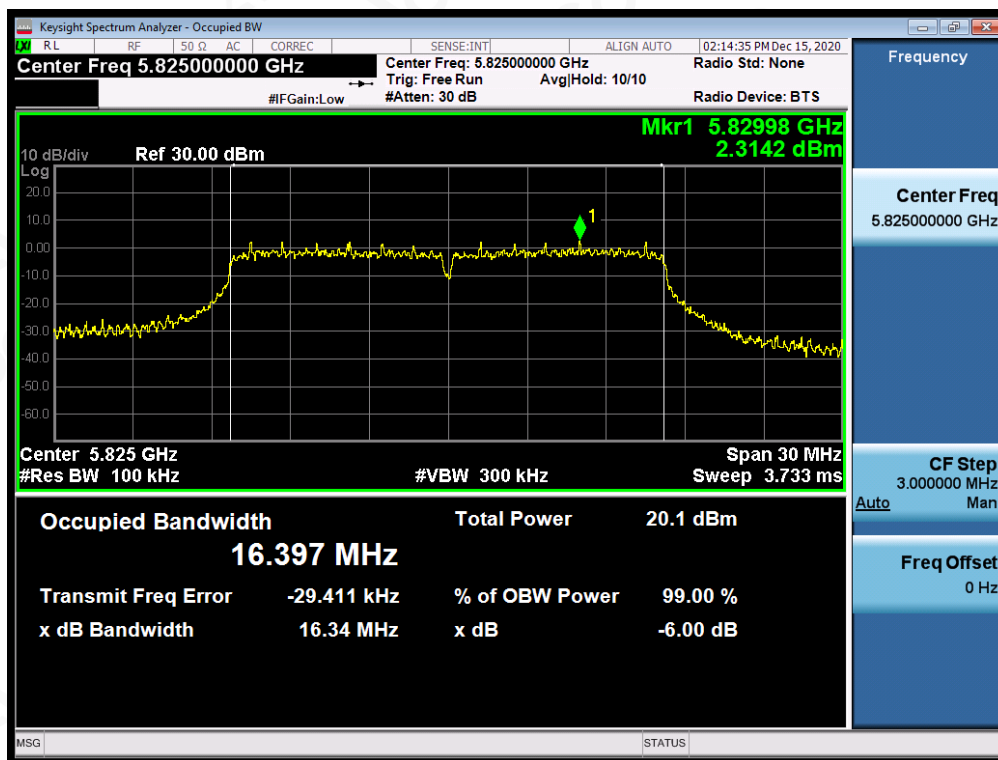


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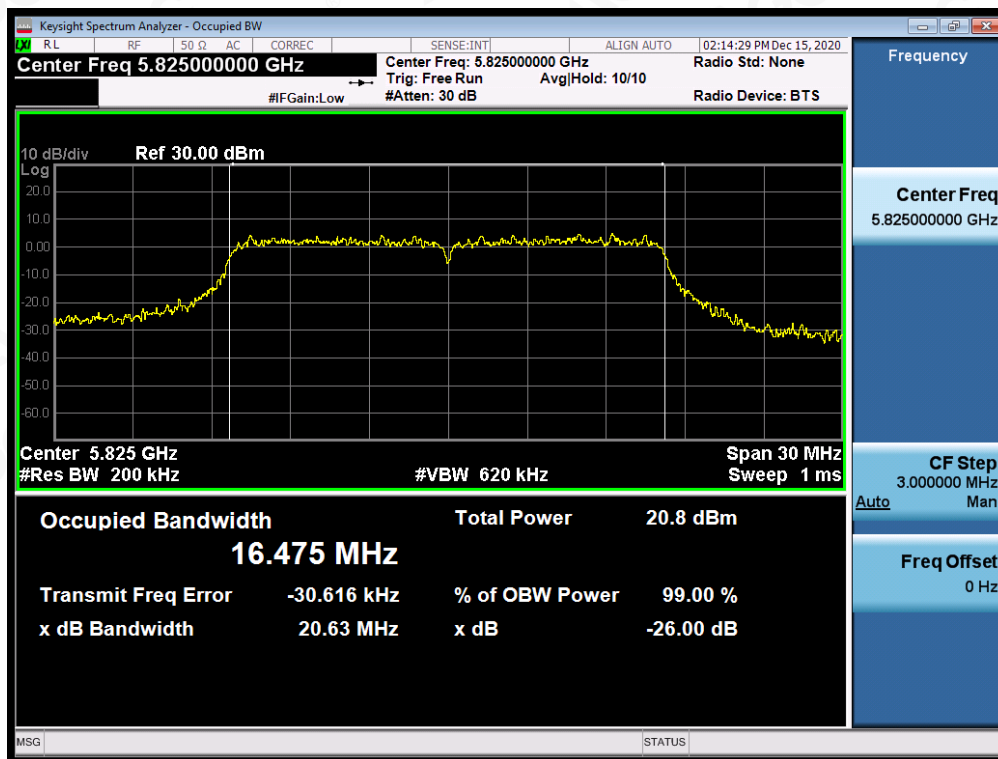
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### TEST PLOT OF BANDWIDTH FOR 5825MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5825MHz (99% BANDWIDTH)



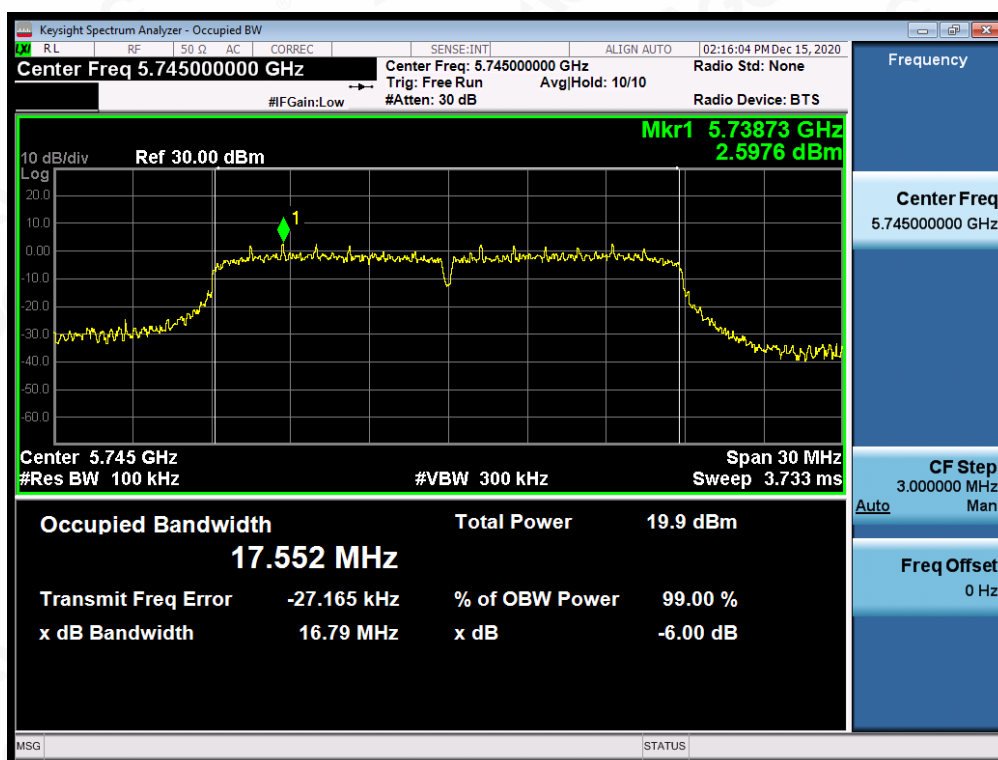
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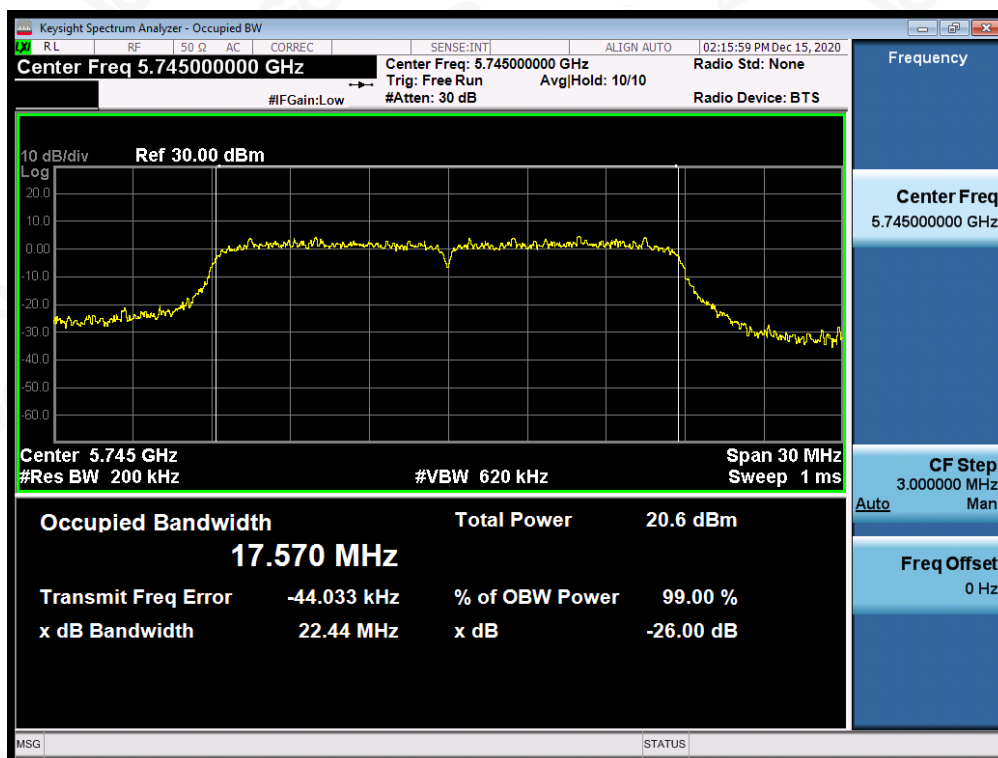


## 802.11n20 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5745MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5745MHz (99% BANDWIDTH)



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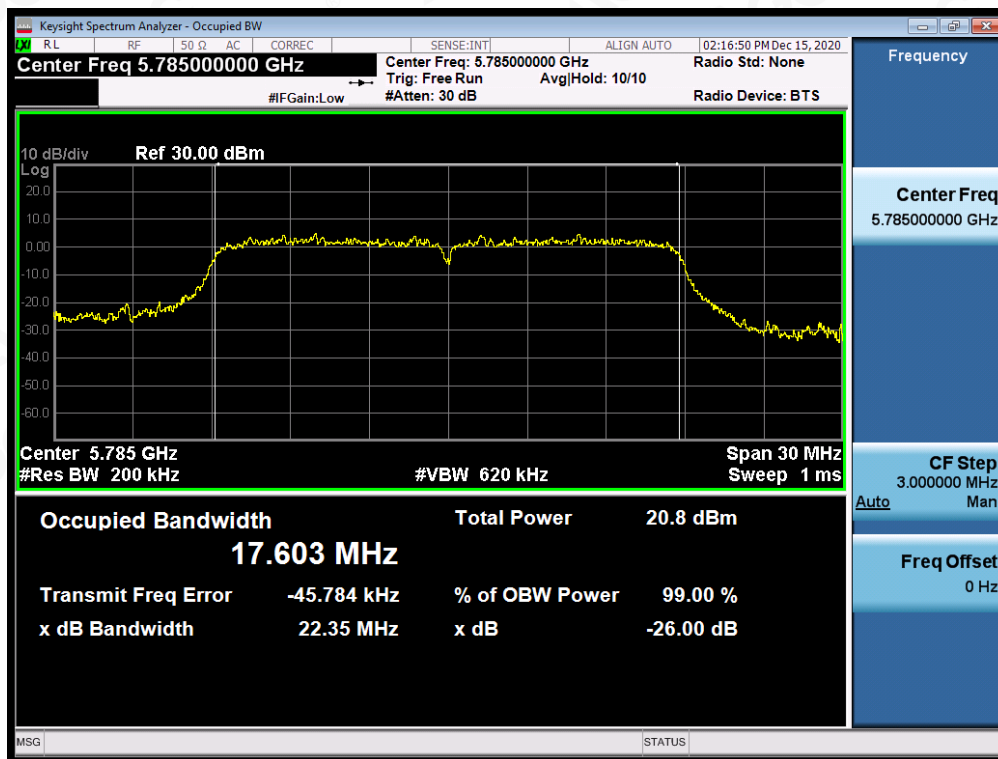
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### TEST PLOT OF BANDWIDTH FOR 5785MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5785MHz (99% BANDWIDTH)

