
FCC Test Report

Report No.: AGC10514230801FR01

FCC ID : 2BCRN-BREAKX1

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION : Party speaker

BRAND NAME : Ikarao

MODEL NAME : BREAK X1, BREAK i300

APPLICANT : Dongguan Aika Electronic Technology Co., Ltd.

DATE OF ISSUE : Sep. 06, 2023

STANDARD(S) : FCC Part 15 Subpart E §15.407

REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 06, 2023	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	Dongguan Aika Electronic Technology Co., Ltd.
Address	Room 201, Building 2, No. 388, Bihu Road, Fenggang Town, Dongguan City, Guangdong Province, China
Manufacturer	GUANGDONG TAIDE ZHILIAN TECHNOLOGY CO.,LTD
Address	No. 388 Bihu Road, Fenggang Town, Dongguan city, Guangdong Province, China
Factory	GUANGDONG TAIDE ZHILIAN TECHNOLOGY CO.,LTD
Address	No. 388 Bihu Road, Fenggang Town, Dongguan city, Guangdong Province, China
Product Designation	Party speaker
Brand Name	Ikarao
Test Model	BREAK X1
Series Model	BREAK i300
Difference description	All the series models are the same as the test model except for the model names.
Date of receipt of test item	Aug. 17, 2023
Date of Test	Aug. 17, 2023~ Sep. 06, 2023
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

Thea Huang

Thea Huang
(Project Engineer)

Sep. 06, 2023

Reviewed By

Calvin Liu

Calvin Liu
(Reviewer)

Sep. 06, 2023

Approved By

Max Zhang

Max Zhang
Authorized Officer

Sep. 06, 2023

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

Equipment Type	☐ Outdoor access points ☐ Indoor access points ☐ Fixed P2P access points ☒ Client devices
Operation Frequency	☒ U-NII 1:5150MHz~5250MHz ☒ U-NII 2A: 5250MHz~5350MHz ☒ U-NII 2C:5470MHz~5725MHz ☒ U-NII 3: 5725MHz~5850MHz
DFS Design Type	☐ Master ☐ Slave with radar detection ☒ Slave without radar detection
TPC Function	☐ Yes ☒ No
Hardware Version	V1.1
Software Version	V1.0
Test Frequency Range:	For 802.11a/n(HT)20/ac(VHT)20: 5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz For 802.11n(HT40/ac(VHT)40: 5190~5230MHz, 5270~5310MHz, 5510~5710MHz, 5755~5795MHz
Max Output Power	IEEE 802.11a(HT20):10.85dBm; IEEE 802.11n(HT20):10.20dBm; IEEE802.11n(HT40):9.67dBm; IEEE 802.11ac(VHT20):10.44dBm; IEEE802.11ac(VHT40):9.93dBm
Modulation	802.11a/n:(64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ac :(256-QAM, 64-QAM, 16-QAM, QPSK, BPSK) OFDM
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps; 802.11n: up to 300Mbps; 802.11ac: up to 866.8Mbps
Number of channels	6 channels of U-NII-1 Band; 6 channels of U-NII-2A Band 18 channels of U-NII-2C Band; 7 channels of U-NII-3 Band
Antenna Designation	FPC Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	6.19dBi
Power Supply	DC 18.5V by battery or AC110~240V/ 50-60HZ

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2.2. TABLE OF CARRIER FREQUENCIES

For 5180~5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

For 5260~5320MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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For 5500~5720MHz:

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) :

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40) :

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

For 5745~5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz	--	--

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

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

This submittal(s) (test report) is intended for **FCC ID: 2BCRN-BREAKX1** filing to comply with the FCC Part 15 requirements.

2.4. TEST METHODOLOGY

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
4	KDB 662911	662911 D01 Multiple Transmitter Output v02r01
5	KDB 789033	789033 D02 General U-NII Test Procedures New Rules v02r01

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

Standard Requirement
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
EUT Antenna: The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 6.19dBi

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3. TEST ENVIRONMENT

3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

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3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS
Temperature range (°C)	15 - 35	-20 - 50
Relative humidity range	20 % - 75 %	20 % - 75 %
Pressure range (kPa)	86 - 106	86 - 106
Power supply	AC120V	--
Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.		

3.4 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	$U_c = \pm 2.7 \%$

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3.5 LIST OF EQUIPMENTS USED

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 03, 2023	Jun. 02, 2024
LISN	R&S	ESH2-Z5	100086	Jun. 03, 2023	Jun. 02, 2024
Attenuator	Dongfang Xupu	LM-XX-6-5W	N/A	Jun. 09, 2023	Jun. 08, 2024
Test software	R&S	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	Feb. 18, 2023	Feb. 17, 2024
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Jun. 01, 2023	May 31, 2024
Power sensor	Aglient	U2021XA	MY54110007	Mar. 18, 2022	Mar. 19, 2024
5GHz Fliter	EM Electronics	5150-5880MHz	N/A	Mar. 18, 2022	Mar. 19, 2024
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2023	Apr. 22, 2024
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 01, 2022	Sep. 02, 2024
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
Test software	FARA	Ver.RA-03A	N/A	N/A	N/A

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4. DESCRIPTION OF TEST MODES

Mode	Available channel	Tested channel	Modulation	Date rate (Mbps)
802.11a/n/ac	36,40,44,48,52, 56, 60, 64,100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165	36,40,48,52, 64, 100, 120, 140, 149, 157, 165	OFDM/OFDMA	6Mbps/MCS0
802.11n/ac	38,46, 54, 62, 102, 110, 118, 126, 134, 142, 151,159	38,46, 54, 62, 102, 118, 126, 151,159	OFDM/OFDMA	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

```

管理员: C:\Windows\System32\cmd.exe - adb shell
rtwpriv_arm64 wlan0 mp_ant_tx a
rtwpriv_arm64 wlan0 mp_bandwidth 40M=0,shortGI=0
rtwpriv_arm64 wlan0 mp_rate 128
rtwpriv_arm64 wlan0 mp_txpower patha=49,pathb=0

rtwpriv_arm64 wlan0 mp_ctx background,pktrtwpriv_arm64 wlan0 mp_start
rtwpriv_arm64 wlan0 mp_channel 36
k3568_t:/ # rtwpriv_arm64 wlan0 mp_start
wlan0 mp_start:mp_start ok

k3568_t:/ # rtwpriv_arm64 wlan0 mp_channel 36
wlan0 mp_channel:Change channel 149 to channel 36
k3568_t:/ # rtwpriv_arm64 wlan0 mp_ant_tx a
wlan0 mp_ant_tx:switch Tx antenna to a
k3568_t:/ # rtwpriv_arm64 wlan0 mp_bandwidth 40M=0,shortGI=0
wlan0 mp_bandwidth:No change current BW 0

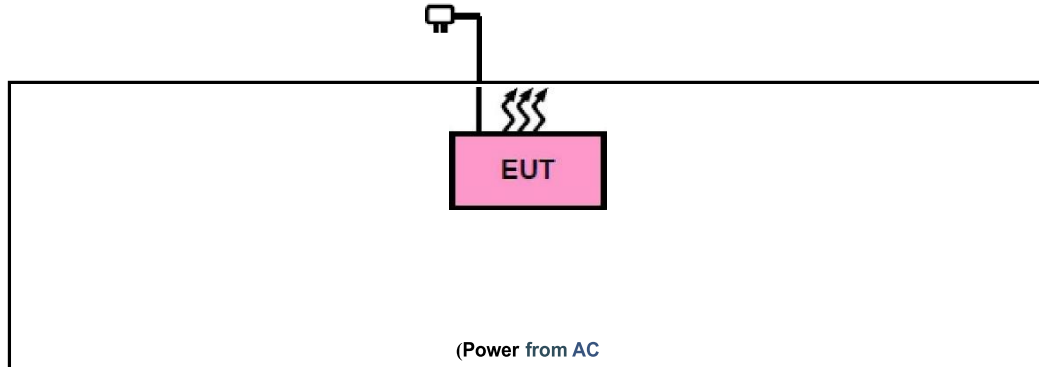
k3568_t:/ # rtwpriv_arm64 wlan0 mp_rate 128
wlan0 mp_rate:Set data rate to 128 index 12
k3568_t:/ # rtwpriv_arm64 wlan0 mp_txpower patha=49,pathb=0
wlan0 mp_txpower:patha=49,pathb=0
k3568_t:/ #
rtwpriv_arm64 wlan0 mp_ctx background,pkt
wlan0 mp_ctx:
Start continuous DA=ffffffff len=1500 count=0

k3568_t:/ # rtwpriv_arm64 wlan0 mp_ctx stop
rtwpriv_arm64 wlan0 mp_ctx stop
wlan0 mp_ctx:Stop continuous Tx
k3568_t:/ #
  
```

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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Party speaker	BREAK X1	2BCRN-BREAKX1	EUT
2	Data Cable	--	0.8m, unshielded	AE

5.3. SUMMARY OF TEST RESULTS

Item	FCC Rules	Description Of Test	Result
1	§15.203	Antenna Equipment	Pass
2	§15.407(a/1/2/3)	RF Output Power	Pass
3	§15.407(e)	6dB Bandwidth Measurement	Pass
4	§2.1049	26dB bandwidth Measurement	Pass
5	§15.407(a/1/2/3)	Power Spectral Density	Pass
6	§15.407(b)(1/2/3/4)	Conducted Spurious Emission	Pass
7	§15.209,§15.407(b)(1/2/3/4)	Radiated Emission& Band Edge	Pass
8	§15.207	AC Power Line Conducted Emission	Pass

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6. DUTY CYCLE MEASUREMENT

5GHz WLAN (NII) operation is possible in 20MHz, 40MHz and 80MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Peak. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Operating mode	Data rates (Mbps)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)	Average Factor (dB)
For band 5.150-5.250 GHz:					
IEEE 802.11a	6	92.27	0.35	0.48	-0.70
IEEE 802.11n-HT20	MCS0	97.61	0.11	0.52	-0.21
IEEE 802.11n-HT40	MCS0	89.66	0.47	1.06	-0.95
IEEE 802.11ac-VHT20	MCS0	92.32	0.35	0.52	-0.69
IEEE 802.11ac-VHT40	MCS9	87.43	0.58	1.05	-1.17
For band 5.25-5.35 GHz:					
IEEE 802.11a	6	96.50	0.15	0.48	-0.31
IEEE 802.11n-HT20	MCS0	95.37	0.21	0.52	-0.41
IEEE 802.11n-HT40	MCS0	92.01	0.36	1.06	-0.72
IEEE 802.11ac-VHT20	MCS0	92.38	0.30	0.52	-0.59
IEEE 802.11ac-VHT40	MCS9	92.32	0.44	1.05	-0.88
For band 5.47-5.725 GHz:					
IEEE 802.11a	6	97.59	0.11	0.48	-0.21
IEEE 802.11n-HT20	MCS0	92.80	0.32	0.52	-0.65
IEEE 802.11n-HT40	MCS0	88.73	0.52	1.55	-1.04
IEEE 802.11ac-VHT20	MCS0	96.26	0.17	0.52	-0.33
IEEE 802.11ac-VHT40	MCS9	91.98	0.36	1.05	-0.73
For band 5.725-5.850 GHz:					
IEEE 802.11a	6	92.68	0.33	0.48	-0.66
IEEE 802.11n-HT20	MCS0	94.95	0.23	0.52	-0.45

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IEEE 802.11n-HT40	MCS0	98.96	0.05	0.96	-0.09
IEEE 802.11ac-VHT20	MCS0	94.57	0.24	0.52	-0.48
IEEE 802.11ac-VHT40	MCS9	88.97	0.51	1.05	-1.02

Remark:

1. Duty Cycle factor = $10 * \log (1/ \text{Duty cycle})$ 2. Average factor = $20 \log_{10} \text{Duty Cycle}$
2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value.
3. The measurement results involving the above compensation parameters have been compensated by software to reflect the final results.

