



FCC RADIO TEST REPORT

FCC ID : A4RGQML3
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. 24, 2022 to May 21, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Louis Wu

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

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



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History of this test report

Report No.	Version	Description	Issue Date
FR102843-05F	01	Initial issue of report	Jun. 08, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.403(i)	6dB & 26dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.407(a)	Maximum Conducted Output Power	Pass	-
3.3	15.407(a)	Power Spectral Density	Pass	-
3.4	15.407(b)	Unwanted Emissions	Pass	6.56 dB under the limit at 5645.800 MHz
3.5	15.207	AC Conducted Emission	Pass	21.09 dB under the limit at 1.473 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: Rachel Hsieh



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Phone
FCC ID	A4RGQML3
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
23031FDH20007N	RF Conducted Measurement
23121FDH20002A	Radiated Spurious Emission
23121FDH20005C	Conducted Emission

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard									
Tx/Rx Channel Frequency Range		5745 MHz ~ 5825 MHz							
Maximum Output Power		MIMO <Ant. 4+3> 802.11a: 24.31 dBm / 0.2698 W 802.11n HT20: 24.26 dBm / 0.2667 W 802.11n HT40: 24.18 dBm / 0.2618 W 802.11ac VHT20: 24.36 dBm / 0.2729 W 802.11ac VHT40: 24.28 dBm / 0.2679 W 802.11ac VHT80: 24.23 dBm / 0.2649 W 802.11ax HE20: 24.46 dBm / 0.2793 W 802.11ax HE40: 24.38 dBm / 0.2742 W 802.11ax HE80: 24.33 dBm / 0.2710 W							
99% Occupied Bandwidth		MIMO <Ant. 4> 802.11a: 24.73 MHz 802.11ax HE20: 25.82 MHz 802.11ax HE40: 53.75 MHz 802.11ax HE80: 78.40 MHz MIMO <Ant. 3> 802.11a: 24.13 MHz 802.11ax HE20: 25.82 MHz 802.11ax HE40: 48.45 MHz 802.11ax HE80: 77.92 MHz							
Type of Modulation		802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11ax: OFDMA (BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM)							
Antenna Type / Gain		<Ant. 4> : IFA Antenna with gain -2.5 dBi <Ant. 3> : Loop Antenna with gain -3.8 dBi							
Antenna Function Description		<table><tr><td></td><td>Ant. 4</td><td>Ant. 3</td></tr><tr><td>802.11 a/n/ac/ax MIMO</td><td>V</td><td>V</td></tr></table>			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:

1. MIMO Ant. 4+3 Directional Gain is a calculated result from MIMO Ant. 4 and MIMO Ant. 3. The formula used in calculation is documented in section 3.6.
2. Power of MIMO Ant. 4 + Ant. 3 is a calculated result from sum of the power MIMO Ant. 4 and MIMO Ant. 3.
3. The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 Testing Location

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

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

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

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

FCC designation No.: TW1190 and TW3786

1.5 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ 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	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155 [#]	5775	165	5825

Note:

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

2.2 Test Mode

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

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

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

The final test modes consider the modulation and the worst data rates as shown in the table below.

MIMO Mode

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

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

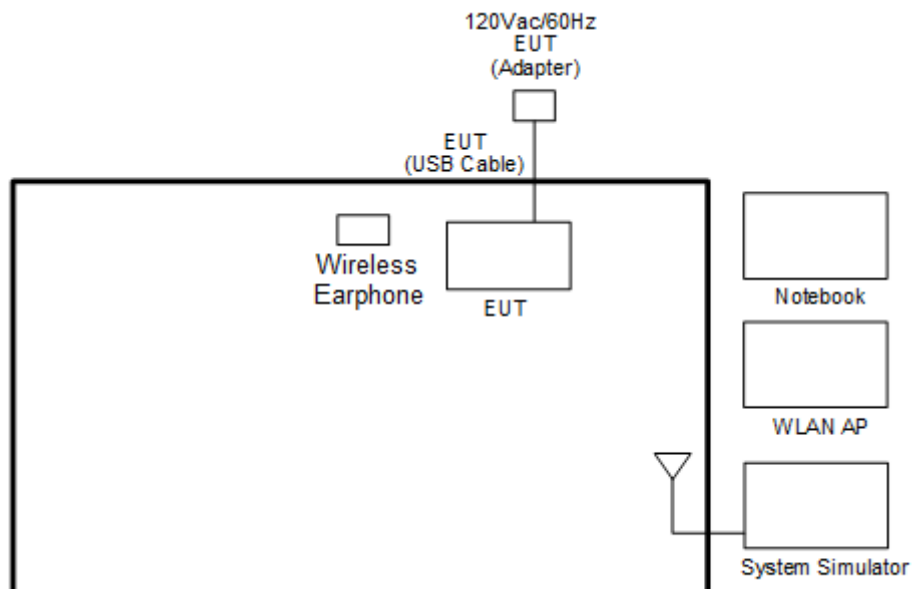
Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + WLAN (5GHz) Link + Bluetooth Link + USB Cable 1 (Type C) (Charging from Adapter 2)
Remark: 1. For Radiated Test Cases, the tests were performed with Adapter 2 and USB Cable 1. 2. During the preliminary test, both charging modes (Adapter mode and WPT Charging mode) were verified. It is determined that the adaptor mode is the worst case for official test.	