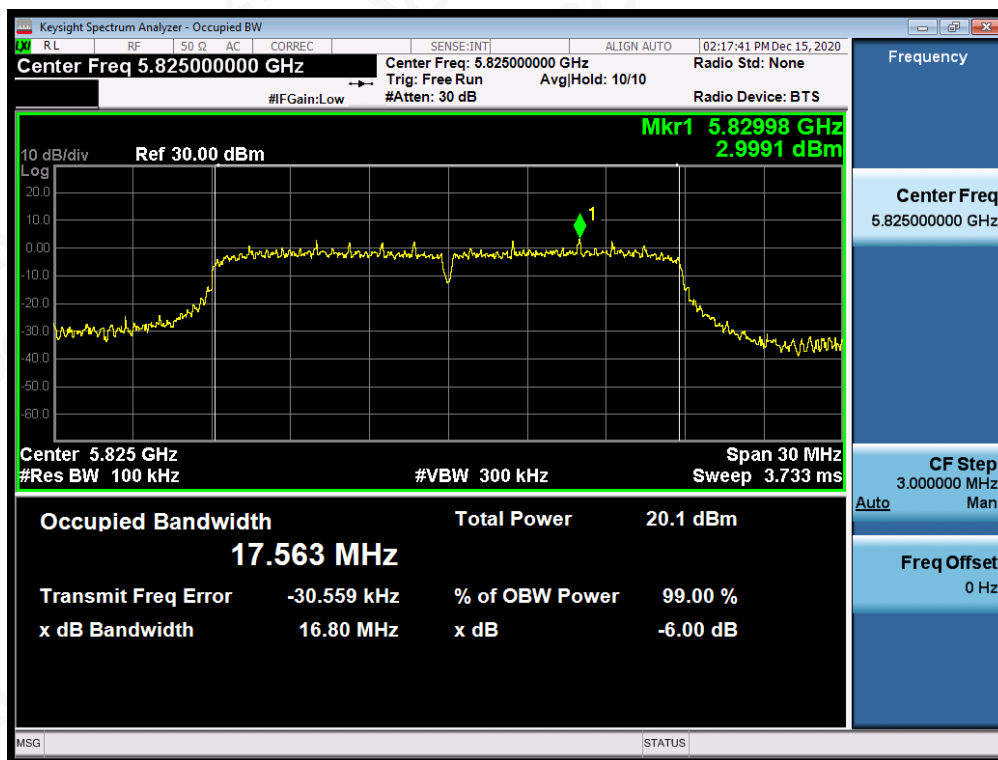


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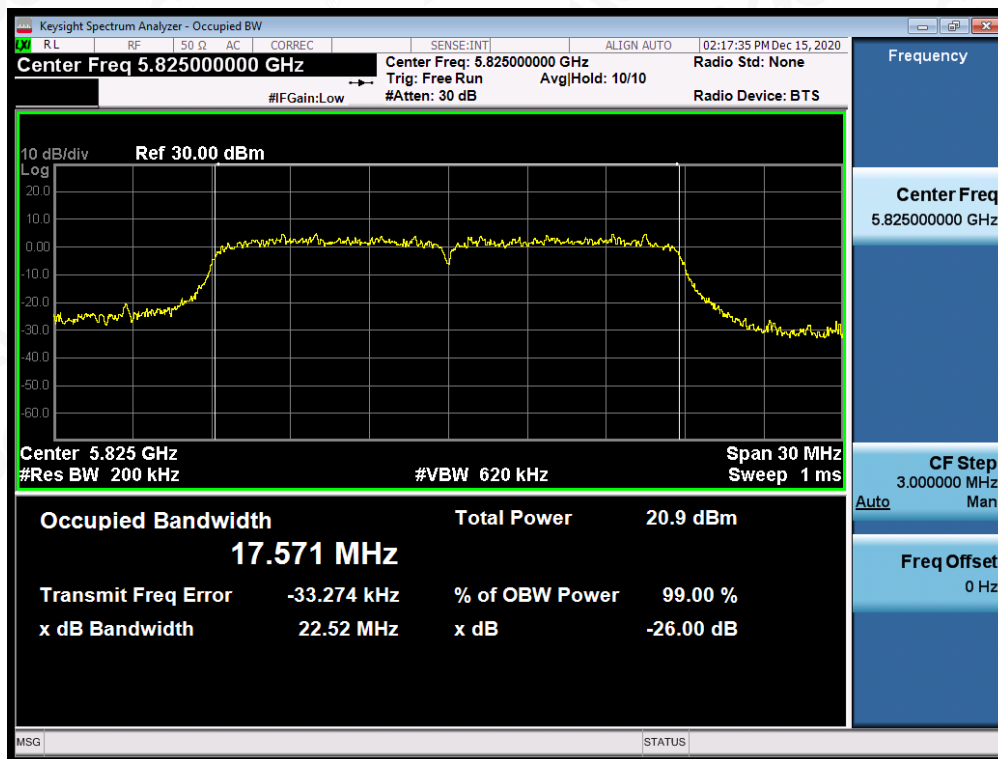
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### TEST PLOT OF BANDWIDTH FOR 5825MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5825MHz (99% BANDWIDTH)



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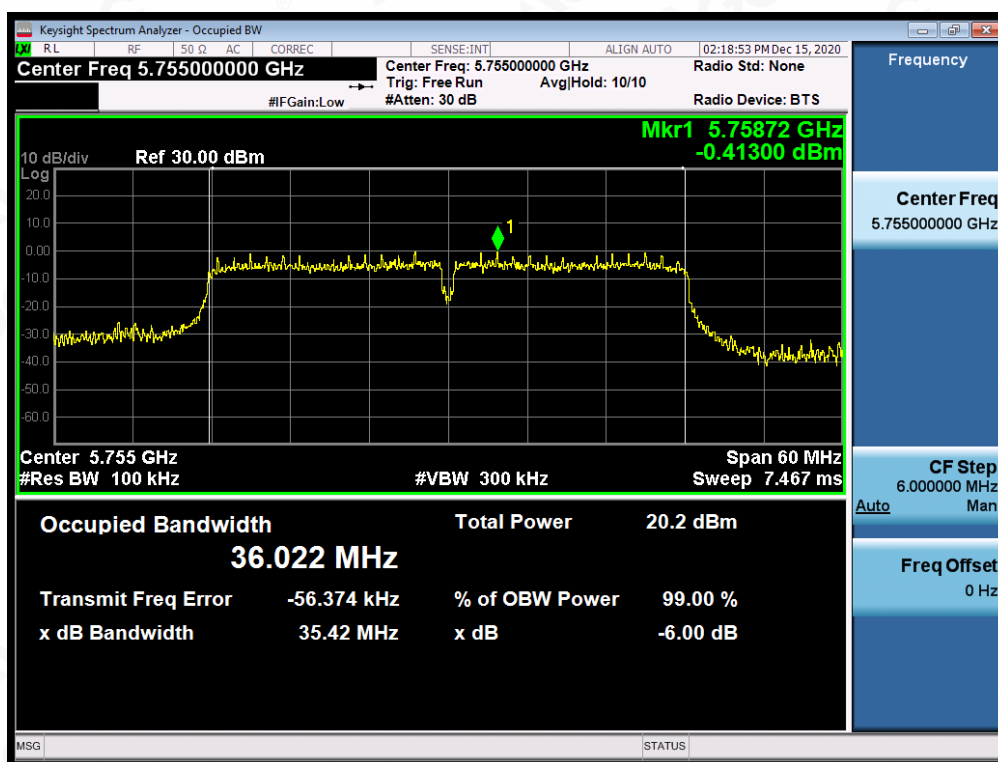
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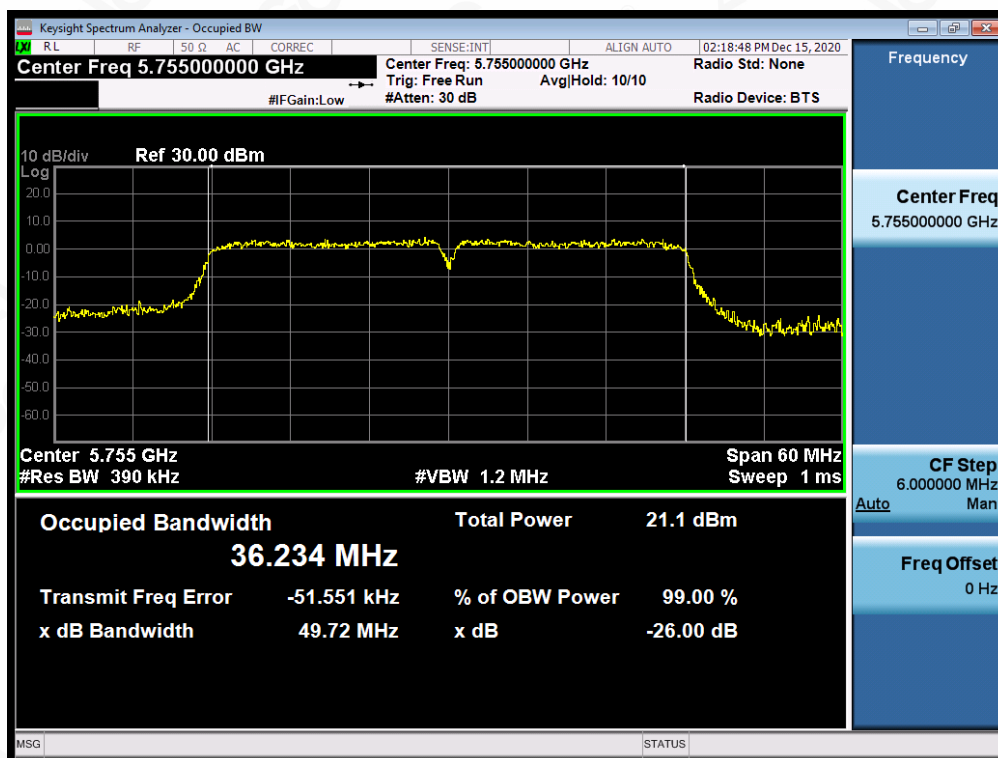


## 802.11n40 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5755MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5755MHz (99% BANDWIDTH)



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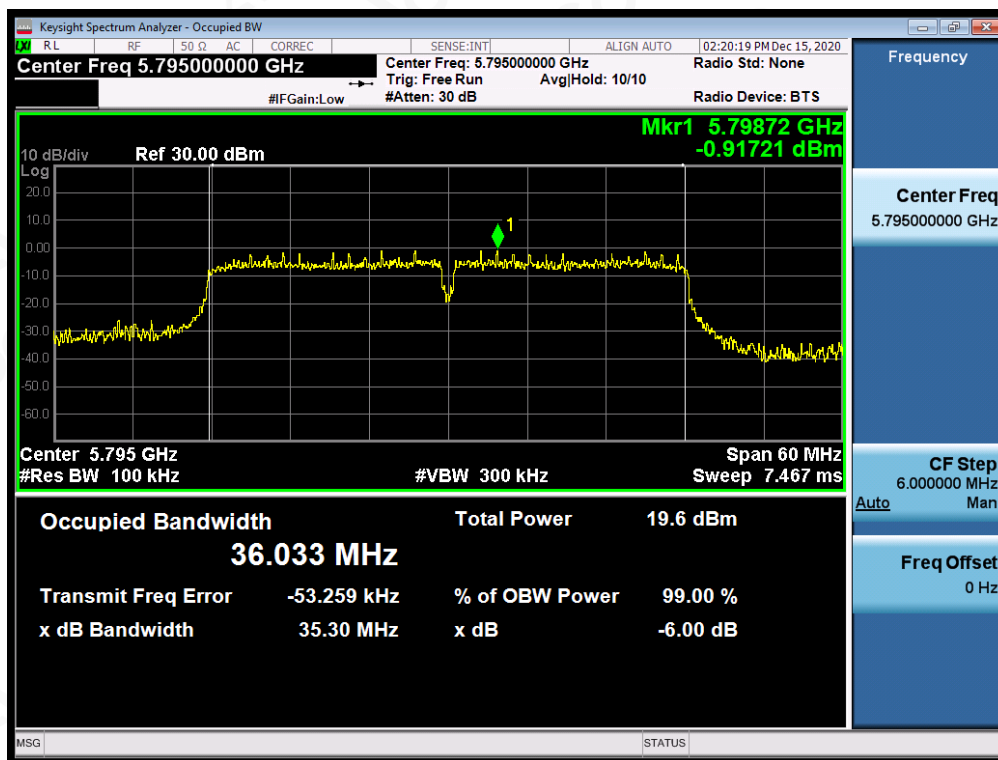
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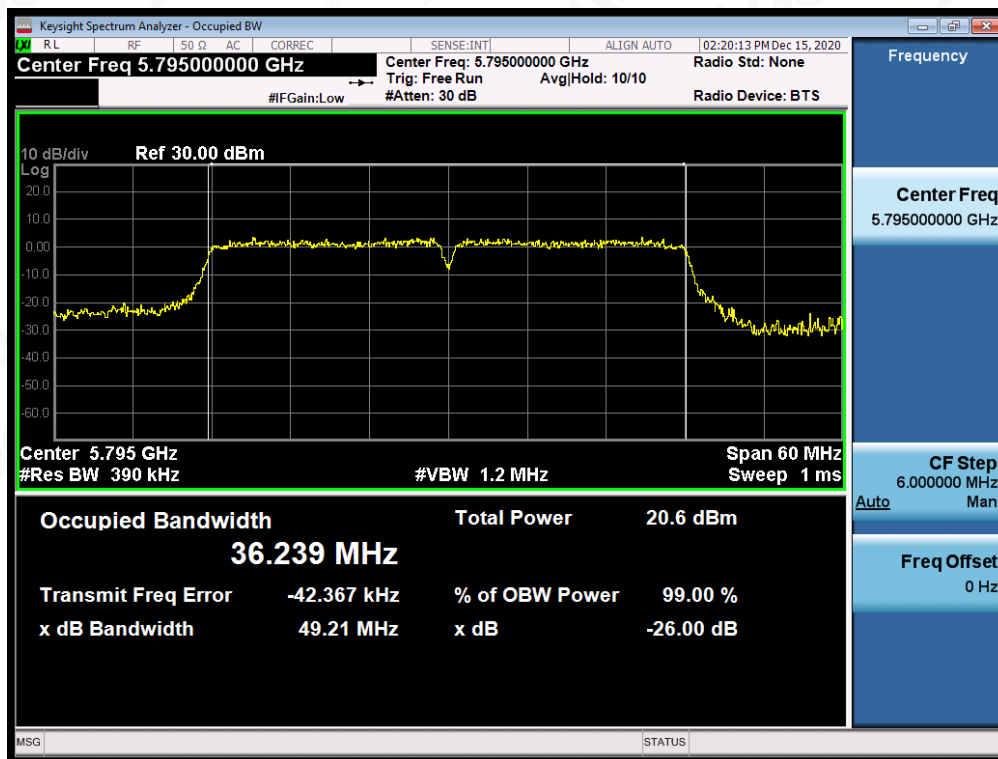
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### TEST PLOT OF BANDWIDTH FOR 5795MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5795MHz (99% BANDWIDTH)



