

RF MEASUREMENT REPORT

FCC ID : 2AFG6-SI07E
Applicant : Guangzhou Shirui Electronics Co., Ltd.
Application Type : Certification
Product : WiFi Module
Model No. : SI07E
FCC Classification : 15E 6GHz Indoor Client (6XD)
FCC Rule Part(s) : Part 15 Subpart E (Section 15.407)
Received Date : February 20, 2024
Test Date : February 29, 2024 ~ April 16, 2024

Tested By : Owen Tsai
(Owen Tsai)
Reviewed By : Paddy Chen
(Paddy Chen)
Approved By : Chenz Ker
(Chenz Ker)



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. 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 (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2402TW0106-U7	1.0	Original Report	2024-04-17	

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General Information

Applicant	Guangzhou Shirui Electronics Co., Ltd.
Applicant Address	192 Kezhu Road, Scienteck Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China
Manufacturer	Guangzhou Shirui Electronics Co., Ltd.
Manufacturer Address	192 Kezhu Road, Scienteck Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China
Test Site	MRT Technology (Taiwan) Co., Ltd
Test Site Address	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.	291082
FCC Rule Part(s)	Part 15.407
Test Device Serial No.	#1-1 ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Firm.
2. MRT facility is an IC registered (MRT Reg. No. 21723) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the Taiwan Accreditation Foundation (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC (Designation Number: TW3261), Industry Canada, EU and TELEC Rules.

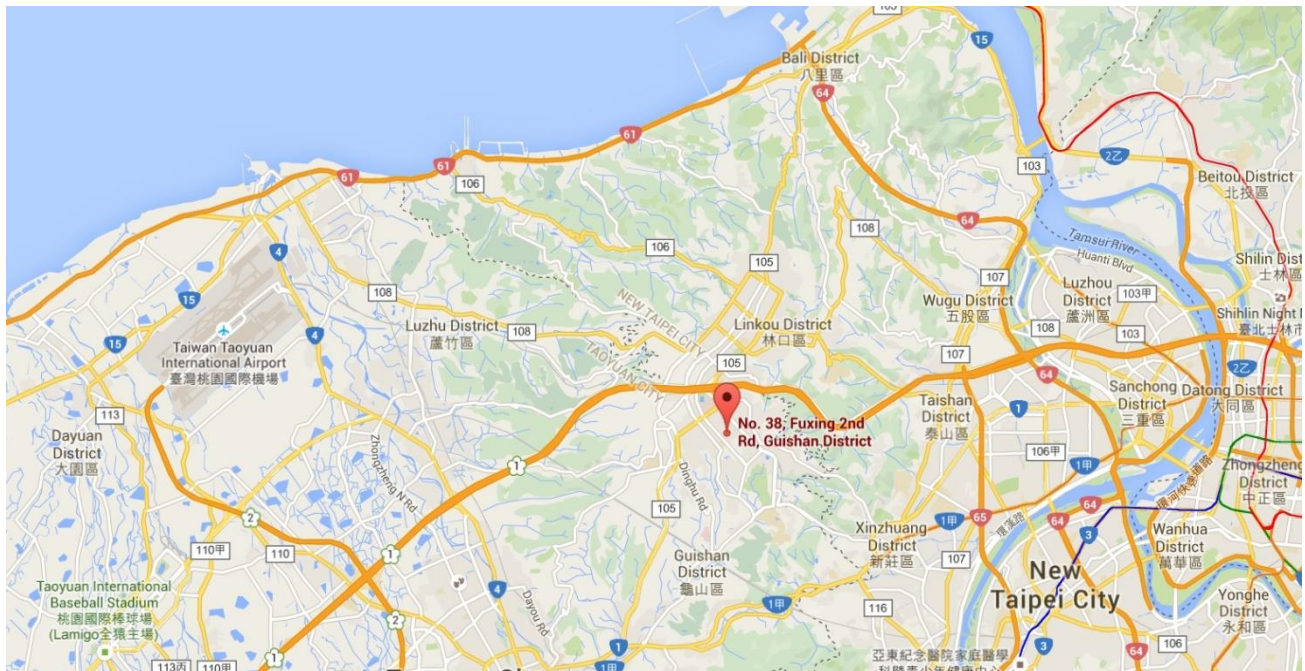
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada and Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. Product Information

2.1. Equipment Description

Product Name:	WiFi Module
Model No.:	SI07E
Test Sample Number	#1
RF Module	SKI.WB902.1
Wi-Fi Specification:	802.11a/b/g/n/ac/ax (1TX / 1RX)

2.2. Radio Specification

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 1201Mbps

Note: For other features of this EUT, test report will be issued separately.

2.3. 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

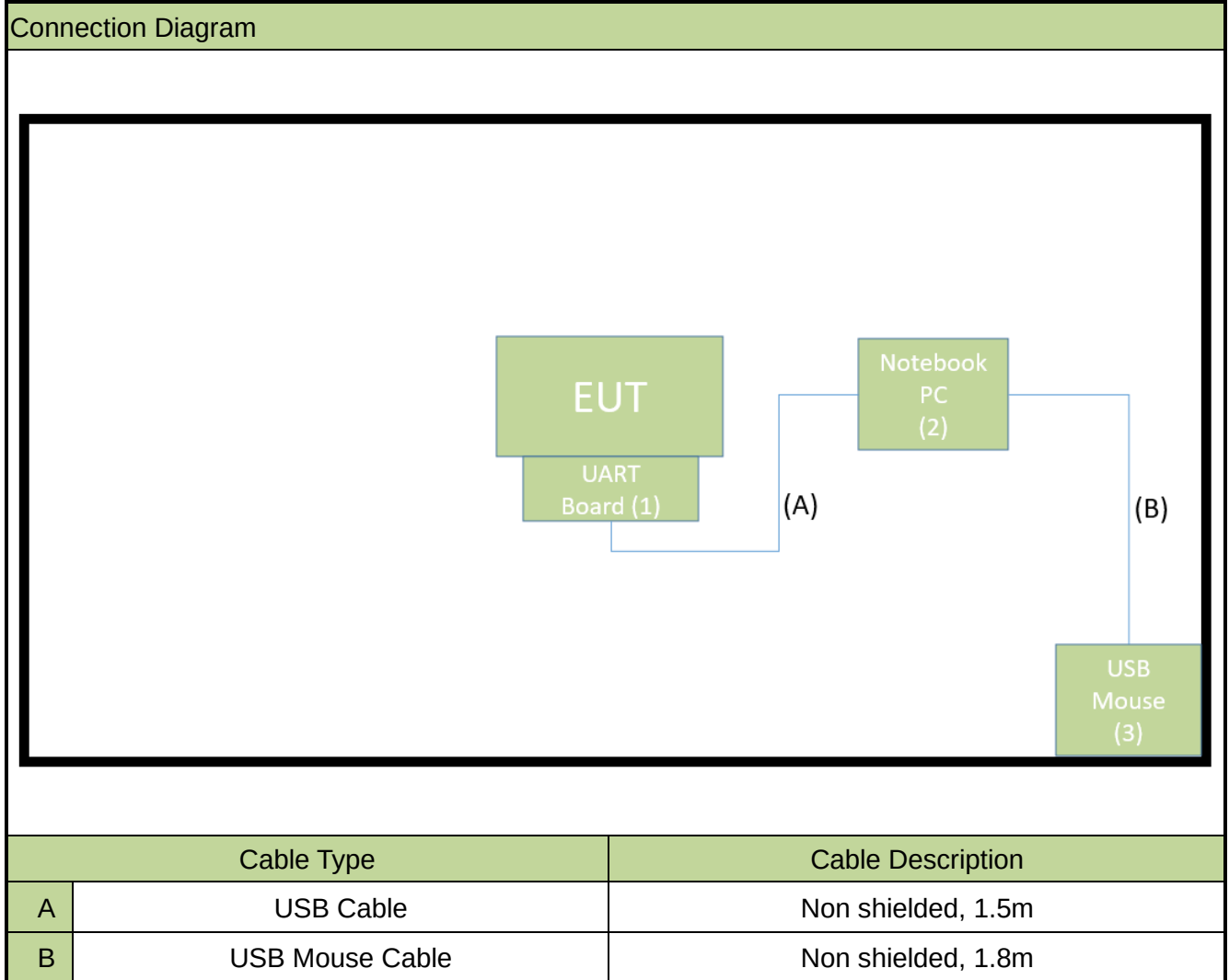
Channel	Frequency	Channel	Frequency	Channel	Frequency
15	6025 MHz	47	6185 MHz	79	6345 MHz
111	6505 MHz	143	6665 MHz	175	6825 MHz
207	6985 MHz		--	--	--

2.4. Test Mode

Mode
Mode 1: Transmit by 802.11ax-HE20_Nss=1 (MCS0)
Mode 2: Transmit by 802.11ax-HE40_Nss=1 (MCS0)
Mode 3: Transmit by 802.11ax-HE80_Nss=1 (MCS0)
Mode 4: Transmit by 802.11ax-HE160_Nss=1 (MCS0)
Remark: - For Radiated emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power. - EUT supports one configuration only in 802.11ax full RU mode.

2.5. 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.



2.6. Test System Details

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Uart Board	EFTDI	FT2232D	N/A	N/A
2	Notebook PC	DELL	P65F	N/A	Non-Shielded, 0.8m
3	USB Mouse	Logitech	M90	N/A	N/A

2.7. Test Software

The test utility software used during testing was “MT7902 QA”, the version is ver0.0.2.93.

Note: Final power setting please refer to operational description.

