RF MEASUREMENT REPORT

FCC ID:	Q9DAPINH605
Applicant:	Hewlett Packard Enterprise
Product:	ACCESS POINT
Model No.:	APINH605
Trademark:	Hewlett Packard Enterprise , HPE aruba networking
FCC Classification:	15E 6GHz Low Power Indoor Access Point (6ID)
FCC Rule Part(s):	Part 15 Subpart E (Section 15.407)
Result:	Complies
Received Date:	2023-06-25
Test Date:	2023-07-10 ~ 2023-12-04

Reviewed By: Jame Yuan

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

The test results relate only to the samples tested.
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB789033 & KDB987594. Test results reported herein relate only to the item(s) tested.
The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2306RSU039-U6	V01	Initial Report	2023-10-16	Invalid
2306RSU039-U6	V02	Revised test data	2023-12-04	Invalid
2306RSU039-U6	V03	Update antenna table	2023-12-05	Valid

CONTENTS

Description Page

1. General Information 6

1.1. Applicant 6
1.2. Manufacturer 6
1.3. Testing Facility 6
1.4. Product Information 7
1.5. Radio Specification under Test 7
1.6. Working Frequencies 8
1.7. Antenna Details 10
1.8. Description of Operating Paths 11

2. Test Configuration 12

2.1. Test Mode 12
2.2. Test System Connection Diagram 13
2.3. Test Software 13
2.4. Applied Standards 14
2.5. Test Environment Condition 14

3. Antenna Requirements 15

4. Measuring Instrument 16

5. Decision Rules and Measurement Uncertainty 18

5.1. Decision Rules 18
5.2. Measurement Uncertainty 18

6. Test Result 20

6.1. Summary 20
6.2. Channel Bandwidth Measurement 21
6.2.1. Test Limit 21
6.2.2. Test Procedure 21
6.2.3. Test Setting 21
6.2.4. Test Setup 22
6.2.5. Test Result 22
6.3. Output Power Measurement 23
6.3.1. Test Limit 23
6.3.2. Test Procedure 23
6.3.3. Test Setting 23
6.3.4. Test Setup 23
6.3.5. Test Result 23
6.4. Power Spectral Density Measurement 24

6.4.1. Test Limit 24
6.4.2. Test Procedure 24
6.4.3. Test Setting 24
6.4.4. Test Setup 24
6.4.5. Test Result 25
6.5. In-Band Emission Measurement 26
6.5.1. Test Limit 26
6.5.2. Test Procedure 26
6.5.3. Test Setting 26
6.5.4. Test Setup 27
6.5.5. Test Result 27
6.6. Frequency Stability Measurement 28
6.6.1. Test Limit 28
6.6.2. Test Procedure 28
6.6.3. Test Setup 28
6.6.4. Test Result 29
6.7. Contention Based Protocol Measurement 30
6.7.1. Test Limit 30
6.7.2. Test Procedure 30
6.7.3. Test Setting 30
6.7.4. Test Setup 31
6.7.5. Test Result 31
6.8. Radiated Spurious Emission Measurement 32
6.8.1. Test Limit 32
6.8.2. Test Procedure 32
6.8.3. Test Setting 33
6.8.4. Test Setup 35
6.8.5. Test Result 36
6.9. Radiated Restricted Band Edge Measurement 37
6.9.1. Test Limit 37
6.9.2. Test Procedure 38
6.9.3. Test Setting 39
6.9.4. Test Setup 40
6.9.5. Test Result 40
6.10. AC Conducted Emissions Measurement 41
6.10.1. Test Limit 41
6.10.2. Test Setup 41
6.10.3. Test Result 41
Appendix A – Test Result 42

A.1 Duty Cycle Test Result 42
A.2 Channel Bandwidth Test Result 43
A.3 Output Power Test Result 55
A.4 Power Spectral Density Test Result 59
A.5 In-Band Emission Measurement 103
A.6 Frequency Stability Test Result 137
A.7 Contention Based Protocol Test Result 138
A.8 Radiated Spurious Emission Test Result 151
A.9 Radiated Restricted Band Edge Test Result 247
A.10 AC Conducted Emissions Test Result 311

Appendix B – Test Setup Photograph 313

Appendix C – EUT Photograph 314

1. General Information

1.1. Applicant

Hewlett Packard Enterprise

6280 America Center Drive, San Jose CA 95002, United States

1.2. Manufacturer

Hewlett Packard Enterprise

6280 America Center Drive, San Jose CA 95002, United States

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: 3261				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Access Point
Model No.	APINH605
Serial No.	CNQHLHJ04H (Conducted)
	CNQHLHJ04T (Radiated)
Software Version	ArubaOS_8.12.0.0_88031 (For CBP)
	RAJB-AB06 V2.0 (For others)
Wi-Fi Specification	802.11a/b/g/n/ac/ax
Bluetooth Specification	BLE only
ZigBee Specification	802.15.4
GNSS Specification	GPS, Galileo, GLONASS
Antenna Information	Refer to Section 1.7
Power Type	AC Adapter Input or PoE Input
Operating Environment	Indoor Use
Remark: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

Frequency Range	For 802.11ax-HE20: 5955 ~ 7095MHz For 802.11ax-HE40: 5965 ~ 7085MHz For 802.11ax-HE80: 5985 ~ 7025MHz For 802.11ax-HE160: 6025 ~ 6985MHz	
Type of Modulation	802.11ax: OFDMA	
Data Rate	802.11ax: up to 2402Mbps	
Channel Puncturing Function	☐ Supported	☒ Unsupported
Support RU	☒ Full RU	☐ Partial RU

1.6. Working Frequencies

802.11ax-HE20

Channel	Frequency	Channel	Frequency	Channel	Frequency
1	5955 MHz	5	5975 MHz	9	5995 MHz
13	6015 MHz	17	6035 MHz	21	6055 MHz
25	6075 MHz	29	6095 MHz	33	6115 MHz
37	6135 MHz	41	6155 MHz	45	6175 MHz
49	6195 MHz	53	6215 MHz	57	6235 MHz
61	6255 MHz	65	6275 MHz	69	6295 MHz
73	6315 MHz	77	6335 MHz	81	6355 MHz
85	6375 MHz	89	6395 MHz	93	6415 MHz
97	6435 MHz	101	6455 MHz	105	6475 MHz
109	5495 MHz	113	6515 MHz	117	6535 MHz
121	6555 MHz	125	6575 MHz	129	6595 MHz
133	6615 MHz	137	6635 MHz	141	6655 MHz
145	6675 MHz	149	6695 MHz	153	6715 MHz
157	6735 MHz	161	6755 MHz	165	6775 MHz
169	6795 MHz	173	6815 MHz	177	6835 MHz
181	6855 MHz	185	6875 MHz	189	6895 MHz
193	6915 MHz	197	6935 MHz	201	6955 MHz
205	6975 MHz	209	6995 MHz	213	7015 MHz
217	7035 MHz	221	7055 MHz	225	7075 MHz
229	7095 MHz	--	--	--	--

802.11ax-HE40

Channel	Frequency	Channel	Frequency	Channel	Frequency
3	5965 MHz	11	6005 MHz	19	6045 MHz
27	6085 MHz	35	6125 MHz	43	6165 MHz
51	6205 MHz	59	6245 MHz	67	6285 MHz
75	6325 MHz	83	6365 MHz	91	6405 MHz
99	6445 MHz	107	6485 MHz	115	6525 MHz
123	6565 MHz	131	6605 MHz	139	6645 MHz
147	6685 MHz	155	6725 MHz	163	6765 MHz
171	6805 MHz	179	6845 MHz	187	6885 MHz
195	6925 MHz	203	6965 MHz	211	7005 MHz
219	7045 MHz	227	7085 MHz	--	--

802.11ax-HE80

Channel	Frequency	Channel	Frequency	Channel	Frequency
7	5985 MHz	23	6065 MHz	39	6145 MHz
55	6225 MHz	71	6305 MHz	87	6385 MHz
103	6465 MHz	119	6545 MHz	135	6625 MHz
151	6705 MHz	167	6785 MHz	183	6865 MHz
199	6945 MHz	215	7025 MHz		--

802.11ax-HE160

Channel	Frequency	Channel	Frequency	Channel	Frequency
15	6025 MHz	47	6185 MHz	79	6345 MHz
111	6505 MHz	143	6665 MHz	175	6825 MHz
207	6985 MHz	--	--	--	--

1.7. Antenna Details

Antenna Type	Frequency Band (GHz)	T_X Paths	Directional Gain (dBi)		
			N_{SS} = 1		N_{SS} = 2
			For Power	For PSD	For Power and PSD
PIFA	5.9 ~ 7.2	2	4.0	7.0	4.0

Note:

1, The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

2, The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac/ax, not include 802.11a/b/g.

3, For beamforming operation, Aruba OS automatically backs power down based on CDD power.

4, The detail calculation method of directional gain refers to antenna specification provided by the applicant.

1.8. Description of Operating Paths

Filter	Specification	Remark
Wi-Fi		
Filter 1#	Band Pass Filter (2412-2472)	Allowing any transmission on all channels
Filter 2#	Band Pass Filter (2402-2447)	Allowing any transmission on 20MHz channels 1 thru 6 and 40MHz channel 3.
Filter 3#	Band Pass Filter (2452-2472)	Allowing any transmission on 20MHz channel 11
Filter 4#	Band Pass Filter (5150-5895)	Allowing any transmission on all channels
Filter 5#	Band Pass Filter (5150-5835)	Allowing any transmission on UNII Band 1/2a/2c/3
Filter 6#	Band Pass Filter (5925-7125)	Allowing any transmission on UNII Band 5/6/7/8
Bluetooth / ZigBee		
Filter 7#	Band Pass Filter (2402-2480)	Allowing any transmission on all channels
Filter 8#	Band Pass Filter (2402-2430)	Allowing transmission on BLE channels 37 (2402MHz) and 38 (2426MHz) and Zigbee channel 11 (2405MHz)
Filter 9#	Band Pass Filter (2478-2482)	Allowing transmission on BLE channel 39 (2480MHz) and Zigbee channel 26(2480MHz)
Note: ZigBee and BLE can't work simultaneously.		

Working Mode

	Radio 0	Radio 1	BLE/ZigBee
1	2.4G_Full Band (Filter 1#)	6G_Full Band (Filter 6#)	---
2	---	6G_Full Band (Filter 6#)	2.4G_Full Band (Filter 7#)
3	2.4G_Low Band (Filter 2#)	6G_Full Band (Filter 6#)	2.4G_High Band (Filter 9#)
4	2.4G_High Band (Filter 3#)	6G_Full Band (Filter 6#)	2.4G_Low Band (Filter 8#)
5	5G_Full Band (Filter 4#)	2.4G_Full Band (Filter 1#)	---
6	5G_Full Band (Filter 4#)	---	2.4G_Full Band (Filter 7#)
7	5G_Full Band (Filter 4#)	2.4G_Low Band (Filter 2#)	2.4G_High Band (Filter 9#)
8	5G_Full Band (Filter 4#)	2.4G_High Band (Filter 3#)	2.4G_Low Band (Filter 8#)
9	5G_Full Band (Filter 5#)	6G_Full Band (Filter 6#)	2.4G_Full Band (Filter 1#)
10	5G_Full Band (Filter 5#)	6G_Full Band (Filter 6#)	2.4G_Full Band (Filter 1#)
11	5G_Full Band (Filter 5#)	6G_Full Band (Filter 6#)	2.4G_Full Band (Filter 1#)
12	5G_Full Band (Filter 5#)	6G_Full Band (Filter 6#)	2.4G_Full Band (Filter 1#)

2.

2. Test Configuration

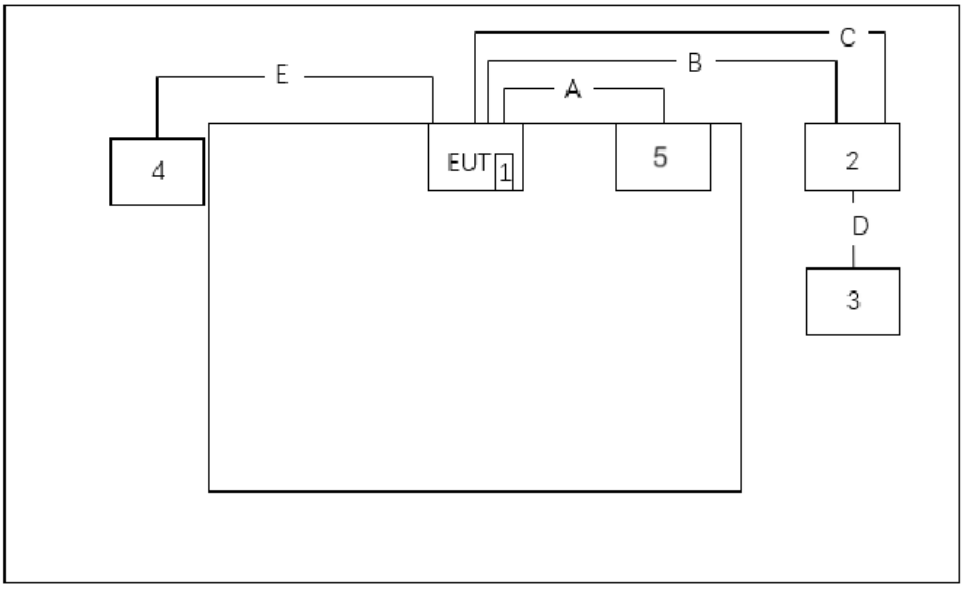
2.1. Test Mode

Mode 1: Transmit by 802.11ax-HE20_N_{SS}=1 (MCS0)
Mode 2: Transmit by 802.11ax-HE40_N_{SS}=1 (MCS0)
Mode 3: Transmit by 802.11ax-HE80_N_{SS}=1 (MCS0)
Mode 4: Transmit by 802.11ax-HE160_N_{SS}=1 (MCS0)
Mode 5: Transmit by 802.11ax-HE20_N_{SS}=2 (MCS0)
Mode 6: Transmit by 802.11ax-HE40_N_{SS}=2 (MCS0)
Mode 7: Transmit by 802.11ax-HE80_N_{SS}=2 (MCS0)
Mode 8: Transmit by 802.11ax-HE160_N_{SS}=2 (MCS0)
Note: 1. All modes of operation and data rates were investigated, so all RF test requirements shall be executed at the worst data rate. 2. For CDD mode, this device supports 2 N_{SS}, N_{SS}=1 and N_{SS}=2 were assessed for radiated emission and output power measurements in this report, others were assessed with Nss=2. 3. For beamforming operation, manufacturer automatically backs power down based on CDD power. Therefore, only the CDD mode was evaluated in this report

2.2. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.

Connection Diagram



Cable Type		Cable Description	Length
A	Power Cable	Non-Shielded	>1.8m
B ~ E	LAN Cable	Non-Shielded, Cat.5e	> 10m
Product		Manufacturer	Model No.
1	USB Flash	Samsung	16G
2	2.5G Switch	TP-Link	TL-SH1005
3	Notebook	Lenovo	E495
4	AP Router	Aruba	AP303
5	AC/DC Adapter	Delta Electronics, Inc.	ADP-50GR BD

2.3. Test Software

The test utility software used during testing was “accessMTool”, and the version was 3.2.1.5.
Final power setting please refer to operational description.

