

FCC Test Report

Report No.: AGC12882210701FE06

FCC ID : 2A2LM-CIRCLE10

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION : AI Fitness Mirror

BRAND NAME : CIRCLE

MODEL NAME : CIRCLE 10

APPLICANT : Dong Inc.

DATE OF ISSUE : Aug. 13, 2021

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	/	Aug. 13, 2021	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	Dong Inc.
Address	PO Box 117387, Burlingame, CA 94011
Manufacturer	Shenzhen Dong Technology Limited
Address	853, Block D, China Resources Land building, 91 Kefa Road, Dachong communtiy, Yuehai street, Nanshan Distict, Shenzhen
Factory	Shenzhen Dong Technology Limited
Address	853, Block D, China Resources Land building, 91 Kefa Road, Dachong communtiy, Yuehai street, Nanshan Distict, Shenzhen
Product Designation	AI Fitness Mirror
Brand Name	CIRCLE
Test Model	CIRCLE 10
Date of test	Jul. 15, 2021 to Aug. 13, 2021
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.

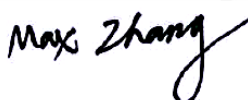
Prepared By



Cool Cheng
(Project Engineer)

Aug. 13, 2021

Reviewed By



Max Zhang
(Reviewer)

Aug. 13, 2021

Approved By



Forrest Lei
(Authorized Officer)

Aug. 13, 2021

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as “AI Fitness Mirror”. 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; 5250 MHz~5350MHz; 5470 MHz~5725MHz; 5725 MHz~5850MHz
Output Power	IEEE 802.11a20:15.69dBm; IEEE 802.11n(20):17.79dBm; IEEE802.11n(40):16.72dBm; IEEE 802.11ac(20):17.19dBm; IEEE 802.11ac(40):17.11dBm; IEEE 802.11ac(80):16.76dBm
Modulation	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM, OFDM
Number of channels	U-NII-1 :7 U-NII-2A:7 U-NII-2C:15 U-NII-3:8
Hardware Version	CIRCLE10-A464AD8WC2
Software Version	CIRCLE10-A464AD8WC2-S01
Antenna Designation	FPC Antenna (Comply with requirements of the FCC part 15.203)
Number of transmit chain	2(802.a/11n/ac all used two antennas, but 802.11a support SISO and 802.11n/ac support MIMO)
Antenna Gain	Refer to Chapter 2.8 of the report.
Power Supply	AC120V

Note:

1. The EUT is designed as client devices 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 MHz~ 5250MHz	36	5180 MHz	5470 MHz~ 5725MHz	110	5550 MHz
	38	5190 MHz		112	5560 MHz
	40	5200 MHz		116	5580 MHz
	42	5210 MHz		118	5590 MHz
	44	5220 MHz		120	5600 MHz
	46	5230 MHz		122	5610 MHz
	48	5240 MHz		132	5660 MHz
5250 MHz~ 5350MHz	52	5260 MHz	5725 MHz~ 5850MHz	134	5670 MHz
	54	5270 MHz		136	5680 MHz
	56	5280 MHz		140	5700 MHz
	58	5290 MHz		149	5745 MHz
	60	5300 MHz		151	5755 MHz
	62	5310 MHz		153	5765 MHz
	64	5320 MHz		155	5775 MHz
5470 MHz~ 5725MHz	100	5500 MHz		157	5785 MHz
	102	5510 MHz		159	5795 MHz
	104	5520 MHz		161	5805 MHz
	106	5530 MHz		165	5825 MHz
	108	5540 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: 2A2LM-CIRCLE10** 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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2.8. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna Type	Frequency Band (MHz)	TX Paths	Bandwidth (MHz)	Max Peak Gain (dBi)		Max Directional Gain (dBi)
				Ant 1	Ant 2	
5G WIFI Internal Antenna List (5GHz 2*2 MIMO)						
Internal Antenna	5150 ~ 5250	2	10,20	5	5	8.01
	5250 ~ 5350	2	10,20	5	5	8.01
	5470 ~ 5725	2	10,20	5	5	8.01
	5725 ~ 5850	2	10,20	5	5	8.01

Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11n mode.

Note 2: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on devices:

$$\text{Array Gain} = 10 \log (N_{ANT} / N_{SS}) \text{ dB} = 3.01;$$

- For power measurements on IEEE 802.11 devices:

$$\text{Array Gain} = 0 \text{ dB for } N_{ANT} \leq 4;$$

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

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

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

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3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 3.1 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 4.0 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.8 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_c = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$

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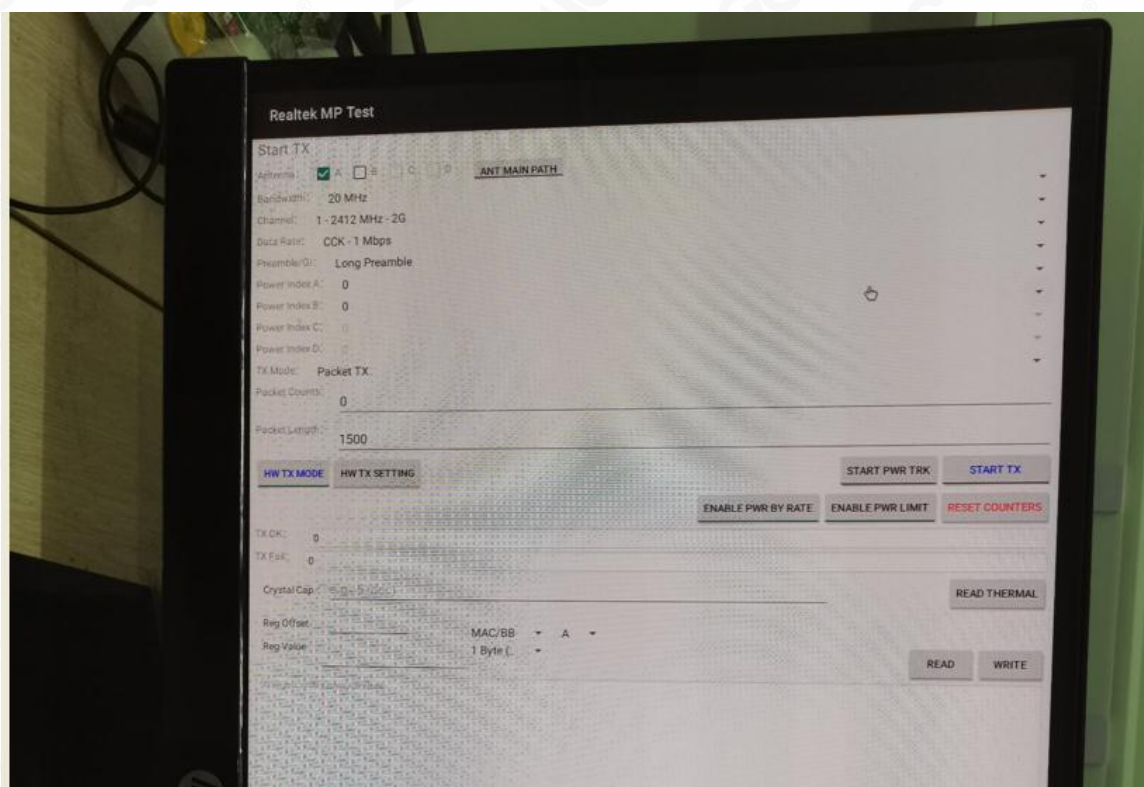
4. DESCRIPTION OF TEST MODES

Mode	Available channel	Tested channel	Modulation	Date rate(Mbps)
802.11a/n/ac20	36, 40, 44, 48, 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
802.11n/ac40	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.

Software Setting



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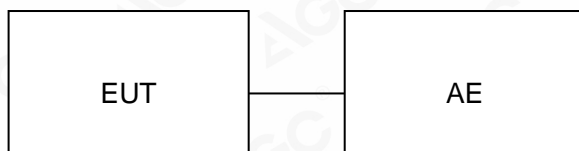
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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	AI Fitness Mirror	CIRCLE 10	2A2LM-CIRCLE10	EUT
2	Adapter	VZ-0122000U	Input:100-240V, 50/60Hz, 1.2A Output:12V, 2A	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

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, 2021	May 14, 2022
LISN	R&S	ESH2-Z5	100086	Jun. 09, 2021	Jun. 08, 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, 2021	May 14, 2022
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 07, 2020	Dec. 06, 2021
Power sensor	Aglient	U2021XA	MY54110007	Jun. 08, 2020	Jun. 07, 2021
5GHz Fliter	EM Electronics	5150-5880MHz	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	Apr. 23, 2021	Apr. 22, 2022
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

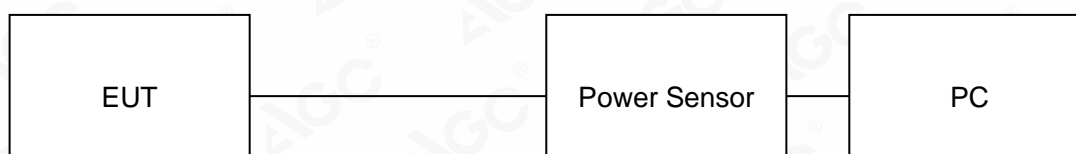
For average power test:

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

Test Data of Conducted Output Power for band 5.15-5.25 GHz-antenna 1				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	13.28	23.98	Pass
	5200	14.24	23.98	Pass
	5240	13.08	23.98	Pass
802.11n20	5180	11.16	23.98	Pass
	5200	12.01	23.98	Pass
	5240	11.54	23.98	Pass
802.11n40	5190	14.03	23.98	Pass
	5230	13.75	23.98	Pass
802.11ac20	5180	12.75	23.98	Pass
	5200	13.25	23.98	Pass
	5240	13.80	23.98	Pass
802.11ac40	5190	12.95	23.98	Pass
	5230	13.67	23.98	Pass
802.11ac80	5210	13.39	23.98	Pass

Test Data of Conducted Output Power for band 5.15-5.25 GHz-antenna 2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	13.00	23.98	Pass
	5200	13.78	23.98	Pass
	5240	13.21	23.98	Pass
802.11n20	5180	10.40	23.98	Pass
	5200	11.25	23.98	Pass
	5240	10.69	23.98	Pass
802.11n40	5190	12.93	23.98	Pass
	5230	13.67	23.98	Pass
802.11ac20	5180	12.74	23.98	Pass
	5200	13.32	23.98	Pass
	5240	12.87	23.98	Pass
802.11ac40	5190	12.97	23.98	Pass
	5230	13.76	23.98	Pass
802.11ac80	5210	13.02	23.98	Pass

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Test Data of Conducted Output Power for band 5.15-5.25 GHz-antenna 1+2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11n20	5180	13.81	23.98	Pass
	5200	14.66	23.98	Pass
	5240	14.15	23.98	Pass
802.11n40	5190	16.53	23.98	Pass
	5230	16.72	23.98	Pass
802.11ac20	5180	15.76	23.98	Pass
	5200	16.30	23.98	Pass
	5240	16.37	23.98	Pass
802.11ac40	5190	15.97	23.98	Pass
	5230	16.73	23.98	Pass
802.11ac80	5210	16.22	23.98	Pass

