

**ELECTROMAGNETIC EMISSIONS
COMPLIANCE REPORT**

Applicant: FIH CO., LTD.
No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679,
Taiwan

Manufacturer: FIH CO., LTD.
No.4, Minsheng St., Tu-Cheng Dist., New Taipei City 23679,
Taiwan

Product Name: Internet Gateway

Brand Name: FIH

Model No.: FSNO21VA

Model Difference: N/A

Report Number: E2/2022/30057

FCC ID RYQFSNO21VA

Date of EUT Received: March 30, 2022

Date of Test: April 21, 2022~May 31, 2022

Issue Date: June 13, 2022

Approved By

Jay Lin

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.

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
E2/2022/30057	00	Original.	June 02, 2022	Yami Kuo	*
E2/2022/30057	01	Revise the antenna type	June 07, 2022	Yami Kuo	*
E2/2022/30057	02	Revise FCC output power	June 13, 2022	Yami Kuo	*

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:	Internet Gateway
Brand Name:	FIH
Model No.:	FSNO21VA
Model Difference:	N/A
Hardware Version:	1.0
Firmware Version:	V0.15A_1KUS
EUT Series No.:	PJ223099050
Power Supply:	12Vdc from AC/DC Adapter
Test Software (Name/Version)	QSPR V5.0.00200

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 288.8 Mbps
	802.11 n_40MHz: up to 600 Mbps
	802.11 ac_20MHz: up to 346.8 Mbps
	802.11 ac_40MHz: up to 800 Mbps
	802.11 ac_80MHz: up to 1733.2 Mbps
	802.11 ax_20MHz: up to 573.6 Mbps
	802.11 ax_40MHz: up to 1147.2 Mbps
	802.11 ax_80MHz: up to 2402 Mbps

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1.3 Antenna Designation

Antenna Type	Freq. (MHz)	Peak Antenna Gain (dBi)	Directional Gain (dBi)
Dipole	5150~5250	-1.04	4.29
	5250~5350	-1.10	4.73
	5475~5725	-1.44	4.99
	5725~5850	-1.35	4.88
Dipole	5150~5250	-2.84	4.29
	5250~5350	-1.34	4.73
	5475~5725	-0.72	4.99
	5725~5850	-1.31	4.88
Dipole	5150~5250	-1.68	4.29
	5250~5350	-1.49	4.73
	5475~5725	-1.54	4.99
	5725~5850	-1.59	4.88
Dipole	5150~5250	-1.46	4.29
	5250~5350	-1.22	4.73
	5475~5725	-0.47	4.99
	5725~5850	-0.36	4.88

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/	5180~5240	4	26.12 dBm	OFDM
	5745-5825	5	29.94 dBm	OFDM
n_HT ac_VHT/ ax_HE	5190~5230	2	28.79 dBm	OFDM
	5755-5795	2	28.85 dBm	OFDM
ac_VHT/ ax_HE 80M	5210	1	23.89 dBm	OFDMA
	5775	1	25.87 dBm	OFDMA

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1.5 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

ANSI C63.10:2013

1.6 Test Facility

Laboratory	Test Site Address	Test Site Name	FCC Designation 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 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 indication where measurements occurred in specific test site and address.

1.7 Special Accessories

There are no special accessories used while test was conducted.

1.8 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:

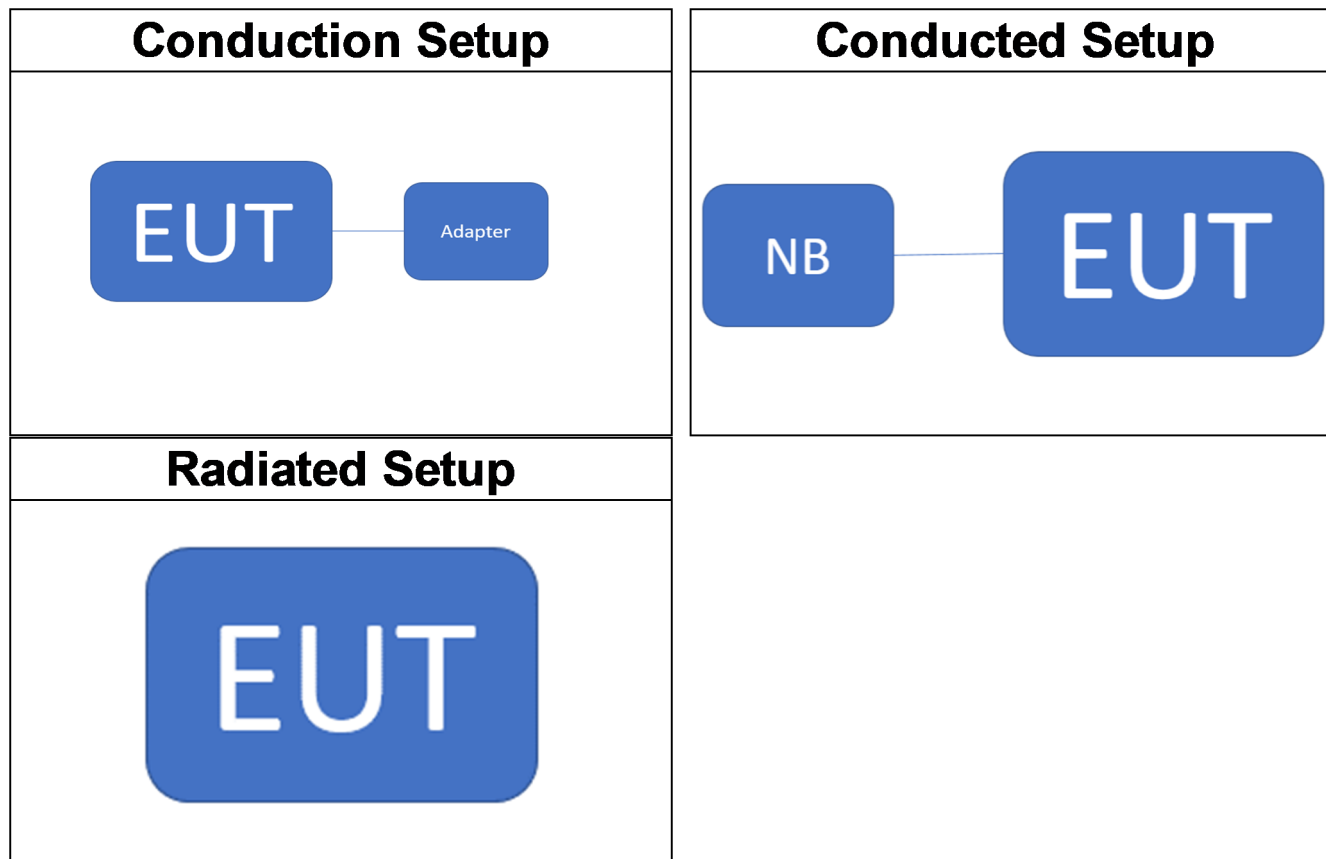
The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

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2.5 Test Configuration



2.6 Control Unit(s)

AC Power-Line Conducted Emission Test Site: Conduction C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Adaptor	SWITCHING ADAPTER	A929-120300W-US1	N/A	N/A	N/A
Adaptor	SWITCHING ADAPTER	ADS-40FSI-12	N/A	N/A	N/A
Conducted Emission Test Site: Conducted D					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Adaptor	SWITCHING ADAPTER	A929-120300W-US1	RF300	N/A	N/A
Notebook	DELL	Latitude 3440	S0011721	N/A	N/A
Radiated Emission Test Site: SAC G					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Adaptor	SWITCHING ADAPTER	A929-120300W-US1	N/A	N/A	N/A
Notebook	DELL	Latitude 3440	N/A	N/A	N/A

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3 SUMMARY OF TEST RESULT

FCC Rules	Description Of Test	Result
§15.207	AC Power Line Conducted Emission	Compliant
§15.407(e)	Emission Bandwidth	Compliant
§15.407(a)	Maximum Conducted Output Power	Compliant
§15.407(a)	Power Spectral Density	Compliant
§15.205 §15.209 §15.407(b)	Undesirable Radiated Emissions	Compliant
§15.407(c)	Transmission in case of Absence of Information	Compliant
§15.203	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 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:

- 5850~5895 MHz is not available for operation in Canada.**
- 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
☒ 802.11 a	☒ Ch0	☒ Ch1	☒ Ch2	☒ Ch3	☐ 1TX	☒ 4TX
☒ 802.11 n	☒ Ch0	☒ Ch1	☒ Ch2	☒ Ch3	☐ SISO	☒ MIMO
☒ 802.11 ac	☒ Ch0	☒ Ch1	☒ Ch2	☒ Ch3	☐ SISO	☒ MIMO
☒ 802.11 ax	☒ Ch0	☒ Ch1	☒ Ch2	☒ Ch3	☐ SISO	☒ MIMO

Beamforming

Modulation	Transmission Chain				Single Transmission Spatial	Multiple Transmission Spatial
☒ 802.11 ac	☒ Ch0	☒ Ch1	☒ Ch2	☒ Ch3	☐ SISO	☒ MIMO
☒ 802.11 ax	☒ Ch0	☒ Ch1	☒ Ch2	☒ Ch3	☐ SISO	☒ MIMO

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4. Observations have been done for 802.11 ax available RU configurations below and found that the lowest, heighest and Full RU results higher emissions.
Only one RU can be enabled at any given time.

802.11ax		20MHz				802.11ax		40MHz			
RU type		26-tone RU		52-tone RU		RU type		26-tone RU		52-tone RU	
RU index and subcarrier range	RU0	[-121: -96]	RU37	[-121: -70]	RU index and subcarrier range	RU0	[-243: -218]	RU37	[-243: -192]		
	RU1	[-95: -70]	RU38	[-68: -17]		RU1	[-217: -192]	RU38	[-189: -138]		
	RU2	[-68: -43]	RU39	[17: 68]		RU2	[-189: -164]	RU39	[-109: -58]		
	RU3	[-42: -17]	RU40	[70: 121]		RU3	[-163: -138]	RU40	[-55: -4]		
	RU4	[-16: -4, 4: 16]	RU41	N/A		RU4	[-136: -111]	RU41	[4: 55]		
	RU5	[17: 42]	RU42	N/A		RU5	[-109: -84]	RU42	[58: 109]		
	RU6	[43: 68]	RU43	N/A		RU6	[-83: -58]	RU43	[138: 189]		
	RU7	[70: 95]	RU44	N/A		RU7	[-55: -30]	RU44	[192: 243]		
	RU8	[96: 121]	RU45	N/A		RU8	[-29: -4]	RU45	N/A		
	RU9	N/A	RU46	N/A		RU9	[4: 29]	RU46	N/A		
	RU10	N/A	RU47	N/A		RU10	[30: 55]	RU47	N/A		
	RU11	N/A	RU48	N/A		RU11	[58: 83]	RU48	N/A		
	RU12	N/A	RU49	N/A		RU12	[84: 109]	RU49	N/A		
	RU13	N/A	RU50	N/A		RU13	[111: 136]	RU50	N/A		
	RU14	N/A	RU51	N/A		RU14	[138: 163]	RU51	N/A		
	RU15	N/A	RU52	N/A		RU15	[164: 189]	RU52	N/A		
	RU16	N/A				RU16	[192: 217]				
	RU17	N/A	106-tone RU			RU17	[218: 243]	106-tone RU			
	RU18	N/A	RU53	[-122: -17]		RU18	N/A	RU53	[-243: -138]		
	RU19	N/A	RU54	[17: 122]		RU19	N/A	RU54	[-109: -4]		
	RU20	N/A	RU55	N/A		RU20	N/A	RU55	[4: 109]		
	RU21	N/A	RU56	N/A		RU21	N/A	RU56	[138: 243]		
	RU22	N/A	RU57	N/A		RU22	N/A	RU57	N/A		
	RU23	N/A	RU58	N/A		RU23	N/A	RU58	N/A		
	RU24	N/A	RU59	N/A		RU24	N/A	RU59	N/A		
	RU25	N/A	RU60	N/A		RU25	N/A	RU60	N/A		
	RU26	N/A				RU26	N/A				
	RU27	N/A	242-tone RU			RU27	N/A	242-tone RU			
	RU28	N/A	RU61	[-122: -2, 2: 122]		RU28	N/A	RU61	[-244: -3]		
	RU29	N/A	RU62	N/A		RU29	N/A	RU62	[3: 244]		
	RU30	N/A	RU63	N/A		RU30	N/A	RU63	N/A		
	RU31	N/A	RU64	N/A		RU31	N/A	RU64	N/A		
	RU32	N/A				RU32	N/A				
	RU33	N/A				RU33	N/A	484-tone RU			
	RU34	N/A				RU34	N/A	RU65	[-244: -3, 3: 244]		
	RU35	N/A				RU35	N/A	RU66	N/A		
	RU36	N/A				RU36	N/A				