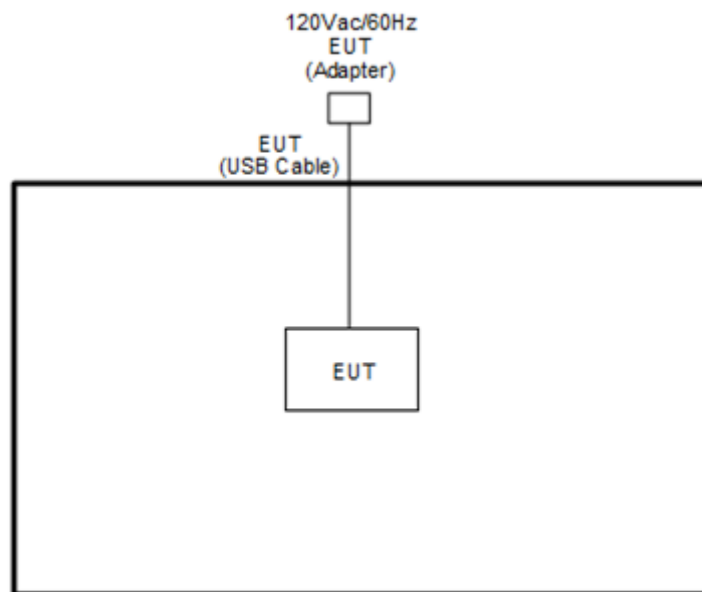
Ch. #		Band IV : 5725-5850 MHz			
		802.11a	802.11ax HE20	802.11ax HE40	802.11ac VHT80
L	Low	149	149	151	-
M	Middle	157	157	-	155
H	High	165	165	159	-

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, 1.8m
2.	Wireless Earphone	Google	G1007/G1008	A4RG1007/ A4RG1008	N/A	N/A
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
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 “adb Command 1.0.36” 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.

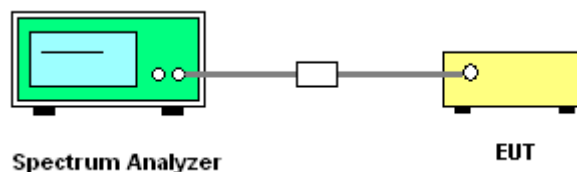
3.1.2 Measuring Instruments

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

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section C) Emission bandwidth for the band 5.725-5.85 GHz
2. Set RBW = 100 kHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 6 dB down from the peak of the emission.
7. Measure and record the results in the test report.

3.1.4 Test Setup



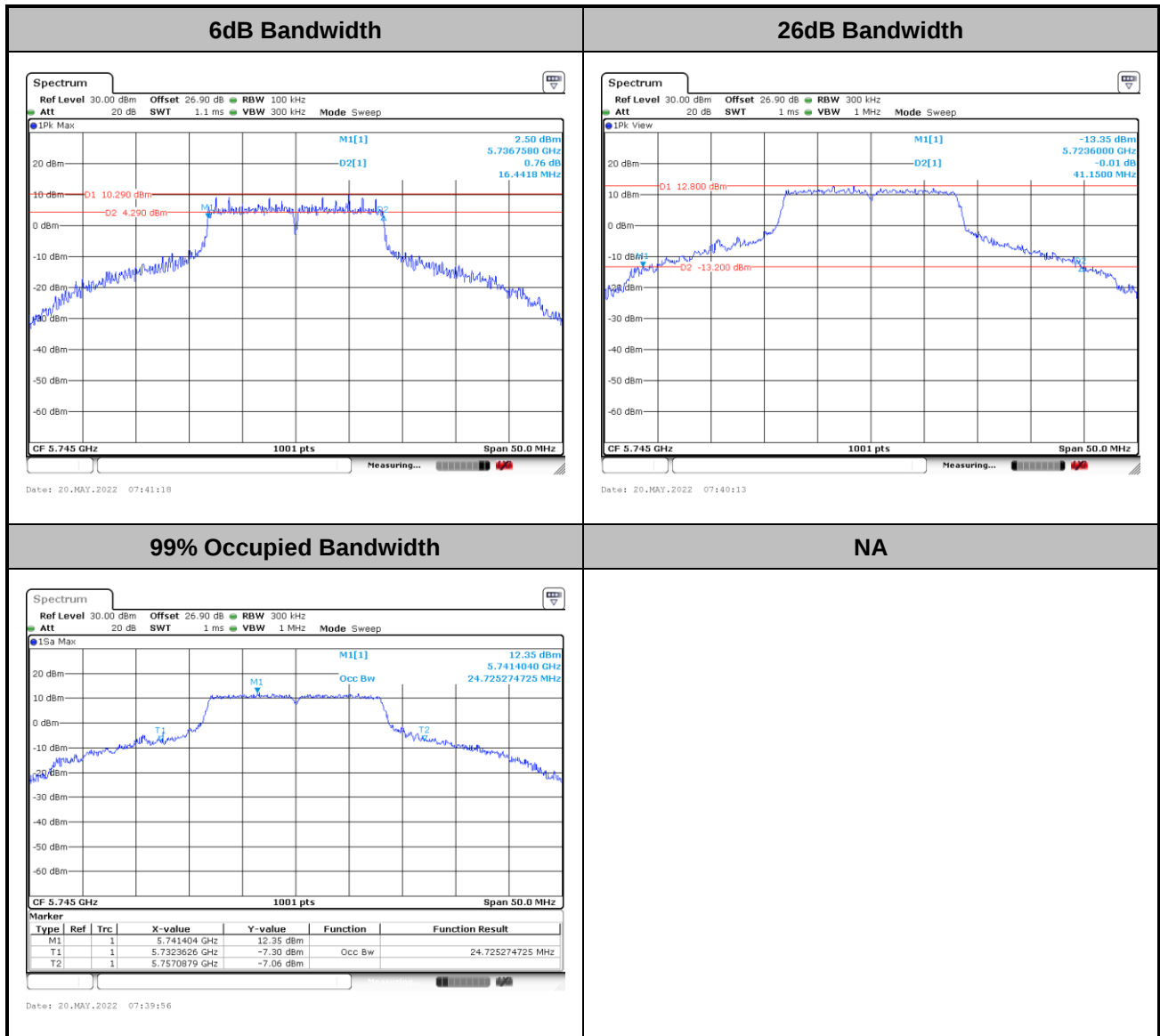
3.1.5 Test Result of 6dB and 26dB and 99% Occupied Bandwidth

Please refer to Appendix A.



