

FCC Test Report

Report No.: AGC02390220401FE06

FCC ID : 2ABRU-WF3235

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION : BDE Dual-Band WiFi MCU Module

BRAND NAME : BDE

MODEL NAME : BDE-WF3235SFA32, BDE-WF3235SFAU32,
BDE-WF3235SFN32, BDE-WF3235SA32,
BDE-WF3235SAU32, BDE-WF3235SN32

APPLICANT : Guangzhou BDE Technology Inc.

DATE OF ISSUE : Aug. 02, 2022

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. 02, 2022	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	Guangzhou BDE Technology Inc.
Address	B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China
Manufacturer	Guangzhou BDE Technology Inc.
Address	B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China
Factory	Guangzhou BDE Technology Inc.
Address	B2-403, Chuangyi Building, 162 Science Avenue, Huangpu District, Guangzhou 510663, China
Product Designation	BDE Dual-Band WiFi MCU Module
Brand Name	BDE
Test Model	BDE-WF3235SFA32
Series Model	BDE-WF3235SFAU32, BDE-WF3235SFN32, BDE-WF3235SA32, BDE-WF3235SAU32, BDE-WF3235SN32
Declaration of Difference	BDE-WF3235SFA32, BDE-WF3235SA32 has a PCB antenna integrated, while BDE-WF3235SFAU32, BDE-WF3235SAU32 has an U.FL connector on board which can be connected to an external antenna, and BDE-WF3235SFN32, BDE-WF3235SN32 has no antenna included but can be connected to an external antenna through the application PCB. In addition, BDE-WF3235SFA32, BDE-WF3235SFAU32, BDE-WF3235SFN32 has on-chip flash integrated, while BDE-WF3235SA32, BDE-WF3235SAU32, BDE-WF3235SN32 has not. Otherwise, they are the same.
Date of test	Jun. 13, 2022 to Aug. 02, 2022
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



Alan Duan
(Project Engineer)

Aug. 02, 2022

Reviewed By



Calvin Liu
(Reviewer)

Aug. 02, 2022

Approved By



Max Zhang
(Authorized Officer)

Aug. 02, 2022

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as “BDE Dual-Band WiFi MCU Module”. 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

Equipment Type	☐ Outdoor access points ☐ Fixed P2P access points	☐ Indoor access points ☒ Client devices
Operation Frequency	☒ U-NII 1:5150MHz~5250MHz ☒ U-NII 2C:5470MHz~5725MHz	☒ U-NII 2A: 5250MHz~5350MHz ☒ U-NII 3: 5725MHz~5850MHz
DFS Design Type	☐ Master ☐ Slave with radar detection	☒ Slave without radar detection
TPC Function	☐ Yes ☒ No	
Test Frequency Range:	For 802.11a/n-HT20-VHT20: 5150~5250MHz, 5250~5350MHz, 5470~5725MHz, 5745~5825MHz	
Output Power	IEEE 802.11a:9.54dBm; IEEE 802.11n-HT20:9.50dBm	
Modulation	BPSK, QPSK, 16QAM, 64QAM, 128QAM, 256QAM, OFDM	
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps	
Number of channels	4 channels of U-NII-1 Band 4 channels of U-NII-2A Band 12 channels of U-NII-2C Band 5 channels of U-NII-3 Band	
Hardware Version	1.2	
Software Version	4.11	
Antenna Designation	Refer to Chapter 2.8 of the report. (Comply with requirements of the FCC part 15.203)	
Antenna Gain	Refer to Chapter 2.8 of the report.	
Power Supply	DC 3.3V	

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2.2. TABLE OF CARRIER FREQUENCIES

For 5180~5240MHz:

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

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

For 5260~5320MHz:

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

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

For 5500~5720MHz:

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

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

For 5745~5825MHz:

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

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

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

This submittal(s) (test report) is intended for **FCC ID: 2ABRU-WF3235** 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.

2.8. DESCRIPTION OF AVAILABLE ANTENNAS

Model No.: BDE-WF3235SFA32/BDE-WF3235SA32

WIFI Dedicated Antenna			
Antenna number	Antenna Type	Frequency Band (MHz)	Max Peak Gain (dBi)
1	PCB antenna	5150 ~ 5825	2.5

Model No.: BDE-WF3235SFAU32/BDE-WF3235SAU32

WIFI Dedicated Antenna			
Antenna number	Antenna Type	Frequency Band (MHz)	Max Peak Gain (dBi)
2	Whip antenna	5150 ~ 5825	7

Model No.: BDE-WF3235SFN32/BDE-WF3235SN32

WIFI Internal Antenna			
Antenna number	Antenna Type	Frequency Band (MHz)	Max Peak Gain (dBi)
3	Ceramic Antenna	5150 ~ 5825	2.6
2	Whip antenna	5150 ~ 5825	7

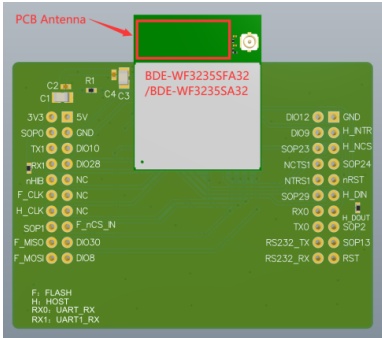
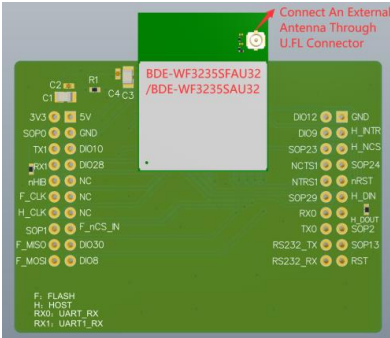
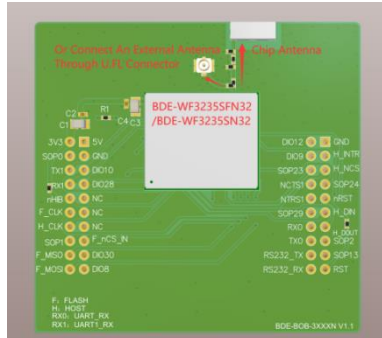
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2.9. DESCRIPTION OF ANTENNA RF PORT

Antenna RF Port			
--	WIFI (BDE-WF3235SFA32/ BDE-WF3235SA32)	WIFI (BDE-WF3235SFAU32/ BDE-WF3235SAU32)	WIFI (BDE-WF3235SFN32/ BDE-WF3235SN32)
Software Control Port	PCB antenna	U.FL Port	Ceramic Antenna or U.FL Port
	 Diagram showing the PCB antenna layout for the BDE-WF3235SFA32/BDE-WF3235SA32 module. A red box highlights the antenna area, labeled 'PCB Antenna'.	 Diagram showing the U.FL Port layout for the BDE-WF3235SFAU32/BDE-WF3235SAU32 module. A red box highlights the U.FL connector area, labeled 'Connect An External Antenna Through U.FL Connector'.	 Diagram showing the layout for the BDE-WF3235SFN32/BDE-WF3235SN32 module, which supports either a ceramic antenna or a U.FL port. A red box highlights the antenna area, labeled 'Connect An External Antenna Through U.FL Connector'.

Note: The above RF soldering board is for testing use only.

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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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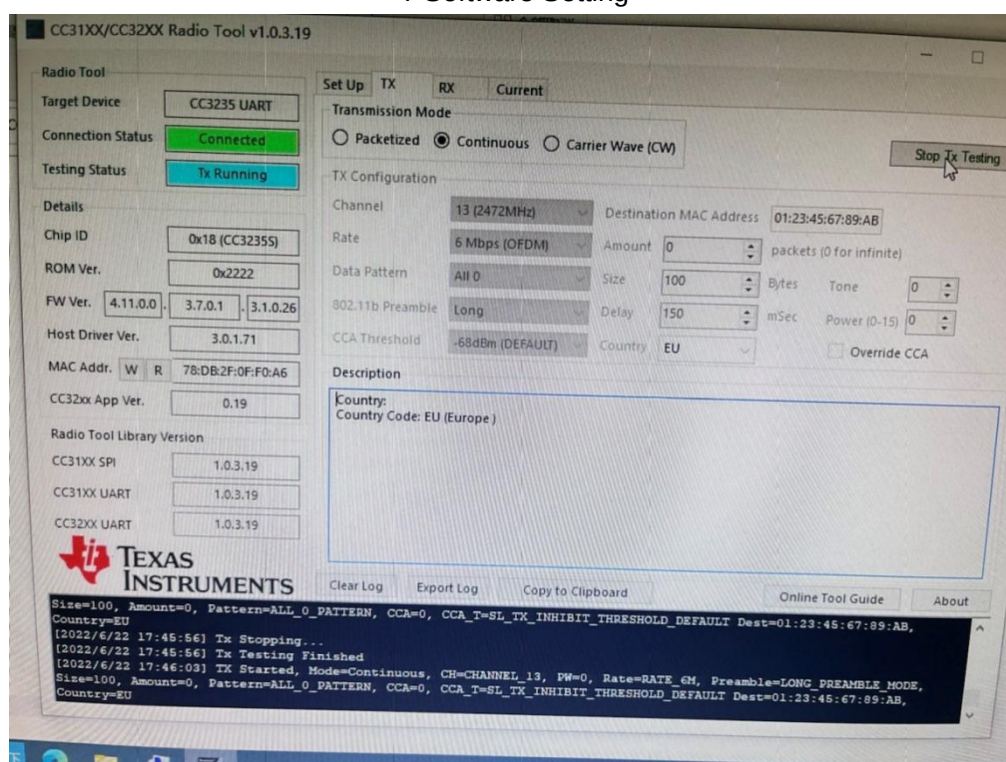
4. DESCRIPTION OF TEST MODES

Mode	Available channel	Tested channel	Modulation	Date rate (Mbps)
802.11a/n/ac20	36,40,44,48, 149,153,157,161,165	36,40,48, 149,157,165	OFDM	6Mbps/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.

T Software Setting



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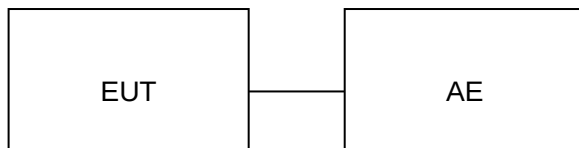
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3. 5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	BDE Dual-Band WiFi MCU Module	BDE-WF3235SFA32	2ABRU-WF3235	EUT
2	PC	Nbl-WAQ9R	--	AE
3	PC adapter	HW-200200CP1	--	AE
4	Control	J5K-NPC	--	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	Mar. 28, 2022	Mar. 27, 2023
LISN	R&S	ESH2-Z5	100086	Jun. 08, 2022	Jun. 07, 2023
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	Mar. 28, 2022	Mar. 27, 2023
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Nov. 17, 2021	Nov. 16, 2022
Power sensor	Aglient	U2021XA	MY54110007	Mar. 04, 2022	Mar. 03, 2023
5GHz Fliter	EM Electronics	5150-5880MHz	N/A	Mar. 22, 2022	Mar. 21, 2024
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 21, 2024
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2021	Apr. 22, 2023
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 08, 2020	Jan. 07, 2023
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

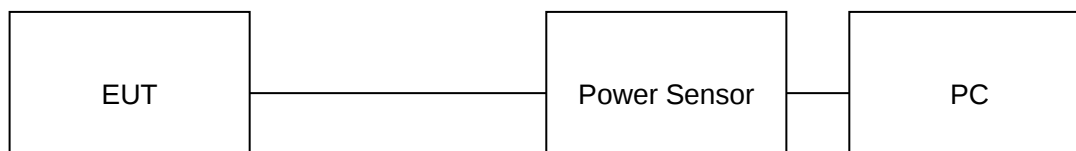
For average power test:

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				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	8.77	24	Pass
	5200	8.85	24	Pass
	5240	7.44	24	Pass
802.11n20	5180	8.75	24	Pass
	5200	8.96	24	Pass
	5240	7.11	24	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	6.62	24	Pass
	5300	5.61	24	Pass
	5320	4.75	24	Pass
802.11n20	5260	6.27	24	Pass
	5300	5.36	24	Pass
	5320	4.81	24	Pass

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	6.71	24	Pass
	5600	9.54	24	Pass
	5700	3.63	24	Pass
802.11n20	5500	6.86	24	Pass
	5600	9.50	24	Pass
	5700	3.71	24	Pass

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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	5.49	30	Pass
	5785	5.74	30	Pass
	5825	4.51	30	Pass
802.11n20	5745	5.20	30	Pass
	5785	5.65	30	Pass
	5825	4.25	30	Pass

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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 $\geq 3 \times \text{RBW}$. 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.

99% occupied bandwidth:

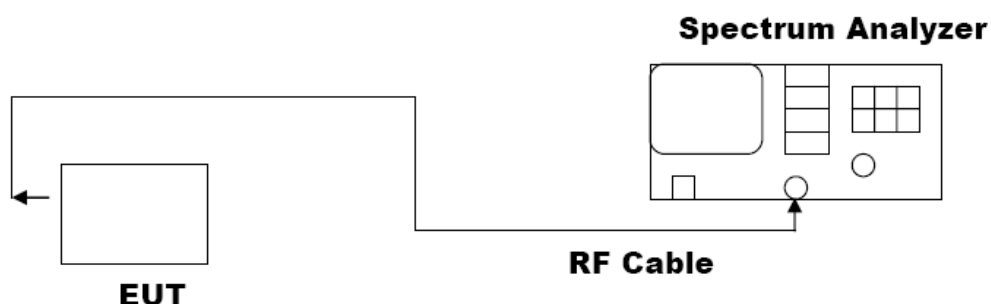
1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set Span = approximately 1.5 to 5 times the OBW, centered on a nominal channel
The nominal IF filter bandwidth (3 dB RBW) shall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

8.2. 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					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	-26dB Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5180	16.521	26.02	N/A	Pass
	5200	16.668	26.53	N/A	Pass
	5240	16.625	27.80	N/A	Pass
802.11n20	5180	17.645	27.61	N/A	Pass
	5200	17.726	28.02	N/A	Pass
	5240	17.727	27.96	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	16.670	27.89	N/A	Pass
	5300	16.693	26.20	N/A	Pass
	5320	16.460	24.46	N/A	Pass
802.11n20	5260	17.700	29.41	N/A	Pass
	5300	17.676	27.63	N/A	Pass
	5320	17.533	23.60	N/A	Pass

Test Data of Occupied Bandwidth and DTS 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	16.350	22.31	N/A	Pass
	5600	16.526	26.12	N/A	Pass
	5700	16.313	20.74	N/A	Pass
802.11n20	5500	17.490	21.65	N/A	Pass
	5600	17.647	26.84	N/A	Pass
	5700	17.480	21.20	N/A	Pass

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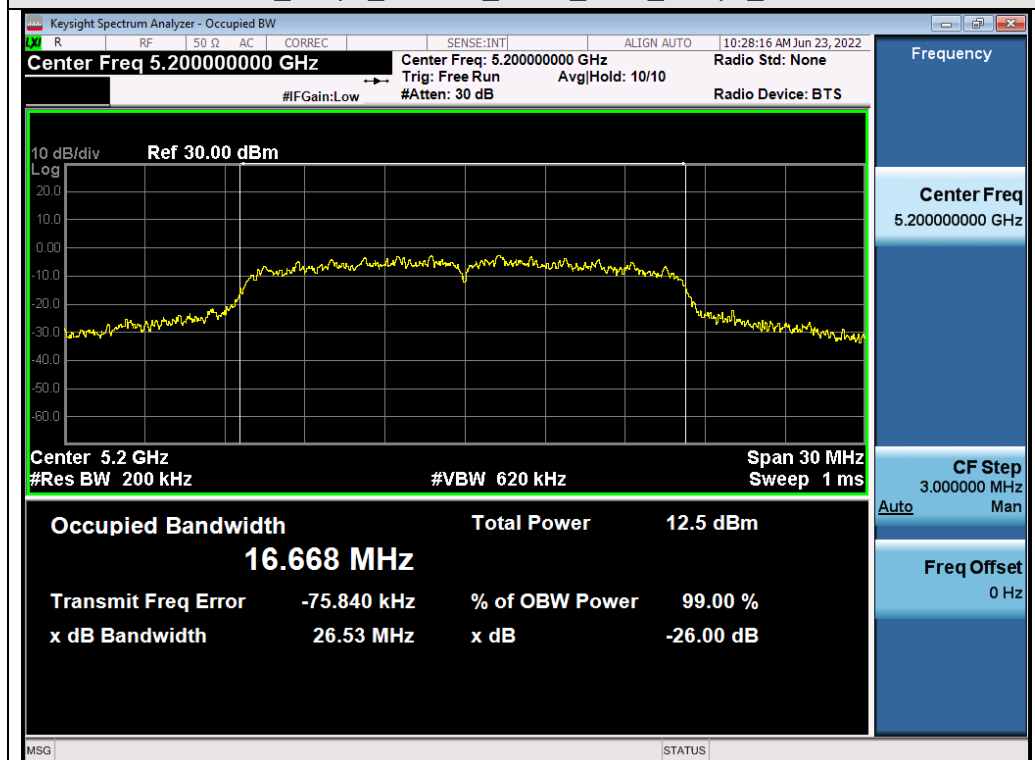
Test Data of Occupied Bandwidth and DTS Bandwidth for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	Limits (MHz)	Pass or Fail
802.11a	5745	16.632	15.09	0.5	Pass
	5785	16.692	15.05	0.5	Pass
	5825	16.520	15.09	0.5	Pass
802.11n20	5745	17.680	15.09	0.5	Pass
	5785	17.782	15.10	0.5	Pass
	5825	17.617	15.07	0.5	Pass