2.4. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.10-2013
- FCC KDB 789033 D02v02r01
- FCC KDB 987594 D02v02r01
- FCC KDB 987594 D04v02
- FCC KDB 662911 D01v02r01
- FCC KDB 414788 D01v01r01
- FCC KDB 412172 D01v01r01

2.5. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20 ~ 75%RH

3. Antenna Requirements

Excerpt from §15.407(a)(9) of the FCC Rules/Regulations:

Access points operating under the provisions of paragraphs (a)(5) and (a)(6) of this section must employ a permanently attached integrated antenna.

- The antenna of the device is built in and locked inside the enclosure.

Conclusion:

The device complies with the requirement of §15.407(a)(9).

4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06598	1 year	2023-11-05	SIP-AC2
Preamplifier	EMCI	EMC051845SE	MRTSUE06601	1 year	2023-11-22	SIP-AC2
Thermohygrometer	testo	608-H1	MRTSUE06622	1 year	2023-11-27	SIP-AC2
Thermohygrometer	testo	608-H1	MRTSUE06624	1 year	2023-11-27	SIP-AC2
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06647	1 year	2024-06-17	SIP-AC2
Anechoic Chamber	RIKEN	SIP-AC2	MRTSUE06781	1 year	2023-12-22	SIP-AC2
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2024-05-23	SIP-AC2
Signal Analyzer	Keysight	N9010B	MRTSUE06603	1 year	2023-10-25	SIP-AC1
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2023-12-22	SIP-AC1
Preamplifier	EMCI	EMC051845SE	MRTSUE06600	1 year	2023-11-07	SIP-AC1
Horn Antenna	R&S	HF907	MRTSUE06610	1 year	2024-06-17	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06616	1 year	2023-11-01	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06620	1 year	2023-11-27	SIP-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06645	1 year	2023-07-30	SIP-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06645	1 year	2024-07-13	SIP-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2023-10-10	SIP-AC1
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2023-10-13	SIP-AC1
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2024-06-07	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2023-07-30	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2024-07-14	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06619	1 year	2023-11-01	SIP-AC3
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2024-01-12	SIP-AC3
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06646	1 year	2023-08-16	SIP-AC3
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06646	1 year	2024-08-04	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2023-12-22	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06622	1 year	2023-11-27	SIP-AC3
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2023-12-28	SIP-AC3
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2024-05-23	WZ-AC2
Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2023-11-27	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2024-04-20	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11038	1 year	2023-11-01	WZ-AC2
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2024-09-17	WZ-AC2
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2024-05-23	WZ-SR2
Shielding Room	MIX-BEP	WZ-SR2	MRTSUE06215	5 years	2026-12-20	WZ-SR2
Thermohygrometer	testo	608-H1	MRTSUE06404	1 year	2024-05-31	WZ-SR2

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Four-Line V-Network	R&S	ENV432	MRTSUE06615	1 year	2023-10-08	WZ-SR2
EMI Test Receiver	R&S	ESR3	MRTSUE06909	1 year	2023-10-27	WZ-SR2
USB Power Sensor	Keysight	U2021XA	MRTSUE06446	1 year	2024-05-23	WZ-SR5
Signal Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2024-02-29	WZ-SR5
Signal Analyzer	Keysight	N9010B	MRTSUE06457	1 year	2024-05-23	WZ-SR5
Thermohygrometer	testo	608-H1	MRTSUE06402	1 year	2024-05-31	WZ-SR5
Shielding Room	HUAMING	WZ-SR5	MRTSUE06442	N/A	N/A	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11079	1 year	2024-06-08	WZ-SR5
Attenuator	MVE	MVE2213	MRTSUE11083	1 year	2024-06-08	WZ-SR5
Signal Generator	Keysight	N5182B	MRTSUE06451	1 year	2024-06-29	WZ-SR5
Frequency extender for EXG or MXG	Keysight	N5182BX07	MRTSUE06984	1 year	2024-02-29	WZ-SR5
Temperature Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2023-10-08	WZ-TR3
Temperature Chamber	BAOYT	BYH-150CL	MRTSUE06051	1 year	2024-09-27	WZ-TR3
Thermohygrometer	testo	608-H1	MRTSUE06401	1 year	2024-05-31	WZ-TR3
Signal Analyzer	Keysight	N9010B	MRTSUE06558	1 year	2024-05-23	WZ-TR3

Software	Version	Function
EMI V3	V 3.0.0	EMI Test Software
Controller_MF 7802BS	1.02	RE Antenna & Turntable
BenchVue Power Meter	2018.1	Power
Controller_MF 7802	1.02	RE Antenna & Turntable

5. Decision Rules and Measurement Uncertainty

5.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted Emission Measurement
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.58dB 150kHz~30MHz: 3.20dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Coaxial: 9kHz~30MHz: 2.59dB Coplanar: 9kHz~30MHz: 2.60dB Horizontal: 30MHz~200MHz: 3.85dB 200MHz~1GHz: 4.36dB 1GHz~40GHz: 4.98dB Vertical: 30MHz~200MHz: 4.06dB 200MHz~1GHz: 5.28dB 1GHz~40GHz: 4.91dB
Spurious Emissions, Conducted
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.3dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.5dB
Power Spectrum Density
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 2.3dB
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 3.2%

Frequency Stability
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 37.99 Hz

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.407(a)(10)	Channel Bandwidth	Conducted	Pass
15.407(a)(5)	Maximum Equivalent Isotopically Radiated Power (E.I.R.P)		Pass
15.407(a)(5)	Maximum Power Spectral Density (E.I.R.P)		Pass
15.407(g)	Frequency Stability		Pass
15.407(b)(7)	In-Band Emission		Pass
15.407(d)(6)	Contention-Based Protocol		Pass
15.407(b)(6)	Unwanted Emissions	Radiated	Pass
15.205, 15.209 15.407(b)(8), (9), (10)	General Field Strength (Restricted Bands and Radiated Emission)		Pass
15.207 15.407(b)(9)	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

Notes:

1. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2. For radiated emission test, every axis (X, Y, Z) was also verified. The detailed axis (X, Y, Z) setup refers to “2306RSU039-UT” and axis (X) is the worst condition. The test results shown in the following sections represent the worst-case emissions.
3. Test Item “Occupied Bandwidth” has been assessed MIMO transmission and showed the worst single test data in this report.

6.2. Channel Bandwidth Measurement

6.2.1. Test Limit

The maximum transmitter channel bandwidth (99% bandwidth) for U–NII devices in the 5.925–7.125 GHz band is 320 megahertz.

6.2.2. Test Procedure

KDB 789033 D02v02r01- Section II)C)1) (26dB Bandwidth)

KDB 789033 D02v02r01- Section II)D) (99% Bandwidth)

6.2.3. Test Setting

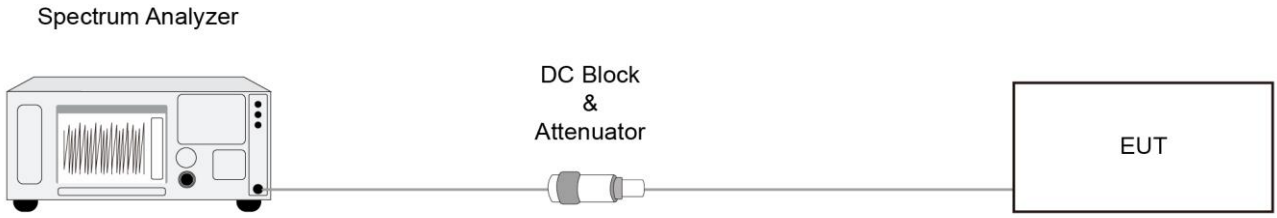
26dB Bandwidth

1. The analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth
2. RBW = approximately 1% of the emission bandwidth.
3. VBW > RBW
4. Detector = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

99% Bandwidth

1. Set center frequency to the nominal EUT channel center frequency.
2. RBW = 1% to 5% of the OBW
3. VBW ≥ 3 × RBW
4. Span = 1.5 times to 5 times the OBW
5. Detector = peak
6. Trace mode = max hold
7. Allow the trace to stabilize
8. Use the 99% power bandwidth function of the instrument.

6.2.4. Test Setup



6.2.5. Test Result

Refer to Appendix A.2.

6.3. Output Power Measurement

6.3.1. Test Limit

For an indoor access point operating in the 5.925-7.125 GHz band, the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm.

6.3.2. Test Procedure

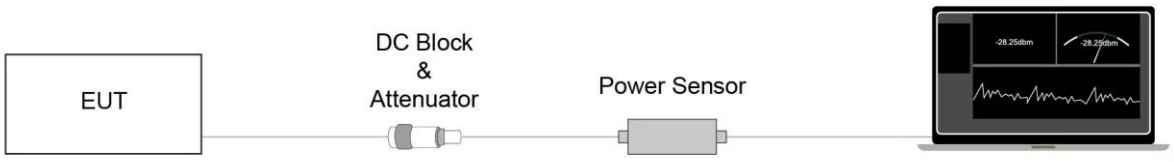
KDB 789033D02v02r01- Section II)E)3)b) Method PM-G

6.3.3. Test Setting

Average Power Measurement

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.3.

6.4. Power Spectral Density Measurement

6.4.1. Test Limit

For an indoor access point operating in the 5.925-7.125 GHz band, the maximum power spectral density must not exceed 5 dBm e.i.r.p. in any 1-megahertz band.

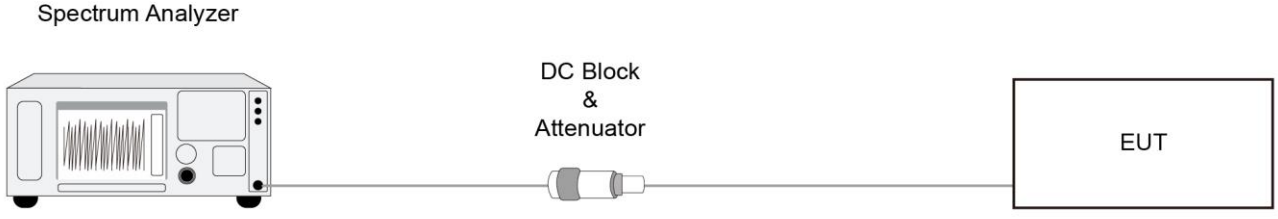
6.4.2. Test Procedure

KDB 789033 D02v02r01-Section II)F)

6.4.3. Test Setting

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire 26dB EBW of the signal.
3. RBW = 1MHz
4. VBW = 3MHz
5. Number of sweep points ≥ 2 × (span / RBW)
6. Detector = power averaging (Average)
7. Sweep time = auto
8. Trigger = free run
9. 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 to ensure that the average accurately represents the true average over the on and off periods of the transmitter.
10. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
11. Add 10*log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10*log(1/0.25) = 6 dB if the duty cycle is 25 percent.

6.4.4. Test Setup



6.4.5. Test Result

Refer to Appendix A.4.

6.5. In-Band Emission Measurement

6.5.1. Test Limit

Suppressed by 20 dB at 1 MHz outside of the channel edge.

(The channel edge is defined as the 26-dB point on either side of the carrier center frequency.)

Suppressed by 28 dB at one channel bandwidth from the channel center.

Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.

6.5.2. Test Procedure

KDB 987594 D02v02r01- Section II)J)

6.5.3. Test Setting

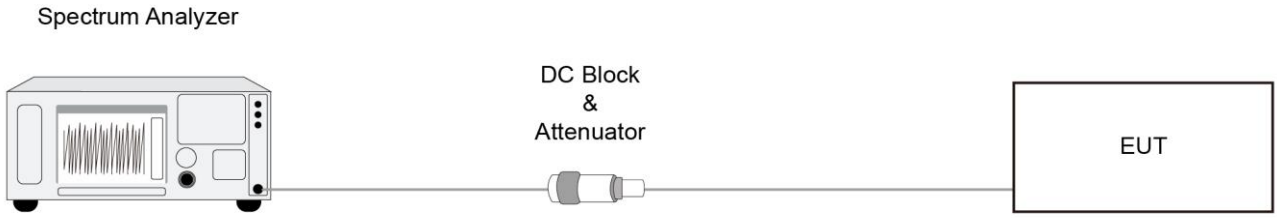
Emissions Mask Reference Level Measurement

1. Set the span to encompass the entire 26 dB EBW of the signal.
2. Set RBW = same RBW used for 26 dB EBW measurement.
3. Set VBW ⩾ 3 X RBW.
4. Number of points in sweep ⩾ [2 x span / RBW].
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging (rms) mode.
8. Use the peak search function on the instrument to find the peak of the spectrum.

In-Band Emission

1. Using the measuring equipment limit line function, develop the emissions mask based on rule.
2. Adjust the span to encompass the entire mask as necessary.
3. Clear trace.
4. Trace average at least 100 traces in power averaging (rms) mode.
5. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

6.5.4. Test Setup



6.5.5. Test Result

Refer to Appendix A.5.

6.6. Frequency Stability Measurement

6.6.1. Test Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

6.6.2. Test Procedure

Frequency Stability Under Temperature Variations:

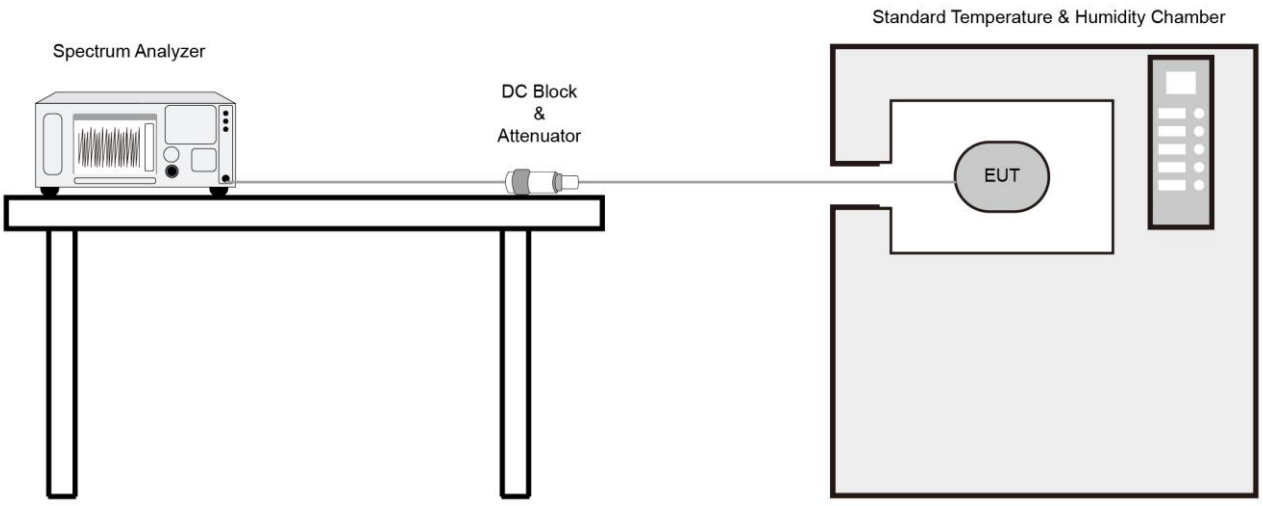
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

6.6.3. Test Setup



6.6.4. Test Result

Refer to Appendix A.6.

6.7. Contention Based Protocol Measurement

6.7.1. Test Limit

Unlicensed indoor low power device must detect co-channel radio frequency power that is at least -62dBm (The threshold is referenced to a 0dBi antenna gain.) or low.

Indoor low power device must detect an AWGN signal with 90% (or better) level of certainty.