Test Data of Conducted Output Power for band 5.25-5.35 GHz-antenna 1				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5260	13.34	23.98	Pass
	5300	12.90	23.98	Pass
	5320	12.58	23.98	Pass
802.11n20	5260	13.25	23.98	Pass
	5300	12.84	23.98	Pass
	5320	12.51	23.98	Pass
802.11n40	5270	13.07	23.98	Pass
	5310	12.54	23.98	Pass
802.11ac20	5260	13.19	23.98	Pass
	5300	12.83	23.98	Pass
	5320	12.50	23.98	Pass
802.11ac40	5270	13.14	23.98	Pass
	5310	12.65	23.98	Pass
802.11ac80	5290	13.49	23.98	Pass

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Test Data of Conducted Output Power for band 5.25-5.35 GHz-antenna 2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5260	13.33	23.98	Pass
	5300	12.93	23.98	Pass
	5320	12.61	23.98	Pass
802.11n20	5260	13.23	23.98	Pass
	5300	12.84	23.98	Pass
	5320	12.48	23.98	Pass
802.11n40	5270	13.03	23.98	Pass
	5310	12.60	23.98	Pass
802.11ac20	5260	13.25	23.98	Pass
	5300	12.85	23.98	Pass
	5320	12.54	23.98	Pass
802.11ac40	5270	13.13	23.98	Pass
	5310	12.64	23.98	Pass
802.11ac80	5290	13.32	23.98	Pass

Test Data of Conducted Output Power for band 5.25-5.35 GHz-antenna 1+2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11n20	5260	16.25	23.98	Pass
	5300	15.85	23.98	Pass
	5320	15.51	23.98	Pass
802.11n40	5270	16.06	23.98	Pass
	5310	15.58	23.98	Pass
802.11ac20	5260	16.23	23.98	Pass
	5300	15.85	23.98	Pass
	5320	15.53	23.98	Pass
802.11ac40	5270	16.15	23.98	Pass
	5310	15.66	23.98	Pass
802.11ac80	5290	16.42	23.98	Pass

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Test Data of Conducted Output Power for band 5.47-5.725 GHz-antenna 1				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5500	13.58	23.98	Pass
	5600	15.69	23.98	Pass
	5700	12.69	23.98	Pass
802.11n20	5500	13.54	23.98	Pass
	5600	15.67	23.98	Pass
	5700	12.62	23.98	Pass
802.11n40	5510	13.76	23.98	Pass
	5590	13.48	23.98	Pass
	5670	12.42	23.98	Pass
802.11ac20	5500	12.51	23.98	Pass
	5600	14.66	23.98	Pass
	5700	11.64	23.98	Pass
802.11ac40	5510	12.91	23.98	Pass
	5590	14.58	23.98	Pass
	5670	12.49	23.98	Pass
802.11ac80	5530	12.87	23.98	Pass
	5610	13.86	23.98	Pass

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Test Data of Conducted Output Power for band 5.47-5.725 GHz-antenna 2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5500	12.57	23.98	Pass
	5600	13.69	23.98	Pass
	5700	12.91	23.98	Pass
802.11n20	5500	13.53	23.98	Pass
	5600	13.66	23.98	Pass
	5700	10.67	23.98	Pass
802.11n40	5510	12.80	23.98	Pass
	5590	13.54	23.98	Pass
	5670	12.42	23.98	Pass
802.11ac20	5500	12.57	23.98	Pass
	5600	13.65	23.98	Pass
	5700	12.87	23.98	Pass
802.11ac40	5510	13.86	23.98	Pass
	5590	13.57	23.98	Pass
	5670	13.60	23.98	Pass
802.11ac80	5530	12.34	23.98	Pass
	5610	13.63	23.98	Pass

Test Data of Conducted Output Power for band 5.47-5.725 GHz-antenna 1+2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11n20	5500	16.55	23.98	Pass
	5600	17.79	23.98	Pass
	5700	14.76	23.98	Pass
802.11n40	5510	16.32	23.98	Pass
	5590	16.52	23.98	Pass
	5670	15.43	23.98	Pass
802.11ac20	5500	15.55	23.98	Pass
	5600	17.19	23.98	Pass
	5700	15.31	23.98	Pass
802.11ac40	5510	16.42	23.98	Pass
	5590	17.11	23.98	Pass
	5670	16.09	23.98	Pass
802.11ac80	5530	15.62	23.98	Pass
	5610	16.76	23.98	Pass

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Test Data of Conducted Output Power for band 5.725-5.85 GHz-antenna 1				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5745	12.22	23.98	Pass
	5785	12.54	23.98	Pass
	5825	12.73	23.98	Pass
802.11n20	5745	13.33	23.98	Pass
	5785	12.47	23.98	Pass
	5825	12.69	23.98	Pass
802.11n40	5755	13.14	23.98	Pass
	5795	12.01	23.98	Pass
802.11ac20	5745	13.15	23.98	Pass
	5785	12.38	23.98	Pass
	5825	12.74	23.98	Pass
802.11ac40	5755	13.33	23.98	Pass
	5795	13.05	23.98	Pass
802.11ac80	5775	12.51	23.98	Pass

Test Data of Conducted Output Power for band 5.725-5.85 GHz-antenna 2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5745	12.18	23.98	Pass
	5785	12.64	23.98	Pass
	5825	12.82	23.98	Pass
802.11n20	5745	13.30	23.98	Pass
	5785	12.61	23.98	Pass
	5825	12.81	23.98	Pass
802.11n40	5755	13.28	23.98	Pass
	5795	12.23	23.98	Pass
802.11ac20	5745	13.12	23.98	Pass
	5785	12.63	23.98	Pass
	5825	12.85	23.98	Pass
802.11ac40	5755	13.39	23.98	Pass
	5795	12.25	23.98	Pass
802.11ac80	5775	13.88	23.98	Pass

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Test Data of Conducted Output Power for band 5.725-5.85 GHz-antenna 1+2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11n20	5745	16.33	23.98	Pass
	5785	15.55	23.98	Pass
	5825	15.76	23.98	Pass
802.11n40	5755	16.23	23.98	Pass
	5795	15.33	23.98	Pass
802.11ac20	5745	15.99	23.98	Pass
	5785	15.86	23.98	Pass
	5825	15.50	23.98	Pass
802.11ac40	5755	16.24	23.98	Pass
	5795	15.68	23.98	Pass
802.11ac80	5775	16.26	23.98	Pass

Note: 1.The Total Average Power (dBm) = $10 \cdot \log \{10^{(\text{Ant 1 Average Power} / 10)} + 10^{(\text{Ant 2 Average Power} / 10)}\}$.

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8. BANDWIDTH

8.1. MEASUREMENT PROCEDURE

-6dB bandwidth (DTS bandwidth):

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.

99% occupied bandwidth:

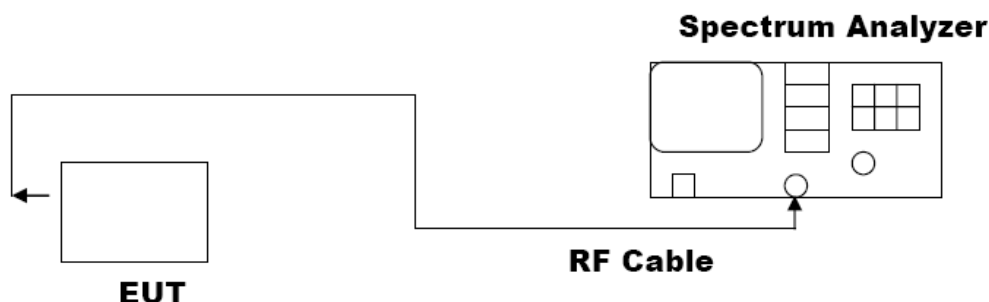
1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 1.5 to 5 times the OBW, centered on a nominal channel
The nominal IF filter bandwidth (3 dB RBW) shall 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.

-26dB Bandwidth:

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. 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.

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



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8.3. LIMITS AND MEASUREMENT RESULTS

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz-antenna 1					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5180	16.318	18.38	N/A	Pass
	5200	16.321	18.42	N/A	Pass
	5240	16.307	18.43	N/A	Pass
802.11n20	5180	17.506	19.39	N/A	Pass
	5200	17.503	19.30	N/A	Pass
	5240	17.501	19.36	N/A	Pass
802.11n40	5190	36.122	41.24	N/A	Pass
	5230	36.110	40.60	N/A	Pass
802.11ac20	5180	17.518	19.29	N/A	Pass
	5200	17.517	19.35	N/A	Pass
	5240	17.521	19.25	N/A	Pass
802.11ac40	5190	36.04	40.55	N/A	Pass
	5230	36.007	40.61	N/A	Pass
802.11ac80	5210	74.633	80.63	N/A	Pass

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz-antenna 2					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5180	16.314	18.40	N/A	Pass
	5200	16.310	18.40	N/A	Pass
	5240	16.309	18.40	N/A	Pass
802.11n20	5180	17.502	19.33	N/A	Pass
	5200	17.501	19.37	N/A	Pass
	5240	17.501	19.37	N/A	Pass
802.11n40	5190	36.119	41.08	N/A	Pass
	5230	36.101	41.36	N/A	Pass
802.11ac20	5180	17.528	19.24	N/A	Pass
	5200	17.518	19.25	N/A	Pass
	5240	17.517	19.18	N/A	Pass
802.11ac40	5190	36.044	40.30	N/A	Pass
	5230	36.046	40.57	N/A	Pass
802.11ac80	5210	74.599	80.47	N/A	Pass

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Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.25-5.35 GHz-antenna 1					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5260	16.324	18.30	N/A	Pass
	5300	16.318	18.31	N/A	Pass
	5320	16.321	18.33	N/A	Pass
802.11n20	5260	17.513	19.29	N/A	Pass
	5300	17.509	19.19	N/A	Pass
	5320	17.513	19.17	N/A	Pass
802.11n40	5270	36.097	41.22	N/A	Pass
	5310	36.073	41.18	N/A	Pass
802.11ac20	5260	17.514	19.29	N/A	Pass
	5300	17.512	19.32	N/A	Pass
	5320	17.511	19.27	N/A	Pass
802.11ac40	5270	36.039	40.28	N/A	Pass
	5310	36.043	40.35	N/A	Pass
802.11ac80	5290	74.660	80.13	N/A	Pass

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.25-5.35 GHz-antenna 2					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5260	16.315	18.26	N/A	Pass
	5300	16.328	18.22	N/A	Pass
	5320	16.323	18.27	N/A	Pass
802.11n20	5260	17.516	19.25	N/A	Pass
	5300	17.514	19.27	N/A	Pass
	5320	17.517	19.16	N/A	Pass
802.11n40	5270	36.093	40.98	N/A	Pass
	5310	36.053	40.97	N/A	Pass
802.11ac20	5260	17.528	19.20	N/A	Pass
	5300	17.529	19.39	N/A	Pass
	5320	17.511	19.20	N/A	Pass
802.11ac40	5270	36.047	40.58	N/A	Pass
	5310	36.048	40.42	N/A	Pass
802.11ac80	5290	74.641	80.65	N/A	Pass

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Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.47-5.725 GHz-antenna 1					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5500	16.327	18.20	N/A	Pass
	5600	16.338	18.27	N/A	Pass
	5700	16.329	18.21	N/A	Pass
802.11n20	5500	17.520	19.19	N/A	Pass
	5600	17.532	19.26	N/A	Pass
	5700	17.511	19.18	N/A	Pass
802.11n40	5510	36.040	40.69	N/A	Pass
	5590	36.083	41.00	N/A	Pass
	5670	36.109	41.37	N/A	Pass
802.11ac20	5500	17.508	19.23	N/A	Pass
	5600	17.519	19.30	N/A	Pass
	5700	17.520	19.34	N/A	Pass
802.11ac40	5510	36.024	40.59	N/A	Pass
	5590	36.040	40.08	N/A	Pass
	5670	36.074	40.72	N/A	Pass
802.11ac80	5530	74.596	80.57	N/A	Pass
	5610	74.531	80.827	N/A	Pass

