RF Test Report

Applicant	:	Plume Design, Inc.
Product Name	:	SuperPod with WiFi 6E
Trade Name	:	Plume Design, Inc.
Model Number	:	M1A
Applicable Standard	:	FCC 47 CFR PART 15 SUBPART E ANSI C63.10:2013
Received Date	:	Dec. 12, 2022
Test Period	:	Feb. 02 ~ Jul. 13, 2023
Issued Date	:	Jan. 11, 2024

Issued by

Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel：+886-3-2710188 / Fax：+886-3-2710190

Taiwan Accreditation Foundation accreditation number: 1330
Frequency Range : 9 kHz to 40 GHz
Test Firm MRA designation number: TW0010 (Bade test site)
Test Firm MRA designation number: TW0034 (Wugu test site)

Note:
1.The test results are valid only for samples provided by customers and under the test conditions described in this report.
2.This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
3.The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Revision History

Version	Issued Date	Revisions	Revised By
00	Jan. 11, 2024	Initial Issue	Snow Wang

Verification of Compliance

Applicant	:	Plume Design, Inc.
Product Name	:	SuperPod with WiFi 6E
Trade Name	:	Plume Design, Inc.
Model Number	:	M1A
FCC ID	:	2AG7G-M1A
Applicable Standard	:	FCC 47 CFR PART 15 SUBPART E ANSI C63.10:2013
Test Result	:	Complied
Performing Lab.	:	Eurofins E&E Wireless Taiwan Co., Ltd. No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.) Tel：+886-3-2710188 / Fax：+886-3-2710190 Taiwan Accreditation Foundation accreditation number: 1330

Eurofins E&E Wireless Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Eurofins E&E Wireless Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : Kai Yu Yang

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1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
15.207	AC Power Conducted Emission	PASS	---
15.407(b) 15.205 / 15.209	Transmitter Radiated Emissions	PASS	---
15.407(a)	Maximum Output Power	PASS	---
15.407(a)	Emission Bandwidth	PASS	---
15.407(a)	Maximum Power Spectral Density	PASS	---
15.407(b)	In-Band Emission (Mask)	PASS	---
15.407(g)	Frequency Stability	PASS	---
15.407(d)	Contention based Protocol	PASS	---
15.407(d)	Operational restrictions for 6 GHz U-NII devices	PASS	Note 2
15.407(a)	Dual Client Proper Power Adjustment	N/A	Note 3
15.407(c)	Automatically discontinue transmission	PASS	---
15.203	Antenna Requirement	PASS	---

Note 1: The above test items refer to the test standards

Note 2: Declaration by applicant

Note 3: Device associates with low power indoor AP only

Decision Rule

■ Uncertainty is not included.

□ Uncertainty is included.

Standard	Description
CFR47, Part 15, Subpart E	Unlicensed National Information Infrastructure Devices
ANSI C63. 10: 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
KDB789033 D02 v02r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E
KDB 662911 D01 v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band (e.g., MIMO, Smart Antenna, etc)
KDB 987594 D02 v01r01	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure 6 GHz (U-NII) Devices Part 15, Subpart E

1.2. Testing Location

Lab Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address: ■ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address: ■ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

1.3. Measurement Uncertainty

sTest Item	Frequency Range	Uncertainty
Conducted Emission	150 kHz ~ 30 MHz	2.7 dB
Radiated Emission	9 kHz ~ 30 MHz	1.9 dB
	30 MHz ~ 1000 MHz	4.9 dB
	1000 MHz ~ 18000 MHz	5.0 dB
	18000 MHz ~ 26500 MHz	4.4 dB
	26500 MHz ~ 40000 MHz	4.4 dB
Conducted Output Power		1.1 dB
RF Bandwidth		4.7 %
Power Spectral Density		1.1 dB
Frequency Stability		1.3 x 10^-7
Duty Cycle		1.1 %
Time Occupancy		1.5 %

2 EUT Description

Applicant	Plume Design, Inc. 325 Lytton Ave., Palo Alto, CA 94301, United States			
Product Name	SuperPod with WiFi 6E			
Trade Name	Plume Design, Inc.			
Model No.	M1A			
FCC ID	2AG7G-M1A			
Operate Frequency	Frequency Band		Frequency Range (MHz)	Number of Channels
	802.11a	U-NII Band 5	5955 – 6415	24
		U-NII Band 6	6435 – 6515	5
		U-NII Band 7	6535 – 6855	17
		U-NII Band 8	6875 – 7115	13
	802.11ax HE20	U-NII Band 5	5955 – 6415	24
		U-NII Band 6	6435 – 6515	5
		U-NII Band 7	6535 – 6855	17
		U-NII Band 8	6875 – 7115	13
	802.11ax HE40	U-NII Band 5	5965 – 6405	12
		U-NII Band 6	6445 – 6485	2
		U-NII Band 7	6525 – 6845	9
		U-NII Band 8	6885 – 7085	6
	802.11ax HE80	U-NII Band 5	5985 – 5385	6
		U-NII Band 6	6465	1
		U-NII Band 7	6545 – 6865	5
		U-NII Band 8	6945 – 7025	2
	802.11ax HE160	U-NII Band 5	6025 – 6345	3
		U-NII Band 6	6505	1
		U-NII Band 7	6665 – 6825	2
		U-NII Band 8	6985	1
Modulation Type	OFDMA			
Antenna Delivery	Reference section 3.1			
EUT Power Rating	100-240 V, 50-60 Hz, 0.6 A			

Antenna information			
Type	Antenna	Frequency	Max. Gain (dBi)
IFA Antenna	ANT-0 (Ant. 5)	U-NII Band 5	5.50
		U-NII Band 6	5.20
		U-NII Band 7	6.20
		U-NII Band 8	5.90
	ANT-1 (Ant. 6)	U-NII Band 5	4.10
		U-NII Band 6	3.70
		U-NII Band 7	4.40
		U-NII Band 8	4.60
	ANT-2 (Ant. 7)	U-NII Band 5	4.40
		U-NII Band 6	3.40
		U-NII Band 7	4.00
		U-NII Band 8	5.00
	ANT-3 (Ant. 8)	U-NII Band 5	4.50
		U-NII Band 6	4.50
		U-NII Band 7	4.30
		U-NII Band 8	5.00

Equipment Type	
Indoor access point	V
Subordinate device	---
Indoor Client devices	---

SISO 1x1

Frequency Band		Maximum Output Power (e.i.r.p.)	
		(dBm)	(W)
802.11a	U-NII Band 5	15.69	0.037
	U-NII Band 6	15.61	0.036
	U-NII Band 7	15.99	0.040
	U-NII Band 8	15.75	0.038
802.11ax HE20	U-NII Band 5	16.24	0.042
	U-NII Band 6	16.30	0.043
	U-NII Band 7	16.11	0.041
	U-NII Band 8	16.05	0.040
802.11ax HE40	U-NII Band 5	18.93	0.078
	U-NII Band 6	19.09	0.081
	U-NII Band 7	18.98	0.079
	U-NII Band 8	19.20	0.083
802.11ax HE80	U-NII Band 5	22.21	0.166
	U-NII Band 6	20.75	0.119
	U-NII Band 7	20.50	0.112
	U-NII Band 8	20.49	0.112
802.11ax HE160	U-NII Band 5	23.38	0.218
	U-NII Band 6	20.84	0.121
	U-NII Band 7	20.68	0.117
	U-NII Band 8	20.88	0.123

MIMO 4x4

Frequency Band		Maximum Output Power (e.i.r.p.)	
		(dBm)	(W)
802.11a	U-NII Band 5	13.45	0.022
	U-NII Band 6	12.29	0.017
	U-NII Band 7	13.24	0.021
	U-NII Band 8	13.34	0.022
802.11ax HE20	U-NII Band 5	14.42	0.028
	U-NII Band 6	14.84	0.031
	U-NII Band 7	13.31	0.021
	U-NII Band 8	13.12	0.021
802.11ax HE40	U-NII Band 5	17.44	0.055
	U-NII Band 6	16.90	0.049
	U-NII Band 7	16.68	0.047
	U-NII Band 8	17.21	0.053
802.11ax HE80	U-NII Band 5	20.57	0.114
	U-NII Band 6	19.41	0.087
	U-NII Band 7	20.24	0.106
	U-NII Band 8	20.69	0.117
802.11ax HE160	U-NII Band 5	22.85	0.193
	U-NII Band 6	22.37	0.173
	U-NII Band 7	22.64	0.184
	U-NII Band 8	22.99	0.199

Beamforming on

Frequency Band		Maximum Output Power (e.i.r.p.)	
		(dBm)	(W)
802.11ax HE20	U-NII Band 5	15.96	0.039
	U-NII Band 6	16.12	0.041
	U-NII Band 7	16.90	0.049
	U-NII Band 8	16.40	0.044
802.11ax HE40	U-NII Band 5	18.84	0.077
	U-NII Band 6	19.33	0.086
	U-NII Band 7	19.95	0.099
	U-NII Band 8	19.30	0.085
802.11ax HE80	U-NII Band 5	22.44	0.175
	U-NII Band 6	21.62	0.145
	U-NII Band 7	22.13	0.163
	U-NII Band 8	22.29	0.170
802.11ax HE160	U-NII Band 5	24.78	0.301
	U-NII Band 6	24.77	0.300
	U-NII Band 7	24.76	0.299
	U-NII Band 8	24.35	0.272

3 Test Methodology

3.1. Mode of Operation

Decision of Test Eurofins has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	Final-Test Mode
Transmit Mode	V
802.11a	V
802.11ax HE20	V
802.11ax HE40	V
802.11ax HE80	V
802.11ax HE160	V

Note : IEEE 802.11ax measurement results only support Full RU。

Software used to control the EUT for staying in continuous transmitting mode was programmed.
After verification, all tests were carried out with the worst case test modes.
By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z (1TX) ; X (4TX) axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

SISO 1x1

Test Mode	ANT-0
802.11a	V
802.11ax HE20	V
802.11ax HE40	V
802.11ax HE80	V
802.11ax HE160	V

Test Mode	Antenna Delivery	Data Rate (Mbps)	Band	Test Channel
802.11a	1TX	6	U-NII Band 5	1, 45, 93
			U-NII Band 6	97, 105, 113
			U-NII Band 7	117, 149, 181
			U-NII Band 8	185, 189, 209, 233
802.11ax HE20	1TX	MCS0	U-NII Band 5	1, 45, 93
			U-NII Band 6	97, 105, 113
			U-NII Band 7	117, 149, 181
			U-NII Band 8	185, 189, 209, 233
802.11ax HE40	1TX	MCS0	U-NII Band 5	3, 43, 91
			U-NII Band 6	99, 107
			U-NII Band 7	115, 123, 147, 179
			U-NII Band 8	187, 195, 211, 227
802.11ax HE80	1TX	MCS0	U-NII Band 5	7, 39, 87
			U-NII Band 6	103
			U-NII Band 7	119, 135, 151, 167, 183
			U-NII Band 8	199, 215
802.11ax HE160	1TX	MCS0	U-NII Band 5	15, 47, 79
			U-NII Band 6	111
			U-NII Band 7	143, 175
			U-NII Band 8	207

MIMO 4x4

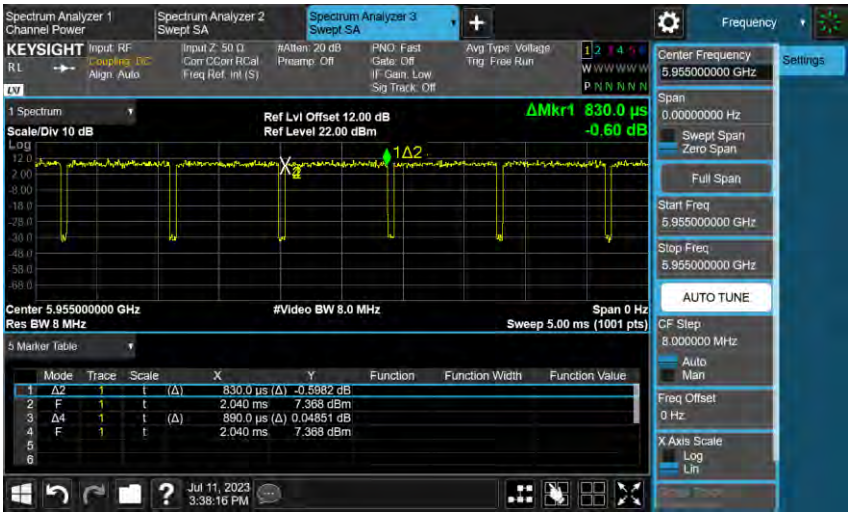
Test Mode	ANT-0	ANT-1	ANT-2	ANT-3	ANT-0+1+2+3
802.11a	V	V	V	V	V
802.11ax HE20	V	V	V	V	V
802.11ax HE40	V	V	V	V	V
802.11ax HE80	V	V	V	V	V
802.11ax HE160	V	V	V	V	V

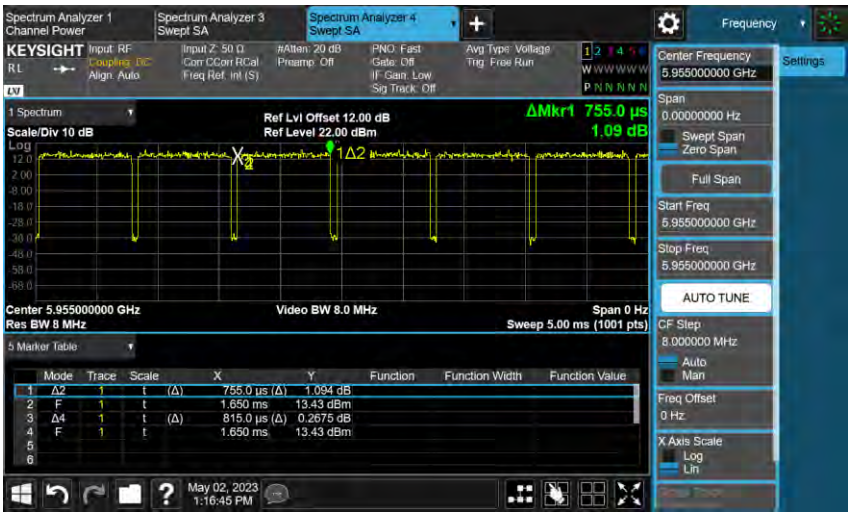
Test Mode	Antenna Delivery	Data Rate (Mbps)	Band	Test Channel
802.11a	4TX (CDD/Beamforming on)	6	U-NII Band 5	1, 45, 93
			U-NII Band 6	97, 105, 113
			U-NII Band 7	117, 149, 181
			U-NII Band 8	185, 189, 209, 233
802.11ax HE20	4TX (CDD/Beamforming on)	MCS0	U-NII Band 5	1, 45, 93
			U-NII Band 6	97, 105, 113
			U-NII Band 7	117, 149, 181
			U-NII Band 8	185, 189, 209, 233
802.11ax HE40	4TX (CDD/Beamforming on)	MCS0	U-NII Band 5	3, 43, 91
			U-NII Band 6	99, 107
			U-NII Band 7	115, 123, 147, 179
			U-NII Band 8	187, 195, 211, 227
802.11ax HE80	4TX (CDD/Beamforming on)	MCS0	U-NII Band 5	7, 39, 87
			U-NII Band 6	103
			U-NII Band 7	119, 135, 151, 167, 183
			U-NII Band 8	199, 215
802.11ax HE160	4TX (CDD/Beamforming on)	MCS0	U-NII Band 5	15, 47, 79
			U-NII Band 6	111
			U-NII Band 7	143, 175
			U-NII Band 8	207

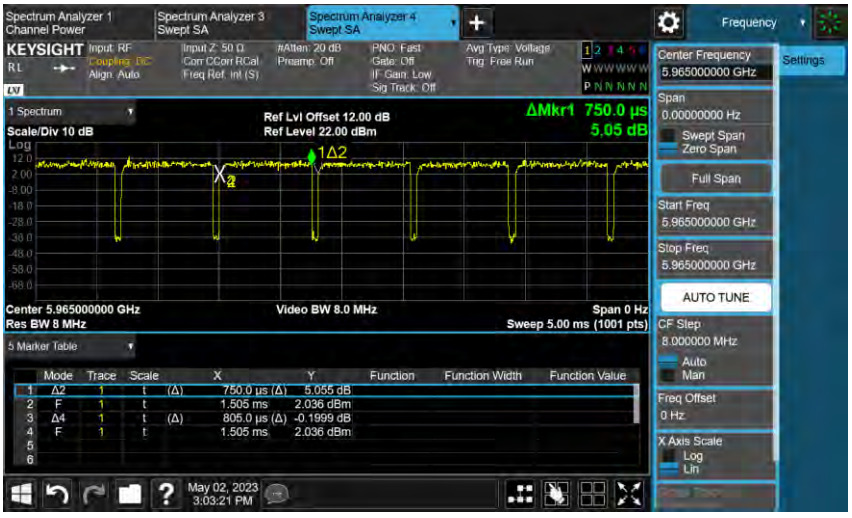
Duty cycle_ SISO 1x1

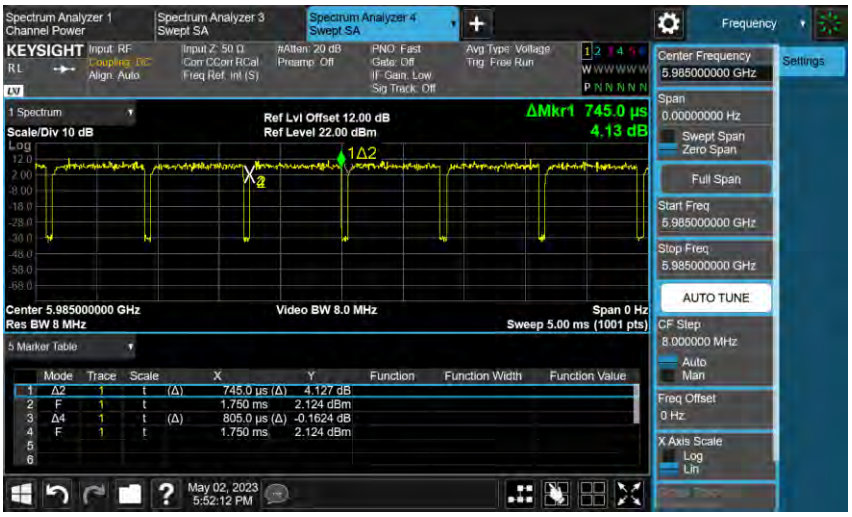
Test Mode	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T (kHz)	VBW setting (kHz)
802.11a	5955	0.830	0.890	93.26	0.30	1.20	2.00
802.11ax HE20	5955	0.755	0.815	92.64	0.33	1.32	2.00
802.11ax HE40	5965	0.750	0.805	93.17	0.31	1.33	2.00
802.11ax HE80	5985	0.745	0.805	92.55	0.34	1.34	2.00
802.11ax HE160	6025	0.745	0.805	92.55	0.34	1.34	2.00