2.8. Applied Standards

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

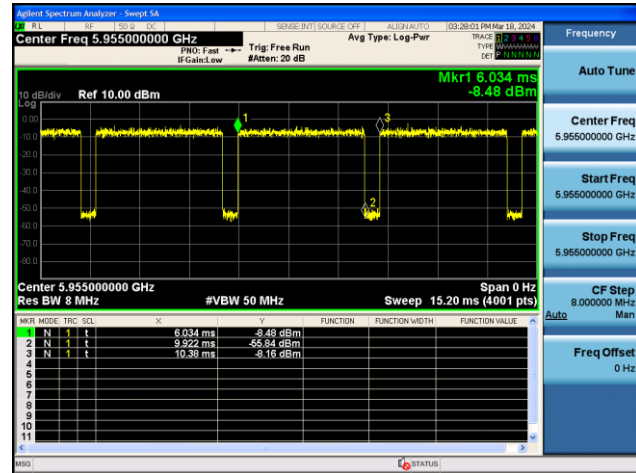
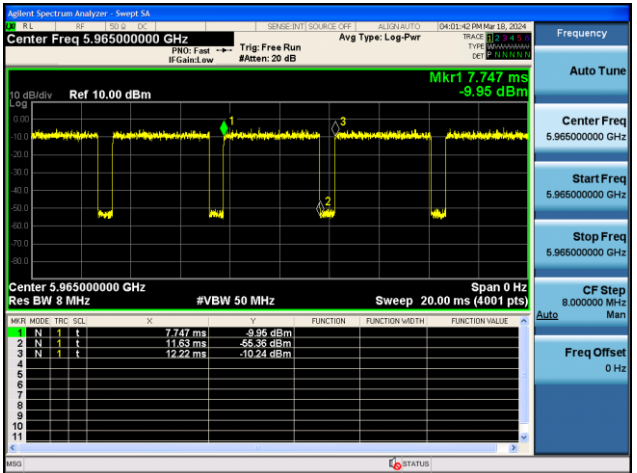
- ANSI C63.10-2013
- FCC KDB 789033 D02v02r01
- FCC KDB 987594 D02v01
- FCC KDB 662911 D01v02r01
- FCC KDB 414788 D01v01r01
- FCC KDB 412172 D01v01r01

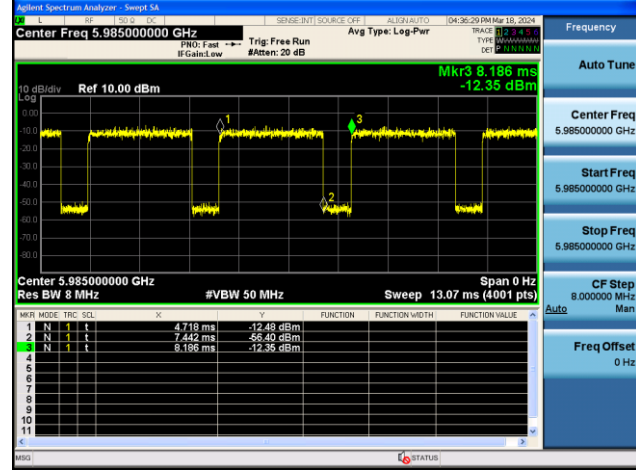
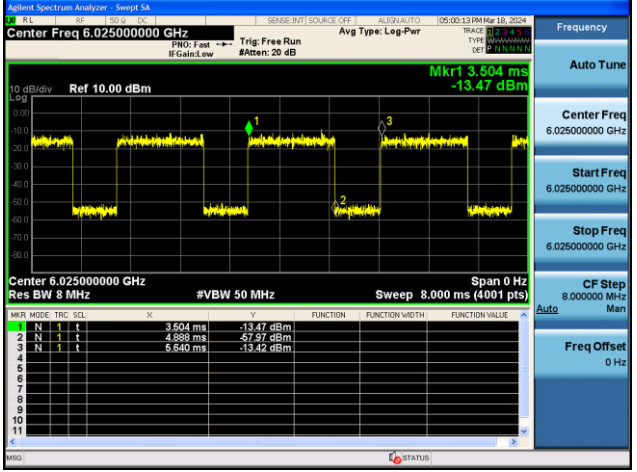
2.9. Duty Cycle

The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Test Mode	Duty Cycle
802.11ax-HE20	89.46%
802.11ax-HE40	86.81%
802.11ax-HE80	78.55%
802.11ax-HE160	64.79%

Duty Cycle	
802.11ax-HE20	802.11ax-HE40

2.10. Test Environment Condition

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

3. Antenna Requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

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).

Antenna Type	Frequency Band (MHz)	T _x Paths	Max Antenna Gain (dBi)
BT/BLE and Wi-Fi Antenna for SKI.WB902.1			
PCB	2402 ~ 2480	1	2.98
	2412 ~ 2462	1	4.28
	5150 ~ 5250	1	4.17
	5250 ~ 5350	1	4.43
	5470 ~ 5725	1	4.68
	5725 ~ 5850	1	4.40
	5945 ~ 6425	1	2.14
	6425 ~ 6525	1	-2.25
	6525 ~ 6885	1	0.85
	6885 ~ 7125	1	0.32

4. Measuring Instrument

Conducted Emissions – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2025/3/5
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2024/4/17
EMI Test Receiver	R&S	ESR3	MRTTWA00045	1 year	2024/5/10

Radiated Emissions – AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	MRTTWA00002	1 year	2024/5/22
Broadband TRILOG Antenna	SCHWARZBECK	VULB 9162	MRTTWA00001	1 year	2024/10/31
Broadband Hornantenna	RFSPIN	DRH18-E	MRTTWA00087	1 year	2024/5/17
Broadband Preamplifier	EMC Instruments corporation	EMC118A45SE	MRTTWA00088	1 year	2024/5/17
Broadband Hornantenna	SCHWARZBECK	BBHA 9170	MRTTWA00004	1 year	2024/3/20
Broadband Amplifier	SCHWARZBECK	BBV 9721	MRTTWA00006	1 year	2024/3/27
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2025/3/5
Signal Analyzer	R&S	FSVA3044	MRTTWA00092	1 year	2024/6/29

Conducted Test Equipment – SR3 / SR6

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EXA Signal Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2024/10/17
EXA Signal Analyzer	KEYSIGHT	N9010B	MRTTWA00074	1 year	2024/7/19
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2024/4/19
Programmable Temperature & Humidity Chamber	TEN BILLION	TTH-B3UP	MRTTWA00036	1 year	2024/6/11
Vector Signal Generator	Keysight	N5182B	MRTTWA00010	1 year	2024/5/22
EXA Analog Signal Generator	KEYSIGHT	N5173B	MRTTWA00072	1 year	2024/5/22

Test Software

Software	Version	Function
e3	9.160520a	EMI Test Software

5. 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
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 150kHz~30MHz: $\pm 2.53\text{dB}$
Radiated Emission Measurement
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 9kHz ~ 1GHz: $\pm 4.25\text{dB}$ 1GHz ~ 40GHz: $\pm 4.45\text{dB}$
Conducted Power (Carrier Power / Power Density)
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.84\text{dB}$
Conducted Spurious Emission
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 2.65\text{ dB}$
Occupied Bandwidth
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 3.3\%$
Temp. / Humidity
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 0.82^\circ\text{C} / \pm 3\%$
Frequency Error
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): $\pm 78.4\text{Hz}$

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.407(a)	26dB Bandwidth	Conducted	Pass
15.407(a)(5), (a)(6)	Maximum Equivalent Isotropically Radiated Power (E.I.R.P)		Pass
15.407(a)(5), (a)(6)	Peak Power Spectral Density (E.I.R.P)		Pass
15.407(b)(6)	In-Band Emission		Pass
15.407(d)(6)	Contention-Based Protocol		Pass
15.407(b)(5)	Unwanted Emissions		Pass
15.407(b)(7), (8), (9)	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass
15.207	AC Conducted Emissions 150kHz - 30MHz	Line Conducted	Pass

Remark:

- Determining compliance is based on the test results met the regulation limits or requirements declared by clients, and the test results don't take into account the value of measurement uncertainty.
- 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.
- Output power test was verified over all data rates of each mode (data refers to operational description), and then choose the maximum power output (low data rate) for final test of each channel.
- For radiated emission test, the test results shown in the following sections represent the worst-case emissions.
- EUT supports one configuration only in 802.11ax full RU mode.

6.2. 26dB Bandwidth

6.2.1. Test Limit

N/A

6.2.2. Test Procedure used

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

KDB 789033 D02v02r01- Section D (99% Bandwidth)

6.2.3. Test Setting

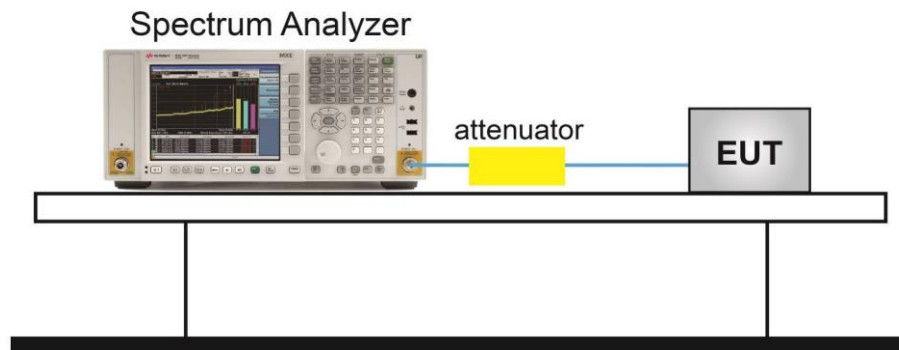
26dB Bandwidth

1. The analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to $X = 26$. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediated power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth.
3. VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold.

99% 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 VBW $\geq 3 \times$ RBW
5. Detector = Peak.
6. Use the 99% power bandwidth function of the instrument.