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Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.47-5.725 GHz-antenna 2					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5500	16.334	18.32	N/A	Pass
	5600	16.352	18.40	N/A	Pass
	5700	16.317	18.34	N/A	Pass
802.11n20	5500	17.507	19.25	N/A	Pass
	5600	17.526	19.26	N/A	Pass
	5700	17.516	19.27	N/A	Pass
802.11n40	5510	36.045	41.00	N/A	Pass
	5590	36.095	41.43	N/A	Pass
	5670	36.077	41.29	N/A	Pass
802.11ac20	5500	17.523	19.24	N/A	Pass
	5600	17.534	19.25	N/A	Pass
	5700	17.513	19.33	N/A	Pass
802.11ac40	5510	36.051	41.06	N/A	Pass
	5590	36.056	40.56	N/A	Pass
	5670	36.040	40.86	N/A	Pass
802.11ac80	5530	74.608	80.73	N/A	Pass
	5610	74.613	80.71	N/A	Pass

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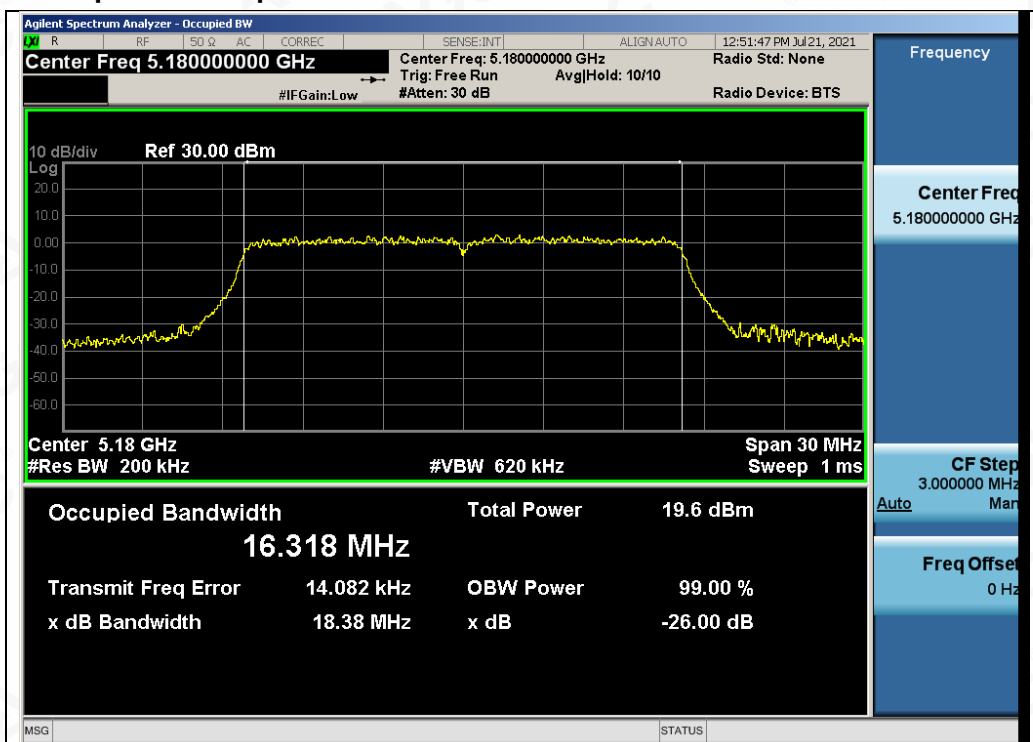
Test Data of Occupied Bandwidth and DTS Bandwidth for band 5.725-5.85 GHz-antenna 1					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5745	16.327	16.33	0.5	Pass
	5785	16.336	16.34	0.5	Pass
	5825	16.329	16.32	0.5	Pass
802.11n20	5745	17.511	17.55	0.5	Pass
	5785	17.514	17.56	0.5	Pass
	5825	17.518	17.54	0.5	Pass
802.11n40	5755	36.110	35.45	0.5	Pass
	5795	36.107	35.11	0.5	Pass
802.11ac20	5745	17.514	17.57	0.5	Pass
	5785	17.527	17.55	0.5	Pass
	5825	17.518	17.55	0.5	Pass
802.11ac40	5755	36.038	34.17	0.5	Pass
	5795	36.049	35.70	0.5	Pass
802.11ac80	5775	74.645	72.64	0.5	Pass

Test Data of Occupied Bandwidth and DTS Bandwidth for band 5.725-5.85 GHz-antenna 2					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5745	16.324	16.35	0.5	Pass
	5785	16.334	16.33	0.5	Pass
	5825	16.323	16.34	0.5	Pass
802.11n20	5745	17.510	17.57	0.5	Pass
	5785	17.522	17.58	0.5	Pass
	5825	17.525	17.58	0.5	Pass
802.11n40	5755	36.081	35.46	0.5	Pass
	5795	36.107	35.43	0.5	Pass
802.11ac20	5745	17.515	17.54	0.5	Pass
	5785	17.511	17.58	0.5	Pass
	5825	17.525	17.58	0.5	Pass
802.11ac40	5755	36.027	35.14	0.5	Pass
	5795	36.067	35.33	0.5	Pass
802.11ac80	5775	74.675	75.04	0.5	Pass

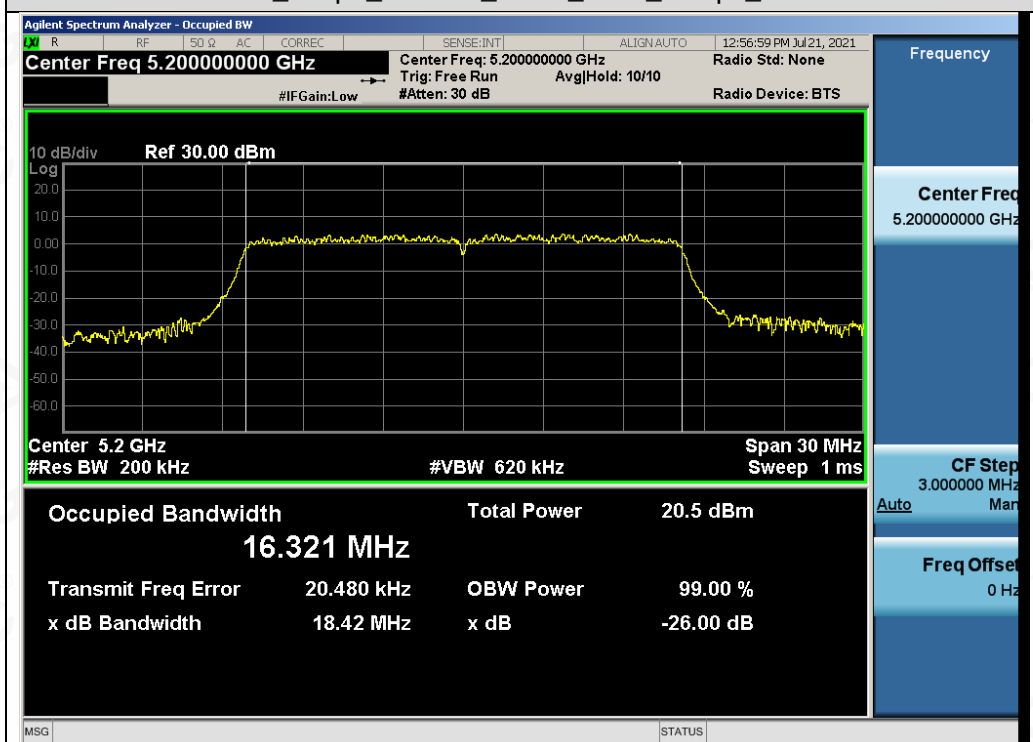
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Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz



Test_Graph_802.11a_ANT1_5180_6Mbps_OBW

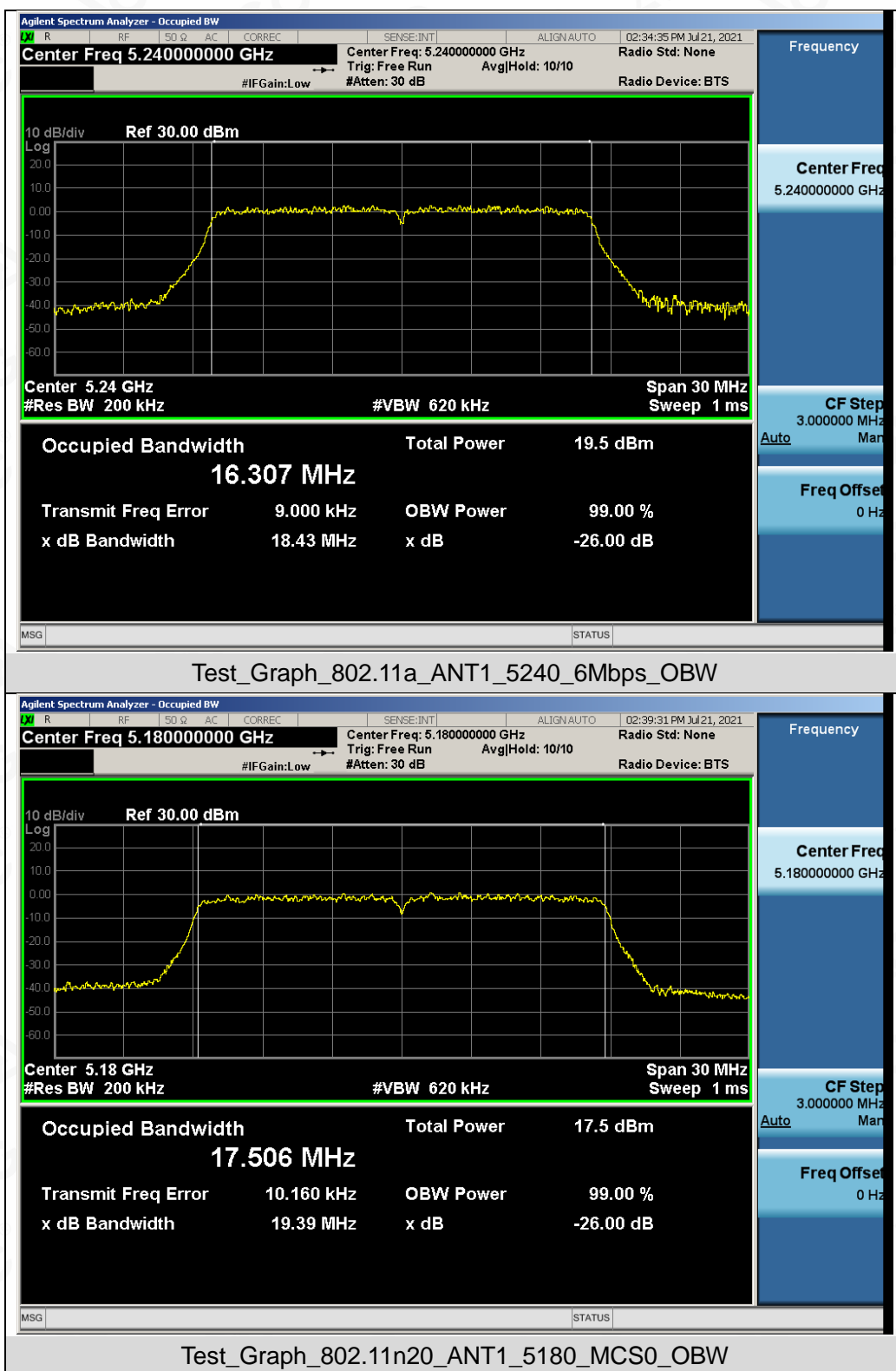


Test_Graph_802.11a_ANT1_5200_6Mbps_OBW

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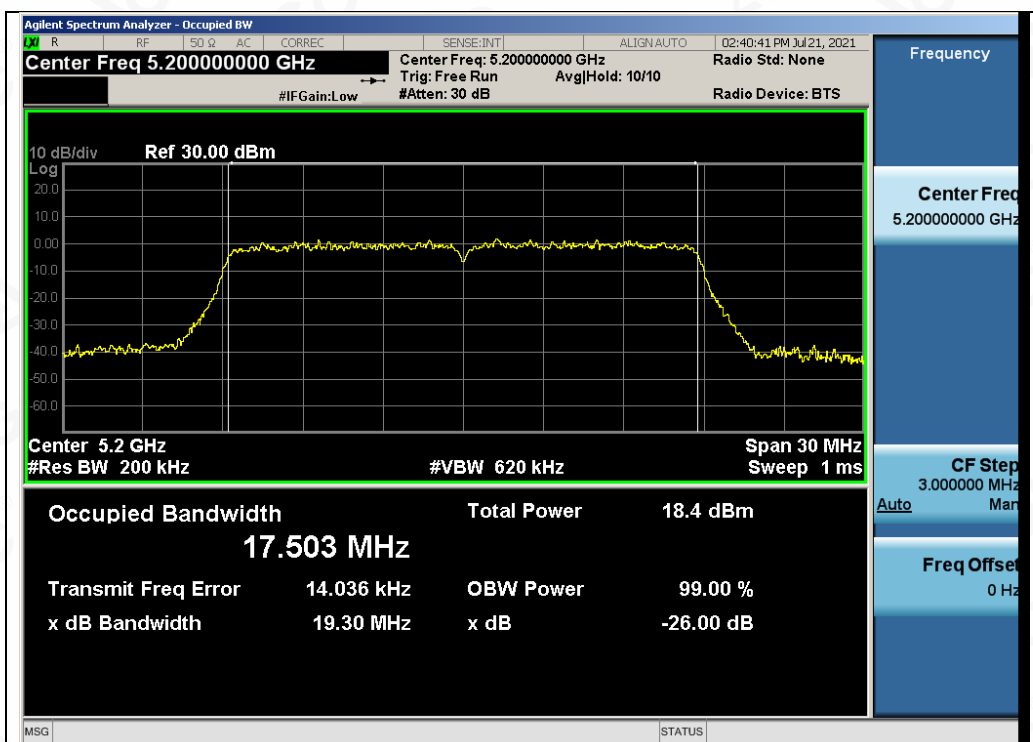




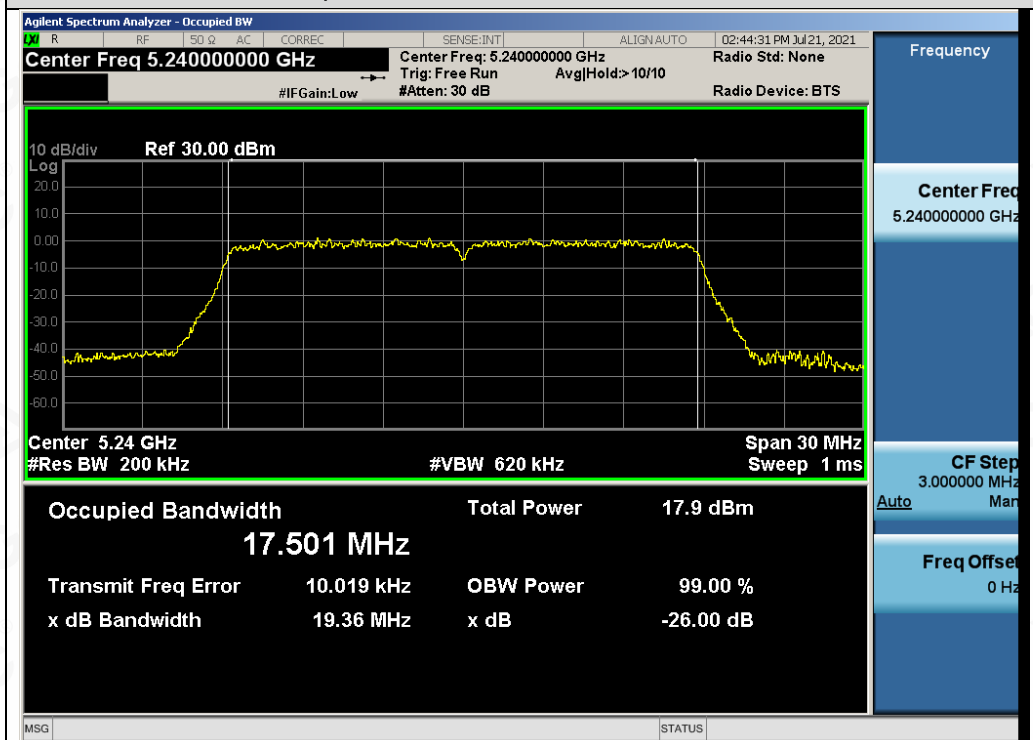
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Test_Graph_802.11n20_ANT1_5200_MCS0_OBW

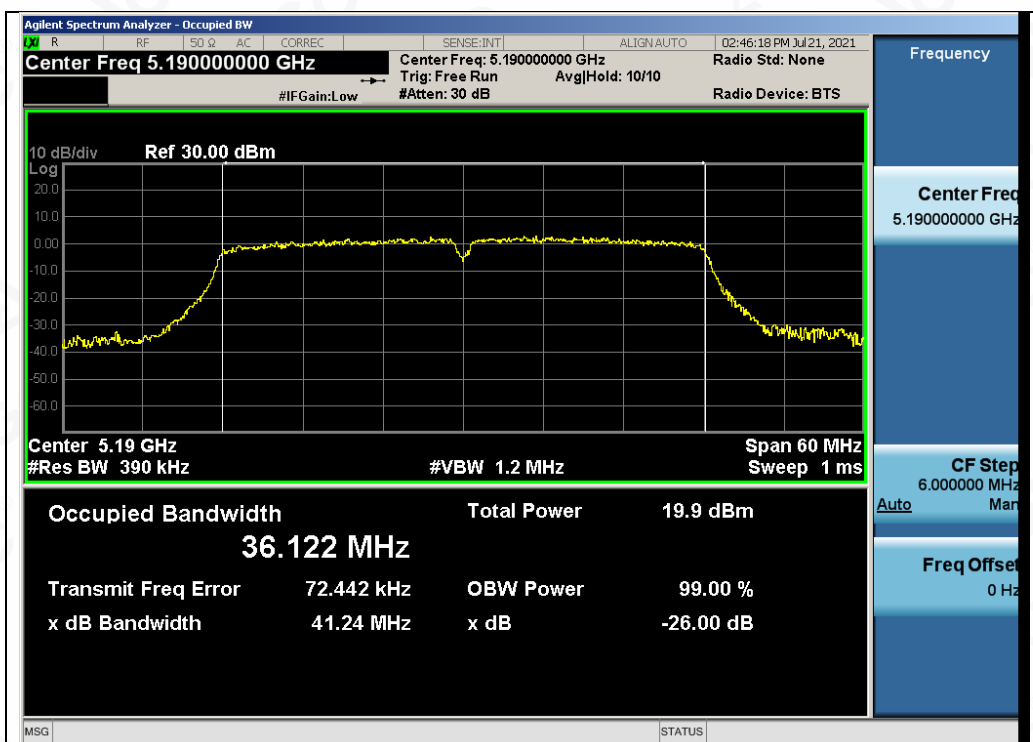


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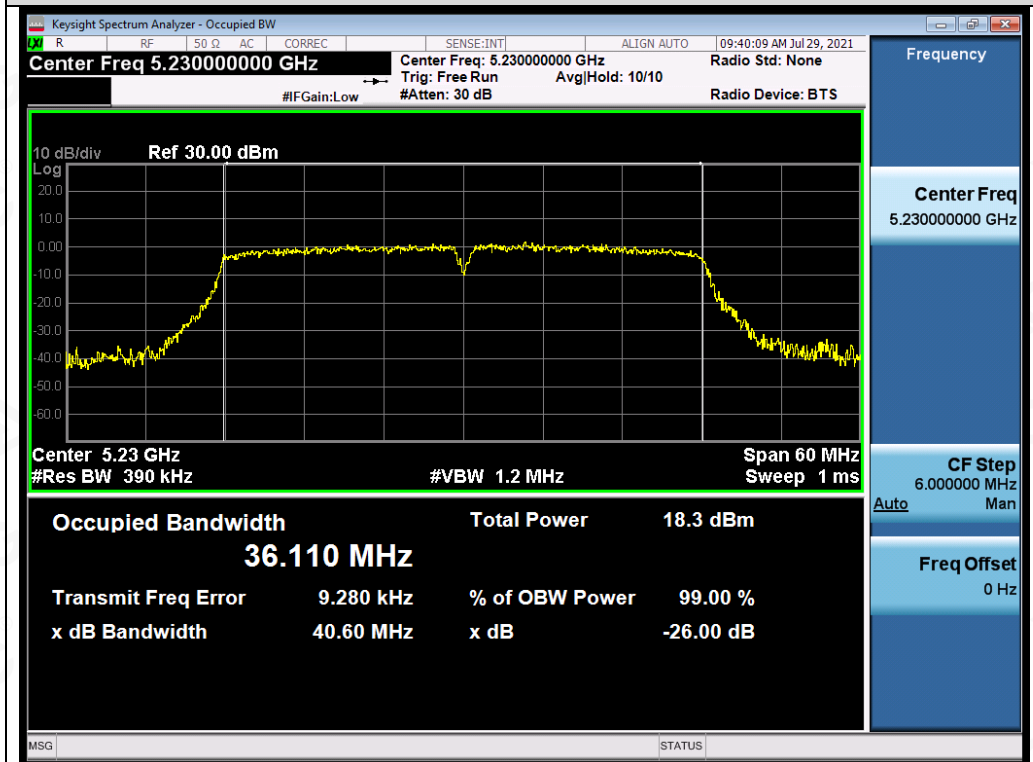
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Test_Graph_802.11n40_ANT1_5190_MCS0_OBW

