



FCC RADIO TEST REPORT

FCC ID : S9GR560
Equipment : R560 Access Point
Brand Name : RUCKUS
Model Name : R560
Applicant : Ruckus Wireless, Inc.
350 W. Java Dr., Sunnyvale CA 94089 USA
Manufacturer : Ruckus Wireless, Inc.
350 W. Java Dr., Sunnyvale CA 94089 USA
Standard : FCC Part 15 Subpart E §15.407

The product was received on Apr. 08, 2022 and testing was performed from Aug. 18, 2022 to Apr. 24, 2024. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval from Sporton International (USA) Inc., the test report shall not be reproduced except in full.

Approved by: Neil Kao

Sporton International (USA) Inc.
1175 Montague Expressway, Milpitas, CA 95035



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History of this test report

Report No.	Version	Description	Issue Date
FR230830001-01A	01	Initial issue of report	Apr. 26, 2024
FR230830001-01A	02	Revise Appendix A and Appendix D This report is an updated version, replacing the report issued on Apr. 26, 2024.	May 02, 2024
FR230830001-01A	03	Revise Appendix A This report is an updated version, replacing the report issued on May 02, 2024.	May 08, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(a)(10)	26dB Emission Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)(4)	Fundamental Maximum EIRP	Pass	-
3.3	15.407(a)(4)	Fundamental Power Spectral Density	Pass	-
3.4	15.407(b)(6)	In-Band Emissions (Channel Mask)	Pass	-
-	15.407(d)(6)	Contention Based Protocol	Not Required	Standard Access Points
3.5	15.407(b)	Unwanted Emissions	Pass	0.38 dB under the limit at 7412.00 MHz
3.6	15.207	AC Conducted Emission	Pass	6.34 dB under the limit at 0.37 MHz
3.7	15.203 15.407(a)	Antenna Requirement	Pass	-

Note:

- Not required means after assessing, test items are not necessary to carry out.
- The FR230830001-01A report reuses AC Conducted Emission test data from the FR220302001F report.

Conformity Assessment Condition:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
- The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs Bluetooth-LE, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, Wi-Fi 6GHz 802.11a/n/ac/ax and ZigBee.
Antenna Type WLAN: <Ant. 1>: Omni-Directional Antenna <Ant. 2>: Omni-Directional Antenna <Ant. 3>: Omni-Directional Antenna <Ant. 4>: Omni-Directional Antenna Bluetooth-LE: Omni-Directional Antenna ZigBee: Omni-Directional Antenna

Antenna information			
5925 MHz ~ 6425 MHz	Peak Gain (dBi)	Vertical	<Ant. 4>: 4.4
		Horizontal	<Ant. 2>: 3.9
6525 MHz ~ 6875 MHz	Peak Gain (dBi)	Vertical	<Ant. 4>: 4.1
		Horizontal	<Ant. 2>: 3.6

Remark:

1. The EUT information mentioned or listed above is declared by manufacturer.
2. Based on the manufacturer's declaration, the device is a special case of MIMO system with two outputs driving a cross-polarized pair of linearly polarized antennas which are vertically/horizontally mounted on the main board as indicated in equipment photo exhibits.
In addition, according to the antenna report provided by the manufacturer, horizontal and vertical antennas are cross-polarized antennas and the transmitting outputs are a 90-degree phase-shifted replica against the other and the phase centers of the two antennas' orientation are co-located.

1.1.1 Antenna Gain

<For CDD Mode>

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)c)i)

Cross-polarized antennas. For a system in which the antennas have fixed orientations relative to one another that ensure that the antennas are cross-polarized regardless of any user actions, the directional gain is computed as follows.

- (i) Cross-polarized antennas with $N_{ANT} = 2$. In the case of a transmitter with only two outputs driving a pair of antennas that are cross-polarized (e.g., vertical and horizontal or left-circular and right-circular), directional gain is the gain of an individual antenna. If the two antennas have different gains, the larger gain applies.

The directional gain "DG" is calculated as following table.

	Vertical	Horizontal	DG for	DG for
	Ant 4	Ant 2	Power	PSD
	(dBi)	(dBi)	(dBi)	(dBi)
5925 MHz ~ 6425 MHz	4.40	3.90	4.40	4.40
6525 MHz ~ 6875 MHz	4.10	3.60	4.10	4.10

Calculation example:

If a device has two antenna, $G_{ANT4} = 4.4\text{dBi}$; $G_{ANT2} = 3.9\text{dBi}$

Directional gain of power measurement = $\max(4.4, 3.9) = 4.4\text{ dBi}$

Directional gain of PSD measurement = $\max(4.4, 3.9) = 4.4\text{ dBi}$

1.2 Modification of EUT

No modifications made to the EUT during the testing.



1.3 Testing Location

Test Site	Sporton International (USA) Inc.
Test Site Location	1175 Montague Expressway, Milpitas, CA 95035 TEL : 408 9043300
Test Site No.	Sporton Site No.
	TH01-CA, 03CH02-CA, CO01-CA

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: US1250

1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 987594 D02 U-NII 6 GHz EMC Measurement v02r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark: All the test items were validated and recorded in accordance with the standards without any modification during the testing.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and only the worst case emissions were reported in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

BW 20M	Channel	1	5	9	13	17	21	25	29
	Freq. (MHz)	5955	5975	5995	6015	6035	6055	6075	6095
BW 40M	Channel	3		11		19		27	
	Freq. (MHz)	5965		6005		6045		6085	
BW 80M	Channel	7				23			
	Freq. (MHz)	5985				6065			
BW 160M	Channel	15							
	Freq. (MHz)	6025							

BW 20M	Channel	33	37	41	45	49	53	57	61
	Freq. (MHz)	6115	6135	6155	6175	6195	6215	6235	6255
BW 40M	Channel	35		43		51		59	
	Freq. (MHz)	6125		6165		6205		6245	
BW 80M	Channel	39				55			
	Freq. (MHz)	6145				6225			
BW 160M	Channel	47							
	Freq. (MHz)	6185							



BW 20M	Channel	65	69	73	77	81	85	89	93
	Freq. (MHz)	6275	6295	6315	6335	6355	6375	6395	6415
BW 40M	Channel	67		75		83		91	
	Freq. (MHz)	6285		6325		6365		6405	
BW 80M	Channel	71				87			
	Freq. (MHz)	6305				6385			
BW 160M	Channel	79							
	Freq. (MHz)	6345							

BW 20M	Channel	117			121			125	
	Freq. (MHz)	6535			6555			6575	
BW 40M	Channel	-				123			
	Freq. (MHz)	-				6565			

BW 20M	Channel	129	133	137	141	145	149	153	157
	Freq. (MHz)	6595	6615	6635	6655	6675	6695	6715	6735
BW 40M	Channel	131		139		147		155	
	Freq. (MHz)	6605		6645		6685		6725	
BW 80M	Channel	135				151			
	Freq. (MHz)	6625				6705			
BW 160M	Channel	143							
	Freq. (MHz)	6665							

BW 20M	Channel	161	165	169	173	177	181
	Freq. (MHz)	6755	6775	6795	6815	6835	6855
BW 40M	Channel	163		171		179	
	Freq. (MHz)	6765		6805		6845	
BW 80M	Channel	167			-		
	Freq. (MHz)	6785			-		

2.2 Test Mode

The final test modes include the worst data rates for each modulation shown in the table below.

MIMO Mode

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20 (Covered by HE20)	MCS0
802.11n HT40 (Covered by HE40)	MCS0
802.11ac VHT20 (Covered by HE20)	MCS0
802.11ac VHT40 (Covered by HE40)	MCS0
802.11ac VHT80 (Covered by HE80)	MCS0
802.11ac VHT160 (Covered by HE160)	MCS0
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0
802.11ax HE160	MCS0

Remark:

1. Based on the manufacturer's declaration, 802.11ax covers the 802.11n and 11ac due to the same modulation family scheme. For 802.11ax, only full resource unit assignment mode is tested since the EUT does not support partial resource unit assignment mode.
2. Based on the manufacturer's declaration, RF power on each chain in MIMO mode is parameterized to be greater than the power in SISO mode, giving the condition that the SISO Mode is covered by MIMO Mode which is deemed the worse case selected for testing.

Test Cases	
AC Conducted Emission	Mode 1 : WLAN (6GHz) Link + LAN 1 Link + LAN 2 Link + USB Dongle (Load) + PoE Adapter

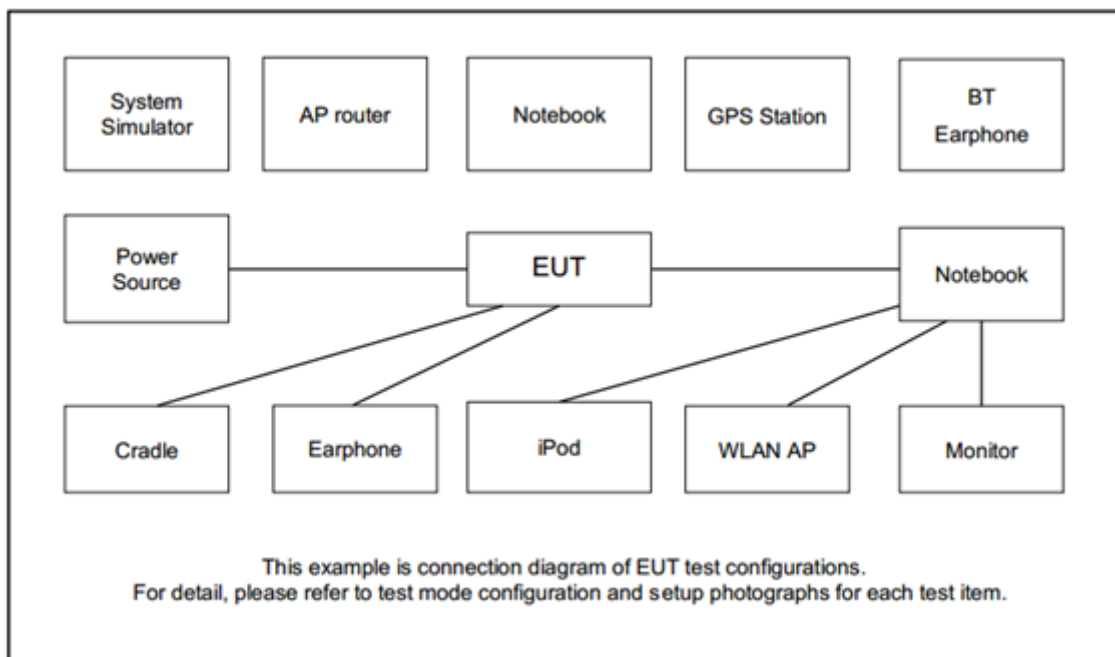
Ch. #		UNII-5 (5925-6425 MHz)	UNII-7 (6525-6875 MHz)
		802.11a	802.11a
L	Low	001	117
M	Middle	045	149
H	High	093	181

Ch. #		UNII-5 (5925-6425 MHz)			
		802.11ax HE20	802.11ax HE40	802.11ax HE80	802.11ax HE160
L	Low	001	003	007	015
M	Middle	045	043	039	047
H	High	093	091	087	079

Ch. #		UNII-7 (6525-6875 MHz)			
		802.11ax HE20	802.11ax HE40	802.11ax HE80	802.11ax HE160
L	Low	117	123	135	143
M	Middle	149	147	151	
H	High	181	179	167	

Remark: Based on ANSI C63.10 clause 5.6.2.2, b) Spurious emissions, measure the mode with the highest output power and the mode with highest output power spectral density for each modulation family.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	PoE Adapter	Ruckus	740-64214-001	NA	NA	Unshielded, 1.8m
2.	USB Dongle	SanDisk	SDCZ60-016G	NA	NA	NA
3.	Notebook	Lenovo	21EB0020US	NA	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility "PuTTY Release 0.62" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 26dB & 99% Occupied Bandwidth Measurement

3.1.1 Limit of 26dB & 99% Occupied Bandwidth

<FCC 14-30 CFR 15.407>

(a)(10) The maximum transmitter channel bandwidth for U-NII devices in the 5.925-7.125 GHz band is 320 megahertz.

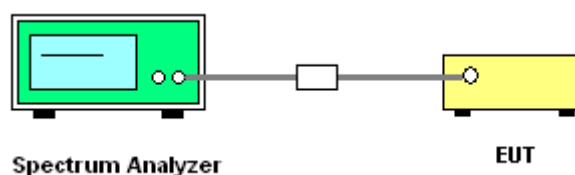
3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section C) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
8. Measure and record the results in the test report.

3.1.4 Test Setup



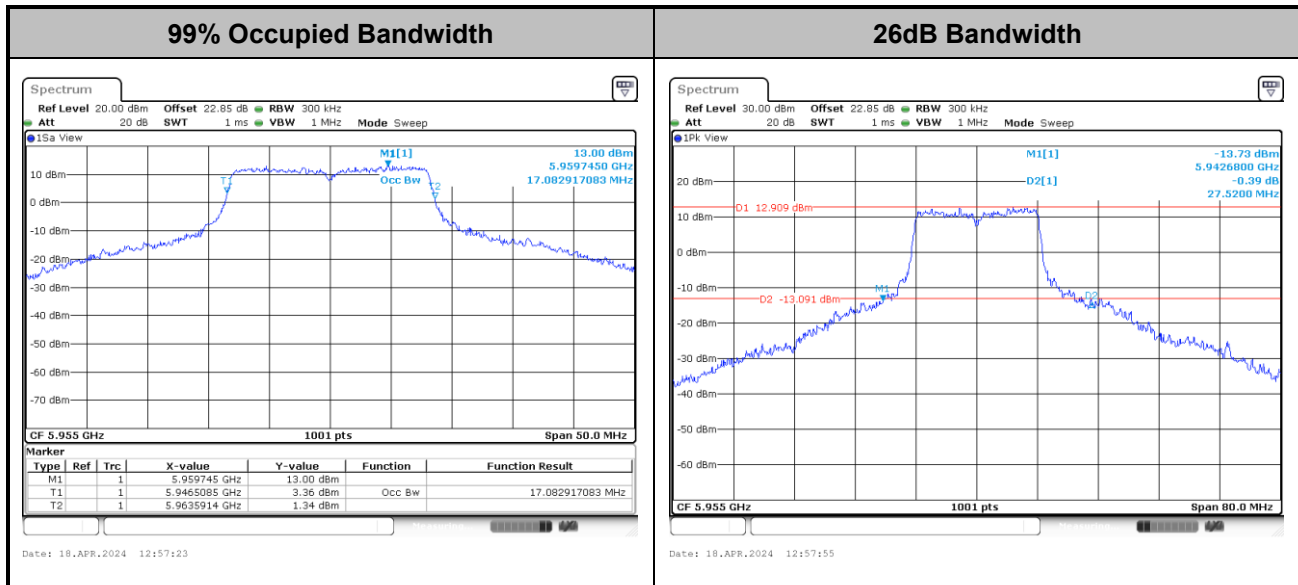
3.1.5 Test Result of 26dB & 99% Occupied Bandwidth

Please refer to Appendix A.



