

FCC Test Report

Report No.: AGC03195200602FE06

FCC ID : TZIUX598
APPLICATION PURPOSE : Original Equipment
PRODUCT DESIGNATION : VR All-in-One HMD
BRAND NAME : ARTS, ClassVR
MODEL NAME : UX598C, CVR-255, UX598
APPLICANT : Arts Electronics Co., Ltd.
DATE OF ISSUE : Sep, 14, 2020
STANDARD(S) : FCC Part 15.407
TEST PROCEDURE(S) : KDB 789033 D02 v02r01
REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: <http://cn.agc-cert.com/>



REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep, 14, 2020	Valid	Initial Release

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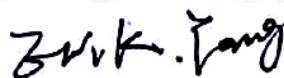
1. VERIFICATION OF CONFORMITY

Applicant	Arts Electronics Co., Ltd.
Address	NO. 1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA
Manufacturer	Arts Electronics Co., Ltd.
Address	NO. 1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA
Factory	Arts Electronics Co., Ltd.
Address	NO. 1, SHANGXING LU, SHANGJIAO COMMUNITY, CHANGAN TOWN, DONGGUAN CITY, GUANGDONG PROVINCE, CHINA
Product Designation	VR All-in-One HMD
Brand Name	ARTS, ClassVR
Test Model	UX598C
Series Model	CVR-255, UX598
Model Difference	UX598C Model: Face board with camera; 5.5-inch 2560 x 1440 resolution display. And it corresponding to the brand ARTS. For CVR-255 Model: It is consistent with UX598C except that the appearance color, model name and brand names are different. And it corresponding to the brand ClassVR. For UX598 Model: Face board without camera. It is consistent with UX598C except that the appearance color and model name are different.
Date of test	Jun. 12, 2020 to Sep, 11, 2020
Deviation	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Report Template	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



Erik Yang
(Project Engineer)

Sep, 11, 2020

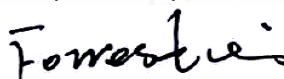
Reviewed By



Max Zhang
(Reviewer)

Sep, 14, 2020

Approved By



Forrest Lei
(Authorized Officer)

Sep, 14, 2020

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as “VR All-in-One HMD”. 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

Operation Frequency	5150 MHz~5250MHz; 5260 MHz~5320MHz, 5500 MHz~5700MHz, 5725 MHz~5850MHz
Output Power	IEEE 802.11a20:12.83dBm; IEEE 802.11n(20):12.82dBm; IEEE 802.11ac(20):13.01dBm; IEEE802.11n(40):11.62dBm; IEEE802.11ac(40):11.07dBm; IEEE802.11ac(80):10.68dBm
Modulation	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM, OFDM
Number of channels	39
Hardware Version	YT-VR-XR1-V0.2
Software Version	VR1114/20191101133109
Antenna Designation	Integral Antenna
Number of transmit chain	2(802.11a/n/ac all used two antennas, but 802.11a support SISO and 802.11n/ac support MIMO)
Directional gain	All transmit signals are completely uncorrelated with each other(see note 4)
Antenna Gain	1.36dBi
Power Supply	DC 5V by adapter or DC 3.8V by battery

Note: 1. There are two antenna positions in the test sample, and the test data of both antenna positions meet the requirements.

2. The EUT is designed as client without radar detection.

3. The device do not support TPC.

4. The maximum antenna gain is 1.36dBi in 5GHz band. ALL transmit signals are completely uncorrelated with each other, According to KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements and power spectral density measurements on IEEE 802.11 devices:

So: Directional gain = GANT = 1.36dBi < 6dBi

2.2. TABLE OF CARRIER FREQUENCIES

Frequency Band	Channel Number	Frequency	Frequency Band	Channel Number	Frequency
5150 MHz ~ 5250MHz	36	5180 MHz	5500 MHz ~ 5700MHz	112	5560 MHz
	38	5190 MHz		116	5580 MHz
	40	5200 MHz		118	5590 MHz
	42	5210 MHz		120	5600 MHz
	44	5220 MHz		122	5610 MHz
	46	5230 MHz		124	5620 MHz
	48	5240 MHz		126	5630 MHz
5260 MHz ~ 5320MHz	52	5260 MHz		128	5640 MHz
	54	5270 MHz		132	5660 MHz
	56	5280 MHz		134	5670 MHz
	58	5290 MHz		136	5680 MHz
	60	5300 MHz		140	5700 MHz
	62	5310 MHz	5725 MHz ~ 5850MHz	149	5745 MHz
	64	5320 MHz		151	5755 MHz
5500 MHz ~ 5700MHz	100	5500 MHz		153	5765 MHz
	102	5510 MHz		155	5775 MHz
	104	5520 MHz		157	5785 MHz
	106	5530 MHz		159	5795 MHz
	108	5540 MHz		165	5825MHz
	110	5550 MHz			

Note: For 20MHz bandwidth system use Channel

36,40,44,48,52,56,60,64,100,104,108,112,116,120,124,128,132,136,140,149,153,157,161,165; For 40MHz bandwidth system use Channel 38,46,54,62,102,110,118,126,134,151,159; For 80MHz bandwidth system use Channel 42,58,106,122,155

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

This submittal(s) (test report) is intended for **FCC ID: TZIUX598** 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	Data rate(Mbps)
802.11a/n20	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 149, 153, 157, 161, 165	36, 40, 48, 52, 60, 64, 100, 120, 140, 149, 157, 165	OFDM	6Mbps/MCS0
802.11n40	38, 46, 54, 62, 102, 110, 118, 126, 134, 151, 159;	38, 46, 54, 62, 102, 118, 134, 151, 159	OFDM	MCS0
802.11ac80	42, 58, 106, 122, 155	42, 58, 106, 122, 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 QRCT3 which can set the EUT into the individual test modes.

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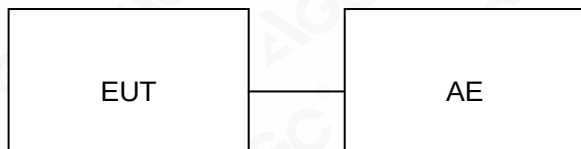
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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	VR All-in-One HMD	UX598C	TZIUX598	EUT
2	Adapter	GQ15-050300-ZU	Input:100-240V, 50/60Hz, 0.5A Max Output:5.0V, 3.0A	Market with EUT
3	USB Type C cable	G258	N/A	AE

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.407	6dB Bandwidth	Compliant
§15.407	Emission Bandwidth	Compliant
§15.203	ANTENNA REQUIREMENT	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

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	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	Aug. 26, 2019	Aug. 25, 2020
LISN	R&S	ESH2-Z5	100086	Jul. 03, 2020	Jul. 02, 2022
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. 12, 2019	Dec. 11, 2020
Power sensor	Aglient	U2021XA	MY54110007	Sep. 10, 2019	Sep. 09, 2020
5GHz Fliter	Micro-tronics	N/A	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	Weinachel Corp	58-30-33	N/A	Sep. 09, 2019	Sep. 08, 2020
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	Oct. 15, 2019	Oct. 16, 2020
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep. 20, 2019	Sep. 19, 2021
Test software	FARA	EZ_EMC (Ver.RA-03A)	N/A	N/A	N/A

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7. MAXIMUM CONDUCTED OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

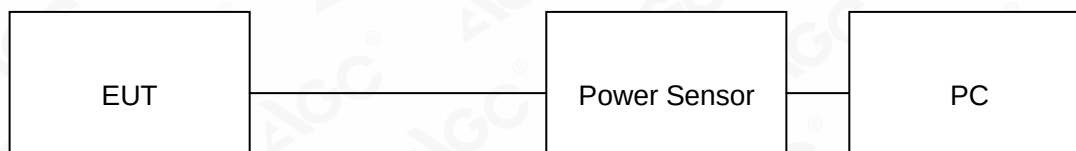
For average power test:

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 Chain 0(dBm)	Average Power Chain 1(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5180	12.83	12.79	N/A	24	Pass
5200	12.60	12.51	N/A	24	Pass
5240	12.71	12.56	N/A	24	Pass
5260	11.49	11.42	N/A	24	Pass
5300	11.36	11.27	N/A	24	Pass
5320	11.33	11.21	N/A	24	Pass
5500	10.50	10.39	N/A	24	Pass
5600	10.76	10.65	N/A	24	Pass
5700	11.13	11.04	N/A	24	Pass
5745	11.05	10.98	N/A	30	Pass
5785	11.18	11.11	N/A	30	Pass
5825	11.53	11.46	N/A	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION					
Frequency (MHz)	Average Power Chain 0(dBm)	Average Power Chain 1(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5180	7.84	7.75	10.81	24	Pass
5200	9.77	9.61	12.70	24	Pass
5240	9.86	9.76	12.82	24	Pass
5260	8.39	8.34	11.38	24	Pass
5300	8.26	8.12	11.20	24	Pass
5320	8.38	8.24	11.32	24	Pass
5500	7.33	7.13	10.24	24	Pass
5600	7.27	7.18	10.24	24	Pass
5700	7.78	7.64	10.72	24	Pass
5745	8.13	8.29	11.22	30	Pass
5785	8.19	8.14	11.18	30	Pass
5825	8.22	8.18	11.21	30	Pass

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LIMITS AND MEASUREMENT RESULT FOR 802.11N40 MODULATION					
Frequency (MHz)	Average Power Chain 0(dBm)	Average Power Chain 1(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5190	8.62	8.59	11.62	24	Pass
5230	7.68	7.61	10.66	24	Pass
5270	7.31	7.26	10.30	24	Pass
5310	7.24	7.18	10.22	24	Pass
5510	7.25	7.13	10.20	24	Pass
5590	7.39	7.22	10.32	24	Pass
5670	7.55	7.44	10.51	24	Pass
5755	8.01	7.98	11.01	30	Pass
5795	8.12	8.01	11.08	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20 MODULATION					
Frequency (MHz)	Average Power Chain 0(dBm)	Average Power Chain 1(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5180	10.03	9.96	13.01	24	Pass
5200	8.64	8.51	11.59	24	Pass
5240	8.57	8.42	11.51	24	Pass
5260	7.58	7.34	10.47	24	Pass
5300	7.37	7.28	10.34	24	Pass
5320	7.30	7.25	10.29	24	Pass
5500	7.08	7.01	10.06	24	Pass
5600	7.31	7.24	10.29	24	Pass
5700	7.92	7.86	10.90	24	Pass
5745	8.14	8.08	11.12	30	Pass
5785	8.15	8.10	11.14	30	Pass
5825	8.32	8.27	11.31	30	Pass

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LIMITS AND MEASUREMENT RESULT FOR 802.11AC40 MODULATION					
Frequency (MHz)	Average Power Chain 0(dBm)	Average Power Chain 1(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5190	7.70	7.55	10.64	24	Pass
5230	7.64	7.51	10.59	24	Pass
5270	7.38	7.13	10.27	24	Pass
5310	7.36	7.29	10.34	24	Pass
5510	7.25	7.18	10.23	24	Pass
5590	7.50	7.46	10.49	24	Pass
5670	7.49	7.39	10.45	24	Pass
5755	8.02	7.96	11.00	30	Pass
5795	8.10	8.02	11.07	30	Pass

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION					
Frequency (MHz)	Average Power Chain 0(dBm)	Average Power Chain 1(dBm)	Average Power Total(dBm)	Applicable Limits (dBm)	Pass or Fail
5210	7.52	7.51	10.53	24	Pass
5290	7.13	7.08	10.12	24	Pass
5530	6.88	6.84	9.87	24	Pass
5610	6.88	6.83	9.87	24	Pass
5775	7.73	7.61	10.68	30	Pass

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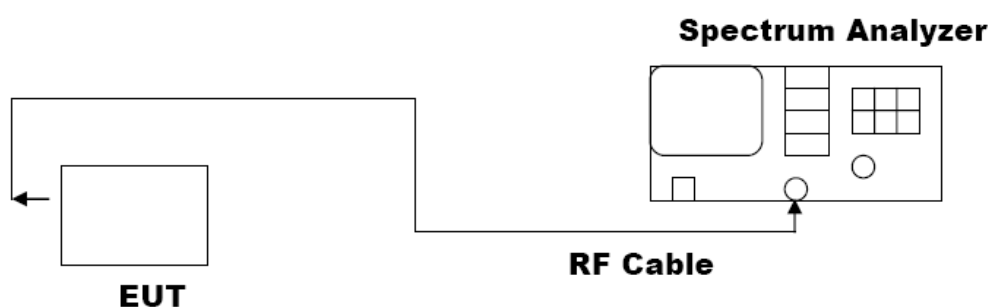
8. 6dB BANDWIDTH

8.1. 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.

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	16.37	16.570	PASS
	5785MHz	16.38	16.558	PASS
	5825MHz	16.37	16.566	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	17.65	17.782	PASS
	5785MHz	17.60	17.787	PASS
	5825MHz	17.62	17.790	PASS
	5755MHz	36.39	36.458	PASS
	5795MHz	36.41	36.457	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	17.62	17.782	PASS
	5785MHz	17.60	17.794	PASS
	5825MHz	17.61	17.814	PASS
	5755MHz	36.36	36.406	PASS
	5795MHz	36.38	36.375	PASS
	5775MHz	76.43	76.014	PASS

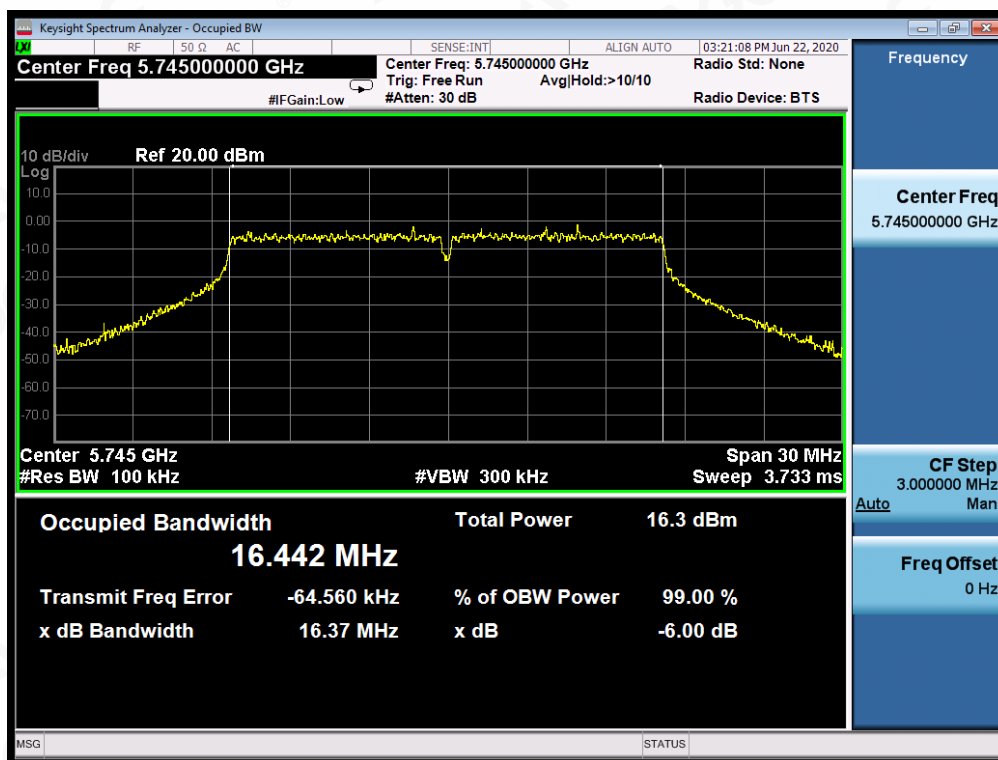
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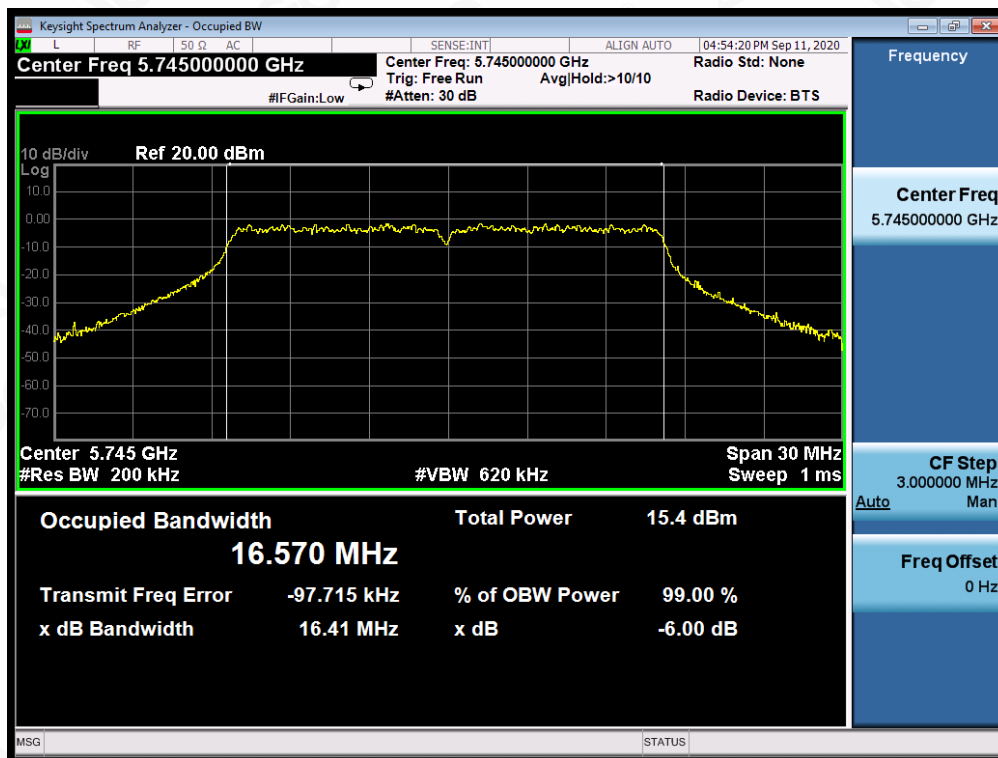