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802.11ax	80MHz			
RU type	26-tone RU		52-tone RU	
RU index and subcarrier range	RU0	[-499: -474]	RU37	[-499: -448]
	RU1	[-473: -448]	RU38	[-445: -394]
	RU2	[-445: -420]	RU39	[-365: -314]
	RU3	[-419: -394]	RU40	[-311: -260]
	RU4	[-392: -367]	RU41	[-257: -206]
	RU5	[-365: -340]	RU42	[-203: -152]
	RU6	[-339: -314]	RU43	[-123: -72]
	RU7	[-311: -286]	RU44	[-69: -18]
	RU8	[-285: -260]	RU45	[18: 69]
	RU9	[-257: -232]	RU46	[72: 123]
	RU10	[-231: -206]	RU47	[152: 203]
	RU11	[-203: -178]	RU48	[206: 257]
	RU12	[-177: -152]	RU49	[260: 311]
	RU13	[-150: -125]	RU50	[314: 365]
	RU14	[-123: -98]	RU51	[394: 445]
	RU15	[-97: -72]	RU52	[448: 499]
	RU16	[-69: -44]	106-tone RU	
	RU17	[-43: -18]	RU53	[-499: -394]
	RU18	[-16: -4, 4: 16]	RU54	[-365: -260]
	RU19	[18: 43]	RU55	[-257: -152]
	RU20	[44: 69]	RU56	[-123: -18]
	RU21	[72: 97]	RU57	[18: 123]
	RU22	[98: 123]	RU58	[152: 257]
	RU23	[125: 150]	RU59	[260: 365]
	RU24	[152: 177]	RU60	[394: 499]
	RU25	[178: 203]	242-tone RU	
	RU26	[206: 231]	RU61	[-500: -259]
	RU27	[232: 257]	RU62	[-258: -17]
	RU28	[260: 285]	RU63	[17: 258]
	RU29	[286: 311]	RU64	[259: 500]
	RU30	[314: 339]	484-tone RU	
	RU31	[340: 365]	RU65	[-500: -17]
	RU32	[367: 392]	RU66	[17: 500]
	RU33	[394: 419]	996-tone RU	
	RU34	[420: 445]	RU67	[-500: -3, 3: 500]
	RU35	[448: 473]		
	RU36	[474: 499]		

5. 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.

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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	4TX
	5745~5825	149 to 165	157			
802.11ax_HE80	5210	42	42	OFDMA	MCS0	MIMO

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	4TX
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48	OFDM	MCS24	MIMO
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS24	MIMO
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42	OFDM	MCS0	MIMO
	5775	155	155			

RADIATED EMISSION TEST (ABOVE 1 GHz)							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATI	DATA RATE (Mbps)	ANTENNA PORT
802.11ax_HE20	5180~5240	36 to 48	36,44,48	OFDMA	FULL RU 26/0,26/8	MCS0	MIMO
	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	MIMO
	5755~5795	151 to 159	151,159				
802.11ax_HE80	5210	42	42	OFDMA	FULL RU 484/65,484/66	MCS0	MIMO
	5775	155	155				

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	4TX
	5745~5825	149 to 165	149,157,165			
802.11n_HT20	5180~5240	36 to 48	36,44,48	OFDM	MCS24	MIMO
	5745~5825	149 to 165	149,157,165			
802.11n_HT40	5190~5230	38 to 46	38,46	OFDM	MCS24	MIMO
	5755~5795	151 to 159	151,159			
802.11ac_VHT80	5210	42	42	OFDM	MCS0	MIMO
	5775	155	155			

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CONDUCTED TEST							
MODE	FREQUENCY BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	RU CONFIGURATI	DATA RATE (Mbps)	ANTENNA PORT
802.11ax_HE20	5180~5240	36 to 48	36,44,48	OFDMA	FULL RU 26/0,26/8	MCS0	MIMO
	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	MIMO
	5755~5795	151 to 159	151,159				
802.11ax_HE80	5210	42	42	OFDMA	FULL RU 484/65,484/66	MCS0	MIMO
	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	+/- 2.34 dB
Output Power measurement	+/- 1 dB
Emission Bandwidth	+/- 1.53 Hz
Undesignable radiated emission measurement	+/- 1.68 dB
Peak Power Density	+/- 1.62 dB
Temperature	+/- 0.4 °C
Humidity	+/- 3.5 %
DC / AC Power Source	+/- 1 %

Radiated Spurious Emission Measurement Uncertainty			
Polarization: Vertical	+/-	2.57 dB	9kHz~30MHz
	+/-	4.85 dB	30MHz - 1000MHz
	+/-	4.45 dB	1GHz - 18GHz
	+/-	4.24 dB	18GHz - 40GHz
Polarization: Horizontal	+/-	2.57 dB	9kHz~30MHz
	+/-	4.37 dB	30MHz - 1000MHz
	+/-	4.45 dB	1GHz - 18GHz
	+/-	4.24 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 C					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
LISN	SCHWARZBECK Mess-Elektronik	NSLK8127	973	04/13/2022	04/12/2023
EMI Test Receiver	R&S	ESCI	101342	04/25/2022	04/24/2023
Coaxial Cable	EC Lab	RF-HY-CAB-250	RF-HY-CAB-250-01	03/27/2022	03/26/2023
Coaxial Cable	EMC Instruments Corp	EMC5D-BM-BM-3000	1401004	03/27/2022	03/26/2023
Pulse Limiter	EC Lab	VTSD 9561F-N	485	03/27/2022	03/26/2023
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R

6.2 Conducted Measurement

Conducted Emission Test Site: Conducted D					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	KEYSIGHT	N9010B	MY59071574	06/25/2021	06/24/2022
Power Meter	Anritsu	ML2496A	2138005	11/12/2021	11/11/2022
Power Sensor	Anritsu	MA2411B	1911395	09/22/2021	09/21/2022
Power Sensor	Anritsu	MA2411B	1911396	09/20/2021	09/19/2022
Test Software	SGS Taiwan	Radio Test Software	Ver.21	N.C.R	N.C.R
Attenuator	Marvelous	WATT-218FS-10	RF15	11/18/2021	11/17/2022
Attenuator	Marvelous	WATT-218FS-10	RF16	11/18/2021	11/17/2022
Attenuator	Marvelous	WATT-218FS-10	RF18	11/18/2021	11/17/2022
Attenuator	Marvelous	WATT-218FS-10	RF19	11/18/2021	11/17/2022
DC Block	PASTERNAK	PE8210	RF158	11/18/2021	11/17/2022
RF Switch	E-INSTRUMENT TECH LTD	ETF-1801	EC2100175	09/10/2021	09/09/2022

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6.3 Radiated Measurement

Radiated Emission Test Site: SAC G					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Broadband Antenna	SCHWARZBECK	VULB 9168	1206	02/15/2022	02/14/2023
Horn Antenna	Schwarzbeck	BBHA9170	184	12/16/2021	12/15/2022
Horn Antenna	RF SPIN	DRH18-E	210105A18E	04/08/2022	04/07/2023
Loop Antenna	ETS.LINDGREN	6502	143303	05/06/2022	05/07/2023
3m Site NSA	SGS	966 chamber G	N/A	03/30/2022	03/29/2023
Spectrum Analyzer	KEYSIGHT	N9010A	MY51440113	07/13/2021	07/12/2022
Test Software	audix	e3	E3 20923 SGS Ver.9 (C)	N.C.R	N.C.R
Pre-Amplifier	EMC Instruments	EMC184045B	980135	10/27/2021	10/26/2022
Pre-Amplifier	EMC Instruments	EMC330N	980781	03/15/2022	03/14/2023
Pre-Amplifier	EMC Instruments	EMC118A45SE	980815	03/15/2022	03/14/2023
Attenuator	Marvelous	MVE2213-10	RF05	11/18/2021	11/17/2022
Coaxial Cable	EMC Instruments	EMCCFD400-NM-NM-8000-5000-2000	210216 、 210217 、 210218	03/15/2022	03/14/2023
Coaxial Cable	EMC Instruments	EMC104-SM-SM-8000-5000-5000	210219 、 210220 、 210221	03/15/2022	03/14/2023
Coaxial Cable	EMC Instruments	EMC105-NM-NM-5000-15000	210224 、 210306	03/15/2022	03/14/2023

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

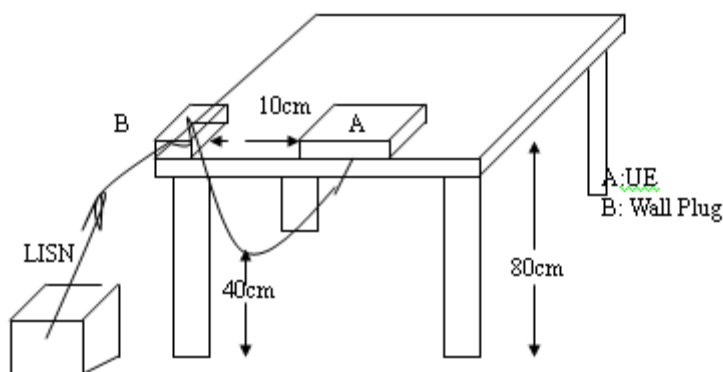
Note

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 closet to the limit.

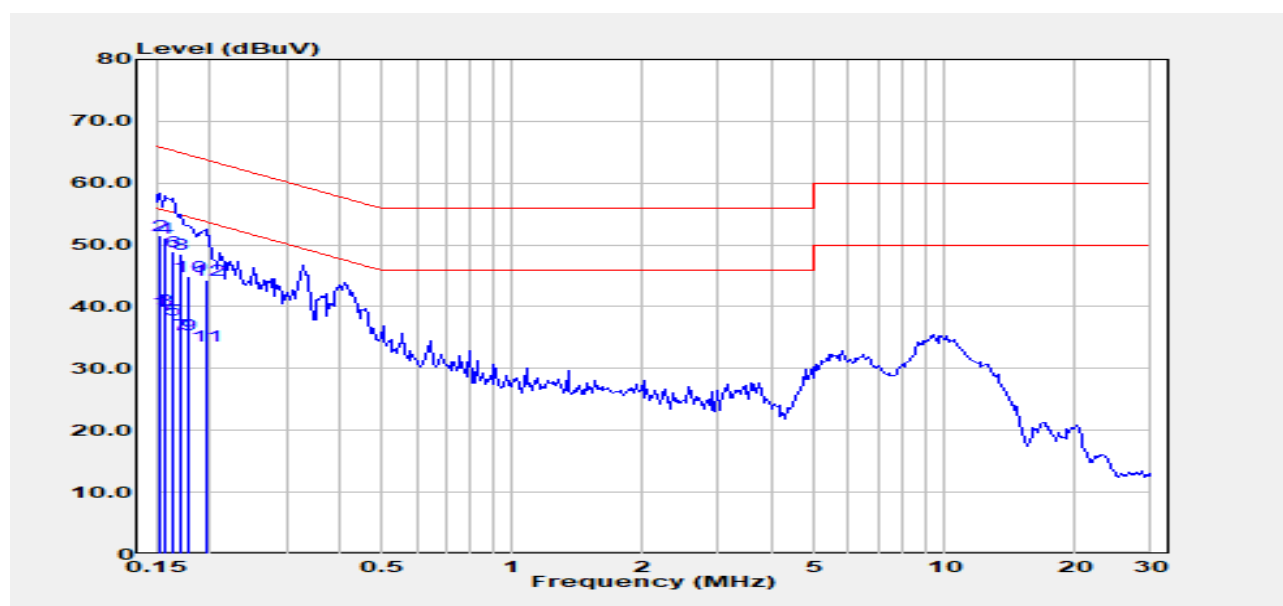
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AC POWER LINE CONDUCTED EMISSION TEST DATA

Report Number :E2-2022-30057 Test Site :Conduction C
 Test Mode :5G Test Date :2022-04-21
 Power :120V/60Hz Temp./Humi. :24.5/59
 Probe :L1 Engineer :Quentin Liu
 Note : Adapter:A929-120300W-US1