6.7.2. Test Procedure

KDB 987594 D02v01- Section II)I)

6.7.3. Test Setting

1. Configure the EUT to transmit with a constant duty cycle.

2. Set the operating parameters of the EUT including power level, operating frequency, modulation and bandwidth.

3. Set the signal analyzer center frequency to the nominal EUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT.

Connect the output port of the EUT to the signal analyzer 2. Ensure that the attenuator 2 provides enough attenuation to not overload the signal analyzer 2 receiver.

4. Monitoring the signal analyzer 2, verify the EUT is operating and transmitting with the parameters set at step two.

5. Using an AWGN signal source, generate a 10 MHz-wide AWGN signal. Use Table 1 of KDB 987594 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.

6. Set the AWGN signal power to an extremely low level. Connect the AWGN signal source, via a 3-dB splitter, to the signal analyzer 1 and the EUT as shown in below figure.

7. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.

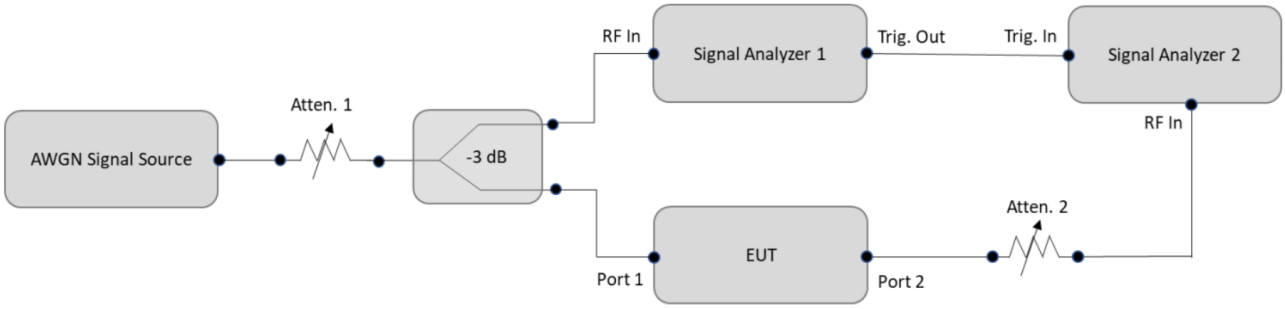
8. Monitor the signal analyzer 2 to verify if the AWGN signal has been detected and the EUT has ceased transmission. If the EUT continues to transmit, then incrementally increase the AWGN signal power level until the EUT stops transmitting.

9. Determine and record the AWGN signal power level (at the EUT's antenna port) at which the EUT ceased transmission. Repeat the procedure at least 10 times to verify the EUT can detect an AWGN signal with 90% (or better) level of certainty.

10. Refer to Table 1 to determine number of times the detection threshold testing needs to be repeated. If

testing is required more than once, then go back to step 5, choose a different center frequency for the AWGN signal and repeat the process.

6.7.4. Test Setup



6.7.5. Test Result

Refer to Appendix A.7.

Remark: The product didn’t use bandwidth reduction for the purpose of incumbent avoidance.

6.8. Radiated Spurious Emission Measurement

6.8.1. Test Limit

For 15.407(b)(5) requirement

For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of −27 dBm/MHz.

Refer to 987594 D02 U-NII 6GHz EMC Measurement v01 clause G

Use guidance in KDB 789033 for measurements below 1000 MHz and above 1000 MHz. Unwanted emissions outside of restricted bands are measured with a RMS detector. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.8.2. Test Procedure

KDB 789033 D02v02r01-Section Ⅱ)G)

6.8.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000MHz	1MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest

2. RBW = 1MHz

3. VBW; If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.

If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.

802.11ax-HE20	VBW = 680Hz	802.11ax-HE40	VBW = 1300Hz
802.11ax-HE80	VBW = 2700Hz	802.11ax-HE160	VBW = 4300Hz

4. Detector = Peak

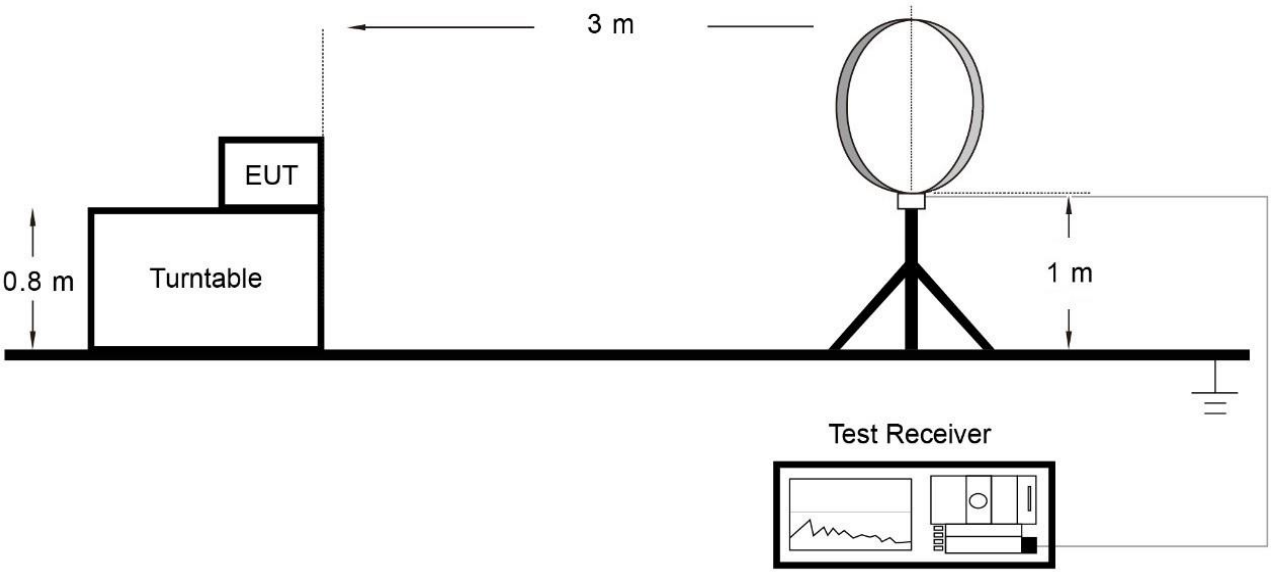
5. Sweep time = auto

6. Trace mode = max hold

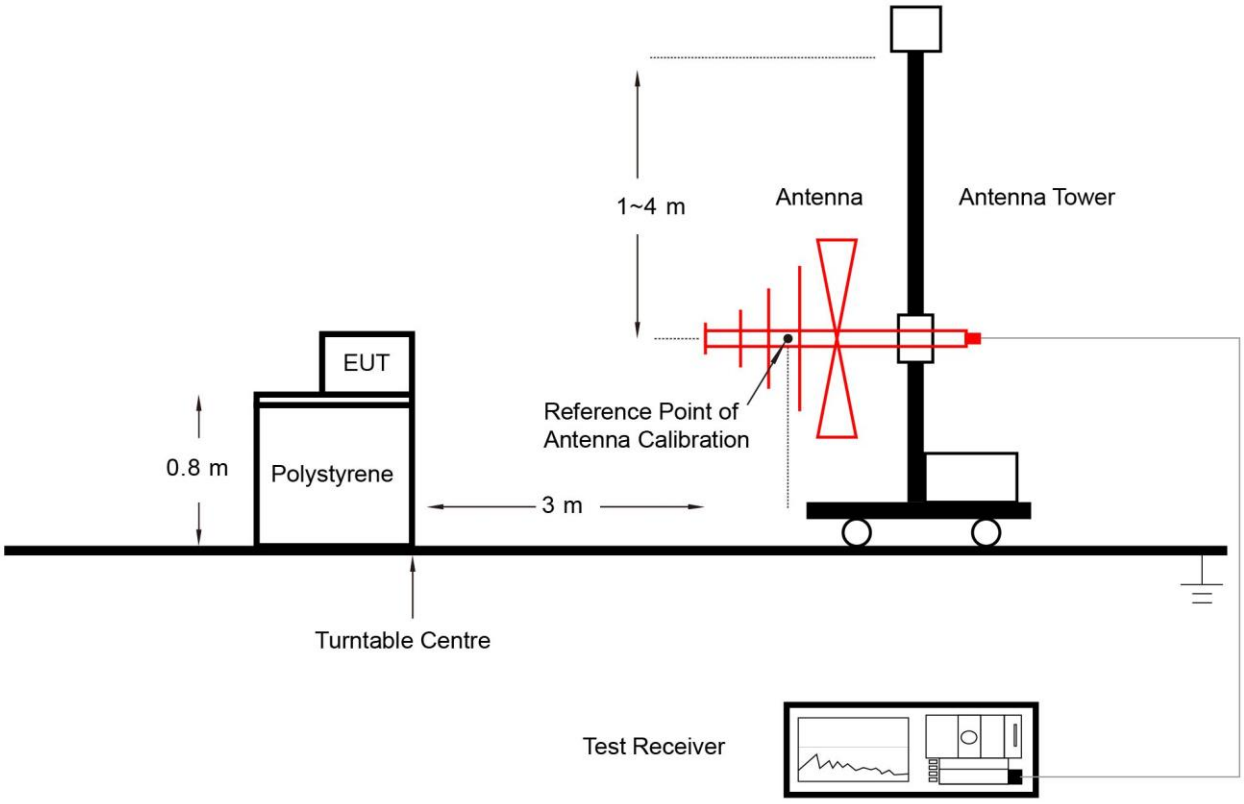
7. Trace was allowed to stabilize

6.8.4. Test Setup

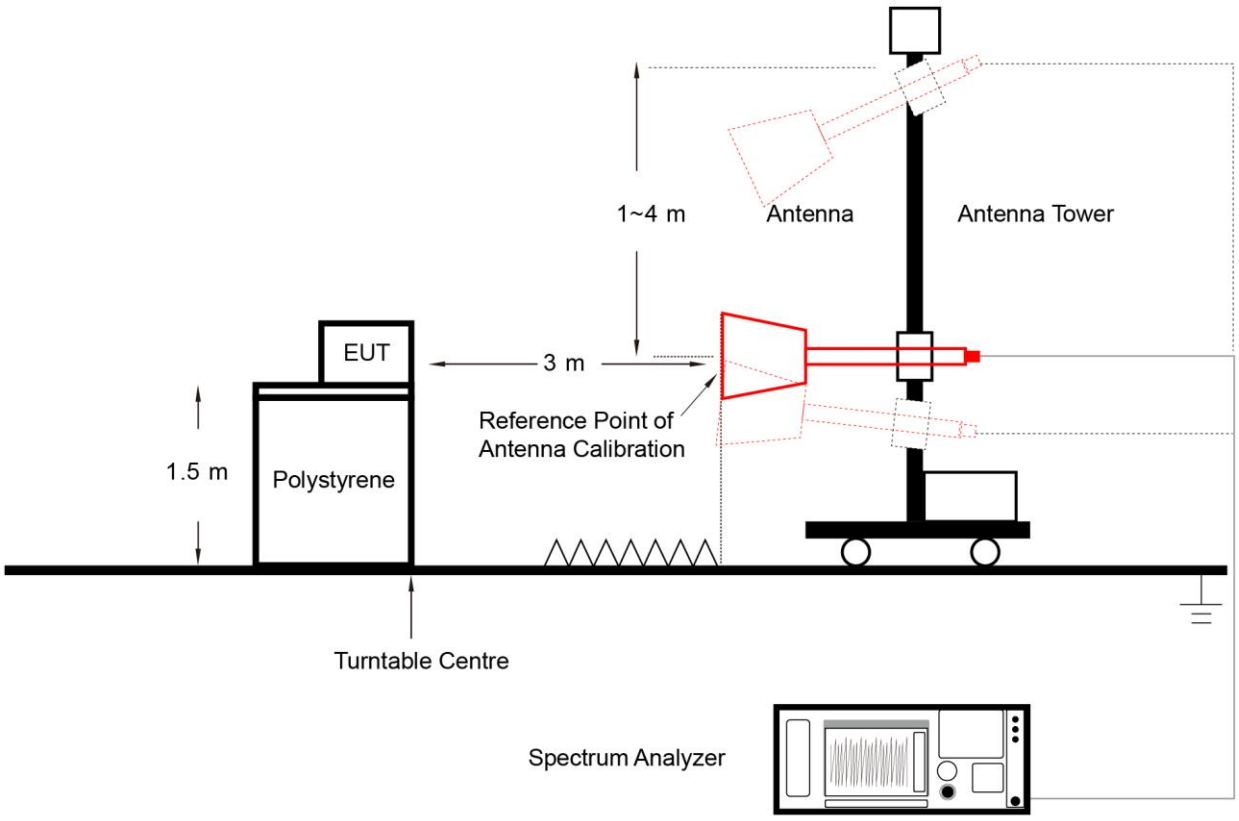
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.8.5. Test Result

Refer to Appendix A.8.

6.9. Radiated Restricted Band Edge Measurement

6.9.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1] 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41	--	--	--

For 15.407(b)(5) requirement:

For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an e.i.r.p. of −27 dBm/MHz.

Refer to 987594 D02 U-NII 6GHz EMC Measurement v01 clause G - Unwanted Emission Measurement

Use guidance in KDB 789033 for measurements below 1000 MHz and above 1000 MHz. Unwanted emissions outside of restricted bands are measured with a RMS detector. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

6.9.2. Test Procedure

KDB 789033 D02v02r01-Section II)G)

6.9.3. Test Setting

Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = Peak
5. Sweep time = Auto couple
6. Trace mode = Max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

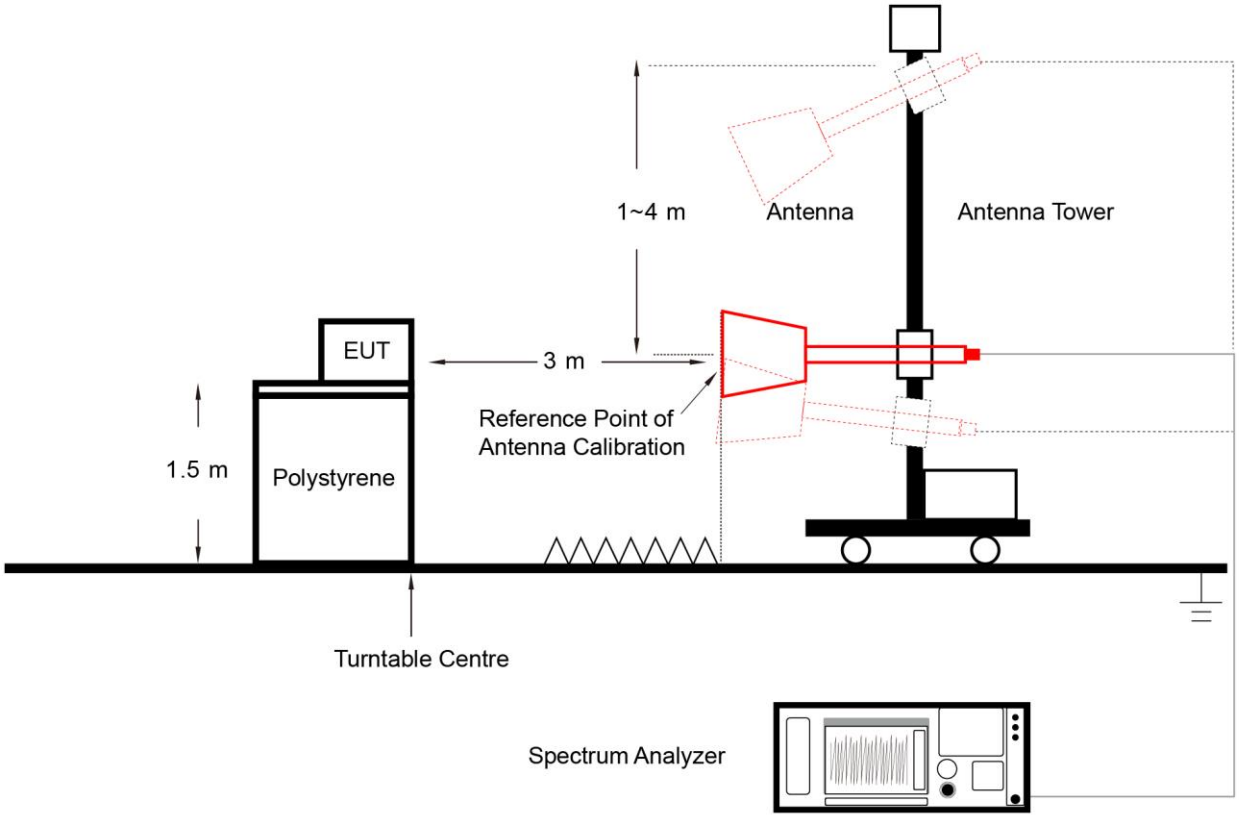
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; if the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10Hz

   If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.