802.11a20 TEST RESULT

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



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

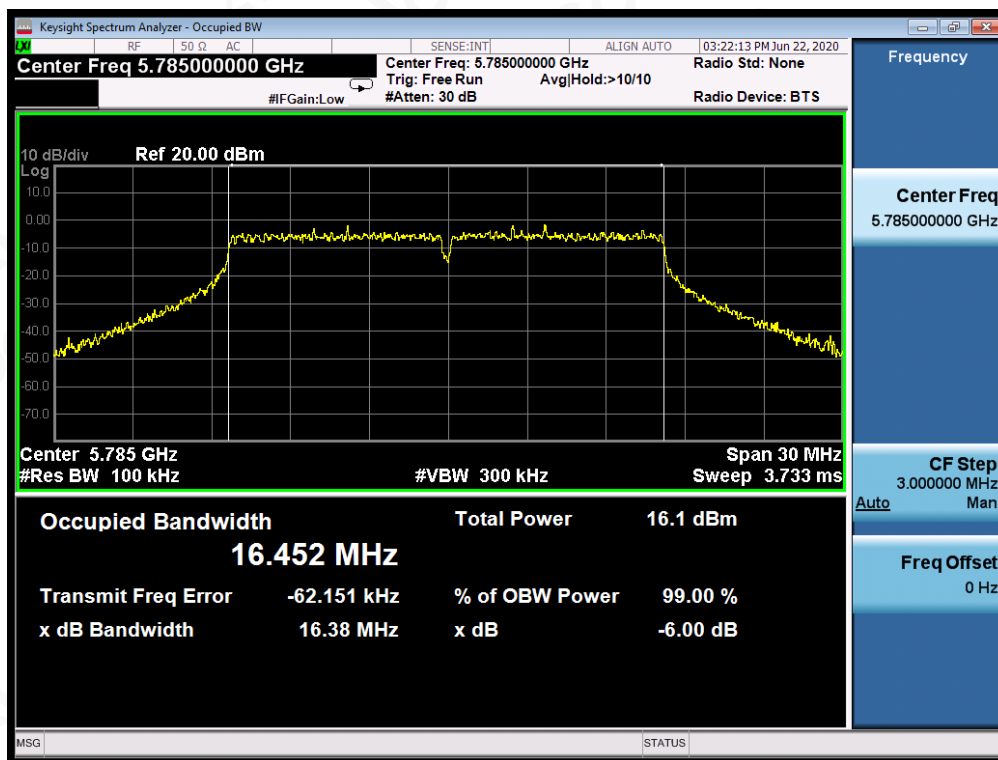


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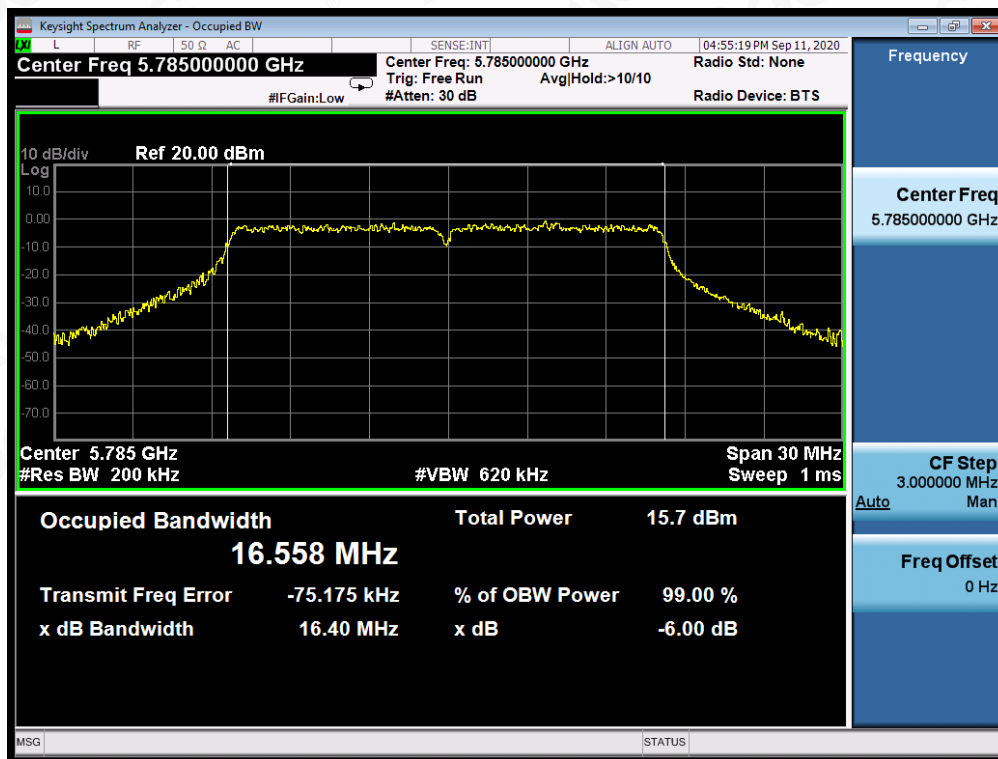
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TEST PLOT OF BANDWIDTH FOR 5785MHz (-6dB BANDWIDTH)



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

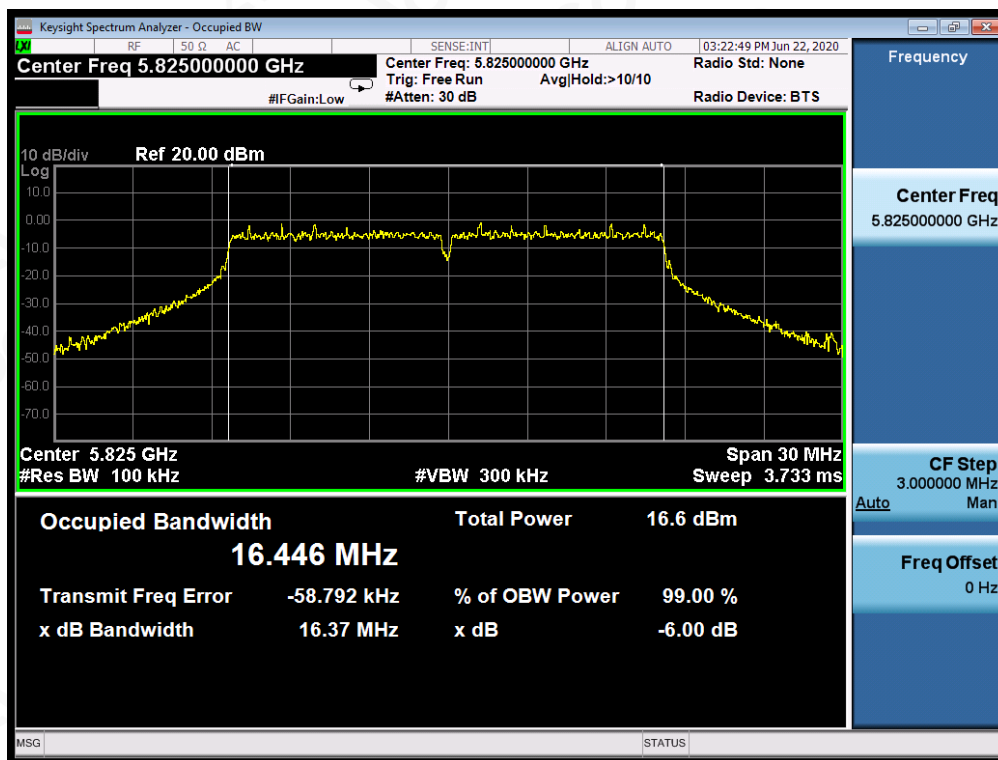


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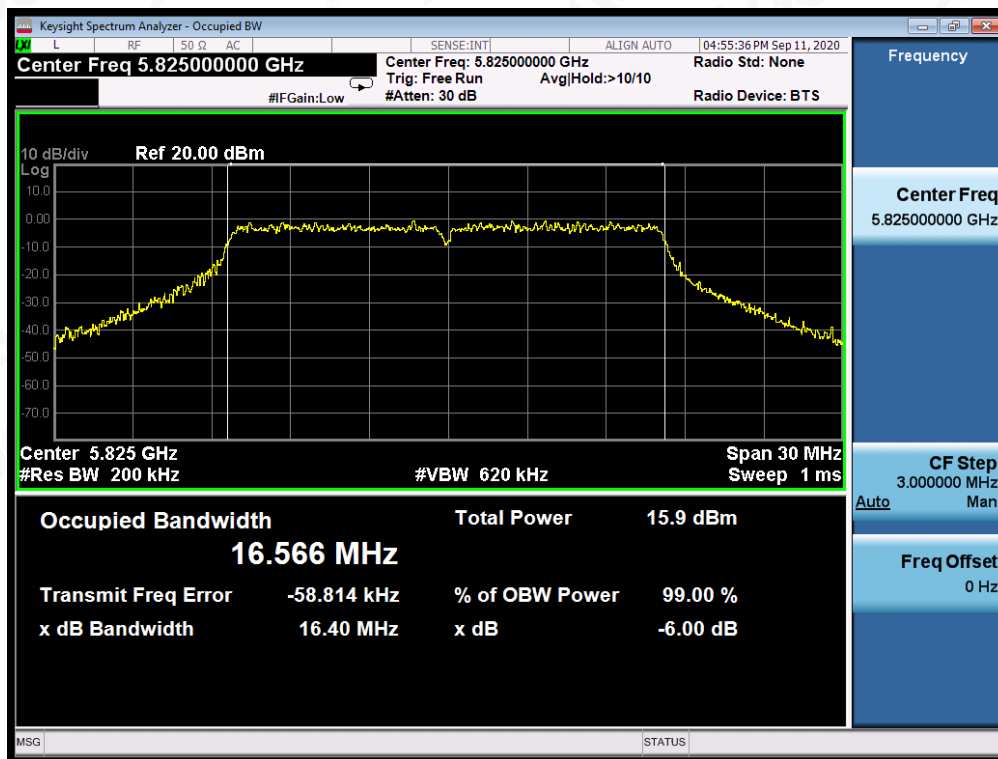
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TEST PLOT OF BANDWIDTH FOR 5825MHz (-6dB BANDWIDTH)



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



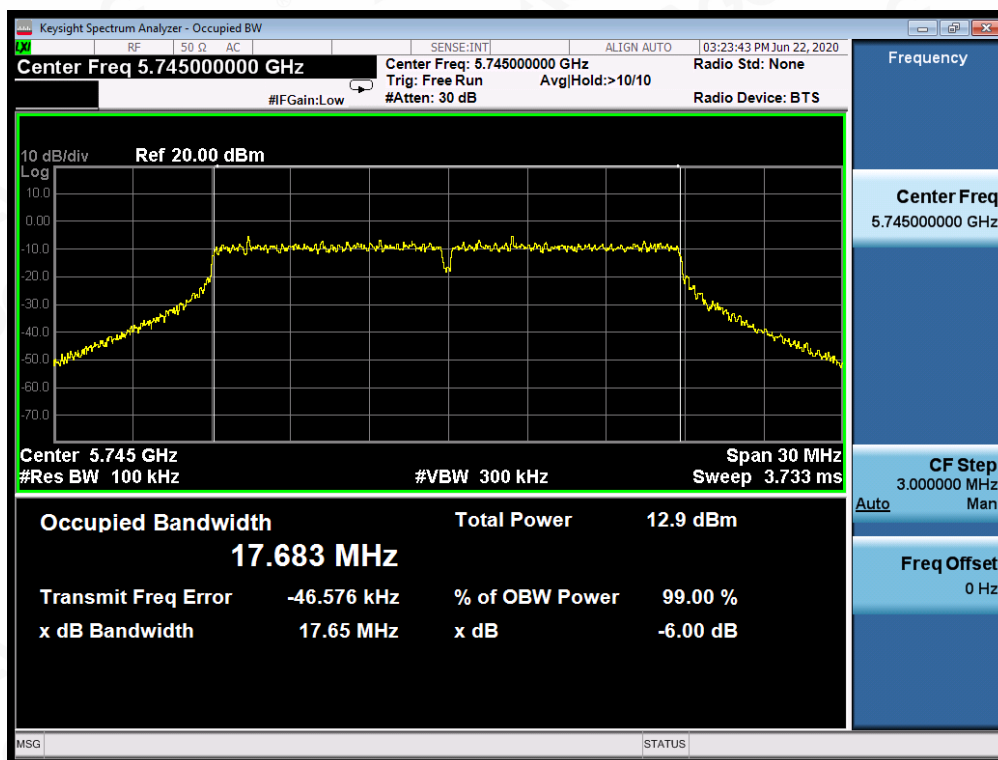
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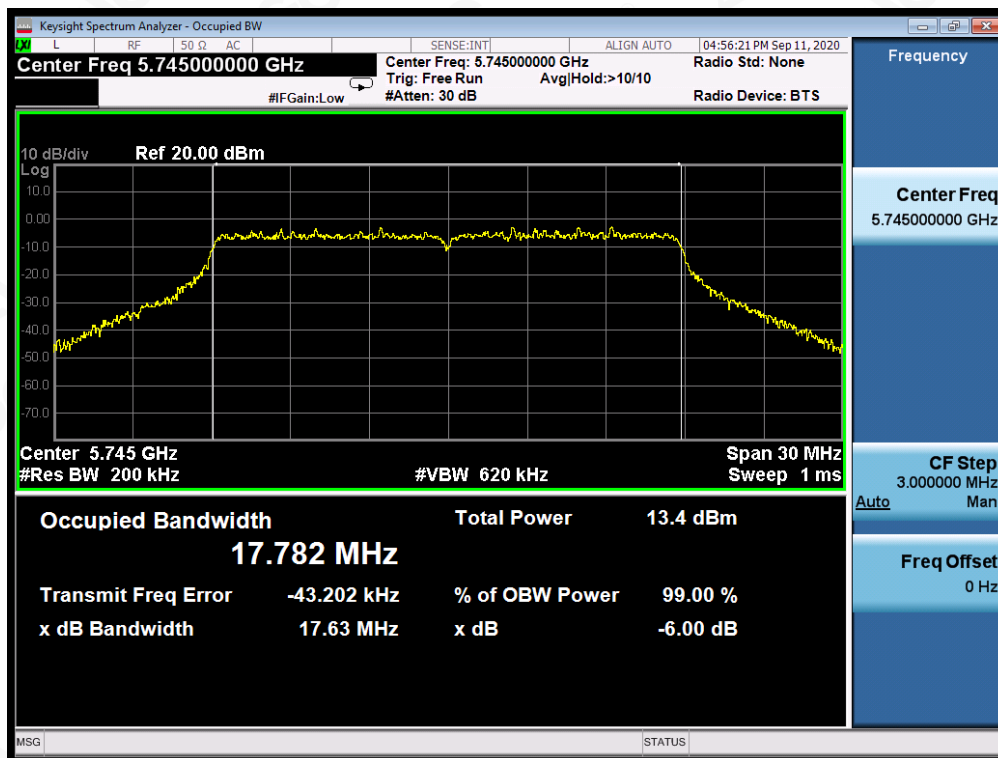


802.11n20 TEST RESULT

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



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

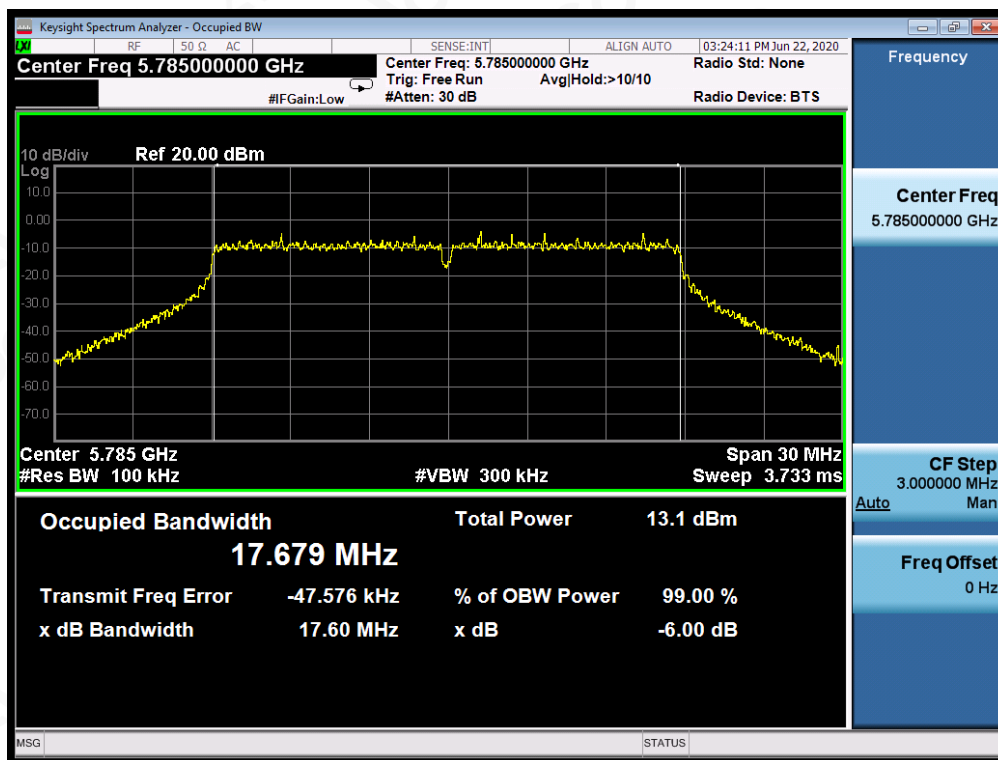


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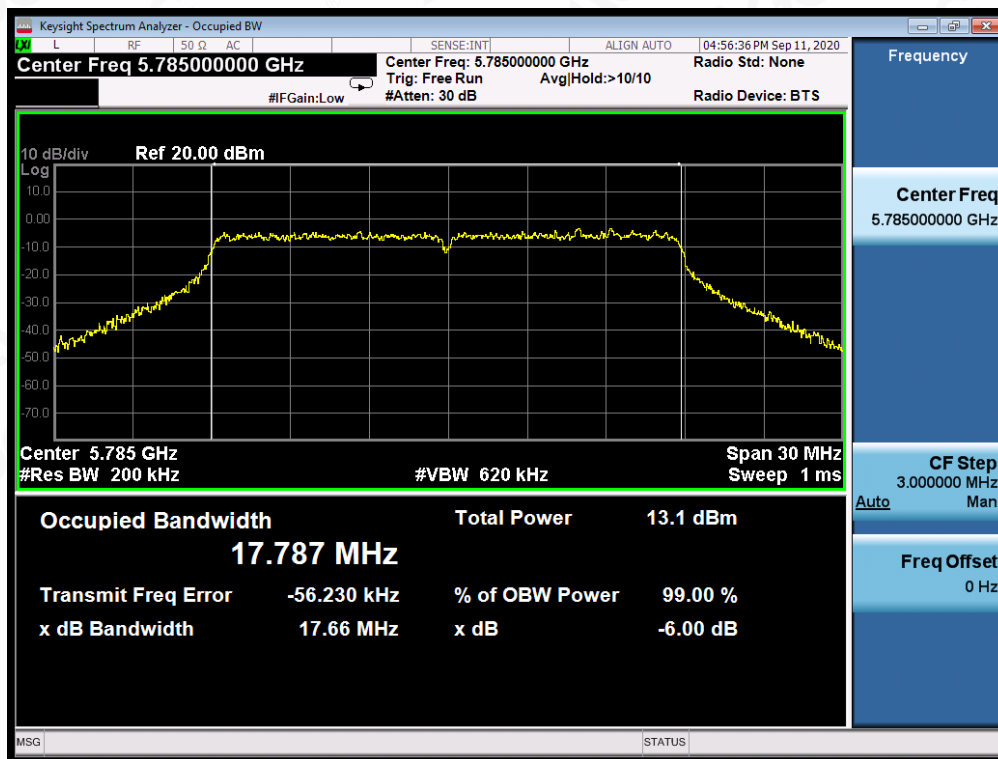
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TEST PLOT OF BANDWIDTH FOR 5785MHz (-6dB BANDWIDTH)