6.2.4. Test Setup



6.2.5. Test Result

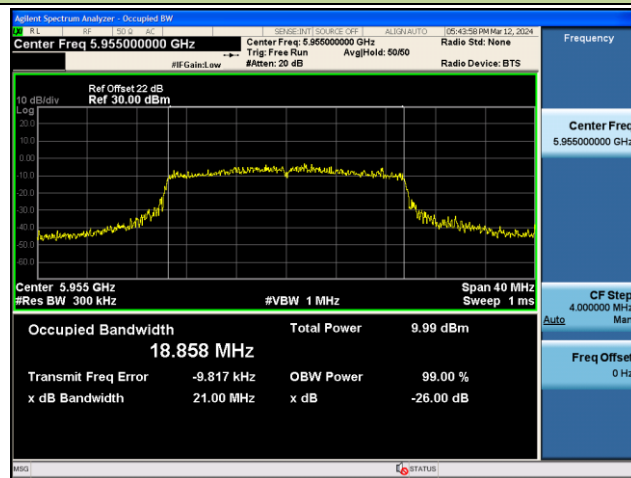
Test Site	SR6	Test Engineer	Owen
Test Date	2024/2/29~2024/3/12		

Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11ax-HE20	MCS0	1	5955	21.00	18.858
802.11ax-HE20	MCS0	33	6115	21.43	18.801
802.11ax-HE20	MCS0	93	6415	21.50	18.880
802.11ax-HE20	MCS0	97	6435	20.73	18.838
802.11ax-HE20	MCS0	105	6475	20.70	18.837
802.11ax-HE20	MCS0	113	6515	21.00	18.831
802.11ax-HE20	MCS0	117	6535	20.99	18.834
802.11ax-HE20	MCS0	149	6695	20.81	18.899
802.11ax-HE20	MCS0	181	6855	21.57	18.902
802.11ax-HE20	MCS0	185	6875	21.26	18.866
802.11ax-HE20	MCS0	189	6895	21.09	18.805
802.11ax-HE20	MCS0	213	7015	21.18	18.886
802.11ax-HE20	MCS0	229	7095	21.34	18.943
802.11ax-HE40	MCS0	3	5965	39.30	37.483
802.11ax-HE40	MCS0	43	6165	39.47	37.621
802.11ax-HE40	MCS0	91	6405	39.53	37.606
802.11ax-HE40	MCS0	99	6445	39.38	37.574
802.11ax-HE40	MCS0	107	6485	39.23	37.686
802.11ax-HE40	MCS0	115	6525	39.42	37.557
802.11ax-HE40	MCS0	123	6565	39.30	37.574
802.11ax-HE40	MCS0	147	6685	39.38	37.570
802.11ax-HE40	MCS0	179	6845	39.36	37.559
802.11ax-HE40	MCS0	187	6885	39.30	37.556
802.11ax-HE40	MCS0	195	6925	39.37	37.567
802.11ax-HE40	MCS0	211	7005	39.37	37.616
802.11ax-HE40	MCS0	227	7085	39.29	37.533

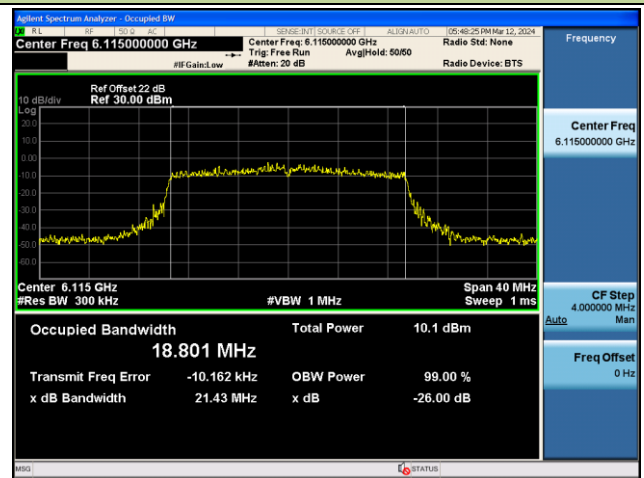
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
802.11ax-HE80	MCS0	7	5985	80.19	76.846
802.11ax-HE80	MCS0	39	6145	80.22	76.910
802.11ax-HE80	MCS0	87	6385	80.11	76.806
802.11ax-HE80	MCS0	103	6465	80.19	76.802
802.11ax-HE80	MCS0	119	6545	80.09	76.885
802.11ax-HE80	MCS0	135	6625	80.18	77.114
802.11ax-HE80	MCS0	151	6705	80.22	76.903
802.11ax-HE80	MCS0	183	6865	80.12	77.137
802.11ax-HE80	MCS0	199	6945	80.13	76.970
802.11ax-HE80	MCS0	215	7025	81.92	77.141
802.11ax-HE160	MCS0	15	6025	161.9	155.34
802.11ax-HE160	MCS0	47	6185	162.0	155.77
802.11ax-HE160	MCS0	79	6345	162.1	155.71
802.11ax-HE160	MCS0	111	6505	166.2	156.46
802.11ax-HE160	MCS0	143	6665	161.9	155.99
802.11ax-HE160	MCS0	175	6825	162.1	155.62
802.11ax-HE160	MCS0	207	6985	162.3	155.88

802.11ax-HE20 26dB Bandwidth & 99% Bandwidth

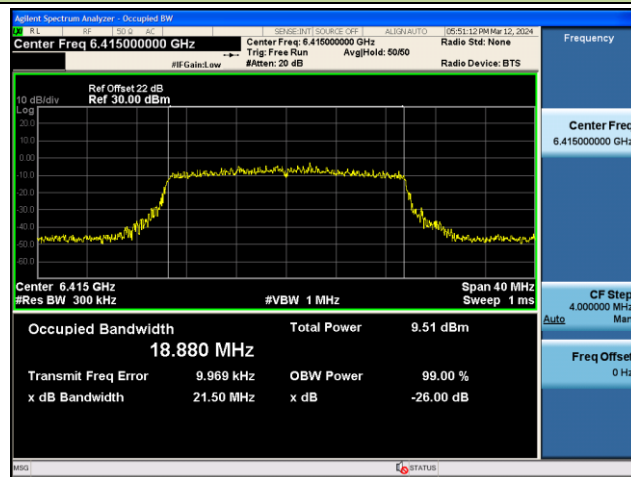
Channel 1 (5955MHz)



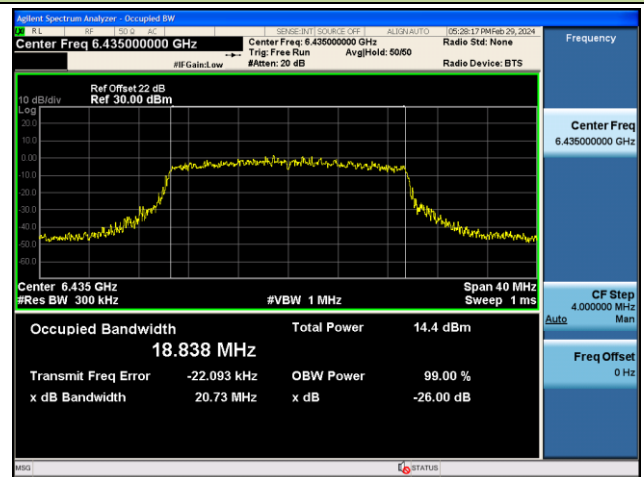
Channel 33 (6115MHz)



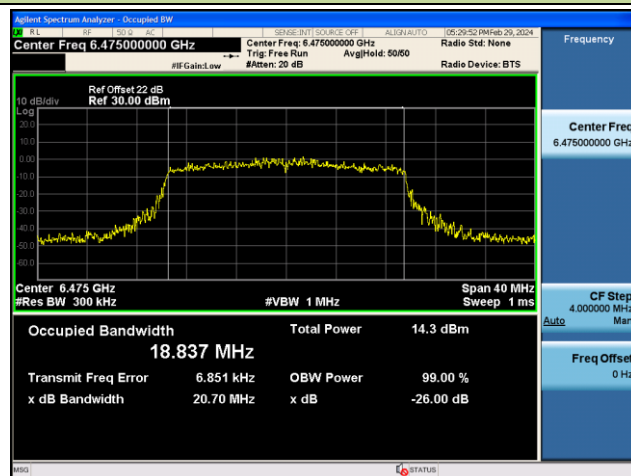
Channel 93 (6415MHz)



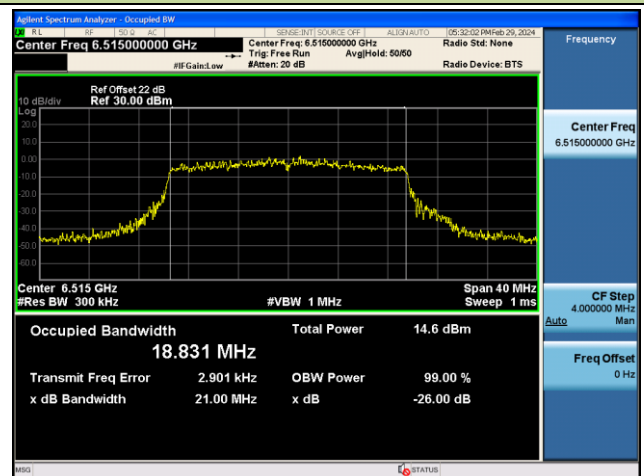
Channel 97 (6435MHz)

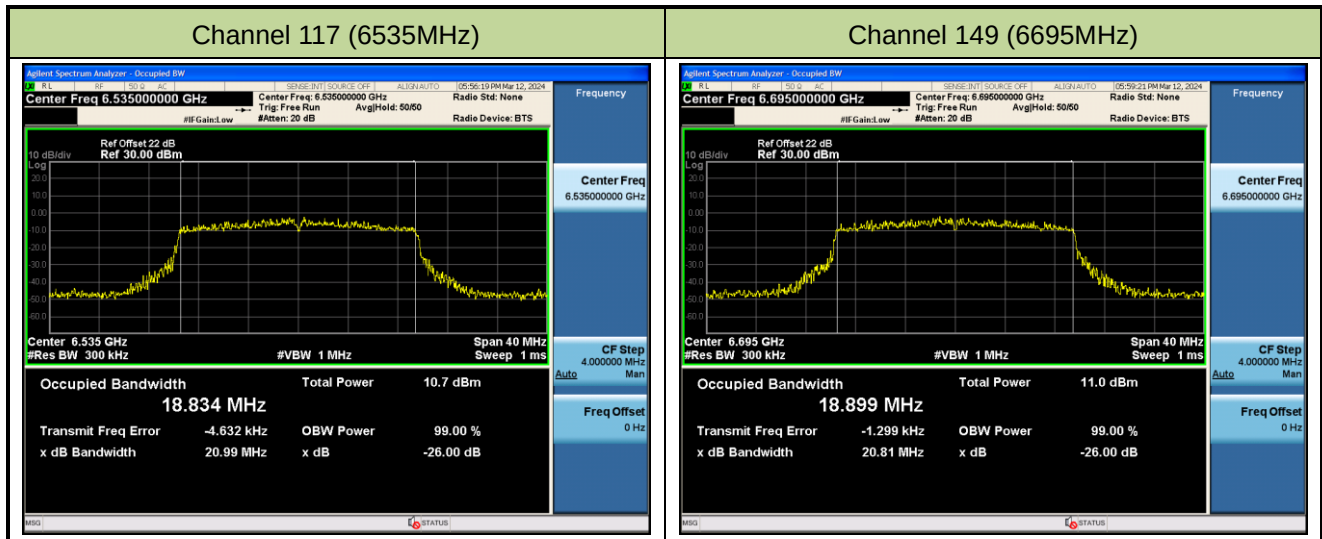


Channel 105 (6475MHz)



