



# FCC RADIO TEST REPORT

FCC ID : A4RGVU6C  
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 Mar. 17, 2022 and testing was performed from Mar. 26, 2022 to May 18, 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 of 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.)



## Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
<b>1 General Description .....</b>	<b>5</b>
1.1 Product Feature of Equipment Under Test.....	5
1.2 Product Specification of Equipment Under Test.....	6
1.3 Modification of EUT .....	6
1.4 Testing Location .....	7
1.5 Applicable Standards.....	7
<b>2 Test Configuration of Equipment Under Test .....</b>	<b>8</b>
2.1 Carrier Frequency and Channel .....	8
2.2 Test Mode.....	9
2.3 Connection Diagram of Test System.....	10
2.4 Support Unit used in test configuration and system .....	11
2.5 EUT Operation Test Setup .....	11
2.6 Measurement Results Explanation Example.....	12
<b>3 Test Result .....</b>	<b>13</b>
3.1 6dB and 26dB and 99% Occupied Bandwidth Measurement .....	13
3.2 Maximum E.I.R.P Output Power Measurement .....	19
3.3 Power Spectral Density Measurement .....	20
3.4 Unwanted Emissions Measurement.....	27
3.5 AC Conducted Emission Measurement.....	32
3.6 Antenna Requirements .....	34
<b>4 List of Measuring Equipment.....</b>	<b>36</b>
<b>5 Uncertainty of Evaluation .....</b>	<b>38</b>
<b>Appendix A. Conducted Test Results</b>	
<b>Appendix B. AC Conducted Emission Test Result</b>	
<b>Appendix C. Radiated Spurious Emission</b>	
<b>Appendix D. Radiated Spurious Emission Plots</b>	
<b>Appendix E. Duty Cycle Plots</b>	
<b>Appendix F. Setup Photographs</b>	



### History of this test report

Report No.	Version	Description	Issue Date
FR1O2843-06J	01	Initial issue of report	Jun. 16, 2022
FR1O2843-06J	02	Revise Power Spectral Density Data	Jul. 06, 2022
FR1O2843-06J	03	Revise Power Spectral Density Measurement	Jul. 08, 2022
FR1O2843-06J	04	Removed antenna info typo.	Jul. 15, 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	1.51 dB under the limit at 5895.250 MHz
3.5	15.207	AC Conducted Emission	Pass	20.04 dB under the limit at 0.152 MHz
3.6	15.203 15.407(a)	Antenna Requirement	Pass	-

**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 this 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	A4RGVU6C
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/5G NR/ NFC/GNSS/WPC/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
23031FDH20005G	Conducted Measurement
22281FDH20003J	Radiated Spurious Emission
22281FDH20006N	Conducted Emission

## 1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard							
<b>Tx/Rx Frequency Range</b>	5850 MHz ~ 5895 MHz						
<b>Maximum Output Power</b>	<b>MIMO &lt;Ant. 4+3&gt;</b> 802.11a: 24.17 dBm / 0.2611 W 802.11n HT20: 24.46 dBm / 0.2794 W 802.11n HT40: 24.52 dBm / 0.2832 W 802.11ac VHT20: 24.56 dBm / 0.2859 W 802.11ac VHT40: 24.62 dBm / 0.2898 W 802.11ac VHT80: 22.77 dBm / 0.1894 W 802.11ac VHT160: 21.83 dBm / 0.1524 W 802.11ax HE20: 24.66 dBm / 0.2926 W 802.11ax HE40: 24.72 dBm / 0.2965 W 802.11ax HE80: 22.87 dBm / 0.1938 W 802.11ax HE160: 21.93 dBm / 0.1559 W						
<b>99% Occupied Bandwidth</b>	<b>MIMO &lt;Ant. 4&gt;</b> 802.11a: 18.98 MHz 802.11ax HE20: 20.73 MHz 802.11ax HE40: 44.26 MHz 802.11ax HE80: 77.32 MHz 802.11ax HE160: 156.80 MHz <b>MIMO &lt;Ant. 3&gt;</b> 802.11a: 18.73 MHz 802.11ax HE20: 20.73 MHz 802.11ax HE40: 42.56 MHz 802.11ax HE80: 77.32 MHz 802.11ax HE160: 156.80 MHz						
<b>Antenna Type / Gain</b>	<b>&lt;Ant. 4&gt;</b> : IFA Antenna with gain -0.5 dBi <b>&lt;Ant. 3&gt;</b> : Loop Antenna with gain -2.1 dBi						
<b>Type of Modulation</b>	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)						
<b>Antenna Function Description</b>	<table border="1"> <thead> <tr> <th></th> <th>Ant. 4</th> <th>Ant. 3</th> </tr> </thead> <tbody> <tr> <td>802.11 a/n/ac/ax MIMO</td> <td>V</td> <td>V</td> </tr> </tbody> </table>		Ant. 4	Ant. 3	802.11 a/n/ac/ax MIMO	V	V
	Ant. 4	Ant. 3					
802.11 a/n/ac/ax MIMO	V	V					

**Remark:**

- 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 3.6.
- Power of MIMO Ant. 4 + Ant. 3 is a calculated result from sum of the power MIMO Ant. 4 and MIMO Ant. 3.
- The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

## 1.3 Modification of EUT

No modifications are made to the EUT during all test items.



### 1.4 Testing Location

<b>Test Site</b>	Sporton International Inc. EMC & Wireless Communications Laboratory
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
<b>Test Site No.</b>	<b>Sporton Site No.</b> CO05-HY, 03CH07-HY

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

<b>Test Site</b>	Sporton International Inc. Wensan Laboratory
<b>Test Site Location</b>	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
<b>Test Site No.</b>	<b>Sporton Site No.</b> TH05-HY (TAF Code: 1190)
<b>Remark</b>	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 of 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 find X plane with Adapter as worst plane.
  
- 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
160 MHz	163	5815	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 but does not support 2x996-tone RU on 160MHz channel.

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

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 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 CDD mode is chosen as worst case configuration for all test cases due to higher power than SISO mode.

The 802.11n/ac mode has no higher power and PSD than 802.11ax mode, thus the 802.11ax mode is chosen as main test configuration, and the 802.11n/ac mode is verified the power.

Final test modes are considering the modulation and worse data rates as below table.

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

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

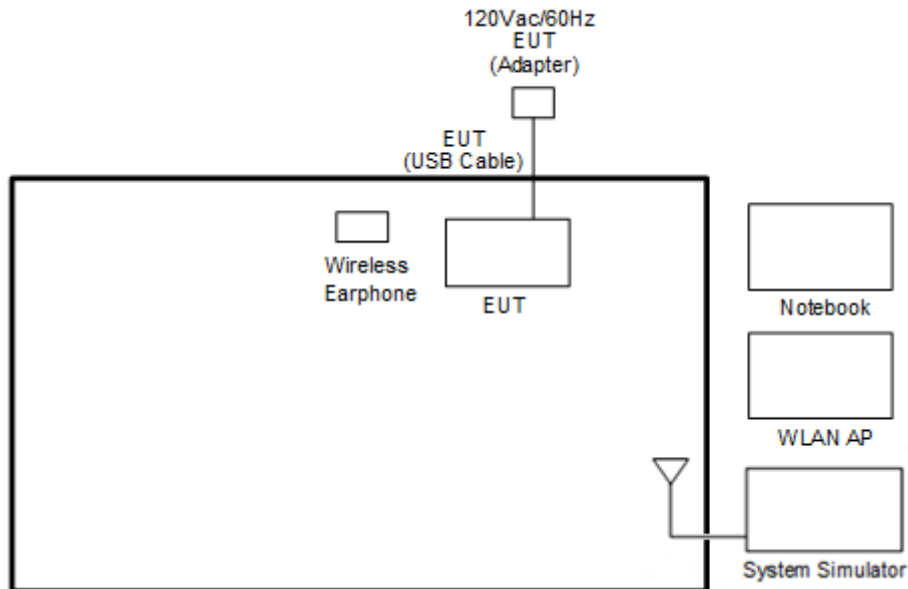
Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + WLAN (5GHz) Link + Bluetooth Link + USB Cable 2 (Charging from Adapter 1)
<b>Remark:</b> 1. For Radiated Test Cases, the tests were performed with Adapter 1 and USB Cable 2 2. During the preliminary test, both charging modes (Adapter mode and WPT 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	802.11ax HE160
L	Low	169	169	167	-	-
M	Middle	173	173	-	171	163
H	High	177	177	175	-	-

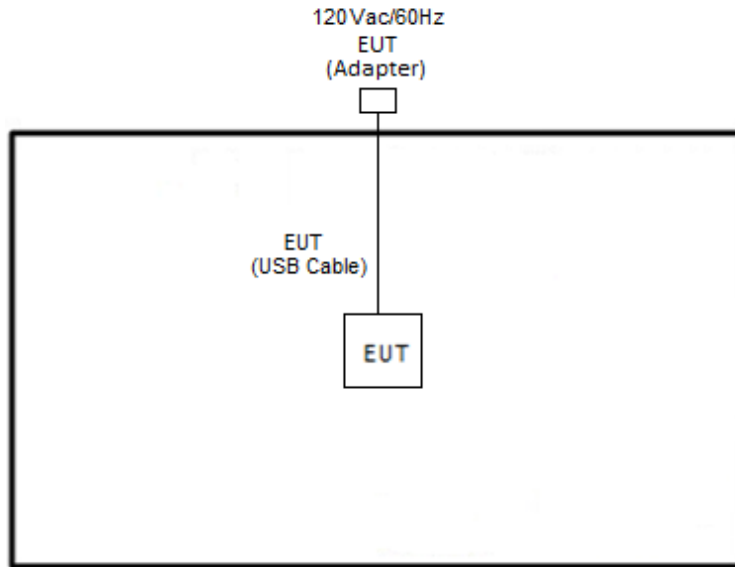
**Remark:** For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.

### 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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Wireless Earphone	Google	G1007/G1008	A4RG1007/ A4RG1008	N/A	N/A
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude 3400	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 “CMD Ver.10.0.19041.1415” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.



## 2.6 Measurement Results Explanation Example

For all conducted test items:

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

Example :

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

*Offset = RF cable loss + attenuator factor.*

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

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

### 3 Test Result

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

##### 3.1.1 Description 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.

##### 3.1.2 Measuring Instruments

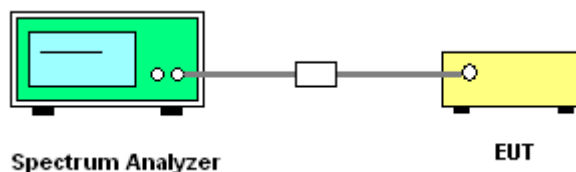
See list of measuring equipment of this test report.

##### 3.1.3 Test 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  $\geq 3 \times$  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.

##### 3.1.4 Test Setup



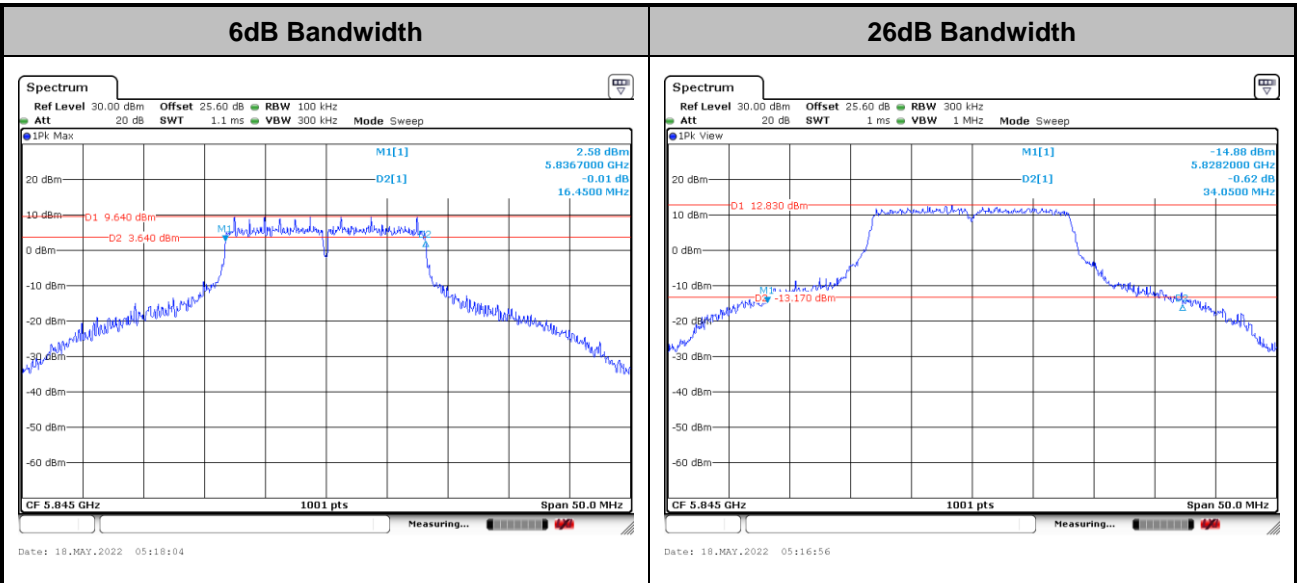
##### 3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.

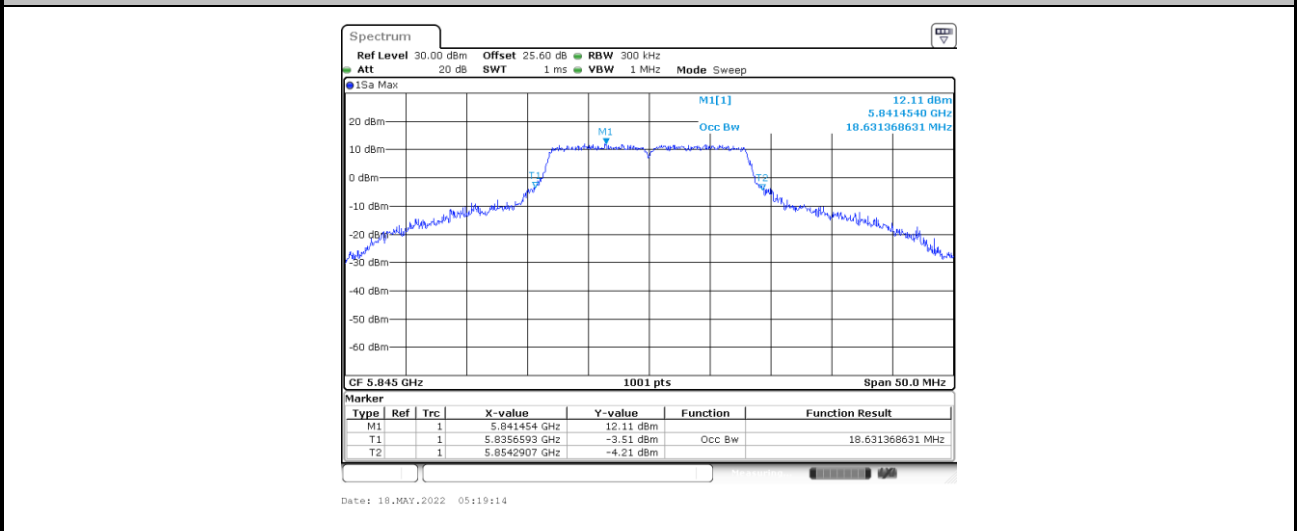


MIMO <Ant. 4+3>

<802.11a Mode>



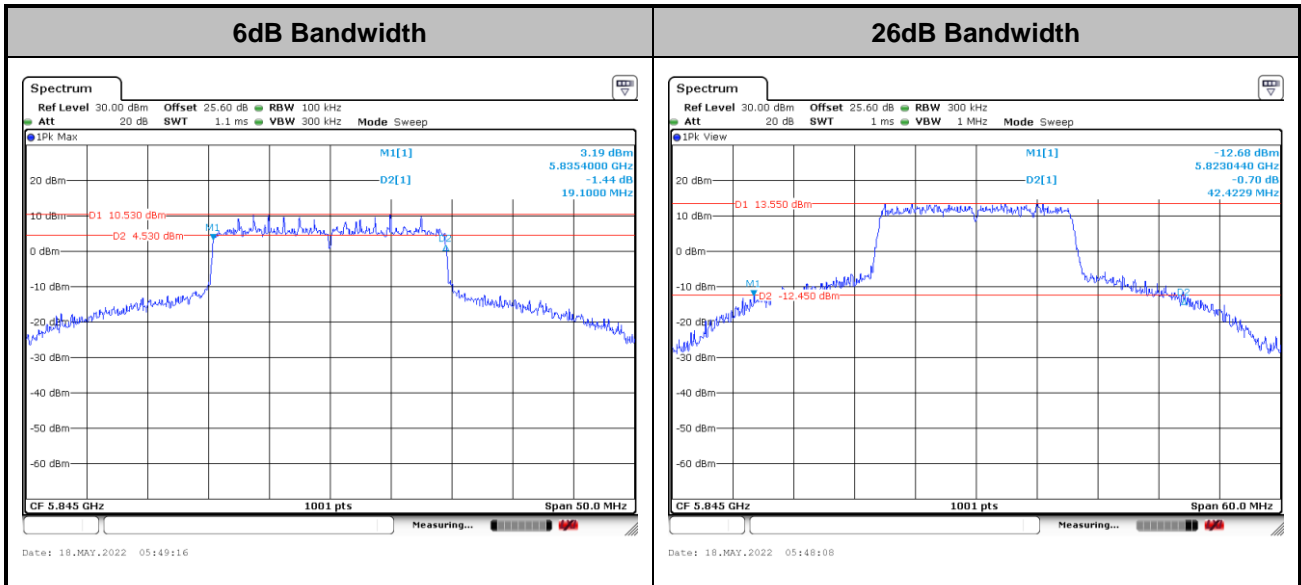
Occupied Bandwidth



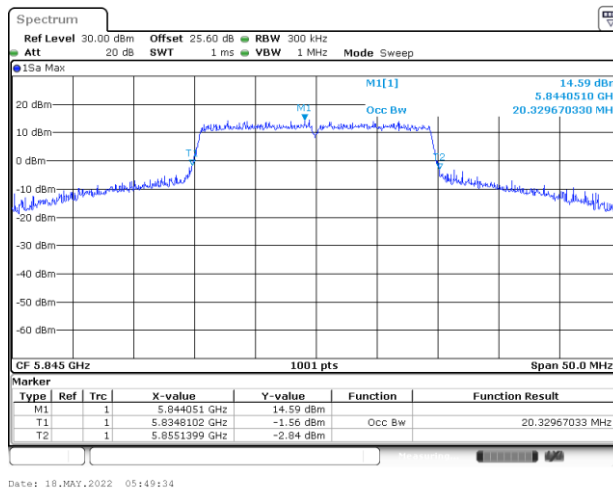
Note: The occupied channel bandwidth is maintained within the band of operation.