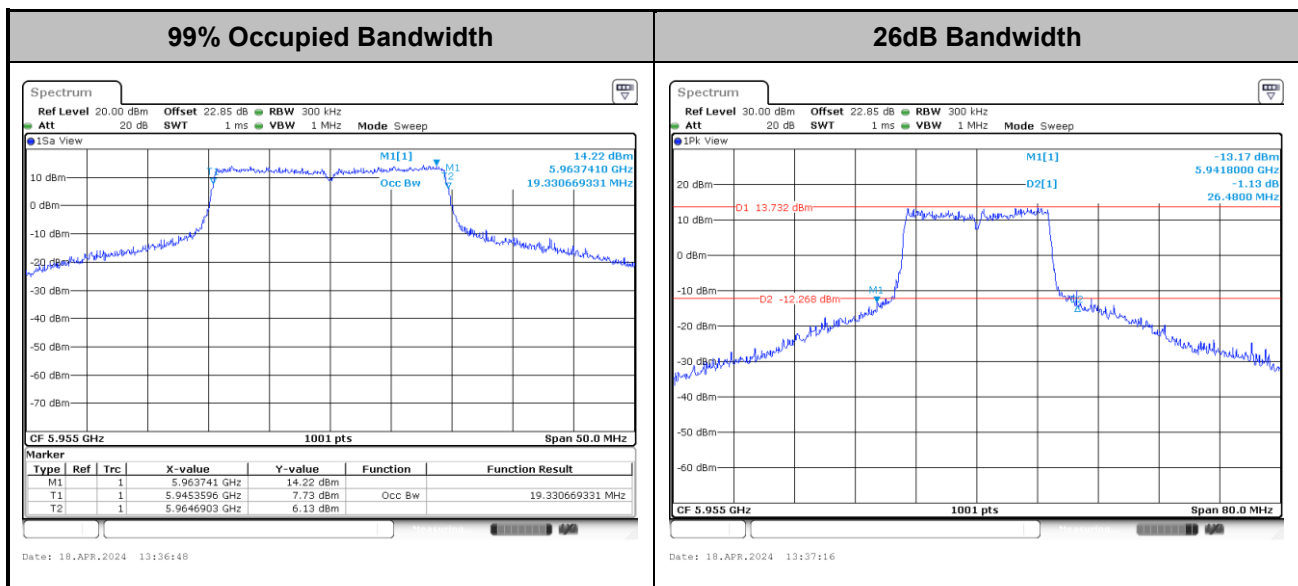
MIMO <Ant. 4+2>

<802.11a>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

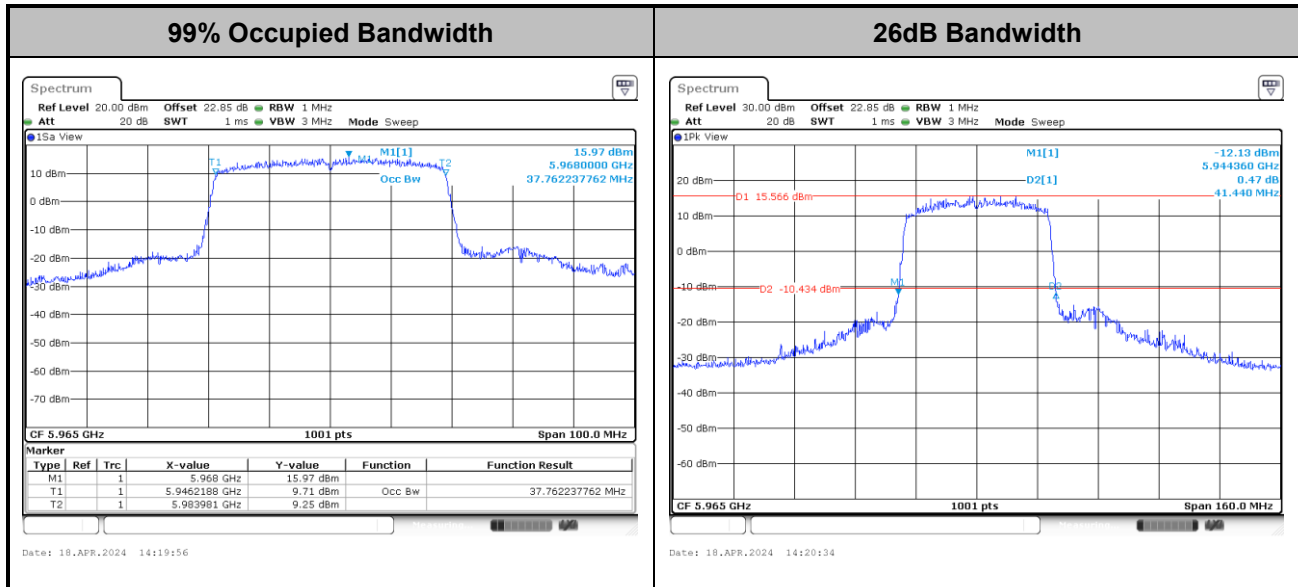
<802.11ax HE20>



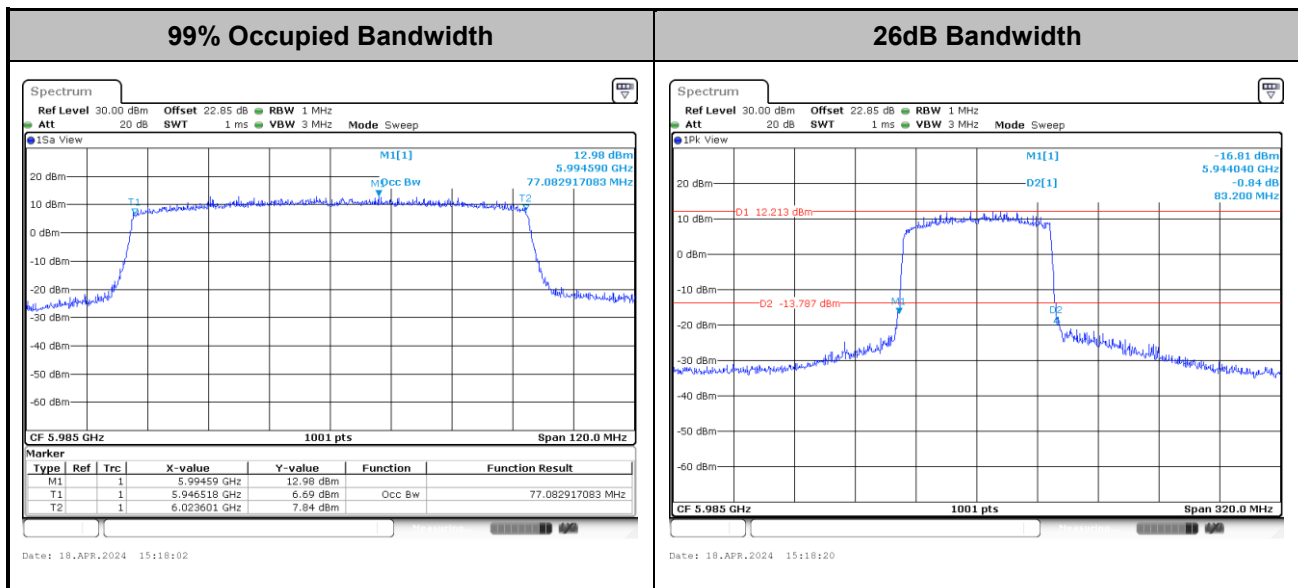
Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



<802.11ax HE40>

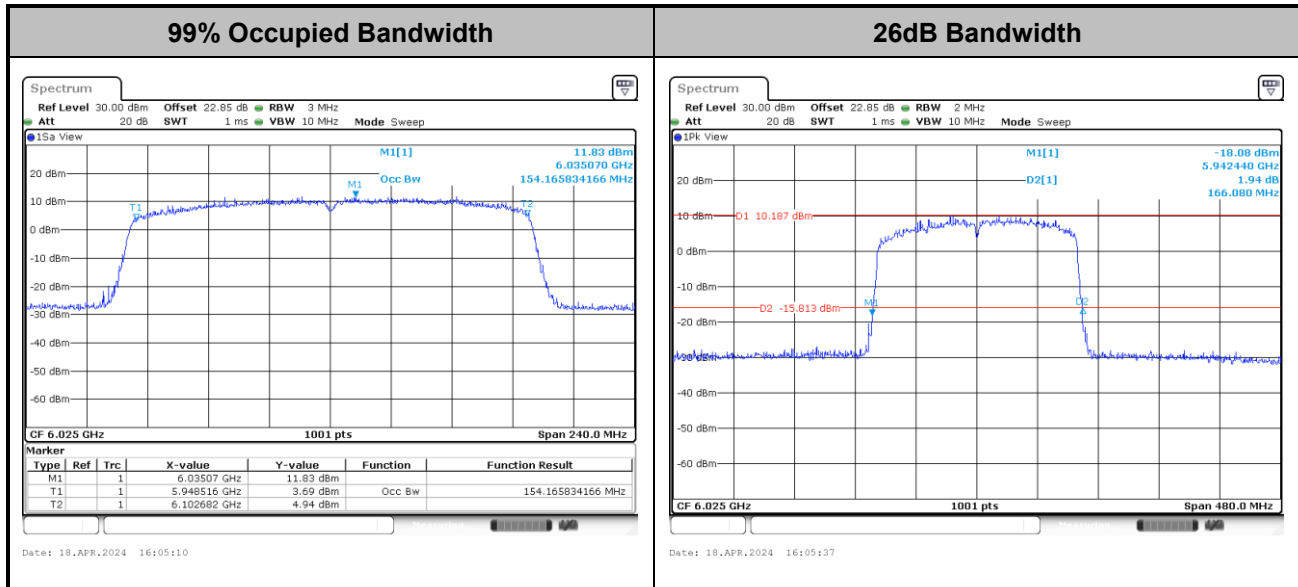


<802.11ax HE80>





<802.11ax HE160>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Fundamental Maximum EIRP Measurement

3.2.1 Limit of Fundamental Maximum EIRP

<FCC 14-30 CFR 15.407>

(a)(4) For a standard power access point and fixed client device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 23 dBm e.i.r.p in any 1-megahertz band. In addition, the maximum e.i.r.p. over the frequency band of operation must not exceed 36 dBm. For outdoor devices, the maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

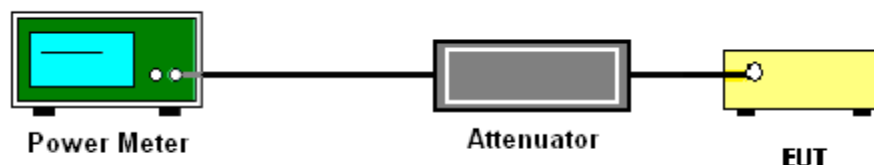
3.2.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter.
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.
5. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

3.2.4 Test Setup



3.2.5 Test Result of Fundamental Maximum EIRP

Please refer to Appendix A.

3.3 Fundamental Power Spectral Density Measurement

3.3.1 Limit of Fundamental Power Spectral Density

<FCC 14-30 CFR 15.407>

(a)(4) For a standard power access point and fixed client device operating in the 5.925–6.425 GHz and 6.525–6.875 GHz bands, the maximum power spectral density must not exceed 23 dBm e.i.r.p in any 1-megahertz band.

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.3.3 Test Procedures

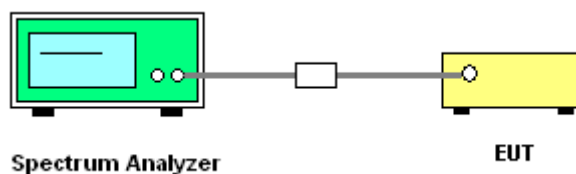
The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section F) Maximum power spectral density.

Method SA-2

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 1 MHz.
 - Set VBW $\geq$ 3 MHz.
 - Number of points in sweep $\geq$ 2 Span / RBW.
 - Sweep time = auto.
 - Detector = RMS
 - Trace average at least 100 traces in power averaging mode.
 - Add $10 \log(1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add $10 \log(1/0.25) = 6$ dB if the duty cycle is 25 percent.
1. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
 2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup

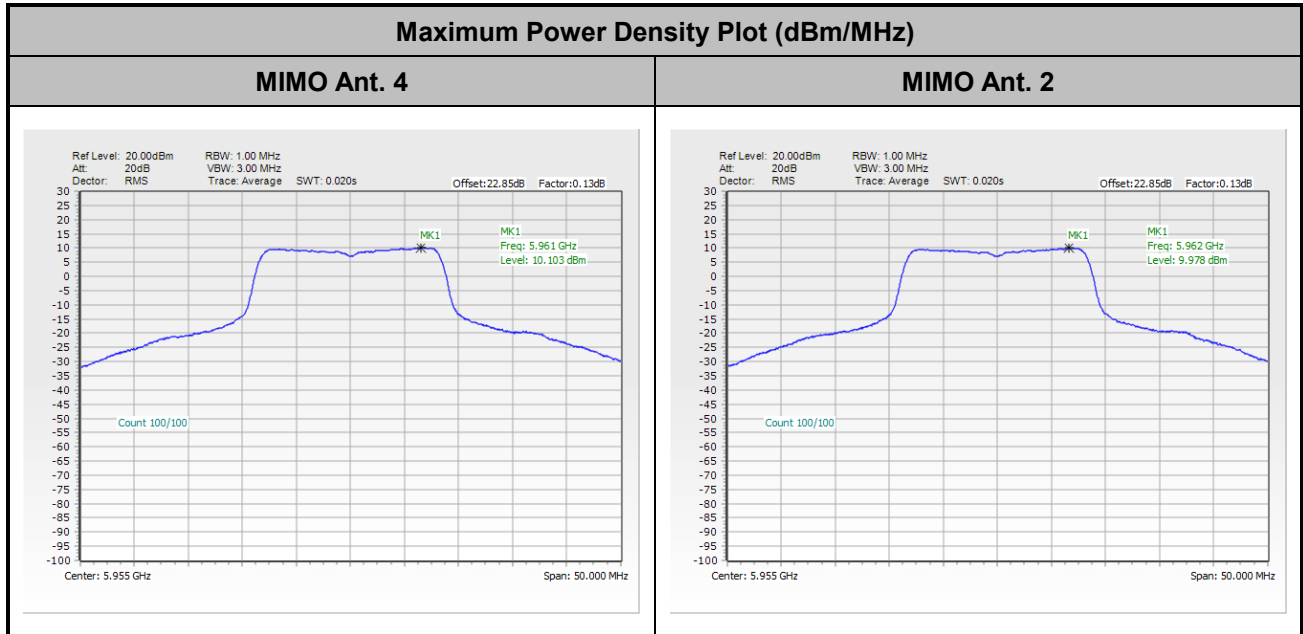




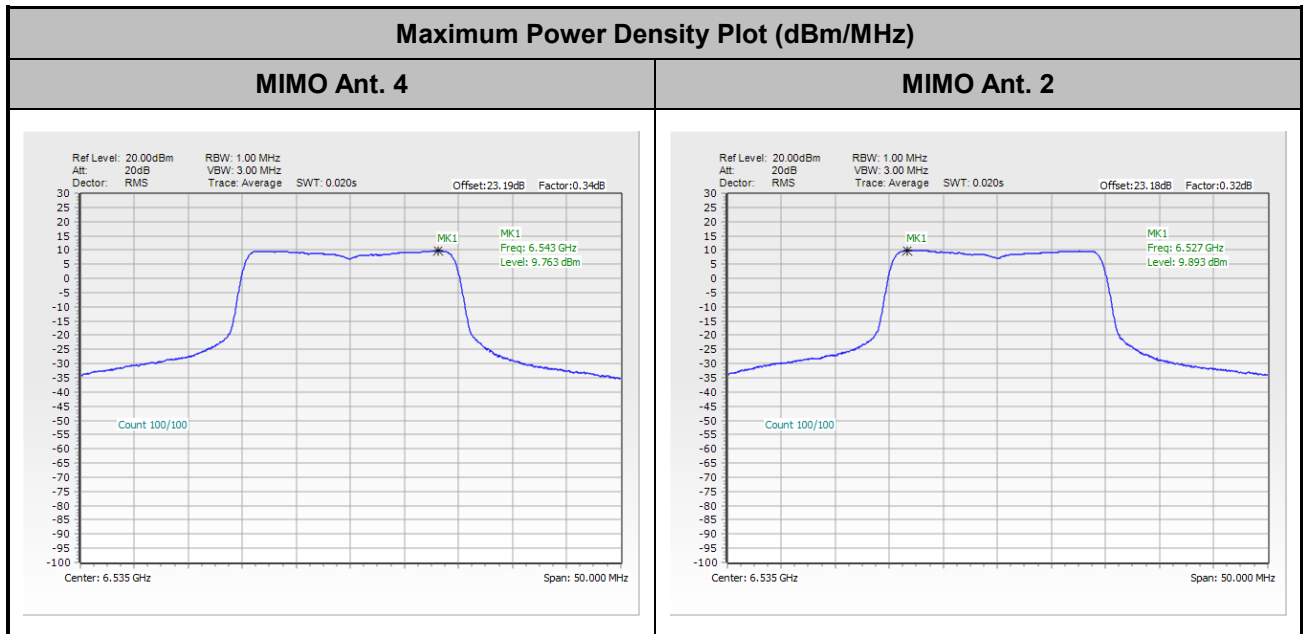
3.3.5 Test Result of Power Spectral Density

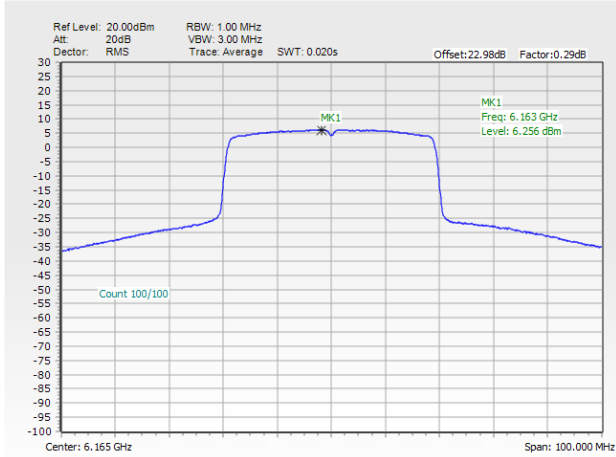
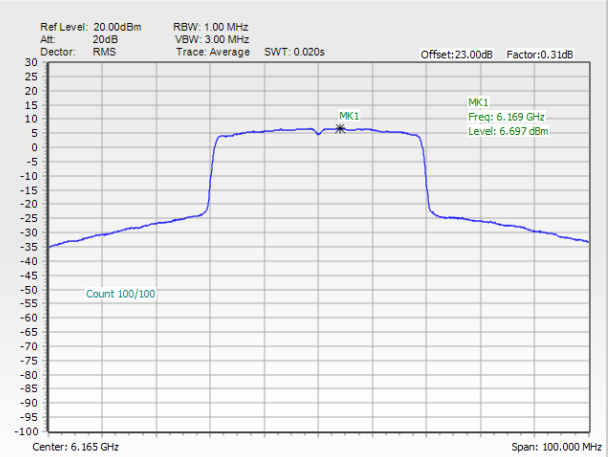
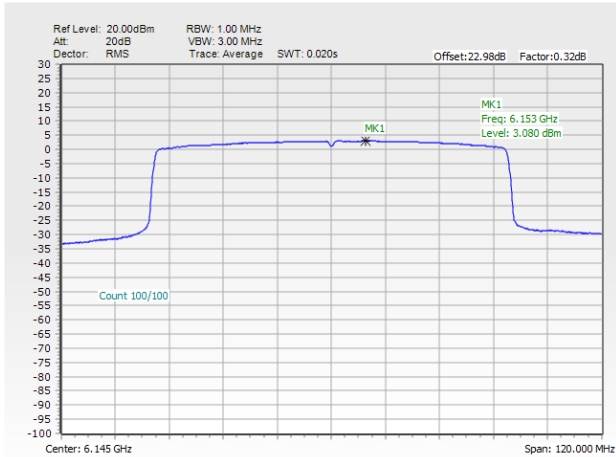
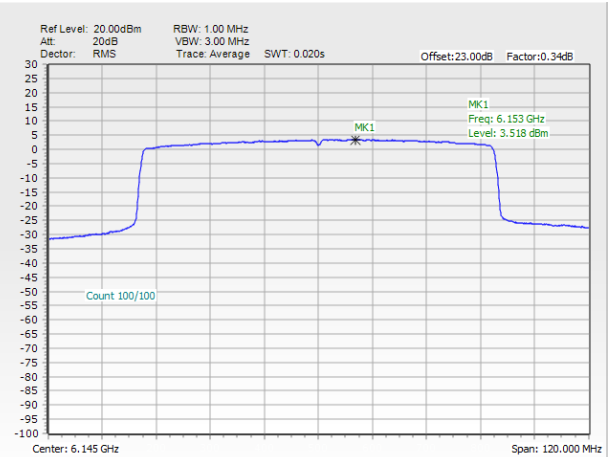
Please refer to Appendix A.

<802.11a 5955MHz>



<802.11ax HE20 6535MHz>



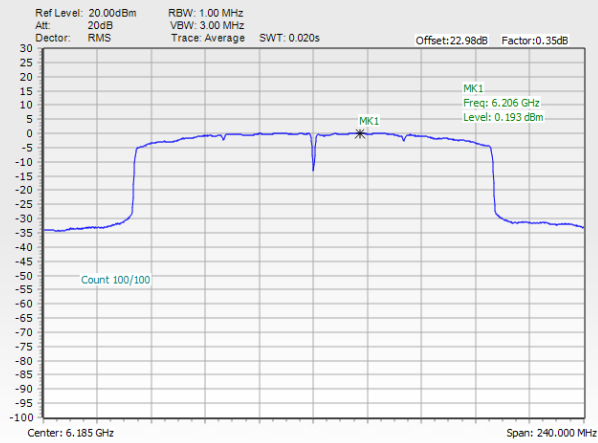
**<802.11ax HE40 6165MHz>****Maximum Power Density Plot (dBm/MHz)****MIMO Ant. 4****MIMO Ant. 2****<802.11ax HE80 6145MHz>****Maximum Power Density Plot (dBm/MHz)****MIMO Ant. 4****MIMO Ant. 2**



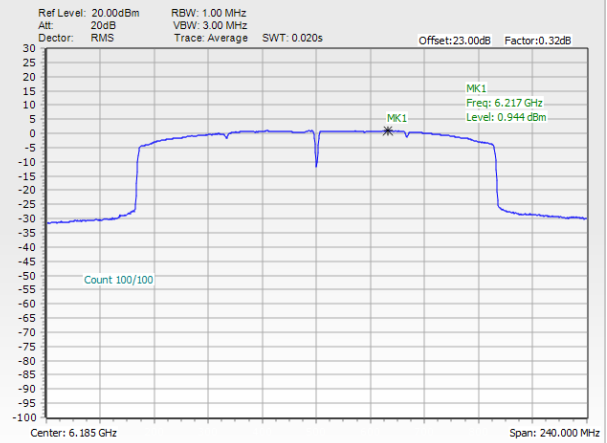
<802.11ax HE160 6185MHz>

Maximum Power Density Plot (dBm/MHz)

MIMO Ant. 4



MIMO Ant. 2





3.4 In-Band Emissions (Channel Mask)

3.4.1 Limit of Unwanted Emissions

<FCC 14-30 CFR 15.407>

(a)(6) For transmitters operating within the 5.925-7.125 GHz bands: Power spectral density must be suppressed by 20 dB at 1 MHz outside of channel edge, by 28 dB at one channel bandwidth from the channel center, and by 40 dB at one- and one-half times the channel bandwidth away from channel center. At frequencies between one megahertz outside an unlicensed device's channel edge and one channel bandwidth from the center of the channel, the limits must be linearly interpolated between 20 dB and 28 dB suppression, and at frequencies between one and one- and one-half times an unlicensed device's channel bandwidth, the limits must be linearly interpolated between 28 dB and 40 dB suppression. Emissions removed from the channel center by more than one- and one-half times the channel bandwidth must be suppressed by at least 40 dB.