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



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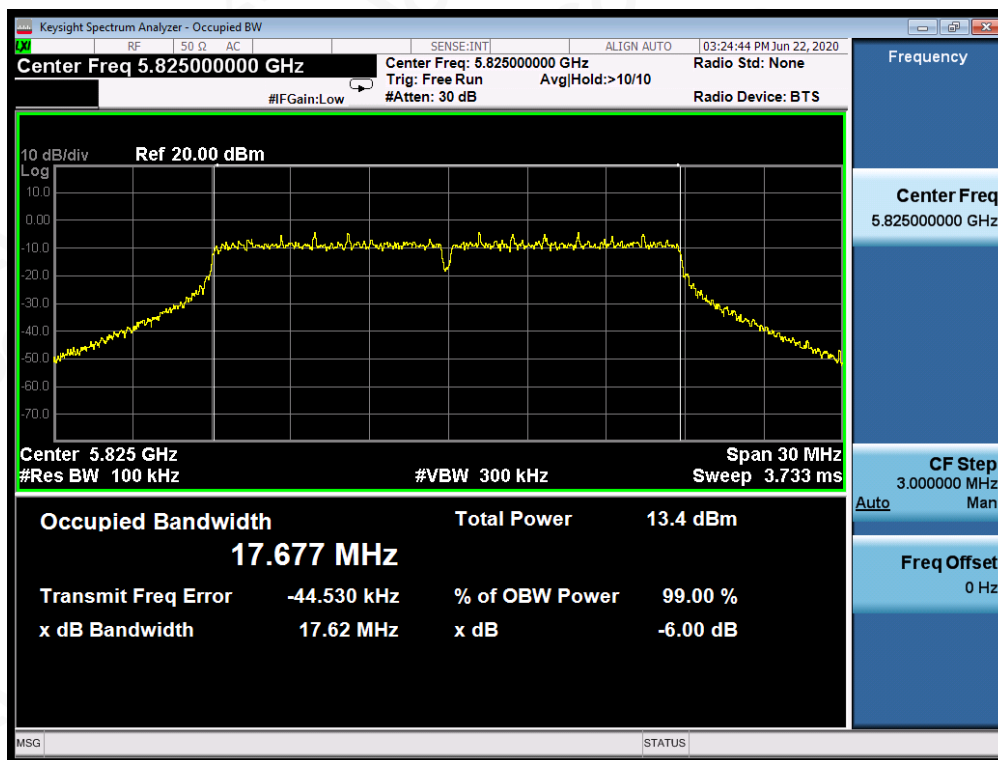
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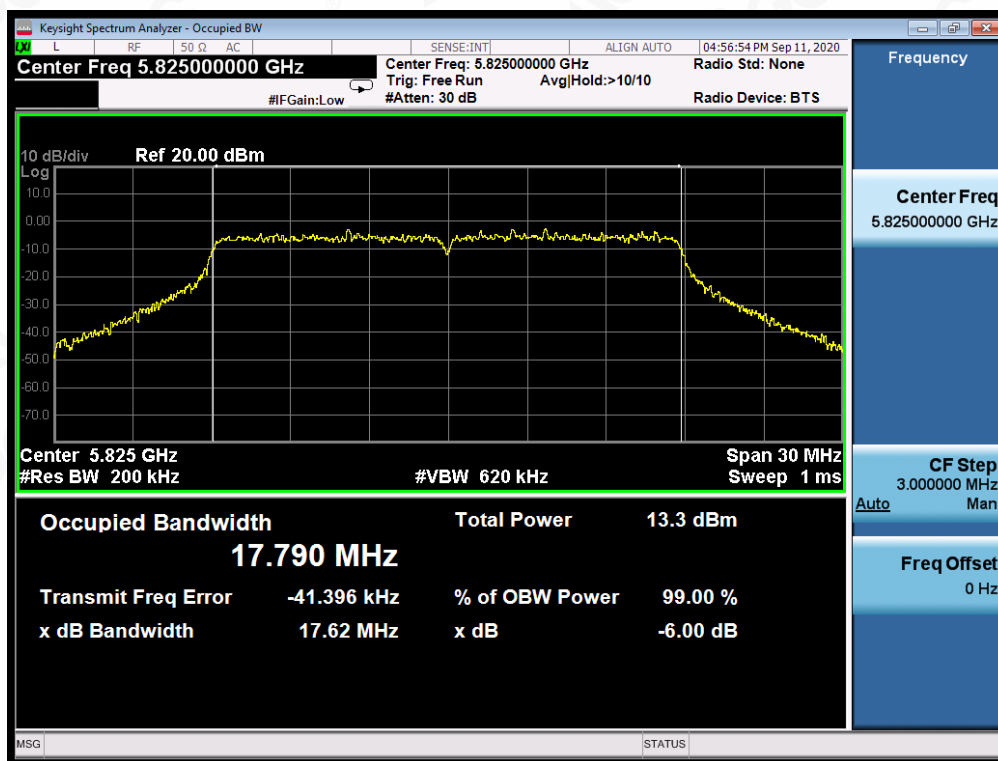
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TEST PLOT OF BANDWIDTH FOR 5825MHz (-6dB BANDWIDTH)



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



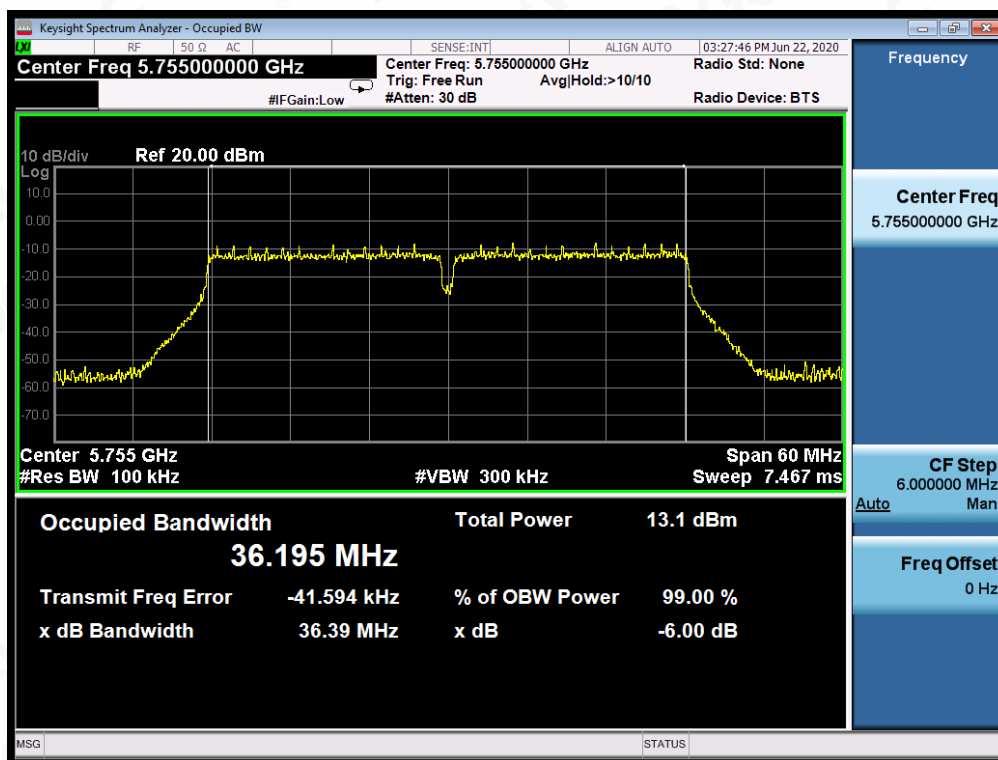
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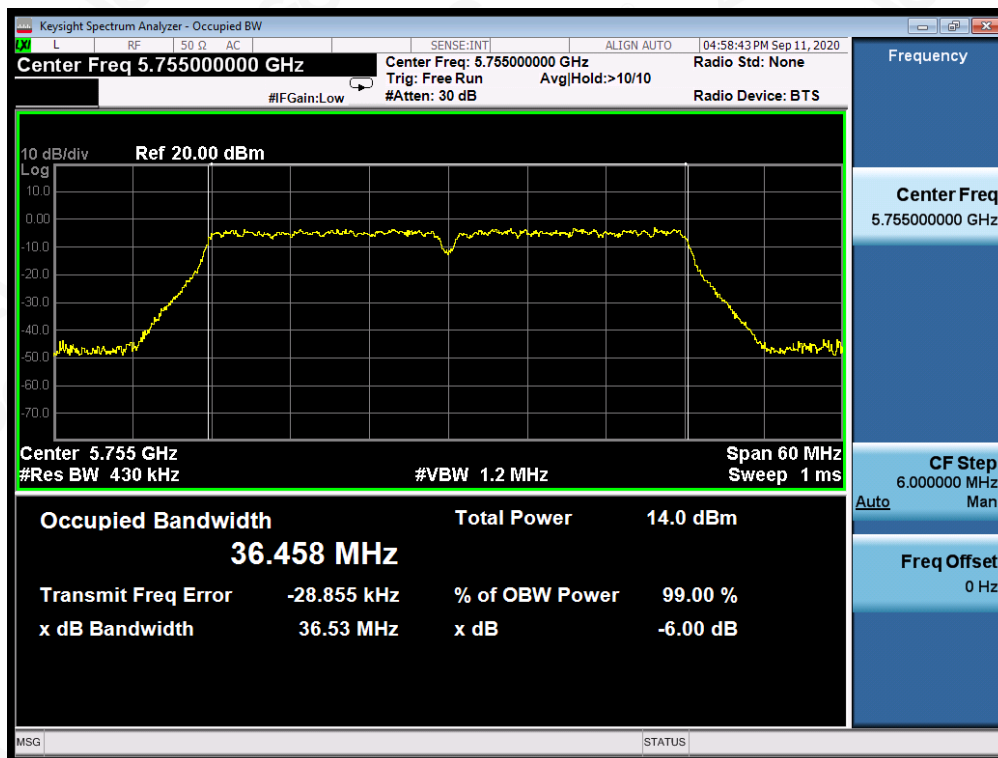


802.11n40 TEST RESULT

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



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



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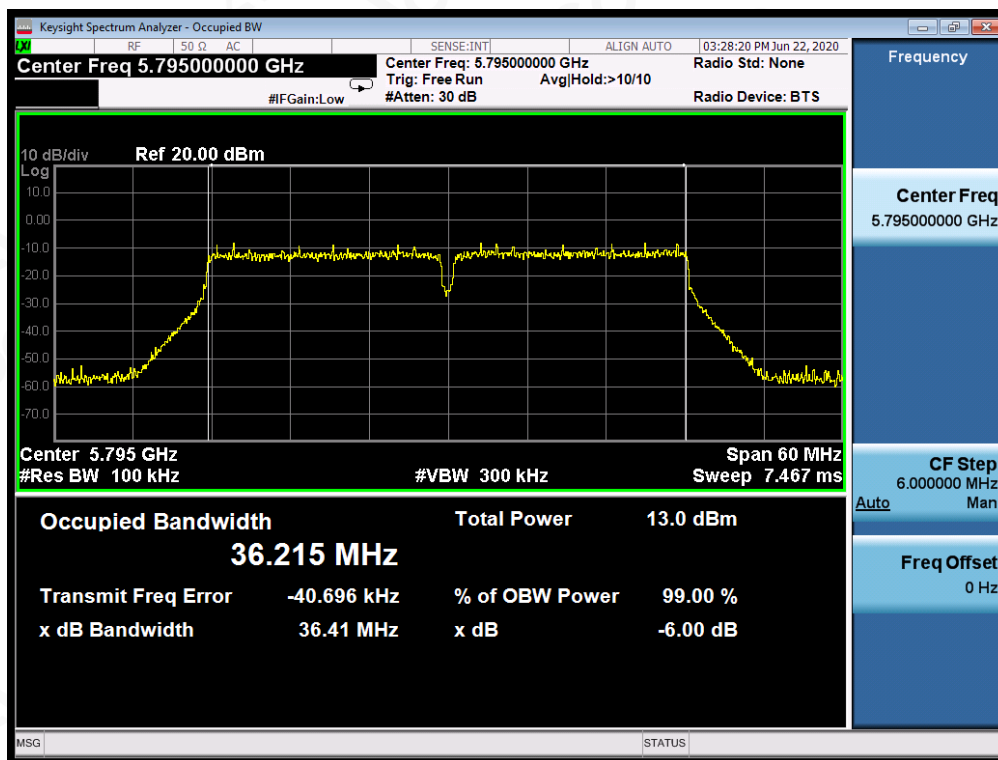
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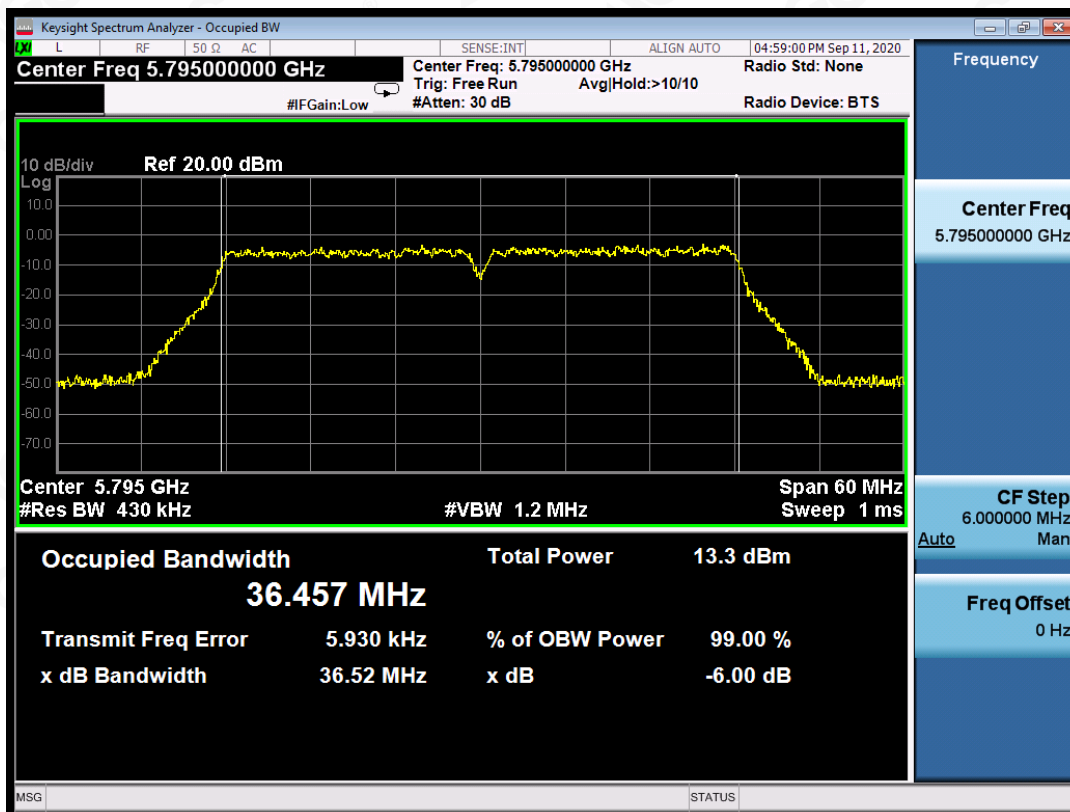
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TEST PLOT OF BANDWIDTH FOR 5795MHz (-6dB BANDWIDTH)



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



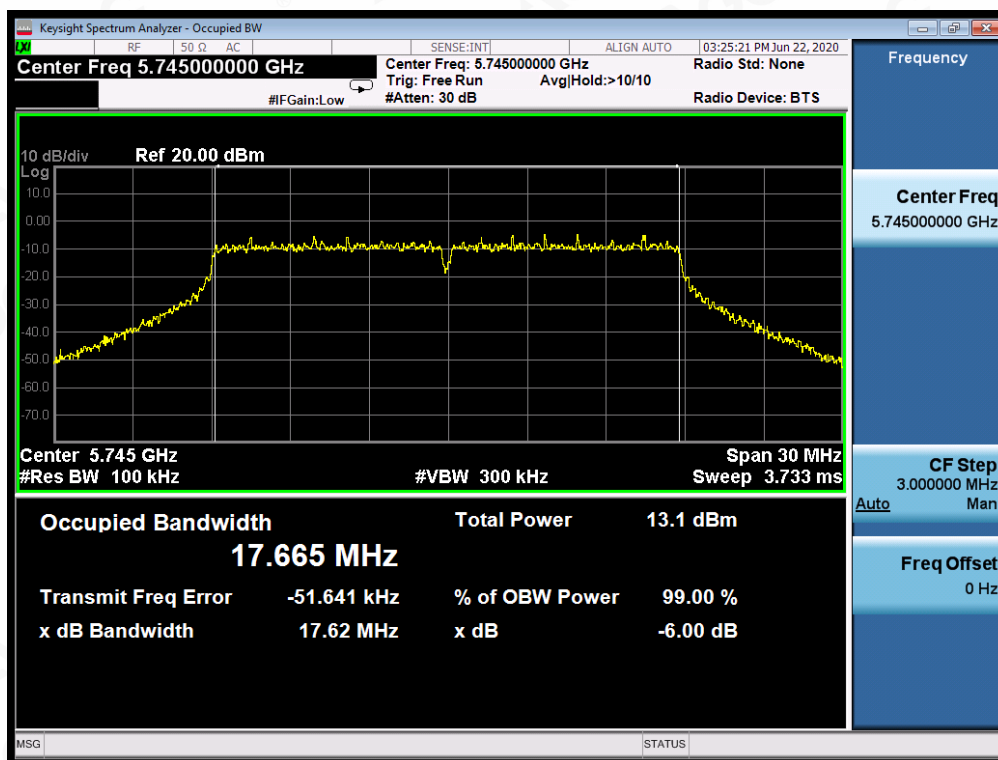
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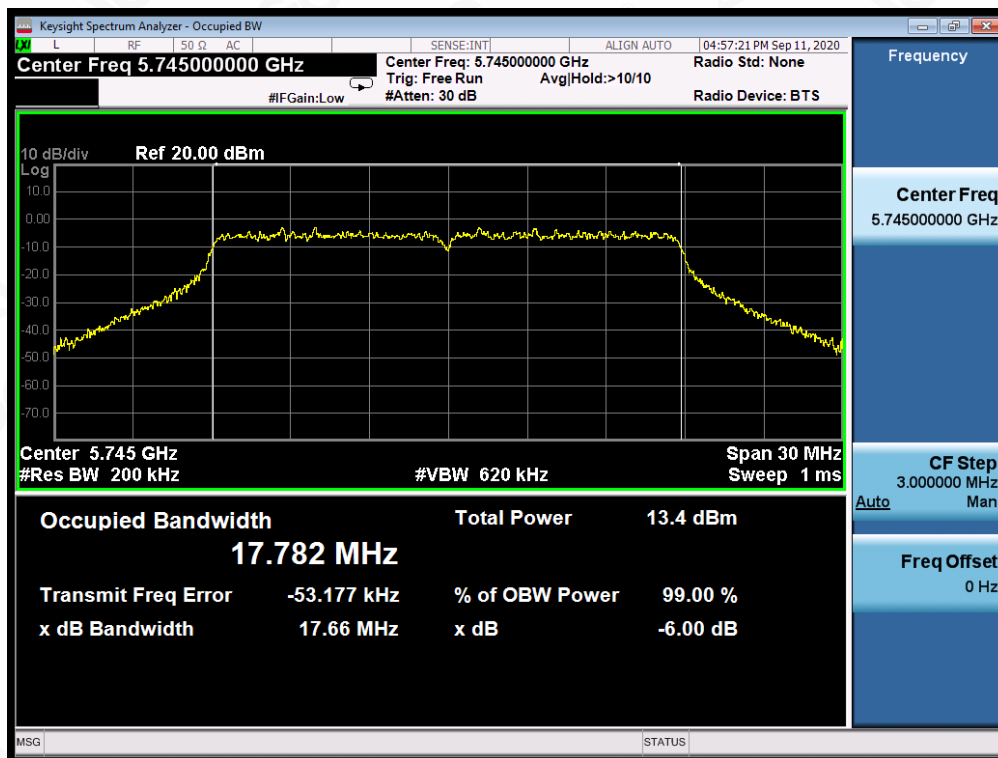


