

**ELECTROMAGNETIC EMISSIONS
COMPLIANCE REPORT**

Applicant: silex technology, Inc.
2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237,
Japan

Manufacturer: silex technology, Inc.
2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237,
Japan

Product Name: AP-800AX

Brand Name: Silex Technology

Model No.: AP-800AX

Model Difference: N/A

Report Number: TERF2303000753ER

FCC ID N6C-AP800AX

IC: 4908A-AP800AX

Date of EUT Received: March 29, 2023

Date of Test: March 29, 2023 ~ May 11, 2023

Issue Date: August 21, 2023

Approved By

Blue Yang

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab. 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 comply with FCC rule part §15.407, ISSED RSS-247.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TERF2303000753ER	00	Original.	July 20, 2023	Susan Lin	
TERF2303000753ER	01	Update channel number in section 1.5	August 21, 2023	Susan Lin	*

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.

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1 GENERAL INFORMATION

1.1 Product Description

Product Name:	AP-800AX
Brand Name:	Silex Technology
Model No.:	AP-800AX
Model Difference:	N/A
Hardware Version:	N/A
Firmware Version:	N/A
EUT Series No.:	000001814
Power Supply:	12Vdc
Test Software (Name/Version):	QRCT v4.0.211.0

1.2 Modulation & Data Rate

Modulation type:	64QAM, 16QAM, QPSK, BPSK for OFDM
	256QAM for OFDM in 802.11ac
	256QAM, 1024QAM for OFDMA in 802.11ax
Transition Rate:	802.11 a: 6 - 54 Mbps
	802.11 n_20MHz: up to 144.4 Mbps
	802.11 n_40MHz: up to 300 Mbps
	802.11 ac_20MHz: up to 173.4 Mbps
	802.11 ac_40MHz: up to 400 Mbps
	802.11 ac_80MHz: up to 866.6 Mbps
	802.11 ax_20MHz: up to 286.8 Mbps
	802.11 ax_40MHz: up to 573.6 Mbps
	802.11 ax_80MHz: up to 1201 Mbps

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1.3 Antenna Designation

Antenna Type	Ch0/Ch1	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)	Directional Gain (dBi)
Dipole	Ch0	ANTDP-039A0	5150~5250	1.1	4.11
			5250~5350	1.1	4.11
			5470~5725	1.2	4.21
			5725~5850	1.3	4.31
	Ch1		5150~5250	1.1	4.11
			5250~5350	1.1	4.11
			5470~5725	1.2	4.21
			5725~5850	1.3	4.31

Note:

1. Pre-scanned was done on the above antennas, measurements were demonstrated by using the antenna with the highest gain as the worst case scenarios.
2. Antenna information is provided by the applicant.

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1.4 FCC

Wi-Fi	Frequency Range	Channels	Rated Power(Avg) (dBm) (Worst Case)	Modulation Technology
a/ n_HT/ ac_VHT/ ax_HE 20M	5180~5240	4	16.47 dBm	OFDMA
	5260~5320	4	21.98 dBm	OFDMA
	5500~5720	12	21.98 dBm	OFDM
	5745-5825	5	19.99 dBm	OFDM
n_HT ac_VHT/ ax_HE 40M	5190~5230	2	16.99 dBm	OFDM
	5270~5310	2	21.98 dBm	OFDM
	5510~5710	6	21.99 dBm	OFDM
	5755-5795	2	22.99 dBm	OFDM
ac_VHT/ ax_HE 80M	5210	1	16.98 dBm	OFDMA
	5290	1	16.06 dBm	OFDM
	5530~5690	3	21.96 dBm	OFDM
	5775	1	22.86 dBm	OFDM

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1.5 ISED

WLAN 5 GHz for ISED (Master)

Wi-Fi	Frequency Range	Channels	EIRP/Avg	(Rated Power(EIRP/Avg) (dBm) (Worst Case)	Modulation Technology
a/ n_HT/ ac_VHT/ ax_HE 20M	5180~5240	4	EIRP	20.58 dBm	OFDMA
	5260~5320	4	Avg	21.98 dBm	OFDMA
	(*)5500~5700	8	Avg	21.98 dBm	OFDM
	5720 (U-NII 2C)	1	Avg	19.62 dBm	OFDM
	5720 (U-NII 3)	1	Avg	15.03 dBm	OFDMA
	5745-5825	5	Avg	19.99 dBm	OFDM
n_HT ac_VHT/ ax_HE 40M	5190~5230	2	EIRP	21.10 dBm	OFDM
	5270~5310	2	Avg	21.98 dBm	OFDM
	(*)5510~5670	3	Avg	21.99 dBm	OFDM
	5710 (U-NII 2C)	1	Avg	19.33 dBm	OFDM
	5710 (U-NII 3)	1	Avg	11.09 dBm	OFDMA
	5755-5795	2	Avg	22.99 dBm	OFDM
ac_VHT/ ax_HE 80M	5210	1	EIRP	21.09 dBm	OFDMA
	5290	1	Avg	16.06 dBm	OFDM
	5530	1	Avg	21.96 dBm	OFDM
	5690 (U-NII 2C)	1	Avg	17.62 dBm	OFDM
	5690 (U-NII 3)	1	Avg	6.30 dBm	OFDM
	5775	1	Avg	22.86 dBm	OFDM

*Note : TDWR frequencies are not available in Canada.

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1.6 Test Methodology of Applied Standards

FCC Part 15, Subpart E §15.407

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 291074 D02 EMC Measurement v01

RSS-247 issue 2 Feb. 2017

RSS-Gen, issue 5 April, 2018

ANSI C63.10:2013

1.7 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designa- tion number	IC CAB identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	SAC 1	TW0027	TW3702
		SAC 2		
		SAC 3		
		Conduction 1		
		Conducted 1		
		Conducted 2		
		Conducted 3		
		Conducted 4		
		Conducted 5		
		Conducted 6		
	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	Conduction C	TW0028	
		SAC C		
		SAC D		
		SAC G		
		Conducted A		
		Conducted B		
		Conducted C		
		Conducted D		
		Conducted E		
		Conducted F		
Conducted G				
Note: Test site name is remarked on the equipment list in each section of this report as an indica- tion where measurements occurred in specific test site and address.				

1.8 Special Accessories

There are no special accessories used while test was conducted.

1.9 Equipment Modifications

There was no modification incorporated into the EUT.

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2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is placed on a table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz. The CISPR Quasi-Peak and Average detector mode is employed. The two LISNs provide 50uH/50 ohm of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

2.3.2 Conducted Test (RF)

The active antenna port of the unlicensed wireless device is connected to the spectrum analyzer with attenuator to protect the instrumentation. If a second antenna port is available, it is tested at one operating frequency, with other port(s) appropriately terminated, to verify it has similar output characteristics as the fully tested port.

2.3.3 Radiated Emissions

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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2.4 Measurement Results Explanation Example

2.4.1 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

2.4.2 For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

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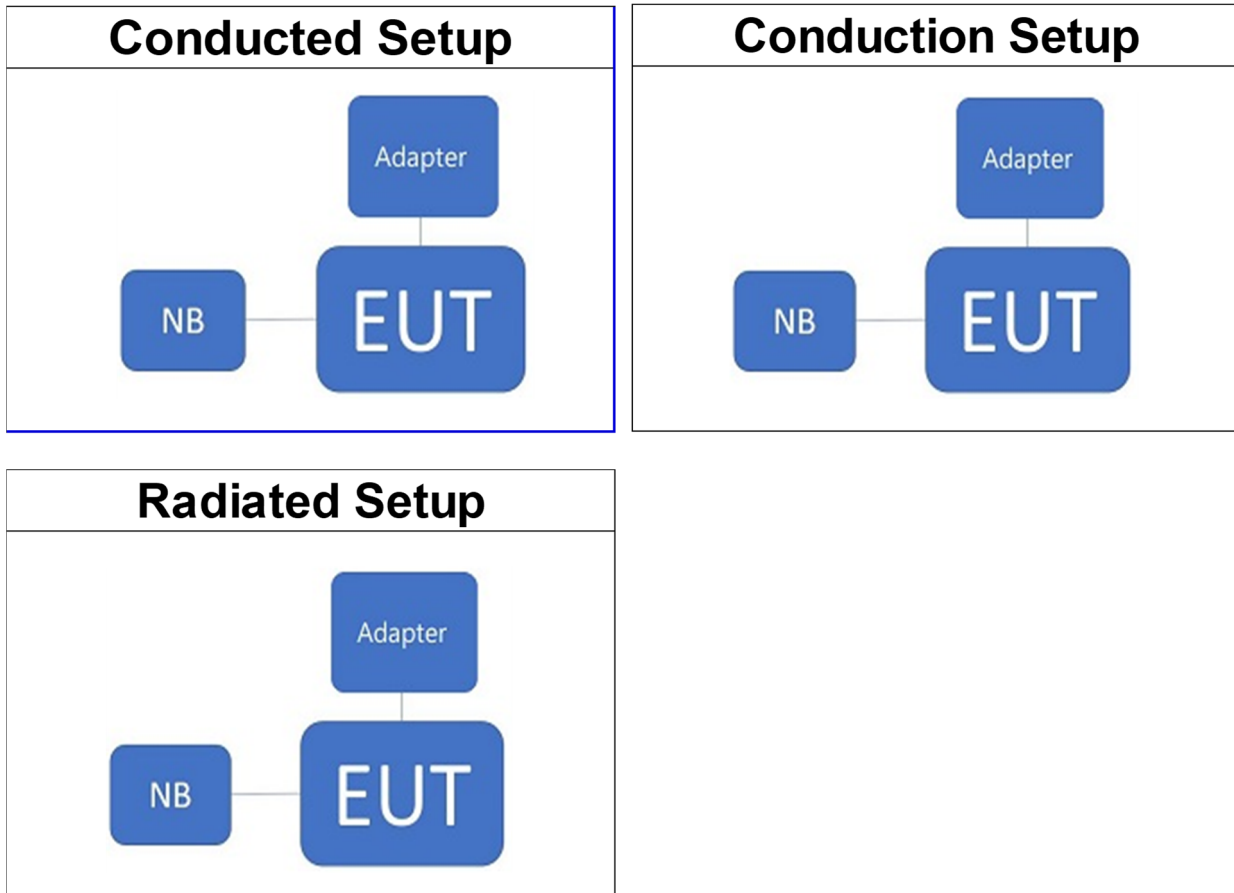
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2.5 Test Configuration



2.6 Control Unit(s)

Conducted Emission Test Site: Conducted 2					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	DELL	Latitude 5590	3R9FST2	N/A	N/A
Adapter	ADAPTER	ATS036T-A120	N/A	N/A	N/A

AC Power-Line Conducted Emission Test Site: Conduction 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	DELL	Latitude 5590	3R9FST2	N/A	N/A
Adapter	ADAPTER	ATS036T-A120	N/A	N/A	N/A

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Notebook	DELL	Latitude 5590	3R9FST2	N/A	N/A
Adapter	ADAPTER	ATS036T-A120	N/A	N/A	N/A

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3 SUMMARY OF TEST RESULT

FCC Rules	ISED Rules	Description Of Test	Result
§15.207	RSS-Gen §8.8	AC Power Line Conducted Emission	Compliant
§15.407(e)	RSS-Gen §6.7 RSS-247 §6.2.4.1	Emission Bandwidth	Compliant
§15.407(a)	RSS-247 §6.2.1~ 4 (1)	Maximum Conducted Output Power	Compliant
§15.407(a)	RSS-247 §6.2.1~ 4 (1)	Power Spectral Density	Compliant
§15.205 §15.209 §15.407(b)	RSS-247 §6.2.1~ 4 (2)	Undesirable Radiated Emissions	Compliant
§15.407(c)	RSS-247 §6.4	Transmission in case of Absence of Information	Compliant
§15.203	N/A	Antenna Requirement	Compliant

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4 DESCRIPTION OF TEST MODES

4.1 Operating Frequencies

Operated band in 5150 MHz ~5250 MHz:

20 M		40 M		80 M	
CH	Freq (MHz)	CH	Freq (MHz)	CH	Freq (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

Operated band in 5250 MHz ~5350 MHz:

20 M		40 M		80 M	
CH	Freq (MHz)	CH	Freq (MHz)	CH	Freq (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310		
60	5300				
64	5320				

Operated band in 5470 MHz ~5725 MHz:

20 M		40 M		80 M	
CH	Freq (MHz)	CH	Freq (MHz)	CH	Freq (MHz)
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590	138	5690
112	5560	126	5630		
116	5580	134	5670		
120	5600	142	5710		
124	5620				
128	5640				
132	5660				
136	5680				
140	5700				
144	5720				

Operated band in 5725 MHz ~5850 MHz:

20 M		40 M		80 M	
CH	Freq (MHz)	CH	Freq (MHz)	CH	Freq (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

Note:

1. 5850~5895 MHz is not available for operation in Canada.
2. Operating in 5600~5650MHz is prohibited in Canada for Master device.