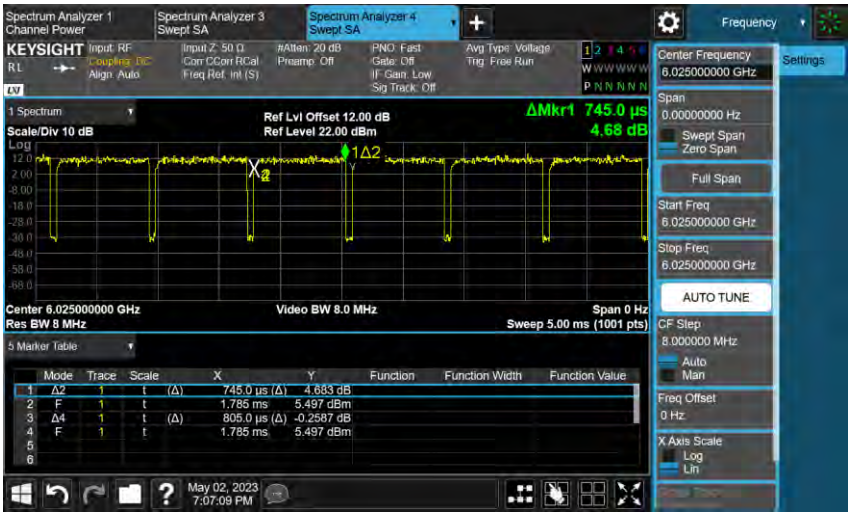
Duty Cycle Graphs

802.11a	
On+off time	

802.11ax HE20	
On+off time	

802.11ax HE40	
On+off time	

802.11ax HE80	
On+off time	

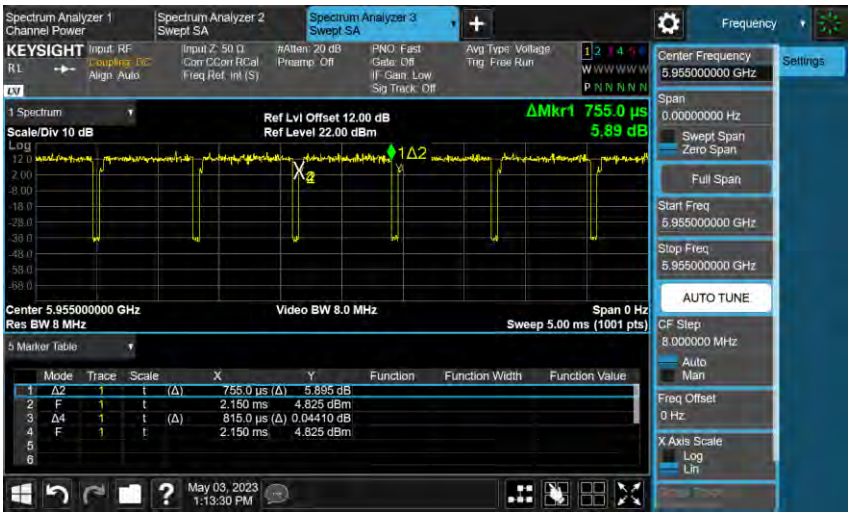
802.11ax HE160	
On+off time	

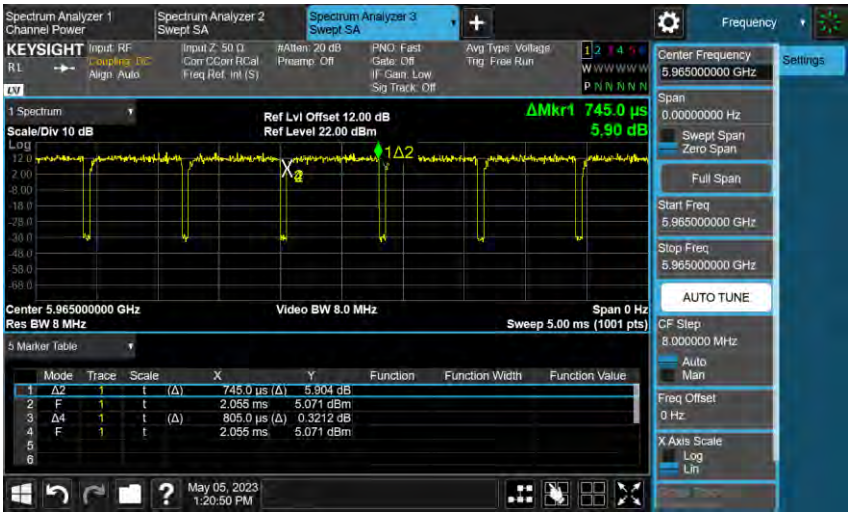
Duty cycle_ MIMO 4x4

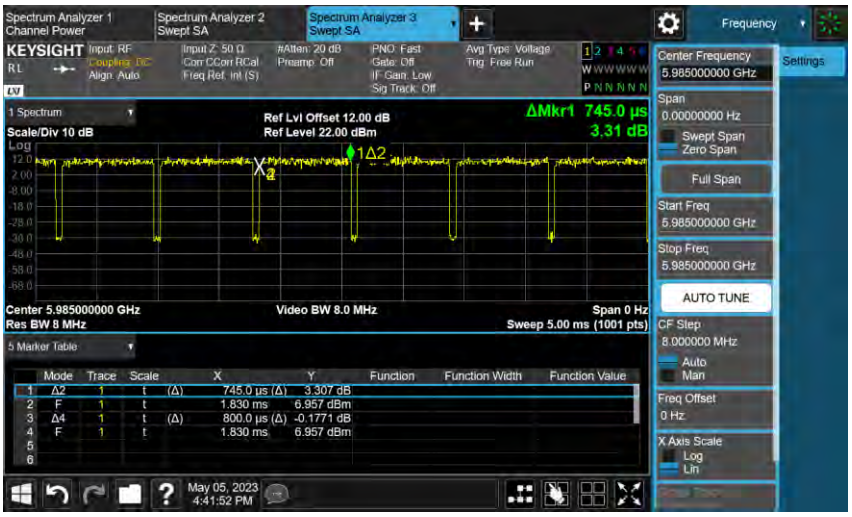
Test Mode	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T (kHz)	VBW setting (kHz)
802.11a	5955	0.830	0.890	93.26	0.30	1.20	2.00
802.11ax HE20	5955	0.755	0.815	92.64	0.33	1.32	2.00
802.11ax HE40	5965	0.745	0.805	92.55	0.34	1.34	2.00
802.11ax HE80	5985	0.745	0.800	93.13	0.31	1.34	2.00
802.11ax HE160	6025	0.750	0.805	93.17	0.31	1.33	2.00

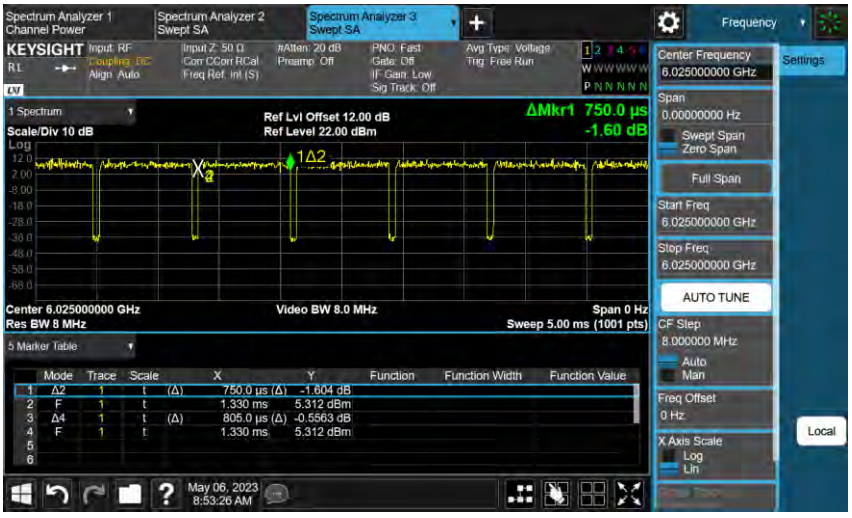
Duty Cycle Graphs

802.11a	
On+off time	

802.11ax HE20	
On+off time	

802.11ax HE40	
On+off time	

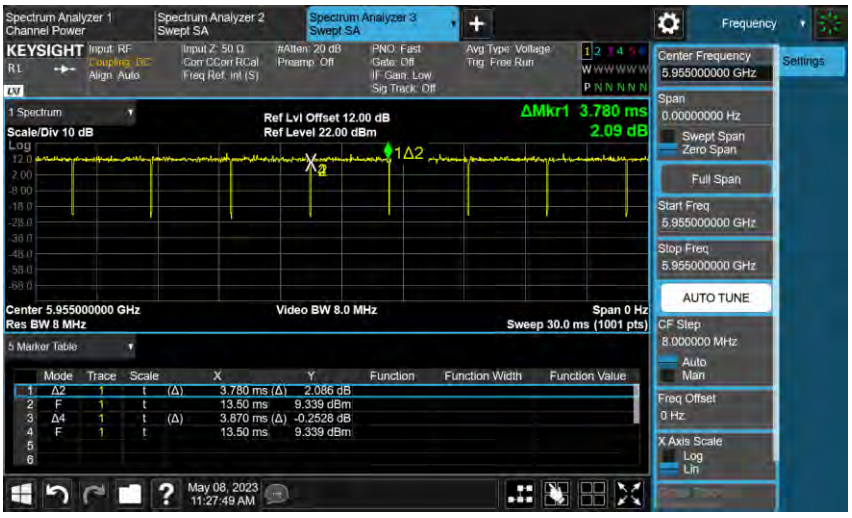
802.11ax HE80	
On+off time	

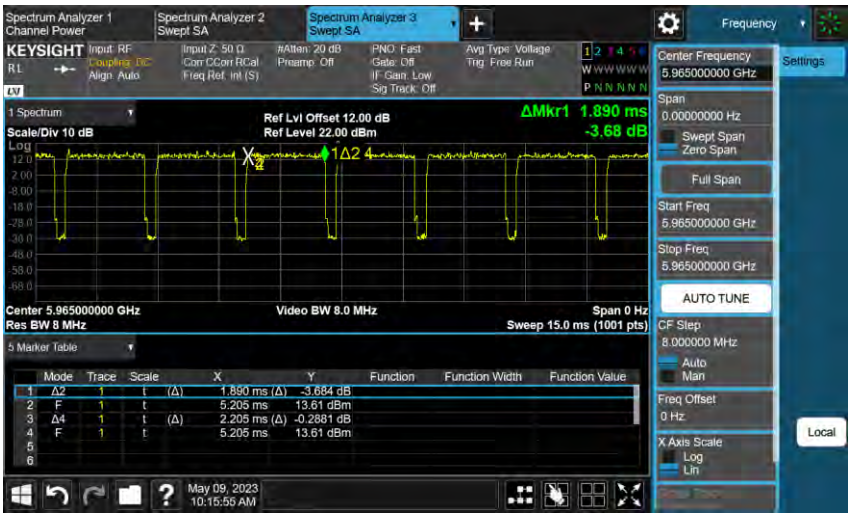
802.11ax HE160	
On+off time	

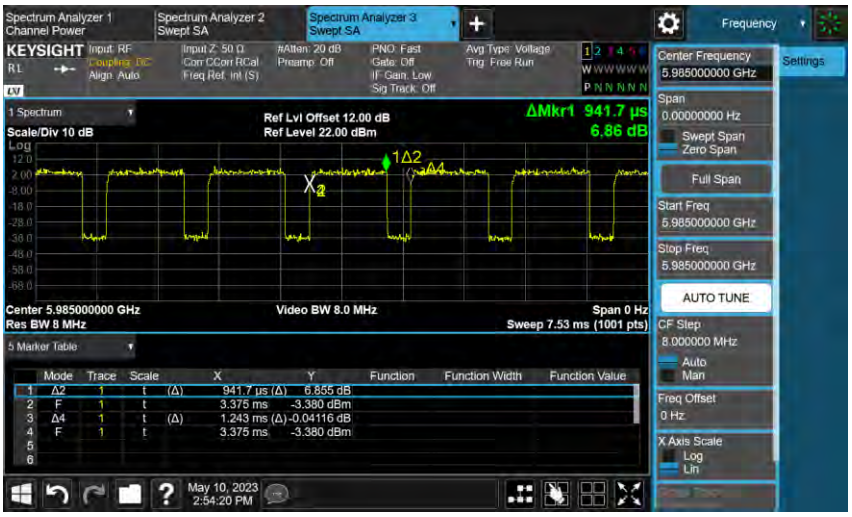
Duty cycle_ Beamforming on

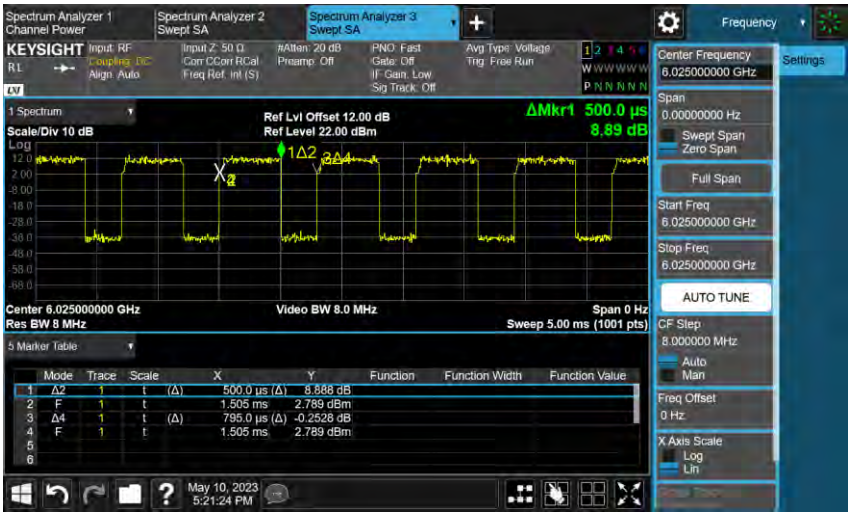
Test Mode	Frequency (MHz)	On time (ms)	On+off time (ms)	Duty cycle (%)	Duty Factor (dB)	1/T (kHz)	VBW setting (kHz)
802.11ax HE20	5955	3.780	3.870	97.67	0.10	0.26	2.00
802.11ax HE40	5965	1.890	2.205	85.71	0.67	0.53	2.00
802.11ax HE80	5985	0.942	1.243	75.78	1.20	1.06	2.00
802.11ax HE160	6025	0.500	0.795	62.89	2.01	2.00	2.00

Duty Cycle Graphs

802.11ax HE20	
On+off time	

802.11ax HE40	
On+off time	

802.11ax HE80	
On+off time	

802.11ax HE160	
On+off time	

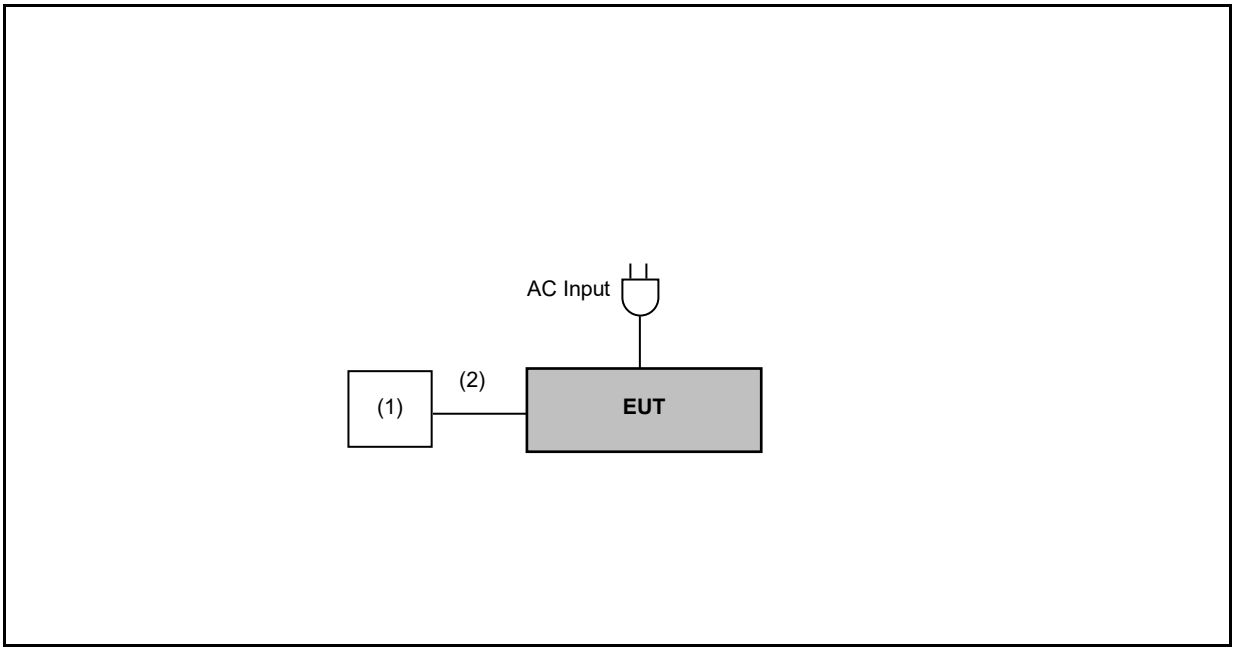
3.2. EUT Test Step

The EUT is operated in the engineering mode to fix the TX frequency for the purposes of measurement. According to its specifications, the EUT must comply with the requirements of Section 15.407 under the FCC Rules Part 15 Subpart E.