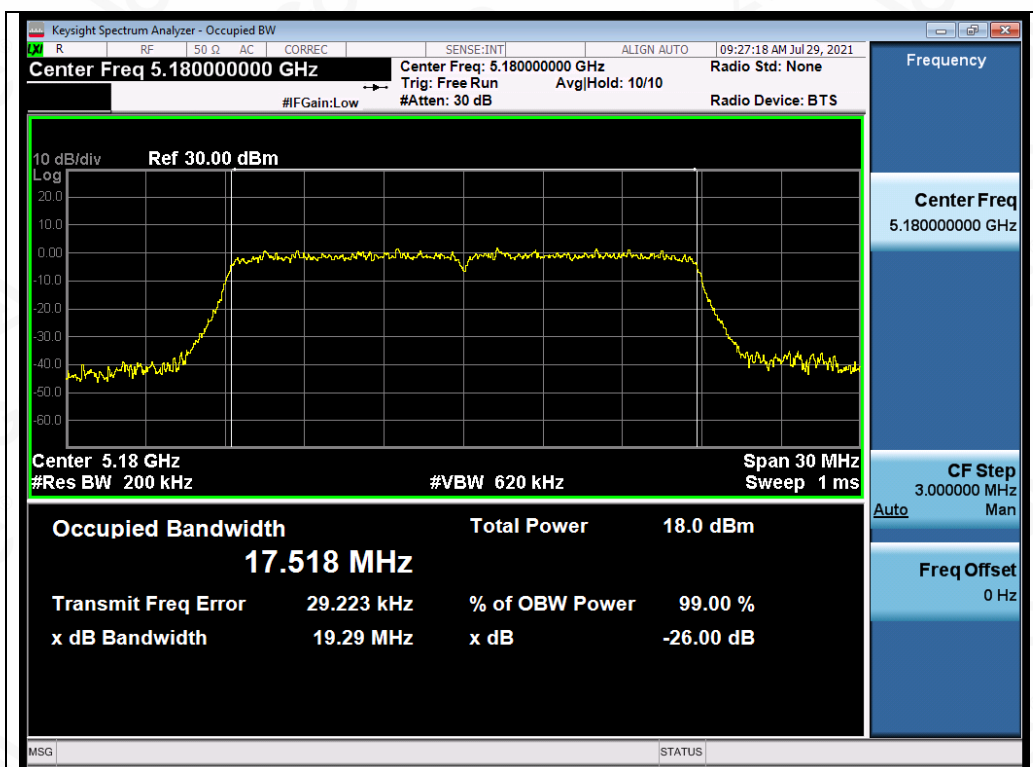


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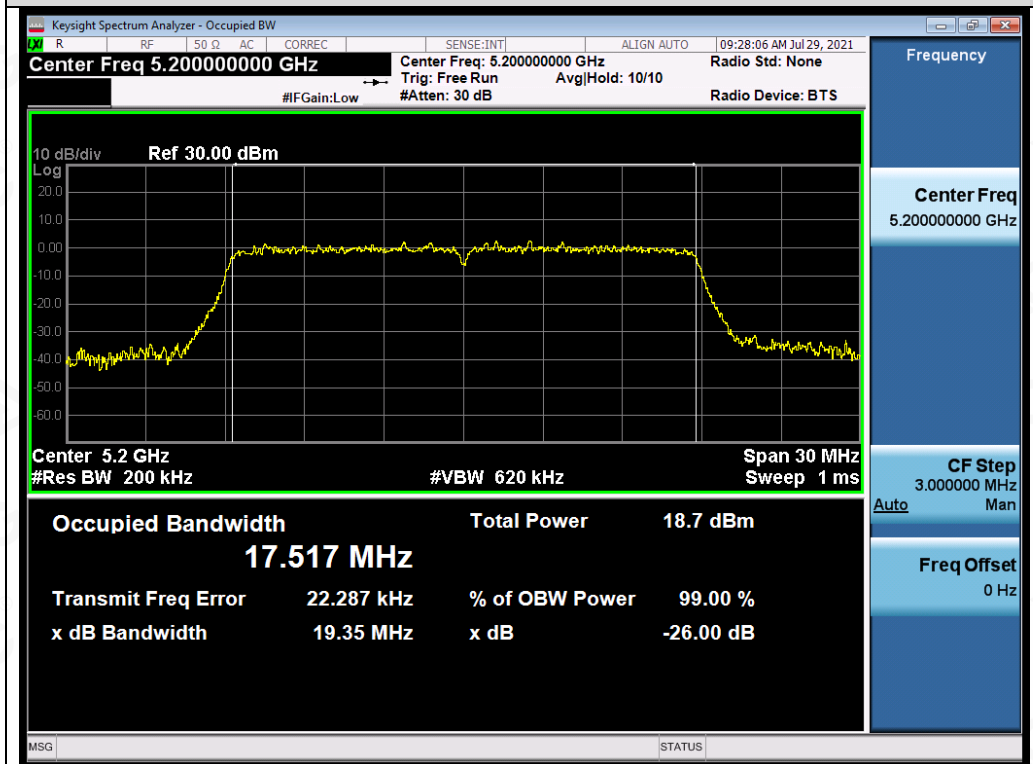
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Test_Graph_802.11ac20_ANT1_5180_MCS0_OBW

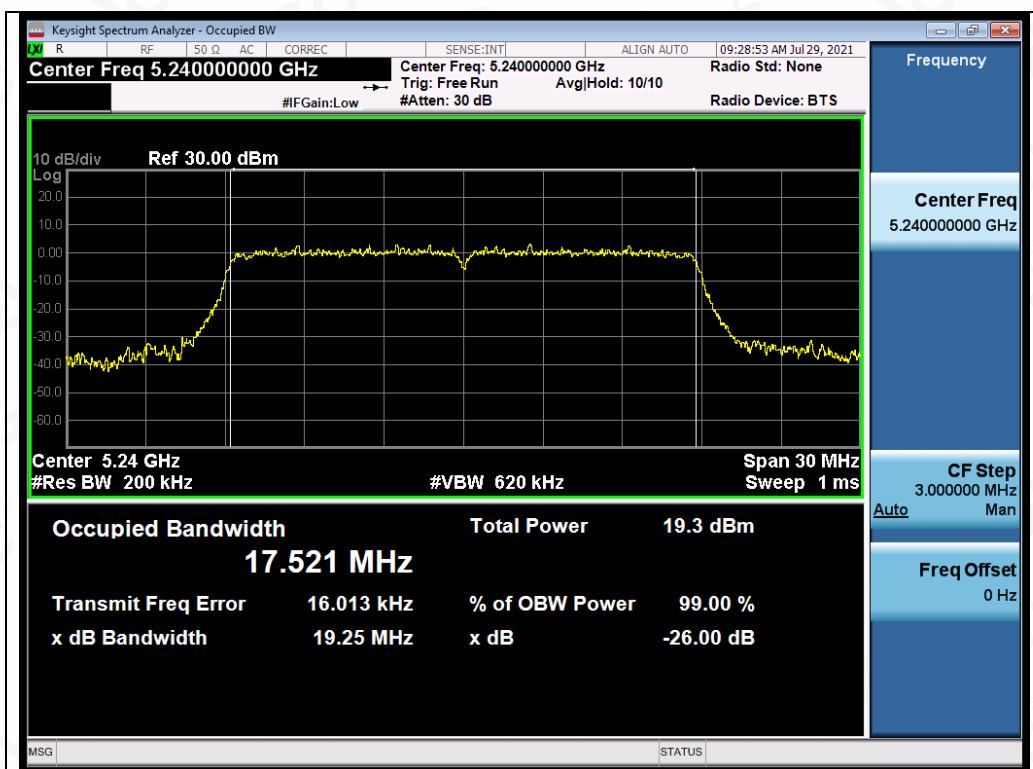


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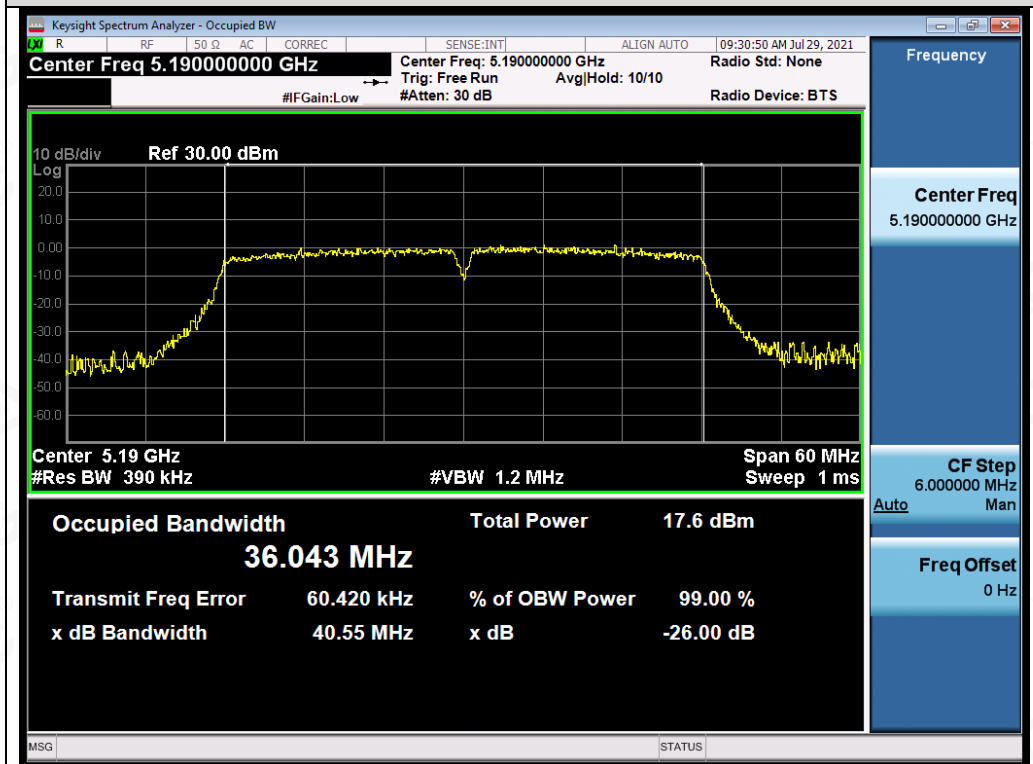
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Test_Graph_802.11ac20_ANT1_5240_MCS9_OBW