<802.11ax HE20 Mode>



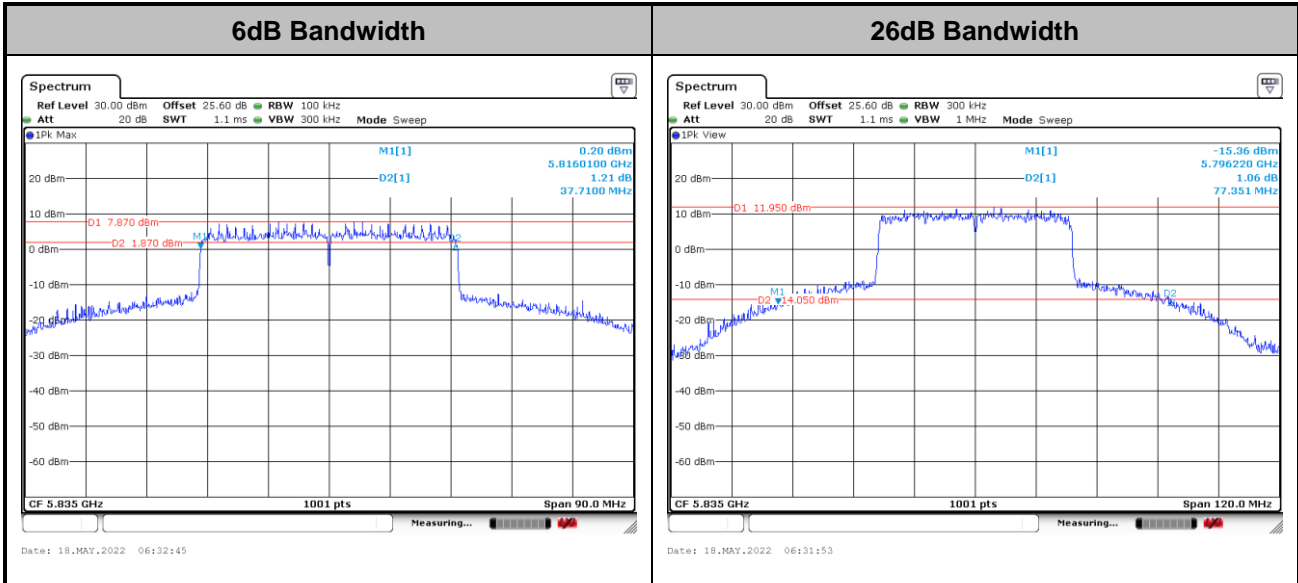
### Occupied Bandwidth



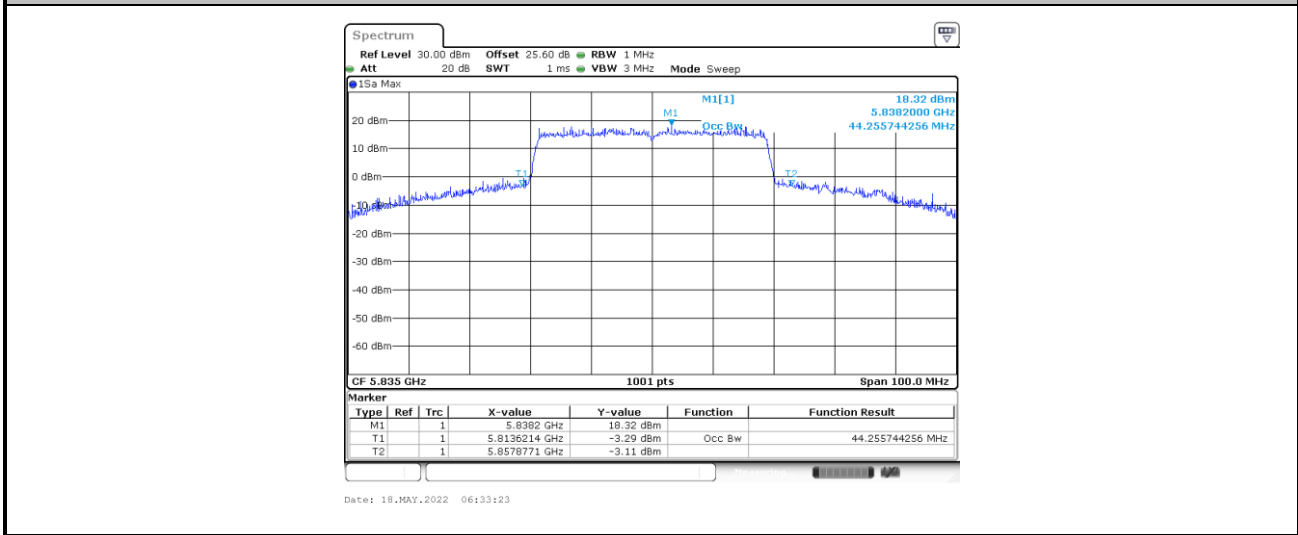
**Note:** The occupied channel bandwidth is maintained within the band of operation.



<802.11ax HE40 Mode>



Occupied Bandwidth



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

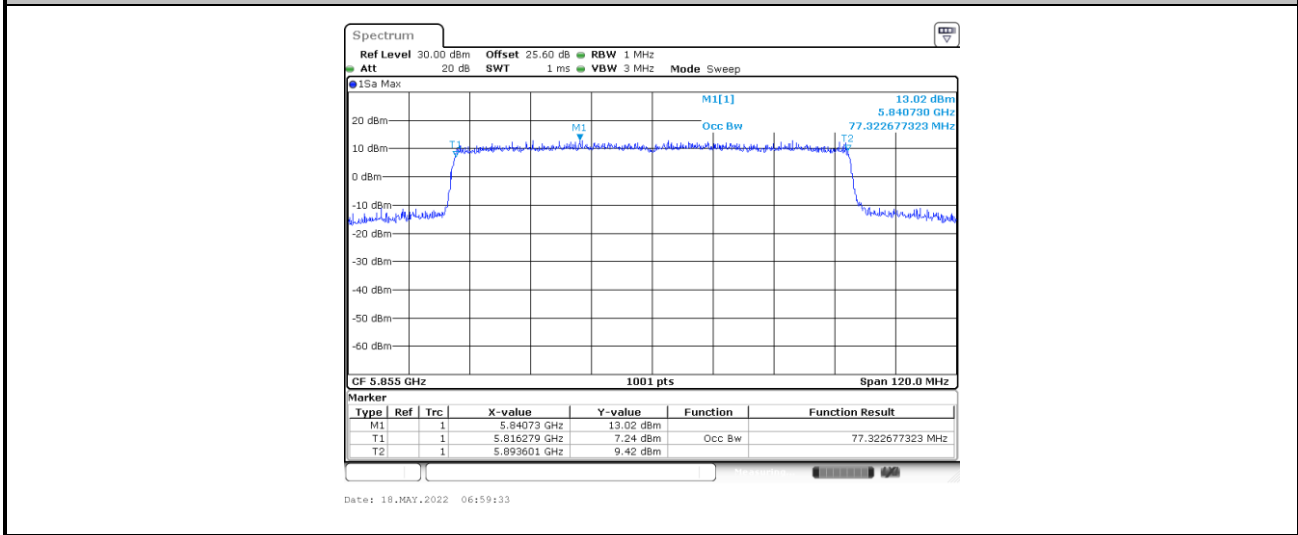




<802.11ax HE80 Mode>



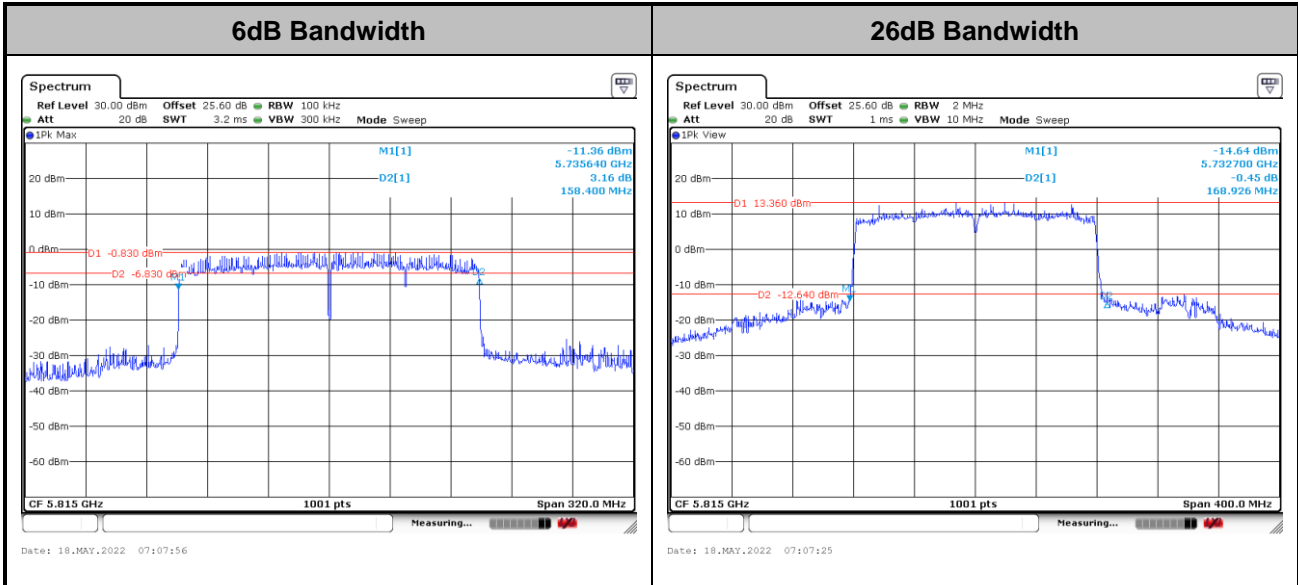
Occupied Bandwidth



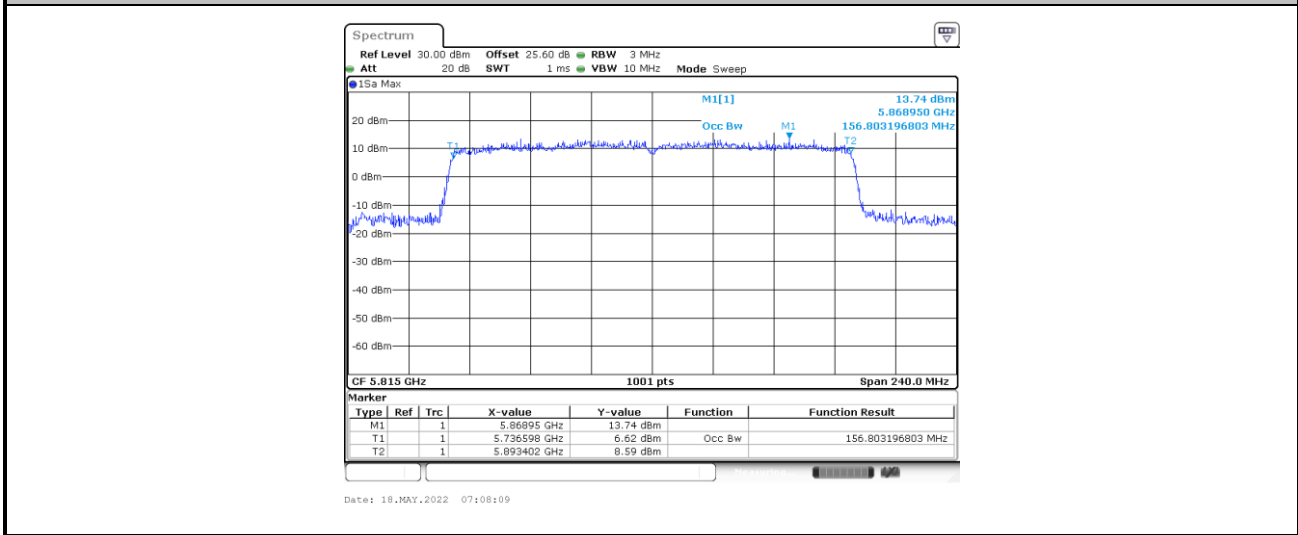
**Note:** The occupied channel bandwidth is maintained within the band of operation.



<802.11ax HE160 Mode>



Occupied Bandwidth



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

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

### 3.2.1 Limit 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.

### 3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

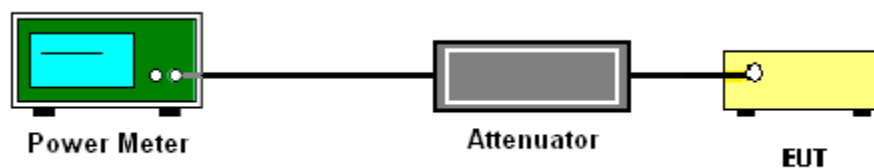
### 3.2.3 Test Procedures

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

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

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

### 3.2.4 Test Setup



### 3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



### 3.3 Power Spectral Density Measurement

#### 3.3.1 Limit of Power Spectral Density

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.

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.

#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

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

##### # Method SA-2 #

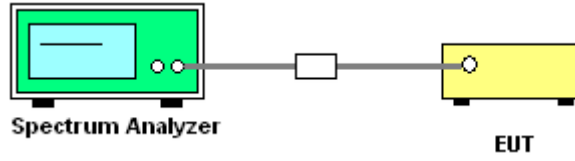
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
  - Set span to encompass the entire emission bandwidth (EBW) of the signal.
  - Set RBW = 1 MHz.
  - Set VBW  $\geq$  3 MHz.
  - Number of points in sweep  $\geq$  2 Span / RBW.
  - Sweep time = auto.
  - Detector = RMS
  - Trace average at least 100 traces in power averaging mode.
  - Add  $10 \log(1/x)$ , where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add  $10 \log(1/0.25) = 6$  dB if the duty cycle is 25 percent.
1. The RF output of EUT is connected to the spectrum analyzer by a low loss cable.
  2. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.
  3. For MIMO mode, calculation method follows FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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

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

### 3.3.4 Test Setup

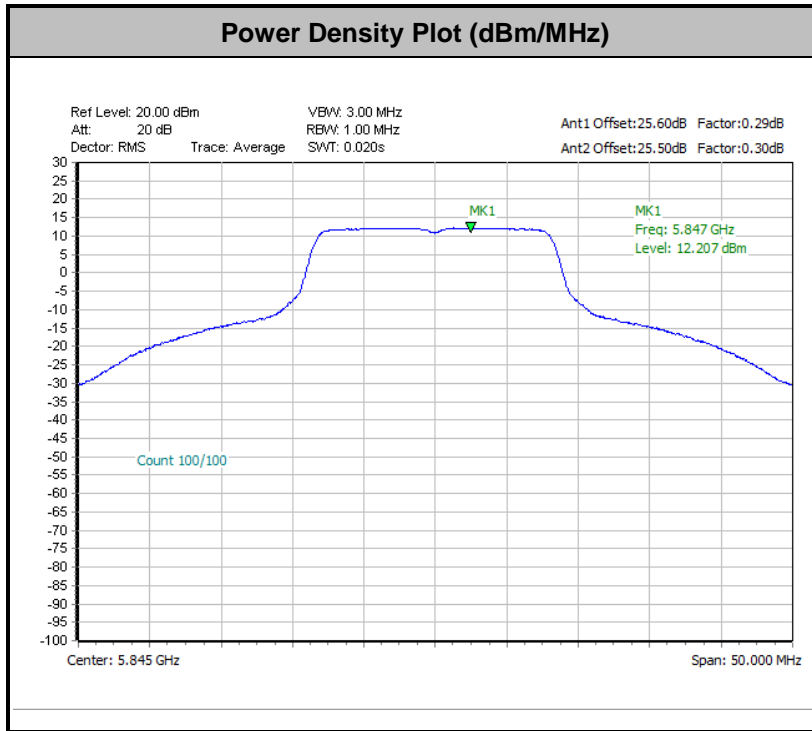


### 3.3.5 Test Result of Power Spectral Density

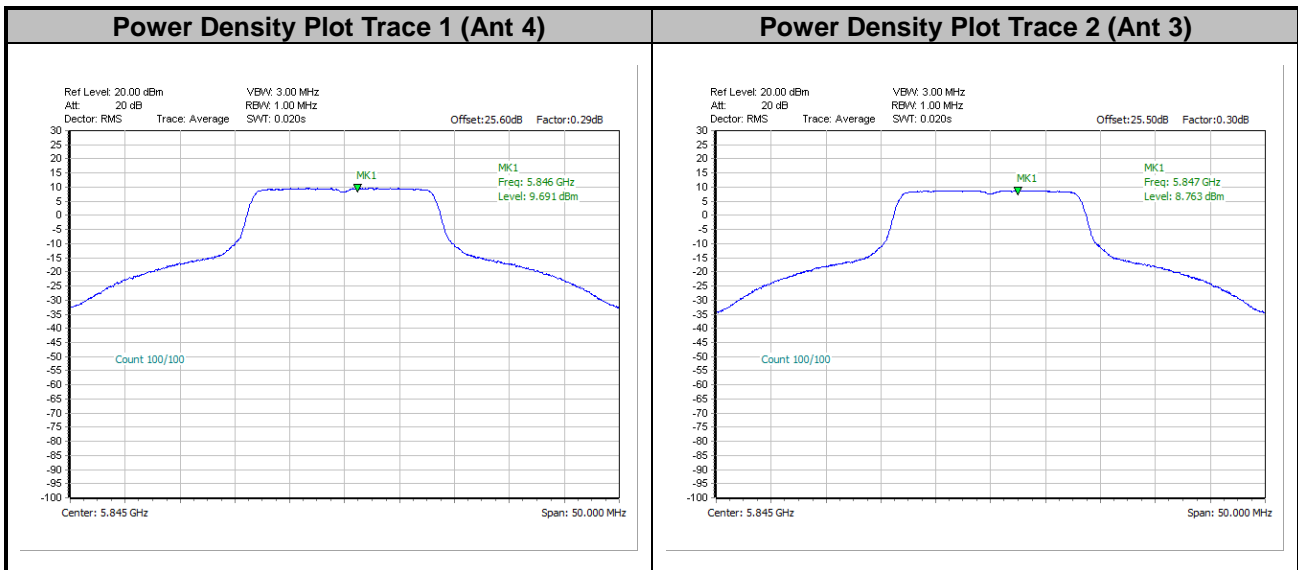
Please refer to Appendix A.