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

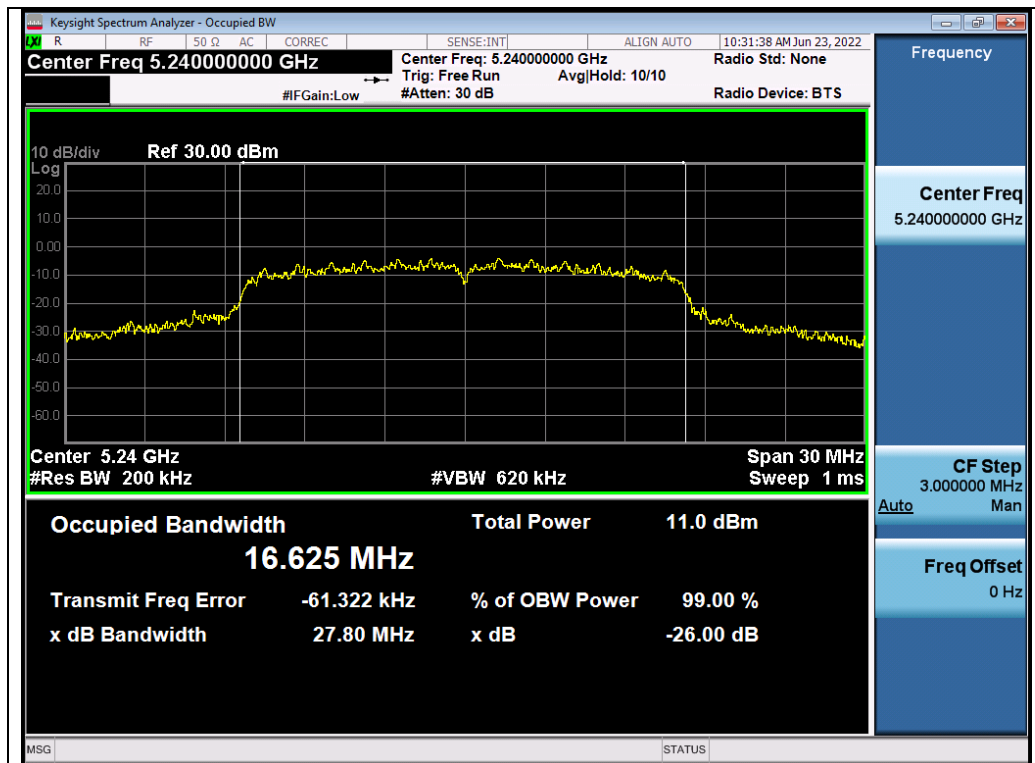


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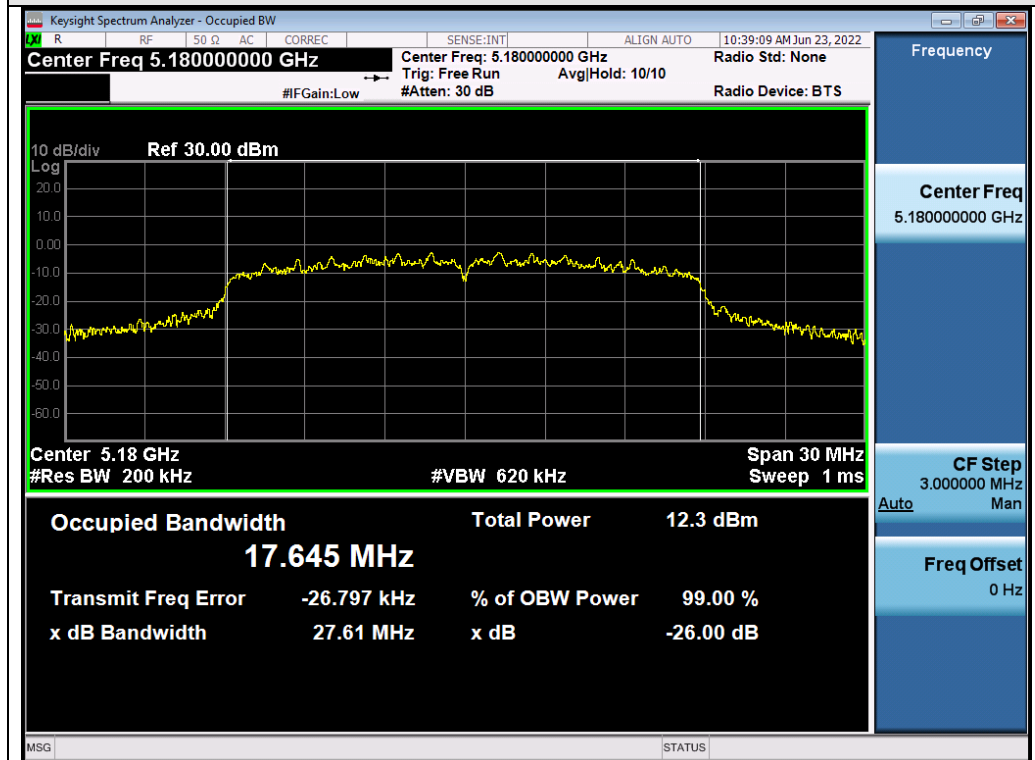


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Test_Graph_802.11a_ANT1_5240_6Mbps_OBW



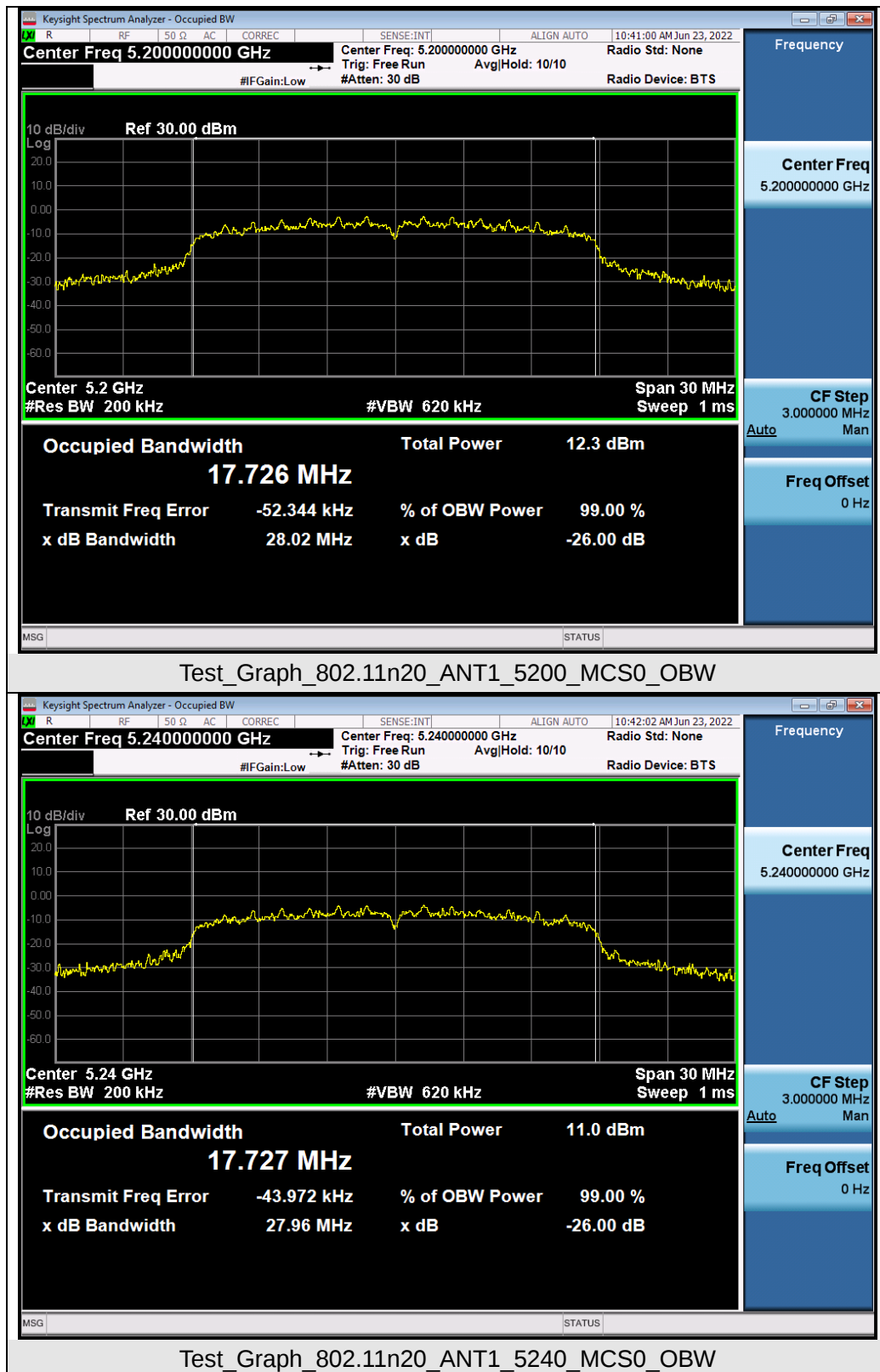
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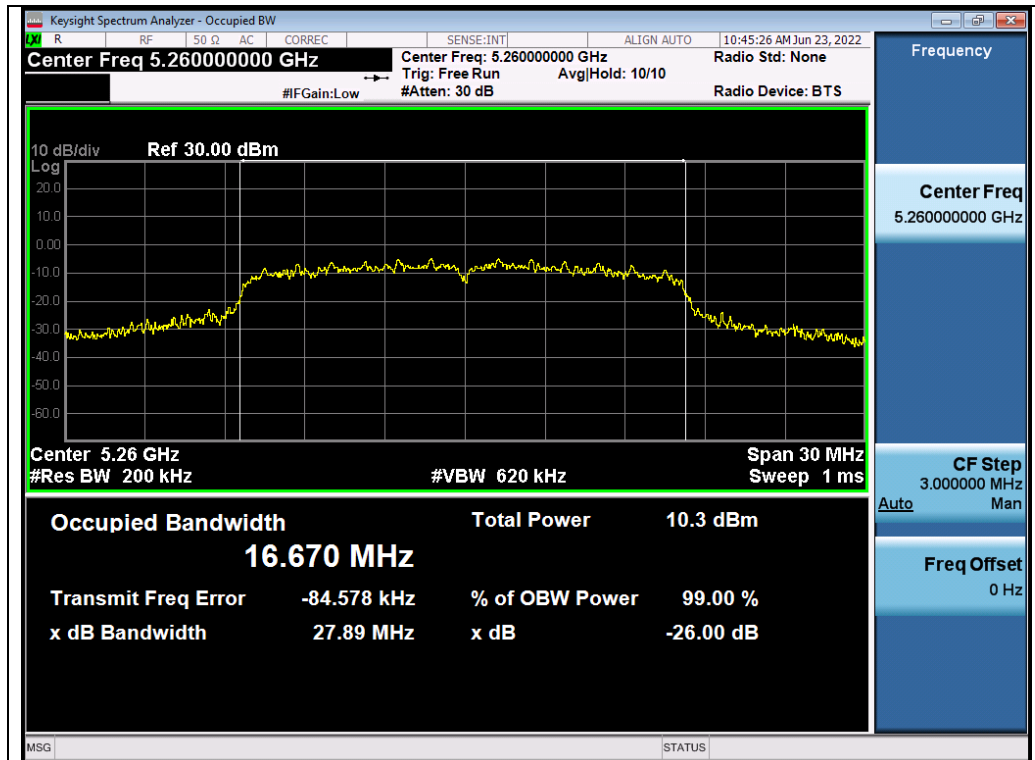
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Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.25-5.35 GHz



Test_Graph_802.11a_ANT1_5260_6Mbps_OBW



Test_Graph_802.11a_ANT1_5300_6Mbps_OBW

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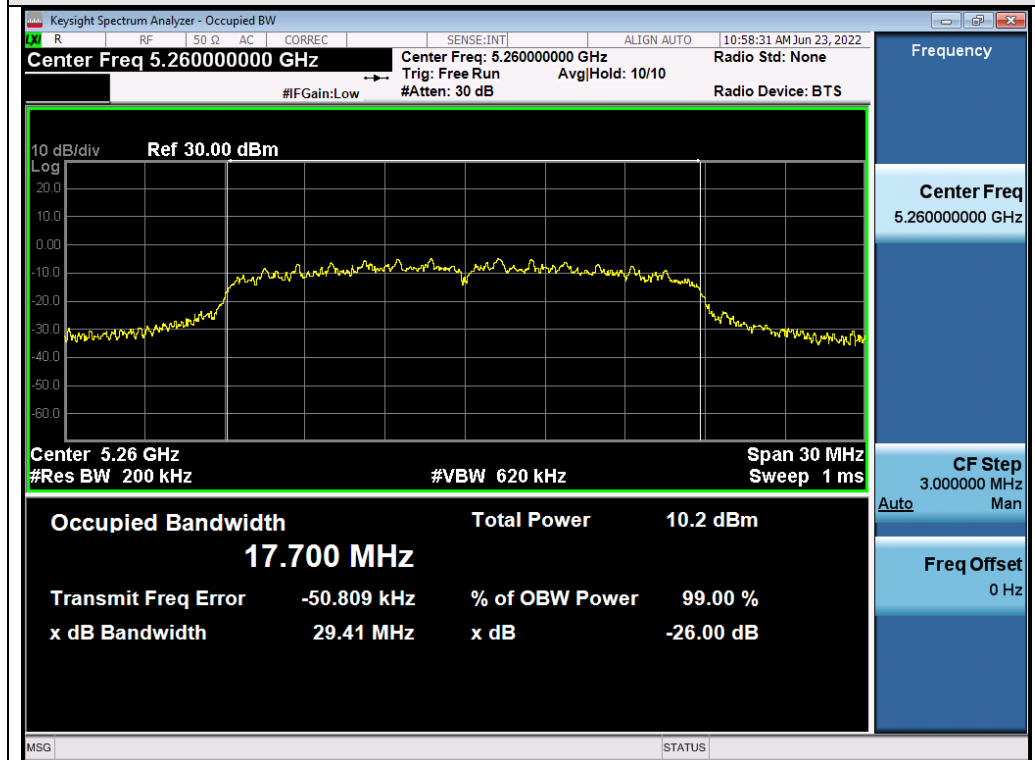
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Test_Graph_802.11a_ANT1_5320_6Mbps_OBW