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4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case. The given UE is pre-scanned among below modes.

Modulation		Transmission Chain								Single Transmission Spatial		Multiple Transmission Spatial	
v	802.11 a	v	Ch0	v	Ch1		Ch2		Ch3		1TX	v	2TX
v	802.11 n	v	Ch0	v	Ch1		Ch2		Ch3		1TX	v	2TX
v	802.11 ac	v	Ch0	v	Ch1		Ch2		Ch3		1TX	v	2TX
v	802.11 ax	v	Ch0	v	Ch1		Ch2		Ch3		1TX	v	2TX
	802.11 be		Ch0		Ch1		Ch2		Ch3		1TX		2TX

4. Therefore, below summary is the modes of test configuration that yield the highest reading and generate the highest emission chosen to carry out the relevantly mandatory test items.

CONDUCTED TEST						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	2TX
	5260~5320	52 to 64	52,60,64			
	5500~5720	100 to 144	100,116,140,144			
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48	OFDM	MCS0	2TX
	5260~5320	52 to 64	52,60,64			
	5500~5720	100 to 144	100,116,140,144			
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS0	2TX
	5270~5310	54 to 62	54,62			
	5510~5670	102 to 142	102,110,134,142			
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42	OFDM	MCS0	2TX
	5290	58	58			
	5530~5610	106 to 138	106,122,138			
	5775	155	155			

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CONDUCTED TEST							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATION	DATA RATE (Mbps)	ANTENNA PORT
802.11ax_HE20	5180~5240	36 to 48	36,44,48	OFDMA	FULL RU 26/0,26/8 52/37,52/40 106/53,106/54	MCS0	2TX
	5260~5320	52 to 64	52,60,64				
	5500~5720	100 to 144	100,116,140,144				
	5745~5825	149 to 165	149,157,165				
802.11ax_HE40	5190~5230	38 to 46	38,46	OFDMA	FULL RU 242/61,242/62	MCS0	2TX
	5270~5310	54 to 62	54,62				
	5510~5670	102 to 142	102,110,134,142				
	5755~5795	151 to 159	151,159				
802.11ax_HE80	5210	42	42	OFDMA	FULL RU 484/65,484/66	MCS0	2TX
	5290	58	58				
	5530~5610	106 to 138	106,122,138				
	5775	155	155				

RADIATED EMISSION TEST (BELOW 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5180~5240	36 to 48	44	OFDM	6	2TX
	5260~5320	52 to 64	60			
	5500~5720	100 to 144	116			
	5745~5825	149 to 165	157			

RADIATED EMISSION TEST (ABOVE 1 GHz)						
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	ANTENNA PORT
802.11a	5180~5240	36 to 48	36,44,48	OFDM	6	2TX
	5260~5320	52 to 64	52,60,64			
	5500~5720	100 to 144	100,116,140,144			
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48	OFDM	MCS0	2TX
	5260~5320	52 to 64	52,60,64			
	5500~5720	100 to 144	100,116,140,144			
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS0	2TX
	5270~5310	54 to 62	54,62			
	5510~5710	102 to 142	102,110,134,142			
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42	OFDM	MCS0	2TX
	5290	58	58			
	5530~5690	106 to 138	106,122,138			
	5775	155	155			

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RADIATED EMISSION TEST (ABOVE 1 GHz)							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATION	DATA RATE (Mbps)	ANTENNA PORT
802.11ax_HE20	5180~5240	36 to 48	36,44,48	OFDMA	FULL RU	MCS0	2TX
	5260~5320	52 to 64	52,60,64				
	5500~5720	100 to 144	100,116,140,144				
	5745~5825	149 to 165	149,157,165				
802.11ax_HE40	5190~5230	38 to 46	38,46	OFDMA	FULL RU	MCS0	2TX
	5270~5310	54 to 62	54,62				
	5510~5710	102 to 142	102,110,134,142				
	5755~5795	151 to 159	151,159				
802.11ax_HE80	5210	42	42	OFDMA	FULL RU	MCS0	2TX
	5290	58	58				
	5530~5690	106 to 138	106,122,138				
	5775	155	155				

Note:

The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

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5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.32 dB
Output Power measurement	+/- 1 dB
Emission Bandwidth	+/- 1.53 Hz
Undesignable radiated emission measurement	+/- 1.68 dB
Peak Power Density	+/- 2.16 dB
Temperature	+/- 0.7 °C
Humidity	+/- 3 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	2.8 dB	9kHz~30MHz
	+/-	4.82 dB	30MHz - 1000MHz
	+/-	4.37 dB	1GHz - 18GHz
	+/-	4.21 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	2.8 dB	9kHz~30MHz
	+/-	4.54 dB	30MHz - 1000MHz
	+/-	4.37 dB	1GHz - 18GHz
	+/-	4.21 dB	18GHz - 40GHz

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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6 MEASUREMENT EQUIPMENT USED

6.1 Emission from AC power line

AC Power-Line Conducted Emission Test Site: Conduction 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESR 7	102525	02/18/2023	02/17/2024
Pulse Limiter	SCHWARZBECK	VTSD 9561F-N	793	06/22/2022	06/21/2023
LISN	SCHWARZBECK	NSLK 8127	01040	08/23/2022	08/22/2023
Coaxial Cables	EMC Instruments Corp.	EMCCFD300-BM-BM-3000	161207	06/22/2022	06/21/2023
Test Software	audix	e3	Ver. 9 210322	N.C.R	N.C.R

6.2 Conducted Measurement

Conducted Emission Test Site: Conducted 2					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071541	07/14/2022	07/13/2023
Test Software	SGS	Radio Test Software	Ver. 21	N.C.R	N.C.R
Power Meter	Anritsu	ML2496A	2132007	09/21/2022	09/20/2023
Power Sensor	Anritsu	MA2411B	1911391	09/21/2022	09/20/2023
Power Sensor	Anritsu	MA2411B	1911392	09/21/2022	09/20/2023
Attenuator	Mini-Circuit	BW-S10W2+	4	12/13/2022	12/12/2023
DC Block	Mini-Circuits	BLK-18-S+	1	12/13/2022	12/12/2023

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6.3 Radiated Measurement

Radiated Emission Test Site: SAC 3					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Horn Antenna	SCHWARZBECK	BBHA9170	184	12/30/2022	12/29/2023
Horn Antenna	SCHWARZBECK	BBHA9120D	1441	09/27/2022	09/26/2023
Bi-log Antenna	SCHWARZBECK	VULB9168	378	08/15/2022	08/14/2023
Loop Antenna	ETS.LINDGREN	6502	148045	10/05/2022	10/04/2023
Spectrum Analyzer	Agilent	E4446A	MY51100003	10/28/2022	10/27/2023
EMI Test Receiver	R&S	ESCI 7	100759	08/22/2022	08/21/2023
Pre-Amplifier	EMC Instruments	EMC118A45SEE	980868	12/13/2022	12/12/2023
Pre-Amplifier	EMC Instruments	EMC184045B	980135	10/27/2022	10/26/2023
Pre-Amplifier	HP	8447D	2944A07676	12/13/2022	12/12/2023
Attenuator	Mini-Circuit	BW-S10W2+	4	12/13/2022	12/12/2023
Filter 5150-5350 MHz	Micro-Tronics	BRM50703	1	12/13/2022	12/12/2023
Filter 5470-5725 MHz	Micro-Tronics	BRM50704	1	12/13/2022	12/12/2023
Filter 5725-5875 MHz	Micro-Tronics	BRM50705	1	12/13/2022	12/12/2023
High Pass Filter	WI	WHKX7.0/18G-8SS	45	12/13/2022	12/12/2023
Coaxial Cable	Huber Suhner	SUCOFLEX 104PEA	MY4251/4PEA	12/13/2022	12/12/2023
Coaxial Cable	EMC Instruments	EMC 107-SM-SM-500	221104	12/13/2022	12/12/2023
Coaxial Cable	EMC Instruments	EMC 107-SM-SM-1000	221103	12/13/2022	12/12/2023
Coaxial Cable	EMC Instruments	EMC 107-SM-SM-1500	221110	12/13/2022	12/12/2023
Coaxial Cable	EMC Instruments	EMC 107-SM-SM-8000	221109	12/13/2022	12/12/2023
Site Cal	SGS	SAC 3	N/A	01/01/2023	12/31/2023
Test Software	audix	e3	Ver. 9 210322	N.C.R	N.C.R

NOTE: N.C.R refers to Not Calibrated Required.

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7 CONDUCTED EMISSION TEST

7.1 Standard Applicable

Frequency range within 150 kHz to 30 MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

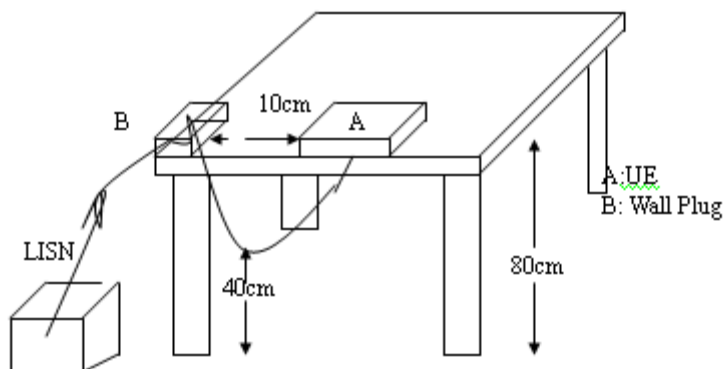
Note

- 1.The lower limit shall apply at the transition frequencies
- 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

7.2 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The LISN was connected with 120Vac/60Hz power source.

7.3 Test SET-UP



7.4 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all phases of power being supplied by given UE are completed.

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7.5 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The * reveals the worst-case results that closest to the limit.