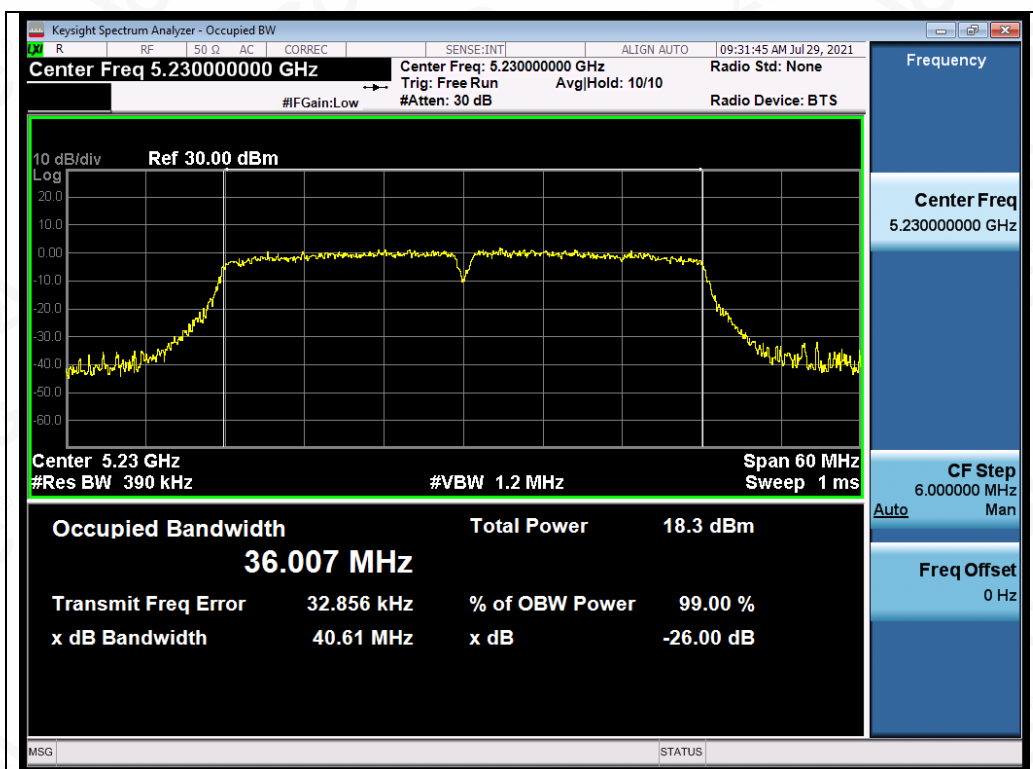


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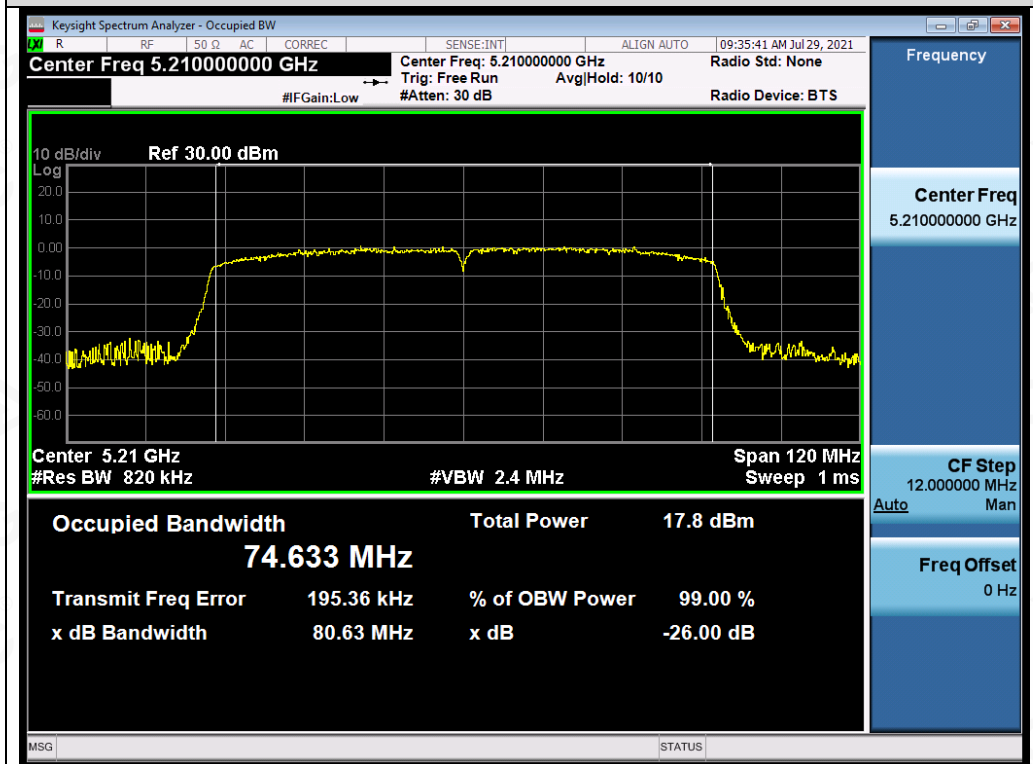
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Test_Graph_802.11ac40_ANT1_5230_MCS9_OBW

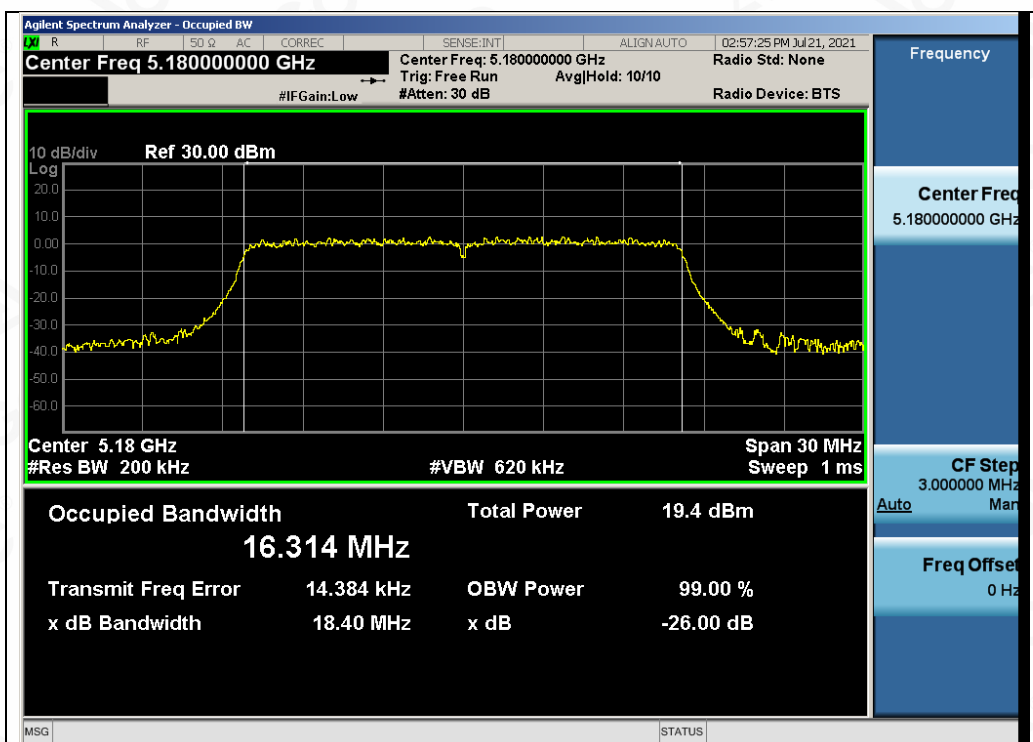


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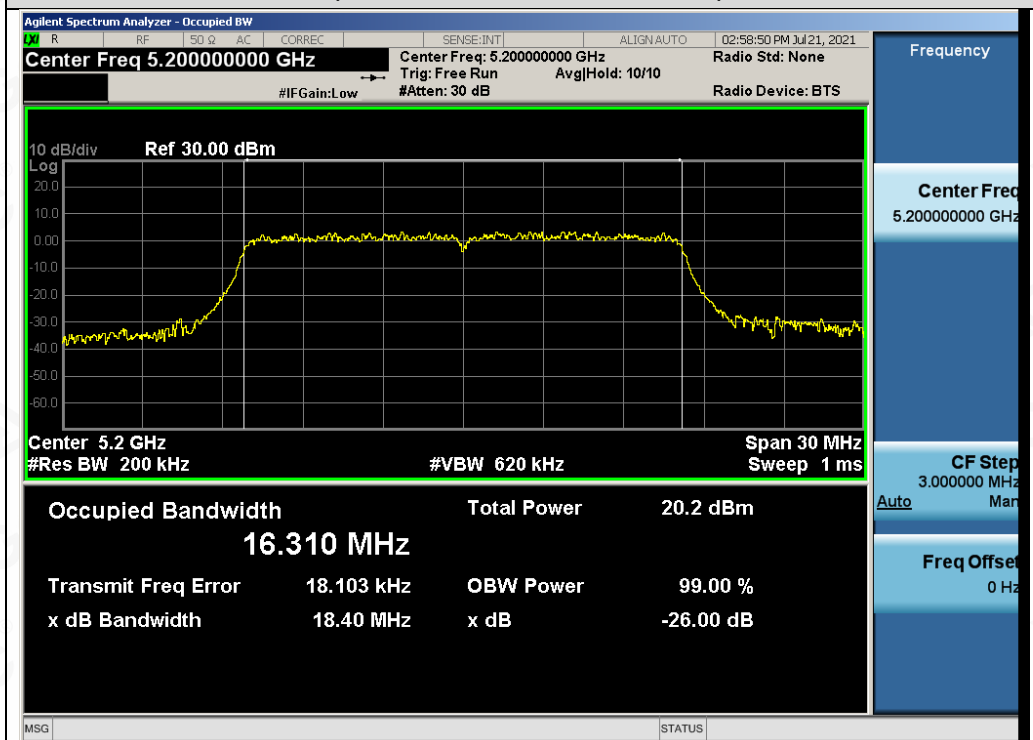
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Test_Graph_802.11a_ANT2_5180_6Mbps_OBW