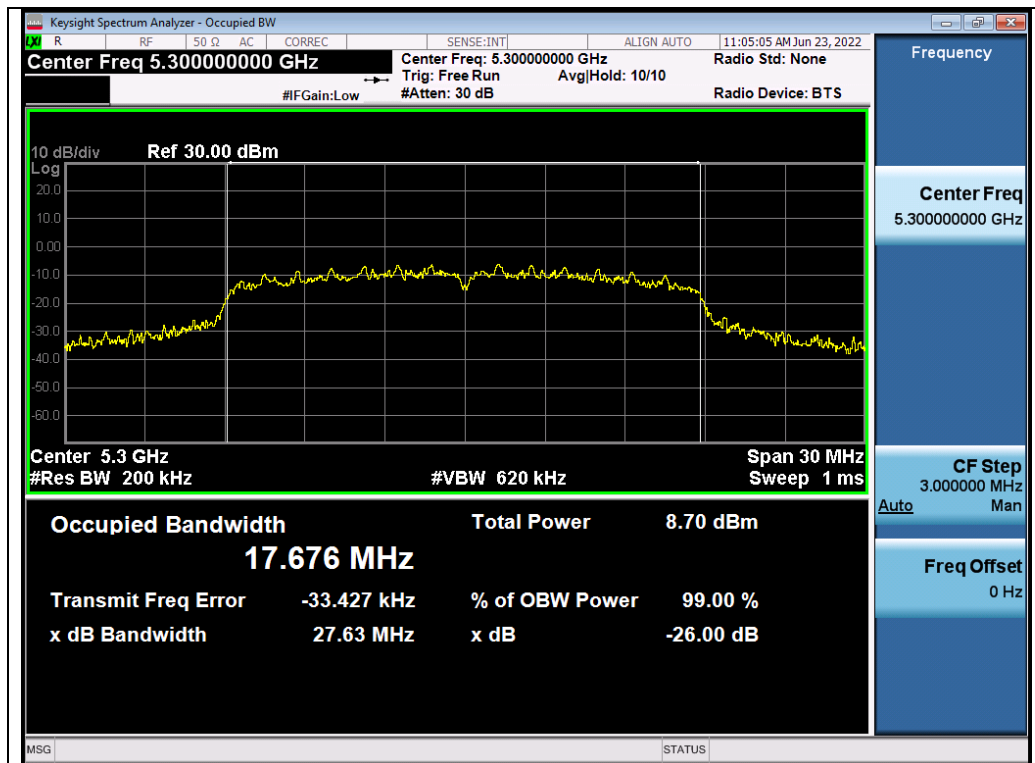
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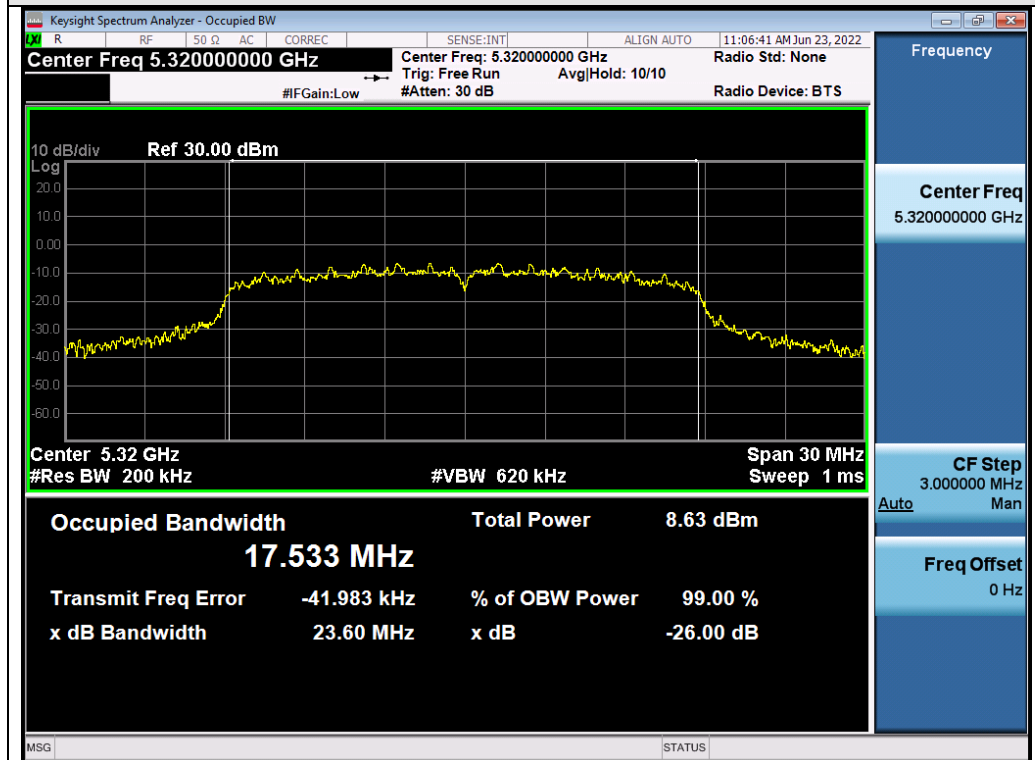
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Test_Graph_802.11n20_ANT1_5300_MCS0_OBW



Test_Graph_802.11n20_ANT1_5320_MCS0_OBW

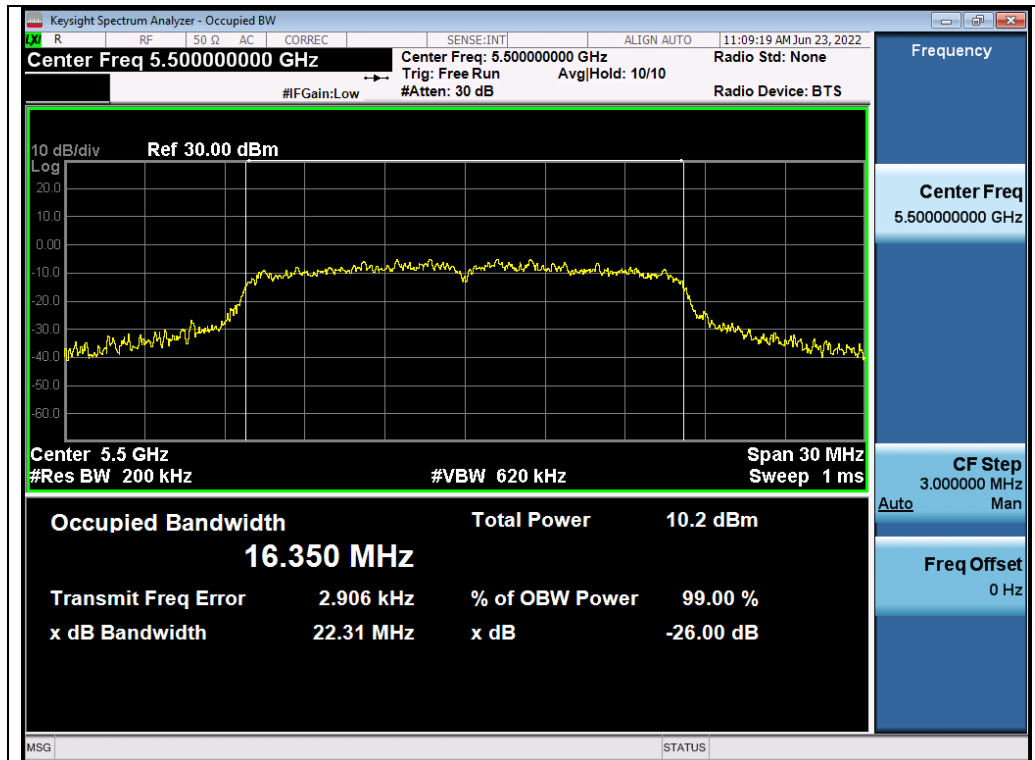
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Test Graphs of Occupied Bandwidth and -26dB Bandwidth for band 5.47-5.725 GHz

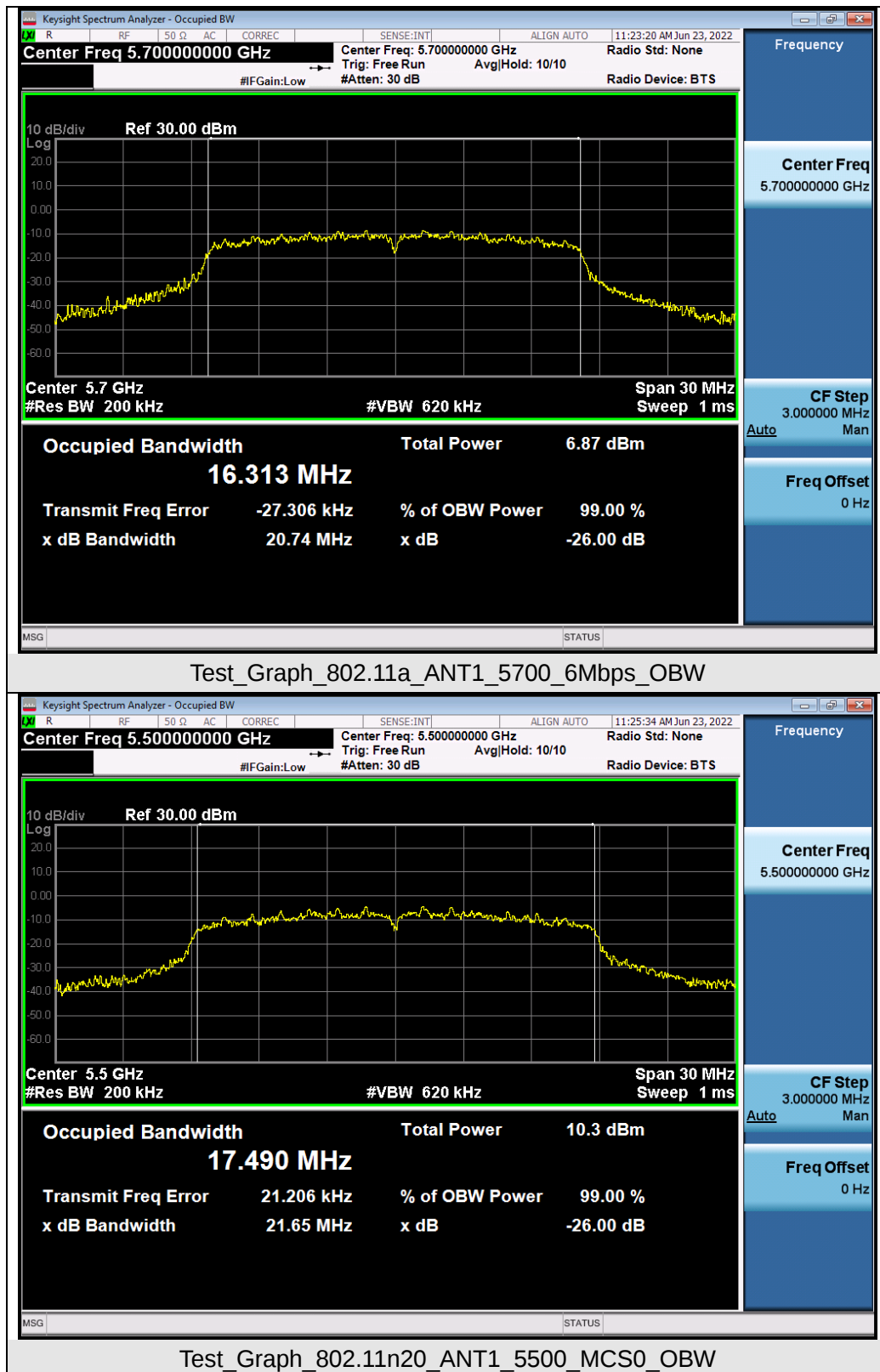


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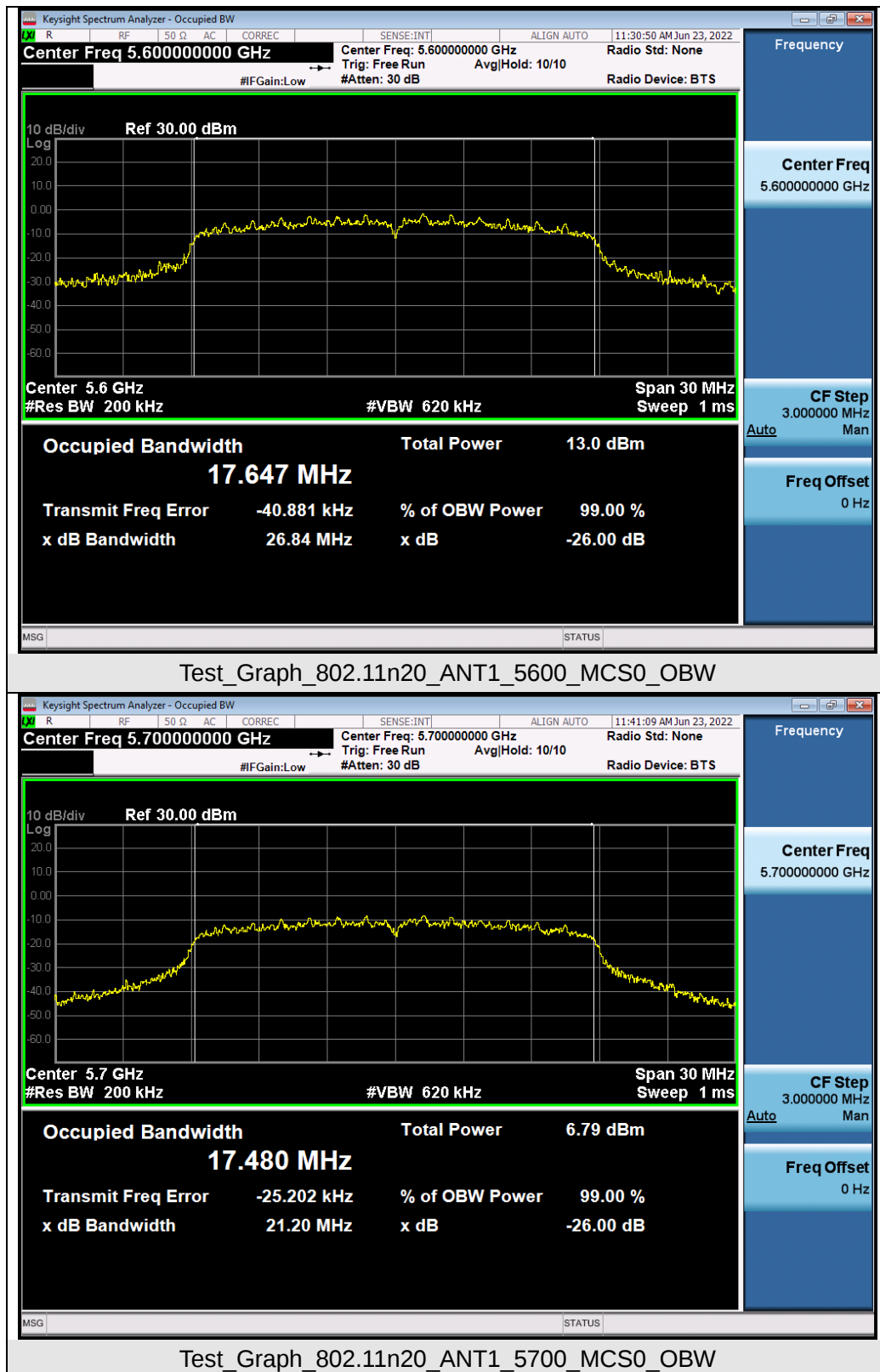


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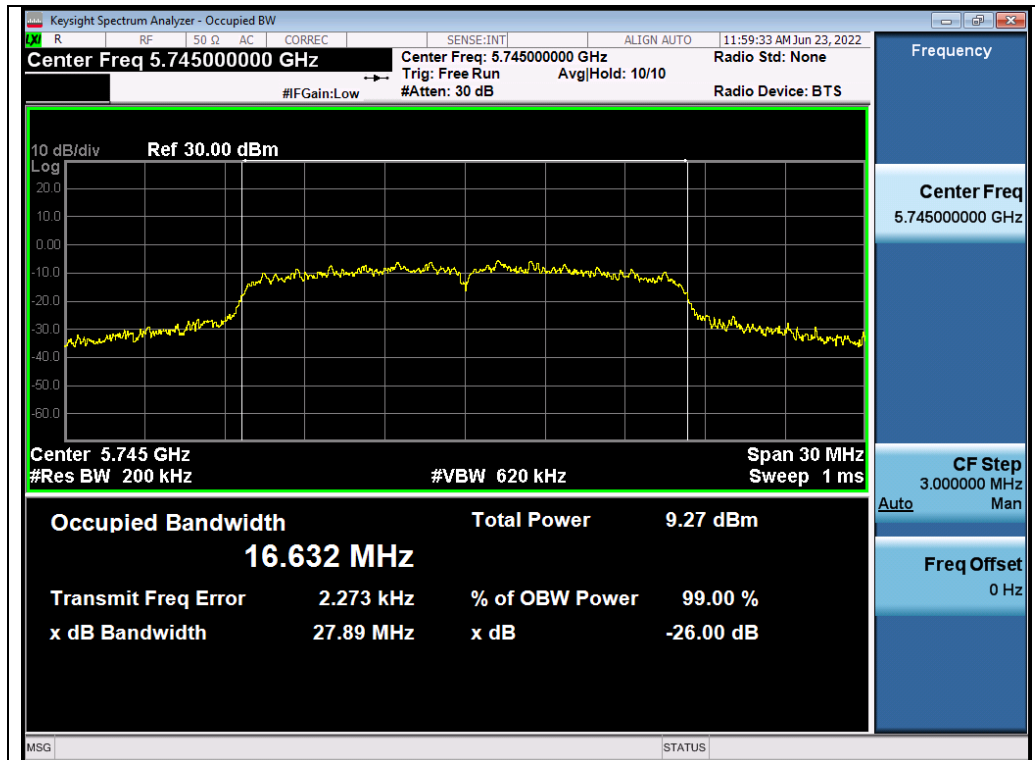


