FCC RADIO TEST REPORT

FCC ID	**:**	**A4RG9S9B**
Equipment	**:**	**Phone**
Applicant	**:**	**Google LLC** **1600 Amphitheatre Parkway,** **Mountain View, California, 94043 USA**
Standard	**:**	**FCC Part 15 Subpart E §15.407**

The product was received on Jun. 08, 2021 and testing was performed from Jul. 02, 2021 to Dec. 16, 2022. We, Sporton International Inc. EMC & Wireless Communications 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. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issue Date
FR0D2942-18A	01	Initial issue of report	Dec. 16, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.407(e)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum E.I.R.P Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	1.63 dB under the limit at 5925.250 MHz
3.5	15.207	AC Conducted Emission	Pass	10.57 dB under the limit at 0.501 MHz
3.6	15.203	Antenna Requirement	Pass	-

Remark: The FR0D2942-18A report reuses AC Conducted Emission test data from the FR0D2942-04F report.

Declaration of Conformity:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results. 2. The measurement uncertainty please refer to report "Uncertainty of Evaluation".
Comments and Explanations:
The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: William Chen

Report Producer: Lucy Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Phone
FCC ID	A4RG9S9B
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/5G NR /NFC/GNSS/WPT WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE

Remark: The above EUT's information was declared by manufacturer.

EUT Information List	
S/N	Performed Test Item
15211FDF60007M	Conducted Measurement
15201FDF60006K	Radiated Spurious Emission
15201FDF60009S	Conducted Emission

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Frequency Range	5850 MHz ~ 5895 MHz
Maximum Output Power	**MIMO <Ant. 4+3>** 802.11a: 21.94 dBm / 0.1563 W 802.11n HT20: 22.89 dBm / 0.1945 W 802.11n HT40: 22.84 dBm / 0.1923 W 802.11ac VHT20: 23.06 dBm / 0.2023 W 802.11ac VHT40: 22.84 dBm / 0.1923 W 802.11ac VHT80: 22.04 dBm / 0.1600 W 802.11ax HE20: 23.19 dBm / 0.2084 W 802.11ax HE40: 22.99 dBm / 0.1991 W 802.11ax HE80: 22.09 dBm / 0.1618 W
99% Occupied Bandwidth	**MIMO <Ant. 4>** 802.11a: 17.53 MHz 802.11ax HE20: 19.48 MHz 802.11ax HE40: 38.26 MHz 802.11ax HE80: 77.20 MHz **MIMO <Ant. 3>** 802.11a: 17.28 MHz 802.11ax HE20: 19.48 MHz 802.11ax HE40: 38.26 MHz 802.11ax HE80: 77.08 MHz
Antenna Type / Gain	**<Ant. 4>:** ILA Antenna with gain 1.1 dBi **<Ant. 3>:** IFA Antenna with gain 0.1 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax : OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM / 1024QAM)
Antenna Function Description	<table><tr><td></td><td>Ant. 4</td><td>Ant. 3</td></tr><tr><td>802.11 a/n/ac/ax MIMO</td><td>V</td><td>V</td></tr></table>

Remark:

1. MIMO Ant. 4+3 Directional Gain is a calculated result from MIMO Ant. 4 and MIMO Ant. 3. The formula used in calculation is documented in section 1.2.1.
2. Power of MIMO Ant. 4 + Ant. 3 is a calculated result from sum of the power MIMO Ant. 4 and MIMO Ant. 3.
3. The EUT's information above is declared by manufacturer. Please refer to Comments and Explanations in report summary.

1.2.1Antenna Directional Gain

Follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)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 kth antenna is being fed by spatial stream j, or zero if it is not;
G_k is the gain in dBi of the kth antenna.

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

Directional gain = $10*\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}]$ dBi

Where G1, G2….GN denote single antenna gain.

The directional gain “DG” is calculated as following table.

UNII-4	Ant 4 (dBi)	Ant 3 (dBi)	DG for Power (dBi)	DG for PSD (dBi)
	1.10	0.10	1.10	3.62

Calculation example:

If a device has two antenna, G_{ANT1}= 1.1dBi; G_{ANT2}=0.1dBi

Directional gain of power measurement = max(1.1, 0.1) + 0 = -1.1 dBi

Directional gain of PSD derived from formula which is

10 x log { { [10^ (1.1 dBi / 20) + 10^ (0.1 dBi / 20)] ^ 2 } / 2 }

= 3.62 dBi

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 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, 03CH07-HY

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 (TAF Code: 3786)
Remark	The Conducted test item subcontracted to Sporton International Inc. Wensan Laboratory.

FCC designation No.: TW1190 and TW3786

1.5 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.
- FCC KDB 291074 D02 EMC Measurement v01(Draft)
- 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.

2 Test Configuration of Equipment Under Test

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

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

2.1 Carrier Frequency and Channel

Frequency Band	Bandwidth	Channel	Frequency (MHz)	Note
5850-5895 MHz (U-NII-4)	20 MHz	169	5845	Straddle
		173	5865	
		177	5885	
	40 MHz	167	5835	Straddle
		175	5875	
	80 MHz	171	5855	Straddle

Note: The channel noted with “straddle” spans 5.725-5.850 GHz and 5.850-5.895 GHz.

2.2 Test Mode

This device support 26/52/106/242/484/996-tone RU.

The PSD of partial RU is reduced to be smaller than full RU according to TCB workshop interim guidance Oct. 2018.

The 802.11ax mode is investigated among different tones, full resource units (RU), partial resource units. The partial RU has no higher power than full RU's, thus the full RU is chosen as main test configuration.

The 242-tone RU is covered by 20MHz channel, 484-tone RU is covered by 40MHz channel and 996-tone RU is covered by 80MHz channel.

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**

Remark: The conducted power level of each chain in MIMO mode is equal or higher than SISO mode.

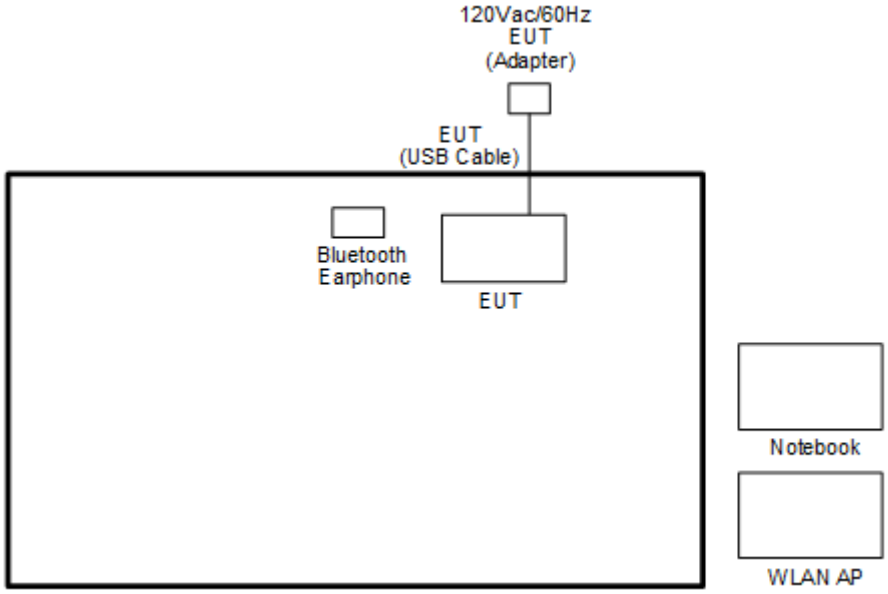
Test Cases	
AC Conducted Emission	Mode 1 : WLAN (5GHz) Link + Bluetooth Link + USB Cable 1 (Charging from AC Adapter 2)
Remark: **1.** For Radiated Test Cases, the tests were performed with Adapter 1 and USB Cable 1 **2.** During the preliminary test, both charging modes (Adapter mode and WPT Charging mode) were verified. It is determined that the adaptor mode is the worst case for official test.	

Ch. #		RF test channel of UNII-4 and UNII-3 &-4 span channels			
		802.11a	802.11ax HE20	802.11ax HE40	802.11ax HE80
L	Low	169	169	167	-
M	Middle	173	173	-	171
H	High	177	177	175	-

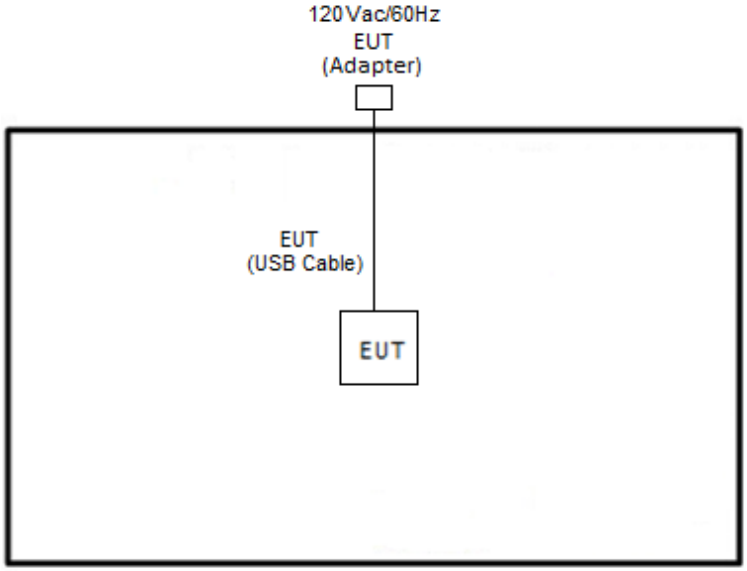
Remark: For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Google	G1013	N/A	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude E3480	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility “ADB Command 1.0.39” 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.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement

3.1.1Description of 6dB and 26dB and 99% Occupied Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

26dB and 99% Occupied bandwidth are reporting only.

3.1.2Measuring Instruments

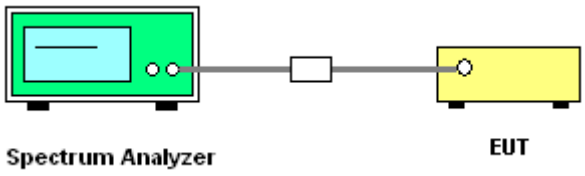
Please refer to the measuring equipment list in this test report.

3.1.3Test Procedures

The testing follows FCC KDB 291074 D02 EMC Measurement v01 (Draft) Section 2.11 Minimum Emission bandwidth

1. Set RBW = 100 kHz.
2. Set the VBW ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold
5. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
6. Measure and record the results in the test report.

3.1.4Test Setup

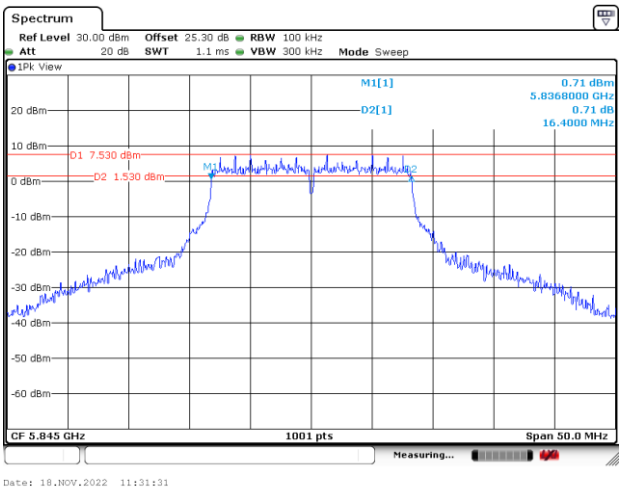
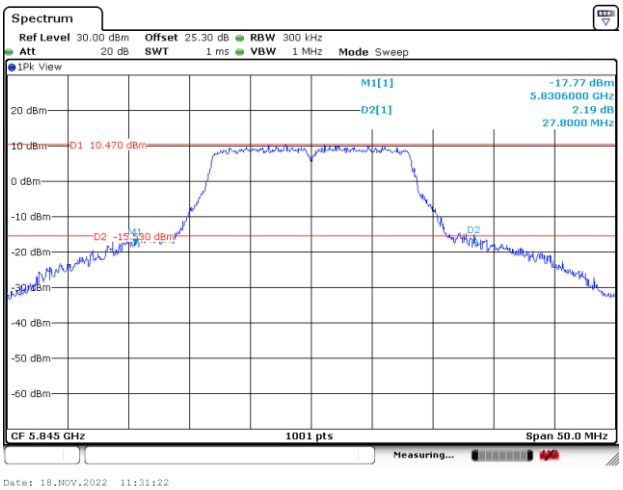


3.1.5Test Result of 6dB and 26dB and 99% Occupied Bandwidth

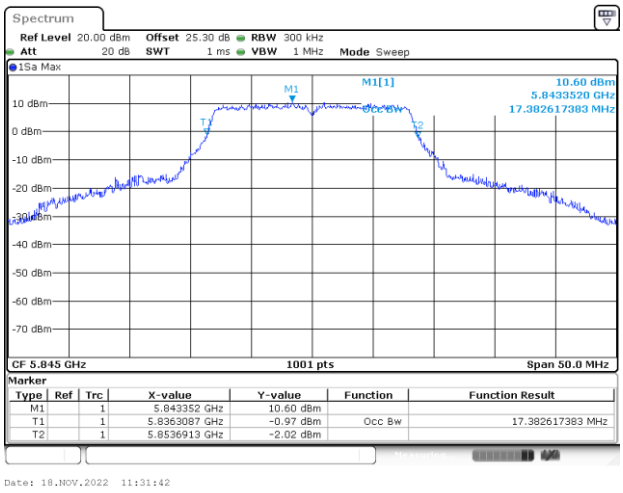
Please refer to Appendix A.

MIMO <Ant. 4+3>

<802.11a>

6dB Bandwidth	26dB Bandwidth
	

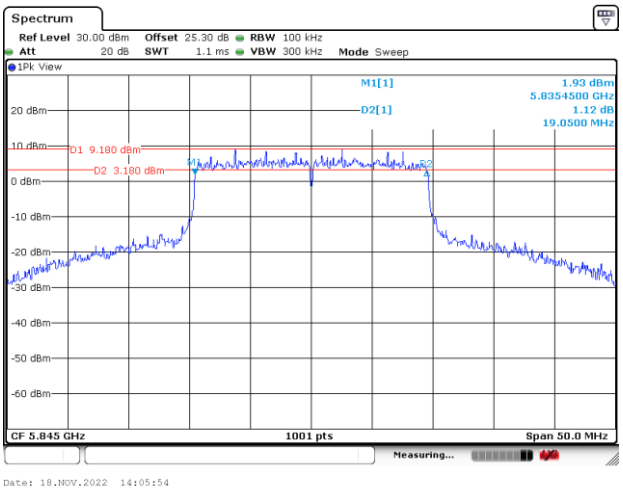
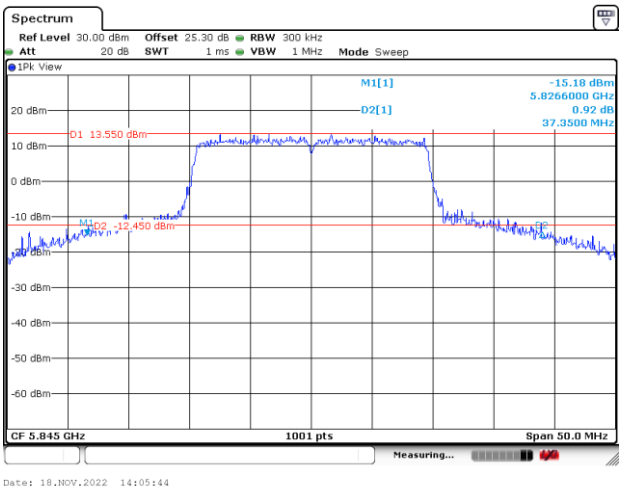
Occupied Bandwidth



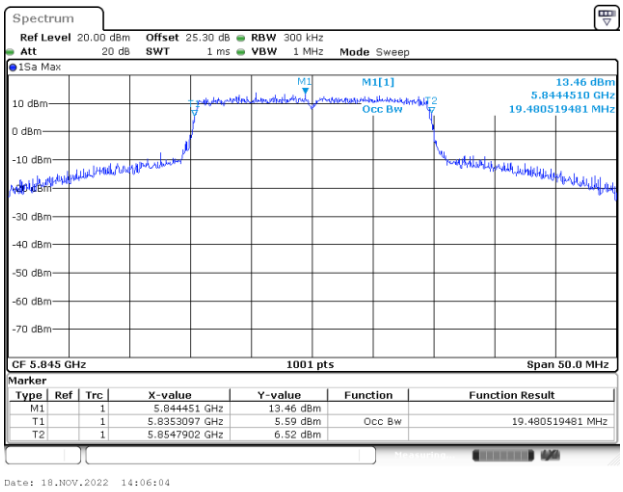
Marker						
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.843352 GHz	10.60 dBm		
T1		1	5.8363087 GHz	-0.97 dBm	Occ Bw	17.382617383 MHz
T2		1	5.8536913 GHz	-2.02 dBm		

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

<802.11ax HE20>

6dB Bandwidth	26dB Bandwidth
	

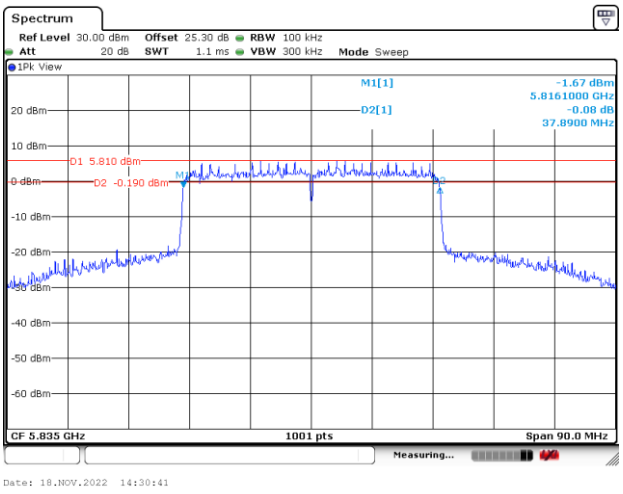
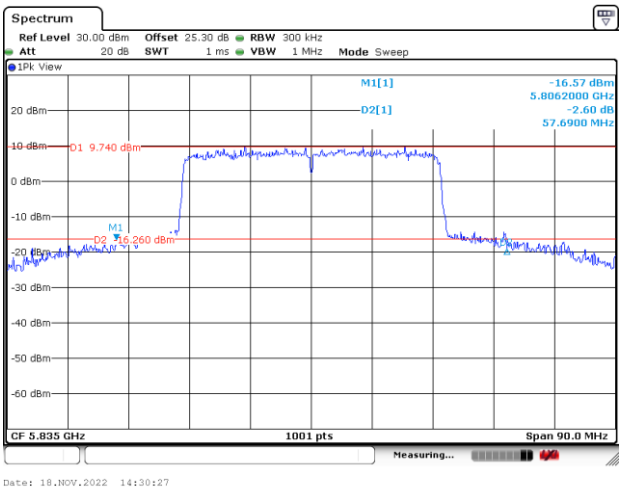
Occupied Bandwidth



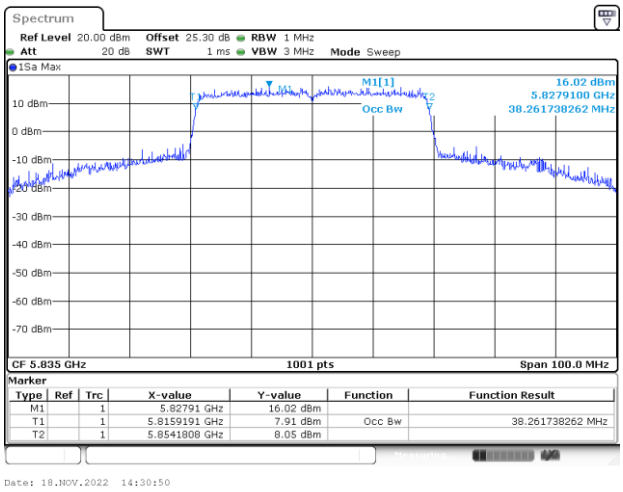
Marker						
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.844451 GHz	13.46 dBm		
T1		1	5.8353097 GHz	5.59 dBm	Occ Bw	19.480519481 MHz
T2		1	5.8547902 GHz	6.52 dBm		