802.11ax-HE20	VBW = 680Hz	802.11ax-HE40	VBW = 1300Hz
802.11ax-HE80	VBW = 2700Hz	802.11ax-HE160	VBW = 4300Hz

4. Detector = Peak
5. Sweep time = Auto
6. Trace mode = Max hold
7. Trace was allowed to stabilize

6.9.4. Test Setup



6.9.5. Test Result

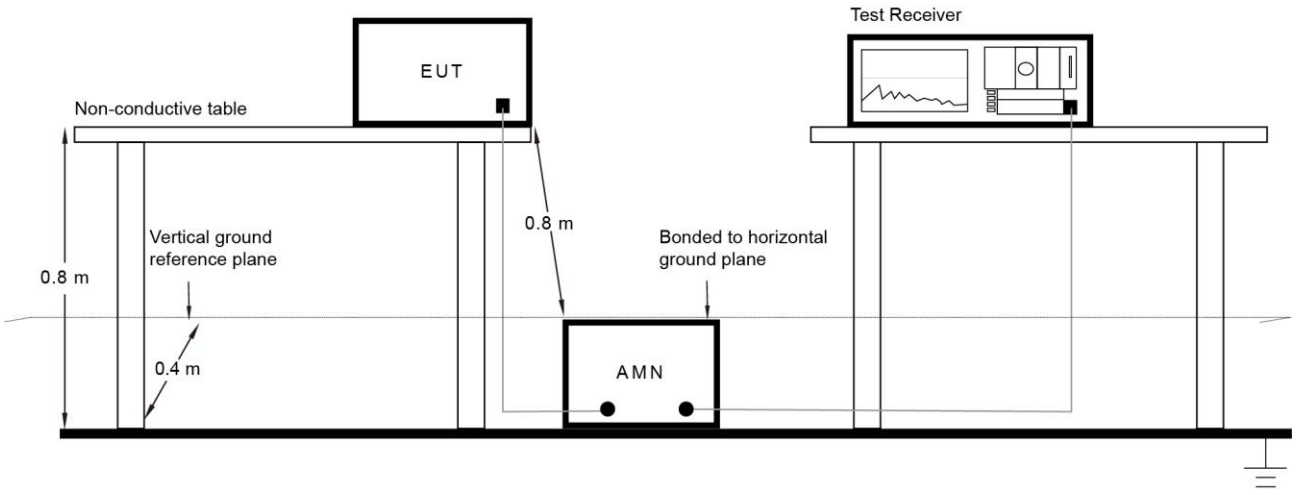
Refer to Appendix A.9.

6.10. AC Conducted Emissions Measurement

6.10.1. Test Limit

FCC Part 15.207 Limits		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

6.10.2. Test Setup



6.10.3. Test Result

Refer to Appendix A.10.

Appendix A – Test Result

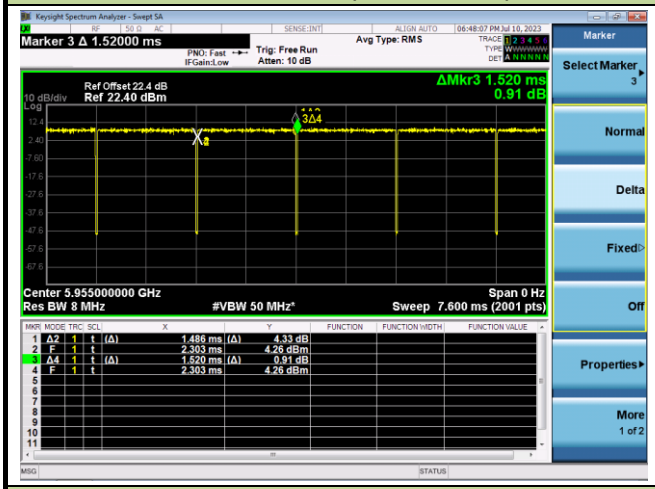
A.1 Duty Cycle Test Result

Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2023-07-10		

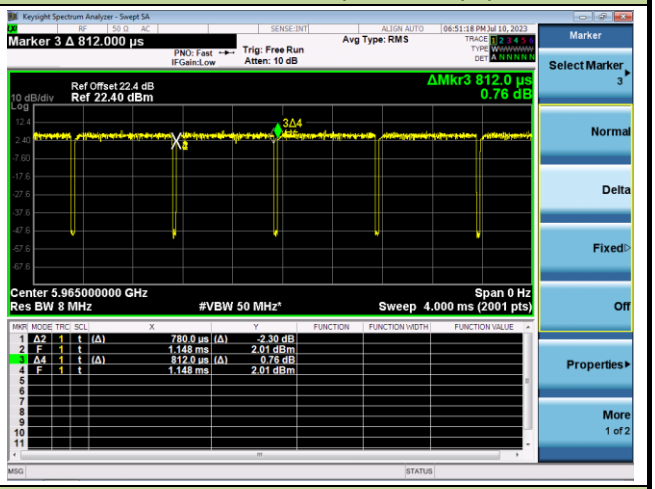
Test Mode	Duty Cycle
802.11ax-HE20	97.76%
802.11ax-HE40	96.06%
802.11ax-HE80	92.58%
802.11ax-HE160	88.31%

Duty Cycle (T = Transmission Duration)

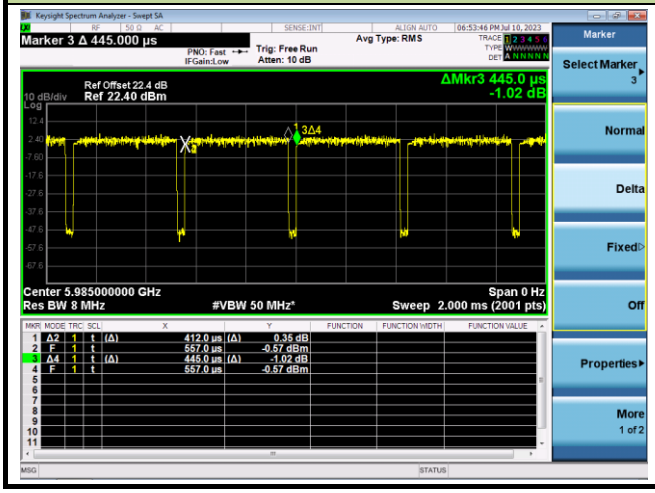
802.11ax-HE20 (T = 1.486ms)



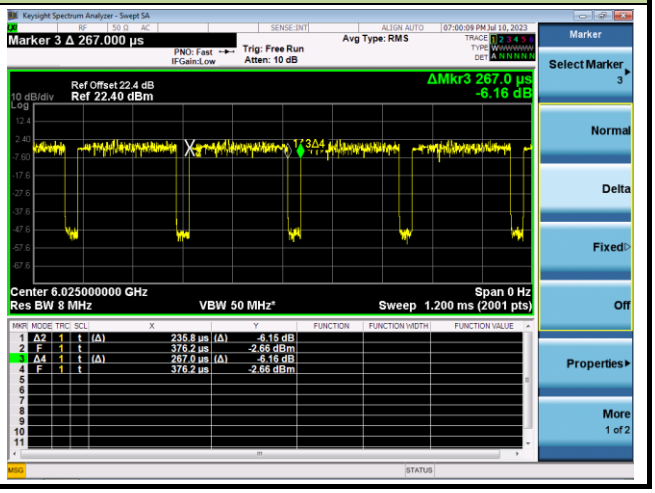
802.11ax-HE40 (T = 780.0μs)



802.11ax-HE80 (T = 412.0μs)



802.11ax-HE160 (T = 235.8μs)

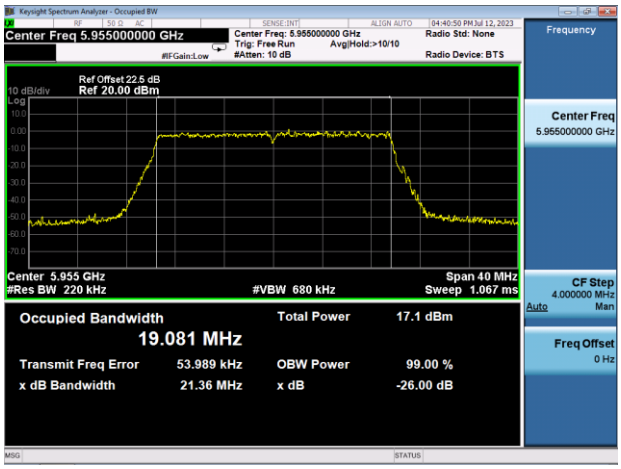
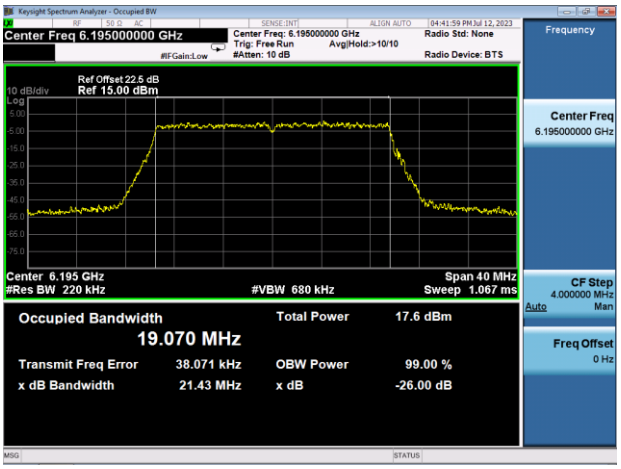
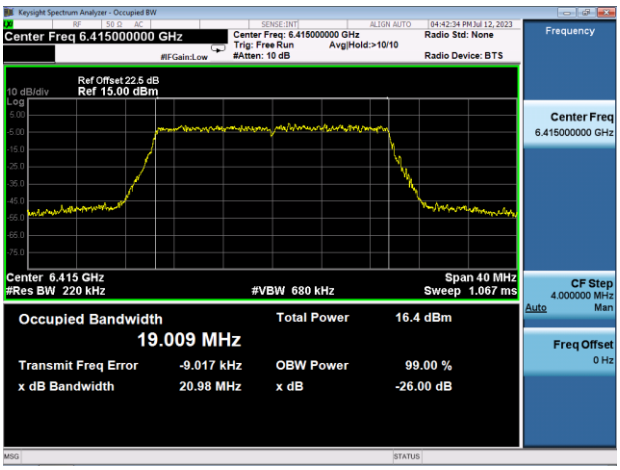
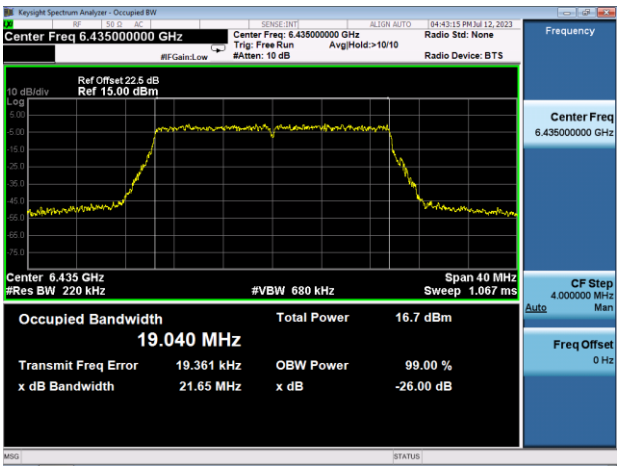
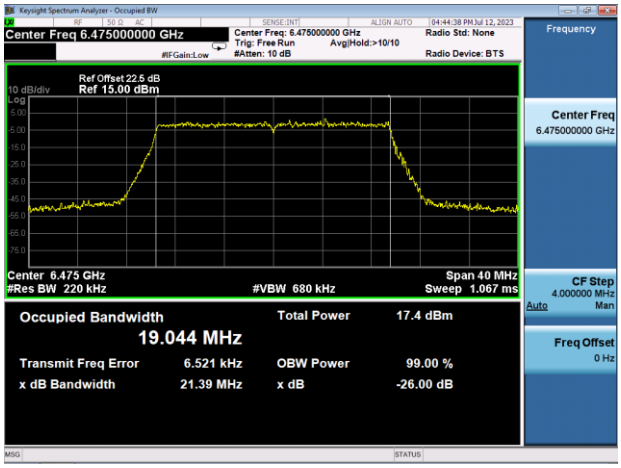
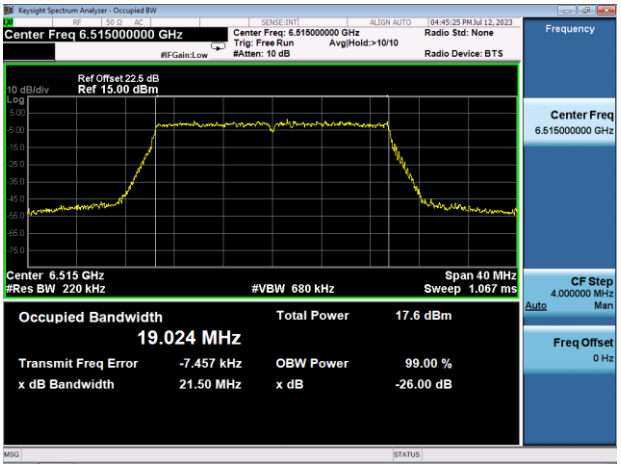