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AC POWER LINE CONDUCTED EMISSION TEST DATA

Report Number :TERF2303000753ER

Test Site :Conduction 1

Test Mode :Operation (WLAN5G)

Test Date :2023-04-21

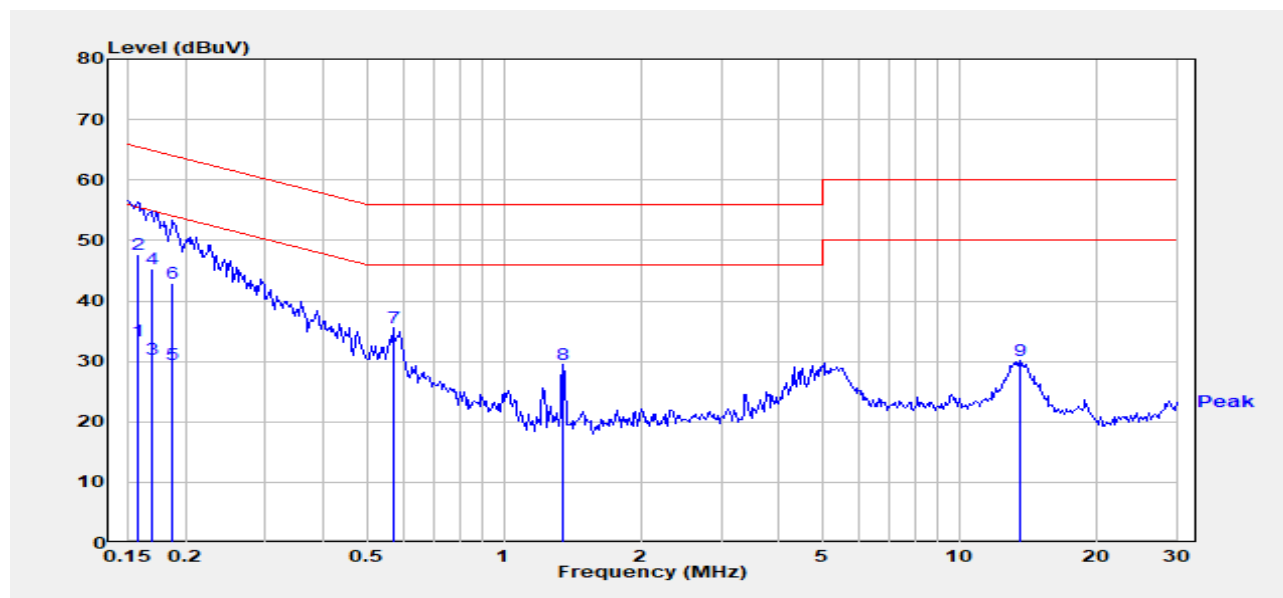
Power :120V/60Hz

Temp./Humi. :26.5/55

Probe :L

Engineer :Nick Lin

Note :



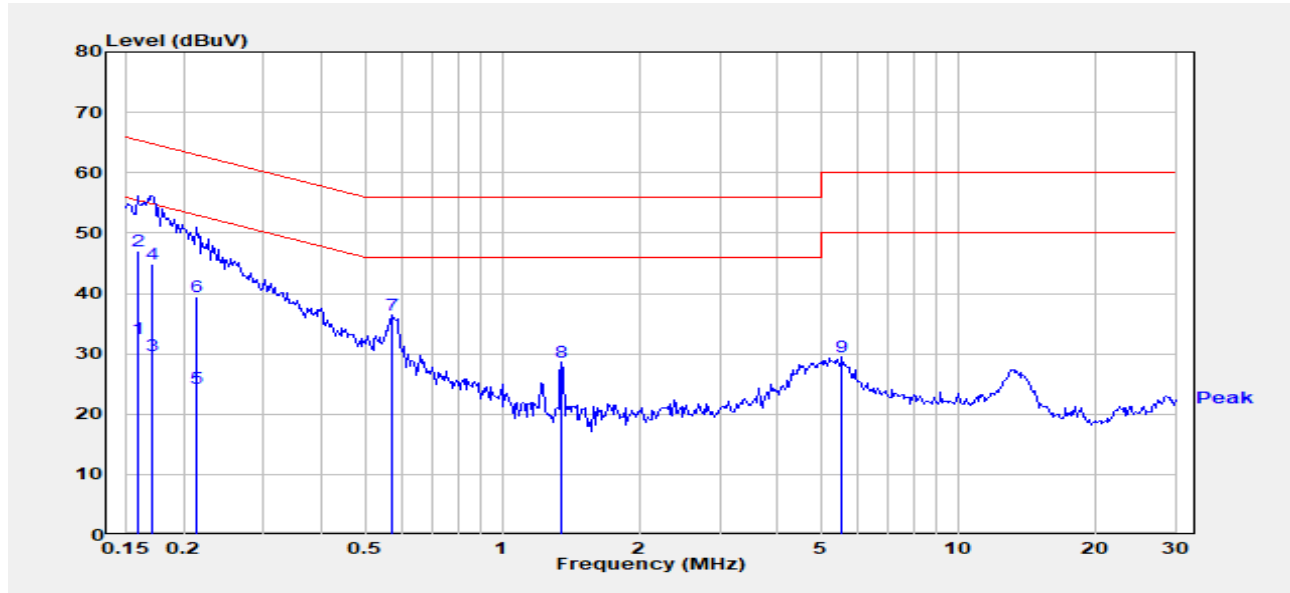
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.157	Average	23.18	10.25	33.43	55.62	-22.19
0.157	QP	37.36	10.25	47.61	65.62	-18.01
0.168	Average	20.12	10.25	30.37	55.04	-24.67
0.168	QP	35.06	10.25	45.31	65.04	-19.73
0.187	Average	19.13	10.25	29.38	54.15	-24.77
0.187	QP	32.66	10.25	42.91	64.15	-21.24
0.571	Peak	25.25	10.27	35.52	56.00	-20.48
1.349	Peak	18.74	10.67	29.41	56.00	-26.59
13.603	Peak	19.34	10.77	30.11	60.00	-29.89

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Report Number :TERF2303000753ER
 Test Mode :Operation (WLAN5G)
 Power :120V/60Hz
 Probe :N
 Note: :

Test Site :Conduction 1
 Test Date :2023-04-21
 Temp./Humi. :26.5/55
 Engineer :Nick Lin



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.158	Average	22.32	10.25	32.57	55.55	-22.98
0.158	QP	36.72	10.25	46.97	65.55	-18.58
0.171	Average	19.43	10.25	29.68	54.92	-25.24
0.171	QP	34.56	10.25	44.81	64.92	-20.11
0.214	Average	14.08	10.25	24.33	53.07	-28.74
0.214	QP	29.22	10.25	39.47	63.07	-23.60
0.575	Peak	26.14	10.27	36.41	56.00	-19.59
1.349	Peak	17.99	10.67	28.67	56.00	-27.33
5.582	Peak	18.88	10.57	29.44	60.00	-30.56

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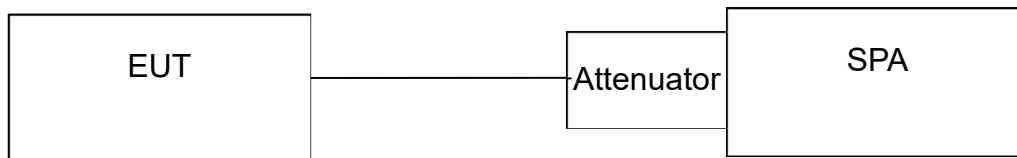
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8 EMISSION BANDWIDTH MEASUREMENT

8.1 Standard Applicable

There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.
The minimum of 6dB Bandwidth measurement is 0.5 MHz for U-NII-3.

8.2 Test Setup



8.3 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules.
3. Remove the antenna from the EUT and then connect a low loss RF cable from the Antenna port to the spectrum analyzer.
 - 3.a. 26dB Band width Measurement: Set the spectrum analyzer as 1% of emission BW
Sweep=auto,
Detector = Peak,
Trace Mode = Max Hold,
Manually readjust RBW until the RBW/EBW ratio is 1% based on EBW as observed on the result of pre-sequence measurement.
 - 3.b. Mark the peak frequency and -26dB (upper and lower) frequency.
4. Repeat the procedures as list above until all test default channels (low, middle, and high) are completed.
5. Minimum Emission Bandwidth for the band 5.725-5.850GHz.
 - a. Set the spectrum analyzer as
RBW = 100 kHz,
VBW = 3*RBW,
Span = large enough to capture all products of the modulation process,
Detector=Peak,
Sweep=auto
 - b. Mark the peak frequency and -6dB (upper and lower) frequency.
6. For 99% Bandwidth: Set the spectrum analyzer as
RBW = 1%,
VBW = 3*RBW,
Span = large enough to capture all products of the modulation process,
Detector=Sample,
Sweep=auto.
7. Turn on the 99% bandwidth function, max reading.
8. Repeat above procedures until all frequency of interest measured was complete.

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8.4 Measurement Result

8.4.1 FCC Occupied Bandwidth

802.11a_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	19.66	12.940	5180	20.08	13.030
5220	20.05	13.020	5220	20.71	13.160
5240	19.62	12.930	5240	20.01	13.010
5260	19.88	12.980	5260	20.62	13.140
5300	19.29	12.850	5300	20.01	13.010
5320	20.34	13.080	5320	20.11	13.030
5500	20.25	13.060	5500	20.09	13.030
5580	19.68	12.940	5580	19.90	12.990
5700	20.17	13.050	5700	19.61	12.920
5720(U-NII 2C)	15.22	11.820	5720(U-NII 2C)	15.11	11.790
5720(U-NII 3)	5.22	7.170	5720(U-NII 3)	5.11	7.090

802.11a_Ch1

802.11a_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	15.96	12.030	5745	16.38	12.140
5785	14.45	11.600	5785	16.35	12.140
5825	15.70	11.960	5825	16.32	12.130

802.11a_Ch1

802.11a_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.19	< 5250
5745	5736.78	> 5725

802.11a_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.19	< 5250
5745	5736.79	> 5725

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802.11n_HT20_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	21.04	13.230	5180	20.94	13.210
5220	21.04	13.230	5220	20.50	13.120
5240	20.74	13.170	5240	21.08	13.240
5260	21.18	13.260	5260	20.20	13.050
5300	20.15	13.040	5300	21.19	13.260
5320	20.82	13.180	5320	20.95	13.210
5500	20.91	13.200	5500	20.99	13.220
5580	20.70	13.160	5580	20.66	13.150
5700	21.21	13.270	5700	21.13	13.250
5720(U-NII 2C)	15.13	11.800	5720(U-NII 2C)	15.48	11.900
5720(U-NII 3)	5.13	7.100	5720(U-NII 3)	5.48	7.390

802.11n_HT20_Ch1

802.11n_HT20_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.93	12.290	5745	17.12	12.340
5785	17.67	12.470	5785	17.23	12.360
5825	17.56	12.450	5825	16.94	12.290

802.11n_HT20_Ch1

802.11n_HT20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.79	< 5250
5745	5736.17	> 5725

802.11n_HT20_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.77	< 5250
5745	5736.17	> 5725