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

<802.11ax HE40>

6dB Bandwidth	26dB Bandwidth
	

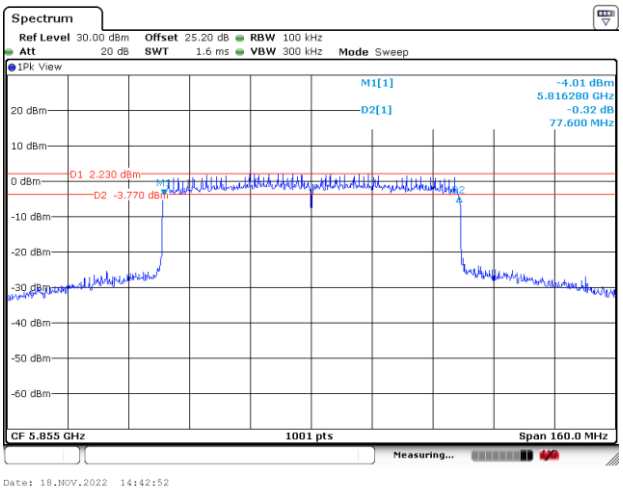
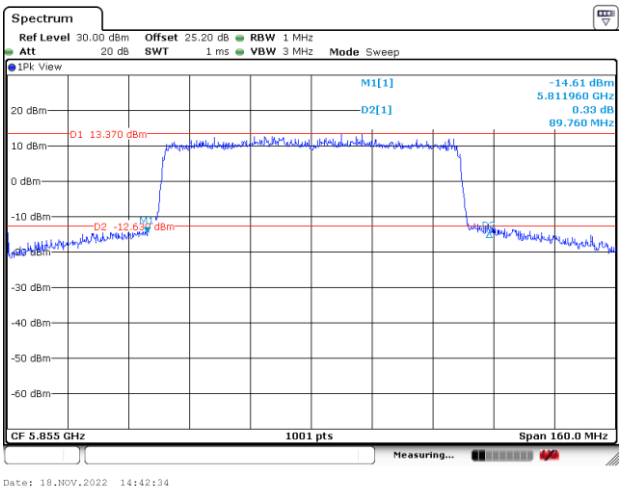
Occupied Bandwidth



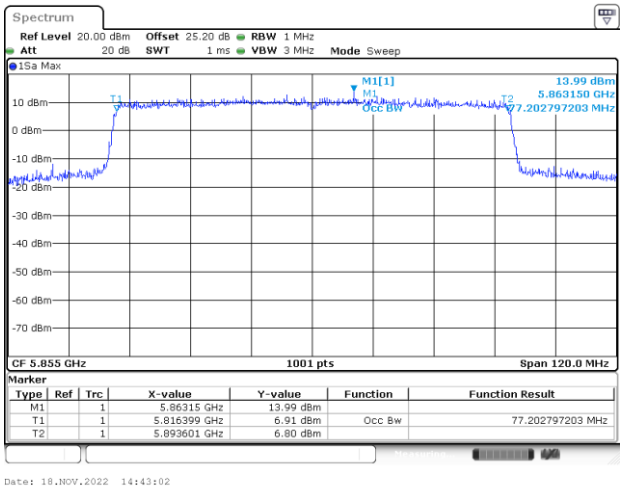
Marker						
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.82791 GHz	16.02 dBm		
T1		1	5.8159191 GHz	7.91 dBm	Occ Bw	38.261738262 MHz
T2		1	5.8541808 GHz	8.05 dBm		

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

<802.11ax HE80>

6dB Bandwidth	26dB Bandwidth
	

Occupied Bandwidth



Marker						
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	5.86315 GHz	13.99 dBm		
T1		1	5.816399 GHz	6.91 dBm	Occ Bw	77.202797203 MHz
T2		1	5.893601 GHz	6.80 dBm		

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

3.2 Maximum E.I.R.P Output Power Measurement

3.2.1Limit of Maximum E.I.R.P Output Power

For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 14 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm. Client devices operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 30 dBm.

3.2.2Measuring Instruments

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

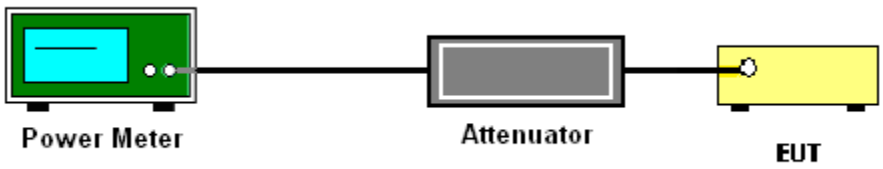
3.2.3Test Procedures

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.

3.2.4Test Setup



3.2.5Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1Limit of Power Spectral Density

1. For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 14 dBm e.i.r.p. in any 1-megahertz band.
2. For client devices operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands shall meet both 15.407(a)(3)(i) 30dBm/500kHz and 15.407(a)(3)(iii) 14dBm/MHz limit, where the stringent limit 14dBm/MHz is applied.

3.3.2Measuring Instruments

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

3.3.3Test Procedures

The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Section F) Maximum power spectral density.

 # Method SA-2 #

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

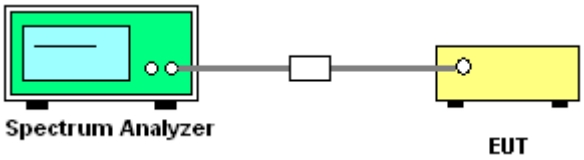
- Measure the duty cycle.
- Set span to encompass the entire emission bandwidth (EBW) of the signal.
- Set RBW = 1 MHz.
- Set VBW ≥ 3 MHz.
- Number of points in sweep ≥ 2 Span / RBW.
- Sweep time = auto.
- Detector = RMS
- Trace average at least 100 traces in power averaging mode.
- Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.

1. The RF output of EUT 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.

3.3.4Test Setup

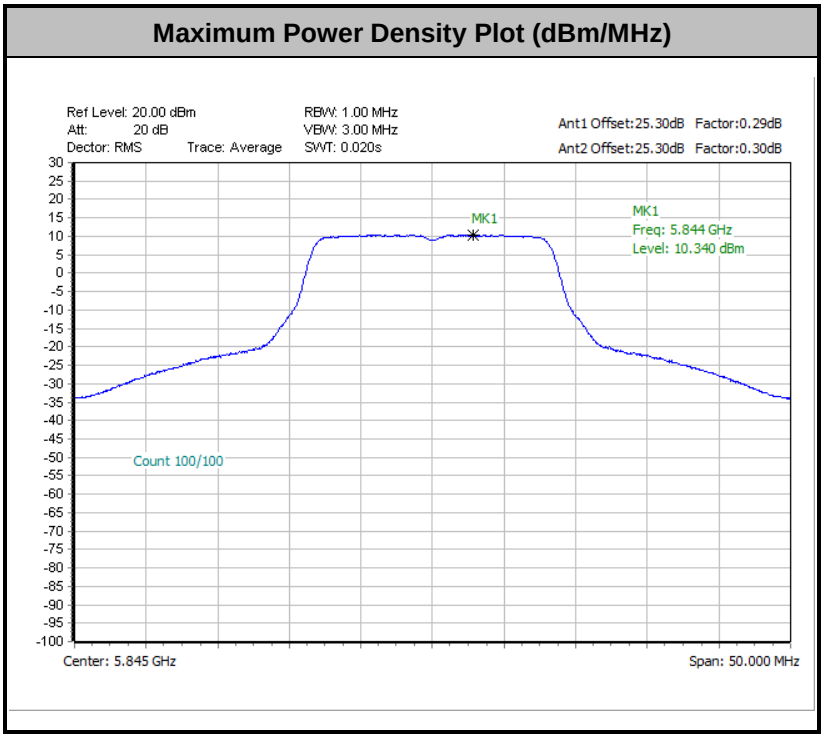


3.3.5Test Result of Power Spectral Density

Please refer to Appendix A.

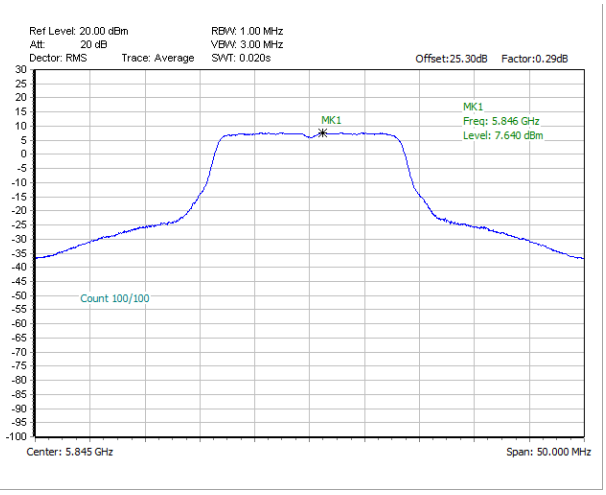
<802.11a>

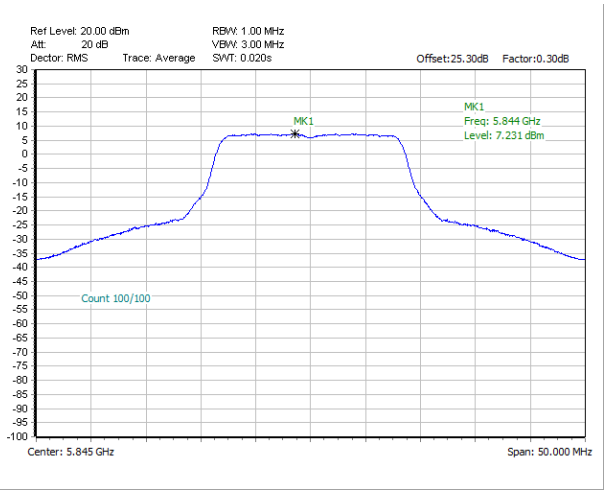
Maximum Power Density Plot (dBm/MHz)



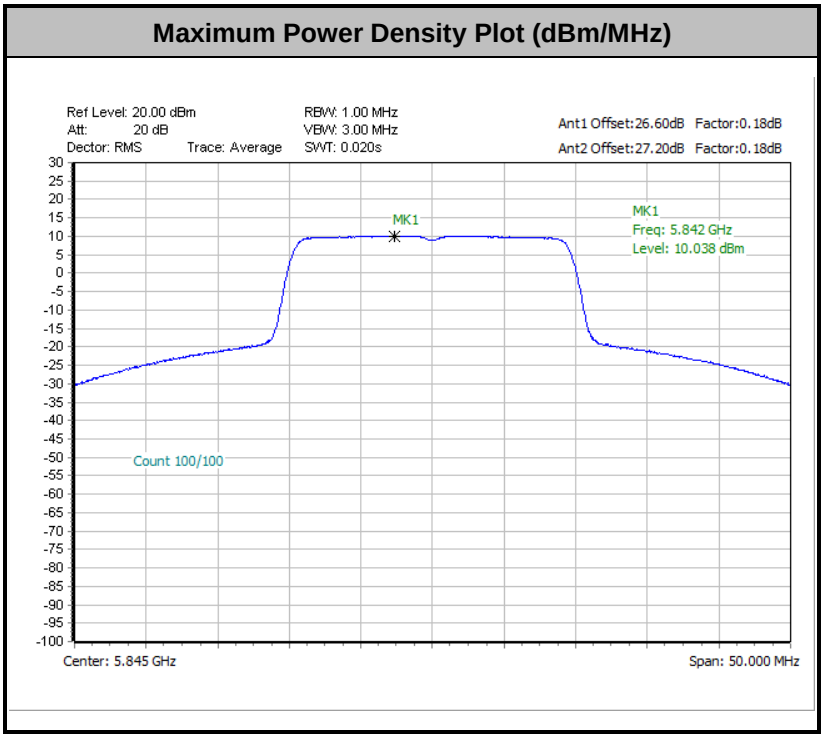
Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

Maximum Power Density Plot Trace 1 (Ant 4)	Maximum Power Density Plot Trace 2 (Ant 3)

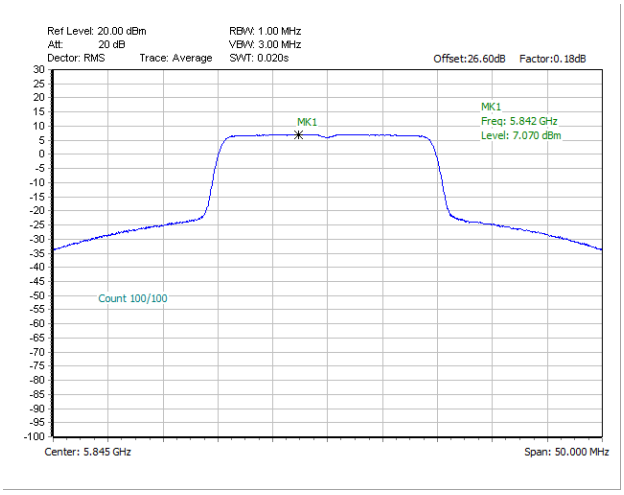
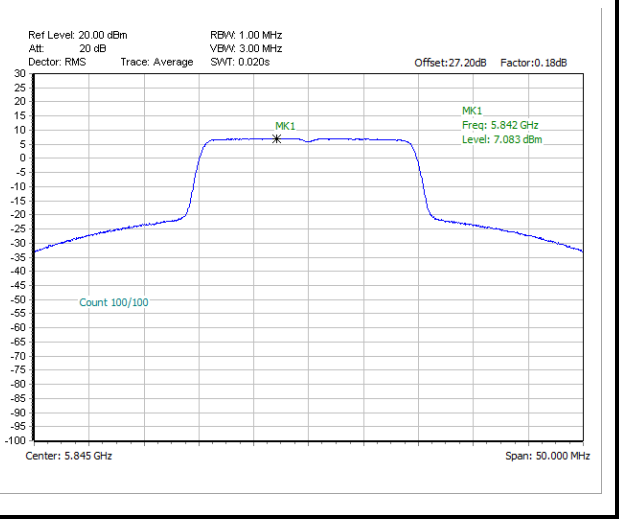




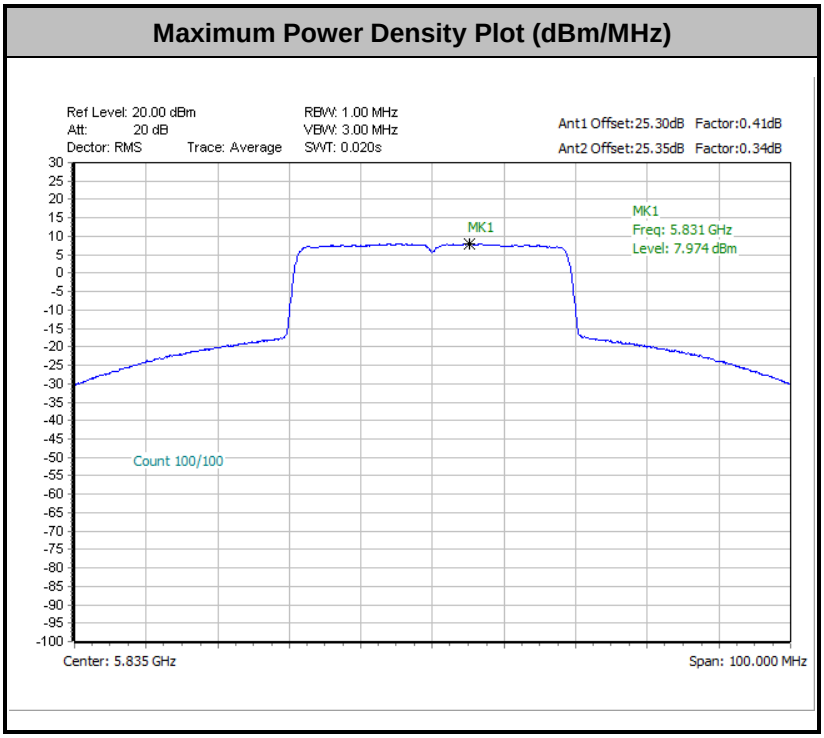
<802.11ax HE20>

Maximum Power Density Plot (dBm/MHz)


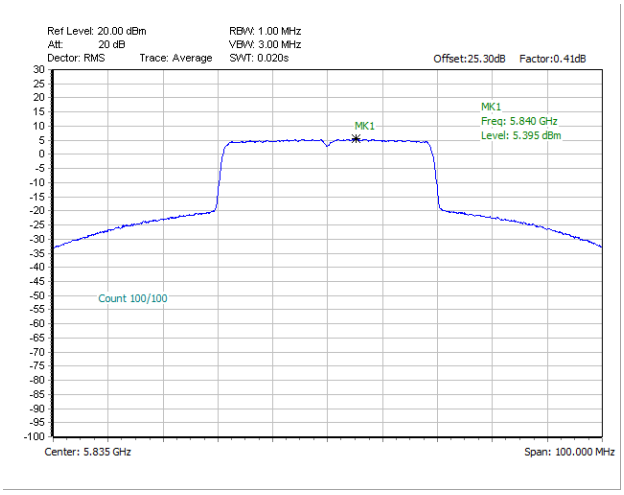
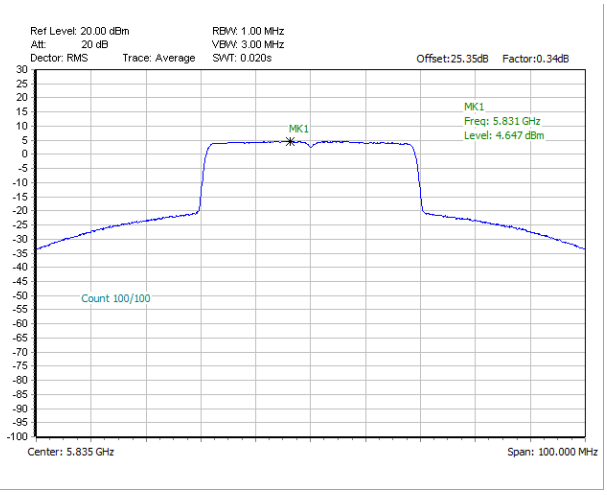
Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

Maximum Power Density Plot Trace 1 (Ant 4)	Maximum Power Density Plot Trace 2 (Ant 3)
	

<802.11ax HE40>

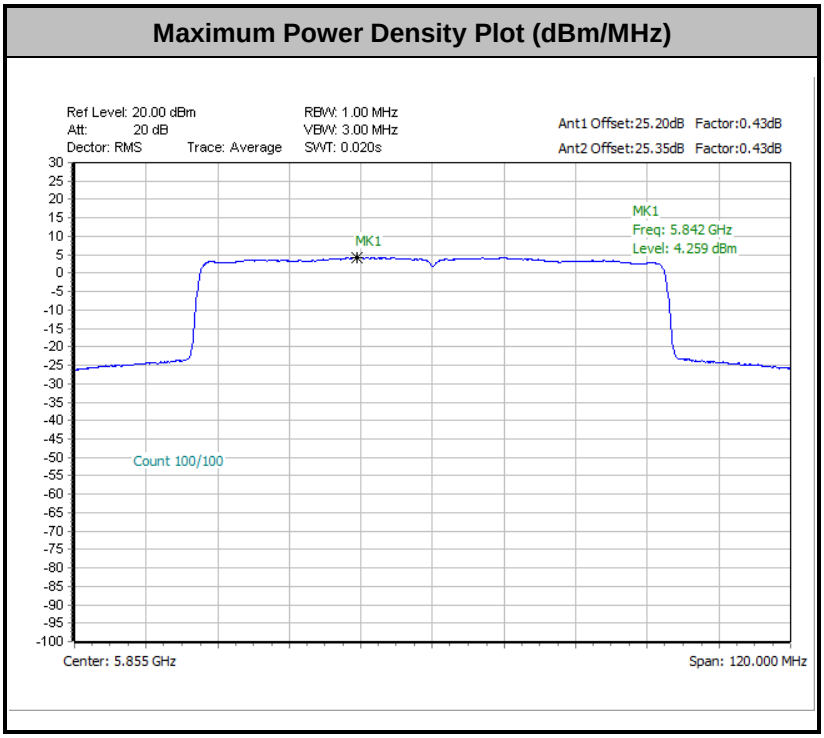
Maximum Power Density Plot (dBm/MHz)


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

Maximum Power Density Plot Trace 1 (Ant 4)	Maximum Power Density Plot Trace 2 (Ant 3)
	

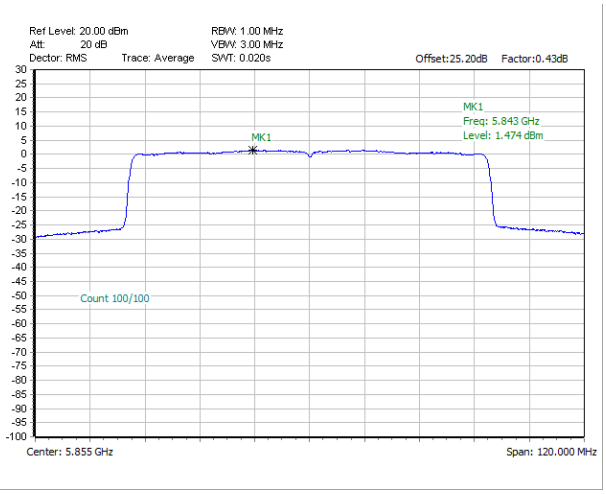
<802.11ax HE80>

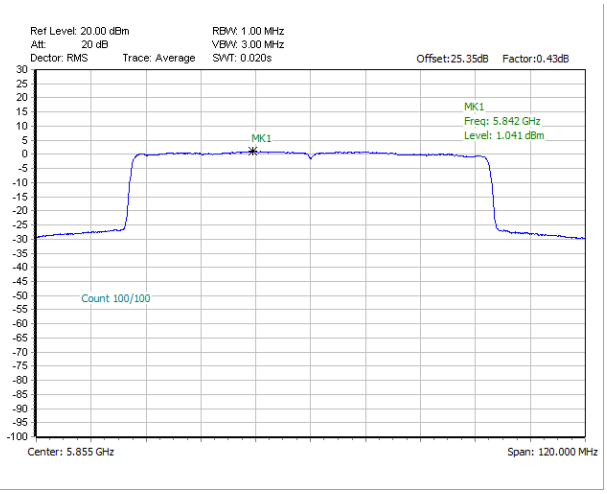
Maximum Power Density Plot (dBm/MHz)



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

Maximum Power Density Plot Trace 1 (Ant 4)	Maximum Power Density Plot Trace 2 (Ant 3)





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.