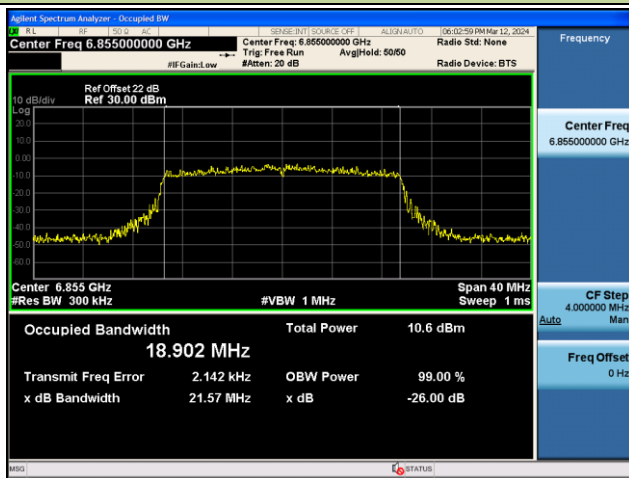
Channel 113 (6515MHz)



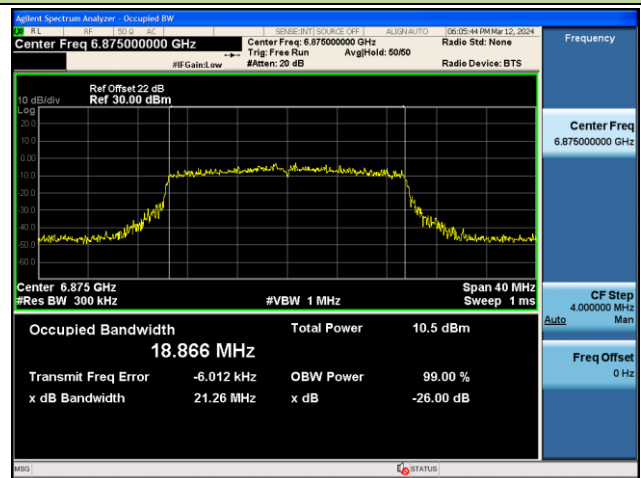


802.11ax-HE20 26dB Bandwidth & 99% Bandwidth

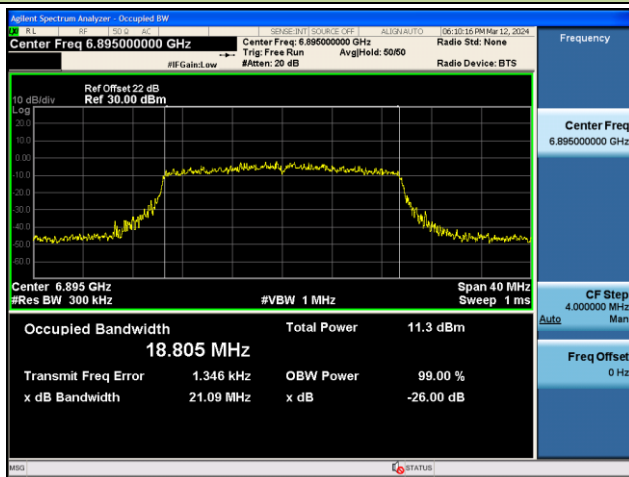
Channel 181 (6855MHz)



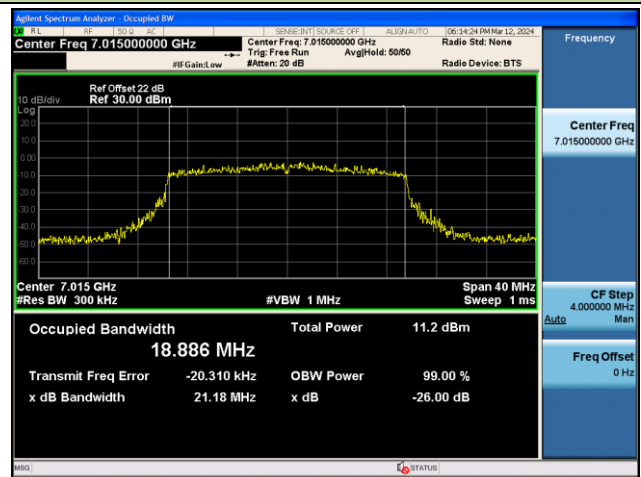
Channel 185 (6875MHz)



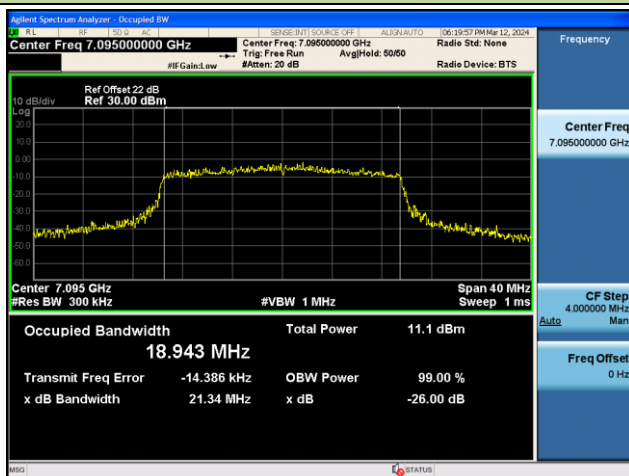
Channel 189 (6895MHz)



Channel 213 (7015MHz)

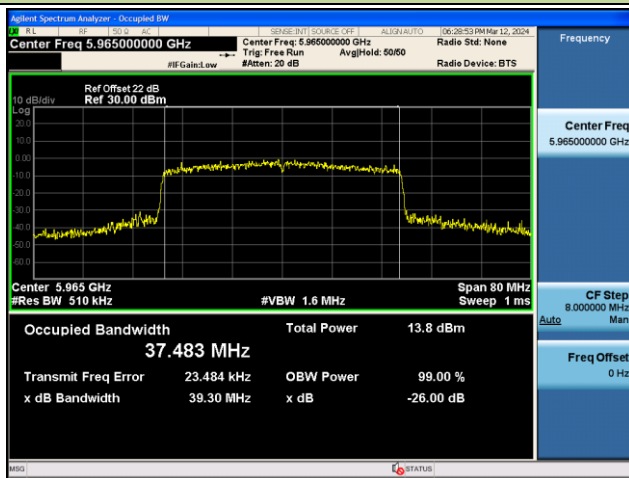


Channel 229 (7095MHz)

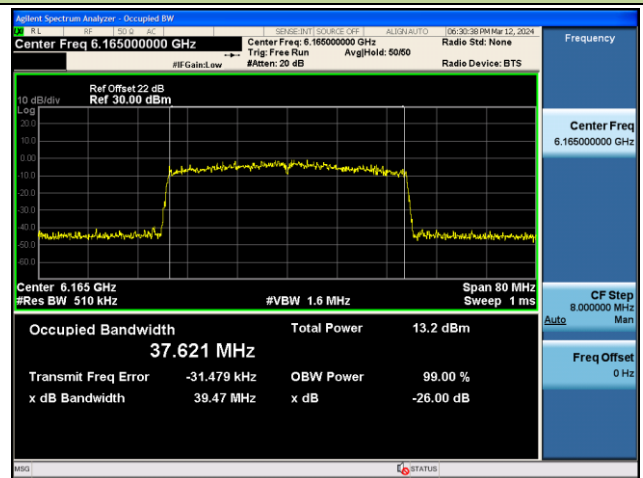


802.11ax-HE40 26dB Bandwidth & 99% Bandwidth

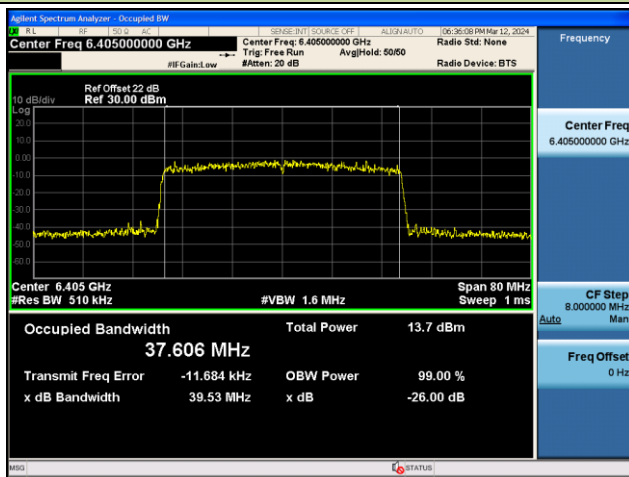
Channel 3 (5965MHz)



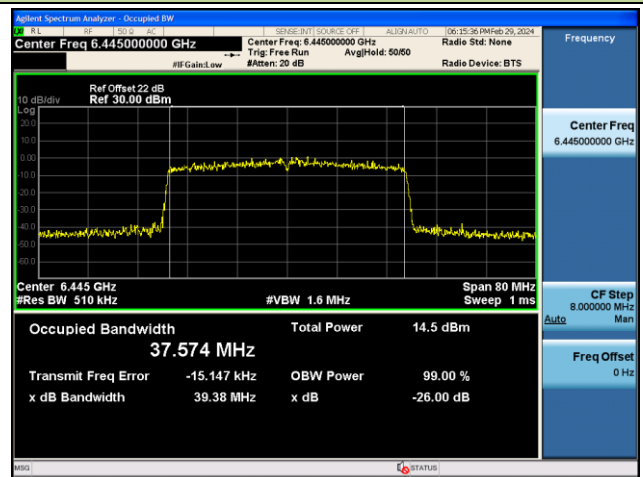
Channel 43 (6165MHz)



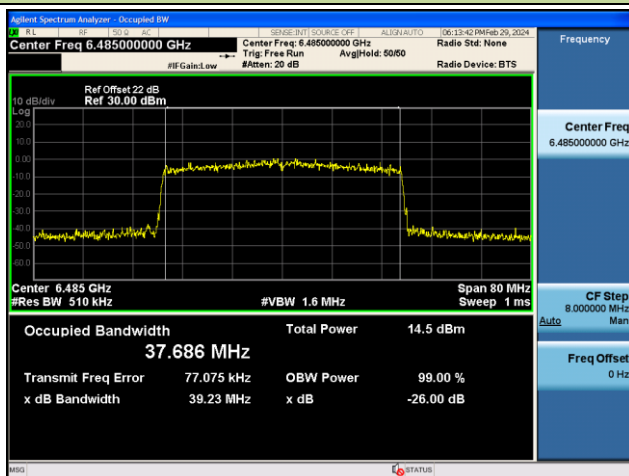
Channel 91 (6405MHz)