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Test Graphs of Occupied Bandwidth for band 5.725-5.85 GHz



Test_Graph_802.11a_ANT1_5745_6Mbps_OBW



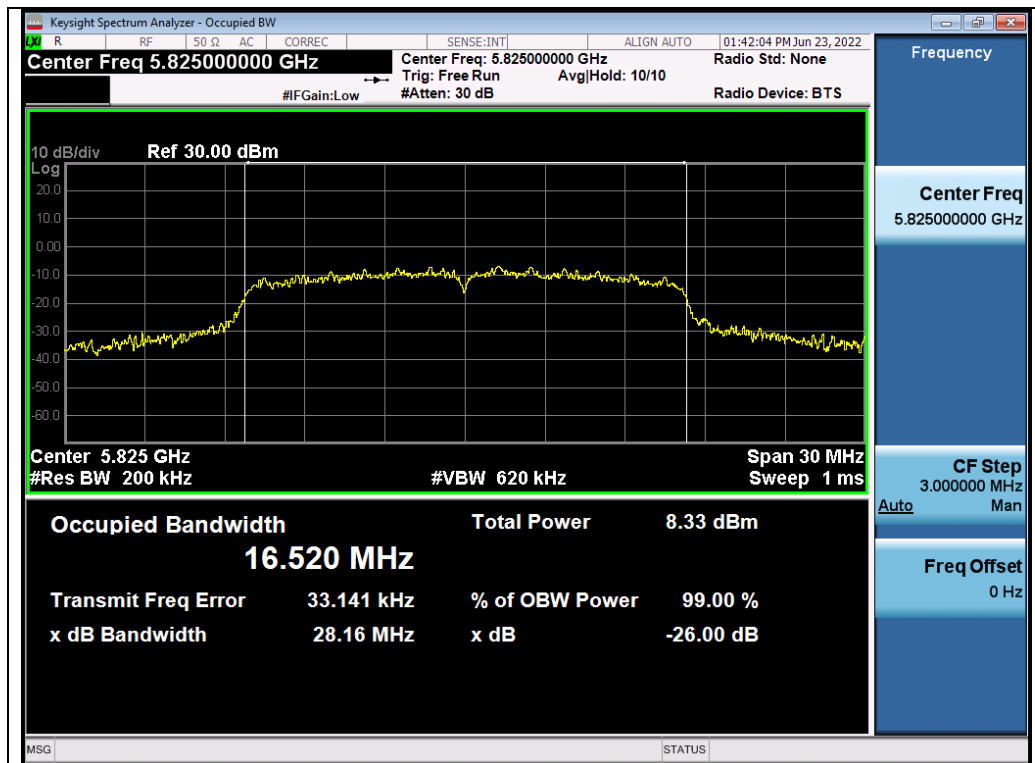
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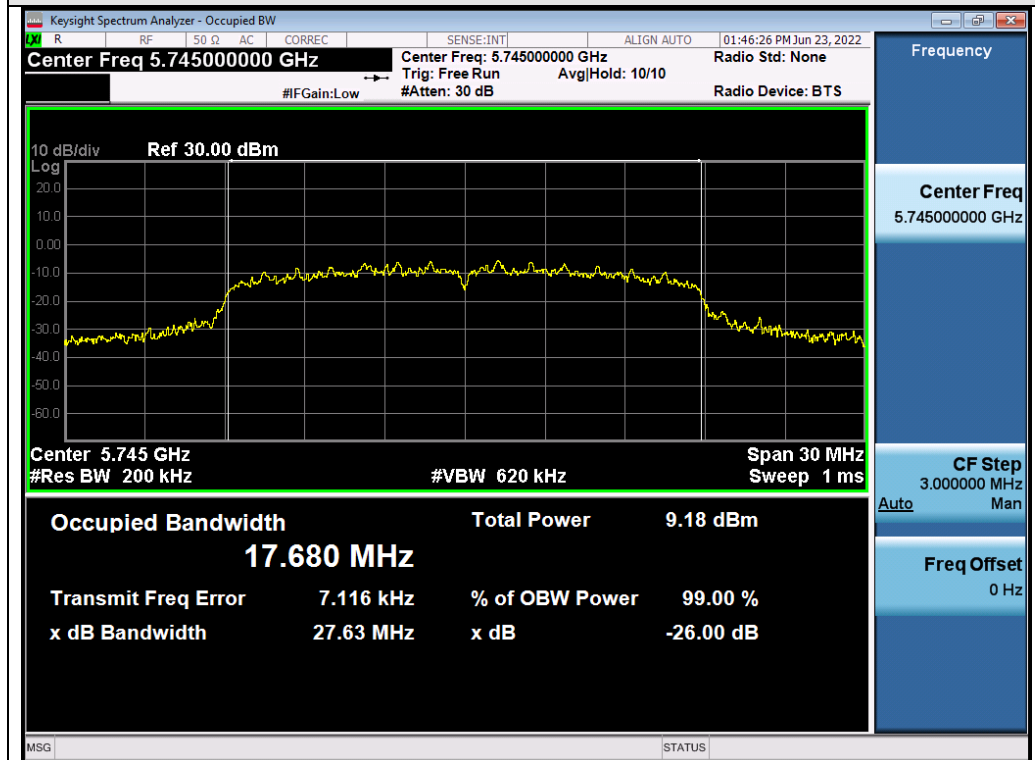
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Test_Graph_802.11a_ANT1_5825_6Mbps_OBW



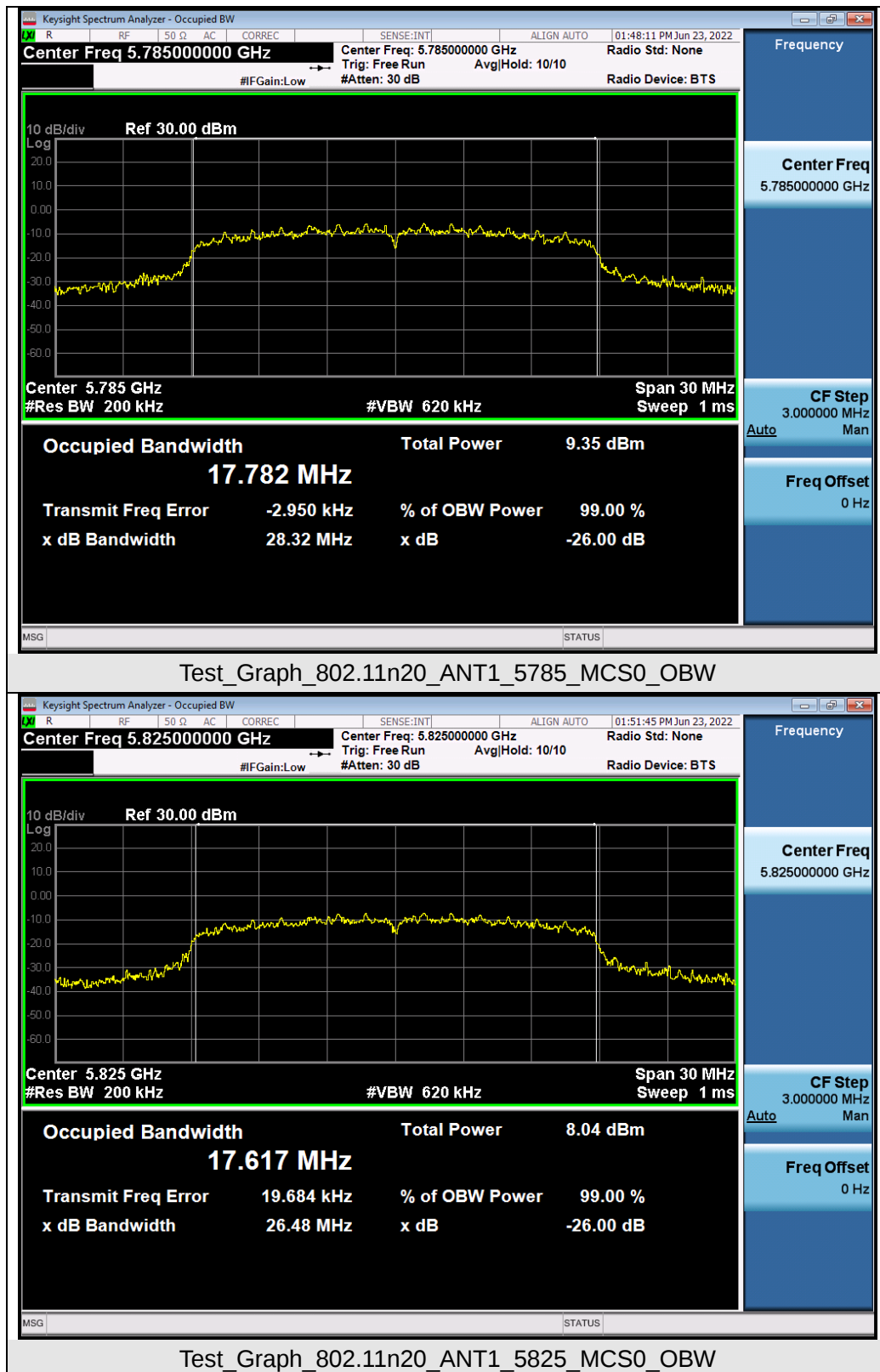
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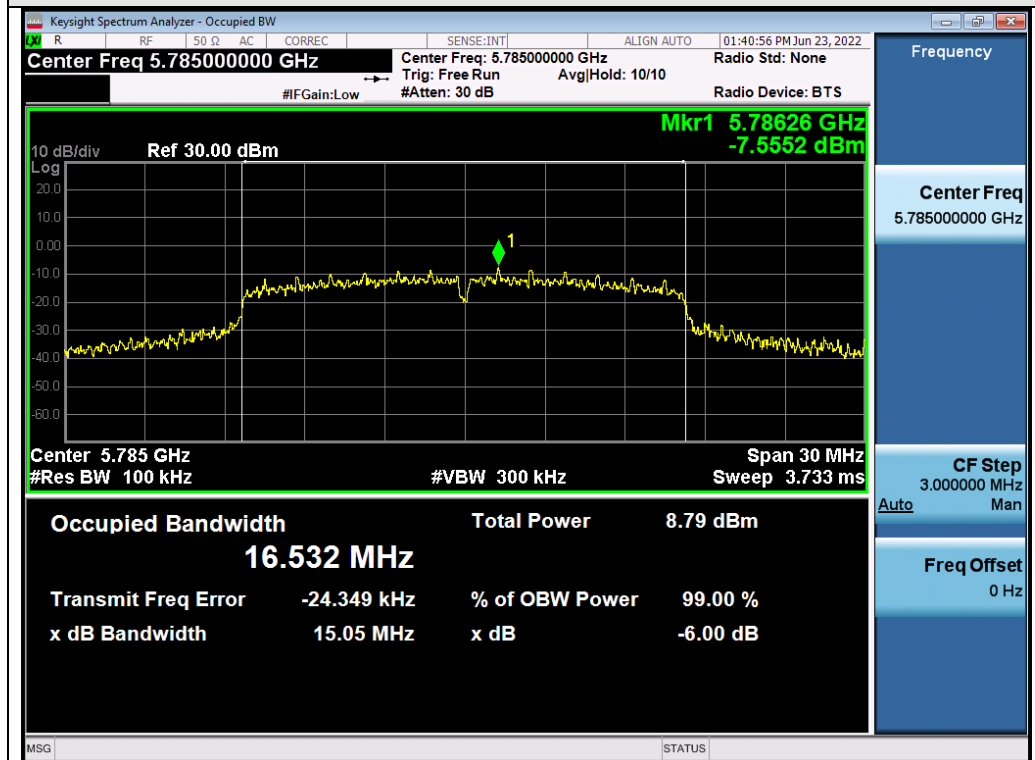


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Test Graphs of DTS Bandwidth for band 5.725-5.85 GHz



Test_Graph_802.11a_ANT1_5745_6Mbps_DTSBW



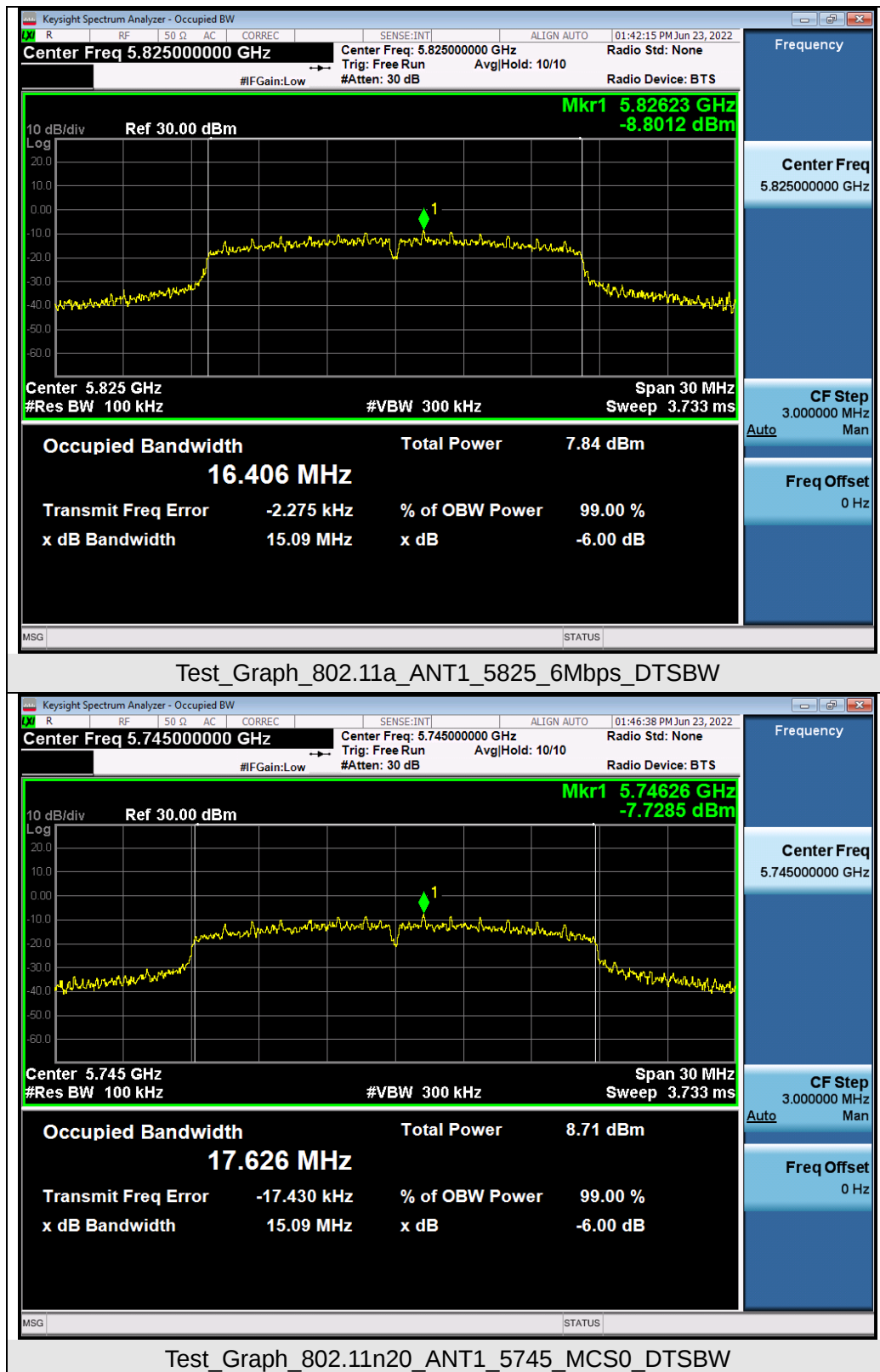
Test_Graph_802.11a_ANT1_5785_6Mbps_DTSBW

