




FCC RADIO TEST REPORT

FCC ID : U8G-P1AX13
Equipment : Peplink Pepwave Wireless Product
Brand Name : 
Model Name : **PEPWAVE**
 MAX HD1 Dome Pro
 MAX-HD1-DOM-PRO-5GH
 MAX HD2 Dome Pro
 MAX-HD2-DOM-PRO-LTEA-Q
Applicant : **PISMO LABS TECHNOLOGY LIMITED**
 A8, 5/F, HK Spinners Industrial Building, Phase 6,
 481 Castle Peak Road, Cheung Sha Wan, Hong Kong
Manufacturer : **PISMO LABS TECHNOLOGY LIMITED**
 A8, 5/F, HK Spinners Industrial Building, Phase 6,
 481 Castle Peak Road, Cheung Sha Wan, Hong Kong
Standard : **FCC Part 15 Subpart E §15.407**

The product was received on Jul. 05, 2022 and testing was performed from Jul. 11, 2022 to Apr. 11, 2023. We, Sporton International Inc. Wensan Laboratory, 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 Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FR261637B	01	Initial issue of report	May 09, 2023



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	1.18 dB under the limit at 53.490 MHz
3.5	15.207	AC Conducted Emission	Pass	7.72 dB under the limit at 23.129 MHz
3.6	15.203	Antenna Requirement	Pass	-

Conformity Assessment Condition:

1. 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/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

1. 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.
2. The purpose of different model name is for marketing purpose.

Reviewed by: Lewis Ho

Report Producer: Lucy Wu



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature		
<p>General Specs LTE/5G NR, Wi-Fi 2.4GHz 802.11b/g/n/ac/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, and GPS</p> <p>Antenna Type WWAN: Omni-directional Antenna WLAN: Omni-directional Antenna GPS: Directional Antenna</p> <p>Sample information Sample 1: MAX HD1 Dome Pro and MAX-HD1-DOM-PRO-5GH with WWAN Module 1 (EM9191) Sample 2: MAX HD2 Dome Pro and MAX-HD2-DOM-PRO-LTEA-Q with WWAN Module 2 (LN920A12-WW)</p>		
Integrated WWAN Module 1	<p>Brand Name: Sierra Model Name: EM9191 FCC ID: N7NEM91</p>	
Integrated WWAN Module 2	<p>Brand Name: Telit Model Name: LN920A12-WW FCC ID: RI7LN920</p>	
Antenna information		
5150 MHz ~ 5250 MHz	Peak Gain (dBi)	Ant. 5: 5.9 Ant. 6: 4.9

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.1.1 Antenna Directional Gain

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F2)f)ii)

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows:

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$.

G_{ANT} is set equal to the gain of the antenna having the highest gain.

For PSD measurements, the directional gain calculation.

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k / 20}$ if the k th antenna is being fed by spatial stream j , or zero if it is not;
 G_k is the gain in dBi of the k th antenna.

As minimum $N_{SS}=1$ is supported by EUT, the formula can be simplified as:

$$Directional\ gain = 10 \cdot \log \left[\left(10^{G_1 / 20} + 10^{G_2 / 20} + \dots + 10^{G_N / 20} \right)^2 / N_{ANT} \right] \text{ dBi}$$

Where G_1, G_2, \dots, G_N denote single antenna gain.

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

			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant 5	Ant 6	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band I	5.90	4.90	5.90	8.42	0.00	2.42

Calculation example:

If a device has two antenna, $G_{ANT1} = 5.9\text{dBi}$; $G_{ANT2} = 4.9\text{dBi}$

Directional gain of power measurement = $\max(5.9, 4.9) + 0 = 5.9 \text{ dBi}$

Directional gain of PSD derived from formula which is

$$10 \times \log \left\{ \left[10^{(5.90 \text{ dBi} / 20)} + 10^{(4.90 \text{ dBi} / 20)} \right]^2 / 2 \right\}$$

= 8.42 dBi

Power and PSD limit reduction = Composite gain – 6dBi, (min = 0)



1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY (TAF Code: 1190)
Remark	The AC Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

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

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH16-HY

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

FCC designation No.: TW1190 and TW3786

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 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



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).

- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1 (U-NII-1)	36	5180	44	5220
	38*	5190	46*	5230
	40	5200	48	5240
	42#	5210		

Note:

- 1. The above Frequency and Channel with "*" are 802.11n HT40 and 802.11ac VHT40 and 802.11ax HE40.
- 2. The above Frequency and Channel with "#" are 802.11ac VHT80 and 802.11ax HE80.



2.2 Test Mode

The SISO mode conducted power is covered by MIMO mode per chain, so only the MIMO mode is tested.

The power for 802.11n and 802.11ac mode is smaller than 802.11ax mode, so all other conducted and radiated test is covered by 802.11ax 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
802.11ax HE20	MCS0
802.11ax HE40	MCS0
802.11ax HE80	MCS0

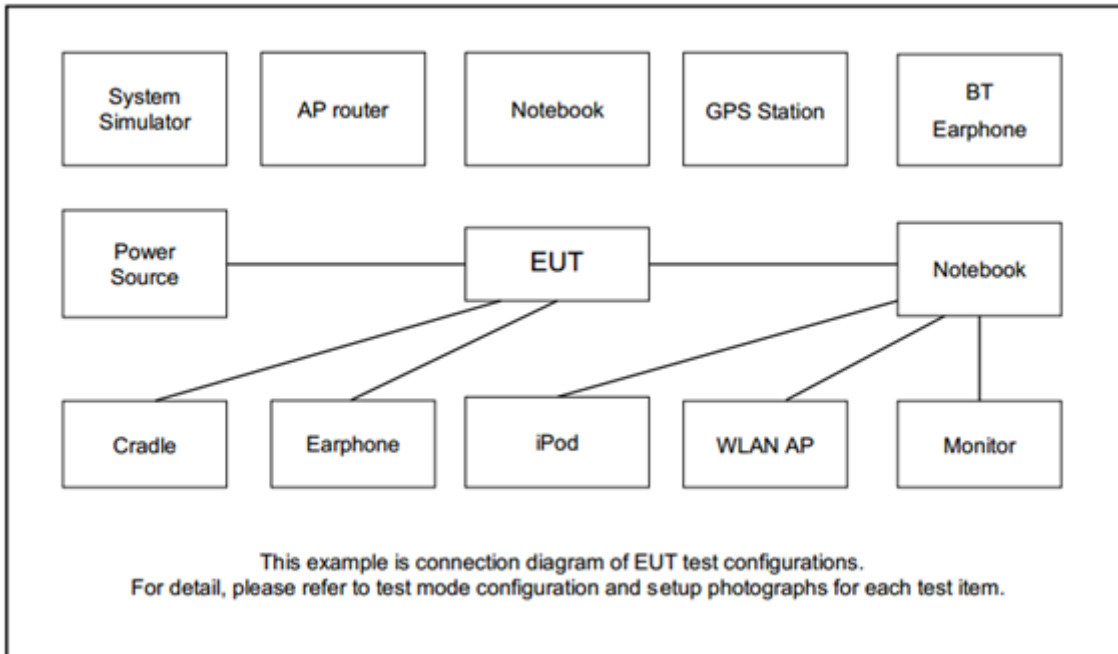
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + PoE Box + PoE Adapter for Sample 1 Mode 2 : WLAN (5GHz) Link + PoE Box + PoE Adapter for Sample 2
Remark:	
<ol style="list-style-type: none"> The worst case of Conducted Emission is mode 1; only the test data of it was reported. For Radiated Test Cases, the tests were performed with Sample 1 	

Ch. #		Band I : 5150-5250 MHz	Band I : 5150-5250 MHz
		802.11a	802.11ax HE20
L	Low	36	36
M	Middle	44	44
H	High	48	48

Ch. #		Band I : 5150-5250 MHz	Band I : 5150-5250 MHz
		802.11ax HE40	802.11ax HE80
L	Low	38	-
M	Middle	-	42
H	High	46	-

Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

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.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
2.	Device	PEPWAVE	MAX BR1 Mini R6	N/A	N/A	N/A
3.	POE Adapter	Billion	BP035-560054QAX	FCC DoC	N/A	N/A

2.5 EUT Operation Test Setup

The RF test items, utility “QSPR Version 5.0-00197” 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 10 dB 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 Description of 26dB & 99% Occupied Bandwidth

This section is for reporting purpose only.

There is no restriction limits for bandwidth.

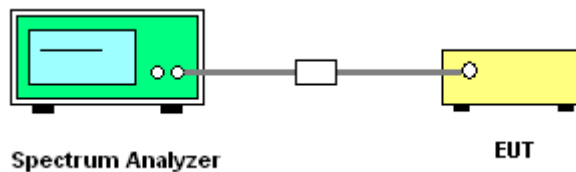
3.1.2 Measuring Instruments

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

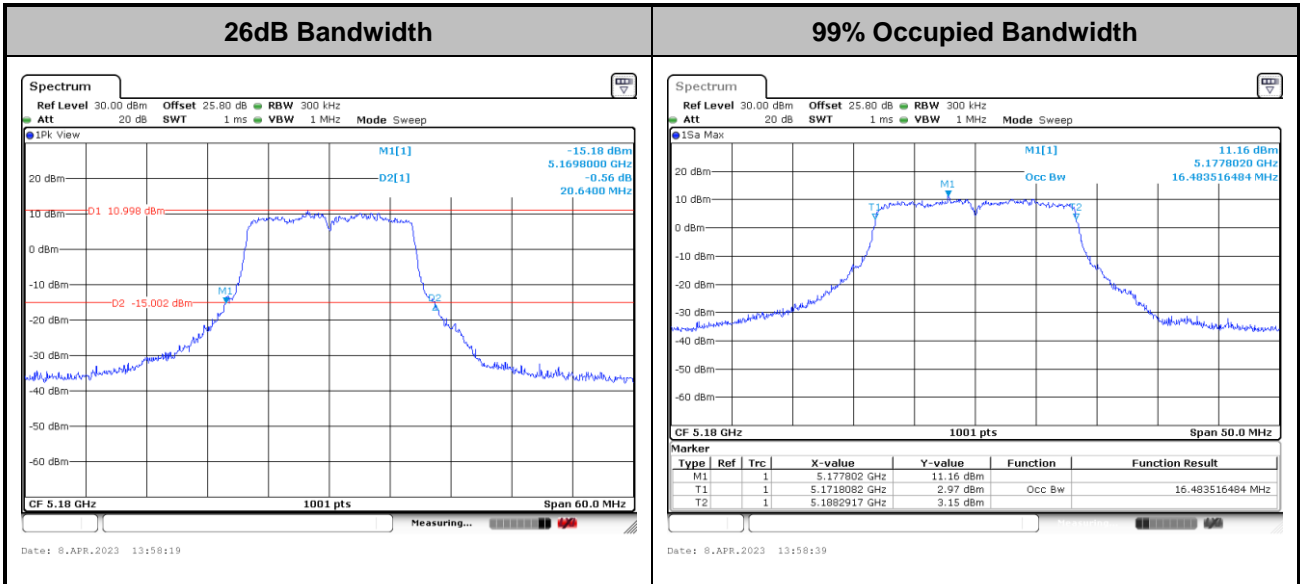
Please refer to Appendix A.



MIMO <Ant. 5+6>

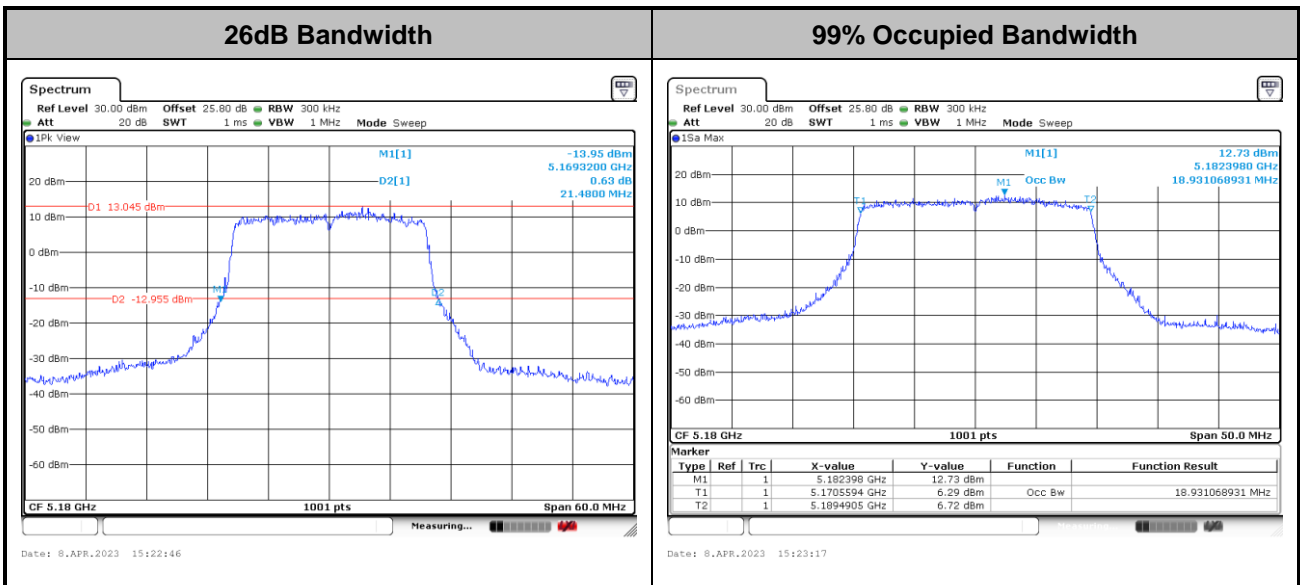
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<802.11a>



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

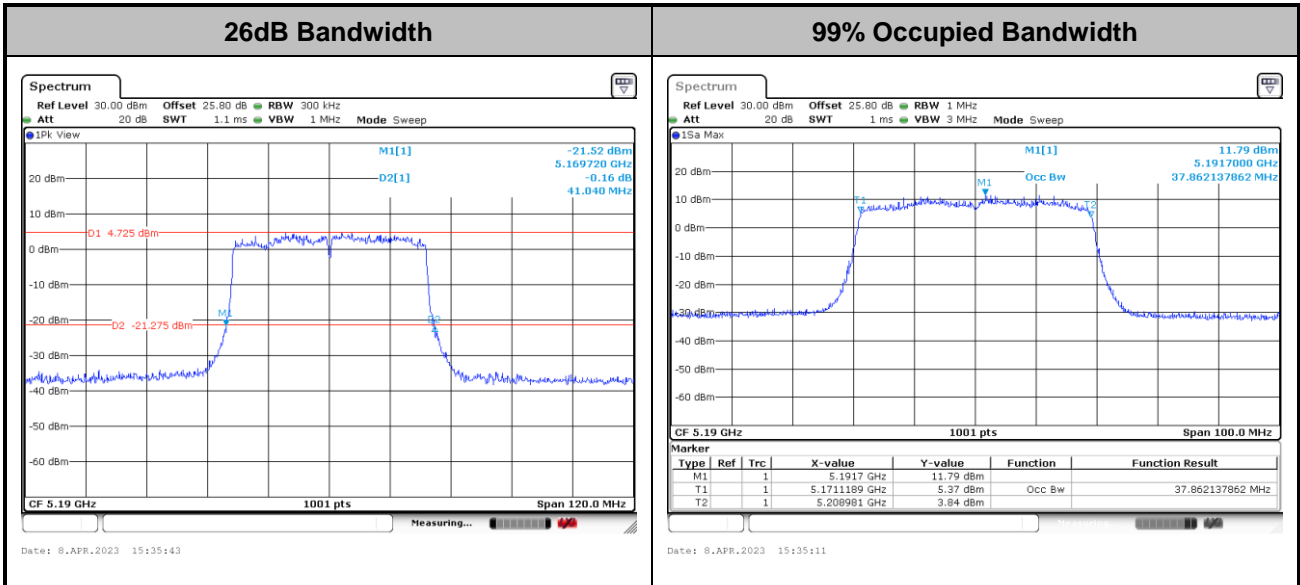
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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