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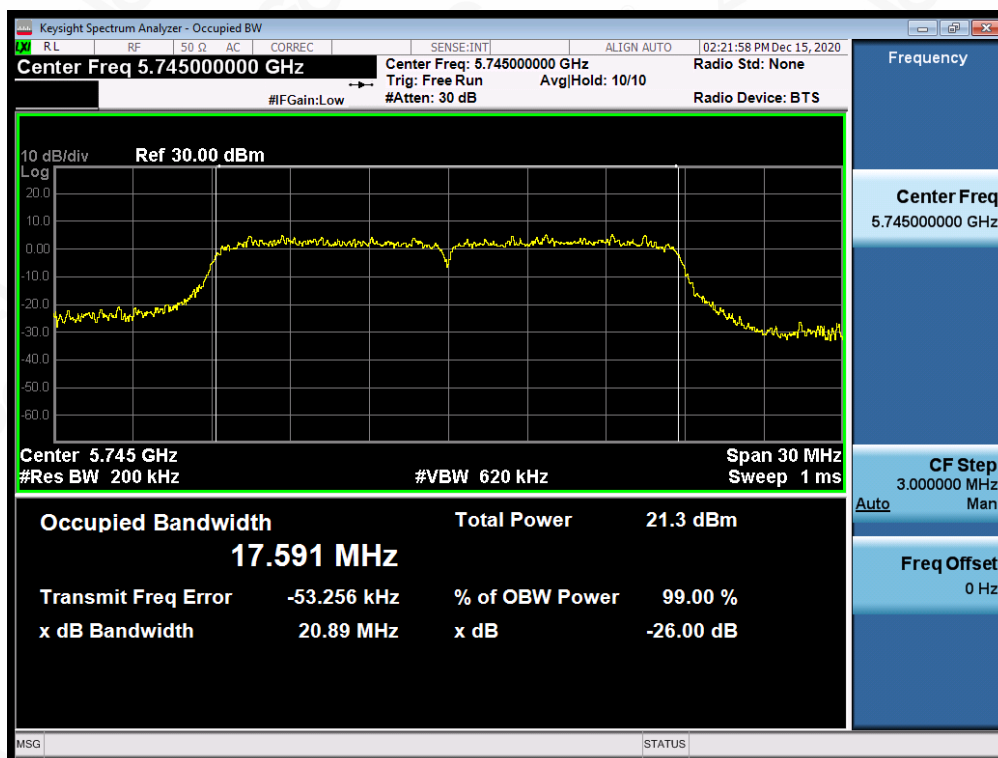


## 802.11ac20 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5745MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5745MHz (99% BANDWIDTH)



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### TEST PLOT OF BANDWIDTH FOR 5785MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5785MHz (99% BANDWIDTH)



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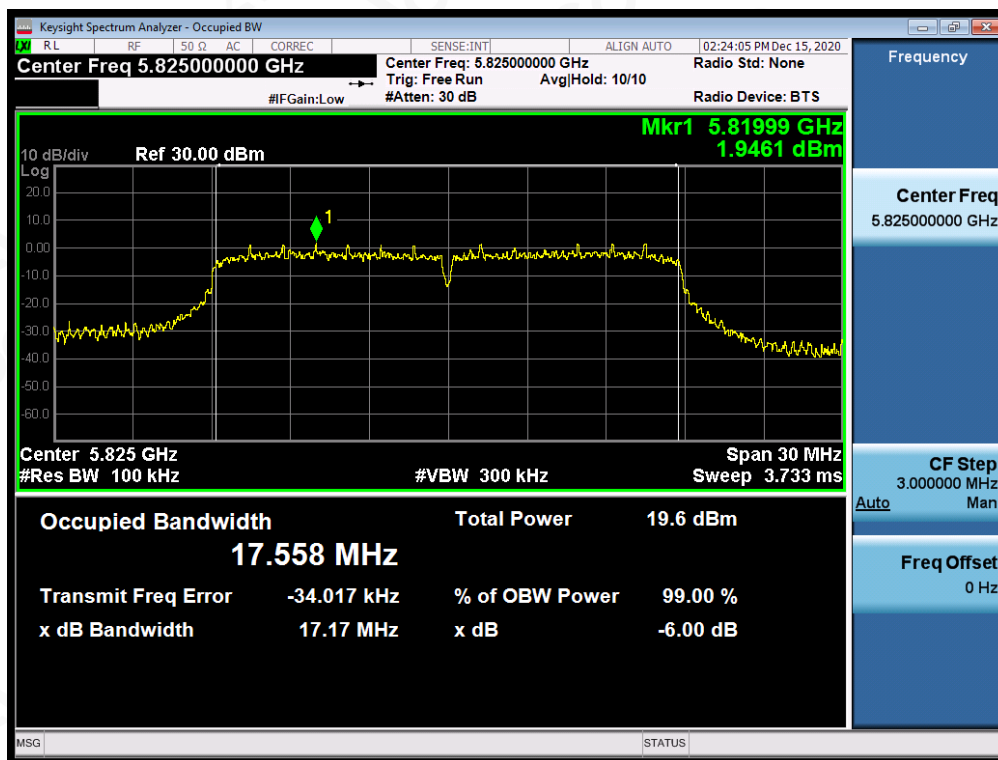
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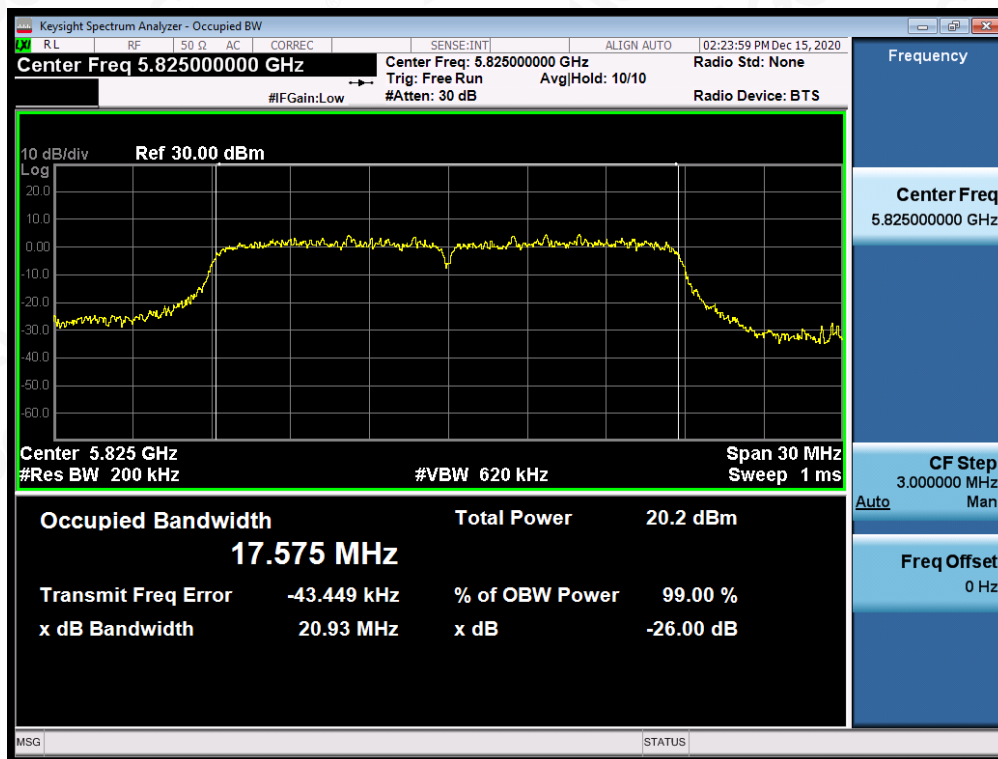
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### TEST PLOT OF BANDWIDTH FOR 5825MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5825MHz (99% BANDWIDTH)



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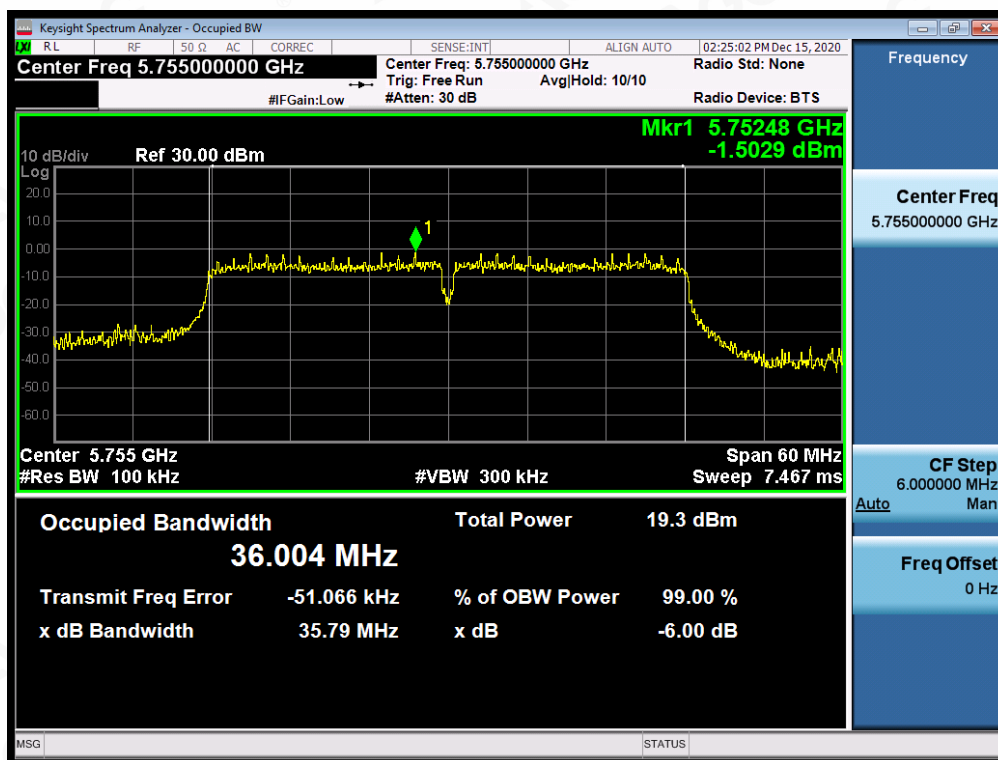
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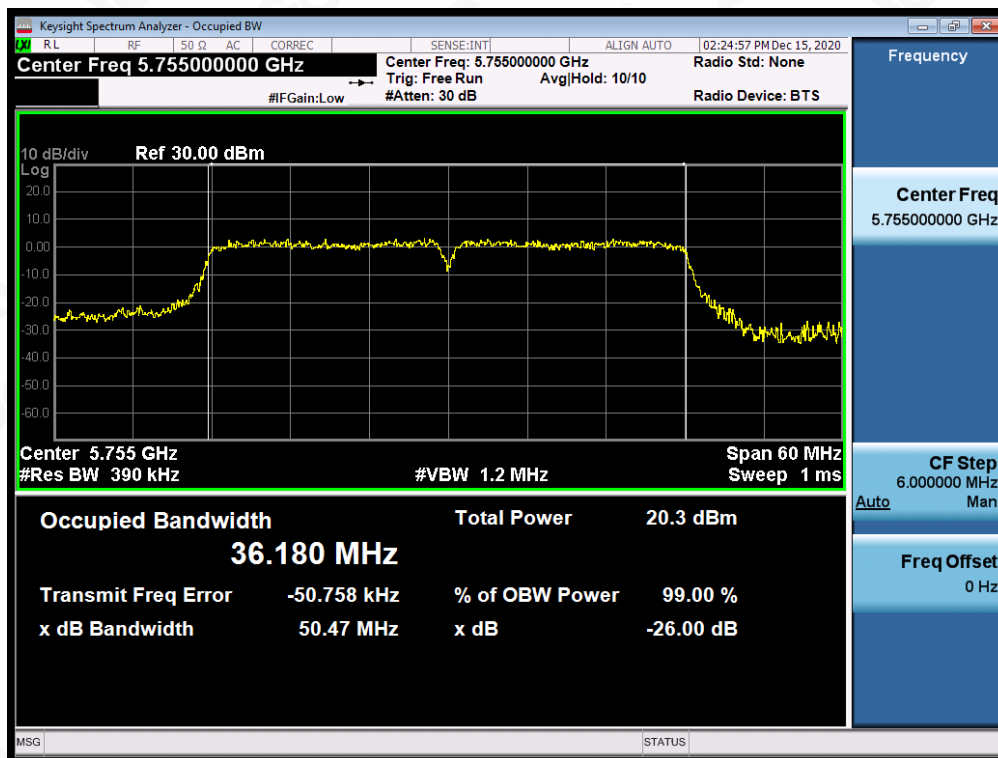