3.4.1Limit of Unwanted Emissions

(1) Unwanted spurious emissions fallen in restricted bands shall comply with the general field strength limits as the following 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.

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

(2) For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz:

15.407(b)(5)(ii), all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of −5 dBm/MHz and shall decrease linearly to an e.i.r.p. of −27 dBm/MHz at or above 5.925 GHz.

All emissions below 5.725 GHz shall not exceed an e.i.r.p. of −27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.

(3) KDB789033 D02 v02r01 G)2)c)

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

Unwanted band-edge emissions may be measured using the integration method as described in KDB Publication 789033 3. d) (ii). Emissions below 5725 MHz should be measured using peak-detection while emission above 5895 MHz should be measured using average.

Frequency(GHz)	EIRP (dBm)	Field Strength @3m distance (dBuV/m)	Note
Below 5.65	-27dBm/MHz	68.2	Peak
5.7	10dBm/MHz	105.2	Peak
5.72	15.6dBm/MHz	110.8	Peak
5.725	27dBm/MHz	122.2	Peak
5.895	-5dBm/MHz	90.2	Average
5.895	15dBm/MHz	110.2	Peak
Above 5.925	-27dBm/MHz	68.2	Average
Above 5.925	-7dBm/MHz	88.2	Peak

Note: Field strength at 3 m distance is converted to EIRP as the following equation:

$$EIRP[dBm] = E[dB\mu V/m] - 95.2$$

3.4.2Measuring Instruments

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

3.4.3Test 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 ≥ 3 MHz
   - Detector = Peak
   - Sweep time = auto
   - Trace mode = max hold

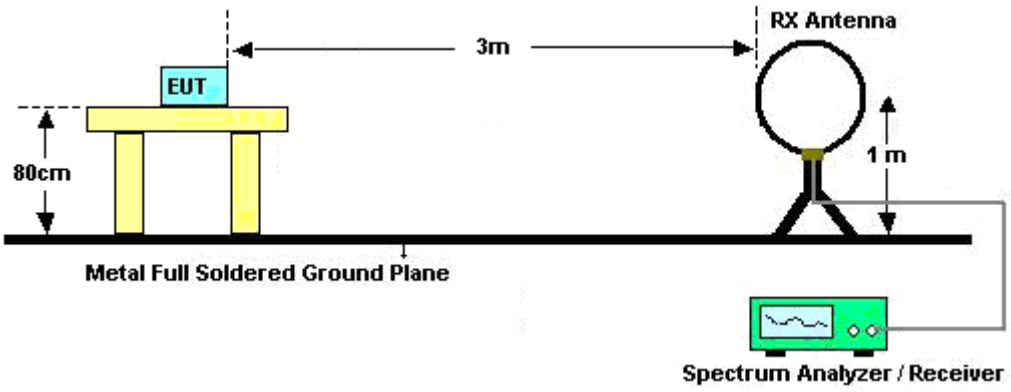
   (3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz

   - RBW = 1 MHz
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 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.

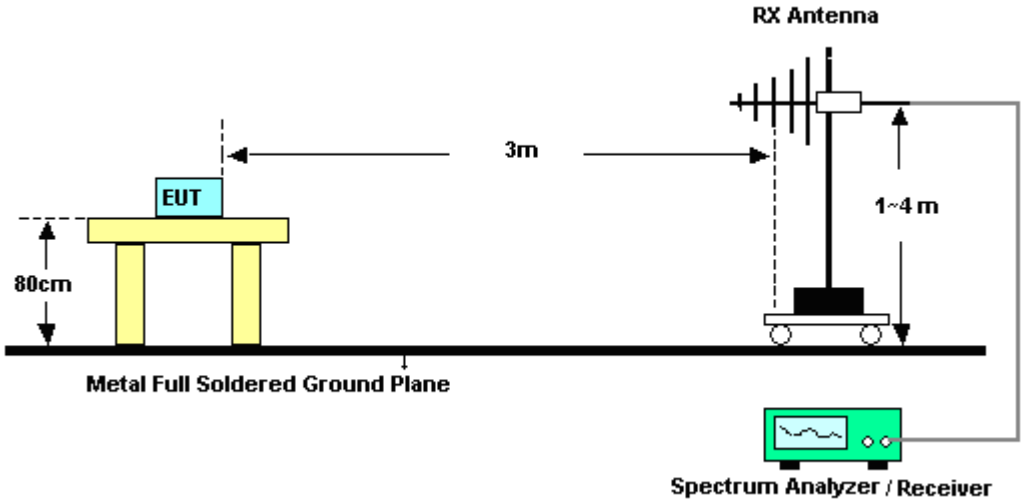
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT was placed at distance 3 meter from measurement antenna which was mounted on the top of a variable height antenna tower.
4. The measurement antenna 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.
5. For each suspected emission, the EUT was 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 1GHz was performed by adjusting the antenna tower from 1m to 4m and by rotating the turn table from 0 degree to 360 degree to find the peak maximum hold reading.
   When there is no suspected emission found and the emission level is with at least 6dB margin against QP limit line, the position is marked as "-".
7. Radiated testing above 1GHz was performed by adjusting the antenna tower from 1m to 4m and by rotating the turn table from 0 degree to 360 degree 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 6dB margin against average limit line, the position is marked as "-".

3.4.4Test Setup

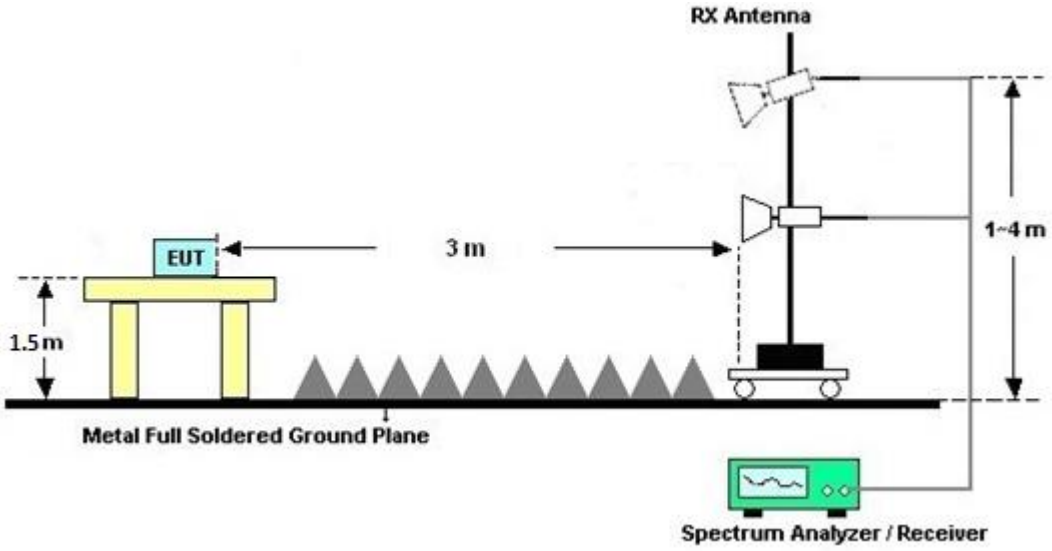
For radiated emissions below 30MHz



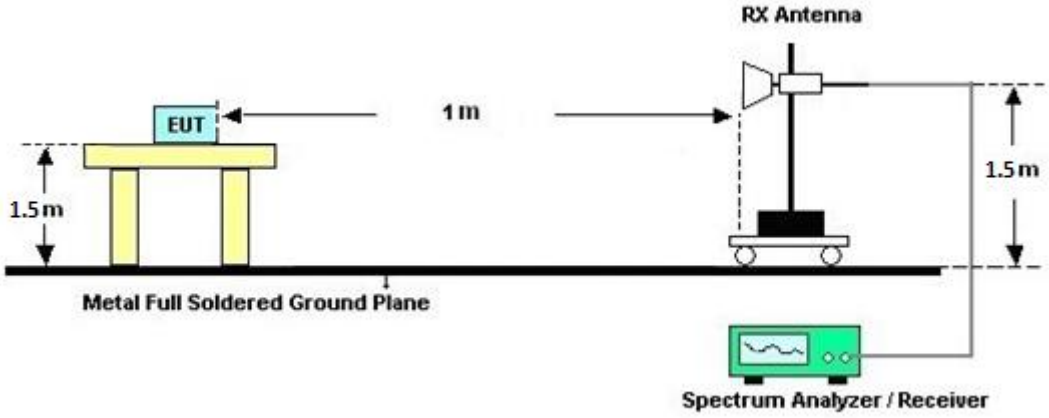
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



3.4.5Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was 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.

3.4.6Test Results of Radiated Spurious Emissions (above 18 GHz)

For frequency above 18GHz, the pre-scanned result is 20dB lower than the limit line is not reported.

3.4.7Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.8Duty Cycle

Please refer to Appendix E.

3.4.9Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

3.5 AC Conducted Emission Measurement

3.5.1Limit 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.

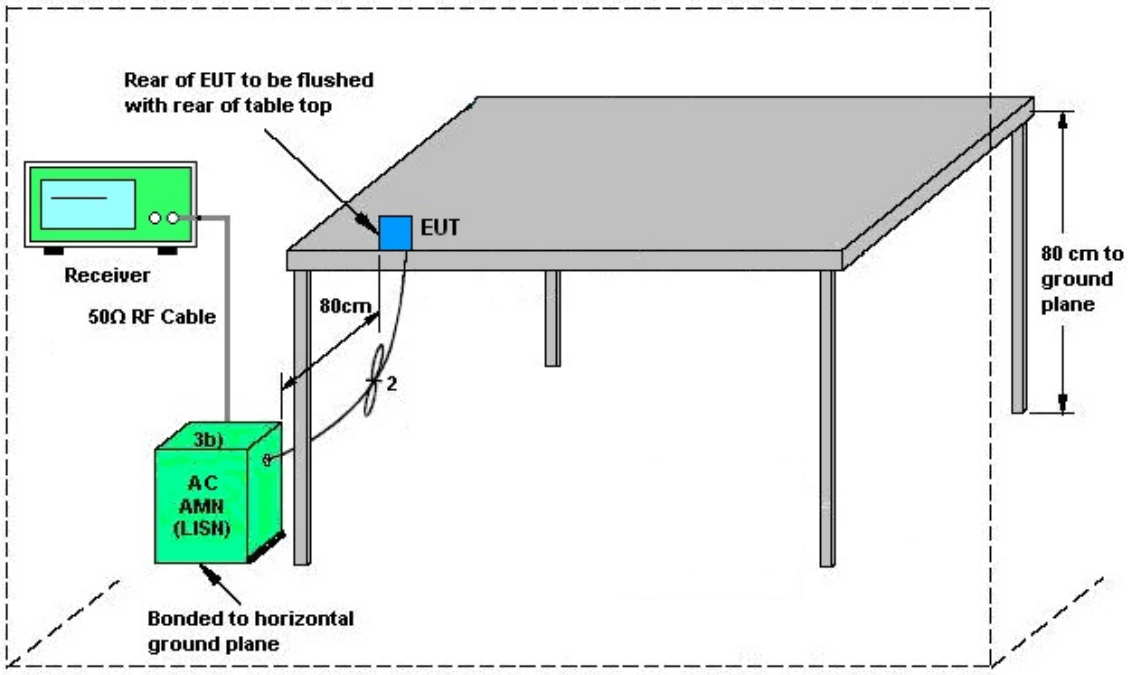
3.5.2Measuring Instruments

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

3.5.3Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was 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 sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

3.5.4Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

3.5.5Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1Standard 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.

3.6.2Antenna 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
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 24, 2022	Nov. 11, 2022~ Nov. 16, 2022	Apr. 23, 2023	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2021	Nov. 11, 2022~ Nov. 16, 2022	Dec. 02, 2022	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 20, 2022	Nov. 11, 2022~ Nov. 16, 2022	Sep. 19, 2023	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 21, 2022	Nov. 11, 2022~ Nov. 16, 2022	Apr. 20, 2023	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 03, 2022	Nov. 11, 2022~ Nov. 16, 2022	Oct. 02, 2023	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 03, 2022	Nov. 11, 2022~ Nov. 16, 2022	Oct. 02, 2023	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 21, 2022	Nov. 11, 2022~ Nov. 16, 2022	Jul. 20, 2023	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2022	Nov. 11, 2022~ Nov. 16, 2022	Jul. 21, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 23, 2022	Nov. 11, 2022~ Nov. 16, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 23, 2022	Nov. 11, 2022~ Nov. 16, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 23, 2022	Nov. 11, 2022~ Nov. 16, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 16, 2022	Nov. 11, 2022~ Nov. 16, 2022	Sep. 15, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 23, 2022	Nov. 11, 2022~ Nov. 16, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Nov. 11, 2022~ Nov. 16, 2022	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Nov. 11, 2022~ Nov. 16, 2022	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Nov. 11, 2022~ Nov. 16, 2022	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Nov. 11, 2022~ Nov. 16, 2022	N/A	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Nov. 11, 2022~ Nov. 16, 2022	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	Mar. 07, 2022	Nov. 11, 2022~ Nov. 16, 2022	Mar. 06, 2023	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	May 27, 2022	Nov. 11, 2022~ Nov. 16, 2022	May 26, 2023	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 30, 2021	Nov. 11, 2022~ Nov. 16, 2022	Nov. 29, 2022	Radiation (03CH07-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Oct. 26, 2022~ Nov. 03, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Hygrometer	TECPEL	DTM-303B	TP200735	N/A	Mar. 22, 2022	Nov. 18, 2022~ Dec. 16, 2022	Mar. 21, 2023	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	15I00041SNO 10 (NO:248)	10MHz~6GHz	Dec. 29, 2021	Oct. 26, 2022~ Dec. 16, 2022	Dec. 28, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101905	10Hz - 40GHz(amp)	Aug. 03, 2022	Oct. 26, 2022~ Dec. 16, 2022	Aug. 02, 2023	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Jul. 02, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Nov. 30, 2020	Jul. 02, 2021	Nov. 29, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Jul. 02, 2021	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Jul. 02, 2021	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jul. 02, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Feb. 25, 2021	Jul. 02, 2021	Feb. 24, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Jul. 02, 2021	Dec. 30, 2021	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.3 dB**

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.5 dB**

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.5 dB**

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.2 dB**

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.3 dB**

Appendix A. Test Result of Conducted Test Items

Test Engineer:	ERIC WU / Ching Chen	Temperature:	21~25	°C
Test Date:	2022/10/26~2022/12/16	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

UNII-4 MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
					Ant 4	Ant 3	Ant 4	Ant 3	Ant 4	Ant 3		
11a	6Mbps	2	169	5845	17.38	17.13	27.80	25.95	16.40	16.40	0.5	Pass
11a	6Mbps	2	173	5865	17.53	17.28	28.35	29.55	16.45	16.45	0.5	Pass
11a	6Mbps	2	177	5885	17.28	17.08	22.00	21.90	16.45	16.45	0.5	Pass

TEST RESULTS DATA
Average Power Table

UNII-4 MIMO										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			DG (dBi)	E.I.R.P Power (dBm)	E.I.R.P Limit (dBm)
					Ant 4	Ant 3	SUM	Ant 4 + Ant 3	Ant 4 + Ant 3	Ant 4 + Ant 3
11a	6Mbps	2	169	5845	19.10	18.75	21.94	1.10	23.04	30
11a	6Mbps	2	173	5865	17.40	17.05	20.24	1.10	21.34	30
11a	6Mbps	2	177	5885	18.20	18.25	21.24	1.10	22.34	30
HT20	MCS0	2	169	5845	19.10	18.75	21.94	1.10	23.04	30
HT20	MCS0	2	173	5865	18.70	18.55	21.64	1.10	22.74	30
HT20	MCS0	2	177	5885	19.80	19.95	22.89	1.10	23.99	30
HT40	MCS0	2	167	5835	20.00	19.65	22.84	1.10	23.94	30
HT40	MCS0	2	175	5875	19.70	19.75	22.74	1.10	23.84	30
VHT20	MCS0	2	169	5845	19.25	18.75	22.02	1.10	23.12	30
VHT20	MCS0	2	173	5865	18.85	18.55	21.71	1.10	22.81	30
VHT20	MCS0	2	177	5885	20.25	19.85	23.06	1.10	24.16	30
VHT40	MCS0	2	167	5835	20.00	19.65	22.84	1.10	23.94	30
VHT40	MCS0	2	175	5875	19.70	19.75	22.74	1.10	23.84	30
VHT80	MCS0	2	171	5855	19.20	18.85	22.04	1.10	23.14	30

TEST RESULTS DATA
Power Spectral Density

UNII-4 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Power Density with Duty Factor (dBm/MHz)			DG (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Pass /Fail
					Ant 4	Ant 3	Ant 4	Ant 3	SUM	Ant 4 + Ant 3	Ant 4 + Ant 3	Ant 4 + Ant 3	
11a	6Mbps	2	169	5845	0.29	0.30			10.34	3.62	13.96	14.00	Pass
11a	6Mbps	2	173	5865	0.29	0.30			10.24	3.62	13.86	14.00	Pass
11a	6Mbps	2	177	5885	0.29	0.30			7.73	3.62	11.36	14.00	Pass

Note: PSD Sum = Max PSD(Ant. 4, Ant. 3) + 10 log (n)

TEST RESULTS DATA
6dB and 26dB EBW and 99% OBW

UNII-4 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	99% Bandwidth (MHz)		26dB Bandwidth (MHz)		6 dB Bandwidth (MHz)		6 dB Bandwidth Min. Limit (MHz)	Pass/Fail
						Ant 4	Ant 3	Ant 4	Ant 3	Ant 4	Ant 3		
HE20	MCS0	2	169	5845	Full	19.48	19.48	37.35	35.05	19.05	19.00	0.5	Pass
HE20	MCS0	2	173	5865	Full	19.33	19.43	30.45	32.70	19.05	19.00	0.5	Pass
HE20	MCS0	2	177	5885	Full	19.18	19.28	32.85	23.80	19.10	19.10	0.5	Pass
HE40	MCS0	2	167	5835	Full	38.26	38.16	57.69	53.82	37.89	37.80	0.5	Pass
HE40	MCS0	2	175	5875	Full	38.26	38.26	57.15	51.57	37.80	37.44	0.5	Pass
HE80	MCS0	2	171	5855	Full	77.20	77.08	89.76	83.36	77.60	76.96	0.5	Pass