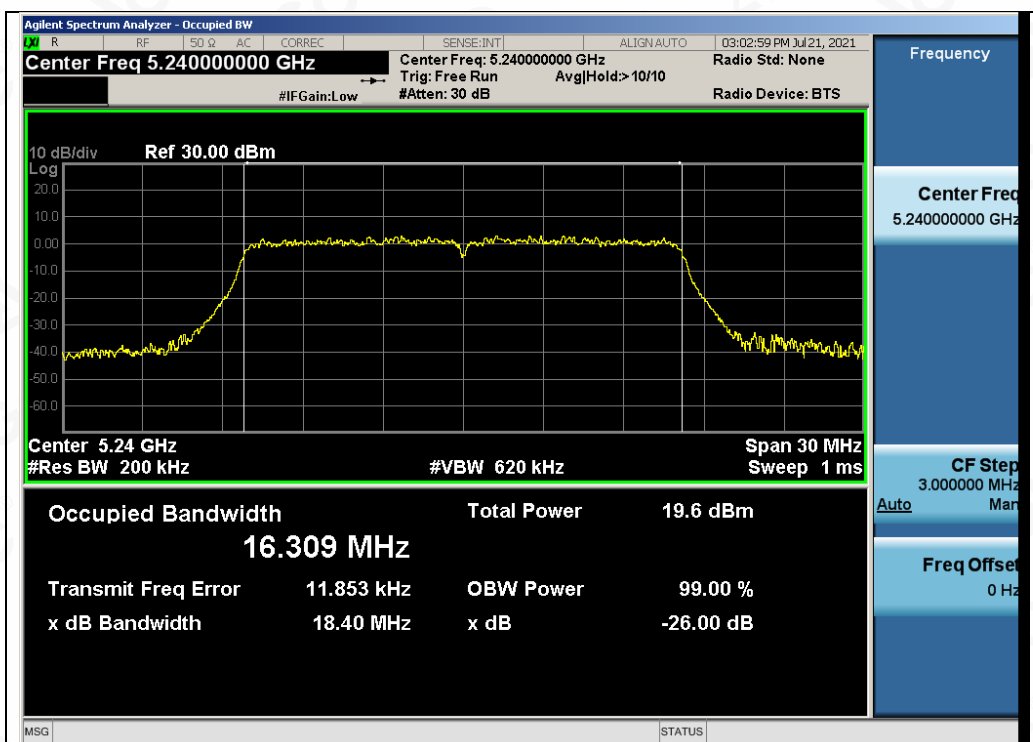


Test_Graph_802.11a_ANT2_5200_6Mbps_OBW

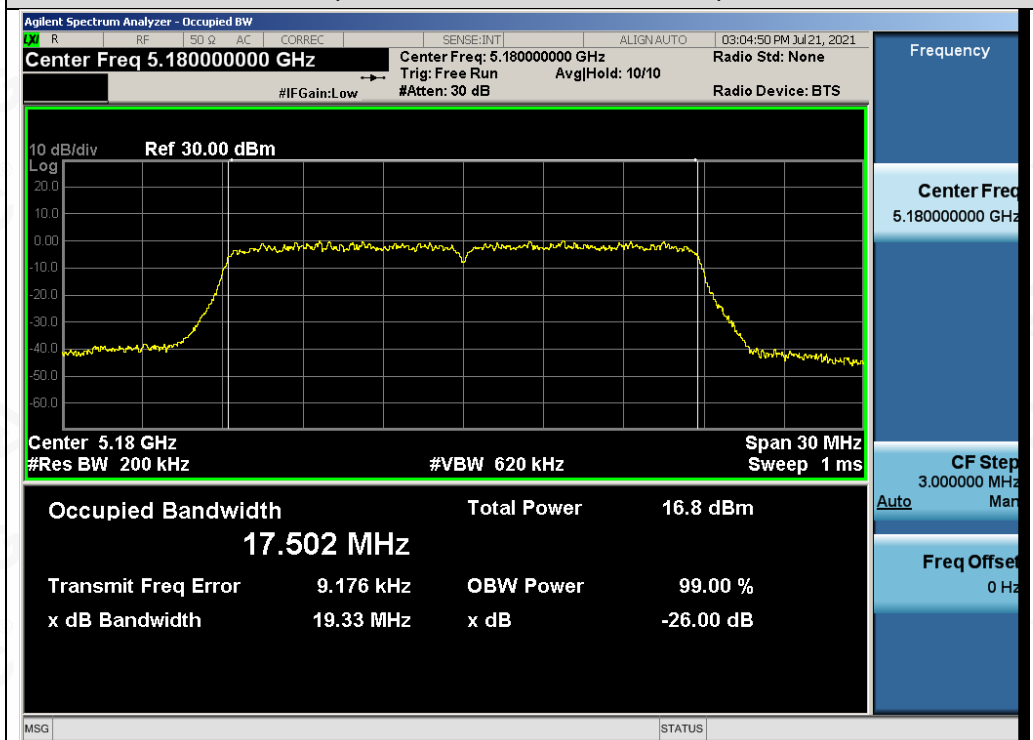
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Test_Graph_802.11a_ANT2_5240_6Mbps_OBW

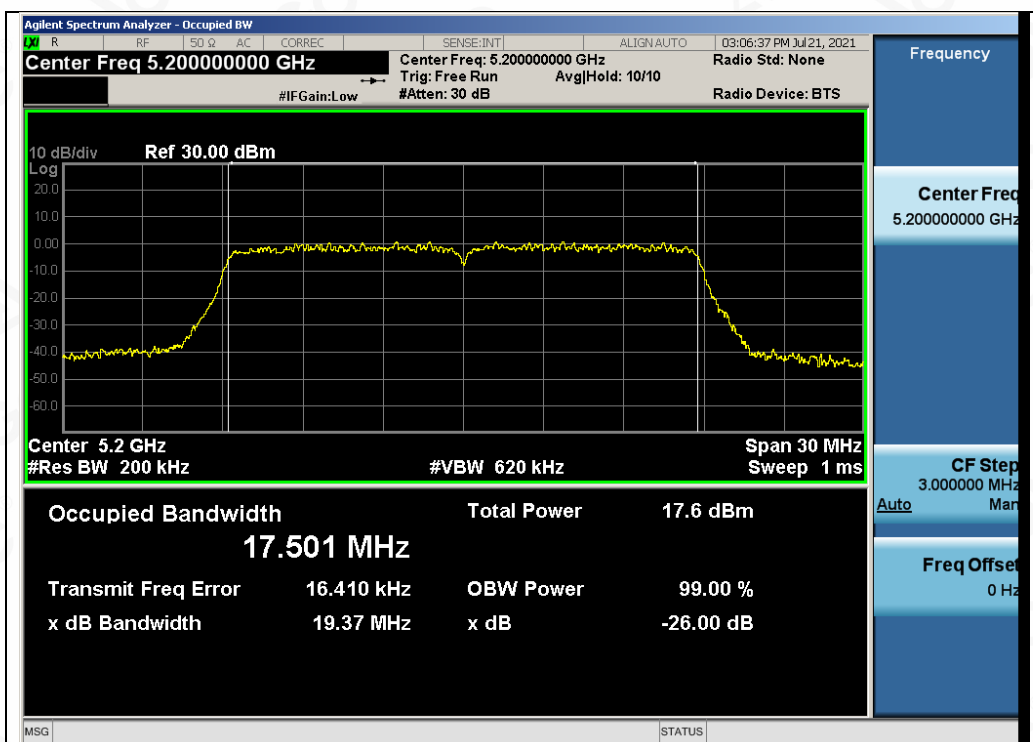


Test_Graph_802.11n20_ANT2_5180_MCS0_OBW

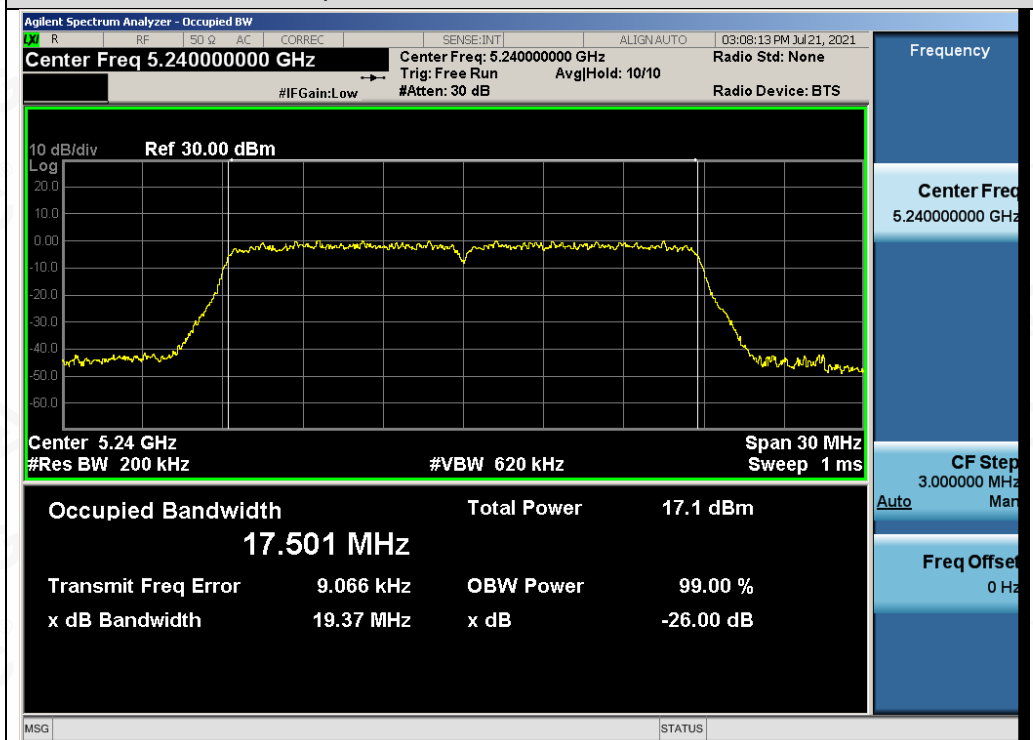
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Test_Graph_802.11n20_ANT2_5200_MCS0_OBW

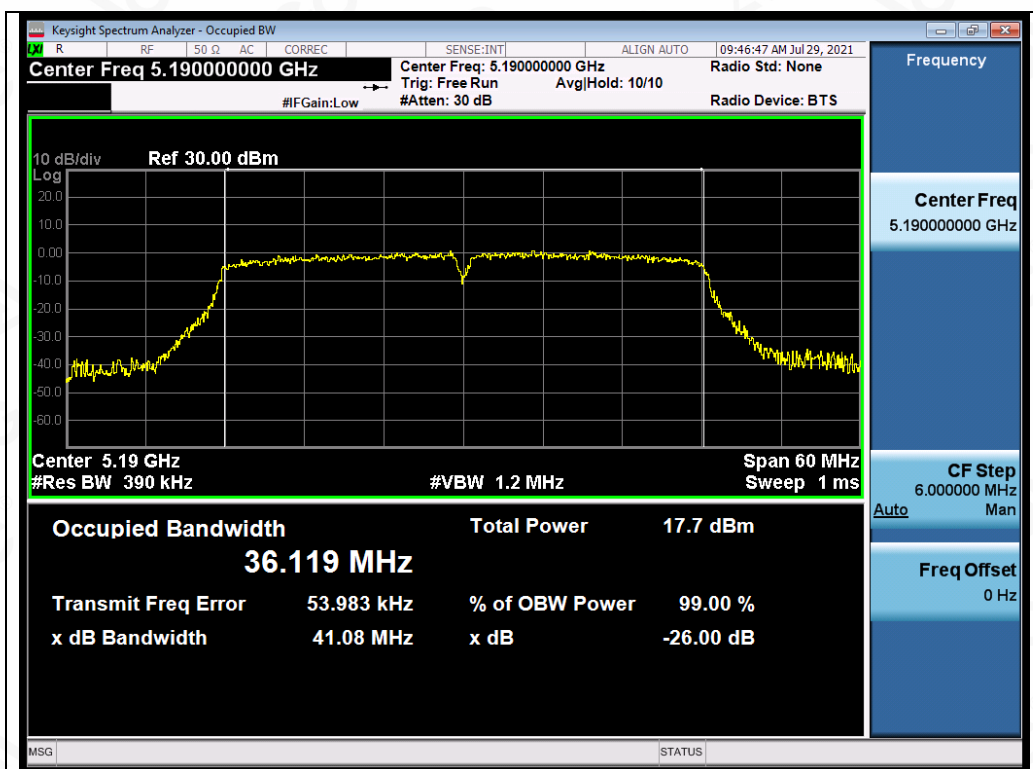


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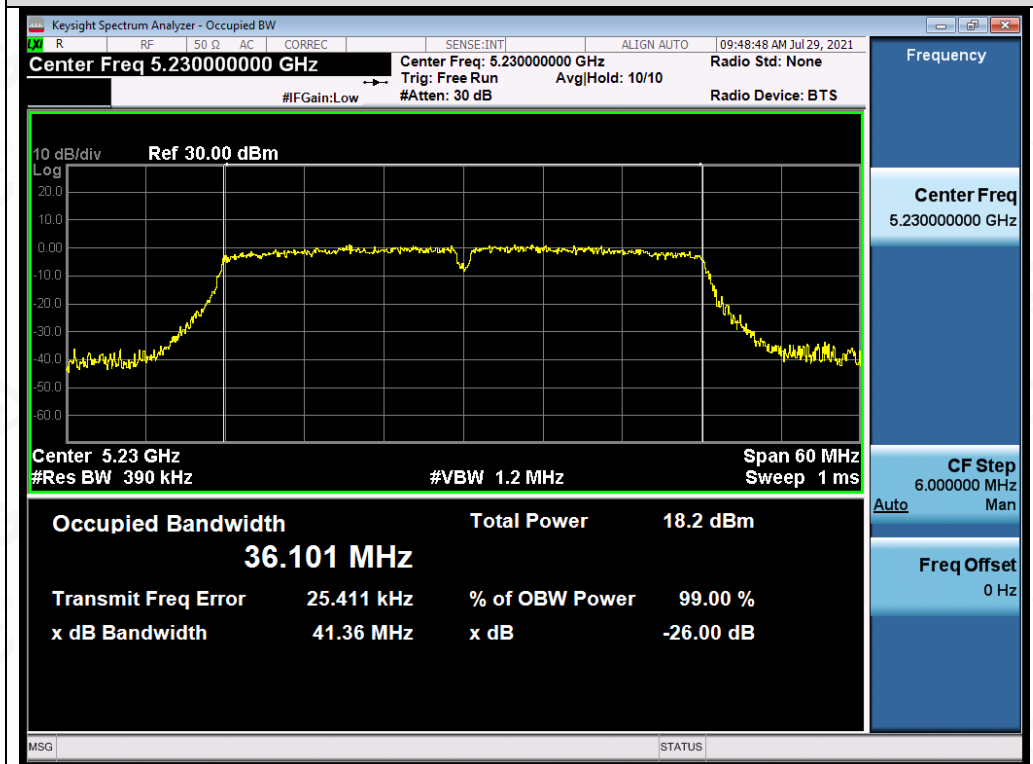
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Test_Graph_802.11n40_ANT2_5190_MCS0_OBW