802.11ac20 TEST RESULT

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



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



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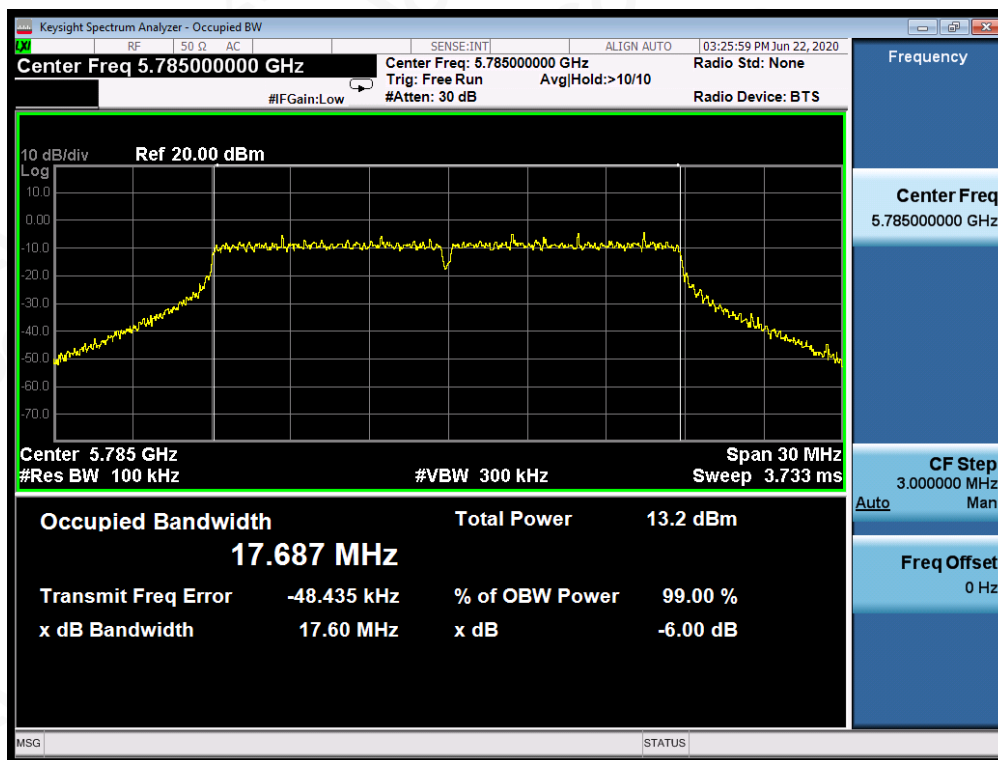
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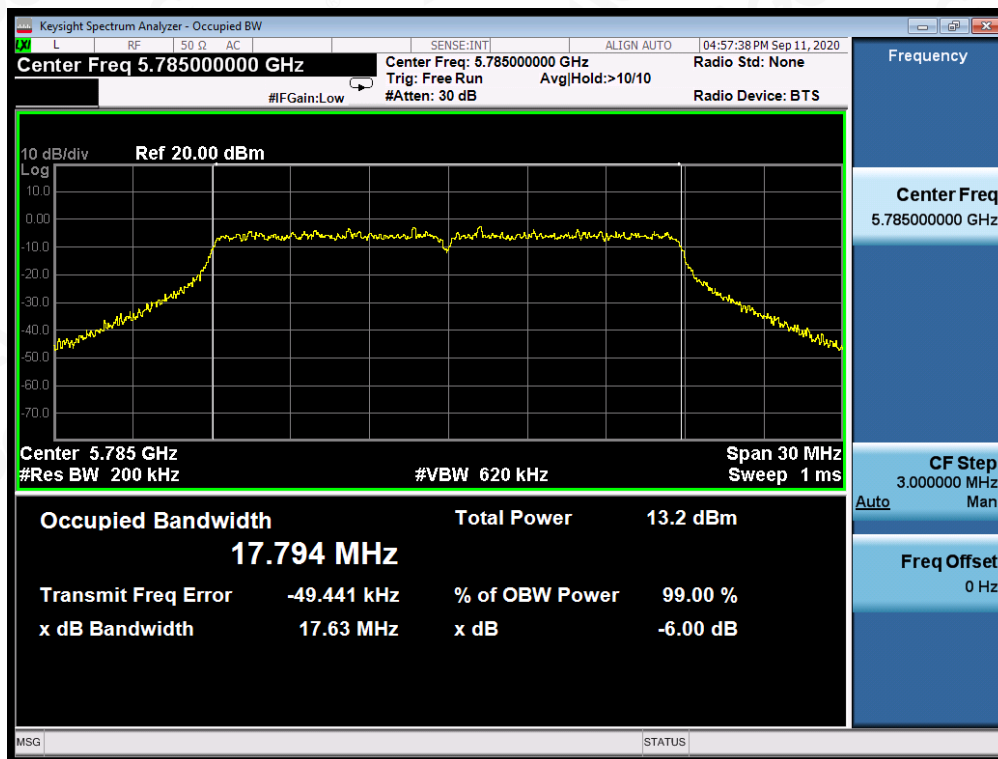
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TEST PLOT OF BANDWIDTH FOR 5785MHz (-6dB BANDWIDTH)



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

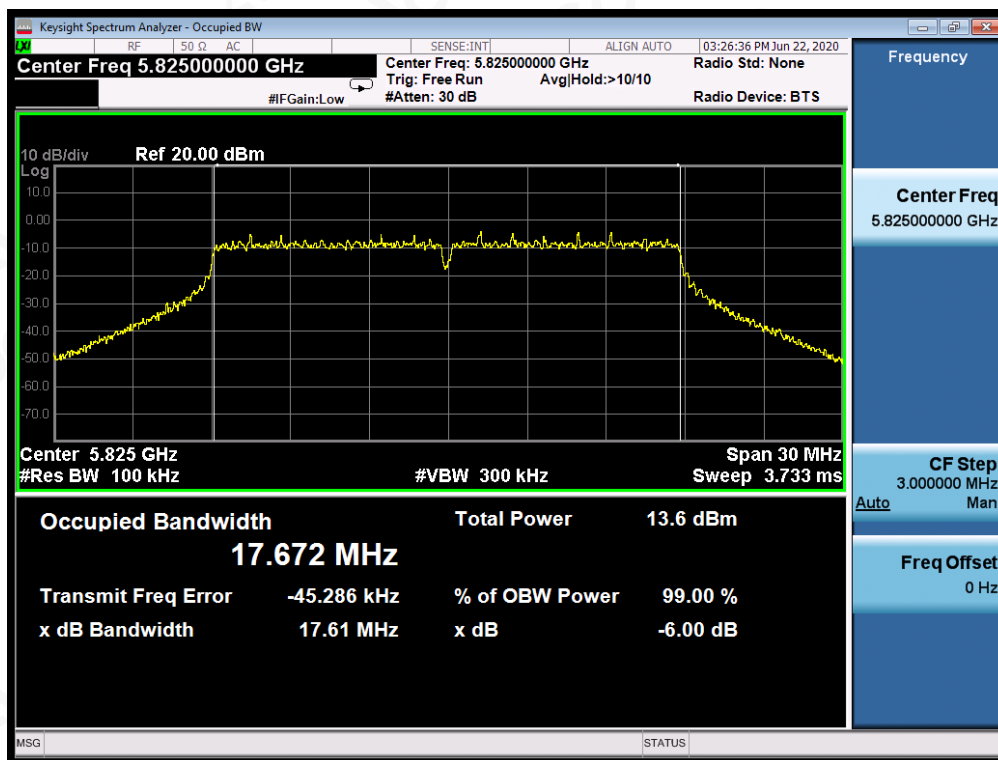


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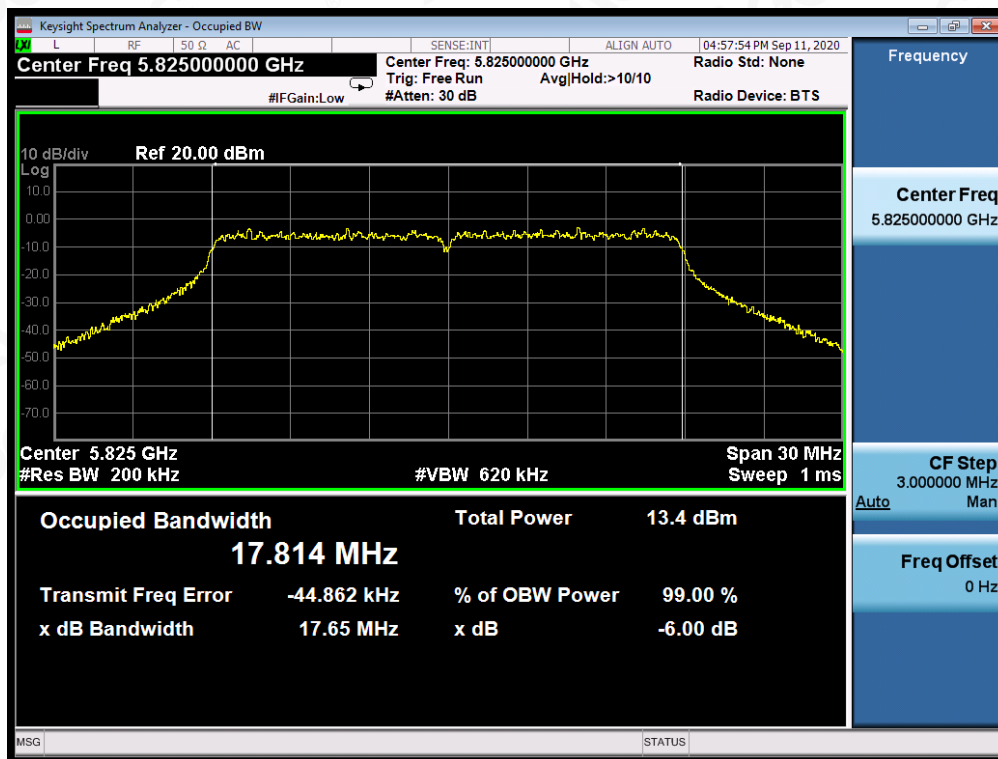
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TEST PLOT OF BANDWIDTH FOR 5825MHz (-6dB BANDWIDTH)



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



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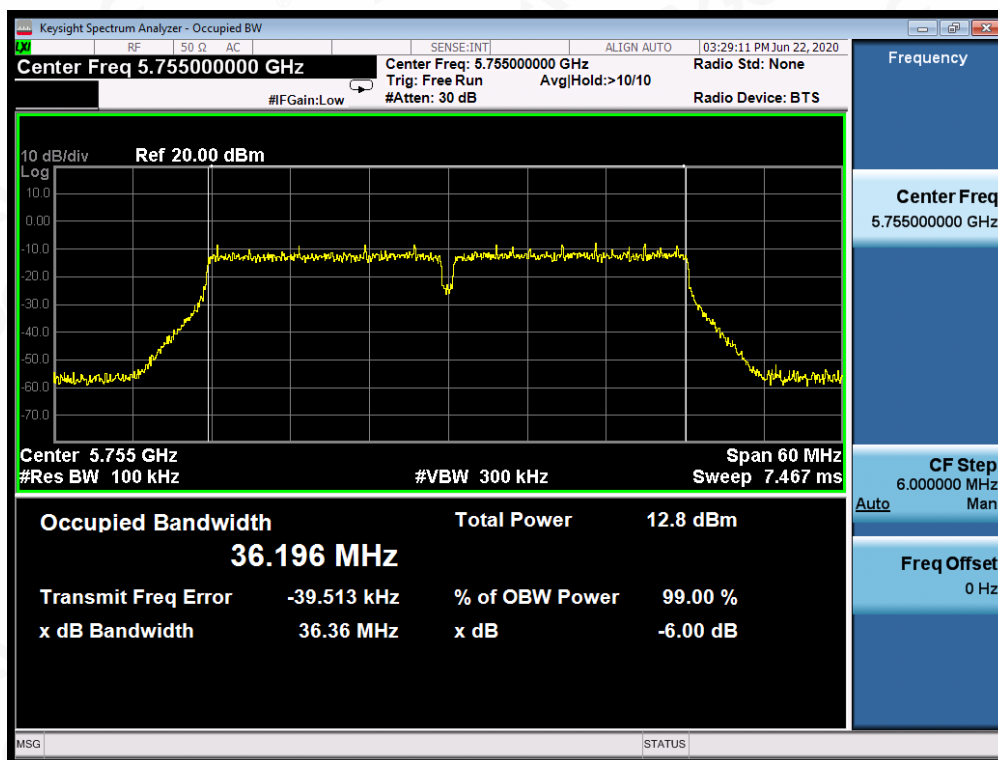
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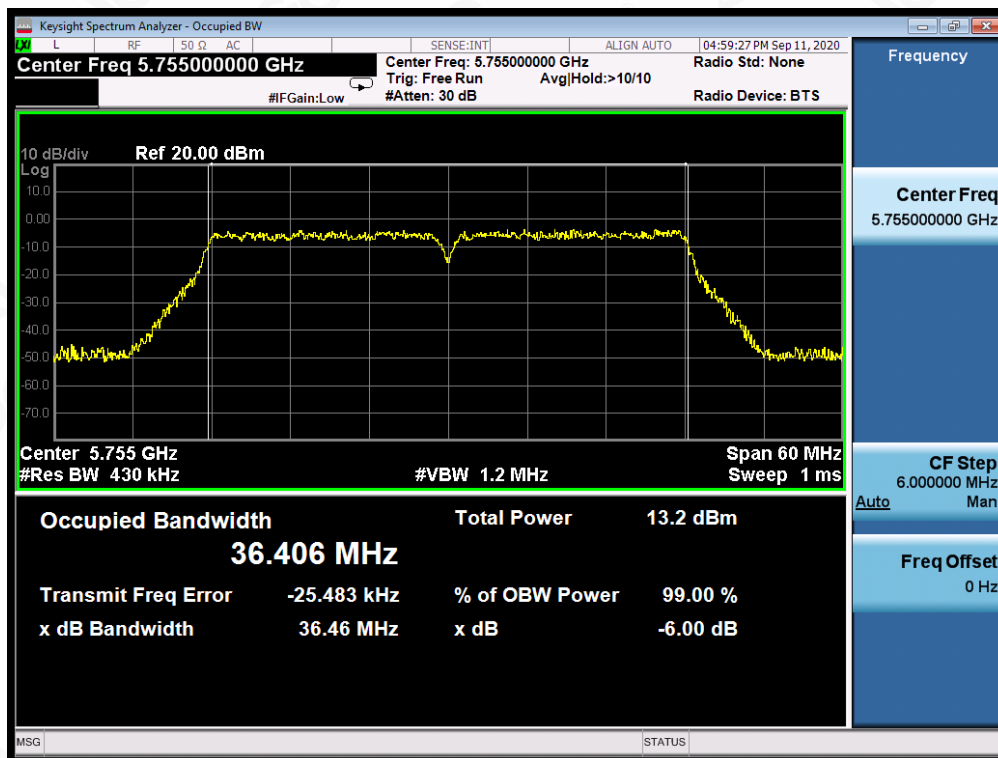


802.11ac40 TEST RESULT

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



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



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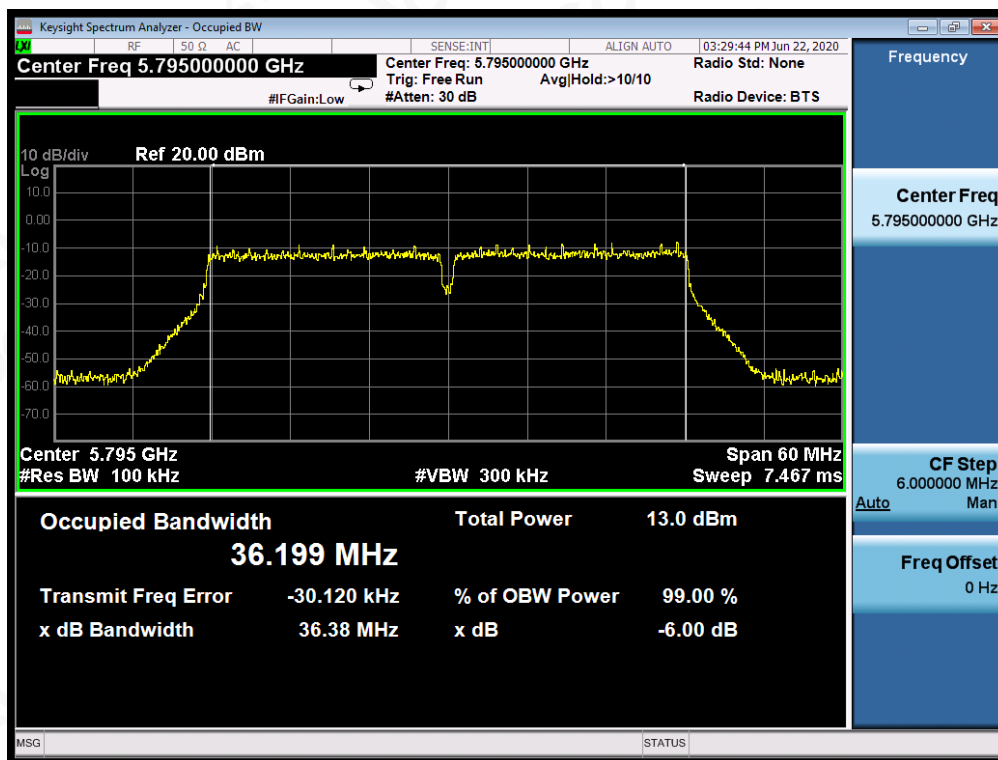
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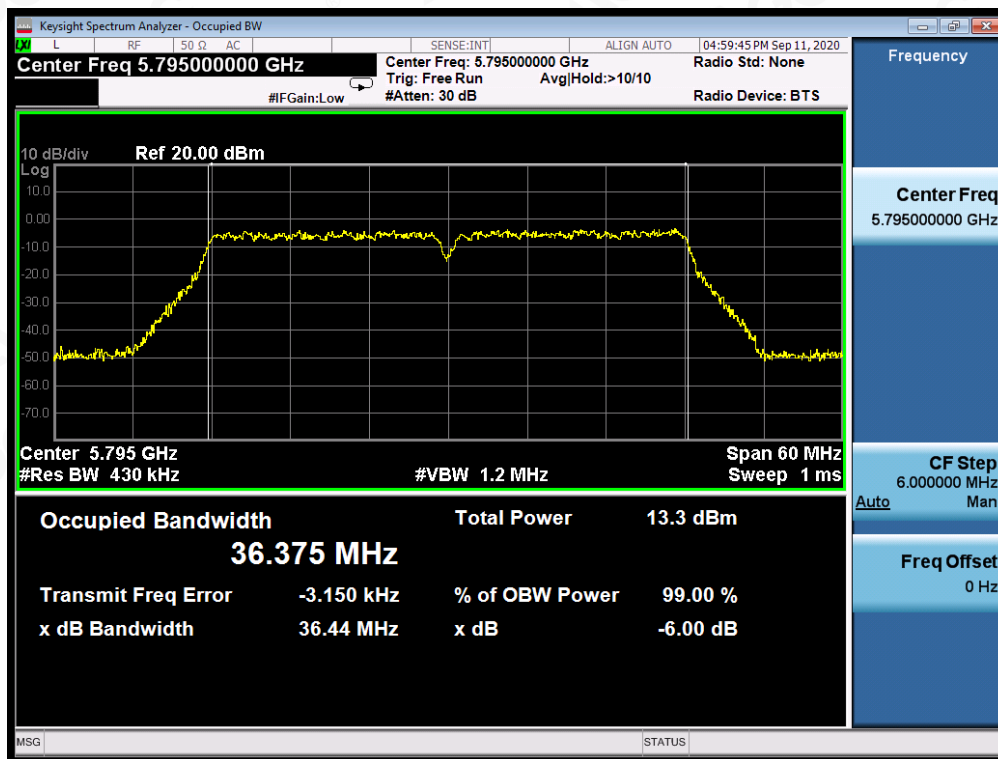
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TEST PLOT OF BANDWIDTH FOR 5795MHz (-6dB BANDWIDTH)