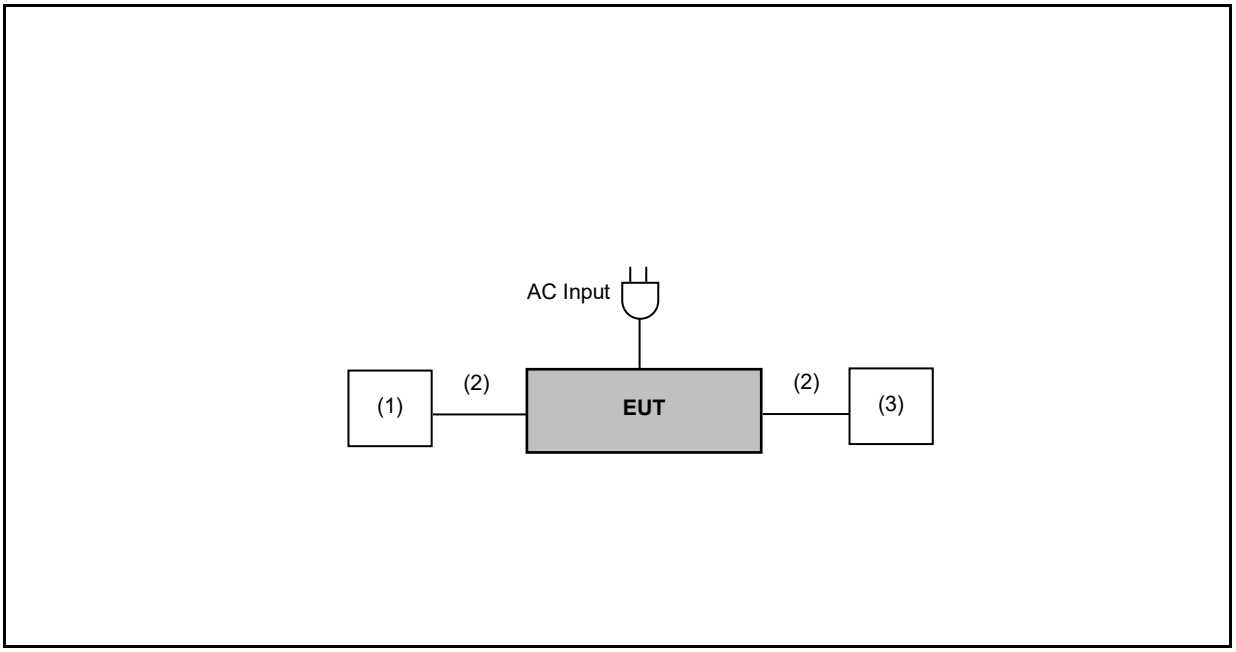
1.	Setup the EUT shown on “Configuration of Test System Details”.
2.	Turn on the power of all equipment.
3.	Turn on TX function.
4.	EUT run test program.

3.3. Configuration of Test System Details

Radiated Emission



Conduction Emission



Devices Description					
Product		Manufacturer	Model Number	Serial Number	Power Cord
(1)	Notebook	HP	440G1	---	---
(2)	RJ45	---	---	---	---
(3)	Notebook	acer	N19C1	---	---

3.4. Test Instruments

For Conducted Emission
Test Period: Mar. 03, 2023
Testing Engineer: Jayson Hsieh

Test Site		Conduction01-BD				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Test Receiver	R&S	ESCI	100367	May 19, 2022	1 year
☐	Test Receiver	R&S	ESCI	100722	Nov. 02, 2022	1 year
☐	Test Receiver	R&S	ESCI	101000	Nov. 23, 2022	1 year
☒	LISN	R&S	ENV216	101040	Apr. 06, 2022	1 year
☒	LISN	R&S	ENV216	101140	Jan. 12, 2023	1 year
☒	RF Cable	Woken	00100D1380194M	TE-02-03	May 27, 2022	1 year
☒	Software	EZ EMC	1.1.4.3	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request.

For Radiated Emissions
Test Period: May. 09 ~ Jul. 07, 2023
Testing Engineer: Kerry Xu, Marc Yeh, Hung Chou

Test Site		96603-BD				
Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☐	Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9010A	MY52221312	Jan. 07, 2023	1 year
☐	Spectrum Analyzer (3 Hz~50 GHz)	Agilent	N9030A	MY53120541	Dec. 29, 2022	1 year
☐	Spectrum Analyzer (2 Hz~50 GHz)	Keysight	N9030B	MY57143537	Apr. 14, 2022	1 year
☒	Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9020B	MY60112363	Jan. 13, 2023	1 year
☒	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A11119	Jan. 07, 2023	1 year
☐	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A10961	Jul. 07, 2022	1 year
☐	Broadband Amplifier (100 kHz~1 GHz)	Titan	T0910E00014330 A1F	001	Jul. 21, 2022	1 year
☐	Amplifier (1 GHz~26.5 GHz)	Agilent	8449B	3008A02237	Oct. 19, 2022	1 year
☒	Broadband Amplifier (1 GHz~26.5 GHz)	Titan	T0912E01263025 A1F	002	Jul. 21, 2022	1 year
☐	Preamplifier (26.5 GHz~40 GHz)	EMCI	EMC2654045	980028	Sep. 02, 2022	1 year
☐	Preamplifier (18 GHz~40 GHz)	EMCI	EMC184045SE	980861	Dec. 15, 2022	1 year
☐	Loop Antenna (9 kHz~30 MHz)	COM-POWER CORPORATION	AL-130	121014	Mar. 23, 2023	1 year
☐	Active Loop Antenna (9 kHz~30 MHz)	Schwarzbeck Mess-Elektronik	FMZB 1513-60	1513-60-031	Feb. 21, 2023	1 year
☒	Trilog Broadband Antenna (30 kHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	01146	Jul. 22, 2022	1 year
☐	Trilog Broadband Antenna (30 kHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	416	Dec. 19, 2022	1 year
☒	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	02207	Jul. 13, 2022	1 year
☒	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	9120D-550	Aug. 25, 2022	1 year

Note: N.C.R. = No Calibration Request.

For Radiated Emissions
Test Period: May. 09 ~ Jul. 07, 2023
Testing Engineer: Kerry Xu, Marc Yeh, Hung Chou

Test Site		96603-BD				
Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Broadband Horn Antenna (18 GHz~40 GHz)	Schwarzbeck Mess-Elektronik	9170	9170-320	Aug. 25, 2022	1 year
☐	Horn Antenna (18 GHz~40 GHz)	ETS	3116	00086467	Dec. 05, 2022	1 year
☐	RF Cable	EMCI	EMC104-N-N-6000	TE01-1	Feb. 17, 2023	1 year
☐	Microwave Cable	EMCI	EMC104-SM-SM-13000	170814	Feb. 17, 2023	1 year
☐	Microwave Cable	EMCI	EMC102-KM-KM-14000	151001	Feb. 17, 2023	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A100	J11005	Aug. 04, 2022	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A900	J11004	Aug. 04, 2022	1 year
☒	Coaxial Cable	Titan	CFD400NL-LW	001	Aug. 04, 2022	1 year
☐	Bluetooth Tester	R&S	CBT	100350	Mar. 20, 2023	2 years
☐	Power Supply	KEITHLEY	2303	4045290	Jan. 19, 2022	1 year
☒	Software	EZ EMC	1.1.4.4	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request.

For Conducted
Test Period: Feb. 02 ~ Jul. 13, 2023
Testing Engineer: An Wu

Test Site		RF01-WG				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Spectrum Analyzer (10 Hz~44 GHz)	R&S	FSV3044	101255	Nov. 30, 2022	1 year
☒	Signal Generator	Keysight	N5182B	MY53052569	Apr. 16, 2022 Apr. 17, 2023	1 year
☒	Signal Generator	Keysight	N5182BX07	MY59360221	Apr. 16, 2022 Apr. 17, 2023	1 year
☒	Power Sensor	Anritsu	MA24408A	11998	Feb. 07, 2023	1 year
☒	Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9020B	MY60112362	Feb. 16, 2023	1 year
☒	Switch Box	R&S	OSP-B157W8	100850	Dec. 09, 2022	1 year

For Radiated Emissions
Test Period: Mar. 20 ~ Jul. 12, 2023
Testing Engineer: Ethan Hsu

Test Site		Fully-01 WG				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Broadband Horn Antenna	RF SPIN	DRH18-E	210308A18ES	Mar. 16, 2023	1 year
☒	Spectrum Analyzer	KEYSIGHT	N9020B	MY60112361	Jan. 09, 2023	1 year
☒	Pre-Amplifier (Above 1G)	EMCI	EMC0518A45SE	980876	Feb. 13, 2023	1 year
☒	Coaxial Cable	EMCI	EMC104-SM-SM-1000	211028	Jan. 12, 2023	1 year
☒	Coaxial Cable	EMCI	EMC104-SM-SM-2000	211034	Jan. 12, 2023	1 year
☒	Coaxial Cable	EMCI	EMC104-SM-SM-8000	211039	Jan. 12, 2023	1 year

Note: N.C.R. = No Calibration Request.

3.5. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	20-30
Humidity (%RH)	25-75	45-75

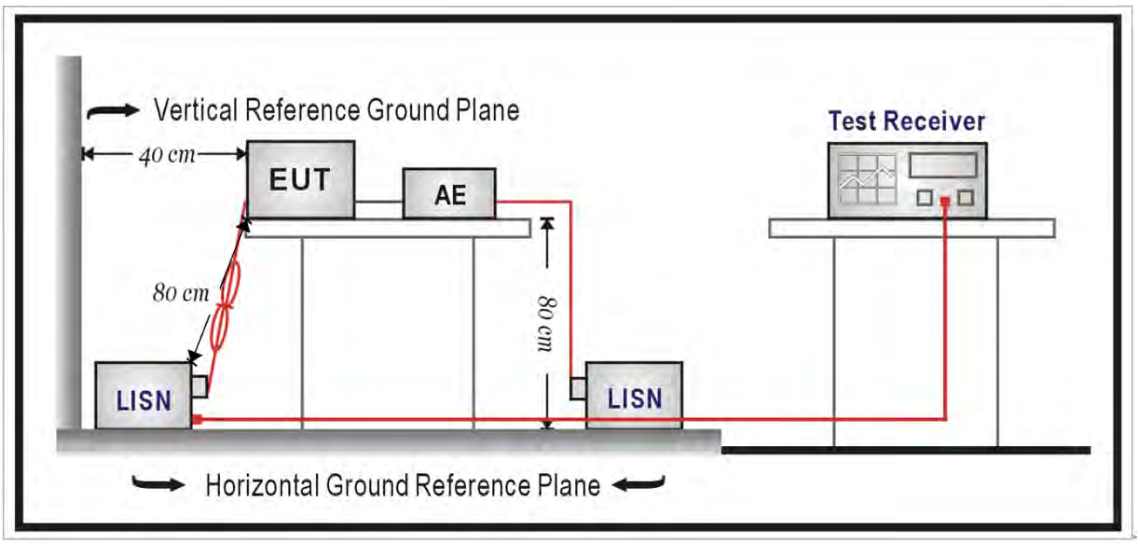
4 Measurement Procedure

4.1. AC Power Conducted Emission Measurement

■ **Limit**

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

■ **Test Setup**



■ **Test Procedure**

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 Ω// 50 uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50 Ω// 50 uH coupling impedance with 50 ohm termination.

Tabletop device shall be placed on a non-conducting platform, of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The wall of screened room shall be located 40 cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80 cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12 mm insulating material.

Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a resolution bandwidth of 9 kHz. The equipment under test (EUT) shall be meet the limits in section 4.1, as applicable, including the average limit and the quasi-peak limit when using respectively, an average detector and quasi-peak detector measured in accordance with the methods described of related standard. When all of peak value were complied with quasi-peak and average limit from 150 kHz to 30 MHz then quasi-peak and average measurement was unnecessary.

The AMN shall be placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8 m from the AMN. If the mains power cable is longer than 1 m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4 m. All of interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long. All of EUT and AE shall be separate place more than 0.1 m. All 50 Ω ports of the LISN shall be resistively terminated into 50 Ω loads when not connected to the measuring instrument.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored

4.2. Transmitter Radiated Emissions Measurement

■ **Limit**

(1)Undesirable emission limits. Except as shown in paragraph (b)(9) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(a) For transmitters operating in the band 5925~6425 MHz, 6425~6525 MHz, 6525~6875 MHz and 6875~7125 MHz all emissions outside the band 5925~7125 MHz shall not exceed -27 dBm/MHz E.I.R.P..

E.I.R.P. (dBm/MHz)	Avg Field Strength at 3 m(dBuV/m)
-7 (Peak)	88.2 (Peak)
-27 (AVG)	68.2 (AVG)

(2)Limits of Radiated Emission Measurement

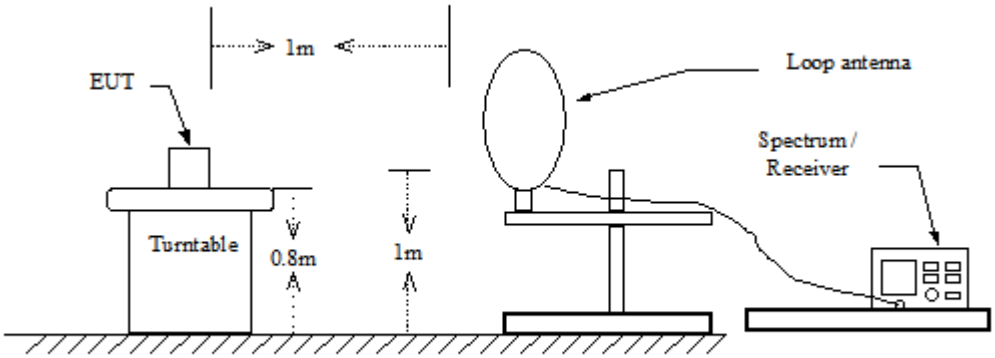
Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequency Range (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	10	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

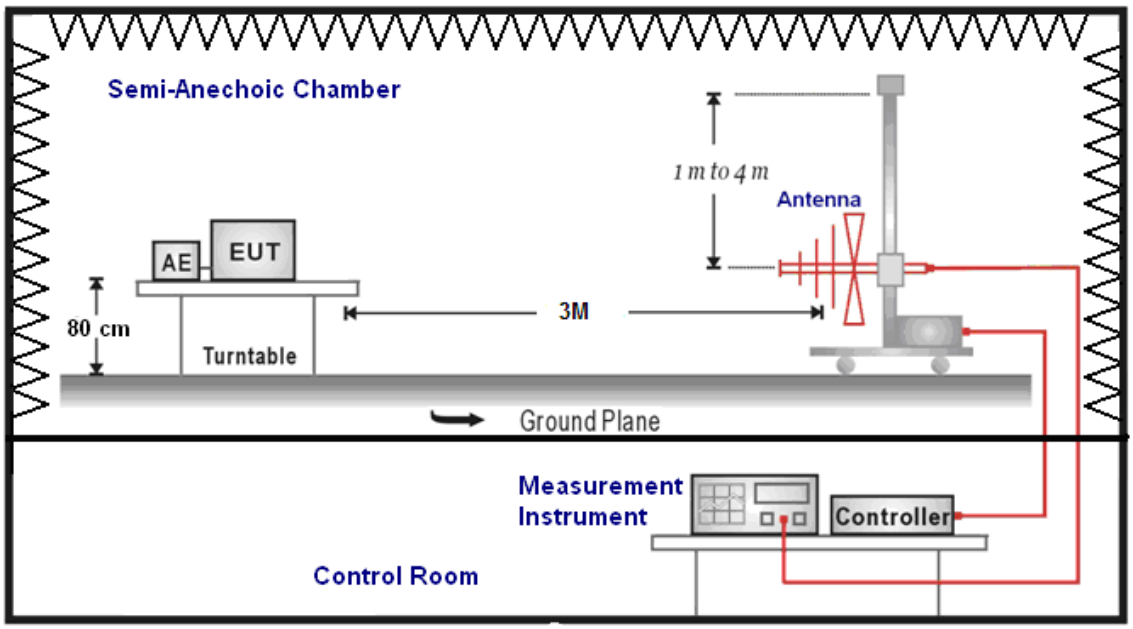
Note: 1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

■ **Setup**

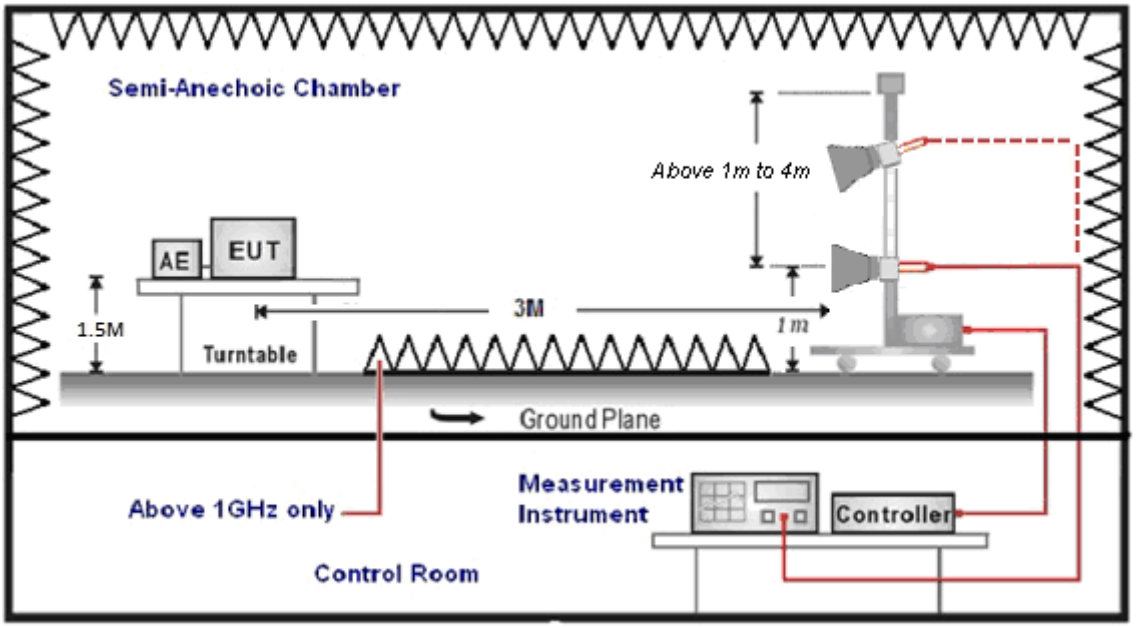
9 kHz ~ 30 MHz



30 MHz ~ 1 GHz



Above 1 GHz


Semi-Anechoic Chamber
Above 1m to 4m
AE
EUT
1.5M
3M
1m
Turntable
Ground Plane
Above 1GHz only
Measurement
Instrument
Controller
Control Room

■ **Test Procedure**

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height (below 1 GHz use 0.8 m turntable / above 1 GHz use 1.5 m turntable), top surface 1.0 x 1.5 meter. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 40 GHz is investigated.