## 802.11ac40 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5755MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5755MHz (99% BANDWIDTH)



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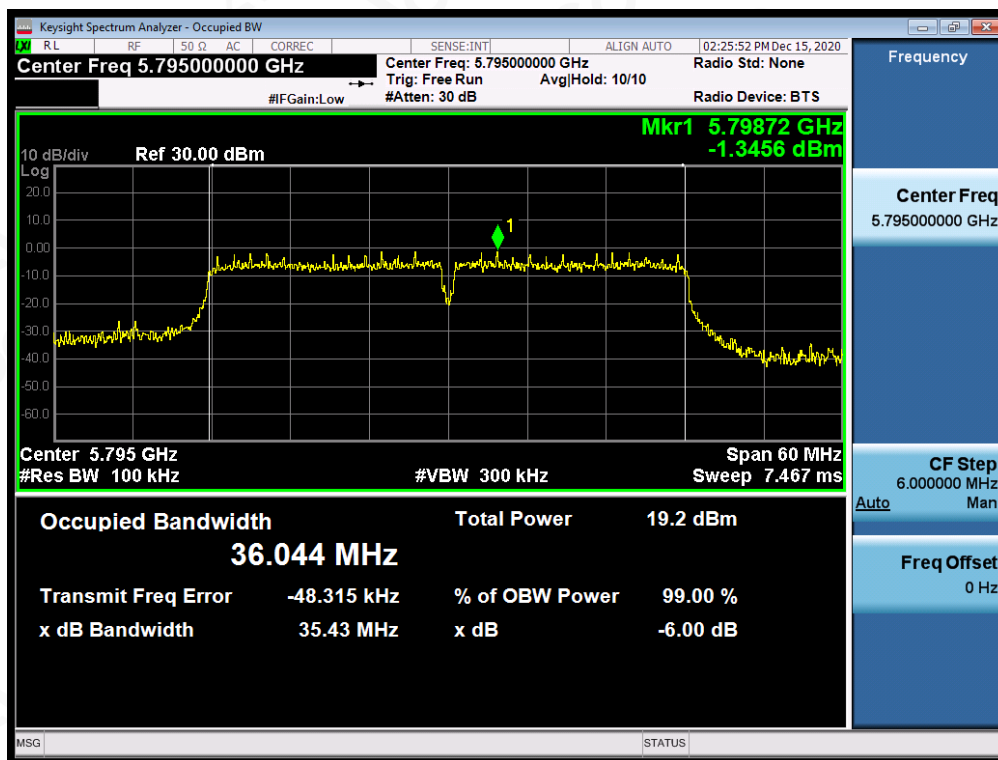
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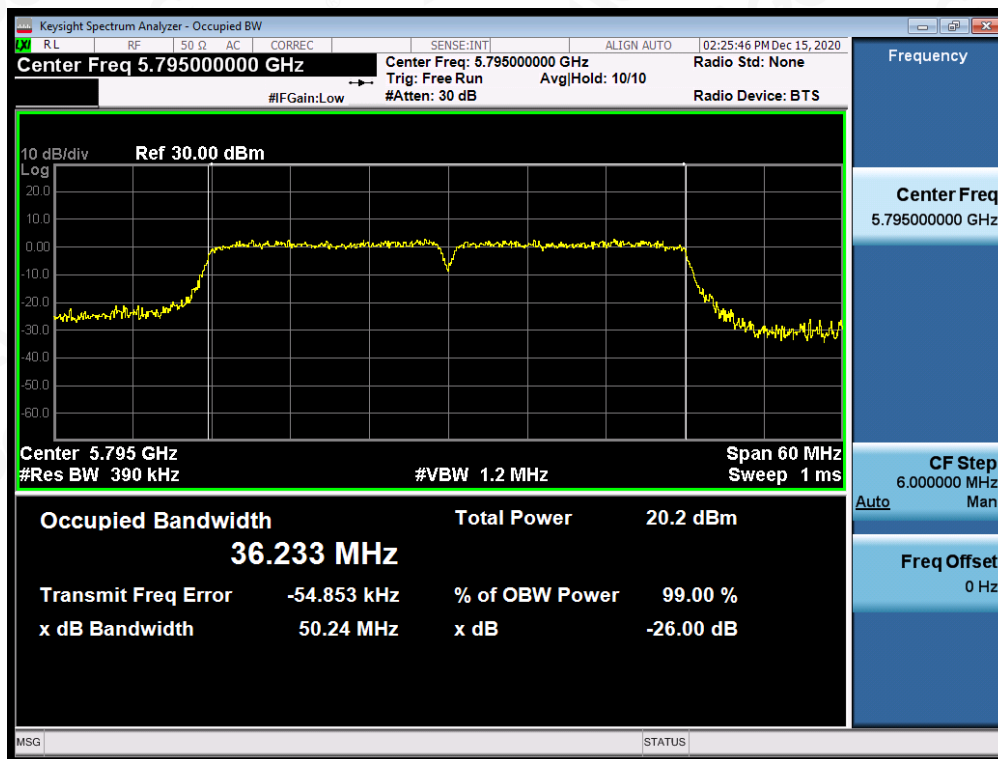
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### TEST PLOT OF BANDWIDTH FOR 5795MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5795MHz (99% BANDWIDTH)



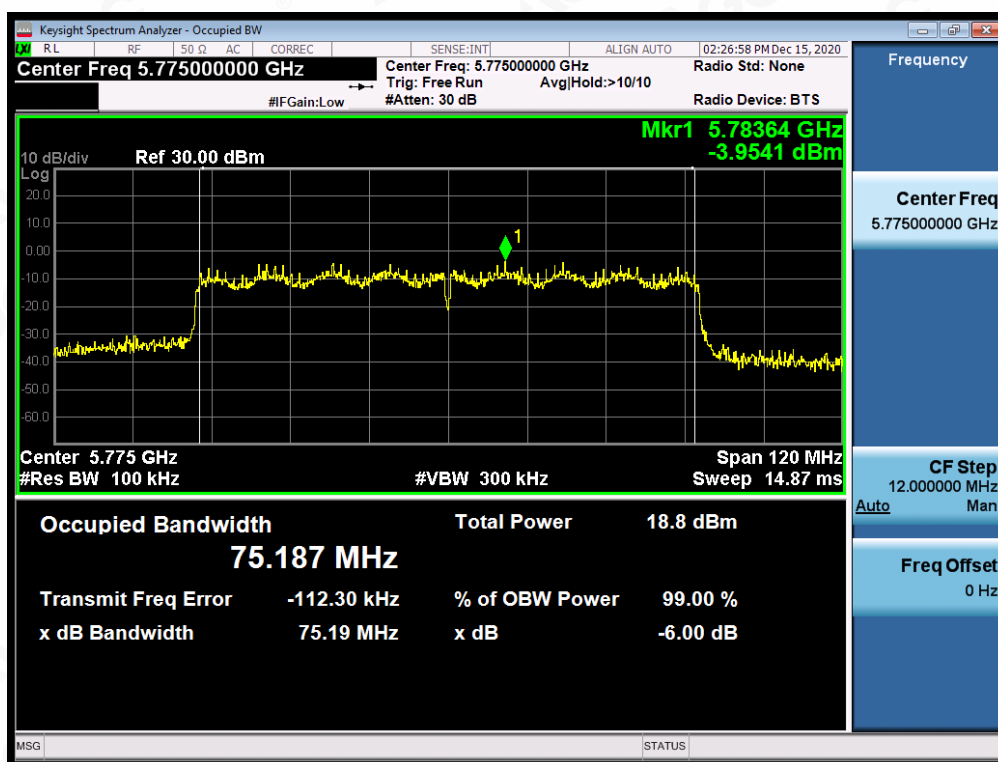
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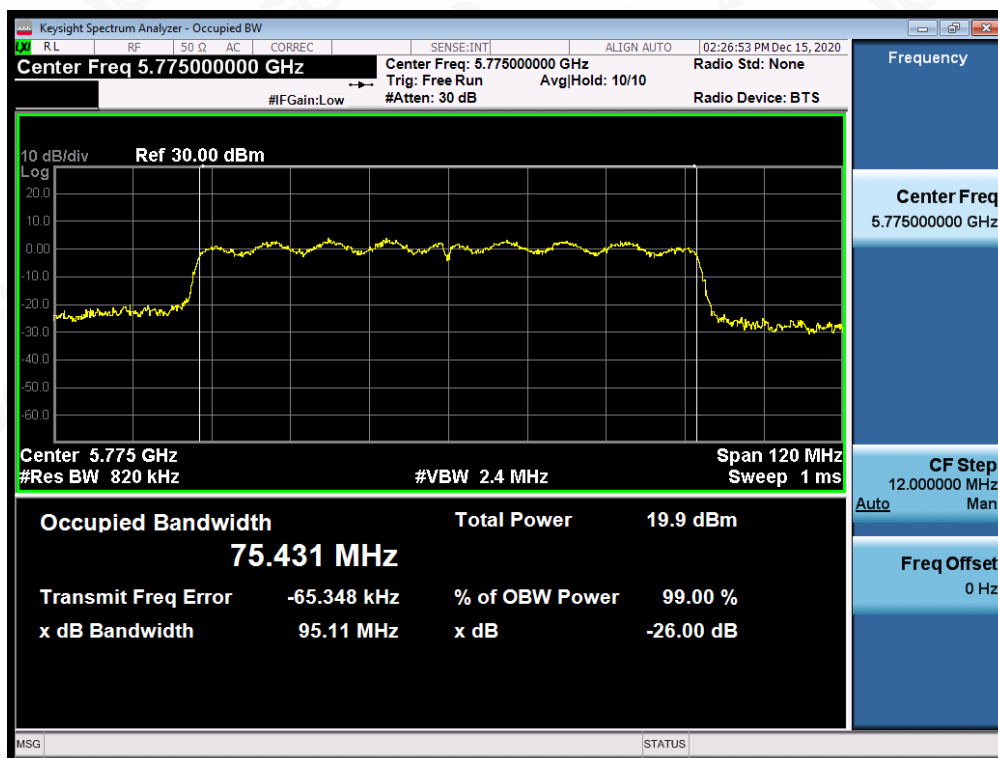


## 802.11ac80 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5775MHz (-6dB BANDWIDTH)



### TEST PLOT OF BANDWIDTH FOR 5775MHz (99% BANDWIDTH)



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## 9. EMISSION BANDWIDTH

### 9.1. MEASUREMENT PROCEDURE

#### 9.1.1. -26dB Bandwidth MEASUREMENT PROCEDURE

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.

Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

#### 9.1.2. 99.00% Occupied Bandwidth MEASUREMENT PROCEDURE

- Connect the antenna port(s) to the spectrum analyzer input.
- Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).

Center Frequency = Channel center frequency

Span = 2 x emission bandwidth

RBW = 1% to 5% of the emission bandwidth

VBW > 3 x RBW

Sweep time = auto couple

Detector = Peak

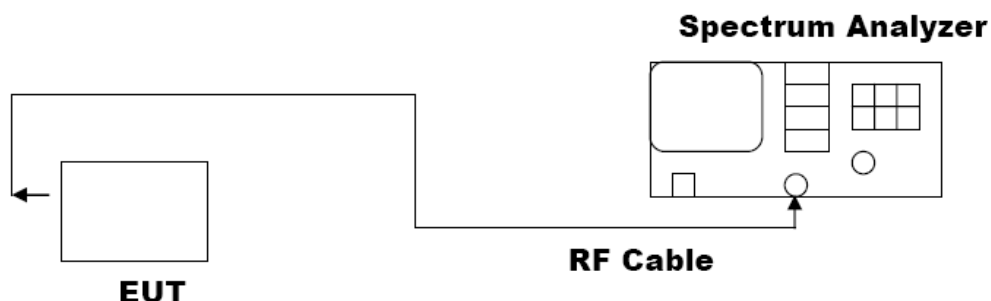
Trace mode = max hold

- Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.

- Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is 1% to 5%.

**Note:** The EUT was tested according to KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

### 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



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### 9.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5180MHz	19.53	16.458	PASS
	5200MHz	20.31	16.447	PASS
	5240MHz	19.62	16.460	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11N20/40 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5180MHz	20.38	17.548	PASS
	5200MHz	20.44	17.552	PASS
	5240MHz	20.23	17.531	PASS
	5190MHz	42.02	36.171	PASS
	5230MHz	42.44	36.148	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20/40/80 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5180MHz	20.35	17.541	PASS
	5200MHz	20.44	17.549	PASS
	5240MHz	20.08	17.528	PASS
	5190MHz	41.43	36.135	PASS
	5230MHz	42.08	36.171	PASS
	5210MHz	80.83	75.301	PASS

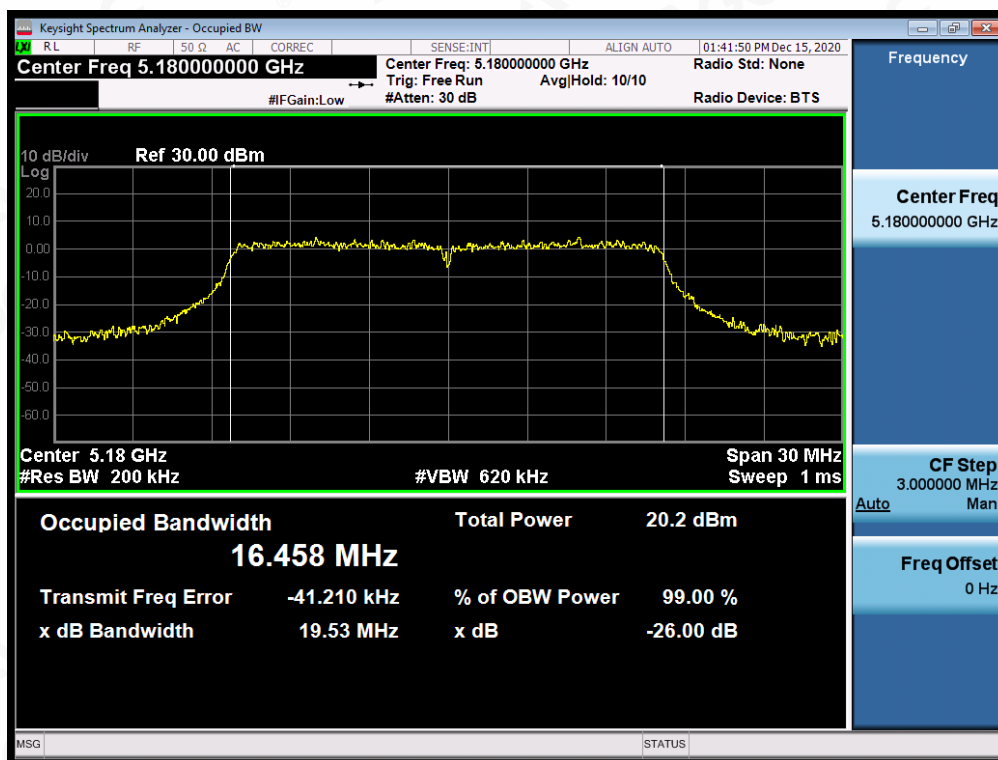
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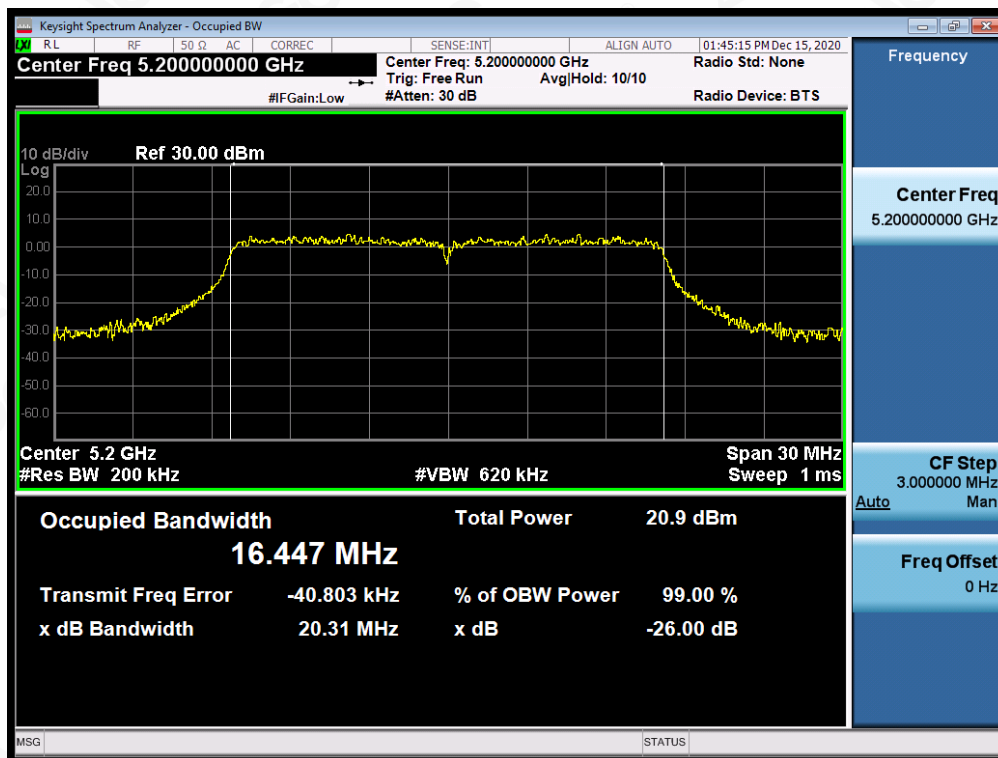


## 802.11a20 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5180MHz



### TEST PLOT OF BANDWIDTH FOR 5200MHz

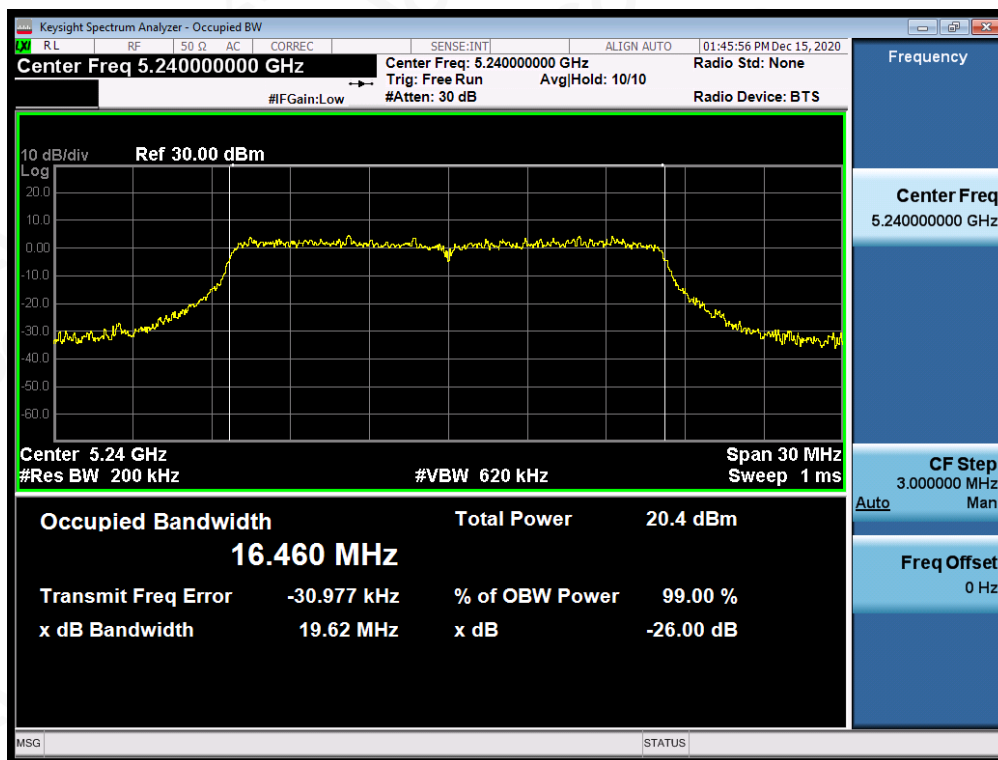


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### TEST PLOT OF BANDWIDTH FOR 5240MHz



### 802.11n20 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5180MHz



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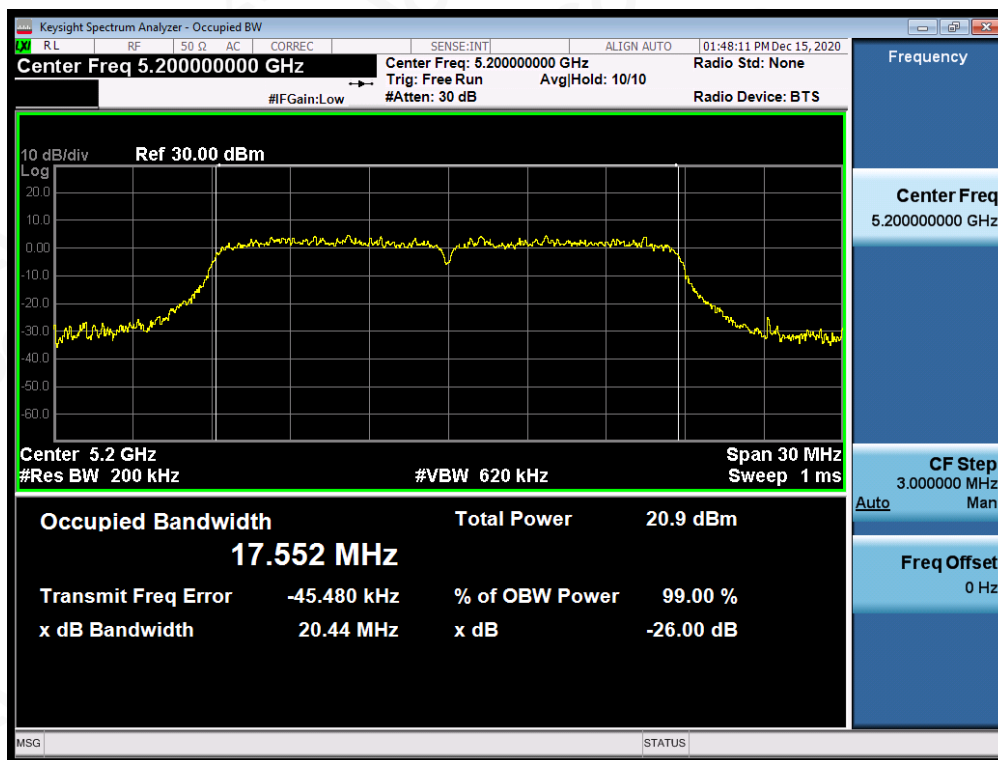
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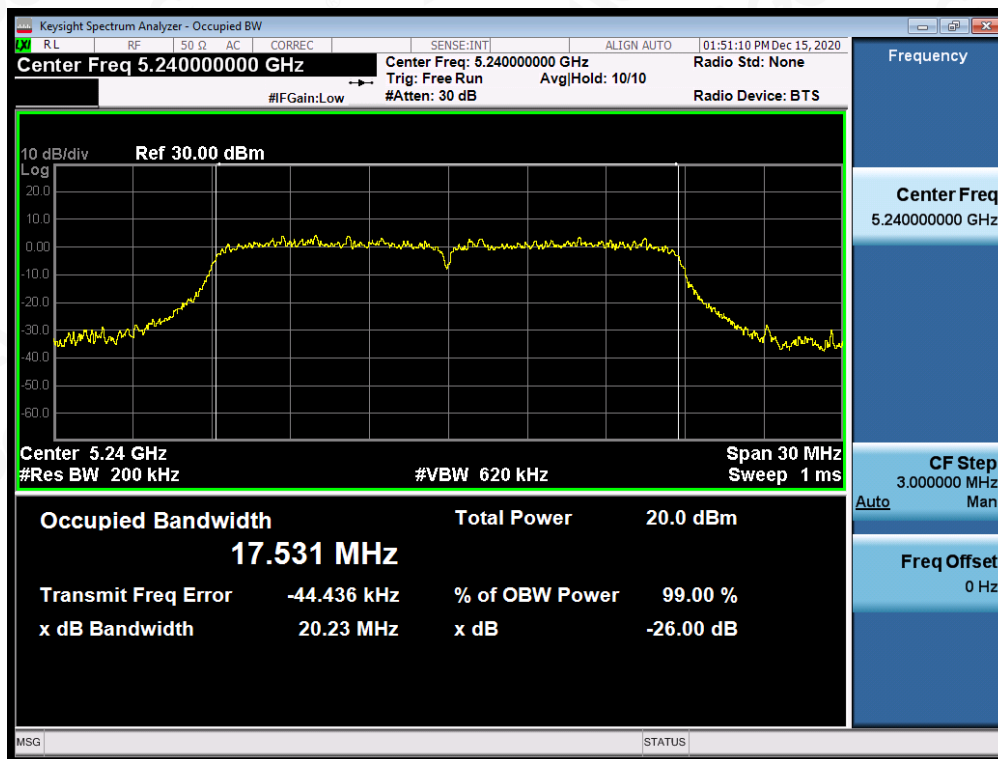
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### TEST PLOT OF BANDWIDTH FOR 5200MHz