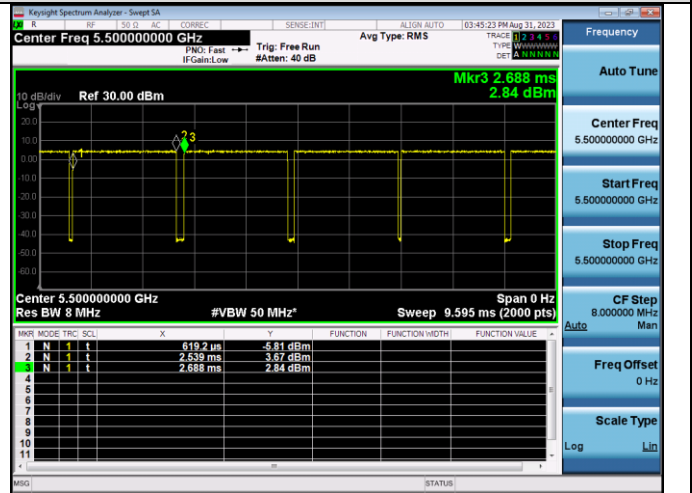
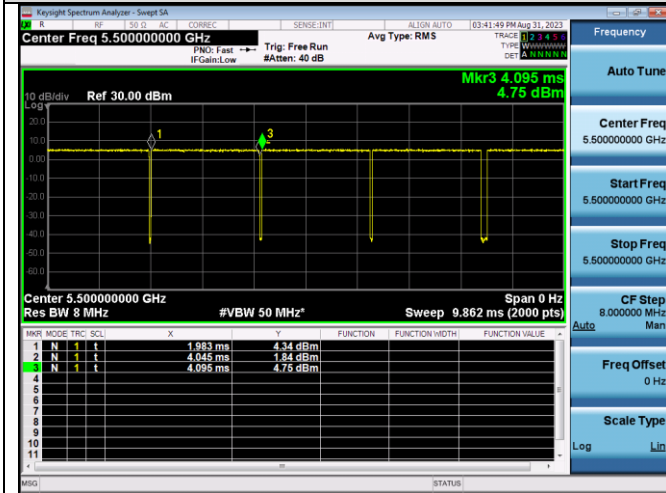
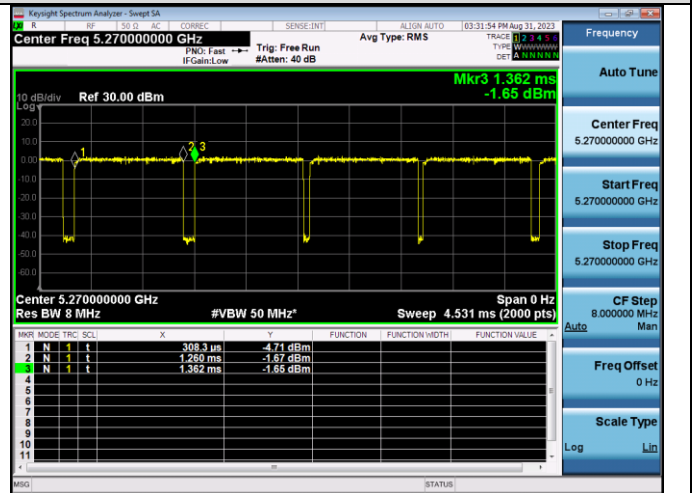
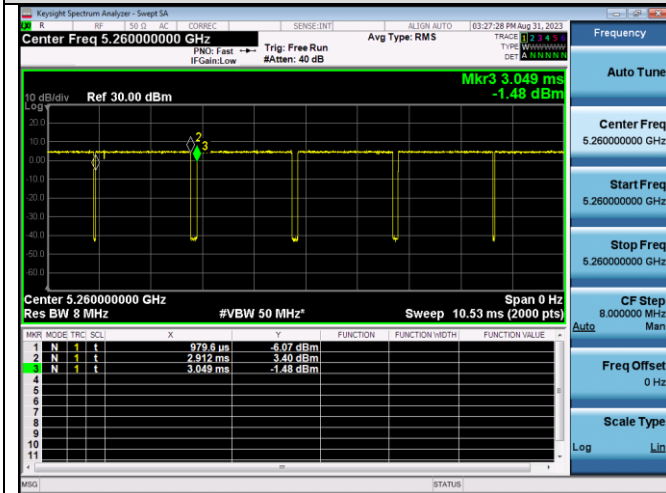
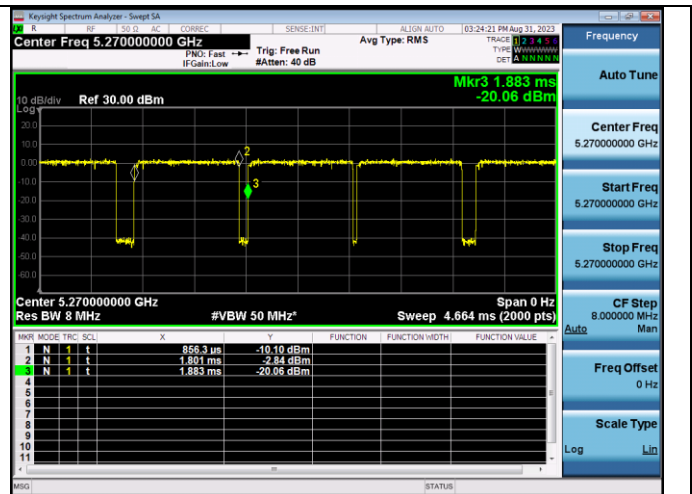
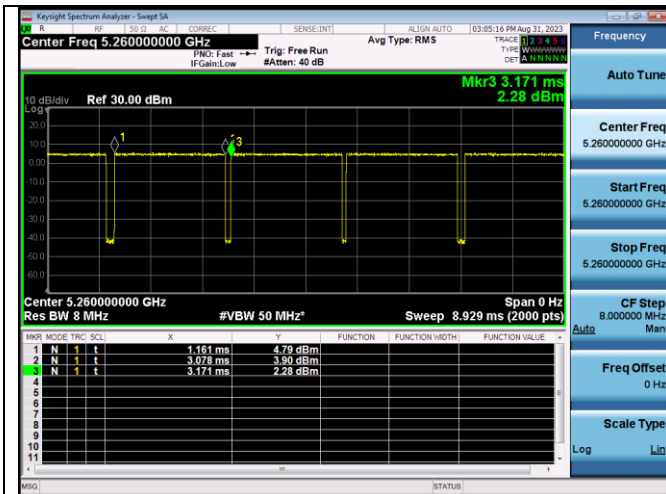
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The test plots as follows:



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7. RF OUTPUT POWER MEASUREMENT

7.1 MEASUREMENT LIMITS

Operation Band	EUT Category		LIMIT
U-NII-1	☐	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p < 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	☐	Fixed point-to-point Access Point	1 Watt (30 dBm)
	☐	Indoor Access Point	1 Watt (30 dBm)
	☒	Client devices	250mW (23.98 dBm)
U-NII-2A	/		250mW (23.98 dBm) or 11 dBm+10 log B*
U-NII-2C	/		250mW (23.98 dBm) or 11 dBm+10 log B*
U-NII-3	/		1 Watt (30 dBm)

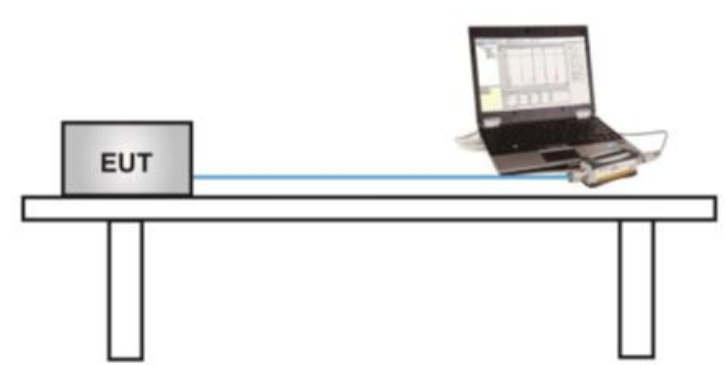
Note: Where B is the 26dB emission bandwidth in MHz.

7.2 MEASUREMENT PROCEDURE

☒ Method PM is Measurement using an RF average power meter. The procedure for this method is as follows:

1. The testing follows the ANSI C63.10 Section 12.3.3.1
2. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
3. The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
4. At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
5. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
6. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
7. Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
8. Adjust the measurement in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle {e.g., $[10 \log (1 / 0.25)]$, if the duty cycle is 25%}.
9. Record the test results in the report.

7.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



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7.4 MEASUREMENT RESULT

Test Data of Conducted Output Power for band 5.15-5.25 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	10.68	23.79	Pass
	5200	10.28	23.79	Pass
	5240	10.85	23.79	Pass
802.11n20	5180	10.07	23.79	Pass
	5200	10.20	23.79	Pass
	5240	9.99	23.79	Pass
802.11n40	5190	9.67	23.79	Pass
	5230	9.52	23.79	Pass
802.11ac20	5180	10.25	23.79	Pass
	5200	9.95	23.79	Pass
	5240	10.44	23.79	Pass
802.11ac40	5190	9.93	23.79	Pass
	5230	9.68	23.79	Pass

Test Data of Conducted Output Power for band 5.25-5.35 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5260	8.90	23.79	Pass
	5300	9.72	23.79	Pass
	5320	9.89	23.79	Pass
802.11n20	5260	8.50	23.79	Pass
	5300	9.24	23.79	Pass
	5320	9.36	23.79	Pass
802.11n40	5270	7.52	23.79	Pass
	5310	8.46	23.79	Pass
802.11ac20	5260	8.54	23.79	Pass
	5300	8.99	23.79	Pass
	5320	9.15	23.79	Pass
802.11ac40	5270	7.69	23.79	Pass
	5310	7.72	23.79	Pass

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Test Data of Conducted Output Power for band 5.47-5.725 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5500	8.58	23.79	Pass
	5600	8.90	23.79	Pass
	5700	10.20	23.79	Pass
802.11n20	5500	8.50	23.79	Pass
	5600	8.74	23.79	Pass
	5700	9.77	23.79	Pass
802.11n40	5510	7.69	23.79	Pass
	5590	7.98	23.79	Pass
	5670	8.81	23.79	Pass
802.11ac20	5500	8.16	23.79	Pass
	5600	8.55	23.79	Pass
	5700	9.62	23.79	Pass
802.11ac40	5510	7.64	23.79	Pass
	5590	8.51	23.79	Pass
	5670	9.13	23.79	Pass

Test Data of Conducted Output Power for band 5.725-5.85 GHz				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5745	10.61	29.81	Pass
	5785	9.52	29.81	Pass
	5825	8.02	29.81	Pass
802.11n20	5745	9.98	29.81	Pass
	5785	9.03	29.81	Pass
	5825	7.64	29.81	Pass
802.11n40	5755	9.51	29.81	Pass
	5795	8.18	29.81	Pass
802.11ac20	5745	9.94	29.81	Pass
	5785	9.10	29.81	Pass
	5825	7.85	29.81	Pass
802.11ac40	5755	9.56	29.81	Pass
	5795	8.65	29.81	Pass

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8. 6DB&26DB BANDWIDTH MEASUREMENT

8.1 MEASUREMENT LIMITS

The minimum 6dB bandwidth shall be at least 500 kHz.

8.2 MEASUREMENT PROCEDURE

8.2.1 -6dB bandwidth (DTS bandwidth) Test setting:

1. Connect EUT RF output port to the Spectrum Analyzer.
2. Set the EUT Work on operation frequency individually.
3. Set RBW = 100kHz.
4. Set the VBW $\geq 3 \times \text{RBW}$. 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.

8.2.2 99% occupied bandwidth test setting:

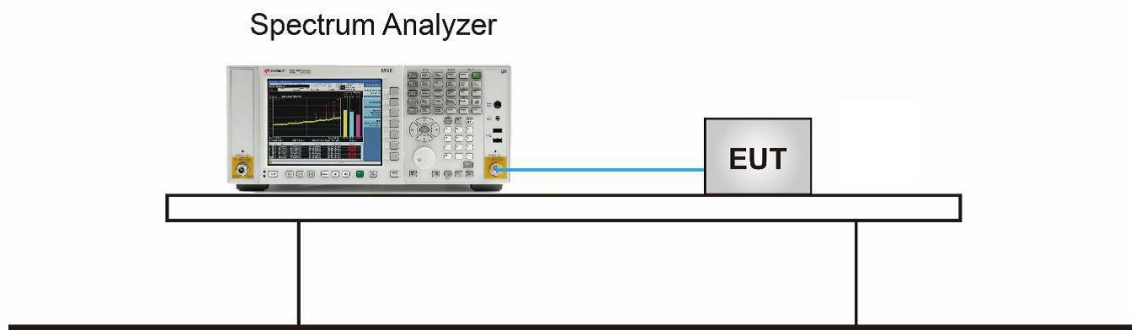
1. Connect EUT RF output port to the Spectrum Analyzer.
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 1.5 to 5 times the OBW, centered on a nominal channel
The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1%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

8.2.3 -26dB Bandwidth test setting:

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW $> \text{RBW}$.
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.

8.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)



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8.4 MEASUREMENT RESULTS

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.15-5.25 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5180	16.573	21.036	N/A	Pass
	5200	16.562	20.456	N/A	Pass
	5240	16.767	28.830	N/A	Pass
802.11n20	5180	17.675	20.892	N/A	Pass
	5200	17.649	21.138	N/A	Pass
	5240	17.735	27.318	N/A	Pass
802.11n40	5190	36.186	41.431	N/A	Pass
	5230	36.231	41.856	N/A	Pass
802.11ac20	5180	17.634	20.967	N/A	Pass
	5200	17.700	20.957	N/A	Pass
	5240	17.739	26.291	N/A	Pass
802.11ac40	5190	36.250	41.680	N/A	Pass
	5230	36.215	44.598	N/A	Pass

Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.25-5.35 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5260	16.644	26.170	N/A	Pass
	5300	16.850	28.415	N/A	Pass
	5320	16.872	29.516	N/A	Pass
802.11n20	5260	17.697	21.004	N/A	Pass
	5300	17.834	29.341	N/A	Pass
	5320	17.818	28.577	N/A	Pass
802.11n40	5270	36.258	41.298	N/A	Pass
	5310	36.257	49.885	N/A	Pass
802.11ac20	5260	17.725	23.239	N/A	Pass
	5300	17.791	29.349	N/A	Pass
	5320	17.870	28.334	N/A	Pass
802.11ac40	5270	36.240	46.279	N/A	Pass
	5310	36.339	56.924	N/A	Pass

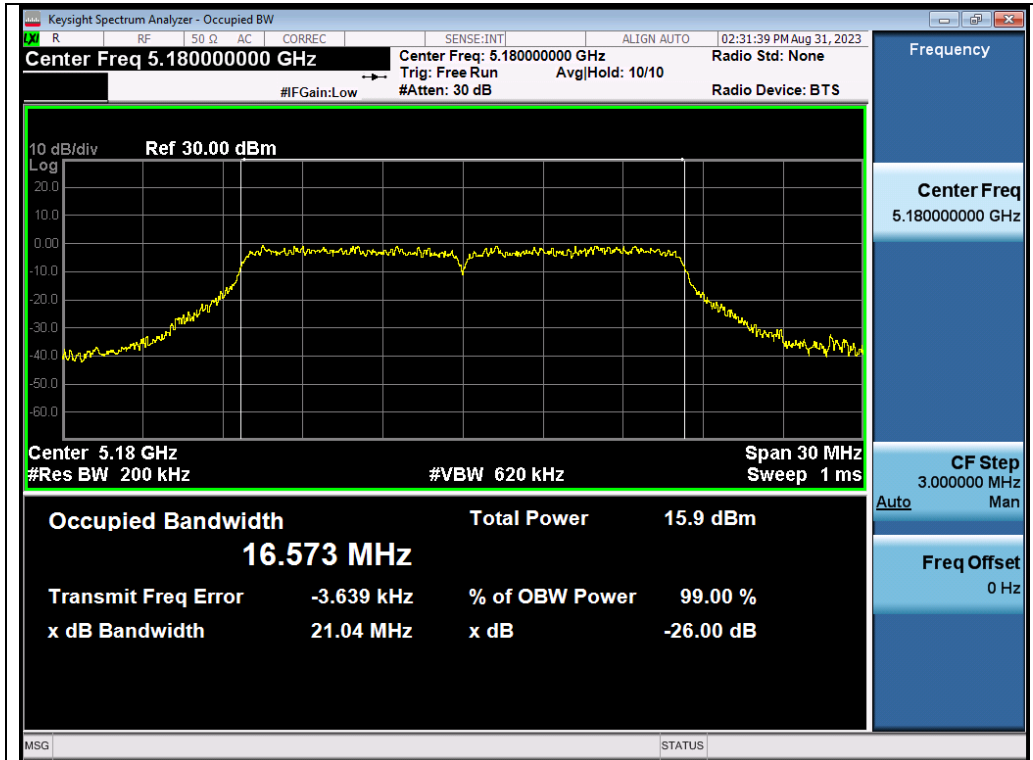
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Test Data of Occupied Bandwidth and -26dB Bandwidth for band 5.47-5.725 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5500	16.589	20.852	N/A	Pass
	5600	16.543	20.418	N/A	Pass
	5700	16.806	30.000	N/A	Pass
802.11n20	5500	17.646	21.025	N/A	Pass
	5600	17.655	21.235	N/A	Pass
	5700	17.863	28.497	N/A	Pass
802.11n40	5510	36.208	41.362	N/A	Pass
	5590	36.186	41.252	N/A	Pass
	5670	36.315	50.548	N/A	Pass
802.11ac20	5500	17.690	21.284	N/A	Pass
	5600	17.667	21.032	N/A	Pass
	5700	17.869	29.351	N/A	Pass
802.11ac40	5510	36.232	41.844	N/A	Pass
	5590	36.215	41.223	N/A	Pass
	5670	36.355	50.323	N/A	Pass