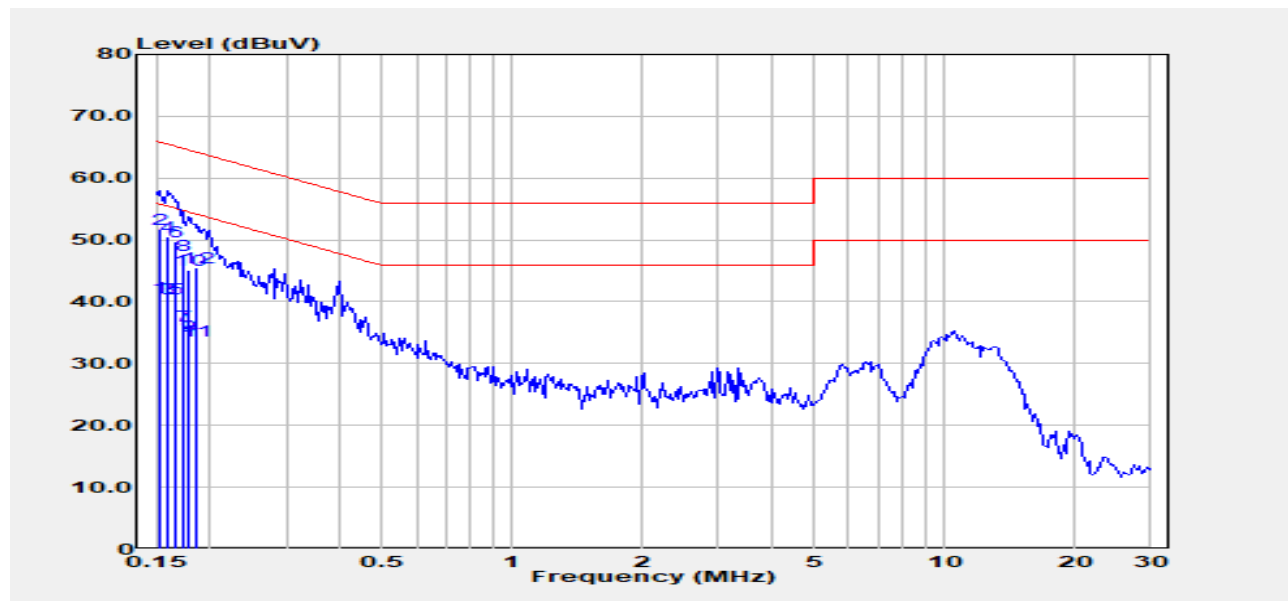
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.153	Average	29.10	10.27	39.37	55.82	-16.45
0.153	QP	41.30	10.27	51.57	65.82	-14.25
0.156	Average	29.30	10.27	39.57	55.65	-16.08
0.156	QP	40.80	10.27	51.07	65.65	-14.58
0.163	Average	27.70	10.27	37.97	55.30	-17.33
0.163	QP	38.70	10.27	48.97	65.30	-16.33
0.170	Average	25.20	10.27	35.47	54.94	-19.47
0.170	QP	38.30	10.27	48.57	64.94	-16.37
0.178	Average	25.20	10.27	35.47	54.59	-19.12
0.178	QP	34.70	10.27	44.97	64.59	-19.62
0.195	Average	23.50	10.27	33.77	53.80	-20.03
0.195	QP	34.00	10.27	44.27	63.80	-19.53

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Report Number :E2-2022-30057 Test Site :Conduction C
Test Mode :5G Test Date :2022-04-21
Power :120V/60Hz Temp./Humi. :24.5/59
Probe :N Engineer :Quentin Liu
Note : Adapter:A929-120300W-US1



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.153	Average	30.50	10.28	40.78	55.82	-15.04
0.153	QP	41.40	10.28	51.68	65.82	-14.14
0.160	Average	30.20	10.28	40.48	55.47	-14.99
0.160	QP	40.30	10.28	50.58	65.47	-14.89
0.167	Average	30.20	10.28	40.48	55.12	-14.64
0.167	QP	39.40	10.28	49.68	65.12	-15.44
0.172	Average	25.90	10.28	36.18	54.86	-18.68
0.172	QP	37.30	10.28	47.58	64.86	-17.28
0.178	Average	24.30	10.27	34.57	54.59	-20.02
0.178	QP	34.90	10.27	45.17	64.59	-19.42
0.185	Average	23.40	10.27	33.67	54.24	-20.57
0.185	QP	35.30	10.27	45.57	64.24	-18.67

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Report Number :E2-2022-30057

Test Site :Conduction C

Test Mode :5G

Test Date :2022-04-21

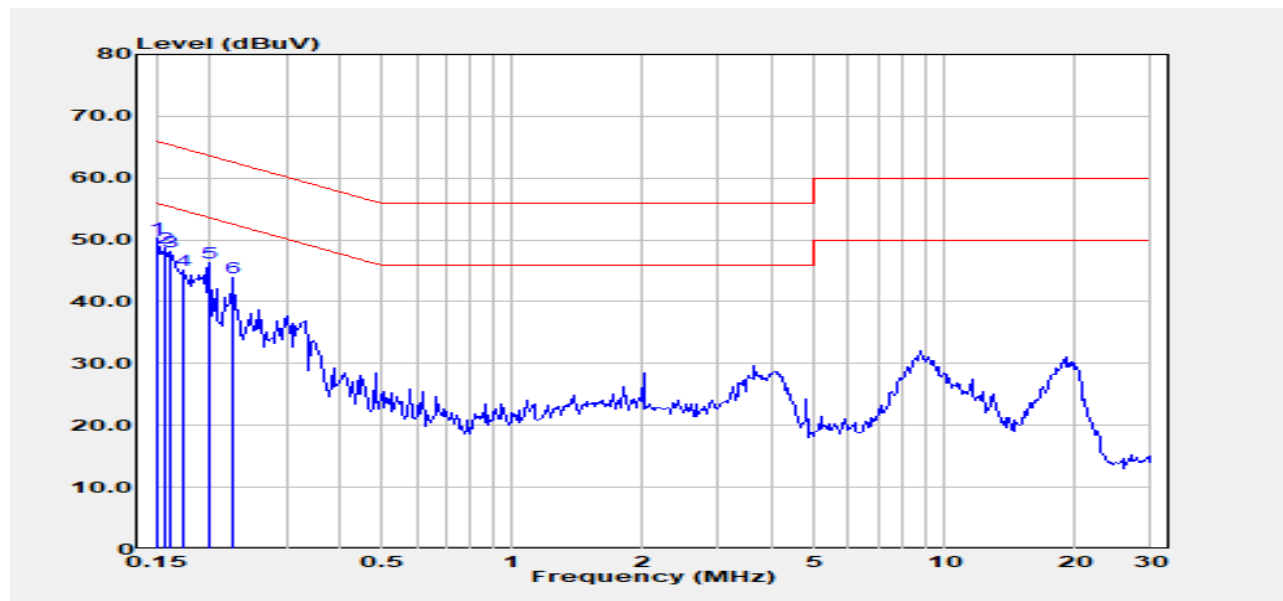
Power :120V/60Hz

Temp./Humi. :24.5/59

Probe :L1

Engineer :Quentin Liu

Note : Adapter:ADS-40FSI-12



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V	Limit dB μ V	Margin dB
0.152	Peak	40.01	10.27	50.28	65.91	-15.63
0.156	Peak	38.46	10.27	48.73	65.65	-16.92
0.162	Peak	37.87	10.27	48.14	65.38	-17.24
0.172	Peak	34.90	10.27	45.17	64.86	-19.68
0.200	Peak	36.06	10.27	46.33	63.62	-17.30
0.227	Peak	33.68	10.28	43.96	62.57	-18.61

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Test Site :Conduction C

Test Mode :5G

Test Date :2022-04-21

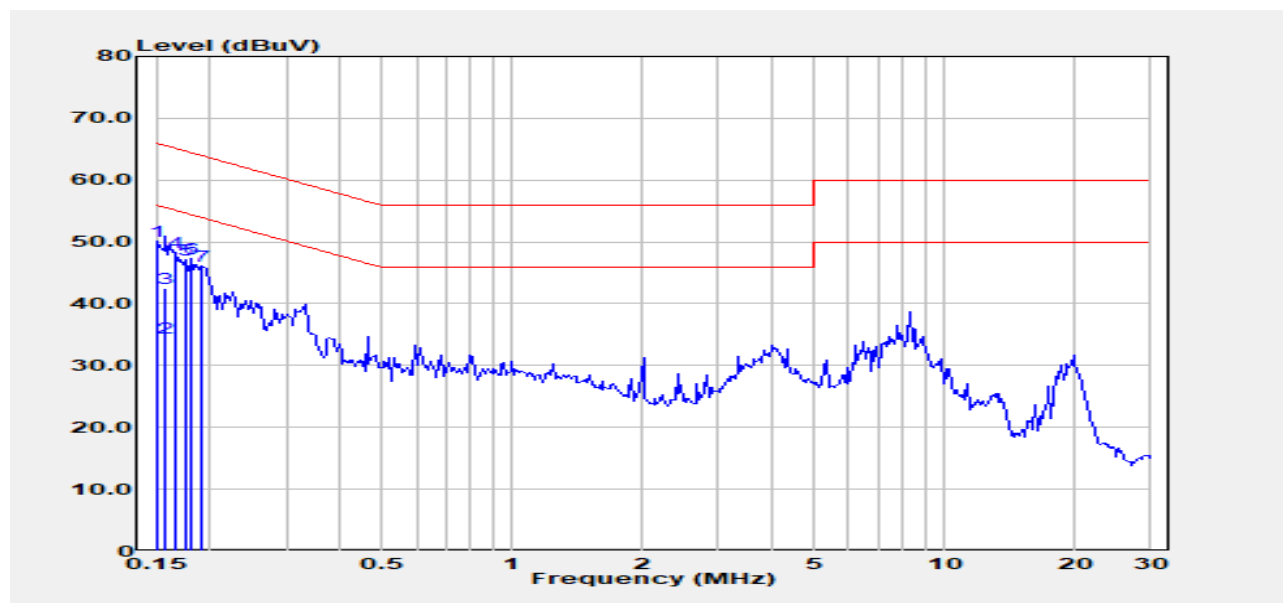
Power :120V/60Hz

Temp./Humi. :24.5/59

Probe :N

Engineer :Quentin Liu

Note : Adapter:ADS-40FSI-12



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Reading Level dB μ V	Factor dB	Actual FS dB μ V	Limit dB μ V	Margin dB
0.152	Peak	39.79	10.28	50.07	65.91	-15.85
0.158	Average	24.30	10.28	34.58	55.56	-20.98
0.158	QP	32.20	10.28	42.48	65.56	-23.08
0.167	Peak	38.08	10.28	48.35	65.12	-16.77
0.176	Peak	36.79	10.27	47.07	64.68	-17.61
0.182	Peak	36.95	10.27	47.22	64.42	-17.19
0.191	Peak	35.76	10.27	46.04	63.98	-17.94

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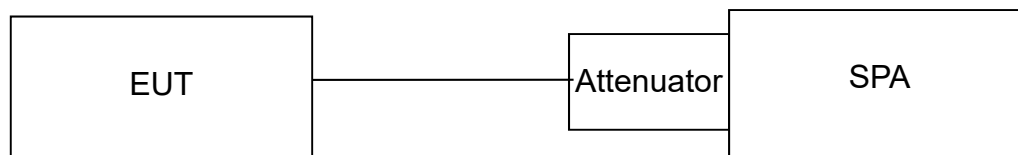
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8 EMISSION BANDWIDTH MEASUREMENT

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. 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)
5180	21.39	13.300
5220	20.68	13.160
5240	20.34	13.080

802.11a_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.36	12.140
5785	16.35	12.140
5825	16.37	12.140

802.11a_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.26	< 5250
5745	5736.75	> 5725

802.11a_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	28.50	14.550
5220	23.74	13.750
5240	28.20	14.500

802.11a_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.38	12.140
5785	16.42	12.150
5825	16.45	12.160

802.11a_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.36	< 5250
5745	5736.75	> 5725

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802.11a_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	23.64	13.740
5220	20.92	13.210
5240	22.46	13.510

802.11a_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.39	12.150
5785	16.37	12.140
5825	16.33	12.130

802.11a_Ch2

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.27	< 5250
5745	5736.74	> 5725

802.11a_Ch3

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	25.44	14.060
5220	20.61	13.140
5240	23.57	13.720

802.11a_Ch3

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	16.42	12.150
5785	16.42	12.150
5825	16.40	12.150

802.11a_Ch3

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.32	< 5250
5745	5736.75	> 5725

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802.11ac_VHT20_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	21.50	13.320
5220	21.38	13.300
5240	21.61	13.350

802.11ac_VHT20_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	30.00	14.770
5785	17.65	12.470
5825	17.85	12.520

802.11ac_VHT20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.91	< 5250
5745	5736.13	> 5725

802.11ac_VHT20_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	25.16	14.010
5220	21.94	13.410
5240	28.23	14.510

802.11ac_VHT20_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.61	12.460
5785	17.70	12.480
5825	17.65	12.470

802.11ac_VHT20_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.94	< 5250
5745	5736.13	> 5725

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802.11ac_VHT20_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	23.21	13.660
5220	21.89	13.400
5240	22.94	13.610

802.11ac_VHT20_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.71	12.480
5785	17.62	12.460
5825	17.77	12.500

802.11ac_VHT20_Ch2

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.91	< 5250
5745	5736.11	> 5725

802.11ac_VHT20_Ch3

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5180	23.39	13.690
5220	20.95	13.210
5240	29.06	14.630

802.11ac_VHT20_Ch3

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5745	17.63	12.460
5785	17.62	12.460
5825	17.77	12.500

802.11ac_VHT20_Ch3

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5248.97	< 5250
5745	5736.15	> 5725

