FCC Test Report

Report No: WD-RF-R-240107-B0

Product Name	:	Wireless Streaming Station
Model Name / Trade	:	CT1820 / CENTRON
Series Model Name / Trade	:	A10 / AVA i3ALLSYNC TOUCH RX46 / i3-TECHNOLOGY
FCC ID	:	2AP48CT1820
Applicant	:	Centron Design Co., Ltd.
Received Date	:	Nov. 09, 2023
Tested Date	:	Mar. 08, 2024 ~ Apr. 03, 2024
Applicable Standard	:	47 CFR FCC Part 15, Subpart E (Section 15.407) 789033 D02 General U-NII Test Procedures New Rules v02r01 ANSI C63.10 : 2013

ilac-MRA TAF Testing Laboratory 2965

Wendell Industrial Co., Ltd
Wendell EMC & RF Laboratory

Test Report

Issued Date: April 08, 2024

Project No.: 23Q110701

Product Name	Wireless Streaming Station
Model Name / Trade	CT1820 / CENTRON
Series Model Name / Trade	A10 / AVA i3ALLSYNC TOUCH RX46 / i3-TECHNOLOGY
FCC ID	2AP48CT1820
Applicant	Centron Design Co., Ltd.
Manufacturer	Centron Design Co., Ltd.
EUT Rated Voltage	AC 100 – 240V ~ 50 / 60Hz 0.6A Max
EUT Test Voltage	AC 120V / 60Hz
EUT Supports Radios Application	WLAN 802.11a/b/g WLAN 802.11n (HT20/HT40) WLAN 802.11ac(VHT20/40/80) and ax(HE20/40/80)
Applicable Standard	47 CFR FCC Part 15, Subpart E (Section 15.407) 789033 D02 General U-NII Test Procedures New Rules v02r01 ANSI C63.10 : 2013
Output Power	5.18 ~ 5.24 GHz: 17.29 dBm 5.745 ~ 5.825 GHz: 17.66 dBm
Test Result	Complied

Documented : Emma Lu

(Specialist / Emma Lu)

Technical Engineer : Jack Chang

(Section Manager / Jack Chang)

Approved : Gary Wu

(Project Manager / Gary Wu)

Table of Contents

Document Revision History

Report No.	Issue date	Description
WD-RF-R-240107-B0	April 08, 2024	Initial report

Summary of Test Result

Ref. Std. Clause	Test Items	Result
15.407(a)	26dB Bandwidth	Pass
15.407(e)	6dB Bandwidth	Pass
--	99% Occupied Bandwidth	Pass
15.407(a)	Maximum Conducted Output Power	Pass
15.407(a)	Power Spectral Density	Pass
15.407(b) 15.209	Unwanted Emissions	Pass
15.407(g)	Frequency Stability	Pass
15.207	AC Conducted Emission	Pass
15.203 15.407(a)	Antenna Requirement	Pass

1 Generation Information

1.1 Applicant

Centron Design Co., Ltd.
2F-3, No. 15, Ln 360, Sec. 1, Neihu Rd., Neihu Dist., Taipei City 114, Taiwan

1.2 Manufacturer

Centron Design Co., Ltd.
2F-3, No. 15, Ln 360, Sec. 1, Neihu Rd., Neihu Dist., Taipei City 114, Taiwan

1.3 Description of Equipment under Test

Product Name	Wireless Streaming Station
Model Name / Trade	CT1820 / CENTRON
Series Model Name / Trade	A10 / AVA i3ALLSYNC TOUCH RX46 / i3-TECHNOLOGY
Model Difference	1. Market Segmentation. 2. The casing color is different： (1) CT1820 / CENTRON：Black casing. (2) A10 / AVA：White casing. (3) i3-TECHNOLOGY / i3ALLSYNC TOUCH RX46：Black casing.
FCC ID	2AP48CT1820
Frequency Range	802.11a/n-HT20/ac-VHT20/ax-HE20:5180~5240MHz, 5745~5825MHz 802.11n-HT40/ac-VHT40/ax-HE40:5190~5230MHz, 5755~5795MHz 802.11ac-VHT80/ax-HE80:5210MHz, 5775MHz
Number of Channels	802.11a/n/ac/ax-20MHz: 6 802.11n/ac/ax -40MHz: 4 802.11ac/ax -80MHz: 2
Data Rate	802.11a：6M - 54Mbps 802.11n：up to 400bps 802.11ac：up to 866.7Mbps 802.11ax：up to 1201Mbps
Type of Modulation	802.11a/n/ac: OFDM, BPSK, QPSK, 16QAM, 64QAM 802.11ax: OFDMA
Antenna Information	Refer to the table “Antenna List”
EUT Supports Radios Application	WLAN 802.11a/b/g、WLAN 802.11n (HT20/HT40) WLAN 802.11ac(VHT20/40/80) and ax(HE20/40/80)
EUT Rated Voltage	AC 100 – 240V ~ 50 / 60Hz 0.6A Max
EUT Test Voltage	AC 120V / 60Hz

The EUT uses following adapter.

Trade Name	SHENZHEN FUJIA APPLIANCE CO., LTD.
Model No.	FJ-SW1202000N
Input Power	AC 100 – 240V ~ 50 / 60Hz 0.6A Max
Output Power	DC 12.0V / 2.0A, 24.0W
Power Line	Non-shielded, Non-Core, 1m

Antenna List

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	SHENZHEN ZCONN PRECISION ELECTRONIC CO.,LTD	2901-01110003506	FPC Antenna	3.48 dBi for 5.15 ~ 5.25 GHz 3.54 dBi for 5.725 ~ 5.85 GHz
2	SHENZHEN ZCONN PRECISION ELECTRONIC CO.,LTD	2901-01110003506	FPC Antenna	3.48 dBi for 5.15~5.25GHz 3.54 dBi for 5.725~5.85GHz

Remark: The antenna of EUT is conforming to FCC 15.203

Channel List

802.11a/n/ac/ax HT20/VHT20/HE20		802.11n/ac/ax HT40/VHT40/HE40		802.11ac/ax VHT80/HE80	
Channel	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**
36	5180	38	5190	42	5210
40	5200	46	5230	155	5775
48	5240	151	5755	--	--
149	5745	159	5795	--	--
157	5785	--	--	--	--
165	5825	--	--	--	--

Test Frequencies in each operating band

Frequency range over which the device operates in each operating band (Note 1)	Number of test frequencies required	Location of test frequencies inside the operating frequency range (Note 1,2)
≤ 1 MHz	1	near center
> 1 MHz and ≤ 10 MHz	2	1 near high end, 1 near low end
> 10 MHz	3	1 near high end, 1 near center, and 1 near low end

Note 1: The frequency range over which the device operates in a given operating band is the difference between the highest and lowest frequencies on which the device can be tuned within that given operating band. The frequency range can be smaller than or equal to the operating band, but cannot be greater than the operating band.

Note 2: In the third column of table 1, “near” means as close as possible to or at the center / low end / high end of the frequency range over which the device operates.

Firmware / Software Version

1	**Product Name**	Wireless Streaming Station
2	**Model No.**	CT1820 / CENTRON
3	**Test SW Version**	Putty 0.63.0.0
4	**RF power setting in TEST SW**	☐ RF power setting was not able to alter during testing. ☒ RF power setting was able to alter during testing. (See the following table)

Parameters of test software setting

Type of Modulation	Channel	Frequency (MHz)	Set Value	
			Chain A	Chain B
802.11a	36	5180	16	16
	40	5200	16	16
	48	5240	16	16
	149	5745	16	16
	157	5785	16	16
	165	5825	15	15
802.11ac VHT20	36	5180	14	14
	40	5200	14	14
	48	5240	13	13
	149	5745	13	13
	157	5785	13	13
	165	5825	13	13
802.11ac VHT40	38	5190	14	14
	46	5230	15	15
	151	5755	14	14
	159	5795	14	14
802.11ac VHT80	42	5210	15	15
	155	5775	14	14
802.11ax(HE20)	36	5180	14	14
	40	5200	14	14
	48	5240	13	13
	149	5745	13	13
	157	5785	13	13
	165	5825	12	12
802.11ax(HE40)	38	5190	13	13

	46	5230	14	14
	151	5755	13	13
	159	5795	13	13
802.11ax(HE80)	42	5210	14	14
	155	5775	13	13

1.4 Test Mode Applicability And Tested Channel Detail

1. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.
2. The worst case was found when positioned on X axis for radiated emission. Following test modes were selected for the final test, and the final worst case is recorded in the report:

EUT Configure Mode	RE < 1G	RE ≥ 1G	ACM	ACP	Description
--	☒	☒	☒	☒	Transmit WIFI

Note : RE<1G: Radiated Emission below 1GHz RE≥1G: Radiated Emission above 1GHz
ACM: Antenna Port Conducted Measurement ACP: AC Power Line Conducted Emission

Following channel(s) was (were) selected for the final test as listed below:

Radiated Spurious Emission Measurement(Below 1GHz):

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11a	36 ~ 48 149 ~ 165	48, 149	OFDM	6

Radiated Spurious Emission Measurement(Above 1GHz):

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36, 40, 48	OFDM	6
802.11ac VHT20		36 ~ 48	36, 40, 48	OFDM	13
802.11ac VHT40		38 ~ 46	38, 46	OFDM	27
802.11ac VHT80		42	42	OFDM	58.5
802.11ax HE20		36 ~ 48	36, 40, 48	OFDMA	14.6
802.11ax HE40		38 ~ 46	38, 46	OFDMA	29.3
802.11ax HE80		42	42	OFDMA	61.3
802.11a	5745 ~ 5825	149 ~ 165	149, 157, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 157, 165	OFDM	13
802.11ac VHT40		151 ~ 159	151, 159	OFDM	27
802.11ac VHT80		155	155	OFDM	58.5
802.11ax HE20		149 ~ 165	149, 157, 165	OFDMA	14.6
802.11ax HE40		151 ~ 159	151, 159	OFDMA	29.3
802.11ax HE80		155	155	OFDMA	61.3

Radiated Band Edge Emission Measurement(Above 1GHz):

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36	OFDM	6
802.11ac VHT20		36 ~ 48	36	OFDM	13
802.11ac VHT40		38 ~ 46	38	OFDM	27
802.11ac VHT80		42	42	OFDM	58.5
802.11ax HE20		36 ~ 48	36	OFDMA	14.6
802.11ax HE40		38 ~ 46	38	OFDMA	29.3
802.11ax HE80		42	42	OFDMA	61.3
802.11a	5745 ~ 5825	149 ~ 165	149, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 165	OFDM	13
802.11ac VHT40		151 ~ 159	151, 159	OFDM	27
802.11ac VHT80		155	155	OFDM	58.5
802.11ax HE20		149 ~ 165	149, 165	OFDMA	14.6
802.11ax HE40		151 ~ 159	151, 159	OFDMA	29.3
802.11ax HE80		155	155	OFDMA	61.3

Output Power, Power Spectral Density,

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36	OFDM	6
802.11ac VHT20		36 ~ 48	36	OFDM	13
802.11ac VHT40		38 ~ 46	38	OFDM	27
802.11ac VHT80		42	42	OFDM	58.5
802.11ax HE20		36 ~ 48	36	OFDMA	14.6
802.11ax HE40		38 ~ 46	38	OFDMA	29.3
802.11ax HE80		42	42	OFDMA	61.3
802.11a	5745 ~ 5825	149 ~ 165	149, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 165	OFDM	13
802.11ac VHT40		151 ~ 159	151, 159	OFDM	27
802.11ac VHT80		155	155	OFDM	58.5
802.11ax HE20		149 ~ 165	149, 165	OFDMA	14.6
802.11ax HE40		151 ~ 159	151, 159	OFDMA	29.3
802.11ax HE80		155	155	OFDMA	61.3

6dB Bandwidth:

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5745 ~ 5825	149 ~ 165	149, 157, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 157, 165	OFDM	13
802.11ac VHT40		151 ~ 159	151, 159	OFDM	27
802.11ac VHT80		155	155	OFDM	58.5
802.11ax HE20		149 ~ 165	149, 157, 165	OFDMA	14.6
802.11ax HE40		151 ~ 159	151, 159	OFDMA	29.3
802.11ax HE80		155	155	OFDMA	61.3

26dB Bandwidth, 99% Occupied Bandwidth:

Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	36	OFDM	6
802.11ac VHT20		36 ~ 48	36	OFDM	13
802.11ac VHT40		38 ~ 46	38	OFDM	27
802.11ac VHT80		42	42	OFDM	58.5
802.11ax HE20		36 ~ 48	36	OFDMA	14.6
802.11ax HE40		38 ~ 46	38	OFDMA	29.3
802.11ax HE80		42	42	OFDMA	61.3
802.11a	5745 ~ 5825	149 ~ 165	149, 165	OFDM	6
802.11ac VHT20		149 ~ 165	149, 165	OFDM	13
802.11ac VHT40		151 ~ 159	151, 159	OFDM	27
802.11ac VHT80		155	155	OFDM	58.5
802.11ax HE20		149 ~ 165	149, 165	OFDMA	14.6
802.11ax HE40		151 ~ 159	151, 159	OFDMA	29.3
802.11ax HE80		155	155	OFDMA	61.3

Frequency Stability:

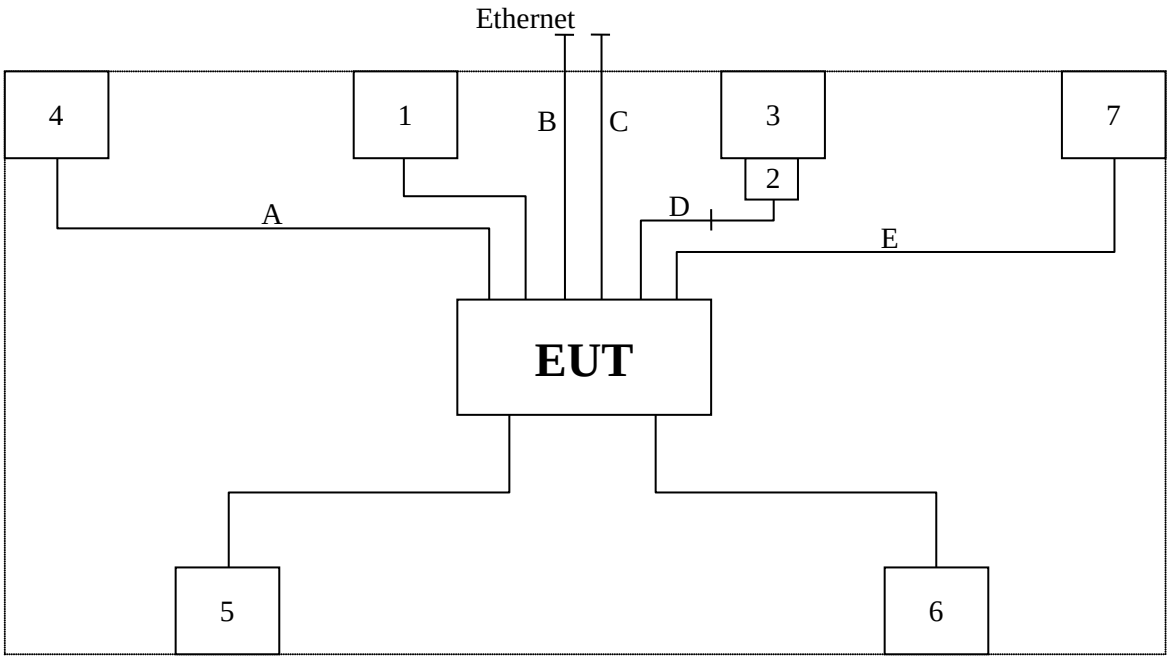
Mode	Frequency (MHz)	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
802.11a	5180 ~ 5240	36 ~ 48	44	OFDM	6
802.11a	5745 ~ 5825	149 ~ 165	157	OFDM	6

AC Conducted Emission:

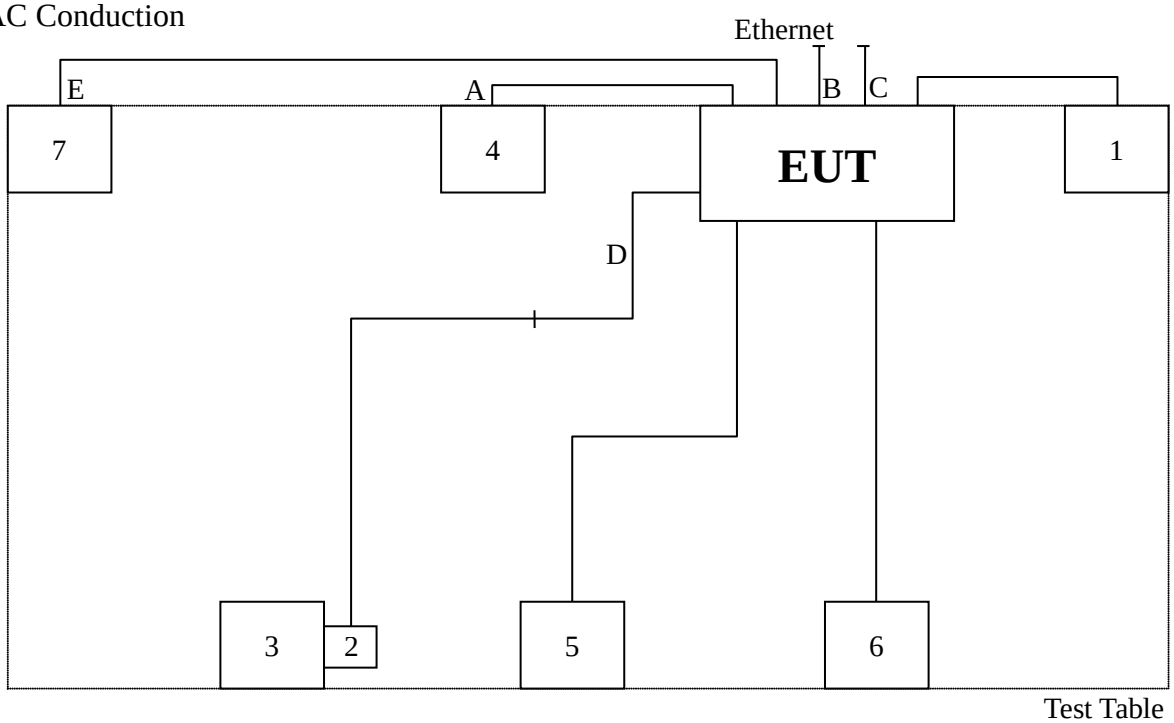
EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11a	36 ~ 48 149 ~ 165	48, 149	OFDM	6

1.5 Configuration of Tested System

Radiation



AC Conduction



1.6 EUT Exercise Software

1. Setup the EUT as shown in Section 1.5
2. Execute software “Putty 0.63.0.0”.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous transmit.
5. Verify that the EUT works properly.

1.7 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Adapter	SHENZHEN FUJIA APPLIANCE CO., LTD.	FJ-SW1202000N	N/A	Non-shielded, Non-Core, 1m
2	Fixture	WD	CH340	N/A	N/A
3	Notebook PC	acer	N16Q1	NXVF4TA023742254147600	N/A
4	Monitor	HP	HP 24f 4k Display	3CM01916T1	Non-shielded, 2 Core, 1.5m
5	USB Keyboard	Lemel	5105U	G6450015686	Non-shielded, Non-Core, 1.5m
6	USB Mouse	acer	MOJFUO	736826B4K700	Non-shielded, Non-Core, 1.5m
7	Personal Computer	DELL	D32M	N/A	N/A

No.	Signal Cable Type	Signal cable Description
A	HDMI Cable	Shielded, Non-Core, 1.5m
B	LAN Cable	Non-shielded, Non-Core, 12m
C	RS232 to 3.5mm Cable	Non-shielded, Non-Core, 1m
D	Data Cable	Non-shielded, Non-Core, 0.24m
E	HDMI Cable	Shielded, Non-Core, 1.5m

1.8 Test Facility

Items	Required (IEC 60068-1)
Temperature (°C)	15-35
Humidity (% RH)	25-75
Barometric pressure (mbar)	860-1060

Description: Accredited by TAF
Accredited Number: 2965

Issued by: Wendell Industrial Co., Ltd

Company Address: 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

Test Lab: Wendell EMC & RF Laboratory

Lab Address: 5F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

Test Location: No. 119, Wugong 3rd Rd., Wugu Dist.,
New Taipei City 248, Taiwan (R.O.C.)

Designation Number: TW0025

Test Firm Registration Number: 665221

1.9 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence (level based on a coverage factor K=2)

Measurement Project	Condition	Expended Uncertainty
AC Conducted Emission	0.150 ~ 30 MHz	± 2.64 dB
Radiated Emission	0.009 ~ 30 MHz	± 3.7 dB
	30 ~ 1000 MHz	± 3.9 dB
	1000 ~ 18000 MHz	± 4.5 dB
	18000 ~ 40000 MHz	± 4.3 dB
RF Power, Conducted	Conducted Measuring	± 0.75 dB
Occupied Bandwidth	Conducted Measuring	± 2.4 %
Power Density	Conducted Measuring	± 1.2 dB
Duty Cycle	Conducted Measuring	± 0.9 %
Frequency Stability	Conducted Measuring	± 0.062 ppm
DC Power Supply	--	± 2.0 %
Temperature	--	± 0.55 °C
Humidity	--	± 3.1 %

Note: Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

1.10 List of Test Equipment

For Conducted measurements / W08-Conducted Measurement

Equipment		Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	Spectrum analyzer	Keysight	N9010A	SG50420005	2023/08/08	2024/08/07
✓	Wideband Peak Power Meter	Anritsu	ML2495A	1733007	2023/09/07	2024/09/06
✓	Pulse Power Sensor + Precision Adaptor	Anritsu	MA2411B	1726022	2023/09/07	2024/09/06
	Temperature Chamber	TAICHY	MHK-225LK	1061121	2023/04/24	2024/04/23
	Wireless Connectivity Tester	R&S	CMW270	101307	2023/05/29	2024/05/28
✓	Attenuator	MVE	MVE2211-10	CT-9-056	2022/08/10	2024/08/09
	Attenuator	MVE	MVE2211-20	CT-9-057	2022/08/10	2024/08/09
	Attenuator	MVE	MVE2211-30	CT-9-058	2022/08/10	2024/08/09
	Power Divider	MVE	MVE8546	170826003	2022/08/10	2024/08/09
	Power Splitter	MVE	MVE8547	170302047	2022/08/11	2024/08/10
	DC Power Supply	GW INSTEK	GPC-3060D	GER817636	2023/08/11	2024/08/10

Remark:

1. The equipments are calibrated every one year.
2. The Attenuator/ Divider/ Splitter are calibrated every two year.
3. The test instruments marked with "✓" are used to measure the final test results.

For AC Conduction measurements / W08-CE

Equipment		Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	EMI Test Receiver	R&S	ESR3	102309	2023/06/19	2024/06/18
✓	2-Line V-Network LISN	R&S	ENV216	101185	2023/06/16	2024/06/15
✓	LISN	SCHWARZBECK	NSLK 8127RC	05028	2023/06/16	2024/06/15
✓	Transient Limiter	EM Electronics Corporation	EM-7600	857	2023/06/17	2024/06/16
✓	50ohm Cable	EMCI	EMCCFD300-BM-BM-5000	170612	2023/06/17	2024/06/16
✓	50 ohm terminal impedance	HUBER+SUHNER	50 ohm terminal impedance	CT-1-109-1	2023/06/16	2024/06/15

Remark:

1. All equipments are calibrated every one year.
2. The test instruments marked with "✓" are used to measure the final test results.
3. Test Software version: FARAD EZ-EMC Ver.EMC-CON 3A1

For Radiated measurements / W08-996-2

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	EMI Receiver	Keysight	N9038A	MY51210173	2023/08/18	2024/08/17
✓	Spectrum Analyzer	Keysight	N9010A	MY52220228	2023/08/18	2024/08/17
✓	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	00033	2023/05/08	2024/05/07
✓	TRILOG super broad Antenna	Schwarzbeck	VULB 9168	VULB 9168-700 & 20E03	2023/07/31	2024/07/30
✓	Horn Antenna	Schwarzbeck	BBHA 9120D	01767	2023/08/17	2024/08/16
✓	Horn Antenna	Schwarzbeck	BBHA 9170	703	2023/08/21	2024/08/20
✓	Pre-Amplifier	EM	EMC330	060774	2023/08/22	2024/08/21
✓	Pre-Amplifier	EMEC	EM01G18G	060648	2023/08/22	2024/08/21
✓	Pre-Amplifier	JPT	JPA0118-55-303K	1910001800055003	2023/08/22	2024/08/21
✓	Pre-Amplifier	EMCI	EMC184045SE	980515	2023/08/22	2024/08/21
✓	Cable	EMEC	EM-CB400	105060103	2023/08/22	2024/08/21
✓	Cable	EMEC	EM-CB400	105060102	2023/08/22	2024/08/21
✓	Cable	EMEC	EM-CB400	105060101	2023/08/22	2024/08/21
✓	RF Cable	HUBER+SUHNER	SF102	MY2752/2	2023/08/22	2024/08/21
✓	RF Cable	MVE	280280.LL266.1200	B60028C	2023/08/22	2024/08/21
✓	RF Cable	EMCI	EMC102-KM-KM-600	190646	2023/08/22	2024/08/21
✓	RF Cable	MVE	140140.LL404.700	B90014C	2023/08/22	2024/08/21
✓	RF Cable	MVE	140140.LL404.300	B90006C	2023/08/22	2024/08/21
	RF Filter	EMEC	BRF-2400-2500	002	2022/08/17	2024/08/16
✓	RF Filter	EMEC	BRF-5150-5350	104	2022/08/17	2024/08/16
✓	RF Filter	EMEC	BRF-5470-5725	092	2022/08/17	2024/08/16
✓	RF Filter	EMEC	BRF-5725-5875	091	2022/08/17	2024/08/16
	RF Filter	EMEC	HPF-2800	002	2022/08/17	2024/08/16
✓	RF Filter	EMEC	HPF-5850	059	2022/08/17	2024/08/16
	SMA Notch Filter	MVE	MFN-902.928.S1	190604001	2022/08/17	2024/08/16

Remark:

1. The equipments are calibrated every one year.
2. The Filter calibrated every two year.
3. The test instruments marked with "✓" are used to measure the final test results.
4. Test Software version: FARAD EZ-EMC Ver.WD-03A1-1

2 Test Result

2.1 Antenna Requirement

2.1.1 Applicable Standard

For the band 5.15-5.25 GHz

(1) For an outdoor access point operating:

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For an indoor access point operating:

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For fixed point-to-point access points operating:

For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi.