For measurements below 30 MHz the resolution bandwidth is set to 10 kHz for peak detection measurements or 9 kHz for quasi-peak detection measurements. The video bandwidth is 3 times of the resolution bandwidth.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For restricted measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements and 10 Hz for average measurements when Duty cycle > 0.98 / 1/T for average measurements when Duty cycle < 0.98.

For out of band measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on tree orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization. SCHWARZBECK MESS-ELEKTRONIK Trilog-Broadband Antenna at 3 Meter and the ETS-Lindgren Double-Ridged Waveguide Horn antnna Schwarzbeck Mess-Elektronik Broadband Horn Antenna was used in frequencies 1 – 40 GHz at a distance of 3 meter. The antenna at an angle toward the source of the emission.All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20 dB/decade).

For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts pre meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro colts per meter (dBuV/m).

Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.

The actual field is intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB/m), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

(1) Amplitude (dBuV/m) = FI (dBuV) +AF (dB/m) +CL (dB)
FI= Reading of the field intensity.
AF= Antenna factor.
CL= Cable loss.
P.S Amplitude is auto calculate in spectrum analyzer.

Measuring Instruments and setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW/VBW(Emission in restricted band)	1 MHz / 3 MHz for Peak 1 MHz / (1/T) for Average
RBW/VBW(Emission in non-restricted band)	1 MHz / 3 MHz for Peak 1 MHz / (1/T) for Average (Only WLAN 6G)

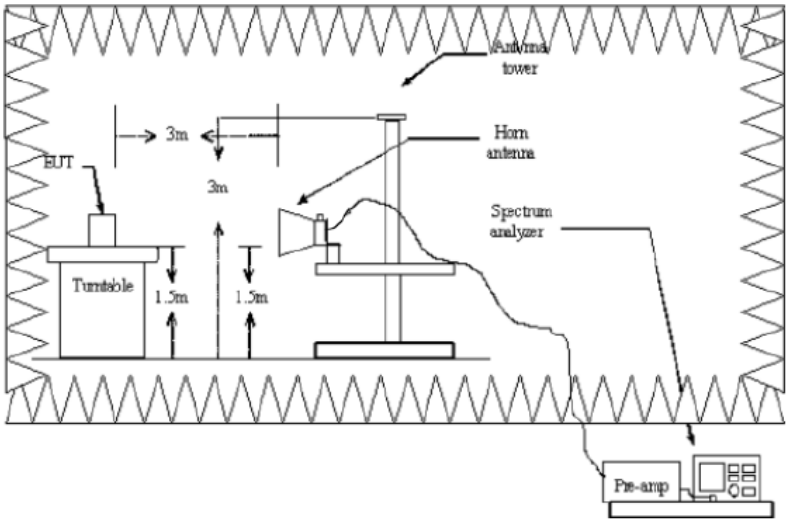
4.3. Maximum Output Power Measurement

■ **Limit**

Frequency Range (GHz)	Maximum Output Power Limit
5.925 ~ 6.425	For standard power access point and fixed client device : e.i.r.p. ≦ 36dBm, For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125mW (21dBm).
	For indoor access point : e.i.r.p. ≦ 30dBm.
	For subordinate device control of an indoor access point : e.i.r.p. ≦ 30dBm.
	For client device control of a standard power access point : e.i.r.p. ≦ 30dBm.
	For client device control of an indoor access point : e.i.r.p. ≦ 24dBm.
6.425 ~ 6.525	For indoor access point : e.i.r.p. ≦ 30dBm.
	For client device control of an indoor access point : e.i.r.p. ≦ 24dBm.
6.525 ~ 6.875	For standard power access point and fixed client device : e.i.r.p. ≦ 36dBm, For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees not exceed 125mW (21dBm).
	For indoor access point : e.i.r.p. ≦ 30dBm.
	For subordinate device control of an indoor access point : e.i.r.p. ≦ 30dBm.
	For client device control of a standard power access point : e.i.r.p. ≦ 30dBm.
	For client device control of an indoor access point : e.i.r.p. ≦ 24dBm.
6.875 ~ 7.125	For indoor access point : e.i.r.p. ≦ 30dBm.
	For client device control of an indoor access point : e.i.r.p. ≦ 24dBm.

For Radiation Method

■ **Test Setup**



■ **Test Procedure**

The test is performed in accordance with ANSI C63.10:2013 section 12.3.2, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices.

Accordance with ANSI C63.10:2013 section 12.1.2 use radiated compliance measurements.

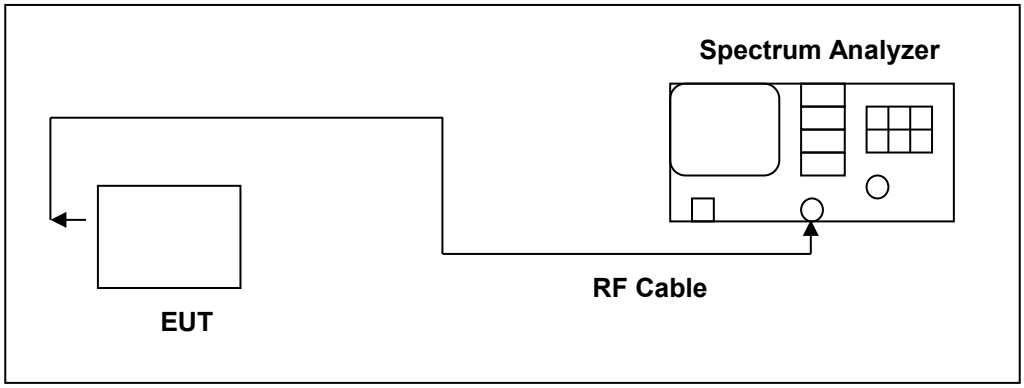
1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a antenna tower.
3. The height of antenna is fixed 1.5 meter , Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. Perform a EIRP level measurement and record the worse read value, is the EIRP level value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor.

4.4. Emission Bandwidth Measurement

■ **Limit**

≤ 320 MHz

■ **Test Setup**

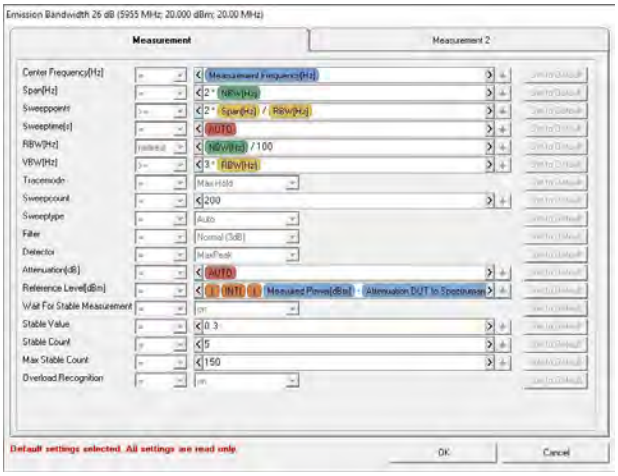


■ **Test Procedure**

The test is performed in accordance with ANSI C63.10:2013 section 12.4 Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

For 26 dB Bandwidth:

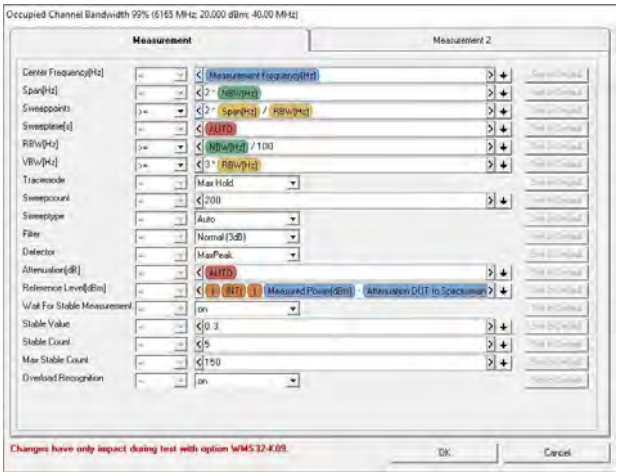
Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	>26 dB Bandwidth
RBW	Approximately 1 % of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto



For 99% Bandwidth:

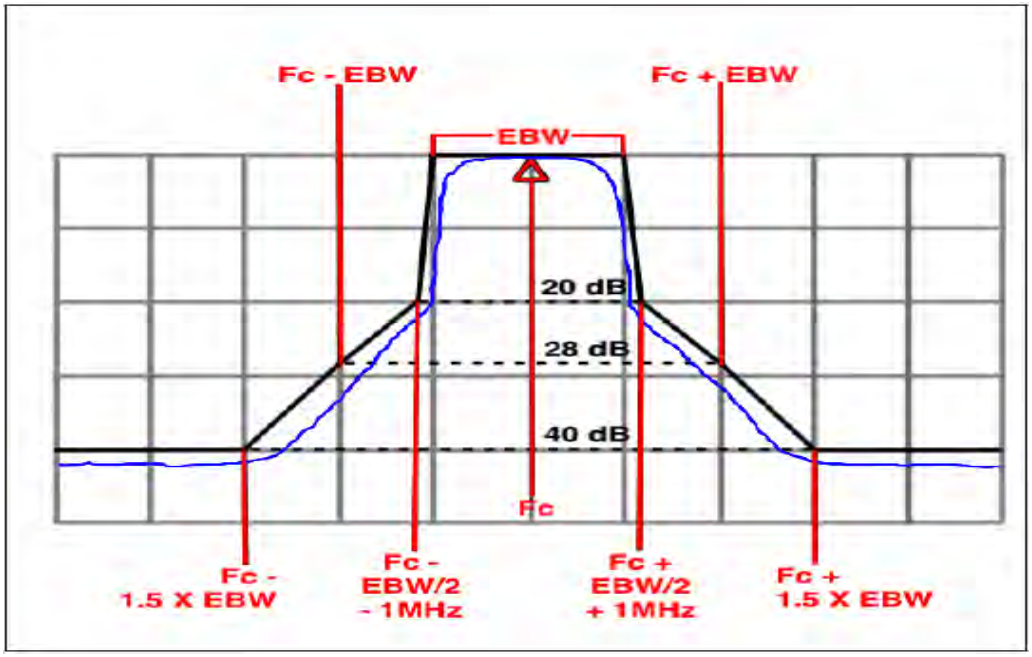
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	1.5 times and 5.0 times the OBW
RBW	Approximately 1 % ~ 5 % of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

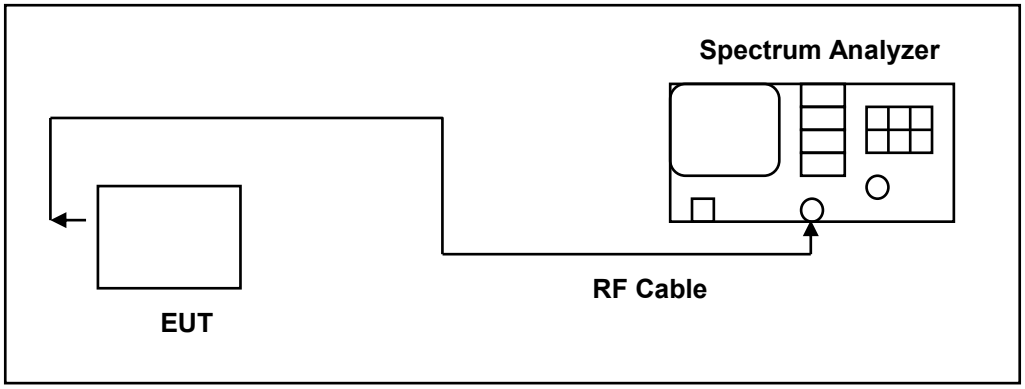


4.5. In-Band Emission (Mask) Measurement

■ **Limit**

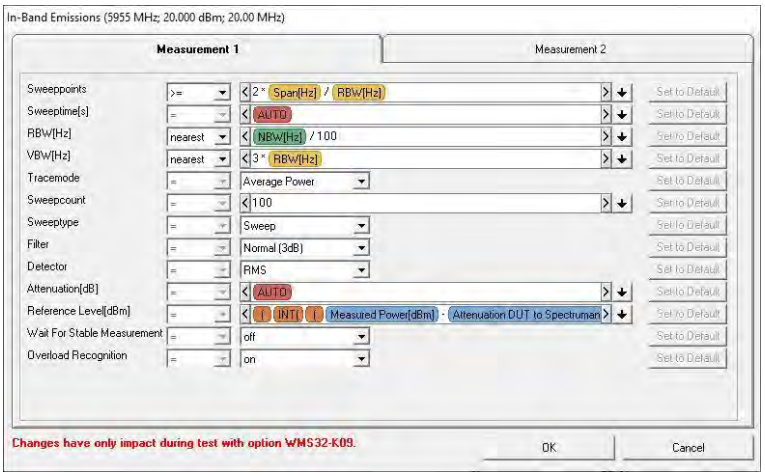


■ **Test Setup**



■ **Test Procedure**

1. Connect output of the antenna port to a spectrum analyzer.
2. Measure the 26 dB EBW using the test procedure 12.4.1 of ANSI C63.10-2013.
3. Measure the power spectral density (which will be used for emissions mask reference) using the following procedure:
   a) Set the span to encompass the entire 26 dB EBW of the signal.
   b) Set RBW = same RBW used for 26 dB EBW measurement.
   c) Set VBW ≥ 3 X RBW
   d) Number of points in sweep ≥ [2 X span / RBW].
   e) Sweep time = auto.
   f) Detector = RMS (i.e., power averaging)
   g) Trace average at least 100 traces in power averaging (rms) mode.
   h) Use the peak search function on the instrument to find the peak of the spectrum.
4. For the purposes of developing the emission mask, the channel bandwidth is defined as the 26 dB EBW.
5. Using the measuring equipment limit line function, develop the emissions mask based on the following requirements. The emissions power spectral density must be reduced below the peak power spectral density (in dB) as follows:
   a) 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.)
   b) Suppressed by 28 dB at one channel bandwidth from the channel center.
   c) Suppressed by 40 dB at one- and one-half times the channel bandwidth from the channel center.
6. Adjust the span to encompass the entire mask as necessary.
7. Clear trace.
8. Trace average at least 100 traces in power averaging (rms) mode.
9. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

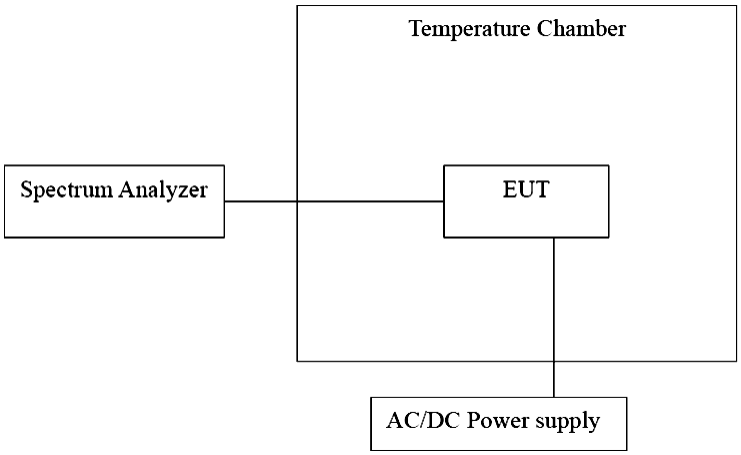


4.6. Frequency Stability Measurement

- **Limit**

The carrier frequency remains within the operating frequency band.

- **Test Setup**



■ **Test Procedure**

1. The EUT and test equipment were set up as shown on the following section.
2. Turn the on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized.
5. Repeat step 4 with the temperature chamber set to the lower the chamber temperature by not more that 10 °C, and allow the temperature inside the chamber to stabilize.
6. The test chamber was allowed to stabilize at +20℃ for a minimum of 30 minutes. The supply voltage was then adjusted of the EUT form 85% (or end point) to 115% and the frequency record.