MIMO <Ant. 4+3>

<802.11a>

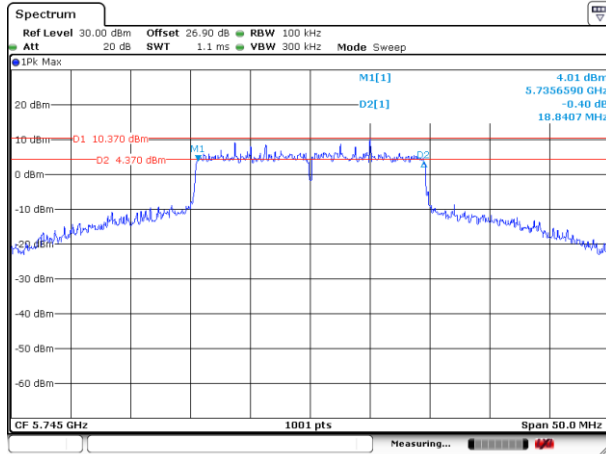


Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

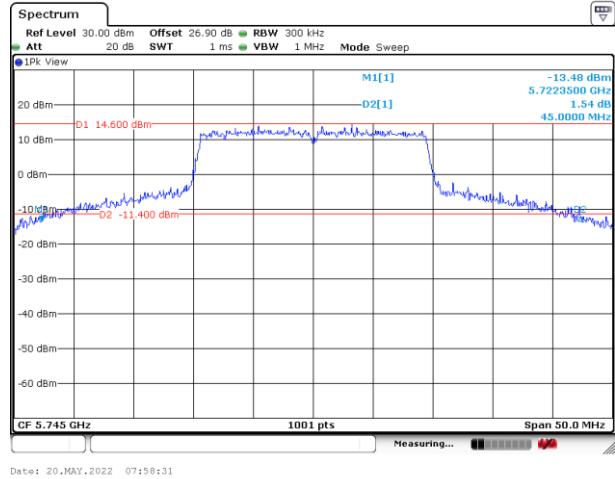


<802.11ax HE20>

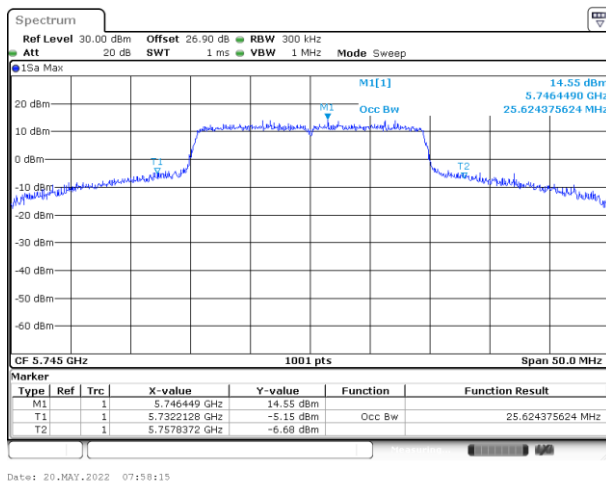
6dB Bandwidth



26dB Bandwidth



99% Occupied Bandwidth

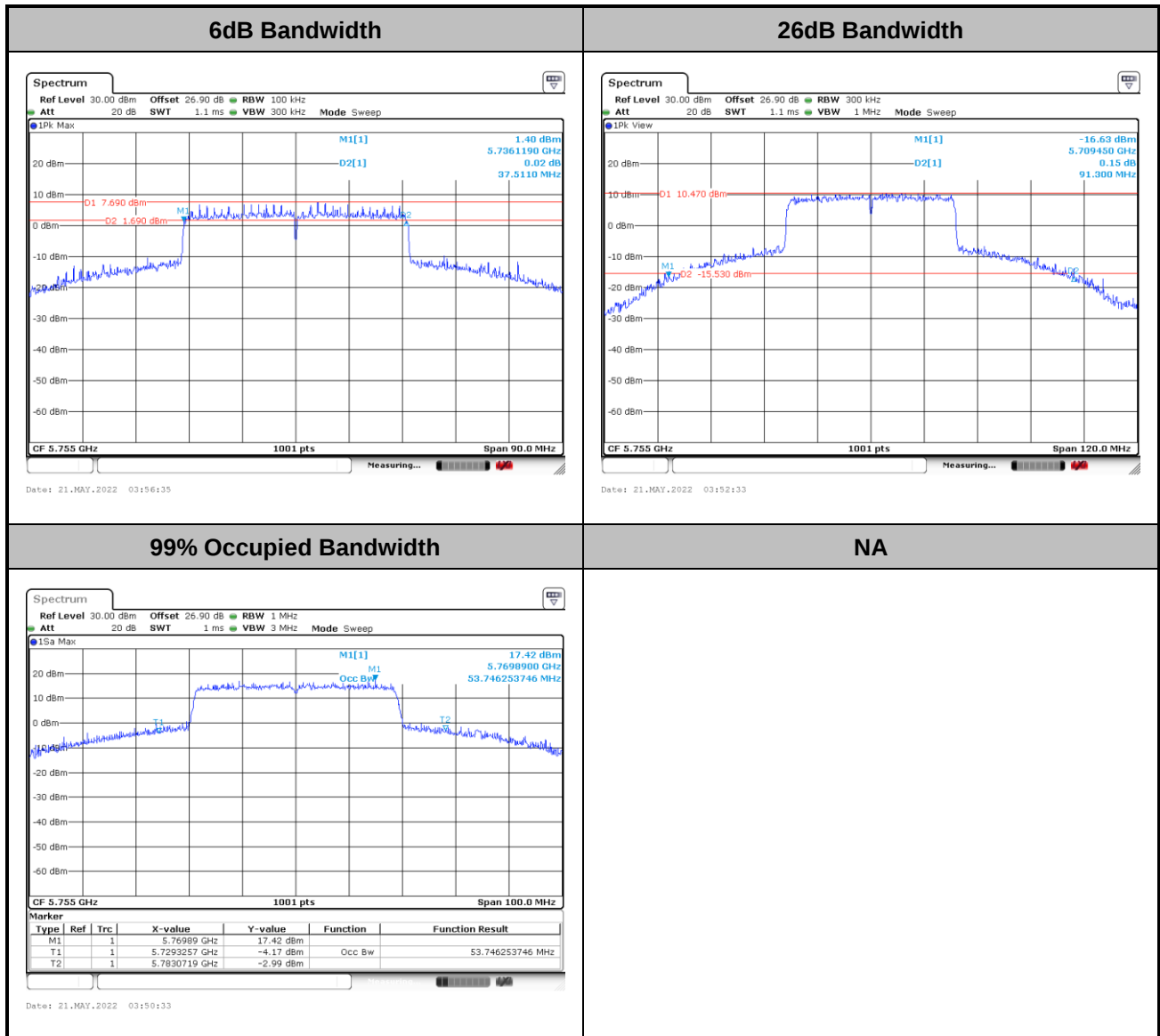


NA

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

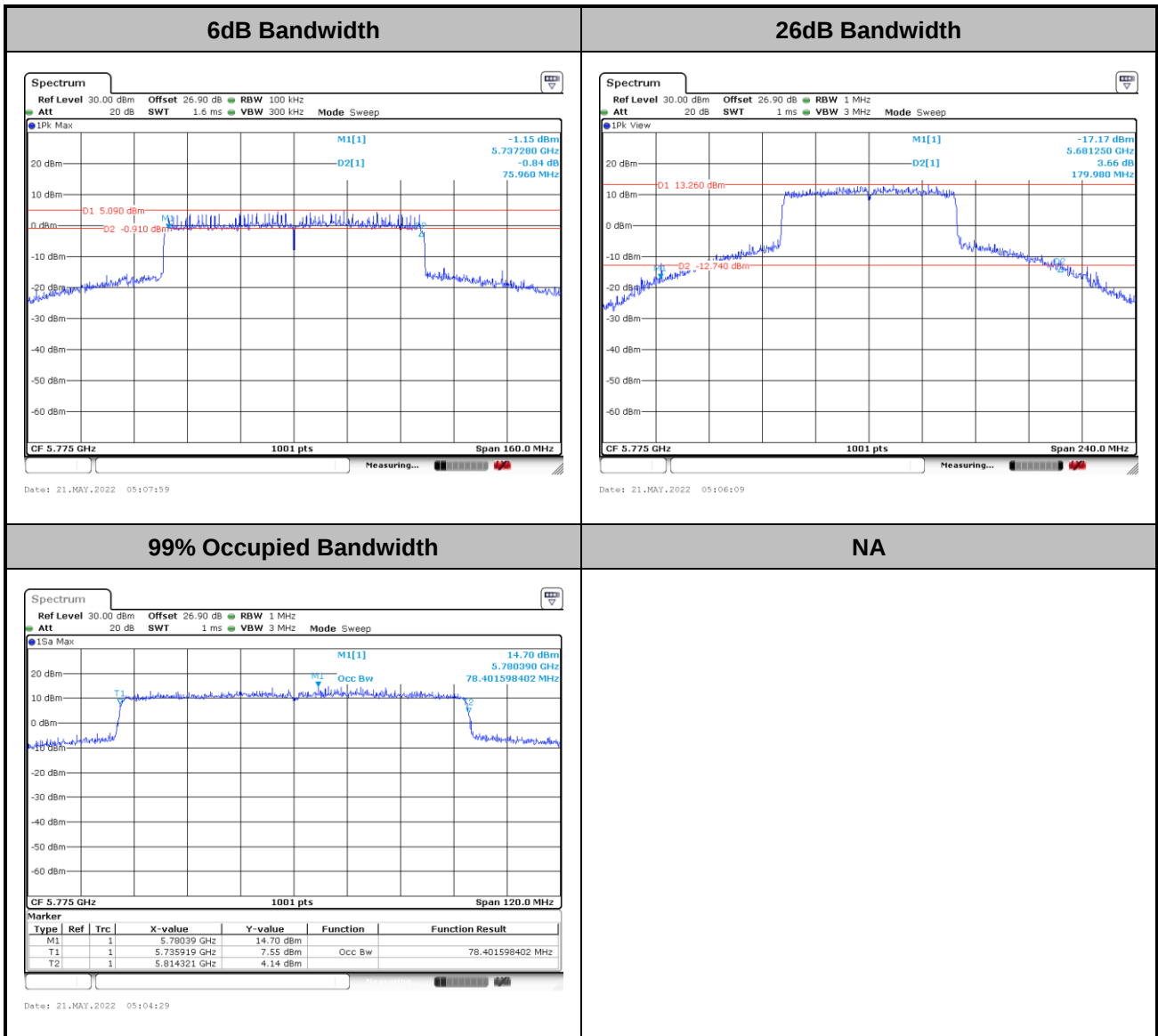


<802.11ax HE40>



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

<802.11ax HE80>



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

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

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

3.2.2 Measuring Instruments

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

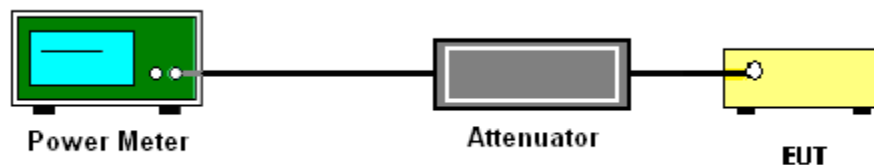
3.2.3 Test Procedures

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

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

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

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5.725–5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band.

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

3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

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

Section F) Maximum power spectral density.