3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

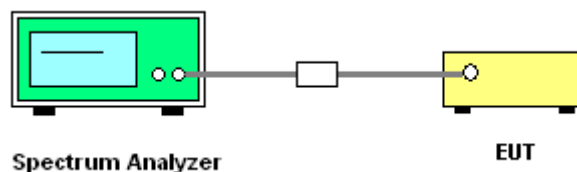
3.4.3 Test Procedures

The testing follows FCC KDB 987594 D02 U-NII 6GHz EMC Measurement v02r01.

Section J) In-Band Emissions.

1. Take nominal bandwidth as reference channel bandwidth provided that 26 dB emission bandwidth is always larger than nominal bandwidth
2. 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 $\geq 3 \times$ RBW
 - d) Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$.
 - 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.
3. 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.
 - 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.
4. Adjust the span to encompass the entire mask as necessary.
5. Clear trace.
6. Trace average at least 100 traces in power averaging (rms) mode.
7. Adjust the reference level as necessary so that the crest of the channel touches the top of the emission mask.

3.4.4 Test Setup





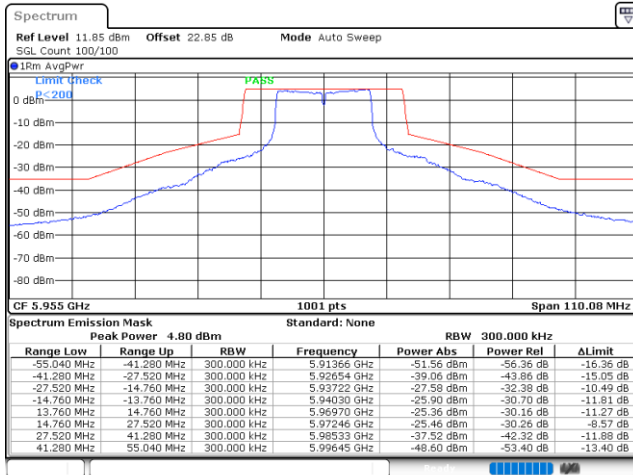
3.4.5 Test Result

MIMO <Ant. 4+2(4)>

EUT Mode :