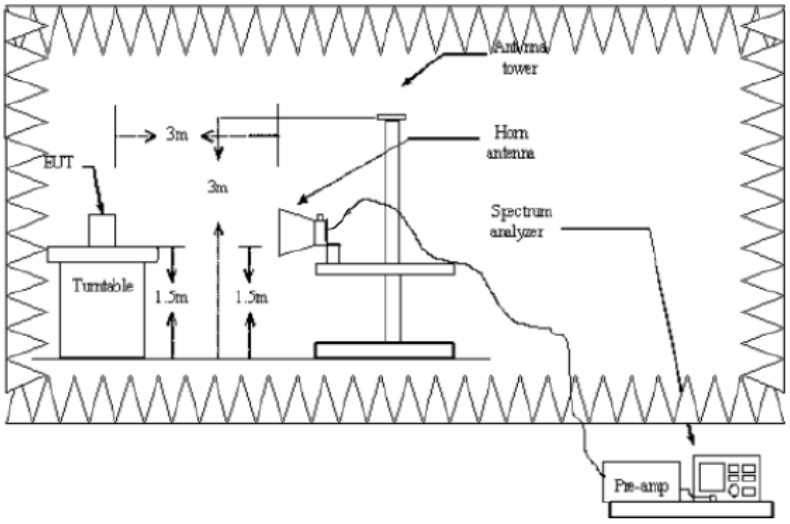
4.7. Maximum Power Spectral Density Measurement

■ **Limit**

Frequency Range (GHz)	Maximum Power Spectral Density Limit
5.925 ~ 6.425	For standard power access point and fixed client device : e.i.r.p. PSD ≤ 23 dBm/MHz.
	For indoor access point : e.i.r.p. PSD ≤ 5 dBm/MHz.
	For subordinate device control of an indoor access point : e.i.r.p. PSD ≤ 5 dBm/MHz.
	For client device control of a standard power access point : e.i.r.p. PSD ≤ 17 dBm/MHz.
	For client device control of an indoor access point : e.i.r.p. PSD ≤ -1 dBm/MHz.
6.425 ~ 6.525	For indoor access point : e.i.r.p. PSD ≤ 5 dBm/MHz.
	For client device control of an indoor access point : e.i.r.p. PSD ≤ -1 dBm/MHz.
6.525 ~ 6.875	For standard power access point and fixed client device : e.i.r.p. PSD ≤ 23 dBm/MHz.
	For indoor access point : e.i.r.p. PSD ≤ 5 dBm/MHz.
	For subordinate device control of an indoor access point : e.i.r.p. PSD ≤ 5 dBm/MHz.
	For client device control of a standard power access point : e.i.r.p. PSD ≤ 17 dBm/MHz.
	For client device control of an indoor access point : e.i.r.p. PSD ≤ -1 dBm/MHz.
6.875 ~ 7.125	For indoor access point : e.i.r.p. PSD ≤ 5 dBm/MHz.
	For client device control of an indoor access point : e.i.r.p. PSD ≤ -1 dBm/MHz.

For Radiation Method

■ **Test Setup**



■ **Test Procedure**

The test is performed in accordance with ANSI C63.10:2013 section 12.5, Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E.

Accordance with ANSI C63.10:2013 section 12.1.2 use radiated compliance measurements.

1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a antenna tower.
3. The height of antenna is fixed 1.5 meter , Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. Perform a EIRP level measurement and record the worse read value, is the EIRP level value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1 MHz
VBW	3 MHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

4.8. Contention Based Protocol Measurement

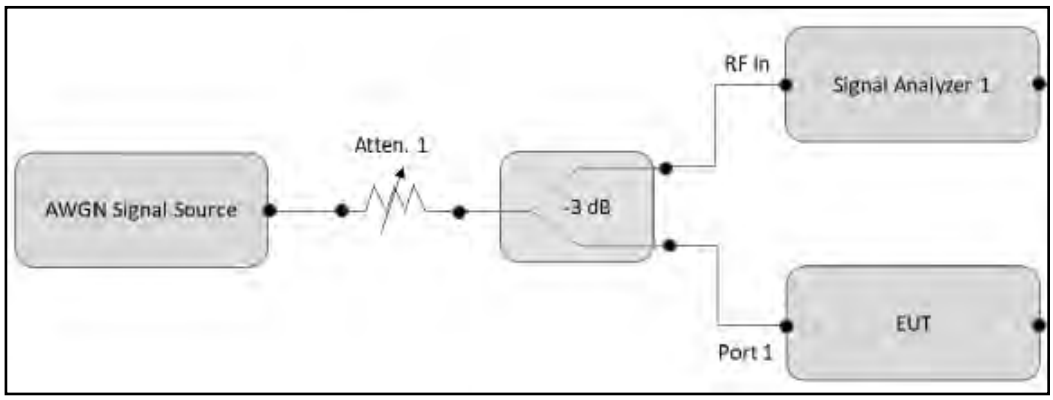
■ **Limit**

Unlicensed low-power indoor devices must detect co-channel radio frequency power that is at least -62 dBm or lower. Upon detection of energy in the band, unlicensed low power indoor devices must vacate the channel and stay off the channel as long as detected radio frequency power is equal to or greater than the threshold (-62 dBm). The -62 dBm (or lower) threshold is referenced to a 0 dBi antenna gain. Additionally, low-power indoor devices must detect co-channel energy with 90% or greater certainty.

Table 1. Criteria to determine number of times detection threshold test may be performed

If	Number of Tests	Placement of Incumbent Transmission
$BW_{EUT} \leq BW_{Inc}$	Once	Tune incumbent and EUT transmissions ($f_{c1} = f_{c2}$)
$BW_{Inc} < BW_{EUT} \leq 2BW_{Inc}$	Once	Incumbent transmission is contained within BW_{EUT}
$2BW_{Inc} < BW_{EUT} \leq 4BW_{Inc}$	Twice. Incumbent transmission is contained within BW_{EUT}	Incumbent transmission is located as closely as possible to the lower edge and upper edge, respectively, of the EUT channel
$BW_{EUT} > 4BW_{Inc}$	Three times	Incumbent transmission is located as closely as possible to the lower edge of the EUT channel, in the middle of EUT channel, and as closely as possible to the upper edge of the EUT channel

■ **Test Setup**



■ **Test Procedure**

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 EEUT channel center frequency. The span range of the signal analyzer shall be between two times and five times the OBW of the EUT.
4. Using an AWGN signal source, generate (but do not transmit, i.e., RF OFF) a 10 MHz-wide AWGN signal. Use Table 1 to determine the center frequency of the 10 MHz AWGN signal relative to the EUT's channel bandwidth and center frequency.
5. Set the AWGN signal power to an extremely low level (more than 20 dB below the -62 dBm threshold). Connect the AWGN signal source, via a 3-dB divider, to the signal analyzer 1 and the EUT as shown in Test Setup.
6. Transmit the AWGN signal (RF ON) and verify its characteristics on the signal analyzer 1.
7. Monitor the signal analyzer 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.
8. (Including all losses in the RF paths) 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.
9. 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 4, choose a different center frequency for the AWGN signal and repeat the process.

4.9. Operational restrictions for 6 GHz U-NII devices

■ **Limits**

In the 5.925-7.125 GHz band, client devices, except fixed client devices, must operate under the control of a standard power access point, indoor access point or subordinate devices; Subordinate devices must operate under the control of an indoor access point.

■ **Declare**

Device is an indoor client device under the control of a low power indoor access point. Please refer to the declaration letter exhibit supplied within this application.

4.10. Automatically discontinue transmission

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signalling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

■ **Declare**

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving.

The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

4.11. Antenna Requirement

■ **Limit**

For intentional device, according to 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And According to 15.407 (a), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

■ **Antenna Connector Construction**

See section 2 – antenna information.

■ Directional Gain Calculated

SISO 1x1

Test mode	Band	Transmission Type	Antenna				Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
			Ant-0 (dBi)	Ant-1 (dBi)	Ant-2 (dBi)	Ant-3 (dBi)				
802.11a 802.11ax HE20 802.11ax HE40 802.11ax HE80 802.11ax HE160	Band 5	Ant-0	5.50	-	-	-	5.50	5.50	0.00	0.00
	Band 6		5.20	-	-	-	5.20	5.20	0.00	0.00
	Band 7		6.20	-	-	-	6.20	6.20	0.20	0.20
	Band 8		5.90	-	-	-	5.90	5.90	0.00	0.00

MIMO 4x4

Test mode	Band	Transmission Type	Antenna				Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
			Ant-0 (dBi)	Ant-1 (dBi)	Ant-2 (dBi)	Ant-3 (dBi)				
802.11a 802.11ax HE20 802.11ax HE40 802.11ax HE80 802.11ax HE160	Band 5	Ant-0	5.50	4.10	4.40	4.50	5.50	4.92	0.00	0.00
	Band 6		5.20	3.70	3.40	4.50	5.20	4.33	0.00	0.00
	Band 7		6.20	4.40	4.00	4.30	6.20	5.95	0.20	0.00
	Band 8		5.90	4.60	5.00	5.00	5.90	4.06	0.00	0.00

Directional gain (Power) = GANT

Directional gain (PSD) = Arrary Gain

Beamforming on

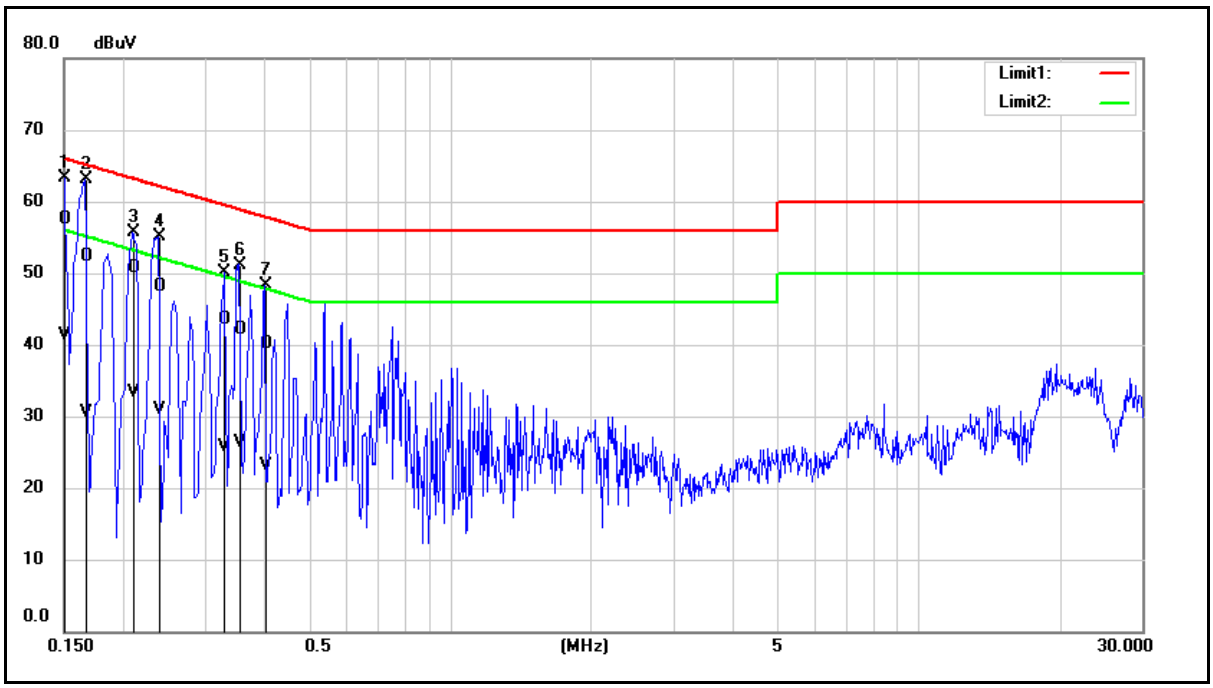
Test mode	Band	Transmission Type	Antenna				Directional Gain for Power (dBi)	Directional Gain for PSD (dBi)	Power Limit Reduction (dB)	PSD Limit Reduction (dB)
			Ant-0 (dBi)	Ant-1 (dBi)	Ant-2 (dBi)	Ant-3 (dBi)				
802.11ax HE20 802.11ax HE40 802.11ax HE80 802.11ax HE160	Band 5	Ant-0	5.50	4.10	4.40	4.50	10.42	10.42	4.42	4.42
	Band 6		5.20	3.70	3.40	4.50	9.53	9.53	3.53	3.53
	Band 7		6.20	4.40	4.00	4.30	12.15	12.15	6.15	6.15
	Band 8		5.90	4.60	5.00	5.00	9.96	9.96	3.96	3.96

Directional gain = GANT + Array Gain

5 Test Results

5.1. Conducted Emission

Standard:	FCC Part 15.407	Line:	L1
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Transmit mode		
Description:			

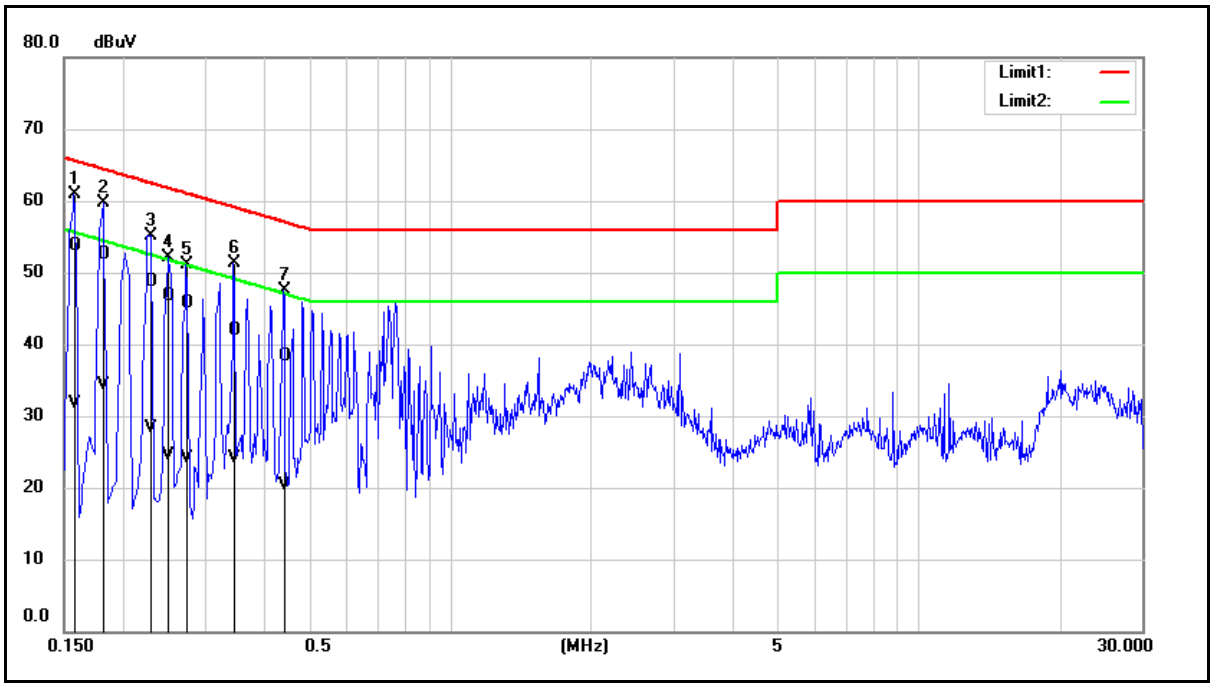


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1500	48.03	31.75	9.54	57.57	41.29	66.00	56.00	-8.43	-14.71	Pass
2	0.1660	42.83	20.87	9.54	52.37	30.41	65.16	55.16	-12.79	-24.75	Pass
3	0.2100	41.10	23.85	9.54	50.64	33.39	63.21	53.21	-12.57	-19.82	Pass
4	0.2380	38.58	21.45	9.54	48.12	30.99	62.17	52.17	-14.05	-21.18	Pass
5	0.3300	33.89	16.09	9.54	43.43	25.63	59.45	49.45	-16.02	-23.82	Pass
6	0.3540	32.46	16.73	9.55	42.01	26.28	58.87	48.87	-16.86	-22.59	Pass
7	0.4020	30.63	13.47	9.55	40.18	23.02	57.81	47.81	-17.63	-24.79	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	FCC Part 15.407	Line:	N
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Transmit mode		
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1580	44.14	22.18	9.60	53.74	31.78	65.57	55.57	-11.83	-23.79	Pass
2	0.1820	42.91	24.70	9.60	52.51	34.30	64.39	54.39	-11.88	-20.09	Pass
3	0.2300	39.11	18.79	9.60	48.71	28.39	62.45	52.45	-13.74	-24.06	Pass
4	0.2500	37.13	14.98	9.60	46.73	24.58	61.76	51.76	-15.03	-27.18	Pass
5	0.2740	36.06	14.59	9.60	45.66	24.19	61.00	51.00	-15.34	-26.81	Pass
6	0.3460	32.38	14.42	9.60	41.98	24.02	59.06	49.06	-17.08	-25.04	Pass
7	0.4420	28.61	10.74	9.61	38.22	20.35	57.02	47.02	-18.80	-26.67	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

5.2. Conducted Test Results

5.2.1. Maximum Output Power Measurement

SISO 1x1

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11a	1	5955	11.57	3.45	0.30	15.32	0.034	30.00
	45	6175	10.52	4.68	0.30	15.50	0.036	30.00
	93	6415	9.54	5.85	0.30	15.69	0.037	30.00
	97	6435	9.07	6.15	0.30	15.52	0.036	30.00
	105	6475	8.91	6.15	0.30	15.36	0.034	30.00
	113	6515	8.92	6.39	0.30	15.61	0.036	30.00
	117	6535	9.20	6.49	0.30	15.99	0.040	30.00
	149	6695	8.90	6.32	0.30	15.52	0.036	30.00
	181	6855	8.84	6.66	0.30	15.80	0.038	30.00
	185	6875	8.72	6.66	0.30	15.68	0.037	30.00
	189	6895	8.90	6.55	0.30	15.75	0.038	30.00
	209	6995	8.28	6.98	0.30	15.56	0.036	30.00
	233	7115	8.36	6.88	0.30	15.54	0.036	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE20	1	5955	12.46	3.45	0.33	16.24	0.042	30.00
	45	6175	10.86	4.68	0.33	15.87	0.039	30.00
	93	6415	9.66	5.85	0.33	15.84	0.038	30.00
	97	6435	9.82	6.15	0.33	16.30	0.043	30.00
	105	6475	9.54	6.15	0.33	16.02	0.040	30.00
	113	6515	9.37	6.39	0.33	16.09	0.041	30.00
	117	6535	9.29	6.49	0.33	16.11	0.041	30.00
	149	6695	9.30	6.32	0.33	15.95	0.039	30.00
	181	6855	8.71	6.66	0.33	15.70	0.037	30.00
	185	6875	8.95	6.66	0.33	15.94	0.039	30.00
	189	6895	9.03	6.55	0.33	15.91	0.039	30.00
	209	6995	8.74	6.98	0.33	16.05	0.040	30.00
	233	7115	0.69	6.88	0.33	7.90	0.006	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE40	3	5965	14.85	3.45	0.31	18.61	0.073	30.00
	43	6165	13.94	4.68	0.31	18.93	0.078	30.00
	91	6405	12.47	5.85	0.31	18.63	0.073	30.00
	99	6445	12.59	6.15	0.31	19.05	0.080	30.00
	107	6485	12.39	6.39	0.31	19.09	0.081	30.00
	115	6525	12.28	6.39	0.31	18.98	0.079	30.00
	123	6565	12.10	6.49	0.31	18.90	0.078	30.00
	147	6685	12.14	6.32	0.31	18.77	0.075	30.00
	179	6845	11.76	6.66	0.31	18.73	0.075	30.00
	187	6885	12.34	6.55	0.31	19.20	0.083	30.00
	195	6925	11.73	6.55	0.31	18.59	0.072	30.00
	211	7005	11.52	6.98	0.31	18.81	0.076	30.00
	227	7085	10.91	6.88	0.31	18.10	0.065	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE80	7	5985	17.27	3.97	0.34	21.58	0.144	30.00
	39	6145	16.51	4.68	0.34	21.53	0.142	30.00
	87	6385	16.02	5.85	0.34	22.21	0.166	30.00
	103	6465	14.26	6.15	0.34	20.75	0.119	30.00
	119	6545	13.67	6.49	0.34	20.50	0.112	30.00
	135	6625	13.24	6.40	0.34	19.98	0.099	30.00
	151	6705	13.25	6.32	0.34	19.91	0.098	30.00
	167	6785	13.09	6.93	0.34	20.36	0.109	30.00
	183	6865	12.51	6.66	0.34	19.51	0.089	30.00
	199	6945	12.19	6.62	0.34	19.15	0.082	30.00
	215	7025	13.17	6.98	0.34	20.49	0.112	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE160	15	6025	18.96	3.97	0.34	23.27	0.212	30.00
	47	6185	18.10	4.95	0.34	23.38	0.218	30.00
	79	6345	16.31	5.70	0.34	22.35	0.172	30.00
	111	6505	14.12	6.39	0.34	20.84	0.121	30.00
	143	6665	13.82	6.17	0.34	20.33	0.108	30.00
	175	6825	13.41	6.93	0.34	20.68	0.117	30.00
	207	6985	13.57	6.98	0.34	20.88	0.123	30.00