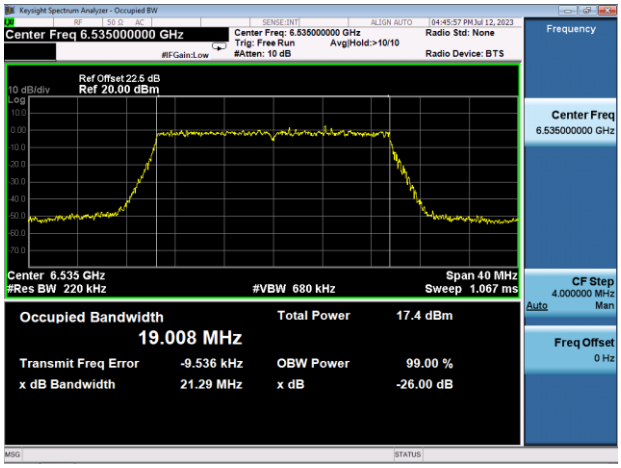
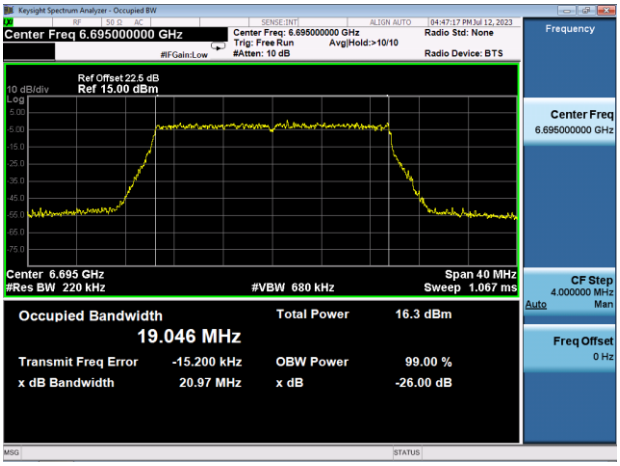
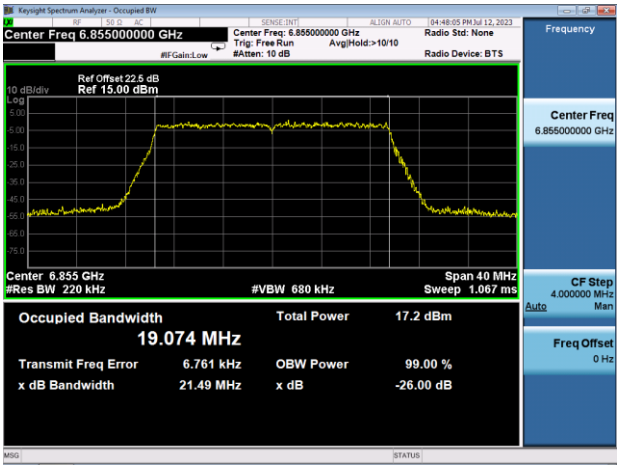
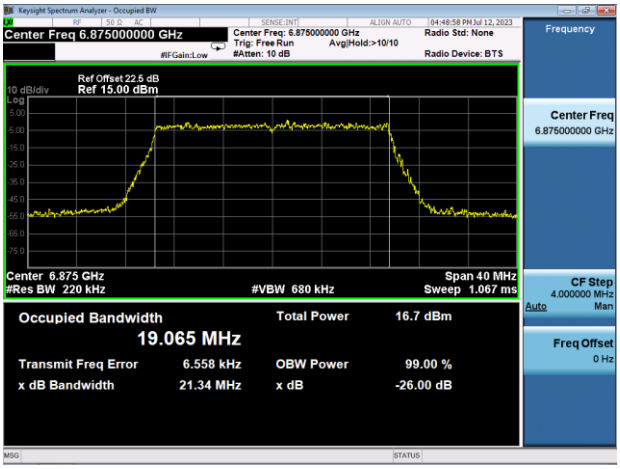
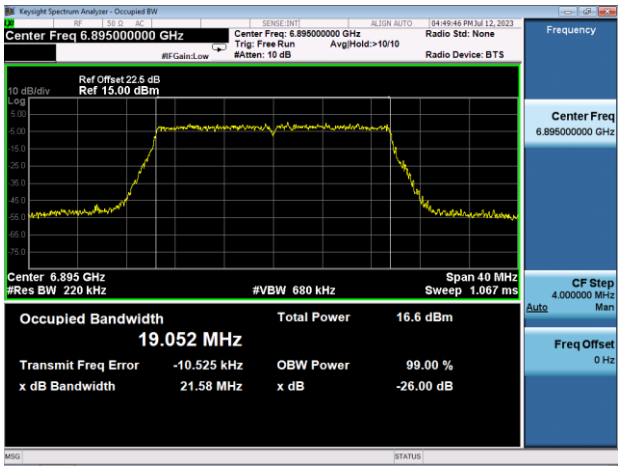
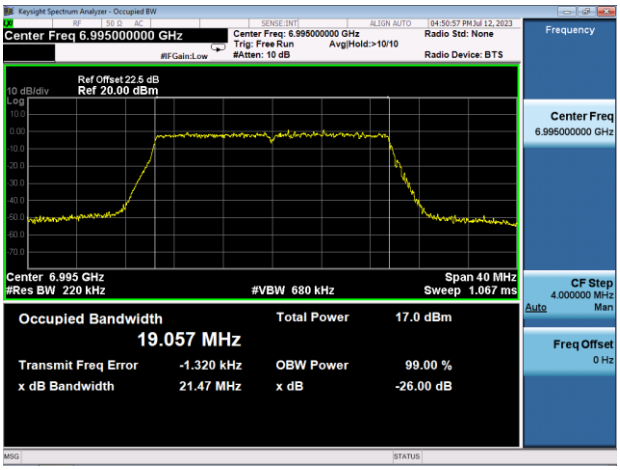
A.2 Channel Bandwidth Test Result

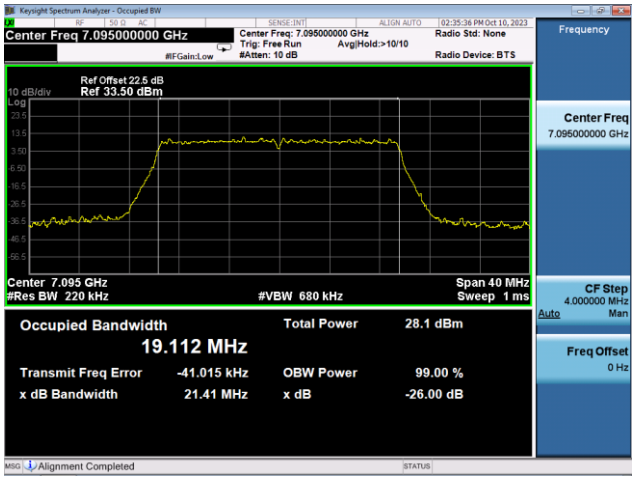
Test Site	WZ-SR5	Test Engineer	Luis Yang
Test Date	2023-07-12 ~ 2023-11-29		

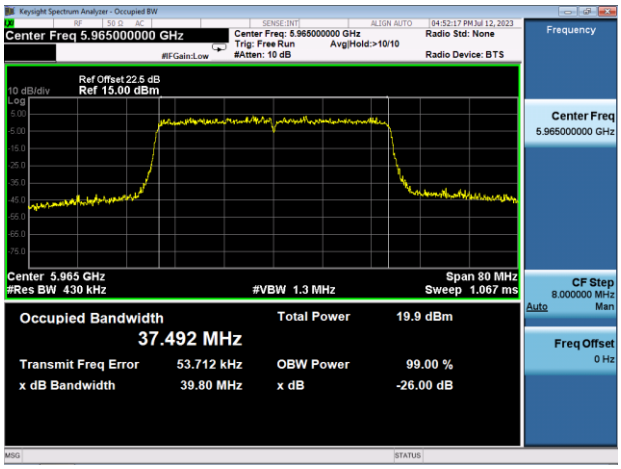
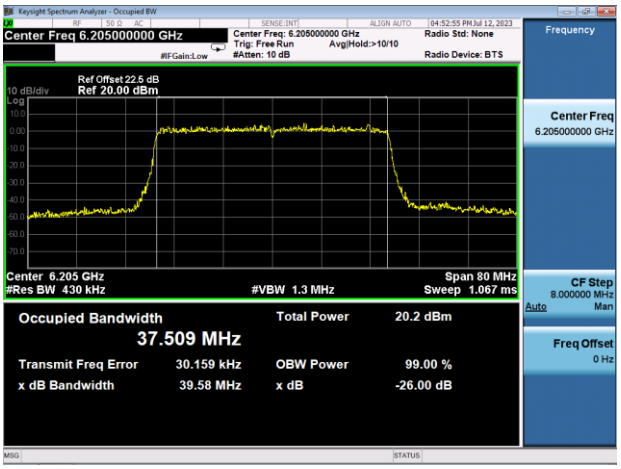
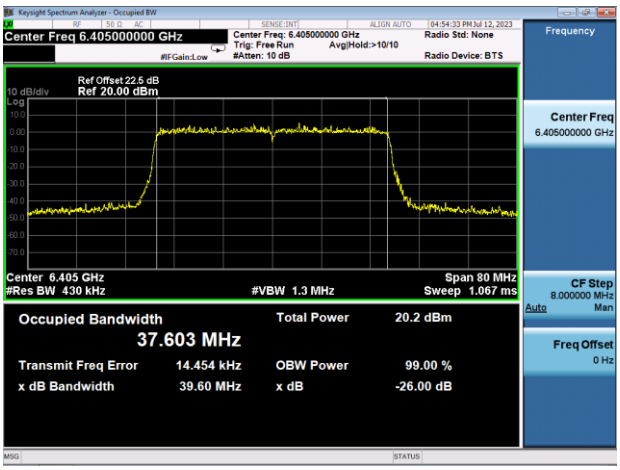
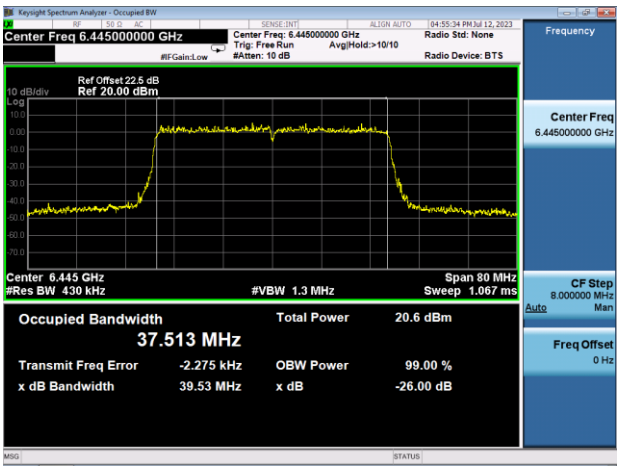
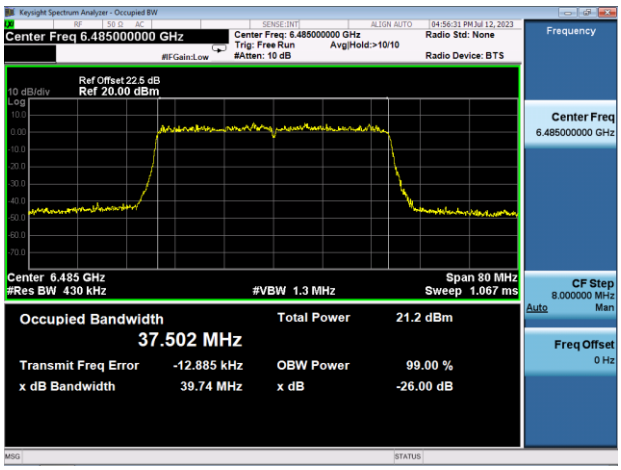
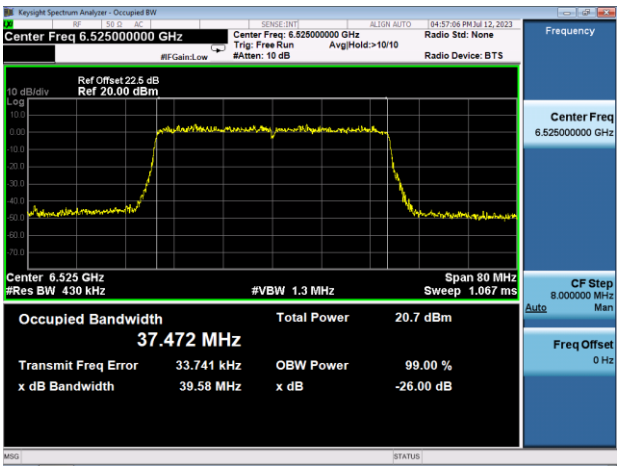
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Test Result
802.11ax-HE20	MCS0	1	5955	21.36	19.081	Pass
802.11ax-HE20	MCS0	49	6195	21.43	19.070	Pass
802.11ax-HE20	MCS0	93	6415	20.98	19.009	Pass
802.11ax-HE20	MCS0	97	6435	21.65	19.040	Pass
802.11ax-HE20	MCS0	105	6475	21.39	19.044	Pass
802.11ax-HE20	MCS0	113	6515	21.50	19.024	Pass
802.11ax-HE20	MCS0	117	6535	21.29	19.008	Pass
802.11ax-HE20	MCS0	149	6695	20.97	19.046	Pass
802.11ax-HE20	MCS0	181	6855	21.49	19.074	Pass
802.11ax-HE20	MCS0	185	6875	21.34	19.065	Pass
802.11ax-HE20	MCS0	189	6895	21.58	19.052	Pass
802.11ax-HE20	MCS0	209	6995	21.47	19.057	Pass
802.11ax-HE20	MCS0	229	7095	21.41	19.112	Pass
802.11ax-HE40	MCS0	3	5965	39.80	37.492	Pass
802.11ax-HE40	MCS0	51	6205	39.58	37.509	Pass
802.11ax-HE40	MCS0	91	6405	39.60	37.603	Pass
802.11ax-HE40	MCS0	99	6445	39.53	37.513	Pass
802.11ax-HE40	MCS0	107	6485	39.74	37.502	Pass
802.11ax-HE40	MCS0	115	6525	39.58	37.472	Pass
802.11ax-HE40	MCS0	123	6565	39.37	37.595	Pass
802.11ax-HE40	MCS0	147	6685	39.58	37.576	Pass
802.11ax-HE40	MCS0	179	6845	39.44	37.538	Pass
802.11ax-HE40	MCS0	187	6885	39.51	37.536	Pass
802.11ax-HE40	MCS0	195	6925	39.67	37.550	Pass
802.11ax-HE40	MCS0	211	7005	39.64	37.506	Pass
802.11ax-HE40	MCS0	227	7085	39.39	37.583	Pass