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802.11ac_VHT40_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	39.11	15.920
5230	38.85	15.890

802.11ac_VHT40_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.37	15.610
5795	36.07	15.570

802.11ac_VHT40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5247.99	< 5250
5755	5737.00	> 5725

802.11ac_VHT40_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	39.16	15.930
5230	39.65	15.980

802.11ac_VHT40_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.41	15.610
5795	36.33	15.600

802.11ac_VHT40_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.07	< 5250
5755	5736.99	> 5725

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802.11ac_VHT40_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	39.58	15.970
5230	39.56	15.970

802.11ac_VHT40_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	36.09	15.570
5795	36.11	15.580

802.11ac_VHT40_Ch2

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5247.98	< 5250
5755	5737.03	> 5725

802.11ac_VHT40_Ch3

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5190	38.77	15.880
5230	39.45	15.960

802.11ac_VHT40_Ch3

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5755	35.42	15.490
5795	35.66	15.520

802.11ac_VHT40_Ch3

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5247.99	< 5250
5755	5736.97	> 5725

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802.11ac_VHT80_Ch0

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.24	19.100

802.11ac_VHT80_Ch0

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	72.64	18.610

802.11ac_VHT80_Ch1

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.46	19.110

802.11ac_VHT80_Ch1

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	71.98	18.570

802.11ac_VHT80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	21.22
5210	5247.71	< 5250
5775	5737.34	> 5725

802.11ac_VHT80_Ch1

Freq. (MHz)	Measured Freq. (MHz)	21.62
5210	5247.65	< 5250
5775	5737.32	> 5725

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802.11ac_VHT80_Ch2

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.08	19.090

802.11ac_VHT80_Ch2

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	73.19	18.640

802.11ac_VHT80_Ch3

Freq. (MHz)	26dB BW (MHz)	10 Log (B) (dB)
5210	81.15	19.090

802.11ac_VHT80_Ch3

Freq. (MHz)	6dB BW (MHz)	10 Log (B) (dB)
5775	75.99	18.810

802.11ac_VHT80_Ch2

Freq. (MHz)	Measured Freq. (MHz)	21.54
5210	5247.67	< 5250
5775	5737.27	> 5725

802.11ac_VHT80_Ch3

Freq. (MHz)	Measured Freq. (MHz)	21.32
5210	5247.65	< 5250
5775	5737.25	> 5725

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802.11ax_HE20_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	21.22	13.270
5220	full	21.41	13.310
5240	full	21.64	13.350

802.11ax_HE20_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	19.09	12.810
5785	full	19.06	12.800
5825	full	19.00	12.790

802.11ax_HE20_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.50	< 5250
5745	5735.49	> 5725

802.11ax_HE20_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	21.62	13.350
5220	full	22.42	13.510
5240	full	23.62	13.730

802.11ax_HE20_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	19.11	12.810
5785	full	18.99	12.790
5825	full	19.15	12.820

802.11ax_HE20_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.54	< 5250
5745	5735.47	> 5725

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802.11ax_HE20_Ch2

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	21.54	13.330
5220	full	21.55	13.330
5240	full	22.15	13.450

802.11ax_HE20_Ch2

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	19.02	12.790
5785	full	19.13	12.820
5825	full	19.18	12.830

802.11ax_HE20_Ch2

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.50	< 5250
5745	5735.48	> 5725

802.11ax_HE20_Ch3

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5180	full	21.32	13.290
5220	full	21.82	13.390
5240	full	22.89	13.600

802.11ax_HE20_Ch3

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5745	full	19.16	12.820
5785	full	19.20	12.830
5825	full	19.14	12.820

802.11ax_HE20_Ch3

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5240	5249.53	< 5250
5745	5735.46	> 5725

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802.11ax_HE40_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	40.11	16.030
5230	full	39.89	16.010

802.11ax_HE40_Ch0

Freq. (MHz)	RU config	81.90	10 Log (B) (dB)
5755	full	37.40	15.730
5795	full	36.37	15.610

802.11ax_HE40_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.82	< 5250
5755	5736.20	> 5725

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	39.73	15.990
5230	full	40.62	16.090

802.11ax_HE40_Ch1

Freq. (MHz)	RU config	80.72	10 Log (B) (dB)
5755	full	37.18	15.700
5795	full	34.54	15.380

802.11ax_HE40_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.83	< 5250
5755	5736.19	> 5725

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802.11ax_HE40_Ch2

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	39.75	15.990
5230	full	39.97	16.020

802.11ax_HE40_Ch2

Freq. (MHz)	RU config	80.80	10 Log (B) (dB)
5755	full	36.41	15.610
5795	full	36.48	15.620

802.11ax_HE40_Ch2

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.87	< 5250
5755	5736.17	> 5725

802.11ax_HE40_Ch3

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5190	full	40.11	16.030
5230	full	39.89	16.010

802.11ax_HE40_Ch3

Freq. (MHz)	RU config	81.72	10 Log (B) (dB)
5755	full	37.40	15.730
5795	full	36.37	15.610

802.11ax_HE40_Ch3

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5230	5248.82	< 5250
5755	5736.20	> 5725

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802.11ax_HE80_Ch0

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	81.35	19.100

802.11ax_HE80_Ch0

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	73.68	18.670

802.11ax_HE80_Ch0

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.55	< 5250
5775	5736.57	> 5725

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	86.07	19.350

802.11ax_HE80_Ch1

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	75.37	18.770

802.11ax_HE80_Ch1

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.47	< 5250
5775	5736.50	> 5725

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802.11ax_HE80_Ch2

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	82.00	19.140

802.11ax_HE80_Ch2

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	77.53	18.890

802.11ax_HE80_Ch3

Freq. (MHz)	RU config	26dB BW (MHz)	10 Log (B) (dB)
5210	full	81.24	19.100

802.11ax_HE80_Ch3

Freq. (MHz)	RU config	6dB BW (MHz)	10 Log (B) (dB)
5775	full	73.39	18.660

802.11ax_HE80_Ch2

Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.52	< 5250
5775	5736.46	> 5725

802.11ax_HE80_Ch3

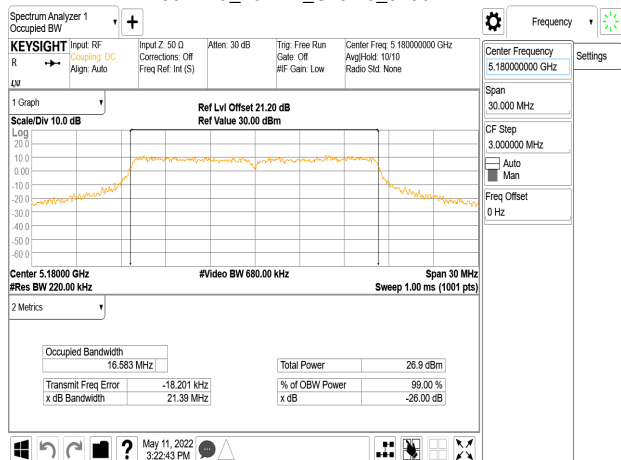
Freq. (MHz)	Measured Freq. (MHz)	Limit (MHz)
5210	5248.49	< 5250
5775	5736.52	> 5725

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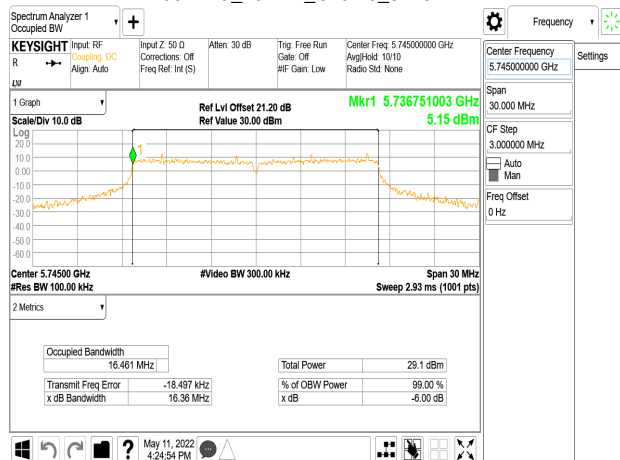
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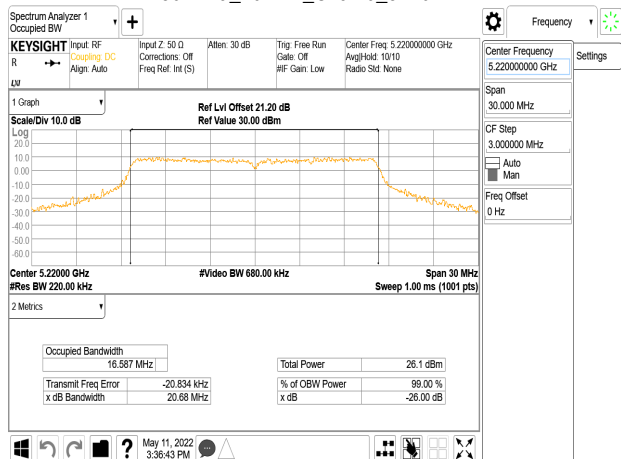
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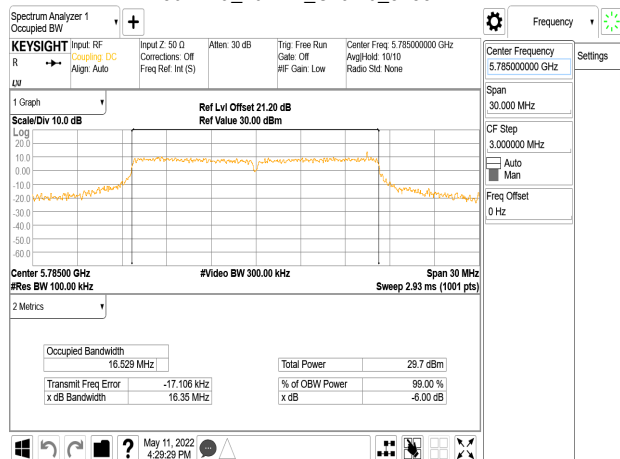
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802.11a_20MHz_Chain0_5220MHz