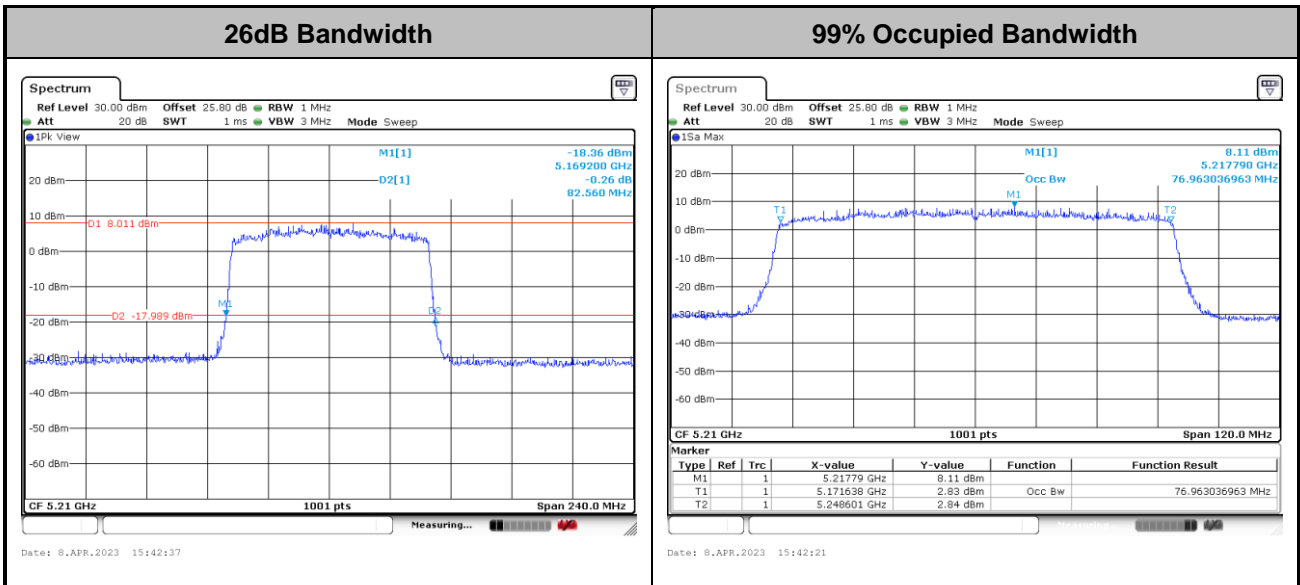


<802.11ax HE40>



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

<802.11ax HE80>

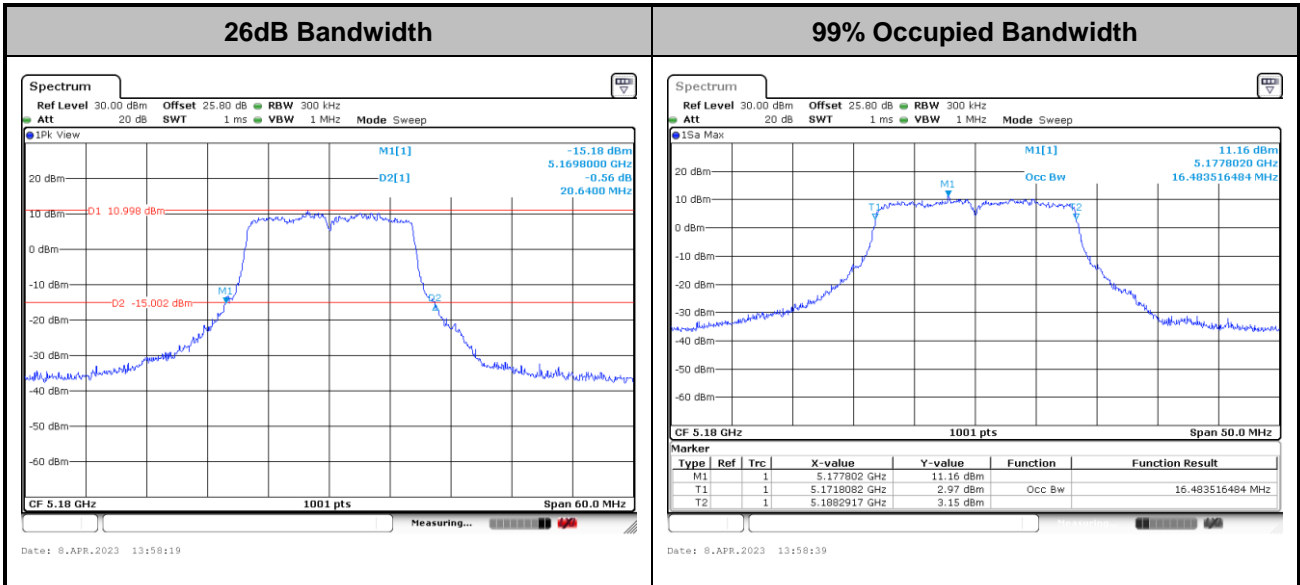


Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



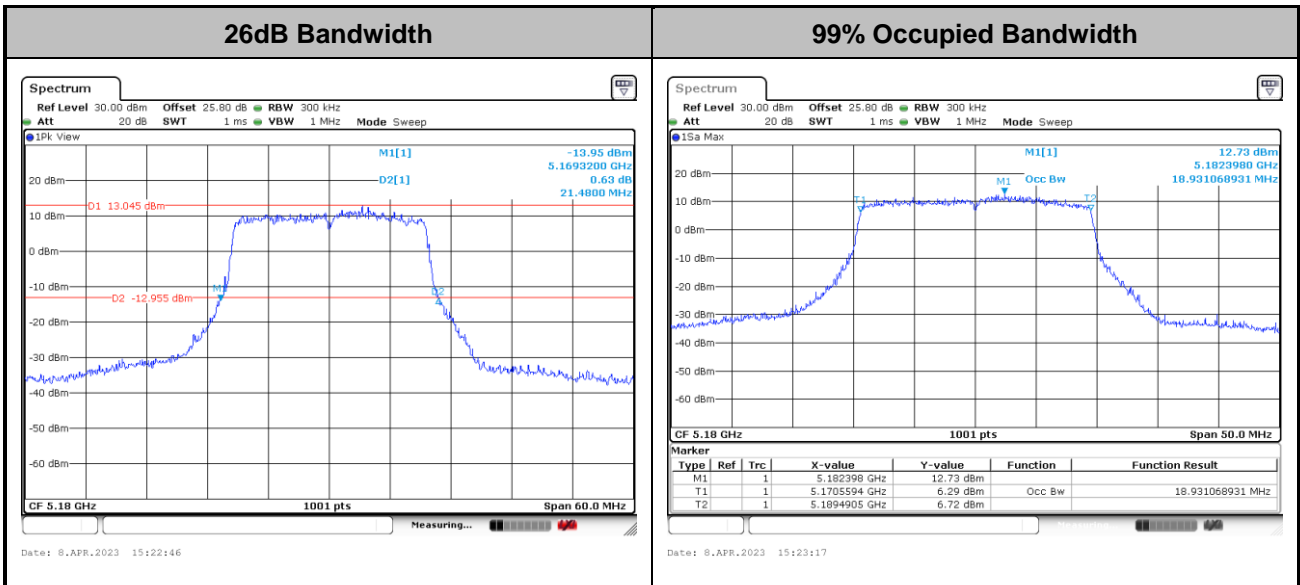
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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

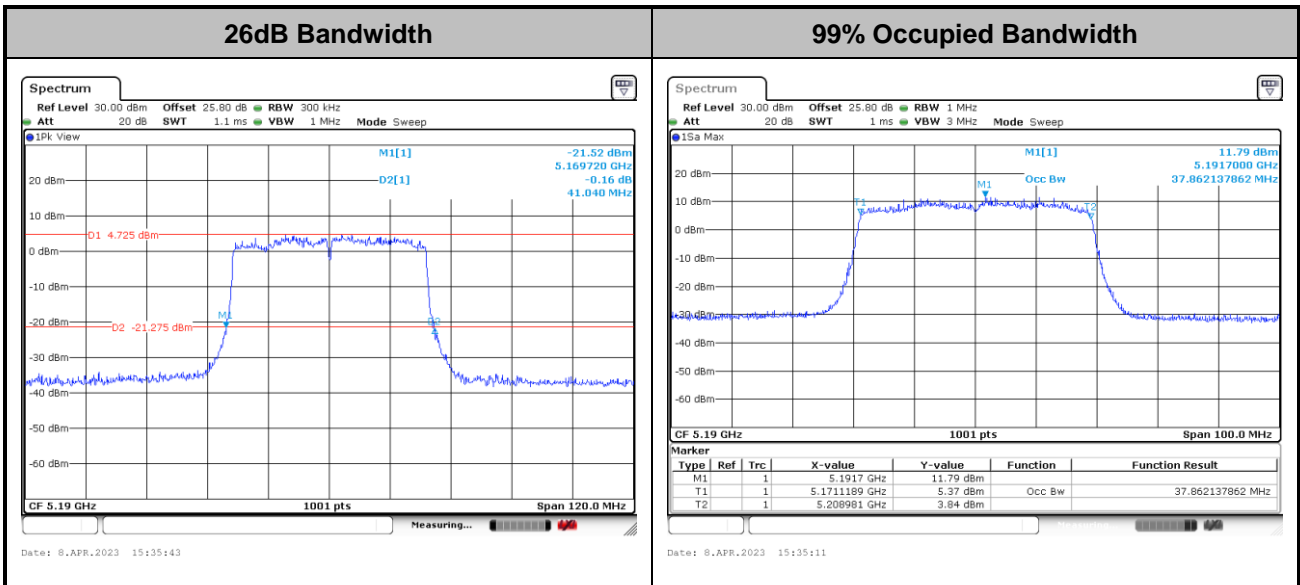
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Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

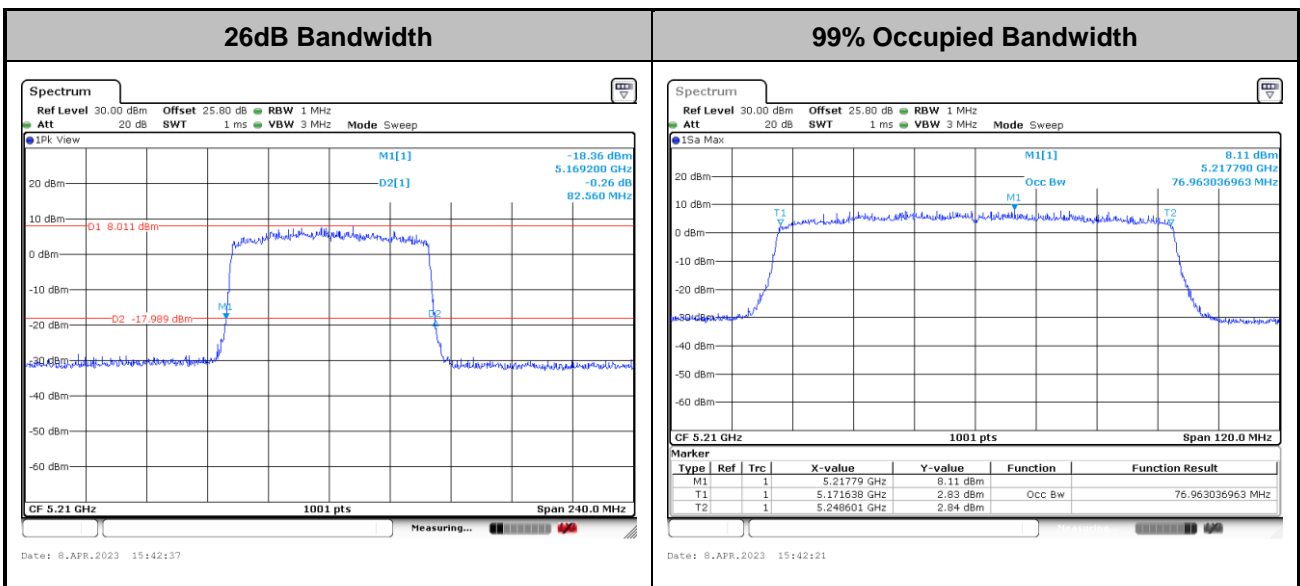


<802.11ax HE40>



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

<802.11ax HE80>



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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

For the 5.15–5.25 GHz bands:

■ For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

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

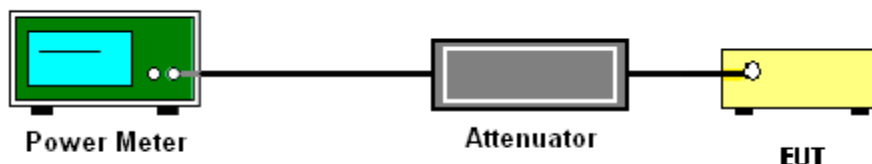
3.2.3 Test Procedures

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 Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

<FCC 14-30 CFR 15.407>

For the 5.15–5.25 GHz bands:

For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1.0 MHz band. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1.0 MHz band.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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-3

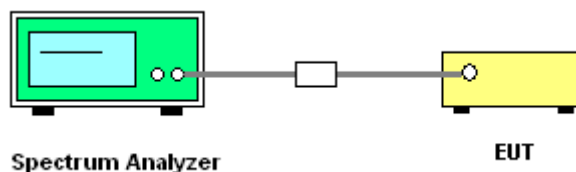
(power averaging (rms) detection with max hold):

- 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 \leq (number of points in sweep) \times 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.
Detector = power averaging (rms).
 - Trace mode = max hold.
 - Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
1. The RF output of EUT is 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. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Method (a): Measure and sum the spectra across the outputs.

The total final Power Spectral Density is from a device with 2 transmitter outputs. The spectrum measurements of the individual outputs are all performed with the same span and number of points; the spectrum value in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 to obtain the value for the first frequency bin of the summed spectrum.

3.3.4 Test Setup



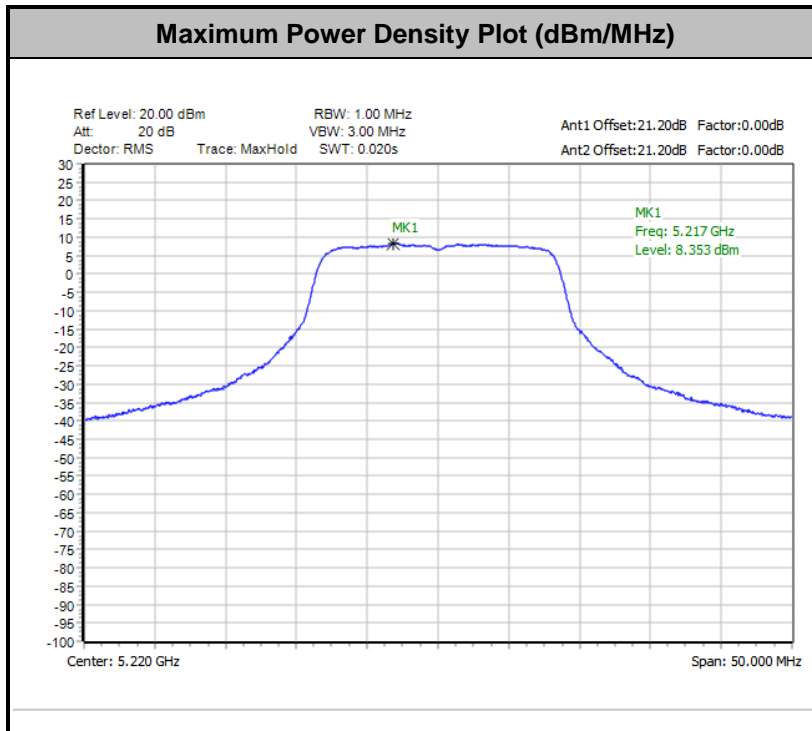
3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

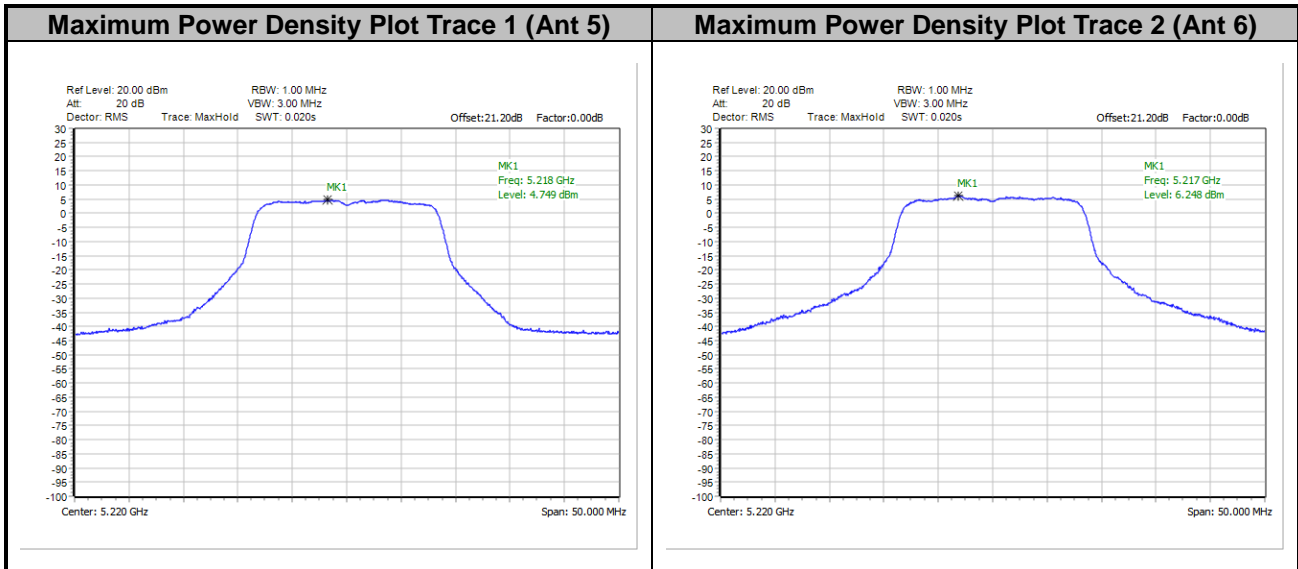


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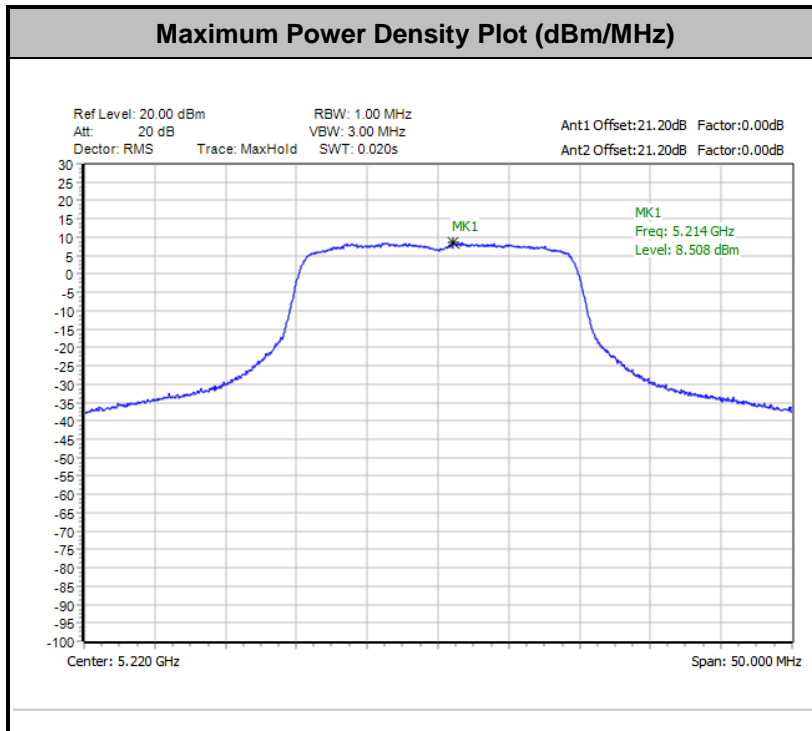