TEST RESULTS DATA
Average Power Table

UNII-4 MIMO											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Average Conducted Power (dBm)			DG (dBi)	E.I.R.P Power (dBm)	E.I.R.P Limit (dBm)
						Ant 4	Ant 3	SUM	Ant 4 + Ant 3	Ant 4 + Ant 3	Ant 4 + Ant 3
HE20	MCS0	2	169	5845	Full	19.20	19.15	22.19	1.10	23.29	30
HE20	MCS0	2	169	5845	26/0	9.80	9.85	12.84	1.10	13.94	30
HE20	MCS0	2	169	5845	52/37	12.60	12.45	15.54	1.10	16.64	30
HE20	MCS0	2	169	5845	106/53	15.10	14.85	17.99	1.10	19.09	30
HE20	MCS0	2	173	5865	Full	18.90	18.95	21.94	1.10	23.04	30
HE20	MCS0	2	173	5865	26/4	10.20	9.95	13.09	1.10	14.19	30
HE20	MCS0	2	173	5865	52/38	12.60	12.35	15.49	1.10	16.59	30
HE20	MCS0	2	173	5865	106/53	14.90	14.75	17.84	1.10	18.94	30
HE20	MCS0	2	177	5885	Full	20.00	20.35	23.19	1.10	24.29	30
HE20	MCS0	2	177	5885	26/8	7.50	8.15	10.85	1.10	11.95	30
HE20	MCS0	2	177	5885	52/40	11.60	11.85	14.74	1.10	15.84	30
HE20	MCS0	2	177	5885	106/54	14.60	14.75	17.69	1.10	18.79	30
HE40	MCS0	2	167	5835	Full	20.20	19.75	22.99	1.10	24.09	30
HE40	MCS0	2	175	5875	Full	19.90	19.85	22.89	1.10	23.99	30
HE80	MCS0	2	171	5855	Full	19.30	18.85	22.09	1.10	23.19	30

TEST RESULTS DATA
Power Spectral Density

UNII-4 MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config.	Duty Factor (dB)		Average Power Density with Duty Factor (dBm/MHz)			DG (dBi)	EIRP PSD (dBm/MHz)	EIRP PSD Limit (dBm/MHz)	Pass /Fail
						Ant 4	Ant 3	Ant 4	Ant 3	SUM	Ant 4 + Ant 3	Ant 4 + Ant 3	Ant 4 + Ant 3	
HE20	MCS0	2	169	5845	Full	0.18	0.18			10.04	3.62	13.66	14.00	Pass
HE20	MCS0	2	169	5845	26/0	0.48	0.49			9.73	3.62	13.36	14.00	Pass
HE20	MCS0	2	169	5845	52/37	0.52	0.52			9.39	3.62	13.01	14.00	Pass
HE20	MCS0	2	169	5845	106/53	0.58	0.58			9.03	3.62	12.65	14.00	Pass
HE20	MCS0	2	173	5865	Full	0.18	0.18			9.88	3.62	13.51	14.00	Pass
HE20	MCS0	2	173	5865	26/4	0.48	0.49			9.00	3.62	12.62	14.00	Pass
HE20	MCS0	2	173	5865	52/38	0.52	0.52			9.78	3.62	13.40	14.00	Pass
HE20	MCS0	2	173	5865	106/53	0.58	0.58			8.85	3.62	12.48	14.00	Pass
HE20	MCS0	2	177	5885	Full	0.18	0.18			7.40	3.62	11.02	14.00	Pass
HE20	MCS0	2	177	5885	26/8	0.48	0.49			5.79	3.62	9.42	14.00	Pass
HE20	MCS0	2	177	5885	52/40	0.52	0.52			7.11	3.62	10.74	14.00	Pass
HE20	MCS0	2	177	5885	106/54	0.58	0.58			7.34	3.62	10.96	14.00	Pass
HE40	MCS0	2	167	5835	Full	0.41	0.34			7.97	3.62	11.60	14.00	Pass
HE40	MCS0	2	175	5875	Full	0.41	0.34			7.87	3.62	11.49	14.00	Pass
HE80	MCS0	2	171	5855	Full	0.43	0.43			4.26	3.62	7.88	14.00	Pass

Note: PSD Sum = Max PSD(Ant. 4, Ant. 3) + 10 log (n)

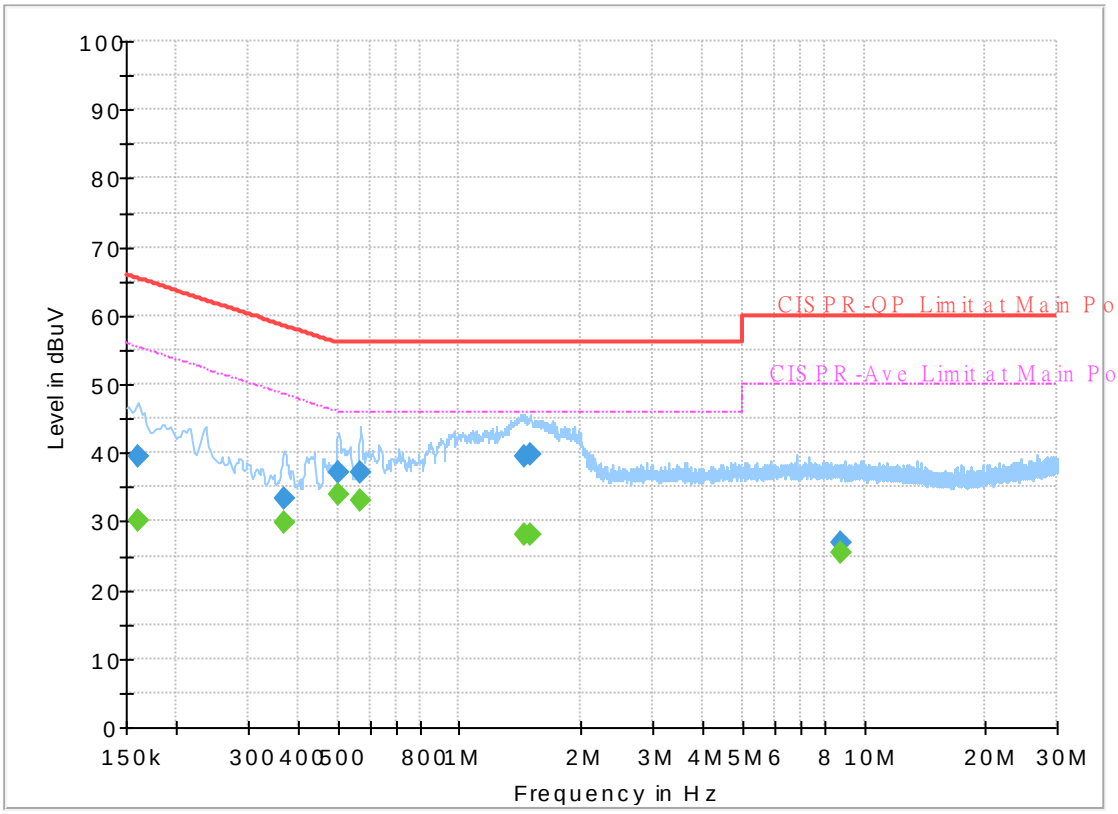
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Howard Huang	**Temperature :**	23~26℃
		Relative Humidity :	40~50%

EUT Information

Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum



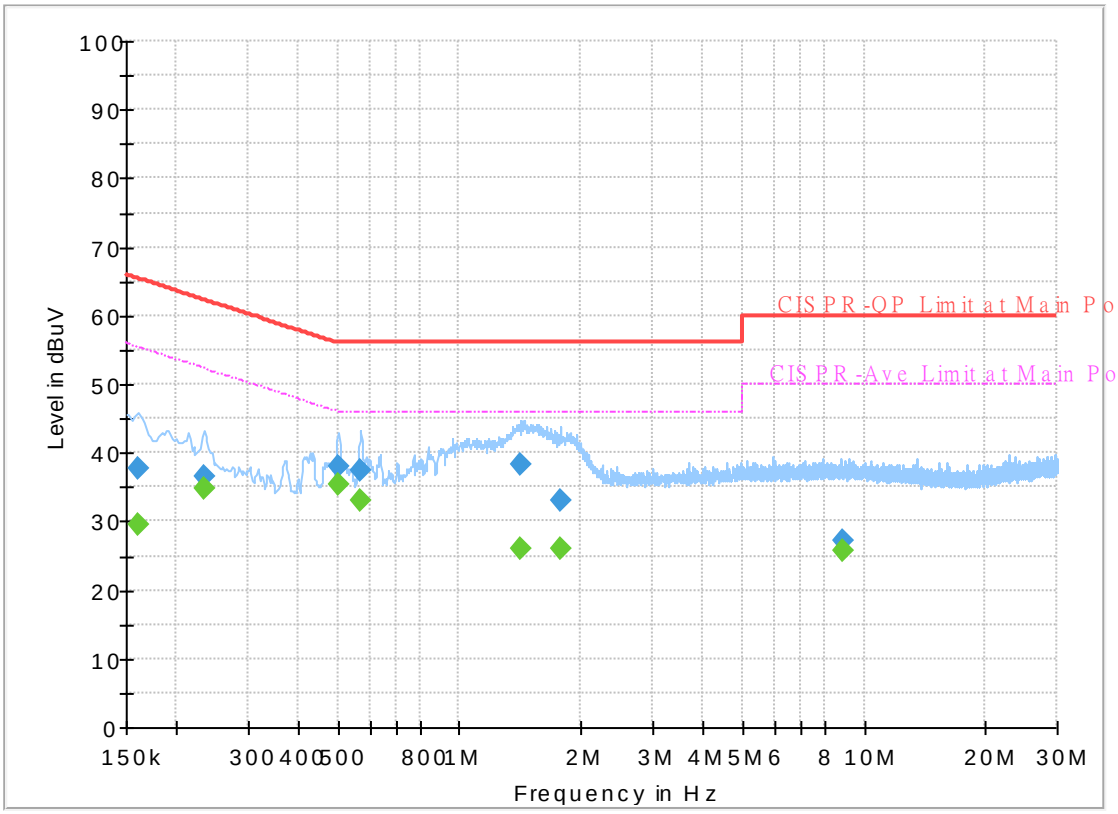
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.161250	---	30.10	55.40	25.30	L1	OFF	19.5
0.161250	39.37	---	65.40	26.03	L1	OFF	19.5
0.368250	---	29.86	48.54	18.68	L1	OFF	19.5
0.368250	33.19	---	58.54	25.35	L1	OFF	19.5
0.503250	---	33.96	46.00	12.04	L1	OFF	19.7
0.503250	37.11	---	56.00	18.89	L1	OFF	19.7
0.568500	---	32.97	46.00	13.03	L1	OFF	19.7
0.568500	37.24	---	56.00	18.76	L1	OFF	19.7
1.441500	---	27.99	46.00	18.01	L1	OFF	20.0
1.441500	39.43	---	56.00	16.57	L1	OFF	20.0
1.493250	---	28.07	46.00	17.93	L1	OFF	20.0
1.493250	39.67	---	56.00	16.33	L1	OFF	20.0
8.720250	---	25.54	50.00	24.46	L1	OFF	20.0
8.720250	26.97	---	60.00	33.03	L1	OFF	20.0

EUT Information

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	---	29.57	55.40	25.83	N	OFF	19.5
0.161250	37.73	---	65.40	27.67	N	OFF	19.5
0.233250	---	34.72	52.33	17.61	N	OFF	19.5
0.233250	36.55	---	62.33	25.78	N	OFF	19.5
0.501000	---	35.43	46.00	10.57	N	OFF	19.7
0.501000	37.94	---	56.00	18.06	N	OFF	19.7
0.568500	---	32.94	46.00	13.06	N	OFF	19.8
0.568500	37.37	---	56.00	18.63	N	OFF	19.8
1.421250	---	25.88	46.00	20.12	N	OFF	20.0
1.421250	38.22	---	56.00	17.78	N	OFF	20.0
1.783500	---	26.00	46.00	20.00	N	OFF	20.0
1.783500	33.06	---	56.00	22.94	N	OFF	20.0
8.828250	---	25.74	50.00	24.26	N	OFF	20.0
8.828250	27.19	---	60.00	32.81	N	OFF	20.0

Appendix C. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	**Temperature :**	22.1~25.9°C
		Relative Humidity :	57.2~64%

UNII-4 - 5850~5895MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4+3		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 169 5845MHz		5610.62	49.52	-18.68	68.2	37.81	34.7	12.24	35.23	100	331	P	H
		5694.105	50.09	-50.76	100.85	38.12	34.88	12.28	35.19	100	331	P	H
		5700.595	48.94	-56.43	105.37	36.93	34.9	12.29	35.18	100	331	P	H
		5723.31	48.94	-69.41	118.35	36.77	35.04	12.3	35.17	100	331	P	H
	*	5845	112.08	-	-	99.67	35.2	12.4	35.19	100	331	P	H
	*	5845	104.88	-	-	92.47	35.2	12.4	35.19	100	331	A	H
		5907.25	55.68	-45.52	101.2	43.25	35.19	12.49	35.25	100	331	P	H
		5966.75	51.99	-36.21	88.2	39.63	35.1	12.57	35.31	100	331	P	H
		5895.25	44.1	-45.92	90.02	31.67	35.2	12.47	35.24	100	331	A	H
		5932.25	43.18	-25.02	68.2	30.79	35.14	12.52	35.27	100	331	A	H
		5644.545	48.46	-19.74	68.2	36.71	34.7	12.26	35.21	387	113	P	V
		5685.255	51.23	-43.09	94.32	39.3	34.84	12.28	35.19	387	113	P	V
		5705.02	49.6	-57.01	106.61	37.56	34.93	12.29	35.18	387	113	P	V
		5723.605	49.65	-69.37	119.02	37.48	35.04	12.3	35.17	387	113	P	V
	*	5845	109.79	-	-	97.38	35.2	12.4	35.19	387	113	P	V
	*	5845	102.4	-	-	89.99	35.2	12.4	35.19	387	113	A	V
		5895.25	53.94	-56.08	110.02	41.51	35.2	12.47	35.24	387	113	P	V
		5984.25	51.01	-37.19	88.2	38.63	35.1	12.6	35.32	387	113	P	V
		5897.25	42.69	-45.86	88.55	30.26	35.2	12.47	35.24	387	113	A	V
		5990.75	42.22	-25.98	68.2	29.84	35.1	12.61	35.33	387	113	A	V

WIFI Ant. 4+3	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 173 5865MHz		5630.68	49.87	-18.33	68.2	38.14	34.7	12.25	35.22	100	332	P	H
		5694.695	50.1	-51.19	101.29	38.13	34.88	12.28	35.19	100	332	P	H
		5708.855	49.67	-58.01	107.68	37.61	34.95	12.29	35.18	100	332	P	H
		5720.36	48.64	-62.98	111.62	36.51	35.02	12.29	35.18	100	332	P	H
	*	5865	112.47	-	-	100.05	35.2	12.42	35.2	100	332	P	H
	*	5865	105.22	-	-	92.8	35.2	12.42	35.2	100	332	A	H
		5896.5	64.91	-44.19	109.1	52.48	35.2	12.47	35.24	100	332	P	H
		5938.5	53.93	-34.27	88.2	41.56	35.12	12.53	35.28	100	332	P	H
		5896.5	52.66	-36.44	89.1	40.23	35.2	12.47	35.24	100	332	A	H
		5928.25	43.65	-24.55	68.2	31.26	35.14	12.52	35.27	100	332	A	H
		5609.735	49.14	-19.06	68.2	37.43	34.7	12.24	35.23	383	123	P	V
		5663.72	48.23	-30.16	78.39	36.41	34.75	12.27	35.2	383	123	P	V
		5719.18	48.45	-62.12	110.57	36.32	35.02	12.29	35.18	383	123	P	V
		5724.49	47.54	-73.5	121.04	35.36	35.05	12.3	35.17	383	123	P	V
	*	5865	109.65	-	-	97.23	35.2	12.42	35.2	383	123	P	V
	*	5865	102.53	-	-	90.11	35.2	12.42	35.2	383	123	A	V
		5900.75	62.32	-43.65	105.97	49.88	35.2	12.48	35.24	383	123	P	V
		5932.75	51.92	-36.28	88.2	39.54	35.13	12.52	35.27	383	123	P	V
		5895.25	50.2	-39.82	90.02	37.77	35.2	12.47	35.24	383	123	A	V
		5926.25	42.82	-25.38	68.2	30.43	35.15	12.51	35.27	383	123	A	V

WIFI Ant. 4+3	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 177 5885MHz		5603.245	48.71	-19.49	68.2	37	34.7	12.24	35.23	100	328	P	H
		5684.665	49.94	-43.95	93.89	38.01	34.84	12.28	35.19	100	328	P	H
		5709.445	49.77	-58.08	107.85	37.7	34.96	12.29	35.18	100	328	P	H
		5722.425	49.7	-66.63	116.33	37.54	35.03	12.3	35.17	100	328	P	H
	*	5885	111.86	-	-	99.43	35.2	12.45	35.22	100	328	P	H
	*	5885	104.69	-	-	92.26	35.2	12.45	35.22	100	328	A	H
		5895.25	87.17	-22.85	110.02	74.74	35.2	12.47	35.24	100	328	P	H
		5935.75	54.69	-33.51	88.2	42.31	35.13	12.53	35.28	100	328	P	H
		5895.25	78.07	-11.95	90.02	65.64	35.2	12.47	35.24	100	328	A	H
		5927.25	44.87	-23.33	68.2	32.48	35.15	12.51	35.27	100	328	A	H
		5645.725	49.12	-19.08	68.2	37.37	34.7	12.26	35.21	345	120	P	V
		5656.05	49.07	-23.62	72.69	37.28	34.72	12.27	35.2	345	120	P	V
		5709.15	49.26	-58.5	107.76	37.2	34.95	12.29	35.18	345	120	P	V
		5724.785	48.81	-72.9	121.71	36.63	35.05	12.3	35.17	345	120	P	V
	*	5890	109.71	-	-	97.28	35.2	12.46	35.23	345	120	P	V
	*	5890	101.81	-	-	89.38	35.2	12.46	35.23	345	120	A	V
		5895.25	84.75	-25.27	110.02	72.32	35.2	12.47	35.24	345	120	P	V
		5935.75	55.31	-32.89	88.2	42.93	35.13	12.53	35.28	345	120	P	V
		5895.25	76.76	-13.26	90.02	64.33	35.2	12.47	35.24	345	120	A	V
		5925	43.93	-24.27	68.2	31.53	35.15	12.51	35.26	345	120	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

UNII-4 - 5850~5895MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 169 5845MHz		11690	45.34	-28.66	74	43.98	38.48	19.47	56.59	-	-	P	H
		13391	47.61	-26.39	74	45.42	39.02	21.11	57.94	-	-	P	H
		14499	47.4	-26.6	74	43.31	39.6	22.01	57.52	-	-	P	H
		17535	58.42	-9.78	68.2	48.16	41.37	24.15	55.26	100	240	P	H
		17945	51.7	-22.3	74	40.85	41.44	24.49	55.08	-	-	P	H
		17945	41.81	-12.19	54	30.96	41.44	24.49	55.08	-	-	A	H
													H
													H
													H
													H
													H
													H
		11690	45.59	-28.41	74	44.23	38.48	19.47	56.59	-	-	P	V
		13400	47.09	-21.11	68.2	44.92	39	21.12	57.95	-	-	P	V
		14499	49.13	-24.87	74	45.04	39.6	22.01	57.52	-	-	P	V
		14499	39.2	-14.8	54	35.11	39.6	22.01	57.52	-	-	A	V
		17535	64.83	-3.37	68.2	54.57	41.37	24.15	55.26	100	45	P	V
		17978	51.16	-22.84	74	40.23	41.48	24.51	55.06	-	-	P	V
		17978	41.2	-12.8	54	30.27	41.48	24.51	55.06	-	-	A	V
													V
													V
													V
													V
													V

WIFI Ant. 4+3	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)
		11730	44.98	-29.02	74	43.52	38.5	19.5	56.54	-	-	P	H
		13391	47.26	-26.74	74	45.07	39.02	21.11	57.94	-	-	P	H
		14499	47.86	-26.14	74	43.77	39.6	22.01	57.52	-	-	P	H
		17595	60.26	-7.94	68.2	49.81	41.49	24.2	55.24	100	299	P	H
		17725	52.17	-21.83	74	41.51	41.53	24.31	55.18	-	-	P	H
		17725	42.31	-11.69	54	31.65	41.53	24.31	55.18	-	-	A	H
													H
													H
													H
													H
													H
802.11a CH 173 5865MHz													H
		11730	46.28	-27.72	74	44.82	38.5	19.5	56.54	-	-	P	V
		13358	47.36	-26.64	74	45.14	39.08	21.08	57.94	-	-	P	V
		14499	48.9	-25.1	74	44.81	39.6	22.01	57.52	-	-	P	V
		14499	39.01	-14.99	54	34.92	39.6	22.01	57.52	-	-	A	V
		17595	65.02	-3.18	68.2	54.57	41.49	24.2	55.24	100	47	P	V
		17802	51.05	-22.95	74	40.22	41.6	24.37	55.14	-	-	P	V
		17802	41.16	-12.84	54	30.33	41.6	24.37	55.14	-	-	A	V
													V
													V
													V
													V
													V

WIFI Ant. 4+3	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)
		11770	44.16	-29.84	74	42.6	38.5	19.54	56.48	-	-	P	H
		13259	45.54	-28.46	74	43.4	39.08	20.99	57.93	-	-	P	H
		14499	47.28	-26.72	74	43.19	39.6	22.01	57.52	-	-	P	H
		17655	50.7	-17.5	68.2	40.17	41.5	24.24	55.21	-	-	P	H
		17791	47.79	-26.21	74	36.99	41.59	24.36	55.15	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
802.11a CH 177 5885MHz		11770	44.64	-29.36	74	43.08	38.5	19.54	56.48	-	-	P	V
		13347	45.7	-28.3	74	43.46	39.11	21.07	57.94	-	-	P	V
		14499	47.89	-26.11	74	43.8	39.6	22.01	57.52	-	-	P	V
		17655	64.29	-3.91	68.2	53.76	41.5	24.24	55.21	100	343	P	V
		17769	48.12	-25.88	74	37.37	41.57	24.34	55.16	-	-	P	V
		17769	38.18	-15.82	54	27.43	41.57	24.34	55.16	-	-	A	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.
4. The emission level close to 18GHz is checked that the average emission level is noise floor only.