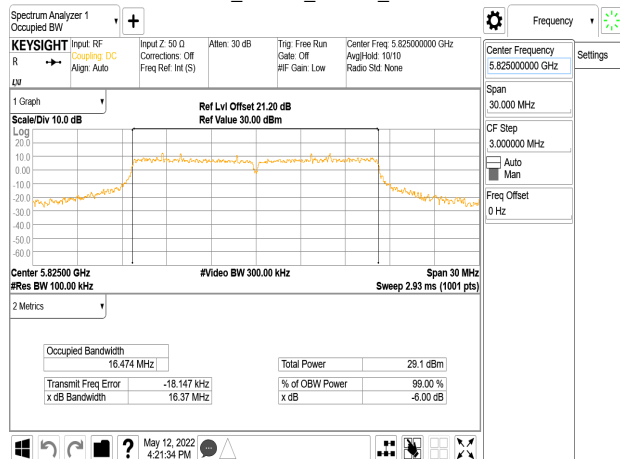
802.11a_20MHz_Chain0_5785MHz



802.11a_20MHz_Chain0_5240MHz



802.11a_20MHz_Chain0_5825MHz

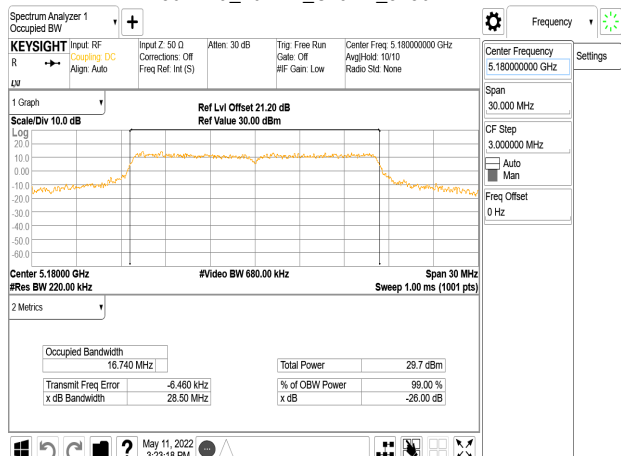


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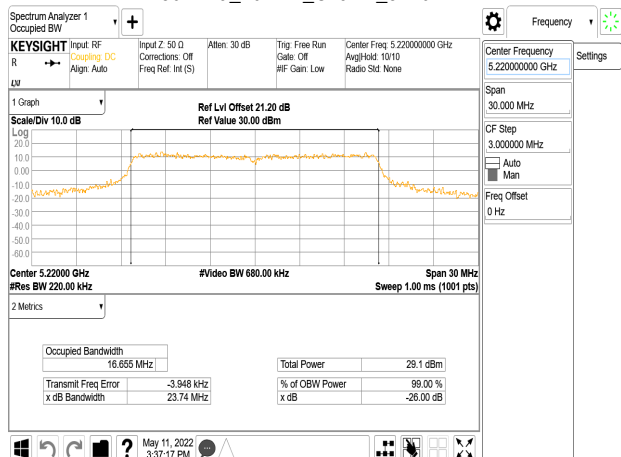
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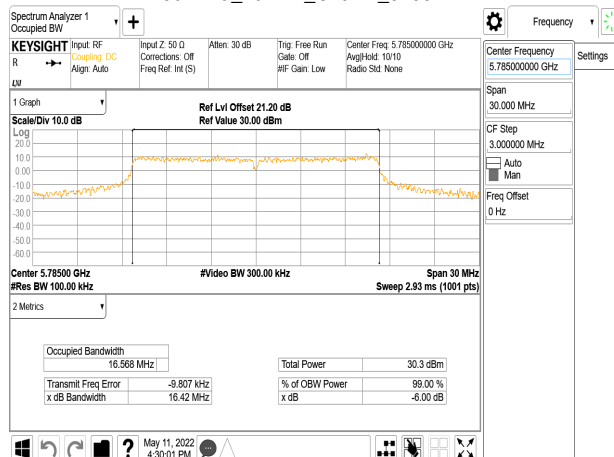
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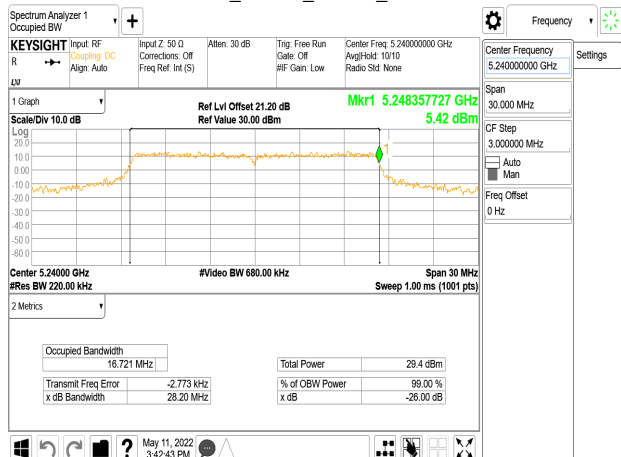
802.11a_20MHz_Chain1_5220MHz



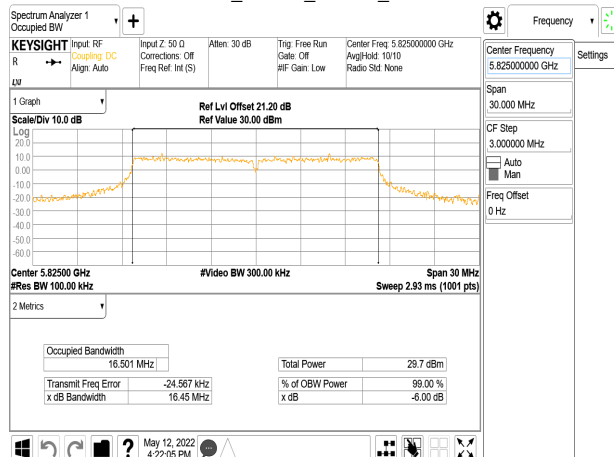
802.11a_20MHz_Chain1_5785MHz



802.11a_20MHz_Chain1_5240MHz



802.11a_20MHz_Chain1_5825MHz

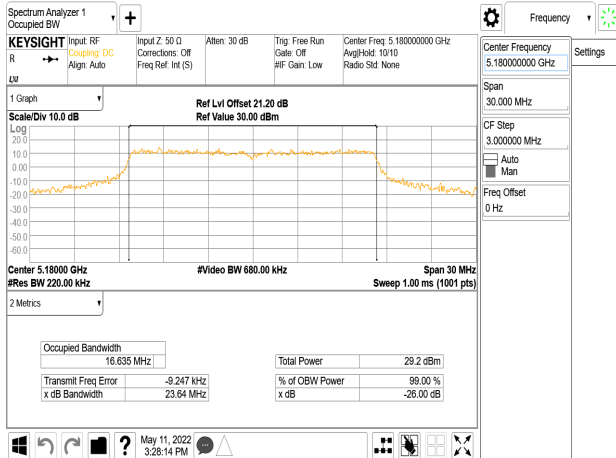


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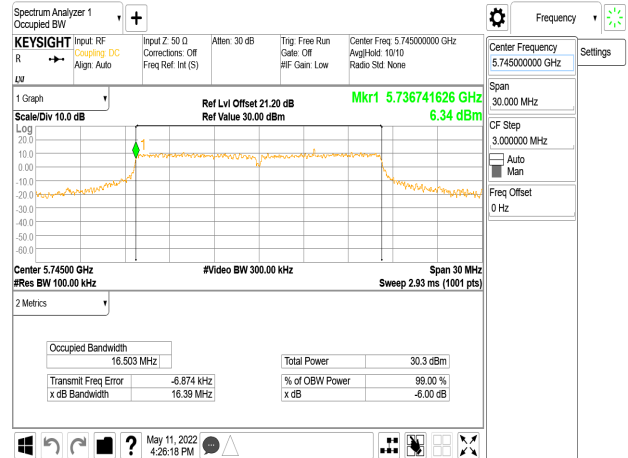
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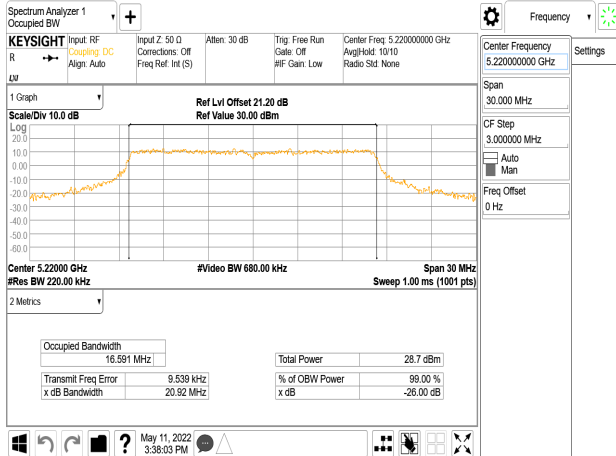
802.11a_20MHz_Chain2_5180MHz



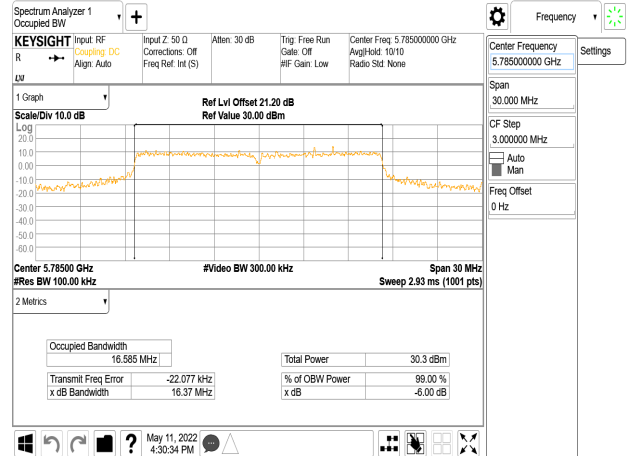
802.11a_20MHz_Chain2_5745MHz



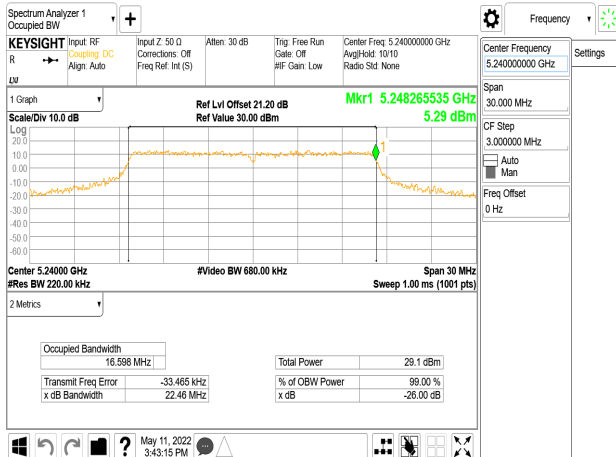
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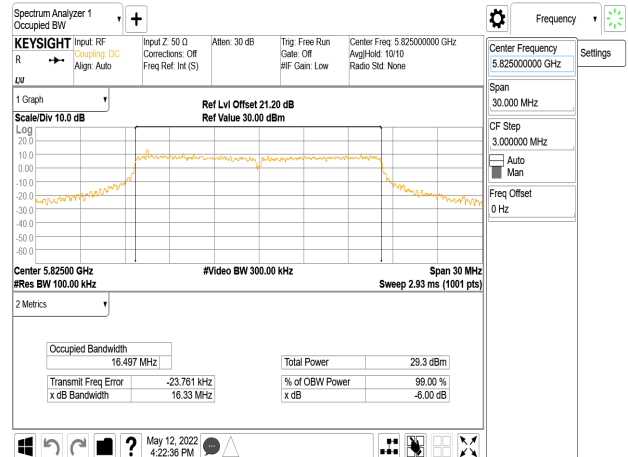
802.11a_20MHz_Chain2_5785MHz



802.11a_20MHz_Chain2_5240MHz



802.11a_20MHz_Chain2_5825MHz

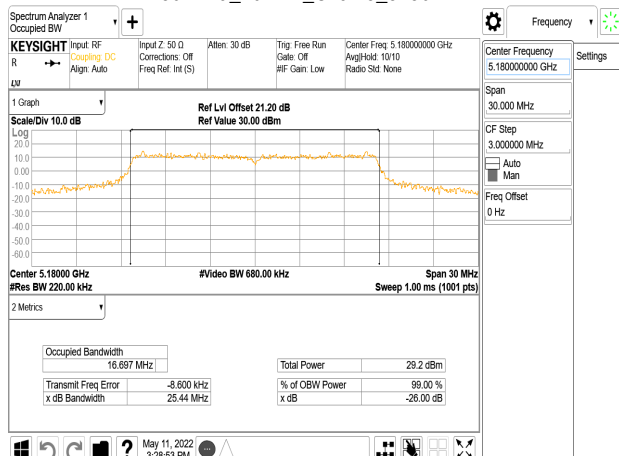


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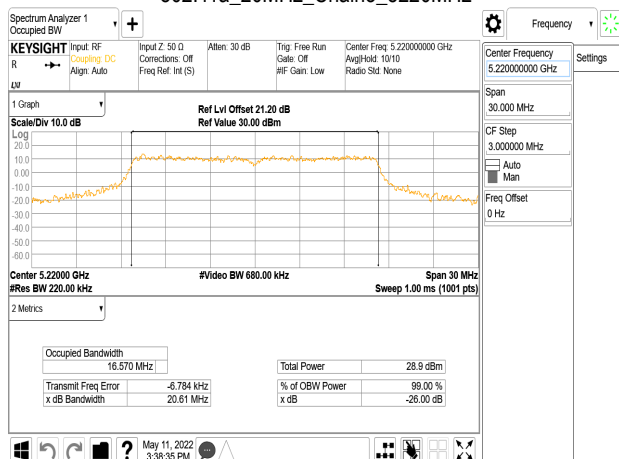
802.11a_20MHz_Chain3_5180MHz



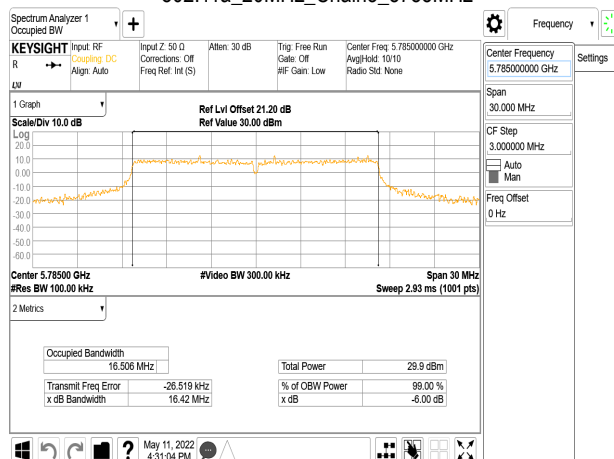
802.11a_20MHz_Chain3_5745MHz



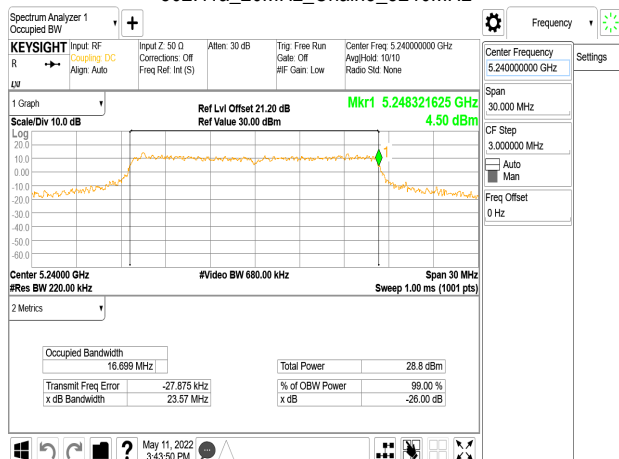
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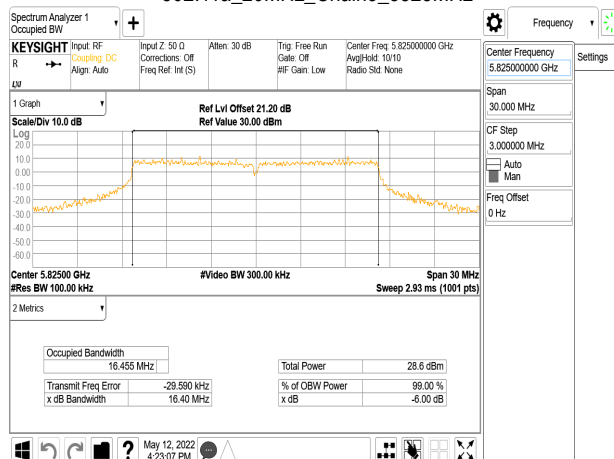
802.11a_20MHz_Chain3_5785MHz