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



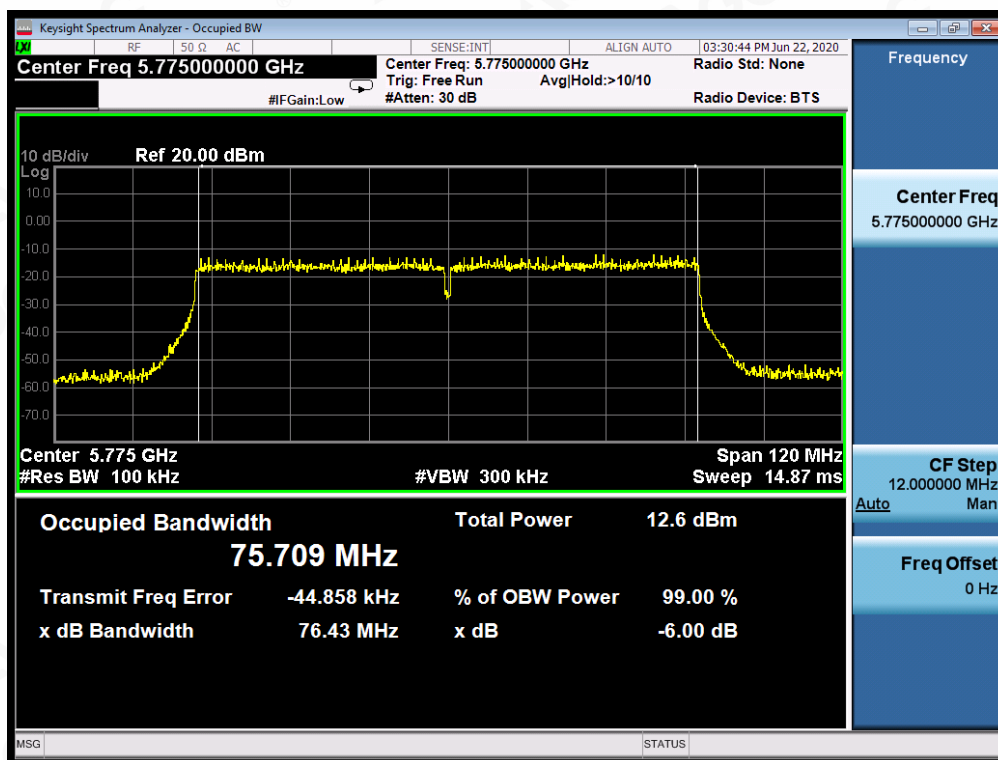
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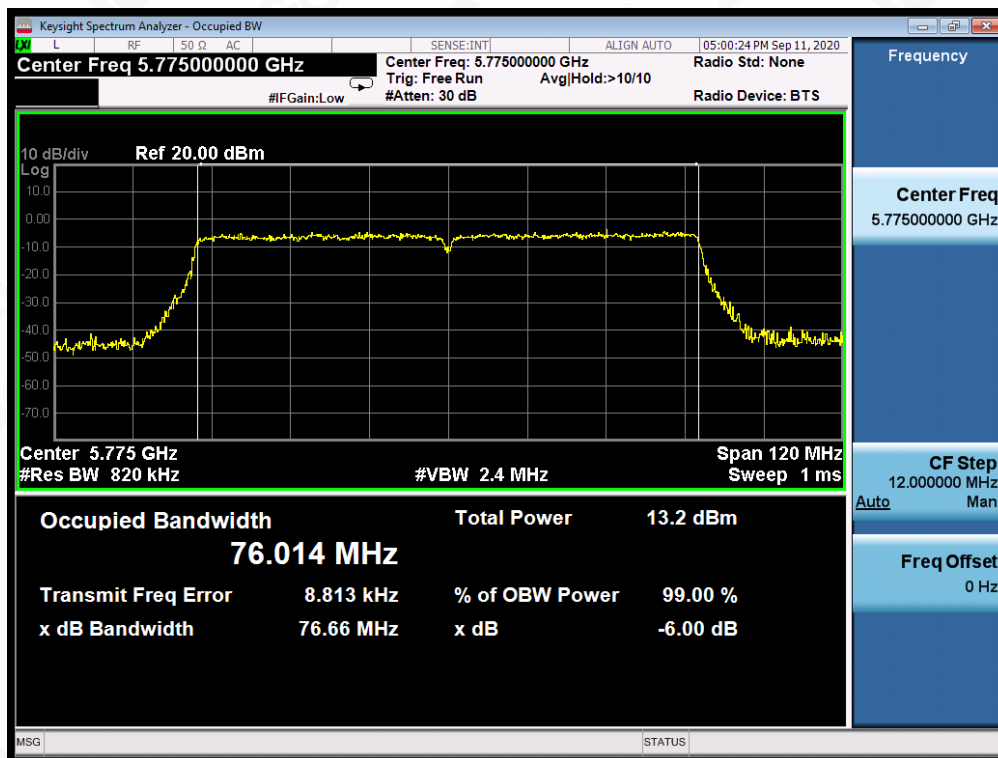


802.11ac80 TEST RESULT

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



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



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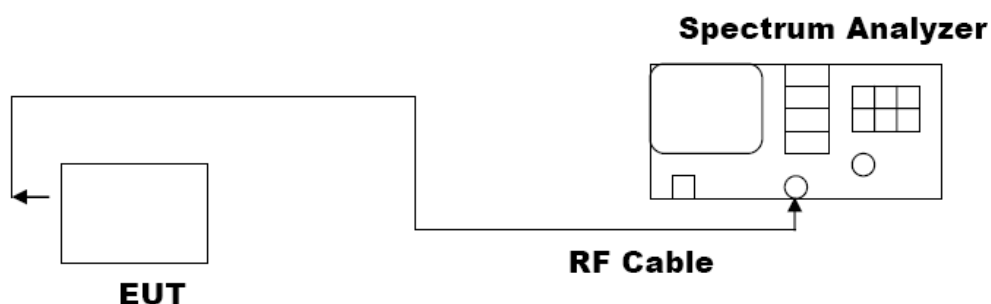
9. EMISSION BANDWIDTH

9.1. MEASUREMENT PROCEDURE

- 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%.

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	20.86	16.580	PASS
	5200MHz	23.69	16.595	PASS
	5240MHz	23.74	16.541	PASS
	5260MHz	19.65	16.499	PASS
	5300MHz	21.51	16.592	PASS
	5320MHz	21.58	16.589	PASS
	5500MHz	20.64	16.552	PASS
	5600MHz	20.74	16.514	PASS
	5700MHz	20.79	16.549	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11N20 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5180MHz	21.74	17.783	PASS
	5200MHz	21.61	17.796	PASS
	5240MHz	21.50	17.796	PASS
	5260MHz	21.83	17.775	PASS
	5300MHz	21.76	17.781	PASS
	5320MHz	21.68	17.790	PASS
	5500MHz	21.80	17.777	PASS
	5600MHz	21.68	17.792	PASS
	5700MHz	21.60	17.784	PASS

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LIMITS AND MEASUREMENT RESULT FOR 802.11N40 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5190MHz	42.03	36.424	PASS
	5230MHz	41.95	36.384	PASS
	5270MHz	41.56	36.436	PASS
	5310MHz	41.91	36.402	PASS
	5510MHz	41.81	36.404	PASS
	5590MHz	41.66	36.375	PASS
	5670MHz	41.68	36.390	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC20 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5180MHz	21.53	17.774	PASS
	5200MHz	21.64	17.793	PASS
	5240MHz	21.68	17.793	PASS
	5260MHz	21.58	17.792	PASS
	5300MHz	21.68	17.815	PASS
	5320MHz	21.86	17.777	PASS
	5500MHz	21.66	17.788	PASS
	5600MHz	21.47	17.809	PASS
	5700MHz	21.84	17.773	PASS

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LIMITS AND MEASUREMENT RESULT FOR 802.11AC40 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5190MHz	41.77	36.373	PASS
	5230MHz	41.50	36.404	PASS
	5270MHz	41.42	36.369	PASS
	5310MHz	41.99	36.365	PASS
	5510MHz	41.73	36.374	PASS
	5590MHz	41.85	36.375	PASS
	5670MHz	41.95	36.358	PASS

LIMITS AND MEASUREMENT RESULT FOR 802.11AC80 MODULATION				
Applicable Limits	Applicable Limits			
	Test Data (MHz)			Criteria
	Frequency (MHz)	-26dB Bandwidth	99.00% Occupied Bandwidth	
Within the Band	5210MHz	80.87	76.121	PASS
	5290MHz	80.89	76.067	PASS
	5530MHz	80.87	76.080	PASS
	5610MHz	80.72	76.048	PASS

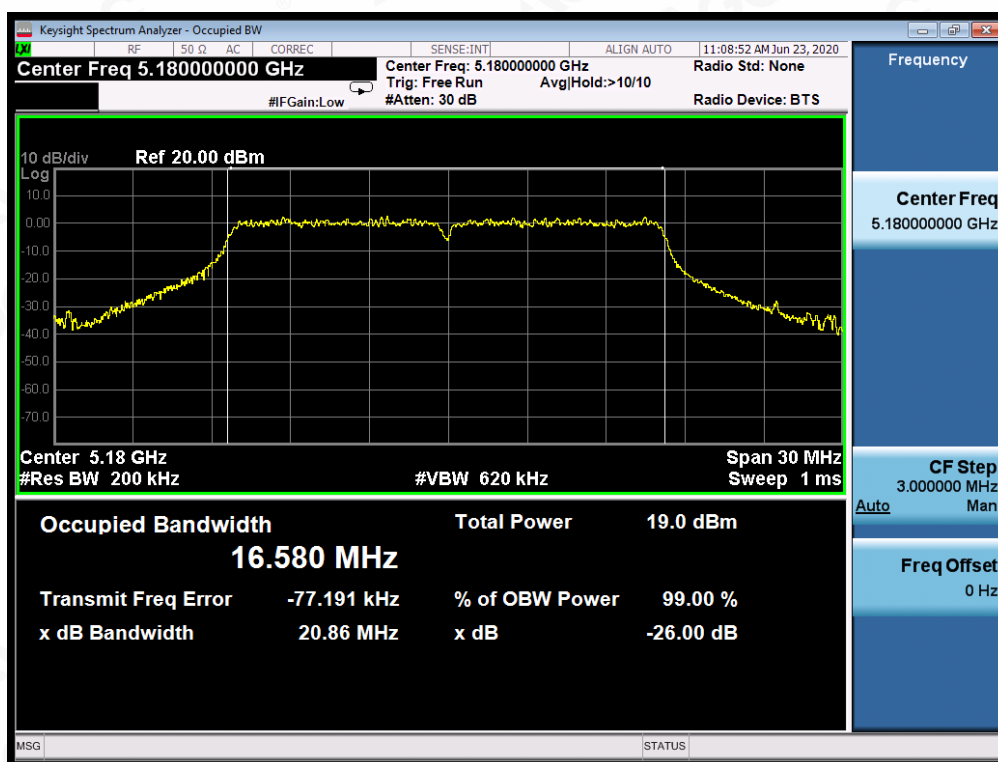
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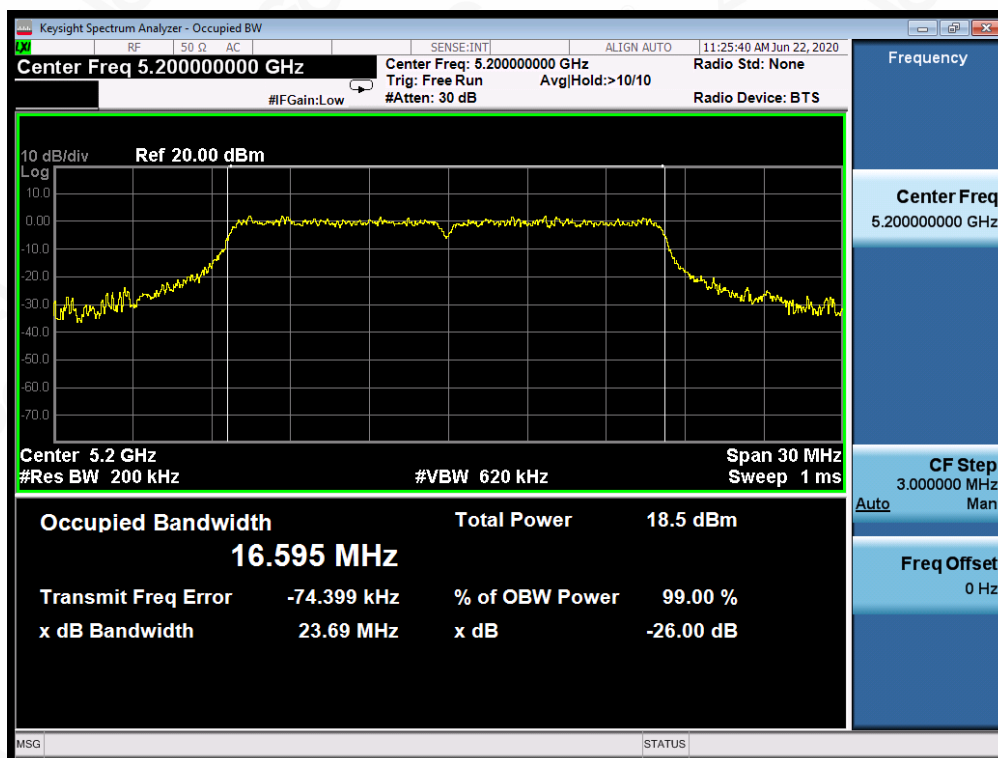


802.11a20 TEST RESULT

TEST PLOT OF BANDWIDTH FOR 5180MHz



TEST PLOT OF BANDWIDTH FOR 5200MHz

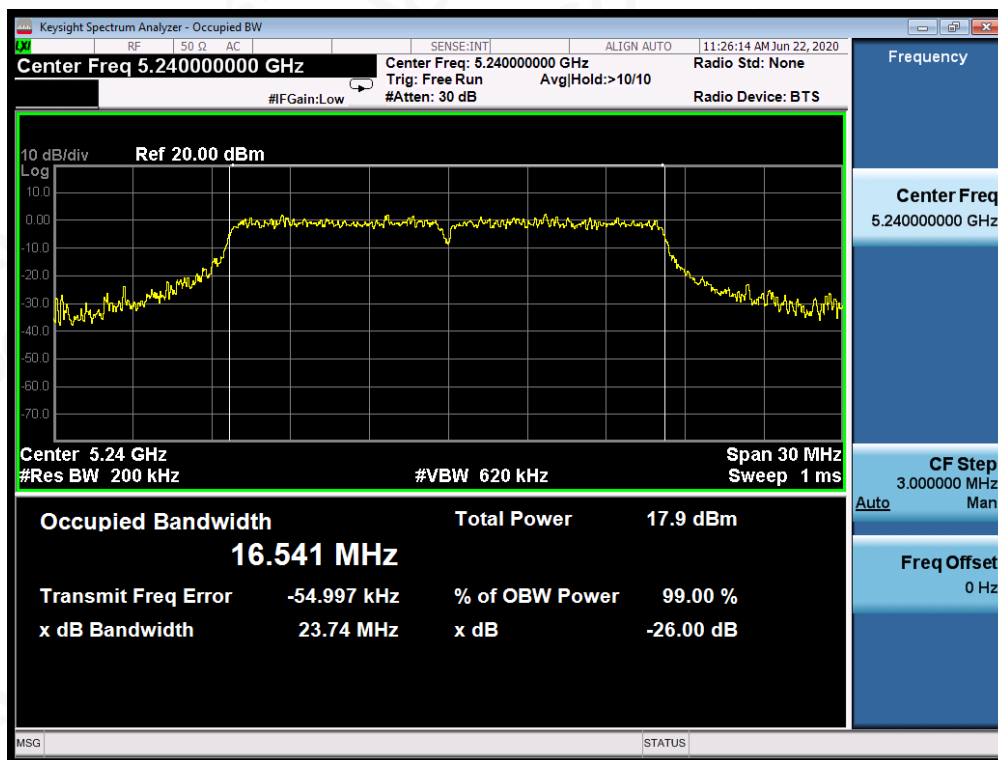


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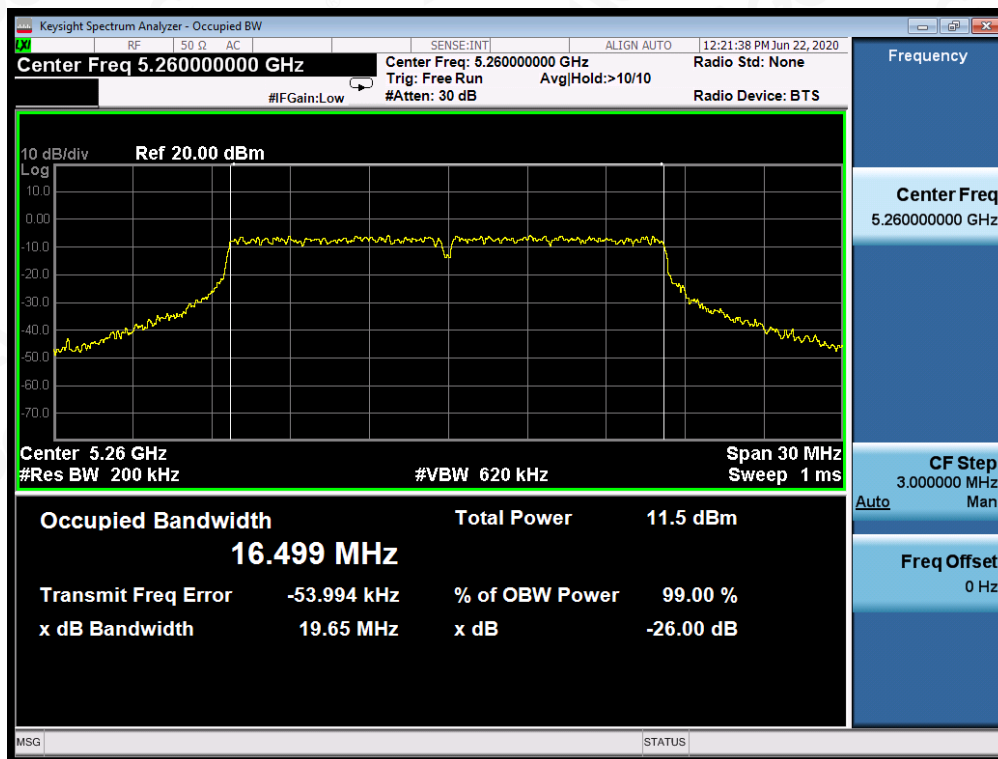
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TEST PLOT OF BANDWIDTH FOR 5240MHz