(4) For client devices:

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

2.1.2 Antenna Connected Construction

Non-standard antenna connector is used.

2.1.3 Test Result

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	SHENZHEN ZCONN PRECISION ELECTRONIC CO.,LTD	2901-01110003506	FPC Antenna	3.48 dBi for 5.15~5.25GHz 3.54 dBi for 5.725~5.85GHz
2	SHENZHEN ZCONN PRECISION ELECTRONIC CO.,LTD	2901-01110003506	FPC Antenna	3.48 dBi for 5.15~5.25GHz 3.54 dBi for 5.725~5.85GHz

Description of the operating transmit modes：

＊ 802.11a：diversity Antenna but only one active mode, this port is Ant-2

＊ 802.11ac_VHT20：MIMO mode, this port is MIMO

＊ 802.11ac_VHT40：MIMO mode, this port is MIMO

＊ 802.11ac_VHT80：MIMO mode, this port is MIMO

＊ 802.11ax_HE20：MIMO mode, this port is MIMO

＊ 802.11ax_HE40：MIMO mode, this port is MIMO

＊ 802.11ax_HE80：MIMO mode, this port is MIMO

Directional gain calculation：

＊ B1_802.11a：Gain = 3.48 dBi ≤ 6dBi

＊ B1_802.11ac_VHT20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.49 dBi > 6dBi

＊ B1_802.11ac_VHT40：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.49 dBi > 6dBi

＊ B1_802.11ac_VHT80：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.49 dBi > 6dBi

＊ B1_802.11ax_HE20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.49 dBi > 6dBi

＊ B1_802.11ax_HE40：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.49 dBi > 6dBi

＊ B1_802.11ax_HE80：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.49 dBi > 6dBi

＊ B3_802.11a：Gain = 3.54 dBi ≤ 6dBi

＊ B3_802.11ac_VHT20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.55 dBi > 6dBi

＊ B3_802.11ac_VHT40：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.55 dBi > 6dBi

＊ B3_802.11ac_VHT80：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.55 dBi > 6dBi

＊ B3_802.11ax_HE20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.55 dBi > 6dBi

∗ B3_802.11ax_HE40：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.55 dBi > 6dBi

∗ B3_802.11ax_HE80：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 6.55 dBi > 6dBi

Conducted Output Power limit after correction：

∗ 802.11ac_VHT20_B1：Power Limit = 24 - 0.49 = 23.51 dBm

∗ 802.11ac_VHT20_B3：Power Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ac_VHT40_B1：Power Limit = 24 - 0.49 = 23.51 dBm

∗ 802.11ac_VHT40_B3：Power Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ac_VHT80_B1：Power Limit = 24 - 0.49 = 23.51 dBm

∗ 802.11ac_VHT80_B3：Power Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ax_HE20_B1：Power Limit = 24 - 0.49 = 23.51 dBm

∗ 802.11ax_HE20_B3：Power Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ax_HE40_B1：Power Limit = 24 - 0.49 = 23.51 dBm

∗ 802.11ax_HE40_B3：Power Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ax_HE80_B1：Power Limit = 24 - 0.49 = 23.51 dBm

∗ 802.11ax_HE80_B3：Power Limit = 30 - 0.55 = 29.45 dBm

Power Spectral Density limit after correction：

∗ 802.11ac_VHT20_B1：PSD Limit = 11 - 0.49 = 10.51 dBm

∗ 802.11ac_VHT20_B3：PSD Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ac_VHT40_B1：PSD Limit = 11 - 0.49 = 10.51 dBm

∗ 802.11ac_VHT40_B3：PSD Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ac_VHT80_B1：PSD Limit = 11 - 0.49 = 10.51 dBm

∗ 802.11ac_VHT80_B3：PSD Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ax_HE20_B1：PSD Limit = 11 - 0.49 = 10.51 dBm

∗ 802.11ax_HE20_B3：PSD Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ax_HE40_B1：PSD Limit = 11 - 0.49 = 10.51 dBm

∗ 802.11ax_HE40_B3：PSD Limit = 30 - 0.55 = 29.45 dBm

∗ 802.11ax_HE80_B1：PSD Limit = 11 - 0.49 = 10.51 dBm

∗ 802.11ax_HE80_B3：PSD Limit = 30 - 0.55 = 29.45 dBm

2.2 Output Power Measurement and Transmit Power Control

2.2.1 Limit

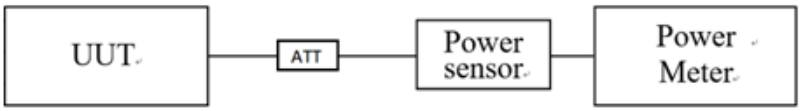
1. For frequency Band 5150~5250MHz:
   (1) Outdoor access point : 1W (30 dBm)
   (2) Indoor access point : 1W (30 dBm)
   (3) Fixed point-to-point access point : 1W (30 dBm)
   (4) Client device : 250mW (24 dBm)
   (5) If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2. For frequency Band 5250~5350MHz and 5470~5725MHz:
   (1) 250mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth (MHz), whichever is lesser.
   (2) If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3. For frequency Band 5725~5850MHz:
   (1) The maximum conducted output power over the frequency band of operation shall not exceed 1 W(30 dBm).
   (2) If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Transmit power control (TPC). U-NII devices operating in the 5.25-5.35 GHz band and the 5.47-5.725 GHz band shall employ a TPC mechanism. The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30 dBm. A TPC mechanism is not required for systems with an e.i.r.p. of less than 500 mW.

2.2.2 Test Setup



2.2.3 Test Procedure

1. Enable the EUT transmit continuously.
2. Let EUT be connected to the power meter, and record the max. reading.
3. Measurement using a gated RF average power meter, since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

2.2.4 Test Result

Mode	Frequency (MHz)	Average power (dBm)			Limit (dBm)	Result
		Chain A	Chain B	Total		
802.11a	5180	16.51	16.95	--	≤ 24	Pass
	5200	16.33	16.53	--	≤ 24	Pass
	5240	17.13	17.29	--	≤ 24	Pass
	5745	17.08	17.66	--	≤ 30	Pass
	5785	17.21	17.44	--	≤ 30	Pass
	5825	16.59	17.14	--	≤ 30	Pass
802.11ac VHT20	5180	13.86	14.06	16.97	≤ 23.51	Pass
	5200	13.69	13.73	16.72	≤ 23.51	Pass
	5240	13.57	14.05	16.83	≤ 23.51	Pass
	5745	13.35	14.28	16.85	≤ 29.45	Pass
	5785	13.76	13.71	16.75	≤ 29.45	Pass
	5825	13.92	14.38	17.17	≤ 29.45	Pass
802.11ac VHT40	5190	12.32	12.86	15.61	≤ 23.51	Pass
	5230	14.02	13.29	16.68	≤ 23.51	Pass
	5755	13.27	13.61	16.45	≤ 29.45	Pass
	5795	13.51	13.85	16.69	≤ 29.45	Pass
802.11ac VHT80	5210	12.75	12.86	15.82	≤ 23.51	Pass
	5775	13.20	13.34	16.28	≤ 29.45	Pass
802.11ax HE20	5180	14.01	14.15	17.09	≤ 23.51	Pass
	5200	13.90	13.95	16.94	≤ 23.51	Pass
	5240	13.74	13.88	16.82	≤ 23.51	Pass
	5745	13.47	14.56	17.06	≤ 29.45	Pass
	5785	13.72	14.29	17.02	≤ 29.45	Pass
	5825	13.41	13.99	16.72	≤ 29.45	Pass
802.11ax HE40	5190	12.32	12.76	15.56	≤ 23.51	Pass
	5230	13.51	14.05	16.80	≤ 23.51	Pass
	5755	13.25	13.91	16.60	≤ 29.45	Pass
	5795	13.67	13.85	16.77	≤ 29.45	Pass
802.11ax HE80	5210	12.99	13.57	16.30	≤ 23.51	Pass
	5775	13.42	13.43	16.44	≤ 29.45	Pass

Remark:

1. Average Power = Reading value on power meter + cable loss
2. 10 Log(X/mW) = dBm, X=1 watt (Limit)

1 watt = 30 dBm

3. Section E) method 1) of power measurement of KDB 662911 is used for calculating total power.

2.2.5 Transmit Power Control

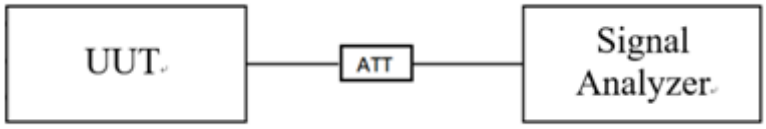
EUT doesn’t support TPC function.

2.3 26dB Bandwidth, 6dB Bandwidth and 99% Occupied Bandwidth Measurement

2.3.1 Limit

Within 5725~5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

2.3.2 Test Setup



2.3.3 Test Procedure

1. The following procedure shall be used for measuring 6dB bandwidth:
   (1) Enable the EUT transmit continuously.
   (2) Set RBW = 100 kHz, VBW ≥ 3 RBW, Sweep = auto couple.
   (3) Detector = Peak, Trace mode = max hold.
   (4) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
2. The following procedure shall be used for measuring 26 dB bandwidth:
   (1) Set RBW = approximately 1% of the emission bandwidth.
   (2) Set the VBW > RBW, Detector = Peak, Trace mode = max hold
   (3) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
3. The following procedure shall be used for measuring 99% power bandwidth:
   (1) Set center frequency to the nominal EUT channel center frequency.
   (2) Set span = 1.5 times to 5.0 times the OBW.
   (3) Set RBW = 1% to 5% of the OBW.
   (4) Set the VBW ≥ 3 RBW.
   (5) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
   (6) Use the 99% power bandwidth function of the instrument.