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802.11n_HT40_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	39.91	16.010	5190	39.86	16.010
5230	40.42	16.070	5230	40.06	16.030
5270	40.07	16.030	5270	39.96	16.020
5310	40.66	16.090	5310	40.06	16.030
5510	40.04	16.020	5510	39.79	16.000
5550	40.06	16.030	5550	39.90	16.010
5670	39.92	16.010	5670	40.19	16.040
5710(U-NII 2C)	35.36	15.490	5710(U-NII 2C)	34.86	15.420
5710(U-NII 3)	5.36	7.290	5710(U-NII 3)	4.86	6.870

802.11n_HT40_Ch1

802.11n_HT40_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.36	15.610	5755	36.36	15.610
5795	35.73	15.530	5795	35.98	15.560

802.11n_HT40_Ch1

802.11n_HT40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.06	< 5250
5755	5736.87	> 5725

802.11n_HT40_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.01	< 5250
5755	5736.99	> 5725

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802.11ac_VHT80_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.07	19.090	5210	80.61	19.060
5290	81.90	19.130	5290	80.12	19.040
5530	80.89	19.080	5530	80.92	19.080
5610	80.60	19.060	5610	80.59	19.060
5690(U-NII 2C)	75.77	18.800	5690(U-NII 2C)	75.34	18.770
5690(U-NII 3)	5.77	7.620	5690(U-NII 3)	5.34	7.280

802.11ac_VHT80_Ch1

802.11ac_VHT80_Ch0

Freq. (MHz)	40.81	10 Log (B) (dB)	Freq. (MHz)	40.24	10 Log (B) (dB)
5775	75.78	18.800	5775	73.82	18.680

802.11ac_VHT80_Ch1

802.11ac_VHT80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5247.69	< 5250
5775	5737.14	> 5725

802.11ac_VHT80_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5247.66	< 5250
5775	5737.23	> 5725

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802.11ax_HE20_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	20.74	13.170	5180	full	20.52	13.120
5220	full	21.11	13.240	5220	full	20.52	13.120
5240	full	20.82	13.180	5240	full	20.94	13.210
5260	full	20.50	13.120	5260	full	21.21	13.270
5300	full	20.96	13.210	5300	full	20.77	13.170
5320	full	21.04	13.230	5320	full	20.89	13.200
5500	full	20.82	13.180	5500	full	20.61	13.140
5580	full	20.65	13.150	5580	full	20.65	13.150
5700	full	20.85	13.190	5700	full	20.96	13.210
5720 (U-NII 2C)	full	15.63	11.940	5720 (U-NII 2C)	full	15.28	11.840
5720 (U-NII 3)	full	5.63	7.510	5720 (U-NII 3)	full	5.28	7.230

802.11ax_HE20_Ch1

802.11ax_HE20_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)	Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	17.17	12.350	5745	full	17.35	12.390
5785	full	16.72	12.230	5785	full	16.43	12.160
5825	full	17.60	12.460	5825	full	18.65	12.710

802.11ax_HE20_Ch1

802.11ax_HE20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.45	< 5250
5745	5735.51	> 5725

802.11ax_HE20_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.49	< 5250
5745	5735.52	> 5725

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802.11ax_HE40_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	40.46	16.070
5230	full	40.81	16.110
5270	full	40.99	16.130
5310	full	40.54	16.080
5510	full	40.27	16.050
5550	full	40.64	16.090
5670	full	40.78	16.100
5710 (U-NII 2C)	full	35.39	15.490
5710 (U-NII 3)	full	5.39	7.320

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	39.94	16.010
5230	full	40.24	16.050
5270	full	41.12	16.140
5310	full	40.48	16.070
5510	full	40.43	16.070
5550	full	40.26	16.050
5670	full	40.86	16.110
5710 (U-NII 2C)	full	35.22	15.470
5710 (U-NII 3)	full	5.22	7.170

802.11ax_HE40_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5755	full	38.10	15.810
5795	full	37.98	15.800

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5755	full	37.87	15.780
5795	full	37.89	15.790

802.11ax_HE40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.81	< 5250
5755	5736.05	> 5725

802.11ax_HE40_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.84	< 5250
5755	5736.07	> 5725

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802.11ax_HE80_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	81.37	19.100
5290	full	81.45	19.110
5530	full	81.45	19.110
5610	full	81.45	19.110
5690 (U-NII 2C)	full	75.52	18.780
5690 (U-NII 3)	full	5.52	7.420

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	81.42	19.110
5290	full	80.80	19.070
5530	full	81.90	19.130
5610	full	81.61	19.120
5690 (U-NII 2C)	full	75.44	18.780
5690 (U-NII 3)	full	5.44	7.350

802.11ax_HE80_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	76.08	18.810

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	75.24	18.760

802.11ax_HE80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.42	< 5250
5775	5736.32	> 5725

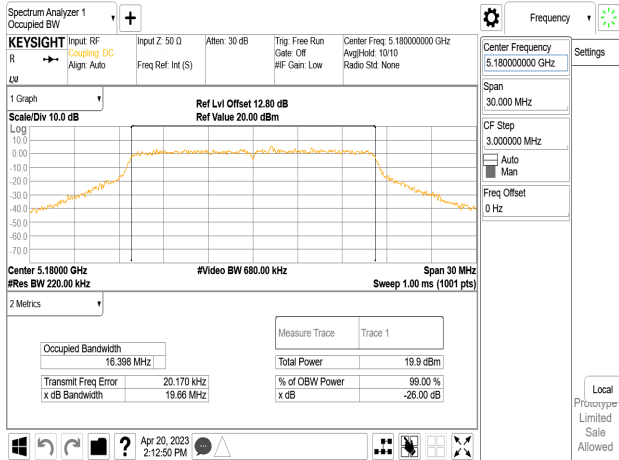
802.11ax_HE80_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.62	< 5250
5775	5736.49	> 5725

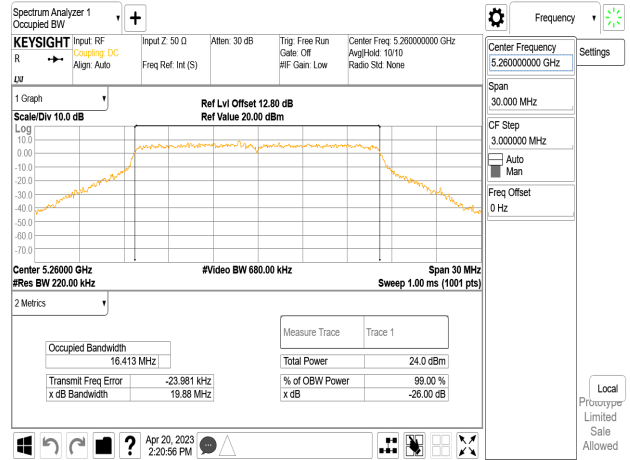
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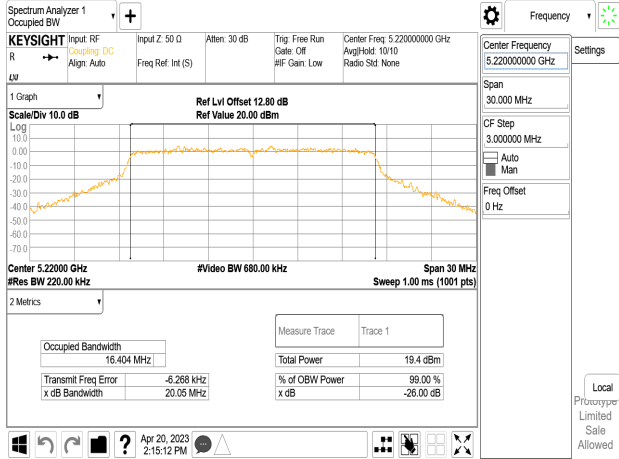
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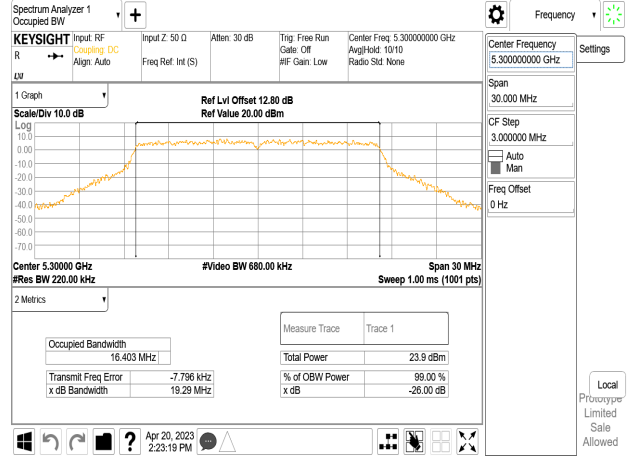
802.11a_20MHz_Chain0_5260MHz



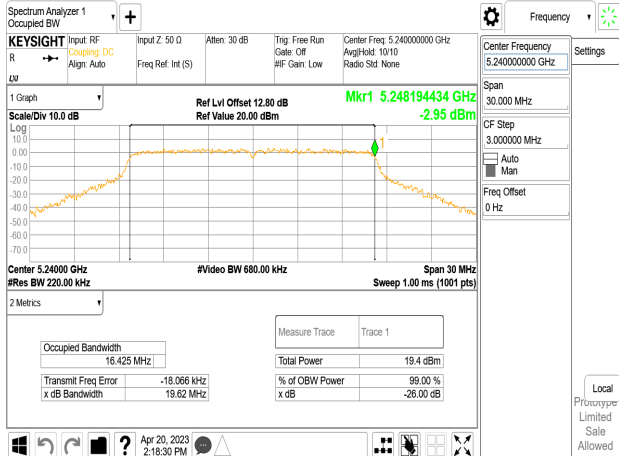
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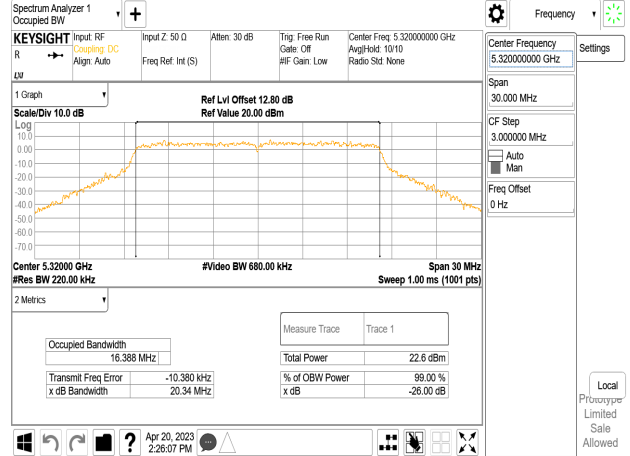
802.11a_20MHz_Chain0_5300MHz