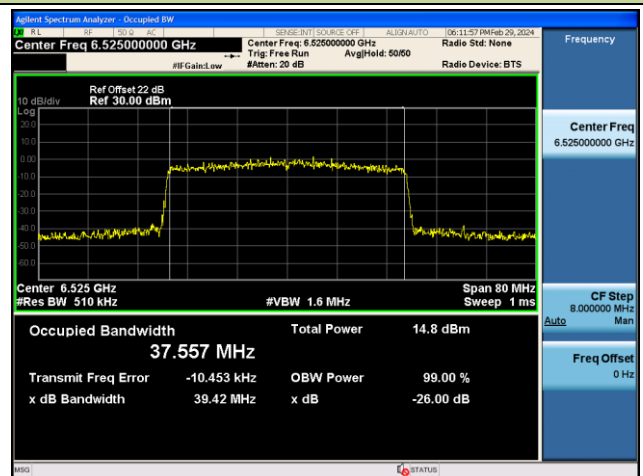
Channel 99 (6445MHz)

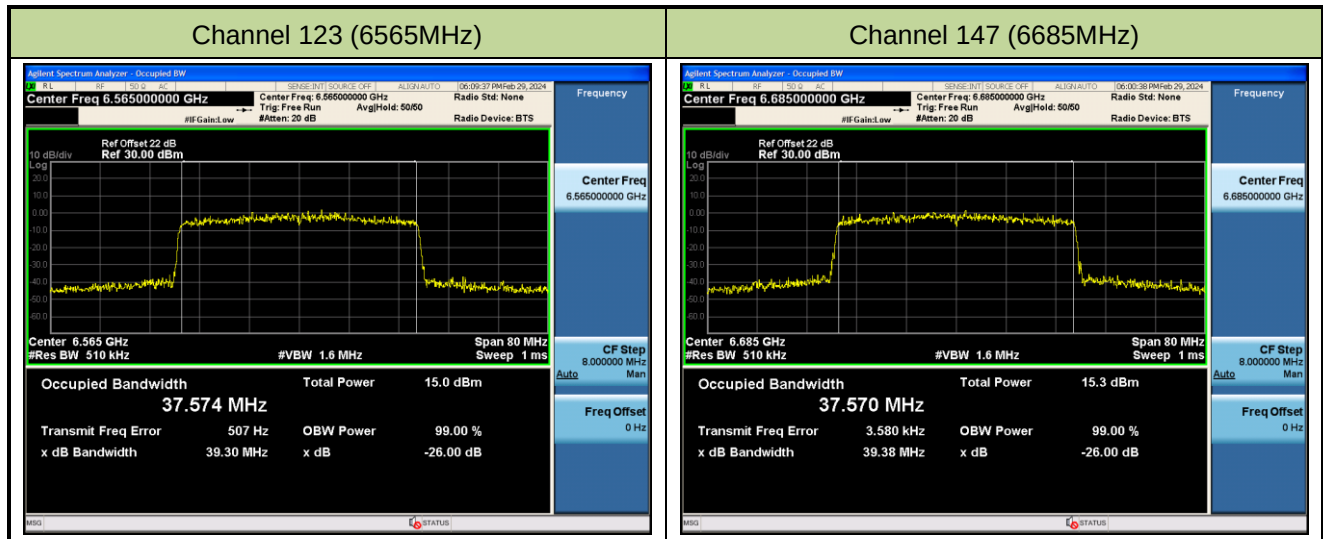


Channel 107 (6485MHz)



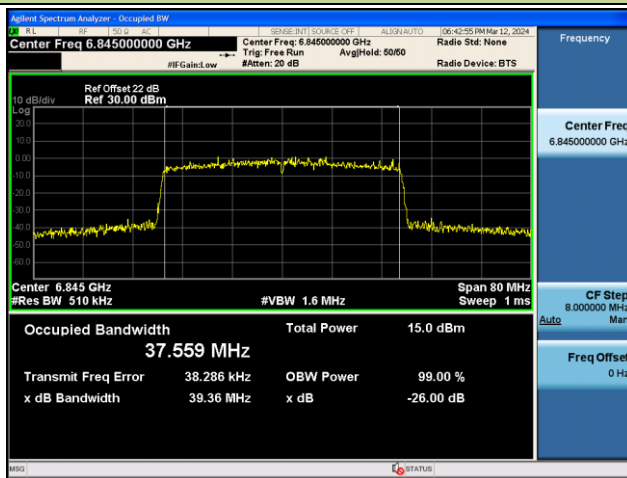
Channel 115 (6525MHz)



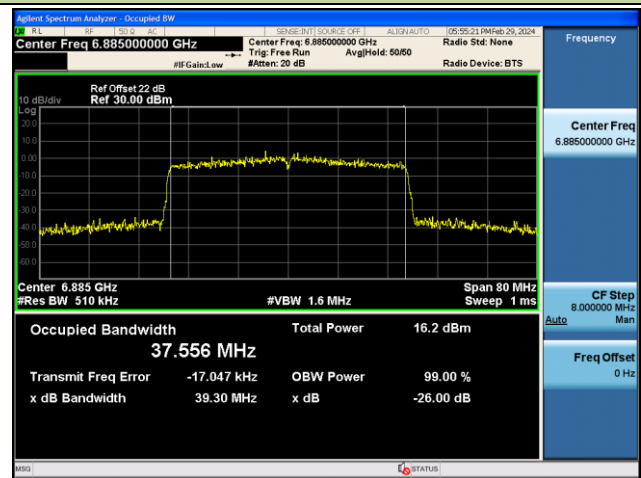


802.11ax-HE40 26dB Bandwidth & 99% Bandwidth

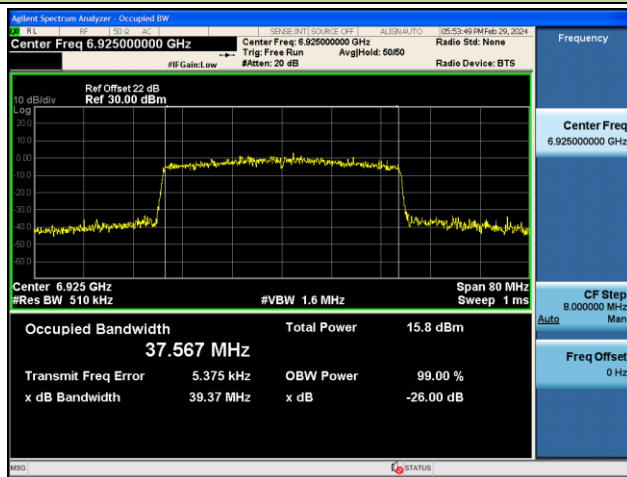
Channel 179 (6845MHz)



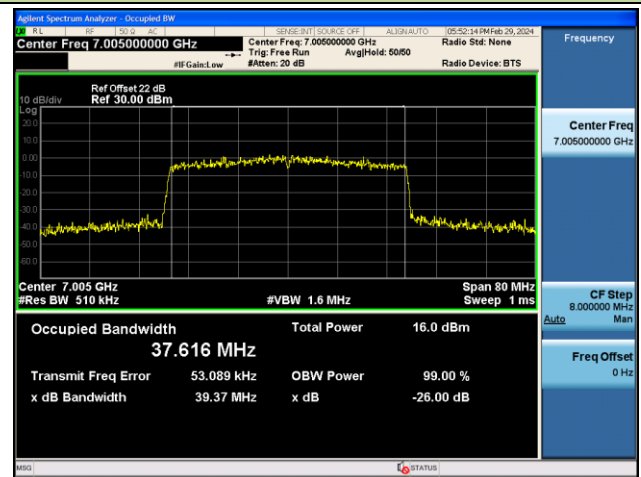
Channel 187 (6885MHz)



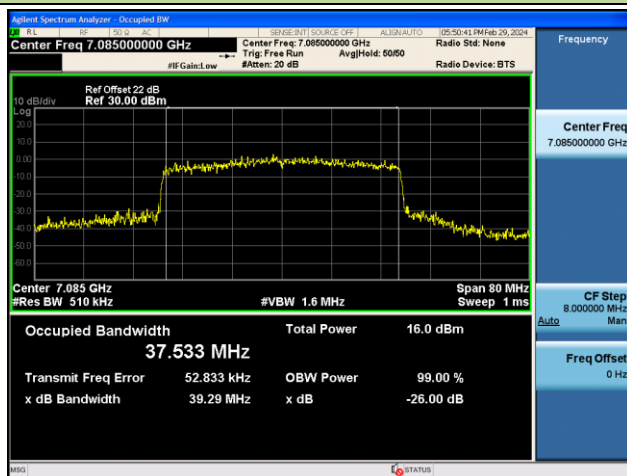
Channel 195 (6925MHz)



Channel 211 (7005MHz)

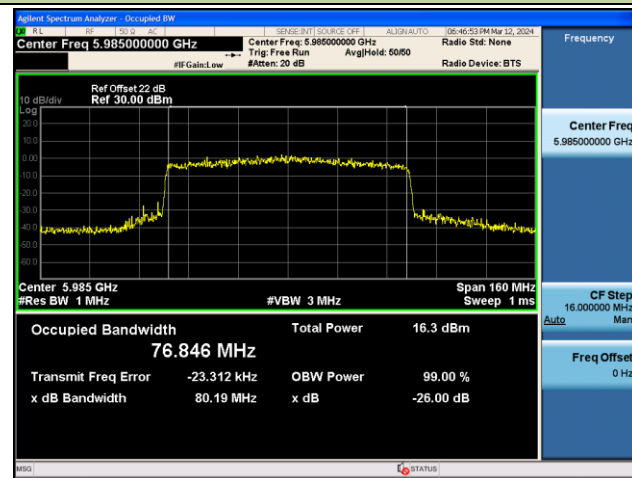


Channel 227 (7085MHz)