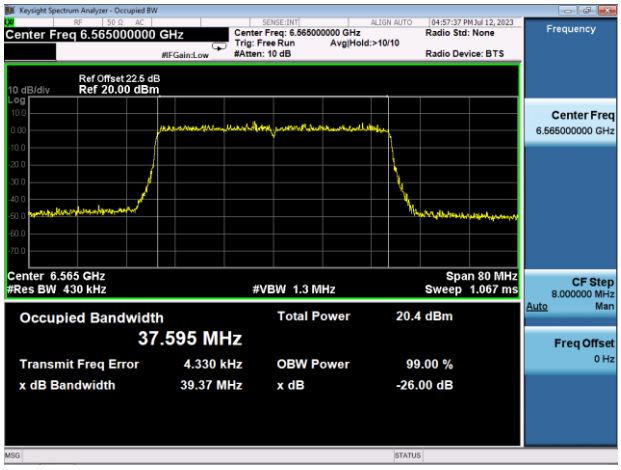
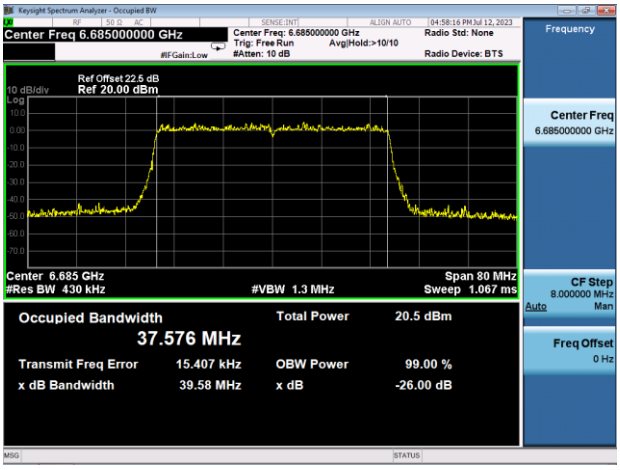
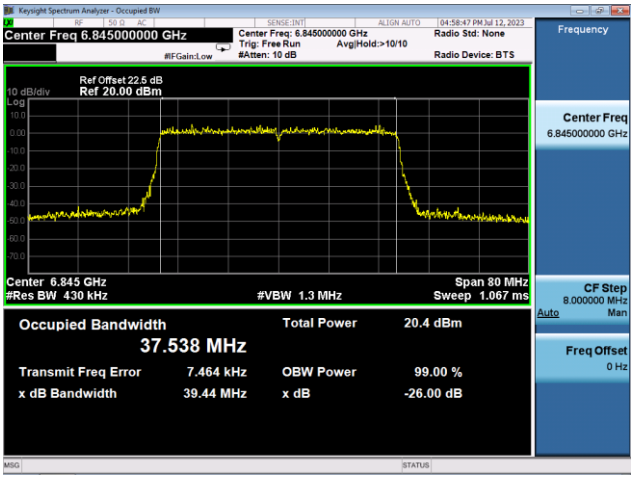
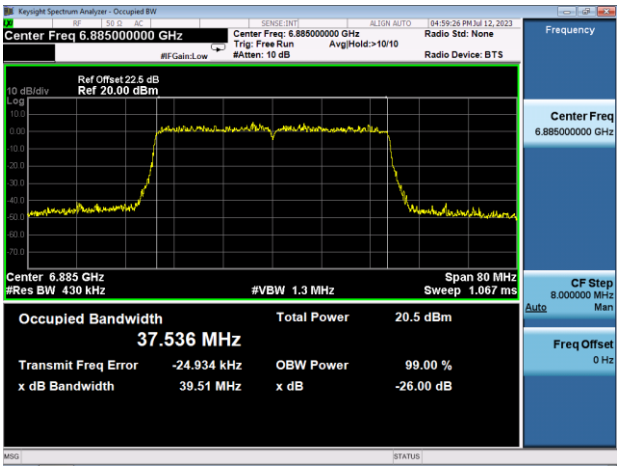
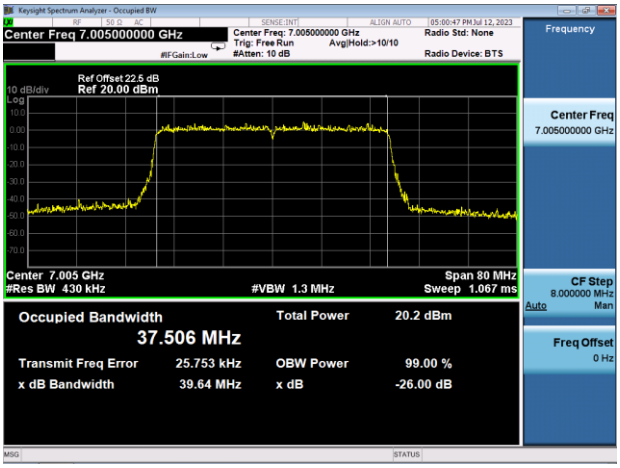
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Test Result
802.11ax-HE80	MCS0	7	5985	80.51	76.996	Pass
802.11ax-HE80	MCS0	55	6225	80.53	77.064	Pass
802.11ax-HE80	MCS0	87	6385	80.70	77.104	Pass
802.11ax-HE80	MCS0	103	6465	80.50	77.260	Pass
802.11ax-HE80	MCS0	119	6545	80.72	77.123	Pass
802.11ax-HE80	MCS0	135	6625	80.82	77.131	Pass
802.11ax-HE80	MCS0	151	6705	80.70	77.070	Pass
802.11ax-HE80	MCS0	167	6785	81.05	77.071	Pass
802.11ax-HE80	MCS0	183	6865	81.12	77.093	Pass
802.11ax-HE80	MCS0	199	6945	81.11	77.150	Pass
802.11ax-HE80	MCS0	215	7025	81.06	77.042	Pass
802.11ax-HE160	MCS0	15	6025	163.2	155.55	Pass
802.11ax-HE160	MCS0	47	6185	163.2	155.71	Pass
802.11ax-HE160	MCS0	79	6345	213.2	155.84	Pass
802.11ax-HE160	MCS0	111	6505	163.5	155.77	Pass
802.11ax-HE160	MCS0	143	6665	163.0	155.86	Pass
802.11ax-HE160	MCS0	175	6825	163.0	155.78	Pass
802.11ax-HE160	MCS0	207	6985	170.5	155.75	Pass

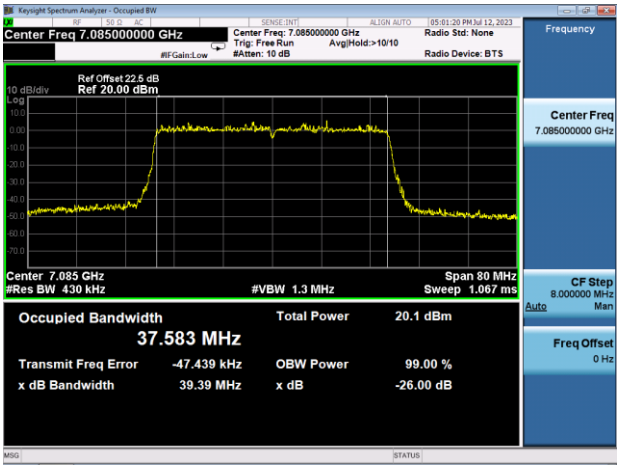
802.11ax-HE20 26dB Bandwidth	
Channel 1 (5955MHz)	Channel 49 (6195MHz)
	
Channel 93 (6415MHz)	Channel 97 (6435MHz)
	
Channel 105 (6475MHz)	Channel 113 (6515MHz)
	

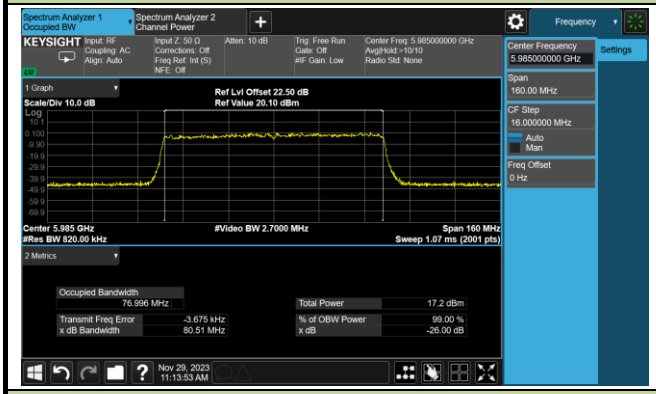
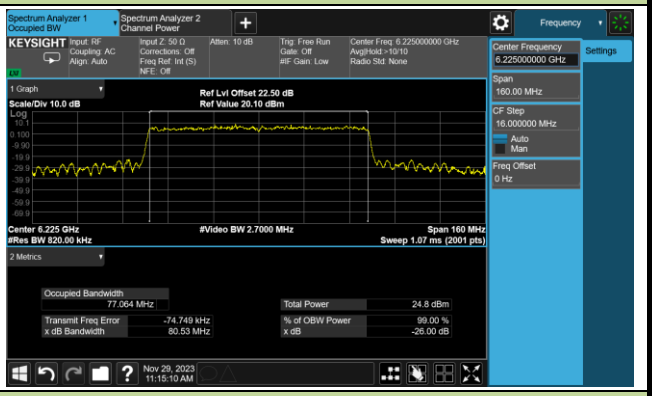
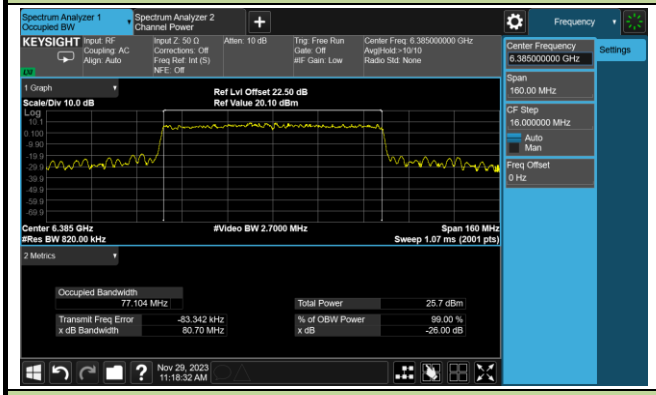
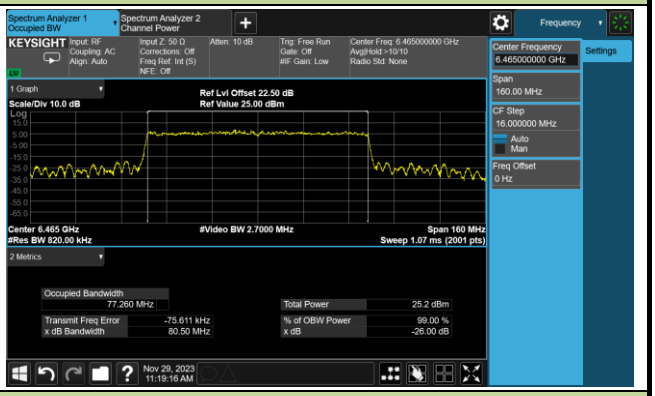
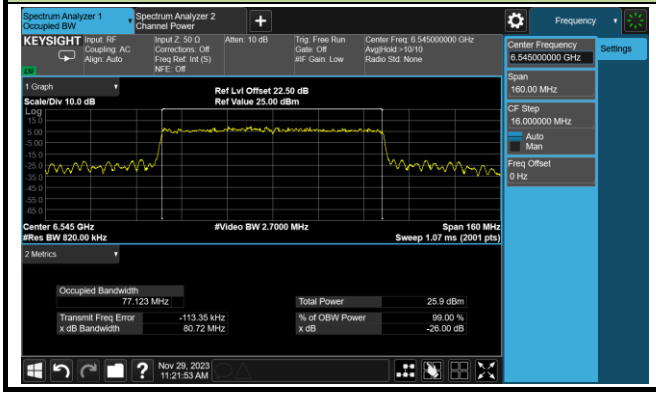
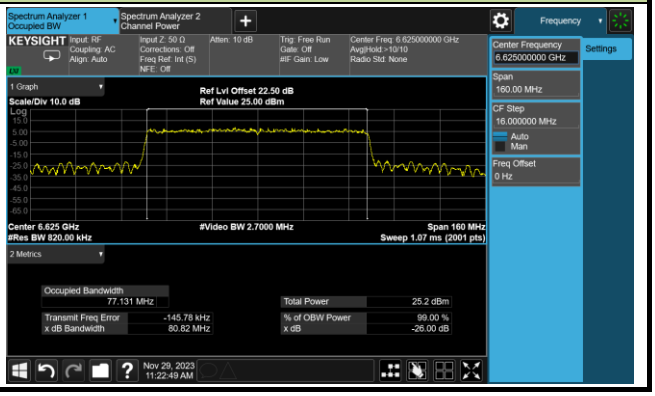
802.11ax-HE20 26dB Bandwidth	
Channel 117 (6535MHz)	Channel 149 (6595MHz)
	
Channel 181 (6855MHz)	Channel 185 (6875MHz)
	
Channel 189 (6895MHz)	Channel 209 (6995MHz)
	

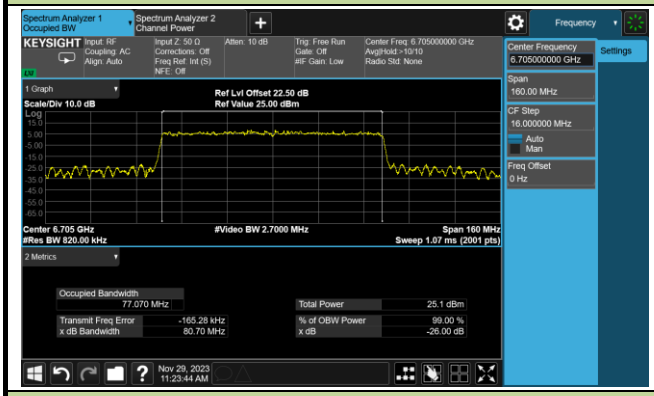
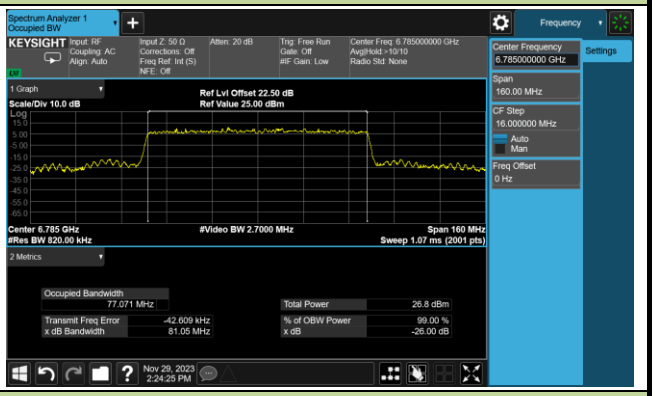
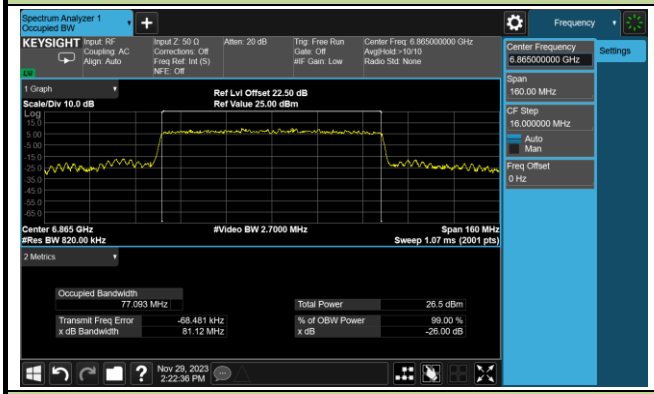
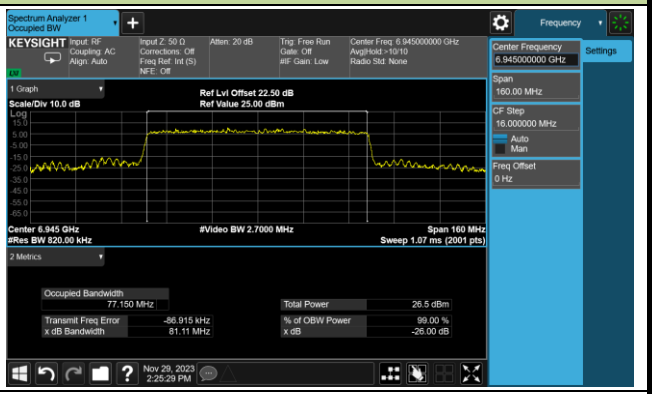
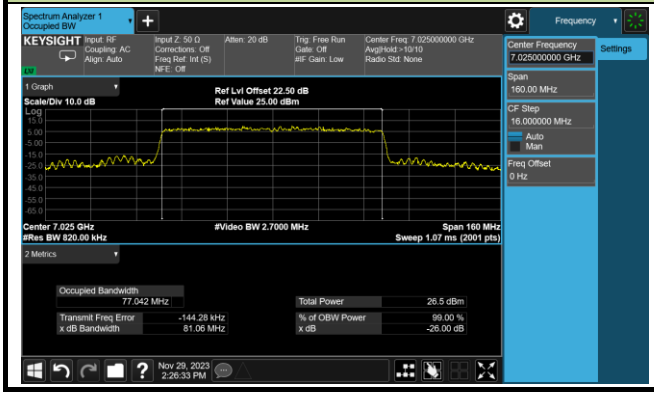
Channel 229 (7095MHz)	
	