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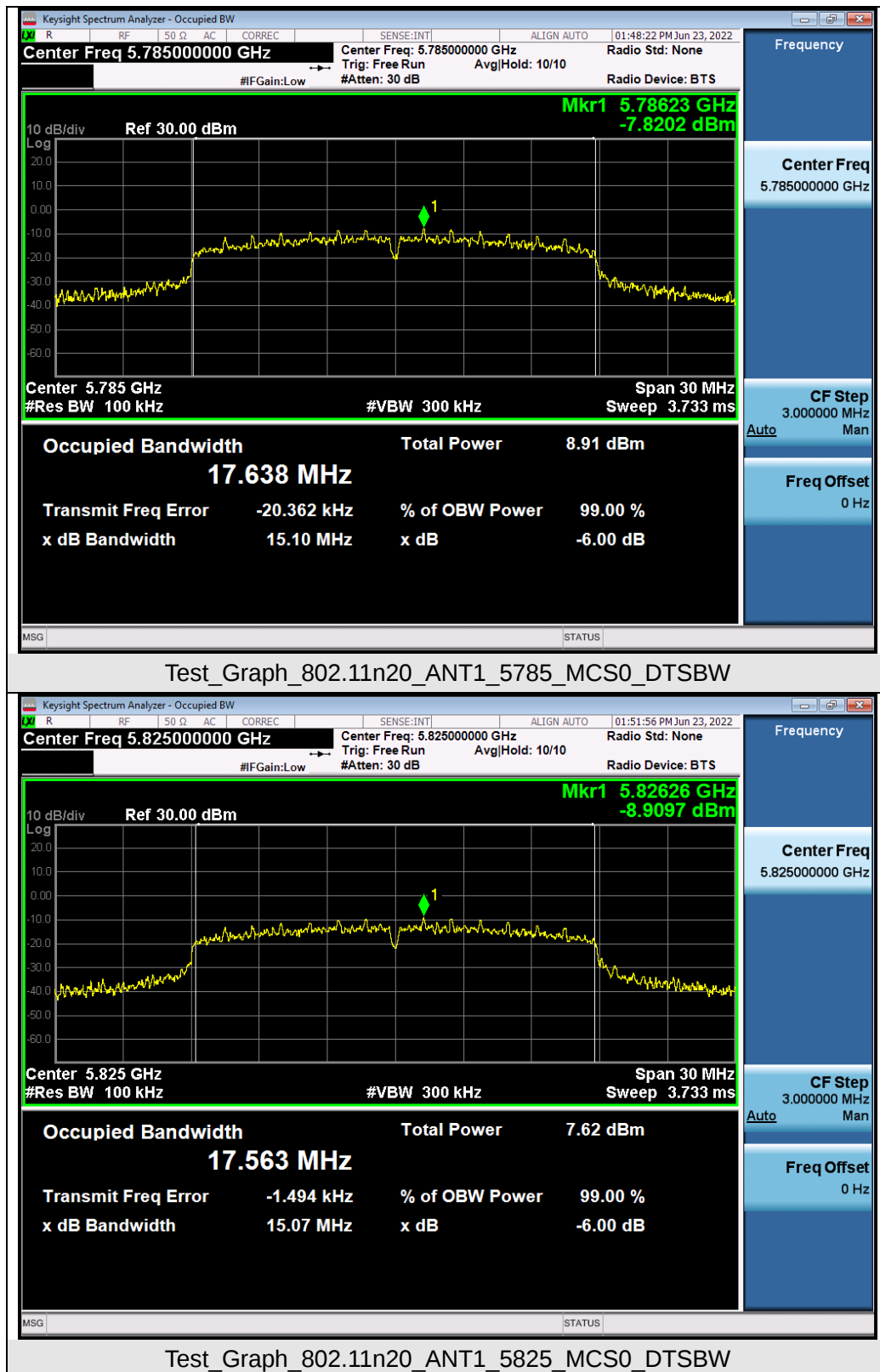
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9. MAXIMUM CONDUCTED OUTPUT AVERAGE POWER SPECTRAL DENSITY

9.1. MEASUREMENT PROCEDURE

Refer to KDB 789033 section F

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

Refer to Section 8.2.

9.3. MEASUREMENT EQUIPMENT USED

Refer to Section 6.

9.4. LIMITS AND MEASUREMENT RESULT

Test Data of Conducted Output Power Density for band 5.15-5.25 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5180	-1.082	11	Pass
	5200	-0.270	11	Pass
	5240	-1.643	11	Pass
802.11n20	5180	-1.036	11	Pass
	5200	-0.877	11	Pass
	5240	-2.846	11	Pass

Test Data of Conducted Output Power Density for band 5.25-5.35 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/MHz)	Limits (dBm/MHz)	Pass or Fail
802.11a	5260	-2.789	11	Pass
	5300	-4.290	11	Pass
	5320	-4.818	11	Pass
802.11n20	5260	-3.160	11	Pass
	5300	-4.074	11	Pass
	5320	-4.355	11	Pass

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Test Data of Conducted Output Power Density for band 5.47-5.725 GHz				
Test Mode	Test Channel (MHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail
802.11a	5500	-3.215	11	Pass
	5600	0.293	11	Pass
	5700	-5.775	11	Pass
802.11n20	5500	-3.019	11	Pass
	5600	-0.342	11	Pass
	5700	-5.517	11	Pass

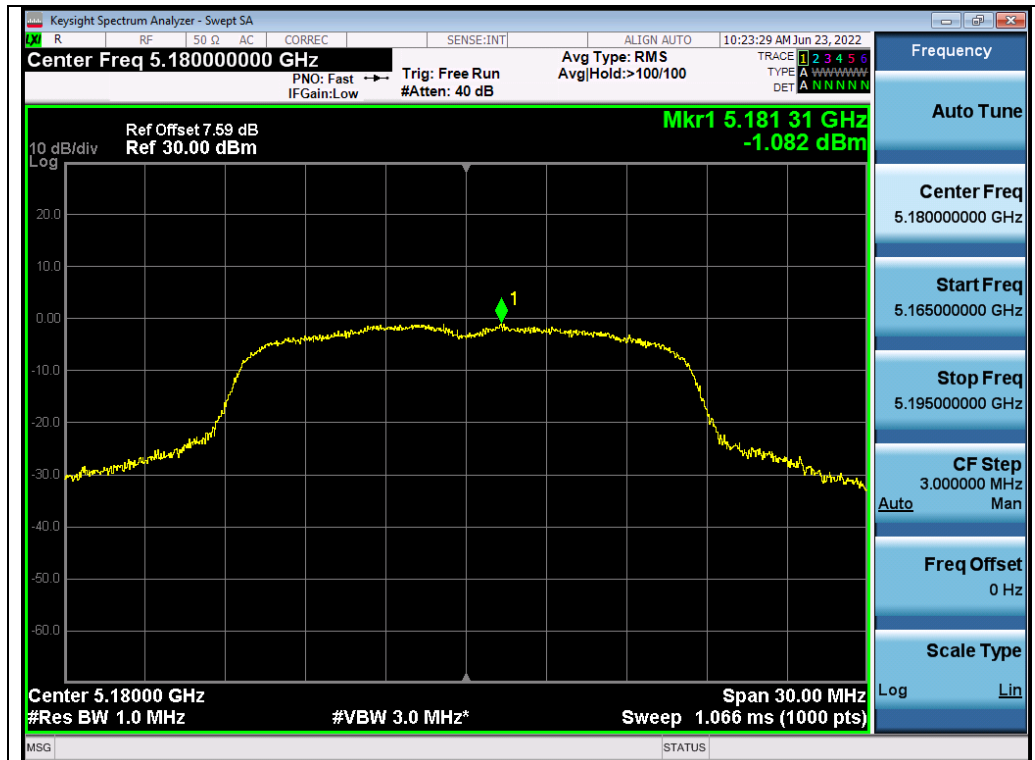
Test Data of Conducted Output Power Density for band 5.725-5.85 GHz					
Test Mode	Test Channel (MHz)	Average Power Density (dBm/100kHz)	Average Power Density (dBm/500kHz)	Limits (dBm/500kHz)	Pass or Fail
802.11a	5745	-11.685	-4.695	30	Pass
	5785	-12.474	-5.484	30	Pass
	5825	-13.183	-6.193	30	Pass
802.11n20	5745	-12.563	-5.573	30	Pass
	5785	-11.828	-4.838	30	Pass
	5825	-13.299	-6.309	30	Pass

Note:1. Power density(dBm/500kHz) = Power density(dBm/100kHz) +10*log(500/100).

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Test Graphs of Conducted Output Power Spectral Density for band 5.15-5.25 GHz

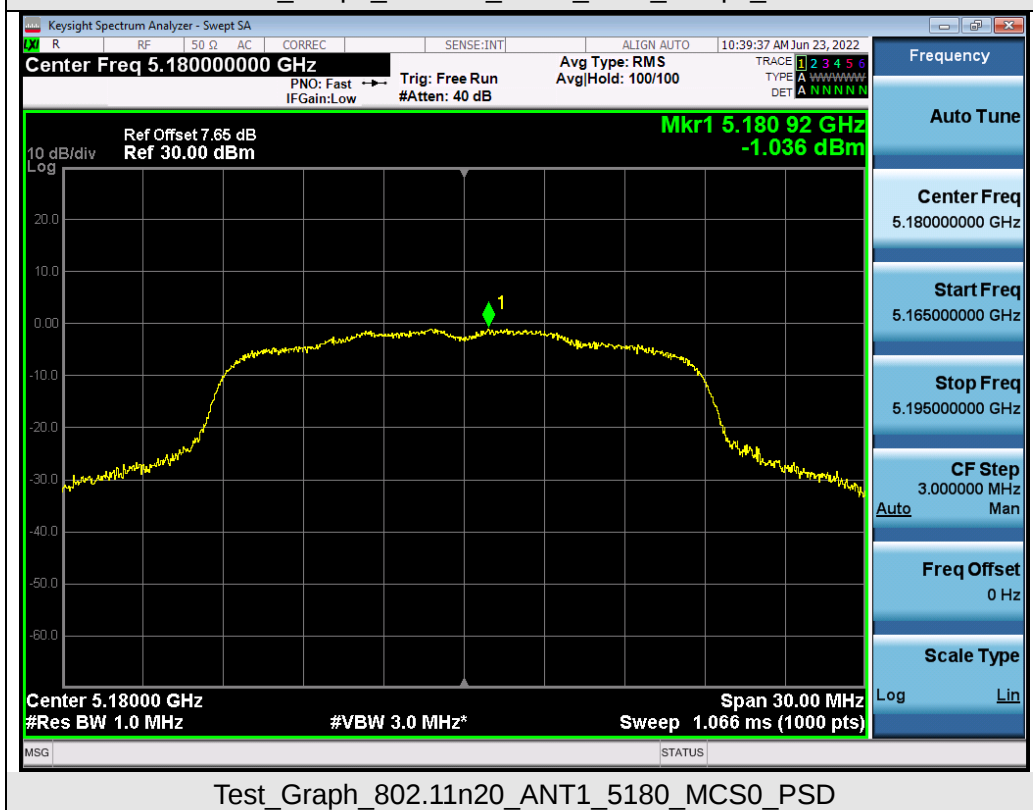


Test_Graph_802.11a_ANT1_5180_6Mbps_PSD



Test_Graph_802.11a_ANT1_5200_6Mbps_PSD

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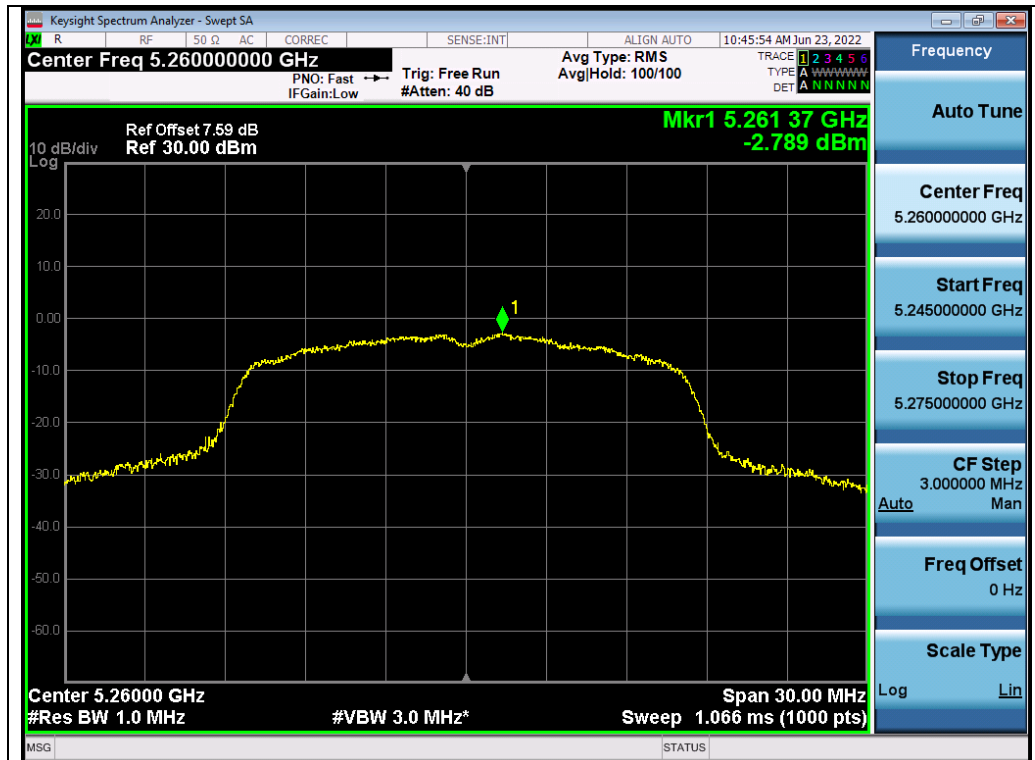
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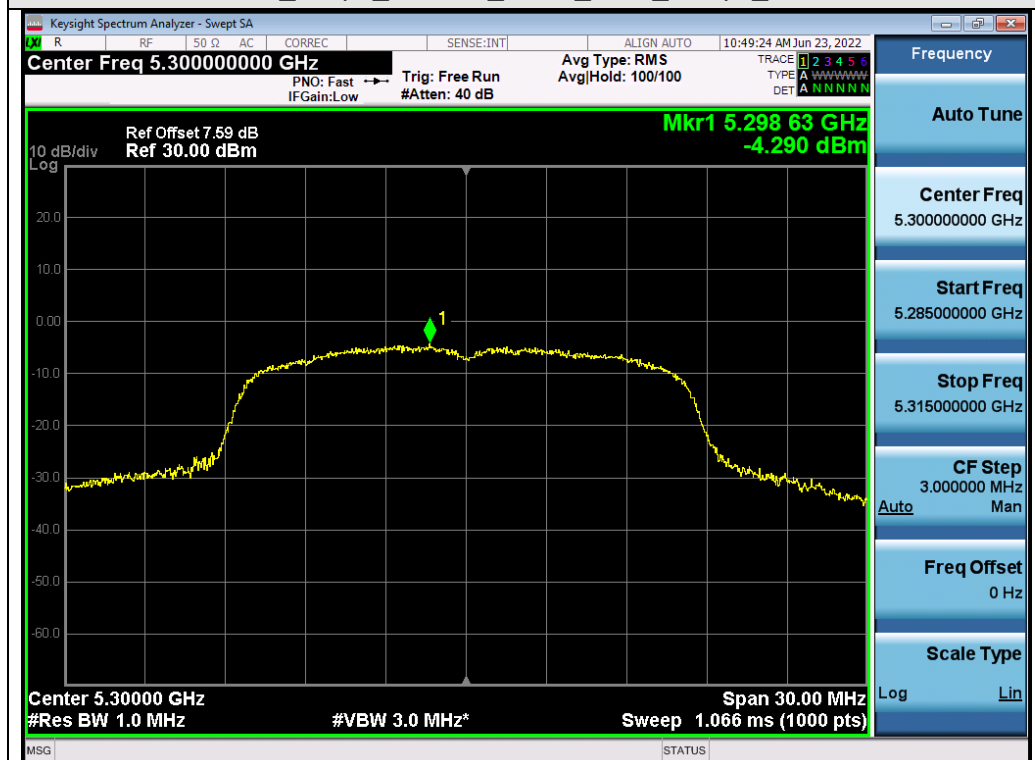
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Test Graphs of Conducted Output Power Spectral Density for band 5.25-5.35 GHz