<802.11a>

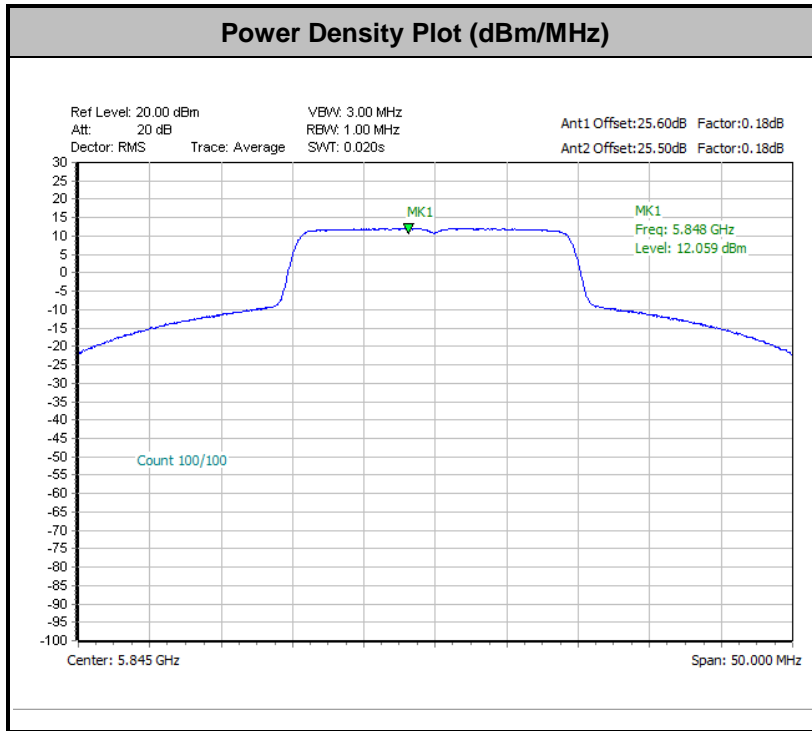


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

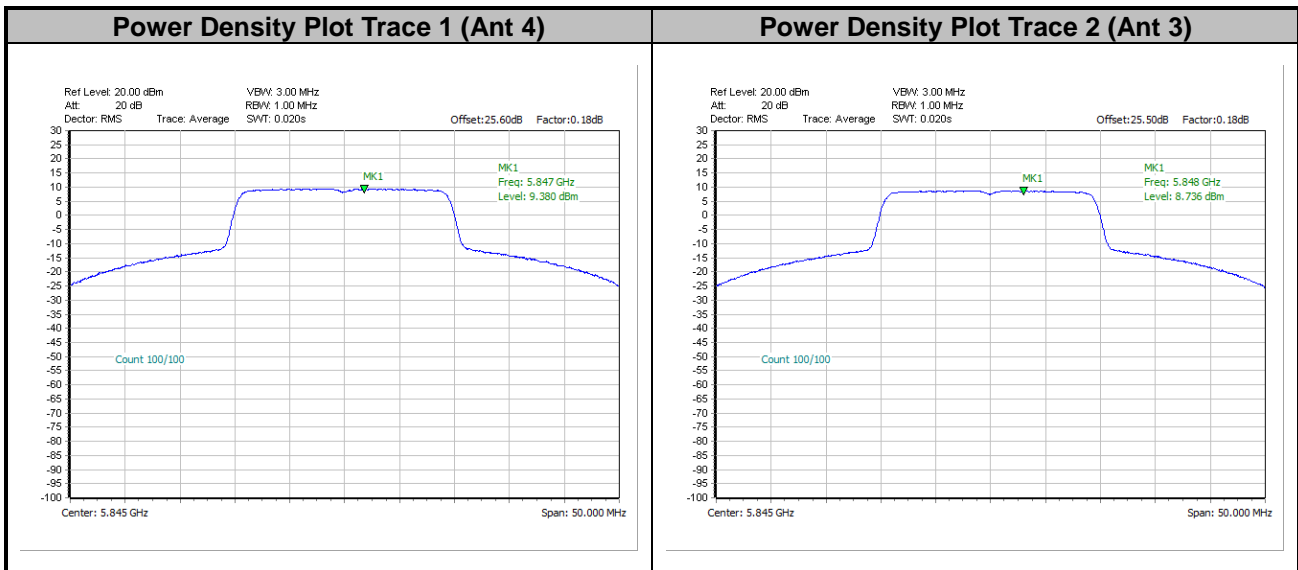




<802.11ax HE20>

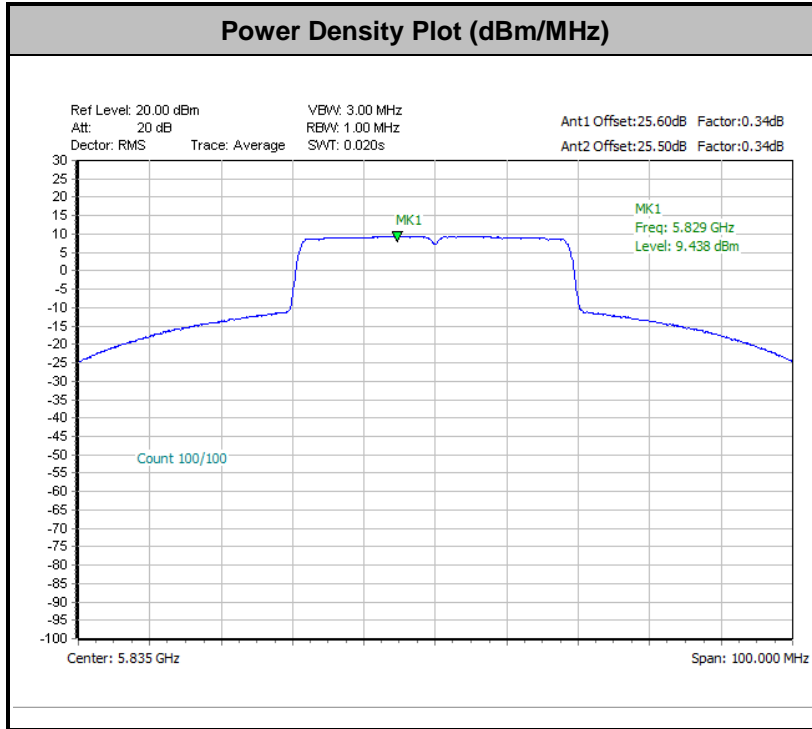


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

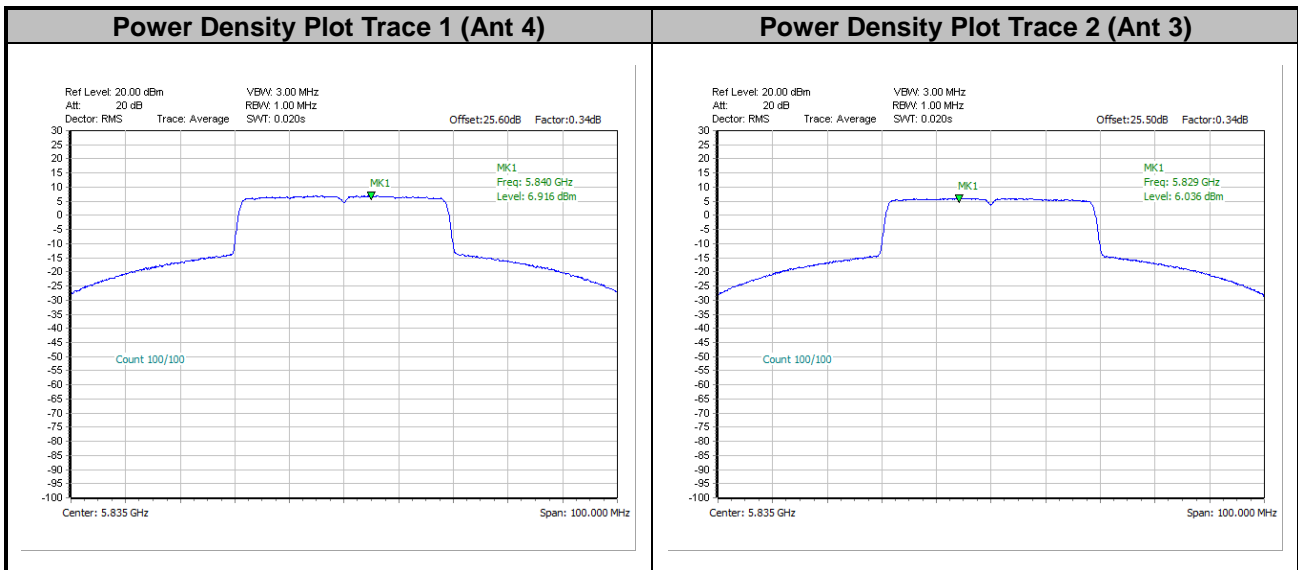




<802.11ax HE40>



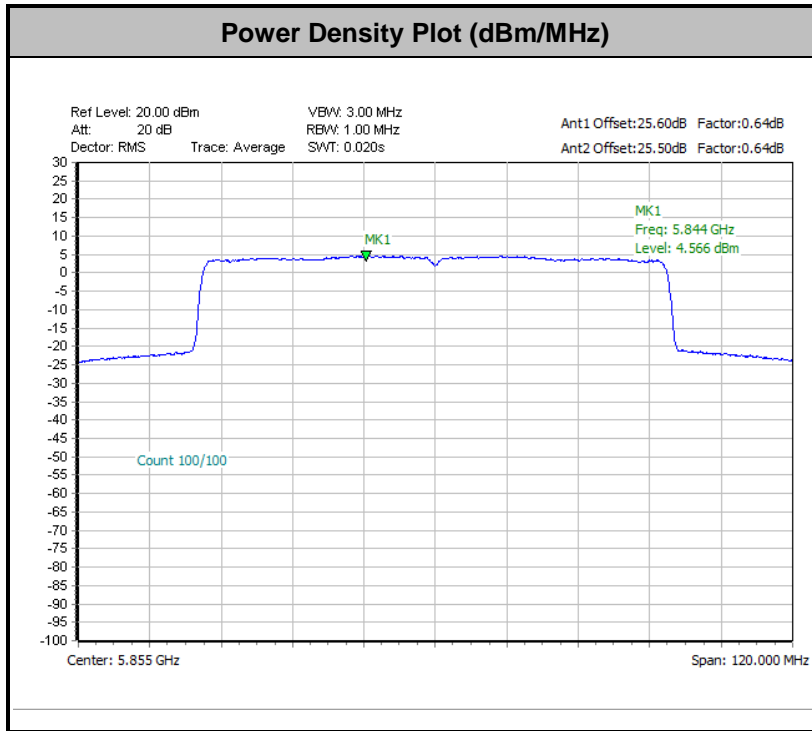
Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.



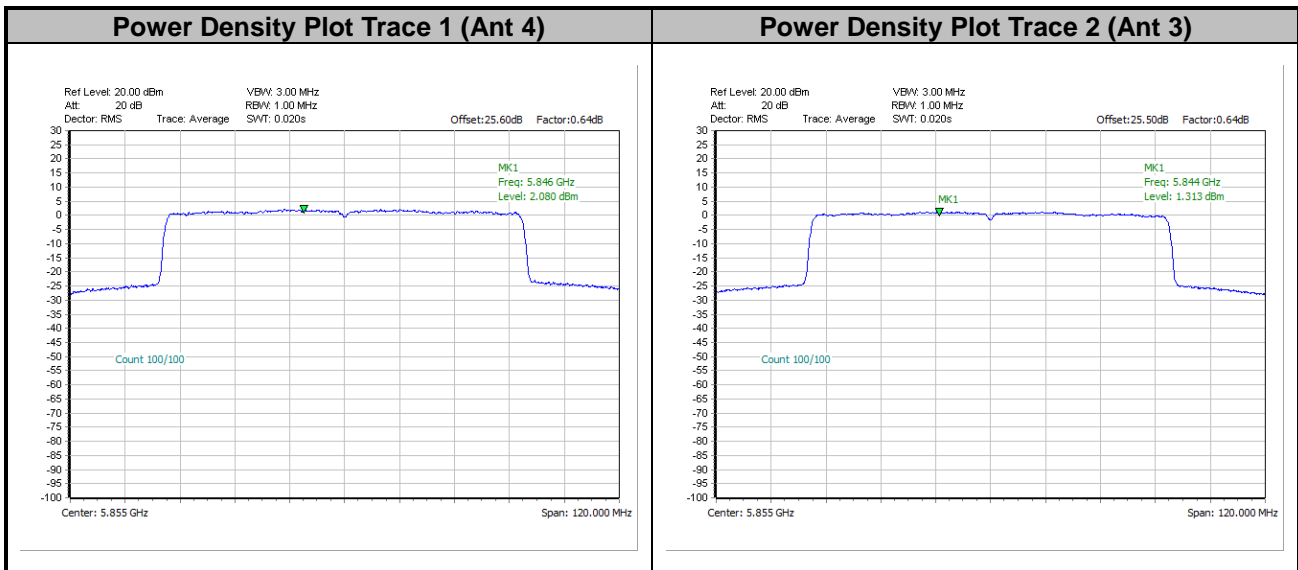




<802.11ax HE80>

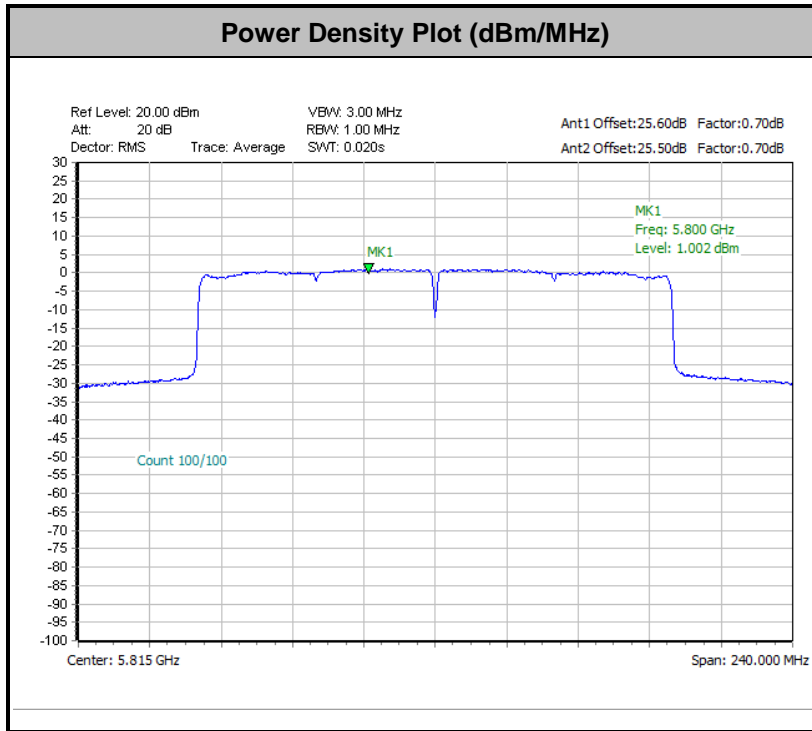


Remark: The test plot is showing a bin by bin combined result mathematically adds two traces.

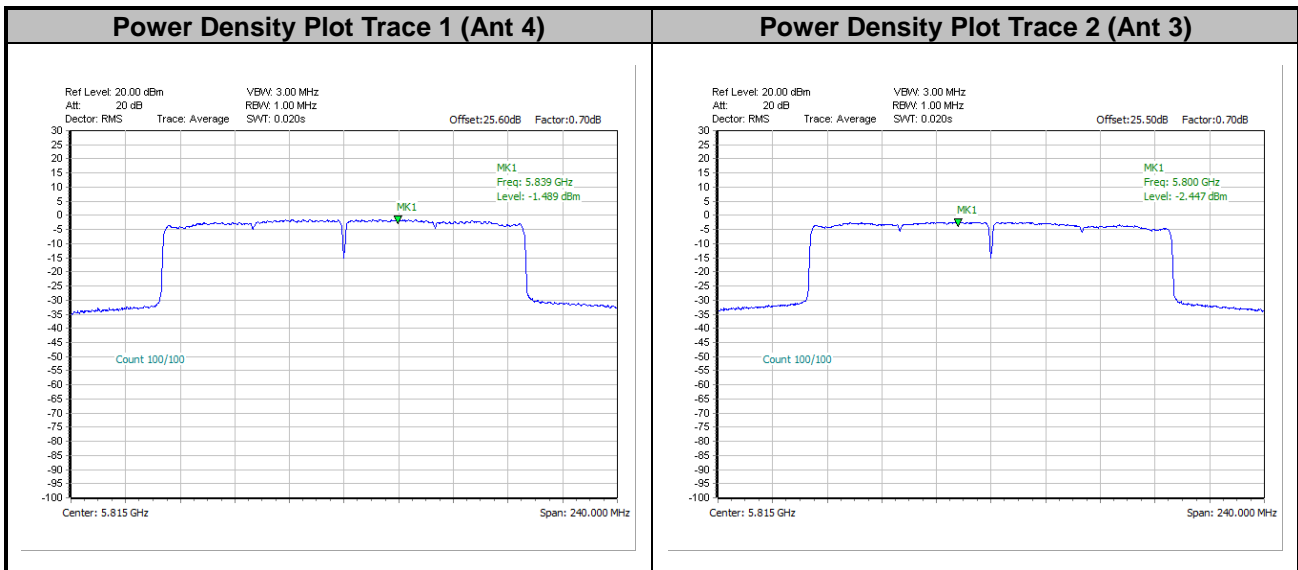




<802.11ax HE160>



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





### 3.4 Unwanted Emissions Measurement

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

#### 3.4.1 Limit of Unwanted Emissions

(1) 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.