UNII-4 - 5850~5895MHz

WIFI 802.11ax HE20_Full (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5642.185	50.17	-18.03	68.2	38.42	34.7	12.26	35.21	100	334	P	H
		5668.735	51.67	-30.43	82.1	39.83	34.77	12.27	35.2	100	334	P	H
		5718.59	50.45	-59.96	110.41	38.33	35.01	12.29	35.18	100	334	P	H
		5721.54	50.23	-64.08	114.31	38.09	35.03	12.29	35.18	100	334	P	H
	*	5845	113.21	45.01	68.2	100.8	35.2	12.4	35.19	100	334	P	H
	*	5845	104.17	-	-	91.76	35.2	12.4	35.19	100	334	A	H
		5896.25	57.59	-	-	45.16	35.2	12.47	35.24	100	334	P	H
		5935.5	52.59	-35.61	88.2	40.21	35.13	12.53	35.28	100	334	P	H
802.11ax		5895.5	47.95	-41.88	89.83	35.52	35.2	12.47	35.24	100	334	A	H
HE20 Full		5927.25	43.83	-24.37	68.2	31.44	35.15	12.51	35.27	100	334	A	H
CH 169		5643.66	49.88	-18.32	68.2	38.13	34.7	12.26	35.21	304	115	P	V
5845MHz		5689.09	49.89	-47.26	97.15	37.94	34.86	12.28	35.19	304	115	P	V
		5720.065	49.65	-61.3	110.95	37.52	35.02	12.29	35.18	304	115	P	V
		5720.065	49.65	-61.3	110.95	37.52	35.02	12.29	35.18	304	115	P	V
	*	5845	109.71	-	-	97.3	35.2	12.4	35.19	304	115	P	V
	*	5845	102	-	-	89.59	35.2	12.4	35.19	304	115	A	V
		5898.25	56.09	-51.72	107.81	43.66	35.2	12.47	35.24	304	115	P	V
		5955.25	51.67	-36.53	88.2	39.31	35.1	12.56	35.3	304	115	P	V
		5896	46.26	-43.2	89.46	33.83	35.2	12.47	35.24	304	115	A	V
		5930.75	42.91	-25.29	68.2	30.52	35.14	12.52	35.27	304	115	A	V

WIFI Ant. 4+3	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)
		5631.565	50.51	-17.69	68.2	38.78	34.7	12.25	35.22	100	334	P	H
		5673.16	49.9	-35.48	85.38	38.04	34.79	12.27	35.2	100	334	P	H
		5706.2	49.25	-57.69	106.94	37.2	34.94	12.29	35.18	100	334	P	H
		5720.655	49.33	-62.96	112.29	37.2	35.02	12.29	35.18	100	334	P	H
	*	5865	112.52	-	-	100.1	35.2	12.42	35.2	100	334	P	H
	*	5865	103.47	-	-	91.05	35.2	12.42	35.2	100	334	A	H
		5896.25	64.66	-44.62	109.28	52.23	35.2	12.47	35.24	100	334	P	H
		5926.5	51.93	-36.27	88.2	39.54	35.15	12.51	35.27	100	334	P	H
802.11ax		5895.25	56.87	-33.15	90.02	44.44	35.2	12.47	35.24	100	334	A	H
HE20 Full		5926	44.77	-23.43	68.2	32.38	35.15	12.51	35.27	100	334	A	H
CH 173		5602.655	48.03	-20.17	68.2	36.32	34.7	12.24	35.23	400	136	P	V
5865MHz		5682.305	49.37	-42.77	92.14	37.45	34.83	12.28	35.19	400	136	P	V
		5711.805	49.37	-59.14	108.51	37.29	34.97	12.29	35.18	400	136	P	V
		5724.785	48.37	-73.34	121.71	36.19	35.05	12.3	35.17	400	136	P	V
	*	5865	109.12	-	-	96.7	35.2	12.42	35.2	400	136	P	V
	*	5865	101.13	-	-	88.71	35.2	12.42	35.2	400	136	A	V
		5898	63.57	-44.42	107.99	51.14	35.2	12.47	35.24	400	136	P	V
		5930.25	53	-35.2	88.2	40.61	35.14	12.52	35.27	400	136	P	V
		5895.5	53.94	-35.89	89.83	41.51	35.2	12.47	35.24	400	136	A	V
		5925	43.31	-24.89	68.2	30.91	35.15	12.51	35.26	400	136	A	V

WIFI Ant. 4+3	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 177 5885MHz		5631.565	49.46	-18.74	68.2	37.73	34.7	12.25	35.22	100	327	P	H
		5668.44	51.42	-30.46	81.88	39.58	34.77	12.27	35.2	100	327	P	H
		5716.525	50.85	-58.98	109.83	38.74	35	12.29	35.18	100	327	P	H
		5720.655	49.24	-63.05	112.29	37.11	35.02	12.29	35.18	100	327	P	H
	*	5885	110.69	-	-	98.26	35.2	12.45	35.22	100	327	P	H
	*	5885	102.34	-	-	89.91	35.2	12.45	35.22	100	327	A	H
		5895.25	89.03	-20.99	110.02	76.6	35.2	12.47	35.24	100	327	P	H
		5926	61.71	-26.49	88.2	49.32	35.15	12.51	35.27	100	327	P	H
		5895.25	86.41	-3.61	90.02	73.98	35.2	12.47	35.24	100	327	A	H
		5925	47.1	-21.1	68.2	34.7	35.15	12.51	35.26	100	327	A	H
		5619.175	48.7	-19.5	68.2	36.97	34.7	12.25	35.22	367	115	P	V
		5691.155	49.4	-49.28	98.68	37.45	34.86	12.28	35.19	367	115	P	V
		5708.56	49.73	-57.87	107.6	37.67	34.95	12.29	35.18	367	115	P	V
		5725.08	47.51	-86.69	134.2	35.33	35.05	12.3	35.17	367	115	P	V
	*	5885	109.42	-	-	96.99	35.2	12.45	35.22	367	115	P	V
	*	5885	99.96	-	-	87.53	35.2	12.45	35.22	367	115	A	V
		5895.5	86.89	-22.94	109.83	74.46	35.2	12.47	35.24	367	115	P	V
		5930.25	56.8	-31.4	88.2	44.41	35.14	12.52	35.27	367	115	P	V
		5895.25	84.34	-5.68	90.02	71.91	35.2	12.47	35.24	367	115	A	V
		5925.25	44.94	-23.26	68.2	32.55	35.15	12.51	35.27	367	115	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

UNII-4 - 5850~5895MHz

WIFI 802.11ax HE20 Full (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		11690	44.36	-29.64	74	43	38.48	19.47	56.59	-	-	P	H
		13336	45.43	-28.57	74	43.18	39.13	21.06	57.94	-	-	P	H
		14499	48.2	-25.8	74	44.11	39.6	22.01	57.52	-	-	P	H
		14499	38.3	-15.7	54	34.21	39.6	22.01	57.52	-	-	A	H
		17535	55.86	-12.34	68.2	45.6	41.37	24.15	55.26	-	-	P	H
		17736	48.94	-25.06	74	38.25	41.54	24.32	55.17	-	-	P	H
		17736	39.01	-14.99	54	28.32	41.54	24.32	55.17	-	-	A	H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 169		11690	44.59	-29.41	74	43.23	38.48	19.47	56.59	-	-	P	V
5845MHz		13347	45.43	-28.57	74	43.19	39.11	21.07	57.94	-	-	P	V
		14499	47.55	-26.45	74	43.46	39.6	22.01	57.52	-	-	P	V
		17535	64.92	-3.28	68.2	54.66	41.37	24.15	55.26	100	47	P	V
		17714	48.89	-25.11	74	38.26	41.51	24.3	55.18	-	-	P	V
		17714	38.99	-15.01	54	28.36	41.51	24.3	55.18	-	-	A	V
													V
													V
													V
													V
													V
													V

WIFI Ant. 4+3	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)
		11730	44.12	-29.88	74	42.66	38.5	19.5	56.54	-	-	P	H
		13402	45.28	-22.92	68.2	43.11	39	21.12	57.95	-	-	P	H
		14499	47.81	-26.19	74	43.72	39.6	22.01	57.52	-	-	P	H
		17595	54.3	-13.9	68.2	43.85	41.49	24.2	55.24	-	-	P	H
		17758	49.09	-24.91	74	38.36	41.56	24.33	55.16	-	-	P	H
		17758	39.17	-14.83	54	28.44	41.56	24.33	55.16	-	-	A	H
													H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 173		11730	45.1	-28.9	74	43.64	38.5	19.5	56.54	-	-	P	V
5865MHz		13248	45.96	-22.24	68.2	43.87	39.04	20.97	57.92	-	-	P	V
		14499	47.8	-26.2	74	43.71	39.6	22.01	57.52	-	-	P	V
		17595	64.02	-4.18	68.2	53.57	41.49	24.2	55.24	100	48	P	V
		17824	48.02	-25.98	74	37.22	41.55	24.38	55.13	-	-	P	V
		17824	38.13	-15.87	54	27.33	41.55	24.38	55.13	-	-	A	V
													V
													V
													V
													V
													V
													V

WIFI Ant. 4+3	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)
		11770	44.39	-29.61	74	42.83	38.5	19.54	56.48	-	-	P	H
		13281	46.09	-27.91	74	43.87	39.14	21.01	57.93	-	-	P	H
		14499	47.78	-26.22	74	43.69	39.6	22.01	57.52	-	-	P	H
		17655	52.75	-15.45	68.2	42.22	41.5	24.24	55.21	-	-	P	H
		17736	49.1	-24.9	74	38.41	41.54	24.32	55.17	-	-	P	H
		17736	39.23	-14.77	54	28.54	41.54	24.32	55.17	-	-	A	H
													H
													H
													H
													H
802.11ax													H
HE20 Full													H
CH 177		11770	45.22	-28.78	74	43.66	38.5	19.54	56.48	-	-	P	V
5885MHz		13358	46.1	-27.9	74	43.88	39.08	21.08	57.94	-	-	P	V
		14499	47.6	-26.4	74	43.51	39.6	22.01	57.52	-	-	P	V
		17655	63.72	-4.48	68.2	53.19	41.5	24.24	55.21	100	343	P	V
		17791	48.72	-25.28	74	37.92	41.59	24.36	55.15	-	-	P	V
		17791	38.78	-15.22	54	27.98	41.59	24.36	55.15	-	-	A	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.
4. The emission level close to 18GHz is checked that the average emission level is noise floor only.

UNII-4 - 5850~5895MHz

WIFI 802.11ax HE40_Full (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5648.675	51.17	-17.03	68.2	39.42	34.7	12.26	35.21	100	333	P	H
		5675.815	50.69	-36.65	87.34	38.82	34.8	12.27	35.2	100	333	P	H
		5717.705	52.05	-58.11	110.16	39.93	35.01	12.29	35.18	100	333	P	H
		5722.72	51.44	-65.56	117	39.27	35.04	12.3	35.17	100	333	P	H
	*	5835	109.71	-	-	97.3	35.2	12.38	35.17	100	333	P	H
	*	5835	101.12	-	-	88.71	35.2	12.38	35.17	100	333	A	H
		5902.75	64.41	-40.1	104.51	51.98	35.19	12.48	35.24	100	333	P	H
		5930.5	56.33	-31.87	88.2	43.94	35.14	12.52	35.27	100	333	P	H
802.11ax		5896.25	55.26	-34.02	89.28	42.83	35.2	12.47	35.24	100	333	A	H
HE40 Full		5925.25	47.58	-20.62	68.2	35.19	35.15	12.51	35.27	100	333	A	H
CH 167		5642.48	49.43	-18.77	68.2	37.68	34.7	12.26	35.21	337	121	P	V
5835MHz		5682.895	51.3	-41.28	92.58	39.38	34.83	12.28	35.19	337	121	P	V
		5716.82	51.01	-58.9	109.91	38.9	35	12.29	35.18	337	121	P	V
		5723.015	51.16	-66.52	117.68	38.99	35.04	12.3	35.17	337	121	P	V
	*	5835	108.74	-	-	96.33	35.2	12.38	35.17	337	121	P	V
	*	5835	98.81	-	-	86.4	35.2	12.38	35.17	337	121	A	V
		5898.75	61.19	-46.25	107.44	48.76	35.2	12.47	35.24	337	121	P	V
		5928.25	54.43	-33.77	88.2	42.04	35.14	12.52	35.27	337	121	P	V
		5895.5	53.28	-36.55	89.83	40.85	35.2	12.47	35.24	337	121	A	V
		5925	45.93	-22.27	68.2	33.53	35.15	12.51	35.26	337	121	A	V

WIFI Ant. 4+3	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 175 5875MHz		5649.265	49.08	-19.12	68.2	37.33	34.7	12.26	35.21	100	320	P	H
		5683.78	50.34	-42.89	93.23	38.41	34.84	12.28	35.19	100	320	P	H
		5708.265	50.75	-56.77	107.52	38.69	34.95	12.29	35.18	100	320	P	H
		5723.9	52.26	-67.43	119.69	40.09	35.04	12.3	35.17	100	320	P	H
	*	5875	109.03	40.83	68.2	96.61	35.2	12.44	35.22	100	320	P	H
	*	5875	100.53	46.53	54	88.11	35.2	12.44	35.22	100	320	A	H
		5896.75	85.8	-23.11	108.91	73.37	35.2	12.47	35.24	100	320	P	H
		5925.5	74.84	-13.36	88.2	62.45	35.15	12.51	35.27	100	320	P	H
		5895.25	77.86	-12.16	90.02	65.43	35.2	12.47	35.24	100	320	A	H
		5925	64.56	-3.64	68.2	52.16	35.15	12.51	35.26	100	320	A	H
		5603.245	49.28	-18.92	68.2	37.57	34.7	12.24	35.23	348	120	P	V
		5668.44	50.76	-31.12	81.88	38.92	34.77	12.27	35.2	348	120	P	V
		5718.885	50	-60.49	110.49	37.88	35.01	12.29	35.18	348	120	P	V
		5724.785	50.04	-71.67	121.71	37.86	35.05	12.3	35.17	348	120	P	V
	*	5875	108.89	40.69	68.2	96.47	35.2	12.44	35.22	348	120	P	V
	*	5875	98.97	44.97	54	86.55	35.2	12.44	35.22	348	120	A	V
		5903.5	87.2	-16.76	103.96	74.77	35.19	12.48	35.24	348	120	P	V
		5925.5	73.61	-14.59	88.2	61.22	35.15	12.51	35.27	348	120	P	V
		5895.75	77.54	-12.11	89.65	65.11	35.2	12.47	35.24	348	120	A	V
		5925	63.16	-5.04	68.2	50.76	35.15	12.51	35.26	348	120	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

UNII-4 - 5850~5895MHz

WIFI 802.11ax HE40_Full (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		11670	53.35	-20.65	74	52.07	38.44	19.46	56.62	-	-	P	H
		13259	45.38	-28.62	74	43.24	39.08	20.99	57.93	-	-	P	H
		14499	47.56	-26.44	74	43.47	39.6	22.01	57.52	-	-	P	H
		17505	53.35	-14.85	68.2	43.19	41.31	24.13	55.28	-	-	P	H
		17802	48.91	-25.09	74	38.08	41.6	24.37	55.14	-	-	P	H
		17802	39.13	-14.87	54	28.3	41.6	24.37	55.14	-	-	A	H
													H
													H
													H
													H
802.11ax													H
HE40 Full													H
CH 167		11670	45.2	-28.8	74	43.92	38.44	19.46	56.62	-	-	P	V
5835MHz		13369	45.76	-28.24	74	43.55	39.06	21.09	57.94	-	-	P	V
		14499	47.54	-26.46	74	43.45	39.6	22.01	57.52	-	-	P	V
		17505	56.11	-12.09	68.2	45.95	41.31	24.13	55.28	-	-	P	V
		17747	48.74	-25.26	74	38.04	41.55	24.32	55.17	-	-	P	V
		17747	38.82	-15.18	54	28.12	41.55	24.32	55.17	-	-	A	V
													V
													V
													V
													V
													V
													V

WIFI Ant. 4+3	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)
		11750	43.97	-30.03	74	42.46	38.5	19.52	56.51	-	-	P	H
		13257	46.24	-27.76	74	44.12	39.07	20.98	57.93	-	-	P	H
		14499	47.84	-26.16	74	43.75	39.6	22.01	57.52	-	-	P	H
		17625	50.45	-17.75	68.2	39.95	41.5	24.22	55.22	-	-	P	H
		17830	48.71	-25.29	74	37.91	41.54	24.39	55.13	-	-	P	H
		17830	38.82	-15.18	54	28.02	41.54	24.39	55.13	-	-	A	H
													H
													H
													H
													H
802.11ax													H
HE40 Full													H
CH 175		11750	44.28	-29.72	74	42.77	38.5	19.52	56.51	-	-	P	V
5875MHz		13291	45.59	-28.41	74	43.33	39.17	21.02	57.93	-	-	P	V
		14499	47.46	-26.54	74	43.37	39.6	22.01	57.52	-	-	P	V
		17625	56.85	-11.35	68.2	46.35	41.5	24.22	55.22	-	-	P	V
		17711	48.81	-25.19	74	38.18	41.51	24.3	55.18	-	-	P	V
		17711	38.88	-15.12	54	28.25	41.51	24.3	55.18	-	-	A	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.
4. The emission level close to 18GHz is checked that the average emission level is noise floor only.