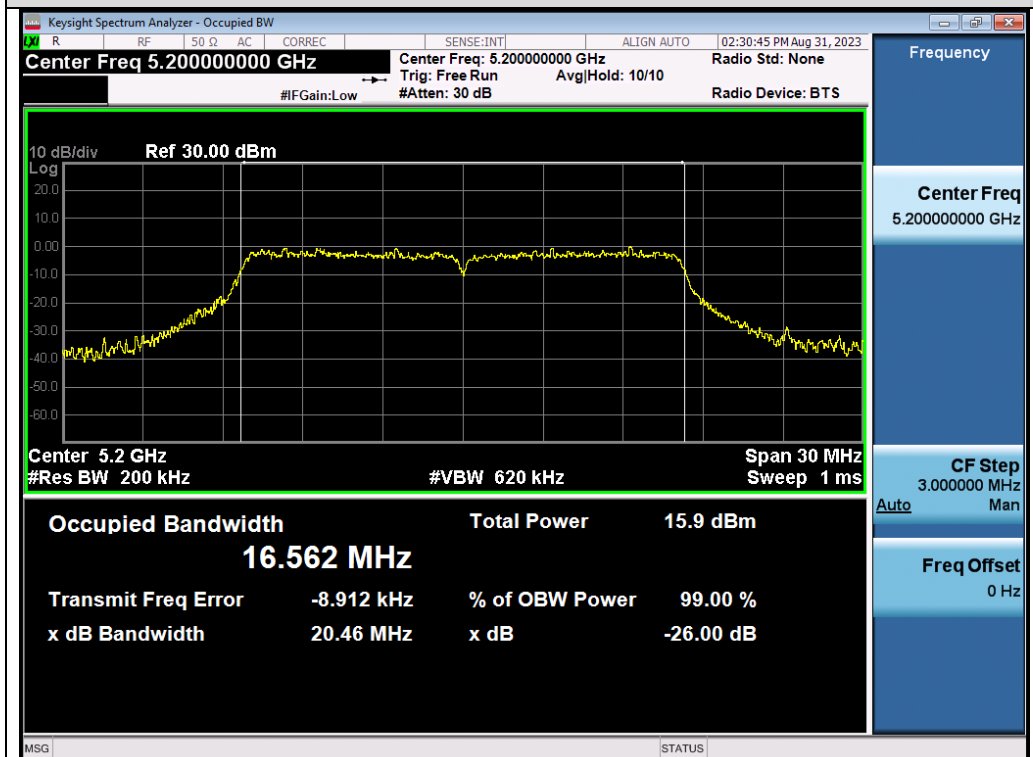
Test Data of Occupied Bandwidth and DTS Bandwidth for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5745	16.781	16.303	0.5	Pass
	5785	16.643	16.336	0.5	Pass
	5825	16.580	16.343	0.5	Pass
802.11n20	5745	17.789	17.292	0.5	Pass
	5785	17.713	17.268	0.5	Pass
	5825	17.699	17.545	0.5	Pass
802.11n40	5755	36.294	36.059	0.5	Pass
	5795	36.187	35.719	0.5	Pass
802.11ac20	5745	17.815	17.562	0.5	Pass
	5785	17.729	17.531	0.5	Pass
	5825	17.629	16.912	0.5	Pass
802.11ac40	5755	36.336	36.283	0.5	Pass
	5795	36.251	35.729	0.5	Pass

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

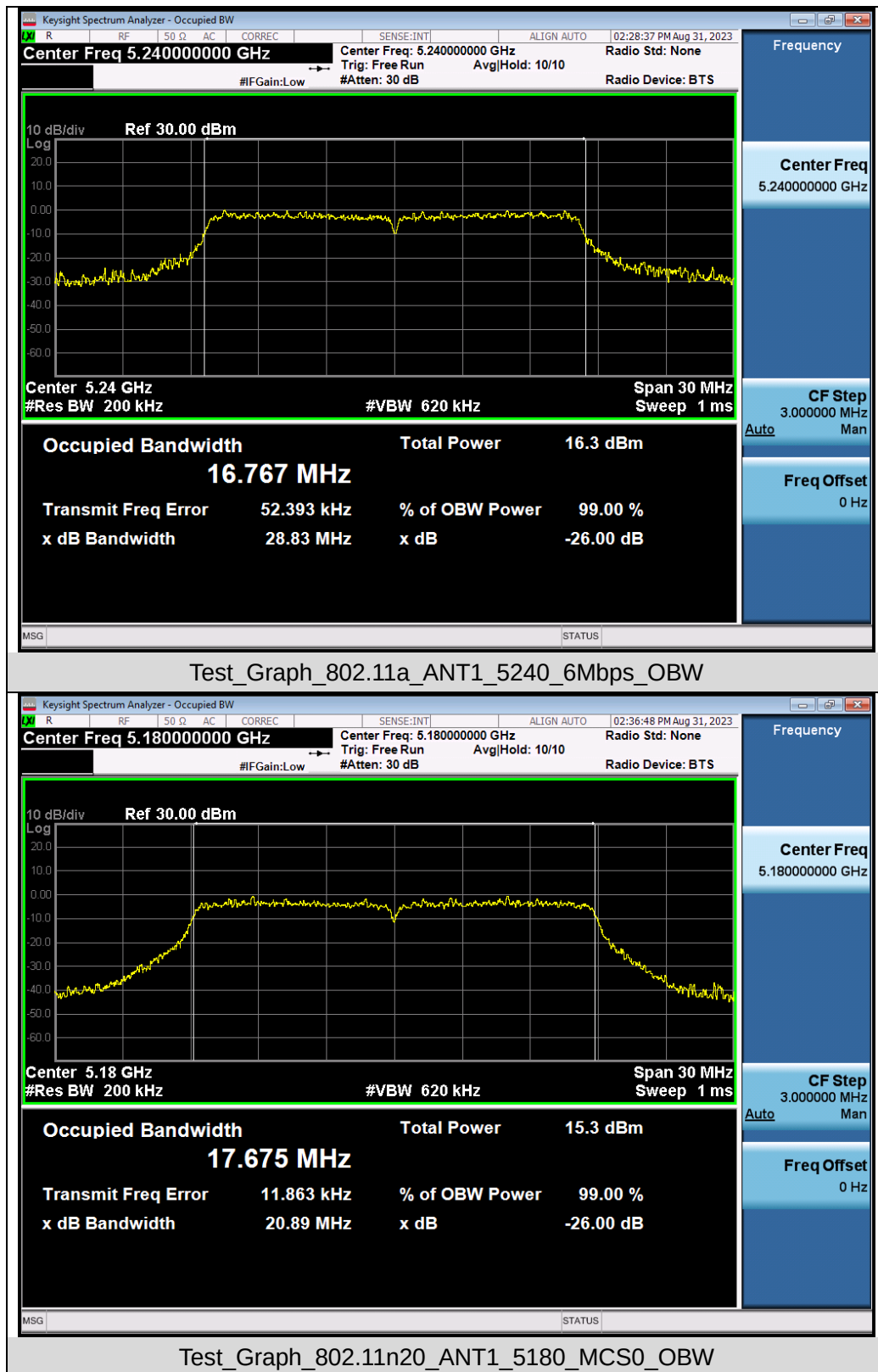


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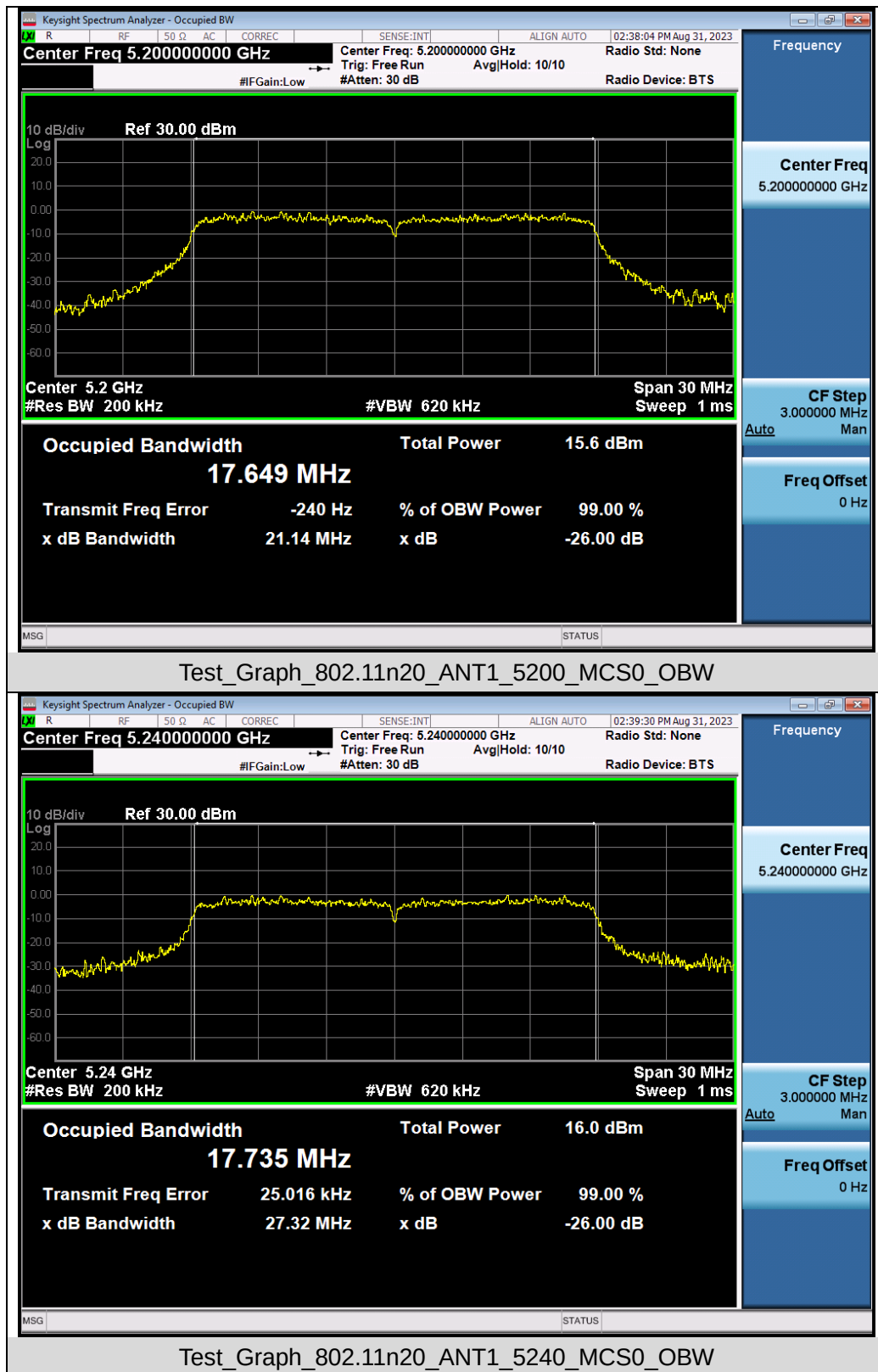