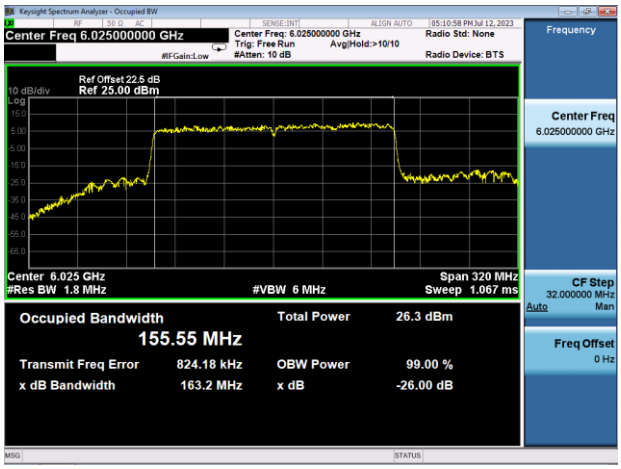
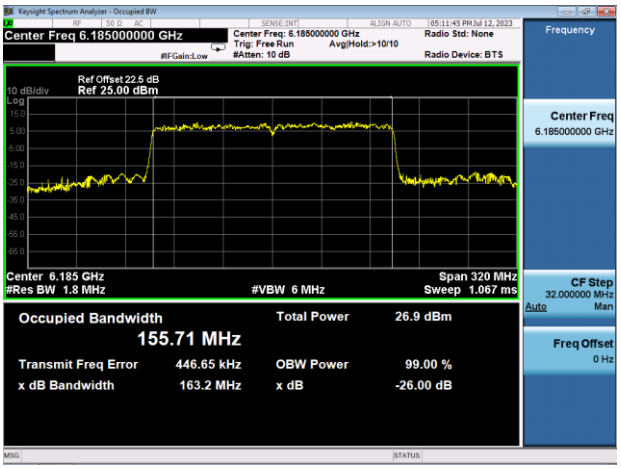
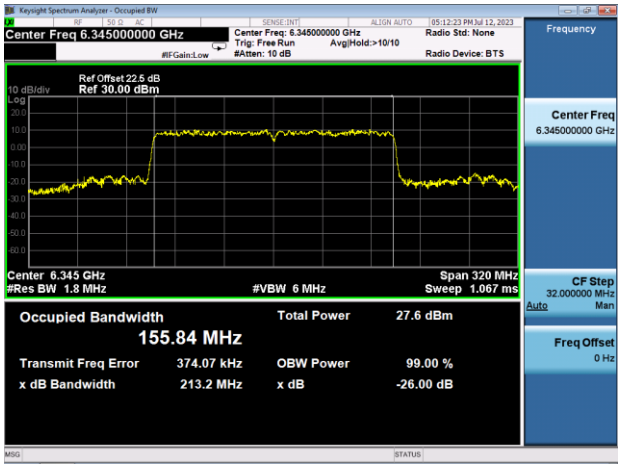
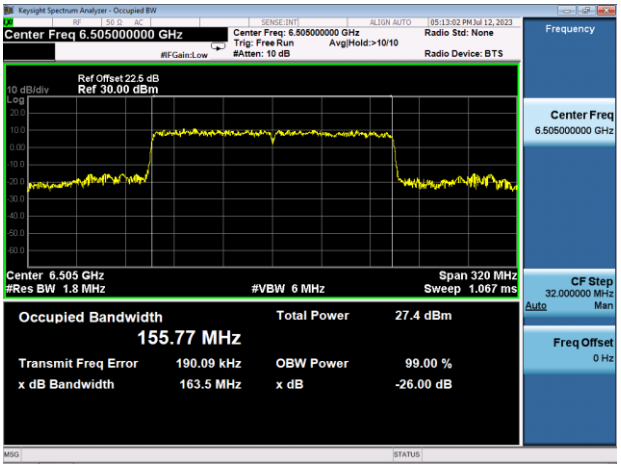
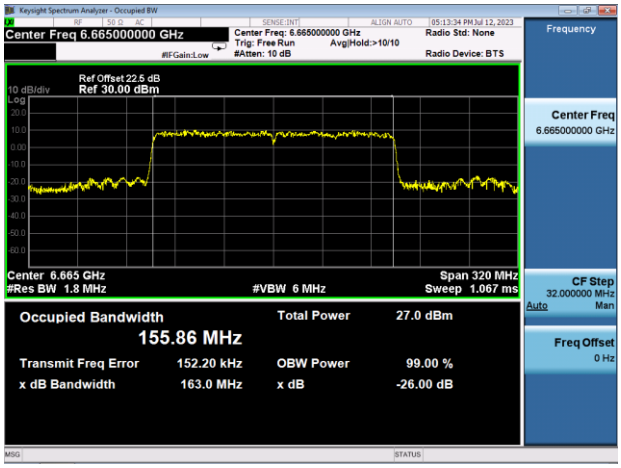
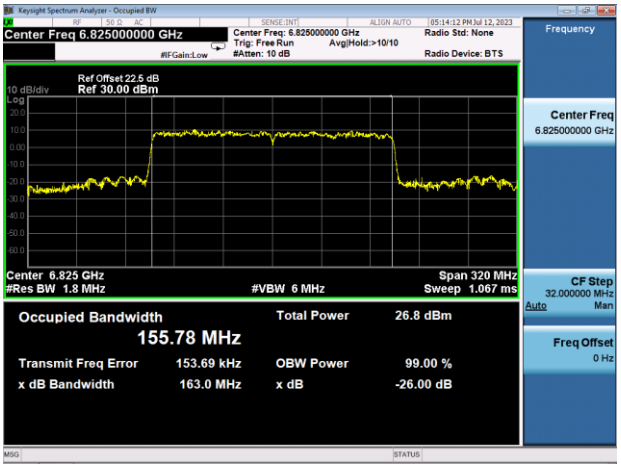
802.11ax-HE40 26dB Bandwidth	
Channel 3 (5965MHz)	Channel 51 (6205MHz)
	
Channel 91 (6405MHz)	Channel 99 (6445MHz)
	
Channel 107 (6485MHz)	Channel 115 (6525MHz)
	

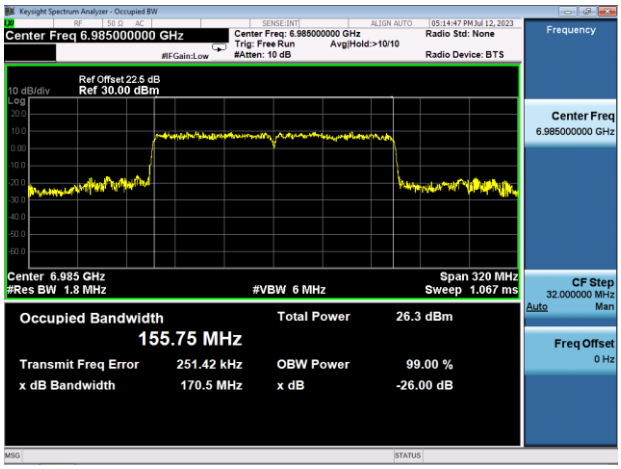
802.11ax-HE40 26dB Bandwidth	
Channel 123 (6565MHz)	Channel 147 (6685MHz)
	
Channel 179 (6845MHz)	Channel 187 (6885MHz)
	
Channel 195 (6925MHz)	Channel 211 (7005MHz)
	

802.11ax-HE40 26dB Bandwidth	
Channel 227 (7085MHz)	
	

802.11ax-HE80 26dB Bandwidth	
Channel 7 (5985MHz)	Channel 55 (6225MHz)
	
Channel 87 (6385MHz)	Channel 103 (6465MHz)
	
Channel 119 (6545MHz)	Channel 135 (6625MHz)
	

802.11ax-HE80 26dB Bandwidth	
Channel 151 (6705MHz)	Channel 167 (6785MHz)
	
Channel 183 (6865MHz)	Channel 199 (6945MHz)
	
Channel 215 (7025MHz)	
	

802.11ax-HE160 26dB Bandwidth	
Channel 15 (6025MHz)	Channel 47 (6185MHz)
	
Channel 79 (6345MHz)	Channel 111 (6505MHz)
	
Channel 143 (6665MHz)	Channel 175 (6825MHz)
	

802.11ax-HE160 26dB Bandwidth	
Channel 207 (6985MHz)	
	

A.3 Output Power Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-18		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	EIRP (dBm)	Limit (dBm)
CDD Mode (Nss = 1)								
11ax-HE20	MCS0	1	5955	6.17	7.21	9.73	13.73	≤ 30.00
11ax-HE20	MCS0	49	6195	7.82	7.92	10.88	14.88	≤ 30.00
11ax-HE20	MCS0	93	6415	7.16	6.31	9.77	13.77	≤ 30.00
11ax-HE20	MCS0	97	6435	8.83	7.44	11.20	15.20	≤ 30.00
11ax-HE20	MCS0	105	6475	7.01	7.09	10.06	14.06	≤ 30.00
11ax-HE20	MCS0	113	6515	8.43	7.37	10.94	14.94	≤ 30.00
11ax-HE20	MCS0	117	6535	7.64	7.46	10.56	14.56	≤ 30.00
11ax-HE20	MCS0	149	6695	7.51	7.32	10.43	14.43	≤ 30.00
11ax-HE20	MCS0	181	6855	7.52	7.26	10.40	14.40	≤ 30.00
11ax-HE20	MCS0	185	6875	8.15	7.23	10.72	14.72	≤ 30.00
11ax-HE20	MCS0	189	6895	7.45	7.75	10.61	14.61	≤ 30.00
11ax-HE20	MCS0	209	6995	8.22	7.22	10.76	14.76	≤ 30.00
11ax-HE20	MCS0	229	7095	7.59	8.37	11.01	15.01	≤ 30.00
11ax-HE40	MCS0	3	5965	9.74	9.98	12.87	16.87	≤ 30.00
11ax-HE40	MCS0	51	6205	10.12	9.86	13.00	17.00	≤ 30.00
11ax-HE40	MCS0	91	6405	10.36	10.18	13.28	17.28	≤ 30.00
11ax-HE40	MCS0	99	6445	10.40	9.97	13.20	17.20	≤ 30.00
11ax-HE40	MCS0	107	6485	10.42	9.38	12.94	16.94	≤ 30.00
11ax-HE40	MCS0	115	6525	9.92	9.86	12.90	16.90	≤ 30.00
11ax-HE40	MCS0	123	6565	10.55	9.41	13.03	17.03	≤ 30.00
11ax-HE40	MCS0	147	6685	9.45	9.35	12.41	16.41	≤ 30.00
11ax-HE40	MCS0	179	6845	9.57	9.15	12.38	16.38	≤ 30.00
11ax-HE40	MCS0	187	6885	9.52	9.51	12.53	16.53	≤ 30.00
11ax-HE40	MCS0	195	6925	10.36	9.15	12.81	16.81	≤ 30.00
11ax-HE40	MCS0	211	7005	9.71	8.98	12.37	16.37	≤ 30.00
11ax-HE40	MCS0	227	7085	9.79	8.76	12.32	16.32	≤ 30.00

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	EIRP (dBm)	Limit (dBm)
CDD Mode (Nss = 1)								
11ax-HE80	MCS0	7	5985	12.26	10.63	14.53	18.53	≤ 30.00
11ax-HE80	MCS0	55	6225	12.21	11.84	15.04	19.04	≤ 30.00
11ax-HE80	MCS0	87	6385	11.95	12.06	15.02	19.02	≤ 30.00
11ax-HE80	MCS0	103	6465	12.58	11.75	15.20	19.20	≤ 30.00
11ax-HE80	MCS0	119	6545	12.14	11.93	15.05	19.05	≤ 30.00
11ax-HE80	MCS0	135	6625	12.77	12.12	15.47	19.47	≤ 30.00
11ax-HE80	MCS0	151	6705	12.36	11.93	15.16	19.16	≤ 30.00
11ax-HE80	MCS0	167	6785	12.72	12.27	15.51	19.51	≤ 30.00
11ax-HE80	MCS0	183	6865	12.57	12.29	15.44	19.44	≤ 30.00
11ax-HE80	MCS0	199	6945	12.40	11.75	15.10	19.10	≤ 30.00
11ax-HE80	MCS0	215	7025	12.23	12.17	15.21	19.21	≤ 30.00
11ax-HE160	MCS0	15	6025	14.44	13.81	17.15	21.15	≤ 30.00
11ax-HE160	MCS0	47	6185	14.25	14.43	17.35	21.35	≤ 30.00
11ax-HE160	MCS0	79	6345	14.46	14.75	17.62	21.62	≤ 30.00
11ax-HE160	MCS0	111	6505	14.50	15.22	17.89	21.89	≤ 30.00
11ax-HE160	MCS0	143	6665	15.22	14.89	18.07	22.07	≤ 30.00
11ax-HE160	MCS0	175	6825	15.34	14.93	18.15	22.15	≤ 30.00
11ax-HE160	MCS0	207	6985	15.35	14.23	17.84	21.84	≤ 30.00

Note 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)}\}$.

Note 2: EIRP (dBm) = Total Average Power (dBm) + Directional Gain (dBi).