TEST PLOT OF BANDWIDTH FOR 5260MHz

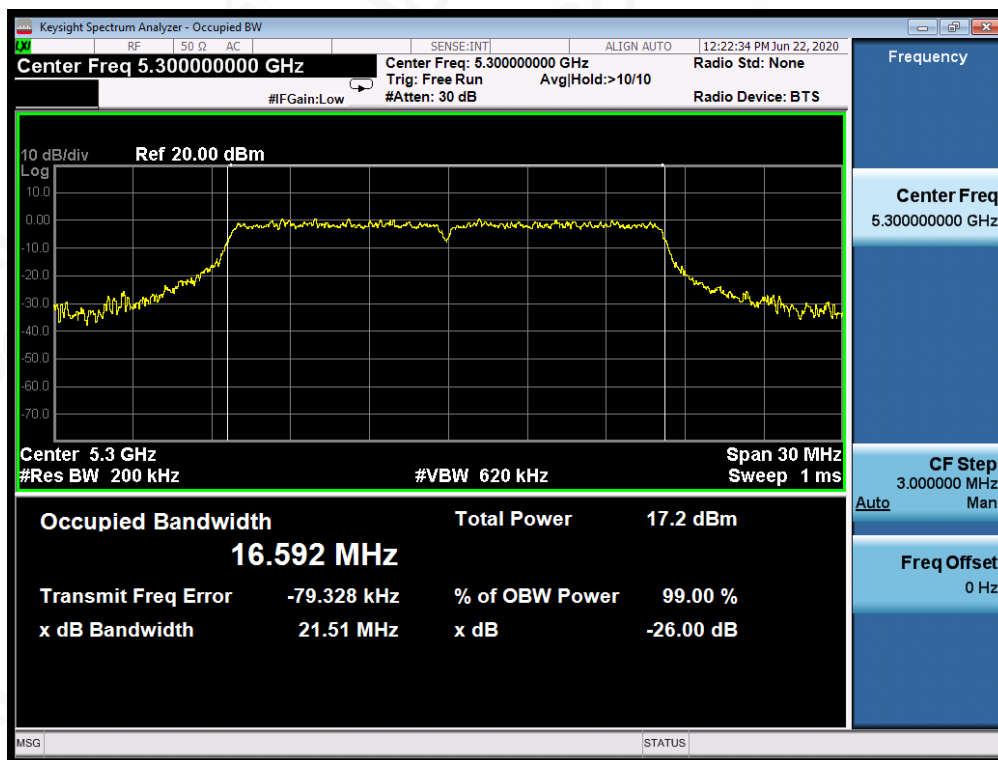


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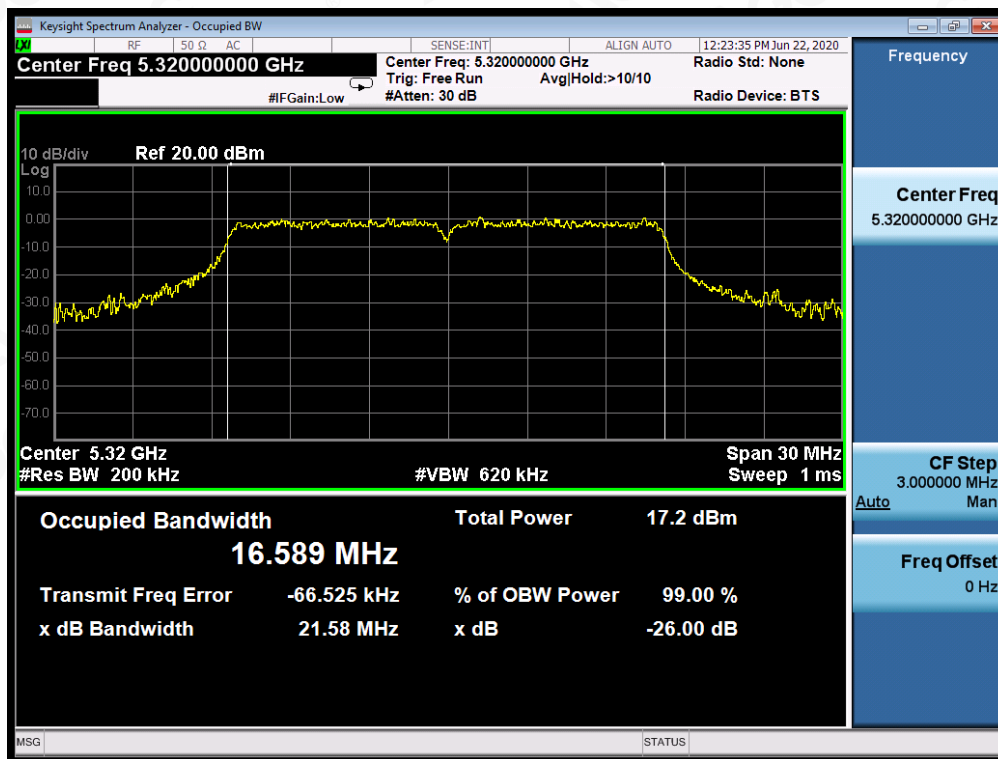
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TEST PLOT OF BANDWIDTH FOR 5300MHz



TEST PLOT OF BANDWIDTH FOR 5320MHz

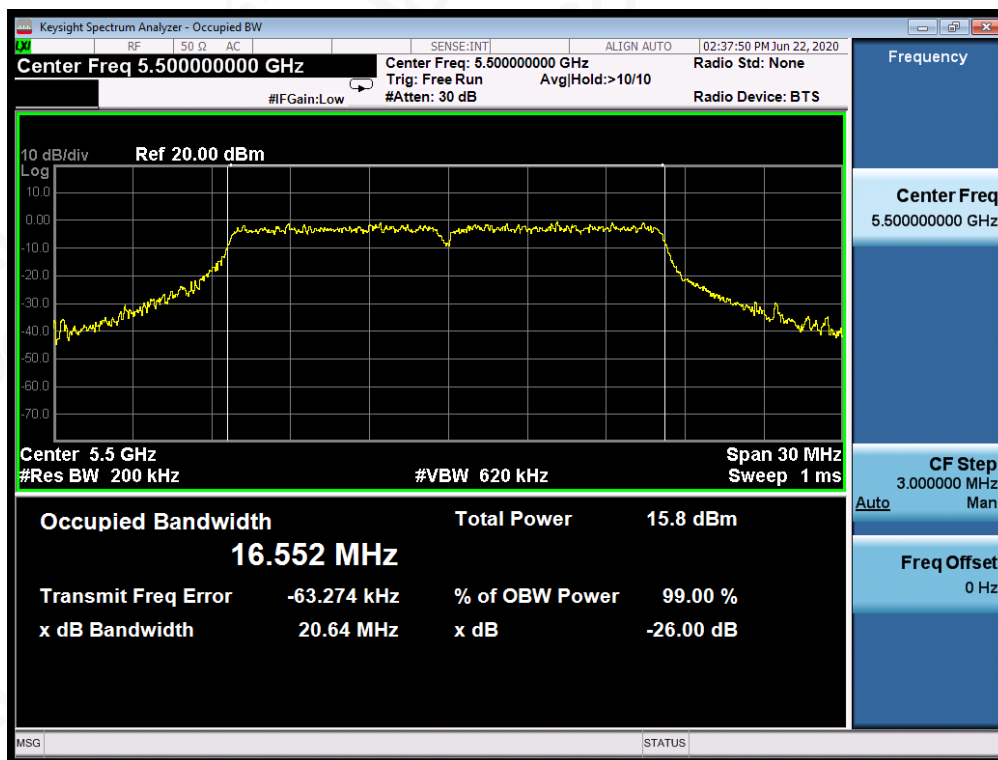


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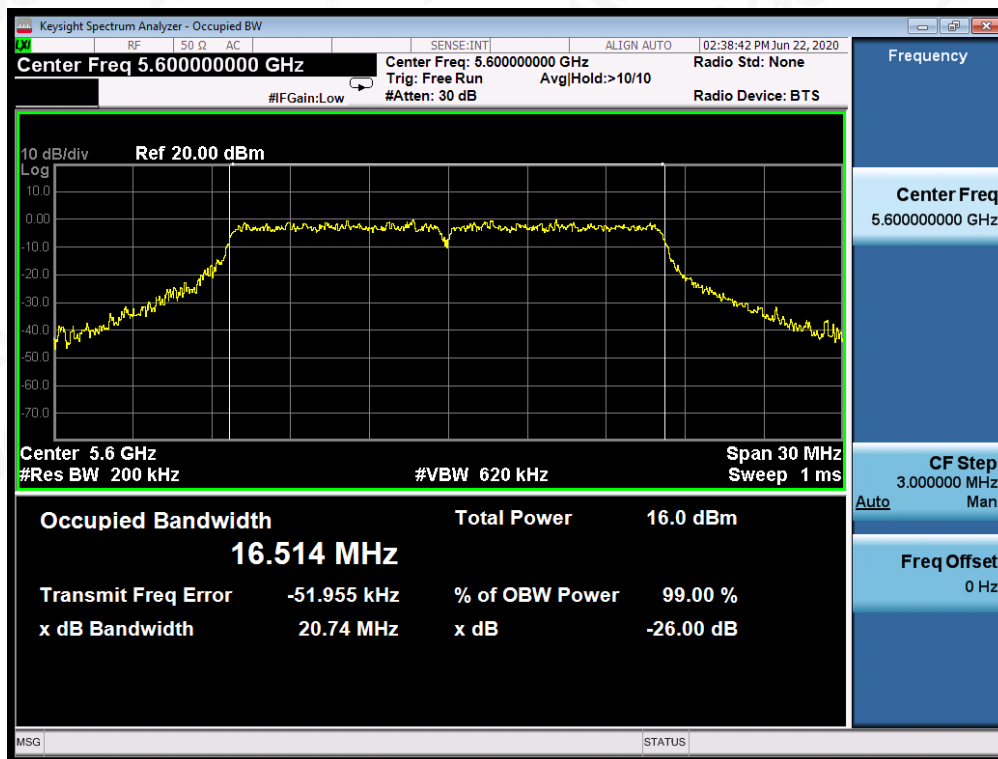
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TEST PLOT OF BANDWIDTH FOR 5500MHz



TEST PLOT OF BANDWIDTH FOR 5600MHz

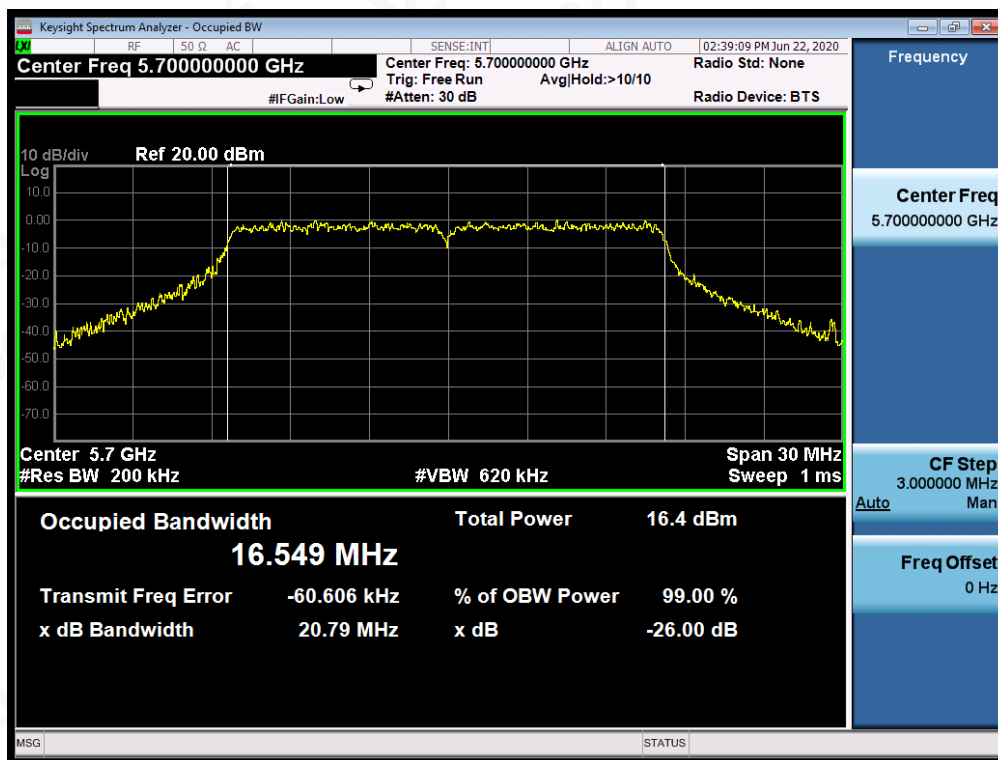


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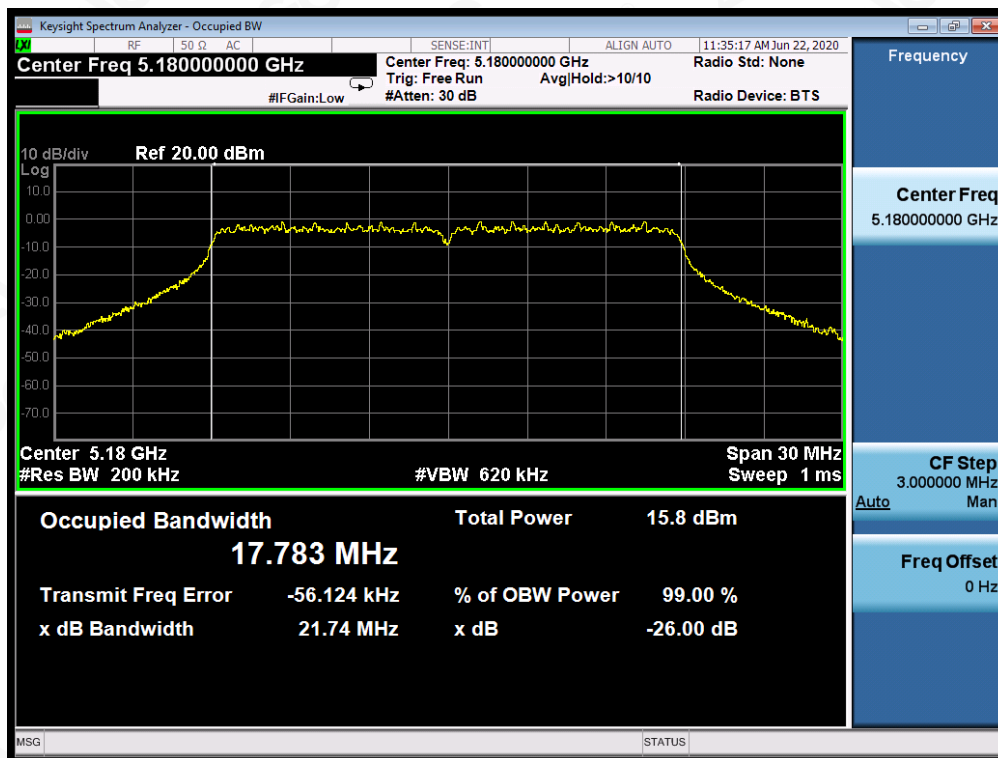


TEST PLOT OF BANDWIDTH FOR 5700MHz



802.11n20 TEST RESULT

TEST PLOT OF BANDWIDTH FOR 5180MHz



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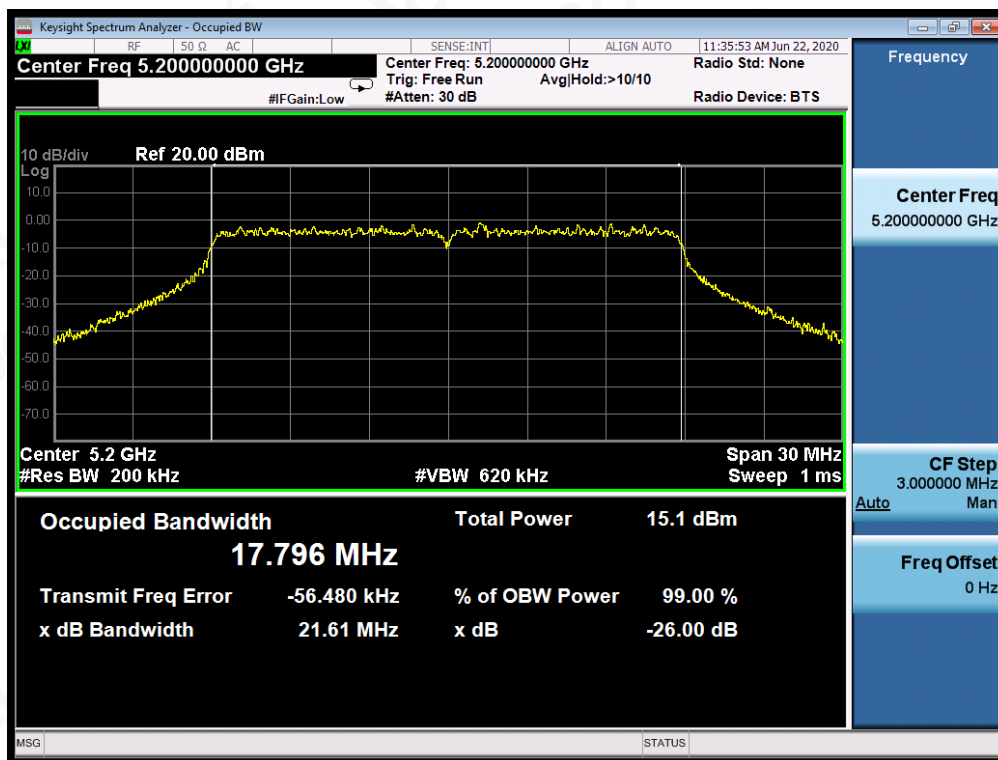
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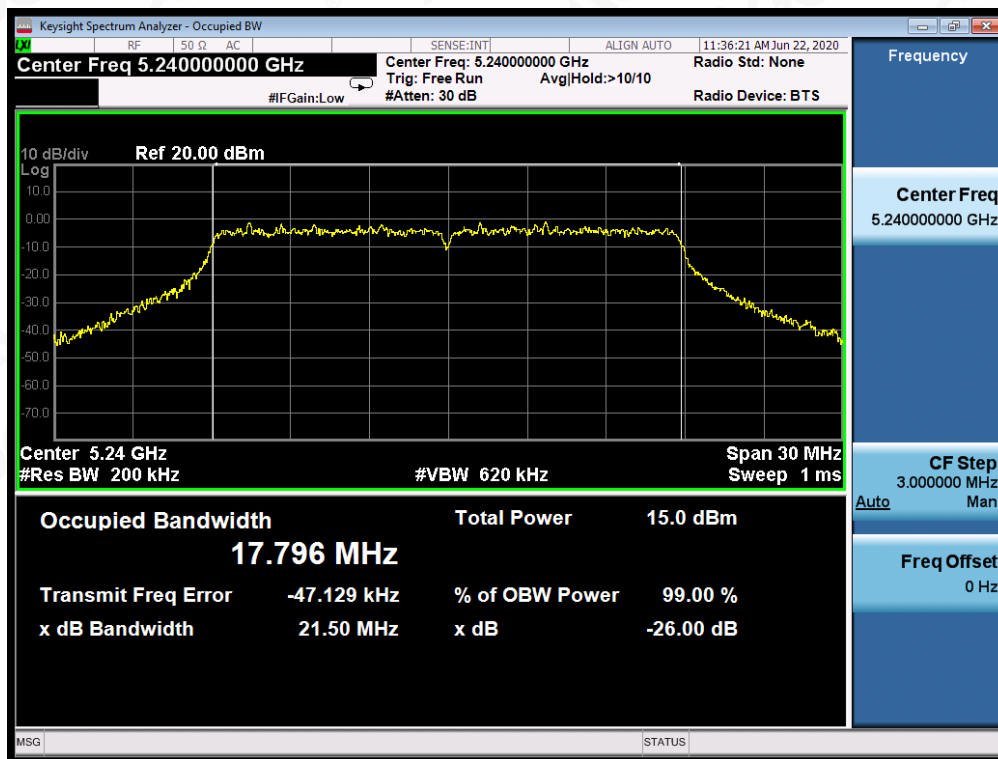
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TEST PLOT OF BANDWIDTH FOR 5200MHz