802.11a_20MHz_Chain0_5240MHz



802.11a_20MHz_Chain0_5320MHz

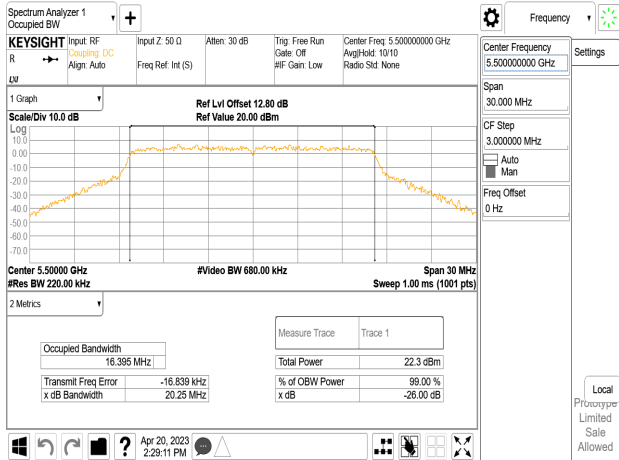


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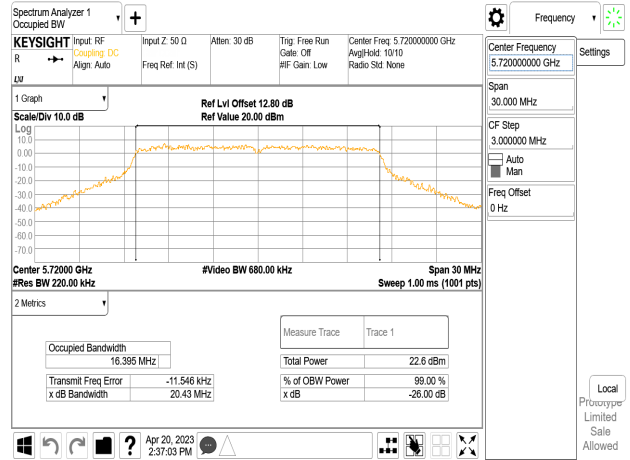
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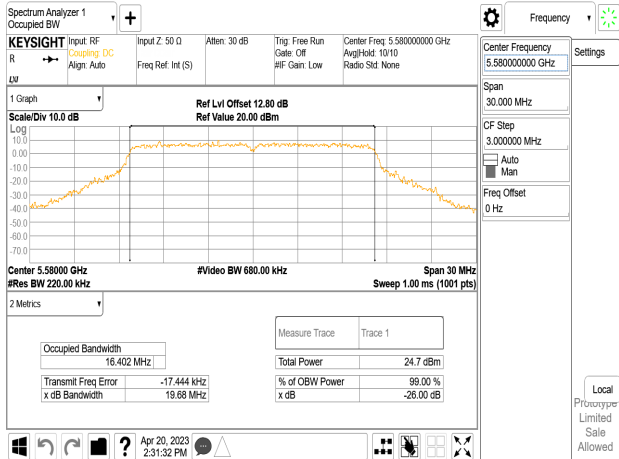
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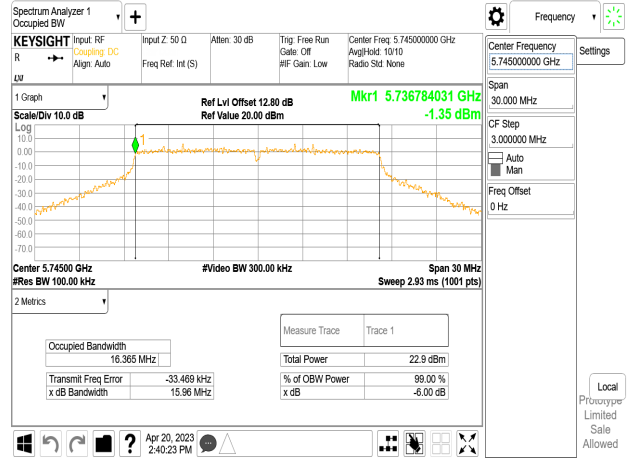
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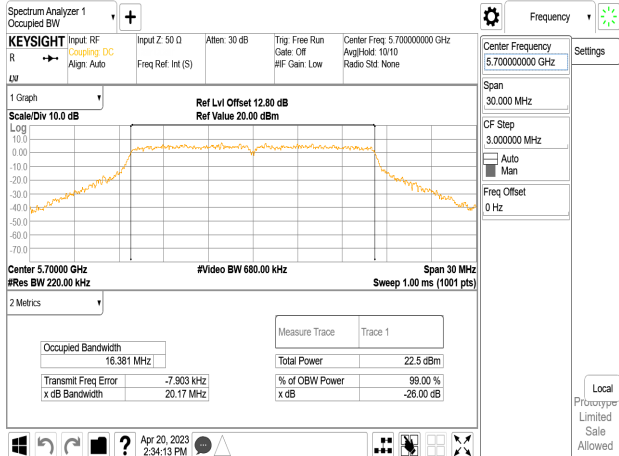
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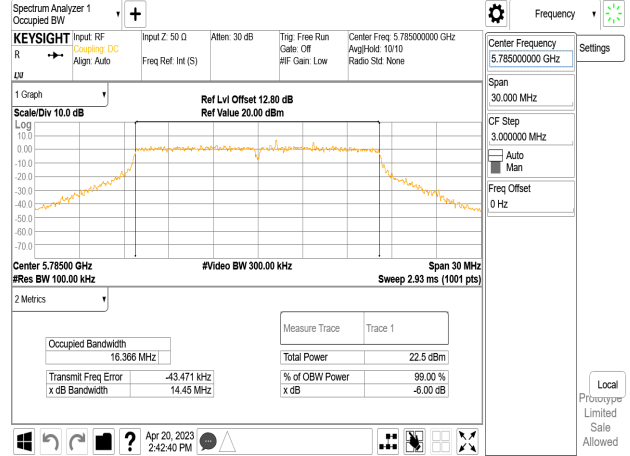
802.11a_20MHz_Chain0_5745MHz



802.11a_20MHz_Chain0_5700MHz



802.11a_20MHz_Chain0_5785MHz

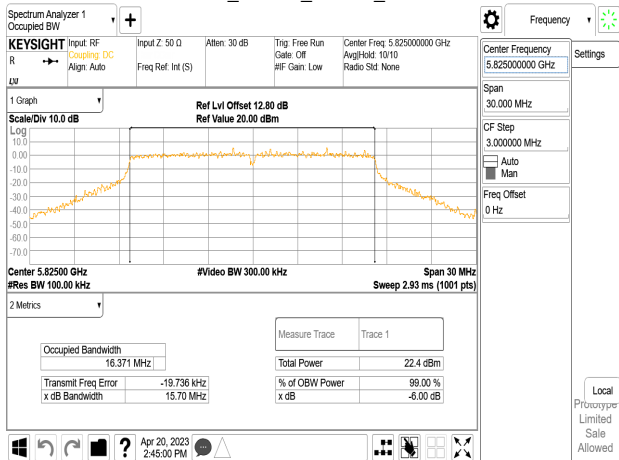


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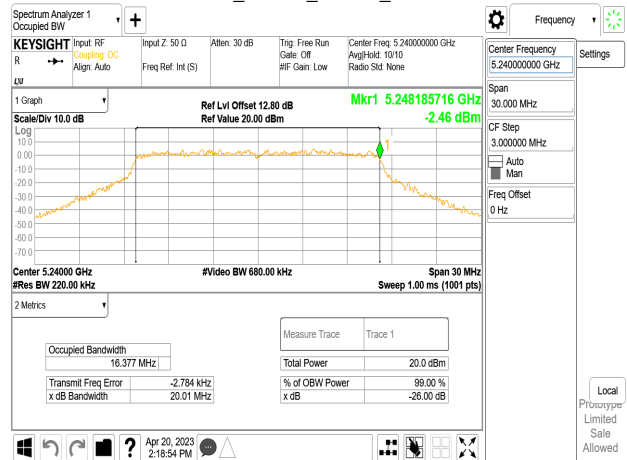
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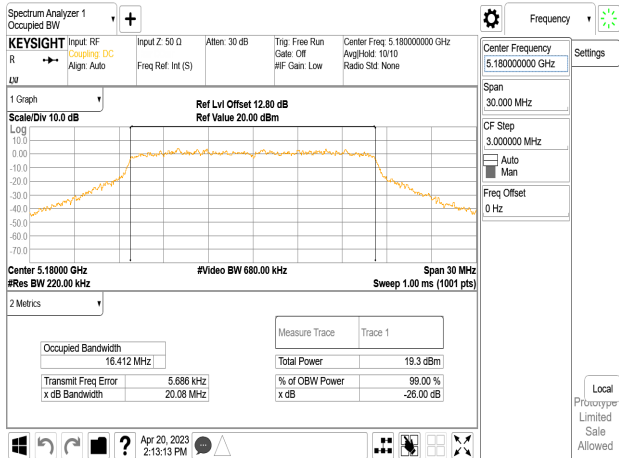
802.11a_20MHz_Chain0_5825MHz



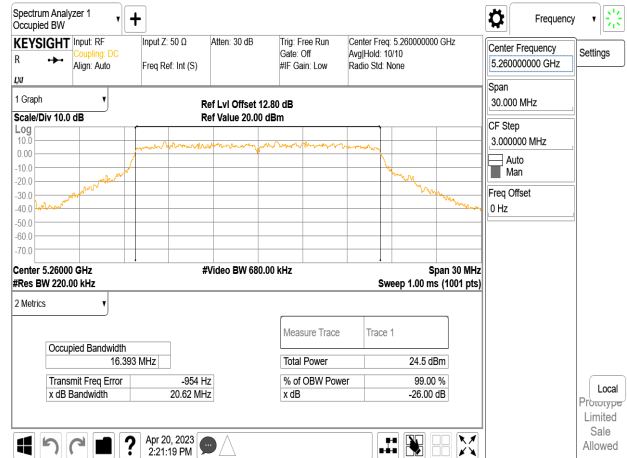
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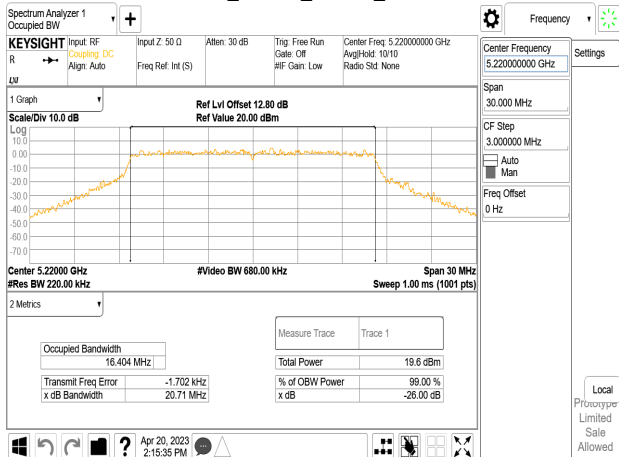
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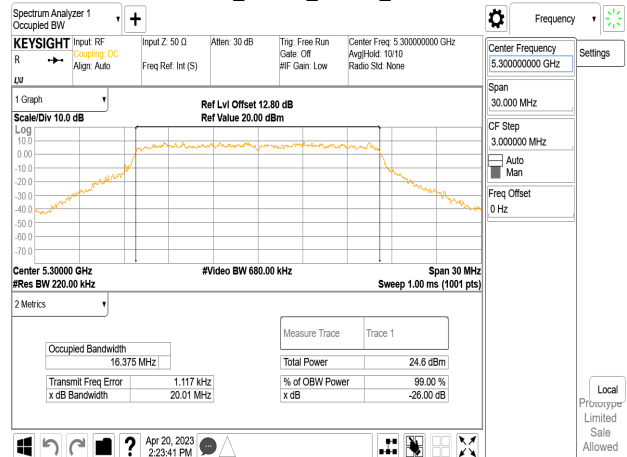
802.11a_20MHz_Chain1_5260MHz