### TEST PLOT OF BANDWIDTH FOR 5240MHz



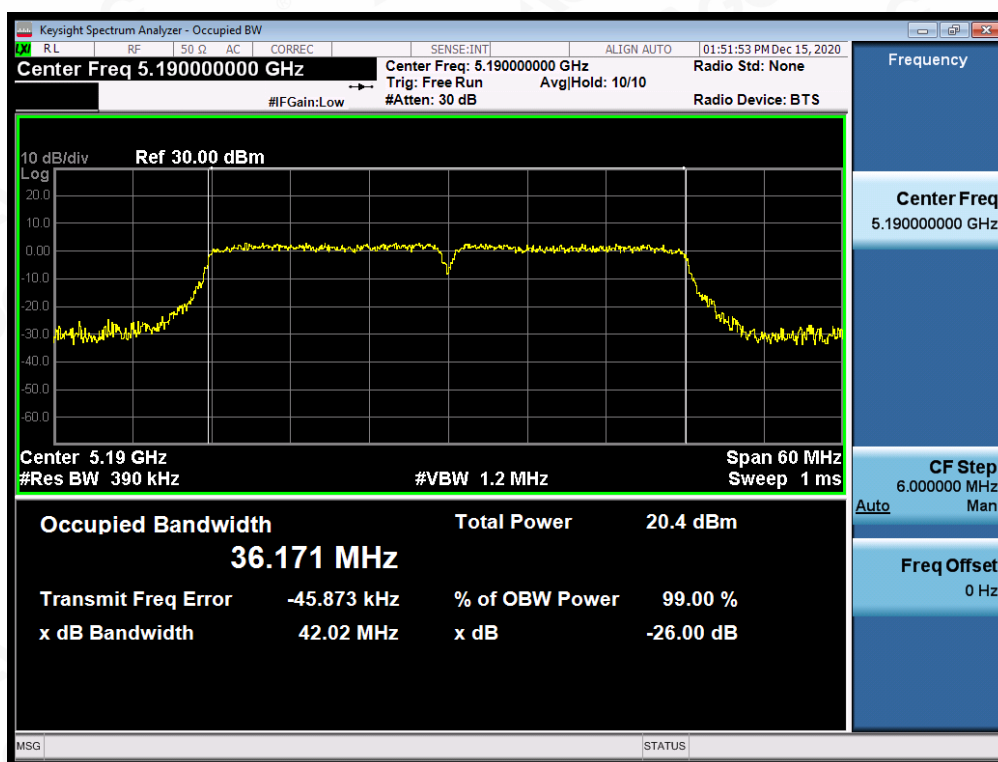
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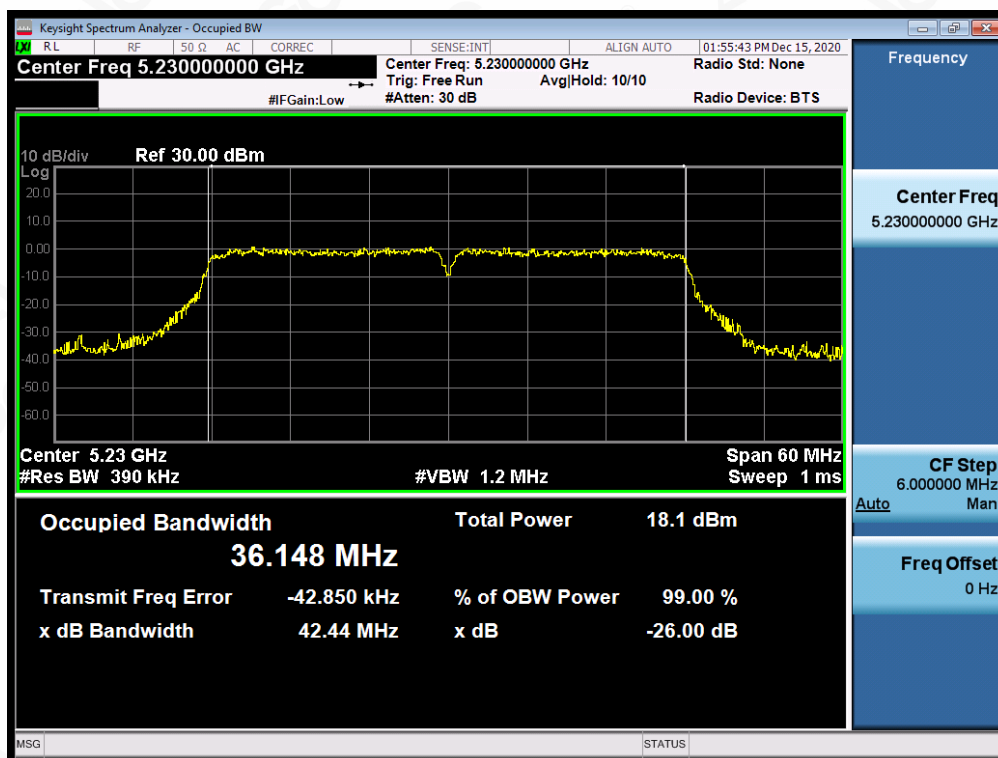


## 802.11n40 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5190MHz



### TEST PLOT OF BANDWIDTH FOR 5230MHz



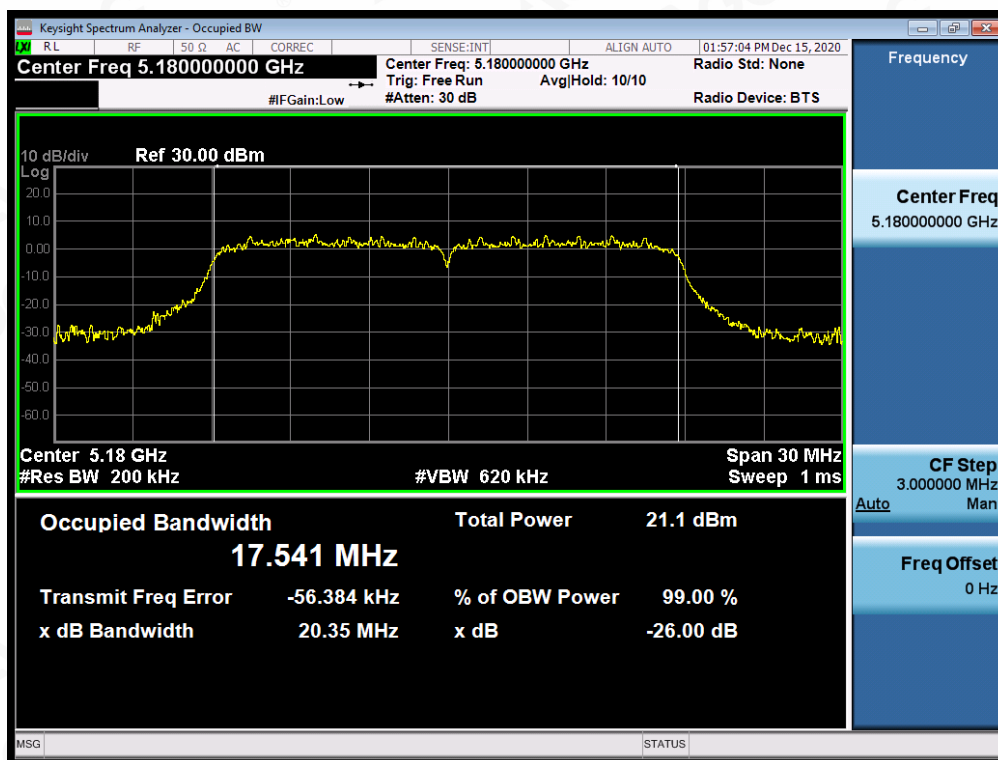
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## 802.11ac20 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5180MHz



### TEST PLOT OF BANDWIDTH FOR 5200MHz

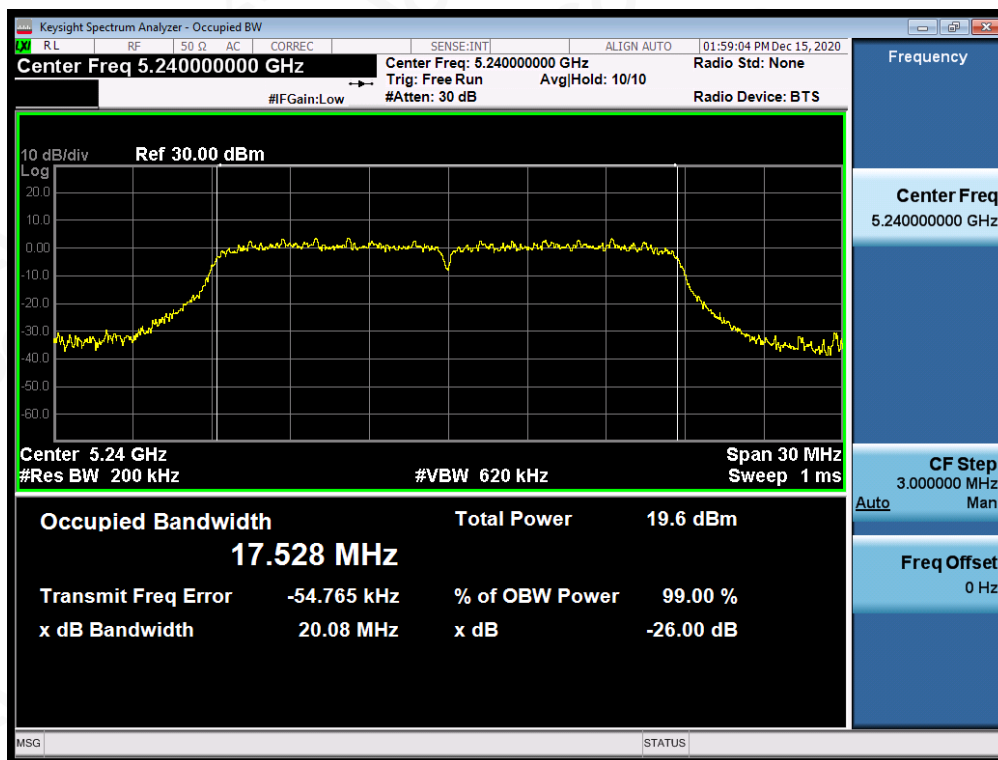


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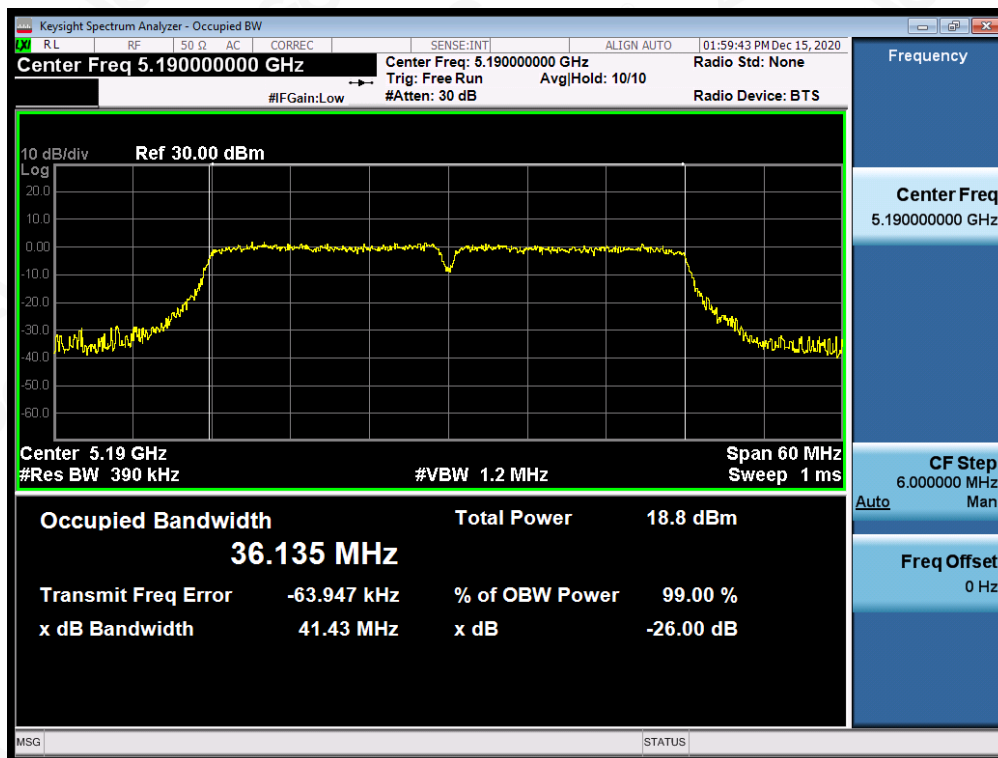