TEST PLOT OF BANDWIDTH FOR 5240MHz

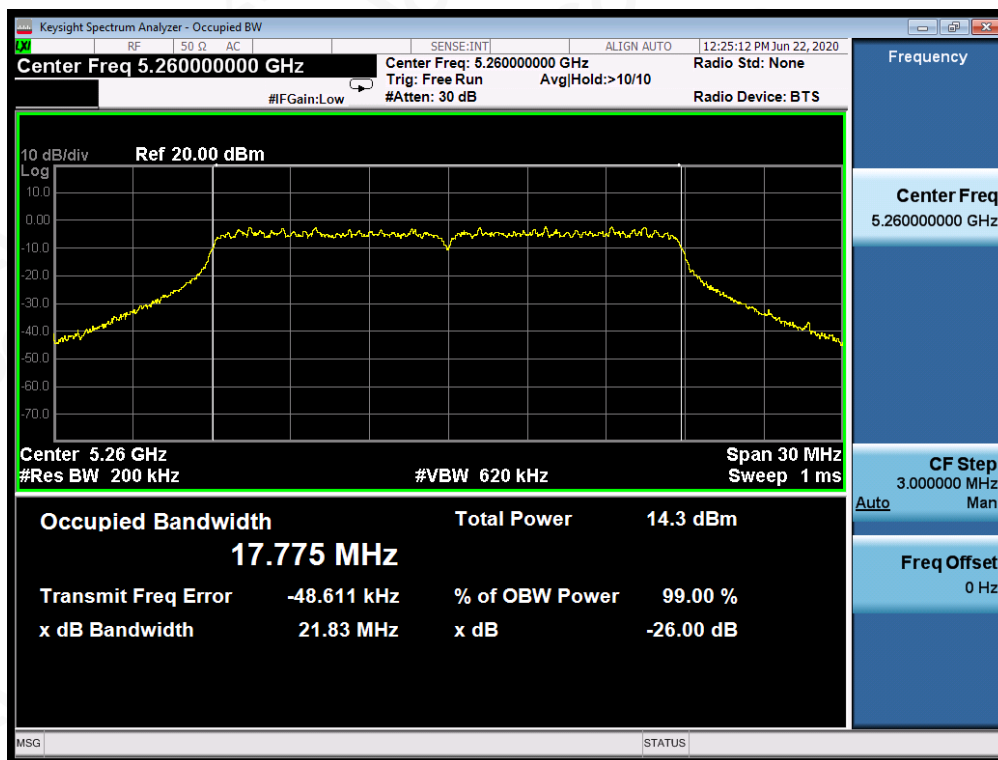


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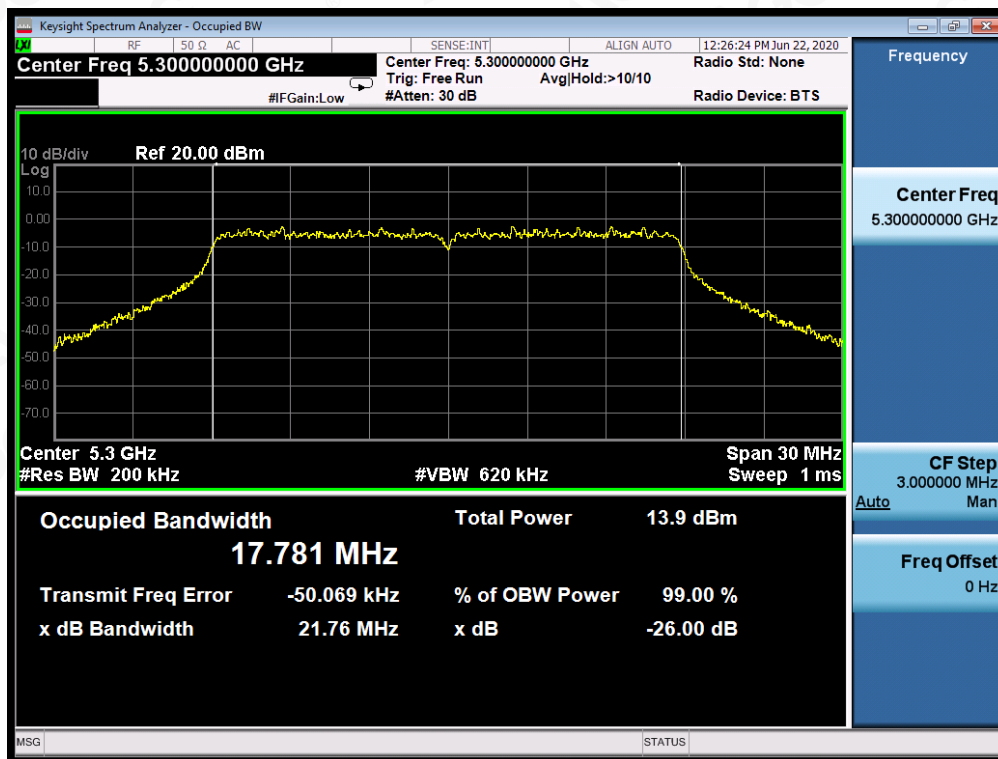
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TEST PLOT OF BANDWIDTH FOR 5260MHz



TEST PLOT OF BANDWIDTH FOR 5300MHz

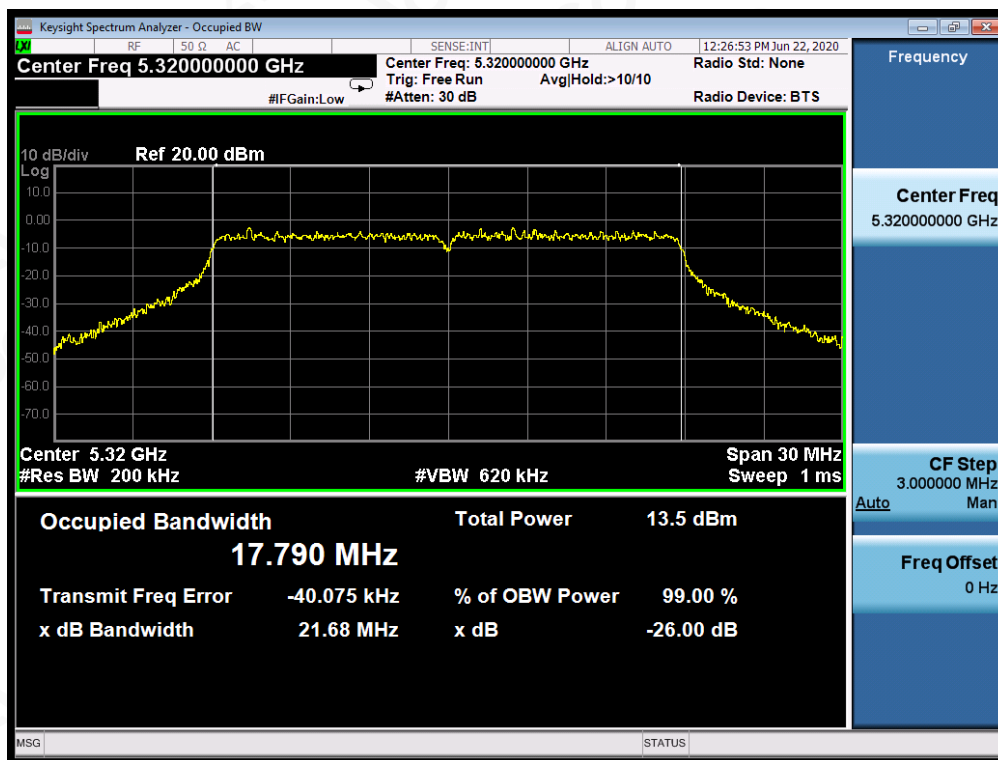


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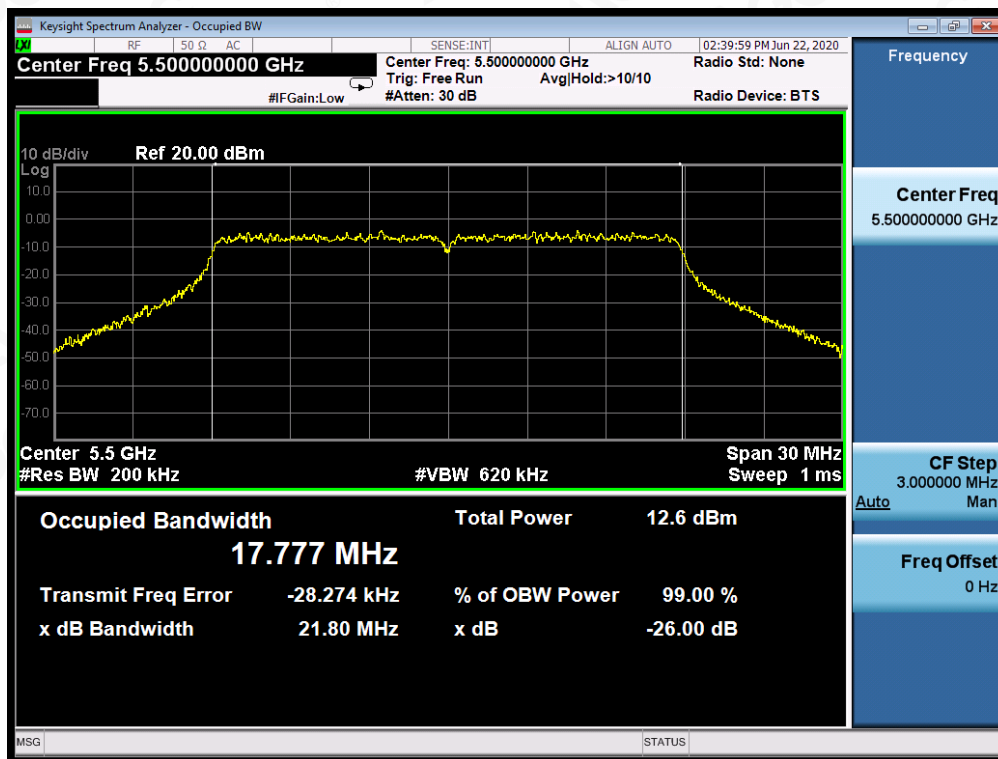
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TEST PLOT OF BANDWIDTH FOR 5320MHz



TEST PLOT OF BANDWIDTH FOR 5500MHz

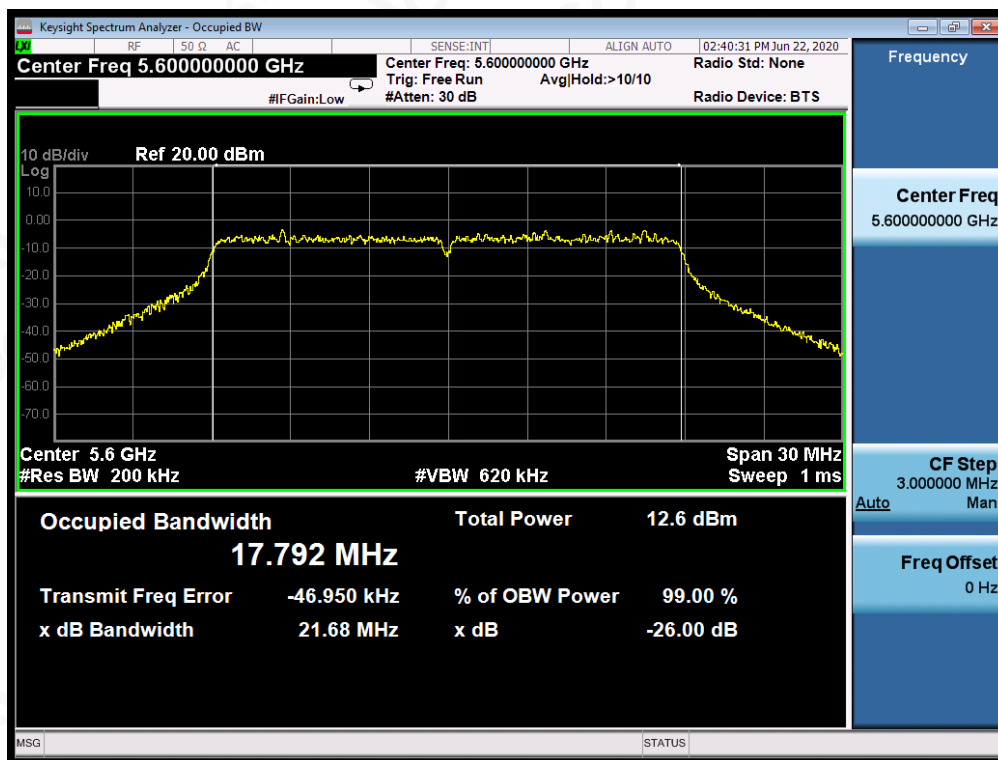


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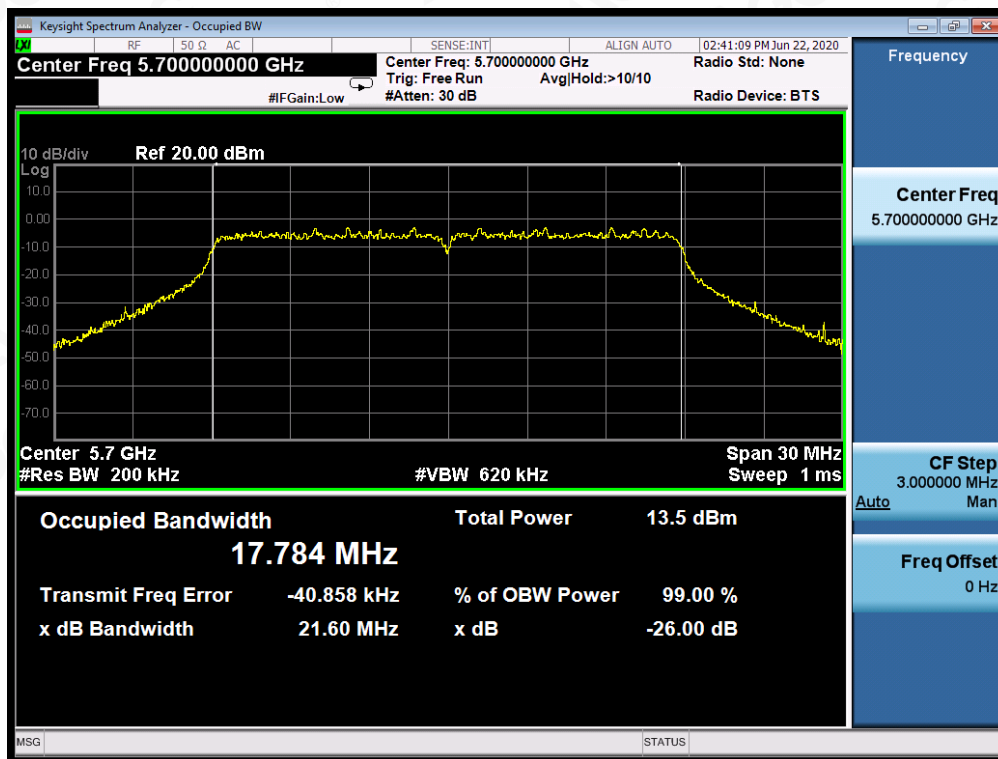
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TEST PLOT OF BANDWIDTH FOR 5600MHz



TEST PLOT OF BANDWIDTH FOR 5700MHz



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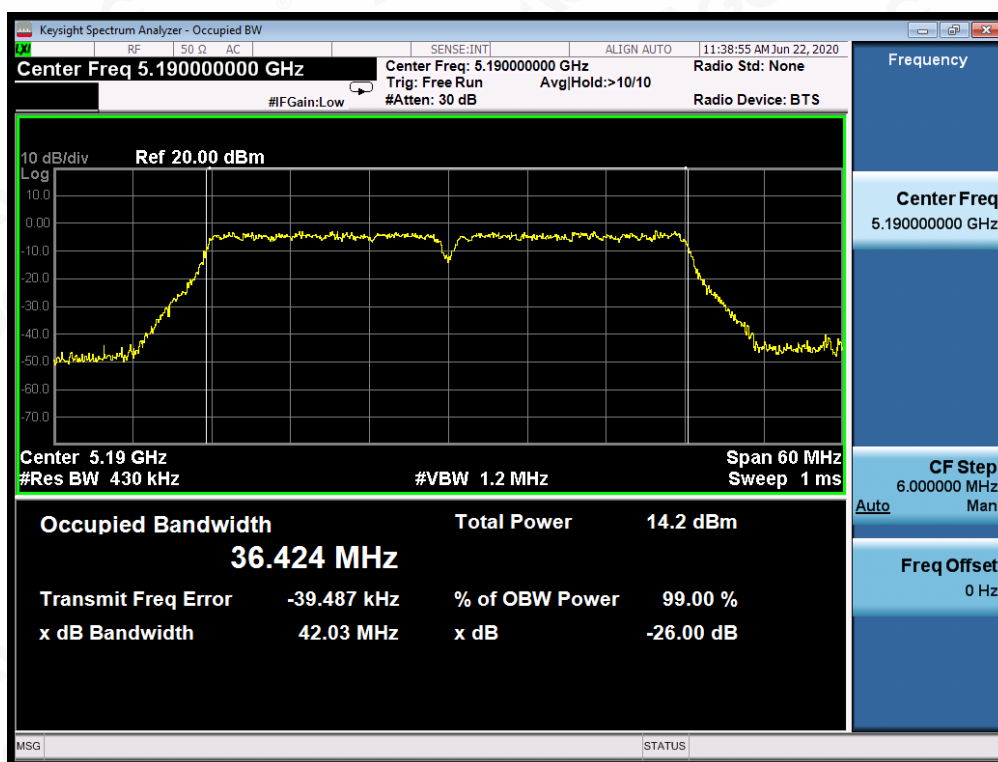
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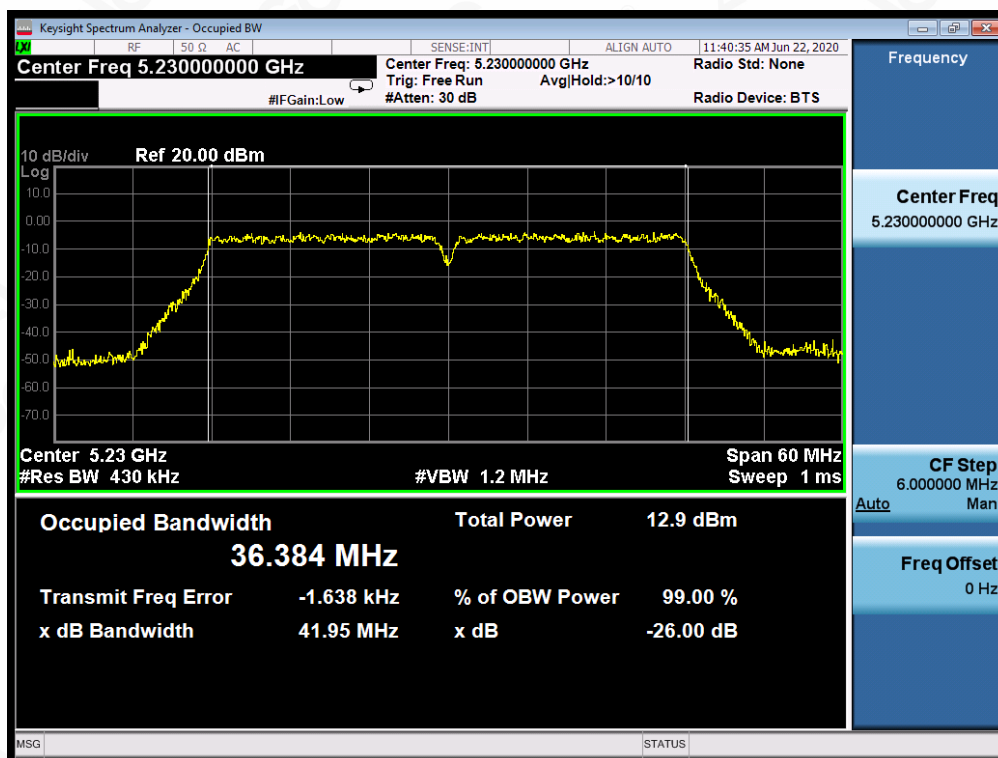