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

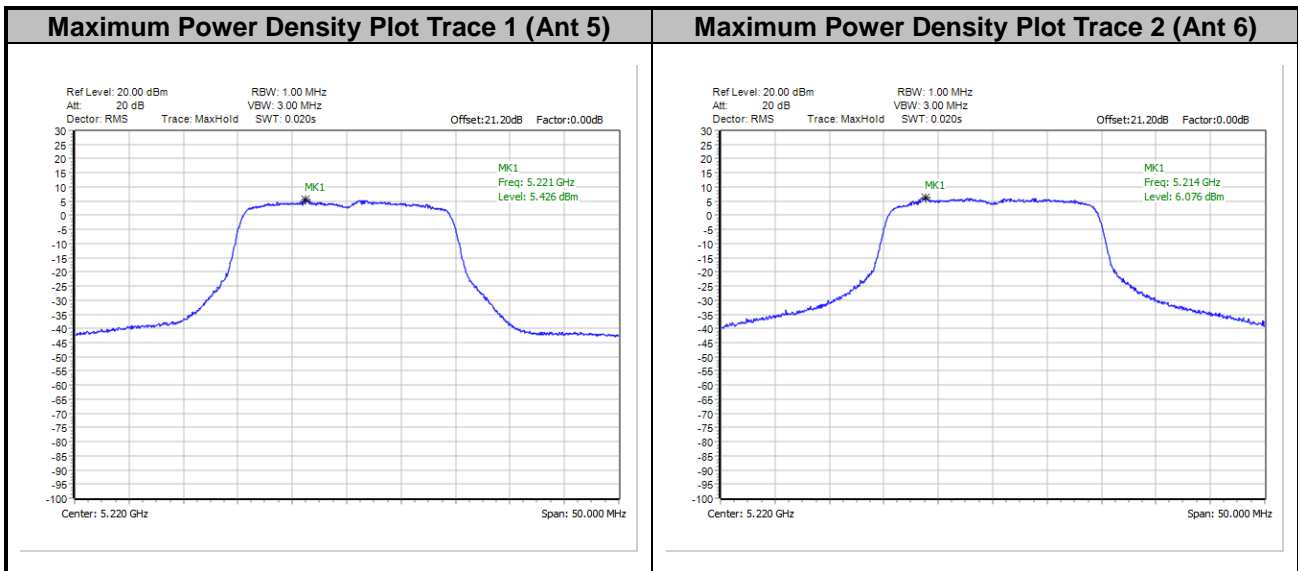




<802.11ax HE20>

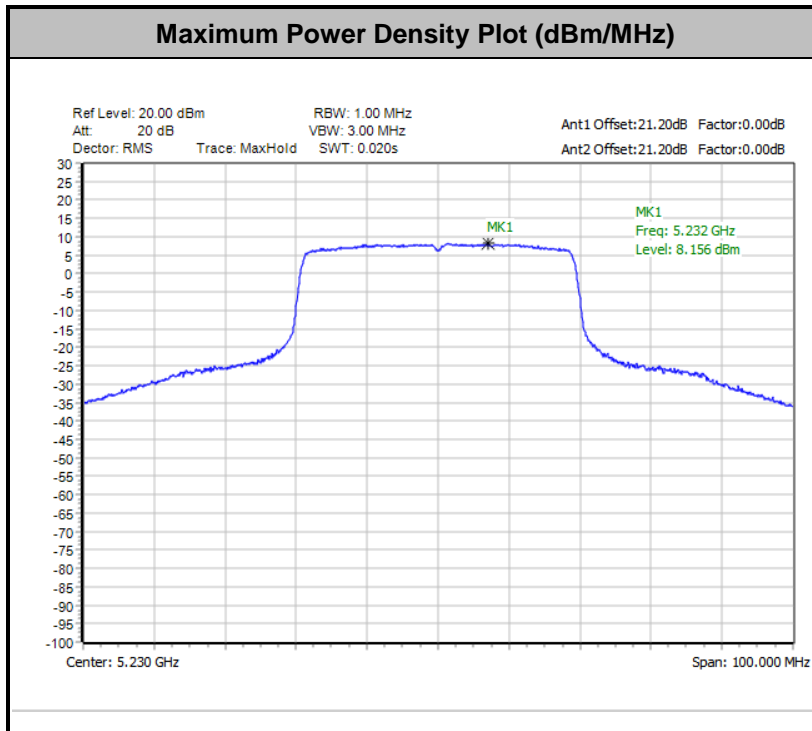


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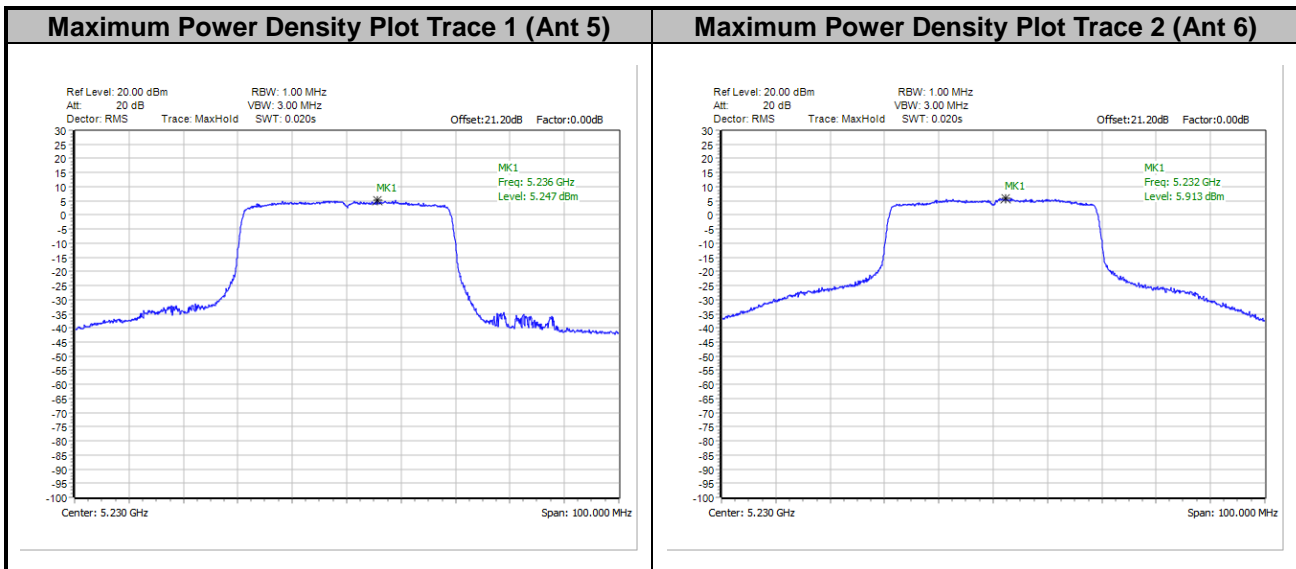




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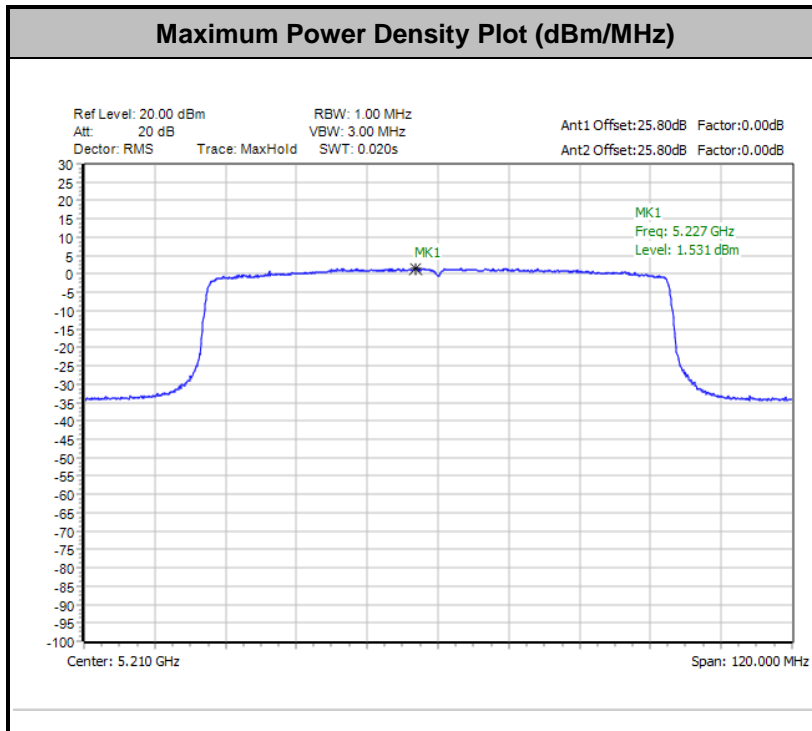


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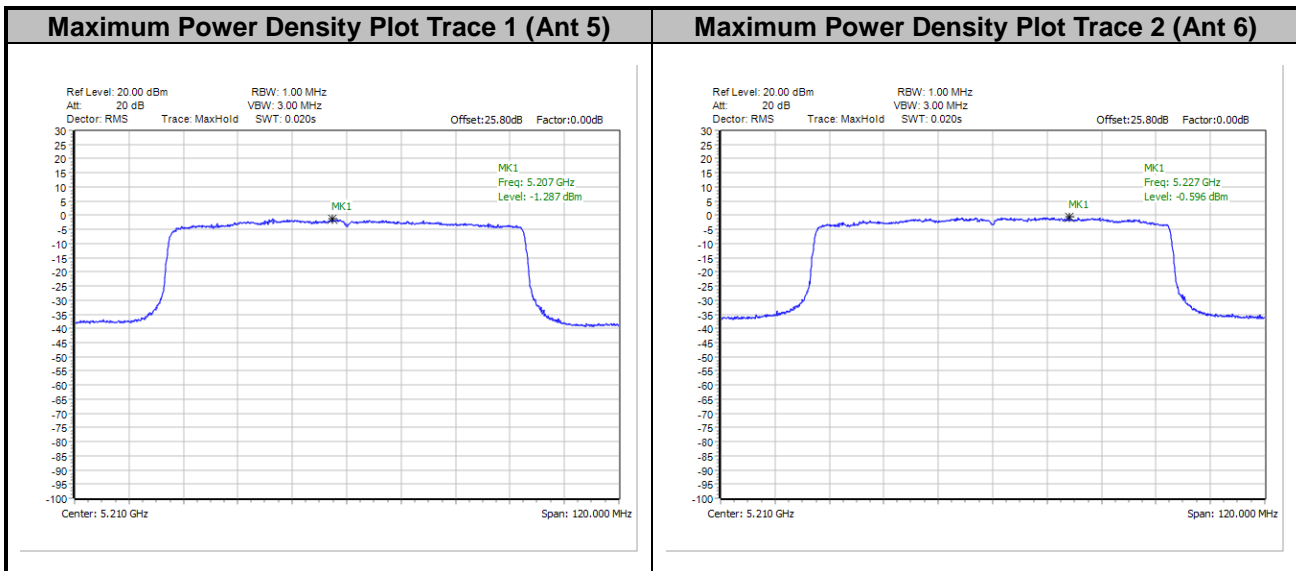




<802.11ax HE80>



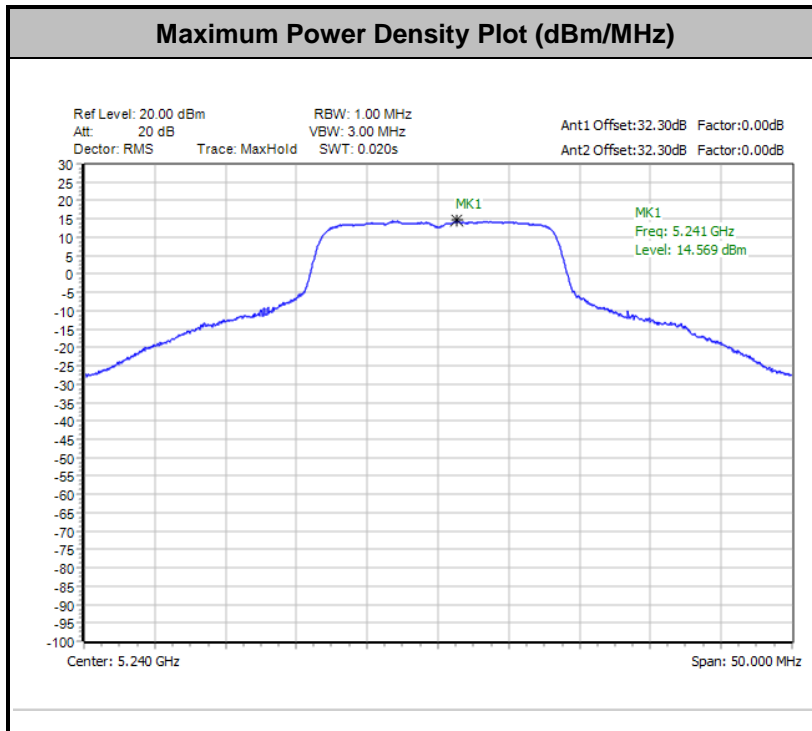
Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.



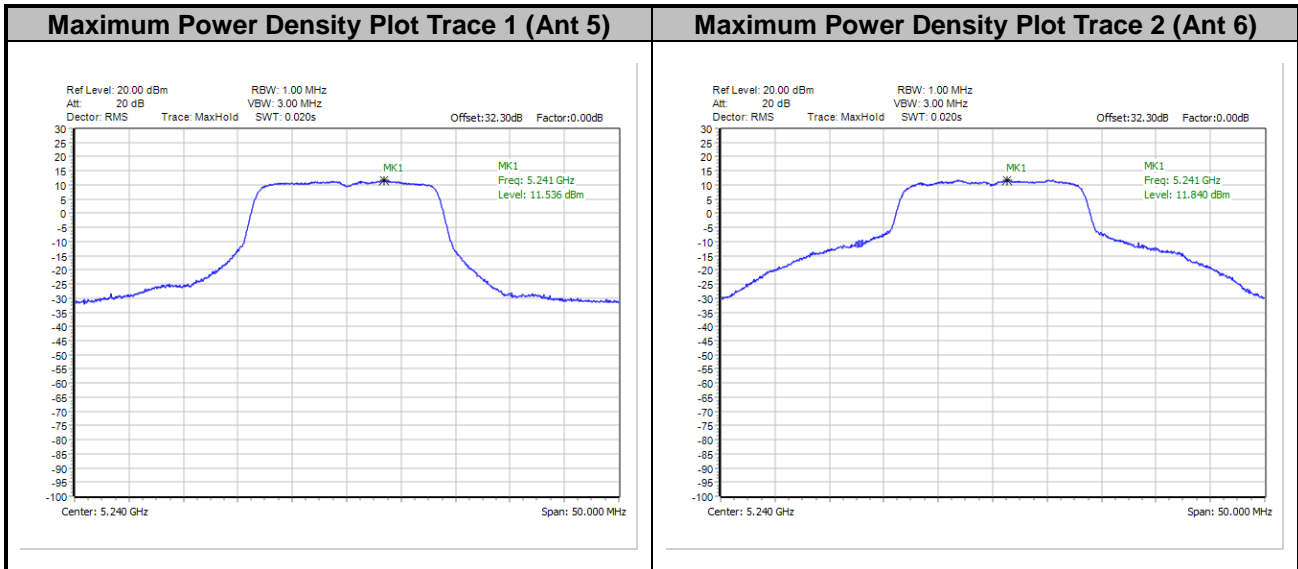


<Master Mode>

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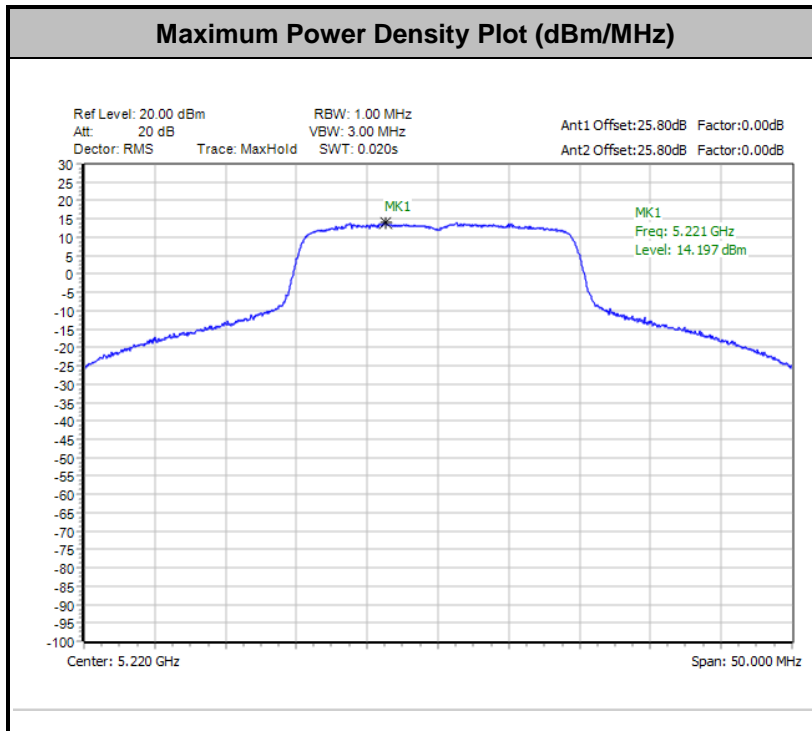