Test_Graph_802.11a_ANT1_5260_6Mbps_PSD



Test_Graph_802.11a_ANT1_5300_6Mbps_PSD

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Test_Graph_802.11a_ANT1_5320_6Mbps_PSD

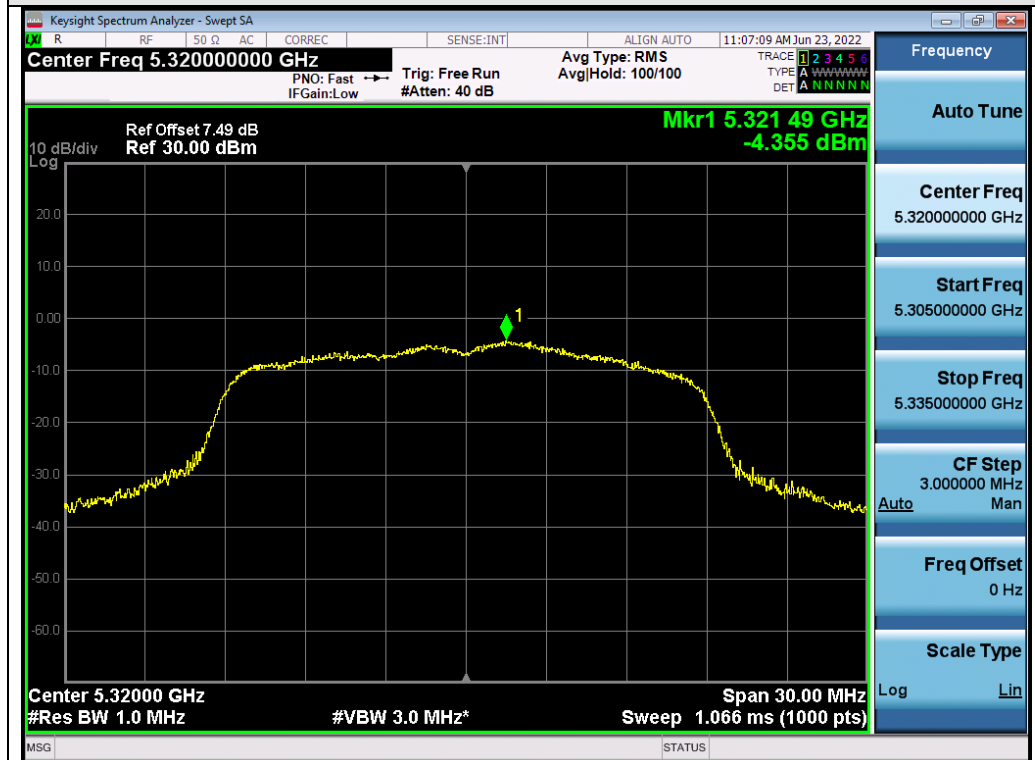


Test_Graph_802.11n20_ANT1_5260_MCS0_PSD

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Test_Graph_802.11n20_ANT1_5300_MCS0_PSD



Test_Graph_802.11n20_ANT1_5320_MCS0_PSD

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Test Graphs of Conducted Output Power Spectral Density for band 5.47-5.725 GHz



Test_Graph_802.11a_ANT1_5500_6Mbps_PSD

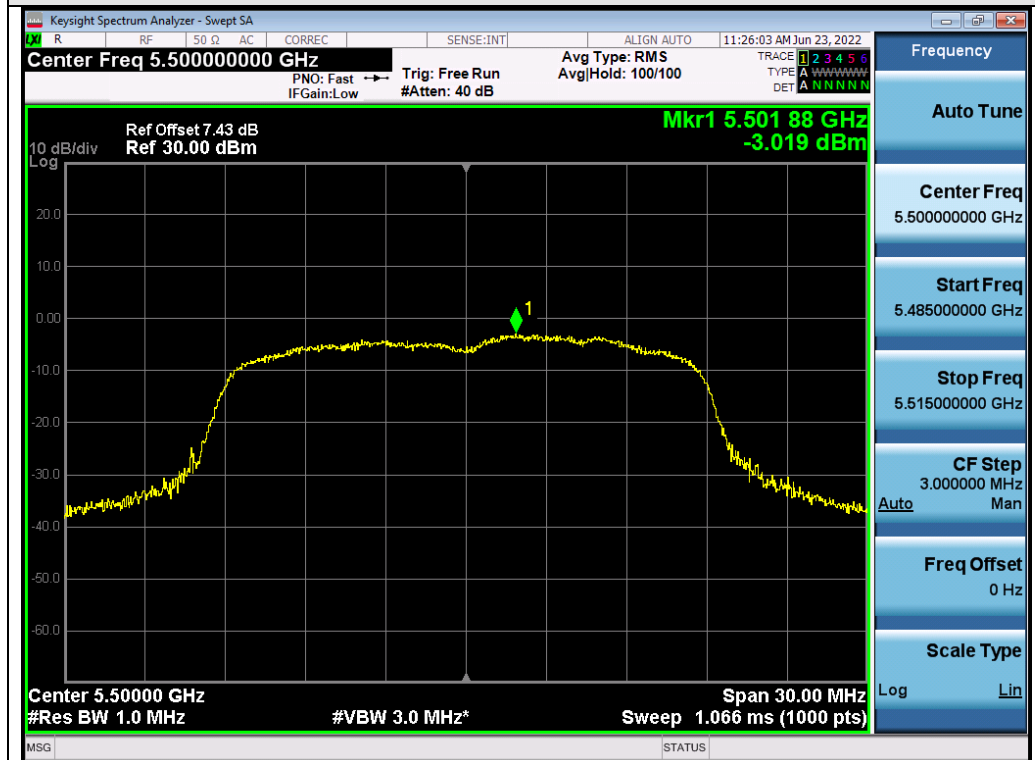


Test_Graph_802.11a_ANT1_5600_6Mbps_PSD

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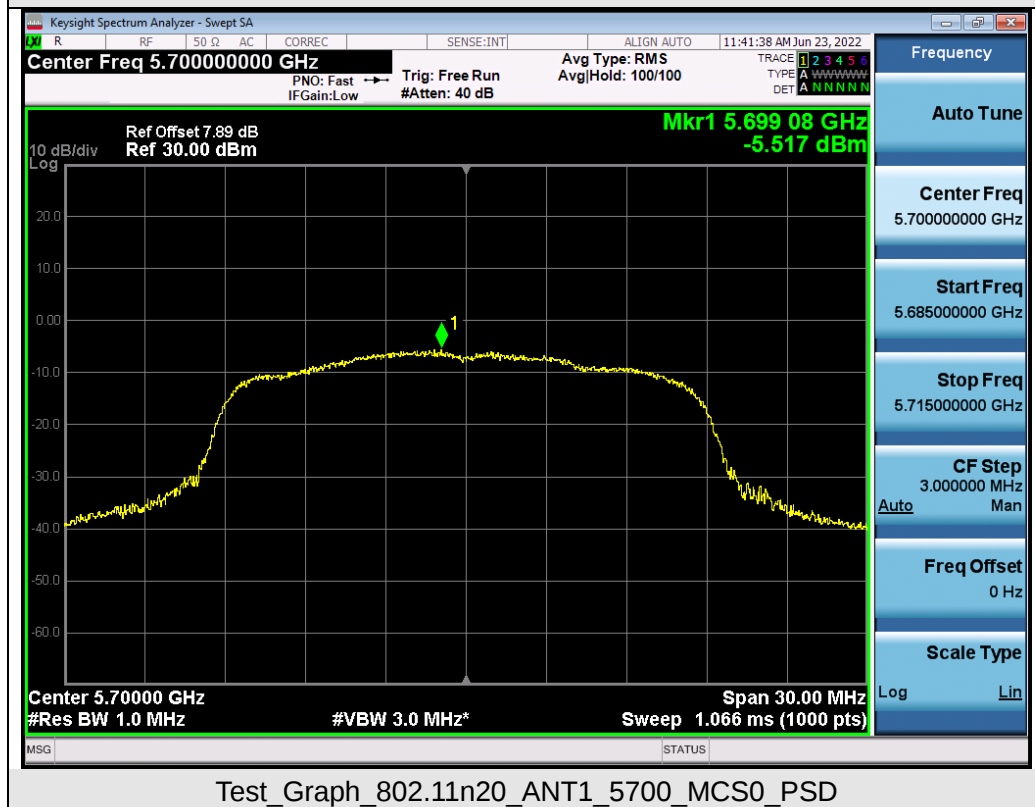
Test_Graph_802.11a_ANT1_5700_6Mbps_PSD



Test_Graph_802.11n20_ANT1_5500_MCS0_PSD

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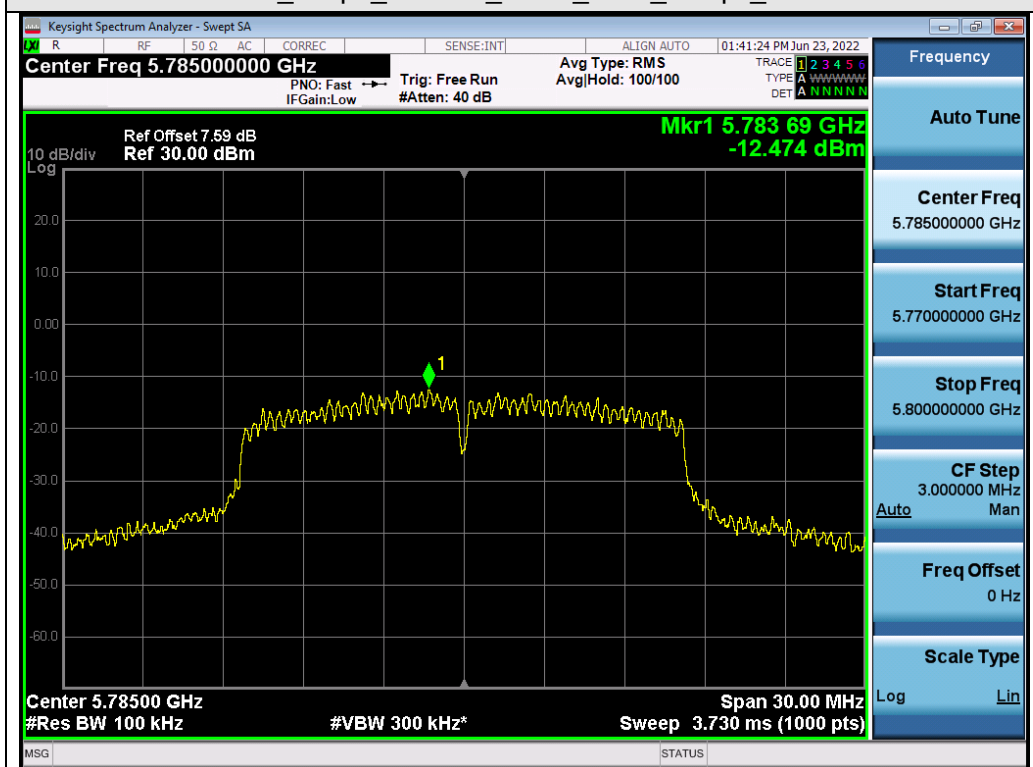
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Test Graphs of Conducted Output Power Spectral Density for band 5.725-5.85 GHz