(7) If the instrument does not have a 99% power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

2.3.4 Test Result

2.3.4.1 6dB Bandwidth

802.11a

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5745	--	15.13	> 500	Pass
5785	--	15.20	> 500	Pass
5825	--	15.08	> 500	Pass

802.11ac VHT20

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5745	15.18	15.11	> 500	Pass
5785	15.03	15.07	> 500	Pass
5825	13.85	15.24	> 500	Pass

802.11ac VHT40

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5755	35.12	35.10	> 500	Pass
5795	35.20	35.15	> 500	Pass

802.11ac VHT80

Frequency (MHz)	6dB BW (MHz)		limit (kHz)	Result
	Chain A	Chain B		
5775	75.22	75.23	> 500	Pass

802.11ax HE20

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5745	18.13	18.10	> 500	Pass
5785	16.50	18.29	> 500	Pass
5825	18.58	16.69	> 500	Pass

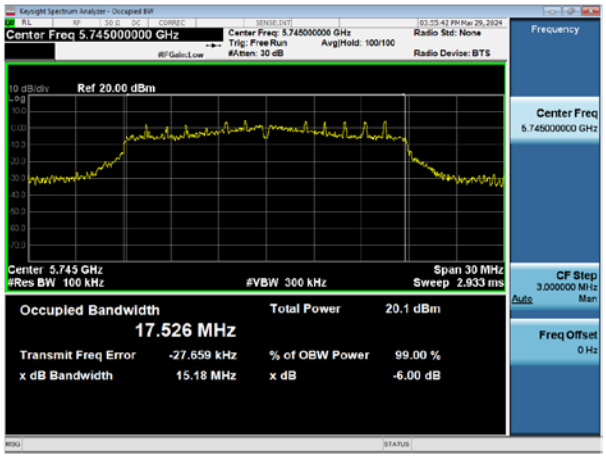
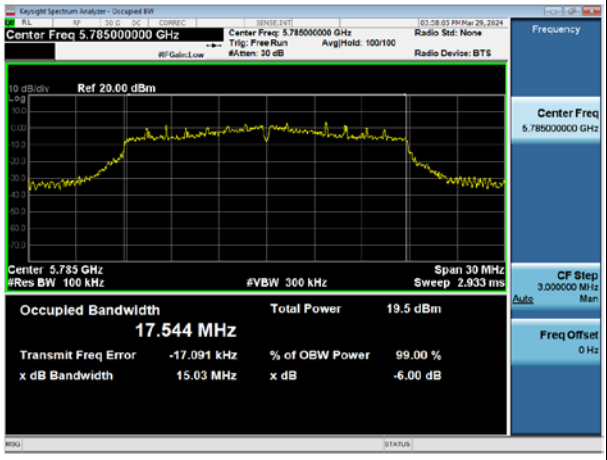
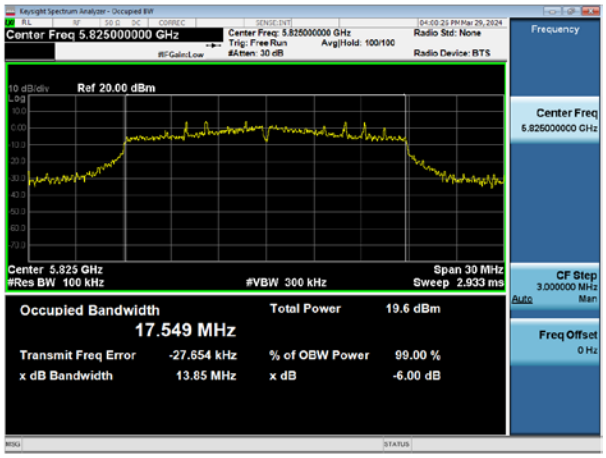
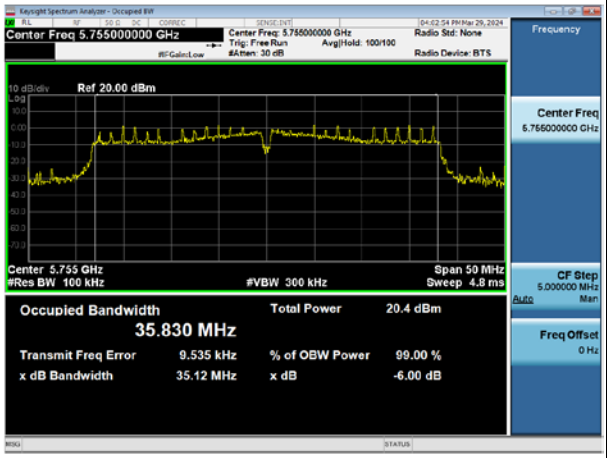
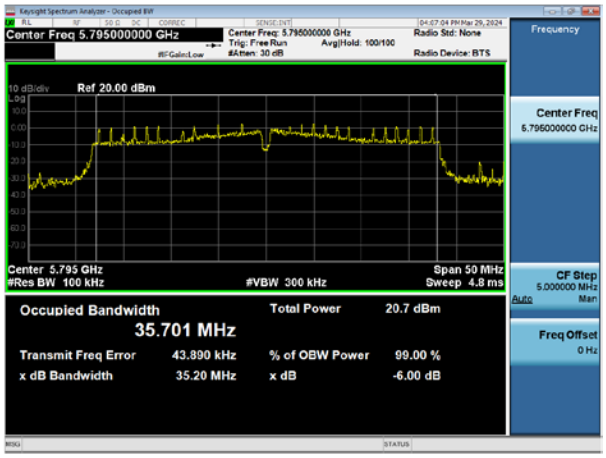
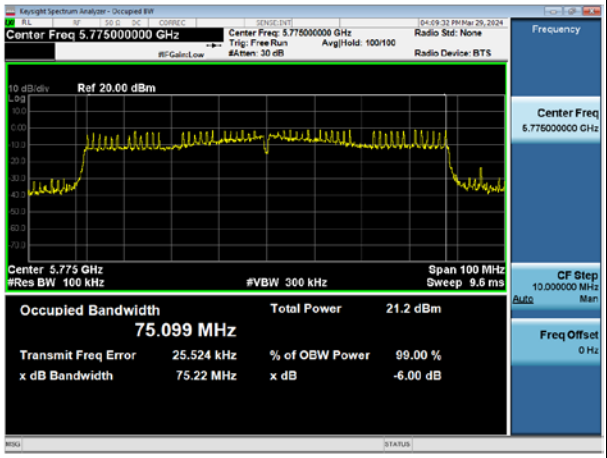
802.11ax HE40

Frequency (MHz)	6dB BW (MHz)		Limit (kHz)	Result
	Chain A	Chain B		
5755	37.76	37.22	> 500	Pass
5795	37.54	37.10	> 500	Pass

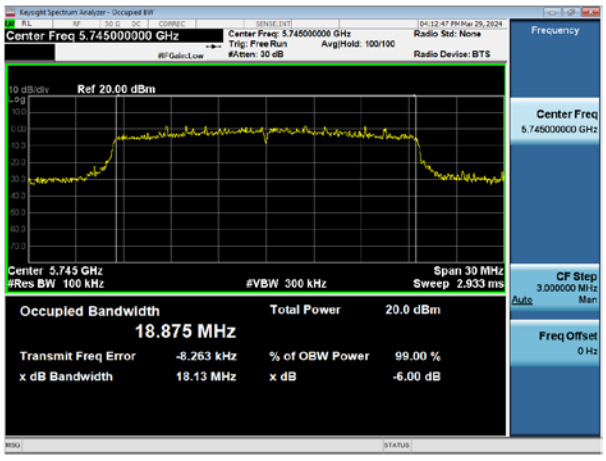
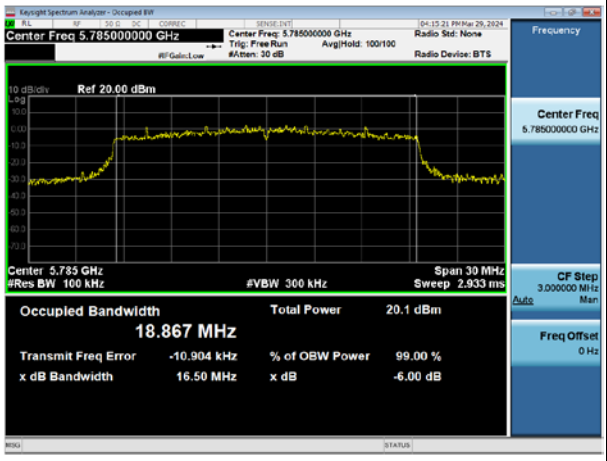
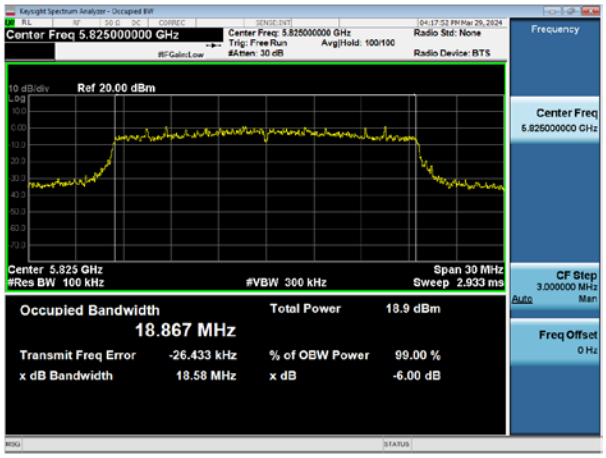
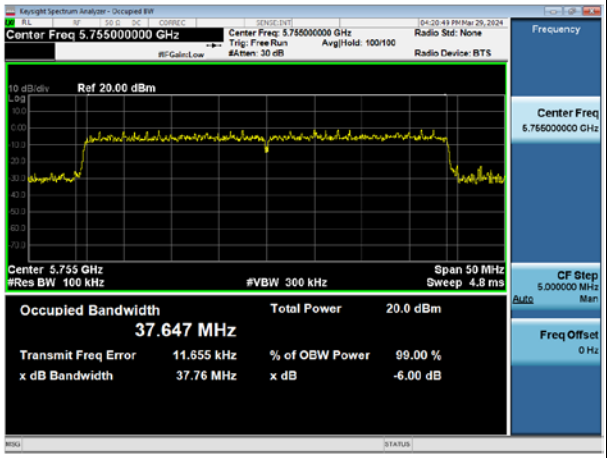
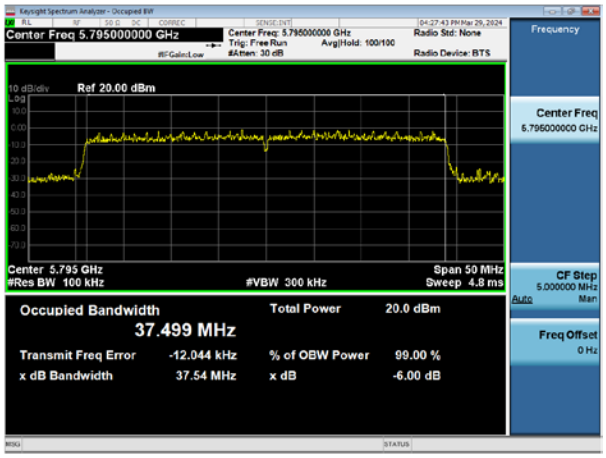
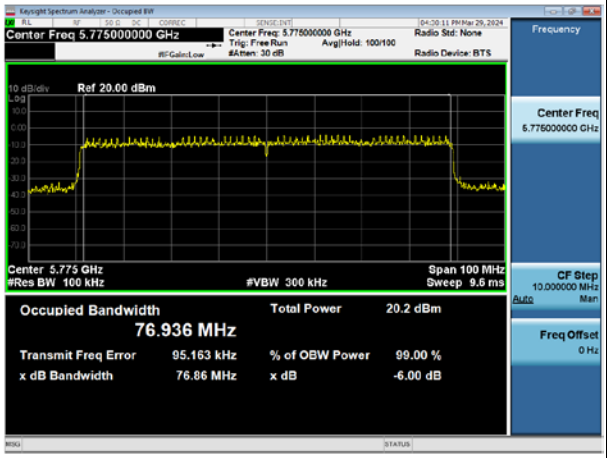
802.11ax HE80

Frequency (MHz)	6dB BW (MHz)		limit (kHz)	Result
	Chain A	Chain B		
5775	76.86	76.48	> 500	Pass