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Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11a	1	5955	9.70	3.45	0.30	13.45	0.022	30.00
	45	6175	7.89	4.68	0.30	12.87	0.019	30.00
	93	6415	6.25	5.85	0.30	12.40	0.017	30.00
	97	6435	5.75	6.15	0.30	12.20	0.017	30.00
	105	6475	5.47	6.15	0.30	11.92	0.016	30.00
	113	6515	5.60	6.39	0.30	12.29	0.017	30.00
	117	6535	5.71	6.49	0.30	12.50	0.018	30.00
	149	6695	6.00	6.32	0.30	12.62	0.018	30.00
	181	6855	6.28	6.66	0.30	13.24	0.021	30.00
	185	6875	6.38	6.66	0.30	13.34	0.022	30.00
	189	6895	6.40	6.55	0.30	13.25	0.021	30.00
	209	6995	5.35	6.98	0.30	12.63	0.018	30.00
	233	7115	5.55	6.88	0.30	12.73	0.019	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE20	1	5955	10.64	3.45	0.33	14.42	0.028	30.00
	45	6175	8.95	4.68	0.33	13.96	0.025	30.00
	93	6415	6.96	5.85	0.33	13.14	0.021	30.00
	97	6435	7.35	6.15	0.33	13.83	0.024	30.00
	105	6475	7.30	6.15	0.33	13.78	0.024	30.00
	113	6515	8.12	6.39	0.33	14.84	0.031	30.00
	117	6535	6.37	6.49	0.33	13.19	0.021	30.00
	149	6695	5.87	6.32	0.33	12.52	0.018	30.00
	181	6855	6.32	6.66	0.33	13.31	0.021	30.00
	185	6875	5.76	6.66	0.33	12.75	0.019	30.00
	189	6895	6.24	6.55	0.33	13.12	0.021	30.00
	209	6995	5.09	6.98	0.33	12.40	0.017	30.00
	233	7115	3.20	6.88	0.33	10.41	0.011	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE40	3	5965	13.65	3.45	0.34	17.44	0.055	30.00
	43	6165	11.96	4.68	0.34	16.98	0.050	30.00
	91	6405	10.74	5.85	0.34	16.93	0.049	30.00
	99	6445	10.41	6.15	0.34	16.90	0.049	30.00
	107	6485	9.34	6.39	0.34	16.07	0.040	30.00
	115	6525	9.78	6.39	0.34	16.51	0.045	30.00
	123	6565	9.85	6.49	0.34	16.68	0.047	30.00
	147	6685	9.49	6.32	0.34	16.15	0.041	30.00
	179	6845	8.98	6.66	0.34	15.98	0.040	30.00
	187	6885	8.88	6.55	0.34	15.77	0.038	30.00
	195	6925	9.76	6.55	0.34	16.65	0.046	30.00
	211	7005	9.89	6.98	0.34	17.21	0.053	30.00
	227	7085	8.08	6.88	0.34	15.30	0.034	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE80	7	5985	16.17	3.97	0.31	20.45	0.111	30.00
	39	6145	15.58	4.68	0.31	20.57	0.114	30.00
	87	6385	13.69	5.85	0.31	19.85	0.097	30.00
	103	6465	12.95	6.15	0.31	19.41	0.087	30.00
	119	6545	12.53	6.49	0.31	19.33	0.086	30.00
	135	6625	12.89	6.40	0.31	19.60	0.091	30.00
	151	6705	13.17	6.32	0.31	19.80	0.096	30.00
	167	6785	12.73	6.93	0.31	19.97	0.099	30.00
	183	6865	13.27	6.66	0.31	20.24	0.106	30.00
	199	6945	13.54	6.62	0.31	20.47	0.111	30.00
	215	7025	13.40	6.98	0.31	20.69	0.117	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE160	15	6025	18.18	3.97	0.31	22.46	0.176	30.00
	47	6185	17.59	4.95	0.31	22.85	0.193	30.00
	79	6345	16.47	5.70	0.31	22.48	0.177	30.00
	111	6505	15.67	6.39	0.31	22.37	0.173	30.00
	143	6665	15.80	6.17	0.31	22.28	0.169	30.00
	175	6825	15.40	6.93	0.31	22.64	0.184	30.00
	207	6985	15.70	6.98	0.31	22.99	0.199	30.00

Beamforming on

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE20	1	5955	12.41	3.45	0.10	15.96	0.039	30.00
	45	6175	11.02	4.68	0.10	15.80	0.038	30.00
	93	6415	9.90	5.85	0.10	15.85	0.038	30.00
	97	6435	9.87	6.15	0.10	16.12	0.041	30.00
	105	6475	9.67	6.15	0.10	15.92	0.039	30.00
	113	6515	9.53	6.39	0.10	16.02	0.040	30.00
	117	6535	10.14	6.49	0.10	16.73	0.047	30.00
	149	6695	10.48	6.32	0.10	16.90	0.049	30.00
	181	6855	9.31	6.66	0.10	16.07	0.040	30.00
	185	6875	9.32	6.66	0.10	16.08	0.041	30.00
	189	6895	8.94	6.55	0.10	15.59	0.036	30.00
	209	6995	9.32	6.98	0.10	16.40	0.044	30.00
	233	7115	3.62	6.88	0.10	10.60	0.011	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE40	3	5965	14.72	3.45	0.67	18.84	0.077	30.00
	43	6165	13.43	4.68	0.67	18.78	0.075	30.00
	91	6405	12.28	5.85	0.67	18.80	0.076	30.00
	99	6445	11.84	6.15	0.67	18.66	0.073	30.00
	107	6485	12.27	6.39	0.67	19.33	0.086	30.00
	115	6525	12.24	6.39	0.67	19.30	0.085	30.00
	123	6565	11.65	6.49	0.67	18.81	0.076	30.00
	147	6685	12.53	6.32	0.67	19.52	0.090	30.00
	179	6845	12.62	6.66	0.67	19.95	0.099	30.00
	187	6885	11.88	6.55	0.67	19.10	0.081	30.00
	195	6925	11.34	6.55	0.67	18.56	0.072	30.00
	211	7005	11.65	6.98	0.67	19.30	0.085	30.00
	227	7085	11.32	6.88	0.67	18.87	0.077	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE80	7	5985	15.93	3.97	1.20	21.10	0.129	30.00
	39	6145	16.08	4.68	1.20	21.96	0.157	30.00
	87	6385	15.39	5.85	1.20	22.44	0.175	30.00
	103	6465	14.27	6.15	1.20	21.62	0.145	30.00
	119	6545	14.25	6.49	1.20	21.94	0.156	30.00
	135	6625	14.52	6.40	1.20	22.12	0.163	30.00
	151	6705	14.16	6.32	1.20	21.68	0.147	30.00
	167	6785	13.45	6.93	1.20	21.58	0.144	30.00
	183	6865	14.27	6.66	1.20	22.13	0.163	30.00
	199	6945	14.47	6.62	1.20	22.29	0.170	30.00
	215	7025	13.79	6.98	1.20	21.97	0.157	30.00

Mode	Channel	Frequency (MHz)	Reading (dBm)	Correction Factor (dB)	Duty Factor (dB)	EIRP (dBm)	EIRP (W)	Limit (dBm)
11ax HE160	15	6025	18.20	3.97	2.01	24.19	0.262	30.00
	47	6185	17.82	4.95	2.01	24.78	0.301	30.00
	79	6345	16.94	5.70	2.01	24.65	0.292	30.00
	111	6505	16.36	6.39	2.01	24.77	0.300	30.00
	143	6665	16.57	6.17	2.01	24.76	0.299	30.00
	175	6825	15.39	6.93	2.01	24.34	0.271	30.00
	207	6985	15.35	6.98	2.01	24.35	0.272	30.00

5.2.2. Emission Bandwidth Measurement

Reference Appendix A

5.2.3. Maximum Power Spectral Density Measurement

SISO 1x1

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11a	1	5955	H	-7.965	0.86	3.45	0.30	4.610	5.00	12
			V	0.250						
	45	6175	H	-8.386	-0.05	4.68	0.30	4.934	5.00	10.5
			V	-0.734						
	93	6415	H	-9.819	-1.19	5.85	0.30	4.960	5.00	11
			V	-1.831						
	97	6435	H	-10.525	-1.66	6.15	0.30	4.788	5.00	11
			V	-2.267						
	105	6475	H	-10.720	-1.78	6.15	0.30	4.671	5.00	10.5
			V	-2.372						
	113	6515	H	-9.949	-1.88	6.39	0.30	4.809	5.00	10.5
			V	-2.618						
	117	6535	H	-9.777	-1.83	6.49	0.30	4.957	5.00	10.5
			V	-2.593						
	149	6695	H	-10.669	-1.91	6.32	0.30	4.706	5.00	11
			V	-2.535						
	181	6855	H	-9.637	-1.99	6.66	0.30	4.973	5.00	11.5
			V	-2.805						
	185	6875	H	-10.960	-2.03	6.66	0.30	4.934	5.00	11.5
			V	-2.620						
	189	6895	H	-10.214	-1.95	6.55	0.30	4.900	5.00	11.5
			V	-2.651						
	209	6995	H	-10.928	-2.39	6.98	0.30	4.887	5.00	11.5
			V	-3.049						
	233	7115	H	-14.202	-2.36	6.88	0.30	4.824	5.00	11.5
			V	-2.650						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE20	1	5955	H	-7.200	1.13	3.45	0.33	4.912	5.00	15.5
			V	0.442						
	45	6175	H	-8.780	-0.37	4.68	0.33	4.645	5.00	14
			V	-1.041						
	93	6415	H	-10.584	-1.60	5.85	0.33	4.585	5.00	13.5
			V	-2.181						
	97	6435	H	-10.033	-1.52	6.15	0.33	4.964	5.00	14
			V	-2.175						
	105	6475	H	-10.121	-1.73	6.15	0.33	4.753	5.00	14
			V	-2.406						
	113	6515	H	-9.946	-1.85	6.39	0.33	4.873	5.00	14
			V	-2.578						
	117	6535	H	-10.300	-2.22	6.49	0.33	4.600	5.00	14
			V	-2.955						
	149	6695	H	-11.472	-1.91	6.32	0.33	4.736	5.00	14.5
			V	-2.424						
	181	6855	H	-12.631	-2.50	6.66	0.33	4.489	5.00	14.5
			V	-2.944						
	185	6875	H	-13.589	-2.20	6.66	0.33	4.794	5.00	14.5
			V	-2.523						
	189	6895	H	-11.957	-2.23	6.55	0.33	4.648	5.00	14.5
			V	-2.721						
	209	6995	H	-11.984	-2.40	6.98	0.33	4.907	5.00	15
			V	-2.910						
	233	7115	H	-18.717	-10.44	6.88	0.33	-3.227	5.00	8
			V	-11.136						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE40	3	5965	H	-7.480	0.64	3.45	0.31	4.404	5.00	17.5
			V	-0.082						
	43	6165	H	-8.744	-0.14	4.68	0.31	4.850	5.00	17
			V	-0.785						
	91	6405	H	-10.648	-1.69	5.85	0.31	4.466	5.00	16
			V	-2.285						
	99	6445	H	-9.779	-1.56	6.15	0.31	4.896	5.00	16.5
			V	-2.274						
	107	6485	H	-9.904	-1.79	6.39	0.31	4.906	5.00	16.5
			V	-2.523						
	115	6525	H	-9.989	-1.93	6.39	0.31	4.765	5.00	16.5
			V	-2.674						
	123	6565	H	-10.419	-1.92	6.49	0.31	4.883	5.00	16.5
			V	-2.578						
	147	6685	H	-11.943	-1.97	6.32	0.31	4.663	5.00	17
			V	-2.427						
	179	6845	H	-9.919	-2.52	6.66	0.31	4.446	5.00	17
			V	-3.398						
	187	6885	H	-12.354	-2.25	6.55	0.31	4.613	5.00	17.5
			V	-2.693						
	195	6925	H	-11.060	-2.73	6.55	0.31	4.128	5.00	17
			V	-3.422						
	211	7005	H	-12.393	-2.63	6.98	0.31	4.663	5.00	17.5
			V	-3.111						
	227	7085	H	-12.015	-3.16	6.88	0.31	4.031	5.00	17
			V	-3.764						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE80	7	5985	H	-9.979	-0.09	3.97	0.34	4.225	5.00	20
			V	-0.555						
	39	6145	H	-8.946	-0.99	4.68	0.34	4.032	5.00	19.5
			V	-1.745						
	87	6385	H	-10.743	-1.47	5.85	0.34	4.715	5.00	19.5
			V	-2.022						
	103	6465	H	-12.664	-3.36	6.15	0.34	3.126	5.00	18.5
			V	-3.907						
	119	6545	H	-12.417	-3.77	6.49	0.34	3.058	5.00	18
			V	-4.410						
	135	6625	H	-13.265	-3.91	6.40	0.34	2.828	5.00	18
			V	-4.448						
	151	6705	H	-13.703	-4.23	6.32	0.34	2.428	5.00	18
			V	-4.753						
	167	6785	H	-13.288	-4.39	6.93	0.34	2.884	5.00	18
			V	-4.985						
	183	6865	H	-12.539	-4.94	6.66	0.34	2.059	5.00	18
			V	-5.771						
	199	6945	H	-13.559	-5.34	6.62	0.34	1.616	5.00	18
			V	-6.054						
	215	7025	H	-14.117	-4.51	6.98	0.34	2.808	5.00	20
			V	-5.016						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE160	15	6025	H	-11.296	-0.78	3.97	0.34	3.531	5.00	22
			V	-1.179						
	47	6185	H	-9.739	-1.95	4.95	0.34	3.337	5.00	21.5
			V	-2.740						
	79	6345	H	-12.676	-3.84	5.70	0.34	2.200	5.00	20
			V	-4.444						
	111	6505	H	-14.757	-5.96	6.39	0.34	0.770	5.00	19
			V	-6.570						
	143	6665	H	-15.854	-6.09	6.17	0.34	0.416	5.00	19
			V	-6.575						
	175	6825	H	-14.610	-6.94	6.93	0.34	0.325	5.00	19
			V	-7.756						
	207	6985	H	-15.236	-6.78	6.98	0.34	0.541	5.00	20.5
			V	-7.443						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