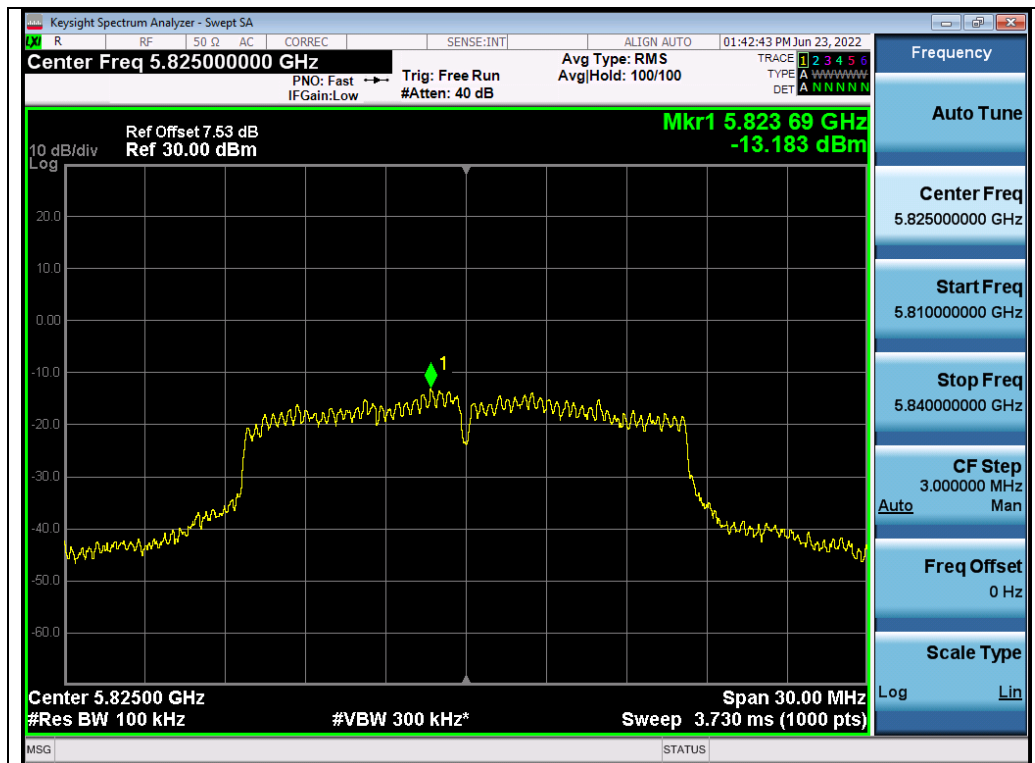


Test_Graph_802.11a_ANT1_5745_6Mbps_PSD

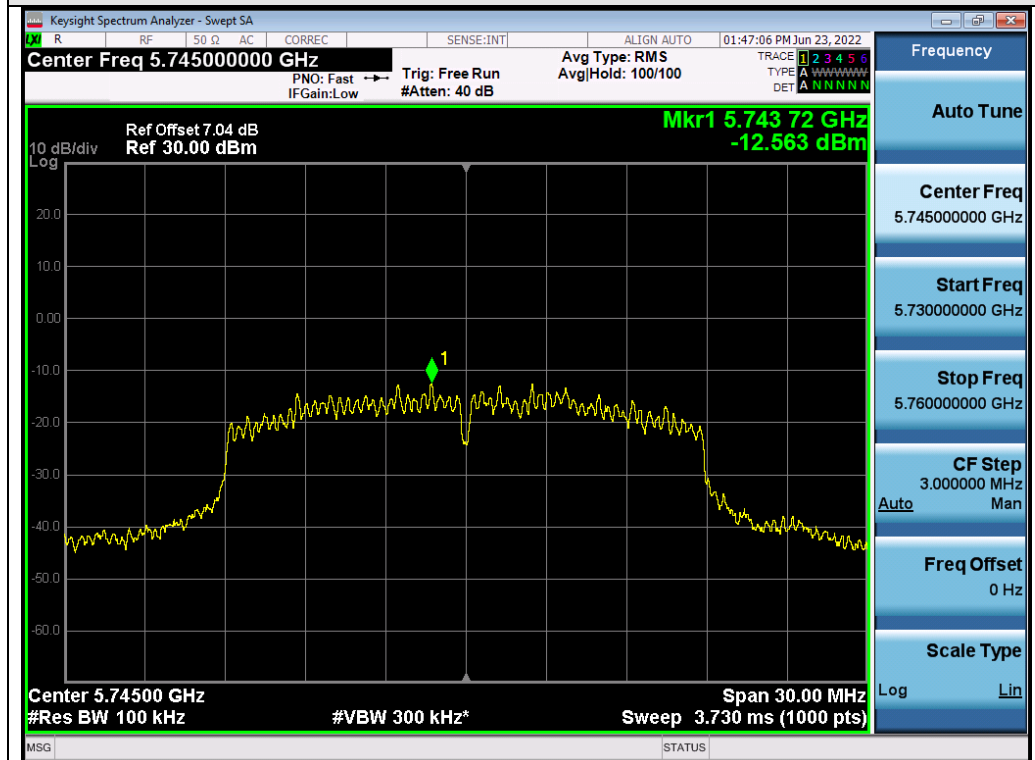


Test_Graph_802.11a_ANT1_5785_6Mbps_PSD

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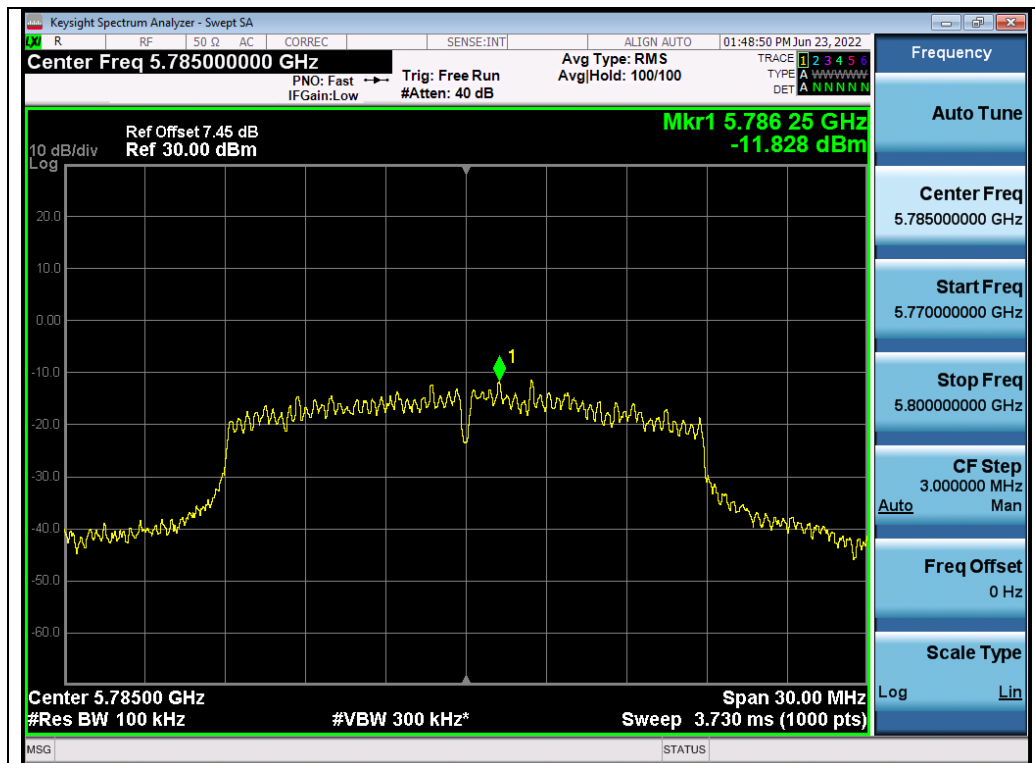


Test_Graph_802.11a_ANT1_5825_6Mbps_PSD

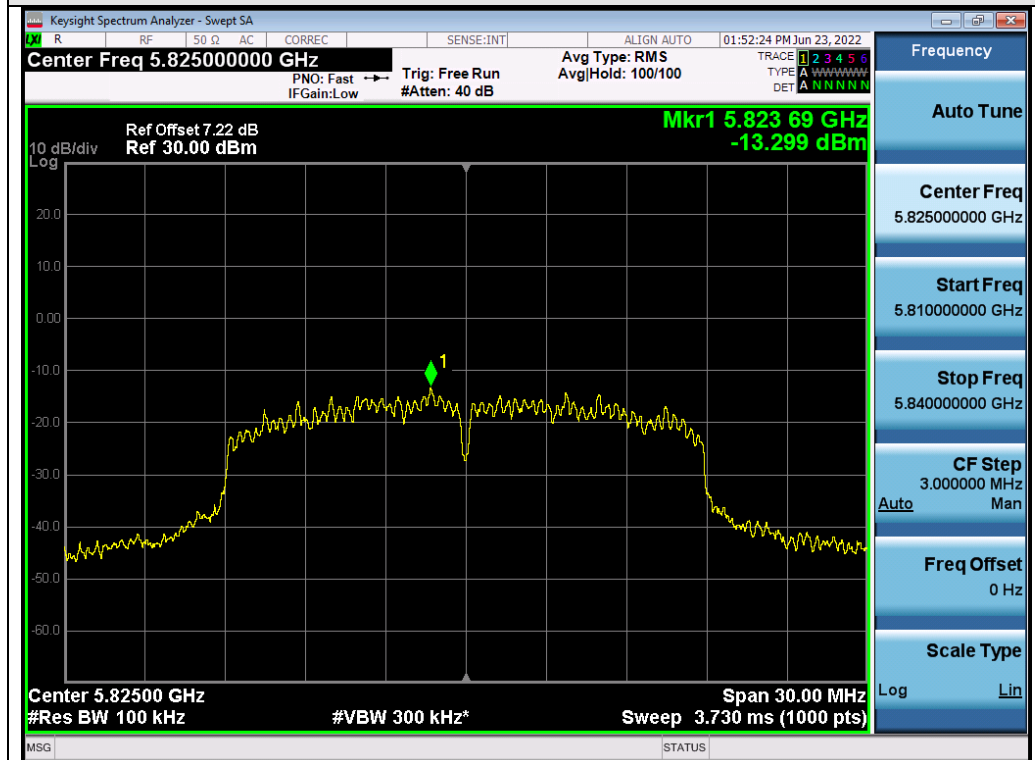


Test_Graph_802.11n20_ANT1_5745_MCS0_PSD

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Test_Graph_802.11n20_ANT1_5785_MCS0_PSD



Test_Graph_802.11n20_ANT1_5825_MCS0_PSD

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10. CONDUCTED SPURIOUS EMISSION

10.1. MEASUREMENT PROCEDURE

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 SPA Trace 1 Max hold, then View.

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

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

The same as described in section 8.2.

10.3. MEASUREMENT EQUIPMENT USED

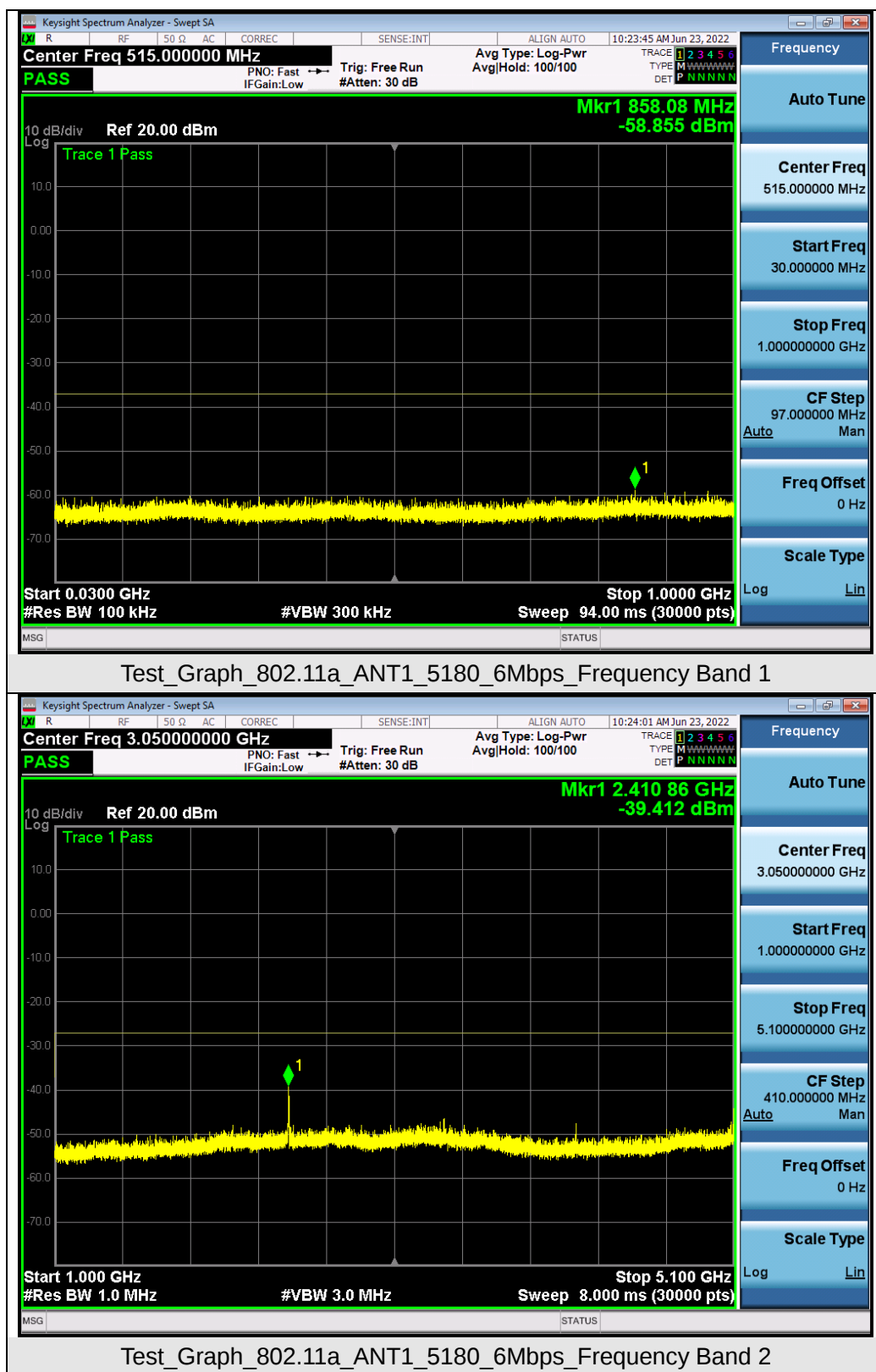
The same as described in section 6.

10.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test channel	Criteri a
-27dBm/MHz	5150MHz-5250MHz	PASS
All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	5725MHz-5850MHz	PASS

Note: All the 20MHz bandwidth modulation had been tested, the 802.11a20 was the worst case and record in his test report. All the 40MHz bandwidth modulation had been tested, the 802.11N40 was the worst case and record in his test report. All the 80MHz bandwidth modulation had been tested, the 802.11AC80 was the worst case and record in his test report.

Test Graphs of Spurious Emissions outside of the 5.15-5.35 GHz band for transmitters operating in the 5.15-5.25 GHz band