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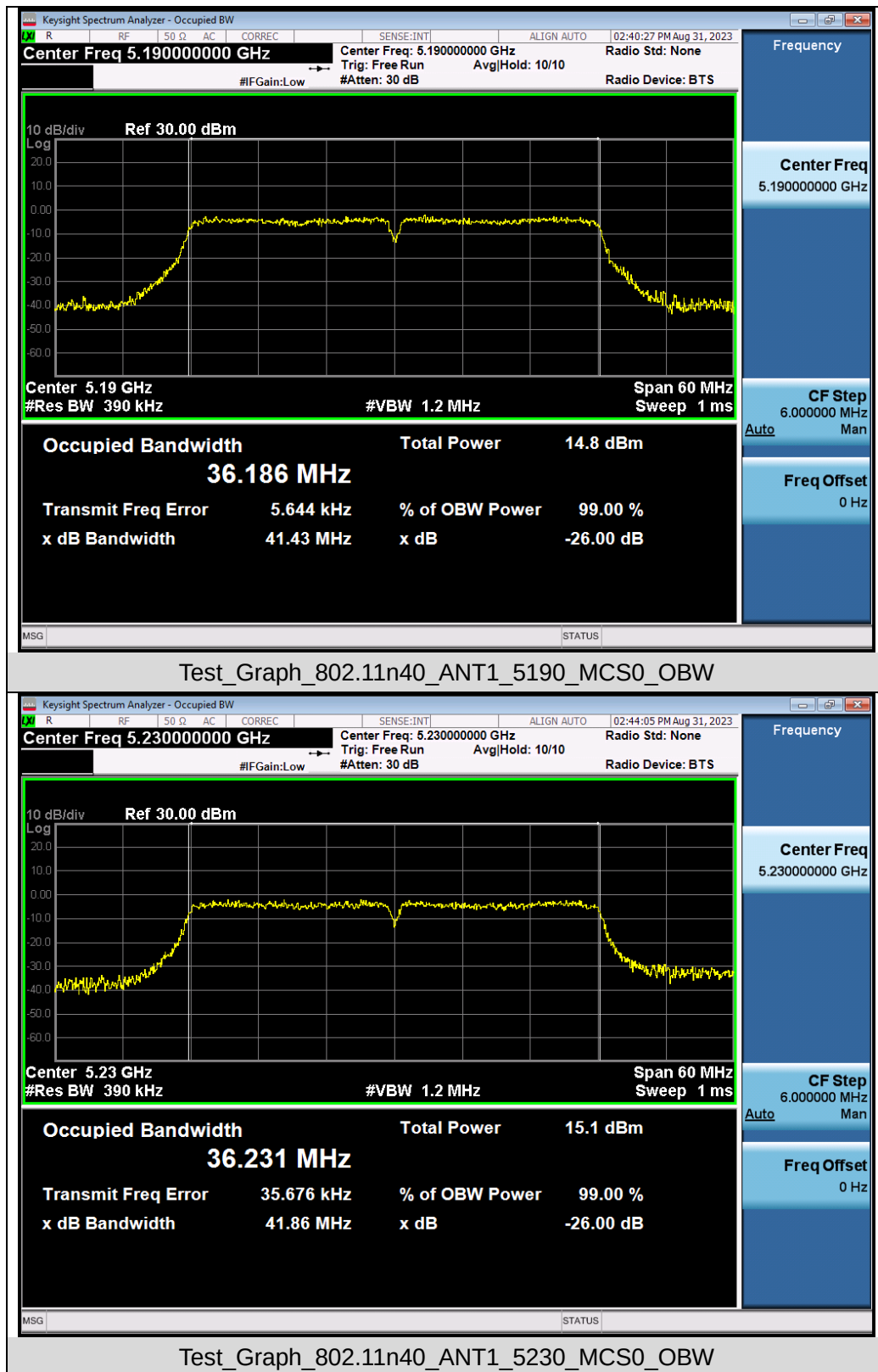
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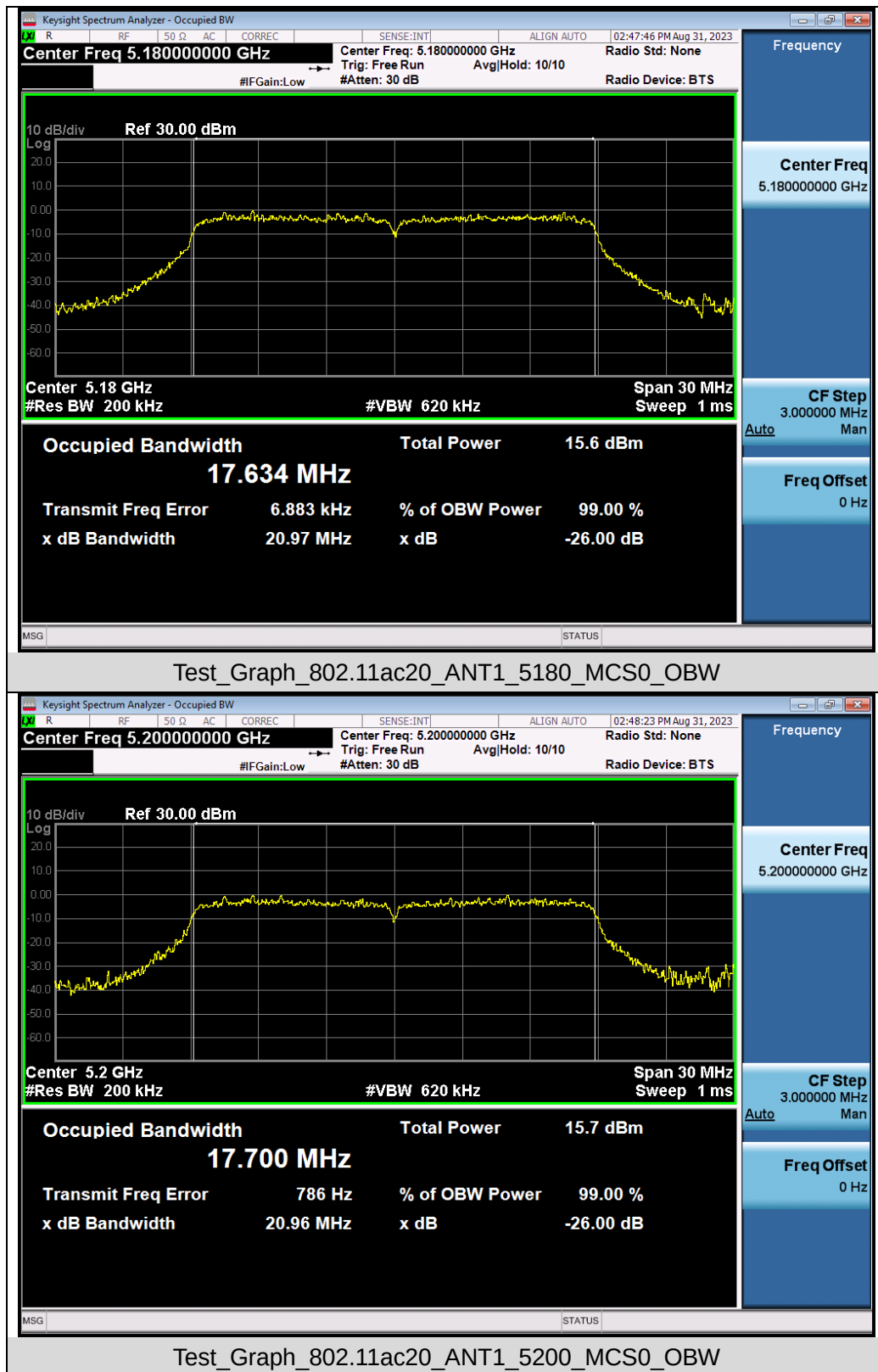
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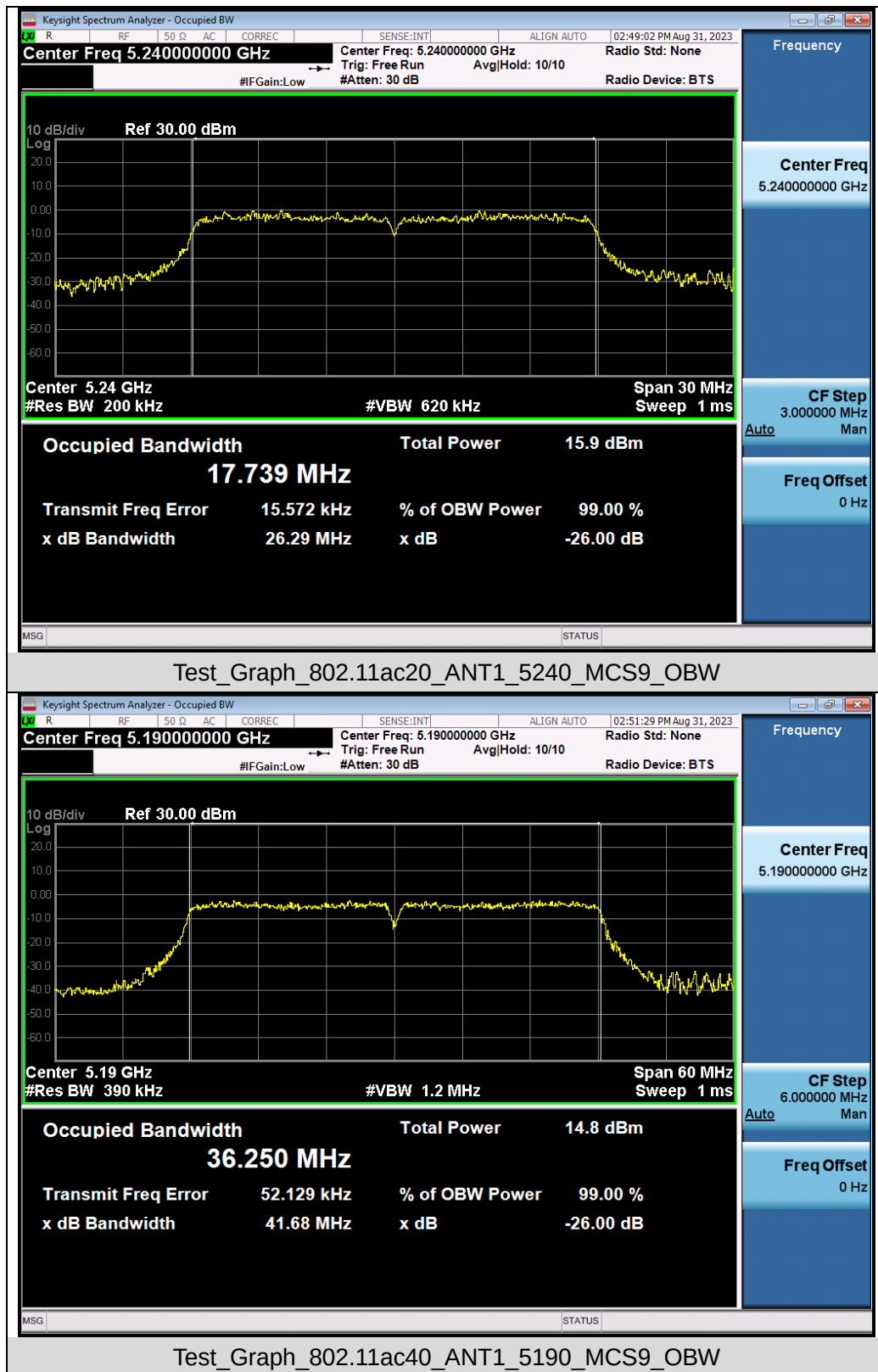
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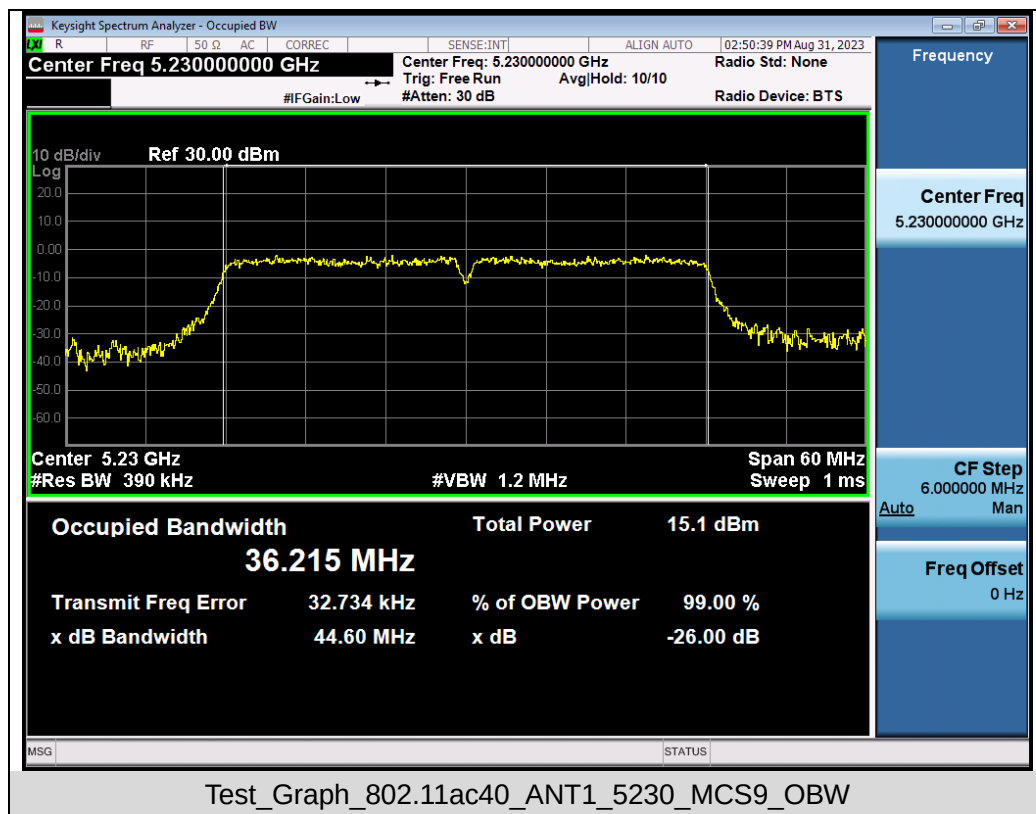
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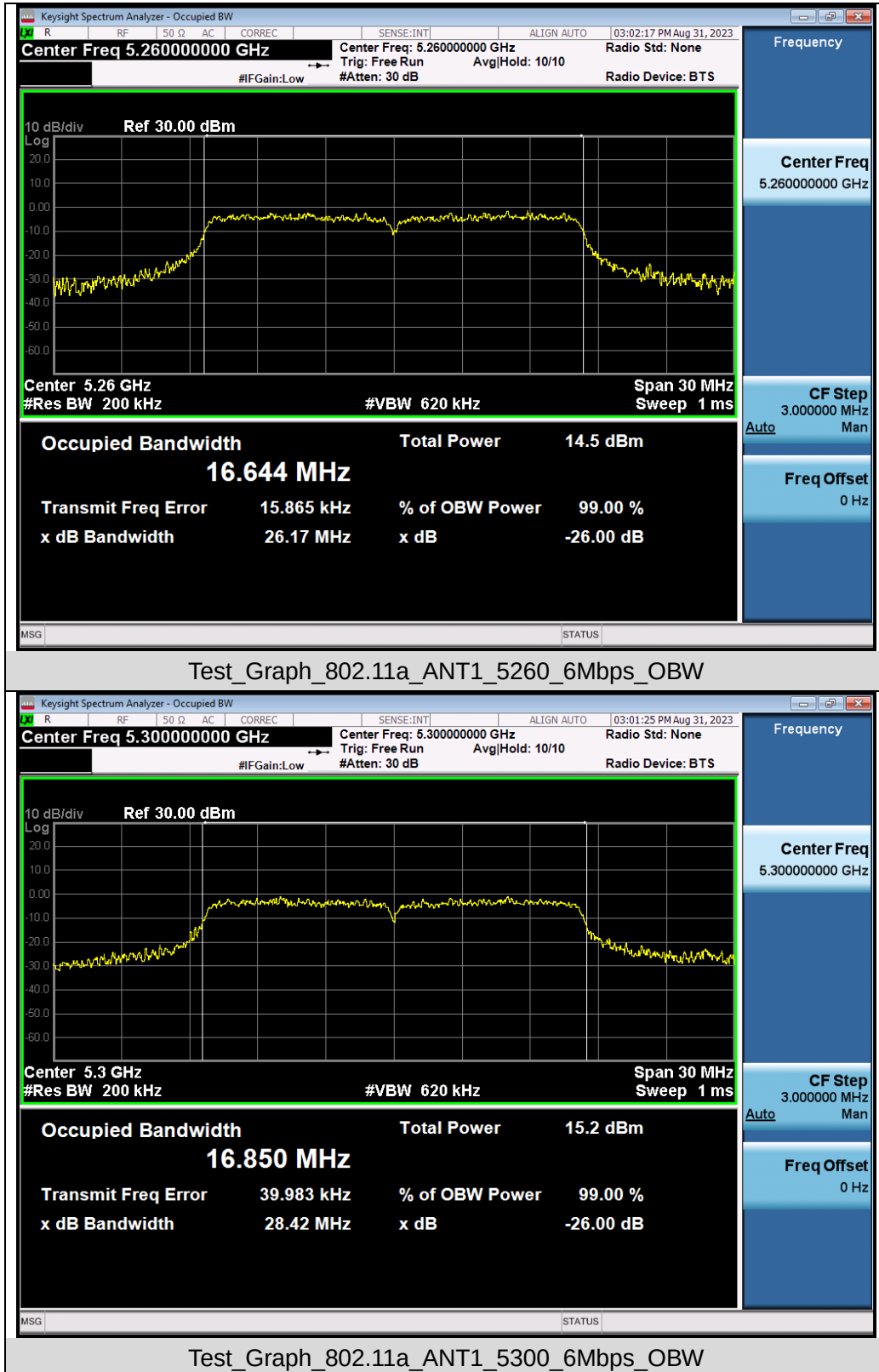
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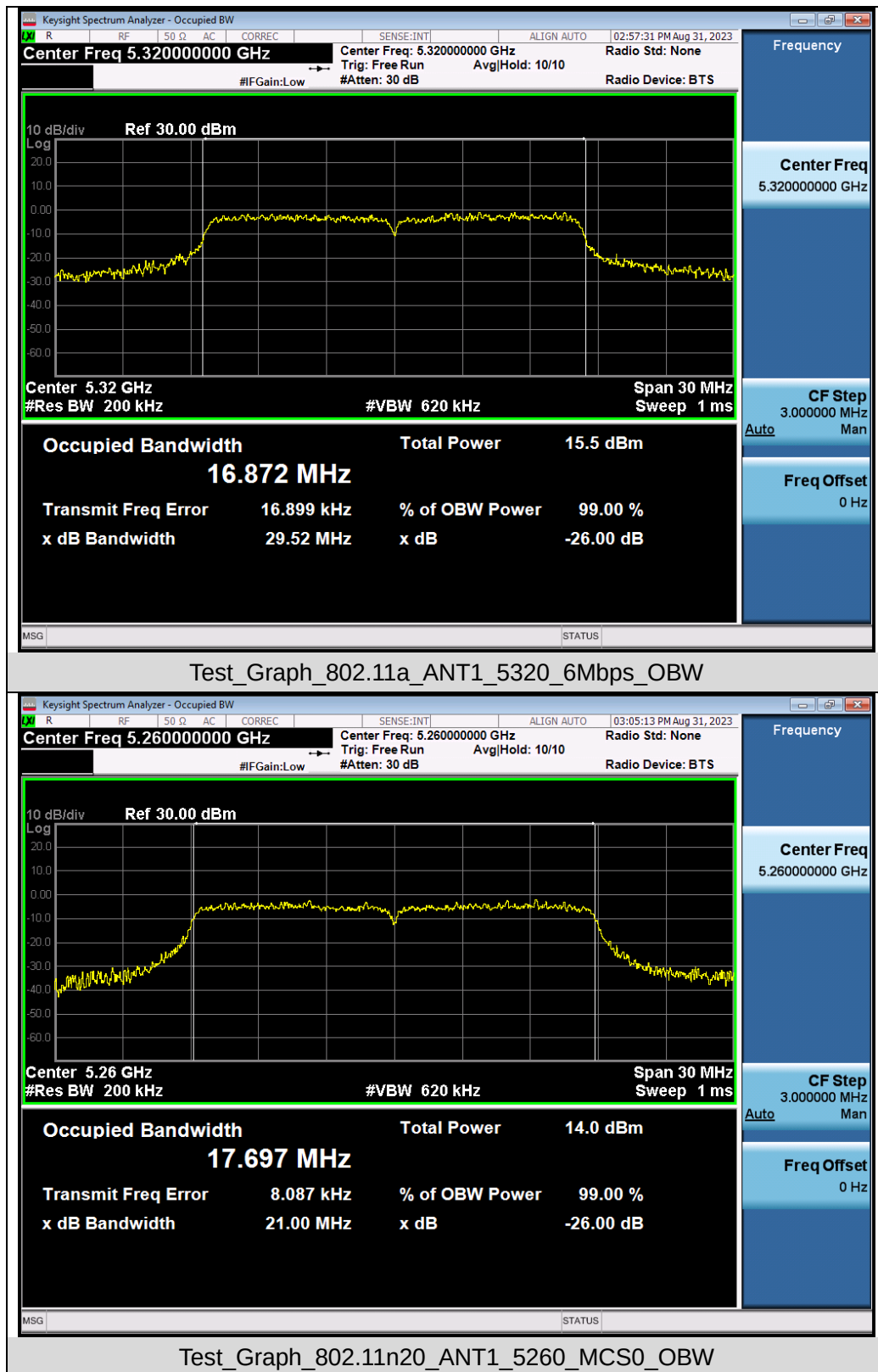
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Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.25-5.35 GHz