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Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11a	1	5955	H	-1.031	0.92	3.45	0.30	4.673	5.00	4.5
			V	-3.485						
	45	6175	H	-2.704	0.00	4.68	0.30	4.975	5.00	4.5
			V	-3.350						
	93	6415	H	-3.962	-1.28	5.85	0.30	4.875	5.00	4
			V	-4.635						
	97	6435	H	-6.041	-1.46	6.15	0.30	4.989	5.00	2.5
			V	-3.321						
	105	6475	H	-5.366	-1.67	6.15	0.30	4.782	5.00	4.5
			V	-4.085						
	113	6515	H	-5.912	-1.88	6.39	0.30	4.811	5.00	4.5
			V	-4.062						
	117	6535	H	-6.346	-1.90	6.49	0.30	4.888	5.00	5
			V	-3.836						
	149	6695	H	-6.499	-1.83	6.32	0.30	4.785	5.00	5.5
			V	-3.650						
	181	6855	H	-6.317	-2.27	6.66	0.30	4.694	5.00	5.5
			V	-4.437						
	185	6875	H	-5.805	-2.40	6.66	0.30	4.560	5.00	5.5
			V	-5.048						
	189	6895	H	-6.182	-2.13	6.55	0.30	4.719	5.00	5.5
			V	-4.303						
	209	6995	H	-6.066	-2.72	6.98	0.30	4.557	5.00	4
			V	-5.424						
	233	7115	H	-6.340	-2.32	6.88	0.30	4.860	5.00	3.5
			V	-4.512						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE20	1	5955	H	-1.438	1.06	3.45	0.33	4.840	5.00	8
			V	-2.531						
	45	6175	H	-3.572	-0.19	4.68	0.33	4.815	5.00	8
			V	-2.867						
	93	6415	H	-4.375	-1.43	5.85	0.33	4.753	5.00	7.5
			V	-4.500						
	97	6435	H	-5.408	-1.70	6.15	0.33	4.779	5.00	7
			V	-4.111						
	105	6475	H	-6.117	-1.60	6.15	0.33	4.879	5.00	7.5
			V	-3.495						
	113	6515	H	-6.151	-1.91	6.39	0.33	4.808	5.00	6.5
			V	-3.965						
	117	6535	H	-5.904	-1.90	6.49	0.33	4.917	5.00	6.5
			V	-4.107						
	149	6695	H	-5.538	-2.03	6.32	0.33	4.618	5.00	7.5
			V	-4.597						
	181	6855	H	-5.521	-2.05	6.66	0.33	4.939	5.00	8
			V	-4.646						
	185	6875	H	-6.083	-2.47	6.66	0.33	4.522	5.00	7.5
			V	-4.948						
	189	6895	H	-5.676	-2.20	6.55	0.33	4.684	5.00	8
			V	-4.783						
	209	6995	H	-6.469	-2.63	6.98	0.33	4.683	5.00	6
			V	-4.939						
	233	7115	H	-8.776	-5.66	6.88	0.33	1.549	5.00	5
			V	-8.569						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE40	3	5965	H	-1.596	0.96	3.45	0.34	4.748	5.00	10.5
			V	-2.562						
	43	6165	H	-3.754	-0.49	4.68	0.34	4.530	5.00	10.5
			V	-3.260						
	91	6405	H	-4.874	-1.49	5.85	0.34	4.698	5.00	10.5
			V	-4.160						
	99	6445	H	-5.130	-1.85	6.15	0.34	4.639	5.00	9
			V	-4.608						
	107	6485	H	-5.968	-2.28	6.39	0.34	4.450	5.00	9
			V	-4.705						
	115	6525	H	-5.221	-1.95	6.39	0.34	4.775	5.00	9
			V	-4.723						
	123	6565	H	-5.629	-1.97	6.49	0.34	4.857	5.00	10
			V	-4.422						
	147	6685	H	-5.421	-1.72	6.32	0.34	4.939	5.00	10.5
			V	-4.137						
	179	6845	H	-5.840	-2.16	6.66	0.34	4.841	5.00	10.5
			V	-4.589						
	187	6885	H	-5.516	-1.97	6.55	0.34	4.923	5.00	10.5
			V	-4.498						
	195	6925	H	-6.357	-2.62	6.55	0.34	4.272	5.00	10.5
			V	-5.005						
	211	7005	H	-5.752	-2.35	6.98	0.34	4.971	5.00	10.5
			V	-4.999						
	227	7085	H	-5.415	-2.38	6.88	0.34	4.836	5.00	9.5
			V	-5.373						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE80	7	5985	H	-2.774	0.60	3.97	0.31	4.883	5.00	13.5
			V	-2.069						
	39	6145	H	-3.694	-0.14	4.68	0.31	4.852	5.00	14
			V	-2.664						
	87	6385	H	-4.054	-1.41	5.85	0.31	4.747	5.00	13.5
			V	-4.827						
	103	6465	H	-5.145	-1.85	6.15	0.31	4.609	5.00	13
			V	-4.595						
	119	6545	H	-5.451	-2.05	6.49	0.31	4.747	5.00	13
			V	-4.707						
	135	6625	H	-5.307	-1.82	6.40	0.31	4.895	5.00	13.5
			V	-4.392						
	151	6705	H	-5.273	-1.69	6.32	0.31	4.941	5.00	13.5
			V	-4.192						
	167	6785	H	-6.264	-2.32	6.93	0.31	4.915	5.00	13
			V	-4.570						
	183	6865	H	-5.985	-2.36	6.66	0.31	4.612	5.00	13.5
			V	-4.829						
	199	6945	H	-5.485	-2.01	6.62	0.31	4.919	5.00	13.5
			V	-4.603						
	215	7025	H	-6.076	-2.55	6.98	0.31	4.740	5.00	14.5
			V	-5.100						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE160	15	6025	H	-2.437	0.44	3.97	0.31	4.721	5.00	16
			V	-2.700						
	47	6185	H	-3.636	-0.44	4.95	0.31	4.815	5.00	16.5
			V	-3.277						
	79	6345	H	-4.592	-1.42	5.70	0.31	4.583	5.00	16
			V	-4.283						
	111	6505	H	-5.368	-1.76	6.39	0.31	4.940	5.00	16
			V	-4.240						
	143	6665	H	-5.565	-1.60	6.17	0.31	4.877	5.00	16.5
			V	-3.829						
	175	6825	H	-6.153	-2.60	6.93	0.31	4.634	5.00	16
			V	-5.134						
	207	6985	H	-5.728	-2.49	6.98	0.31	4.797	5.00	16.5
			V	-5.285						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

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Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE20	1	5955	H	-7.359	1.30	3.45	0.10	4.852	5.00	17
			V	0.667						
	45	6175	H	-7.544	-0.24	4.68	0.10	4.544	5.00	12
			V	-1.129						
	93	6415	H	-12.290	-1.29	5.85	0.10	4.658	5.00	13
			V	-1.652						
	97	6435	H	-11.902	-1.29	6.15	0.10	4.961	5.00	10
			V	-1.684						
	105	6475	H	-13.857	-1.73	6.15	0.10	4.518	5.00	10
			V	-2.007						
	113	6515	H	-14.141	-1.54	6.39	0.10	4.953	5.00	10
			V	-1.782						
	117	6535	H	-13.028	-1.77	6.49	0.10	4.818	5.00	11
			V	-2.110						
	149	6695	H	-14.754	-1.64	6.32	0.10	4.783	5.00	12
			V	-1.854						
	181	6855	H	-10.786	-1.86	6.66	0.10	4.904	5.00	13
			V	-2.450						
	185	6875	H	-10.670	-1.99	6.66	0.10	4.775	5.00	14
			V	-2.617						
	189	6895	H	-11.939	-1.87	6.55	0.10	4.778	5.00	13
			V	-2.322						
	209	6995	H	-10.703	-2.14	6.98	0.10	4.937	5.00	12
			V	-2.795						
	233	7115	H	-15.878	-7.80	6.88	0.10	-0.815	5.00	3
			V	-8.529						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE40	3	5965	H	-7.748	0.71	3.45	0.67	4.828	5.00	20
			V	0.039						
	43	6165	H	-7.689	-0.91	4.68	0.67	4.441	5.00	18
			V	-1.932						
	91	6405	H	-12.527	-1.85	5.85	0.67	4.673	5.00	17
			V	-2.235						
	99	6445	H	-13.230	-2.31	6.15	0.67	4.510	5.00	16
			V	-2.676						
	107	6485	H	-13.461	-2.16	6.39	0.67	4.904	5.00	16
			V	-2.490						
	115	6525	H	-13.402	-2.23	6.39	0.67	4.827	5.00	16
			V	-2.578						
	123	6565	H	-13.501	-2.39	6.49	0.67	4.774	5.00	16
			V	-2.736						
	147	6685	H	-14.808	-2.21	6.32	0.67	4.779	5.00	17
			V	-2.457						
	179	6845	H	-11.365	-2.66	6.66	0.67	4.667	5.00	18
			V	-3.292						
	187	6885	H	-12.090	-2.36	6.55	0.67	4.860	5.00	18
			V	-2.849						
	195	6925	H	-11.017	-2.80	6.55	0.67	4.418	5.00	16
			V	-3.512						
	211	7005	H	-11.364	-2.74	6.98	0.67	4.914	5.00	16
			V	-3.377						
	227	7085	H	-11.012	-2.81	6.88	0.67	4.736	5.00	16
			V	-3.527						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE80	7	5985	H	-9.745	-0.36	3.97	1.20	4.815	5.00	24
			V	-0.886						
	39	6145	H	-8.269	-1.04	4.68	1.20	4.839	5.00	24
			V	-1.952						
	87	6385	H	-11.840	-2.37	5.85	1.20	4.676	5.00	24
			V	-2.895						
	103	6465	H	-13.486	-2.79	6.15	1.20	4.563	5.00	22
			V	-3.173						
	119	6545	H	-13.361	-2.91	6.49	1.20	4.784	5.00	22
			V	-3.316						
	135	6625	H	-13.732	-2.80	6.40	1.20	4.803	5.00	22
			V	-3.162						
	151	6705	H	-13.837	-3.06	6.32	1.20	4.458	5.00	22
			V	-3.441						
	167	6785	H	-13.221	-3.56	6.93	1.20	4.573	5.00	22
			V	-4.054						
	183	6865	H	-12.495	-2.98	6.66	1.20	4.882	5.00	23
			V	-3.493						
	199	6945	H	-11.386	-3.19	6.62	1.20	4.629	5.00	23
			V	-3.905						
	215	7025	H	-11.893	-3.35	6.98	1.20	4.828	5.00	24
			V	-4.007						

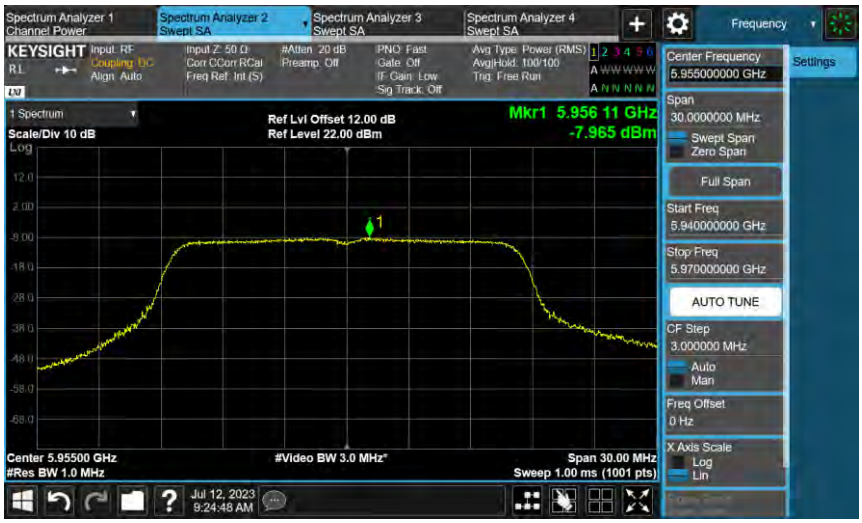
Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

Mode	Channel	Frequency (MHz)	Polarization (H/V)	Reading (dBm)	Reading (dBm) H+V	Correction Factor(dB)	Duty Factor (dB)	EIRP PSD (dBm/MHz)	Limit (dBm/MHz)	Setting
11ax HE160	15	6025	H	-10.555	-1.22	3.97	2.01	4.762	5.00	30
			V	-1.760						
	47	6185	H	-9.089	-2.16	4.95	2.01	4.803	5.00	29
			V	-3.146						
	79	6345	H	-11.425	-2.83	5.70	2.01	4.888	5.00	29
			V	-3.471						
	111	6505	H	-14.654	-3.89	6.39	2.01	4.510	5.00	28
			V	-4.275						
	143	6665	H	-14.626	-3.38	6.17	2.01	4.808	5.00	28
			V	-3.715						
	175	6825	H	-13.825	-3.95	6.93	2.01	4.989	5.00	27
			V	-4.427						
	207	6985	H	-12.925	-4.38	6.98	2.01	4.613	5.00	27
			V	-5.035						

Note: EIRP PSD (dBm) = Reading (dBm) + Correction Factor(dB) + Duty Factor(dB)

■ **Test Graphs**

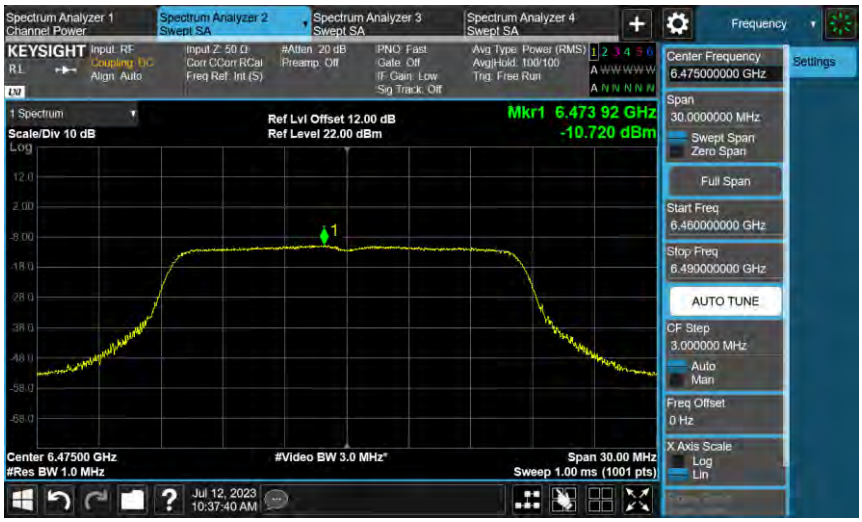
SISO 1x1

802.11a	
5955 MHz Horizontal	
5955 MHz Vertical	

802.11a	
6175 MHz Horizontal	
6175 MHz Vertical	

802.11a	
6415 MHz Horizontal	
6415 MHz Vertical	

802.11a	
6435 MHz Horizontal	
6435 MHz Vertical	

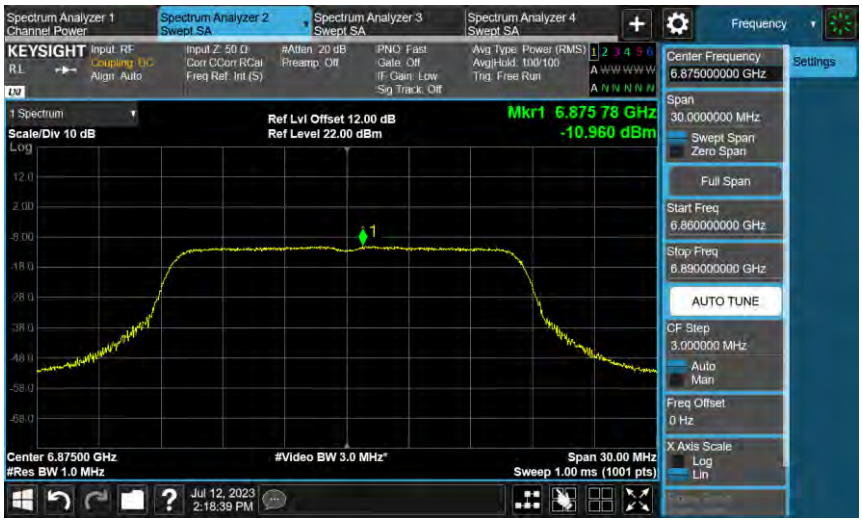
802.11a	
6475 MHz Horizontal	
6475 MHz Vertical	

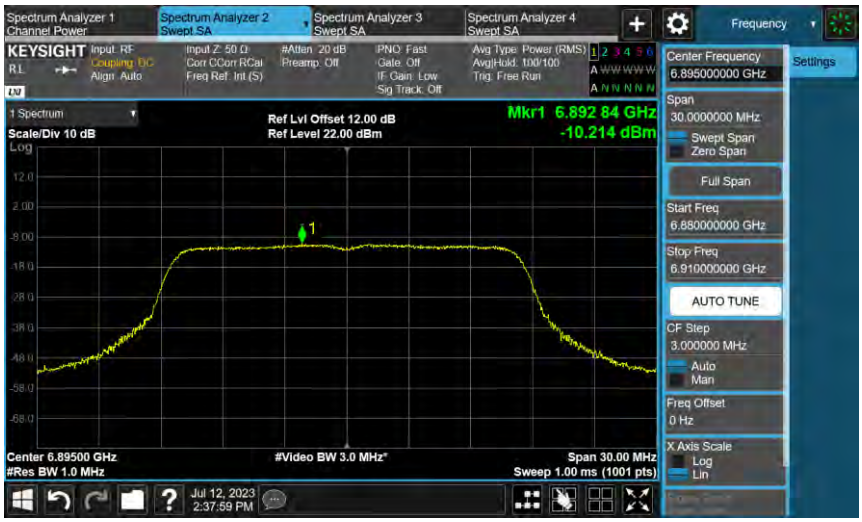
802.11a	
6515 MHz Horizontal	
6515 MHz Vertical	

802.11a	
6535 MHz Horizontal	
6535 MHz Vertical	

802.11a	
6695 MHz Horizontal	
6695 MHz Vertical	

802.11a	
6855 MHz Horizontal	
6855 MHz Vertical	

802.11a	
6875 MHz Horizontal	
6875 MHz Vertical	

802.11a	
6895 MHz Horizontal	
6895 MHz Vertical	

802.11a	
6995 MHz Horizontal	
6995 MHz Vertical	

802.11a	
7115 MHz Horizontal	
7115 MHz Vertical	

802.11ax HE20	
5955 MHz Horizontal	
5955 MHz Vertical	

802.11ax HE20	
6175 MHz Horizontal	
6175 MHz Vertical	

802.11ax HE20	
6415 MHz Horizontal	
6415 MHz Vertical	

802.11ax HE20	
6435 MHz Horizontal	
6435 MHz Vertical	

802.11ax HE20	
6475 MHz Horizontal	
6475 MHz Vertical	

802.11ax HE20	
6515 MHz Horizontal	
6515 MHz Vertical	

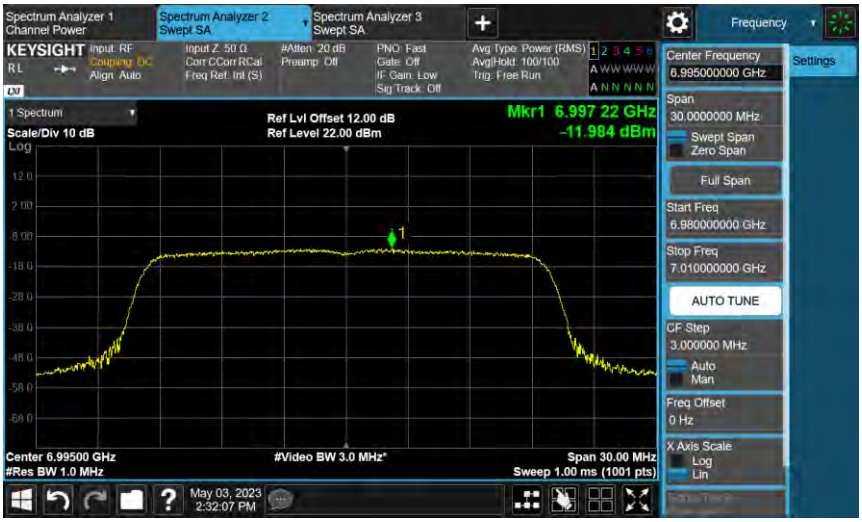
802.11ax HE20	
6535 MHz Horizontal	
6535 MHz Vertical	