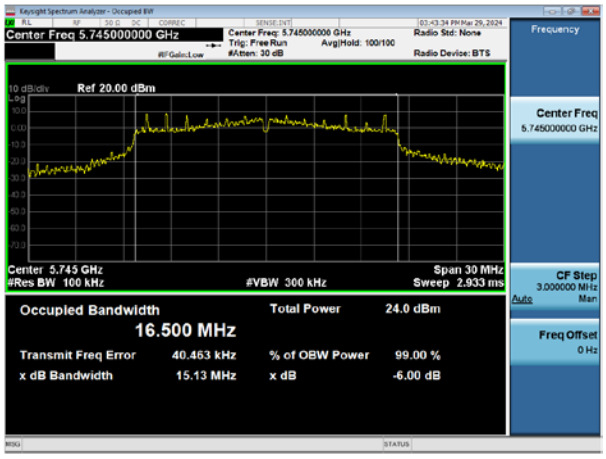
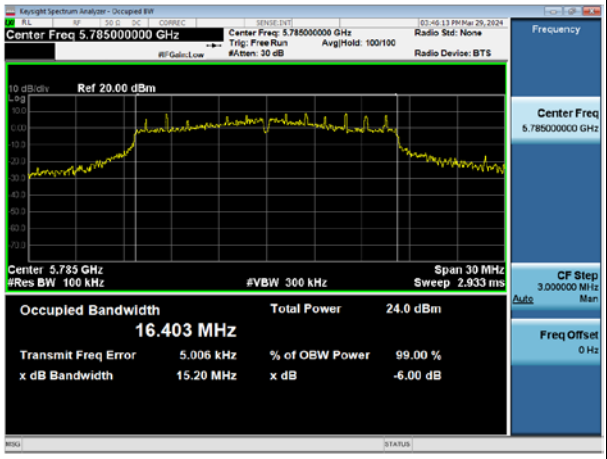
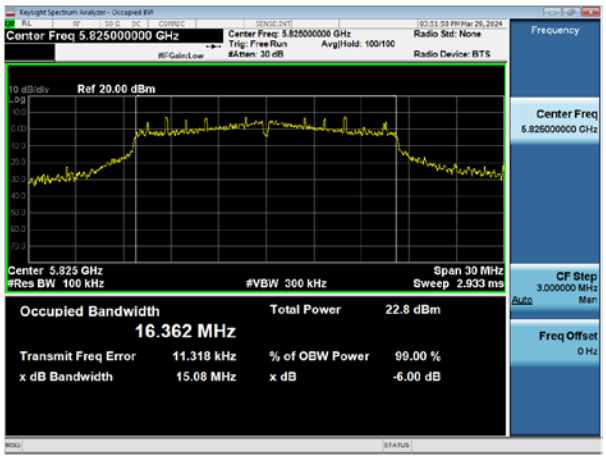
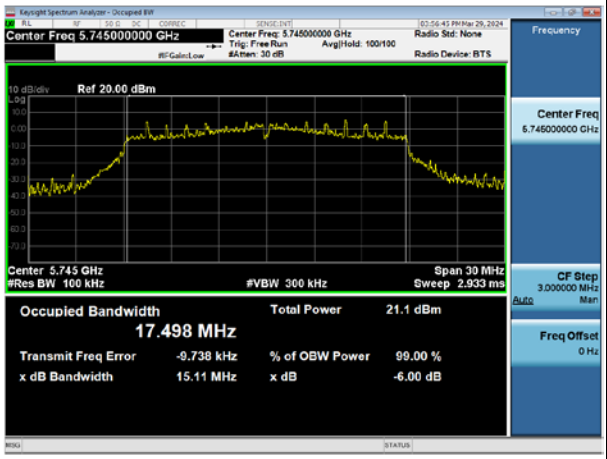
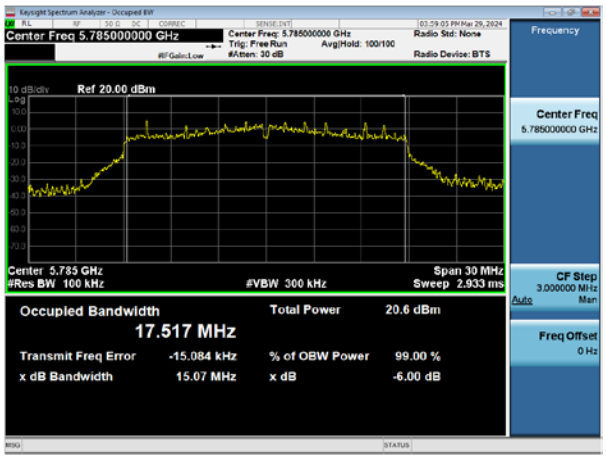
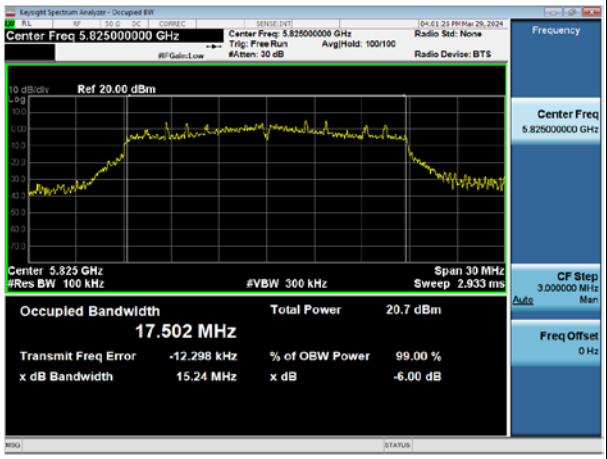
6dB spectrum plot of Chain A value:

802.11ac VHT20 5745MHz	802.11ac VHT20 5785MHz
	
802.11ac VHT20 5825MHz	**802.11ac VHT40 5755MHz**
	
802.11ac VHT40 5795MHz	**802.11ac VHT80 5775MHz**
	

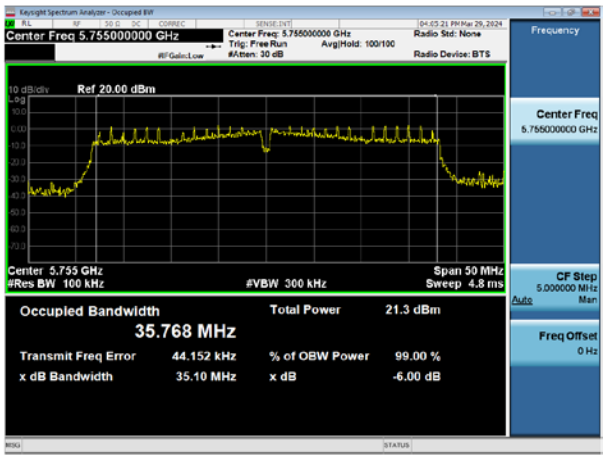
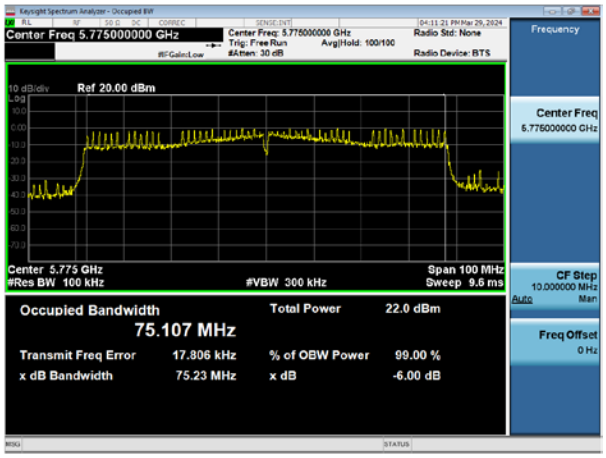
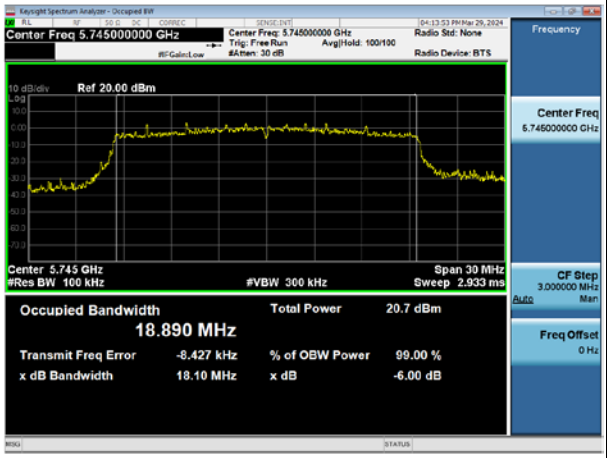
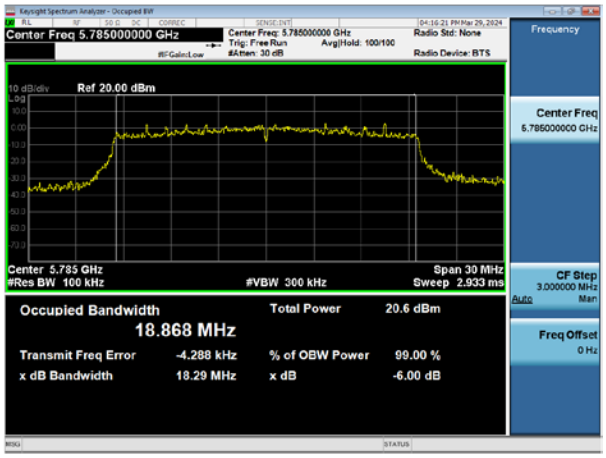
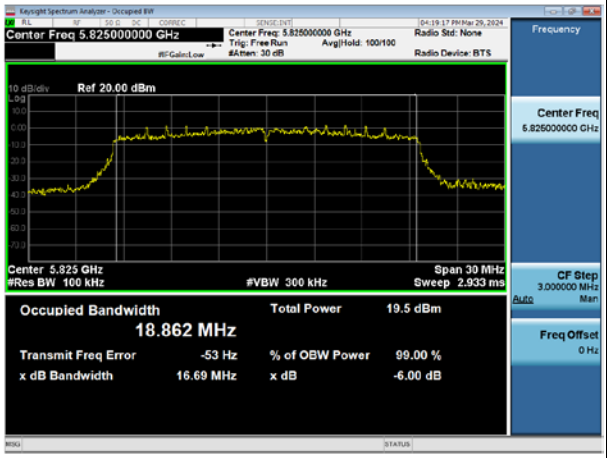
6dB spectrum plot of Chain A value:

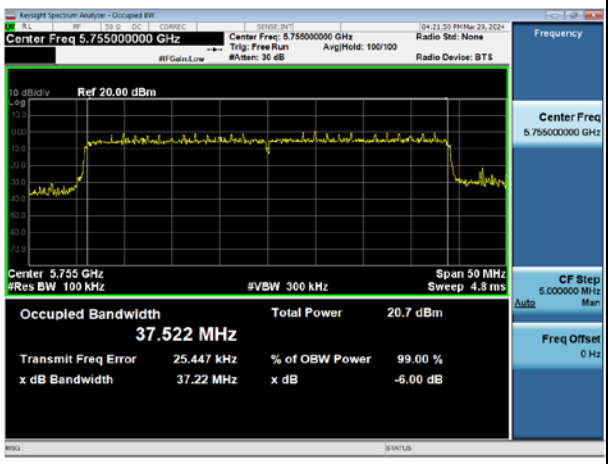
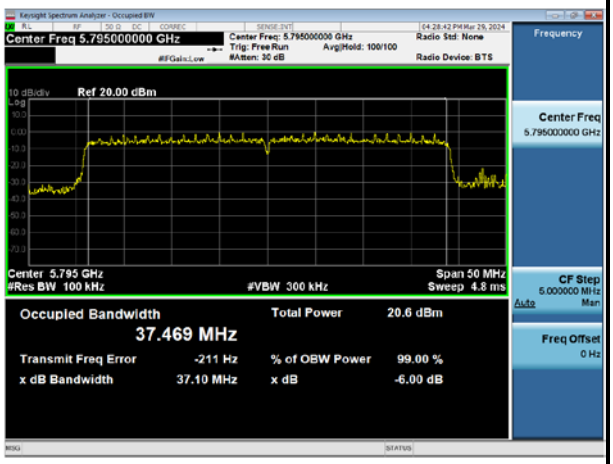
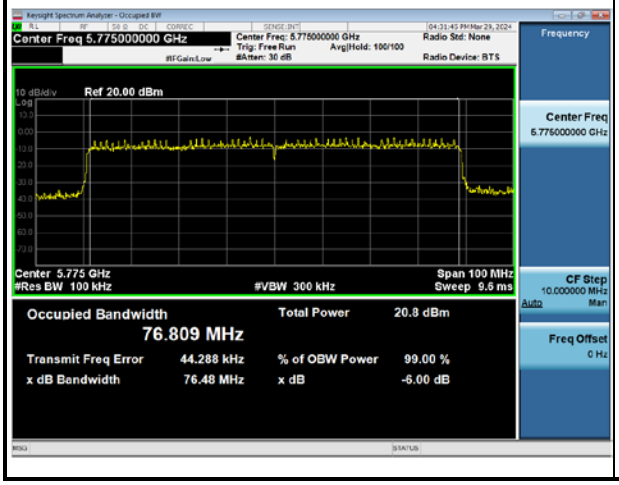
802.11ax HE20 5745MHz	802.11ax HE20 5785MHz
	
802.11ax HE20 5825MHz	**802.11ax HE40 5755MHz**
	
802.11ax HE40 5795MHz	**802.11ax HE80 5775MHz**
	

6dB spectrum plot of Chain B value:

802.11a 5745MHz	802.11a 5785MHz
	
802.11a 5825MHz	**802.11ac VHT20 5745MHz**
	
802.11ac VHT20 5785MHz	**802.11ac VHT20 5825MHz**
	

6dB spectrum plot of Chain B value:

802.11ac VHT40 5755MHz	802.11ac VHT40 5795MHz
	
802.11ac VHT80 5775MHz	**802.11ax HE20 5745MHz**
	
802.11ax HE20 5785MHz	**802.11ax HE20 5825MHz**
	

802.11ax HE40 5755MHz	802.11ax HE40 5795MHz
	
802.11ax HE80 5775MHz	**--**
	--

2.3.4.2 26dB & 99% Bandwidth

802.11a

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5180	--	21.540	--	--	--	--
5200	--	20.810	--	--	--	--
5240	--	20.980	--	16.445	--	--