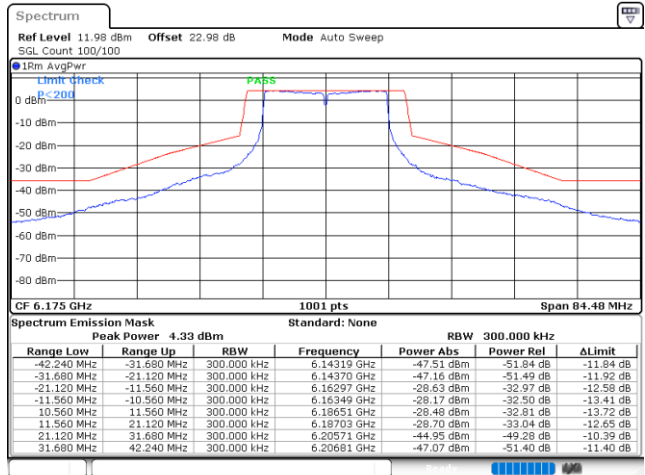
802.11a

Plot on Channel 5955MHz



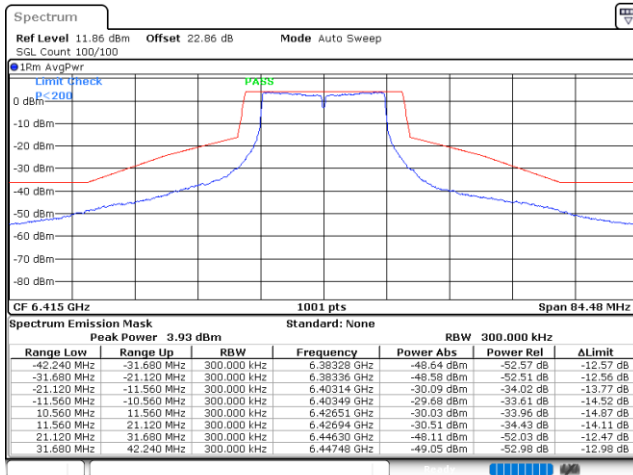
Date: 18.APR.2024 12:58:17

Plot on Channel 6175MHz



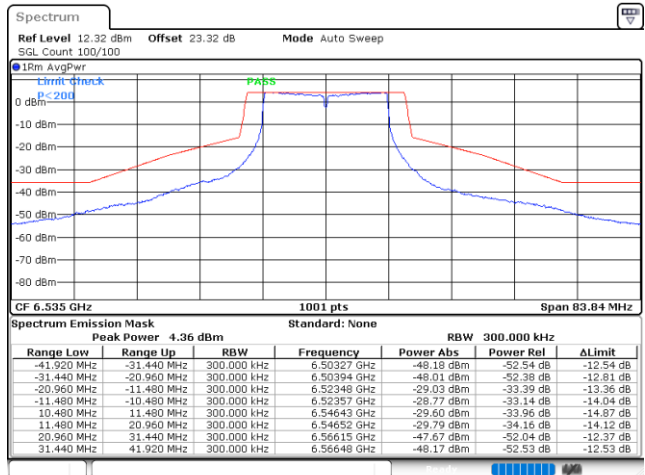
Date: 18.APR.2024 13:07:57

Plot on Channel 6415MHz



Date: 18.APR.2024 13:19:48

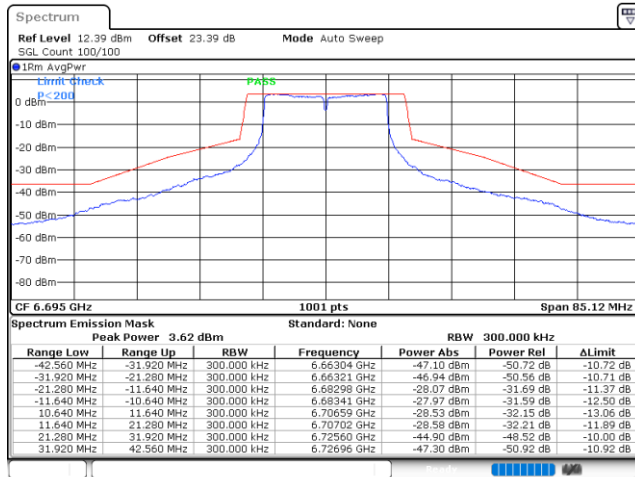
Plot on Channel 6535MHz



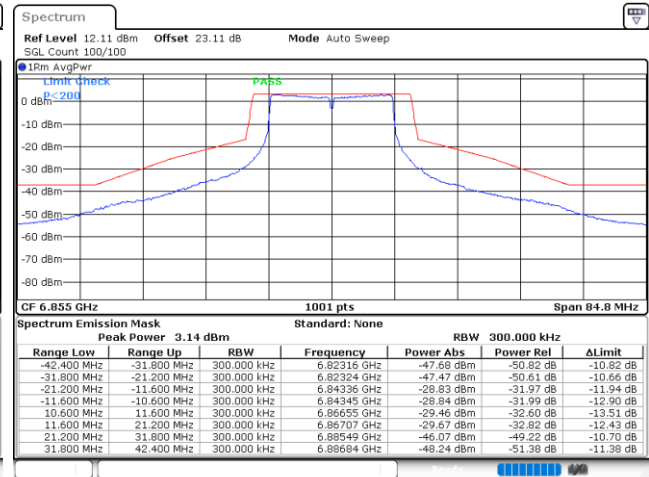
Date: 18.APR.2024 16:38:23



Plot on Channel 6695MHz



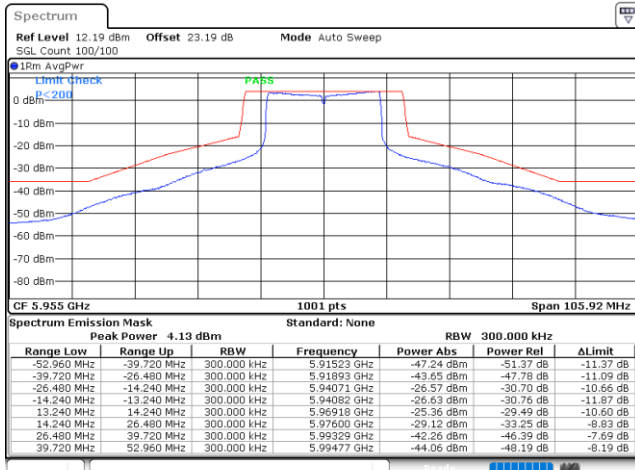
Plot on Channel 6855MHz





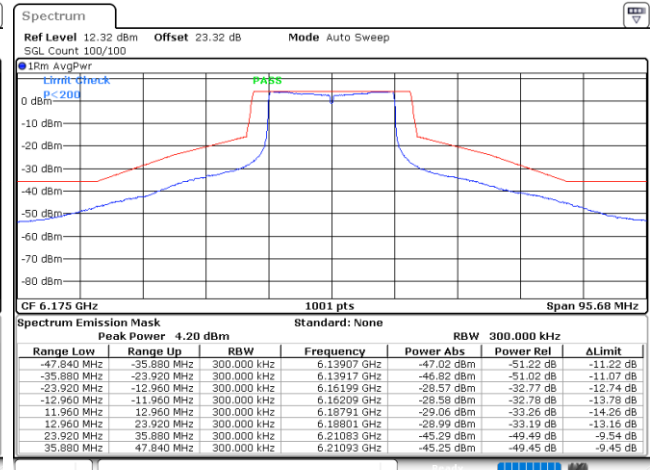
EUT Mode : 802.11ax HE20

Plot on Channel 5955MHz



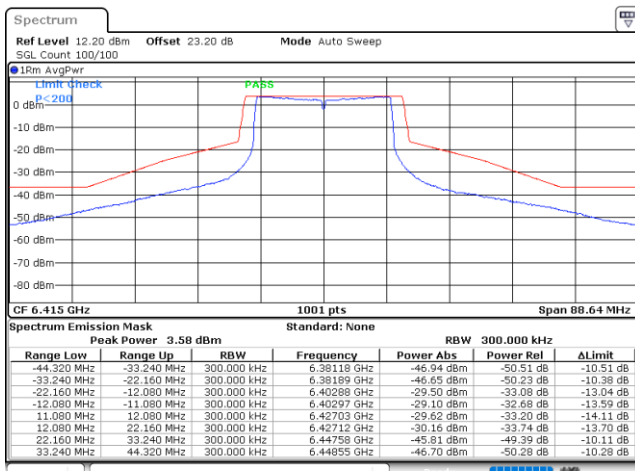
Date: 18.APR.2024 13:37:36

Plot on Channel 6175MHz



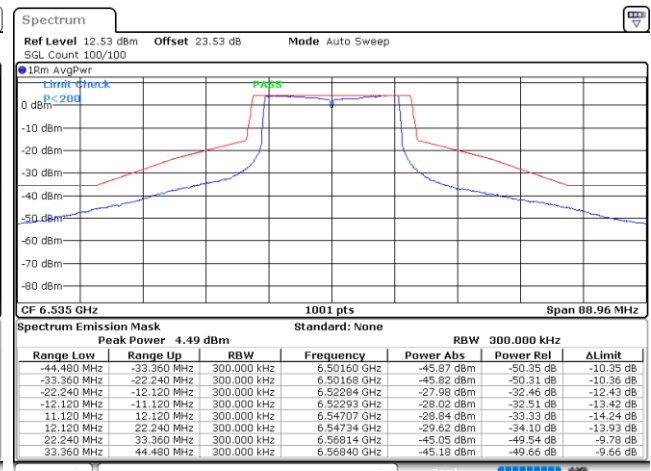
Date: 18.APR.2024 13:44:40

Plot on Channel 6415MHz



Date: 18.APR.2024 13:53:10

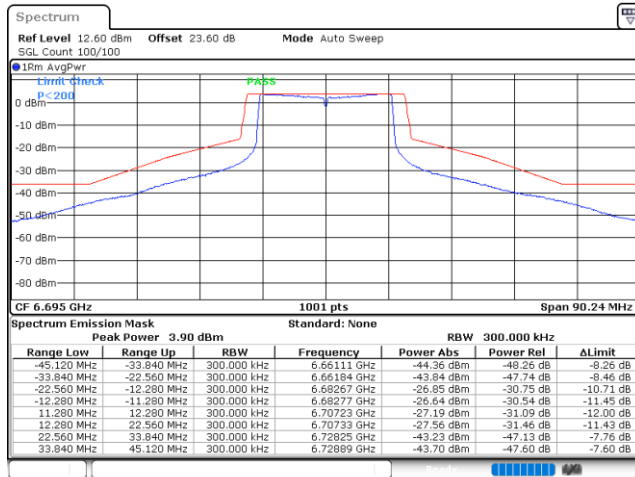
Plot on Channel 6535MHz



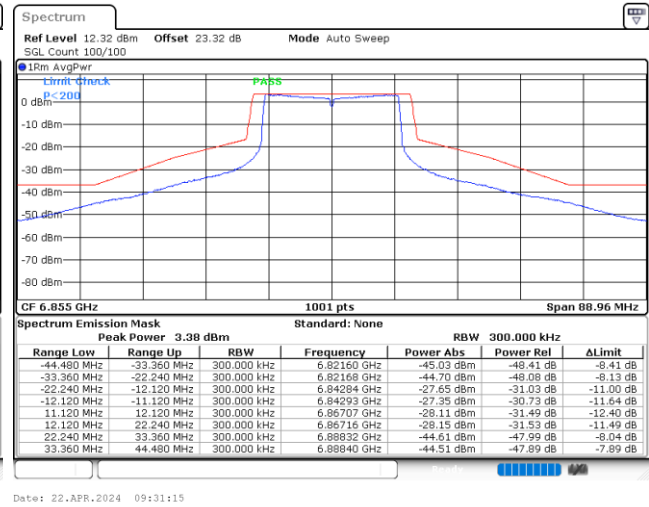
Date: 22.APR.2024 09:14:21



Plot on Channel 6695MHz



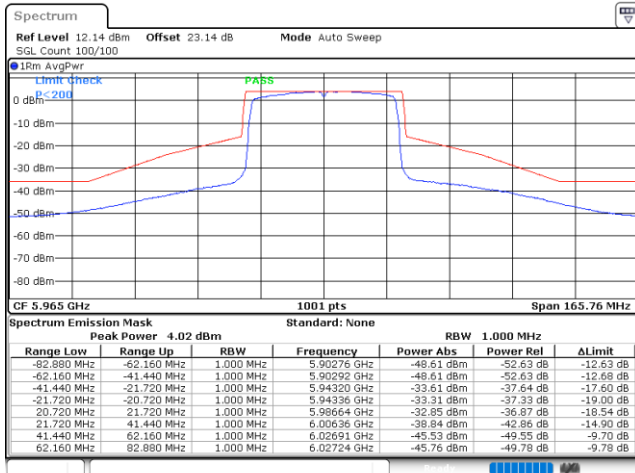
Plot on Channel 6855MHz





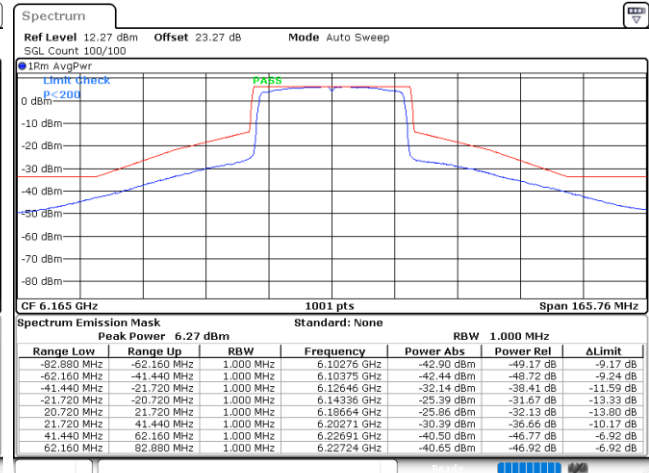
EUT Mode : 802.11ax HE40

Plot on Channel 5965MHz



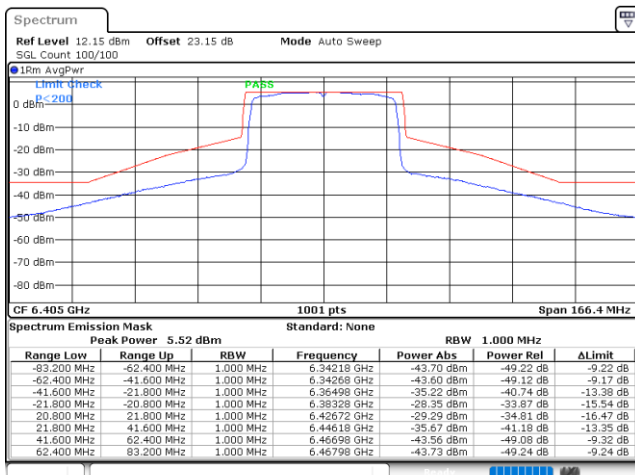
Date: 18.APR.2024 14:21:13

Plot on Channel 6165MHz



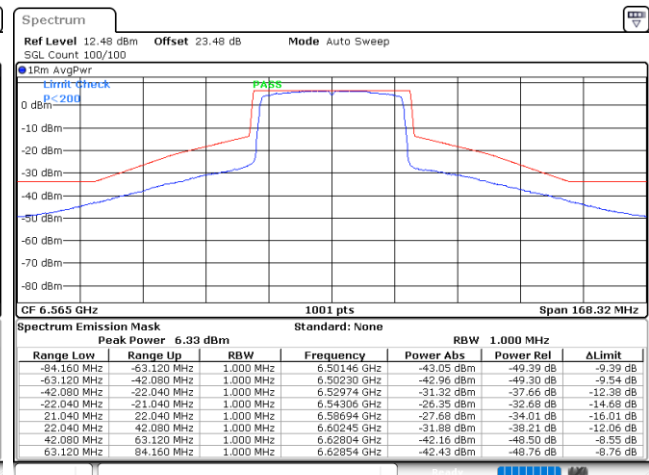
Date: 18.APR.2024 14:28:25

Plot on Channel 6405MHz



Date: 18.APR.2024 14:40:03

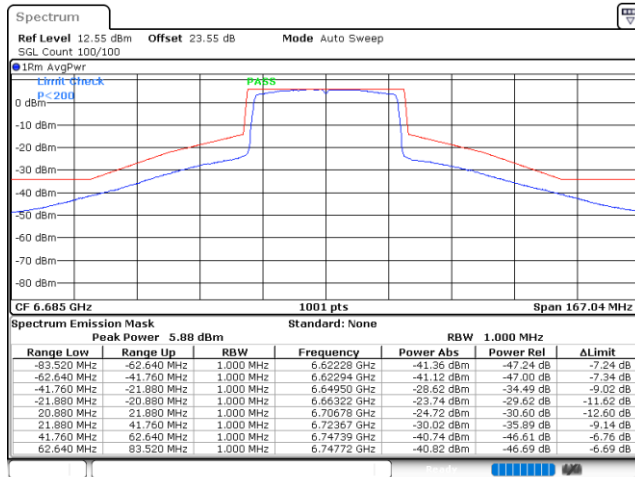
Plot on Channel 6565MHz



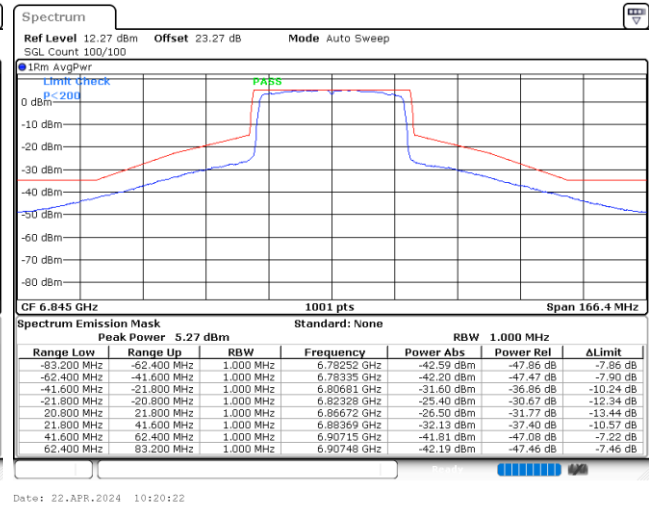
Date: 22.APR.2024 10:04:33



Plot on Channel 6685MHz



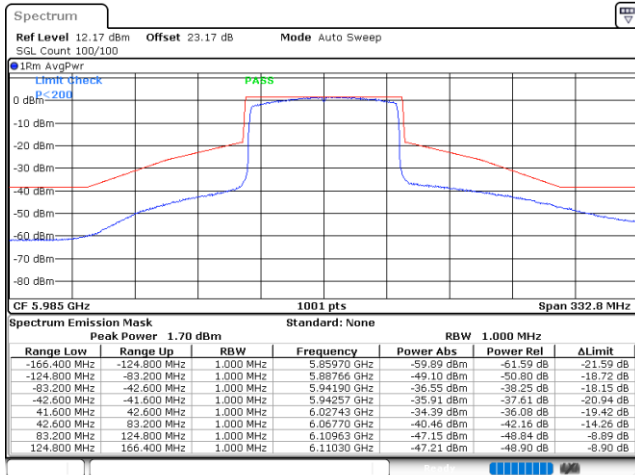
Plot on Channel 6845MHz





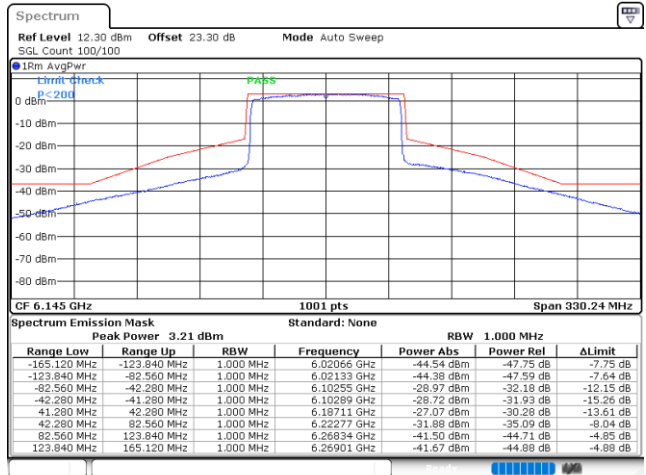
EUT Mode : 802.11ax HE80

Plot on Channel 5985MHz



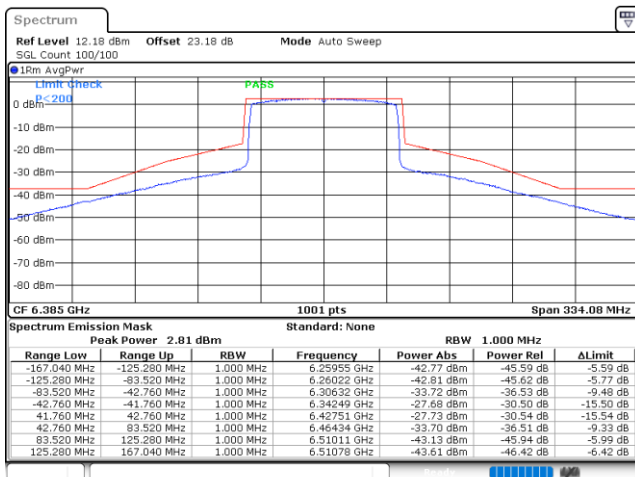
Date: 18.APR.2024 15:10:42

Plot on Channel 6145MHz



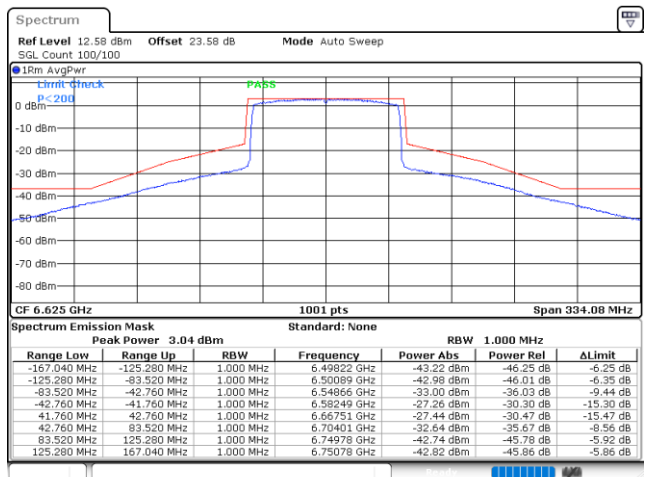
Date: 18.APR.2024 15:25:36

Plot on Channel 6385MHz



Date: 18.APR.2024 15:32:16

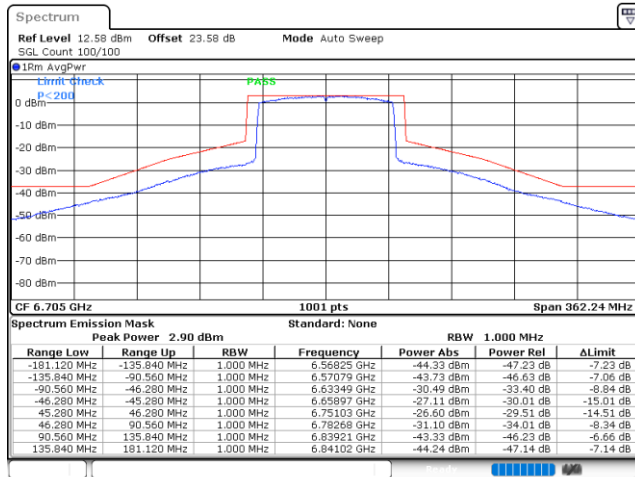
Plot on Channel 6625MHz



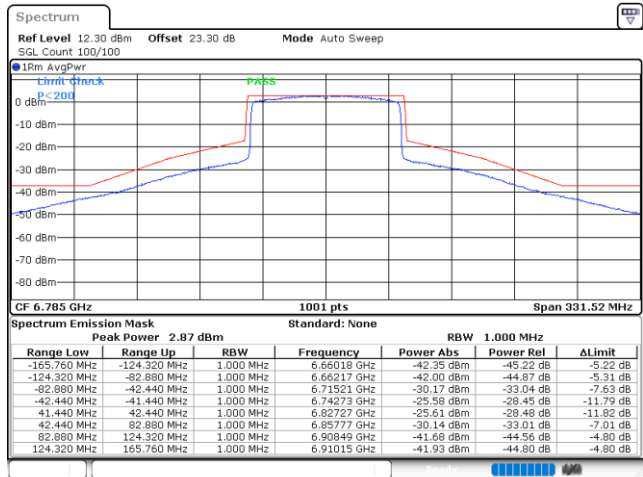
Date: 22.APR.2024 10:37:36



Plot on Channel 6705MHz



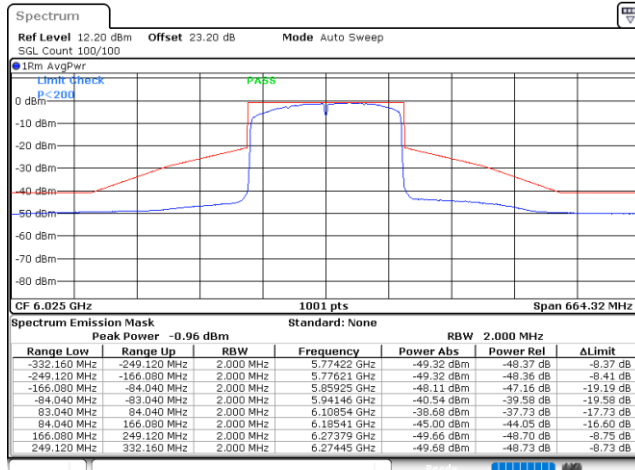
Plot on Channel 6785MHz





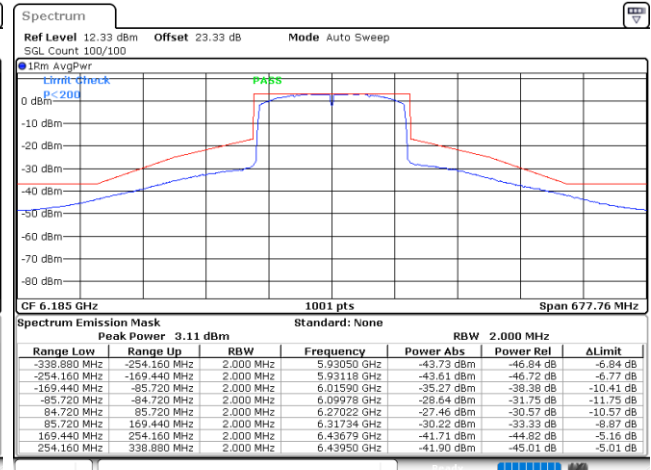
EUT Mode : 802.11ax HE160

Plot on Channel 6025MHz



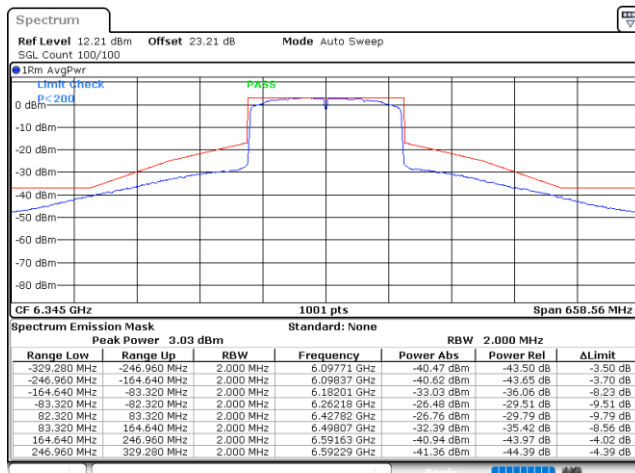
Date: 18.APR.2024 16:05:57

Plot on Channel 6185MHz



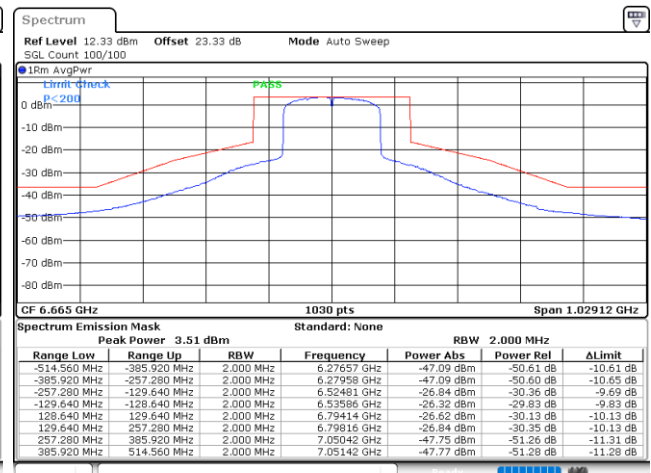
Date: 18.APR.2024 16:14:35

Plot on Channel 6345MHz



Date: 18.APR.2024 16:20:56

Plot on Channel 6665MHz



Date: 22.APR.2024 11:13:08

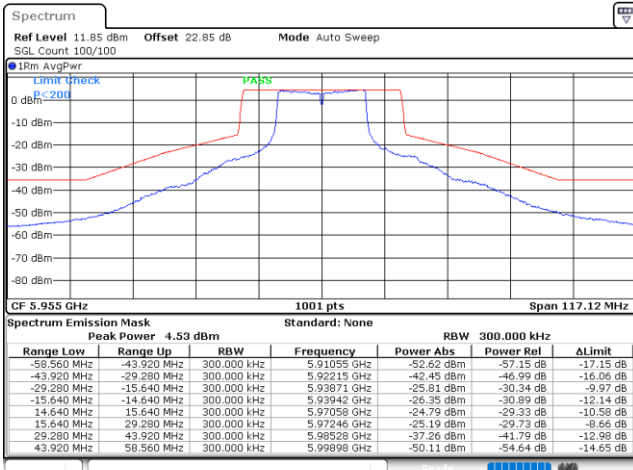


MIMO <Ant. 4+2(2)>

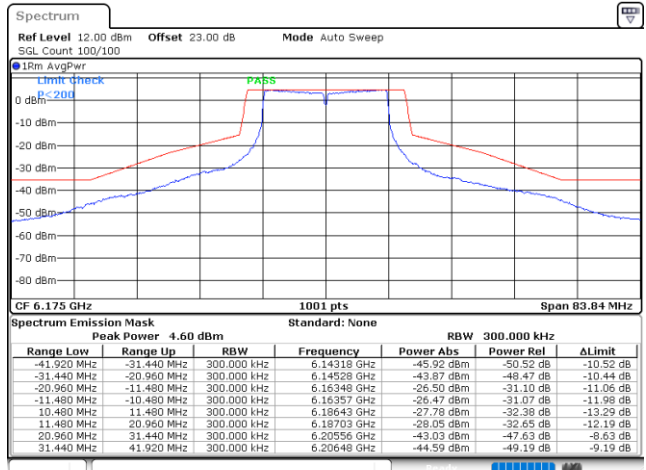
EUT Mode :