UNII-4 - 5850~5895MHz

WIFI 802.11ax HE80_Full (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5621.535	50.63	-17.57	68.2	38.9	34.7	12.25	35.22	100	336	P	H
		5697.94	54.66	-49.02	103.68	42.68	34.89	12.28	35.19	100	336	P	H
		5715.64	55.7	-53.88	109.58	43.6	34.99	12.29	35.18	100	336	P	H
		5720.36	56.41	-55.21	111.62	44.28	35.02	12.29	35.18	100	336	P	H
	*	5855	106.23	-	-	93.81	35.2	12.41	35.19	100	336	P	H
	*	5855	97.32	-	-	84.9	35.2	12.41	35.19	100	336	A	H
		5906.25	79.1	-22.84	101.94	66.68	35.19	12.48	35.25	100	336	P	H
		5932.75	74.69	-13.51	88.2	62.31	35.13	12.52	35.27	100	336	P	H
802.11ax		5895.25	71.57	-18.45	90.02	59.14	35.2	12.47	35.24	100	336	A	H
HE80 Full		5925.25	66.57	-1.63	68.2	54.18	35.15	12.51	35.27	100	336	A	H
CH 171		5630.09	50.86	-17.34	68.2	39.13	34.7	12.25	35.22	351	118	P	V
5855MHz		5698.825	52.32	-52.01	104.33	40.33	34.9	12.28	35.19	351	118	P	V
		5719.475	54.19	-56.46	110.65	42.06	35.02	12.29	35.18	351	118	P	V
		5722.72	54.13	-62.87	117	41.96	35.04	12.3	35.17	351	118	P	V
	*	5855	104.71	-	-	92.29	35.2	12.41	35.19	351	118	P	V
	*	5855	95.61	-	-	83.19	35.2	12.41	35.19	351	118	A	V
		5895.25	78.73	-31.29	110.02	66.3	35.2	12.47	35.24	351	118	P	V
		5926	70.82	-17.38	88.2	58.43	35.15	12.51	35.27	351	118	P	V
		5895.25	69.5	-20.52	90.02	57.07	35.2	12.47	35.24	351	118	A	V
		5925.5	62.8	-5.4	68.2	50.41	35.15	12.51	35.27	351	118	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

UNII-4 - 5850~5895MHz

WIFI 802.11ax HE80_Full (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		11710	45	-29	74	43.57	38.5	19.49	56.56	-	-	P	H
		13342	45.22	-28.78	74	42.98	39.12	21.06	57.94	-	-	P	H
		14499	47.65	-26.35	74	43.56	39.6	22.01	57.52	-	-	P	H
		17565	49.4	-18.8	68.2	39.05	41.43	24.17	55.25	-	-	P	H
		17745	48.68	-25.32	74	37.99	41.54	24.32	55.17	-	-	P	H
		17745	38.92	-15.08	54	28.23	41.54	24.32	55.17	-	-	A	H
													H
													H
													H
													H
802.11ax													H
HE80 Full													H
CH 171		11710	44.12	-29.88	74	42.69	38.5	19.49	56.56	-	-	P	V
5855MHz		13342	45.5	-28.5	74	43.26	39.12	21.06	57.94	-	-	P	V
		14499	47.54	-26.46	74	43.45	39.6	22.01	57.52	-	-	P	V
		17565	51.46	-16.74	68.2	41.11	41.43	24.17	55.25	-	-	P	V
		17779	49.26	-24.74	74	38.48	41.58	24.35	55.15	-	-	P	V
		17779	39.31	-14.69	54	28.53	41.58	24.35	55.15	-	-	A	V
													V
													V
													V
													V
													V
													V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.
3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.
4. The emission level close to 18GHz is checked that the average emission level is noise floor only.

Emission above 18GHz

5GHz WIFI 802.11ax HE80 Full (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.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE80 Full SHF		39252	46.09	-27.91	74	46.85	44.4	14.54	59.7	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		39780	46.04	-27.96	74	45.34	44.6	14.74	58.64	-	-	P	V
													V
													V
													V
													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

5GHz WIFI 802.11ax HE80 Full (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.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE80 Full LF		30	22.24	-17.76	40	26.8	24.51	1.01	30.08	-	-	P	H
		94.8	28.61	-14.89	43.5	41.75	15.15	1.73	30.02	-	-	P	H
		192.54	25.31	-18.19	43.5	38.16	14.71	2.48	30.04	-	-	P	H
		790.7	29.89	-16.11	46	26.67	27.85	4.97	29.6	-	-	P	H
		864.9	32.62	-13.38	46	27.82	28.78	5.23	29.21	-	-	P	H
		959.4	34.21	-11.79	46	26.74	30.67	5.58	28.78	-	-	P	H
													H
													H
													H
													H
													H
													H
		30	31.74	-8.26	40	36.3	24.51	1.01	30.08	-	-	P	V
		64.29	25.65	-14.35	40	42.4	11.82	1.37	29.94	-	-	P	V
		98.58	25.76	-17.74	43.5	38.39	15.62	1.76	30.01	-	-	P	V
		782.3	32.37	-13.63	46	29.23	27.83	4.94	29.63	-	-	P	V
		929.3	32.42	-13.58	46	26.64	29.18	5.51	28.91	-	-	P	V
		958.7	33.9	-12.1	46	26.45	30.66	5.58	28.79	-	-	P	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 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	**P**eak or **A**verage
H/V	**H**orizontal or **V**ertical

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.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 169 5845MHz		5860	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		5860	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

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 Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 5860 MHz:

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 Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 5860 MHz:

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 Limit(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

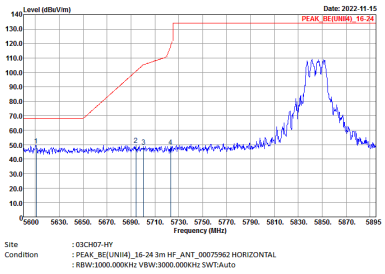
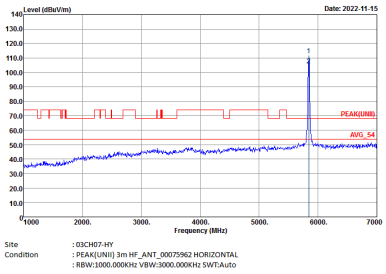
Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	**Temperature :**	22.1~25.9°C
		Relative Humidity :	57.2~64%

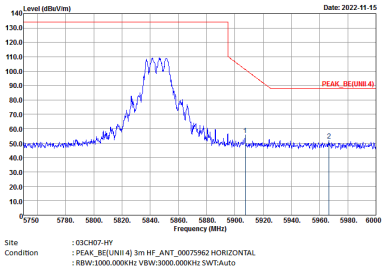
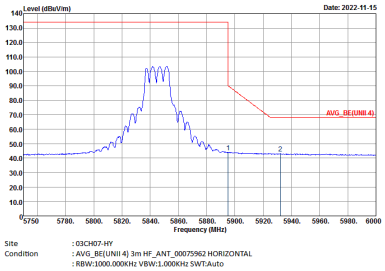
Note symbol

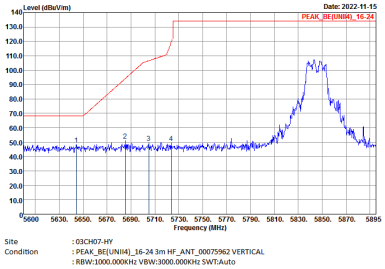
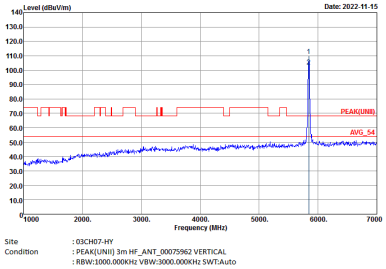
-L	**Low channel location**
-R	**High channel location**

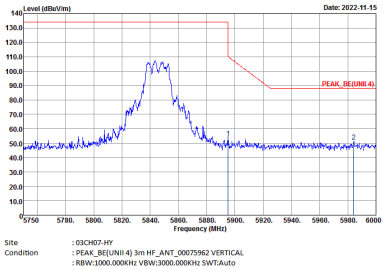
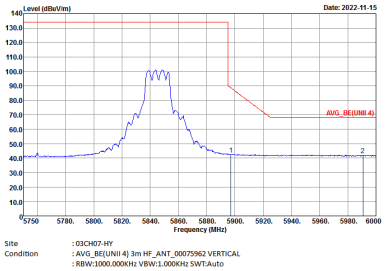
Band 4 - 5725~5850MHz

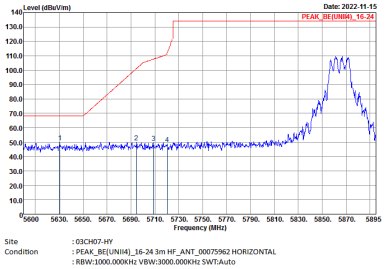
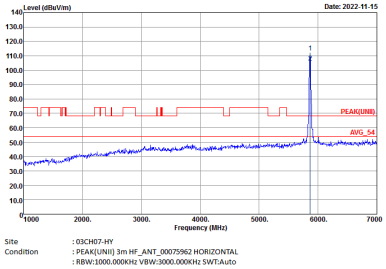
WIFI 802.11a (Band Edge @ 3m)

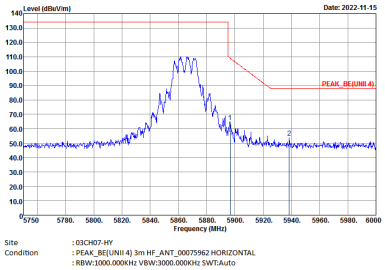
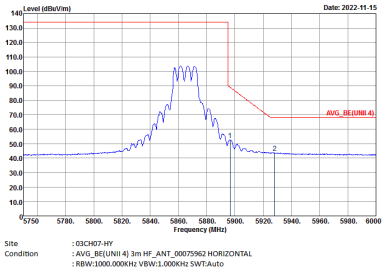
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - L	
4+3	Horizontal	Fundamental
Peak		

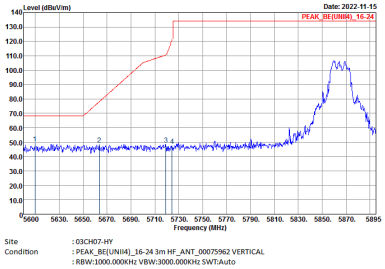
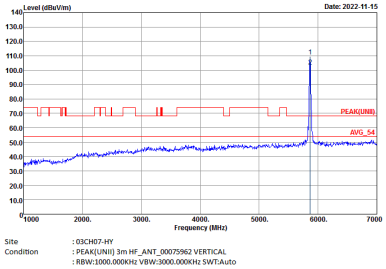
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

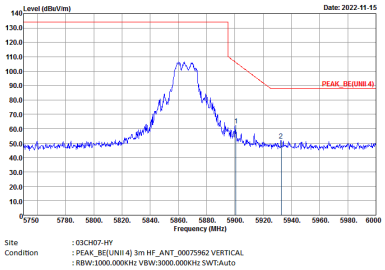
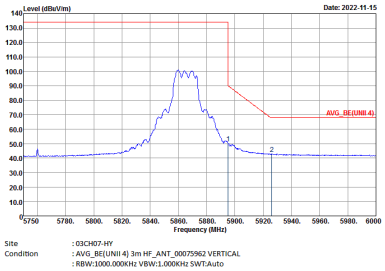
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - L	
4+3	Vertical	Fundamental
Peak		

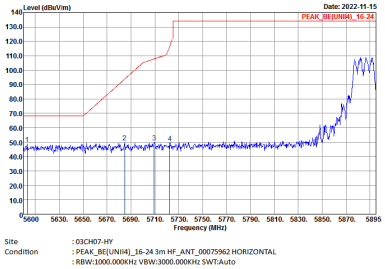
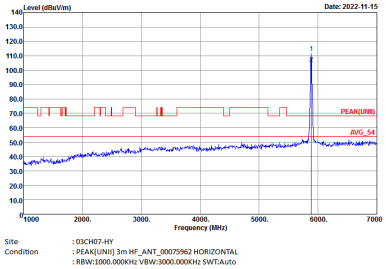
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

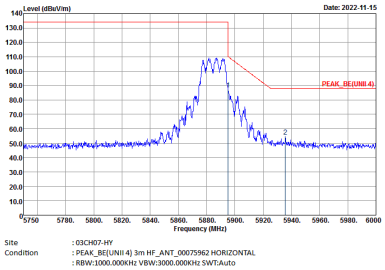
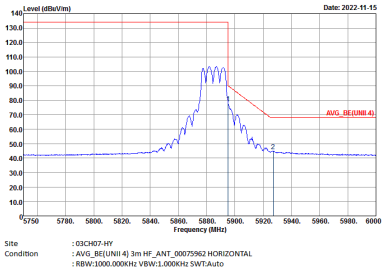
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz - L	
4+3	Horizontal	Fundamental
Peak		

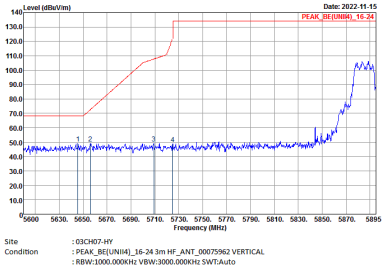
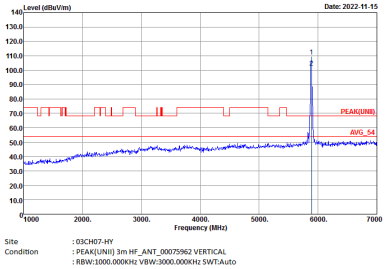
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz – R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

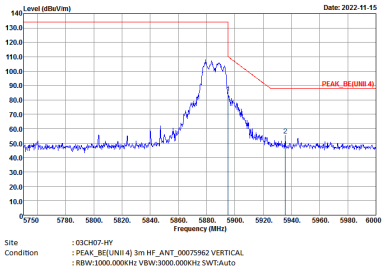
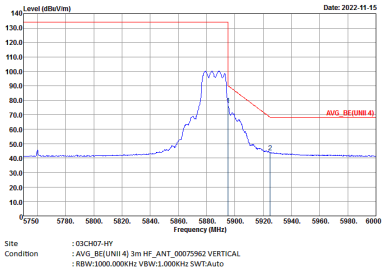
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz - L	
4+3	Vertical	Fundamental
Peak		

WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz – R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

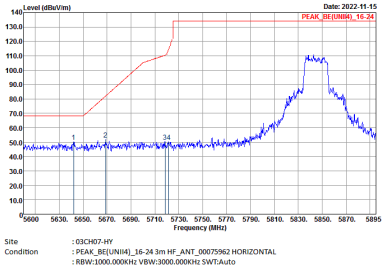
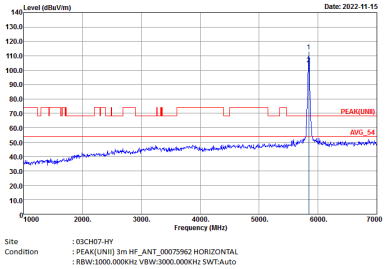
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - L	
4+3	Horizontal	Fundamental
Peak		

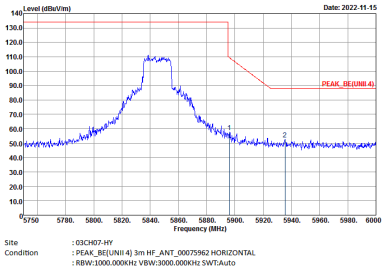
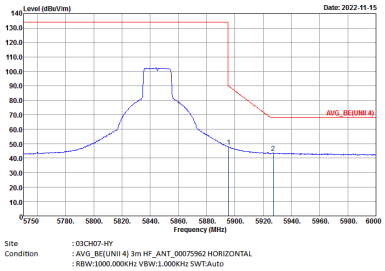
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

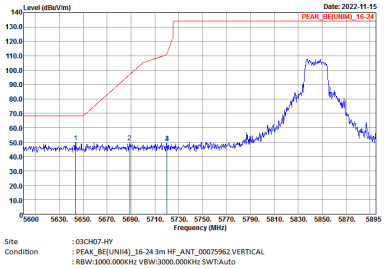
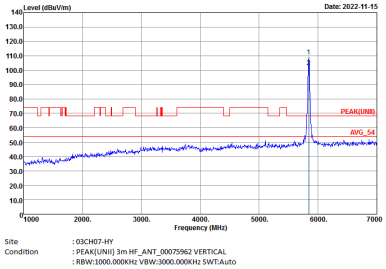
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - L	
4+3	Vertical	Fundamental
Peak		

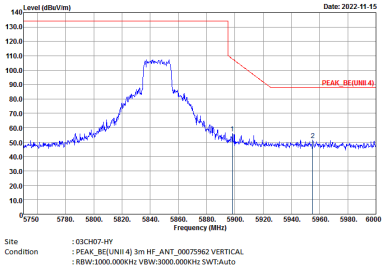
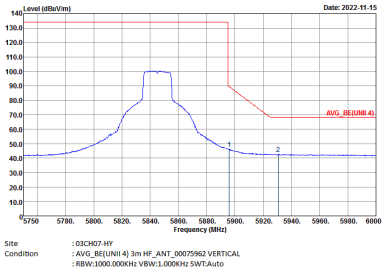
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

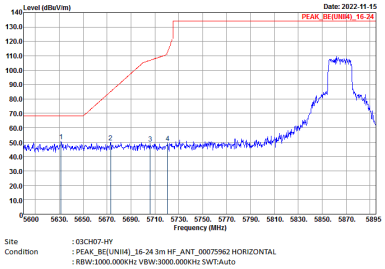
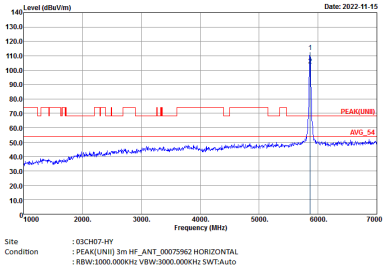
UNII-4 - 5850~5895MHz
WIFI 802.11ax HE20 Full (Band Edge @ 3m)

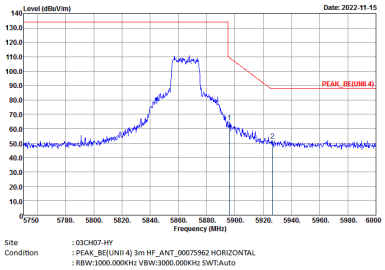
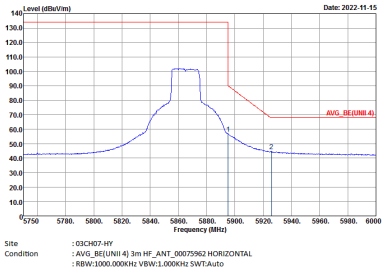
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz - L	
4+3	Horizontal	Fundamental
Peak		

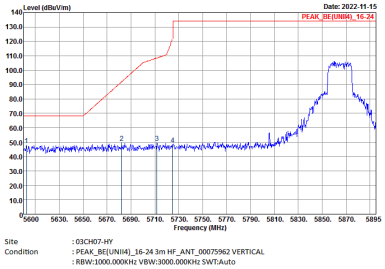
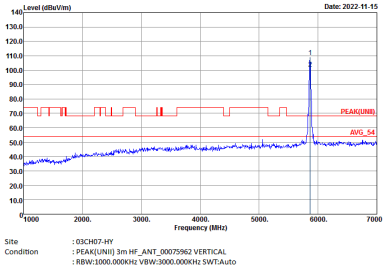
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

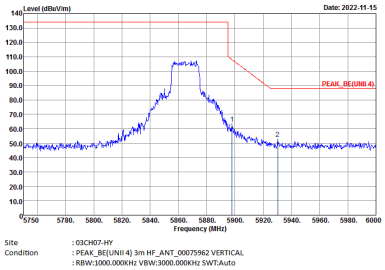
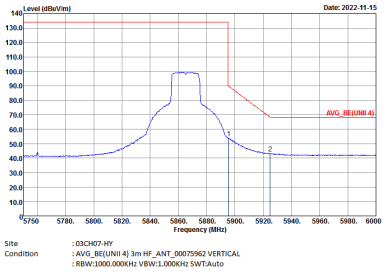
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz - L	
4+3	Vertical	Fundamental
Peak		

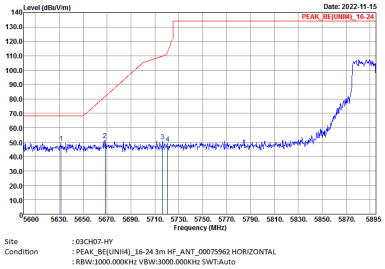
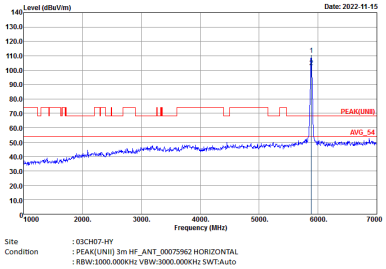
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

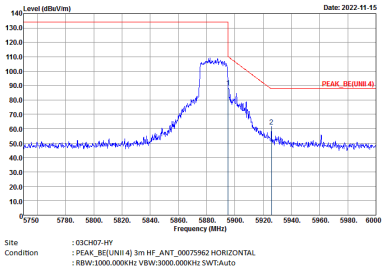
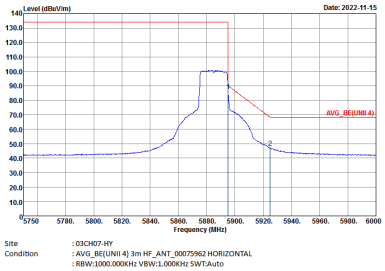
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - L	
4+3	Horizontal	Fundamental
Peak		