802.11ac VHT20

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5180	20.630	20.700	--	--	--	--
5200	21.040	20.500	--	--	--	--
5240	20.660	21.080	17.660	17.576	--	--

802.11ac VHT40

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5190	39.110	38.680	--	--	--	--
5230	39.210	38.600	36.049	35.957	--	--

802.11ac VHT80

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5210	79.760	79.800	75.336	75.102	--	--

802.11ax HE20

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5180	22.430	21.020	--	--	--	--
5200	21.070	21.130	--	--	--	--
5240	21.480	20.950	19.113	18.947	--	--

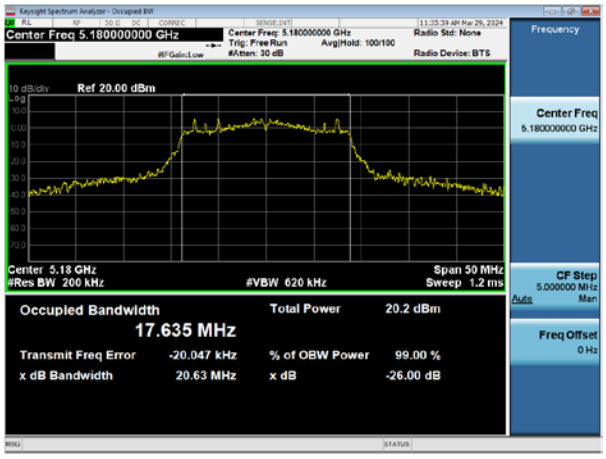
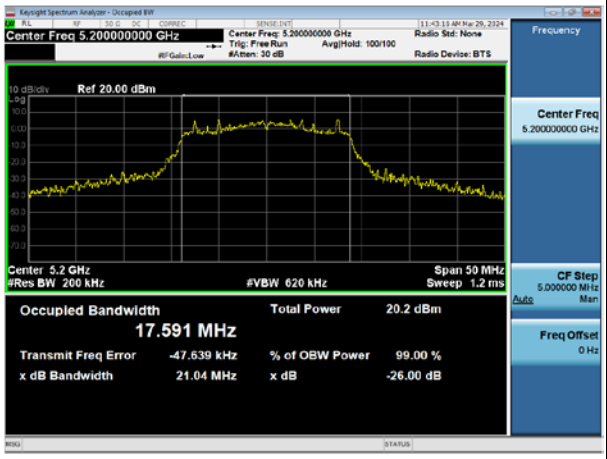
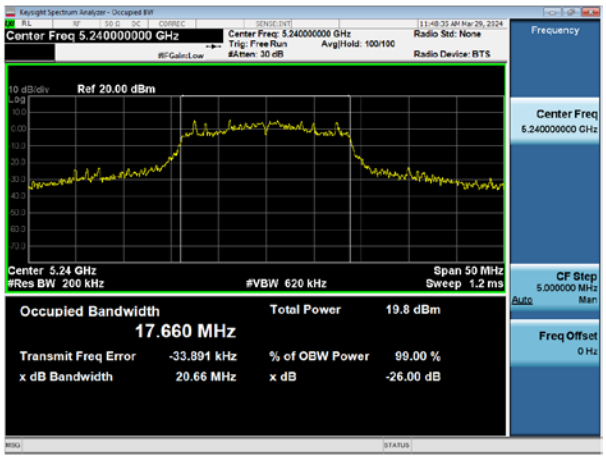
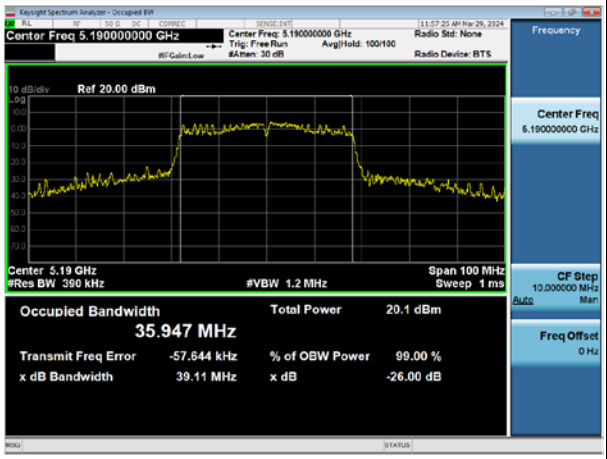
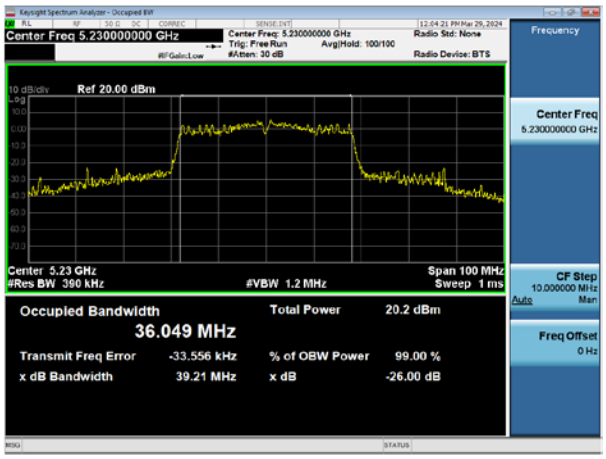
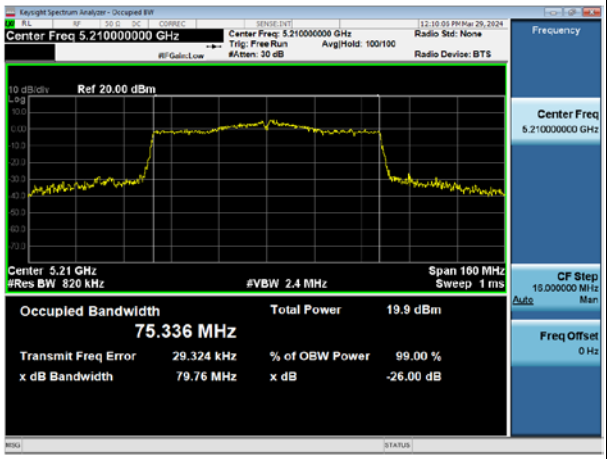
802.11ax HE40

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5190	40.000	39.840	--	--	--	--
5230	40.230	39.900	37.641	37.622	--	--

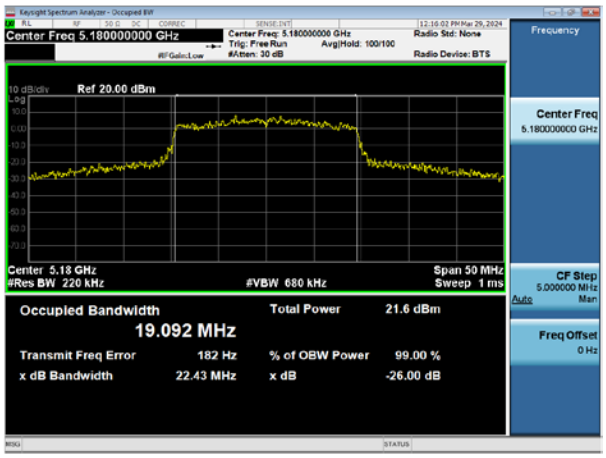
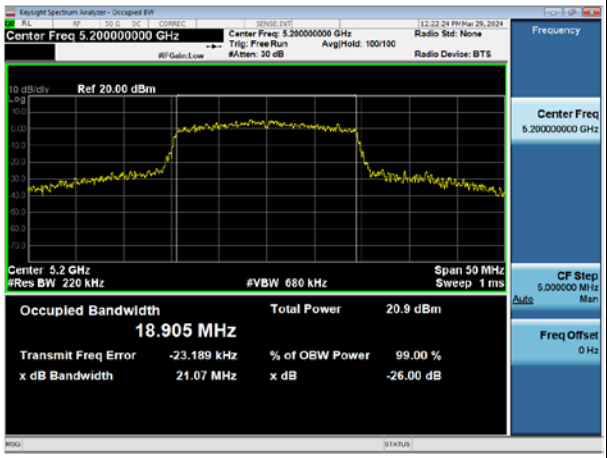
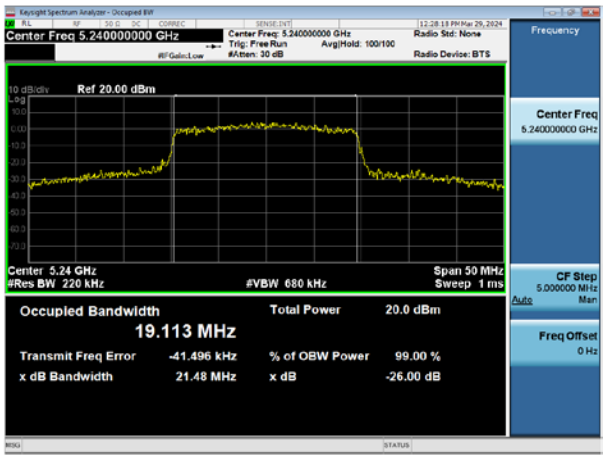
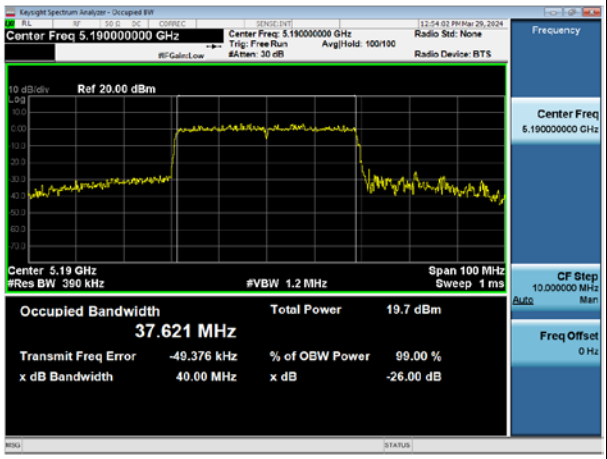
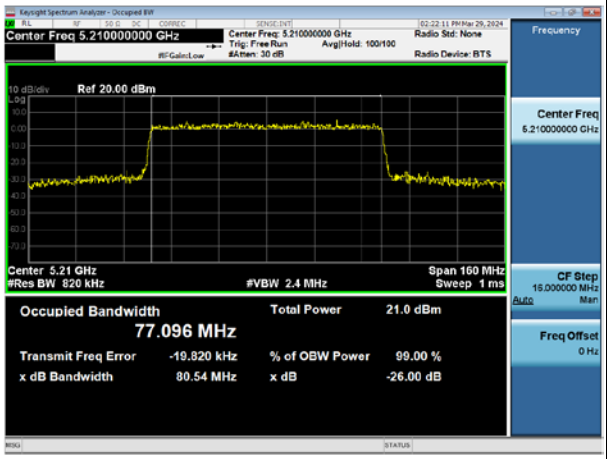
802.11ax HE80

Frequency (MHz)	26dB BW (MHz)		99% OBW (MHz)		Limit (kHz)	Result
	Chain A	Chain B	Chain A	Chain B		
5210	80.540	80.590	77.096	77.113	--	--