802.11a

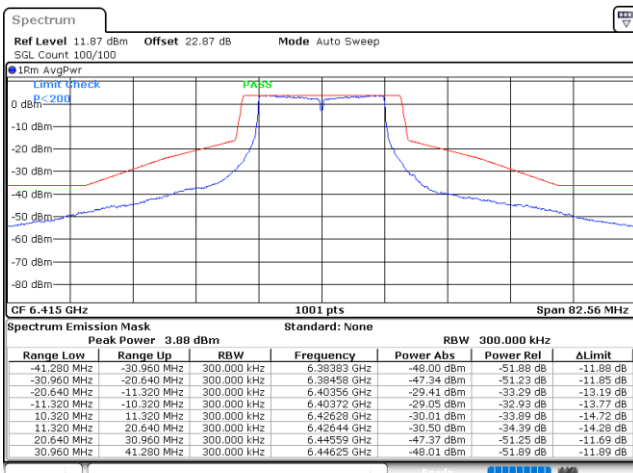
Plot on Channel 5955MHz



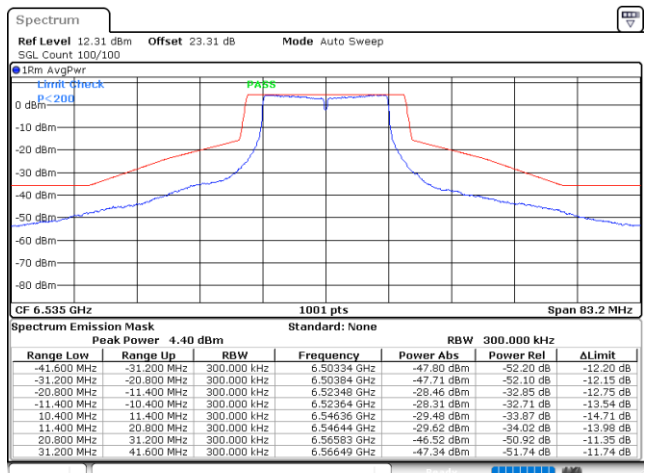
Plot on Channel 6175MHz



Plot on Channel 6415MHz

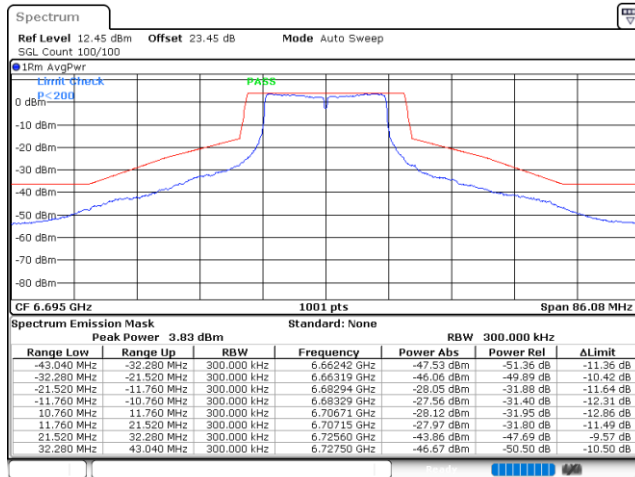


Plot on Channel 6535MHz

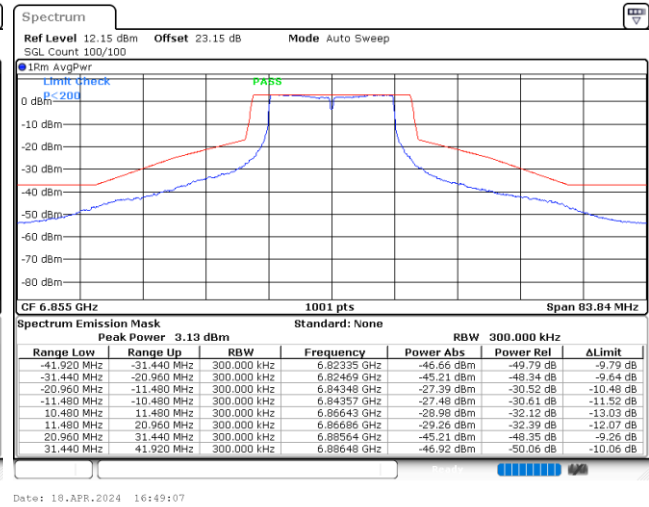




Plot on Channel 6695MHz



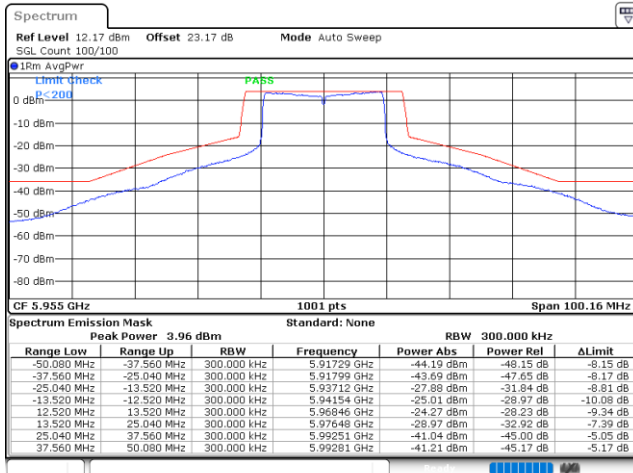
Plot on Channel 6855MHz



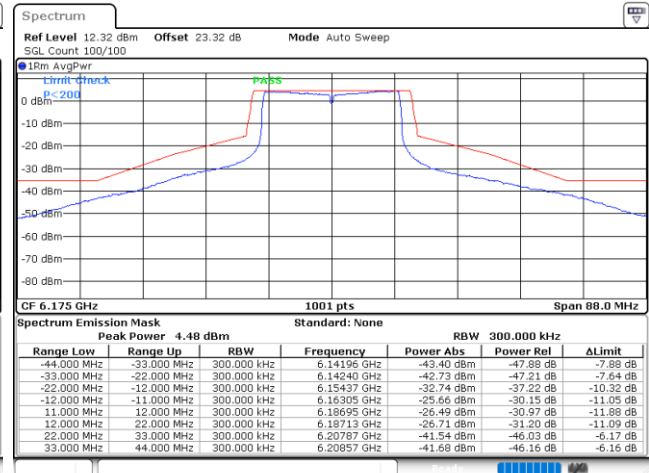


EUT Mode : 802.11ax HE20

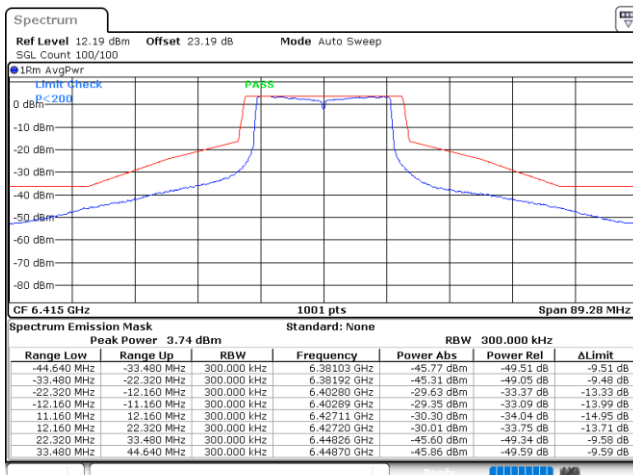
Plot on Channel 5955MHz



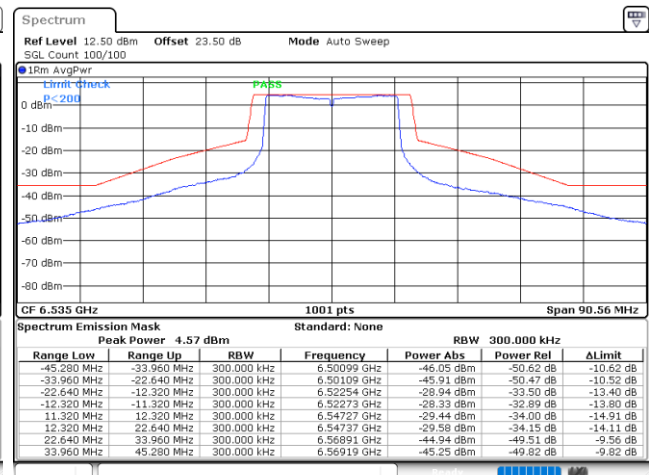
Plot on Channel 6175MHz



Plot on Channel 6415MHz

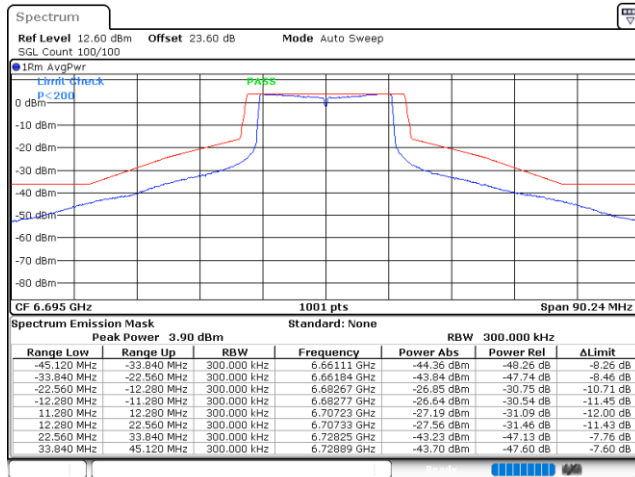


Plot on Channel 6535MHz

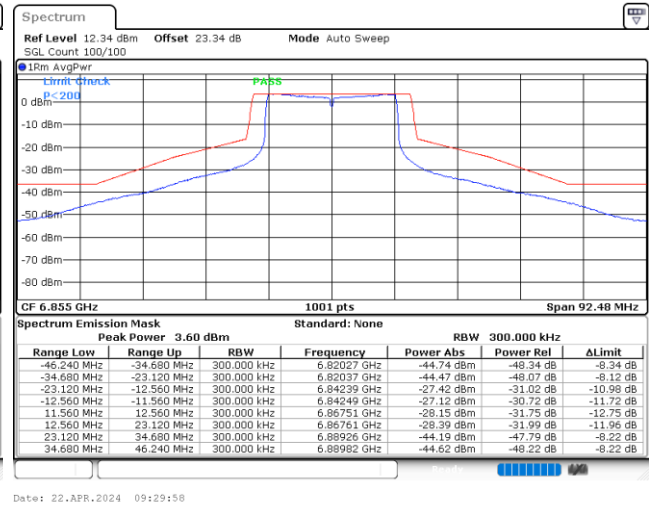




Plot on Channel 6695MHz



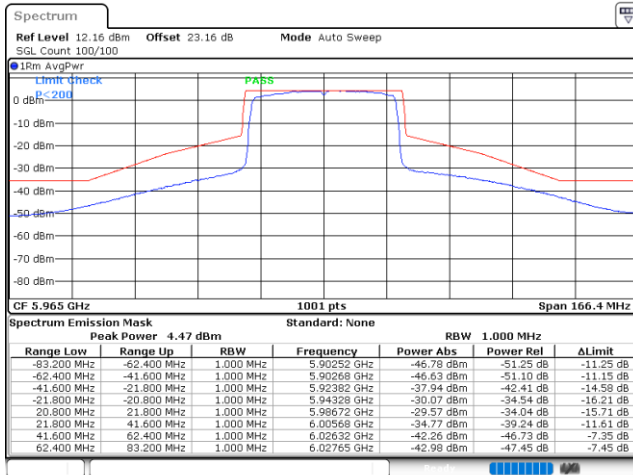
Plot on Channel 6855MHz





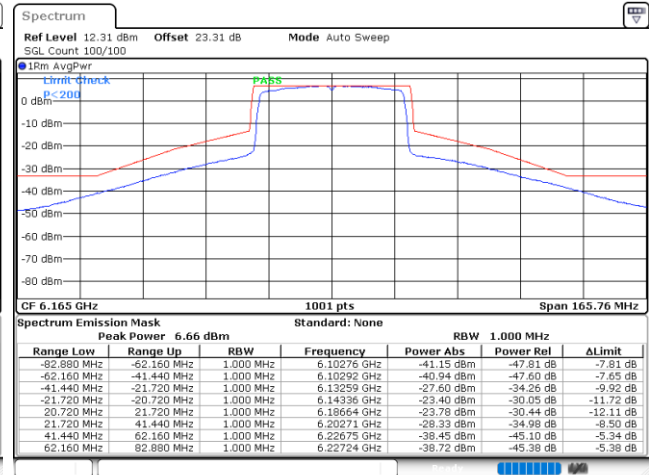
EUT Mode : 802.11ax HE40

Plot on Channel 5965MHz



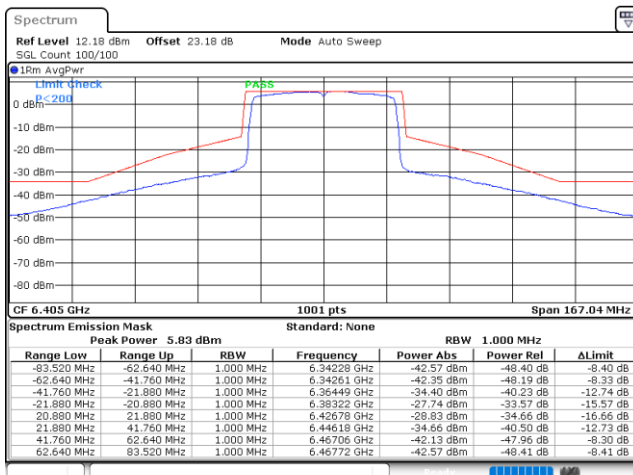
Date: 18.APR.2024 14:19:05

Plot on Channel 6165MHz



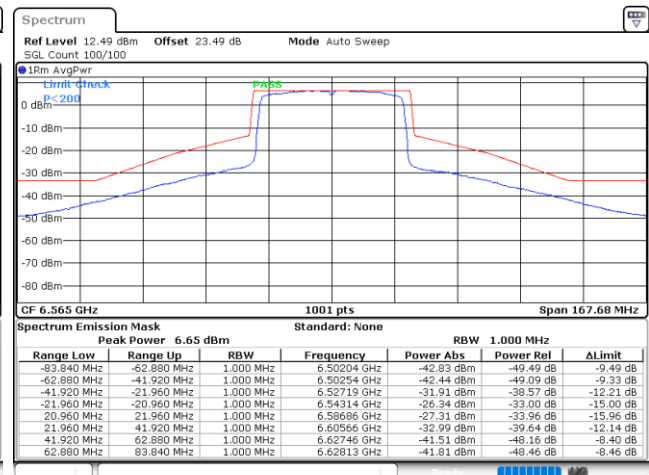
Date: 18.APR.2024 14:26:43

Plot on Channel 6405MHz



Date: 18.APR.2024 14:38:19

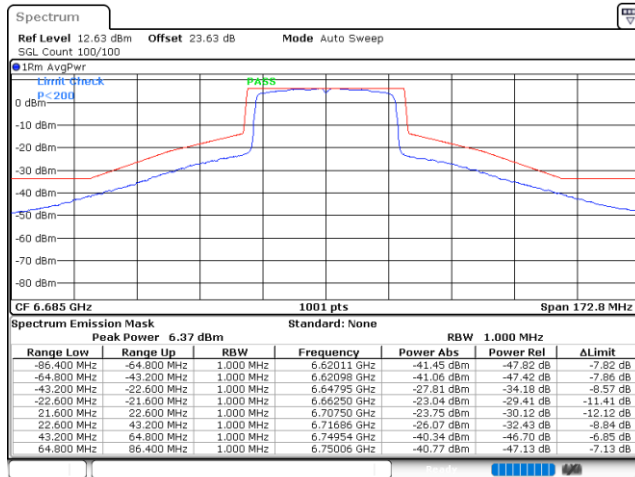
Plot on Channel 6565MHz



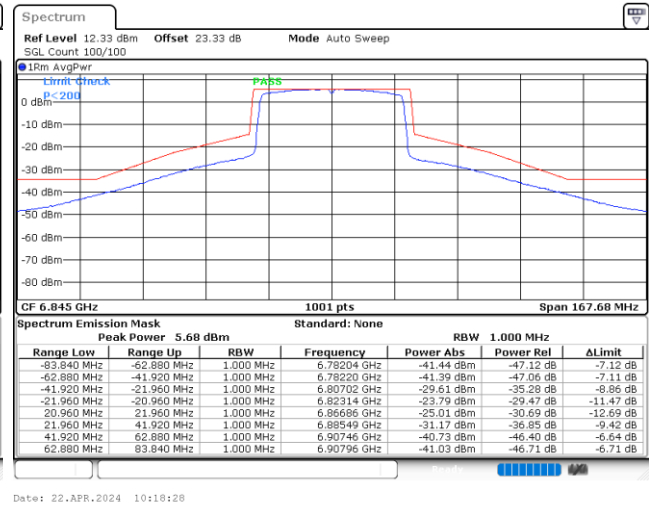
Date: 22.APR.2024 10:02:57



Plot on Channel 6685MHz



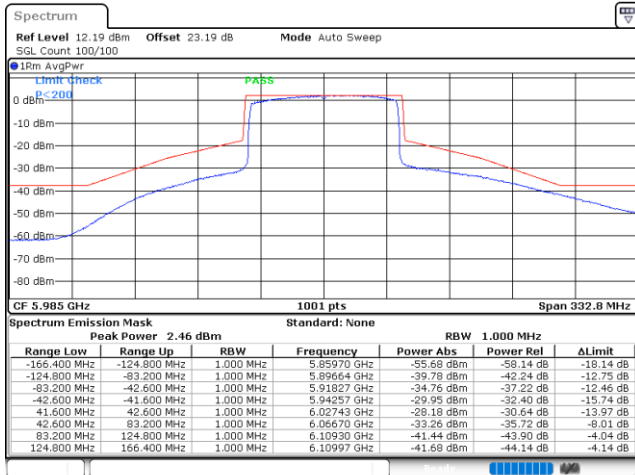
Plot on Channel 6845MHz





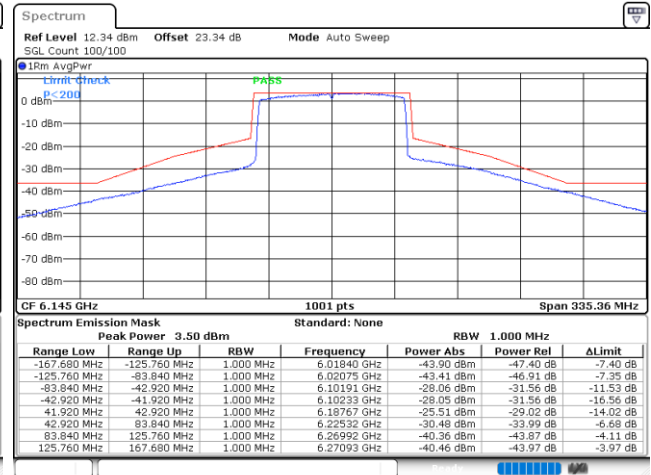
EUT Mode : 802.11ax HE80

Plot on Channel 5985MHz



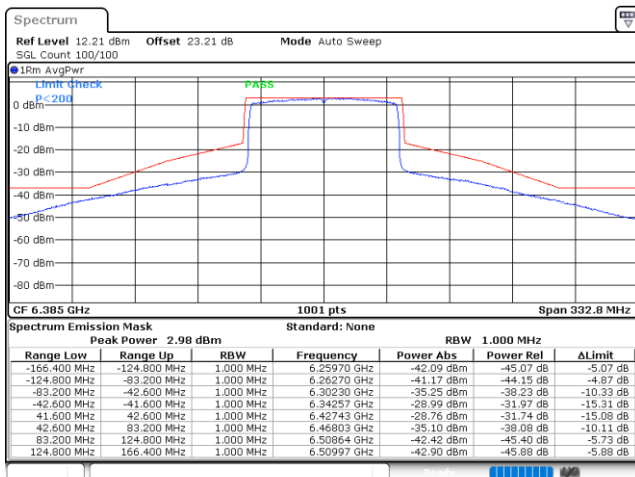
Date: 18.APR.2024 15:17:21

Plot on Channel 6145MHz



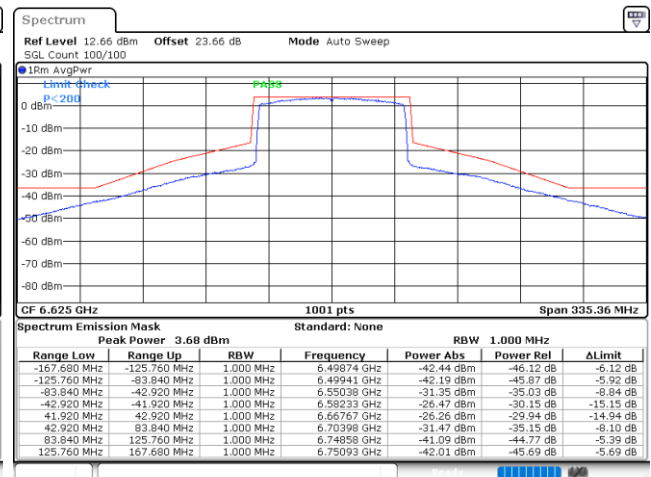
Date: 18.APR.2024 15:24:02

Plot on Channel 6385MHz



Date: 18.APR.2024 15:30:30

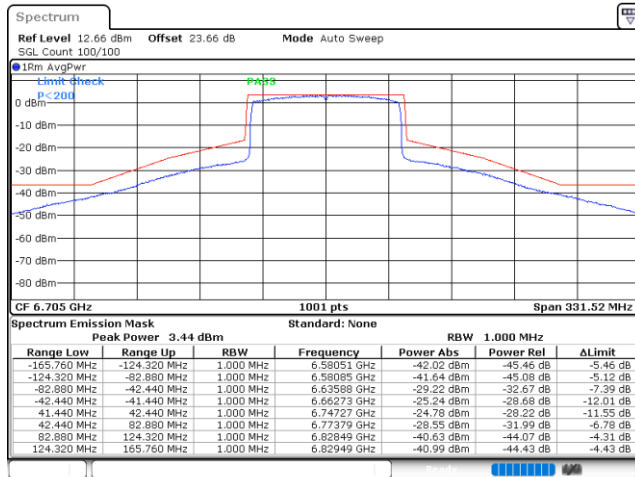
Plot on Channel 6625MHz



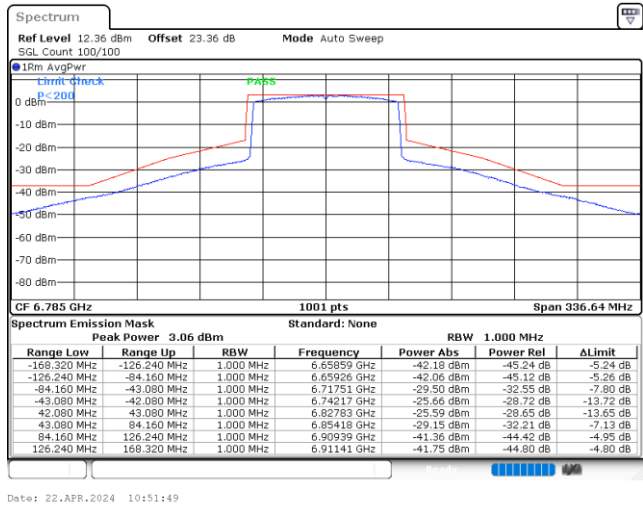
Date: 22.APR.2024 10:36:17



Plot on Channel 6705MHz



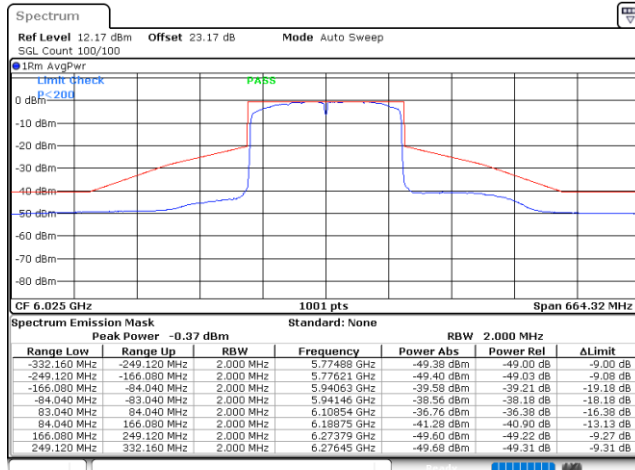
Plot on Channel 6785MHz





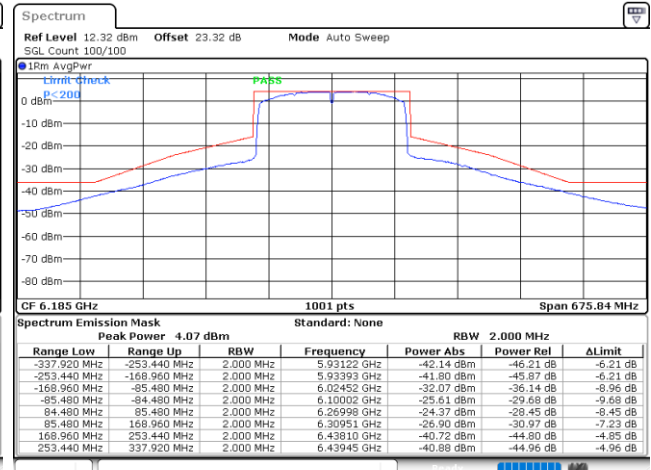
EUT Mode : 802.11ax HE160

Plot on Channel 6025MHz



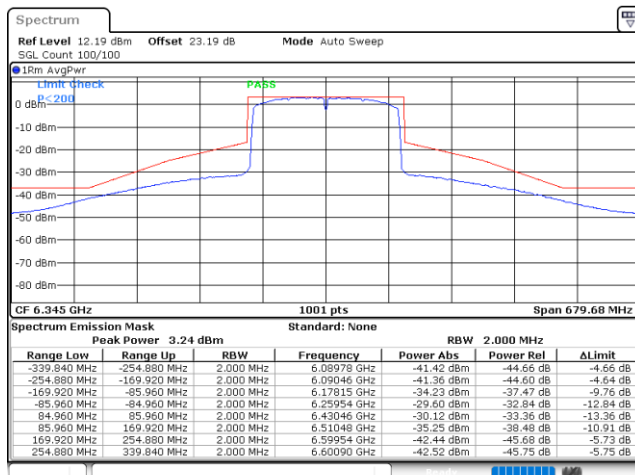
Date: 18.APR.2024 16:04:16

Plot on Channel 6185MHz



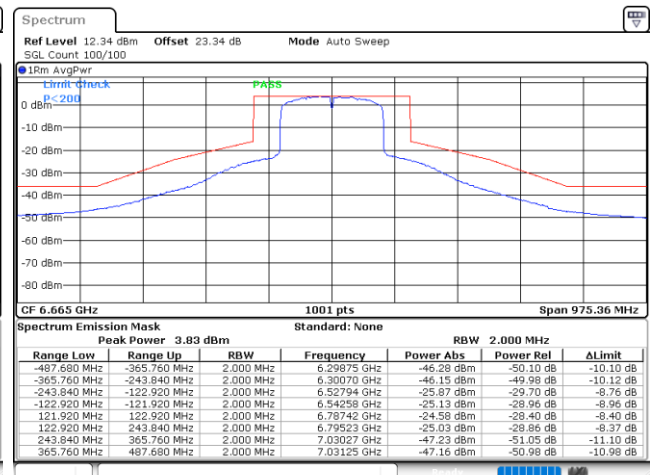
Date: 18.APR.2024 16:13:04

Plot on Channel 6345MHz



Date: 18.APR.2024 16:19:37

Plot on Channel 6665MHz



Date: 22.APR.2024 11:09:37

3.5 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.5.1 Limit of Unwanted Emissions

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

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27 (RMS)	68.3
- 7 (Peak)	88.3

According 987594 D02 U-NII 6GHz EMC Measurement v02r01 section G:

Unwanted emissions outside of restricted bands are measured with a RMS detector.

In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

- (2) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as below table:

Frequency (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	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

3.5.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

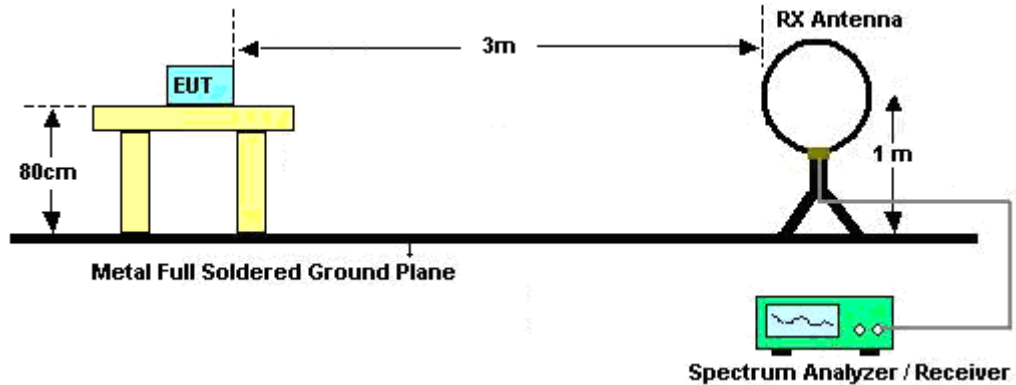
3.5.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
(1) Procedure for Unwanted Emissions Measurements Below 1000 MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
(3) Procedures for Average Unwanted Emissions Measurements Above 1000MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq$ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-”.

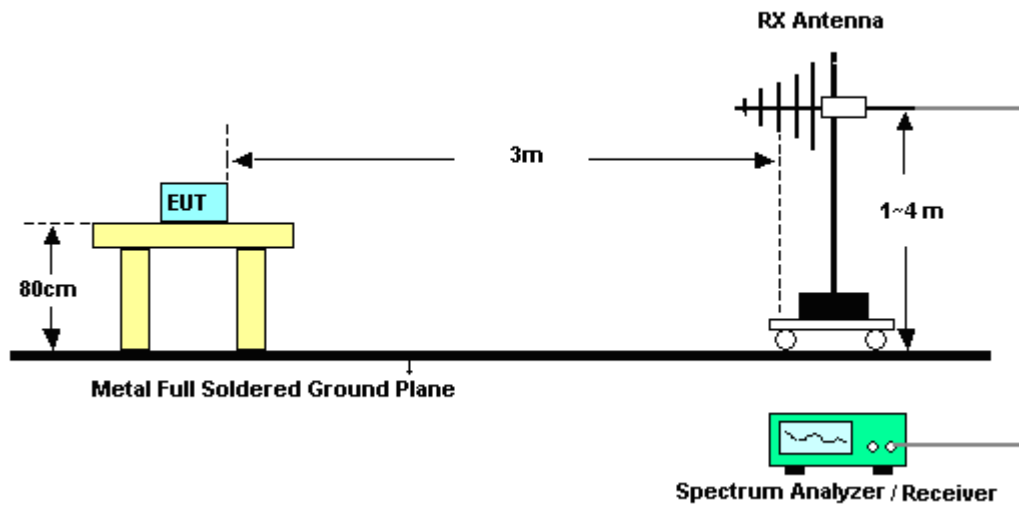
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.

3.5.4 Test Setup

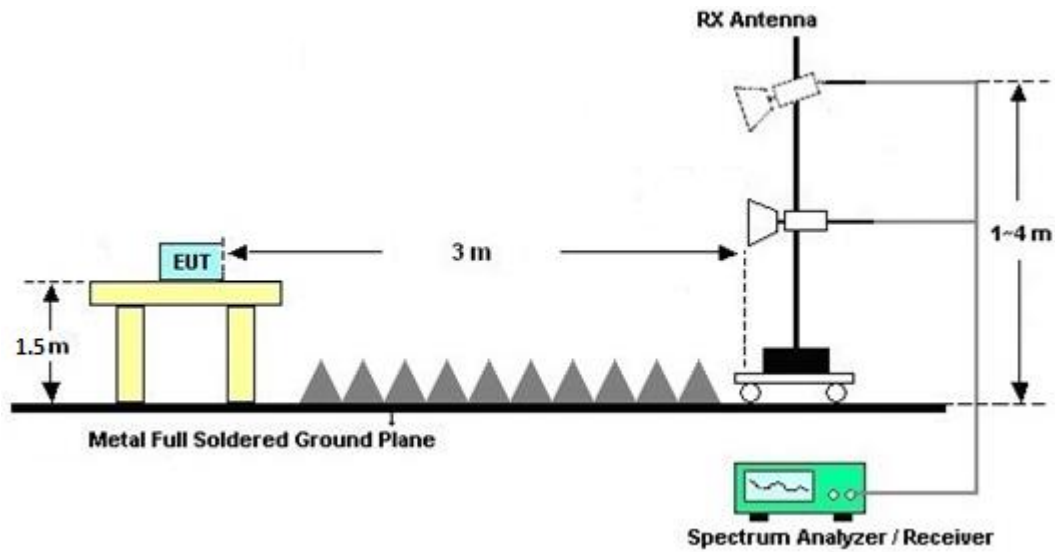
For radiated emissions below 30MHz



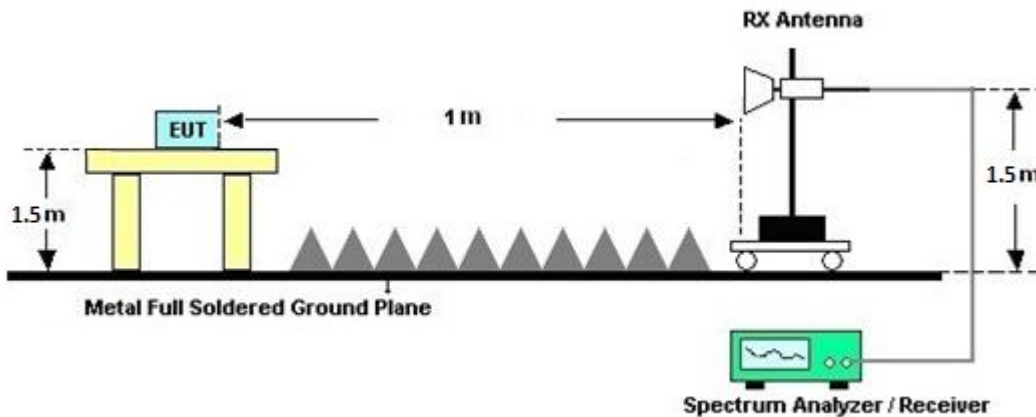