802.11ax HE20	
6695 MHz Horizontal	
6695 MHz Vertical	

802.11ax HE20	
6855 MHz Horizontal	
6855 MHz Vertical	

802.11ax HE20	
6875 MHz Horizontal	
6875 MHz Vertical	

802.11ax HE20	
6895 MHz Horizontal	
6895 MHz Vertical	

802.11ax HE20	
6995 MHz Horizontal	
6995 MHz Vertical	

802.11ax HE20	
7115 MHz Horizontal	
7115 MHz Vertical	

802.11ax HE40	
5965 MHz Horizontal	
5965 MHz Vertical	

802.11ax HE40	
6515 MHz Horizontal	
6515 MHz Vertical	

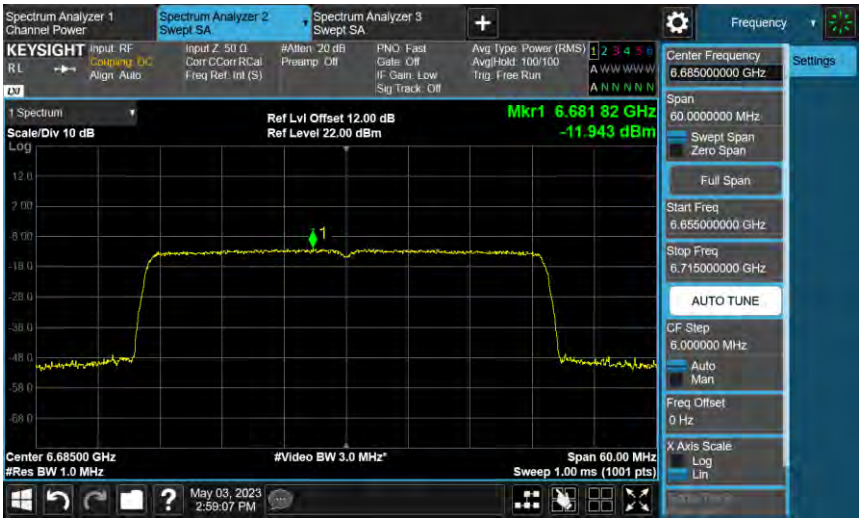
802.11ax HE40	
6405 MHz Horizontal	
6405 MHz Vertical	

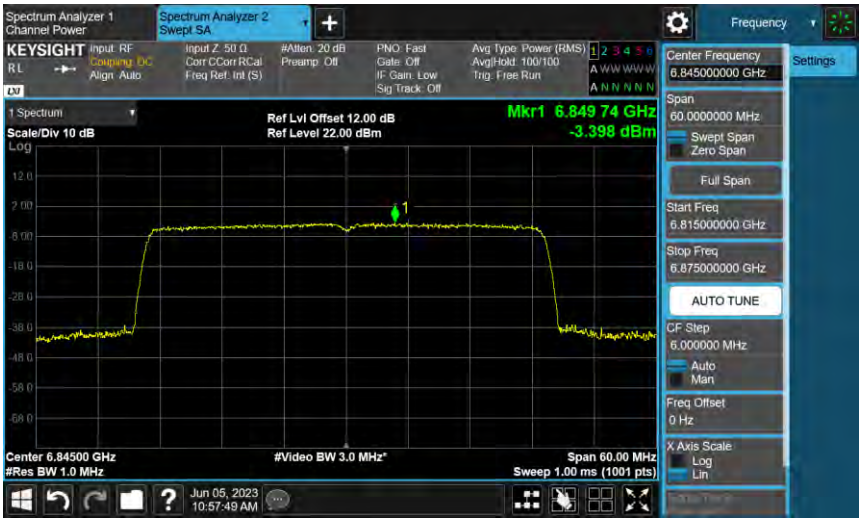
802.11ax HE40	
6445 MHz Horizontal	
6445 MHz Vertical	

802.11ax HE40	
6485 MHz Horizontal	
6485 MHz Vertical	

802.11ax HE40	
6525 MHz Horizontal	
6525 MHz Vertical	

802.11ax HE40	
6565 MHz Horizontal	
6565 MHz Vertical	

802.11ax HE40	
6685 MHz Horizontal	
6685 MHz Vertical	

802.11ax HE40	
6845 MHz Horizontal	
6845 MHz Vertical	

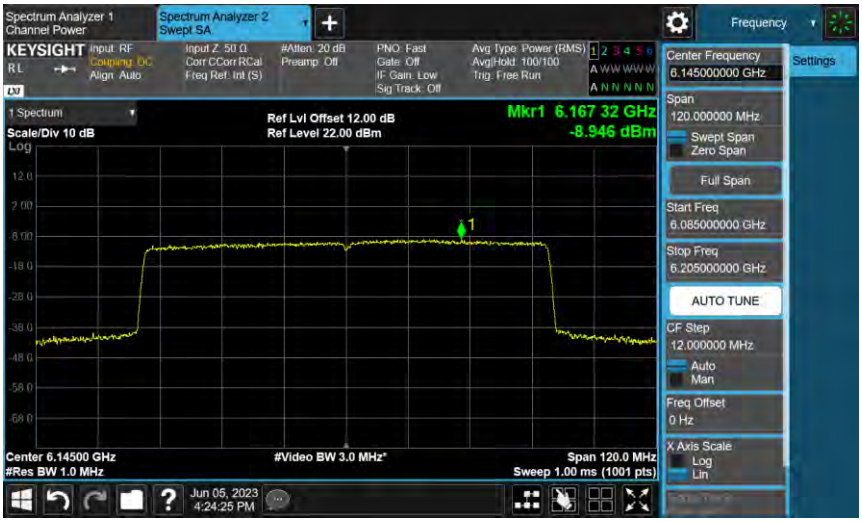
802.11ax HE40	
6885 MHz Horizontal	
6885 MHz Vertical	

802.11ax HE40	
6925 MHz Horizontal	
6925 MHz Vertical	

802.11ax HE40	
7005 MHz Horizontal	
7005 MHz Vertical	

802.11ax HE40	
7085 MHz Horizontal	
7085 MHz Vertical	

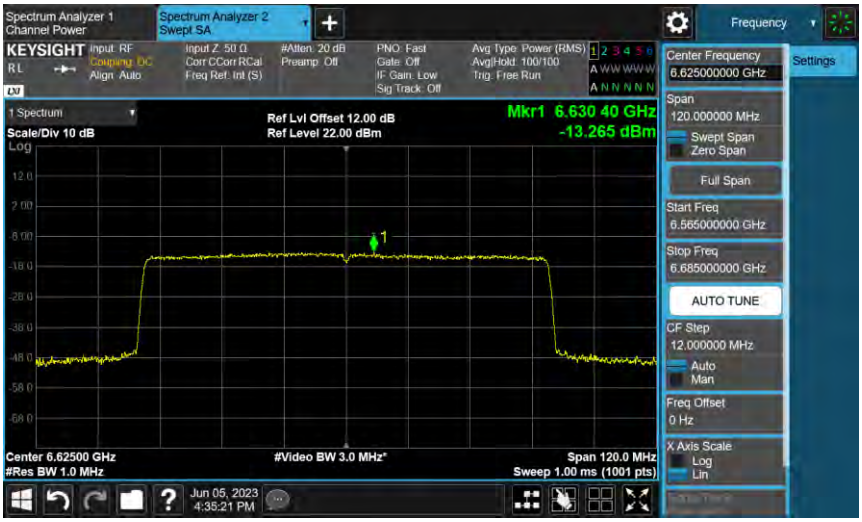
802.11ax HE80	
5985 MHz Horizontal	
5985 MHz Vertical	

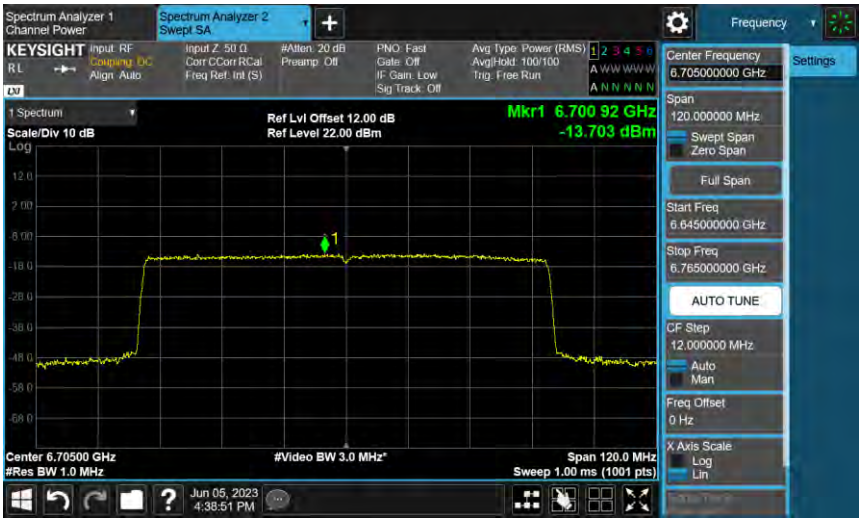
802.11ax HE80	
6145 MHz Horizontal	
6145 MHz Vertical	

802.11ax HE80	
6385 MHz Horizontal	
6385 MHz Vertical	

802.11ax HE80	
6465 MHz Horizontal	
6465 MHz Vertical	

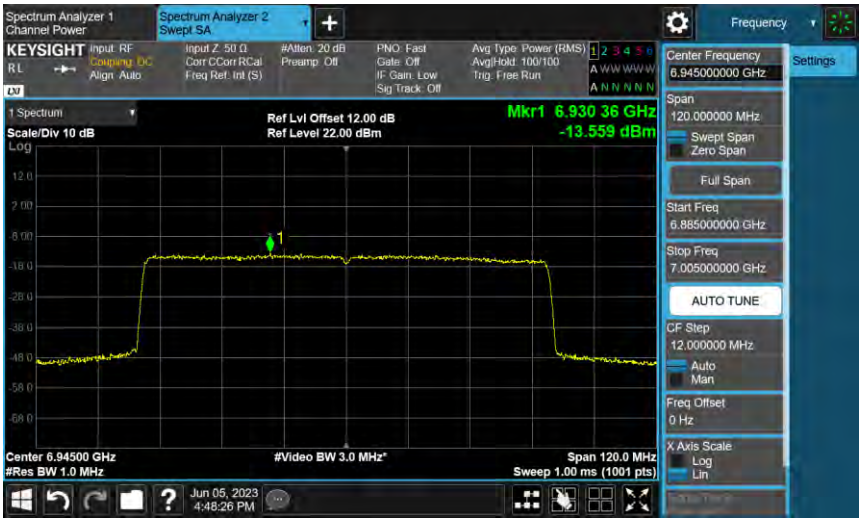
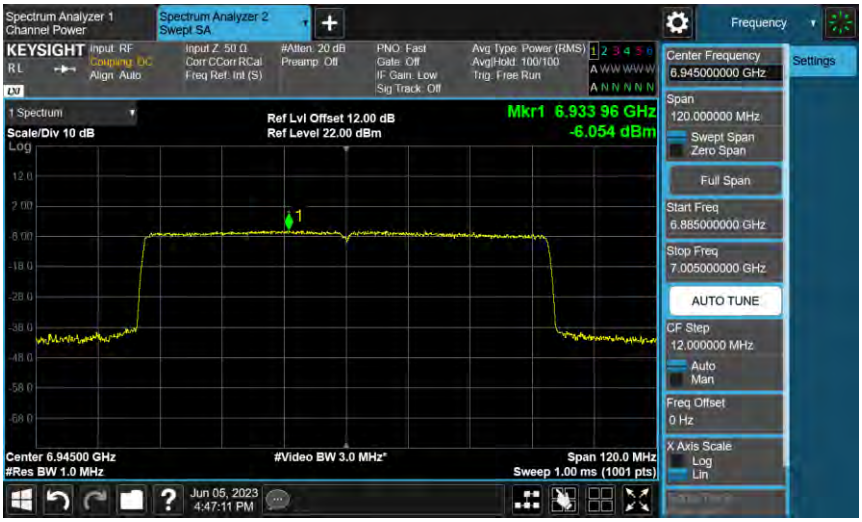
802.11ax HE80	
6545 MHz Horizontal	
6545 MHz Vertical	

802.11ax HE80	
6625 MHz Horizontal	
6625 MHz Vertical	

802.11ax HE80	
6705 MHz Horizontal	
6705 MHz Vertical	

802.11ax HE80	
6785 MHz Horizontal	
6785 MHz Vertical	

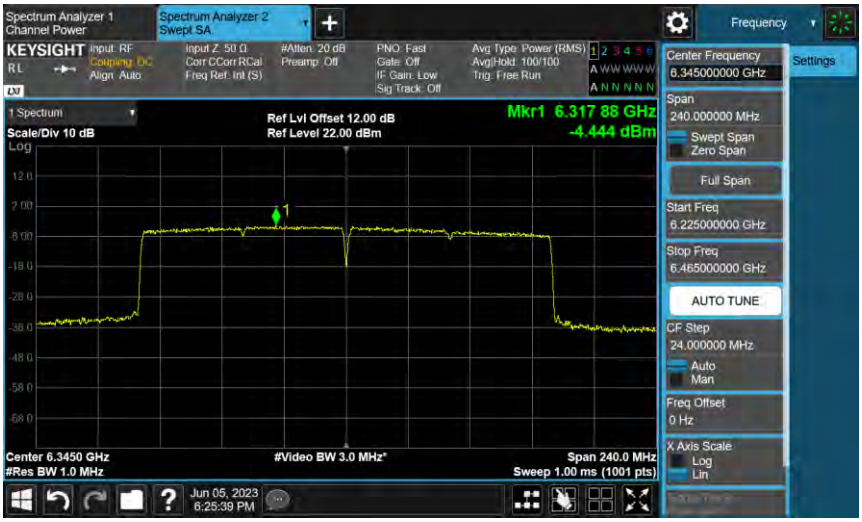
802.11ax HE80	
6865 MHz Horizontal	
6865 MHz Vertical	

802.11ax HE80	
6945 MHz Horizontal	
6945 MHz Vertical	

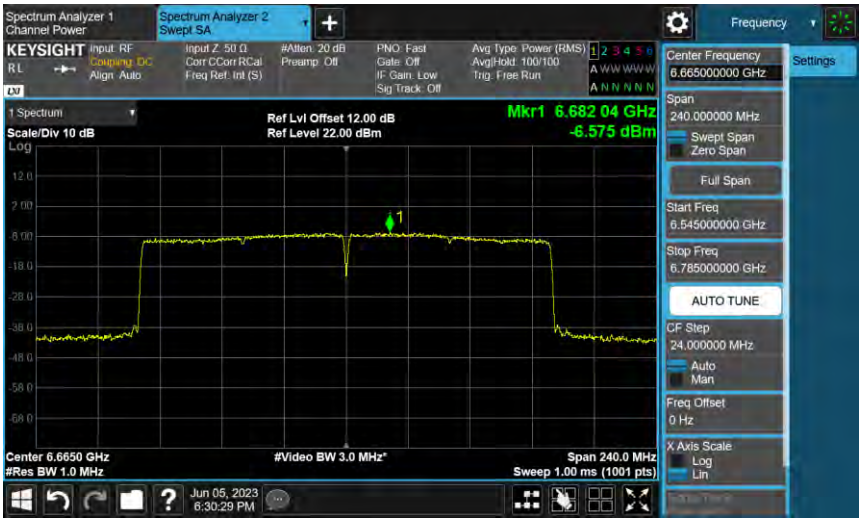
802.11ax HE80	
7025 MHz Horizontal	
7025 MHz Vertical	

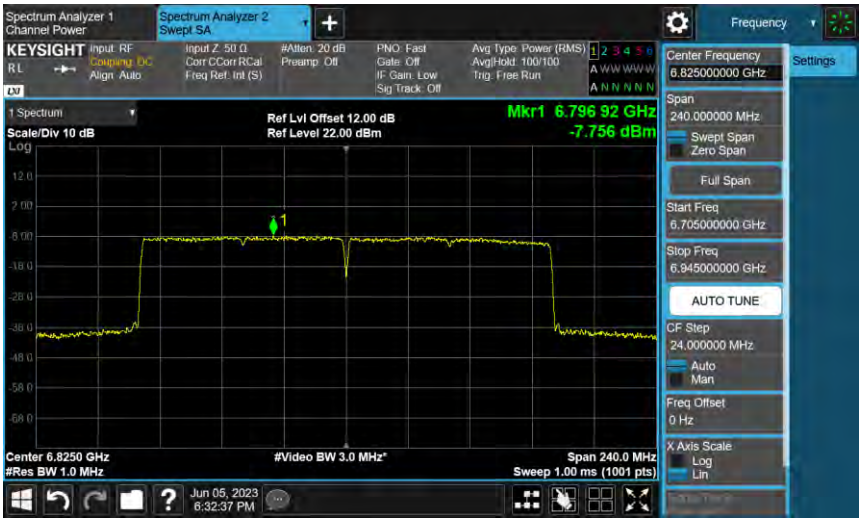
802.11ax HE160	
6025 MHz Horizontal	
6025 MHz Vertical	

802.11ax HE160	
6185 MHz Horizontal	
6185 MHz Vertical	

802.11ax HE160	
6345 MHz Horizontal	
6345 MHz Vertical	

802.11ax HE160	
6505 MHz Horizontal	
6505 MHz Vertical	

802.11ax HE160	
6665 MHz Horizontal	
6665 MHz Vertical	

802.11ax HE160	
6825 MHz Horizontal	
6825 MHz Vertical	

802.11ax HE160	
6985 MHz Horizontal	
6985 MHz Vertical	

MIMO 4x4

802.11a	
5955 MHz Horizontal	
5955 MHz Vertical	

802.11a	
6175 MHz Horizontal	
6175 MHz Vertical	

802.11a	
6415 MHz Horizontal	
6415 MHz Vertical	

802.11a	
6435 MHz Horizontal	
6435 MHz Vertical	

802.11a	
6475 MHz Horizontal	
6475 MHz Vertical