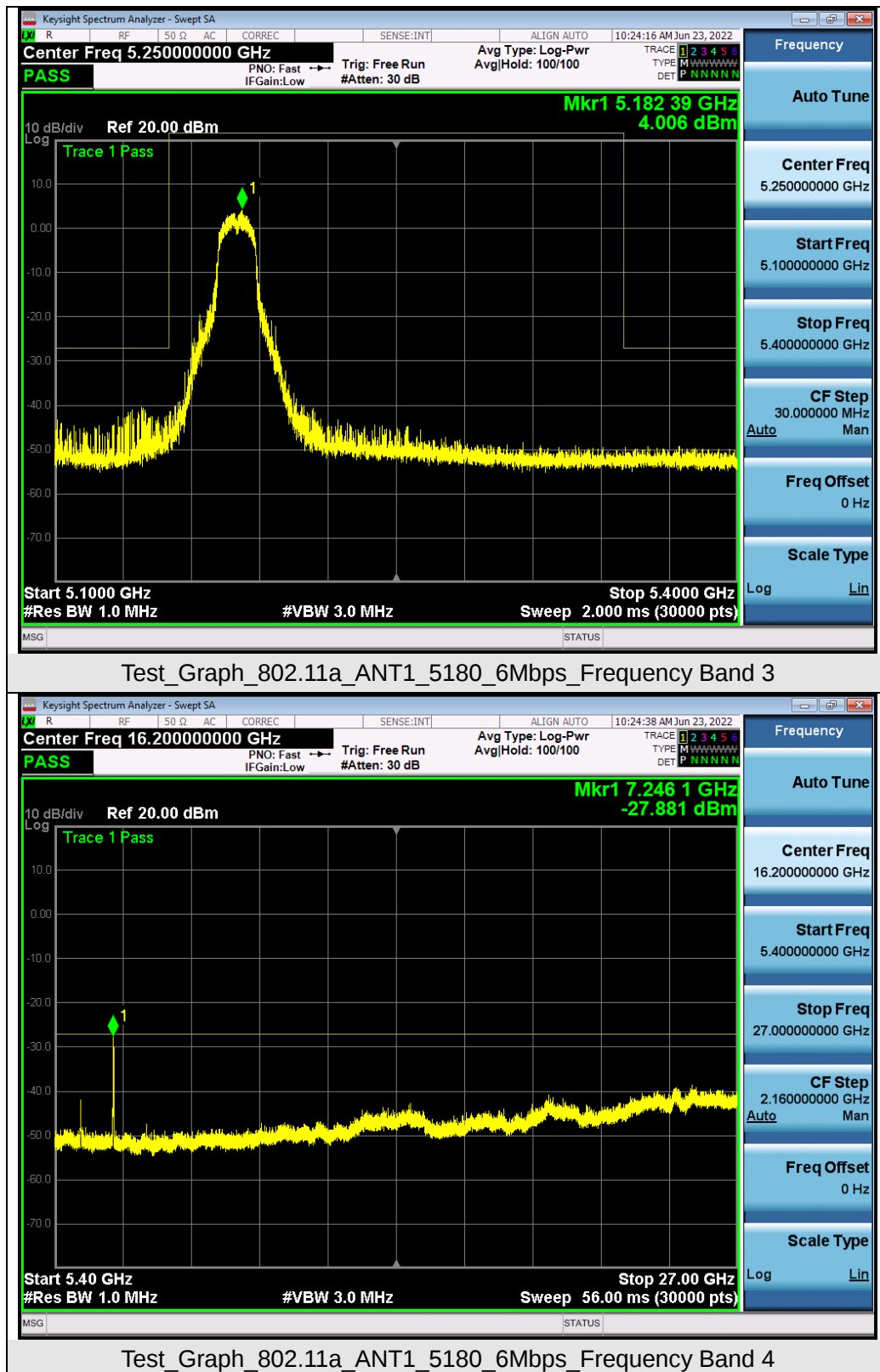


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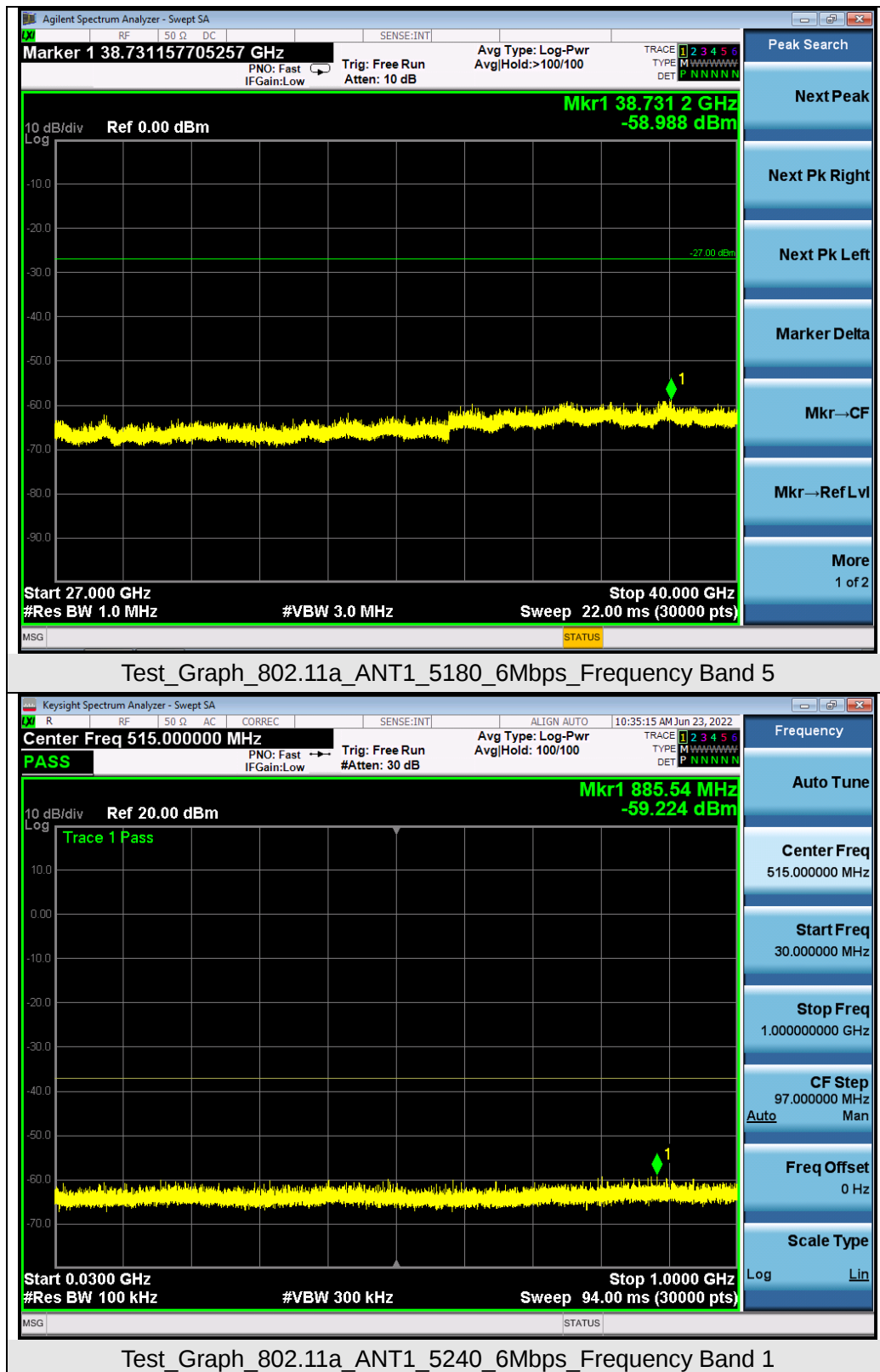
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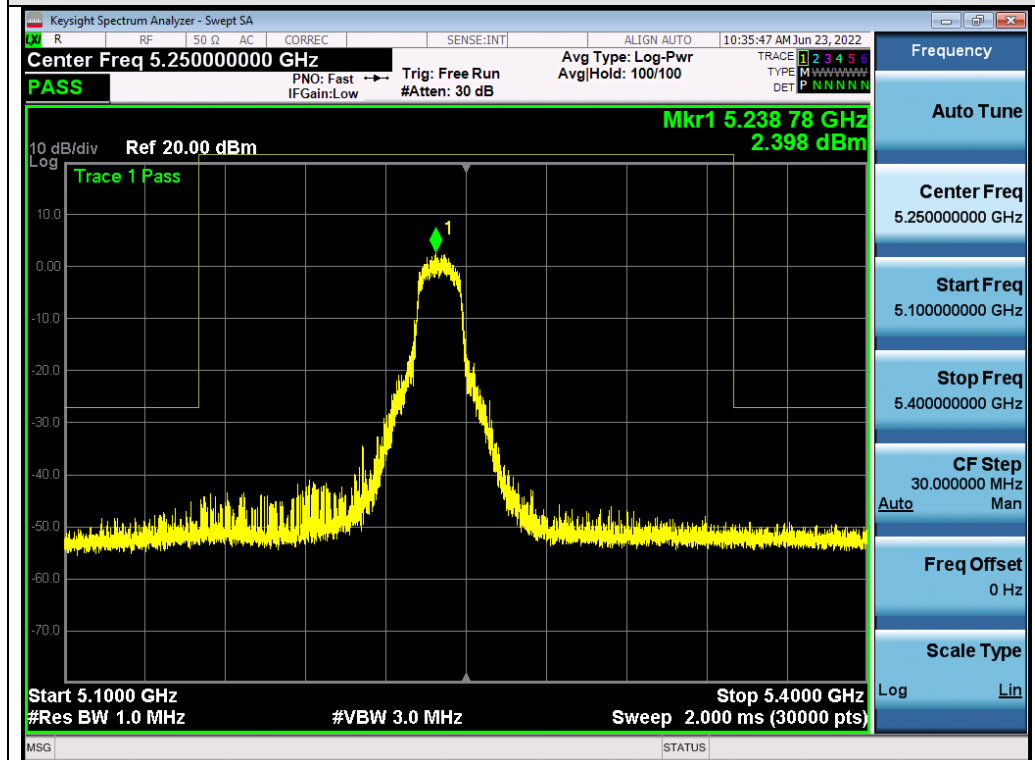
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Test_Graph_802.11a_ANT1_5240_6Mbps_Frequency Band 2

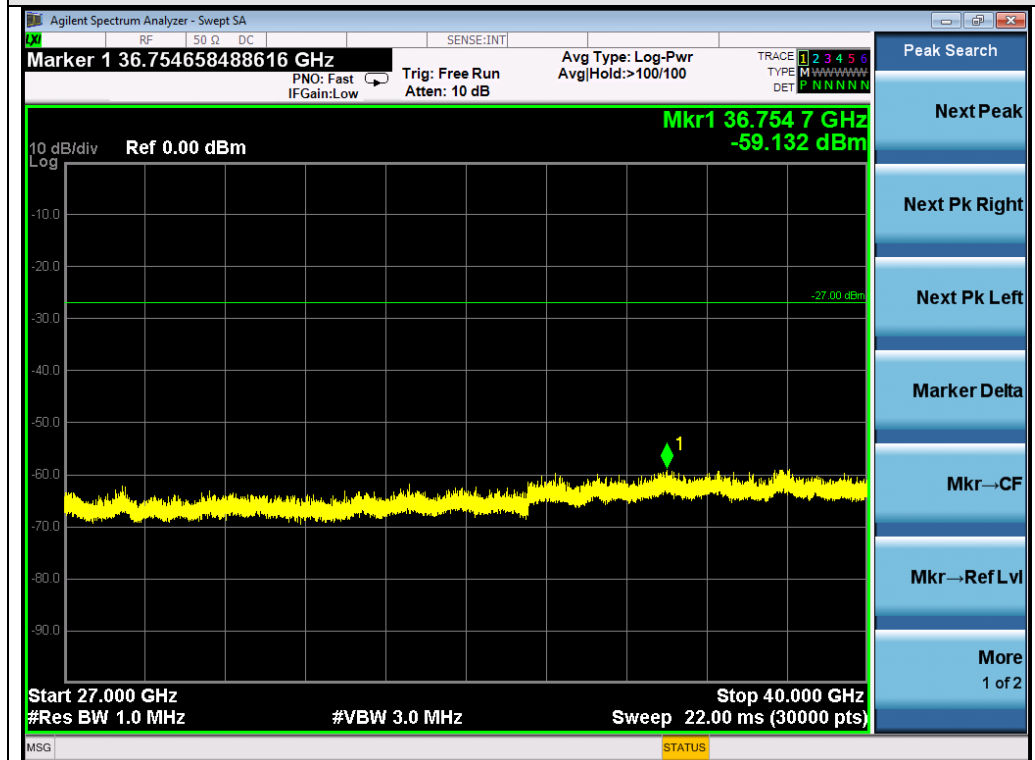


Test_Graph_802.11a_ANT1_5240_6Mbps_Frequency Band 3

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Test_Graph_802.11a_ANT1_5240_6Mbps_Frequency Band 4

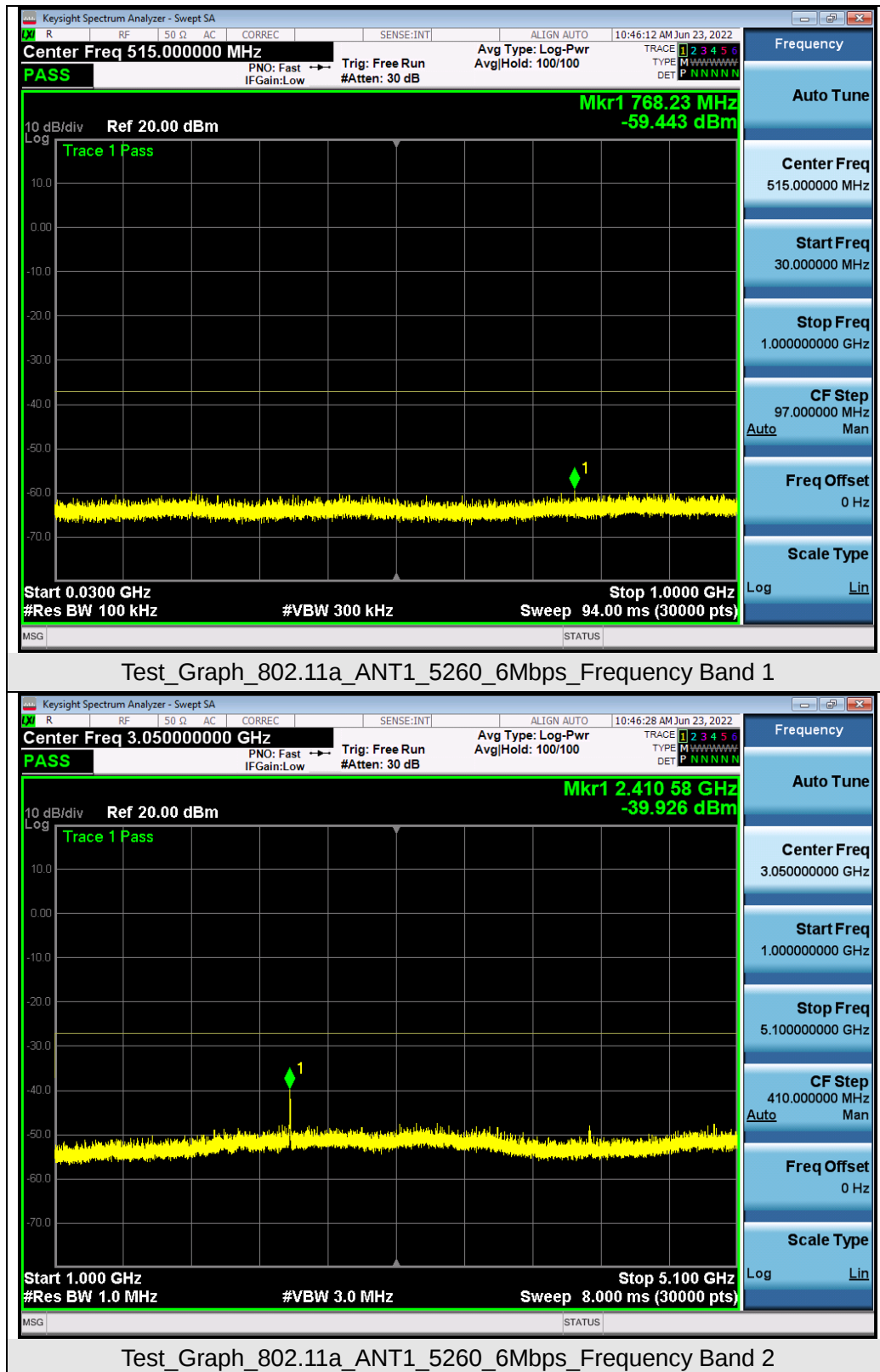


Test_Graph_802.11a_ANT1_5240_6Mbps_Frequency Band 5

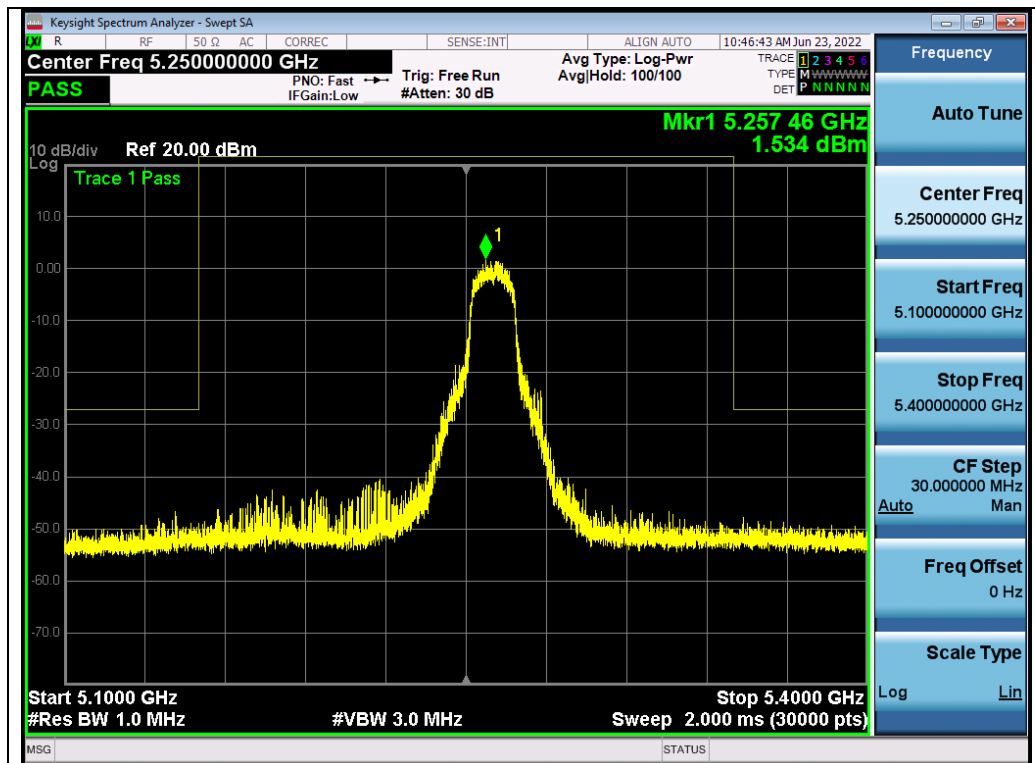
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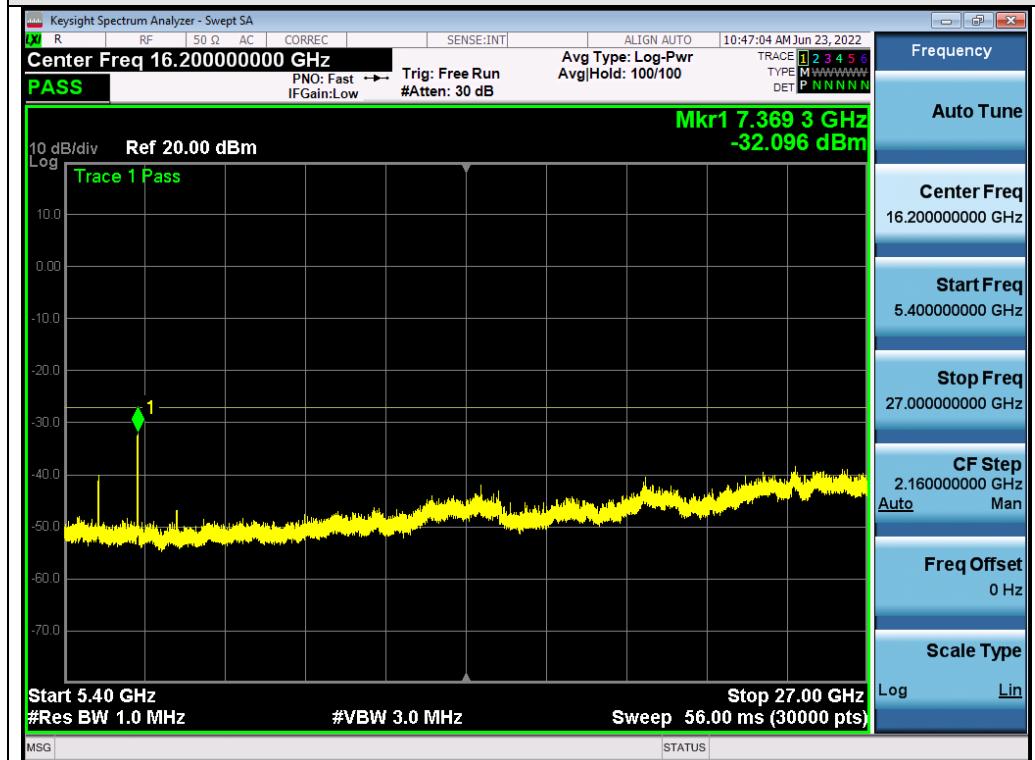
Test Graphs of Spurious Emissions outside of the 5.15-5.35 GHz band for transmitters operating in the 5.25-5.35 GHz band



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Test_Graph_802.11a_ANT1_5260_6Mbps_Frequency Band 3



Test_Graph_802.11a_ANT1_5260_6Mbps_Frequency Band 4

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