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

(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:  
$$\text{EIRP[dBm]} = \text{E[dB}\mu\text{V/m]} - 95.2$$

### 3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

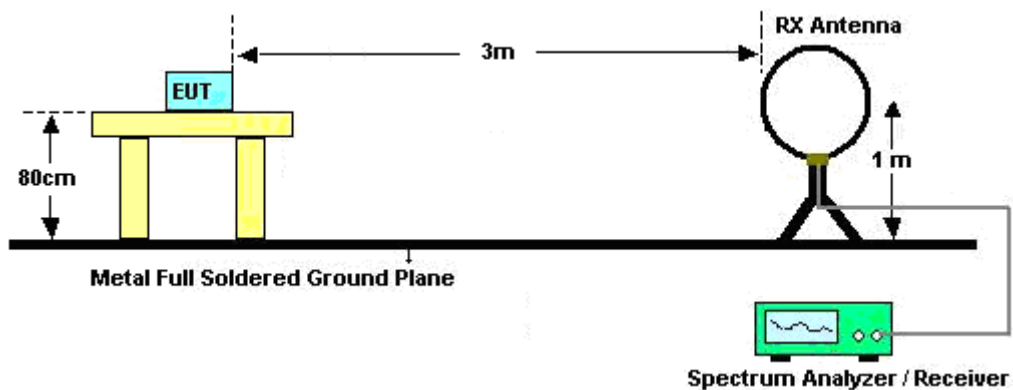
### 3.4.3 Test Procedures

- The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. Section G) Unwanted emissions measurement.
  - Procedure for Unwanted Emissions Measurements Below 1000 MHz
    - RBW = 120 kHz
    - VBW = 300 kHz
    - Detector = Peak
    - Trace mode = max hold
  - Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
    - RBW = 1 MHz
    - VBW  $\geq$  3 MHz
    - Detector = Peak
    - Sweep time = auto
    - Trace mode = max hold
  - Procedures for Average Unwanted Emissions Measurements Above 1000 MHz
    - RBW = 1 MHz
    - VBW = 10 Hz, when duty cycle is no less than 98 percent.
    - VBW  $\geq$  1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

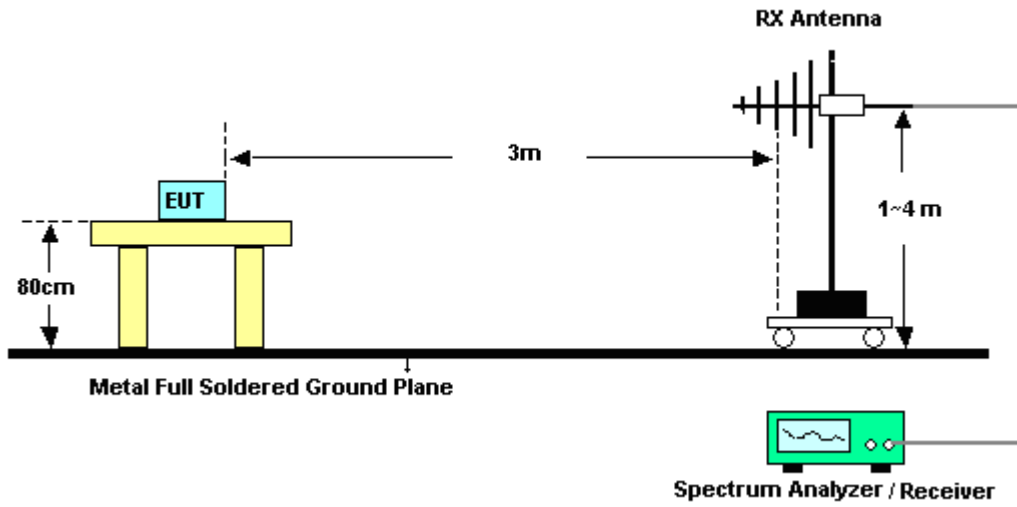
2. The EUT was placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT was placed at distance 3 meter from measurement antenna which was mounted on the top of a variable height antenna tower.
4. The measurement antenna 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 “-“.

### 3.4.4 Test Setup

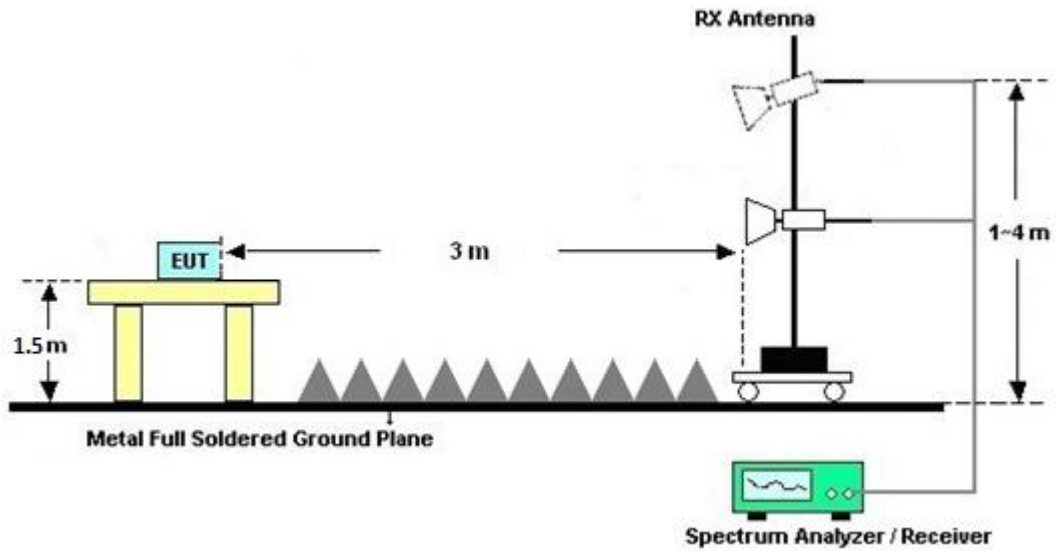
For radiated emissions below 30MHz



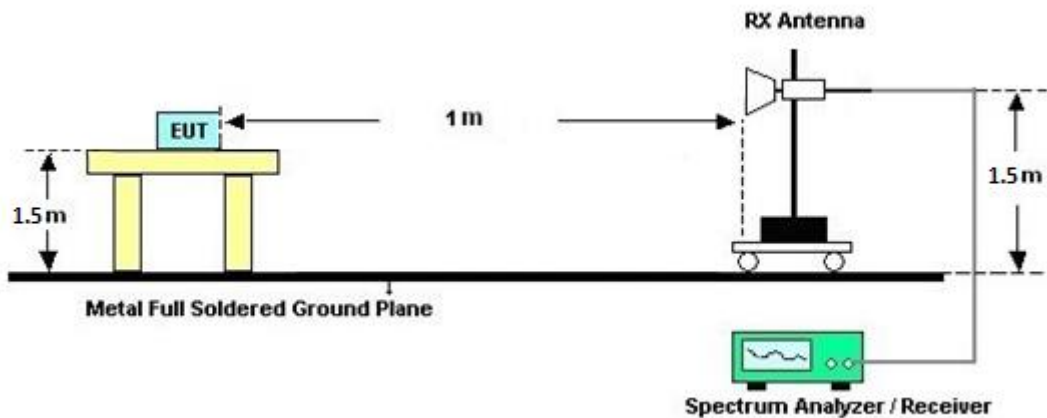
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 3.4.5 Test Results of Radiated 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.

### 3.4.6 Test 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.

### 3.4.7 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

### 3.4.8 Duty Cycle

Please refer to Appendix E.

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

Please refer to Appendix C and D.



### 3.5 AC Conducted Emission Measurement

#### 3.5.1 Limit of AC Conducted Emission

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

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

\*Decreases with the logarithm of the frequency.

#### 3.5.2 Measuring Instruments

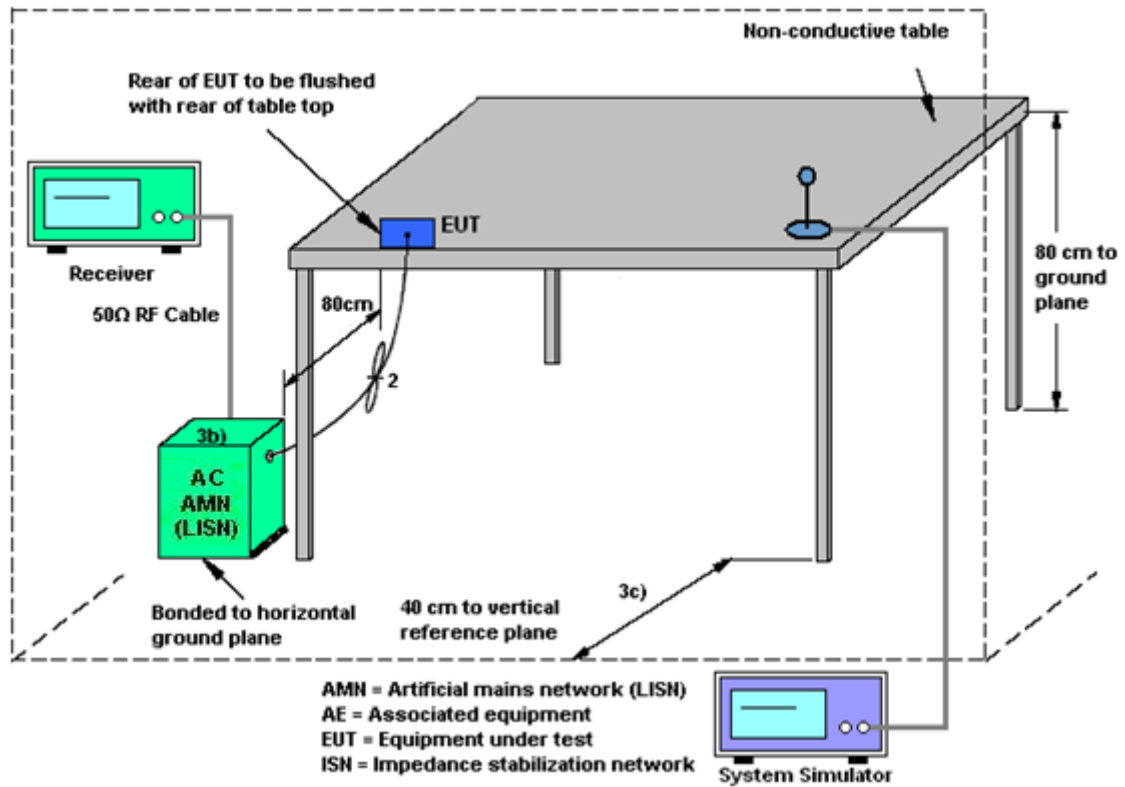
See list of measuring equipment of this test report.

#### 3.5.3 Test 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.



### 3.5.4 Test Setup



### 3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

### 3.6 Antenna Requirements

#### 3.6.1 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

#### 3.6.2 Antenna Gain

Refer to FCC KDB 662911 D01 Multiple Transmitter Output v02r01

<CDD Modes>

For power measurements on IEEE 802.11 devices,

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

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 follows F)2)f)ii) of KDB 662911 D01 v02r01.

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

where

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

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

$N_{ANT}$  = the total number of antennas

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

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

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

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

For example: If a device has two antenna,  $G_{ANT1}= 3.6\text{dBi}$ ;  $G_{ANT2}=4.2\text{dBi}$

Directional gain of power measurement =  $\max(3.6, 4.2) + 0 = 4.2 \text{ dBi}$

Directional gain of PSD measurement =  $10 \cdot \log \left[ \left( 10^{3.6/20} + 10^{4.2/20} \right)^2 / 2 \right] = 6.92 \text{ dBi}$



The directional gain of EUT is listed in the following table.

<b>UNII-4</b>	<b>Ant 4 (dBi)</b>	<b>Ant 3 (dBi)</b>	<b>DG for Power (dBi)</b>	<b>DG for PSD (dBi)</b>
	-0.50	-2.10	-0.50	1.75

Calculation example:

The DG for PSD is derived from formula is

$$10 \times \log \left\{ \left[ 10^{(-0.5\text{dBi} / 20)} + 10^{(-2.1 \text{ dBi} / 20)} \right]^2 / 2 \right\}$$
$$= 1.75 \text{ dBi}$$



## 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. 28, 2021	Mar. 31, 2022~ May 03, 2022	Apr. 27, 2022	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2021	Mar. 31, 2022~ May 03, 2022	Dec. 02, 2022	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Mar. 31, 2022~ May 03, 2022	Jan. 06, 2023	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 22, 2021	Mar. 31, 2022~ Apr. 20, 2022	Apr. 21, 2022	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 21, 2022	Apr. 21, 2022~ May 03, 2022	Apr. 20, 2023	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 04, 2021	Mar. 31, 2022~ May 03, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 04, 2021	Mar. 31, 2022~ May 03, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 23, 2021	Mar. 31, 2022~ May 03, 2022	Jul. 22, 2022	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2021	Mar. 31, 2022~ May 03, 2022	Jul. 21, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 17, 2021	Mar. 31, 2022~ May 03, 2022	Sep. 16, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 23, 2022	Mar. 31, 2022~ May 03, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2857/2	9KHz ~ 40GHz	Sep. 06, 2021	Mar. 31, 2022~ May 03, 2022	Sep. 05, 2022	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Mar. 31, 2022~ May 03, 2022	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB1148	N/A	Oct. 25, 2021	Mar. 31, 2022~ May 03, 2022	Oct. 24, 2022	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Nov. 30, 2021	Mar. 31, 2022~ May 03, 2022	Nov. 29, 2022	Radiation (03CH07-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECEPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Mar. 26, 2022~ May 18, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Mar. 26, 2022~ May 18, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Mar. 26, 2022~ May 18, 2022	Aug. 29, 2022	Conducted (TH05-HY)
Switch Control Mainframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Mar. 26, 2022~ May 18, 2022	Aug. 11, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Apr. 20, 2022	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102388	9kHz~3.6GHz	Dec. 01, 2021	Apr. 20, 2022	Nov. 30, 2022	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 17, 2021	Apr. 20, 2022	Nov. 16, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 03, 2021	Apr. 20, 2022	Dec. 02, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Apr. 20, 2022	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	00691	N/A	Jul. 28, 2021	Apr. 20, 2022	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 30, 2021	Apr. 20, 2022	Dec. 29, 2022	Conduction (CO05-HY)



## 5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.1 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.1 dB
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### Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.8 dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.0 dB
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**Appendix A. Test Result of Conducted Test Items**

Test Engineer:	Jacob Yu/Junyu Jhou	Temperature:	21~25	°C
Test Date:	2022/3/31~2022/5/18	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	18.63	18.53	34.05	36.50	16.45	16.45	0.5	Pass
11a	6Mbps	2	173	5865	18.63	18.73	35.00	34.30	16.45	16.45	0.5	Pass
11a	6Mbps	2	177	5885	18.98	18.68	35.80	34.25	16.40	16.40	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			
11a	6Mbps	2	169	5845	21.50	20.70	24.13	-0.50	23.63	30
11a	6Mbps	2	173	5865	21.30	20.90	24.11	-0.50	23.61	30
11a	6Mbps	2	177	5885	21.40	20.90	24.17	-0.50	23.67	30
HT20	MCS0	2	169	5845	21.60	21.30	24.46	-0.50	23.96	30
HT20	MCS0	2	173	5865	21.60	21.10	24.37	-0.50	23.87	30
HT20	MCS0	2	177	5885	21.50	21.20	24.36	-0.50	23.86	30
HT40	MCS0	2	167	5835	21.80	21.20	24.52	-0.50	24.02	30
HT40	MCS0	2	175	5875	21.40	21.00	24.21	-0.50	23.71	30
VHT20	MCS0	2	169	5845	21.70	21.40	24.56	-0.50	24.06	30
VHT20	MCS0	2	173	5865	21.70	21.20	24.47	-0.50	23.97	30
VHT20	MCS0	2	177	5885	21.60	21.30	24.46	-0.50	23.96	30
VHT40	MCS0	2	167	5835	21.90	21.30	24.62	-0.50	24.12	30
VHT40	MCS0	2	175	5875	21.50	21.10	24.31	-0.50	23.81	30
VHT80	MCS0	2	171	5855	20.10	19.40	22.77	-0.50	22.27	30
VHT160	MCS0	2	163	5815	19.20	18.40	21.83	-0.50	21.33	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				
11a	6Mbps	2	169	5845	0.29	0.30			12.21	1.75	13.95	14.00	Pass
11a	6Mbps	2	173	5865	0.29	0.30			12.07	1.75	13.82	14.00	Pass
11a	6Mbps	2	177	5885	0.29	0.30			12.14	1.75	13.89	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	20.33	20.63	42.42	42.06	19.10	19.00	0.5	Pass
HE20	MCS0	2	173	5865	Full	20.18	20.38	45.75	40.82	19.05	19.10	0.5	Pass
HE20	MCS0	2	177	5885	Full	20.73	20.73	44.86	41.13	19.05	18.55	0.5	Pass
HE40	MCS0	2	167	5835	Full	44.26	42.56	77.35	76.18	37.71	37.44	0.5	Pass
HE40	MCS0	2	175	5875	Full	40.36	39.66	72.46	82.93	37.71	37.80	0.5	Pass
HE80	MCS0	2	171	5855	Full	77.32	77.32	132.29	105.98	76.96	77.44	0.5	Pass
HE160	MCS0	2	163	5815	Full	156.80	156.80	168.93	166.93	158.40	158.40	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			
HE20	MCS0	2	169	5845	Full	21.80	21.50	24.66	-0.50	24.16	30
HE20	MCS0	2	169	5845	26/0	12.40	11.90	15.17	-0.50	14.67	30
HE20	MCS0	2	169	5845	52/37	15.40	14.70	18.07	-0.50	17.57	30
HE20	MCS0	2	169	5845	106/53	18.10	17.50	20.82	-0.50	20.32	30
HE20	MCS0	2	173	5865	Full	21.80	21.30	24.57	-0.50	24.07	30
HE20	MCS0	2	173	5865	26/4	12.50	11.20	14.91	-0.50	14.41	30
HE20	MCS0	2	173	5865	52/38	15.50	14.10	17.87	-0.50	17.37	30
HE20	MCS0	2	173	5865	106/53	18.10	17.50	20.82	-0.50	20.32	30
HE20	MCS0	2	177	5885	Full	21.70	21.40	24.56	-0.50	24.06	30
HE20	MCS0	2	177	5885	26/8	11.90	10.90	14.44	-0.50	13.94	30
HE20	MCS0	2	177	5885	52/40	15.50	14.40	18.00	-0.50	17.50	30
HE20	MCS0	2	177	5885	106/54	18.00	17.80	20.91	-0.50	20.41	30
HE40	MCS0	2	167	5835	Full	22.00	21.40	24.72	-0.50	24.22	30
HE40	MCS0	2	175	5875	Full	21.60	21.20	24.41	-0.50	23.91	30
HE80	MCS0	2	171	5855	Full	20.20	19.50	22.87	-0.50	22.37	30
HE160	MCS0	2	163	5815	Full	19.30	18.50	21.93	-0.50	21.43	30