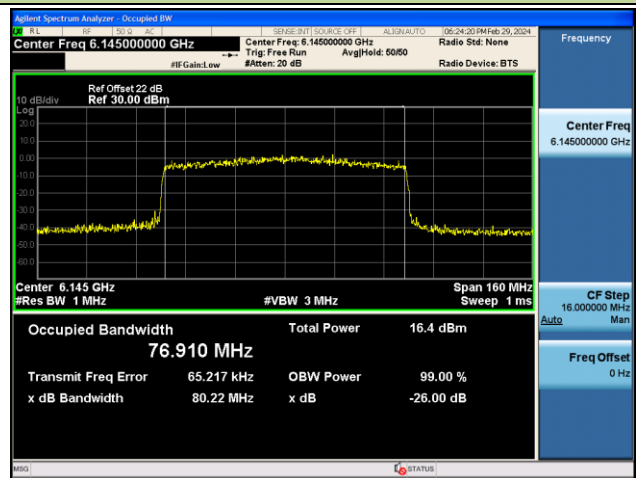


802.11ax-HE80 26dB Bandwidth & 99% Bandwidth

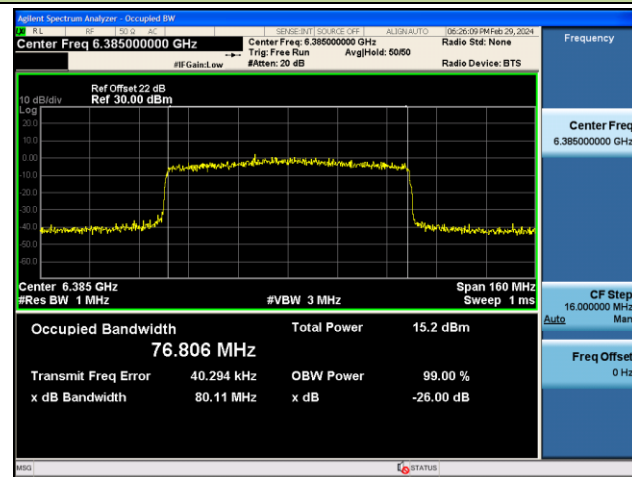
Channel 7 (5985MHz)



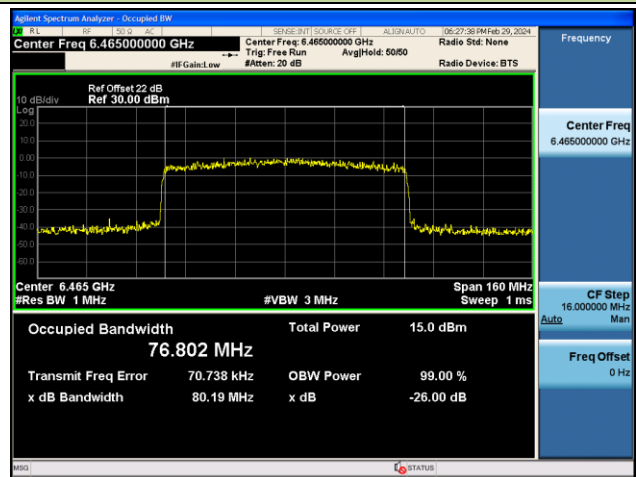
Channel 39 (6145MHz)



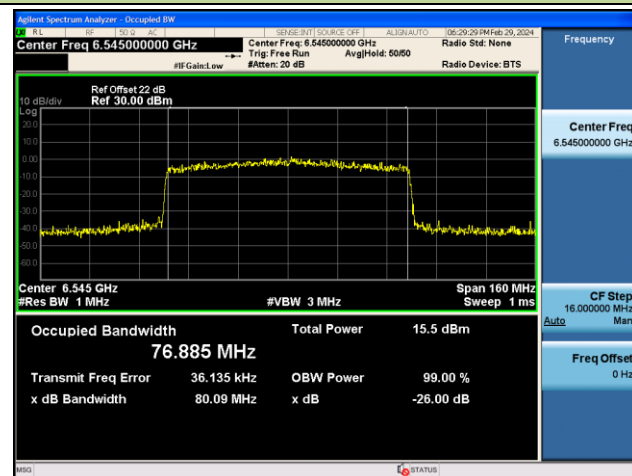
Channel 87 (6385MHz)



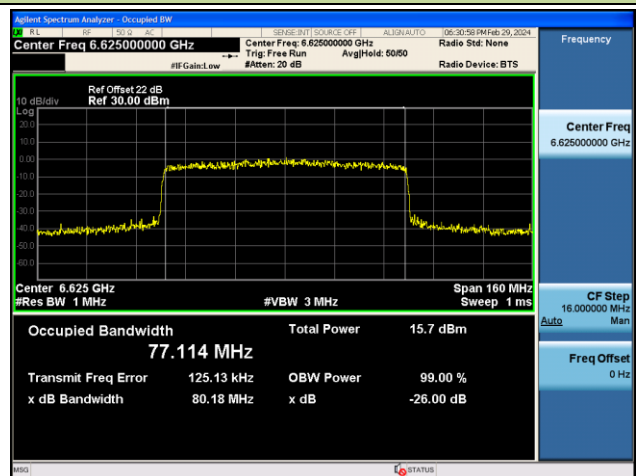
Channel 103 (6465MHz)

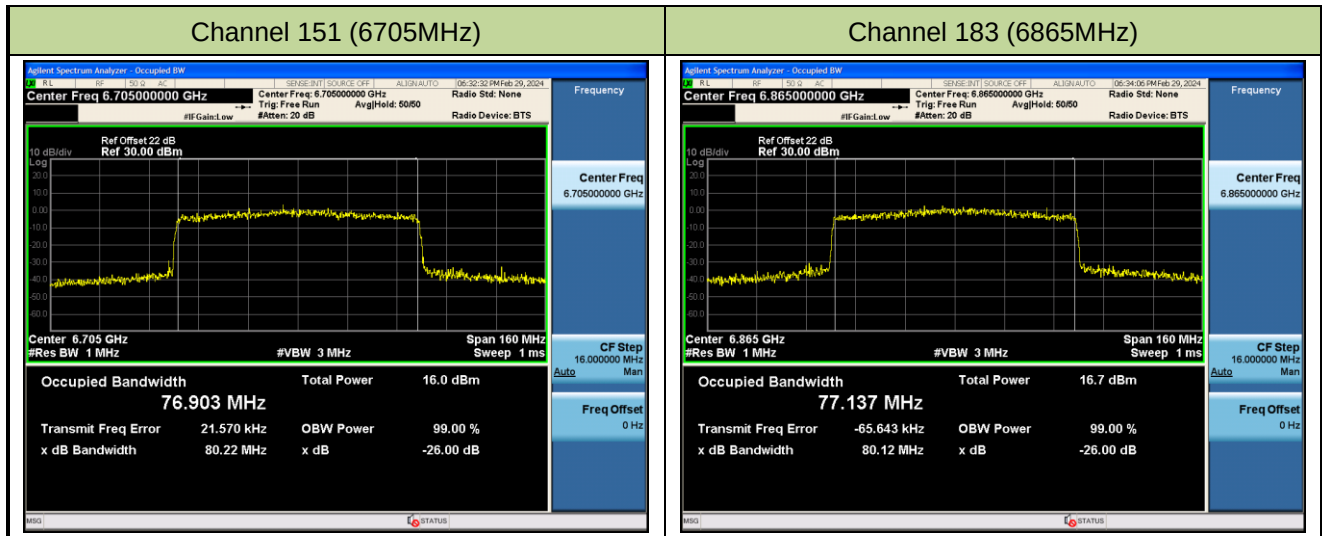


Channel 119 (6545MHz)



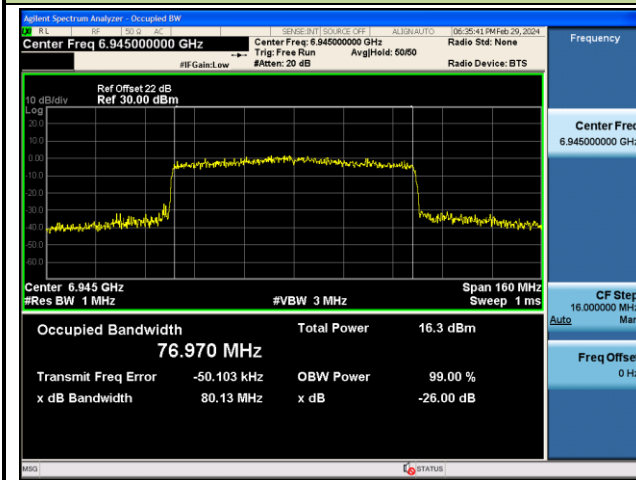
Channel 135 (6625MHz)



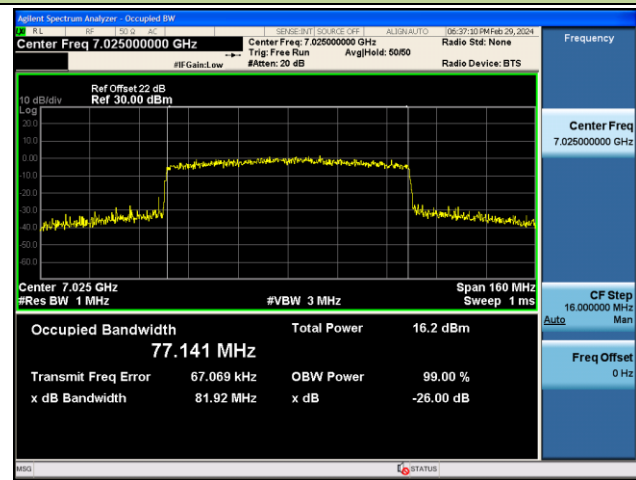


802.11ax-HE80 26dB Bandwidth & 99% Bandwidth (Nss=1)

Channel 199 (6945MHz)

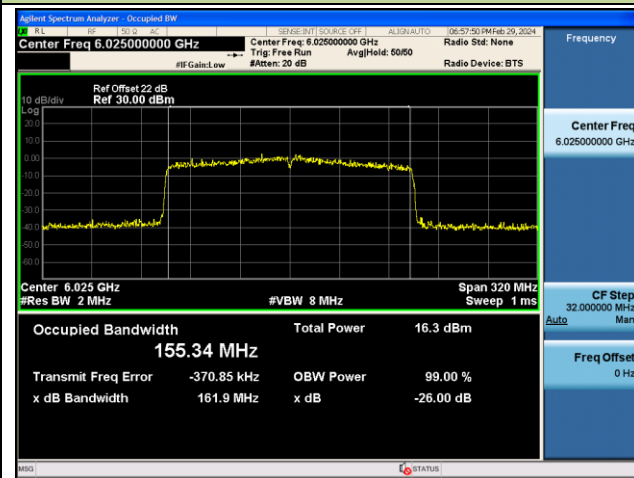


Channel 215 (7025MHz)