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.5.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emissions (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

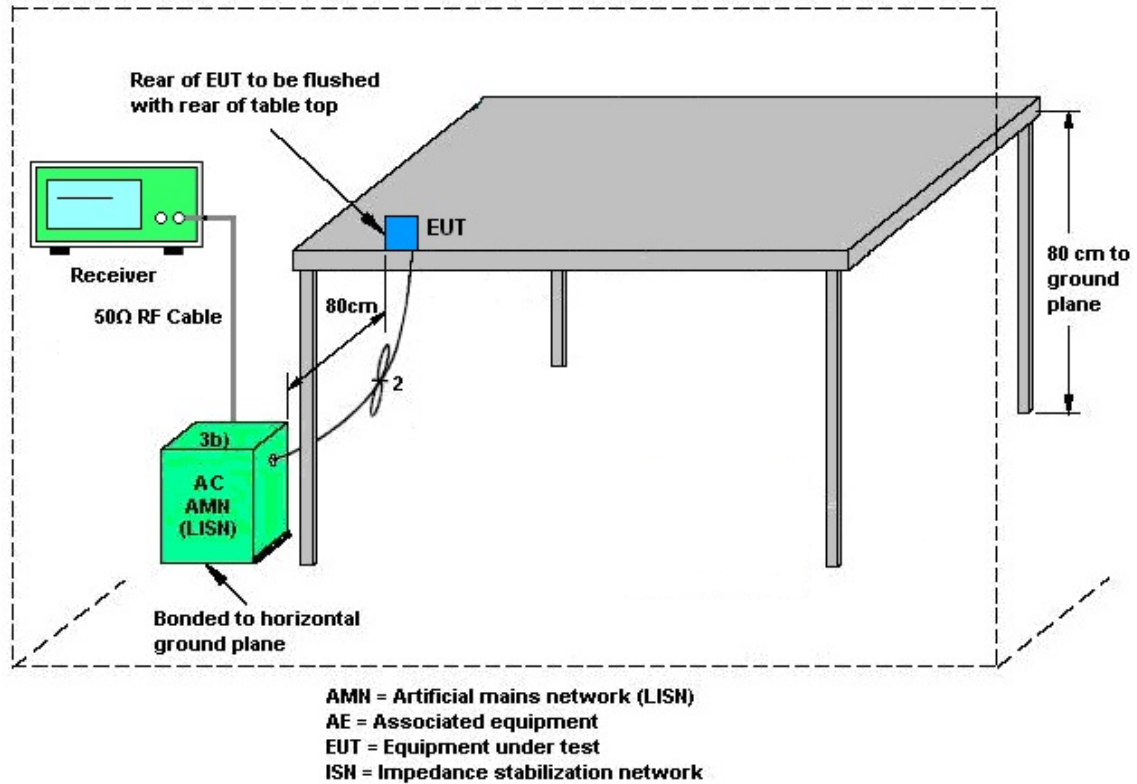
3.6.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.6.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

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 rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
LISN	TESEQ	NNB51	47407	N/A	May 10, 2022	Aug. 18, 2022~ Sep. 08, 2022	May 09, 2023	Conduction (CO01-CA)
LISN	TESEQ	NNB51	47415	N/A	May 10, 2022	Aug. 18, 2022~ Sep. 08, 2022	May 09, 2023	Conduction (CO01-CA)
EMI Test Receiver	R&S	ESR7	102177	9kHz~7GHz	May 31, 2022	Aug. 18, 2022~ Sep. 08, 2022	May 30, 2023	Conduction (CO01-CA)
Pulse limiter with 10dB attenuation	R&S	VTSD 9561-F N	9561-F- N00412	N/A	Jul. 05, 2022	Aug. 18, 2022~ Sep. 08, 2022	Jul. 04, 2023	Conduction (CO01-CA)
Test Software	R&S	EMC32 V10.30.0	N/A	N/A	N/A	Aug. 18, 2022~ Sep. 08, 2022	N/A	Conduction (CO01-CA)
Loop Antenna	R&S	HFH2-Z2E	100840	9kHz~30MHz	Jun. 29, 2023	Apr. 17, 2024~ Apr. 24, 2024	Jun. 28, 2024	Radiation (03CH02-CA)
Bilog Antenna	TESEQ	6111D	54683	30MHz~1GHz	Nov. 13, 2024	Apr. 17, 2024~ Apr. 24, 2024	Nov. 12, 2024	Radiation (03CH02-CA)
Horn Antenna	SCHWARZBECK	BBHA 9120D	02140	1GHz~18GHz	Jan. 29, 2024	Apr. 17, 2024~ Apr. 24, 2024	Jan. 28, 2025	Radiation (03CH02-CA)
Horn Antenna	SCHWARZBECK	BBHA9170	00841	18GHz~40GHz	Aug. 22 2023	Apr. 17, 2024~ Apr. 24, 2024	Aug. 21 2024	Radiation (03CH02-CA)
Amplifier	SONOMA	310N	372240	N/A	May 03, 2023	Apr. 17, 2024~ Apr. 24, 2024	May 02, 2024	Radiation (03CH02-CA)
Preamplifier	Keysight	83017A	MY53270323	1GHz~26.5GHz	May 04, 2023	Apr. 17, 2024~ Apr. 24, 2024	May 03, 2024	Radiation (03CH02-CA)
Preamplifier	E-instrument	ERA-100M-18G-56-01-A70	EC1900252	1GHz~18GHz	May 23, 2023	Apr. 17, 2024~ Apr. 24, 2024	May 22, 2024	Radiation (03CH02-CA)
Preamplifier	EMEC	EMC18G40G	060725	18GHz~40GHz	May 04, 2023	Apr. 17, 2024~ Apr. 24, 2024	May 03, 2024	Radiation (03CH02-CA)
Preamplifier	EMEC	EMC18G40G	060726	18GHz~40GHz	Apr. 04, 2024	Apr. 17, 2024~ Apr. 24, 2024	Apr. 03, 2025	Radiation (03CH02-CA)
RF Cable	HUBER+SUHNER	SUCOFLEX 102	804209/2, 802406/2, 802875/2, 802952/2	N/A	Oct. 13, 2023	Apr. 17, 2024~ Apr. 24, 2024	Oct. 12, 2024	Radiation (03CH02-CA)
High Pass Filter	WOKEN	WFIL-H8000-25000F-01	WR32BNW2B1	8G~25G	Jun. 05, 2023	Apr. 17, 2024~ Apr. 24, 2024	Jun. 04, 2024	Radiation (03CH02-CA)
Filter	Wainwright	WLK12-1200-1272-11000-40SS	SN2	1.2GHz Low Pass Filter	Jun. 05, 2023	Apr. 17, 2024~ Apr. 24, 2024	Jun. 04, 2024	Radiation (03CH02-CA)
Hygrometer	TESEO	608-H1	45142602	N/A	Aug. 30, 2023	Apr. 17, 2024~ Apr. 24, 2024	Aug. 29, 2024	Radiation (03CH02-CA)
Controller	ChainTek	EM-1000	060876	NA	N/A	Apr. 17, 2024~ Apr. 24, 2024	N/A	Radiation (03CH02-CA)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Apr. 17, 2024~ Apr. 24, 2024	N/A	Radiation (03CH02-CA)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Apr. 17, 2024~ Apr. 24, 2024	N/A	Radiation (03CH02-CA)
Software	Audix	E3	N/A	N/A	N/A	Apr. 17, 2024~ Apr. 24, 2024	N/A	Radiation (03CH02-CA)
Hygrometer	Testo	608-H1	45141354	N/A	Jul. 26, 2023	Apr. 18, 2024~ Apr. 22, 2024	Jul. 25, 2024	Conducted (TH01-CA)
Power Sensor	DARE!!	RPR3006W	RPR6W-2101003	10MHz-8GHz	May 04, 2023	Apr. 18, 2024~ Apr. 22, 2024	May 03, 2024	Conducted (TH01-CA)
Switch Box	EM Electronics	EMSW26	1090304	N/A	Oct. 09, 2023	Apr. 18, 2024~ Apr. 22, 2024	Oct. 08, 2024	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101545	10Hz-40GHz	May 03, 2023	Apr. 18, 2024~ Apr. 22, 2024	May 02, 2024	Conducted (TH01-CA)