**TEST RESULTS DATA**  
**Power Spectral Density**

UNII-4 MIMO														
Mod.	Data Rate	N <sub>Tx</sub>	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				
HE20	MCS0	2	169	5845	Full	0.18	0.18			12.06	1.75	13.81	14.00	Pass
HE20	MCS0	2	169	5845	26/0	0.48	0.49			11.76	1.75	13.51	14.00	Pass
HE20	MCS0	2	169	5845	52/37	0.64	0.64			11.94	1.75	13.69	14.00	Pass
HE20	MCS0	2	169	5845	106/53	0.64	0.71			11.65	1.75	13.40	14.00	Pass
HE20	MCS0	2	173	5865	Full	0.18	0.18			11.97	1.75	13.71	14.00	Pass
HE20	MCS0	2	173	5865	26/4	0.48	0.49			10.61	1.75	12.36	14.00	Pass
HE20	MCS0	2	173	5865	52/38	0.64	0.64			11.83	1.75	13.58	14.00	Pass
HE20	MCS0	2	173	5865	106/53	0.64	0.71			11.72	1.75	13.47	14.00	Pass
HE20	MCS0	2	177	5885	Full	0.18	0.18			11.94	1.75	13.69	14.00	Pass
HE20	MCS0	2	177	5885	26/8	0.48	0.49			11.34	1.75	13.09	14.00	Pass
HE20	MCS0	2	177	5885	52/40	0.64	0.64			11.60	1.75	13.35	14.00	Pass
HE20	MCS0	2	177	5885	106/54	0.64	0.71			11.81	1.75	13.56	14.00	Pass
HE40	MCS0	2	167	5835	Full	0.34	0.34			9.44	1.75	11.19	14.00	Pass
HE40	MCS0	2	175	5875	Full	0.34	0.34			8.96	1.75	10.71	14.00	Pass
HE80	MCS0	2	171	5855	Full	0.64	0.64			4.57	1.75	6.31	14.00	Pass
HE160	MCS0	2	163	5815	Full	0.70	0.70			1.00	1.75	2.75	14.00	Pass

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



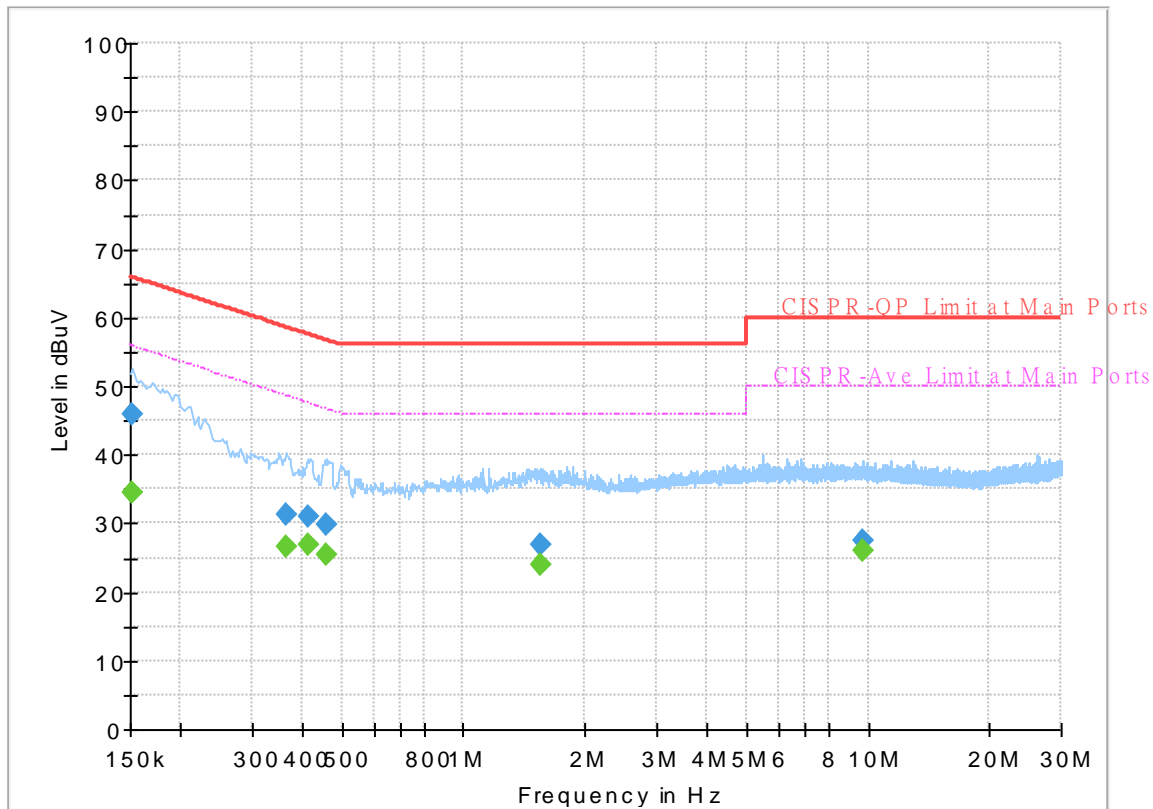
## Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	23~26°C
		Relative Humidity :	45~55%

# EUT Information

Report NO : 1O2843-06  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



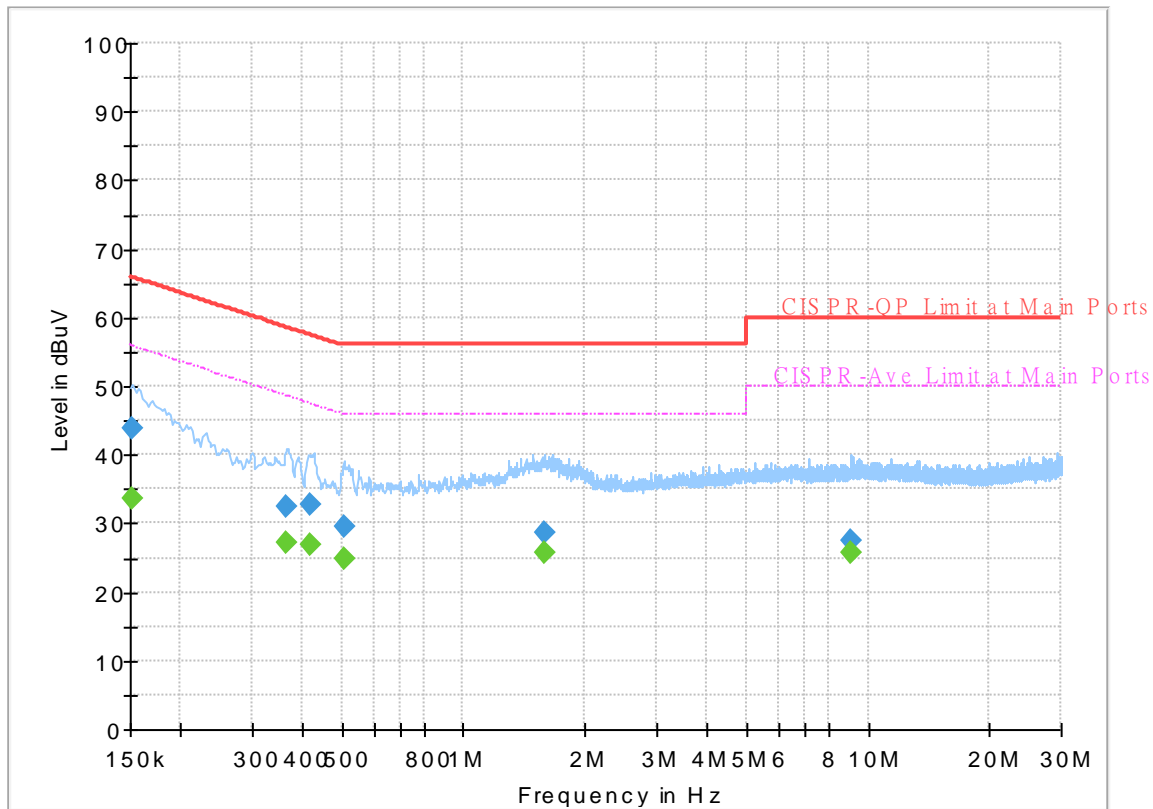
## Final\_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	34.55	55.88	21.33	L1	OFF	19.6
0.152250	45.84	---	65.88	20.04	L1	OFF	19.6
0.363750	---	26.59	48.64	22.05	L1	OFF	19.6
0.363750	31.26	---	58.64	27.38	L1	OFF	19.6
0.413250	---	26.86	47.58	20.72	L1	OFF	19.6
0.413250	30.87	---	57.58	26.71	L1	OFF	19.6
0.456000	---	25.30	46.77	21.47	L1	OFF	19.6
0.456000	29.90	---	56.77	26.87	L1	OFF	19.6
1.542750	---	23.97	46.00	22.03	L1	OFF	19.7
1.542750	26.81	---	56.00	29.19	L1	OFF	19.7
9.732750	---	25.96	50.00	24.04	L1	OFF	20.1
9.732750	27.45	---	60.00	32.55	L1	OFF	20.1

# EUT Information

Report NO : 1O2843-06  
 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)
0.152250	---	33.74	55.88	22.14	N	OFF	19.6
0.152250	43.77	---	65.88	22.11	N	OFF	19.6
0.366000	---	27.05	48.59	21.54	N	OFF	19.6
0.366000	32.40	---	58.59	26.19	N	OFF	19.6
0.420000	---	27.00	47.45	20.45	N	OFF	19.6
0.420000	32.81	---	57.45	24.64	N	OFF	19.6
0.505500	---	24.73	46.00	21.27	N	OFF	19.6
0.505500	29.50	---	56.00	26.50	N	OFF	19.6
1.592250	---	25.63	46.00	20.37	N	OFF	19.7
1.592250	28.78	---	56.00	27.22	N	OFF	19.7
9.071250	---	25.86	50.00	24.14	N	OFF	20.0
9.071250	27.36	---	60.00	32.64	N	OFF	20.0





### Appendix C. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	20~26.7°C
		Relative Humidity :	49~61.1%

**Band 4 - 5725~5850MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI Ant.	Note	Frequency ( MHz )	Level ( dBμV/m )	Margin ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )	
802.11a CH 169 5845MHz		5642.185	52.06	-16.14	68.2	40.25	34.7	12.26	35.15	100	299	P	H	
		5697.35	54.75	-48.5	103.25	42.74	34.89	12.28	35.16	100	299	P	H	
		5701.185	47.72	-57.81	105.53	35.68	34.91	12.29	35.16	100	299	P	H	
		5721.54	49.58	-64.73	114.31	37.42	35.03	12.29	35.16	100	299	P	H	
	*	5845	113.2	-	-	100.78	35.2	12.4	35.18	100	299	P	H	
	*	5845	104.81	-	-	92.39	35.2	12.4	35.18	100	299	A	H	
		5895.5	59.89	-49.94	109.83	47.41	35.2	12.47	35.19	100	299	P	H	
		5974	57.78	-30.42	88.2	45.31	35.1	12.58	35.21	100	299	P	H	
		5896.25	51.71	-37.57	89.28	39.23	35.2	12.47	35.19	100	299	A	H	
		5926.75	43.7	-24.5	68.2	31.24	35.15	12.51	35.2	100	299	A	H	
			5627.435	47.39	-20.81	68.2	35.58	34.7	12.25	35.14	300	16	P	V
			5685.845	48.49	-46.27	94.76	36.53	34.84	12.28	35.16	300	16	P	V
			5702.955	52.01	-54.02	106.03	39.96	34.92	12.29	35.16	300	16	P	V
			5722.425	47.99	-68.34	116.33	35.82	35.03	12.3	35.16	300	16	P	V
	*		5845	112.45	-	-	100.03	35.2	12.4	35.18	300	16	P	V
	*		5845	104.61	-	-	92.19	35.2	12.4	35.18	300	16	A	V
			5897.75	60.71	-47.47	108.18	48.23	35.2	12.47	35.19	300	16	P	V
			5925	51.77	-36.43	88.2	39.31	35.15	12.51	35.2	300	16	P	V
		5897.25	52.4	-36.15	88.55	39.92	35.2	12.47	35.19	300	16	A	V	
		5926.25	43.72	-24.48	68.2	31.26	35.15	12.51	35.2	300	16	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		5609.44	48.53	-19.67	68.2	36.73	34.7	12.24	35.14	100	298	P	H	
		5667.26	52.56	-28.45	81.01	40.67	34.77	12.27	35.15	100	298	P	H	
		5715.935	55.22	-54.44	109.66	43.09	35	12.29	35.16	100	298	P	H	
		5720.95	49.62	-63.35	112.97	37.46	35.03	12.29	35.16	100	298	P	H	
	*	5865	112.46	-	-	100.03	35.2	12.42	35.19	100	298	P	H	
	*	5865	104.73	-	-	92.3	35.2	12.42	35.19	100	298	A	H	
		5896.25	71.2	-38.08	109.28	58.72	35.2	12.47	35.19	100	298	P	H	
		5929	61.77	-26.43	88.2	49.31	35.14	12.52	35.2	100	298	P	H	
		5896	63.62	-25.84	89.46	51.14	35.2	12.47	35.19	100	298	A	H	
		5925.25	48	-20.2	68.2	35.54	35.15	12.51	35.2	100	298	A	H	
			5628.91	47.7	-20.5	68.2	35.9	34.7	12.25	35.15	314	17	P	V
			5660.77	46.91	-29.29	76.2	35.05	34.74	12.27	35.15	314	17	P	V
			5713.28	47.74	-61.18	108.92	35.63	34.98	12.29	35.16	314	17	P	V
			5724.785	48.02	-73.69	121.71	35.83	35.05	12.3	35.16	314	17	P	V
	*		5865	113.54	-	-	101.11	35.2	12.42	35.19	314	17	P	V
	*		5865	104.79	-	-	92.36	35.2	12.42	35.19	314	17	A	V
			5897	74.97	-33.76	108.73	62.49	35.2	12.47	35.19	314	17	P	V
			5926.75	57.92	-30.28	88.2	45.46	35.15	12.51	35.2	314	17	P	V
		5897	64.15	-24.58	88.73	51.67	35.2	12.47	35.19	314	17	A	V	
		5926.5	49.18	-19.02	68.2	36.72	35.15	12.51	35.2	314	17	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		5632.745	48.99	-19.21	68.2	37.19	34.7	12.25	35.15	100	299	P	H	
		5690.565	51.17	-47.07	98.24	39.19	34.86	12.28	35.16	100	299	P	H	
		5716.525	48.32	-61.51	109.83	36.19	35	12.29	35.16	100	299	P	H	
		5724.195	47.64	-72.72	120.36	35.45	35.05	12.3	35.16	100	299	P	H	
	*	5885	113.08	-	-	100.62	35.2	12.45	35.19	100	299	P	H	
	*	5885	104.83	-	-	92.37	35.2	12.45	35.19	100	299	A	H	
		5896.75	94.72	-14.19	108.91	82.24	35.2	12.47	35.19	100	299	P	H	
		5926	67.17	-21.03	88.2	54.71	35.15	12.51	35.2	100	299	P	H	
		5897	86.71	-2.02	88.73	74.23	35.2	12.47	35.19	100	299	A	H	
		5926.5	56.86	-11.34	68.2	44.4	35.15	12.51	35.2	100	299	A	H	
			5636.58	47.92	-20.28	68.2	36.11	34.7	12.26	35.15	331	18	P	V
			5669.03	47.75	-34.57	82.32	35.85	34.78	12.27	35.15	331	18	P	V
			5709.445	47.99	-59.86	107.85	35.9	34.96	12.29	35.16	331	18	P	V
			5722.72	46.71	-70.29	117	34.53	35.04	12.3	35.16	331	18	P	V
	*		5885	112.8	-	-	100.34	35.2	12.45	35.19	331	18	P	V
	*		5885	105.06	-	-	92.6	35.2	12.45	35.19	331	18	A	V
			5898	93.63	-14.36	107.99	81.15	35.2	12.47	35.19	331	18	P	V
			5926	69.43	-18.77	88.2	56.97	35.15	12.51	35.2	331	18	P	V
		5897.5	86.78	-1.58	88.36	74.3	35.2	12.47	35.19	331	18	A	V	
		5926.75	56.88	-11.32	68.2	44.42	35.15	12.51	35.2	331	18	A	V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 4 5725~5850MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