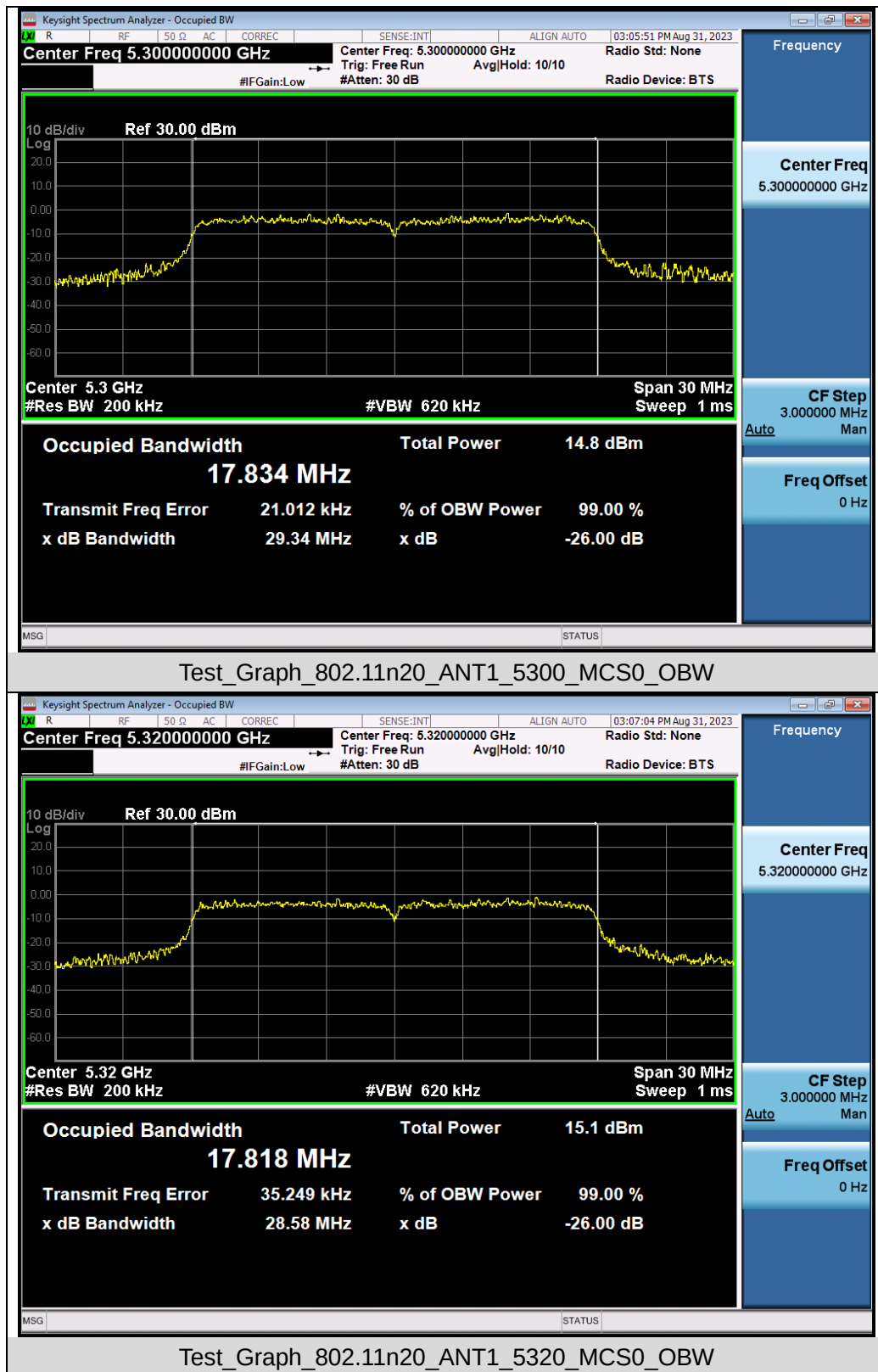


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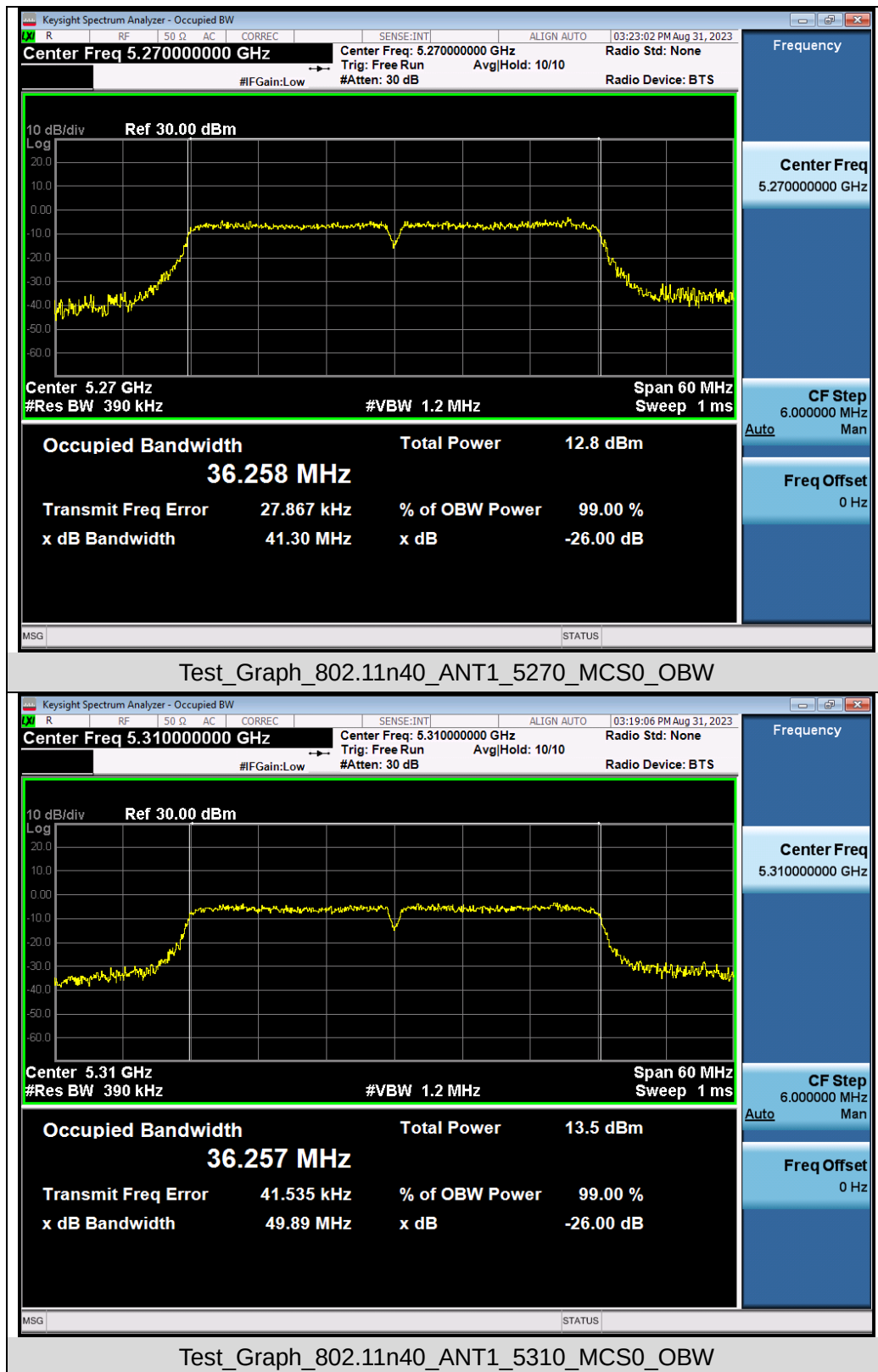
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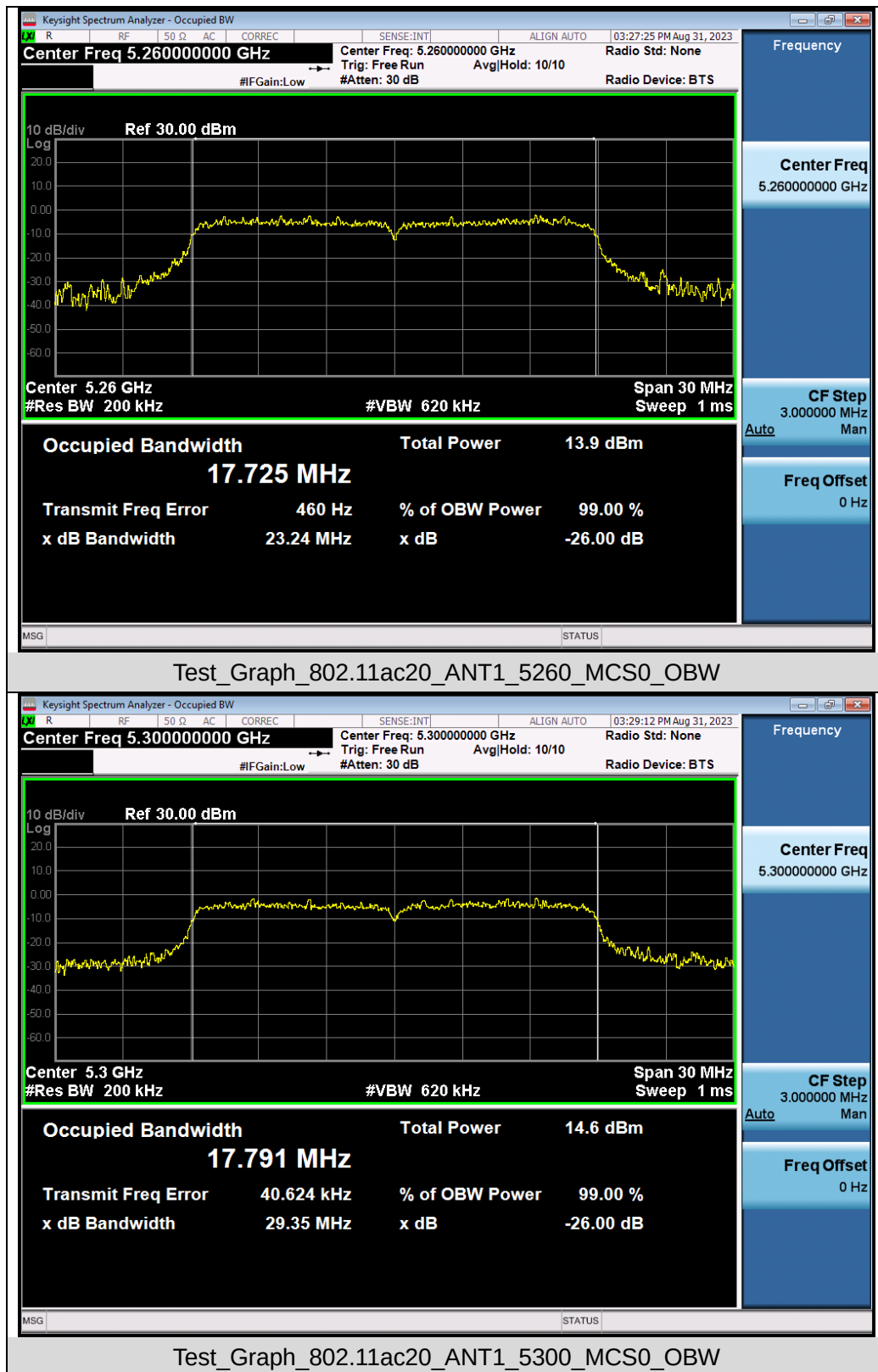
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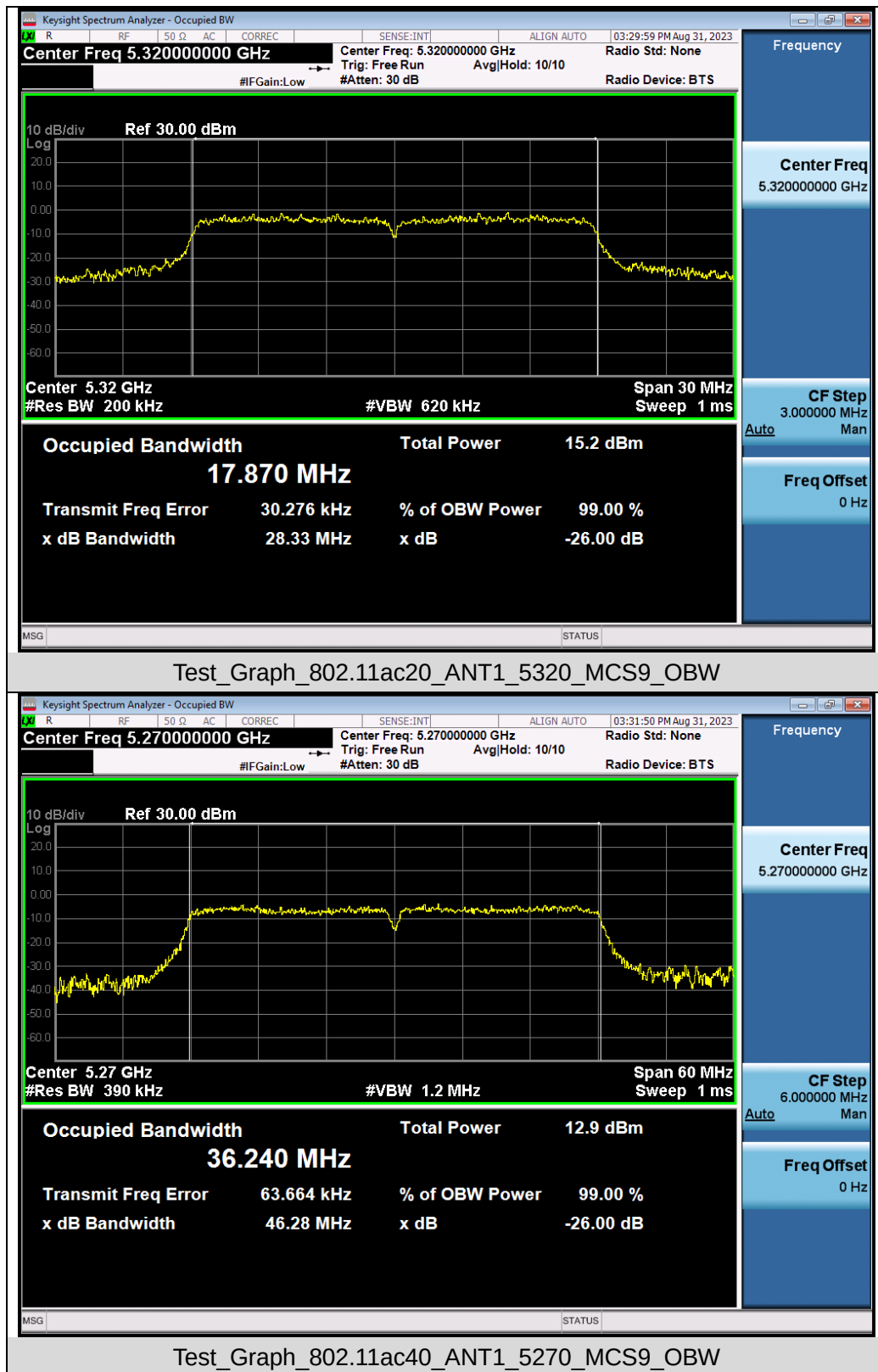