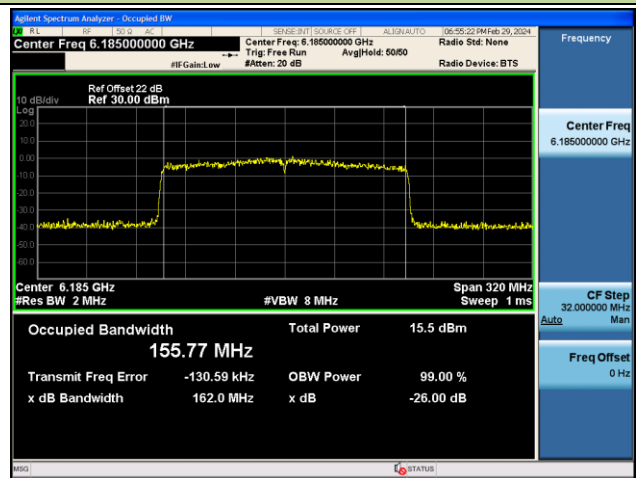


802.11ax-HE160 26dB Bandwidth & 99% Bandwidth

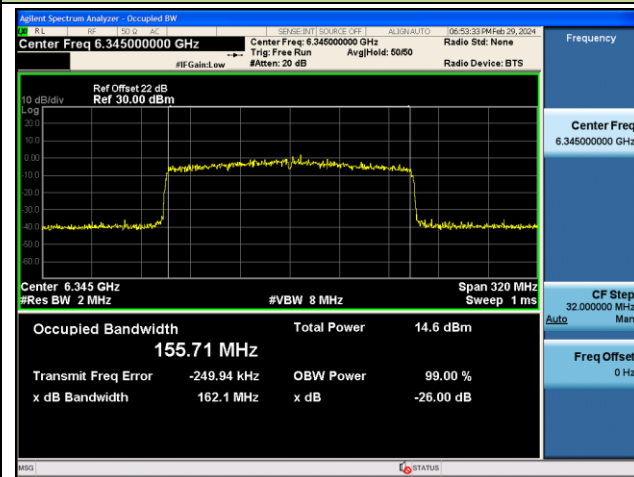
Channel 15 (6025MHz)



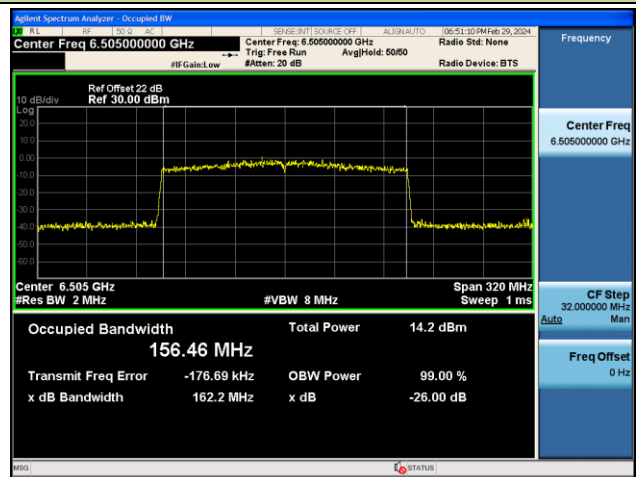
Channel 47 (6185MHz)



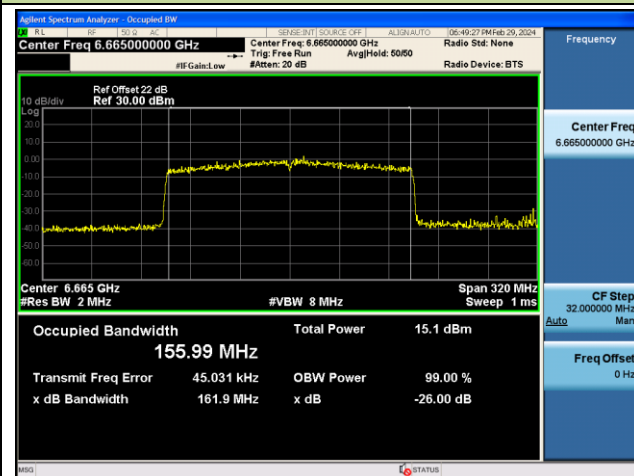
Channel 79 (6345MHz)



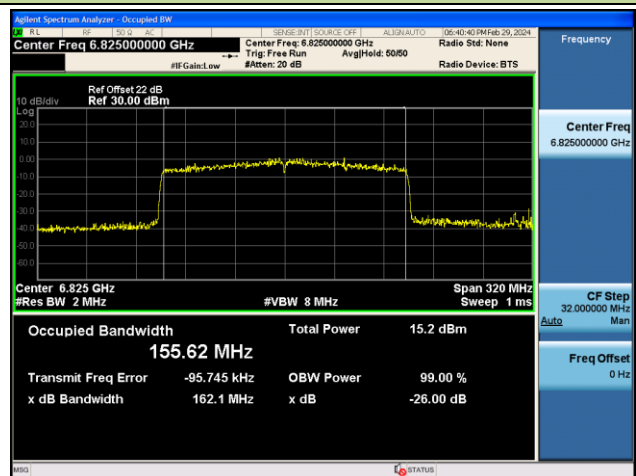
Channel 111 (6505MHz)

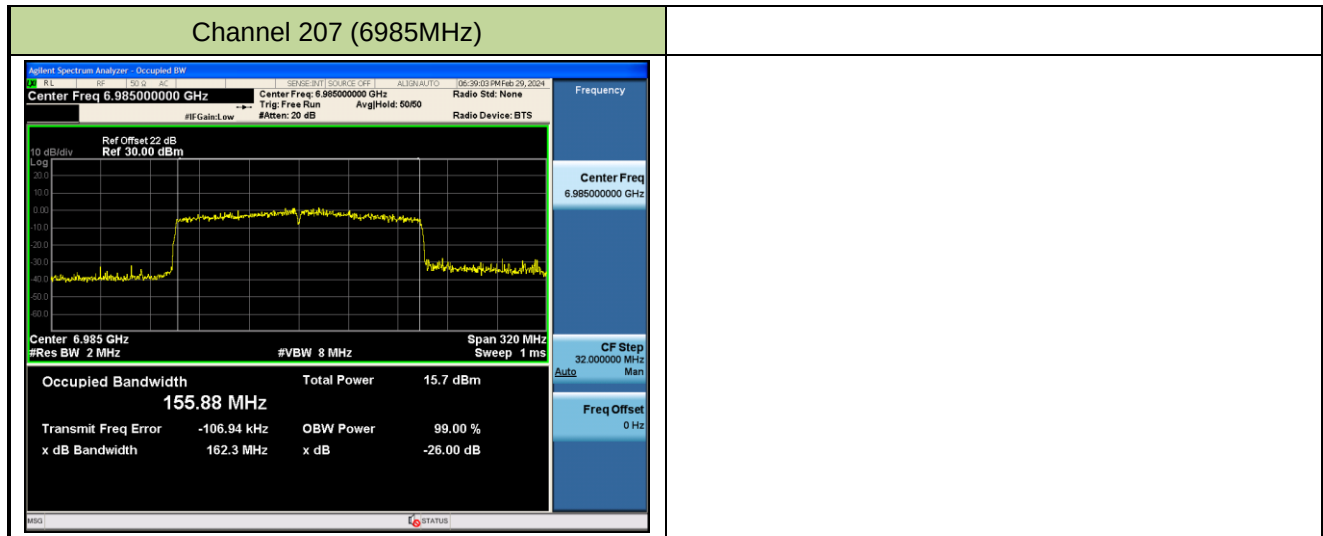


Channel 143 (6665MHz)



Channel 175 (6825MHz)





6.3. Output Power

6.3.1. Test Limit

For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum power spectral density must not exceed -1 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm..

6.3.2. Test Procedure Used

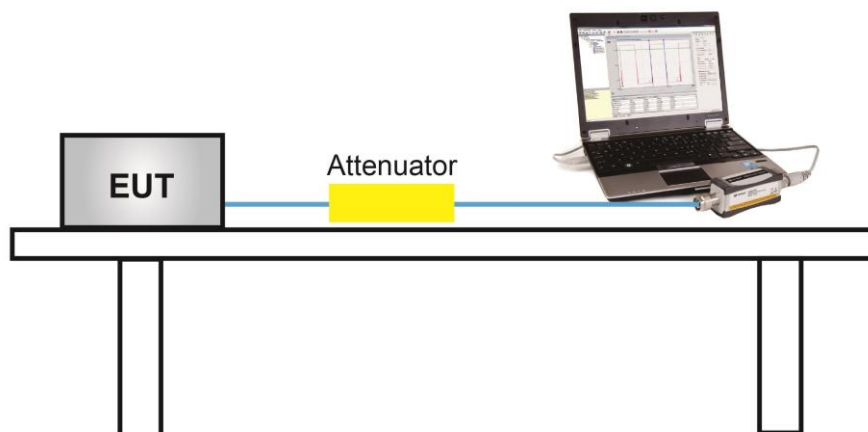
KDB 789033D02v02r01- Section E)3)b) Method PM-G

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

Test Site	SR6	Test Engineer	Owen
Test Date	2024/3/18		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 AV Power (dBm)	Ant Gain (dBi)	Total Average Power (dBm)	EIRP Limit (dBm)
11ax-HE20	MCS0	1	5955	7.26	2.14	9.40	≤ 24.00
11ax-HE20	MCS0	33	6115	7.23	2.14	9.37	≤ 24.00
11ax-HE20	MCS0	93	6415	7.81	2.14	9.95	≤ 24.00
11ax-HE20	MCS0	97	6435	10.74	-2.25	8.49	≤ 24.00
11ax-HE20	MCS0	105	6475	10.59	-2.25	8.34	≤ 24.00
11ax-HE20	MCS0	113	6515	10.88	-2.25	8.63	≤ 24.00
11ax-HE20	MCS0	117	6535	8.78	0.85	9.63	≤ 24.00
11ax-HE20	MCS0	149	6695	8.34	0.85	9.19	≤ 24.00
11ax-HE20	MCS0	181	6855	8.23	0.85	9.08	≤ 24.00
11ax-HE20	MCS0	185	6875	8.21	0.85	9.06	≤ 24.00
11ax-HE20	MCS0	189	6895	9.23	0.32	9.55	≤ 24.00
11ax-HE20	MCS0	213	7015	9.05	0.32	9.37	≤ 24.00
11ax-HE20	MCS0	229	7095	9.25	0.32	9.57	≤ 24.00
11ax-HE40	MCS0	3	5965	9.44	2.14	11.58	≤ 24.00
11ax-HE40	MCS0	43	6165	9.93	2.14	12.07	≤ 24.00
11ax-HE40	MCS0	91	6405	10.34	2.14	12.48	≤ 24.00
11ax-HE40	MCS0	99	6445	10.72	-2.25	8.47	≤ 24.00
11ax-HE40	MCS0	107	6485	10.65	-2.25	8.40	≤ 24.00
11ax-HE40	MCS0	115	6525	10.94	-2.25	8.69	≤ 24.00
11ax-HE40	MCS0	123	6565	10.83	0.85	11.68	≤ 24.00
11ax-HE40	MCS0	147	6685	11.06	0.85	11.91	≤ 24.00
11ax-HE40	MCS0	179	6845	11.44	0.85	12.29	≤ 24.00
11ax-HE40	MCS0	187	6885	12.03	0.32	12.35	≤ 24.00
11ax-HE40	MCS0	195	6925	11.76	0.32	12.08	≤ 24.00
11ax-HE40	MCS0	211	7005	11.73	0.32	12.05	≤ 24.00
11ax-HE40	MCS0	227	7085	11.91	0.32	12.23	≤ 24.00