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

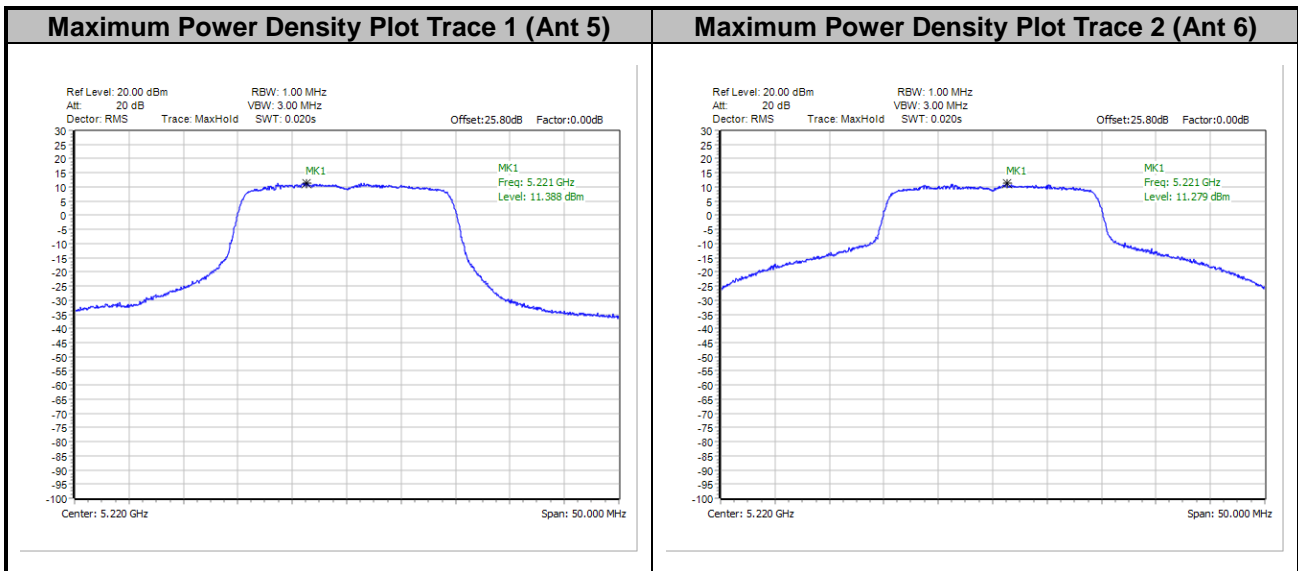




<802.11ax HE20>

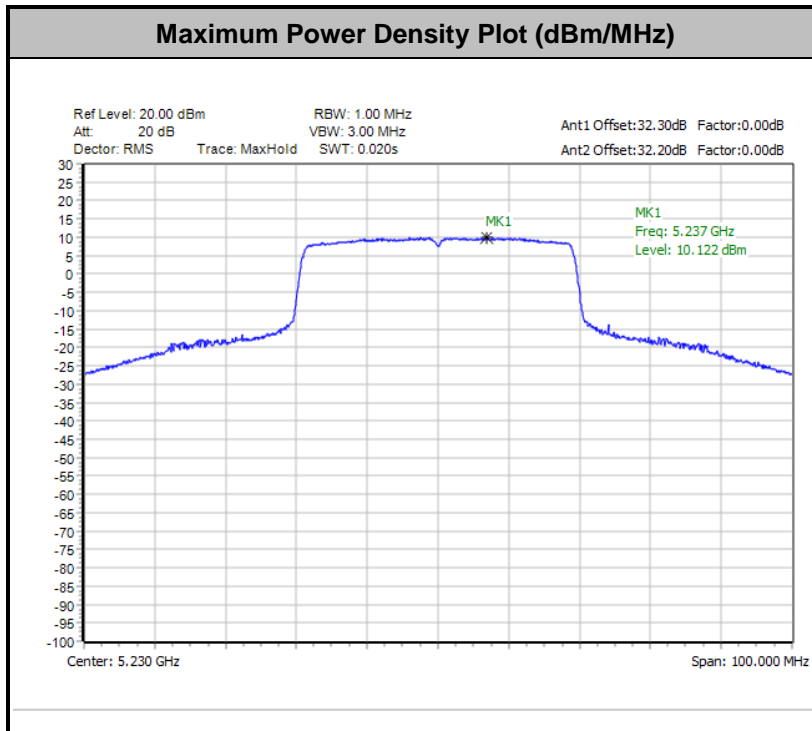


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

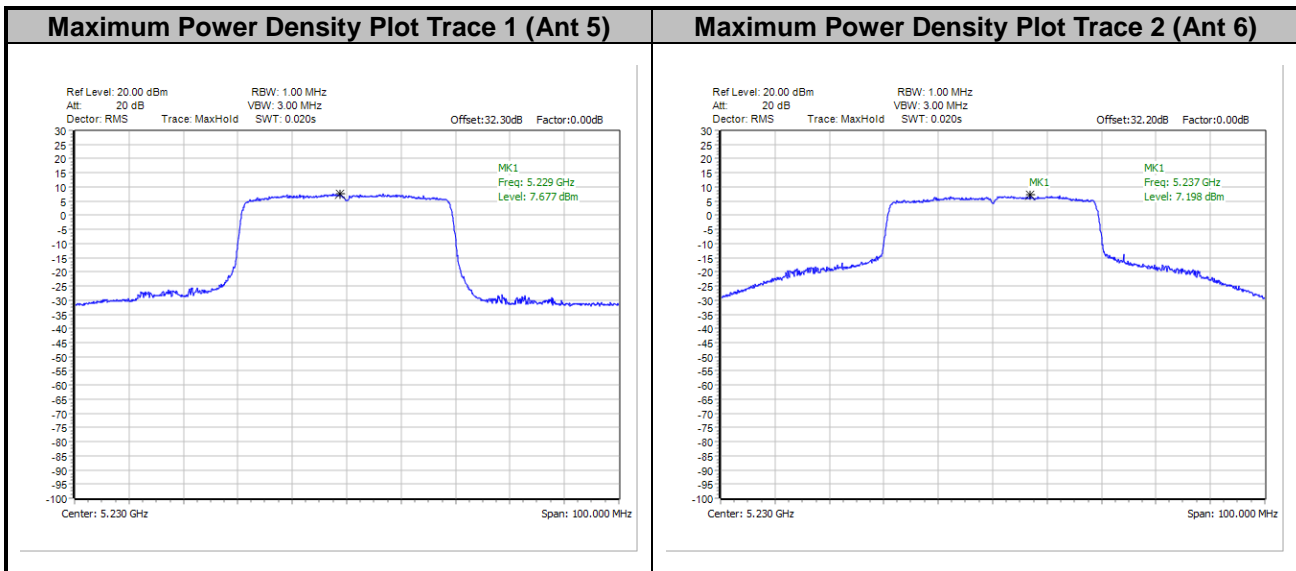




<802.11ax HE40>

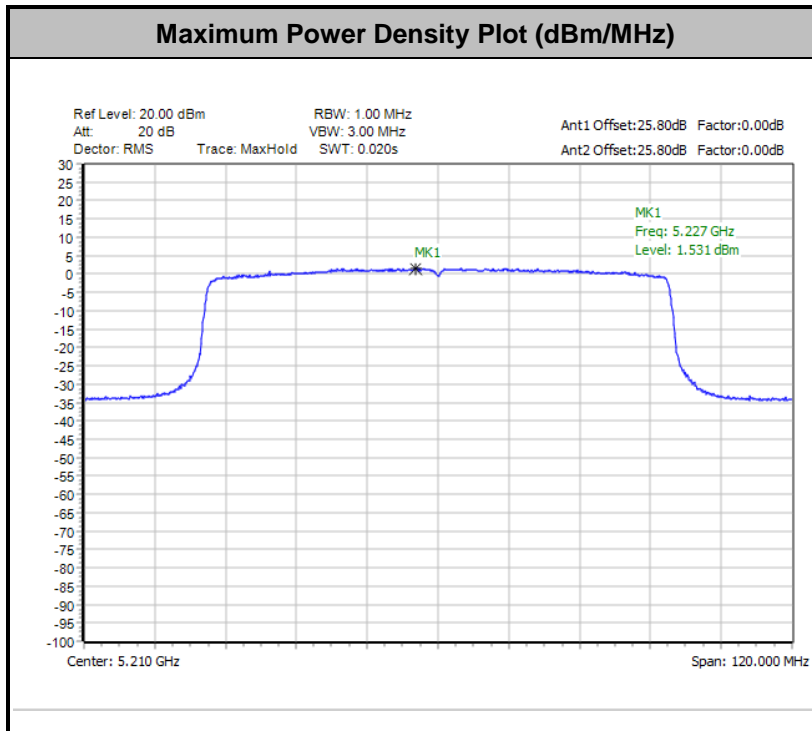


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

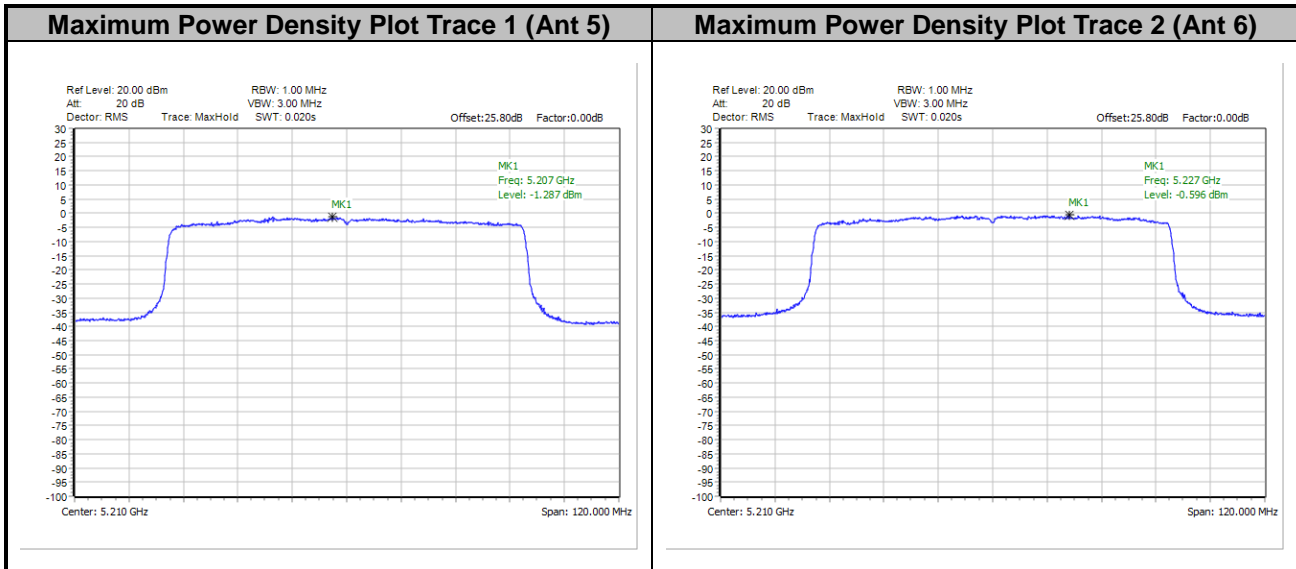




<802.11ax HE80>



Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.





3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5150-5250 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27dBm/MHz.
- (2) Unwanted spurious emissions falls 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.

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

EIRP (dBm)	Field Strength at 3m (dBμV/m)
- 27	68.3

- (3) KDB789033 D02 v02r01 G)2)c)
 - (i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.
 - (ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.4.2 Measuring Instruments

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

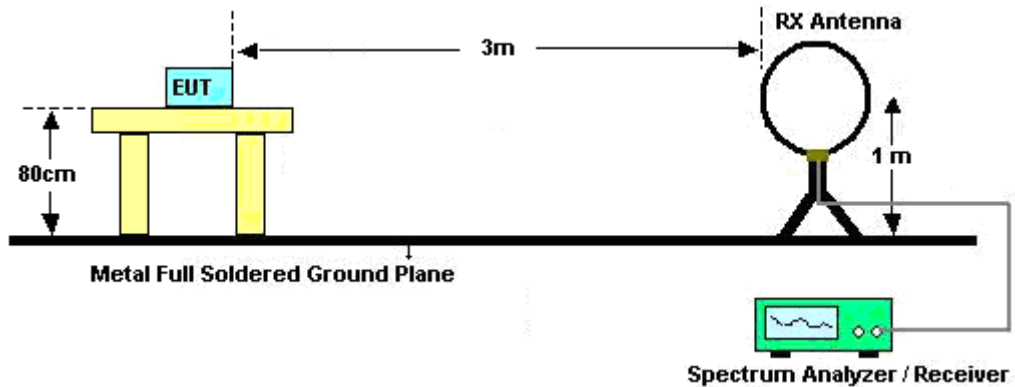
**3.4.3 Test Procedures**

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 1000 MHz
 - 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 "-".

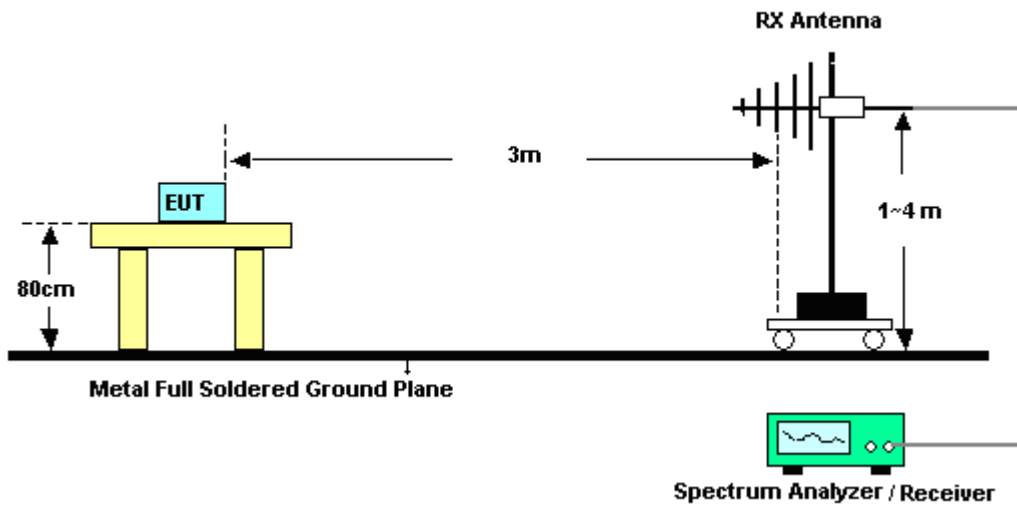
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with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

3.4.4 Test Setup

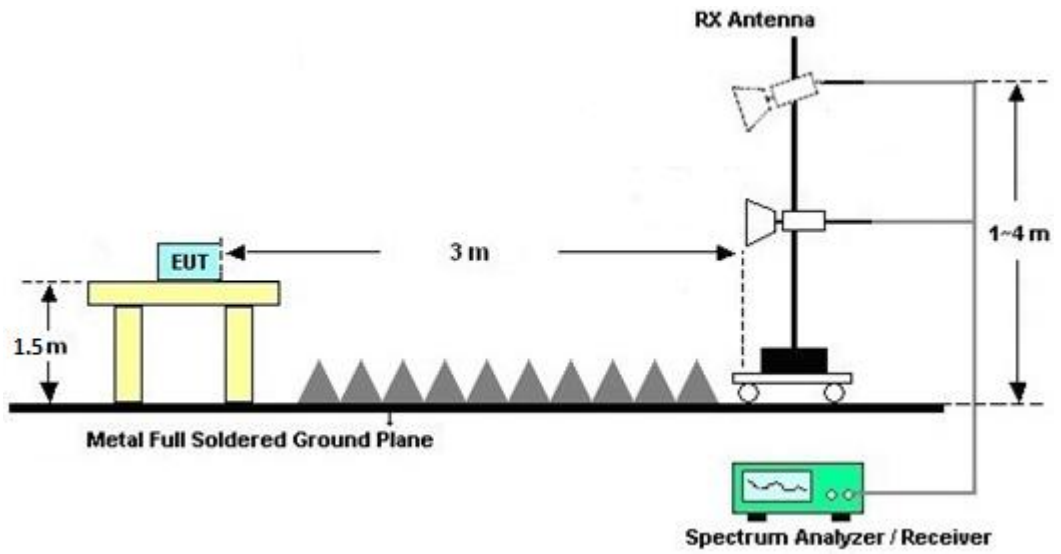
For radiated emissions below 30MHz



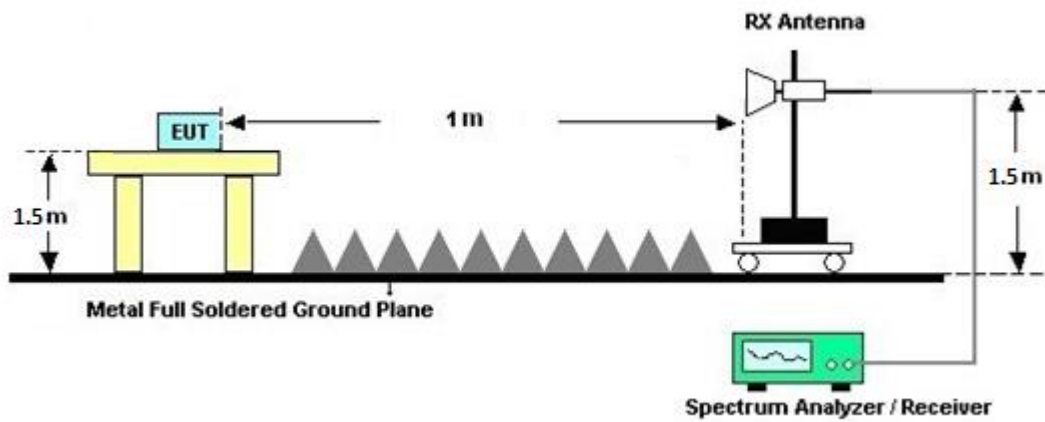
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





3.4.5 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.

3.4.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.4.7 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.



3.5 AC Conducted Emission Measurement

3.5.1 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 (dBµV)	
	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.

3.5.2 Measuring Instruments

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

3.5.3 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 shall 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.

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.6 Antenna Requirements

3.6.1 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.

3.6.2 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
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02038	1GHz~18GHz	Aug. 09, 2022	Mar. 09, 2023~ Apr. 11, 2023	Aug. 08, 2023	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBECK	SCHWARZBECK	BBHA 9120 D	9120D-1522	Mar. 10, 2022	Mar. 07, 2023~ Mar. 08, 2023	Mar. 09, 2023	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00993	18GHz~40GHz	Nov. 24, 2022	Mar. 07, 2023~ Apr. 11, 2023	Nov. 23, 2023	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N-06	47020 & 06	30MHz~1GHz	Oct. 08, 2022	Mar. 07, 2023~ Apr. 11, 2023	Oct. 07, 2023	Radiation (03CH16-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 20, 2022	Mar. 07, 2023~ Apr. 11, 2023	Sep. 19, 2023	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 28, 2022	Mar. 07, 2023~ Apr. 11, 2023	Jun. 27, 2023	Radiation (03CH16-HY)
Preamplifier	EMEC	EM1G18G	060812	1GHz~18GHz	Dec. 26, 2022	Mar. 07, 2023~ Apr. 11, 2023	Dec. 25, 2023	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 09, 2022	Mar. 07, 2023~ Apr. 11, 2023	Dec. 08, 2023	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1GHz	Jul. 04, 2022	Mar. 07, 2023~ Apr. 11, 2023	Jul. 03, 2023	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A(MXE)	MY57290111	3Hz~26.5GHz	Dec. 15, 2022	Mar. 07, 2023~ Apr. 11, 2023	Dec. 14, 2023	Radiation (03CH16-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 10, 2023	Mar. 07, 2023~ Apr. 11, 2023	Jan. 09, 2024	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	805935/4	N/A	Aug. 09, 2022	Mar. 07, 2023~ Apr. 11, 2023	Aug. 08, 2023	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	802434/4	N/A	Aug. 09, 2022	Mar. 07, 2023~ Apr. 11, 2023	Aug. 08, 2023	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-5757	N/A	Aug. 09, 2022	Mar. 07, 2023~ Apr. 11, 2023	Aug. 08, 2023	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Mar. 07, 2023~ Apr. 11, 2023	N/A	Radiation (03CH16-HY)
Controller	ChainTek	3000-1	N/A	Control Turn table & Ant Mast	N/A	Mar. 07, 2023~ Apr. 11, 2023	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Mar. 07, 2023~ Apr. 11, 2023	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Mar. 07, 2023~ Apr. 11, 2023	N/A	Radiation (03CH16-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 17, 2022	Mar. 02, 2023~ Apr. 08, 2023	Nov. 16, 2023	Conducted (TH05-HY)
USB Power Sensor	DARE	RPR3006W	15I00041SNO10 (NO:248)	10MHz~6GHz	Jan. 05, 2023	Mar. 02, 2023~ Apr. 08, 2023	Jan. 04, 2024	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Sep. 01, 2022	Mar. 02, 2023~ Apr. 08, 2023	Aug. 31, 2023	Conducted (TH05-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jul. 11, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Jul. 11, 2022	Nov. 30, 2022	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2021	Jul. 11, 2022	Nov. 16, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Jul. 11, 2022	Dec. 02, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Jul. 11, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-FN	00691	N/A	Jul. 28, 2021	Jul. 11, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Jul. 11, 2022	Dec. 29, 2022	Conduction (CO05-HY)



5 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.5 dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	6.5 dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.6 dB
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Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 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 (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.6 dB
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Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu, Hank Hsu and Sylvia Li	Temperature:	21~25	°C
Test Date:	2023/03/02~2023/04/08	Relative Humidity:	51~54	%

<Client Mode>

TEST RESULTS DATA
26dB and 99% OBW

U-NII-1 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	
11a	6Mbps	2	36	5180	16.48	16.63	20.64	24.00	-	-	22.17	22.17	
11a	6Mbps	2	44	5220	16.43	17.73	20.82	33.30	-	-	22.16	22.16	
11a	6Mbps	2	48	5240	16.48	17.43	20.76	32.52	-	-	22.17	22.17	