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 169 5845MHz		11690	46.09	-27.91	74	45.34	38.48	19.48	57.21	-	-	P	H	
		13325	48.03	-25.97	74	46.07	39.15	21.02	58.21	-	-	P	H	
		13325	37.58	-16.42	54	35.62	39.15	21.02	58.21	-	-	A	H	
		14499	48.05	-25.95	74	44.57	39.6	21.97	58.09	-	-	P	H	
		14499	40.76	-13.24	54	37.28	39.6	21.97	58.09	-	-	A	H	
		17535	55.19	-13.01	68.2	45.94	41.37	24.14	56.26	-	-	P	H	
		17725	51.66	-22.34	74	41.98	41.53	24.3	56.15	-	-	P	H	
		17725	42.84	-11.16	54	33.16	41.53	24.3	56.15	-	-	A	H	
														H
														H
														H
														H
			11690	45.65	-28.35	74	44.9	38.48	19.48	57.21	-	-	P	V
			13347	48.2	-25.8	74	46.27	39.11	21.04	58.22	-	-	P	V
			13347	40.15	-13.85	54	38.22	39.11	21.04	58.22	-	-	A	V
			14499	48.82	-25.18	74	45.34	39.6	21.97	58.09	-	-	P	V
			14499	40.02	-13.98	54	36.54	39.6	21.97	58.09	-	-	A	V
			17535	59.57	-8.63	68.2	50.32	41.37	24.14	56.26	-	-	P	V
			17725	50.88	-23.12	74	41.2	41.53	24.3	56.15	-	-	P	V
			17725	42.51	-11.49	54	32.83	41.53	24.3	56.15	-	-	A	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)	
802.11a CH 173 5865MHz		11730	45.58	-28.42	74	44.71	38.5	19.52	57.15	-	-	P	H	
		13369	48.46	-25.54	74	46.56	39.06	21.06	58.22	-	-	P	H	
		13369	40.12	-13.88	54	38.22	39.06	21.06	58.22	-	-	A	H	
		14502	48.27	-19.93	68.2	44.78	39.6	21.98	58.09	-	-	P	H	
		14502	39.67	-14.33	54	36.18	39.6	21.98	58.09	-	-	A	H	
		17595	53.81	-14.39	68.2	44.35	41.49	24.19	56.22	-	-	P	H	
		17736	50.65	-23.35	74	40.94	41.54	24.31	56.14	-	-	P	H	
		17736	42.11	-11.89	54	32.4	41.54	24.31	56.14	-	-	A	H	
														H
														H
														H
														H
			11730	45.98	-28.02	74	45.11	38.5	19.52	57.15	-	-	P	V
			13347	48.44	-25.56	74	46.51	39.11	21.04	58.22	-	-	P	V
			13347	39.59	-14.41	54	37.66	39.11	21.04	58.22	-	-	A	V
			14491	48.27	-25.73	74	44.82	39.58	21.96	58.09	-	-	P	V
			14491	39.74	-14.26	54	36.29	39.58	21.96	58.09	-	-	A	V
			17595	57.87	-10.33	68.2	48.41	41.49	24.19	56.22	-	-	P	V
			17758	51.14	-22.86	74	41.39	41.56	24.32	56.13	-	-	P	V
			17758	42.93	-11.07	54	33.18	41.56	24.32	56.13	-	-	A	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)	
802.11a CH 177 5885MHz		11770	45.74	-28.26	74	44.76	38.5	19.56	57.08	-	-	P	H	
		13347	48.16	-25.84	74	46.23	39.11	21.04	58.22	-	-	P	H	
		13347	37.81	-16.19	54	35.88	39.11	21.04	58.22	-	-	A	H	
		14491	48.01	-25.99	74	44.56	39.58	21.96	58.09	-	-	P	H	
		14491	37.59	-16.41	54	34.14	39.58	21.96	58.09	-	-	A	H	
		17655	53.42	-14.78	68.2	43.88	41.5	24.23	56.19	-	-	P	H	
		17813	50.95	-23.05	74	41.1	41.57	24.37	56.09	-	-	P	H	
		17813	42.52	-11.48	54	32.67	41.57	24.37	56.09	-	-	A	H	
														H
														H
														H
														H
			11770	46.02	-27.98	74	45.04	38.5	19.56	57.08	-	-	P	V
			13358	47.87	-26.13	74	45.96	39.08	21.05	58.22	-	-	P	V
			14480	47.81	-26.19	74	44.38	39.56	21.96	58.09	-	-	P	V
			17655	57.3	-10.9	68.2	47.76	41.5	24.23	56.19	-	-	P	V
			17769	50.98	-23.02	74	41.2	41.57	24.33	56.12	-	-	P	V
			17769	42.9	-11.1	54	33.12	41.57	24.33	56.12	-	-	A	V
														V
														V
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE20\_Full (Band Edge @ 3m)**

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 )
		5613.57	48.06	-20.14	68.2	36.25	34.7	12.25	35.14	100	299	P	H
		5652.51	48.8	-21.27	70.07	36.98	34.71	12.26	35.15	100	299	P	H
		5714.755	49.47	-59.86	109.33	37.35	34.99	12.29	35.16	100	299	P	H
		5725.08	48.52	-85.68	134.2	36.33	35.05	12.3	35.16	100	299	P	H
	*	5845	111.48	-	-	99.06	35.2	12.4	35.18	100	299	P	H
	*	5845	102.4	-	-	89.98	35.2	12.4	35.18	100	299	A	H
		5900.25	64.81	-41.53	106.34	52.32	35.2	12.48	35.19	100	299	P	H
		5973.75	54.24	-33.96	88.2	41.77	35.1	12.58	35.21	100	299	P	H
<b>802.11ax</b>		5895.5	52.39	-37.44	89.83	39.91	35.2	12.47	35.19	100	299	A	H
<b>HE20 Full</b>		5925.5	44.11	-24.09	68.2	31.65	35.15	12.51	35.2	100	299	A	H
<b>CH 169</b>		5633.63	46.78	-21.42	68.2	34.97	34.7	12.26	35.15	300	16	P	V
<b>5845MHz</b>		5693.81	48.31	-52.33	100.64	36.31	34.88	12.28	35.16	300	16	P	V
		5700.3	50.65	-54.63	105.28	38.62	34.9	12.29	35.16	300	16	P	V
		5722.72	46.07	-70.93	117	33.89	35.04	12.3	35.16	300	16	P	V
	*	5845	110.94	-	-	98.52	35.2	12.4	35.18	300	16	P	V
	*	5845	102.01	-	-	89.59	35.2	12.4	35.18	300	16	A	V
		5896.75	62.66	-46.25	108.91	50.18	35.2	12.47	35.19	300	16	P	V
		5929.75	55.26	-32.94	88.2	42.8	35.14	12.52	35.2	300	16	P	V
		5895.5	53.12	-36.71	89.83	40.64	35.2	12.47	35.19	300	16	A	V
		5925.5	44.75	-23.45	68.2	32.29	35.15	12.51	35.2	300	16	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)
<b>802.11ax</b> <b>HE20 Full</b> <b>CH 173</b> <b>5865MHz</b>		5625.665	48.59	-19.61	68.2	36.78	34.7	12.25	35.14	100	299	P	H
		5654.28	49.06	-22.32	71.38	37.23	34.72	12.26	35.15	100	299	P	H
		5719.475	48.51	-62.14	110.65	36.36	35.02	12.29	35.16	100	299	P	H
		5725.08	55.32	-78.88	134.2	43.13	35.05	12.3	35.16	100	299	P	H
	*	5865	110.88	-	-	98.45	35.2	12.42	35.19	100	299	P	H
	*	5865	102.19	-	-	89.76	35.2	12.42	35.19	100	299	A	H
		5901	78.42	-27.37	105.79	65.93	35.2	12.48	35.19	100	299	P	H
		5926.75	59.14	-29.06	88.2	46.68	35.15	12.51	35.2	100	299	P	H
		5895.25	66.34	-23.68	90.02	53.86	35.2	12.47	35.19	100	299	A	H
		5925	49.21	-18.99	68.2	36.75	35.15	12.51	35.2	100	299	A	H
		5617.7	48.65	-19.55	68.2	36.84	34.7	12.25	35.14	314	17	P	V
		5698.825	47.55	-56.78	104.33	35.53	34.9	12.28	35.16	314	17	P	V
		5713.87	47.87	-61.22	109.09	35.76	34.98	12.29	35.16	314	17	P	V
		5724.195	47.11	-73.25	120.36	34.92	35.05	12.3	35.16	314	17	P	V
	*	5865	111.48	-	-	99.05	35.2	12.42	35.19	314	17	P	V
	*	5865	102.24	-	-	89.81	35.2	12.42	35.19	314	17	A	V
		5896	75.41	-34.05	109.46	62.93	35.2	12.47	35.19	314	17	P	V
		5930	57.76	-30.44	88.2	45.3	35.14	12.52	35.2	314	17	P	V
	5895.25	66.95	-23.07	90.02	54.47	35.2	12.47	35.19	314	17	A	V	
	5926.5	49.89	-18.31	68.2	37.43	35.15	12.51	35.2	314	17	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		5615.93	47.89	-20.31	68.2	36.08	34.7	12.25	35.14	100	299	P	H
		5695.875	48.96	-53.2	102.16	36.96	34.88	12.28	35.16	100	299	P	H
		5712.69	48.64	-60.12	108.76	36.53	34.98	12.29	35.16	100	299	P	H
		5723.9	49.4	-70.29	119.69	37.22	35.04	12.3	35.16	100	299	P	H
	*	5885	112.06	-	-	99.6	35.2	12.45	35.19	100	299	P	H
	*	5885	102.26	-	-	89.8	35.2	12.45	35.19	100	299	A	H
		5895.25	93.74	-16.28	110.02	81.26	35.2	12.47	35.19	100	299	P	H
		5926.5	66.41	-21.79	88.2	53.95	35.15	12.51	35.2	100	299	P	H
		5895.25	88.18	-1.84	90.02	75.7	35.2	12.47	35.19	100	299	A	H
		5925	58.44	-9.76	68.2	45.98	35.15	12.51	35.2	100	299	A	H
		5630.09	47.81	-20.39	68.2	36.01	34.7	12.25	35.15	331	17	P	V
		5695.285	47.5	-54.22	101.72	35.5	34.88	12.28	35.16	331	17	P	V
		5712.1	48.05	-60.54	108.59	35.95	34.97	12.29	35.16	331	17	P	V
		5722.13	48.48	-67.18	115.66	36.32	35.03	12.29	35.16	331	17	P	V
	*	5885	111.65	-	-	99.19	35.2	12.45	35.19	331	17	P	V
	*	5885	102.35	-	-	89.89	35.2	12.45	35.19	331	17	A	V
		5895.25	92.34	-17.68	110.02	79.86	35.2	12.47	35.19	331	17	P	V
		5928	67.13	-21.07	88.2	54.67	35.14	12.52	35.2	331	17	P	V
		5895.25	88.51	-1.51	90.02	76.03	35.2	12.47	35.19	331	17	A	V
	5925	58.48	-9.72	68.2	46.02	35.15	12.51	35.2	331	17	A	V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



Band 4 5725~5850MHz

WIFI 802.11ax HE20 Full (Harmonic @ 3m)

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 169 5845MHz		11690	45.26	-28.74	74	44.51	38.48	19.48	57.21	-	-	P	H	
		13399	47.79	-26.21	74	45.93	39	21.09	58.23	-	-	P	H	
		14499	47.91	-26.09	74	44.43	39.6	21.97	58.09	-	-	P	H	
		17535	53.78	-14.42	68.2	44.53	41.37	24.14	56.26	-	-	P	H	
		17714	50.88	-23.12	74	41.23	41.51	24.29	56.15	-	-	P	H	
		17714	42.89	-11.11	54	33.24	41.51	24.29	56.15	-	-	A	H	
														H
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														H
														H
														H
			11690	45.46	-28.54	74	44.71	38.48	19.48	57.21	-	-	P	V
			13380	48.59	-25.41	74	46.71	39.04	21.07	58.23	-	-	P	V
			13380	40.32	-13.68	54	38.44	39.04	21.07	58.23	-	-	A	V
		14491	47.9	-26.1	74	44.45	39.58	21.96	58.09	-	-	P	V	
		17535	58.17	-10.03	68.2	48.92	41.37	24.14	56.26	-	-	P	V	
		17736	51.49	-22.51	74	41.78	41.54	24.31	56.14	-	-	P	V	
		17736	42.96	-11.04	54	33.25	41.54	24.31	56.14	-	-	A	V	
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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 173 5865MHz		11730	46	-28	74	45.13	38.5	19.52	57.15	-	-	P	H	
		13380	48.96	-25.04	74	47.08	39.04	21.07	58.23	-	-	P	H	
		13380	40.63	-13.37	54	38.75	39.04	21.07	58.23	-	-	A	H	
		14499	47.91	-26.09	74	44.43	39.6	21.97	58.09	-	-	P	H	
		17595	54.01	-14.19	68.2	44.55	41.49	24.19	56.22	-	-	P	H	
		17714	51.92	-22.08	74	42.27	41.51	24.29	56.15	-	-	P	H	
		17714	43.69	-10.31	54	34.04	41.51	24.29	56.15	-	-	A	H	
														H
														H
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														H
														H
														H
			11730	44.7	-29.3	74	43.83	38.5	19.52	57.15	-	-	P	V
			13369	47.97	-26.03	74	46.07	39.06	21.06	58.22	-	-	P	V
		14480	47.91	-26.09	74	44.48	39.56	21.96	58.09	-	-	P	V	
		17595	54.14	-14.06	68.2	44.68	41.49	24.19	56.22	-	-	P	V	
		17879	50.94	-23.06	74	41.13	41.44	24.42	56.05	-	-	P	V	
		17879	42.69	-11.31	54	32.88	41.44	24.42	56.05	-	-	A	V	
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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		11770	45.34	-28.66	74	44.36	38.5	19.56	57.08	-	-	P	H	
		13369	48.75	-25.25	74	46.85	39.06	21.06	58.22	-	-	P	H	
		13369	40.34	-13.66	54	38.44	39.06	21.06	58.22	-	-	A	H	
		14499	48.2	-25.8	74	44.72	39.6	21.97	58.09	-	-	P	H	
		14499	39.99	-14.01	54	36.51	39.6	21.97	58.09	-	-	A	H	
		17655	52.85	-15.35	68.2	43.31	41.5	24.23	56.19	-	-	P	H	
		17956	50.47	-23.53	74	40.53	41.46	24.49	56.01	-	-	P	H	
		17956	42.42	-11.58	54	32.48	41.46	24.49	56.01	-	-	A	H	
														H
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			11770	45.82	-28.18	74	44.84	38.5	19.56	57.08	-	-	P	V
			13391	48.15	-25.85	74	46.28	39.02	21.08	58.23	-	-	P	V
			13391	40.01	-13.99	54	38.14	39.02	21.08	58.23	-	-	A	V
			14499	48.16	-25.84	74	44.68	39.6	21.97	58.09	-	-	P	V
			14499	39.71	-14.29	54	36.23	39.6	21.97	58.09	-	-	A	V
			17655	53.86	-14.34	68.2	44.32	41.5	24.23	56.19	-	-	P	V
		17714	51.48	-22.52	74	41.83	41.51	24.29	56.15	-	-	P	V	
		17714	43.29	-10.71	54	33.64	41.51	24.29	56.15	-	-	A	V	
													V	
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<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE40\_Full (Band Edge @ 3m)**

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 )
		5618.88	48.94	-19.26	68.2	37.13	34.7	12.25	35.14	100	300	P	H
		5699.415	49.65	-55.12	104.77	37.63	34.9	12.28	35.16	100	300	P	H
		5718.295	51.34	-58.98	110.32	39.2	35.01	12.29	35.16	100	300	P	H
		5722.425	53.22	-63.11	116.33	41.05	35.03	12.3	35.16	100	300	P	H
	*	5835	107.7	-	-	95.3	35.2	12.38	35.18	100	300	P	H
	*	5835	98.52	-	-	86.12	35.2	12.38	35.18	100	300	A	H
		5897.75	66.01	-42.17	108.18	53.53	35.2	12.47	35.19	100	300	P	H
		5926	60.58	-27.62	88.2	48.12	35.15	12.51	35.2	100	300	P	H
		5896.25	57.45	-31.83	89.28	44.97	35.2	12.47	35.19	100	300	A	H
		5926	49.09	-19.11	68.2	36.63	35.15	12.51	35.2	100	300	A	H
<b>802.11ax</b>													H
<b>HE40 Full</b>													H
<b>CH 167</b>		5602.36	47.81	-20.39	68.2	36.01	34.7	12.24	35.14	303	16	P	V
<b>5835MHz</b>		5689.385	49.89	-47.48	97.37	37.91	34.86	12.28	35.16	303	16	P	V
		5717.115	51.9	-58.09	109.99	39.77	35	12.29	35.16	303	16	P	V
		5723.015	50.57	-67.11	117.68	38.39	35.04	12.3	35.16	303	16	P	V
	*	5835	107.3	-	-	94.9	35.2	12.38	35.18	303	16	P	V
	*	5835	98.38	-	-	85.98	35.2	12.38	35.18	303	16	A	V
		5901	69.1	-36.69	105.79	56.61	35.2	12.48	35.19	303	16	P	V
		5928.5	59.24	-28.96	88.2	46.78	35.14	12.52	35.2	303	16	P	V
		5896.25	58.64	-30.64	89.28	46.16	35.2	12.47	35.19	303	16	A	V
		5925.5	50.55	-17.65	68.2	38.09	35.15	12.51	35.2	303	16	A	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)
		5632.745	47.35	-20.85	68.2	35.55	34.7	12.25	35.15	100	299	P	H
		5691.745	49.46	-49.65	99.11	37.47	34.87	12.28	35.16	100	299	P	H
		5714.755	49.57	-59.76	109.33	37.45	34.99	12.29	35.16	100	299	P	H
		5720.36	47.95	-63.67	111.62	35.8	35.02	12.29	35.16	100	299	P	H
	*	5875	107.3	-	-	94.85	35.2	12.44	35.19	100	299	P	H
	*	5875	98.31	-	-	85.86	35.2	12.44	35.19	100	299	A	H
		5896.25	84.36	-24.92	109.28	71.88	35.2	12.47	35.19	100	299	P	H
		5925.75	73.83	-14.37	88.2	61.37	35.15	12.51	35.2	100	299	P	H
		5895.25	77.52	-12.5	90.02	65.04	35.2	12.47	35.19	100	299	A	H
		5925	63.66	-4.54	68.2	51.2	35.15	12.51	35.2	100	299	A	H
802.11ax													H
HE40 Full													H
CH 175		5614.75	48.58	-19.62	68.2	36.77	34.7	12.25	35.14	312	16	P	V
5875MHz		5695.875	48.32	-53.84	102.16	36.32	34.88	12.28	35.16	312	16	P	V
		5713.28	49.67	-59.25	108.92	37.56	34.98	12.29	35.16	312	16	P	V
		5723.605	47.68	-71.34	119.02	35.5	35.04	12.3	35.16	312	16	P	V
	*	5875	107.39	-	-	94.94	35.2	12.44	35.19	312	16	P	V
	*	5875	95.05	-	-	82.6	35.2	12.44	35.19	312	16	A	V
		5903	86.98	-17.34	104.32	74.5	35.19	12.48	35.19	312	16	P	V
		5925.5	75.55	-12.65	88.2	63.09	35.15	12.51	35.2	312	16	P	V
		5895.25	78.1	-11.92	90.02	65.62	35.2	12.47	35.19	312	16	A	V
		5925	64.52	-3.68	68.2	52.06	35.15	12.51	35.2	312	16	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE40\_Full (Harmonic @ 3m)**