### TEST PLOT OF BANDWIDTH FOR 5240MHz



### 802.11ac40 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5190MHz



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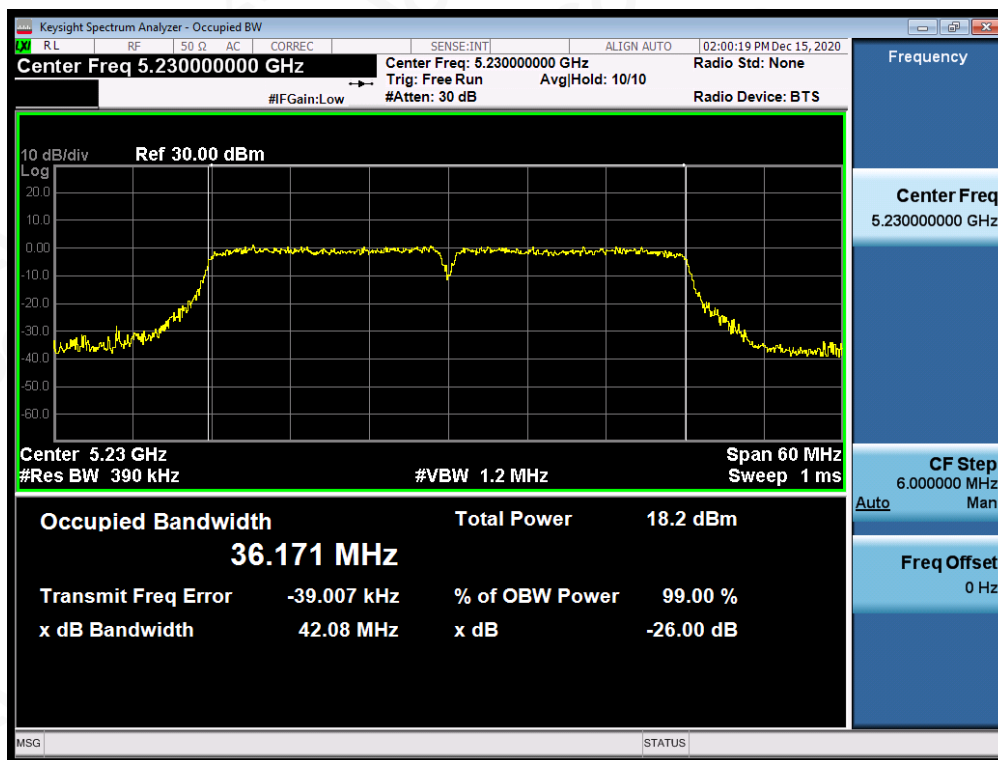
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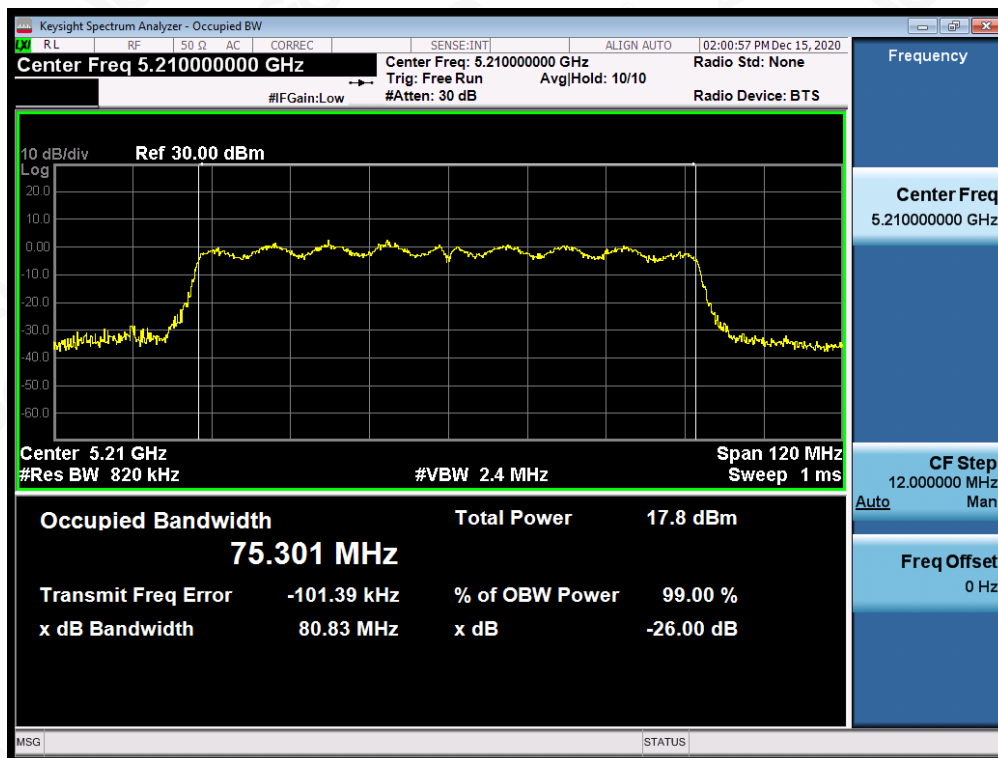


### TEST PLOT OF BANDWIDTH FOR 5230MHz



### 802.11ac80 TEST RESULT

### TEST PLOT OF BANDWIDTH FOR 5210MHz



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## 10. MAXIMUM CONDUCTED OUTPUT AVERAGE POWER SPECTRAL DENSITY

### 10.1 MEASUREMENT PROCEDURE

Refer to KDB 789033 section F

### 10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 8.2.

### 10.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

### 10.4 LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT FOR 802.11A20 MODULATION			
Frequency (MHz)	Power density (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5180	4.521	17	Pass
5200	4.018	17	Pass
5240	3.349	17	Pass
Frequency (MHz)	Power density (30dBm/500kHz)	Applicable Limits (30dBm/500kHz)	Pass or Fail
5745	1.205	30	Pass
5785	0.807	30	Pass
5825	0.781	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION			
Frequency (MHz)	Power density (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5180	3.775	17	Pass
5200	3.776	17	Pass
5240	2.518	17	Pass
Frequency (MHz)	Power density (30dBm/500kHz)	Applicable Limits (30dBm/500kHz)	Pass or Fail
5745	0.369	30	Pass
5785	0.360	30	Pass
5825	0.683	30	Pass

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LIMITS AND MEASUREMENT RESULT FOR 802.1N40 MODULATION			
Frequency (MHz)	Power density (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5190	0.761	17	Pass
5230	-1.467	17	Pass
Frequency (MHz)	Power density (30dBm/500kHz)	Applicable Limits (30dBm/500kHz)	Pass or Fail
5755	-1.625	30	Pass
5795	-2.110	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20 MODULATION			
Frequency (MHz)	Power density (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5180	3.668	17	Pass
5200	2.721	17	Pass
5240	2.165	17	Pass
Frequency (MHz)	Power density (30dBm/500kHz)	Applicable Limits (30dBm/500kHz)	Pass or Fail
5745	0.843	30	Pass
5785	0.605	30	Pass
5825	-0.058	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.1AC40 MODULATION			
Frequency (MHz)	Power density (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5190	-0.765	17	Pass
5230	-1.266	17	Pass
Frequency (MHz)	Power density (30dBm/500kHz)	Applicable Limits (30dBm/500kHz)	Pass or Fail
5755	-2.313	30	Pass
5795	-2.523	30	Pass

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LIMITS AND MEASUREMENT RESULT FOR 802.1AC80 MODULATION			
Frequency (MHz)	Power density (dBm/MHz)	Applicable Limits (dBm/MHz)	Pass or Fail
5210	-2.236	17	Pass
Frequency (MHz)	Power density (30dBm/500kHz)	Applicable Limits (30dBm/500kHz)	Pass or Fail
5775	-3.565	30	Pass

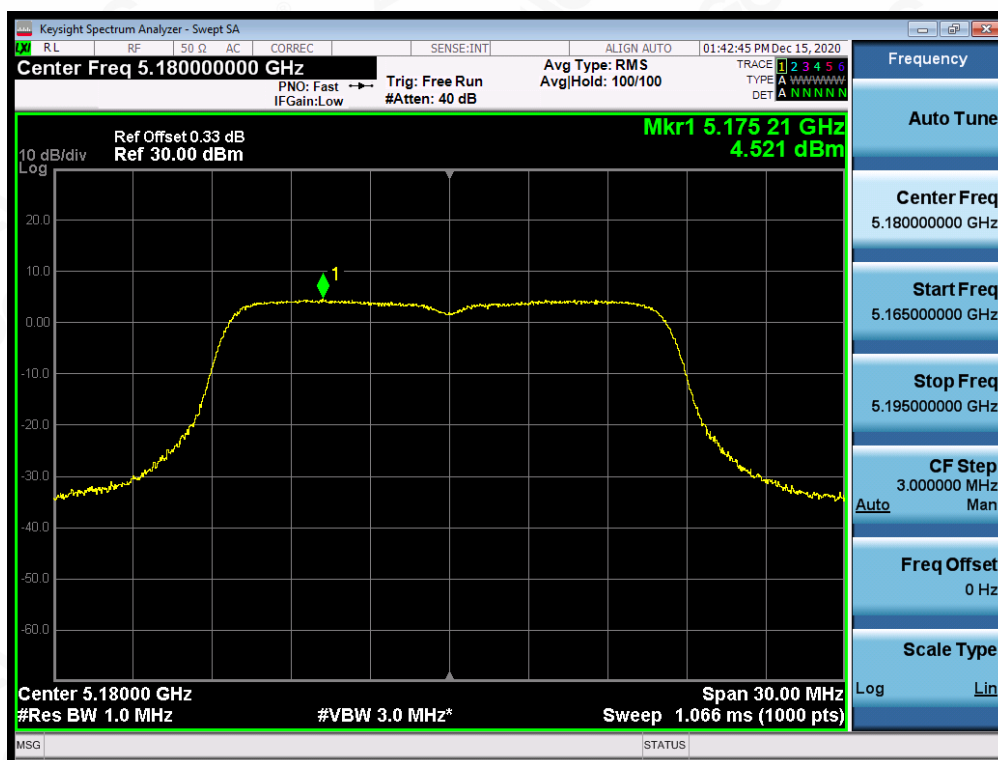
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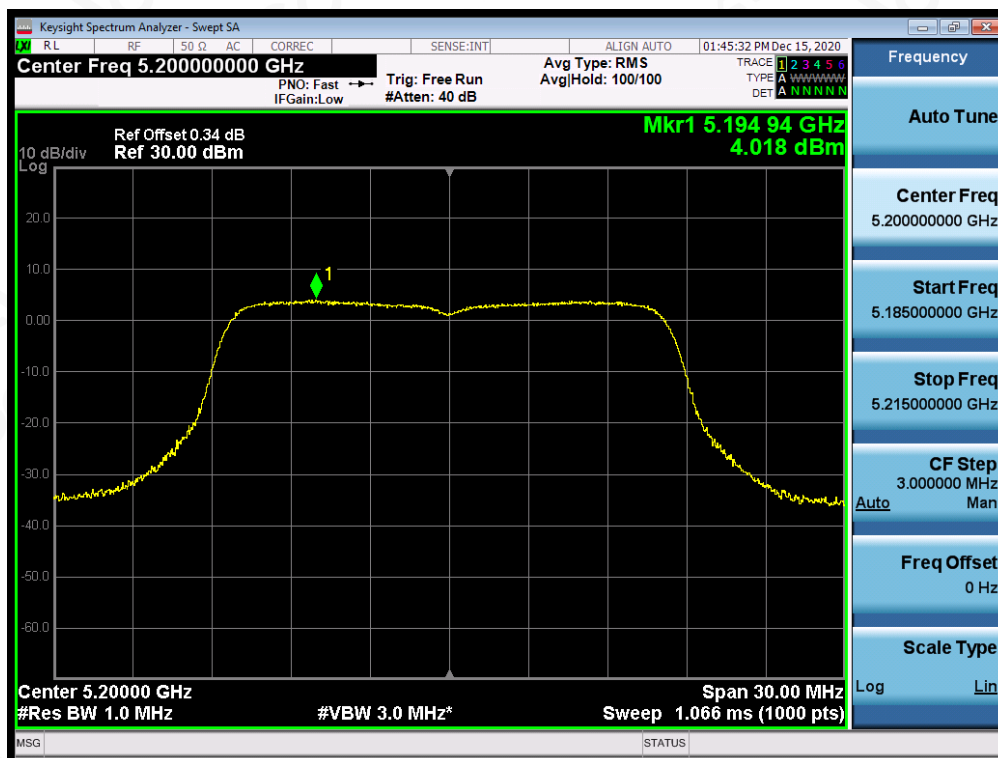