TEST RESULTS DATA
Average Power Table

FCC U-NII-1 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
11a	6Mbps	2	36	5180	14.70	16.20	18.52	24.00		5.90	Pass	
11a	6Mbps	2	44	5220	15.40	16.50	19.00	24.00		5.90	Pass	
11a	6Mbps	2	48	5240	15.10	15.80	18.47	24.00		5.90	Pass	
HT20	MCS0	2	36	5180	14.80	16.20	18.57	24.00		5.90	Pass	
HT20	MCS0	2	44	5220	15.50	16.60	19.10	24.00		5.90	Pass	
HT20	MCS0	2	48	5240	14.90	16.00	18.50	24.00		5.90	Pass	
HT40	MCS0	2	38	5190	15.70	16.70	19.24	24.00		5.90	Pass	
HT40	MCS0	2	46	5230	18.70	19.20	21.97	24.00		5.90	Pass	
VHT20	MCS0	2	36	5180	14.90	16.30	18.67	24.00		5.90	Pass	
VHT20	MCS0	2	44	5220	15.60	16.70	19.20	24.00		5.90	Pass	
VHT20	MCS0	2	48	5240	15.00	16.10	18.60	24.00		5.90	Pass	
VHT40	MCS0	2	38	5190	15.80	16.80	19.34	24.00		5.90	Pass	
VHT40	MCS0	2	46	5230	18.80	19.30	22.07	24.00		5.90	Pass	
VHT80	MCS0	2	42	5210	15.20	16.10	18.68	24.00		5.90	Pass	

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-1 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
11a	6Mbps	2	36	5180			8.28	8.58	8.42		Pass	
11a	6Mbps	2	44	5220			8.35	8.58	8.42		Pass	
11a	6Mbps	2	48	5240			8.18	8.58	8.42		Pass	

TEST RESULTS DATA
26dB and 99% OBW

U-NII-1 MIMO														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	RU Config.	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
						Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	
HE20	MCS0	2	36	5180	Full	18.93	19.08	21.48	24.36	-	-	22.77	22.77	
HE20	MCS0	2	44	5220	Full	18.93	19.38	21.90	32.52	-	-	22.77	22.77	
HE20	MCS0	2	48	5240	Full	18.98	19.18	21.90	29.76	-	-	22.78	22.78	
HE40	MCS0	2	38	5190	Full	37.86	37.86	41.04	41.16	-	-	23.01	23.01	
HE40	MCS0	2	46	5230	Full	38.06	38.36	41.16	49.92	-	-	23.01	23.01	
HE80	MCS0	2	42	5210	Full	76.96	77.20	82.56	83.04	-	-	23.01	23.01	

TEST RESULTS DATA
Average Power Table

FCC U-NII-1 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
HE20	MCS0	2	36	5180	Full	15.00	16.40	18.77	24.00	24.00	5.90	5.90	Pass
HE20	MCS0	2	44	5220	Full	15.70	16.80	19.30	24.00	24.00	5.90	5.90	Pass
HE20	MCS0	2	48	5240	Full	15.10	16.20	18.70	24.00	24.00	5.90	5.90	Pass
HE40	MCS0	2	38	5190	Full	15.90	16.90	19.44	24.00	24.00	5.90	5.90	Pass
HE40	MCS0	2	46	5230	Full	18.90	19.40	22.17	24.00	24.00	5.90	5.90	Pass
HE80	MCS0	2	42	5210	Full	15.30	16.20	18.78	24.00	24.00	5.90	5.90	Pass

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-1 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
						Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
HE20	MCS0	2	36	5180	Full			8.51	8.58	8.42		Pass	
HE20	MCS0	2	44	5220	Full			8.51	8.58	8.42		Pass	
HE20	MCS0	2	48	5240	Full			8.44	8.58	8.42		Pass	
HE40	MCS0	2	38	5190	Full			5.29	8.58	8.42		Pass	
HE40	MCS0	2	46	5230	Full			8.16	8.58	8.42		Pass	
HE80	MCS0	2	42	5210	Full			1.53	8.58	8.42		Pass	

<Master Mode>

TEST RESULTS DATA
26dB and 99% OBW

U-NII-1 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
					Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	
11a	6Mbps	2	36	5180	16.48	16.63	20.64	24.00	-	-	22.17		
11a	6Mbps	2	44	5220	16.43	17.73	20.82	33.30	-	-	22.16		
11a	6Mbps	2	48	5240	16.48	17.43	20.76	32.52	-	-	22.17		

TEST RESULTS DATA
Average Power Table

FCC U-NII-1 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
11a	6Mbps	2	36	5180	18.90	20.40	22.72	30.00		5.90	Pass	
11a	6Mbps	2	44	5220	21.90	21.60	24.76	30.00		5.90	Pass	
11a	6Mbps	2	48	5240	21.80	21.70	24.76	30.00		5.90	Pass	
HT20	MCS0	2	36	5180	18.90	20.40	22.72	30.00		5.90	Pass	
HT20	MCS0	2	44	5220	21.50	21.10	24.31	30.00		5.90	Pass	
HT20	MCS0	2	48	5240	21.20	21.00	24.11	30.00		5.90	Pass	
HT40	MCS0	2	38	5190	15.70	16.70	19.24	30.00		5.90	Pass	
HT40	MCS0	2	46	5230	21.00	20.30	23.67	30.00		5.90	Pass	
VHT20	MCS0	2	36	5180	19.00	20.50	22.82	30.00		5.90	Pass	
VHT20	MCS0	2	44	5220	21.60	21.20	24.41	30.00		5.90	Pass	
VHT20	MCS0	2	48	5240	21.30	21.10	24.21	30.00		5.90	Pass	
VHT40	MCS0	2	38	5190	15.80	16.80	19.34	30.00		5.90	Pass	
VHT40	MCS0	2	46	5230	21.10	20.40	23.77	30.00		5.90	Pass	
VHT80	MCS0	2	42	5210	15.20	16.10	18.68	30.00		5.90	Pass	

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-1 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
					Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
11a	6Mbps	2	36	5180			12.40	14.58	8.42		Pass	
11a	6Mbps	2	44	5220			14.14	14.58	8.42		Pass	
11a	6Mbps	2	48	5240			14.57	14.58	8.42		Pass	

TEST RESULTS DATA
26dB and 99% OBW

U-NII-1 MIMO														
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	RU Config.	99% Bandwidth (MHz)		26 dB Bandwidth (MHz)		IC 99% Bandwidth Power Limit (dBm)		IC 99% Bandwidth EIRP Limit (dBm)		Note
						Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	Ant 5	Ant 6	
HE20	MCS0	2	36	5180	Full	18.93	19.08	21.48	24.36	-	-	22.77	22.77	
HE20	MCS0	2	44	5220	Full	18.93	19.38	21.90	32.52	-	-	22.77	22.77	
HE20	MCS0	2	48	5240	Full	18.98	19.18	21.90	29.76	-	-	22.78	22.78	
HE40	MCS0	2	38	5190	Full	37.86	37.86	41.04	41.16	-	-	23.01	23.01	
HE40	MCS0	2	46	5230	Full	38.06	38.36	41.16	49.92	-	-	23.01	23.01	
HE80	MCS0	2	42	5210	Full	76.96	77.20	82.56	83.04	-	-	23.01	23.01	

TEST RESULTS DATA
Average Power Table

FCC U-NII-1 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
HE20	MCS0	2	36	5180	Full	19.10	20.60	22.92	30.00	30.00	5.90	5.90	Pass
HE20	MCS0	2	44	5220	Full	21.70	21.30	24.51	30.00	30.00	5.90	5.90	Pass
HE20	MCS0	2	48	5240	Full	21.40	21.20	24.31	30.00	30.00	5.90	5.90	Pass
HE40	MCS0	2	38	5190	Full	15.90	16.90	19.44	30.00	30.00	5.90	5.90	Pass
HE40	MCS0	2	46	5230	Full	21.20	20.50	23.87	30.00	30.00	5.90	5.90	Pass
HE80	MCS0	2	42	5210	Full	15.30	16.20	18.78	30.00	30.00	5.90	5.90	Pass

TEST RESULTS DATA
Power Spectral Density

FCC U-NII-1 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Power Density (dBm/MHz)			Average PSD Limit (dBm/MHz)		DG (dBi)		Pass /Fail
						Ant 5	Ant 6	SUM	Ant 5	Ant 6	Ant 5	Ant 6	
HE20	MCS0	2	36	5180	Full			12.79		14.58		8.42	Pass
HE20	MCS0	2	44	5220	Full			14.20		14.58		8.42	Pass
HE20	MCS0	2	48	5240	Full			14.09		14.58		8.42	Pass
HE40	MCS0	2	38	5190	Full			5.29		14.58		8.42	Pass
HE40	MCS0	2	46	5230	Full			10.12		14.58		8.42	Pass
HE80	MCS0	2	42	5210	Full			1.53		14.58		8.42	Pass



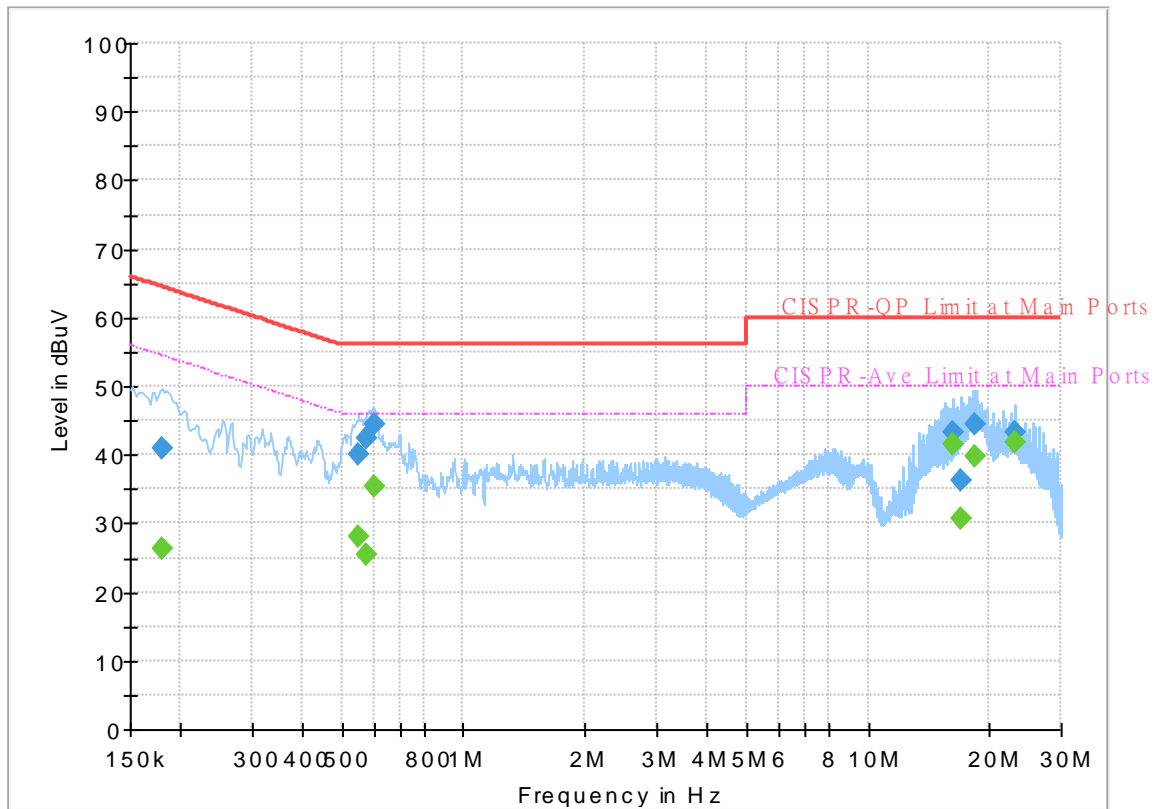
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Calvin Wang	Temperature :	23~26°C
		Relative Humidity :	45~55%

EUT Information

Report NO : 261637
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Line

Full Spectrum



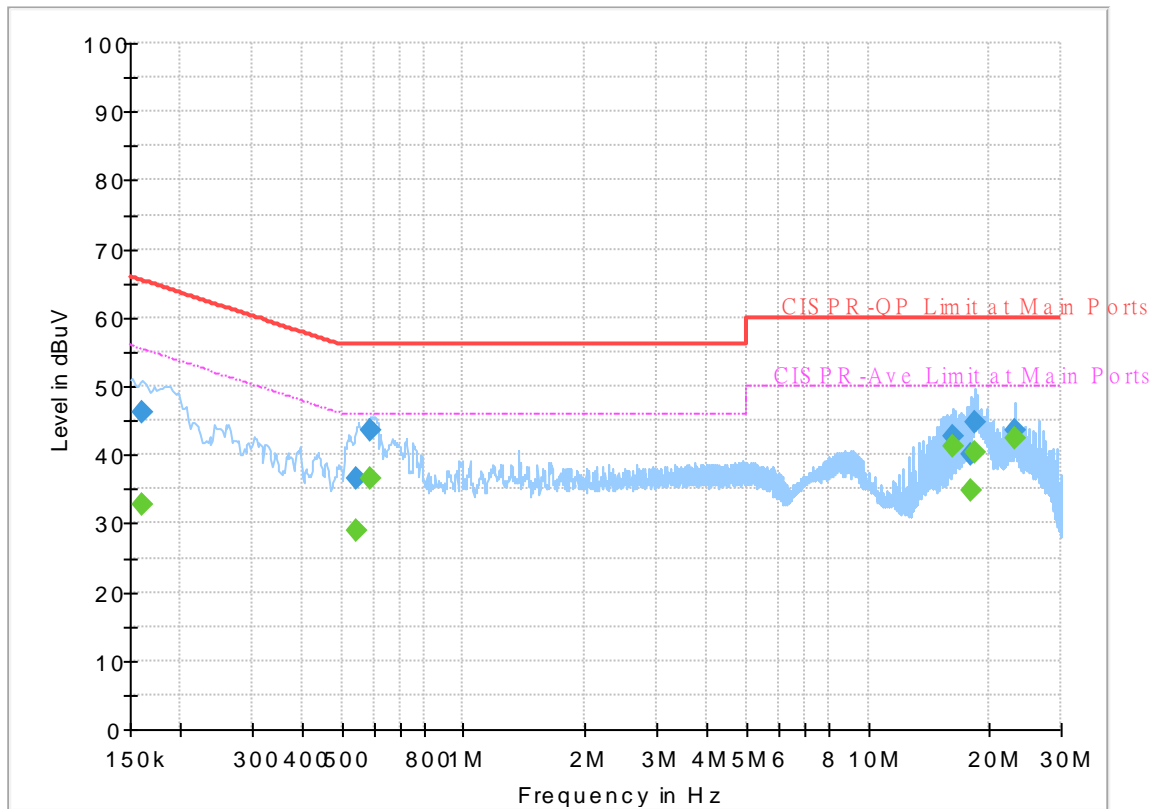
Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.179250	---	26.34	54.52	28.18	L1	OFF	19.6
0.179250	40.80	---	64.52	23.72	L1	OFF	19.6
0.550500	---	28.11	46.00	17.89	L1	OFF	19.6
0.550500	39.99	---	56.00	16.01	L1	OFF	19.6
0.575250	---	25.58	46.00	20.42	L1	OFF	19.6
0.575250	42.37	---	56.00	13.63	L1	OFF	19.6
0.600000	---	35.48	46.00	10.52	L1	OFF	19.6
0.600000	44.32	---	56.00	11.68	L1	OFF	19.6
16.228500	---	41.44	50.00	8.56	L1	OFF	19.8
16.228500	43.27	---	60.00	16.73	L1	OFF	19.8
17.002500	---	30.77	50.00	19.23	L1	OFF	19.8
17.002500	36.32	---	60.00	23.68	L1	OFF	19.8
18.366000	---	39.79	50.00	10.21	L1	OFF	19.8
18.366000	44.41	---	60.00	15.59	L1	OFF	19.8
23.129250	---	41.94	50.00	8.06	L1	OFF	19.8
23.129250	43.28	---	60.00	16.72	L1	OFF	19.8

EUT Information

Report NO : 261637
 Test Mode : Mode 1
 Test Voltage : 120Vac/60Hz
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	---	32.64	55.40	22.76	N	OFF	19.6
0.161250	46.34	---	65.40	19.06	N	OFF	19.6
0.546000	---	28.96	46.00	17.04	N	OFF	19.6
0.546000	36.58	---	56.00	19.42	N	OFF	19.6
0.591000	---	36.54	46.00	9.46	N	OFF	19.6
0.591000	43.45	---	56.00	12.55	N	OFF	19.6
16.228500	---	41.17	50.00	8.83	N	OFF	19.9
16.228500	42.82	---	60.00	17.18	N	OFF	19.9
17.934000	---	34.76	50.00	15.24	N	OFF	19.9
17.934000	40.01	---	60.00	19.99	N	OFF	19.9
18.305250	---	40.38	50.00	9.62	N	OFF	19.9
18.305250	44.70	---	60.00	15.30	N	OFF	19.9
23.129250	---	42.28	50.00	7.72	N	OFF	20.0
23.129250	43.49	---	60.00	16.51	N	OFF	20.0



Appendix C. Radiated Spurious Emission

Test Engineer :	Andy Yang, Gary Guo and Steven Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

Band 1 - 5150~5250MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	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 36 5180MHz		5148.46	58.19	-15.81	74	43.7	33	10.96	29.47	199	35	P	H	
		5149.76	49.76	-4.24	54	35.27	33	10.96	29.47	199	35	A	H	
	*	5180	112.5	-	-	98.04	33	10.96	29.5	199	35	P	H	
	*	5180	104.71	-	-	90.25	33	10.96	29.5	199	35	A	H	
													H	
														H
			5149.76	60.16	-13.84	74	45.67	33	10.96	29.47	301	176	P	V
			5150	51.52	-2.48	54	37.03	33	10.96	29.47	301	176	A	V
	*		5180	112.54	-	-	98.08	33	10.96	29.5	301	176	P	V
	*		5180	106.38	-	-	91.92	33	10.96	29.5	301	176	A	V
														V
														V
802.11a CH 44 5220MHz		5146.9	59.36	-14.64	74	44.77	33.1	10.96	29.47	324	189	P	H	
		5147.42	48.34	-5.66	54	33.75	33.1	10.96	29.47	324	189	A	H	
	*	5220	116.35	-	-	101.71	33.2	10.98	29.54	324	189	P	H	
	*	5220	110.86	-	-	96.22	33.2	10.98	29.54	324	189	A	H	
			5376	56.39	-17.61	74	41.99	32.95	11.13	29.68	324	189	P	H
			5412.68	44.69	-9.31	54	30.23	33	11.18	29.72	324	189	A	H
			5148.46	61.87	-12.13	74	47.28	33.1	10.96	29.47	365	356	P	V
			5148.98	52.81	-1.19	54	38.22	33.1	10.96	29.47	365	356	A	V
	*		5220	118.58	-	-	103.94	33.2	10.98	29.54	365	356	P	V
	*		5220	112.84	-	-	98.2	33.2	10.98	29.54	365	356	A	V
			5375.44	54.64	-19.36	74	40.24	32.95	11.13	29.68	365	356	P	V
			5376	44.79	-9.21	54	30.39	32.95	11.13	29.68	365	356	A	V