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 )
		11670	45.11	-28.89	74	44.44	38.44	19.47	57.24	-	-	P	H
		13369	48.06	-25.94	74	46.16	39.06	21.06	58.22	-	-	P	H
		13369	39.72	-14.28	54	37.82	39.06	21.06	58.22	-	-	A	H
		14480	48.78	-25.22	74	45.35	39.56	21.96	58.09	-	-	P	H
		14480	40.49	-13.51	54	37.06	39.56	21.96	58.09	-	-	A	H
		17505	49.54	-18.66	68.2	40.39	41.31	24.12	56.28	-	-	P	H
		17769	50.9	-23.1	74	41.12	41.57	24.33	56.12	-	-	P	H
													H
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													H
													H
													H
<b>802.11ax</b>													H
<b>HE40 Full</b>													H
<b>CH 167</b>		11670	46.12	-27.88	74	45.45	38.44	19.47	57.24	-	-	P	V
<b>5835MHz</b>		13347	47.97	-26.03	74	46.04	39.11	21.04	58.22	-	-	P	V
		14502	47.89	-20.31	68.2	44.4	39.6	21.98	58.09	-	-	P	V
		17505	51.39	-16.81	68.2	42.24	41.31	24.12	56.28	-	-	P	V
		17725	51.95	-22.05	74	42.27	41.53	24.3	56.15	-	-	P	V
		17725	43.91	-10.09	54	34.23	41.53	24.3	56.15	-	-	A	V
													V
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													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		11750	45.56	-28.44	74	44.63	38.5	19.54	57.11	-	-	P	H	
		13380	47.86	-26.14	74	45.98	39.04	21.07	58.23	-	-	P	H	
		14491	48.47	-25.53	74	45.02	39.58	21.96	58.09	-	-	P	H	
		14491	40.58	-13.42	54	37.13	39.58	21.96	58.09	-	-	A	H	
		17625	49.33	-18.87	68.2	39.82	41.5	24.21	56.2	-	-	P	H	
		17901	51.15	-22.85	74	41.36	41.4	24.43	56.04	-	-	P	H	
		17901	43.08	-10.92	54	33.29	41.4	24.43	56.04	-	-	A	H	
														H
														H
														H
														H
														H
														H
			11750	45.81	-28.19	74	44.88	38.5	19.54	57.11	-	-	P	V
			13336	48.08	-25.92	74	46.13	39.13	21.03	58.21	-	-	P	V
			13336	40.08	-13.92	54	38.13	39.13	21.03	58.21	-	-	A	V
			14491	48.51	-25.49	74	45.06	39.58	21.96	58.09	-	-	P	V
			14491	40.89	-13.11	54	37.44	39.58	21.96	58.09	-	-	A	V
			17625	50.08	-18.12	68.2	40.57	41.5	24.21	56.2	-	-	P	V
		17956	50.94	-23.06	74	41	41.46	24.49	56.01	-	-	P	V	
		17956	43.22	-10.78	54	33.28	41.46	24.49	56.01	-	-	A	V	
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													





**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE80\_Full (Band Edge @ 3m)**

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 )
		5627.73	50.54	-17.66	68.2	38.73	34.7	12.25	35.14	100	299	P	H
		5695.875	54.25	-47.91	102.16	42.25	34.88	12.28	35.16	100	299	P	H
		5718.885	54.04	-56.45	110.49	41.9	35.01	12.29	35.16	100	299	P	H
		5723.31	56.03	-62.32	118.35	43.85	35.04	12.3	35.16	100	299	P	H
	*	5855	103.12	-	-	90.69	35.2	12.41	35.18	100	299	P	H
	*	5855	94.48	-	-	82.05	35.2	12.41	35.18	100	299	A	H
		5901.25	79.51	-26.1	105.61	67.02	35.2	12.48	35.19	100	299	P	H
		5927.75	74.68	-13.52	88.2	62.22	35.14	12.52	35.2	100	299	P	H
		5895.25	70.04	-19.98	90.02	57.56	35.2	12.47	35.19	100	299	A	H
		5927.75	65.43	-2.77	68.2	52.97	35.14	12.52	35.2	100	299	A	H
<b>802.11ax</b>													H
<b>HE80 Full</b>													H
<b>CH 171</b>		5647.2	47.27	-20.93	68.2	35.46	34.7	12.26	35.15	300	16	P	V
<b>5855MHz</b>		5687.91	50.07	-46.21	96.28	38.1	34.85	12.28	35.16	300	16	P	V
		5717.705	52.07	-58.09	110.16	39.93	35.01	12.29	35.16	300	16	P	V
		5722.72	52.29	-64.71	117	40.11	35.04	12.3	35.16	300	16	P	V
	*	5855	102.34	-	-	89.91	35.2	12.41	35.18	300	16	P	V
	*	5855	93.89	-	-	81.46	35.2	12.41	35.18	300	16	A	V
		5896.25	79.05	-30.23	109.28	66.57	35.2	12.47	35.19	300	16	P	V
		5925	74.33	-13.87	88.2	61.87	35.15	12.51	35.2	300	16	P	V
		5895.25	71.33	-18.69	90.02	58.85	35.2	12.47	35.19	300	16	A	V
		5926.5	66.49	-1.71	68.2	54.03	35.15	12.51	35.2	300	16	A	V
													V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE80\_Full (Harmonic @ 3m)**

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 )
		11710	45.19	-28.81	74	44.36	38.5	19.51	57.18	-	-	P	H
		13399	48.45	-25.55	74	46.59	39	21.09	58.23	-	-	P	H
		13399	40.1	-13.9	54	38.24	39	21.09	58.23	-	-	A	H
		14499	48.62	-25.38	74	45.14	39.6	21.97	58.09	-	-	P	H
		14499	40.79	-13.21	54	37.31	39.6	21.97	58.09	-	-	A	H
		17565	49.67	-18.53	68.2	40.32	41.43	24.16	56.24	-	-	P	H
		17714	51.26	-22.74	74	41.61	41.51	24.29	56.15	-	-	P	H
		17714	43.12	-10.88	54	33.47	41.51	24.29	56.15	-	-	A	H
													H
													H
													H
<b>802.11ax</b>													H
<b>HE80 Full</b>													H
<b>CH 171</b>		11710	45.69	-28.31	74	44.86	38.5	19.51	57.18	-	-	P	V
<b>5855MHz</b>		13391	47.81	-26.19	74	45.94	39.02	21.08	58.23	-	-	P	V
		14499	47.98	-26.02	74	44.5	39.6	21.97	58.09	-	-	P	V
		17565	51.06	-17.14	68.2	41.71	41.43	24.16	56.24	-	-	P	V
		17813	50.91	-23.09	74	41.06	41.57	24.37	56.09	-	-	P	V
		17813	42.67	-11.33	54	32.82	41.57	24.37	56.09	-	-	A	V
													V
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													V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>												



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE160\_Full (Band Edge @ 3m)**

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 )
		5649.855	63.89	-4.31	68.2	52.08	34.7	12.26	35.15	100	297	P	H
		5697.94	72.68	-31	103.68	60.67	34.89	12.28	35.16	100	297	P	H
		5717.41	73.32	-36.76	110.08	61.19	35	12.29	35.16	100	297	P	H
		5720.655	69.68	-42.61	112.29	57.53	35.02	12.29	35.16	100	297	P	H
	*	5815	101	-	-	88.63	35.2	12.35	35.18	100	297	P	H
	*	5815	91.72	-	-	79.35	35.2	12.35	35.18	100	297	A	H
		5898.5	72.94	-34.69	107.63	60.46	35.2	12.47	35.19	100	297	P	H
		5961.25	72.51	-15.69	88.2	60.06	35.1	12.56	35.21	100	297	P	H
		5896	65.86	-23.6	89.46	53.38	35.2	12.47	35.19	100	297	A	H
		5946.5	64.86	-3.34	68.2	52.41	35.11	12.54	35.2	100	297	A	H
<b>802.11ax</b>													H
<b>HE160 Full</b>													H
<b>CH 163</b>		5647.495	58.46	-9.74	68.2	46.65	34.7	12.26	35.15	304	16	P	V
<b>5815MHz</b>		5698.235	64.6	-39.3	103.9	52.59	34.89	12.28	35.16	304	16	P	V
		5703.25	67.35	-38.76	106.11	55.3	34.92	12.29	35.16	304	16	P	V
		5721.835	66.79	-48.19	114.98	54.63	35.03	12.29	35.16	304	16	P	V
	*	5815	98.51	-	-	86.14	35.2	12.35	35.18	304	16	P	V
	*	5815	90.71	-	-	78.34	35.2	12.35	35.18	304	16	A	V
		5898.5	74.44	-33.19	107.63	61.96	35.2	12.47	35.19	304	16	P	V
		5941.25	73.72	-14.48	88.2	61.27	35.12	12.53	35.2	304	16	P	V
		5895.25	65.44	-24.58	90.02	52.96	35.2	12.47	35.19	304	16	A	V
		5941.5	65.05	-3.15	68.2	52.59	35.12	12.54	35.2	304	16	A	V
													V
													V
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



**Band 4 5725~5850MHz  
WIFI 802.11ax HE160\_Full (Harmonic @ 3m)**

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 )	
<b>802.11ax HE160 Full CH 163 5815MHz</b>		11630	44.47	-29.53	74	43.98	38.36	19.44	57.31	-	-	P	H	
		13259	44.73	-29.27	74	42.88	39.08	20.96	58.19	-	-	P	H	
		14491	46.87	-27.13	74	43.42	39.58	21.96	58.09	-	-	P	H	
		17445	47.37	-20.83	68.2	38.29	41.35	24.06	56.33	-	-	P	H	
		17791	48.8	-25.2	74	38.97	41.59	24.35	56.11	-	-	P	H	
		17791	40.18	-13.82	54	30.35	41.59	24.35	56.11	-	-	A	H	
														H
														H
														H
														H
														H
														H
														H
			11630	42.71	-31.29	74	42.22	38.36	19.44	57.31	-	-	P	V
			13303	44.79	-29.21	74	42.8	39.19	21	58.2	-	-	P	V
			14499	47.37	-26.63	74	43.89	39.6	21.97	58.09	-	-	P	V
			17445	48.39	-19.81	68.2	39.31	41.35	24.06	56.33	-	-	P	V
			17714	48.48	-25.52	74	38.83	41.51	24.29	56.15	-	-	P	V
			17714	40.05	-13.95	54	30.4	41.51	24.29	56.15	-	-	A	V
													V	
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> <li>The emission level close to 18GHz is checked that the average emission level is noise floor only.</li> </ol>													



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		39912	45.65	-28.35	74	44.63	44.6	14.8	58.38	-	-	P	H
													H
													H
													H
													H
													H
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													H
													H
			39868	45.35	-28.65	74	44.43	44.6	14.78	58.46	-	-	P
													V
													V
													V
													V
													V
													V
													V
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													V
													V
													V
													V
													V
													V
<b>Remark</b>	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	23.35	-16.65	40	27.88	24.57	1.01	30.11	-	-	P	H	
		95.61	28.67	-14.83	43.5	41.56	15.35	1.74	29.98	-	-	P	H	
		195.78	25.93	-17.57	43.5	38.38	14.89	2.5	29.84	-	-	P	H	
		906.9	34.07	-11.93	46	28.75	28.63	5.48	28.79	-	-	P	H	
		932.8	34.07	-11.93	46	27.97	29.29	5.52	28.71	-	-	P	H	
		958.7	34.88	-11.12	46	27.17	30.75	5.58	28.62	-	-	P	H	
														H
														H
														H
														H
														H
														H
			30	33.27	-6.73	40	37.8	24.57	1.01	30.11	-	-	P	V
			34.86	30.1	-9.9	40	37.13	22.1	0.95	30.08	-	-	P	V
			91.02	25.77	-17.73	43.5	39.37	14.73	1.7	30.03	-	-	P	V
			899.9	32.57	-13.43	46	27.32	28.6	5.46	28.81	-	-	P	V
			932.8	33.5	-12.5	46	27.4	29.29	5.52	28.71	-	-	P	V
			958.7	34.39	-11.61	46	26.68	30.75	5.58	28.62	-	-	P	V
														V
														V
													V	
													V	
													V	
													V	

**Remark**

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



**Note symbol**

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



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

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 :	20~26.7°C
		Relative Humidity :	49~61.1%

### Note symbol

-L	Low channel location
-R	High channel location



**Band 4 - 5725~5850MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Band Edge @ 3m</b>	
<b>ANT</b>	<b>802.11a CH169 5845MHz - L</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Fundamental</b>
<b>Peak</b>	<p>Site : 03CH07-RY          Condition : PEAK_SCREENING_16-24 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH07-RY          Condition : PEAK(URH) 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - R	
4+3	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank

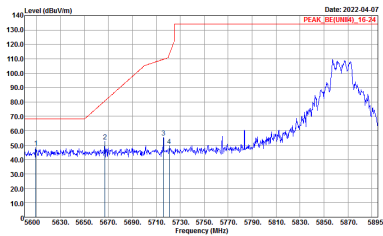
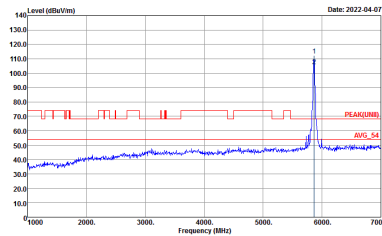


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09SCH07-HY Condition : PEAK_BREUNIAJ_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09SCH07-HY Condition : PEAK(UM) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>

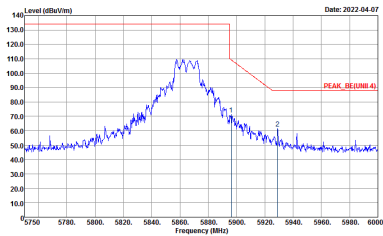
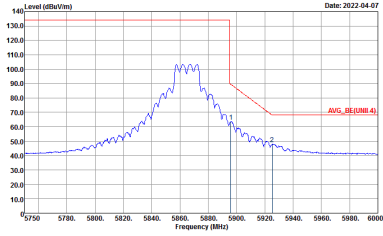


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH169 5845MHz - R	
4+3	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank
Avg.	<p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWF:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz - L	
4+3	Horizontal	Fundamental
Peak	 <p>Site : 09SCH07-HY          Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	 <p>Site : 09SCH07-HY          Condition : PEAK(1000) 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz – R	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH07-HY Condition : PEAK_BE(UHF4) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : AVG_BE(UHF4) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p>Left blank</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09SCH07-HY Condition : PEAK_BREUNIAI_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09SCH07-HY Condition : PEAK(UM) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



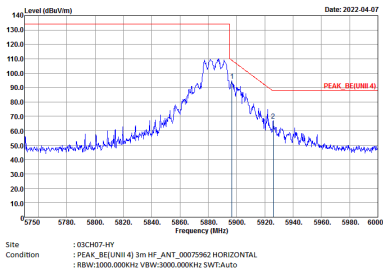
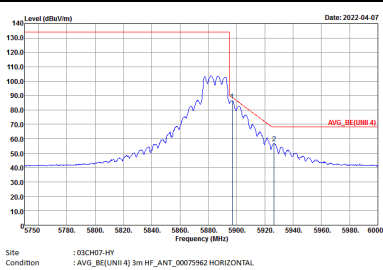


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH173 5865MHz – R	
4+3	Vertical	Fundamental
<p><b>Peak</b></p>	<p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	<p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p>Left blank</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - L	
4+3	Horizontal	Fundamental
Peak	<p>Site : 09SCH07-HY Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09SCH07-HY Condition : PEAK(100%) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - R	
4+3	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09SCH07-HY Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09SCH07-HY Condition : PEAK(LINE) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH177 5885MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE20 Full (Band Edge @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Band Edge @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE20 Full CH169 5845MHz - L</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Fundamental</b>
<b>Peak</b>	<p>Site : 03CH07-HY          Condition : PEAK_BE(LIN)@_16-24 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTAuto</p>	<p>Site : 03CH07-HY          Condition : PEAK(LIN)I 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTAuto</p>



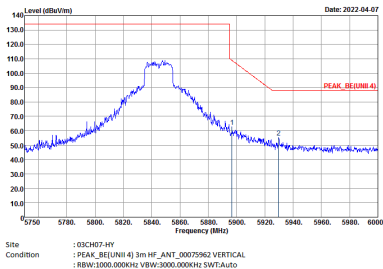
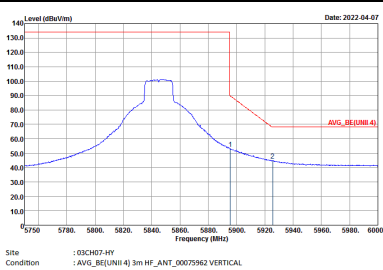
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz - R	
4+3	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(UNI#4) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank
Avg.	<p>Site : 03CH07-HY Condition : AVG_BE(UNI#4) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3.000kHz SWF:Auto</p>	Left blank



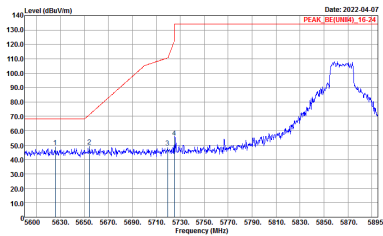
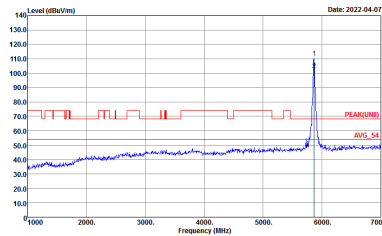
<b>WIFI</b>	<b>Band 4 5725~5850MHz Band Edge @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE20 Full CH169 5845MHz - L</b>	
<b>4+3</b>	<b>Vertical</b>	<b>Fundamental</b>
<b>Peak</b>	<p>Site : 09SCH07-HY Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09SCH07-HY Condition : PEAK(UM) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>





WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH169 5845MHz - R	
4+3	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(UMH4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH07-HY Condition : AVG_BE(UMH4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - L	
4+3	Horizontal	Fundamental
Peak	 <p>Date: 2022-04-07 PEAK_REF(1000), 16-24</p> <p>Site : 09CH07-HY Condition : PEAK_BREUNIAI_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	 <p>Date: 2022-04-07 PEAK(1000) AVG_54</p> <p>Site : 09CH07-HY Condition : PEAK(1000) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>

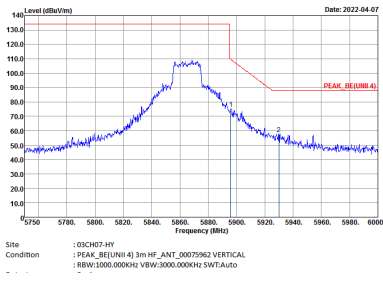
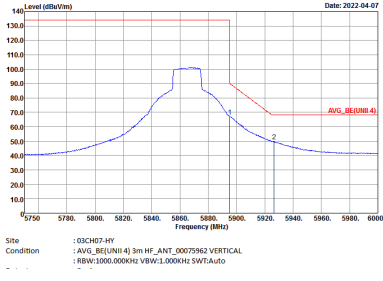


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - R	
4+3	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09CH07-HY          Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09CH07-HY          Condition : PEAK(LIN) 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz - R	
4+3	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - L	
4+3	Horizontal	Fundamental
Peak	<p>Date: 2022-04-07 PEAK: 5885MHz, 16.24</p> <p>Site : 09CH07-HY Condition : PEAK_BREUNIAI_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Date: 2022-04-07 PEAK: 5885MHz AVG: 54</p> <p>Site : 09CH07-HY Condition : PEAK(LINE) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