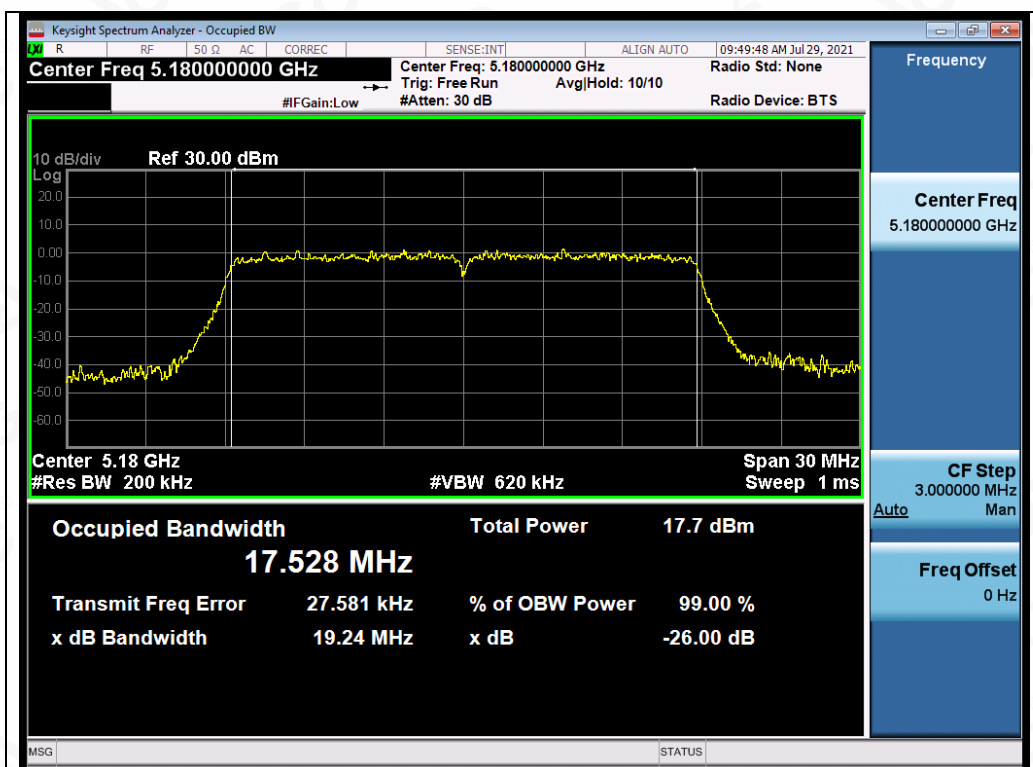


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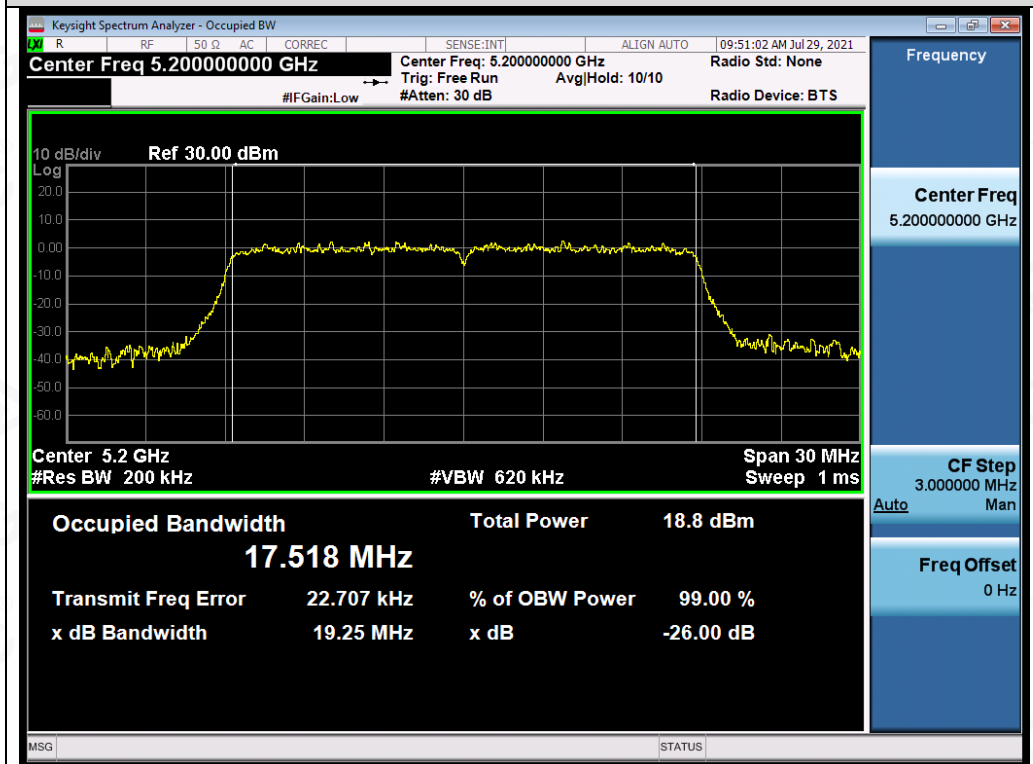
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Test_Graph_802.11ac20_ANT2_5180_MCS0_OBW

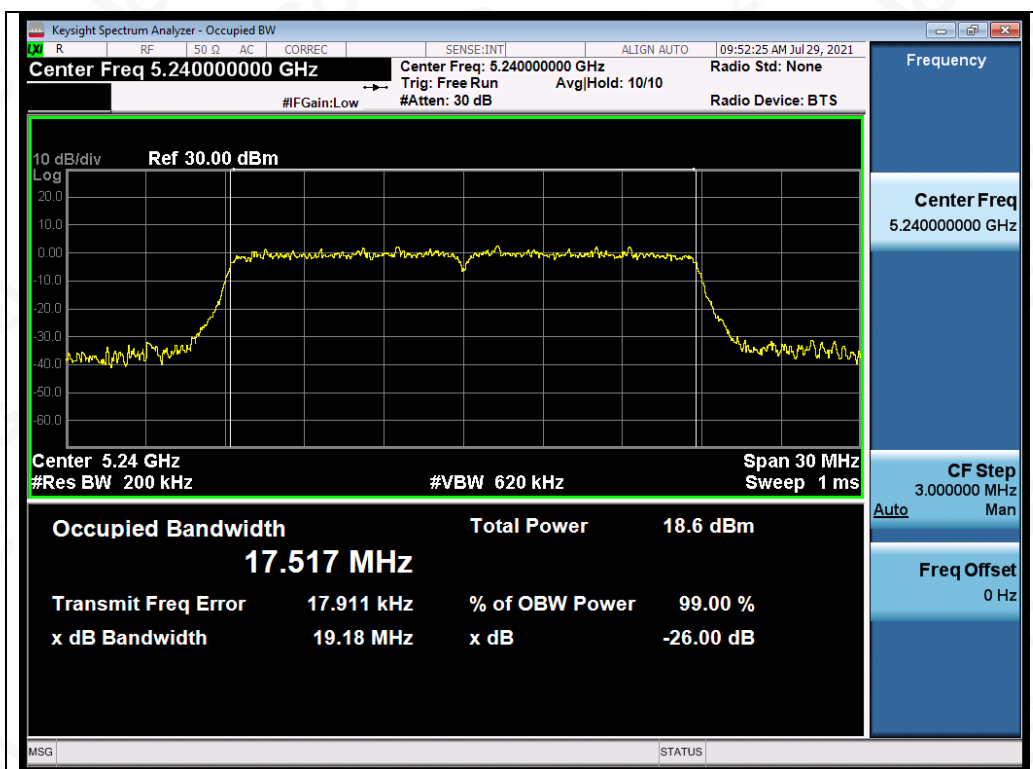


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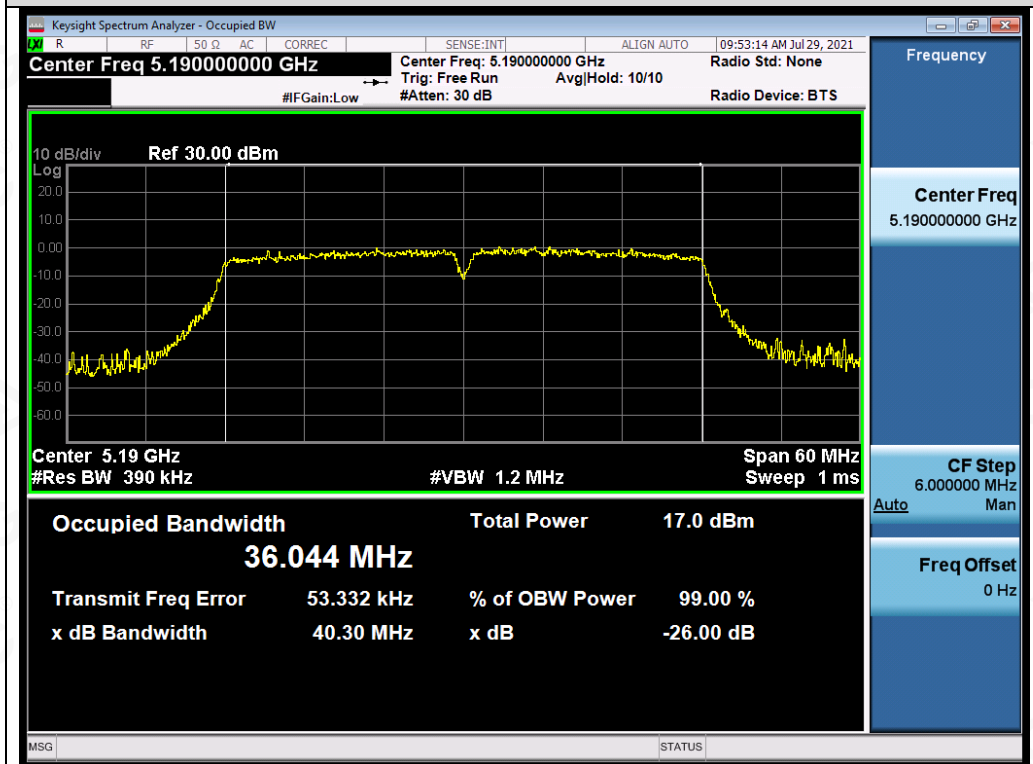
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Test_Graph_802.11ac20_ANT2_5240_MCS9_OBW



Test_Graph_802.11ac40_ANT2_5190_MCS9_OBW

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