Method SA-2

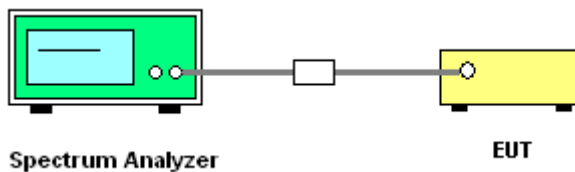
(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

- Measure the duty cycle.
 - Set span to encompass the entire emission bandwidth (EBW) of the signal.
 - Set RBW = 300kHz.
 - Set VBW $\geq$ 1 MHz.
 - Add $10 \log(500 \text{ kHz/RBW})$ to the measured result, whereas RBW ($< 500 \text{ kHz}$) is the reduced resolution bandwidth of the spectrum analyzer set during measurement
 - Number of points in sweep $\geq 2 \text{ Span} / \text{RBW}$.
 - 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 $10 \log(1/0.25) = 6 \text{ dB}$ 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 (c): Measure and add $10 \log(N_{\text{ANT}})$ dB.

With this technique, spectrum measurements are performed at each output of the device, but rather than summing the spectra or the spectral peaks across the outputs, the quantity $10 \log(N_{\text{ANT}})$ dB is added to each spectrum value before comparing to the emission limit. The addition of $10 \log(N_{\text{ANT}})$ dB serves to apportion the emission limit among the N_{ANT} outputs so that each output is permitted to contribute no more than $1/N_{\text{ANT}}^{\text{th}}$ of the PSD limit.

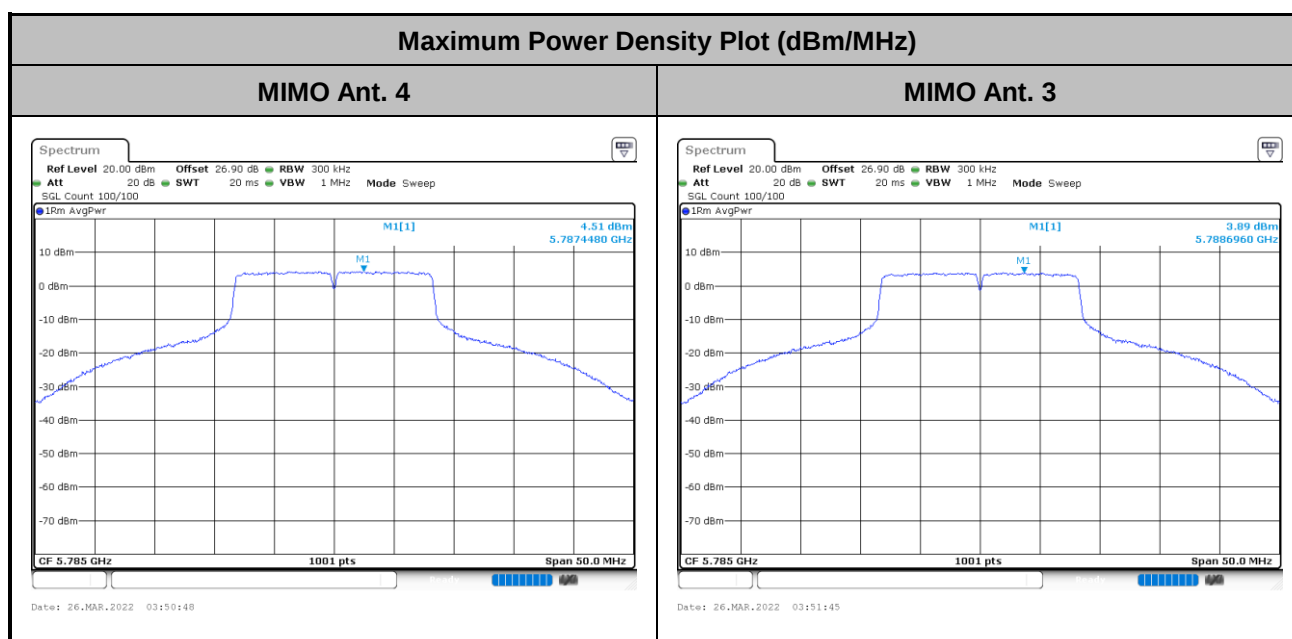
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

<802.11a>

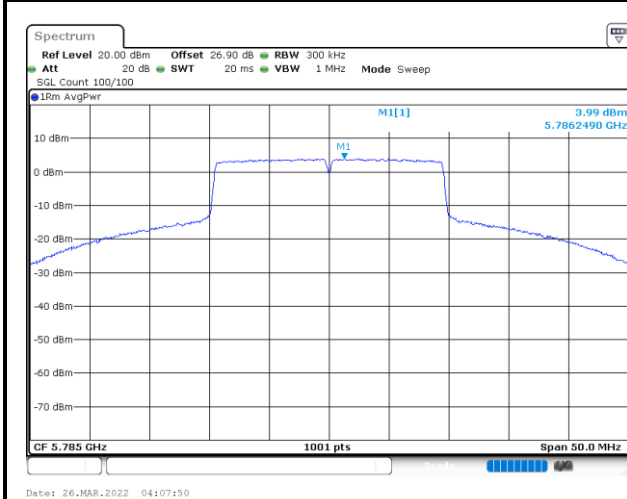




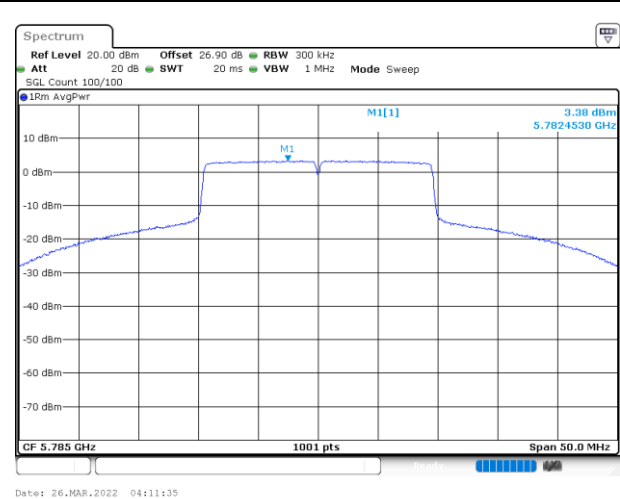
<802.11ax HE20>

Maximum Power Density Plot (dBm/MHz)