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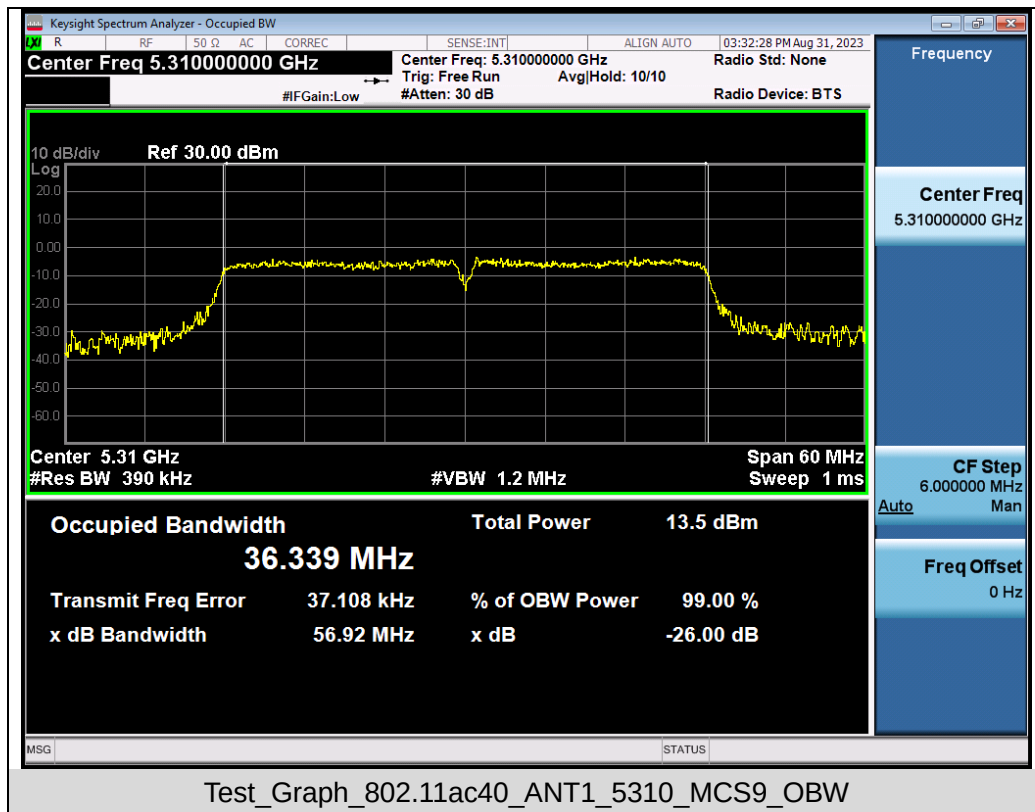


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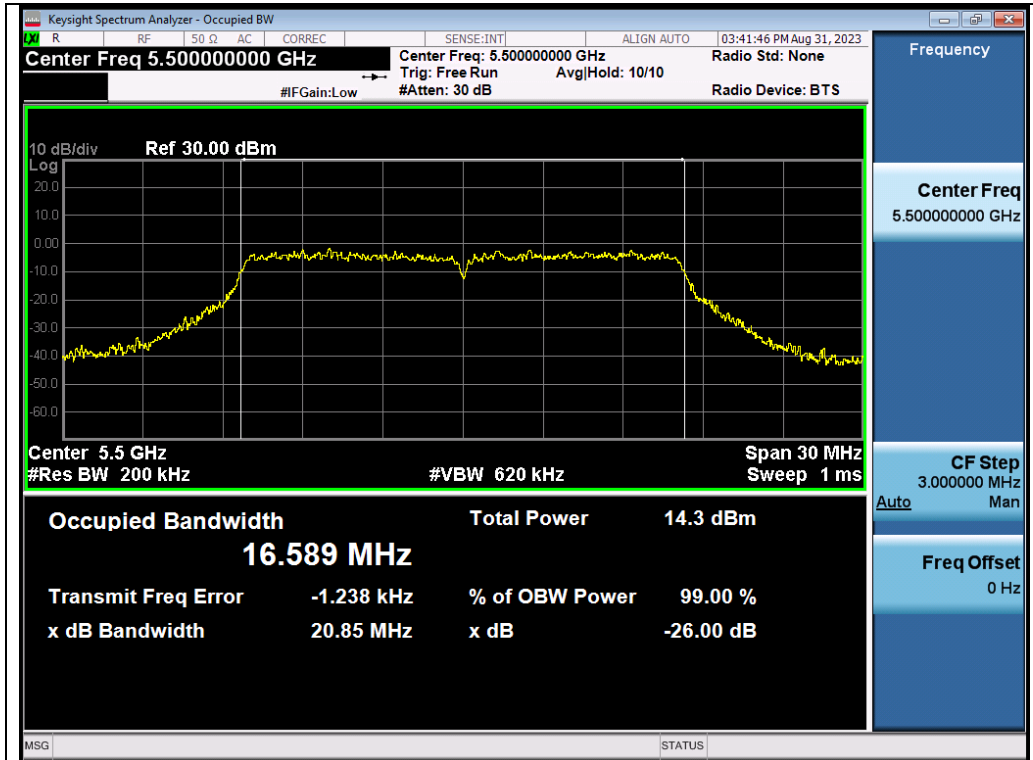
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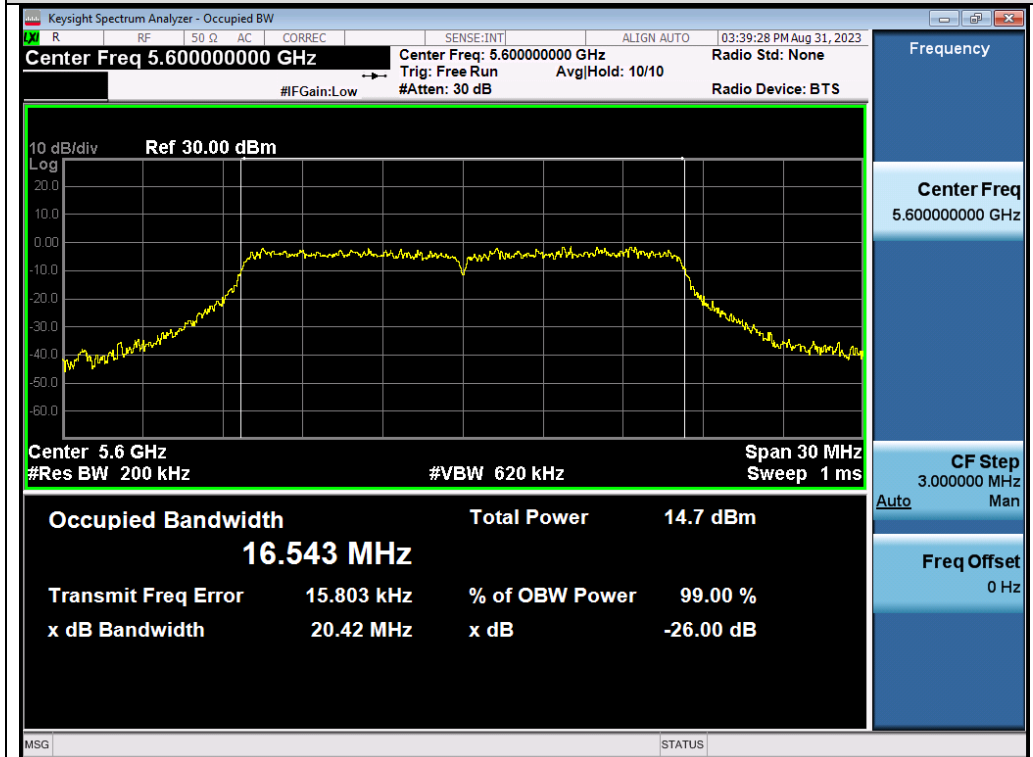
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Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.47-5.725 GHz