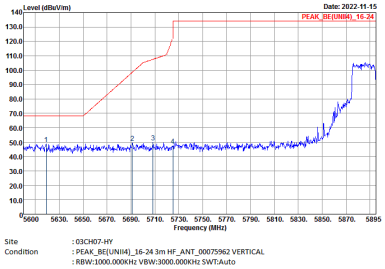
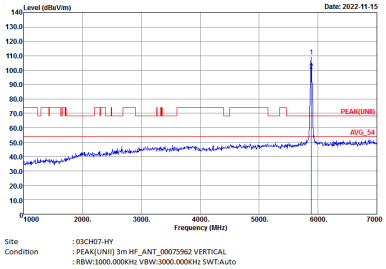
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

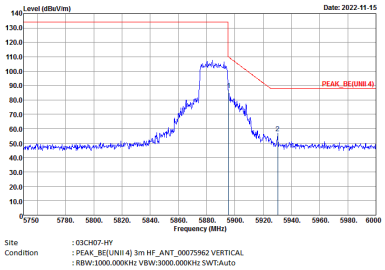
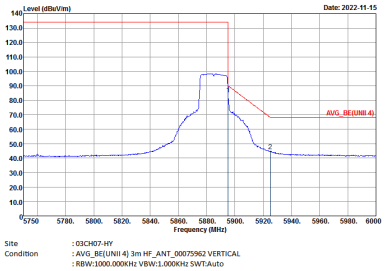
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - L	
4+3	Vertical	Fundamental
Peak		

WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

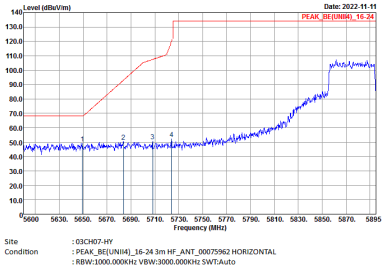
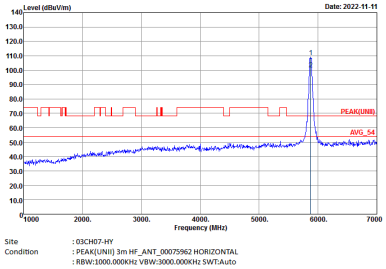
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - L	
4+3	Horizontal	Fundamental
Peak		

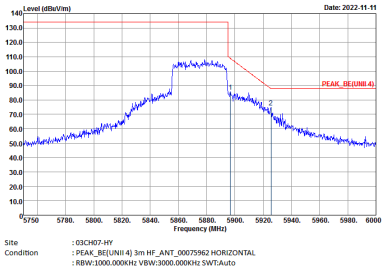
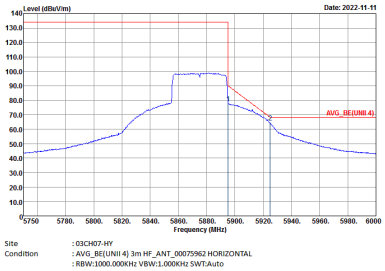
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

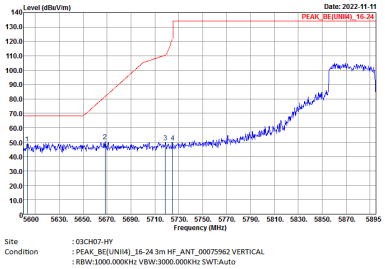
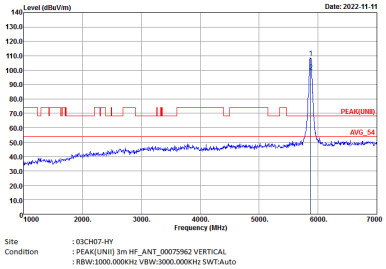
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - L	
4+3	Vertical	Fundamental
Peak		

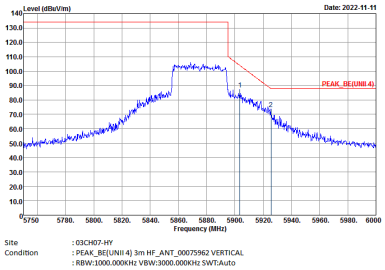
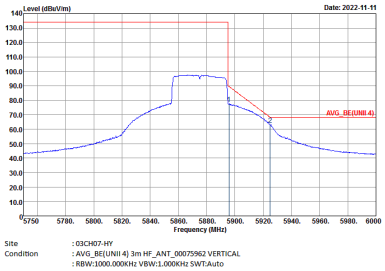
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

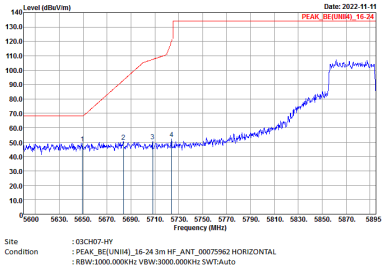
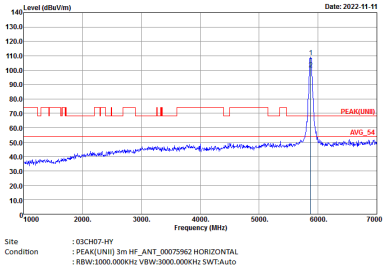
UNII-4 - 5850~5895MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

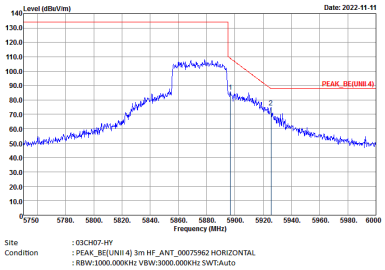
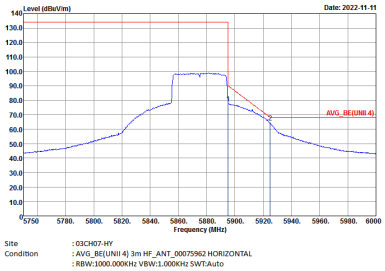
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - L	
4+3	Horizontal	Fundamental
Peak		

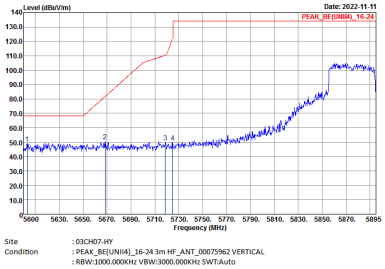
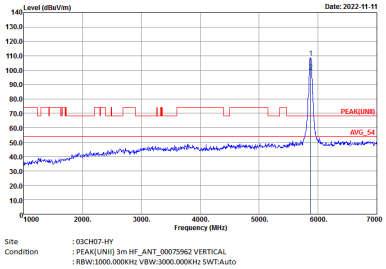
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

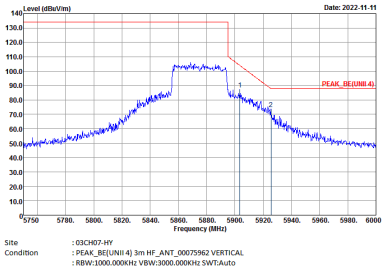
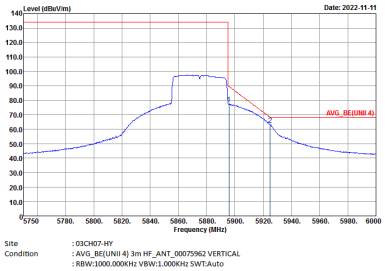
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - L	
4+3	Vertical	Fundamental
Peak		

WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

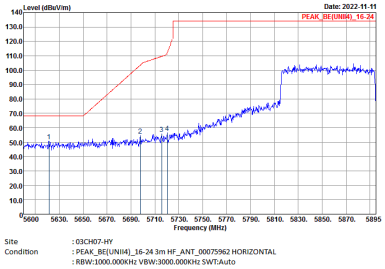
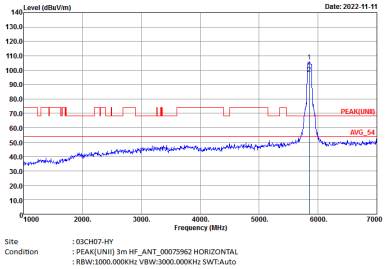
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - L	
4+3	Horizontal	Fundamental
Peak		

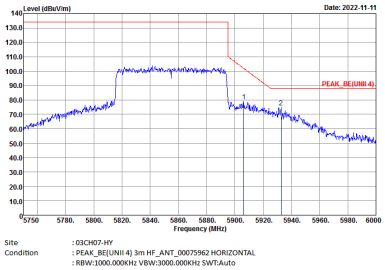
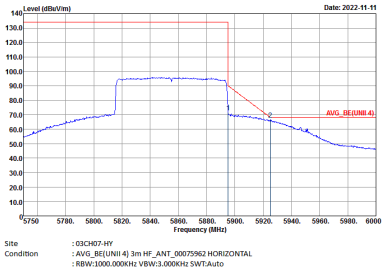
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

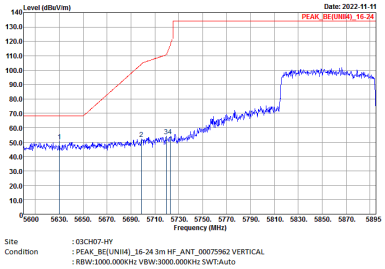
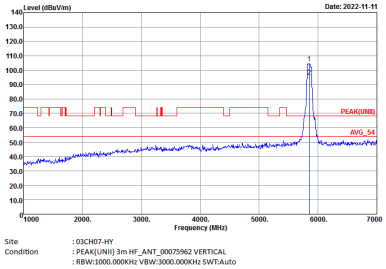
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - L	
4+3	Vertical	Fundamental
Peak		

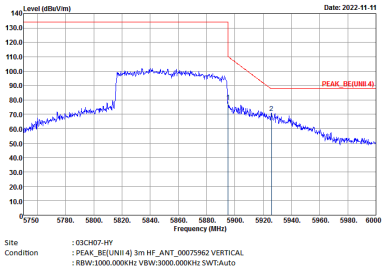
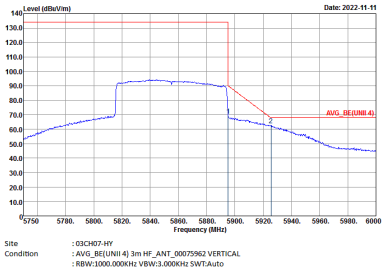
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

UNII-4 - 5850~5895MHz
WIFI 802.11ax HE80 Full (Band Edge @ 3m)

WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - L	
4+3	Horizontal	Fundamental
Peak		

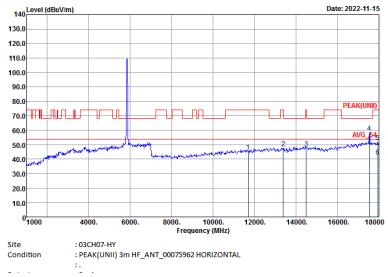
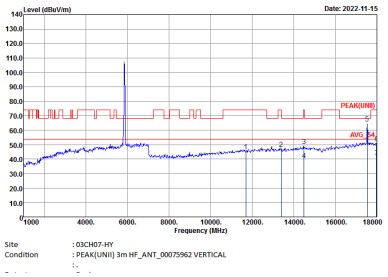
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

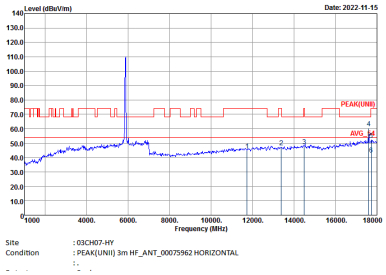
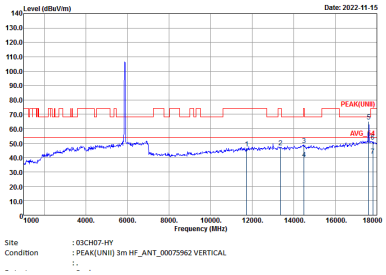
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - L	
4+3	Vertical	Fundamental
Peak		

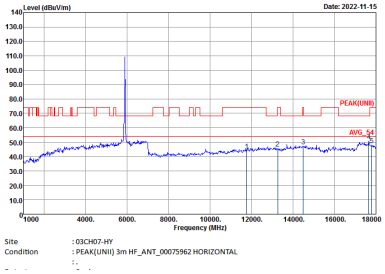
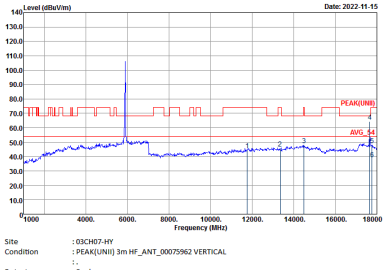
WIFI	UNII-4 - 5850~5895MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

Band 4 - 5725~5850MHz

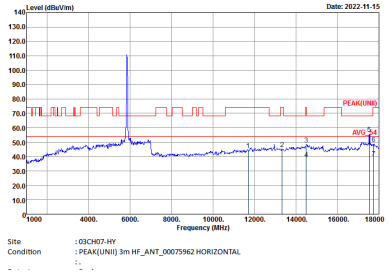
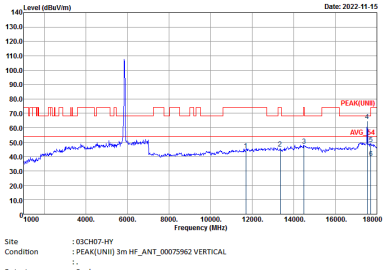
WIFI 802.11a (Harmonic @ 3m)

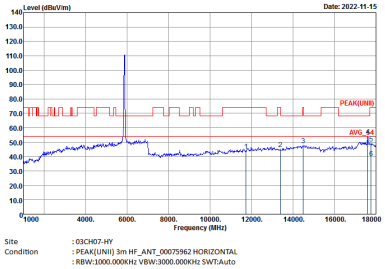
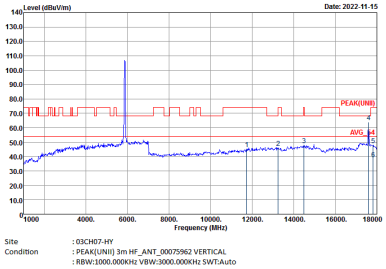
WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11a CH169 5845MHz	
4+3	Horizontal	Vertical
Peak Avg.		

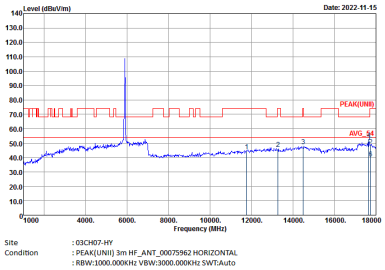
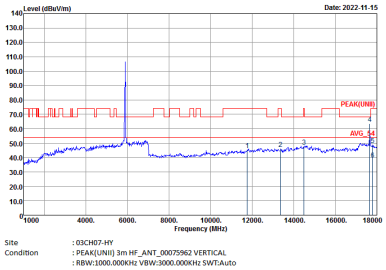
WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11a CH173 5865MHz	
4+3	Horizontal	Vertical
Peak Avg.		

WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11a CH177 5885MHz	
4+3	Horizontal	Vertical
Peak Avg.		

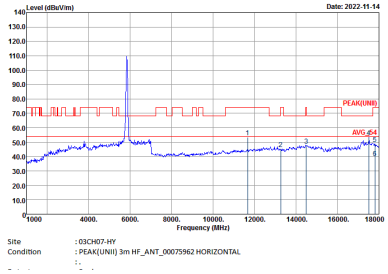
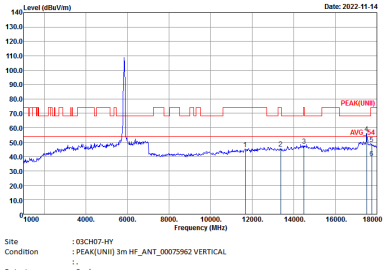
UNII-4 - 5850~5895MHz
WIFI 802.11ax HE20 Full (Harmonic @ 3m)

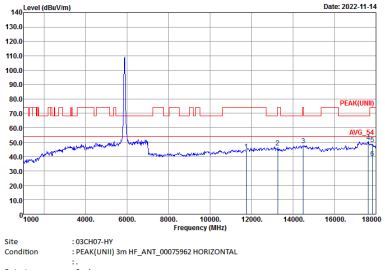
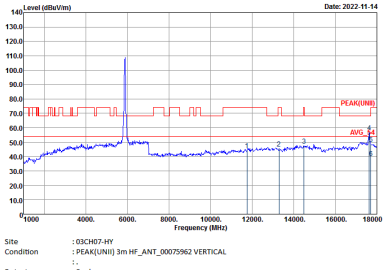
WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz	
4+3	Horizontal	Vertical
Peak Avg.		

WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz	
4+3	Horizontal	Vertical
Peak Avg.		

WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz	
4+3	Horizontal	Vertical
Peak Avg.		

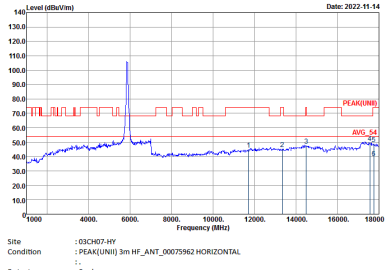
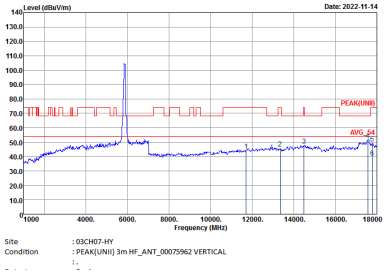
UNII-4 - 5850~5895MHz
WIFI 802.11ax HE40 Full (Harmonic @ 3m)

WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz	
4+3	Horizontal	Vertical
Peak Avg.		

WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz	
4+3	Horizontal	Vertical
Peak Avg.		

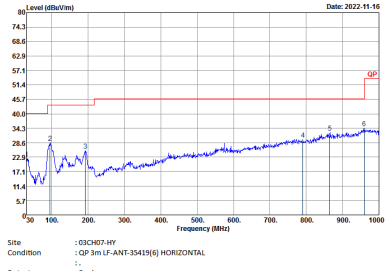
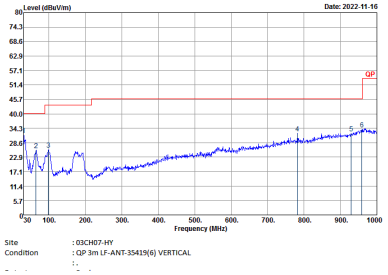
UNII-4 - 5850~5895MHz

WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI	UNII-4 - 5850~5895MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz	
4+3	Horizontal	Vertical
Peak Avg.		

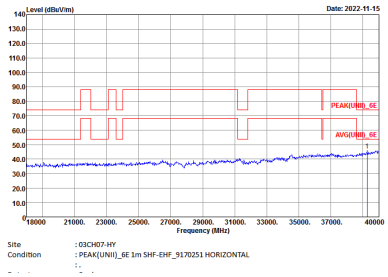
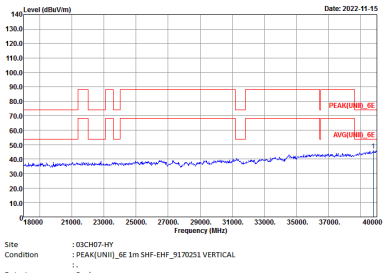
Emission above 18GHz

5GHz WIFI 802.11ax HE80 Full (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full SHF	
4+3	Horizontal	Vertical
Peak Avg.		