802.11a_20MHz_Chain1_5220MHz



802.11a_20MHz_Chain1_5300MHz



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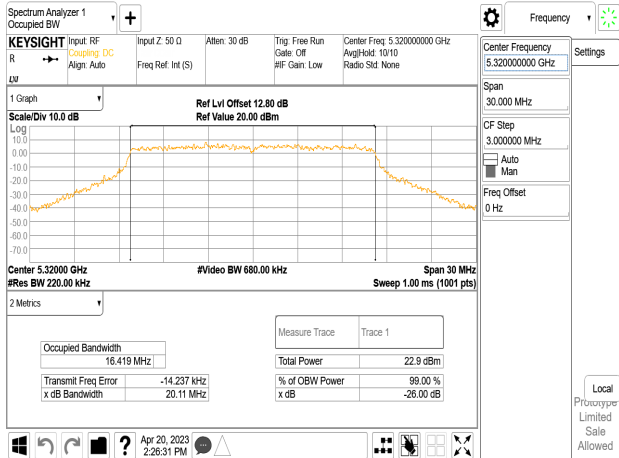
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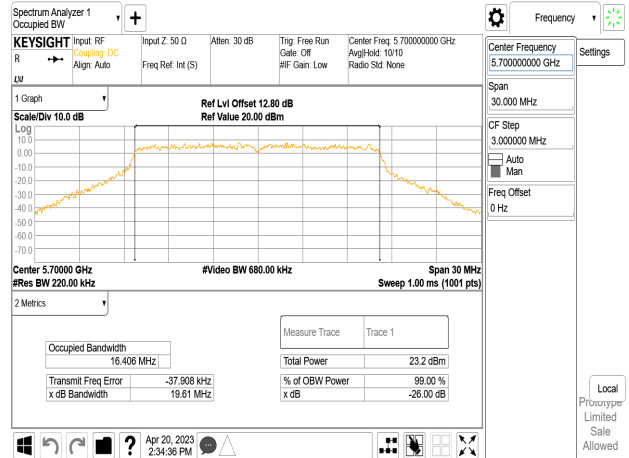
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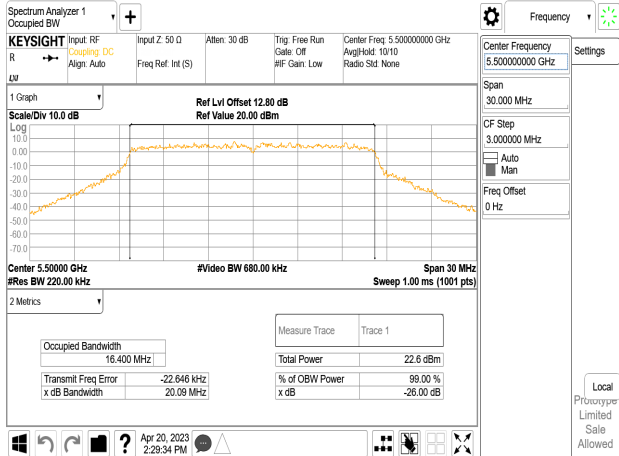
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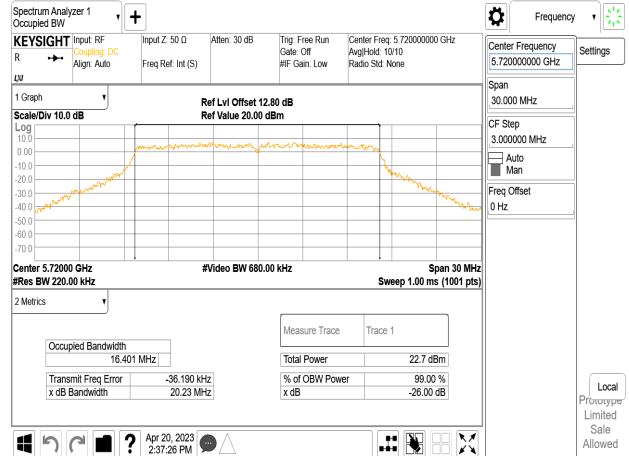
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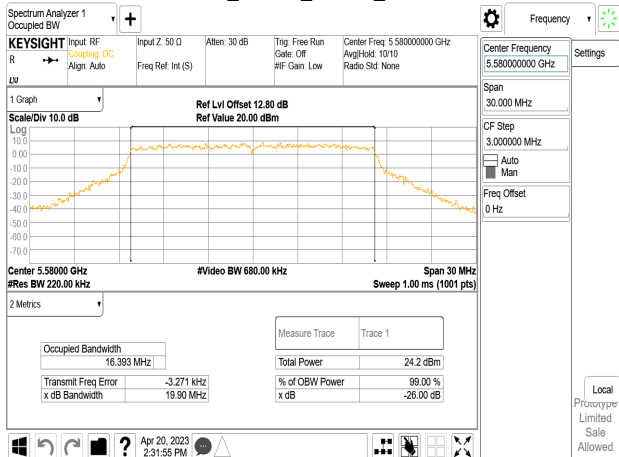
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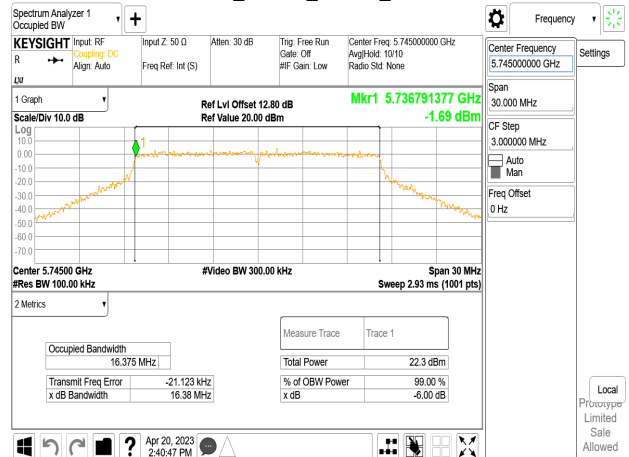
802.11a_20MHz_Chain1_5720MHz



802.11a_20MHz_Chain1_5580MHz



802.11a_20MHz_Chain1_5745MHz



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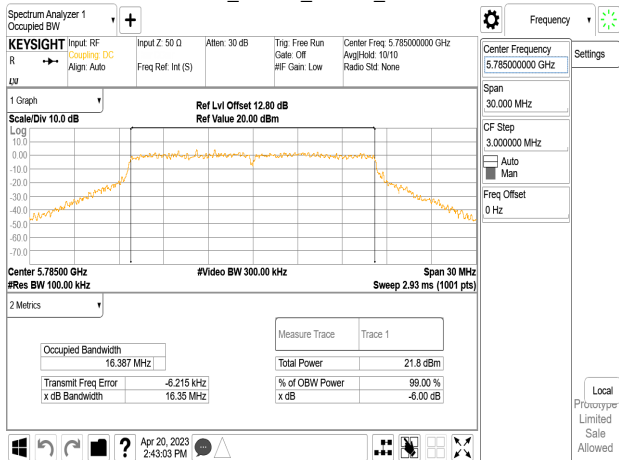
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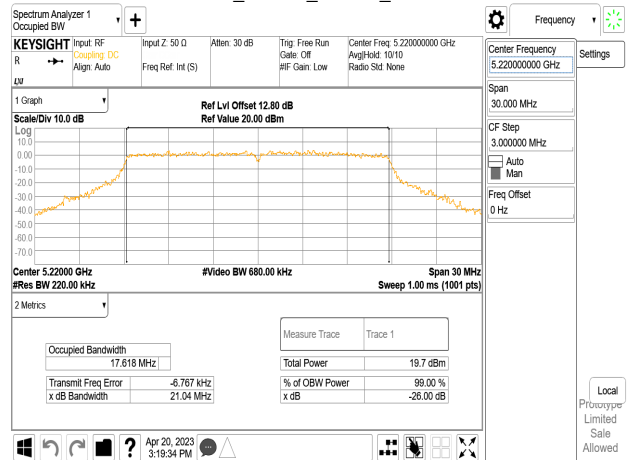
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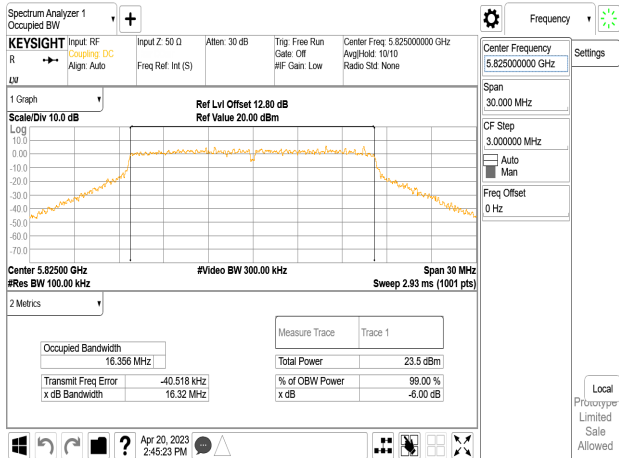
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802.11n_20MHz_Chain0_5220MHz



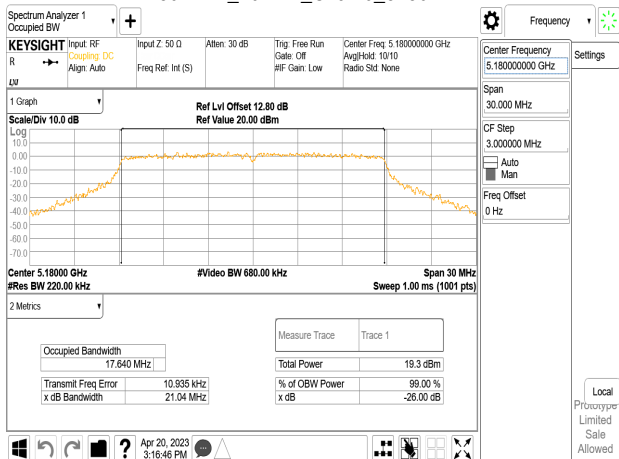
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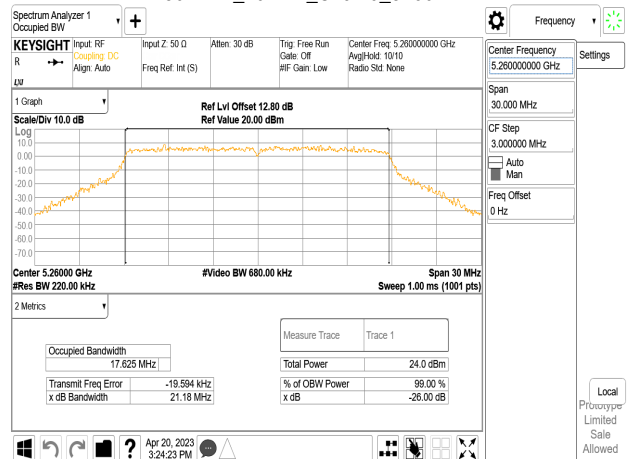
802.11n_20MHz_Chain0_5240MHz