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-18		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	EIRP (dBm)	Limit (dBm)
CDD Mode (Nss = 2)								
11ax-HE20	MCS0	1	5955	9.96	9.33	12.67	16.67	≤ 30.00
11ax-HE20	MCS0	49	6195	9.49	9.78	12.65	16.65	≤ 30.00
11ax-HE20	MCS0	93	6415	10.09	9.37	12.76	16.76	≤ 30.00
11ax-HE20	MCS0	97	6435	10.07	9.68	12.89	16.89	≤ 30.00
11ax-HE20	MCS0	105	6475	10.28	9.74	13.03	17.03	≤ 30.00
11ax-HE20	MCS0	113	6515	9.88	9.85	12.88	16.88	≤ 30.00
11ax-HE20	MCS0	117	6535	9.92	9.45	12.70	16.70	≤ 30.00
11ax-HE20	MCS0	149	6695	9.55	9.49	12.53	16.53	≤ 30.00
11ax-HE20	MCS0	181	6855	9.93	9.32	12.65	16.65	≤ 30.00
11ax-HE20	MCS0	185	6875	9.89	9.33	12.63	16.63	≤ 30.00
11ax-HE20	MCS0	189	6895	9.73	8.89	12.34	16.34	≤ 30.00
11ax-HE20	MCS0	209	6995	10.17	9.20	12.72	16.72	≤ 30.00
11ax-HE20	MCS0	229	7095	9.97	9.17	12.60	16.60	≤ 30.00
11ax-HE40	MCS0	3	5965	11.89	12.53	15.23	19.23	≤ 30.00
11ax-HE40	MCS0	51	6205	12.45	12.15	15.31	19.31	≤ 30.00
11ax-HE40	MCS0	91	6405	12.42	12.65	15.55	19.55	≤ 30.00
11ax-HE40	MCS0	99	6445	13.23	12.38	15.84	19.84	≤ 30.00
11ax-HE40	MCS0	107	6485	12.99	12.59	15.80	19.80	≤ 30.00
11ax-HE40	MCS0	115	6525	12.65	12.74	15.71	19.71	≤ 30.00
11ax-HE40	MCS0	123	6565	12.89	12.19	15.56	19.56	≤ 30.00
11ax-HE40	MCS0	147	6685	12.49	12.23	15.37	19.37	≤ 30.00
11ax-HE40	MCS0	179	6845	13.47	12.67	16.10	20.10	≤ 30.00
11ax-HE40	MCS0	187	6885	12.67	12.43	15.56	19.56	≤ 30.00
11ax-HE40	MCS0	195	6925	13.47	12.16	15.87	19.87	≤ 30.00
11ax-HE40	MCS0	211	7005	13.28	12.26	15.81	19.81	≤ 30.00
11ax-HE40	MCS0	227	7085	12.72	11.62	15.22	19.22	≤ 30.00

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	EIRP (dBm)	Limit (dBm)
CDD Mode (Nss = 2)								
11ax-HE80	MCS0	7	5985	15.96	15.04	18.53	22.53	≤ 30.00
11ax-HE80	MCS0	55	6225	15.21	15.23	18.23	22.23	≤ 30.00
11ax-HE80	MCS0	87	6385	15.17	15.19	18.19	22.19	≤ 30.00
11ax-HE80	MCS0	103	6465	15.32	15.06	18.20	22.20	≤ 30.00
11ax-HE80	MCS0	119	6545	15.30	15.16	18.24	22.24	≤ 30.00
11ax-HE80	MCS0	135	6625	15.62	15.22	18.43	22.43	≤ 30.00
11ax-HE80	MCS0	151	6705	15.84	15.29	18.58	22.58	≤ 30.00
11ax-HE80	MCS0	167	6785	15.69	15.81	18.76	22.76	≤ 30.00
11ax-HE80	MCS0	183	6865	15.88	15.24	18.58	22.58	≤ 30.00
11ax-HE80	MCS0	199	6945	15.52	15.19	18.37	22.37	≤ 30.00
11ax-HE80	MCS0	215	7025	15.40	14.88	18.16	22.16	≤ 30.00
11ax-HE160	MCS0	15	6025	17.55	16.95	20.27	24.27	≤ 30.00
11ax-HE160	MCS0	47	6185	17.44	17.26	20.36	24.36	≤ 30.00
11ax-HE160	MCS0	79	6345	18.15	18.30	21.24	25.24	≤ 30.00
11ax-HE160	MCS0	111	6505	17.78	17.88	20.84	24.84	≤ 30.00
11ax-HE160	MCS0	143	6665	18.49	18.43	21.47	25.47	≤ 30.00
11ax-HE160	MCS0	175	6825	18.18	17.85	21.03	25.03	≤ 30.00
11ax-HE160	MCS0	207	6985	17.35	17.10	20.24	24.24	≤ 30.00

Note 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} + 10^{(\text{Ant 1 Average Power }/10)}\}$.

Note 2: EIRP (dBm) = Total Average Power (dBm) + Directional Gain (dBi).

A.4 Power Spectral Density Test Result

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-10 ~ 2023-07-26		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)
CDD Mode (Nss = 1)								
802.11ax-HE20	MCS0	1	5955	-5.393	-5.175	97.76	4.83	≤ 5.00
802.11ax-HE20	MCS0	49	6195	-6.416	-4.649	97.76	4.67	≤ 5.00
802.11ax-HE20	MCS0	93	6415	-5.267	-5.340	97.76	4.81	≤ 5.00
802.11ax-HE20	MCS0	97	6435	-4.677	-6.258	97.76	4.71	≤ 5.00
802.11ax-HE20	MCS0	105	6475	-5.224	-5.556	97.76	4.72	≤ 5.00
802.11ax-HE20	MCS0	113	6515	-5.111	-5.591	97.76	4.76	≤ 5.00
802.11ax-HE20	MCS0	117	6535	-5.339	-5.344	97.76	4.77	≤ 5.00
802.11ax-HE20	MCS0	149	6695	-5.592	-5.480	97.76	4.57	≤ 5.00
802.11ax-HE20	MCS0	181	6855	-5.378	-5.855	97.76	4.50	≤ 5.00
802.11ax-HE20	MCS0	185	6875	-5.327	-5.881	97.76	4.51	≤ 5.00
802.11ax-HE20	MCS0	189	6895	-5.702	-5.421	97.76	4.55	≤ 5.00
802.11ax-HE20	MCS0	209	6995	-5.133	-5.605	97.76	4.75	≤ 5.00
802.11ax-HE20	MCS0	229	7095	-5.211	-5.423	97.76	4.79	≤ 5.00
802.11ax-HE40	MCS0	3	5965	-5.661	-5.611	96.06	4.55	≤ 5.00
802.11ax-HE40	MCS0	51	6205	-5.949	-5.192	96.06	4.63	≤ 5.00
802.11ax-HE40	MCS0	91	6405	-5.618	-5.719	96.06	4.52	≤ 5.00
802.11ax-HE40	MCS0	99	6445	-5.123	-5.687	96.06	4.79	≤ 5.00
802.11ax-HE40	MCS0	107	6485	-5.690	-5.338	96.06	4.67	≤ 5.00
802.11ax-HE40	MCS0	115	6525	-5.209	-5.583	96.06	4.79	≤ 5.00
802.11ax-HE40	MCS0	123	6565	-5.194	-6.124	96.06	4.55	≤ 5.00
802.11ax-HE40	MCS0	147	6685	-5.355	-5.433	96.06	4.79	≤ 5.00
802.11ax-HE40	MCS0	179	6845	-5.237	-6.026	96.06	4.57	≤ 5.00
802.11ax-HE40	MCS0	187	6885	-5.162	-5.554	96.06	4.83	≤ 5.00
802.11ax-HE40	MCS0	195	6925	-4.734	-6.188	96.06	4.78	≤ 5.00
802.11ax-HE40	MCS0	211	7005	-5.177	-6.243	96.06	4.51	≤ 5.00
802.11ax-HE40	MCS0	227	7085	-5.238	-6.043	96.06	4.56	≤ 5.00

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)
CDD Mode (Nss = 1)								
802.11ax-HE80	MCS0	7	5985	-4.947	-6.169	92.58	4.83	≤ 5.00
802.11ax-HE80	MCS0	55	6225	-5.794	-5.603	92.58	4.65	≤ 5.00
802.11ax-HE80	MCS0	87	6385	-5.686	-5.906	92.58	4.55	≤ 5.00
802.11ax-HE80	MCS0	103	6465	-5.190	-6.303	92.58	4.63	≤ 5.00
802.11ax-HE80	MCS0	119	6545	-5.084	-6.092	92.58	4.79	≤ 5.00
802.11ax-HE80	MCS0	135	6625	-5.254	-6.058	92.58	4.71	≤ 5.00
802.11ax-HE80	MCS0	151	6705	-5.039	-6.309	92.58	4.72	≤ 5.00
802.11ax-HE80	MCS0	167	6785	-5.475	-5.610	92.58	4.80	≤ 5.00
802.11ax-HE80	MCS0	183	6865	-5.269	-5.991	92.58	4.73	≤ 5.00
802.11ax-HE80	MCS0	199	6945	-5.407	-6.168	92.58	4.57	≤ 5.00
802.11ax-HE80	MCS0	215	7025	-5.679	-5.777	92.58	4.62	≤ 5.00
802.11ax-HE160	MCS0	15	6025	-6.060	-5.841	88.31	4.60	≤ 5.00
802.11ax-HE160	MCS0	47	6185	-5.628	-5.950	88.31	4.76	≤ 5.00
802.11ax-HE160	MCS0	79	6345	-5.561	-6.445	88.31	4.57	≤ 5.00
802.11ax-HE160	MCS0	111	6505	-5.832	-6.045	88.31	4.61	≤ 5.00
802.11ax-HE160	MCS0	143	6665	-5.967	-5.823	88.31	4.66	≤ 5.00
802.11ax-HE160	MCS0	175	6825	-5.487	-6.351	88.31	4.65	≤ 5.00
802.11ax-HE160	MCS0	207	6985	-5.223	-6.770	88.31	4.62	≤ 5.00

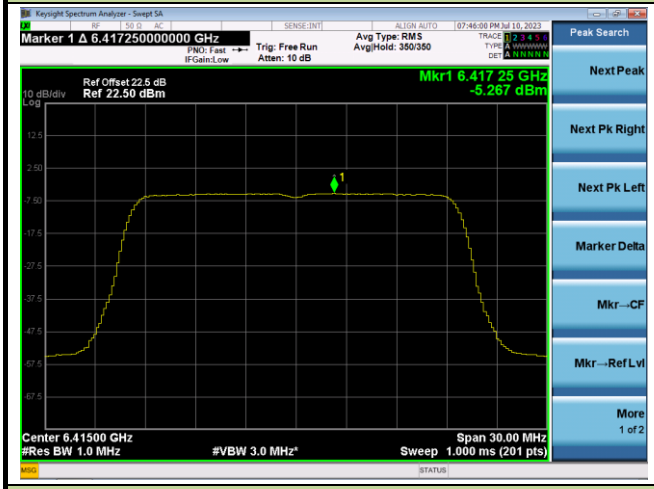
Note: When EUT duty cycle < 98%, EIRP PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle) + Directional Gain (dBi).

Test Site	WZ-SR5	Test Engineer	Lynn Yang
Test Date	2023-07-10 ~ 2023-07-26		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)
CDD Mode (Nss = 2)								
802.11ax-HE20	MCS0	1	5955	-2.586	-2.372	97.76	4.63	≤ 5.00
802.11ax-HE20	MCS0	49	6195	-2.160	-2.485	97.76	4.79	≤ 5.00
802.11ax-HE20	MCS0	93	6415	-2.629	-2.408	97.76	4.59	≤ 5.00
802.11ax-HE20	MCS0	97	6435	-1.796	-2.784	97.76	4.85	≤ 5.00
802.11ax-HE20	MCS0	105	6475	-2.182	-2.557	97.76	4.74	≤ 5.00
802.11ax-HE20	MCS0	113	6515	-2.082	-2.606	97.76	4.77	≤ 5.00
802.11ax-HE20	MCS0	117	6535	-1.864	-2.872	97.76	4.77	≤ 5.00
802.11ax-HE20	MCS0	149	6695	-2.562	-2.625	97.76	4.52	≤ 5.00
802.11ax-HE20	MCS0	181	6855	-2.310	-2.689	97.76	4.61	≤ 5.00
802.11ax-HE20	MCS0	185	6875	-2.325	-2.604	97.76	4.65	≤ 5.00
802.11ax-HE20	MCS0	189	6895	-3.199	-2.012	97.76	4.54	≤ 5.00
802.11ax-HE20	MCS0	209	6995	-2.579	-2.137	97.76	4.76	≤ 5.00
802.11ax-HE20	MCS0	229	7095	-3.060	-2.166	97.76	4.52	≤ 5.00
802.11ax-HE40	MCS0	3	5965	-2.178	-2.981	96.06	4.62	≤ 5.00
802.11ax-HE40	MCS0	51	6205	-2.723	-2.617	96.06	4.52	≤ 5.00
802.11ax-HE40	MCS0	91	6405	-2.871	-2.453	96.06	4.53	≤ 5.00
802.11ax-HE40	MCS0	99	6445	-2.029	-3.168	96.06	4.62	≤ 5.00
802.11ax-HE40	MCS0	107	6485	-2.463	-2.397	96.06	4.75	≤ 5.00
802.11ax-HE40	MCS0	115	6525	-2.235	-2.974	96.06	4.60	≤ 5.00
802.11ax-HE40	MCS0	123	6565	-2.675	-2.587	96.06	4.55	≤ 5.00
802.11ax-HE40	MCS0	147	6685	-2.326	-2.634	96.06	4.71	≤ 5.00
802.11ax-HE40	MCS0	179	6845	-2.261	-2.594	96.06	4.76	≤ 5.00
802.11ax-HE40	MCS0	187	6885	-2.156	-3.038	96.06	4.61	≤ 5.00
802.11ax-HE40	MCS0	195	6925	-2.588	-2.748	96.06	4.52	≤ 5.00
802.11ax-HE40	MCS0	211	7005	-2.177	-2.612	96.06	4.80	≤ 5.00
802.11ax-HE40	MCS0	227	7085	-2.156	-3.047	96.06	4.61	≤ 5.00

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/MHz)	Ant 1 PSD (dBm/MHz)	Duty Cycle (%)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)
CDD Mode (Nss = 2)								
802.11ax-HE80	MCS0	7	5985	-2.811	-2.623	92.58	4.63	≤ 5.00
802.11ax-HE80	MCS0	55	6225	-2.690	-2.953	92.58	4.53	≤ 5.00
802.11ax-HE80	MCS0	87	6385	-2.494	-3.065	92.58	4.58	≤ 5.00
802.11ax-HE80	MCS0	103	6465	-2.269	-3.190	92.58	4.64	≤ 5.00
802.11ax-HE80	MCS0	119	6545	-2.333	-3.181	92.58	4.61	≤ 5.00
802.11ax-HE80	MCS0	135	6625	-2.475	-3.114	92.58	4.56	≤ 5.00
802.11ax-HE80	MCS0	151	6705	-2.699	-2.849	92.58	4.57	≤ 5.00
802.11ax-HE80	MCS0	167	6785	-2.191	-2.956	92.58	4.79	≤ 5.00
802.11ax-HE80	MCS0	183	6865	-2.708	-2.879	92.58	4.55	≤ 5.00
802.11ax-HE80	MCS0	199	6945	-2.028	-3.181	92.58	4.78	≤ 5.00
802.11ax-HE80	MCS0	215	7025	-2.756	-2.809	92.58	4.56	≤ 5.00
802.11ax-HE160	MCS0	15	6025	-3.132	-2.687	88.31	4.65	≤ 5.00
802.11ax-HE160	MCS0	47	6185	-3.409	-2.643	88.31	4.54	≤ 5.00
802.11ax-HE160	MCS0	79	6345	-2.836	-3.086	88.31	4.59	≤ 5.00
802.11ax-HE160	MCS0	111	6505	-2.547	-3.102	88.31	4.73	≤ 5.00
802.11ax-HE160	MCS0	143	6665	-3.550	-2.571	88.31	4.52	≤ 5.00
802.11ax-HE160	MCS0	175	6825	-2.966	-2.945	88.31	4.59	≤ 5.00
802.11ax-HE160	MCS0	207	6985	-3.196	-4.156	88.31	3.90	≤ 5.00

Note: When EUT duty cycle < 98%, EIRP PSD (dBm/MHz) = 10*log {$10^{(\text{Ant 0 PSD}/10)}$ + $10^{(\text{Ant 1 PSD}/10)}$} (dBm/MHz) + 10*log (1/Duty Cycle) + Directional Gain (dBi).

802.11ax-HE20 Power Spectral Density- Ant 0 (Nss = 1)	
Channel 1 (5955MHz)	Channel 49 (6195MHz)
	
Channel 93 (6415MHz)	Channel 97 (6435MHz)
	
Channel 105 (6475MHz)	Channel 113 (6515MHz)