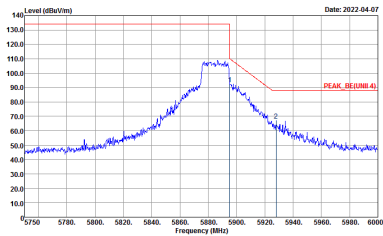
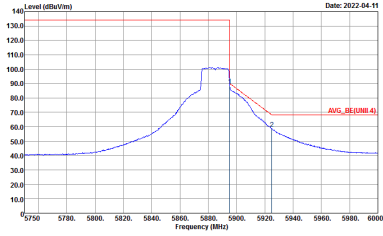
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - R	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>		<p>Left blank</p>
<p><b>Avg.</b></p>		<p>Left blank</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09CH07-HY          Condition : PEAK_0810000_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09CH07-HY          Condition : PEAK_0810000_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>





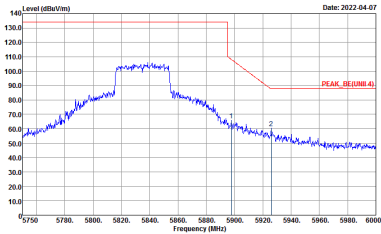
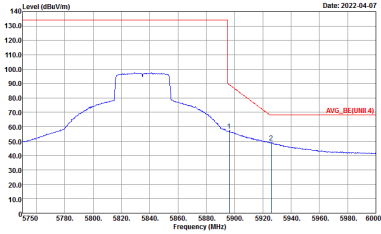
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH177 5885MHz - R	
4+3	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE40 Full (Band Edge @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Band Edge @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE40 Full CH167 5835MHz - L</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Fundamental</b>
<b>Peak</b>	<p>Site : 03CH07-HY          Condition : PEAK_B(UNIQ)_16-24 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTAuto</p>	<p>Site : 03CH07-HY          Condition : PEAK(UNIQ) 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTAuto</p>

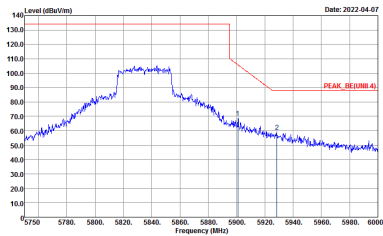
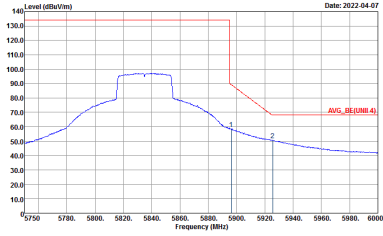


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - R	
4+3	Horizontal	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(UHF4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWF:Auto</p>	Left blank
Avg.	 <p>Site : 03CH07-HY Condition : AVG_BE(UHF4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3.000kHz SWF:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09CH07-HY Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09CH07-HY Condition : PEAK(QNR) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH167 5835MHz - R	
4+3	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - L	
4+3	Horizontal	Fundamental
Peak	<p>Date: 2022-04-07 PEAK: 5875MHz, 16.24</p> <p>Site : 09SCH07-HY Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Date: 2022-04-07 PEAK: 5875MHz, 16.24</p> <p>Site : 09SCH07-HY Condition : PEAK(UN) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



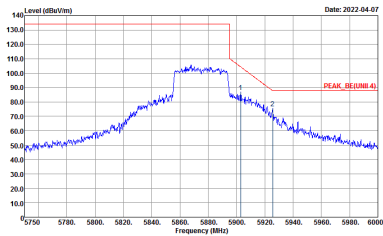
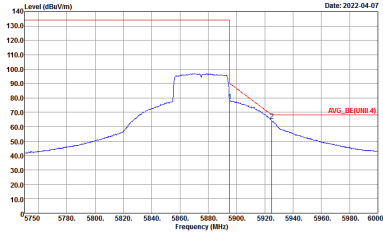
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - R	
4+3	Horizontal	Fundamental
<p><b>Peak</b></p>	<p>Site : 03CH07-HY            Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	<p>Site : 03CH07-HY            Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p>Left blank</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09SCH07-HY          Condition : PEAK_0810000_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09SCH07-HY          Condition : PEAK_0810000_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>





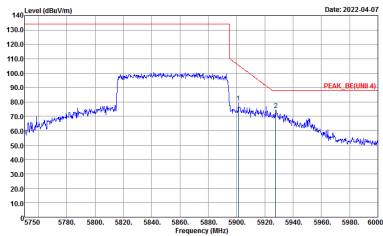
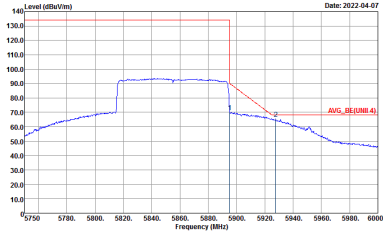
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz - R	
4+3	Vertical	Fundamental
<p><b>Peak</b></p>	 <p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	 <p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p>Left blank</p>



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE80 Full (Band Edge @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Band Edge @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE80 Full CH171 5855MHz - L</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Fundamental</b>
<b>Peak</b>	<p>Site : 03CH07-HY          Condition : PEAK_BE(LIN)16-24 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTAuto</p>	<p>Site : 03CH07-HY          Condition : PEAK(LIN)1 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTAuto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - R	
4+3	Horizontal	Fundamental
Peak	 <p>Date: 2022-04-07</p> <p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	 <p>Date: 2022-04-07</p> <p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 HORIZONTAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09CH07-HY Condition : PEAK_BREUNIAH_16-24 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09CH07-HY Condition : PEAK(LIN) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz - R	
4+3	Vertical	Fundamental
<p><b>Peak</b></p>	<p>Site : 03CH07-HY Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	<p>Site : 03CH07-HY Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p>Left blank</p>



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE160 Full (Band Edge @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Band Edge @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE160 Full CH163 5815MHz - L</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Fundamental</b>
<b>Peak</b>	<p>Site : 03CH07-HY          Condition : PEAK_BE(UNID)_16-24 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY          Condition : PEAK(UNID) 3m HF_ANT_00075962 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH163 5815MHz - R	
4+3	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(UNII-4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	Left blank
Avg.	<p>Site : 03CH07-HY Condition : AVG_BE(UNII-4) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH163 5815MHz - L	
4+3	Vertical	Fundamental
Peak	<p>Site : 09CH07-HY          Condition : PEAK_BREUNIAI_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>	<p>Site : 09CH07-HY          Condition : PEAK(LIN) 3m HF_ANT_00075962 VERTICAL          : RBW:1000.000kHz; VBW:3000.000kHz; SWT:Auto</p>





WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE160 Full CH163 5815MHz - R	
4+3	Vertical	Fundamental
<p><b>Peak</b></p>	<p>Site : 03CH07-HY            Condition : PEAK_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL            : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Left blank</p>
<p><b>Avg.</b></p>	<p>Site : 03CH07-HY            Condition : AVG_BE(UHF-4) 3m HF_ANT_00075962 VERTICAL            : RBW:1000.000kHz VBW:3.000kHz SWT:Auto</p>	<p>Left blank</p>



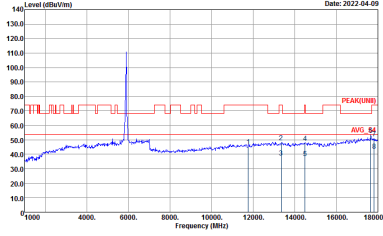
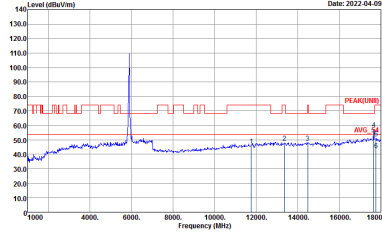
**Band 4 - 5725~5850MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11a CH169 5845MHz</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH173 5865MHz	
4+3	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL</p>



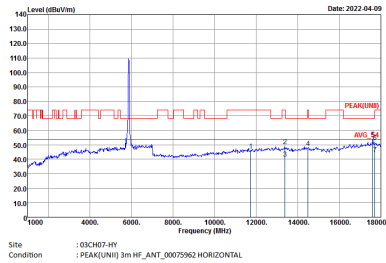
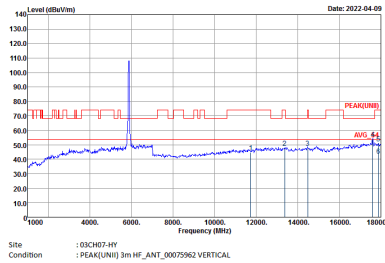
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH177 5885MHz	
4+3	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL</p>



**Band 4 5725~5850MHz  
WIFI 802.11ax HE20 Full (Harmonic @ 3m)**

<b>WIFI</b>	<b>Band 4 5725~5850MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE20 Full CH169 5845MHz</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak Avg.</b>	<p>Site : (03)CM2-RF Condition : PEAK(UNH) 3m HF_ANT_00075962 HORIZONTAL</p>	<p>Site : (03)CM2-RF Condition : PEAK(UNH) 3m HF_ANT_00075962 VERTICAL</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH173 5865MHz	
4+3	Horizontal	Vertical
Peak Avg.	 <p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL</p>	 <p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL</p>



<b>WIFI</b>	<b>Band 4 5725~5850MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11ax HE20 Full CH177 5885MHz</b>	
<b>4+3</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak Avg.</b>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL</p>



Band 4 5725~5850MHz
WIFI 802.11ax HE40 Full (Harmonic @ 3m)

Table with 3 columns: WIFI, ANT, 4+3. It contains two spectral plots: Horizontal and Vertical. The plots show Level (dBuV/m) vs Frequency (MHz) with a prominent peak at approximately 5725 MHz. The horizontal plot is labeled 'PEAK(UWB)' and 'AVG\_54', while the vertical plot is labeled 'PEAK(UWB)' and 'AVG\_45'.

Peak
Avg.





WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH175 5875MHz	
4+3	Horizontal	Vertical
Peak Avg.	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 HORIZONTAL</p>	<p>Site : 03CH07-HY Condition : PEAK(UNI) 3m HF_ANT_00075962 VERTICAL</p>



**Band 4 5725~5850MHz**  
**WIFI 802.11ax HE80 Full (Harmonic @ 3m)**

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH171 5855MHz	
4+3	Horizontal	Vertical
Peak Avg.	<p>Horizontal spectrum plot showing Level (dBm/Vm) vs Frequency (MHz). The plot displays a series of peaks between 5725 MHz and 5850 MHz, with a prominent peak at 5855 MHz. The y-axis ranges from 10.0 to 140.0 dBm/Vm, and the x-axis ranges from 1000 to 18000 MHz. The plot includes a red line for the peak and a blue line for the average. The date is 2022-04-09. Site: (03)CH27-RT, Condition: PEAK(LIN) 3m HF_ANT_00075962 HORIZONTAL.</p>	<p>Vertical spectrum plot showing Level (dBm/Vm) vs Frequency (MHz). The plot displays a series of peaks between 5725 MHz and 5850 MHz, with a prominent peak at 5855 MHz. The y-axis ranges from 10.0 to 140.0 dBm/Vm, and the x-axis ranges from 1000 to 18000 MHz. The plot includes a red line for the peak and a blue line for the average. The date is 2022-04-09. Site: (03)CH27-RT, Condition: PEAK(LIN) 3m HF_ANT_00075962 VERTICAL.</p>



Band 4 5725~5850MHz  
WIFI 802.11ax HE160 Full (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE160 Full CH163 5815MHz	
4+3	Horizontal	Vertical
Peak Avg.	<p>Site : (03)CM2-RF Condition : PEAK(UNH) 3m HF_ANT_00075962 HORIZONTAL</p>	<p>Site : (03)CM2-RF Condition : PEAK(UNH) 3m HF_ANT_00075962 VERTICAL</p>



Emission above 18GHz
5GHz WIFI 802.11ax HE20 Full (SHF @ 1m)

Table with 2 columns: Horizontal and Vertical. Each column contains a spectral plot showing Level (dBu/m) vs Frequency (MHz) with Peak and Avg markers. Includes site and condition details for each plot.



Emission below 1GHz  
5GHz WIFI 802.11ax HE20 Full (LF @ 3m)

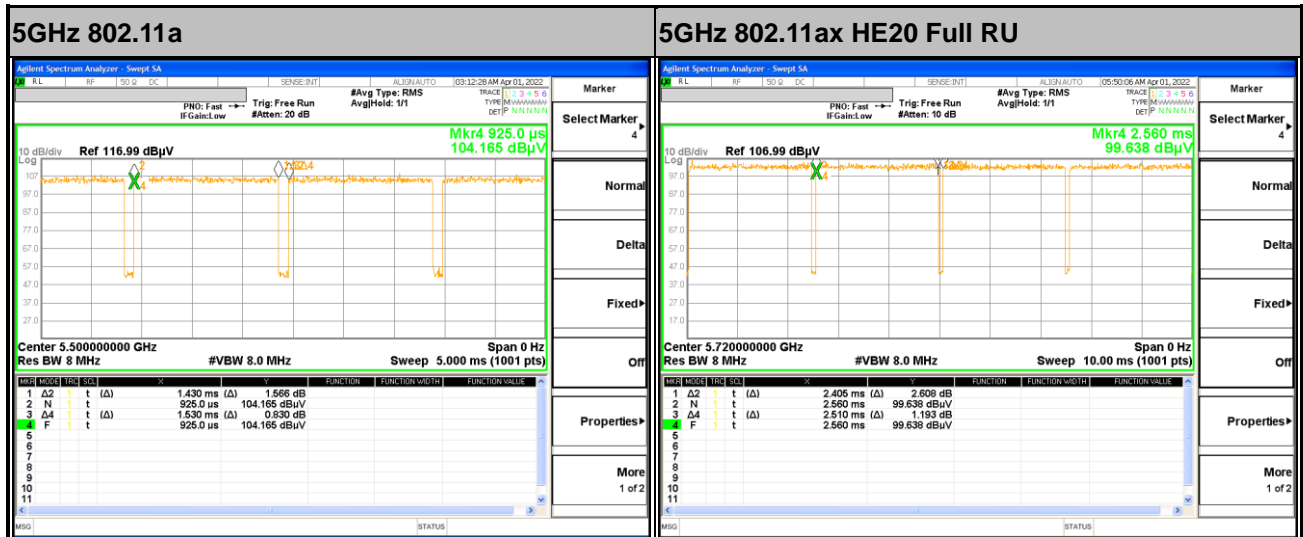
WIFI	5GHz WIFI	
ANT	802.11ax HE20 Full LF	
4+3	Horizontal	Vertical
QP / Peak	<p>Site Condition : 03CH07-HY : QP 3m LF-ANT-35419(6) HORIZONTAL</p>	<p>Site Condition : 03CH07-HY : QP 3m LF-ANT-35419(6) VERTICAL</p>



## Appendix E. Duty Cycle Plots

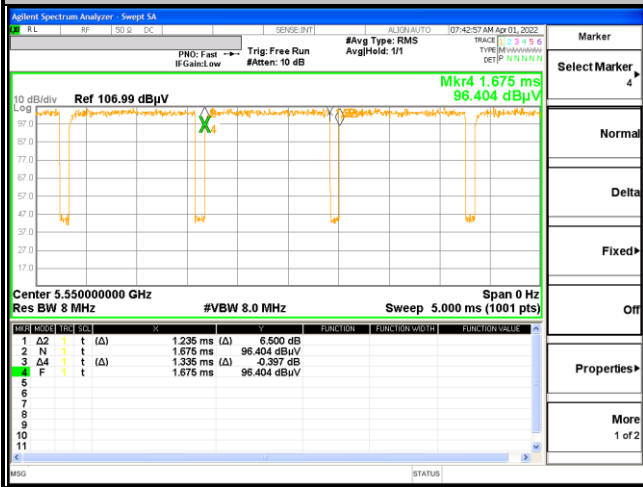
Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
4+3	802.11a	93.46	1430	0.70	1kHz
4+3	5GHz 802.11ax HE20 Full RU	95.82	2405	0.42	1kHz
4+3	5GHz 802.11ax HE40 Full RU	92.51	1235	0.81	1kHz
4+3	5GHz 802.11ax HE80 Full RU	86.23	626	1.60	3kHz
4+3	5GHz 802.11ax HE160 Full RU	85.07	570	1.75	3kHz

### MIMO <Ant. 4+3>

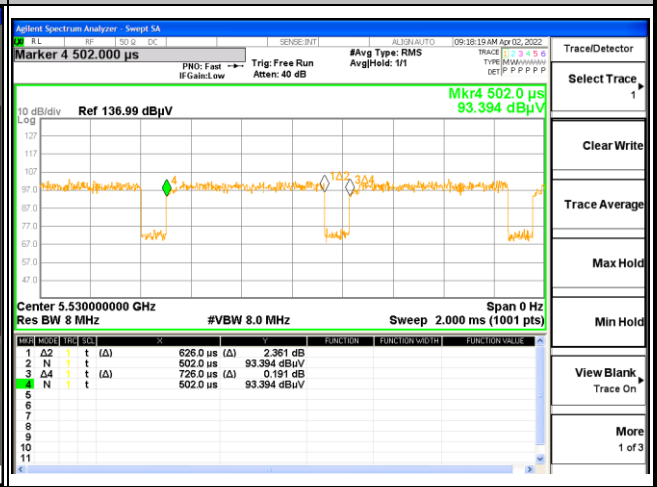




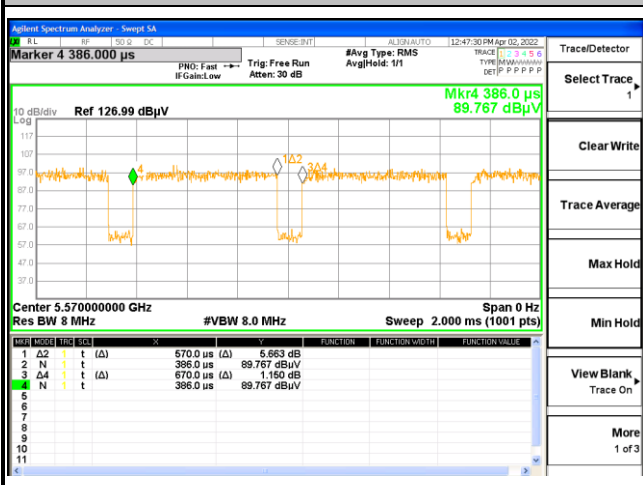
5GHz 802.11ax HE40 Full RU



5GHz 802.11ax HE80 Full RU



5GHz 802.11ax HE160 Full RU



—THE END—