802.11a_20MHz_Chain3_5240MHz



802.11a_20MHz_Chain3_5825MHz

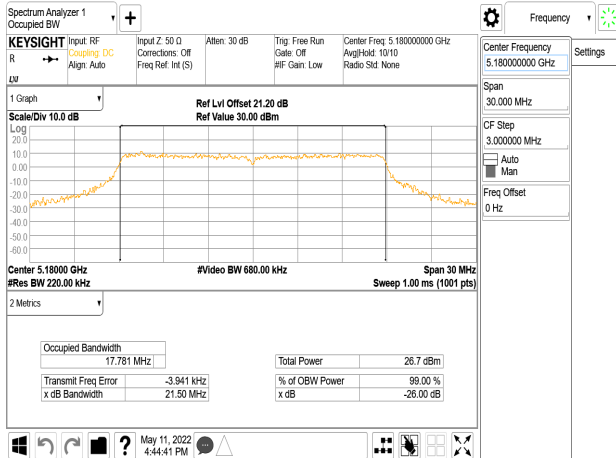


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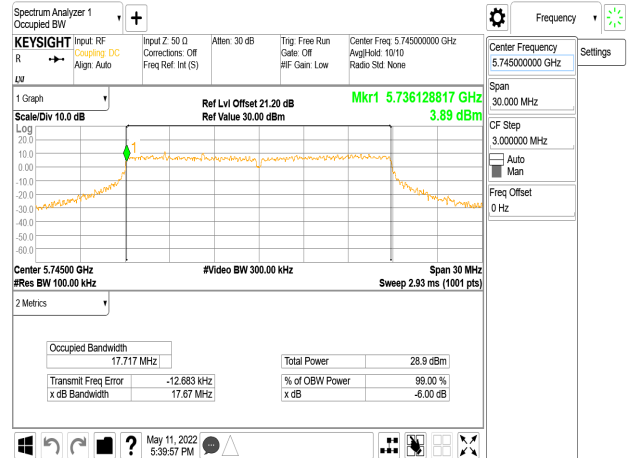
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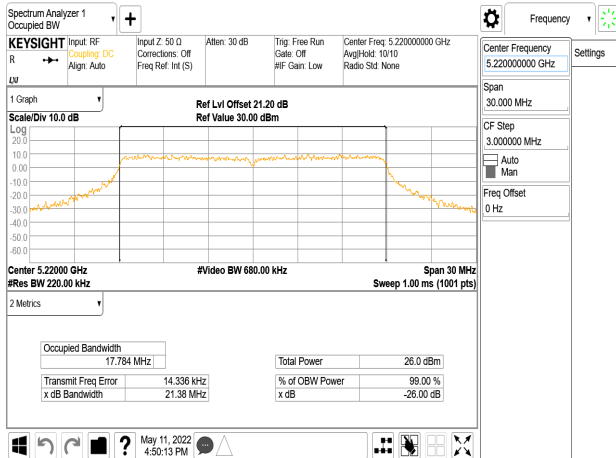
802.11ac_20MHz_Chain0_5180MHz



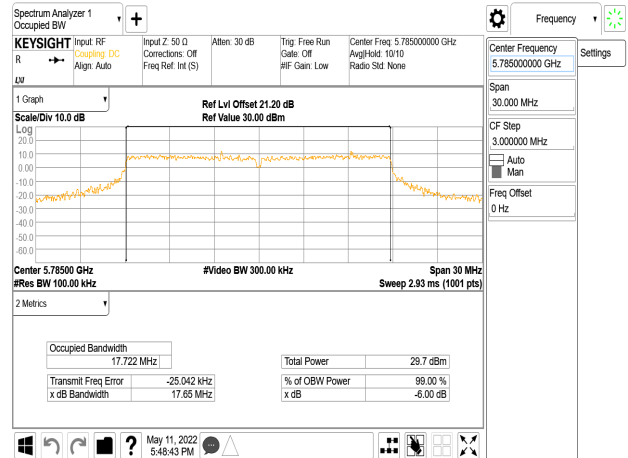
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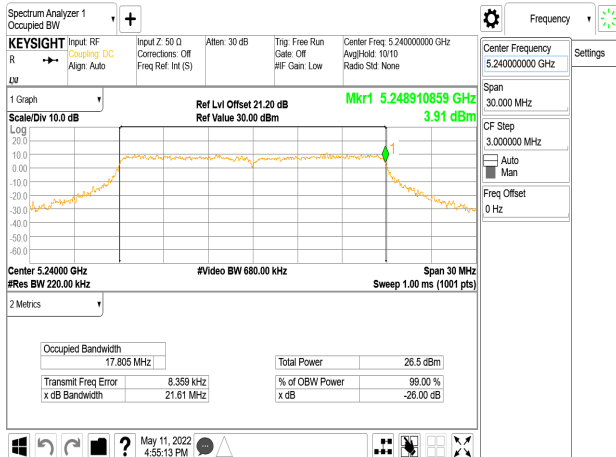
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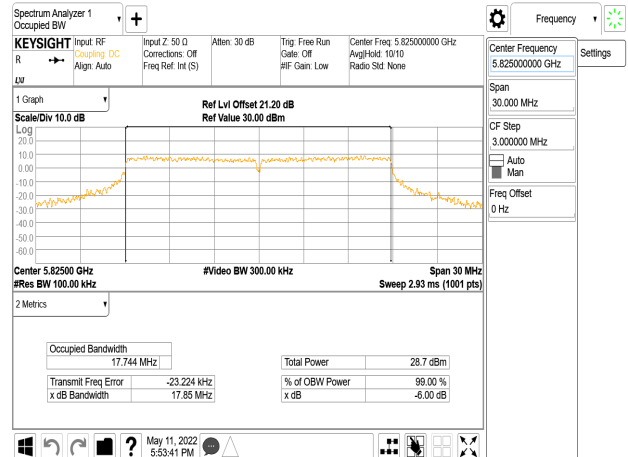
802.11ac_20MHz_Chain0_5785MHz



802.11ac_20MHz_Chain0_5240MHz



802.11ac_20MHz_Chain0_5825MHz

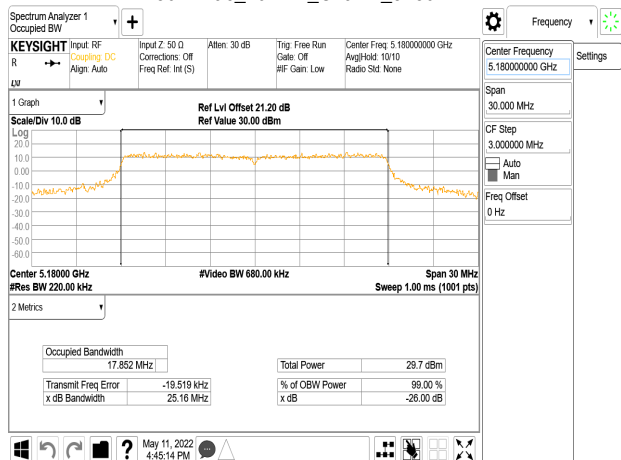


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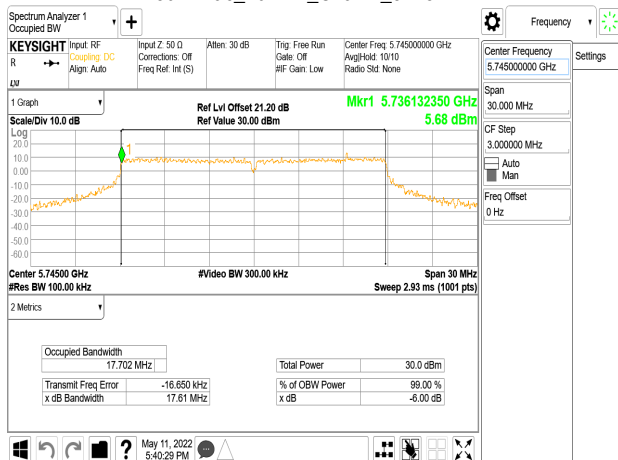
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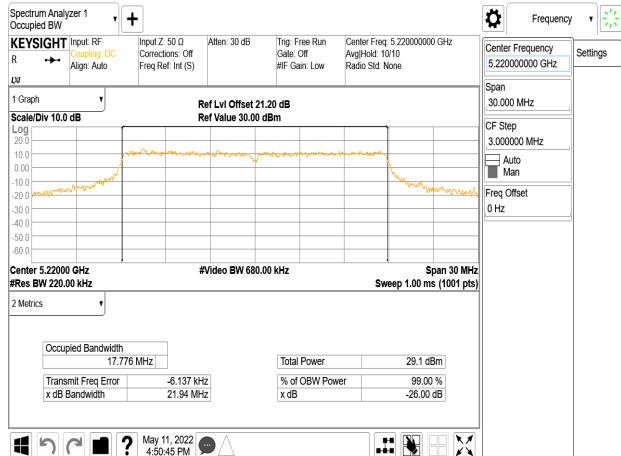
802.11ac_20MHz_Chain1_5180MHz