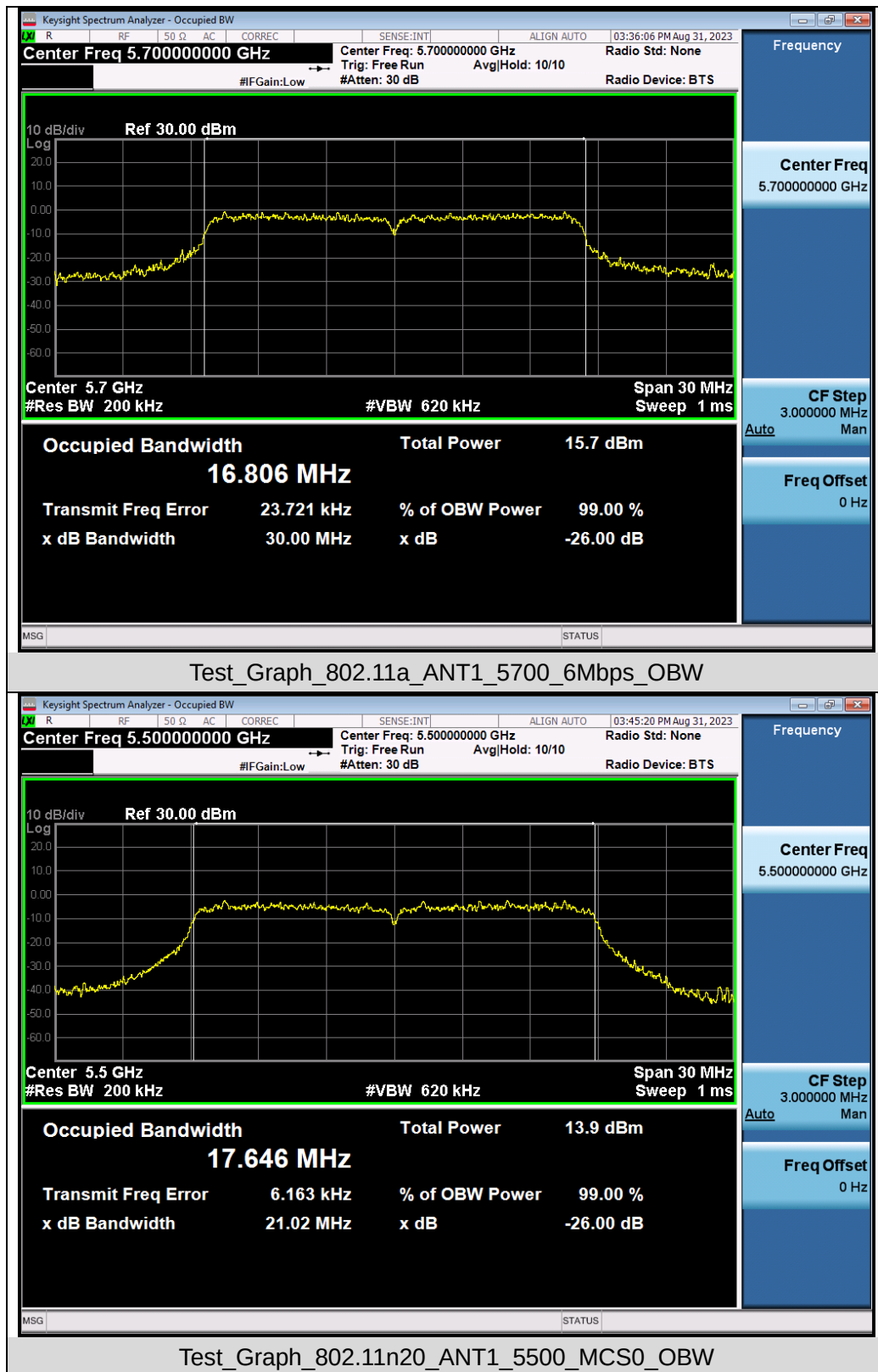


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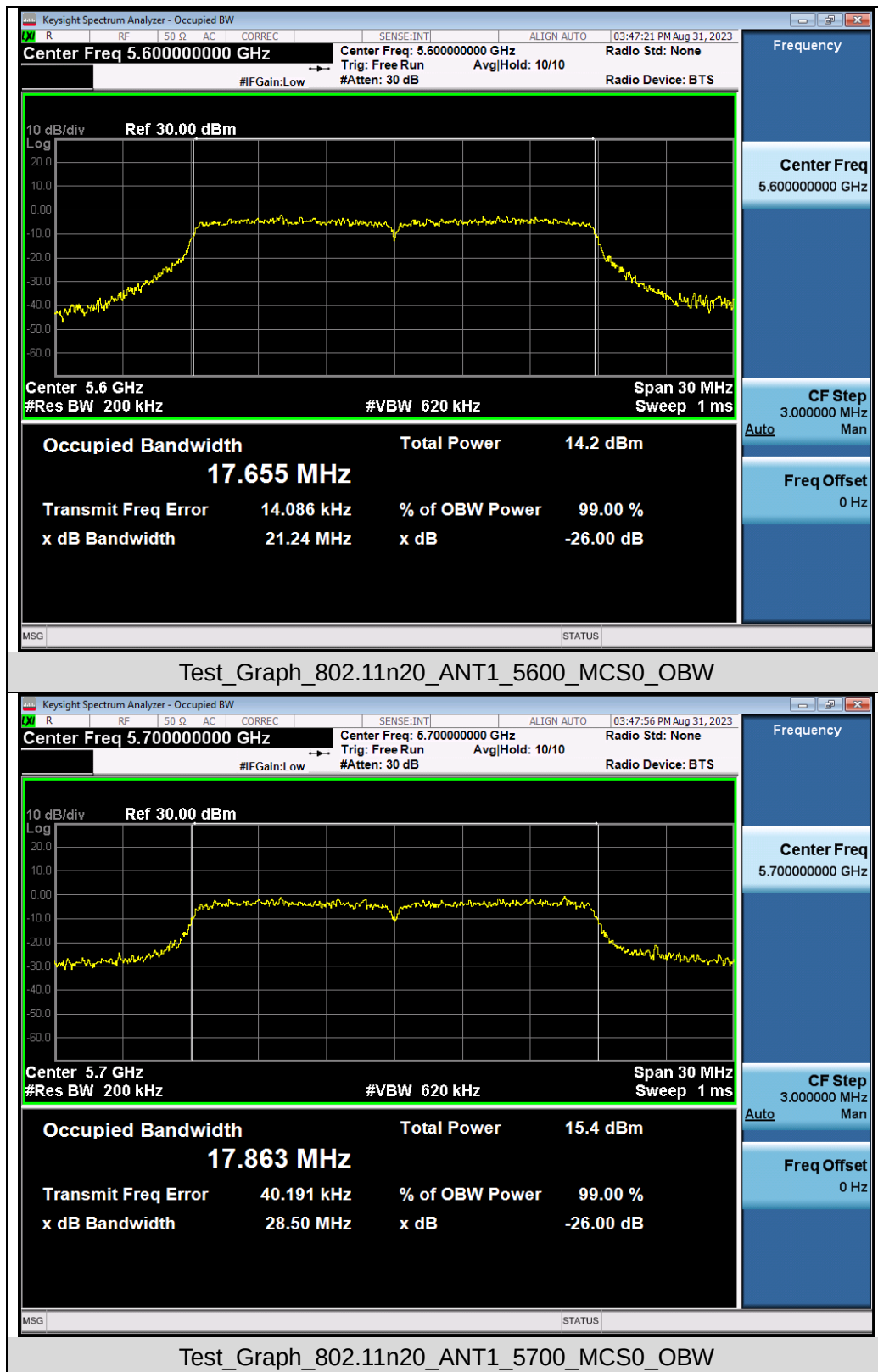


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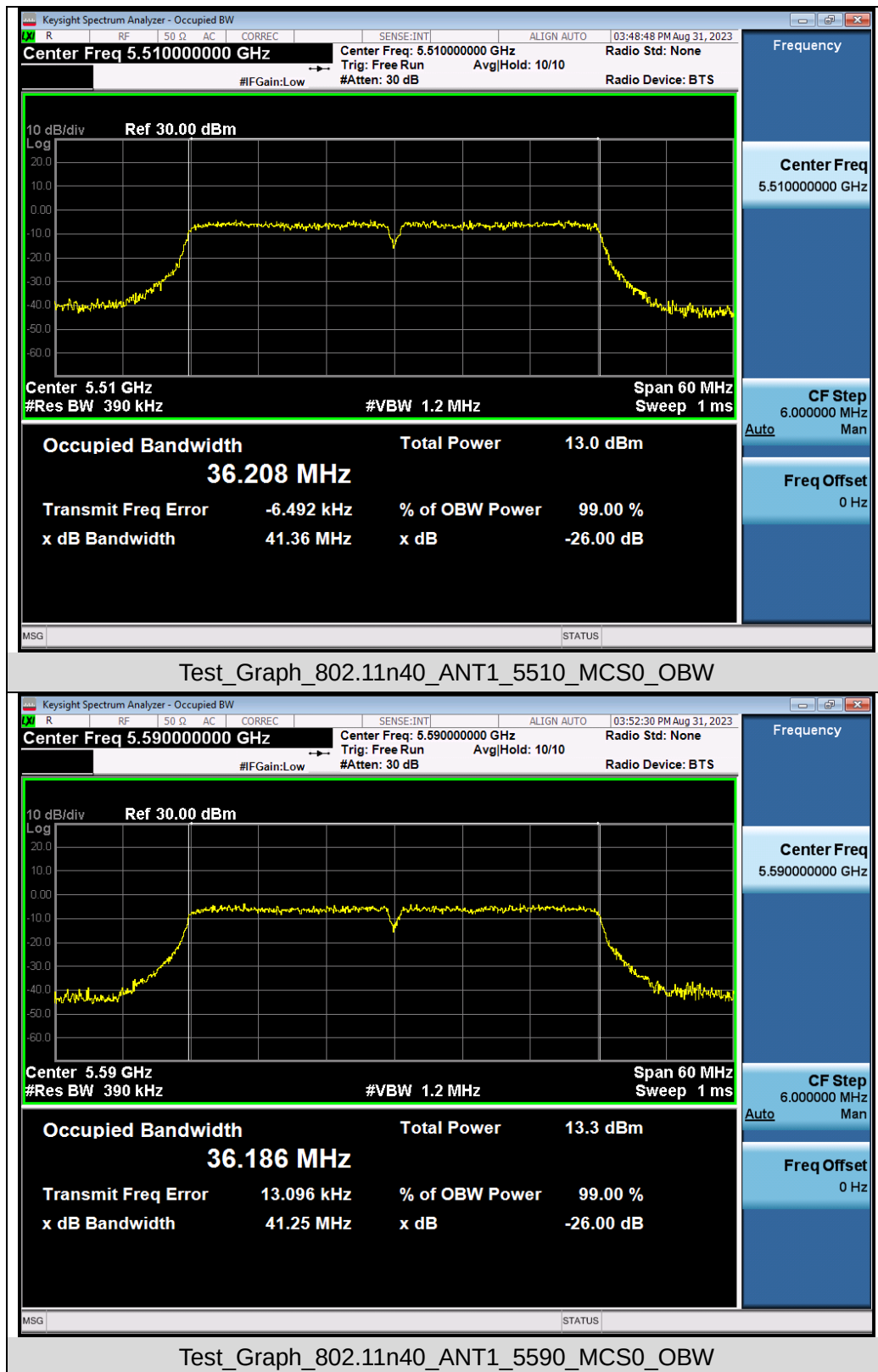
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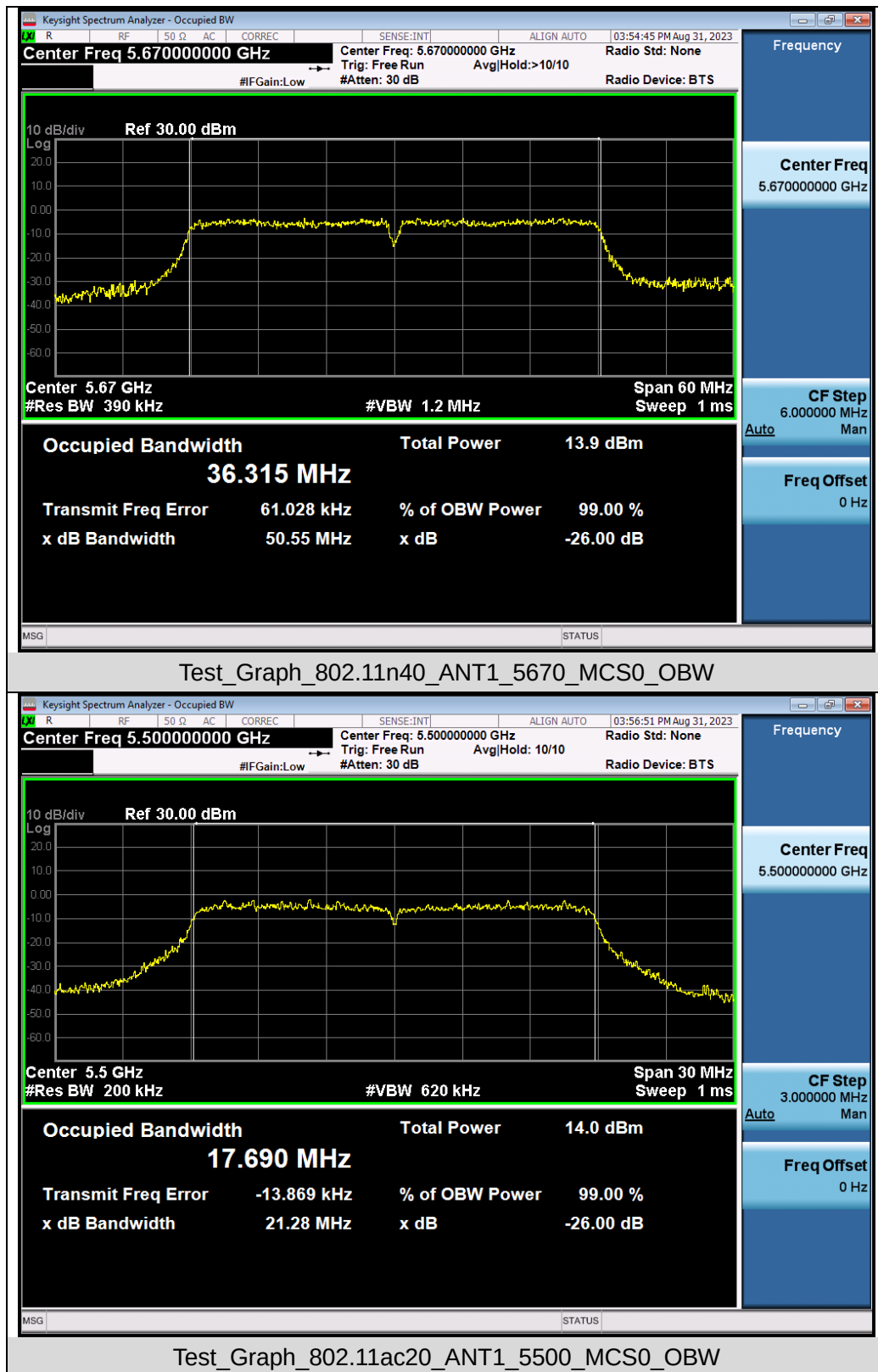
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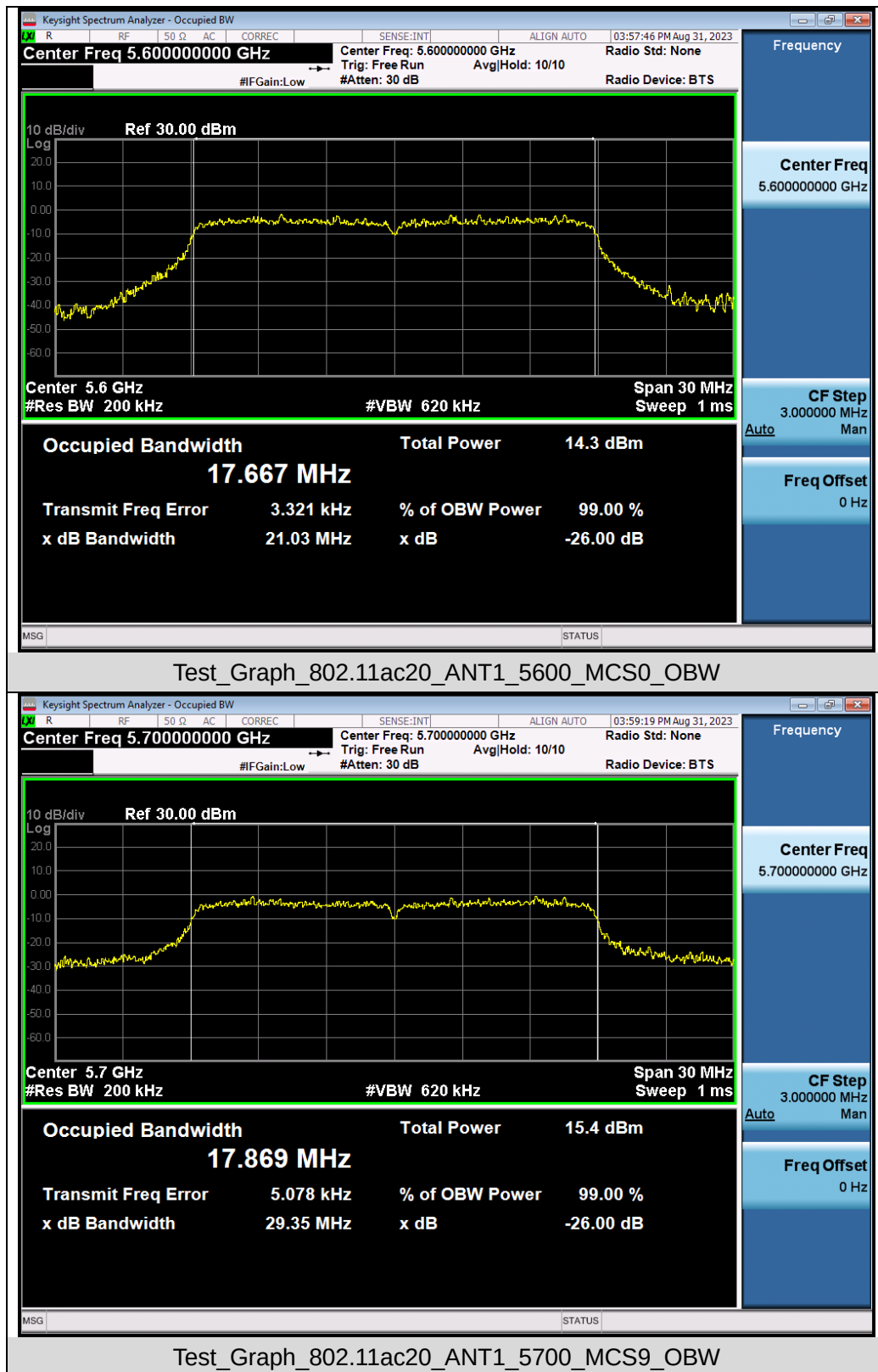
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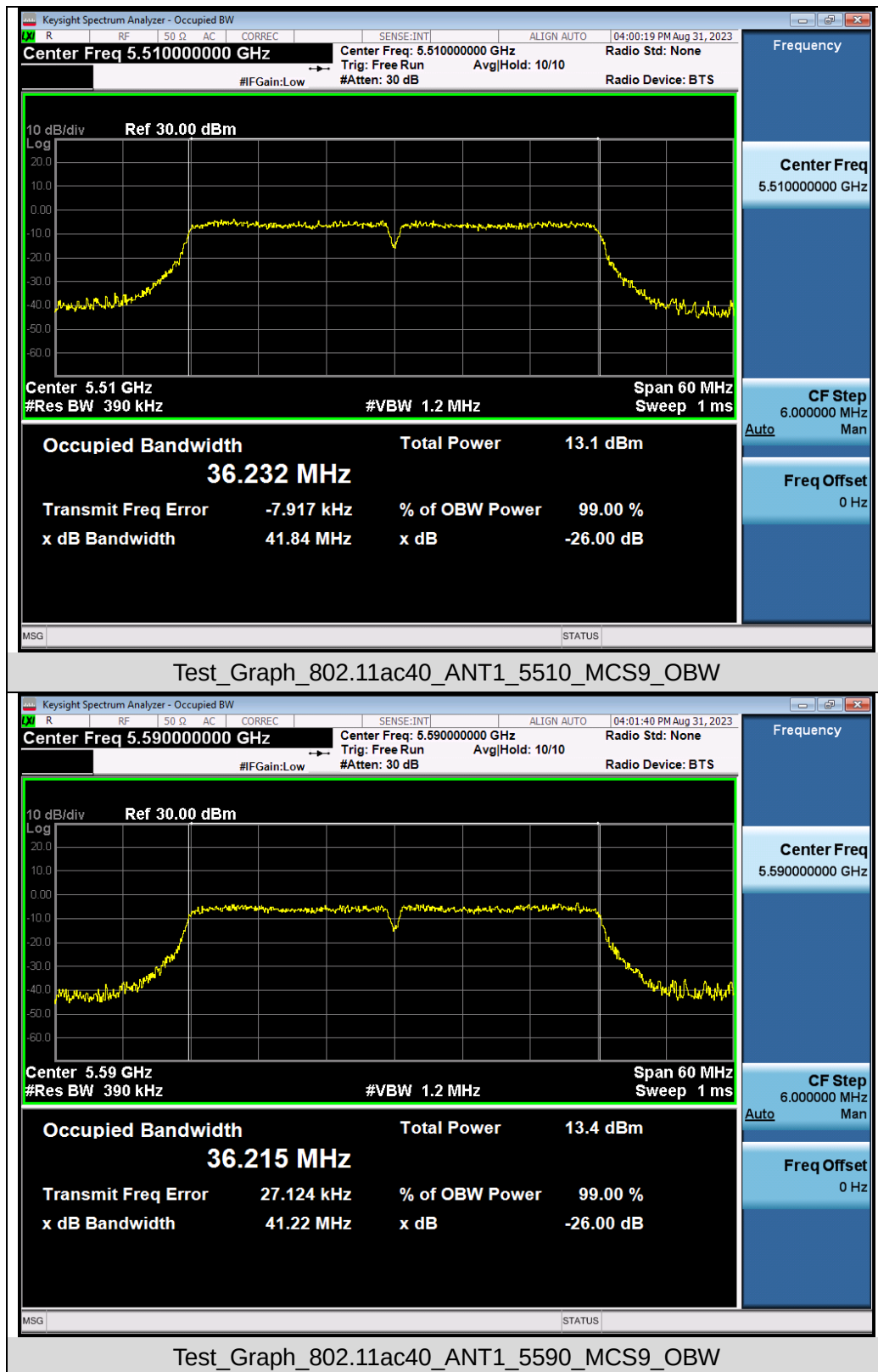