802.11a CH 48 5240MHz		5142.22	53.87	-20.13	74	39.37	33	10.96	29.46	207	39	P	H
		5143.52	43.11	-10.89	54	28.61	33	10.96	29.46	207	39	A	H
	*	5240	113.22	-	-	98.86	32.92	11	29.56	207	39	P	H
	*	5240	107.23	-	-	92.87	32.92	11	29.56	207	39	A	H
		5353.6	53.44	-20.56	74	39.09	32.9	11.11	29.66	207	39	P	H
		5431.16	43.22	-10.78	54	28.85	32.9	11.21	29.74	207	39	A	H
		5107.64	54.59	-19.41	74	40.06	33	10.96	29.43	301	1	P	V
		5041.6	44.2	-9.8	54	29.42	33.2	10.95	29.37	301	1	A	V
	*	5240	115.33	-	-	100.97	32.92	11	29.56	301	1	P	V
	*	5240	109.34	-	-	94.98	32.92	11	29.56	301	1	A	V
		5376.28	53.57	-20.43	74	39.22	32.9	11.13	29.68	301	1	P	V
		5376.28	46.34	-7.66	54	31.99	32.9	11.13	29.68	301	1	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 1 5150~5250MHz
WIFI 802.11a (Harmonic @ 3m)**

WIFI Ant. 5+6	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 36 5180MHz		10360	46.69	-21.51	68.2	58.93	38.7	16.22	67.16	-	-	P	H
		15540	46.3	-27.7	74	55.56	37.54	19.81	66.61	-	-	P	H
													H
													H
													H
													H
													H
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													H
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													H
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													H
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													H
													H
													H
			10360	47.76	-20.44	68.2	60	38.7	16.22	67.16	-	-	P
		15540	47.27	-26.73	74	56.53	37.54	19.81	66.61	-	-	P	V
													V
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													V
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WIFI Ant. 5+6	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 44 5220MHz		10440	50.29	-17.91	68.2	62.39	38.92	16.28	67.12	-	-	P	H
		15660	58.28	-15.72	74	67.06	37.44	19.87	66.79	275	88	P	H
		15660	48.3	-5.7	54	57.08	37.44	19.87	66.79	275	88	A	H
													H
													H
													H
													H
													H
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													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
			10440	49.97	-18.23	68.2	62.07	38.92	16.28	67.12	-	-	P
		15660	58.31	-15.69	74	67.09	37.44	19.87	66.79	298	175	P	V
		15660	48.62	-5.38	54	57.4	37.44	19.87	66.79	298	175	A	V
													V
													V
													V
													V
													V
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													V
													V
													V
													V



WiFi Ant. 5+6	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 48 5240MHz		10480	46.97	-21.23	68.2	59.06	38.7	16.31	67.1	-	-	P	H
		15720	47.07	-26.93	74	56.54	37.5	19.91	66.88	-	-	P	H
													H
													H
													H
													H
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													H
													H
													H
			10480	47.32	-20.88	68.2	59.41	38.7	16.31	67.1	-	-	P
		15720	47.73	-26.27	74	57.2	37.5	19.91	66.88	-	-	P	V
													V
													V
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													V
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													V
													V
													V
													V
													V
													V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 												



Band 1 5150~5250MHz
WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI Ant. 5+6	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 36 5180MHz		5149.76	60.2	-13.8	74	45.71	33	10.96	29.47	195	32	P	H	
		5150	50.83	-3.17	54	36.34	33	10.96	29.47	195	32	A	H	
	*	5180	111.01	-	-	96.55	33	10.96	29.5	195	32	P	H	
	*	5180	104.1	-	-	89.64	33	10.96	29.5	195	32	A	H	
													H	
													H	
			5148.98	62.44	-11.56	74	47.95	33	10.96	29.47	361	174	P	V
			5150	52.26	-1.74	54	37.77	33	10.96	29.47	361	174	A	V
		*	5180	112.81	-	-	98.35	33	10.96	29.5	361	174	P	V
		*	5180	106	-	-	91.54	33	10.96	29.5	361	174	A	V
													V	
													V	
802.11ax HE20 Full CH 44 5220MHz		5149.5	59.59	-14.41	74	45.1	33	10.96	29.47	200	37	P	H	
		5149.76	49.97	-4.03	54	35.48	33	10.96	29.47	200	37	A	H	
		*	5220	117.28	-	-	102.78	33.06	10.98	29.54	200	37	P	H
		*	5220	109.81	-	-	95.31	33.06	10.98	29.54	200	37	A	H
			5362.56	55.86	-18.14	74	41.59	32.83	11.11	29.67	200	37	P	H
			5352.2	44.03	-9.97	54	29.79	32.8	11.1	29.66	200	37	A	H
			5147.42	64.17	-9.83	74	49.68	33	10.96	29.47	268	177	P	V
			5148.98	52.23	-1.77	54	37.74	33	10.96	29.47	268	177	A	V
		*	5220	117.96	-	-	103.46	33.06	10.98	29.54	268	177	P	V
		*	5220	110.18	-	-	95.68	33.06	10.98	29.54	268	177	A	V
		5405.96	55.07	-18.93	74	40.73	32.89	11.16	29.71	268	177	P	V	
		5376	45.28	-8.72	54	30.98	32.85	11.13	29.68	268	177	A	V	



802.11ax HE20 Full CH 48 5240MHz		5147.42	61.7	-12.3	74	47.21	33	10.96	29.47	195	179	P	H
		5146.12	49.65	-4.35	54	35.16	33	10.96	29.47	195	179	A	H
	*	5240	116.89	-	-	102.43	33.02	11	29.56	195	179	P	H
	*	5240	109.65	-	-	95.19	33.02	11	29.56	195	179	A	H
		5356.4	56.2	-17.8	74	41.95	32.81	11.11	29.67	195	179	P	H
		5350	44.48	-9.52	54	30.24	32.8	11.1	29.66	195	179	A	H
		5142.48	63	-11	74	48.5	33	10.96	29.46	267	175	P	V
		5142.22	51.91	-2.09	54	37.41	33	10.96	29.46	267	175	A	V
	*	5240	119.35	-	-	104.89	33.02	11	29.56	267	175	P	V
	*	5240	111.07	-	-	96.61	33.02	11	29.56	267	175	A	V
		5357.24	57.78	-16.22	74	43.53	32.81	11.11	29.67	267	175	P	V
		5355.28	46.44	-7.56	54	32.18	32.81	11.11	29.66	267	175	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 1 5150~5250MHz

WIFI 802.11ax HE20 Full (Harmonic @ 3m)

WIFI Ant. 5+6	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 36 5180MHz		10360	47.6	-20.6	68.2	59.84	38.7	16.22	67.16	-	-	P	H
		15540	46.72	-27.28	74	55.98	37.54	19.81	66.61	-	-	P	H
													H
													H
													H
													H
													H
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													H
													H
													H
													H
													H
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													H
													H
													H
			10360	46.99	-21.21	68.2	59.23	38.7	16.22	67.16	-	-	P
		15540	47.29	-26.71	74	56.55	37.54	19.81	66.61	-	-	P	V
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WIFI Ant. 5+6	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 44 5220MHz		10440	47.92	-20.28	68.2	59.84	38.92	16.28	67.12	-	-	P	H	
		15660	58.81	-15.19	74	68.29	37.44	19.87	66.79	275	88	P	H	
		15660	47.86	-6.14	54	57.34	37.44	19.87	66.79	275	88	A	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			10440	47.98	-20.22	68.2	59.9	38.92	16.28	67.12	-	-	P	V
			15660	58.07	-15.93	74	67.55	37.44	19.87	66.79	298	175	P	V
			15660	47.22	-6.78	54	56.7	37.44	19.87	66.79	298	175	A	V
														V
														V
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													V	
													V	



WIFI Ant. 5+6	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 48 5240MHz		10480	58.03	-10.17	68.2	69.98	38.84	16.31	67.1	324	318	P	H	
		15720	61.07	-12.93	74	70.82	37.22	19.91	66.88	272	87	P	H	
		15720	49.4	-4.6	54	59.15	37.22	19.91	66.88	272	87	A	H	
													H	
													H	
													H	
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													H	
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													H	
													H	
													H	
													H	
			10480	55.02	-13.18	68.2	66.97	38.84	16.31	67.1	316	244	P	V
			15720	58.57	-15.43	74	68.32	37.22	19.91	66.88	209	267	P	V
			15720	47.34	-6.66	54	57.09	37.22	19.91	66.88	209	267	A	V
														V
														V
														V
														V
													V	
													V	
													V	
													V	
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



Band 1 5150~5250MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI Ant. 5+6	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 38 5190MHz		5148.46	61.14	-12.86	74	46.65	33	10.96	29.47	189	182	P	H	
		5147.42	51.84	-2.16	54	37.35	33	10.96	29.47	189	182	A	H	
	*	5190	106.27	-	-	91.82	33	10.96	29.51	189	182	P	H	
	*	5190	98.71	-	-	84.26	33	10.96	29.51	189	182	A	H	
		5375.44	52.78	-21.22	74	38.43	32.9	11.13	29.68	189	182	P	H	
		5405.96	41.71	-12.29	54	27.36	32.9	11.16	29.71	189	182	A	H	
		5147.42	61.45	-12.55	74	46.96	33	10.96	29.47	195	104	P	V	
		5149.24	52.65	-1.35	54	38.16	33	10.96	29.47	195	104	A	V	
	*	5190	106.55	-	-	92.1	33	10.96	29.51	195	104	P	V	
	*	5190	99.1	-	-	84.65	33	10.96	29.51	195	104	A	V	
		5379.64	51.81	-22.19	74	37.47	32.9	11.13	29.69	195	104	P	V	
		5376.28	42.95	-11.05	54	28.6	32.9	11.13	29.68	195	104	A	V	
	802.11ax HE40 Full CH 46 5230MHz		5143.78	56.57	-17.43	74	42.08	33	10.96	29.47	197	36	P	H
			5146.64	46.84	-7.16	54	32.35	33	10.96	29.47	197	36	A	H
*		5230	110.05	-	-	95.57	33.04	10.99	29.55	197	36	P	H	
*		5230	103.5	-	-	89.02	33.04	10.99	29.55	197	36	A	H	
		5377.96	53.58	-20.42	74	39.28	32.86	11.13	29.69	197	36	P	H	
		5376	43.45	-10.55	54	29.15	32.85	11.13	29.68	197	36	A	H	
		5142.22	60.48	-13.52	74	45.98	33	10.96	29.46	268	176	P	V	
		5146.38	49.36	-4.64	54	34.87	33	10.96	29.47	268	176	A	V	
*		5230	110.26	-	-	95.78	33.04	10.99	29.55	268	176	P	V	
*		5230	103.27	-	-	88.79	33.04	10.99	29.55	268	176	A	V	
	5362	55.04	-18.96	74	40.78	32.82	11.11	29.67	268	176	P	V		
	5376	44.26	-9.74	54	29.96	32.85	11.13	29.68	268	176	A	V		
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



Band 1 5150~5250MHz

WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI Ant. 5+6	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 38 5190MHz		10380	46.98	-21.22	68.2	59.2	38.7	16.23	67.15	-	-	P	H	
		15570	47.37	-26.63	74	56.75	37.46	19.82	66.66	-	-	P	H	
													H	
													H	
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													H	
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													H	
													H	
			10380	46.9	-21.3	68.2	59.12	38.7	16.23	67.15	-	-	P	V
			15570	47.31	-26.69	74	56.69	37.46	19.82	66.66	-	-	P	V
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WiFi Ant. 5+6	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 46 5230MHz		10460	47.46	-20.74	68.2	59.4	38.88	16.29	67.11	-	-	P	H	
		15690	47.8	-26.2	74	57.49	37.26	19.89	66.84	-	-	P	H	
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													H	
													H	
			10460	47.54	-20.66	68.2	59.48	38.88	16.29	67.11	-	-	P	V
			15690	47.77	-26.23	74	57.46	37.26	19.89	66.84	-	-	P	V
													V	
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Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 													



Band 1 5150~5250MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI Ant. 5+6	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 42 5210MHz		5147.42	62.23	-11.77	74	47.74	33	10.96	29.47	246	183	P	H
		5146.12	52.38	-1.62	54	37.89	33	10.96	29.47	246	183	A	H
	*	5210	101.69	-	-	87.27	32.98	10.97	29.53	246	183	P	H
	*	5210	94.37	-	-	79.95	32.98	10.97	29.53	246	183	A	H
		5377.4	53.05	-20.95	74	38.7	32.9	11.13	29.68	-	-	P	H
		5351.36	41.89	-12.11	54	27.55	32.9	11.1	29.66	156	23	A	H
		5148.72	61.67	-12.33	74	47.18	33	10.96	29.47	156	23	P	V
		5149.76	51.45	-2.55	54	36.96	33	10.96	29.47	156	23	A	V
	*	5210	102.74	-	-	88.32	32.98	10.97	29.53	156	23	P	V
	*	5210	94.19	-	-	79.77	32.98	10.97	29.53	156	23	A	V
		5417.16	53.9	-20.1	74	39.54	32.9	11.18	29.72	156	23	P	V
		5376	41.89	-12.11	54	27.54	32.9	11.13	29.68	156	23	A	V
Remark	<ol style="list-style-type: none"> No other spurious found. All results are PASS against Peak and Average limit line. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 												



Band 1 5150~5250MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI Ant. 5+6	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 42 5210MHz		10420	46.8	-21.4	68.2	58.97	38.7	16.26	67.13	-	-	P	H	
		15630	46.65	-27.35	74	56.27	37.28	19.85	66.75	-	-	P	H	
													H	
													H	
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													H	
			10420	47.43	-20.77	68.2	59.6	38.7	16.26	67.13	-	-	P	V
			15630	46.26	-27.74	74	55.88	37.28	19.85	66.75	-	-	P	V
													V	
													V	
													V	
													V	
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													V	
													V	
													V	
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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.													



Emission above 18GHz
WIFI 802.11a (SHF @ 1m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
5+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11a SHF		22536	40.99	-33.01	74	61.12	38.3	-3.84	54.59	-	-	P	H	
		38110	46.87	-41.33	68.2	61.6	43.49	-0.83	57.39	-	-	P	H	
													H	
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													H	
													H	
													H	
			22120	40.94	-33.06	74	61.14	38.15	-3.67	54.68	-	-	P	V
			36850	45.61	-42.59	68.2	61.37	43.1	-0.71	58.15	-	-	P	V
														V
														V
														V
														V
														V
													V	
													V	
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.													



Emission below 1GHz

WIFI 802.11a (LF @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
5+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)	
802.11a LF		81.84	29.92	-10.08	40	47.23	13.67	1.32	32.3	128	99	Q	H	
		101.55	33.68	-9.82	43.5	48.22	16.15	1.55	32.24	122	94	Q	H	
		167.16	34.5	-9	43.5	48.95	15.86	1.99	32.3	118	81	Q	H	
		201.72	37.63	-5.87	43.5	52.78	14.99	2.17	32.31	134	81	Q	H	
		233.58	36.99	-9.01	46	50.38	16.59	2.35	32.33	115	86	Q	H	
		456.8	36.28	-9.72	46	42.28	23.19	3.29	32.48	116	87	Q	H	
														H
														H
														H
														H
														H
														H
			53.49	38.82	-1.18	40	57.31	12.87	0.94	32.3	100	26	Q	V
			69.69	34.47	-5.53	40	53.31	12.25	1.19	32.28	182	353	Q	V
			81.57	33.21	-6.79	40	50.55	13.64	1.32	32.3	125	66	Q	V
			166.89	37.44	-6.06	43.5	51.88	15.88	1.98	32.3	100	82	Q	V
			237.09	33.14	-12.86	46	46.11	16.99	2.37	32.33	153	38	Q	V
			488.3	39.87	-6.13	46	45.26	23.74	3.4	32.53	-	-	P	V
													V	
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Remark

- No other spurious found.
- All results are PASS against limit line.
- The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is Margin line.
P/A	Peak or Average
H/V	Horizontal or Vertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
5+6		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a		5150	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 36		5150	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H
5180MHz													

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Margin(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 5150MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
= 55.45 (dBμV/m)
2. Margin(dB)
= Level(dBμV/m) – Limit Line(dBμV/m)
= 55.45(dBμV/m) – 74(dBμV/m)
= -18.55(dB)

For Average Limit @ 5150MHz:

1. Level(dBμV/m)
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)
= 43.54 (dBμV/m)
2. Margin(dB) = Level(dBμV/m) – Limit Line(dBμV/m)
= 43.54(dBμV/m) – 54(dBμV/m)
= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix D. Radiated Spurious Emission Plots

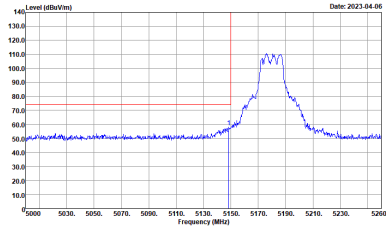
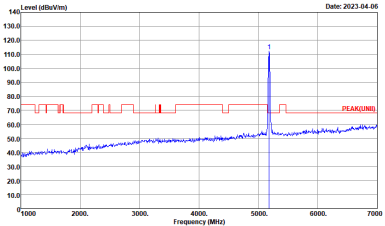
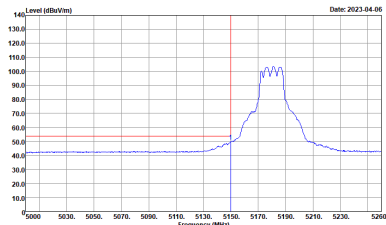
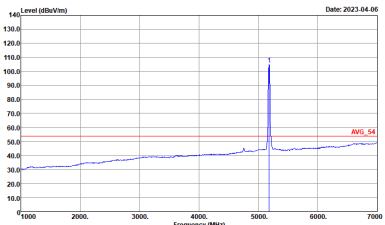
Test Engineer :	Andy Yang, Gary Guo and Steven Wu	Temperature :	20~25°C
		Relative Humidity :	50~60%

Note symbol

-L	Low channel location
-R	High channel location



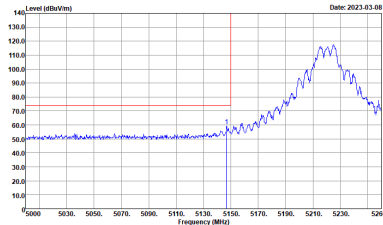
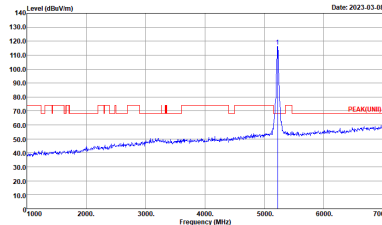
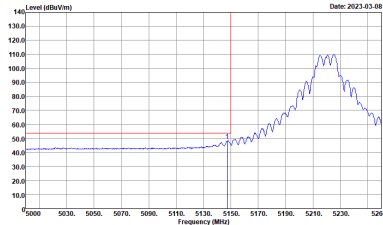
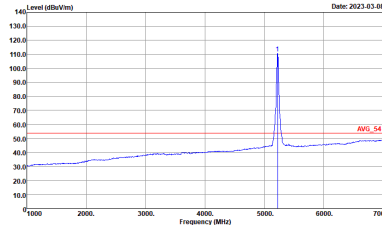
Band 1 - 5150~5250MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(FUNDE) 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto</p>