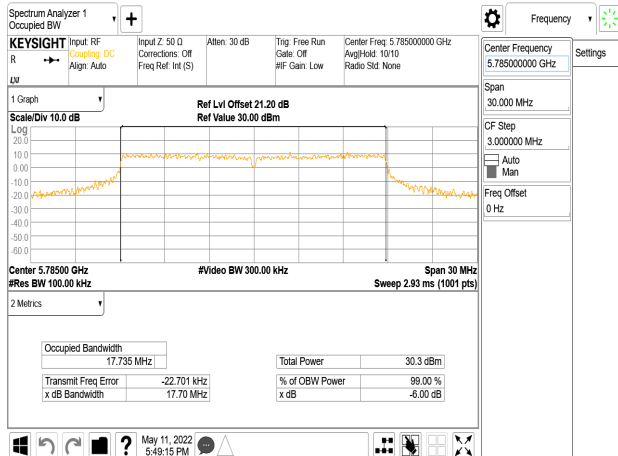
802.11ac_20MHz_Chain1_5745MHz



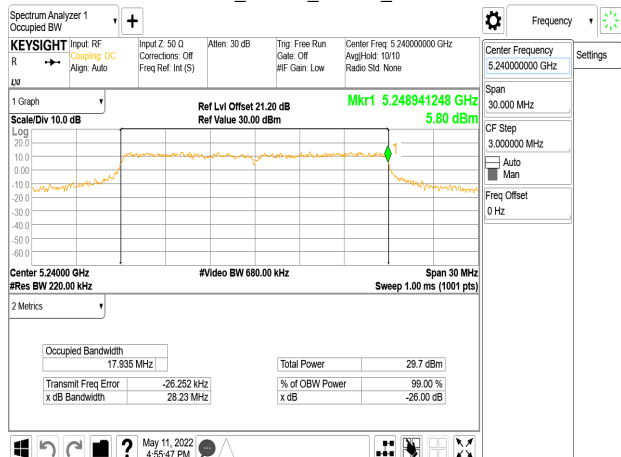
802.11ac_20MHz_Chain1_5220MHz



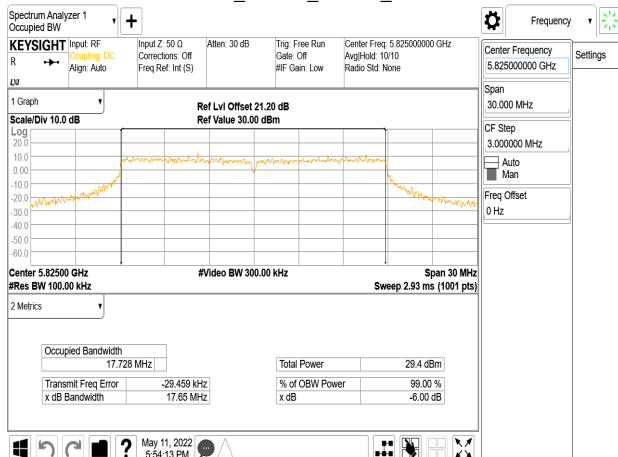
802.11ac_20MHz_Chain1_5785MHz



802.11ac_20MHz_Chain1_5240MHz



802.11ac_20MHz_Chain1_5825MHz

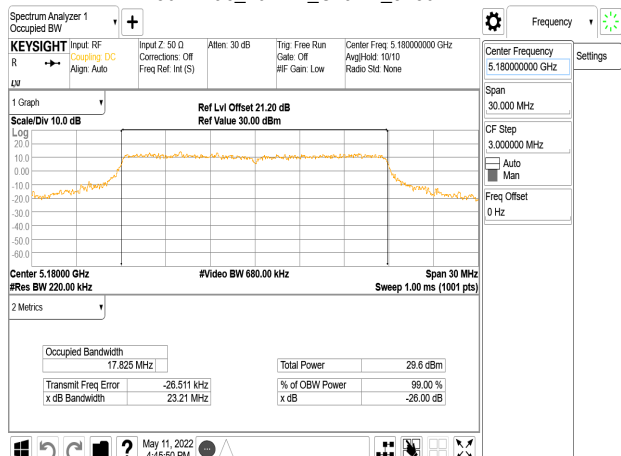


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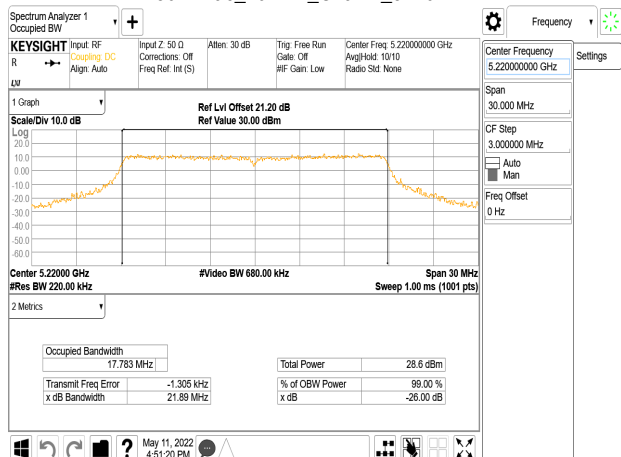
802.11ac_20MHz_Chain2_5180MHz



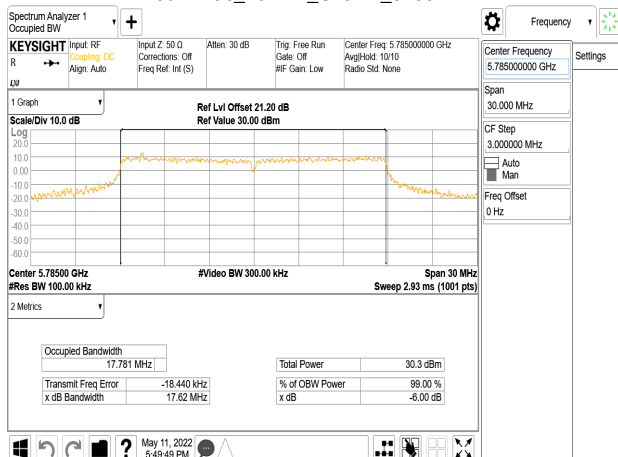
802.11ac_20MHz_Chain2_5745MHz



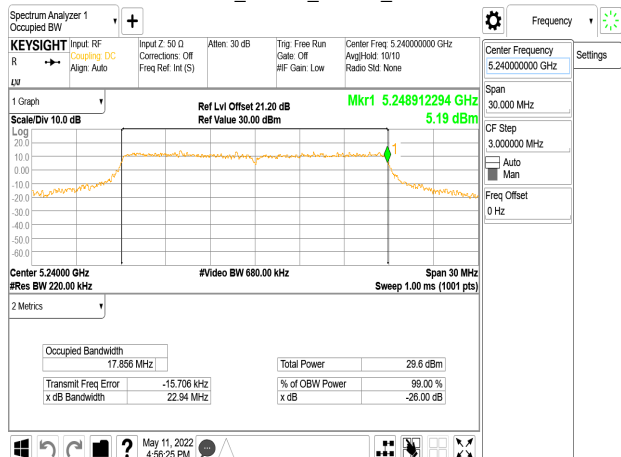
802.11ac_20MHz_Chain2_5220MHz



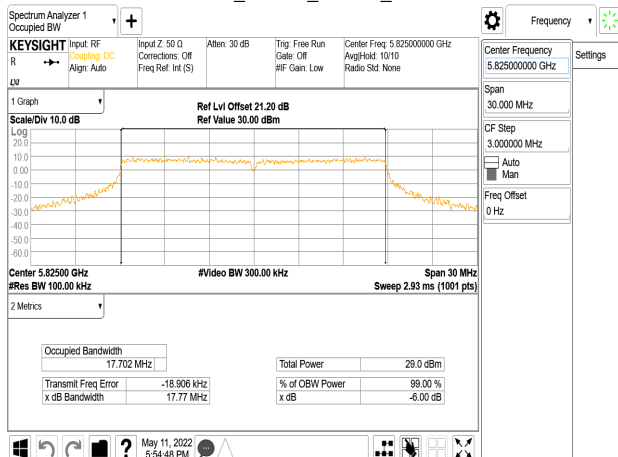
802.11ac_20MHz_Chain2_5785MHz



802.11ac_20MHz_Chain2_5240MHz



802.11ac_20MHz_Chain2_5825MHz

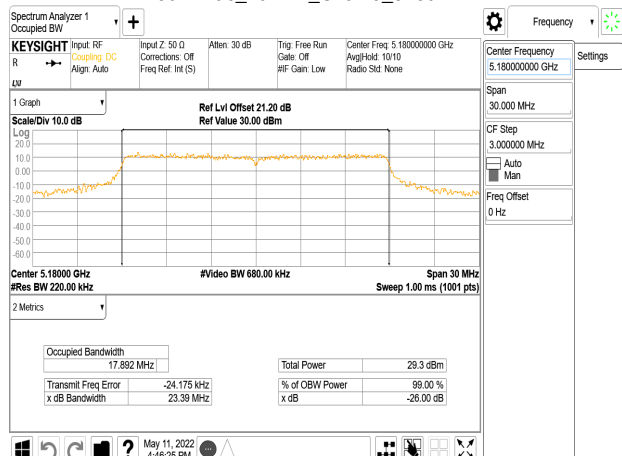


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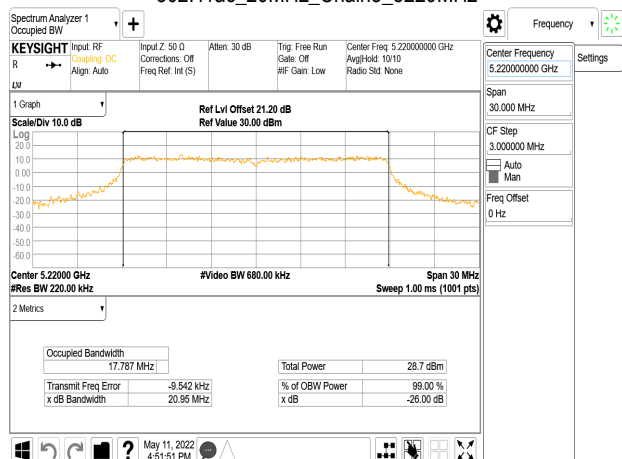
802.11ac_20MHz_Chain3_5180MHz



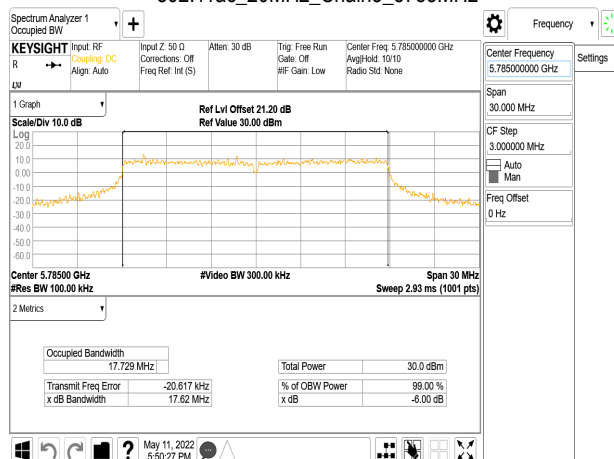
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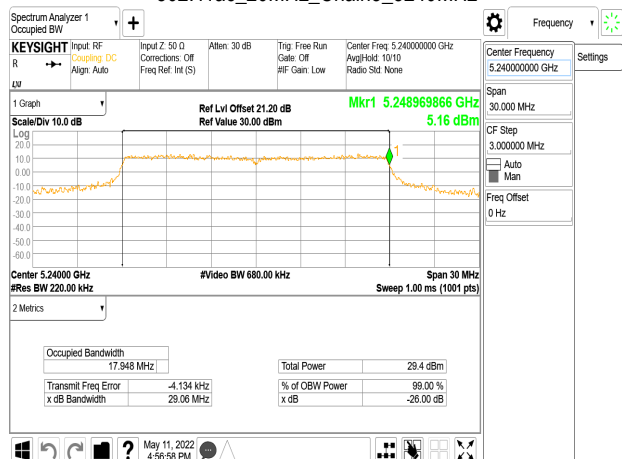
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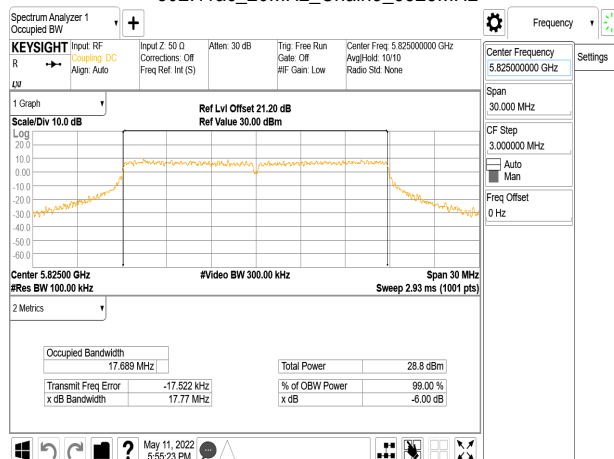
802.11ac_20MHz_Chain3_5785MHz



802.11ac_20MHz_Chain3_5240MHz



802.11ac_20MHz_Chain3_5825MHz

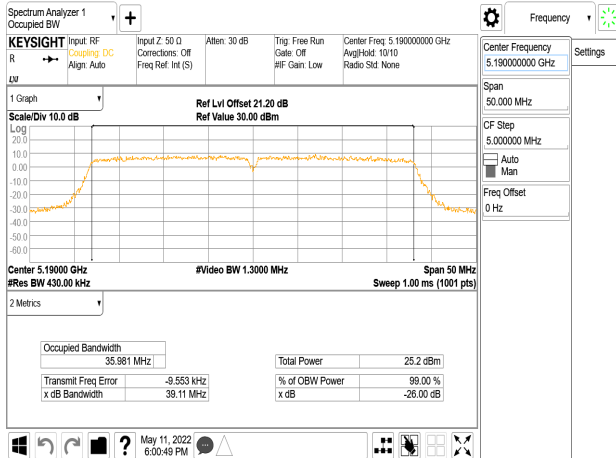


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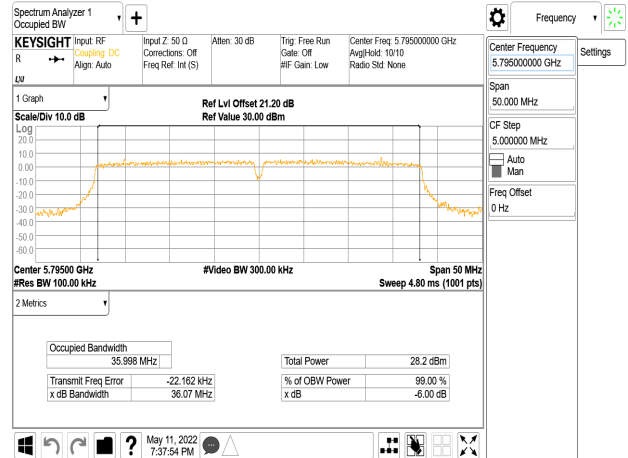
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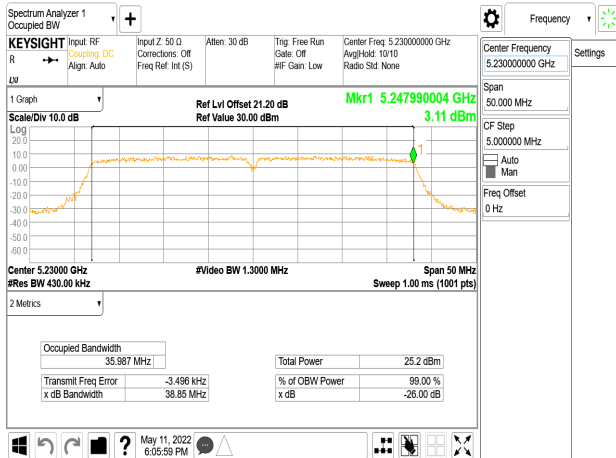
802.11ac_40MHz_Chain0_5190MHz