Emission below 1GHz

5GHz WIFI 802.11ax HE80 Full (LF @ 3m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full LF	
4+3	Horizontal	Vertical
QP / Peak		

Appendix E. Duty Cycle Plots

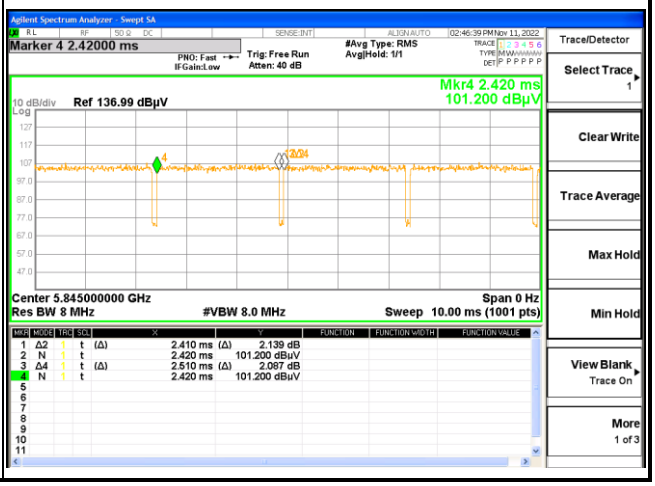
<For Radiated Spurious Emission test>

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
4+3	802.11a	93.44	1425	0.70	1kHz
4+3	5GHz 802.11ax HE20 Full RU	96.02	2410	0.41	1kHz
4+3	5GHz 802.11ax HE40 Full RU	92.54	1240	0.81	1kHz
4+3	5GHz 802.11ax HE80 Full RU	90.57	960	1.04	3kHz

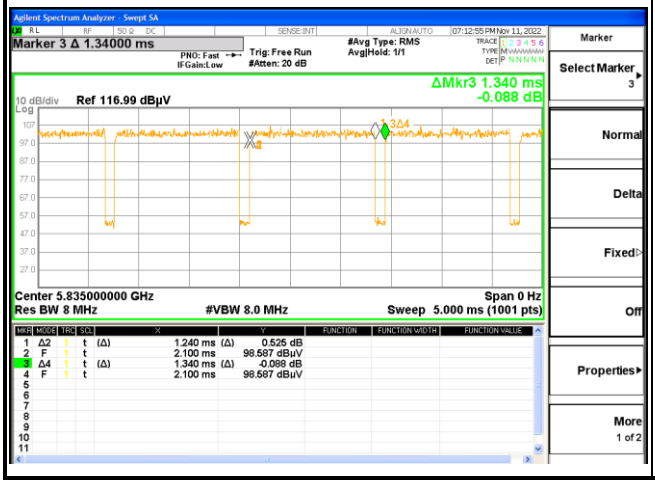
MIMO <Ant. 4+3>

802.11a

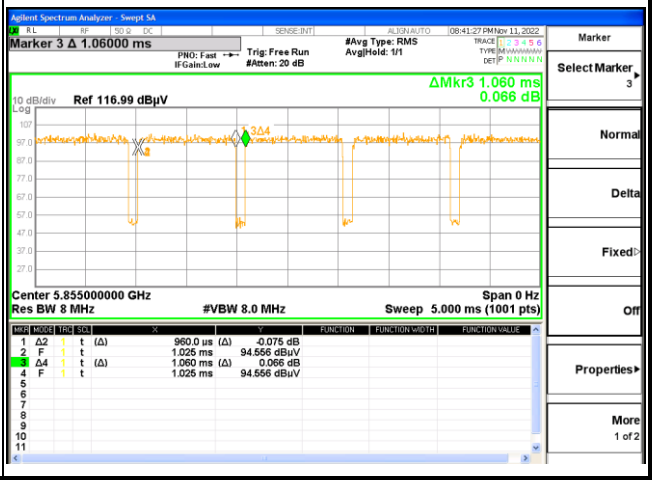
5GHz 802.11ax HE20 Full RU



5GHz 802.11ax HE40 Full RU



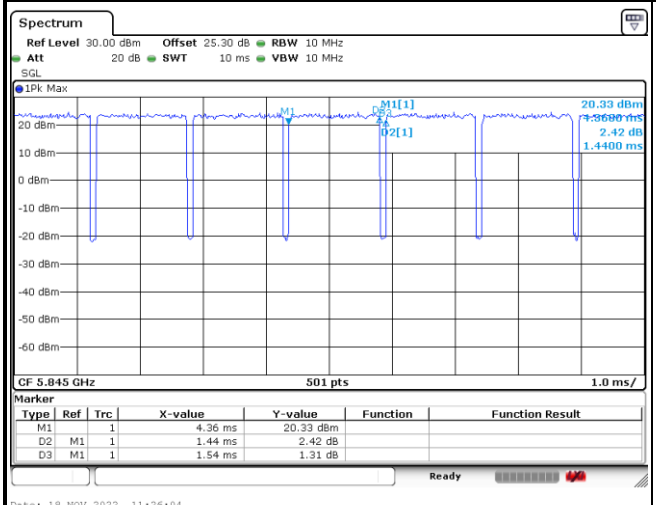
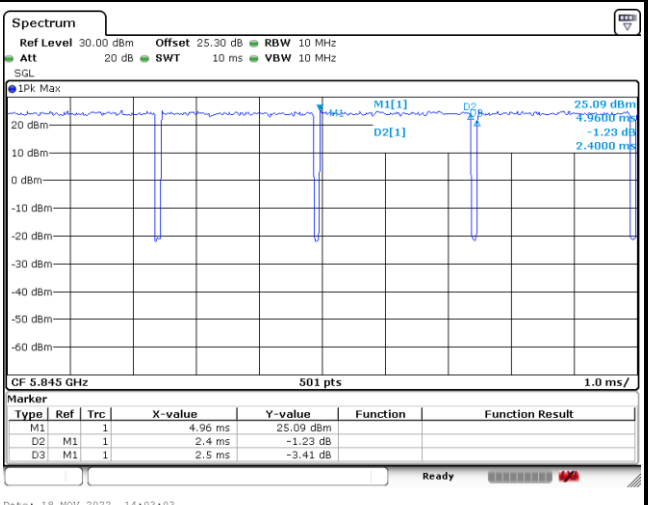
5GHz 802.11ax HE80 Full RU

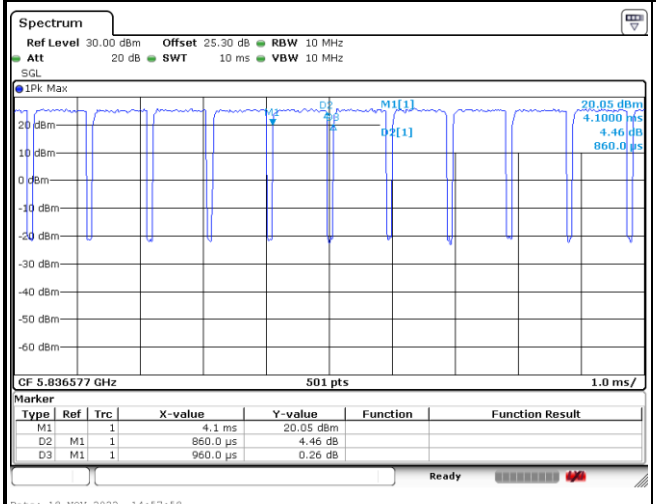
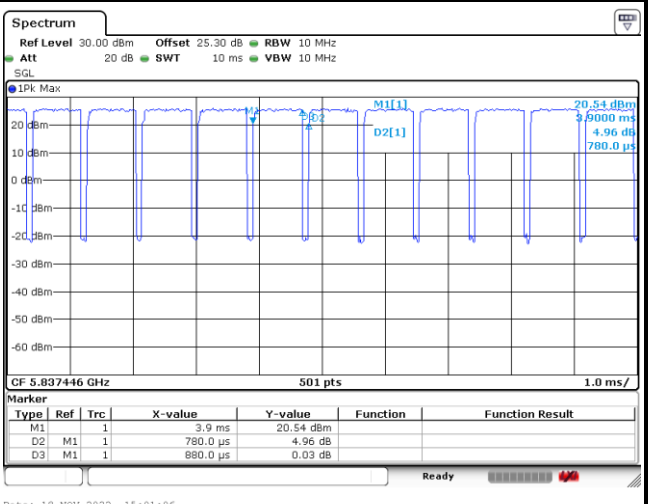


<For Conducted test>

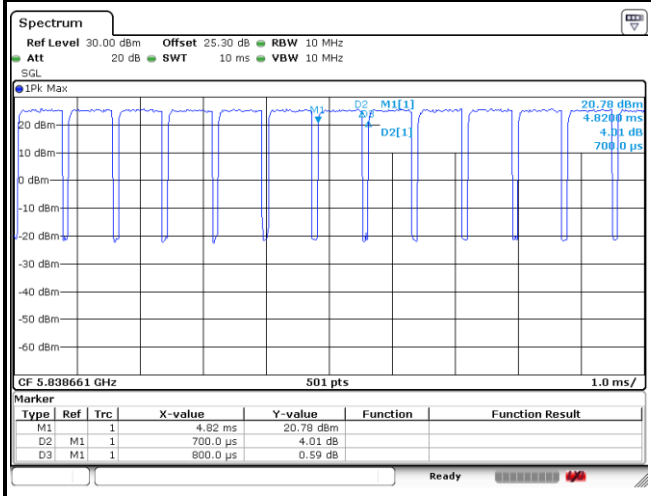
Antenna	Band	Duty Cycle(%)	T(us)	VBW Setting
4+3	802.11a for Ant. 4	93.51	1440	0.29
4+3	802.11a for Ant. 3	93.42	1420	0.30
4+3	5GHz 802.11ax HE20 Full RU for Ant. 4	96.00	2400	0.18
4+3	5GHz 802.11ax HE20 Full RU for Ant. 3	96.00	2400	0.18
4+3	5GHz 802.11ax HE20 26 RU Ant. 4	89.58	860	0.48
4+3	5GHz 802.11ax HE20 26 RU Ant. 3	89.36	840	0.49
4+3	5GHz 802.11ax HE20 52 RU Ant. 4	88.64	780	0.52
4+3	5GHz 802.11ax HE20 52 RU Ant. 3	88.64	780	0.52
4+3	5GHz 802.11ax HE20 106 RU Ant. 4	87.50	700	0.58
4+3	5GHz 802.11ax HE20 106 RU Ant. 3	87.50	700	0.58
4+3	5GHz 802.11ax HE40 Full RU for Ant. 4	91.04	1220	0.41
4+3	5GHz 802.11ax HE40 Full RU for Ant. 3	92.54	1240	0.34
4+3	5GHz 802.11ax HE80 Full RU for Ant. 4	90.57	960	0.43
4+3	5GHz 802.11ax HE80 Full RU for Ant. 3	90.57	960	0.43

MIMO <Ant. 4>

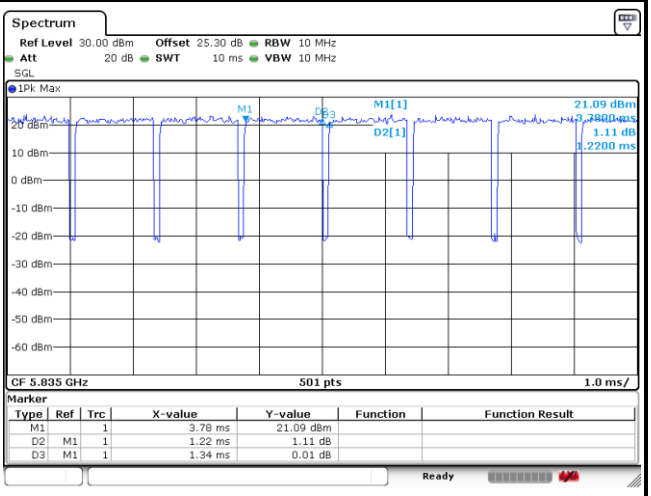
802.11a	802.11ax HE20 Full RU
	

802.11ax HE20 26 RU	802.11ax HE20 52 RU
	

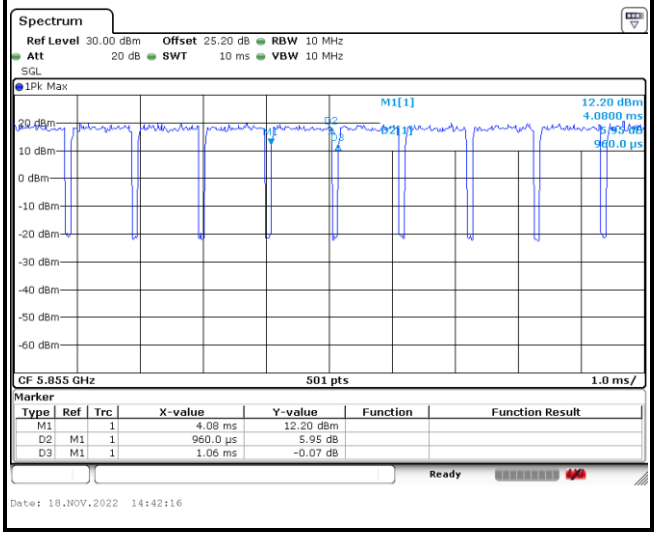
802.11ax HE20 106 RU



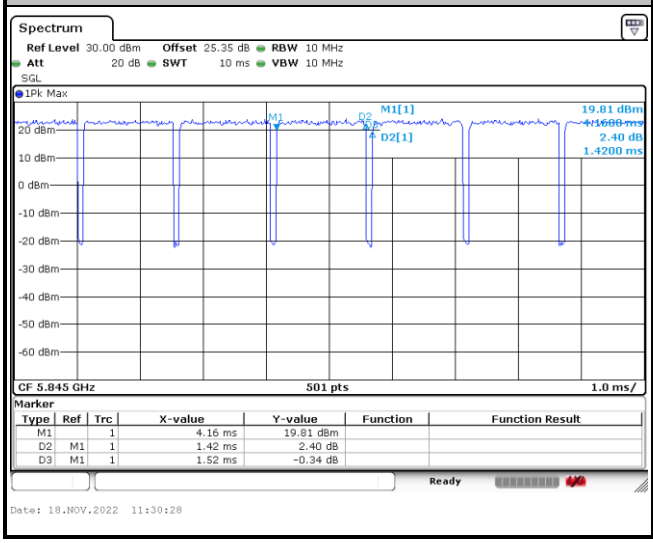
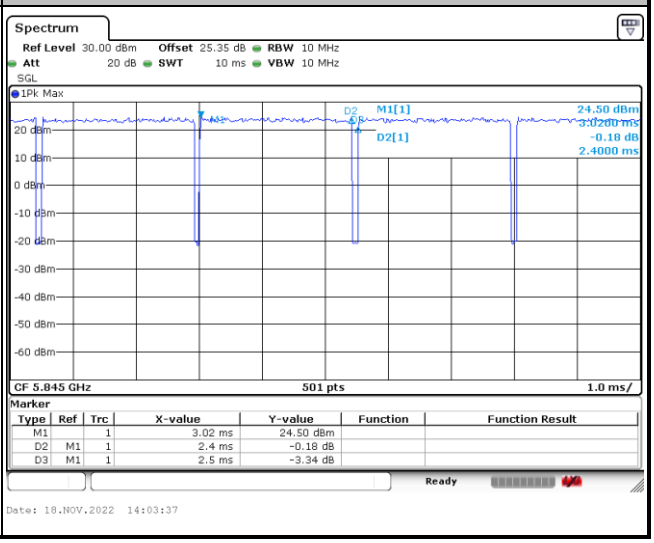
802.11ax HE40 Full RU

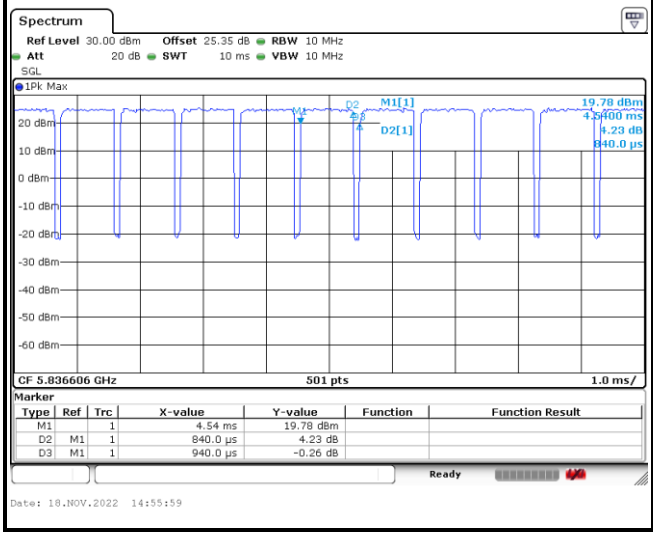
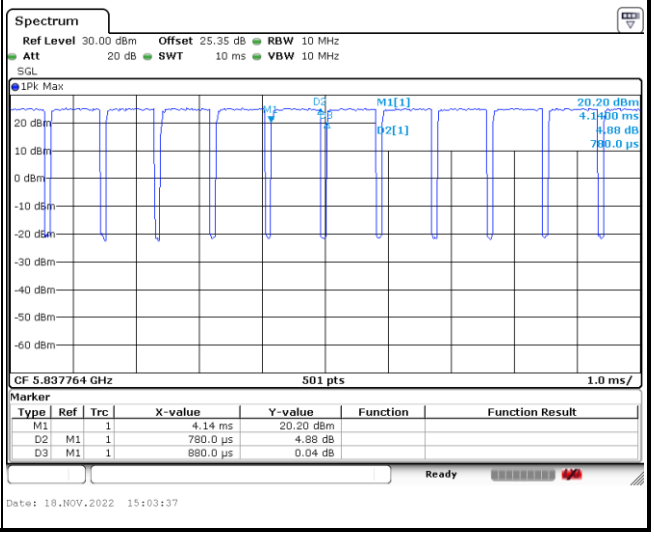


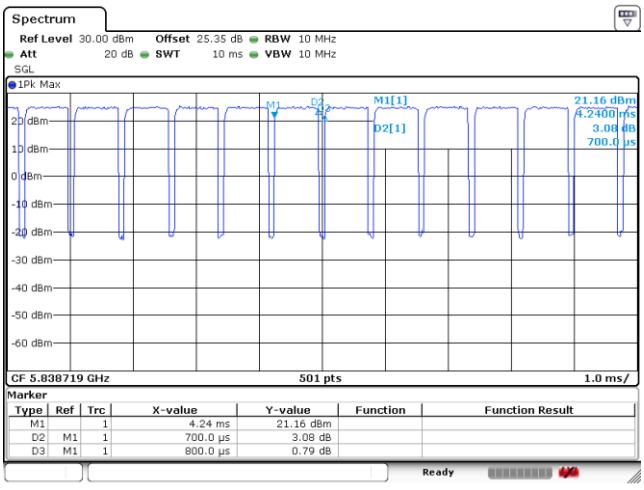
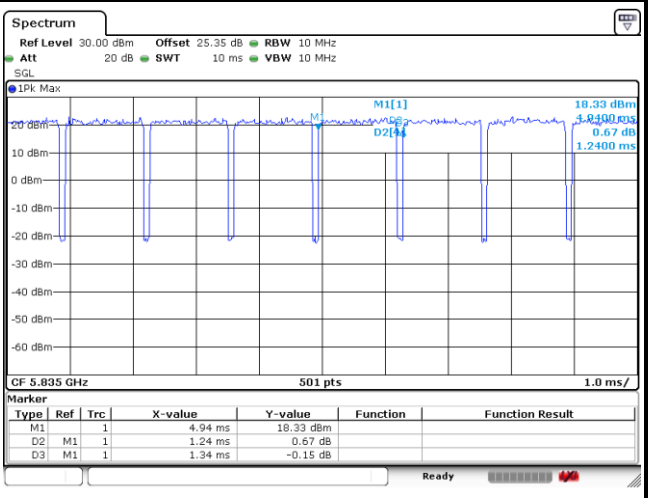
802.11ax HE80 Full RU

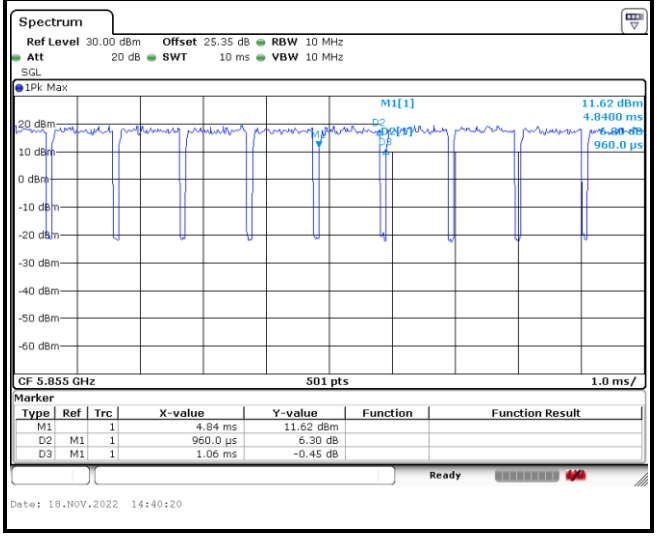


MIMO <Ant. 3>

802.11a	802.11ax HE20 Full RU
	

802.11ax HE20 26 RU	802.11ax HE20 52 RU
	

802.11ax HE20 106 RU	802.11ax HE40 Full RU
	

802.11ax HE80 Full RU


———THE END———