MIMO Ant. 4



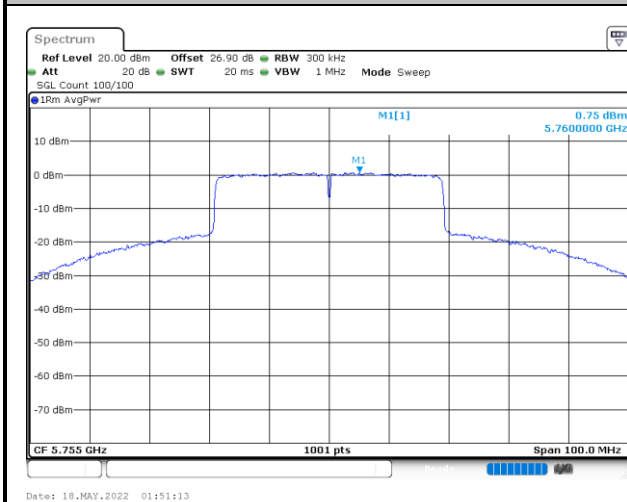
MIMO Ant. 3



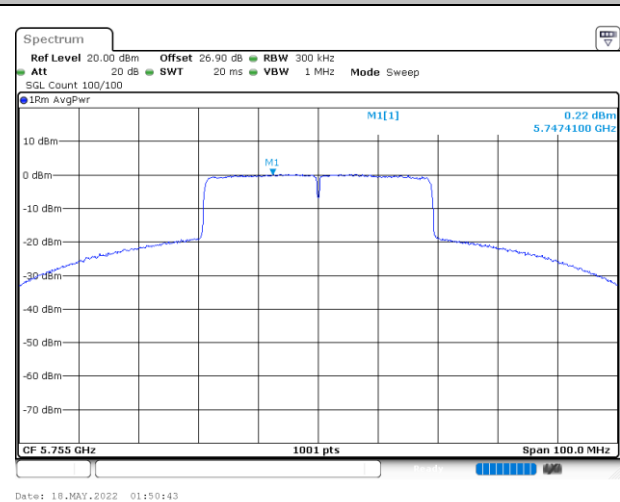
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Maximum Power Density Plot (dBm/MHz)

MIMO Ant. 4



MIMO Ant. 3

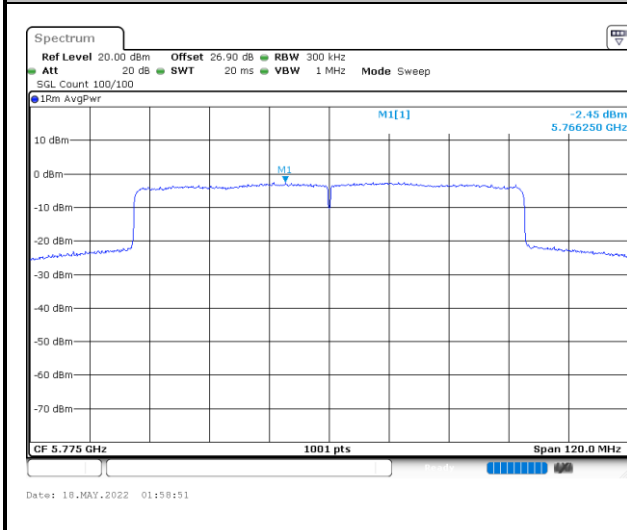




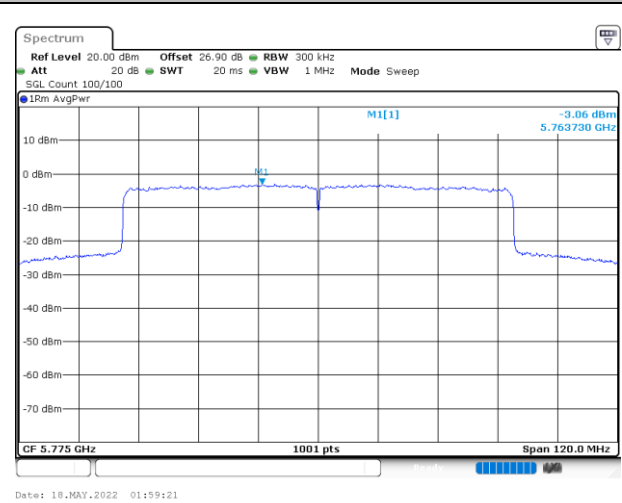
<802.11ax HE80>

Maximum Power Density Plot (dBm/MHz)

MIMO Ant. 4



MIMO Ant. 3



Note: Average Power Density (dB) = Measured value+ Duty Factor

3.4 Unwanted Emissions Measurement

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

3.4.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

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

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

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

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

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.