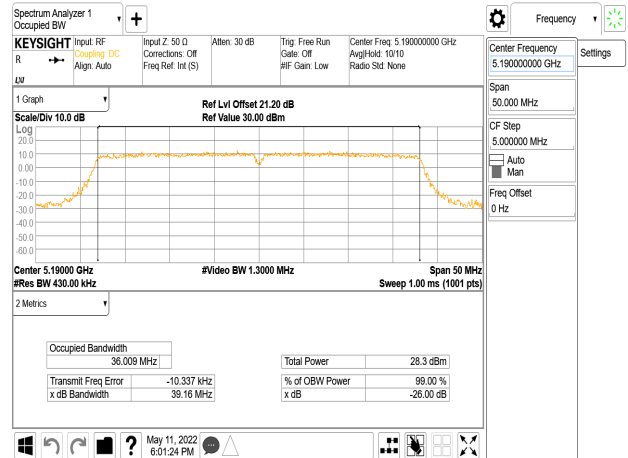
802.11ac_40MHz_Chain0_5795MHz



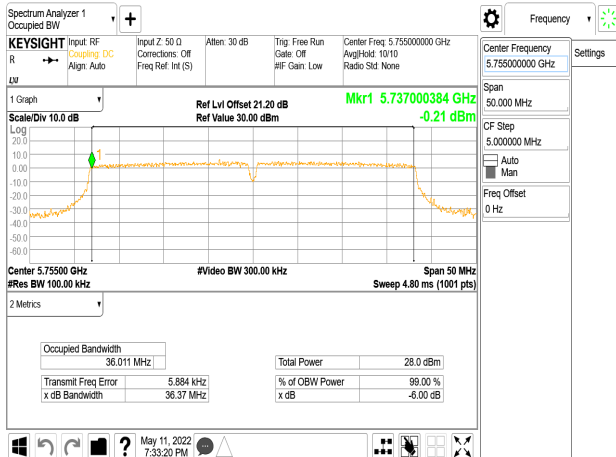
802.11ac_40MHz_Chain0_5230MHz



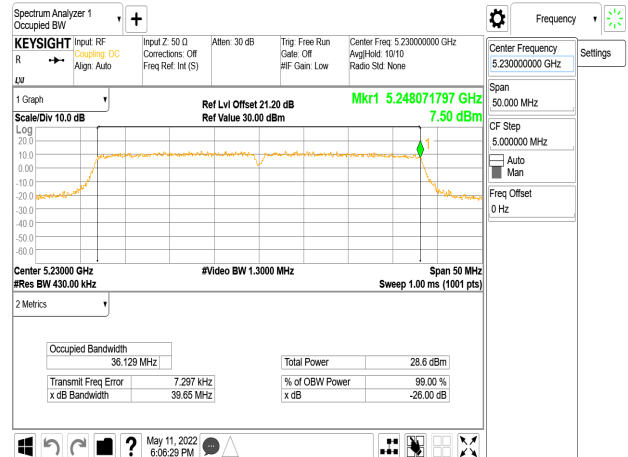
802.11ac_40MHz_Chain1_5190MHz



802.11ac_40MHz_Chain0_5755MHz



802.11ac_40MHz_Chain1_5230MHz



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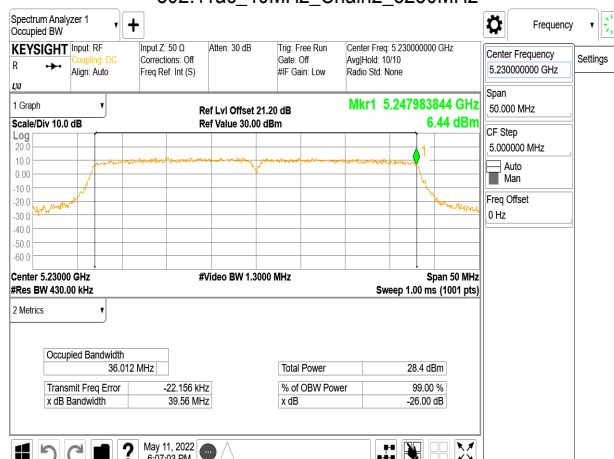
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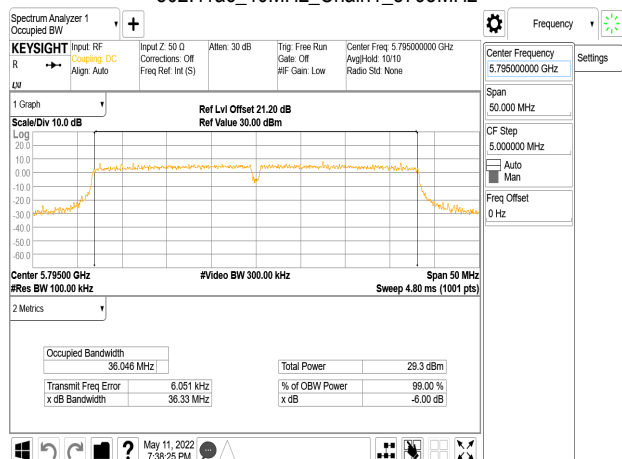
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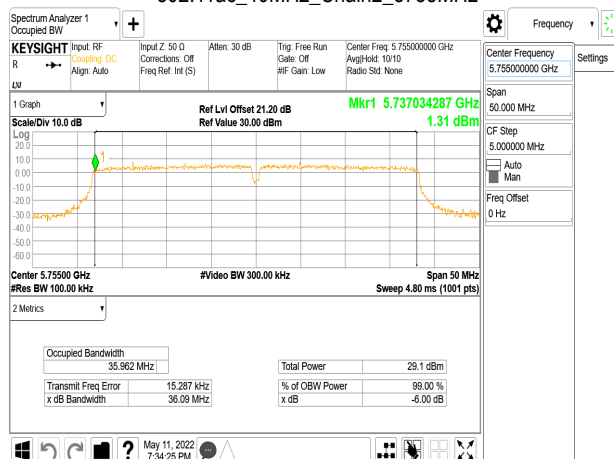
802.11ac 40MHz Chain2 5230MHz



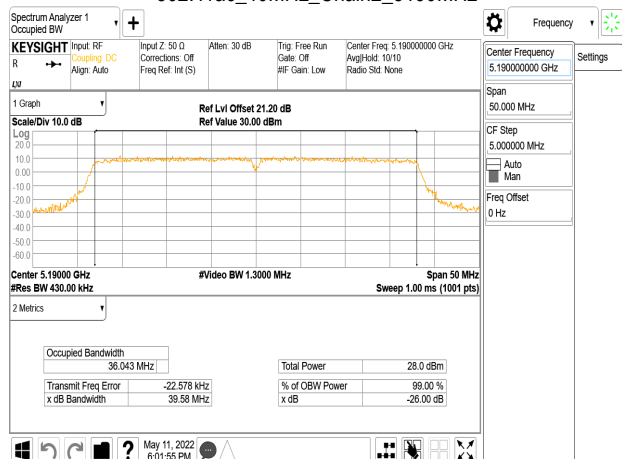
802.11ac_40MHz_Chain1_5795MHz



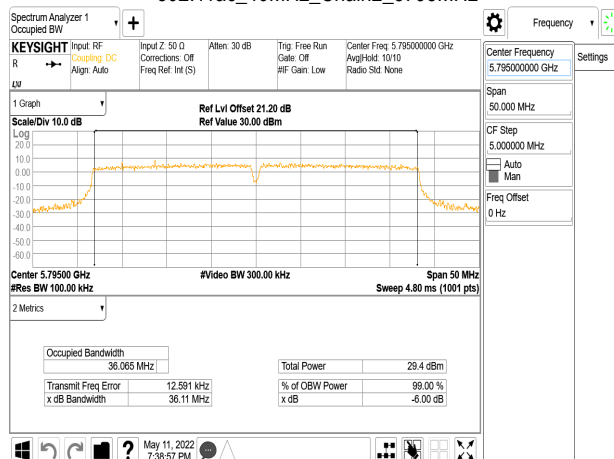
802.11ac_40MHz_Chain2_5755MHz



802.11ac 40MHz Chain2 5190MHz



802.11ac 40MHz Chain2 5795MHz

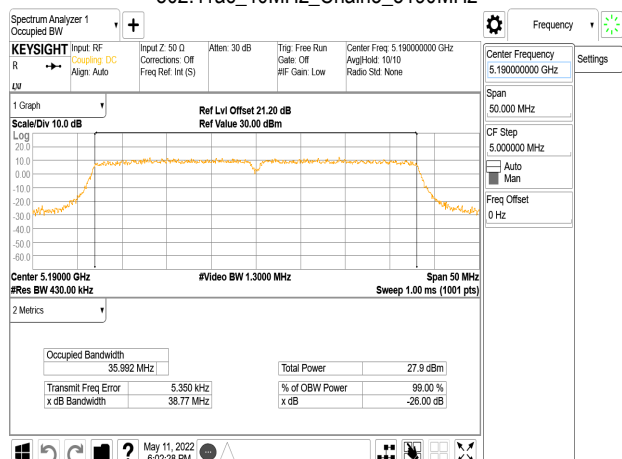


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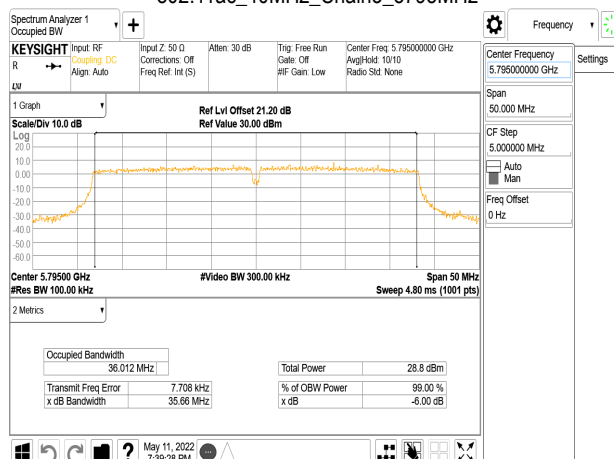
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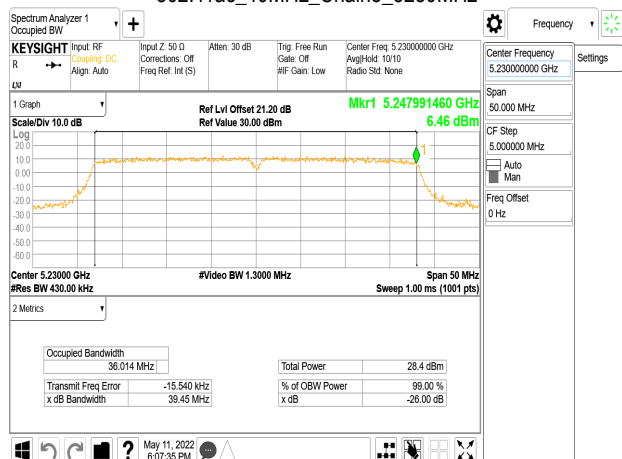
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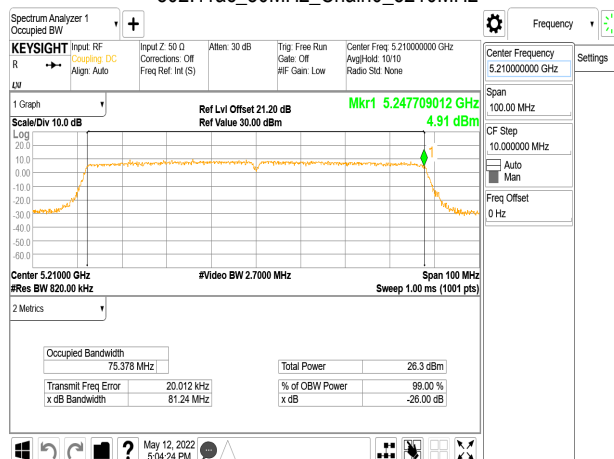
802.11ac_40MHz_Chain3_5795MHz



802.11ac_40MHz_Chain3_5230MHz



802.11ac_80MHz_Chain0_5210MHz



802.11ac_40MHz_Chain3_5755MHz



802.11ac_80MHz_Chain0_5775MHz



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