802.11n_20MHz_Chain0_5180MHz



802.11n_20MHz_Chain0_5260MHz



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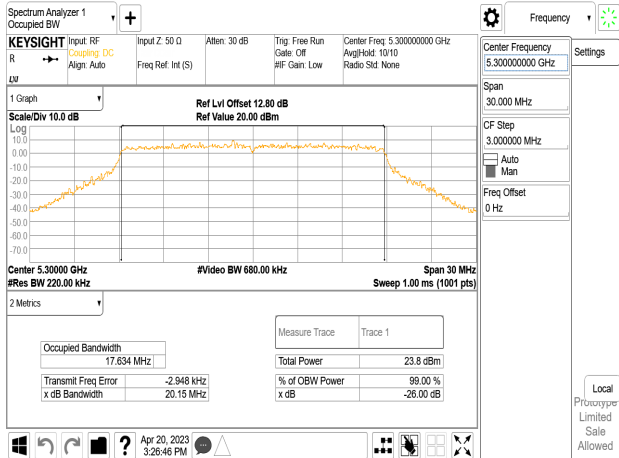
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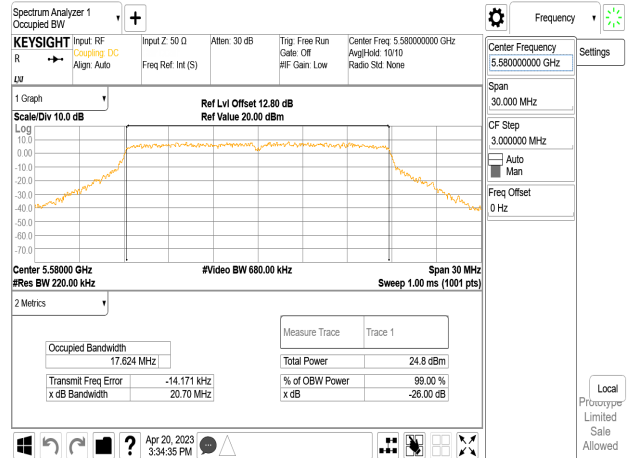
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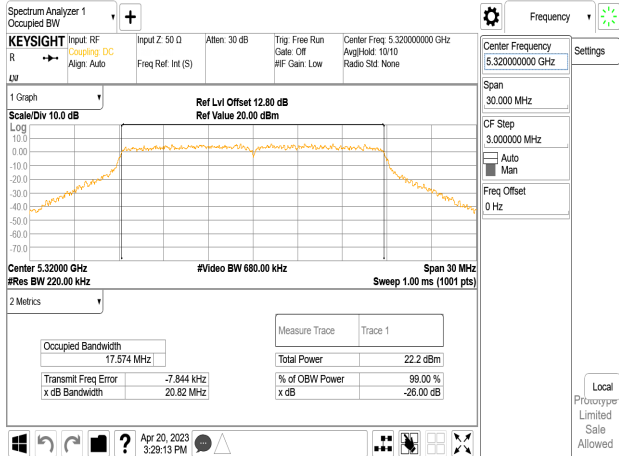
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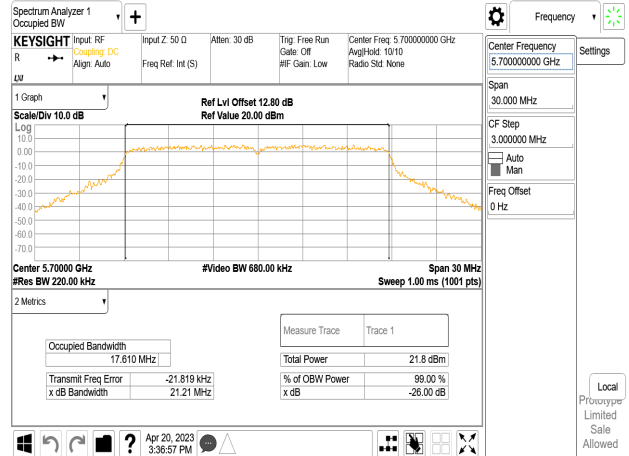
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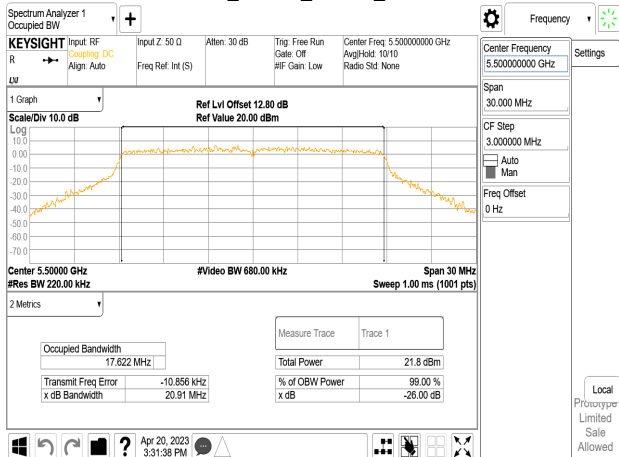
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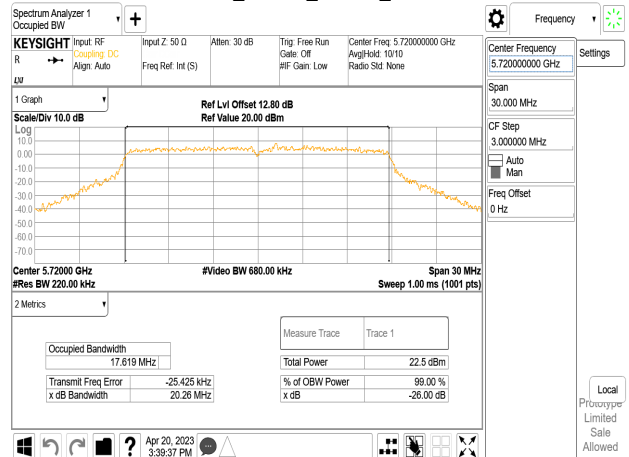
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802.11n_20MHz_Chain0_5500MHz



802.11n_20MHz_Chain0_5720MHz

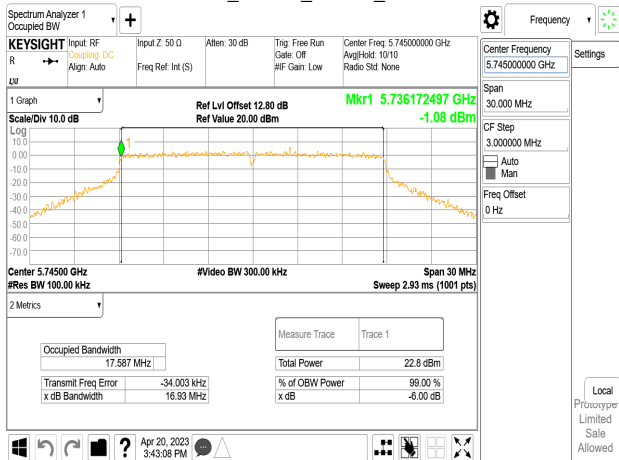


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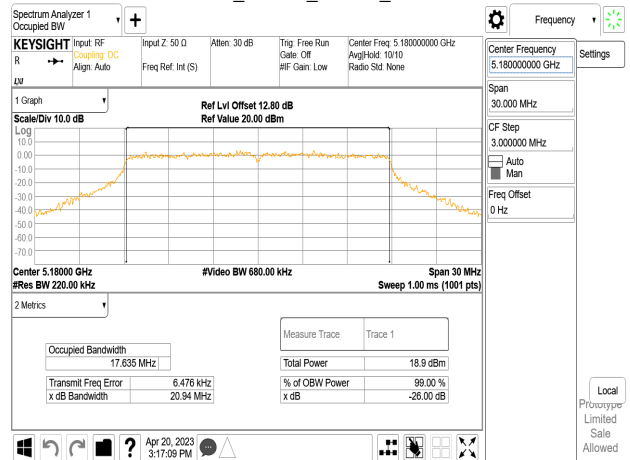
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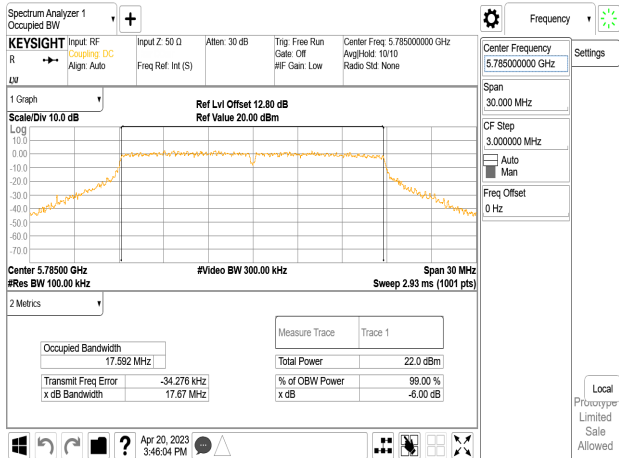
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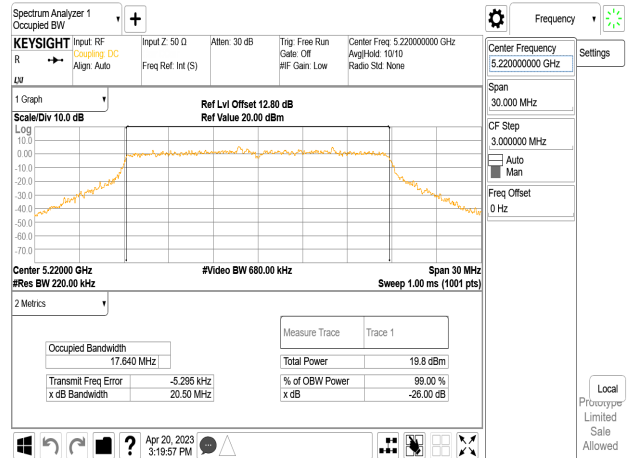
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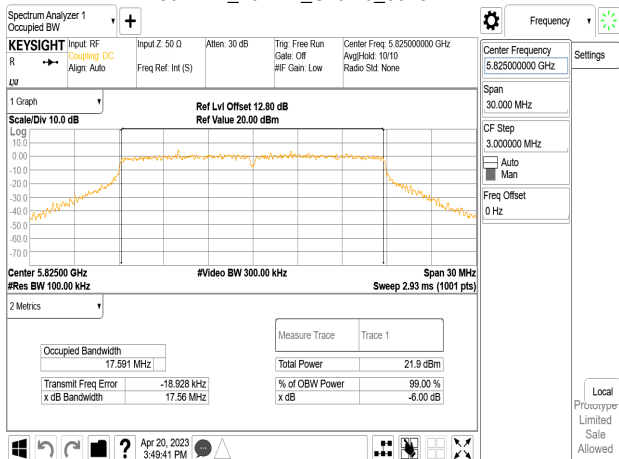
802.11n_20MHz_Chain0_5785MHz