3.4.2 Measuring Instruments

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

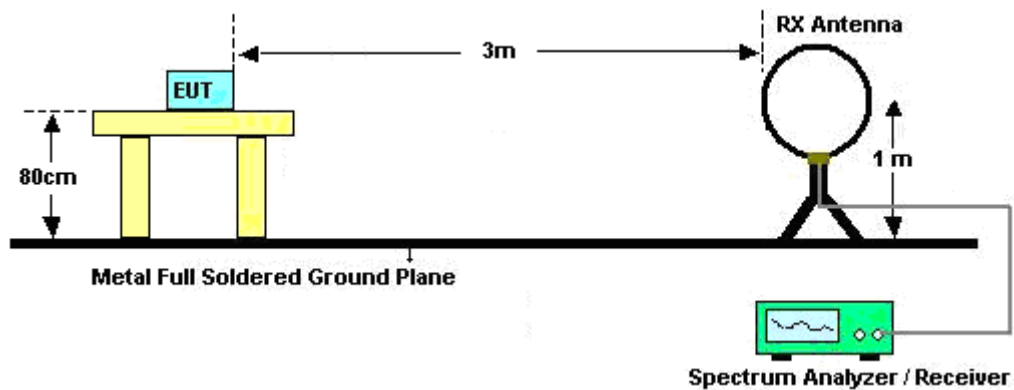
3.4.3 Test Procedures

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

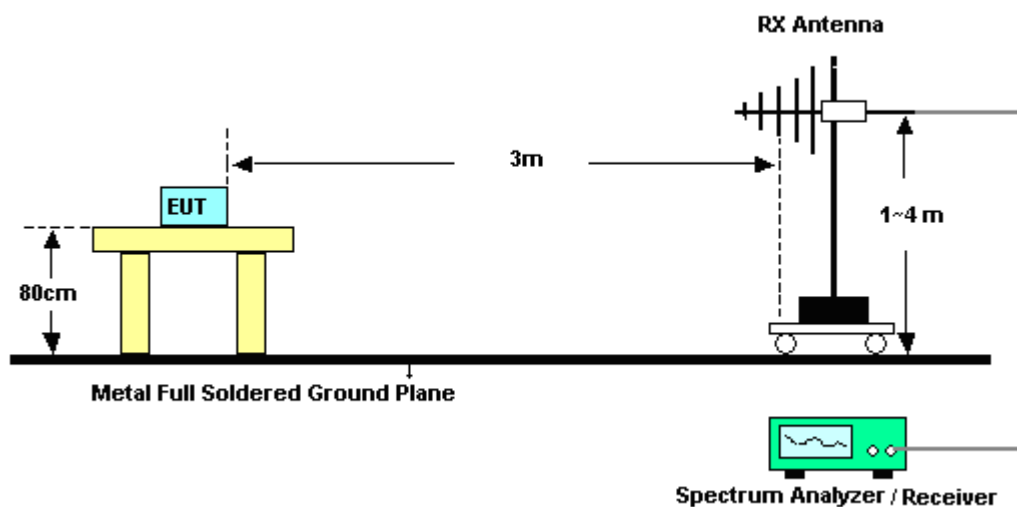
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit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

3.4.4 Test Setup

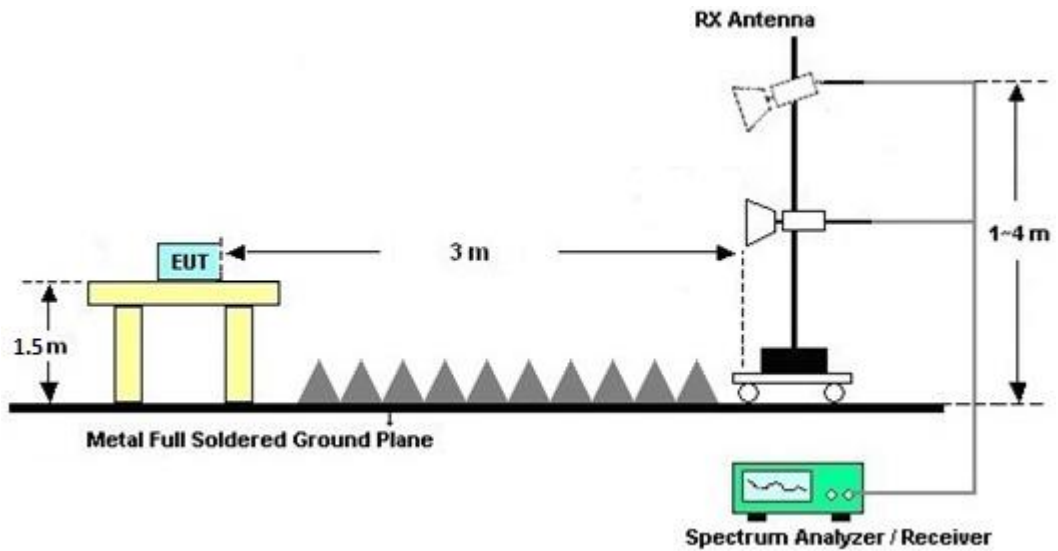
For radiated emissions below 30MHz



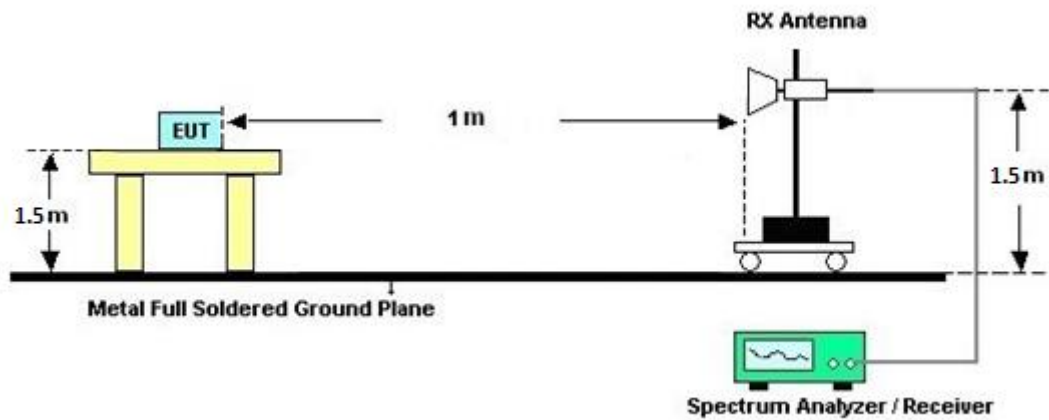
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





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

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

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

3.4.6 Test Result of Radiated Band Edges

Please refer to Appendix C and D.