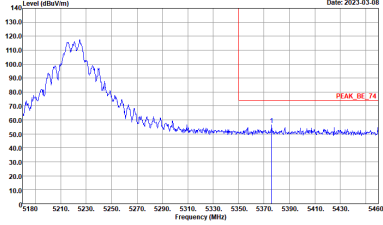
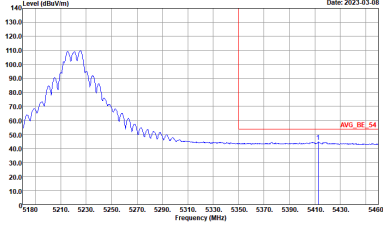


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH36 5180MHz	
5+6	Vertical	Fundamental
Peak	<p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH16-11Y Condition : PEAK(UN1) 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>

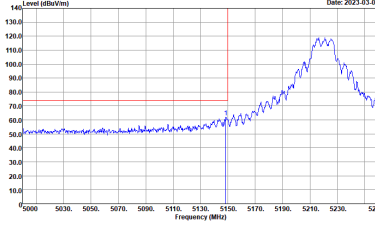
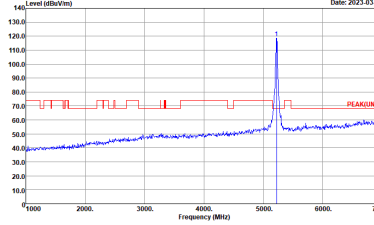
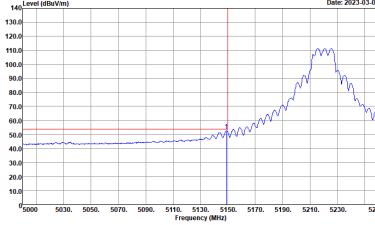
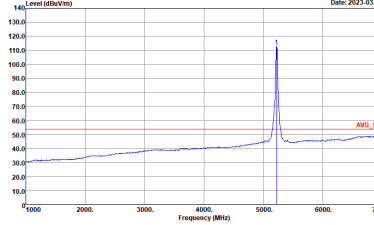


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-1Y Condition : PEAK_BE_74 3m 91200_02038_220809 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-1Y Condition : PEAK(UNL) 3m 91200_02038_220809 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-1Y Condition : AVG_BE_54 3m 91200_02038_220809 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	 <p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_02038_220809 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>

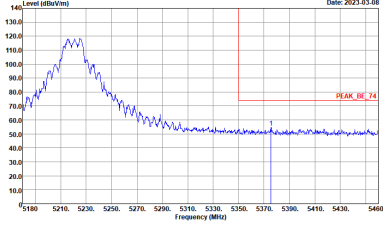
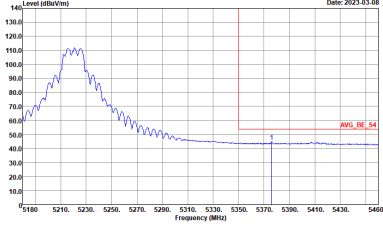


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - R	
5+6	Horizontal	Fundamental
<p>Peak</p>	 <p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_02038_220809 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	 <p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_02038_220809 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Left blank</p>

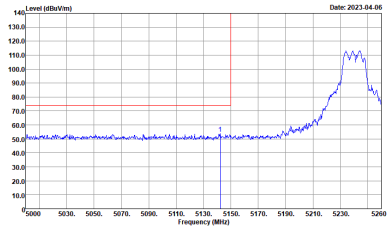
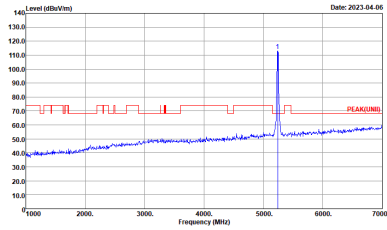
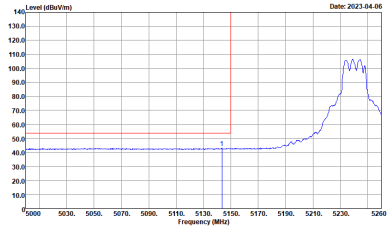
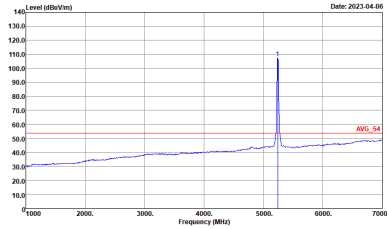


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - L	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_02038_220809 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UN1) 3m 91200_02038_220809 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_02038_220809 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_02038_220809 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH44 5220MHz - R	
5+6	Vertical	Fundamental
<p>Peak</p>	 <p>Site : 03CH6-1Y Condition : PEAK_BE_74 3m 91200_02038_220809 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	 <p>Site : 03CH6-1Y Condition : AVG_BE_54 3m 91200_02038_220809 VERTICAL RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Left blank</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - R	
5+6	Horizontal	Fundamental
<p>Peak</p>	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000000Hz VBW:3000000Hz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000000Hz VBW:10000Hz SWT:Auto</p>	<p>Left blank</p>



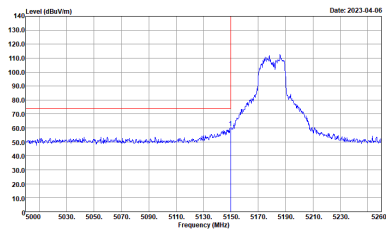
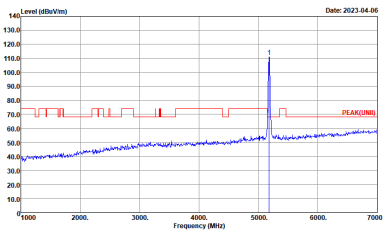
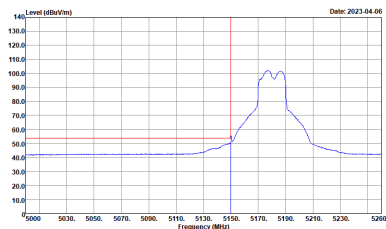
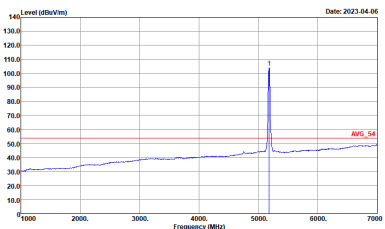
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - L	
5+6	Vertical	Fundamental
Peak	<p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	<p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>



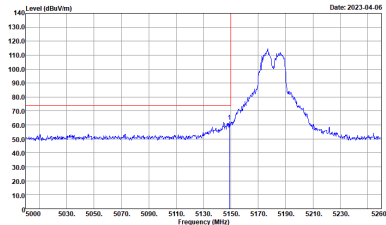
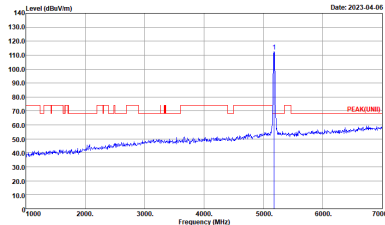
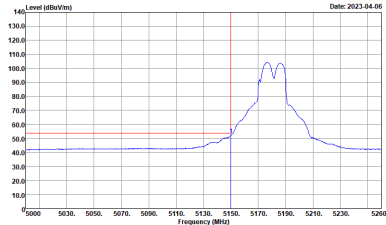
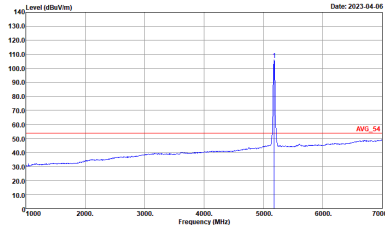
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11a CH48 5240MHz - R	
5+6	Vertical	Fundamental
<p>Peak</p>	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Left blank</p>



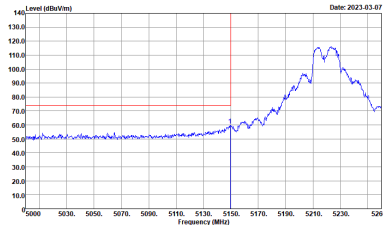
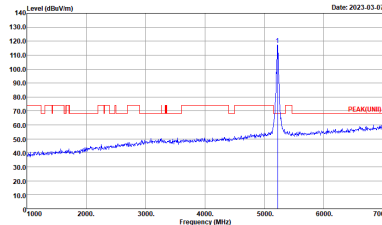
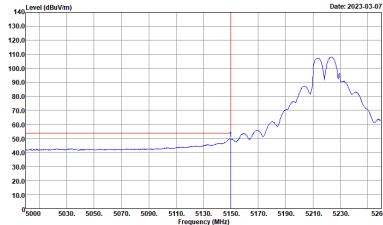
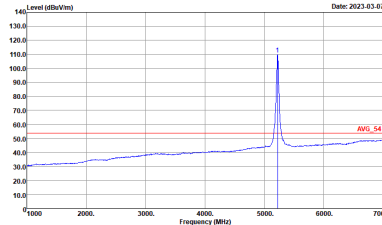
Band 1 5150~5250MHz
WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-1Y Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH16-1Y Condition : PEAK(UNIT) 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-1Y Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	 <p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UN1) 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:0.300kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:0.300kHz SWT:Auto</p>

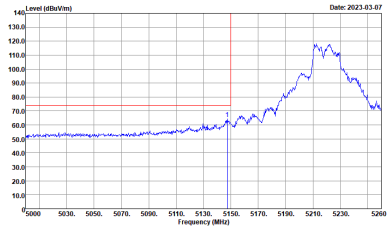
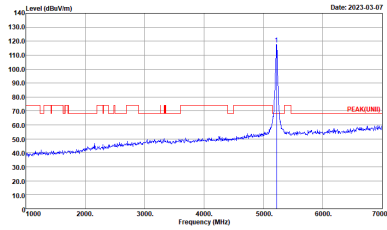
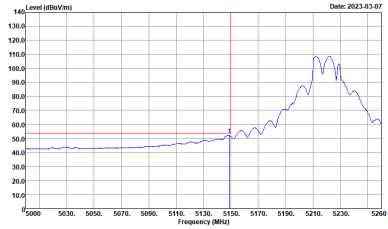
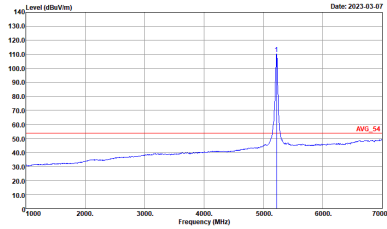


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH44 5220MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH44 5220MHz - R	
5+6	Horizontal	Fundamental
Peak	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_220310 HORIZONTAL : RBW:1000000Hz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000000Hz VBW:3000.000kHz SWT:Auto</p>	Left blank

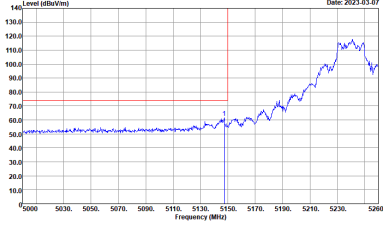
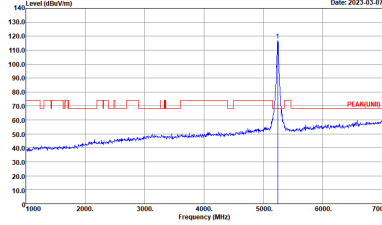
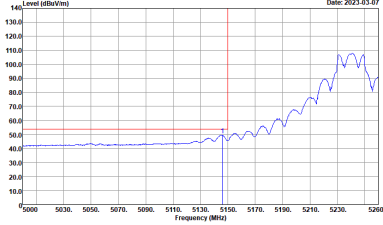
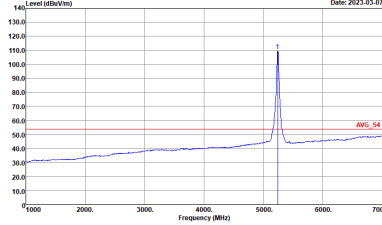


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH44 5220MHz - L	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UNL) 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>

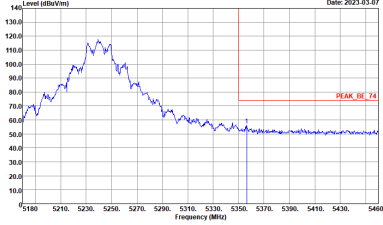
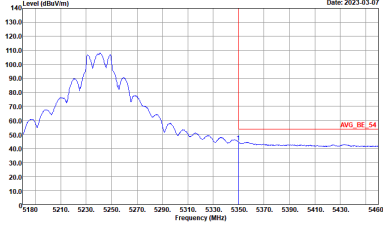


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH44 5220MHz - R	
5+6	Vertical	Fundamental
Peak	<p>Site Condition : 03CH6-HY : PEAK_BE_74 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site Condition : 03CH6-HY : AVG_BE_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank

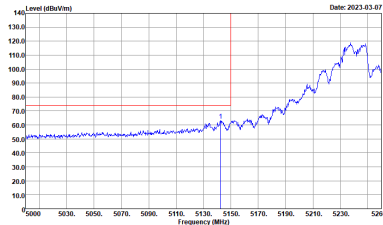
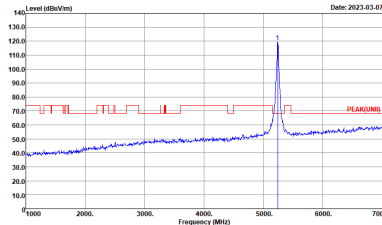
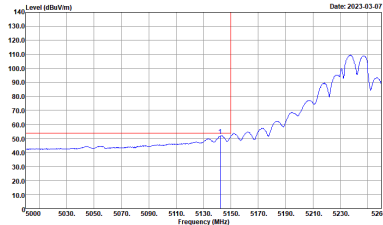
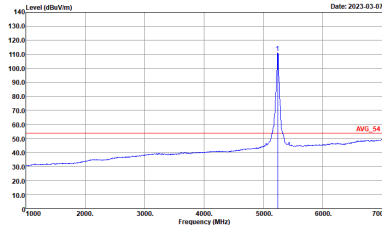


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH48 5240MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH48 5240MHz - R	
5+6	Horizontal	Fundamental
<p>Peak</p>	 <p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_220310 HORIZONTAL RBW:1000000Hz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	 <p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_220310 HORIZONTAL RBW:1000000Hz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>



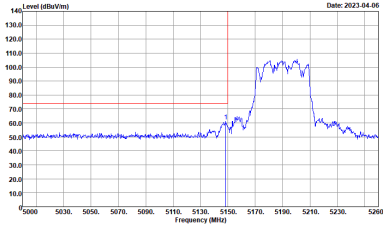
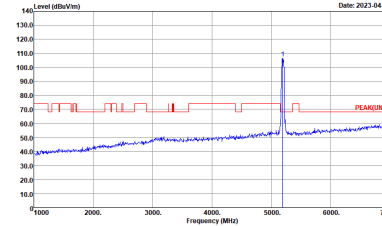
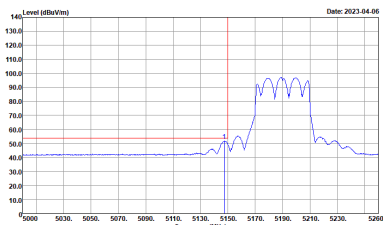
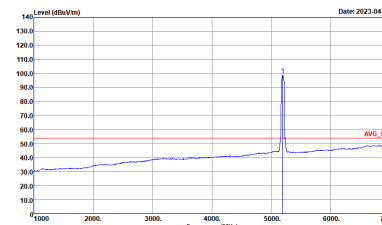
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH48 5240MHz - L	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UNL) 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH48 5240MHz - R	
5+6	Vertical	Fundamental
<p>Peak</p>	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>



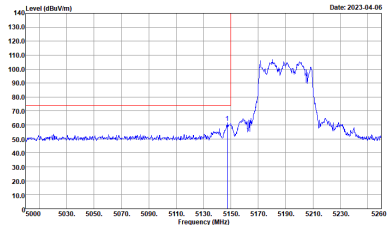
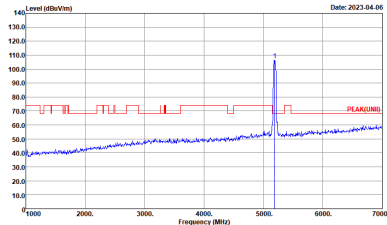
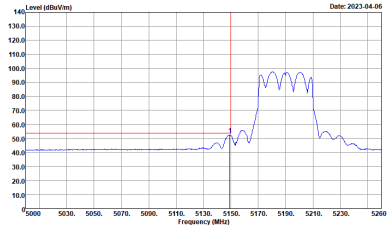
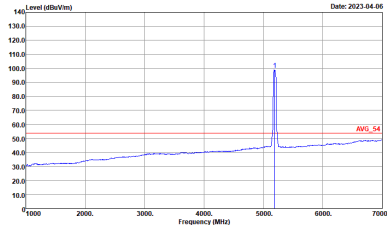
Band 1 5150~5250MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UNIT) 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - R	
5+6	Horizontal	Fundamental
<p>Peak</p>	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Left blank</p>

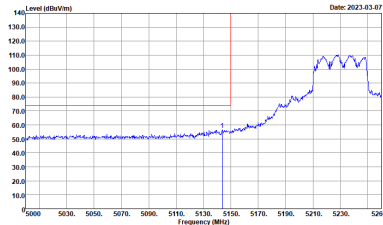
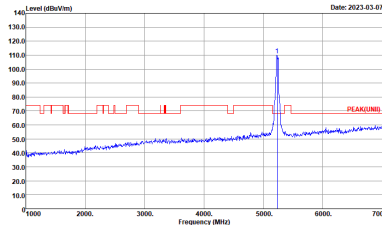
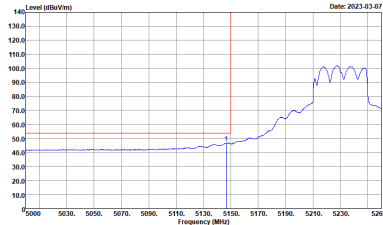
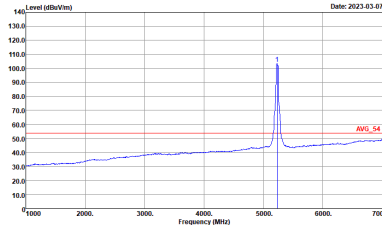


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - L	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UNL) 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>