5 Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.0 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.5 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Venkata Kondepudi	Temperature:	19.5~21.4	°C
Test Date:	2024/04/18~2024/04/22	Relative Humidity:	47.6~56.2	%

TEST RESULTS DATA
26dB and 99% OBW

UNII-5 MIMO antenna								
Mod.	Data Rate	NTX	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		Note
				Ant 4	Ant 2	Ant 4	Ant 2	
11a	6Mbps	2	5955	17.08	17.03	27.52	29.28	
11a	6Mbps	2	6175	16.68	16.63	21.12	20.96	
11a	6Mbps	2	6415	16.68	16.83	21.12	20.64	

TEST RESULTS DATA
EIRP Power Table

FCC UNII-5 MIMO antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
11a	6Mbps	2	5955	21.84	21.74		4.40		26.24	26.14	36.00	Pass
11a	6Mbps	2	6175	21.64	21.77		4.40		26.04	26.17	36.00	Pass
11a	6Mbps	2	6415	21.45	21.52		4.40		25.85	25.92	36.00	Pass
HT20	MCS0	2	5955	21.19	21.18		4.40		25.59	25.58	36.00	Pass
HT20	MCS0	2	6175	21.36	21.61		4.40		25.76	26.01	36.00	Pass
HT20	MCS0	2	6415	21.12	21.18		4.40		25.52	25.58	36.00	Pass
HT40	MCS0	2	5965	19.57	19.84		4.40		23.97	24.24	36.00	Pass
HT40	MCS0	2	6165	21.64	21.88		4.40		26.04	26.28	36.00	Pass
HT40	MCS0	2	6405	21.22	21.45		4.40		25.62	25.85	36.00	Pass
VHT20	MCS0	2	5955	21.23	21.16		4.40		25.63	25.56	36.00	Pass
VHT20	MCS0	2	6175	21.38	21.59		4.40		25.78	25.99	36.00	Pass
VHT20	MCS0	2	6415	21.07	21.18		4.40		25.47	25.58	36.00	Pass
VHT40	MCS0	2	5965	19.52	19.81		4.40		23.92	24.21	36.00	Pass
VHT40	MCS0	2	6165	21.64	21.90		4.40		26.04	26.30	36.00	Pass
VHT40	MCS0	2	6405	21.21	21.44		4.40		25.61	25.84	36.00	Pass
VHT80	MCS0	2	5985	19.36	20.41		4.40		23.76	24.81	36.00	Pass
VHT80	MCS0	2	6145	21.37	21.69		4.40		25.77	26.09	36.00	Pass
VHT80	MCS0	2	6385	21.12	21.30		4.40		25.52	25.70	36.00	Pass
VHT160	MCS0	2	6025	16.70	17.71	4.40		21.10	22.11	36.00	Pass	
VHT160	MCS0	2	6185	21.05	21.96	4.40		25.45	26.36	36.00	Pass	
VHT160	MCS0	2	6345	21.23	21.49	4.40		25.63	25.89	36.00	Pass	

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.
Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.
EIRP of each polarization must individually be below the limit

TEST RESULTS DATA
EIRP Power Spectral Density

FCC UNII-5 MIMO antenna														
Mod.	Data Rate	NTX	Freq. (MHz)	Duty Factor (dB)		Conducted Power Density with Duty Factor (dBm/MHz)			DG (dBi)		EIRP Power Density (dBm/MHz)		EIRP Power Density Limit (dBm/MHz)	Pass /Fail
				Ant 4	Ant 2	Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
11a	6Mbps	2	5955	0.13	0.13	10.10	9.98		4.40		14.50	14.38	23.00	Pass
11a	6Mbps	2	6175	0.13	0.13	9.57	9.81		4.40		13.97	14.21	23.00	Pass
11a	6Mbps	2	6415	0.13	0.13	9.12	9.32		4.40		13.52	13.72	23.00	Pass

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.

Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.

EIRP PSD of each polarization must individually be below the limit

TEST RESULTS DATA
26dB and 99% OBW

UNII-7 MIMO antenna								
Mod.	Data Rate	NTX	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		Note
				Ant 4	Ant 2	Ant 4	Ant 2	
11a	6Mbps	2	6535	16.68	16.58	20.96	20.80	
11a	6Mbps	2	6695	16.78	16.63	21.28	21.52	
11a	6Mbps	2	6855	16.73	16.63	21.20	20.96	

TEST RESULTS DATA
EIRP Power Table

FCC UNII-7 MIMO antenna												
Mod.	Data Rate	NTX	Freq. (MHz)	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
				Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
11a	6Mbps	2	6535	22.04	22.08		4.10		26.14	26.18	36.00	Pass
11a	6Mbps	2	6695	21.17	21.24		4.10		25.27	25.34	36.00	Pass
11a	6Mbps	2	6855	21.13	21.22		4.10		25.23	25.32	36.00	Pass
HT20	MCS0	2	6535	21.81	21.98		4.10		25.91	26.08	36.00	Pass
HT20	MCS0	2	6695	21.17	21.29		4.10		25.27	25.39	36.00	Pass
HT20	MCS0	2	6855	21.11	21.30		4.10		25.21	25.40	36.00	Pass
HT40	MCS0	2	6565	21.81	21.98		4.10		25.91	26.08	36.00	Pass
HT40	MCS0	2	6685	21.32	21.53		4.10		25.42	25.63	36.00	Pass
HT40	MCS0	2	6845	21.20	21.53		4.10		25.30	25.63	36.00	Pass
VHT20	MCS0	2	6535	21.86	21.93		4.10		25.96	26.03	36.00	Pass
VHT20	MCS0	2	6695	21.06	21.22		4.10		25.16	25.32	36.00	Pass
VHT20	MCS0	2	6855	21.05	21.30		4.10		25.15	25.40	36.00	Pass
VHT40	MCS0	2	6565	21.89	22.00		4.10		25.99	26.10	36.00	Pass
VHT40	MCS0	2	6685	21.20	21.48		4.10		25.30	25.58	36.00	Pass
VHT40	MCS0	2	6845	21.20	21.53		4.10		25.30	25.63	36.00	Pass
VHT80	MCS0	2	6625	21.40	21.54		4.10		25.50	25.64	36.00	Pass
VHT80	MCS0	2	6705	21.12	21.37		4.10		25.22	25.47	36.00	Pass
VHT80	MCS0	2	6785	21.20	21.42		4.10		25.30	25.52	36.00	Pass
VHT160	MCS0	2	6665	21.89	22.15		4.10		25.99	26.25	36.00	Pass

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.
Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.
EIRP of each polarization must individually be below the limit

TEST RESULTS DATA
EIRP Power Spectral Density

FCC UNII-7 MIMO antenna														
Mod.	Data Rate	NTx	Freq. (MHz)	Duty Factor (dB)		Conducted Power Density with Duty Factor (dBm/MHz)			DG (dBi)		EIRP Power Density (dBm/MHz)		EIRP Power Density Limit (dBm/MHz)	Pass /Fail
				Ant 4	Ant 2	Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
11a	6Mbps	2	6535	0.13	0.13	9.60	9.68		4.10		13.70	13.78	23.00	Pass
11a	6Mbps	2	6695	0.13	0.13	8.74	8.96		4.10		12.84	13.06	23.00	Pass
11a	6Mbps	2	6855	0.13	0.13	8.24	8.42		4.10		12.34	12.52	23.00	Pass

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.

Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.

EIRP PSD of each polarization must individually be below the limit

TEST RESULTS DATA
26dB and 99% OBW

UNII-5 MIMO antenna									
Mod.	Data Rate	NTx	Freq. (MHz)	RU Config	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		Note
					Ant 4	Ant 2	Ant 4	Ant 2	
HE20	MCS0	2	5955	Full	19.33	19.38	26.48	25.04	
HE20	MCS0	2	6175	Full	19.18	19.18	23.92	22.00	
HE20	MCS0	2	6415	Full	19.18	19.13	22.16	22.32	
HE40	MCS0	2	5965	Full	37.76	37.86	41.44	41.60	
HE40	MCS0	2	6165	Full	37.86	37.86	41.44	41.44	
HE40	MCS0	2	6405	Full	37.86	37.76	41.60	41.76	
HE80	MCS0	2	5985	Full	77.08	77.08	83.20	83.20	
HE80	MCS0	2	6145	Full	77.20	77.20	82.56	83.84	
HE80	MCS0	2	6385	Full	77.20	77.08	83.52	83.20	
HE160	MCS0	2	6025	Full	154.17	154.65	166.08	166.08	
HE160	MCS0	2	6185	Full	155.12	154.89	169.44	168.96	
HE160	MCS0	2	6345	Full	155.12	155.12	164.64	169.92	

TEST RESULTS DATA
EIRP Power Table

FCC UNII-5 MIMO antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
HE20	MCS0	2	5955	Full	21.59	21.56		4.40		25.99	25.96	36.00	Pass
HE20	MCS0	2	6175	Full	21.82	22.00		4.40		26.22	26.40	36.00	Pass
HE20	MCS0	2	6415	Full	21.51	21.74		4.40		25.91	26.14	36.00	Pass
HE40	MCS0	2	5965	Full	19.64	19.97		4.40		24.04	24.37	36.00	Pass
HE40	MCS0	2	6165	Full	21.73	21.93		4.40		26.13	26.33	36.00	Pass
HE40	MCS0	2	6405	Full	21.35	21.49		4.40		25.75	25.89	36.00	Pass
HE80	MCS0	2	5985	Full	19.72	20.76		4.40		24.12	25.16	36.00	Pass
HE80	MCS0	2	6145	Full	21.66	21.96		4.40		26.06	26.36	36.00	Pass
HE80	MCS0	2	6385	Full	21.38	21.58		4.40		25.78	25.98	36.00	Pass
HE160	MCS0	2	6025	Full	17.08	18.03		4.40		21.48	22.43	36.00	Pass
HE160	MCS0	2	6185	Full	21.36	22.21		4.40		25.76	26.61	36.00	Pass
HE160	MCS0	2	6345	Full	21.53	21.76		4.40		25.93	26.16	36.00	Pass

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.
Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.
EIRP of each polarization must individually be below the limit

TEST RESULTS DATA
EIRP Power Spectral Density

FCC UNII-5 MIMO antenna															
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Duty Factor (dB)		Conducted Power Density with Duty Factor (dBm/MHz)			DG (dBi)		EIRP Power Density (dBm/MHz)		EIRP Power Density Limit (dBm/MHz)	Pass /Fail
					Ant 4	Ant 2	Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
HE20	MCS0	2	5955	Full	0.34	0.32	9.37	9.07		4.40	13.77	13.47	23.00	Pass	
HE20	MCS0	2	6175	Full	0.34	0.32	9.38	9.54		4.40	13.78	13.94	23.00	Pass	
HE20	MCS0	2	6415	Full	0.34	0.32	9.16	8.99		4.40	13.56	13.39	23.00	Pass	
HE40	MCS0	2	5965	Full	0.29	0.31	4.29	4.73		4.40	8.69	9.13	23.00	Pass	
HE40	MCS0	2	6165	Full	0.29	0.31	6.26	6.70		4.40	10.66	11.10	23.00	Pass	
HE40	MCS0	2	6405	Full	0.29	0.31	5.54	5.95		4.40	9.94	10.35	23.00	Pass	
HE80	MCS0	2	5985	Full	0.32	0.34	1.41	2.36		4.40	5.81	6.76	23.00	Pass	
HE80	MCS0	2	6145	Full	0.32	0.34	3.08	3.52		4.40	7.48	7.92	23.00	Pass	
HE80	MCS0	2	6385	Full	0.32	0.34	2.69	3.05		4.40	7.09	7.45	23.00	Pass	
HE160	MCS0	2	6025	Full	0.35	0.32	-3.77	-3.37		4.40	0.63	1.03	23.00	Pass	
HE160	MCS0	2	6185	Full	0.35	0.32	0.19	0.94		4.40	4.59	5.34	23.00	Pass	
HE160	MCS0	2	6345	Full	0.35	0.32	0.17	0.28		4.40	4.57	4.68	23.00	Pass	

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.

Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.

EIRP PSD of each polarization must individually be below the limit

TEST RESULTS DATA
26dB and 99% OBW

UNII-7 MIMO antenna									
Mod.	Data Rate	NTx	Freq. (MHz)	RU Config	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		Note
					Ant 4	Ant 2	Ant 4	Ant 2	
HE20	MCS0	2	6535	Full	19.13	19.13	22.24	22.64	
HE20	MCS0	2	6695	Full	19.23	19.23	22.56	23.60	
HE20	MCS0	2	6855	Full	19.23	19.18	22.24	23.12	
HE40	MCS0	2	6565	Full	37.86	37.86	42.08	41.92	
HE40	MCS0	2	6685	Full	37.96	38.06	41.76	43.20	
HE40	MCS0	2	6845	Full	37.86	38.06	41.60	41.92	
HE80	MCS0	2	6625	Full	77.32	77.32	83.52	83.84	
HE80	MCS0	2	6705	Full	77.32	77.32	90.56	82.88	
HE80	MCS0	2	6785	Full	77.32	77.32	82.88	84.16	
HE160	MCS0	2	6665	Full	156.08	155.84	257.28	243.84	

TEST RESULTS DATA
EIRP Power Table

FCC UNII-7 MIMO antenna													
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)	Pass /Fail
					Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
HE20	MCS0	2	6535	Full	22.35	22.54		4.10	26.45	26.64	36.00	Pass	
HE20	MCS0	2	6695	Full	21.55	21.73		4.10	25.65	25.83	36.00	Pass	
HE20	MCS0	2	6855	Full	21.50	21.73		4.10	25.60	25.83	36.00	Pass	
HE40	MCS0	2	6565	Full	22.00	22.16		4.10	26.10	26.26	36.00	Pass	
HE40	MCS0	2	6685	Full	21.45	21.69		4.10	25.55	25.79	36.00	Pass	
HE40	MCS0	2	6845	Full	21.32	21.67		4.10	25.42	25.77	36.00	Pass	
HE80	MCS0	2	6625	Full	21.67	21.89		4.10	25.77	25.99	36.00	Pass	
HE80	MCS0	2	6705	Full	21.40	21.62		4.10	25.50	25.72	36.00	Pass	
HE80	MCS0	2	6785	Full	21.47	21.73		4.10	25.57	25.83	36.00	Pass	
HE160	MCS0	2	6665	Full	22.33	22.39		4.10	26.43	26.49	36.00	Pass	

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.

Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.

EIRP of each polarization must individually be below the limit

TEST RESULTS DATA
EIRP Power Spectral Density

FCC UNII-7 MIMO antenna															
Mod.	Data Rate	NTX	Freq. (MHz)	RU Config	Duty Factor (dB)		Conducted Power Density with Duty Factor (dBm/MHz)			DG (dBi)		EIRP Power Density (dBm/MHz)		EIRP Power Density Limit (dBm/MHz)	Pass /Fail
					Ant 4	Ant 2	Ant 4	Ant 2	SUM	Ant 4	Ant 2	Ant 4	Ant 2		
HE20	MCS0	2	6535	Full	0.32	0.34	9.76	9.89		4.10	13.86	13.99	23.00	Pass	
HE20	MCS0	2	6695	Full	0.32	0.34	9.09	9.15		4.10	13.19	13.25	23.00	Pass	
HE20	MCS0	2	6855	Full	0.32	0.34	8.51	8.89		4.10	12.61	12.99	23.00	Pass	
HE40	MCS0	2	6565	Full	0.29	0.31	6.37	6.59		4.10	10.47	10.69	23.00	Pass	
HE40	MCS0	2	6685	Full	0.29	0.31	6.00	6.29		4.10	10.10	10.39	23.00	Pass	
HE40	MCS0	2	6845	Full	0.29	0.31	5.33	5.87		4.10	9.43	9.97	23.00	Pass	
HE80	MCS0	2	6625	Full	0.32	0.34	3.16	3.43		4.10	7.26	7.53	23.00	Pass	
HE80	MCS0	2	6705	Full	0.32	0.34	3.05	3.22		4.10	7.15	7.32	23.00	Pass	
HE80	MCS0	2	6785	Full	0.32	0.34	2.50	2.78		4.10	6.60	6.88	23.00	Pass	
HE160	MCS0	2	6665	Full	0.35	0.32	0.76	0.96	4.10	4.86	5.06	23.00	Pass		

Note 1: The device has 2 antennas, each of which has one of two polarizations that are orthogonal to one another.
Each polarization has 1 antenna

Note 2: One of the polarization is a 90-degree phase-shifted replica of the other.
EIRP PSD of each polarization must individually be below the limit



Appendix B. AC Conducted Emission Test Results

Test Engineer :	Leo Liu	Temperature :	23~25°C
		Relative Humidity :	43~47%

EUT Information

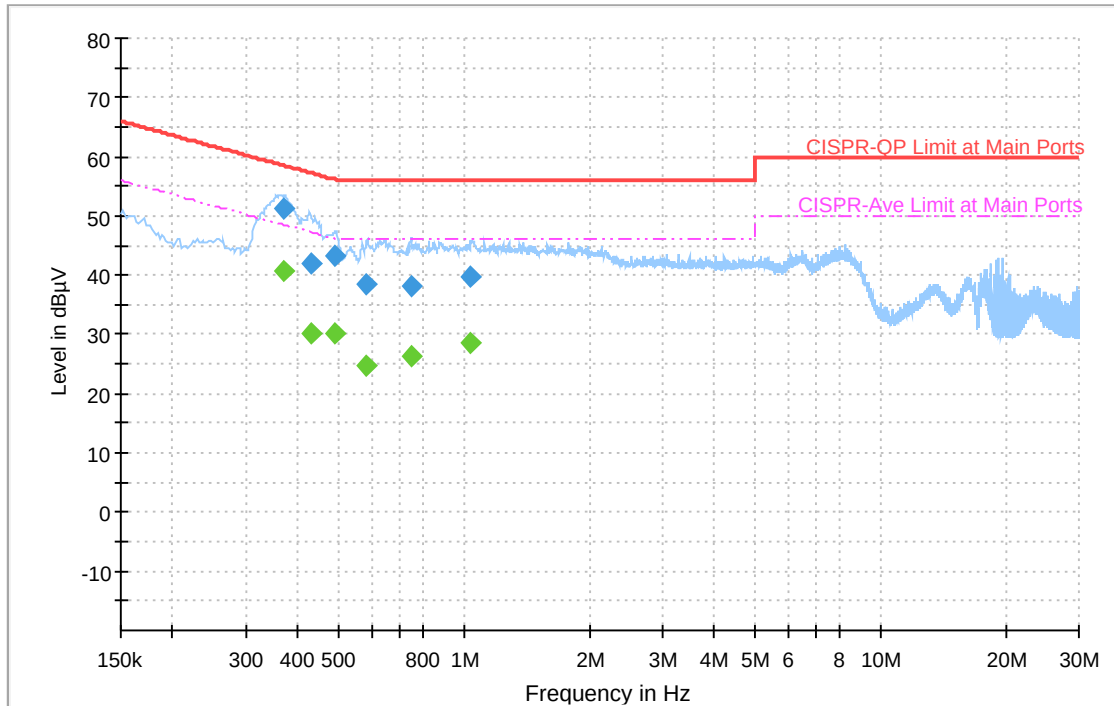
Test Site Location :