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 AV Power (dBm)	Ant Gain (dBi)	Total Average Power (dBm)	EIRP Limit (dBm)
11ax-HE80	MCS0	7	5985	12.67	2.14	14.81	≤ 24.00
11ax-HE80	MCS0	39	6145	12.96	2.14	15.10	≤ 24.00
11ax-HE80	MCS0	87	6385	12.14	2.14	14.28	≤ 24.00
11ax-HE80	MCS0	103	6465	11.73	-2.25	9.48	≤ 24.00
11ax-HE80	MCS0	119	6545	12.10	0.85	12.95	≤ 24.00
11ax-HE80	MCS0	135	6625	11.97	0.85	12.82	≤ 24.00
11ax-HE80	MCS0	151	6705	12.12	0.85	12.97	≤ 24.00
11ax-HE80	MCS0	183	6865	13.03	0.85	13.88	≤ 24.00
11ax-HE80	MCS0	199	6945	12.81	0.32	13.13	≤ 24.00
11ax-HE80	MCS0	215	7025	12.85	0.32	13.17	≤ 24.00
11ax-HE160	MCS0	15	6025	12.96	2.14	15.10	≤ 24.00
11ax-HE160	MCS0	47	6185	12.62	2.14	14.76	≤ 24.00
11ax-HE160	MCS0	79	6345	12.03	2.14	14.17	≤ 24.00
11ax-HE160	MCS0	111	6505	11.55	-2.25	9.30	≤ 24.00
11ax-HE160	MCS0	143	6665	11.91	0.85	12.76	≤ 24.00
11ax-HE160	MCS0	175	6825	12.24	0.85	13.09	≤ 24.00
11ax-HE160	MCS0	207	6985	12.94	0.32	13.26	≤ 24.00

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

6.4. Power Spectral Density

6.4.1. Test Limit

For client devices operating under the control of an indoor access point in the 5.925-7.125 GHz bands, the maximum power spectral density must not exceed -1 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 24 dBm.

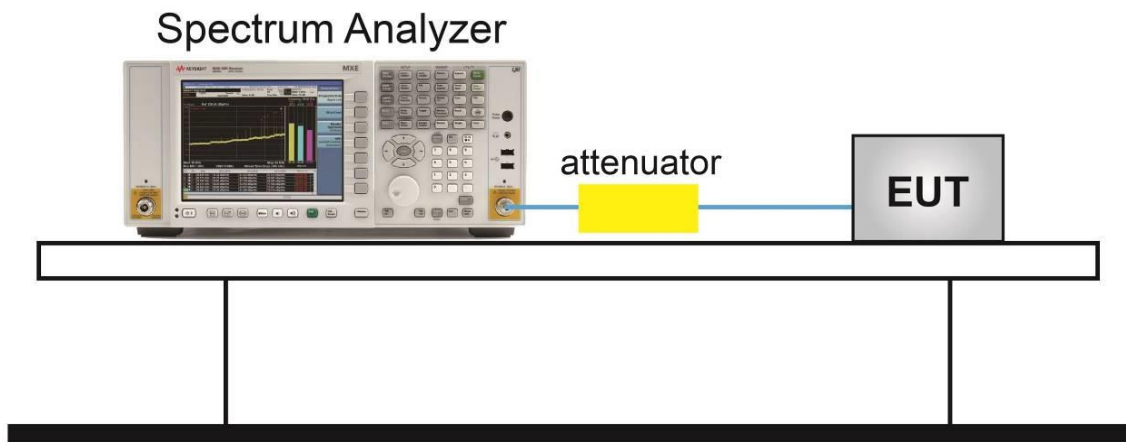
6.4.2. Test Procedure Used

KDB 789033 D02v02r01-SectionF

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 $\geq 2 \times (\text{span} / \text{RBW})$
6. Detector = power averaging (Average)
7. Sweep time = auto
8. Trigger = free run
9. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
10. Add $10 \cdot \log(1/x)$, 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 $10 \cdot \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.

6.4.4. Test Setup



6.4.5. Test Result

Test Site	SR6	Test Engineer	Owen
Test Date	2024/3/18		

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	PSD Ant0 (dBm/MHz)	Duty Cycle (%)	Ant Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)
11ax-HE20	MCS0	1	5955	-3.974	89.46%	2.14	-1.350	≤ -1.00
11ax-HE20	MCS0	33	6115	-4.035	89.46%	2.14	-1.411	≤ -1.00
11ax-HE20	MCS0	93	6415	-4.154	89.46%	2.14	-1.530	≤ -1.00
11ax-HE20	MCS0	97	6435	-1.238	89.46%	-2.25	-3.004	≤ -1.00
11ax-HE20	MCS0	105	6475	-1.500	89.46%	-2.25	-3.266	≤ -1.00
11ax-HE20	MCS0	113	6515	-0.896	89.46%	-2.25	-2.662	≤ -1.00
11ax-HE20	MCS0	117	6535	-2.916	89.46%	0.85	-1.582	≤ -1.00
11ax-HE20	MCS0	149	6695	-2.538	89.46%	0.85	-1.204	≤ -1.00
11ax-HE20	MCS0	181	6855	-2.762	89.46%	0.85	-1.428	≤ -1.00
11ax-HE20	MCS0	185	6875	-3.001	89.46%	0.85	-1.667	≤ -1.00
11ax-HE20	MCS0	189	6895	-2.006	89.46%	0.32	-1.202	≤ -1.00
11ax-HE20	MCS0	213	7015	-2.395	89.46%	0.32	-1.591	≤ -1.00
11ax-HE20	MCS0	229	7095	-2.167	89.46%	0.32	-1.363	≤ -1.00
11ax-HE40	MCS0	3	5965	-4.529	86.81%	2.14	-1.775	≤ -1.00
11ax-HE40	MCS0	43	6165	-4.368	86.81%	2.14	-1.614	≤ -1.00
11ax-HE40	MCS0	91	6405	-3.969	86.81%	2.14	-1.215	≤ -1.00
11ax-HE40	MCS0	99	6445	-3.650	86.81%	-2.25	-5.286	≤ -1.00
11ax-HE40	MCS0	107	6485	-3.384	86.81%	-2.25	-5.020	≤ -1.00
11ax-HE40	MCS0	115	6525	-2.958	86.81%	-2.25	-4.594	≤ -1.00
11ax-HE40	MCS0	123	6565	-3.023	86.81%	0.85	-1.559	≤ -1.00
11ax-HE40	MCS0	147	6685	-3.041	86.81%	0.85	-1.577	≤ -1.00
11ax-HE40	MCS0	179	6845	-2.570	86.81%	0.85	-1.106	≤ -1.00
11ax-HE40	MCS0	187	6885	-2.573	86.81%	0.32	-1.639	≤ -1.00
11ax-HE40	MCS0	195	6925	-2.291	86.81%	0.32	-1.357	≤ -1.00
11ax-HE40	MCS0	211	7005	-2.341	86.81%	0.32	-1.407	≤ -1.00
11ax-HE40	MCS0	227	7085	-2.380	86.81%	0.32	-1.446	≤ -1.00

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Total PSD (dBm/MHz)	Duty Cycle (%)	Directional Gain (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)
11ax-HE80	MCS0	7	5985	-4.387	78.55%	2.14	-1.198	≤ -1.00
11ax-HE80	MCS0	39	6145	-4.587	78.55%	2.14	-1.398	≤ -1.00
11ax-HE80	MCS0	87	6385	-5.652	78.55%	2.14	-2.463	≤ -1.00
11ax-HE80	MCS0	103	6465	-6.594	78.55%	-2.25	-7.795	≤ -1.00
11ax-HE80	MCS0	119	6545	-5.690	78.55%	0.85	-3.791	≤ -1.00
11ax-HE80	MCS0	135	6625	-5.574	78.55%	0.85	-3.675	≤ -1.00
11ax-HE80	MCS0	151	6705	-4.848	78.55%	0.85	-2.949	≤ -1.00
11ax-HE80	MCS0	183	6865	-4.855	78.55%	0.85	-2.956	≤ -1.00
11ax-HE80	MCS0	199	6945	-4.675	78.55%	0.32	-3.306	≤ -1.00
11ax-HE80	MCS0	215	7025	-5.168	78.55%	0.32	-3.799	≤ -1.00
11ax-HE160	MCS0	15	6025	-8.480	64.79%	2.14	-4.455	≤ -1.00
11ax-HE160	MCS0	47	6185	-8.360	64.79%	2.14	-4.335	≤ -1.00
11ax-HE160	MCS0	79	6345	-8.566	64.79%	2.14	-4.541	≤ -1.00
11ax-HE160	MCS0	111	6505	-9.322	64.79%	-2.25	-9.687	≤ -1.00
11ax-HE160	MCS0	143	6665	-8.400	64.79%	0.85	-5.665	≤ -1.00
11ax-HE160	MCS0	175	6825	-8.209	64.79%	0.85	-5.474	≤ -1.00
11ax-HE160	MCS0	207	6985	-7.618	64.79%	0.32	-5.413	≤ -1.00

Note 1: Total PSD (dBm/MHz) = $10 \cdot \log \{10^{(\text{Ant } 0 \text{ PSD}/10)}\}$

Note 2: When EUT duty cycle < 98%, EIRP PSD (dBm/MHz) = Total PSD (dBm/MHz) + $10 \cdot \log (1/\text{Duty Cycle})$ + Gain (dBi).