## 802.11a20 TEST RESULT

### TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz



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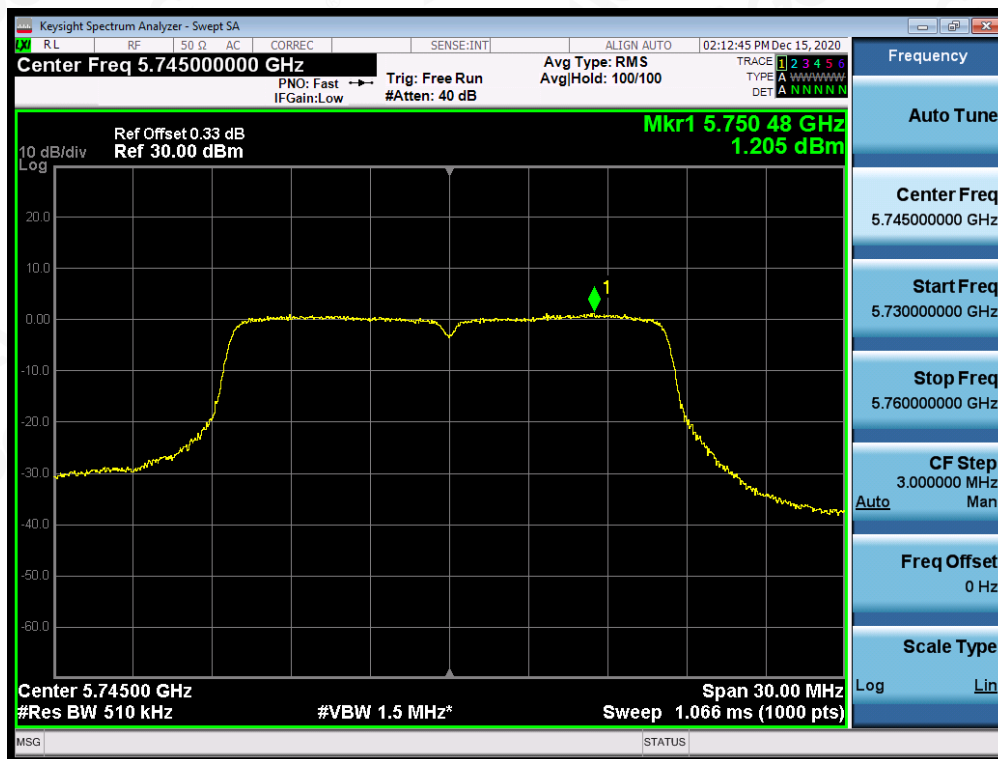
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### TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz



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### TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz



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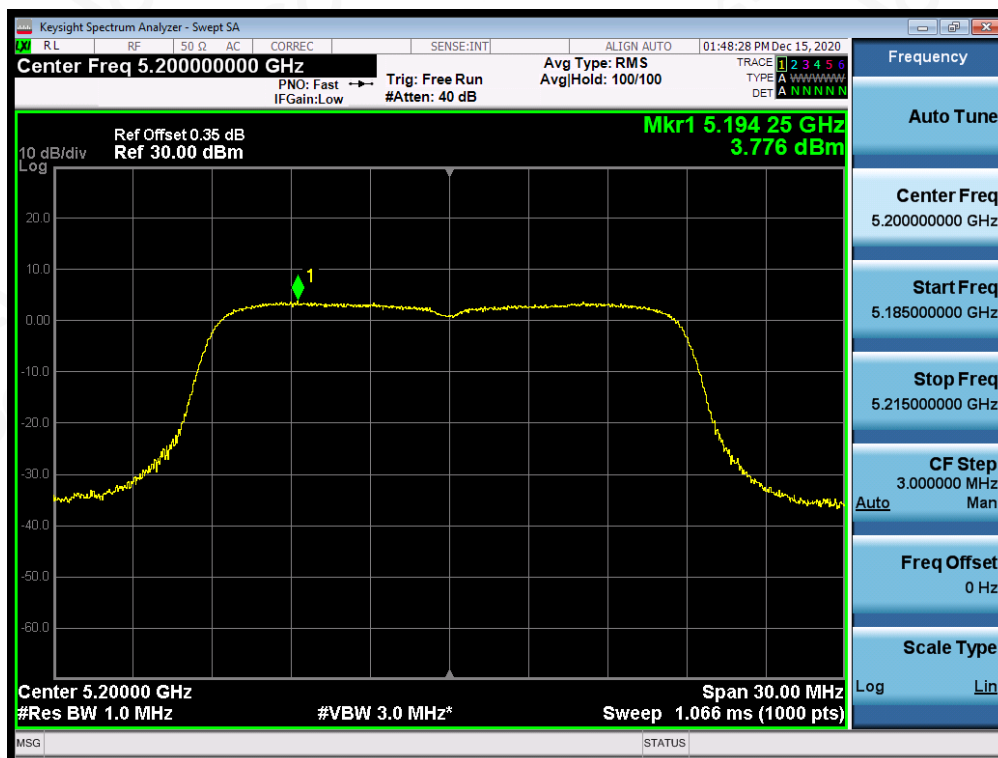


## 802.11n20 TEST RESULT

### TEST PLOT OF SPECTRAL DENSITY FOR 5180MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5200MHz



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### TEST PLOT OF SPECTRAL DENSITY FOR 5240MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5745MHz



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### TEST PLOT OF SPECTRAL DENSITY FOR 5785MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5825MHz



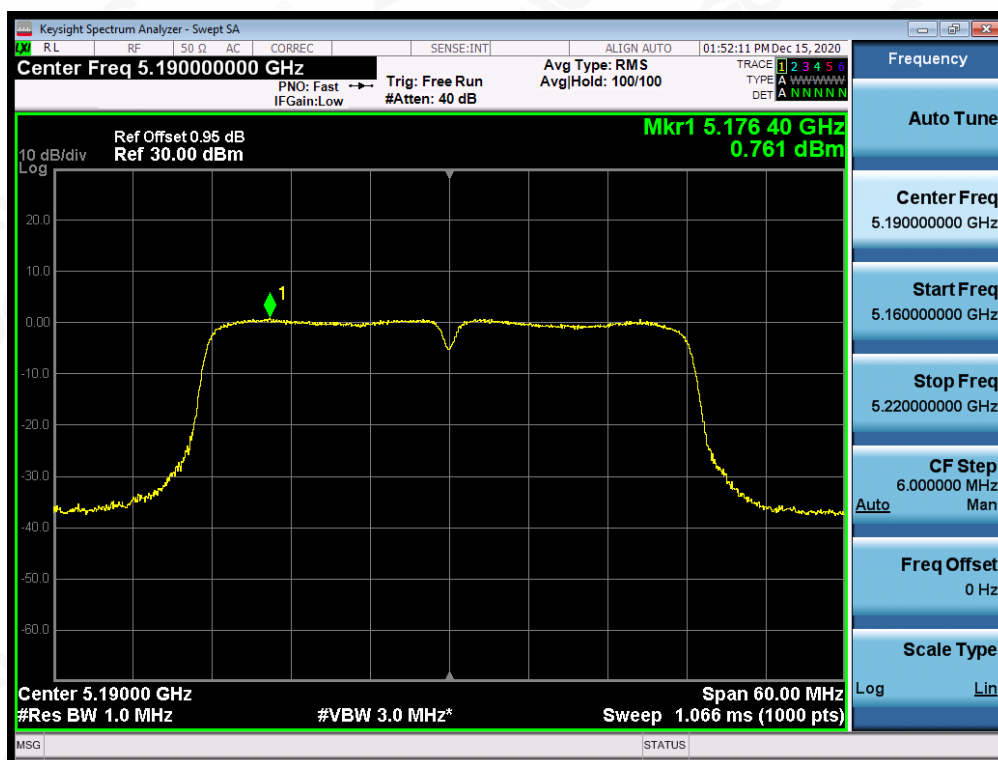
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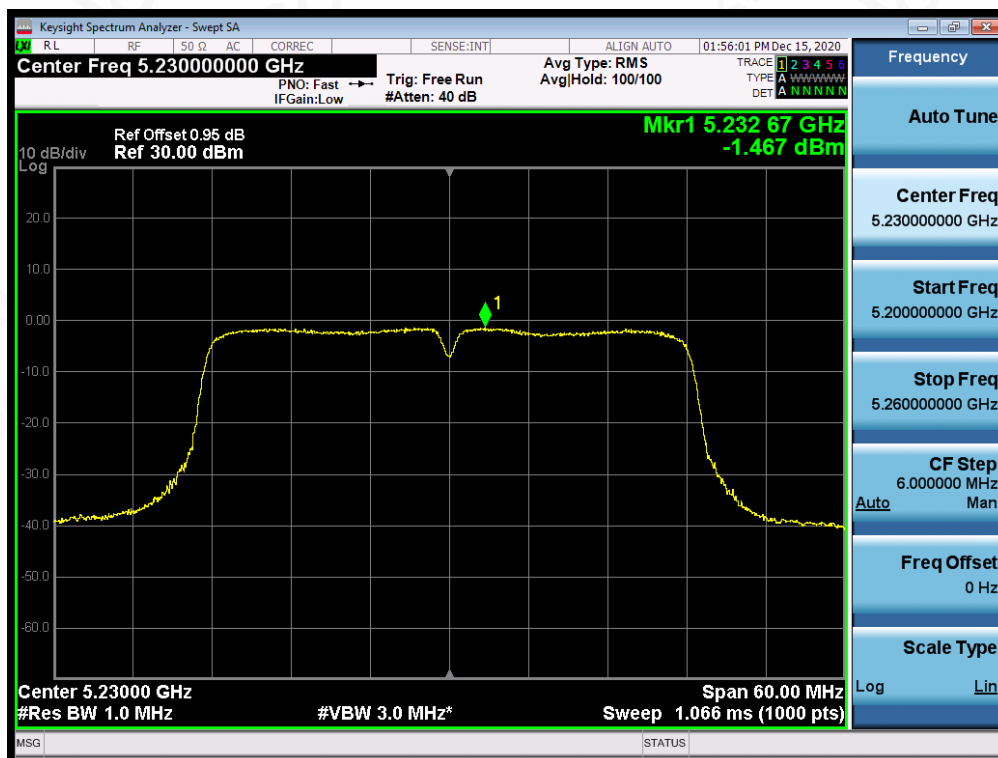


## 802.11n40 TEST RESULT

### TEST PLOT OF SPECTRAL DENSITY FOR 5190MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5230MHz

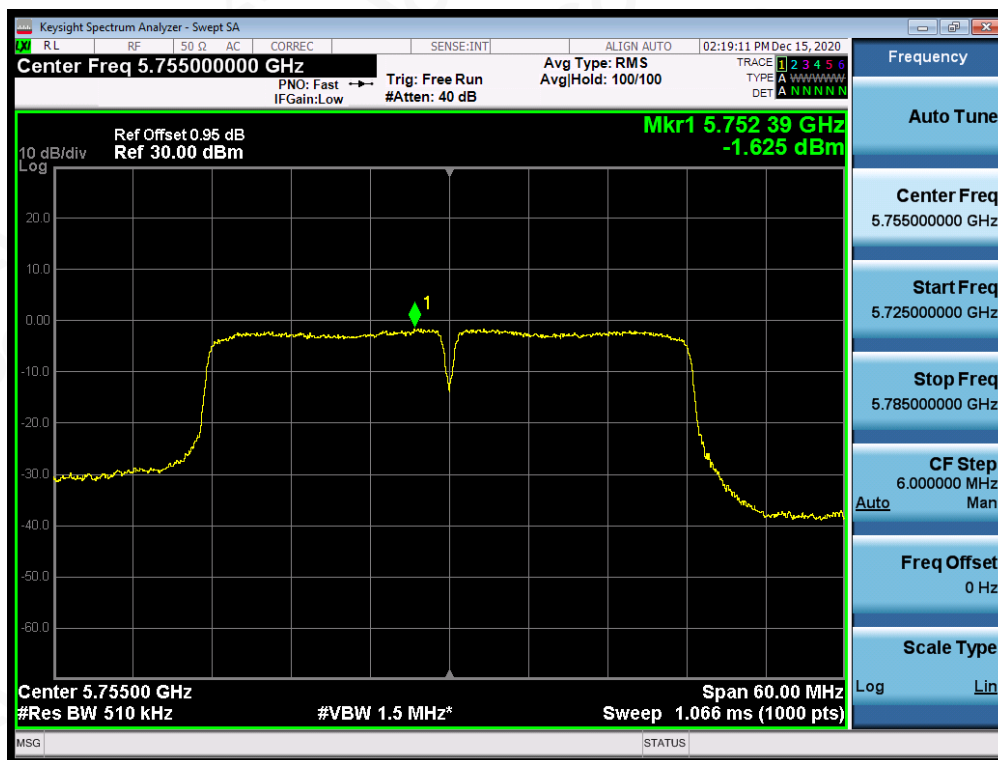


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### TEST PLOT OF SPECTRAL DENSITY FOR 5755MHz



### TEST PLOT OF SPECTRAL DENSITY FOR 5795MHz



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