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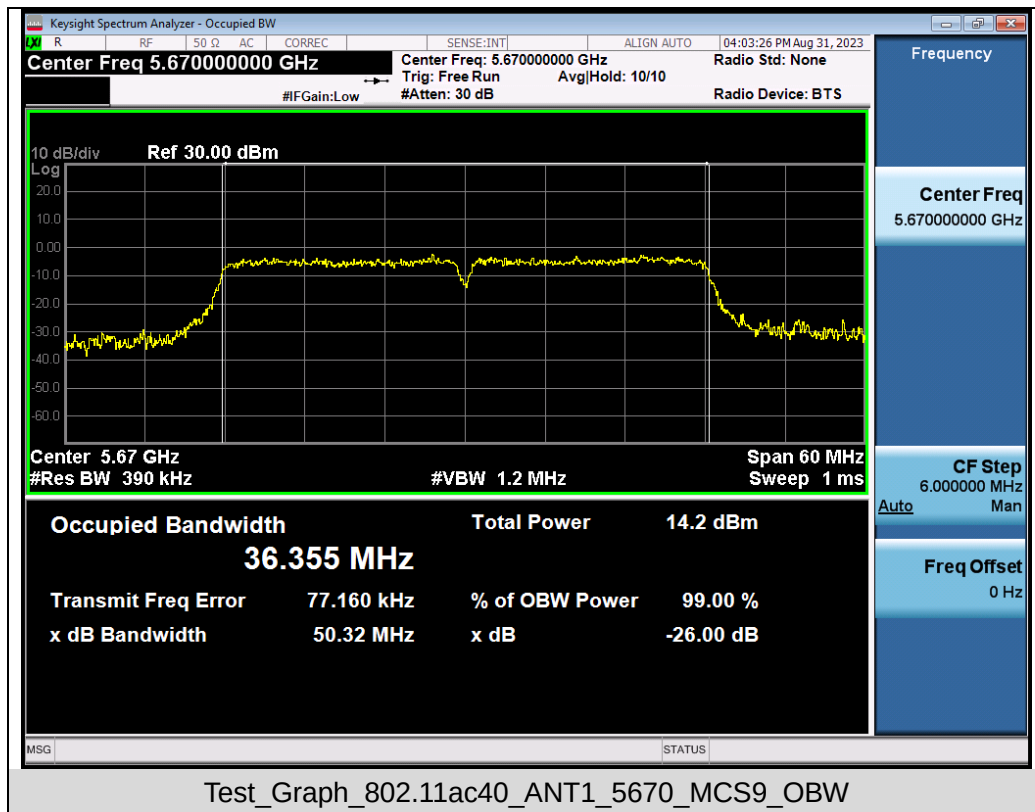


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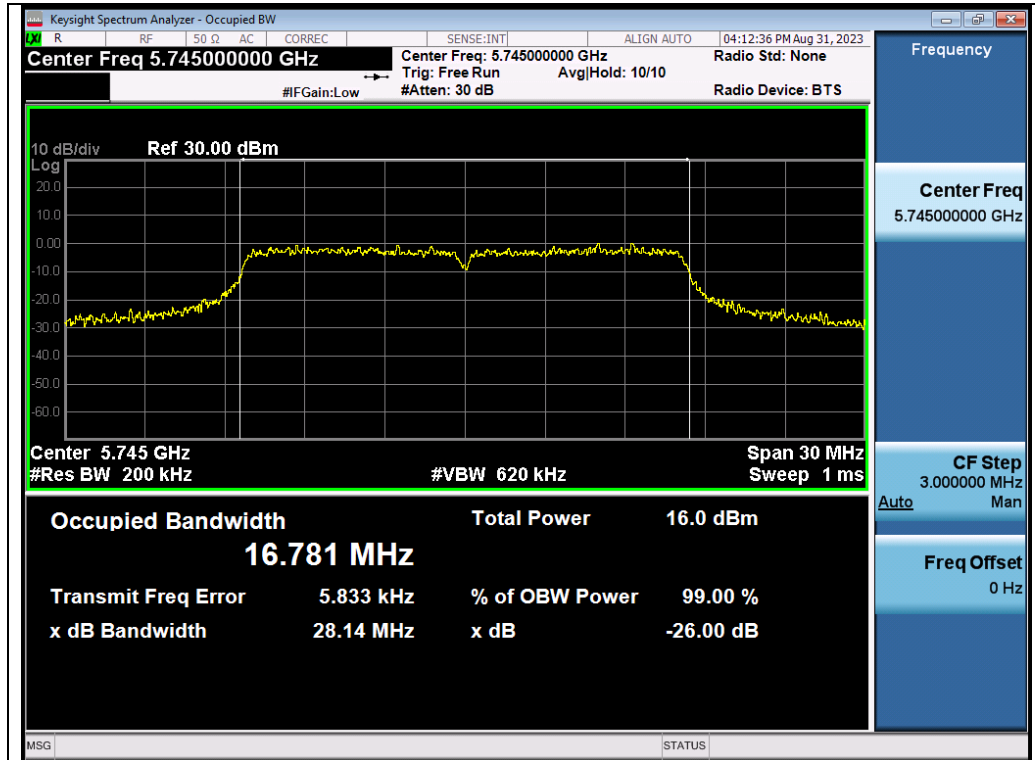
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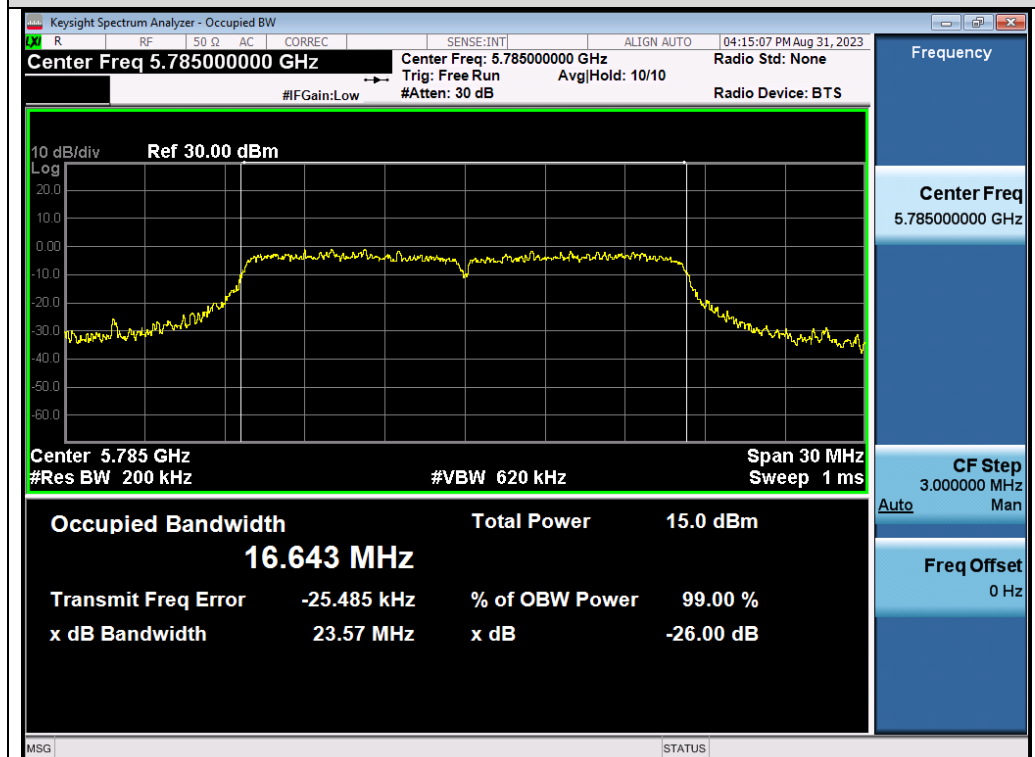
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Test Graphs of Occupied Bandwidth for band 5.725-5.85 GHz



Test_Graph_802.11a_ANT1_5745_6Mbps_OBW



Test_Graph_802.11a_ANT1_5785_6Mbps_OBW

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