CO01-CA

Power:

120Vac/60Hz

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Line	Filter	Corr. (dB)
0.368304	---	40.77	48.54	7.77	L1	OFF	20.3
0.368304	51.38	---	58.54	7.16	L1	OFF	20.3
0.427695	---	30.25	47.30	17.05	L1	OFF	20.3
0.427695	41.95	---	57.30	15.35	L1	OFF	20.3
0.490119	---	30.20	46.17	15.97	L1	OFF	20.3
0.490119	43.10	---	56.17	13.07	L1	OFF	20.3
0.585510	---	24.66	46.00	21.34	L1	OFF	20.3
0.585510	38.60	---	56.00	17.40	L1	OFF	20.3
0.748446	---	26.40	46.00	19.60	L1	OFF	20.3
0.748446	38.05	---	56.00	17.95	L1	OFF	20.3
1.036410	---	28.64	46.00	17.36	L1	OFF	20.3
1.036410	39.67	---	56.00	16.33	L1	OFF	20.3

EUT Information

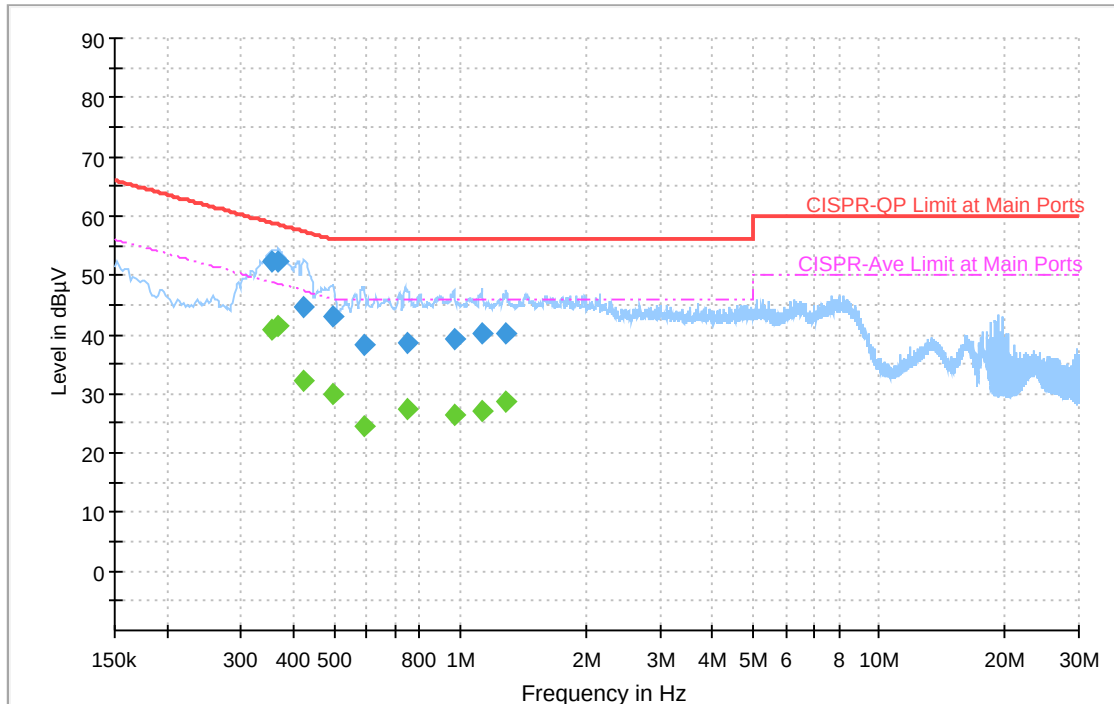
Test Site Location :

CO01-CA

Power:

120Vac/60Hz

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Line	Filter	Corr. (dB)
0.356649	---	40.65	48.81	8.16	N	OFF	20.3
0.356649	52.16	---	58.81	6.65	N	OFF	20.3
0.367656	---	41.45	48.55	7.10	N	OFF	20.3
0.367656	52.21	---	58.55	6.34	N	OFF	20.3
0.420990	---	32.23	47.43	15.20	N	OFF	20.3
0.420990	44.60	---	57.43	12.83	N	OFF	20.3
0.494367	---	29.79	46.09	16.30	N	OFF	20.3
0.494367	43.11	---	56.09	12.98	N	OFF	20.3
0.590352	---	24.49	46.00	21.51	N	OFF	20.3
0.590352	38.17	---	56.00	17.83	N	OFF	20.3
0.747285	---	27.26	46.00	18.74	N	OFF	20.3
0.747285	38.62	---	56.00	17.38	N	OFF	20.3
0.966102	---	26.41	46.00	19.59	N	OFF	20.3
0.966102	39.25	---	56.00	16.75	N	OFF	20.3
1.132575	---	27.11	46.00	18.89	N	OFF	20.3
1.132575	40.26	---	56.00	15.74	N	OFF	20.3
1.290435	---	28.72	46.00	17.28	N	OFF	20.3
1.290435	40.06	---	56.00	15.94	N	OFF	20.3



Appendix C. Radiated Spurious Emission

Test Engineer :	Minh Nguyen	Temperature :	20.1~23.6°C
		Relative Humidity :	39.6~53.2%

Band 5 - 5925~6425MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 01 5955MHz		5922.3	77.41	-10.79	88.2	63.2	32.53	11.92	30.24	301	96	P	H
		5924.4	67.72	-0.48	68.2	53.5	32.54	11.92	30.24	301	96	A	H
	*	5955	118.42	-	-	104.1	32.61	11.96	30.25	301	96	P	H
	*	5955	111.43	-	-	97.11	32.61	11.96	30.25	301	96	A	H
		7727	52.24	-1.76	54	33.79	36.22	13.63	31.4	301	96	A	H
													H
		5922.3	78.23	-9.97	88.2	63.99	32.56	11.92	30.24	298	345	P	V
		5922.16	66.96	-1.24	68.2	52.72	32.56	11.92	30.24	298	345	A	V
	*	5955	119.89	-	-	105.59	32.59	11.96	30.25	298	345	P	V
	*	5955	112.68	-	-	98.38	32.59	11.96	30.25	298	345	A	V
		7391	52.19	-1.81	54	33.52	36.48	13.35	31.16	298	345	A	V
													V
802.11a CH 45 6175MHz	*	6175	116.98	-	-	99.35	34.21	13.47	30.05	301	184	P	H
	*	6175	108.21	-	-	90.58	34.21	13.47	30.05	301	184	A	H
		7412	52.4	-1.6	54	30.89	36.52	14.72	29.73	301	184	A	H
													H
													H
													H
	*	6175	114.45	-	-	96.82	34.21	13.47	30.05	302	92	P	V
	*	6175	106.33	-	-	88.7	34.21	13.47	30.05	302	92	A	V
		7412	52.46	-1.54	54	30.95	36.52	14.72	29.73	302	92	A	V
													V
													V
													V



802.11a CH 93 6415MHz	*	6415	117.2	-	-	99.22	34.78	13.76	30.56	303	180	P	H
	*	6415	109.54	-	-	91.56	34.78	13.76	30.56	303	180	A	H
		7412	53.62	-0.38	54	32.11	36.52	14.72	29.73	303	180	A	H
													H
													H
													H
	*	6415	112.3	-	-	94.32	34.78	13.76	30.56	299	92	P	V
	*	6415	106.32	-	-	88.34	34.78	13.76	30.56	299	92	A	V
		7398	53.61	-0.39	54	32.05	36.57	14.71	29.72	299	92	A	V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 5 5925~6425MHz****WIFI 802.11a (Harmonic @ 3m)**

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 01 5955MHz		11910	46.4	-27.6	74	57.65	39.12	17.39	67.76	-	-	P	H
		17865	60.42	-13.58	74	62.16	45.82	21.85	69.41	-	-	P	H
		17865	49.49	-4.51	54	51.23	45.82	21.85	69.41	-	-	A	H
		17865	44.81	-9.19	54	48.97	42.33	23.2	69.69	395	170	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11910	47.78	-26.22	74	59.03	39.12	17.39	67.76	-	-	P	V
		17865	59.79	-14.21	74	61.18	46.17	21.85	69.41	-	-	P	V
		17865	50.08	-3.92	54	51.47	46.17	21.85	69.41	-	-	A	V
		17865	45.53	-8.47	54	49.69	42.33	23.2	69.69	391	185	A	V
													V
													V
													V
													V
													V
													V
													V
													V



WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 45 6175MHz		12350	46.85	-27.15	74	57.62	38.77	17.71	67.25	-	-	P	H
		18525	35.55	-38.45	74	37.67	37.71	12.58	52.41	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		12350	52.59	-21.41	74	63.36	38.77	17.71	67.25	278	44	P	V
		12350	44.05	-9.95	54	54.82	38.77	17.71	67.25	278	44	A	V
		18525	36.64	-37.36	74	38.76	37.71	12.58	52.41	-	-	P	V
													V
													V
													V
													V
													V
													V
													V

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11a CH 93 6415MHz		12830	48.16	-40.04	88.2	58.74	38.9	18.12	67.6	-	-	P	H
		19245	37.48	-36.52	74	39.58	37.65	12.87	52.62	-	-	P	H
		19245	41.88	-32.12	74	43.75	38	14.09	53.96	100	131	P	H
		19245	33.24	-20.76	54	35.11	38	14.09	53.96	100	131	A	H
													H
													H
													H
													H
													H
													H
													H
													H
		12830	52.2	-36	88.2	62.76	38.92	18.12	67.6	-	-	P	V
		19245	39.26	-34.74	74	41.33	37.68	12.87	52.62	-	-	P	V
		19245	36.89	-37.11	74	38.75	38.01	14.09	53.96	100	207	P	V
		19245	28.66	-25.34	54	30.52	38.01	14.09	53.96	100	207	A	V
													V
													V
													V
													V
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



Band 5 5925~6425MHz

WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 01 5955MHz		5924.54	76.01	-12.19	88.2	61.79	32.54	11.92	30.24	303	94	P	H
		5923.84	67.27	-0.93	68.2	53.05	32.54	11.92	30.24	303	94	A	H
	*	5955	120.45	-	-	106.13	32.61	11.96	30.25	303	94	P	H
	*	5955	111.02	-	-	96.7	32.61	11.96	30.25	303	94	A	H
		7398	52.9	-1.1	54	34.28	36.43	13.36	31.17	303	94	A	H
													H
		5923.98	80.66	-7.54	88.2	66.42	32.56	11.92	30.24	297	347	P	V
		5922.02	67.2	-1	68.2	52.96	32.56	11.92	30.24	297	347	A	V
	*	5955	120.62	-	-	106.32	32.59	11.96	30.25	297	347	P	V
	*	5955	111.58	-	-	97.28	32.59	11.96	30.25	297	347	A	V
		7391	52.85	-1.15	54	34.18	36.48	13.35	31.16	207	228	P	V
													V
802.11ax HE20 Full CH 45 6175MHz	*	6175	118.46	-	-	100.83	34.21	13.47	30.05	400	182	P	H
	*	6175	110.4	-	-	92.77	34.21	13.47	30.05	400	182	A	H
		7384	53.28	-0.72	54	31.74	36.59	14.69	29.74	400	182	A	H
													H
													H
													H
	*	6175	120.03	-	-	102.4	34.21	13.47	30.05	298	58	P	V
	*	6175	110.53	-	-	92.9	34.21	13.47	30.05	298	58	A	V
		7398	53.56	-0.44	54	32	36.57	14.71	29.72	298	58	A	V
													V
													V
													V



802.11ax HE20 Full CH 93 6415MHz	*	6415	118.99	-	-	101.01	34.78	13.76	30.56	395	150	P	H
	*	6415	110.22	-	-	92.24	34.78	13.76	30.56	395	150	A	H
		7419	53.53	-0.47	54	32.05	36.49	14.73	29.74	395	150	A	H
													H
													H
													H
	*	6415	118.26	-	-	100.28	34.78	13.76	30.56	298	60	P	V
	*	6415	110.91	-	-	92.93	34.78	13.76	30.56	298	60	A	V
		7398	53.58	-0.42	54	32.02	36.57	14.71	29.72	298	60	A	V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

**Band 5 5925~6425MHz****WIFI 802.11ax HE20 Full (Harmonic @ 3m)**

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 01 5955MHz		11910	46.56	-27.44	74	55.41	38.91	18.97	66.73	-	-	P	H
		17865	53.52	-20.48	74	57.1	42.4	23.71	69.69	400	277	P	H
		17865	43.97	-10.03	54	47.55	42.4	23.71	69.69	400	277	A	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		11910	47.86	-26.14	74	56.71	38.91	18.97	66.73	-	-	P	V
		17865	53.54	-20.46	74	57.12	42.4	23.71	69.69	202	106	P	V
		17865	43.44	-10.56	54	47.02	42.4	23.71	69.69	202	106	A	V
													V
													V
													V
													V
													V
													V



WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 45 6175MHz		12350	47.24	-26.76	74	55.54	39.03	19.33	66.66	-	-	P	H
		18528.66	36.31	-37.69	74	37.36	38.07	14.39	53.51	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		12350	47.9	-26.1	74	56.2	39.03	19.33	66.66	-	-	P	V
		18520.65	39.86	-34.14	74	40.77	38.2	14.39	53.5	-	-	P	V
													V
													V
													V
													V
													V
													V
													V



WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE20 Full CH 93 6415MHz		12830	47.23	-40.97	88.2	54.73	39.69	19.75	66.94	-	-	P	H
		19245	37.58	-36.42	74	38.55	37.99	14.74	53.7	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		12830	47.58	-40.62	88.2	55.08	39.69	19.75	66.94	-	-	P	V
		19245	38.31	-35.69	74	39.23	38.04	14.74	53.7	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



Band 5 5925~6425MHz

WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 03 5965MHz		5921.64	76.41	-11.79	88.2	62.2	32.53	11.92	30.24	302	93	P	H
		5924.7	65.68	-2.52	68.2	51.46	32.54	11.92	30.24	302	93	A	H
	*	5965	116.8	-	-	102.46	32.62	11.97	30.25	302	93	P	H
	*	5965	106.31	-	-	91.97	32.62	11.97	30.25	302	93	A	H
		7377	51.77	-2.23	54	33.2	36.39	13.34	31.16	302	93	A	H
													H
		5924.88	75.02	-13.18	88.2	60.78	32.56	11.92	30.24	299	347	P	V
		5922.72	62.81	-5.39	68.2	48.57	32.56	11.92	30.24	299	347	A	V
	*	5965	116.28	-	-	101.97	32.59	11.97	30.25	299	347	P	V
	*	5965	106.87	-	-	92.56	32.59	11.97	30.25	299	347	A	V
		7384	51.73	-2.27	54	33.06	36.49	13.34	31.16	299	347	A	V
													V
802.11ax HE40 Full CH 43 6165MHz		5896.8	56.97	-31.23	88.2	39.38	34.17	13.14	29.72	400	164	P	H
		5924.88	47.51	-20.69	68.2	29.89	34.19	13.17	29.74	400	164	A	H
	*	6165	116.32	-	-	98.69	34.2	13.46	30.03	400	164	P	H
	*	6165	105.7	-	-	88.07	34.2	13.46	30.03	400	164	A	H
		7426	51.98	-2.02	54	30.54	36.46	14.73	29.75	400	164	A	H
													H
		5836.32	57.75	-30.45	88.2	40.32	34.04	13.08	29.69	299	59	P	V
		5923.44	47.46	-20.74	68.2	29.84	34.19	13.17	29.74	299	59	A	V
	*	6165	115.01	-	-	97.38	34.2	13.46	30.03	299	59	P	V
	*	6165	106.13	-	-	88.5	34.2	13.46	30.03	299	59	A	V
		7433	52.02	-1.98	54	30.59	36.44	14.74	29.75	299	59	A	V
													V



802.11ax HE40 Full CH 91 6405MHz	*	6405	115	-	-	97.06	34.74	13.75	30.55	400	150	P	H
	*	6405	106.3	-	-	88.36	34.74	13.75	30.55	400	150	A	H
		7398	52.08	-1.92	54	30.52	36.57	14.71	29.72	400	150	A	H
													H
													H
													H
	*	6405	116.68	-	-	98.74	34.74	13.75	30.55	299	57	P	V
	*	6405	107.04	-	-	89.1	34.74	13.75	30.55	299	57	A	V
		7706	51.98	-2.02	54	30.54	36.47	14.98	30.01	299	57	A	V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Band 5 5925~6425MHz

WIFI 802.11ax HE40 Full (Harmonic @ 3m)

[illegible]



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[illegible]

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 91 6405MHz		12810	47.71	-40.49	88.2	55.16	39.67	19.73	66.85	-	-	P	H
		19215	36.84	-37.16	74	37.76	38.02	14.73	53.67	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												



Band 5 5925~6425MHz

WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI Ant. 4+2	Note	Frequency (MHz)	Level (dBμV/m)	Margin (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 07 5985MHz		5924.04	75.49	-12.71	88.2	61.27	32.54	11.92	30.24	250	104	P	H
		5925	66.02	-2.18	68.2	51.8	32.54	11.92	30.24	250	104	A	H
	*	5985	112.97	-	-	98.6	32.63	12	30.26	250	104	P	H
	*	5985	103.38	-	-	89.01	32.63	12	30.26	250	104	A	H
		7398	52.97	-1.03	54	34.35	36.43	13.36	31.17	250	104	A	H
													H
		5919.56	73.47	-14.73	88.2	59.24	32.55	11.92	30.24	283	347	P	V
		5922.12	65.08	-3.12	68.2	50.84	32.56	11.92	30.24	283	347	A	V
	*	5985	114.21	-	-	99.89	32.58	12	30.26	283	347	P	V
	*	5985	103.99	-	-	89.67	32.58	12	30.26	283	347	A	V
		7412	53	-1	54	34.33	36.48	13.37	31.18	283	347	A	V
													V
802.11ax HE80 Full CH 39 6145MHz	*	6145	112.22	-	-	94.61	34.17	13.43	29.99	400	109	P	H
	*	6145	103	-	-	85.39	34.17	13.43	29.99	400	109	A	H
		7405	52.06	-1.94	54	30.52	36.55	14.71	29.72	400	109	A	H
													H
													H
													H
	*	6145	112.11	-	-	94.5	34.17	13.43	29.99	300	326	P	V
	*	6145	103.07	-	-	85.46	34.17	13.43	29.99	300	326	A	V
		7426	52.07	-1.93	54	30.63	36.46	14.73	29.75	300	326	A	V
													V
													V
													V



802.11ax HE80 Full CH 87 6385MHz		6383	111.7	23.5	88.2	93.83	34.66	13.73	30.52	400	83	P	H
		6383	102.72	34.52	68.2	84.85	34.66	13.73	30.52	400	83	A	H
		7391	52.08	-1.92	54	30.53	36.58	14.7	29.73	400	83	A	H
													H
													H
													H
		6369	113.74	25.54	88.2	95.92	34.62	13.71	30.51	300	322	P	V
		6390	103.48	35.28	68.2	85.58	34.69	13.74	30.53	300	322	A	V
		7433	52.08	-1.92	54	30.65	36.44	14.74	29.75	300	322	A	V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												