802.11n40 TEST RESULT

TEST PLOT OF BANDWIDTH FOR 5190MHz



TEST PLOT OF BANDWIDTH FOR 5230MHz

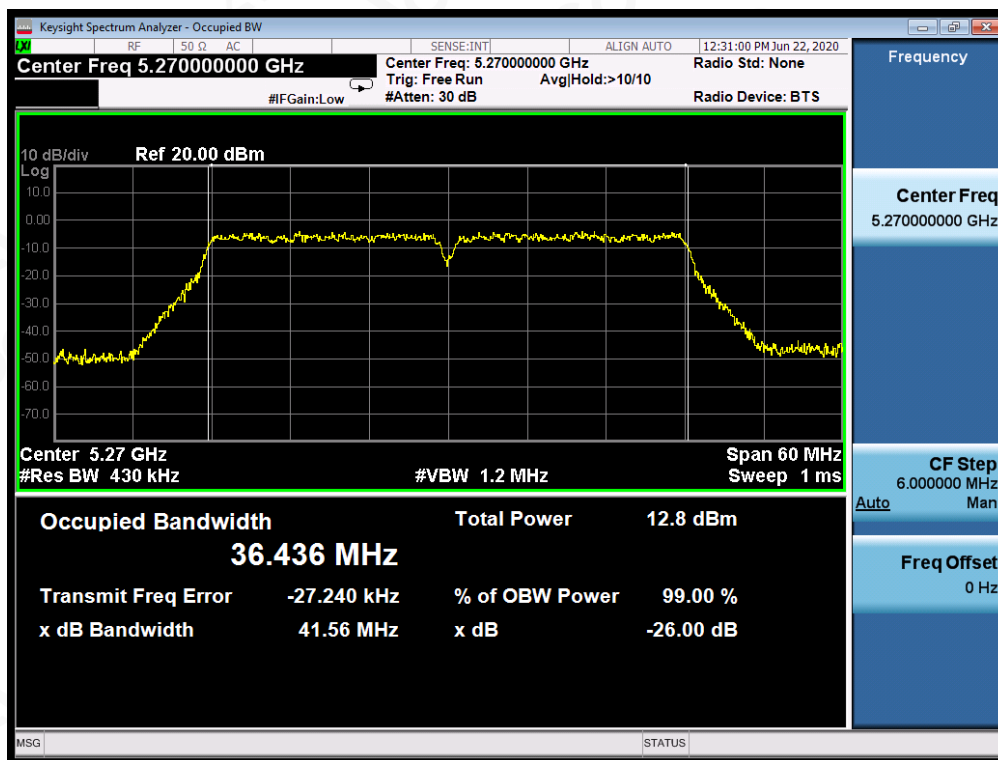


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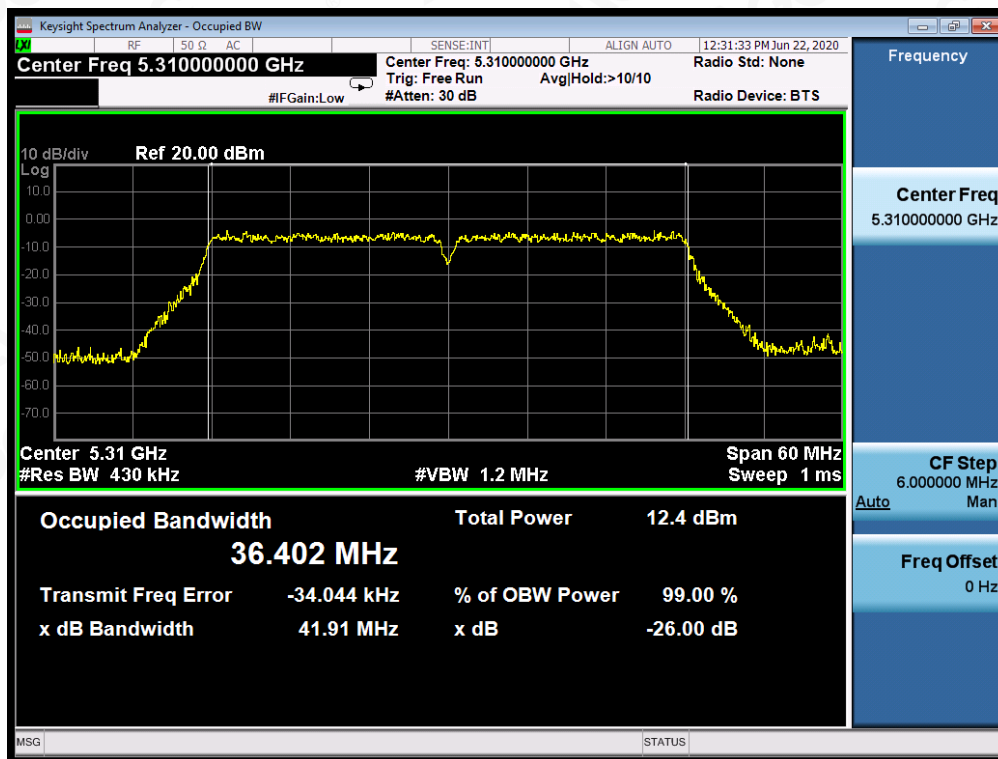
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TEST PLOT OF BANDWIDTH FOR 5270MHz



TEST PLOT OF BANDWIDTH FOR 5310MHz

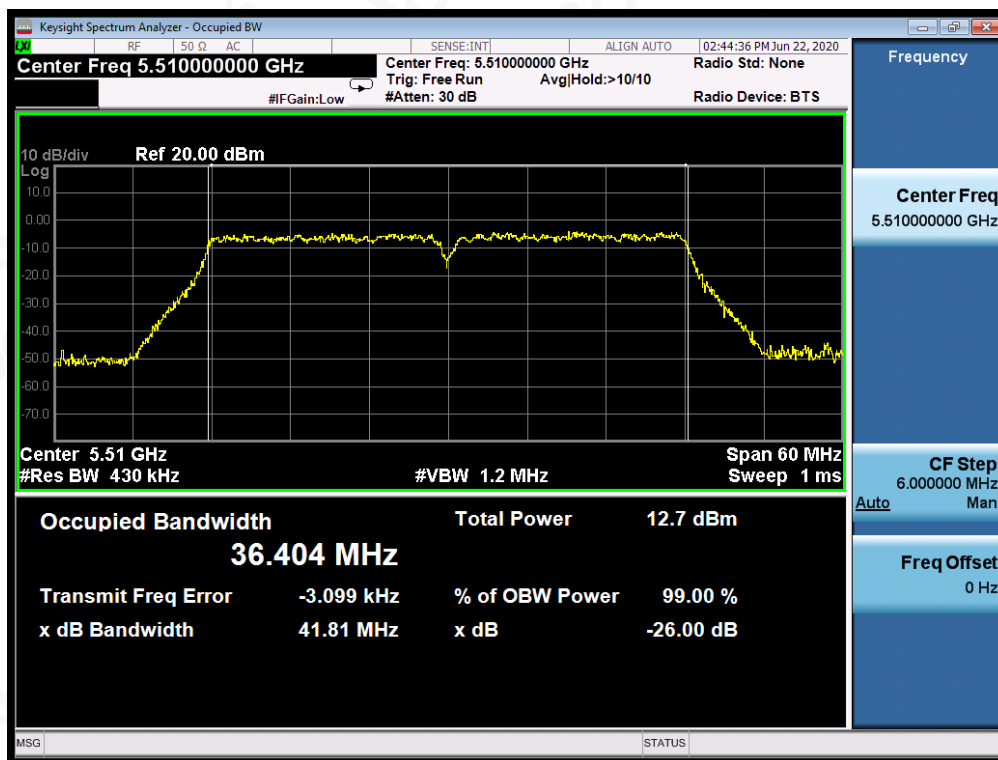


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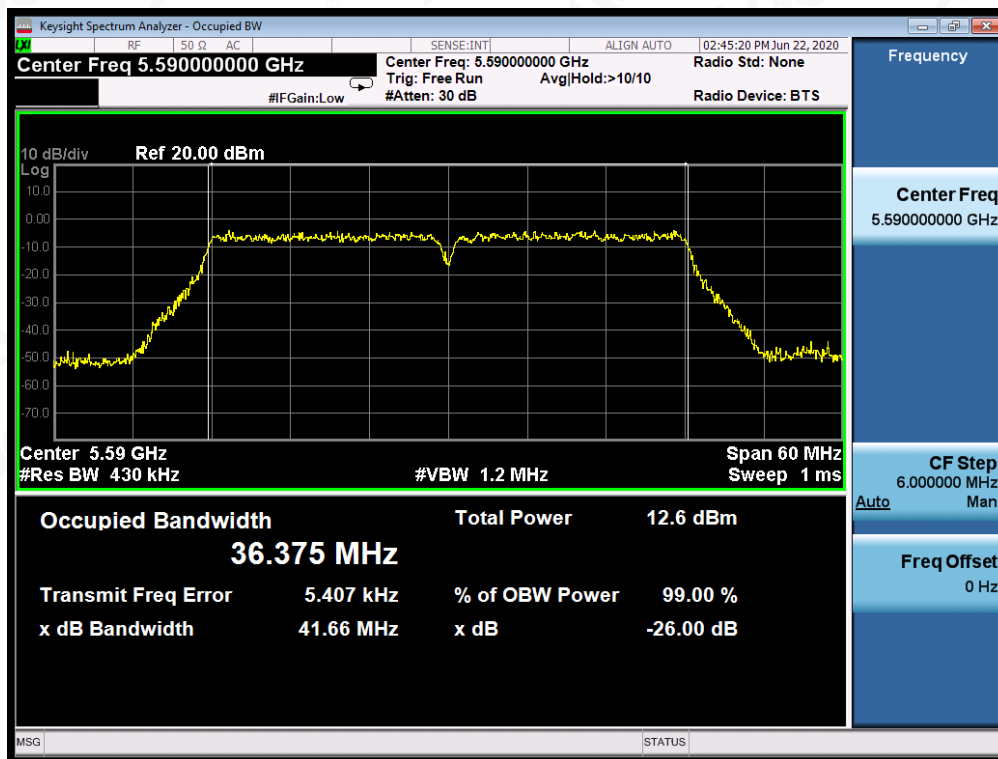
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TEST PLOT OF BANDWIDTH FOR 5510MHz



TEST PLOT OF BANDWIDTH FOR 5590MHz

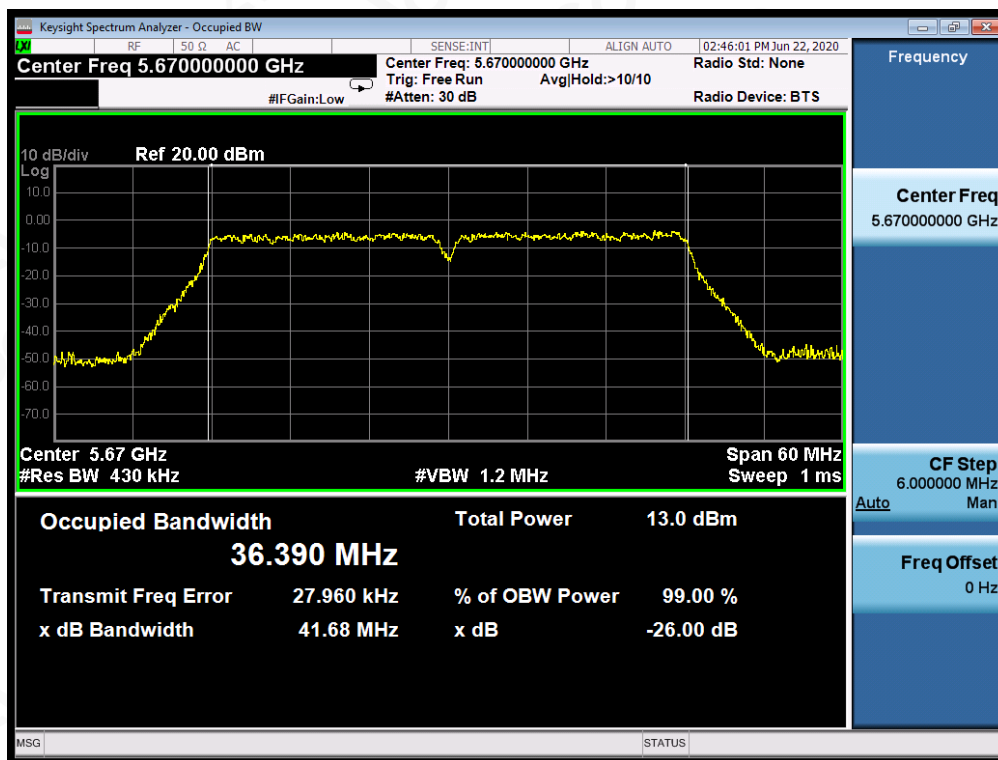


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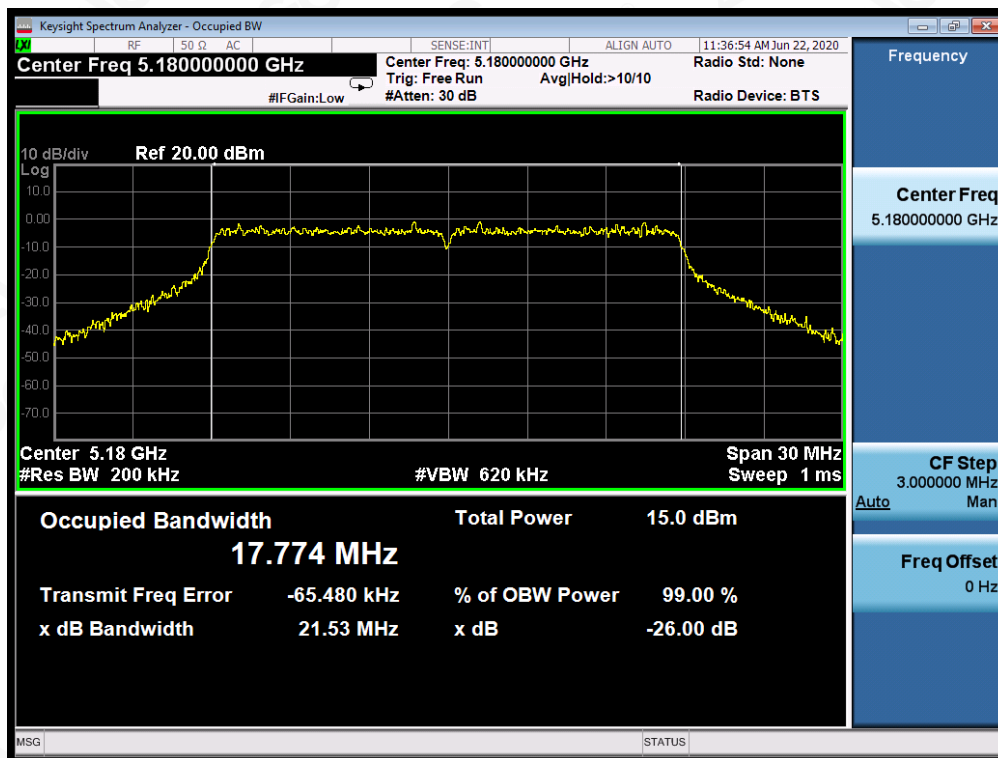


TEST PLOT OF BANDWIDTH FOR 5670MHz



802.11ac20 TEST RESULT

TEST PLOT OF BANDWIDTH FOR 5180MHz



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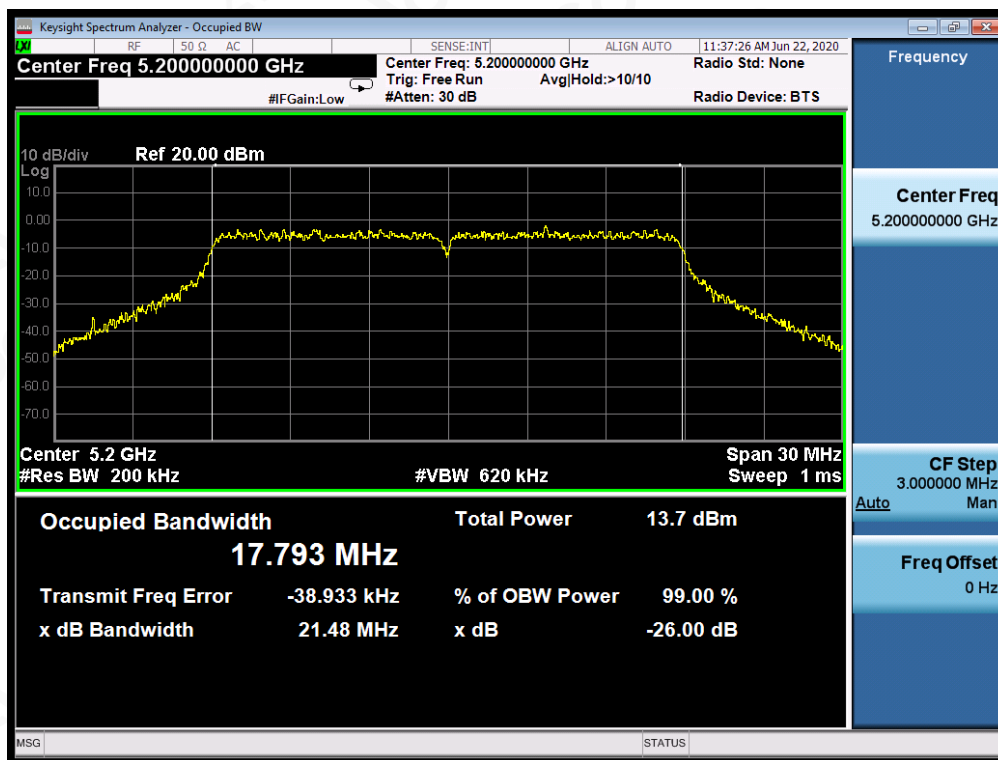
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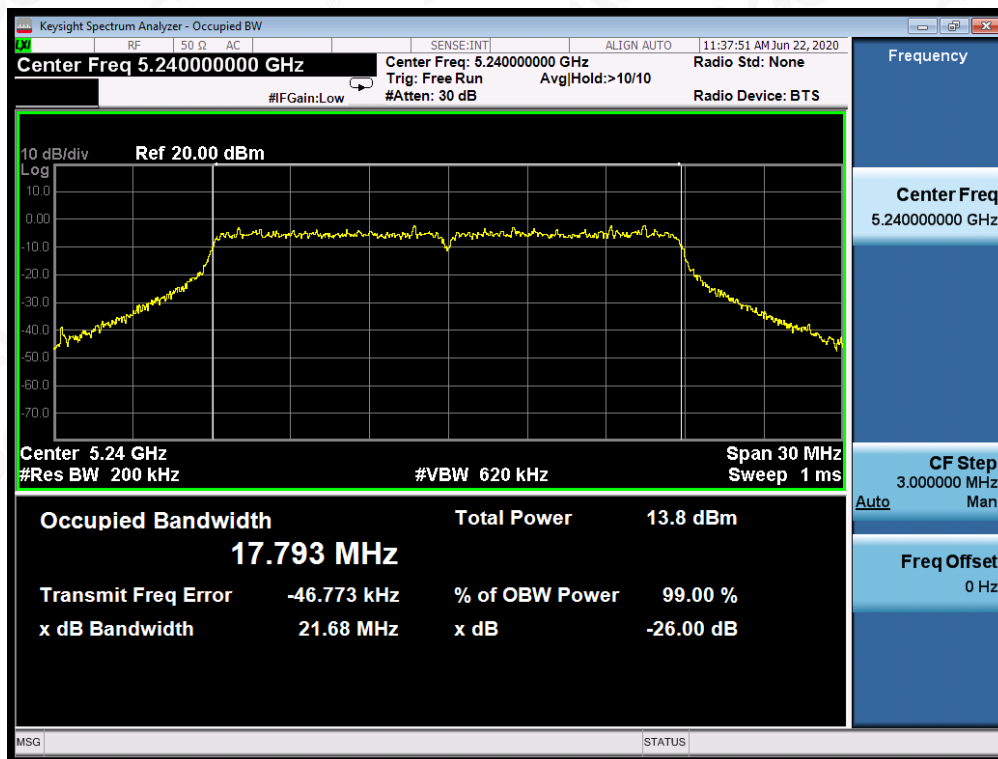
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TEST PLOT OF BANDWIDTH FOR 5200MHz



TEST PLOT OF BANDWIDTH FOR 5240MHz



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Attestation of Global Compliance(Shenzhen)Co., Ltd
Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd
Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: http://cn.agc-cert.com/