802.11n_20MHz_Chain1_5220MHz



802.11n_20MHz_Chain0_5825MHz



802.11n_20MHz_Chain1_5240MHz



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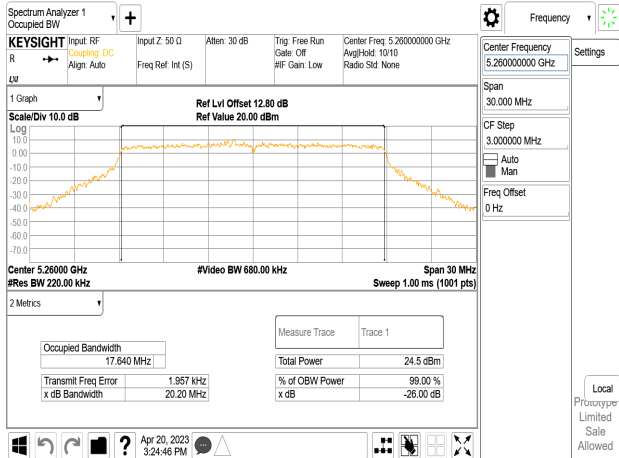
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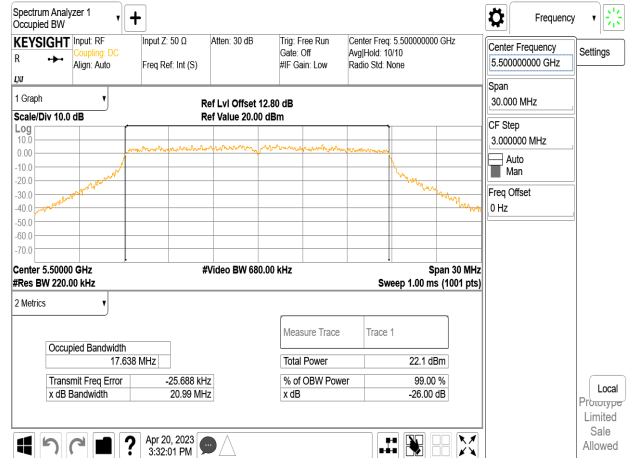
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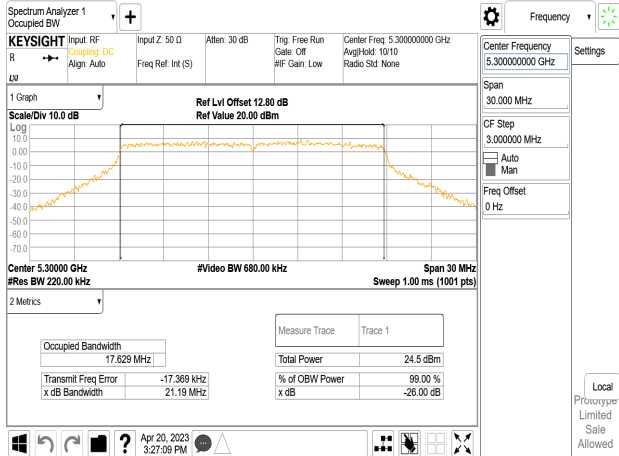
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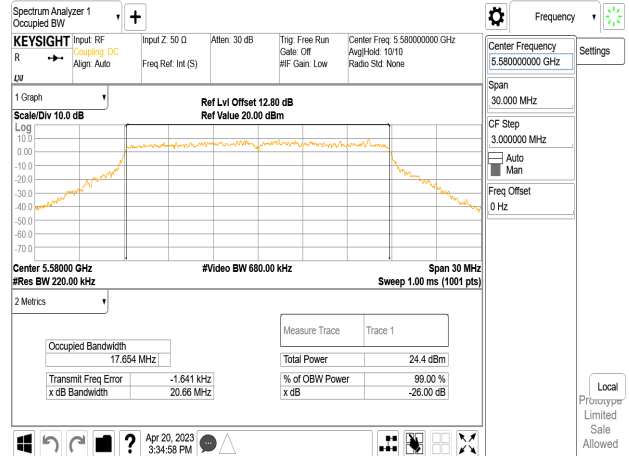
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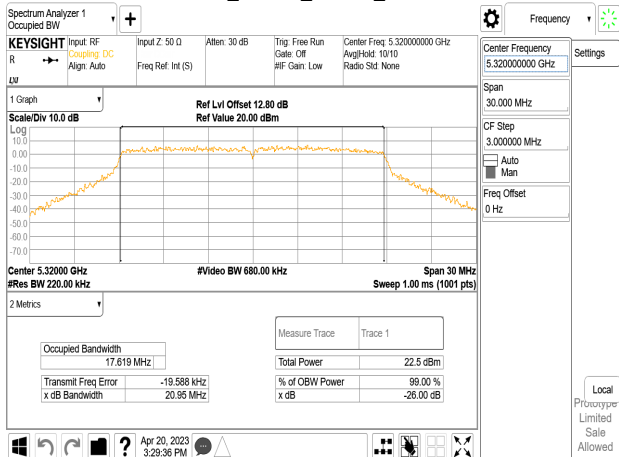
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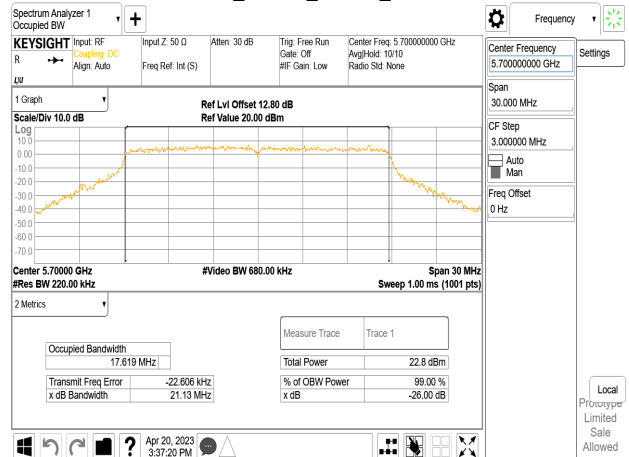
802.11n_20MHz_Chain1_5580MHz



802.11n_20MHz_Chain1_5320MHz



802.11n_20MHz_Chain1_5700MHz



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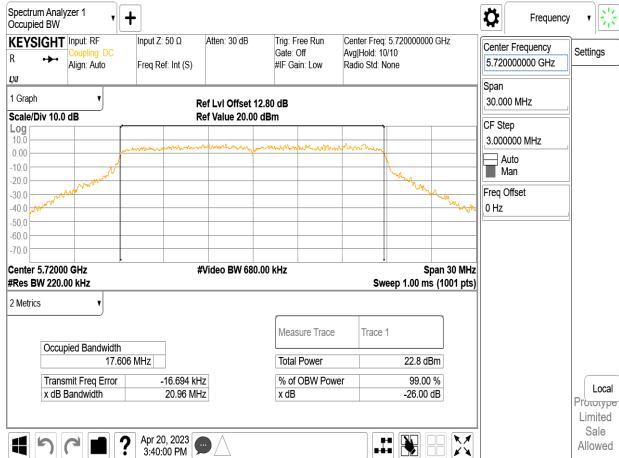
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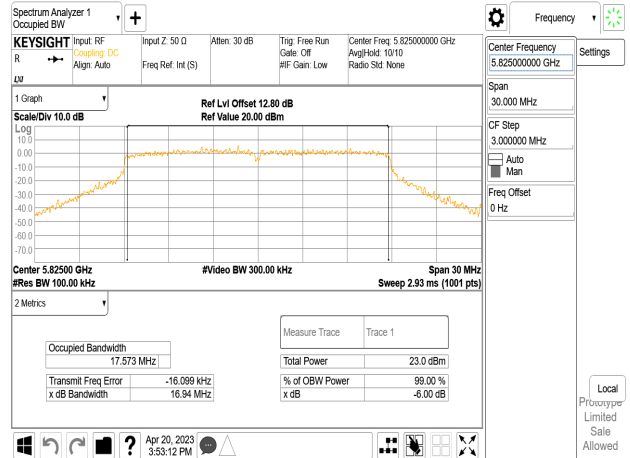
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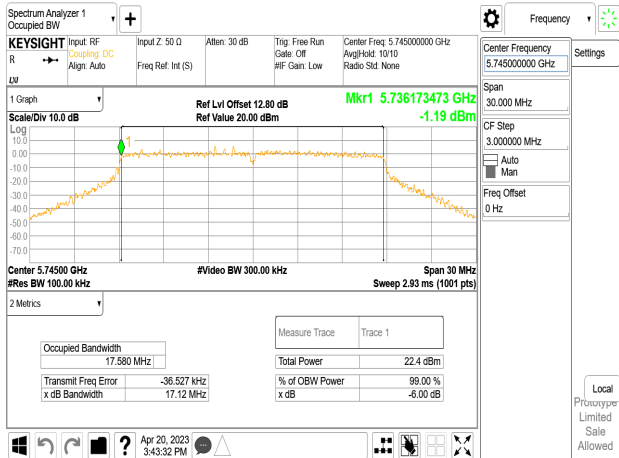
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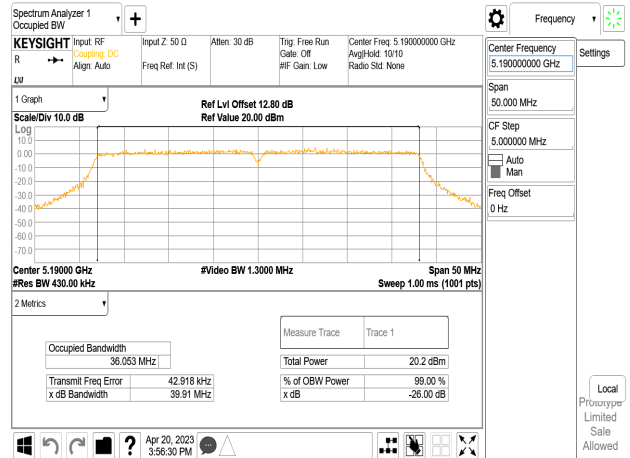
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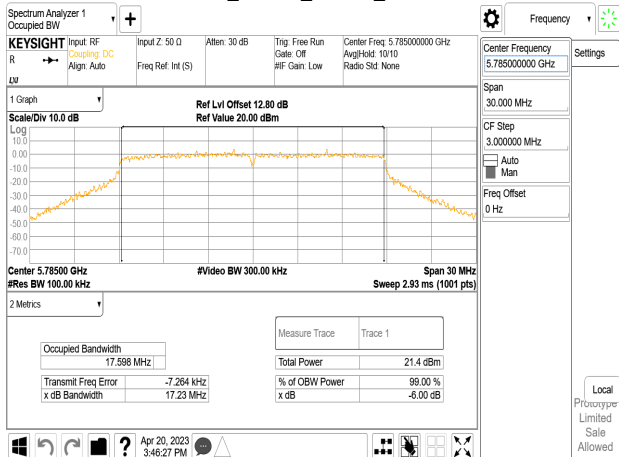
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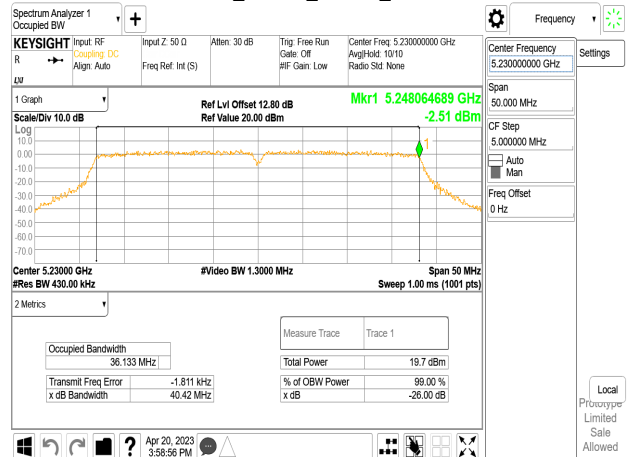
802.11n_40MHz_Chain0_5190MHz



802.11n_20MHz_Chain1_5785MHz



802.11n_40MHz_Chain0_5230MHz



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