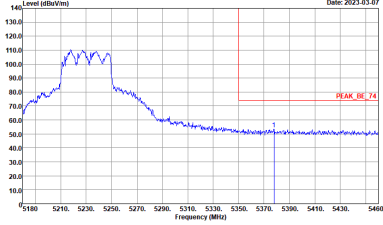
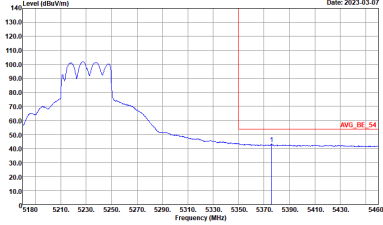


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - R	
5+6	Vertical	Fundamental
<p>Peak</p>		<p>Left blank</p>
<p>Avg.</p>		<p>Left blank</p>

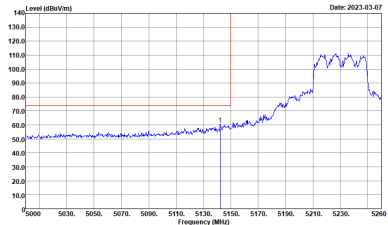
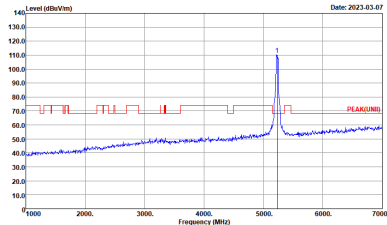
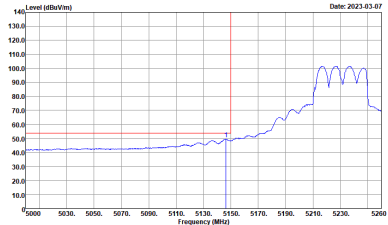
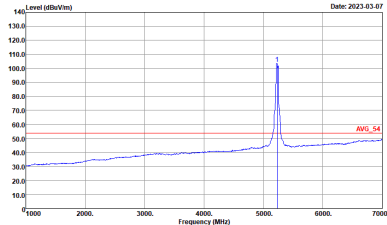


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH46 5230MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH46 5230MHz - R	
5+6	Horizontal	Fundamental
<p>Peak</p>	 <p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_220310 HORIZONTAL RBW:1000000Hz VBW:3000000Hz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	 <p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_220310 HORIZONTAL RBW:1000000Hz VBW:3000000Hz SWT:Auto</p>	<p>Left blank</p>



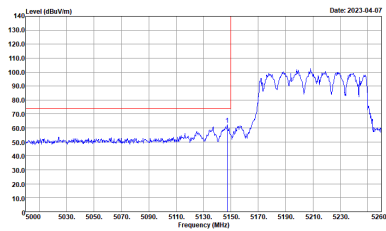
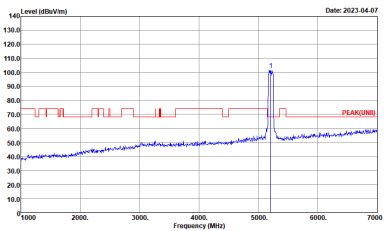
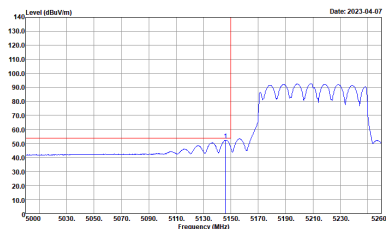
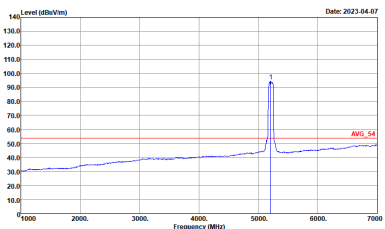
WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH46 5230MHz - L	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH46 5230MHz - R	
5+6	Vertical	Fundamental
<p>Peak</p>	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p>Avg.</p>	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_220310 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>



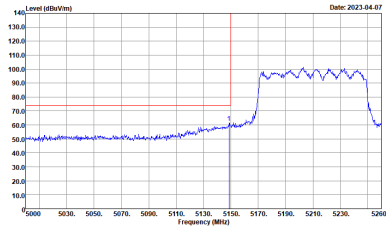
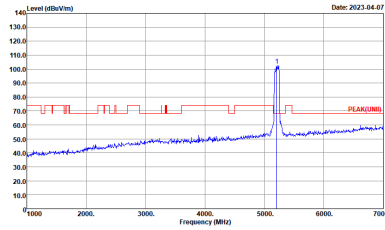
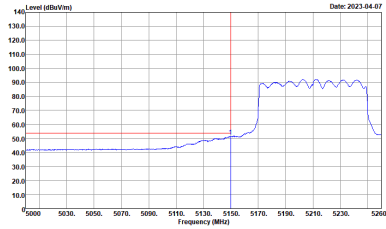
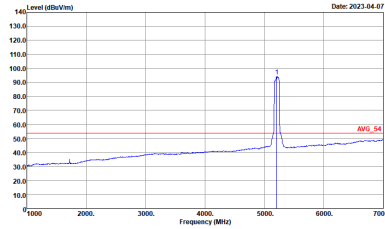
Band 1 5150~5250MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH42 5210MHz - L	
5+6	Horizontal	Fundamental
Peak	 <p>Site : 03CH16-11Y Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : PEAK(UNIT1) 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-11Y Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	 <p>Site : 03CH16-11Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH42 5210MHz - R	
5+6	Horizontal	Fundamental
Peak	<p>Site : 03CH6-HY Condition : PEAK_BE_74 3m 91200_1522_230323 HORIZONTAL : RBW:1000000Hz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH6-HY Condition : AVG_BE_54 3m 91200_1522_230323 HORIZONTAL : RBW:1000000Hz VBW:3000.000kHz SWT:Auto</p>	Left blank



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH42 5210MHz - L	
5+6	Vertical	Fundamental
Peak	 <p>Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : PEAK(UNL) 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH16-HY Condition : AVG_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH42 5210MHz - R	
5+6	Vertical	Fundamental
Peak	<p>Site : 03CH6-11Y Condition : PEAK_BE_74 3m 91200_1522_230323 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH6-11Y Condition : AVG_BE_54 3m 91200_1522_230323 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank



Band 1 - 5150~5250MHz
WIFI 802.11a (Harmonic @ 3m)

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH36 5180MHz	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-HY Condition : PEAK(LINE1) 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-HY Condition : PEAK(LINE1) 3m 91200_1522_230323 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH36 5180MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>

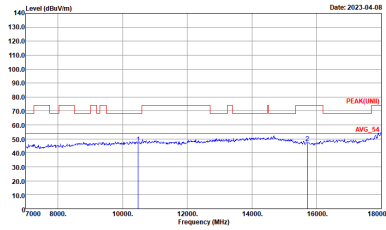
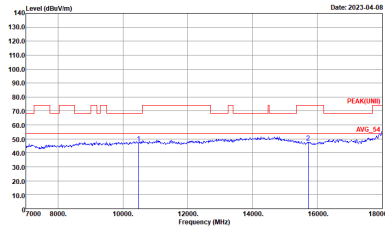


WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH44 5220MHz	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-1#Y Condition : PEAK[UNII] 3m 91200_02038_220809 HORIZONTAL :</p>	<p>Site : 03CH16-1#Y Condition : PEAK[UNII] 3m 91200_02038_220809 VERTICAL :</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH44 5220MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_02038_220809 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_02038_220809 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_02038_220809 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_02038_220809 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH48 5240MHz	
5+6	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH16-1Y Condition : PEAK[UNII] 3m 91200_1522_230323 HORIZONTAL :</p>	 <p>Site : 03CH16-1Y Condition : PEAK[UNII] 3m 91200_1522_230323 VERTICAL :</p>



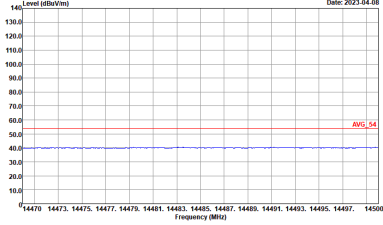
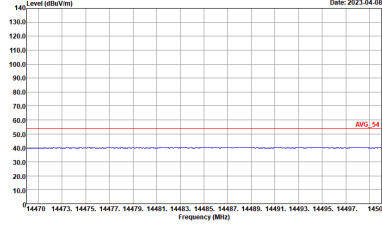
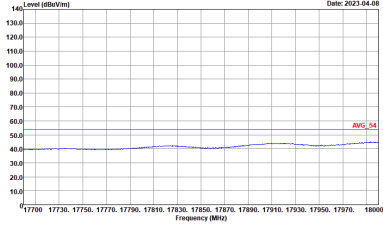
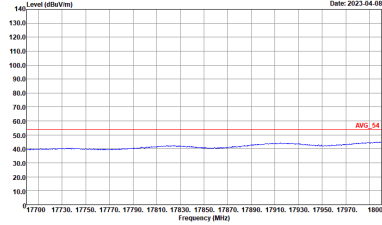
WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11a CH48 5240MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>



**Band 1 5150~5250MHz
WIFI 802.11ax HE20 Full (Harmonic @ 3m)**

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_1522_230323 VERTICAL</p>

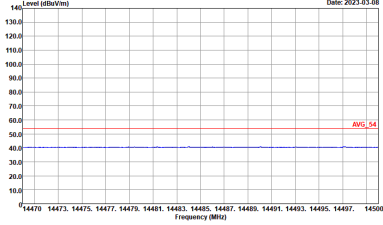
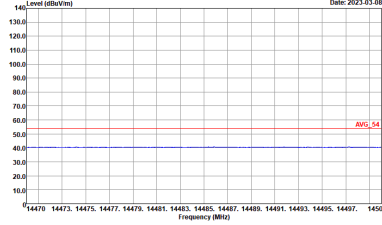
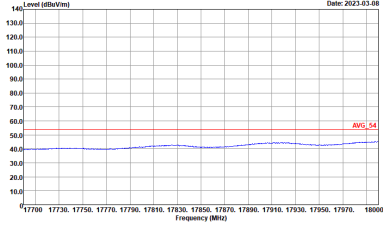
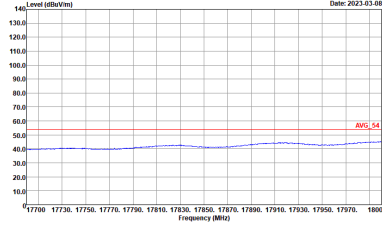


WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH36 5180MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>

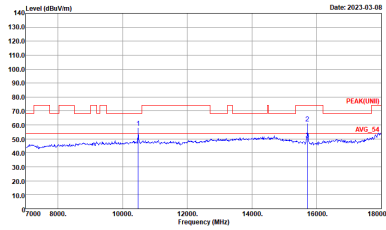
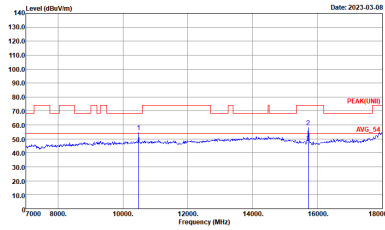


WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH44 5220MHz	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-1#Y Condition : PEAK(UNII) 3m 91200_1522_220310 HORIZONTAL :</p>	<p>Site : 03CH16-1#Y Condition : PEAK(UNII) 3m 91200_1522_220310 VERTICAL :</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH44 5220MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_220310 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL</p>	 <p>Site : 03CH16-1FY Condition : AVG_54 3m 91200_1522_220310 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH48 5240MHz	
5+6	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH16-1#Y Condition : PEAK(UNII) 3m 91200_1522_220310 HORIZONTAL :</p>	 <p>Site : 03CH16-1#Y Condition : PEAK(UNII) 3m 91200_1522_220310 VERTICAL :</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH48 5240MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 VERTICAL</p>



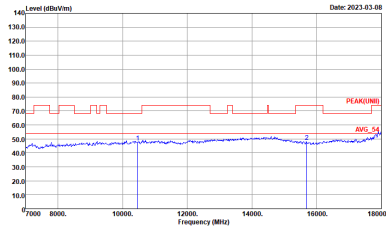
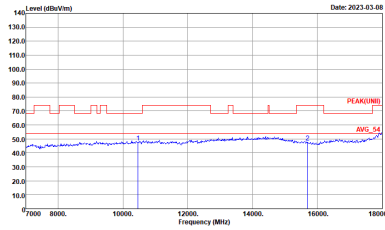
**Band 1 5150~5250MHz
WIFI 802.11ax HE40 Full (Harmonic @ 3m)**

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-1FY Condition : PEAK(UNIT) 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1FY Condition : PEAK(UNIT) 3m 91200_1522_230323 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH46 5230MHz	
5+6	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH16-1#Y Condition : PEAK[UNII] 3m 91200_1522_220310 HORIZONTAL :</p>	 <p>Site : 03CH16-1#Y Condition : PEAK[UNII] 3m 91200_1522_220310 VERTICAL :</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH46 5230MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_220310 VERTICAL</p>



Band 1 5150~5250MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH42 5210MHz	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_1522_230323 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH42 5210MHz	
5+6	Horizontal	Vertical
<p>14.47G ~14.5G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>
<p>17.7G ~18G Avg.</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 HORIZONTAL</p>	<p>Site : 03CH16-1Y Condition : AVG_54 3m 91200_1522_230323 VERTICAL</p>



**Emission above 18GHz
5GHz WIFI 802.11a (SHF @ 1m)**

WIFI	5GHz WIFI	
ANT	802.11a SHF	
5+6	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH16-4Y Condition : PEAK[LINE1] In SHF_993_1124 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	<p>Site : 03CH16-4Y Condition : PEAK[LINE1] In SHF_993_1124 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>



Emission below 1GHz
5GHz WIFI 802.11a (LF)

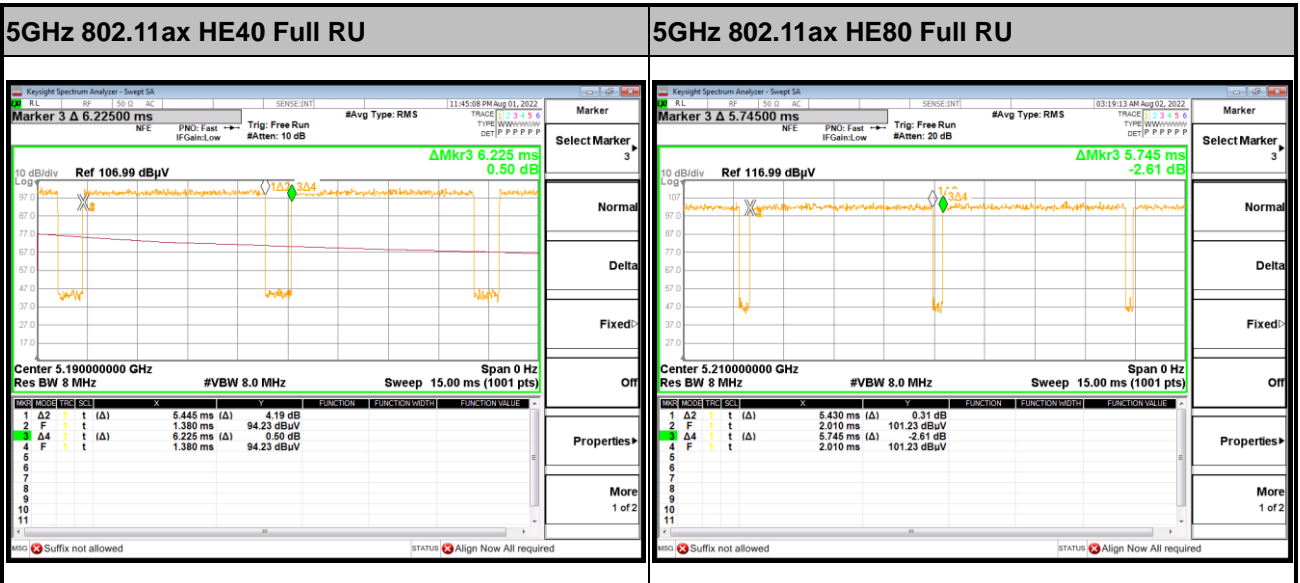
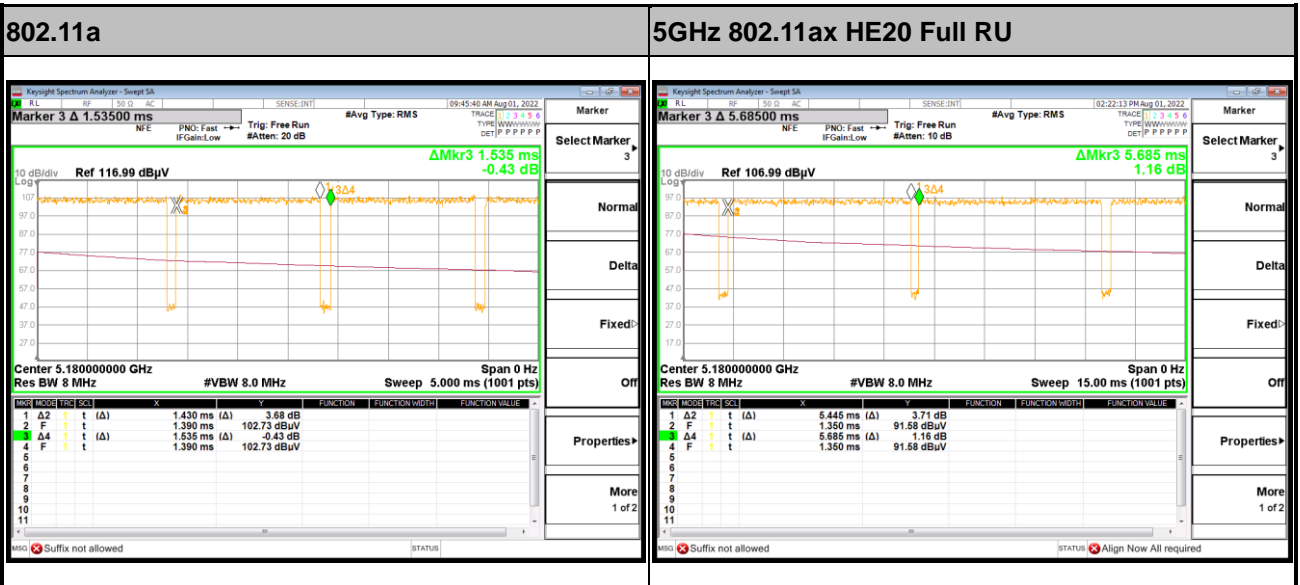
WIFI	5GHz WIFI	
ANT	802.11a LF	
5+6	Horizontal	Vertical
QP / Peak	<p>Site : 03CH16-HY Condition : QP 3m BELOG_47020_221008_H HORIZONTAL</p>	<p>Site : 03CH16-HY Condition : QP 3m BELOG_47020_221008_H VERTICAL</p>



Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
5+6	802.11a	93.16	1430	0.70	1kHz
5+6	5GHz 802.11ax HE20 Full RU	95.78	5445	0.18	300Hz
5+6	5GHz 802.11ax HE40 Full RU	87.47	5445	0.18	300Hz
5+6	5GHz 802.11ax HE80 Full RU	94.52	5430	0.18	300Hz

MIMO <Ant. 5+6>



—THE END—