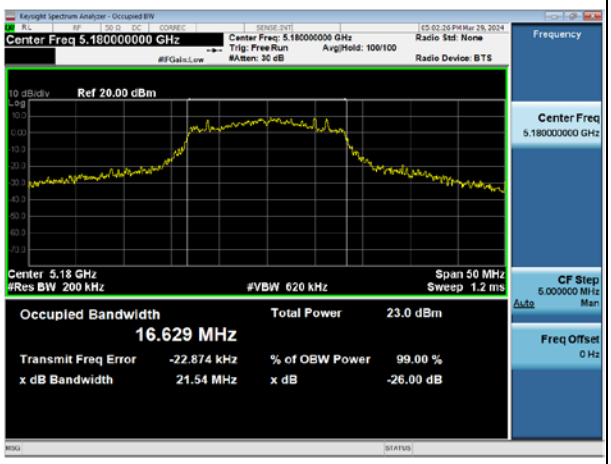
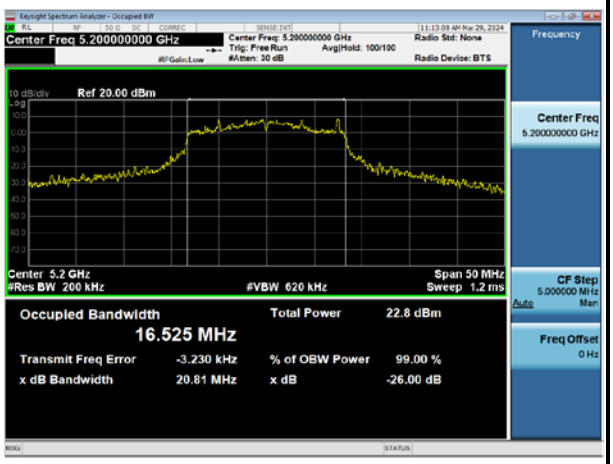
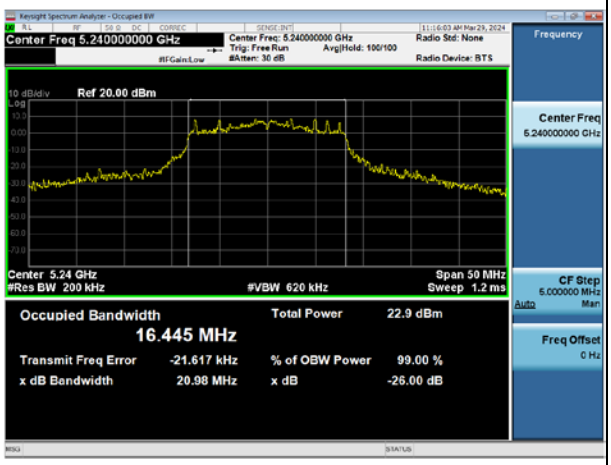
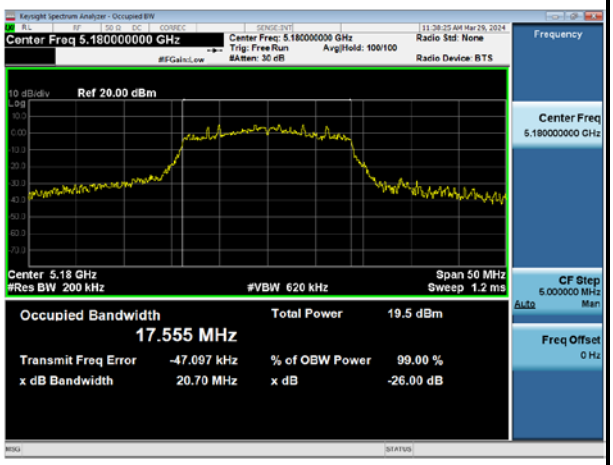
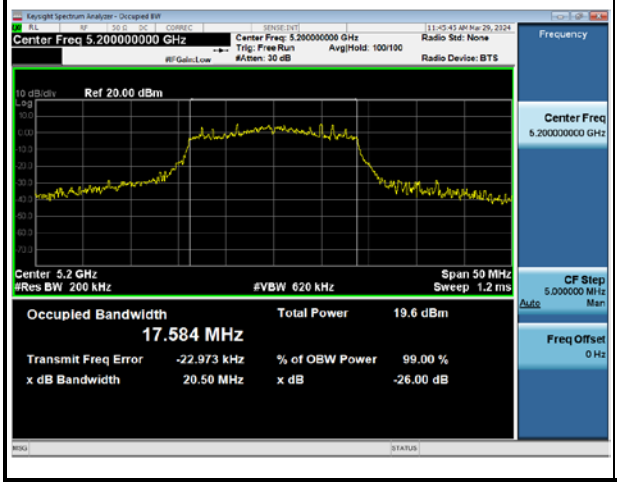
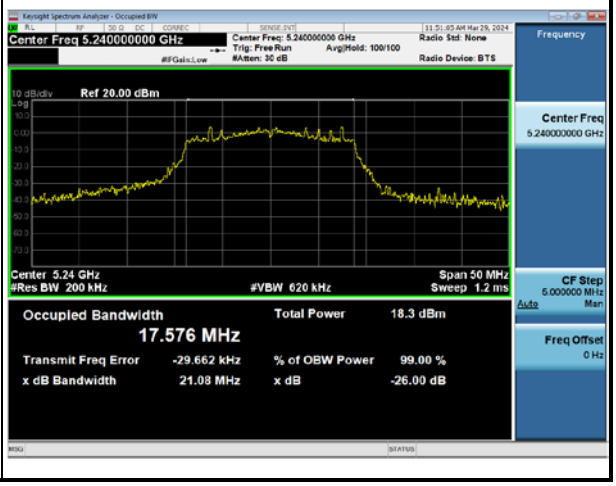
26dB & 99% Occupied Bandwidth spectrum plot of Chain A value:

802.11ac VHT20 5180MHz	802.11ac VHT20 5200MHz
	
802.11ac VHT20 5240MHz	**802.11ac VHT40 5190MHz**
	
802.11ac VHT40 5230MHz	**802.11ac VHT80 5210MHz**
	

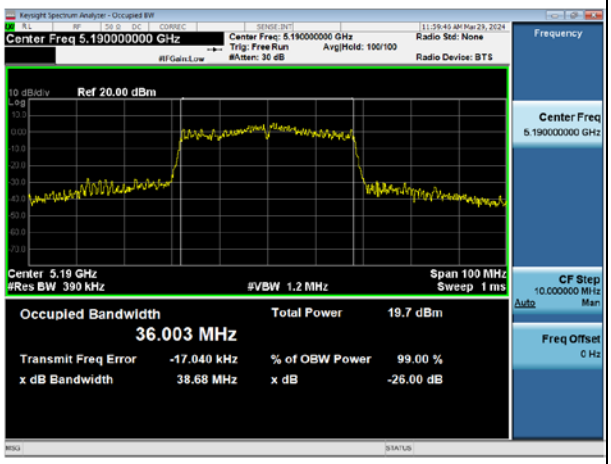
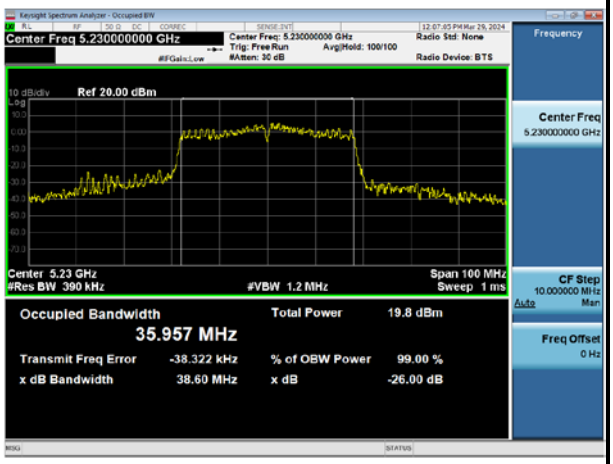
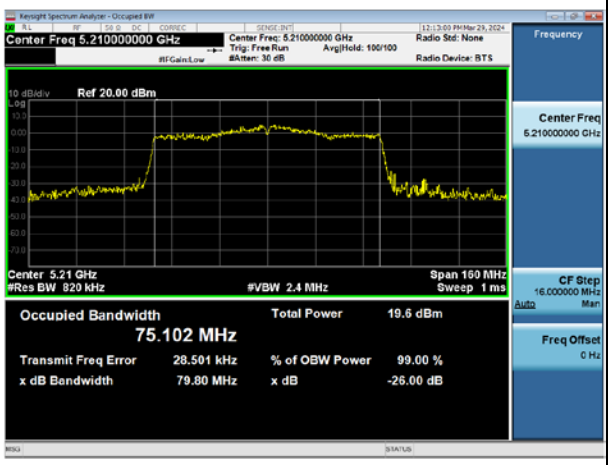
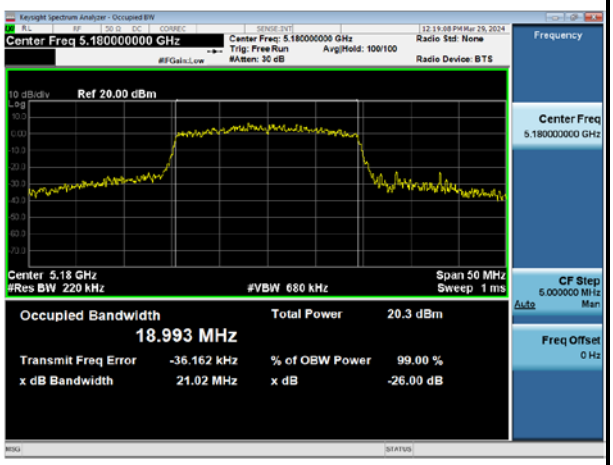
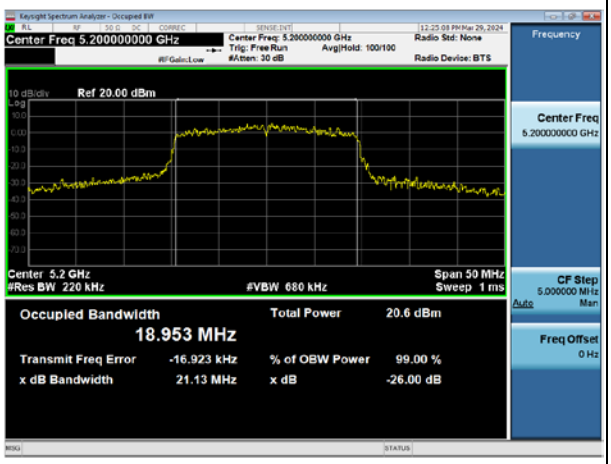
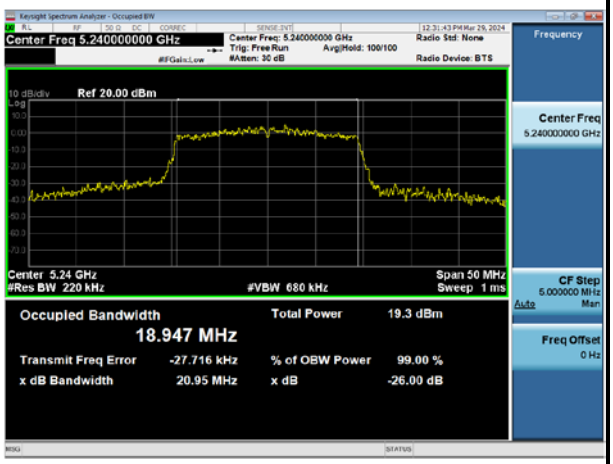
26dB & 99% Occupied Bandwidth spectrum plot of Chain A value:

802.11ax HE20 5180MHz	802.11ax HE20 5200MHz
	
802.11ax HE20 5240MHz	**802.11ax HE40 5190MHz**
	
802.11ax HE40 5230MHz	**802.11ax HE80 5210MHz**
	

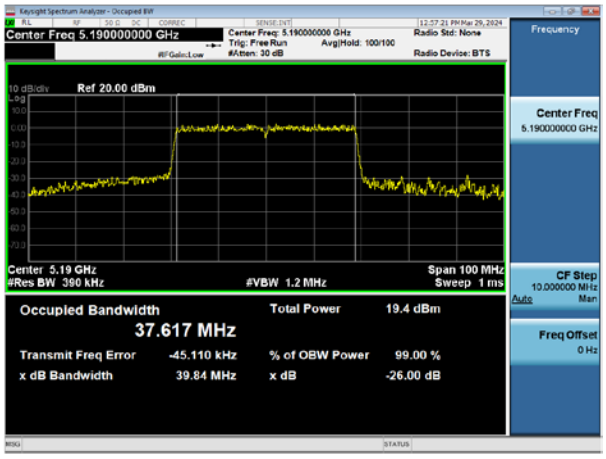
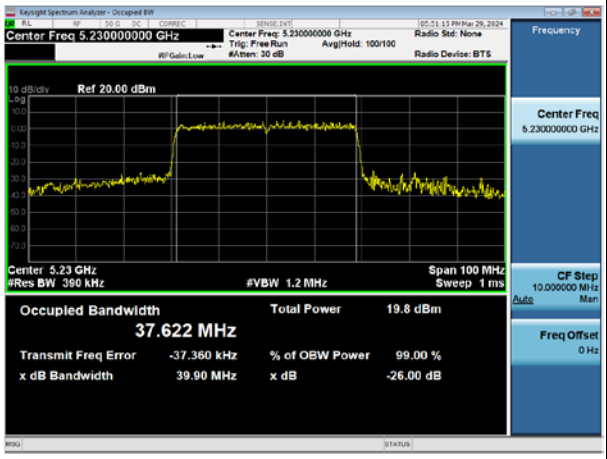
26dB & 99% Occupied Bandwidth spectrum plot of Chain B value:

802.11a 5180MHz	802.11a 5200MHz
	
802.11a 5240MHz	**802.11ac VHT20 5180MHz**
	
802.11ac VHT20 5200MHz	**802.11ac VHT20 5240MHz**
	

26dB & 99% Occupied Bandwidth spectrum plot of Chain B value:

802.11ac VHT40 5190MHz	802.11ac VHT40 5230MHz
	
802.11ac VHT80 5210MHz	**802.11ax HE20 5180MHz**
	
802.11ax HE20 5200MHz	**802.11ax HE20 5240MHz**
	

26dB & 99% Occupied Bandwidth spectrum plot of Chain B value:

802.11ax HE40 5190MHz	802.11ax HE40 5230MHz
	
802.11ax HE80 5210MHz	**--**
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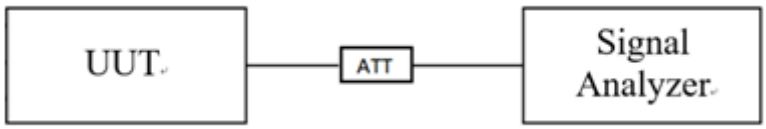
2.4 Power Spectral Density Measurement

2.4.1 Limit

1. For frequency Band 5150~5250MHz:
   (1) Outdoor access point : 17 dBm / MHz
   (2) Indoor access point : 17 dBm / MHz
   (3) Fixed point-to-point access point : 17 dBm / MHz
   (4) Client device : 11 dBm / MHz
2. For frequency Band 5250~5350MHz:
   11 dBm / MHz
3. For frequency Band 5470~5725MHz:
   11 dBm / MHz
4. For frequency Band 5725~5850MHz:
   30 dBm / 500kHz
5. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

2.4.2 Test Setup



2.4.3 Test Procedure

1. For frequency band 5150~5250, 5250~5350, 5470~5725MHz
   Method SA-2
   (1) Measure the duty cycle D of the transmitter output signal.
   (2) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal
   (3) Spectrum analyzer set:
      a) RBW = 1 MHz
      b) VBW = 3 MHz
      c) Sweep time = auto
      d) Detector = RMS
      e) Number of points in sweep ≥ [2 span / RBW].
      (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
      f) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
2. For frequency band 5725~5850 MHz
   Method SA-2
   (1) Measure the duty cycle D of the transmitter output signal.
   (2) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal
   (3) Spectrum analyzer set:
      a) RBW = 100 kHz
      b) VBW = 300 kHz
      c) Sweep time = auto
      d) Detector = RMS
      e) Number of points in sweep ≥ [2 span / RBW].
      (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
      f) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.

2.4.4 Test Result

For 5150 MHz ~ 5250 MHz

802.11a

Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5180	--	5.90	--	< 11	Pass
5200	--	7.50	--	< 11	Pass
5240	--	7.61	--	< 11	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ac VHT20

Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5180	4.63	4.13	7.40	< 10.51	Pass
5200	4.71	4.37	7.55	< 10.51	Pass
5240	4.14	3.25	6.73	< 10.51	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ac VHT40

Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5190	1.93	1.08	4.54	< 10.51	Pass
5230	1.57	1.31	4.45	< 10.51	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ac VHT80

Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5210	-0.76	-2.51	1.46	< 10.51	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ax HE20

Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5180	4.37	3.02	6.76	< 10.51	Pass
5200	3.48	3.13	6.32	< 10.51	Pass
5240	2.75	2.06	5.43	< 10.51	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ax HE40

Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5190	-1.82	-2.42	0.90	< 10.51	Pass
5230	-0.56	-1.23	2.13	< 10.51	Pass

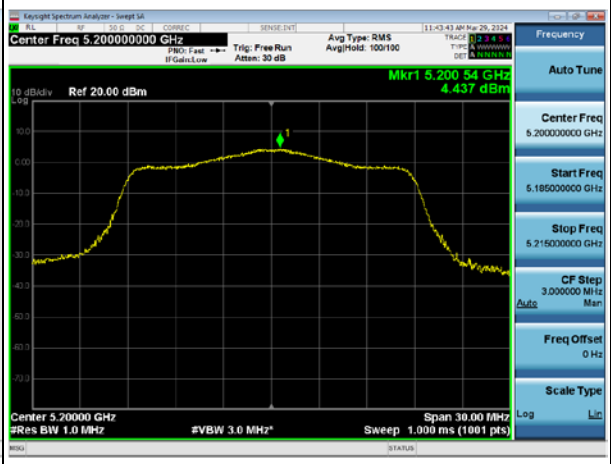
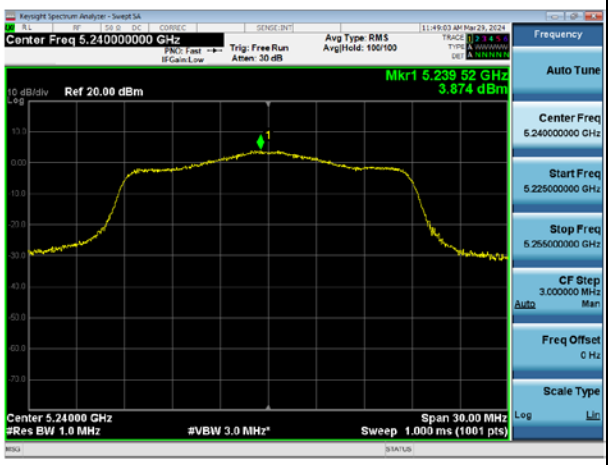
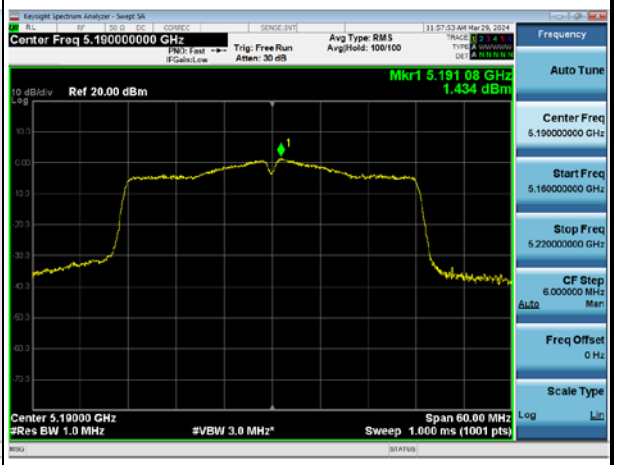
Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

802.11ax HE80

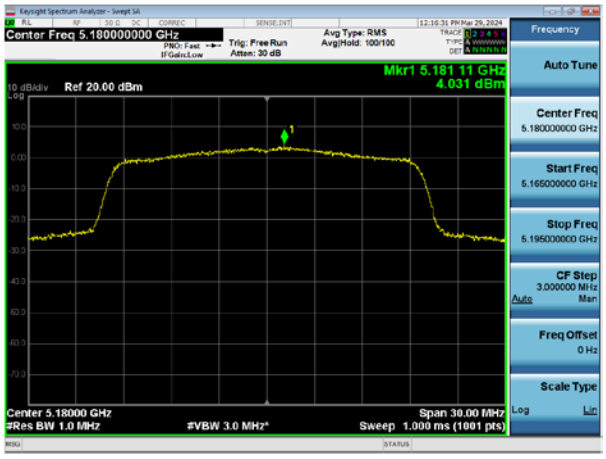
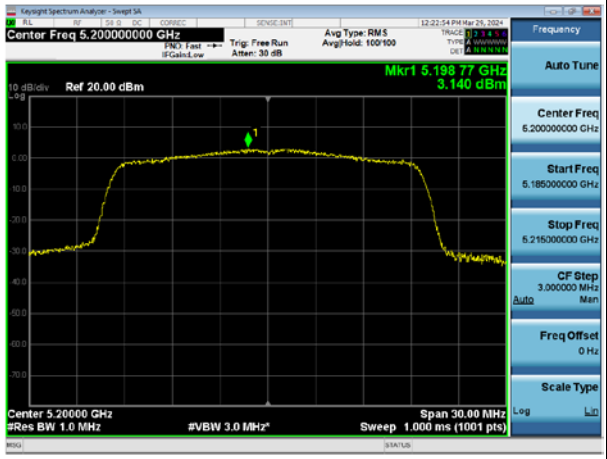
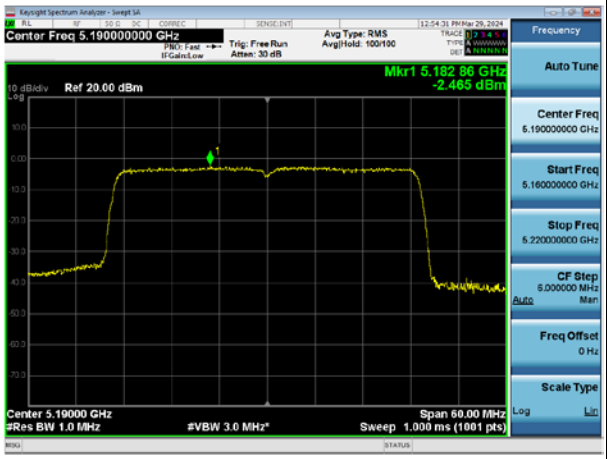
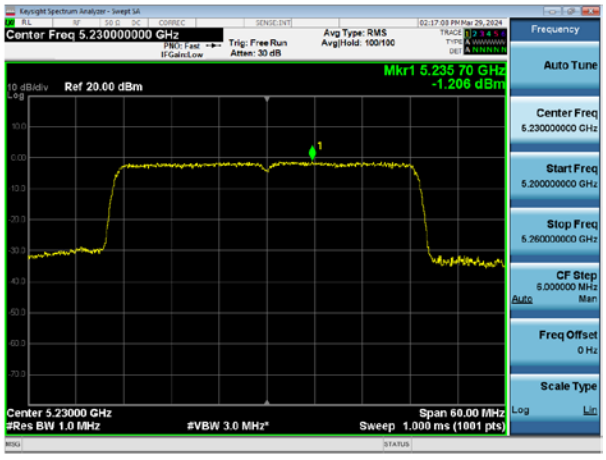
Frequency (MHz)	PSD (dBm)		Total PSD (dBm/MHz)	Limit (dBm/MHz)	Result
	Chain A	Chain B			
5210	-3.76	-4.28	-1.00	< 10.51	Pass

Remark: PSD = Reading value on a spectrum analyzer + cable loss + duty factor

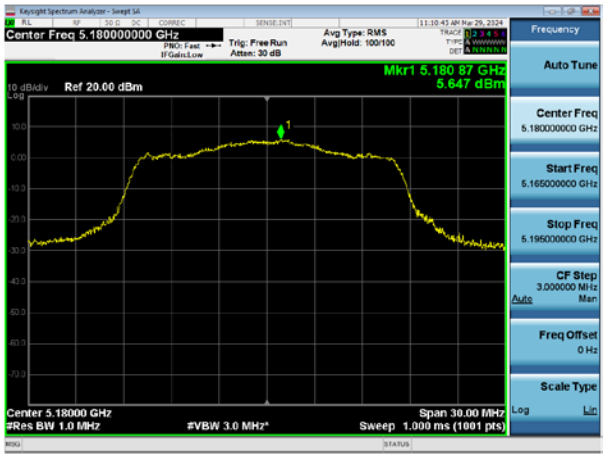
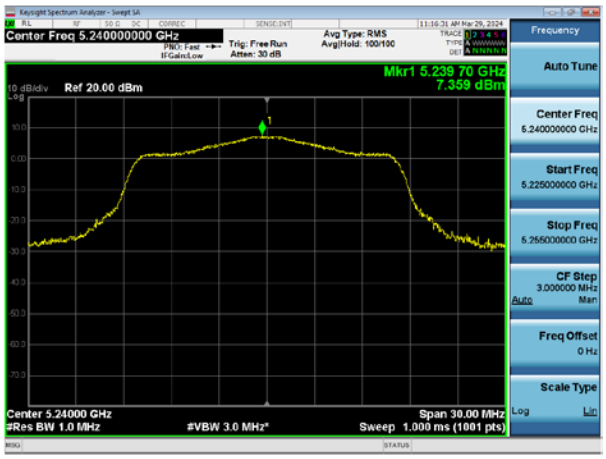
Power Spectral Density spectrum plot of Chain A value:

802.11ac VHT20 5180MHz	802.11ac VHT20 5200MHz
	
802.11ac VHT20 5240MHz	**802.11ac VHT40 5190MHz**
	
802.11ac VHT40 5230MHz	**802.11ac VHT80 5210MHz**
	

Power Spectral Density spectrum plot of Chain A value:

802.11ax HE20 5180MHz	802.11ax HE20 5200MHz
	
802.11ax HE20 5240MHz	**802.11ax HE40 5190MHz**
	
802.11ax HE40 5230MHz	**802.11ax HE80 5210MHz**
	

Power Spectral Density spectrum plot of Chain B value:

802.11a 5180MHz	802.11a 5200MHz
	
802.11a 5240MHz	**802.11ac VHT20 5180MHz**
	
802.11ac VHT20 5200MHz	**802.11ac VHT20 5240MHz**