3.4.7 Duty Cycle

Please refer to Appendix E.

3.4.8 Test Result of 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 μ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

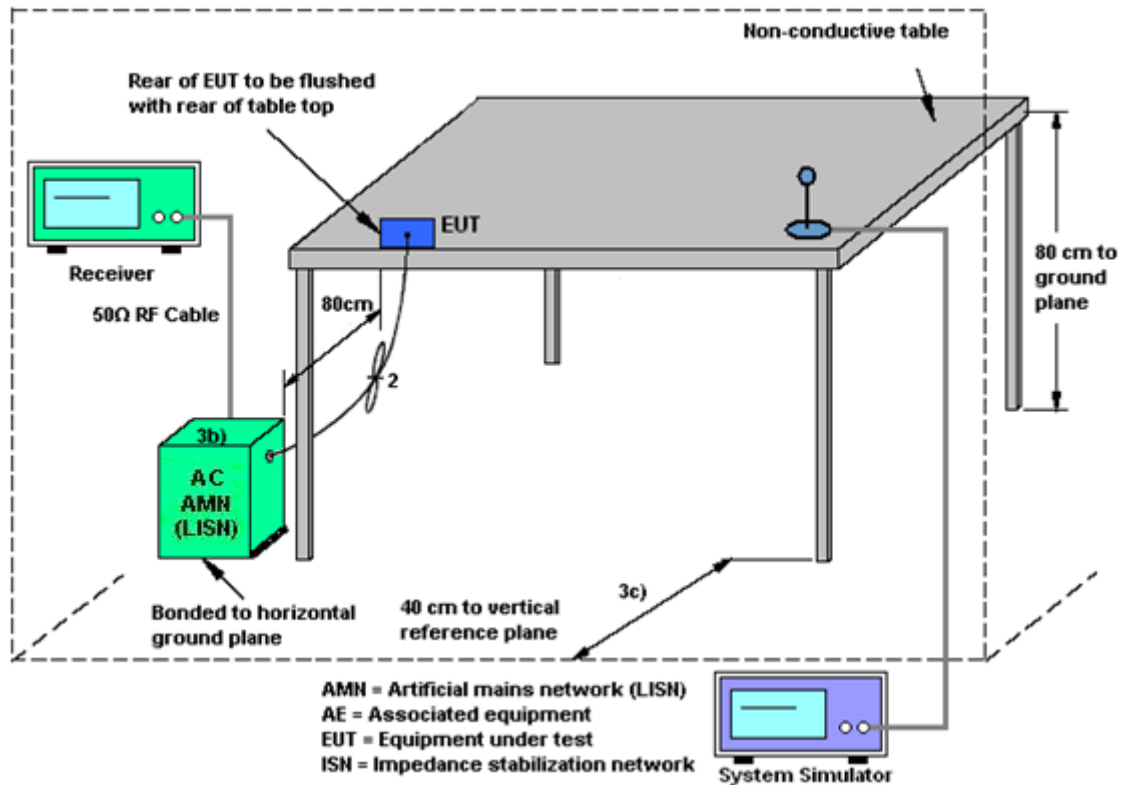
3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

3.5.4 Test Setup



3.5.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

3.6 Antenna Requirements

3.6.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

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

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

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

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

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



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

<CDD Modes>						
			DG	DG	Power	PSD
			for	for	Limit	Limit
	Ant. 4	Ant. 3	Power	PSD	Reduction	Reduction
	(dBi)	(dBi)	(dBi)	(dBi)	(dB)	(dB)
Band IV	-2.50	-3.80	-2.50	-0.12	0.00	0.00

Power Limit Reduction = DG(Power) – 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) – 6dBi, (min = 0)

Calculation example:

The DG for PSD is derived from formula is

$$10 \times \log \left\{ \left[10^{(-2.50 \text{ dBi} / 20)} + 10^{(-3.80 \text{ dBi} / 20)} \right]^2 / 2 \right\} \\ = -0.12 \text{ dBi}$$



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 07, 2021	Apr. 13, 2022~May 18, 2022	Sep. 06, 2022	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N-06	47020 & 06	30MHz to 1GHz	Oct. 09, 2021	Apr. 13, 2022~May 18, 2022	Oct. 08, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1G~18GHz	Aug. 04, 2021	Apr. 13, 2022~May 18, 2022	Aug. 03, 2022	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	00993	18GHz ~40GHz	Nov. 30, 2021	Apr. 13, 2022~May 18, 2022	Nov. 29, 2022	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1G	Jul. 05, 2021	Apr. 13, 2022~May 18, 2022	Jul. 04, 2022	Radiation (03CH16-HY)
Amplifier	EMCI	EMC051845SE	980729	1-18GHz	Jul. 09, 2021	Apr. 13, 2022~May 18, 2022	Jul. 08, 2022	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Apr. 13, 2022~May 18, 2022	Jun. 21, 2022	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 09, 2021	Apr. 13, 2022~May 18, 2022	Dec. 08, 2022	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A	MY59053012	3Hz~26.5GHz	Nov. 18, 2021	Apr. 13, 2022~May 18, 2022	Nov. 17, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11680/4PE	NA	Aug. 28, 2021	Apr. 13, 2022~May 18, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11688/4PE	NA	Aug. 28, 2021	Apr. 13, 2022~May 18, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-5757	NA	Aug. 28, 2021	Apr. 13, 2022~May 18, 2022	Aug. 27, 2022	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Apr. 13, 2022~May 18, 2022	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Apr. 13, 2022~May 18, 2022	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Apr. 13, 2022~May 18, 2022	N/A	Radiation (03CH16-HY)
Hygrometer	TECEPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Mar. 24, 2022~May 21, 2022	Nov. 15, 2022	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Mar. 24, 2022~May 21, 2022	Dec. 15, 2022	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Mar. 24, 2022~May 21, 2022	Aug. 29, 2022	Conducted (TH05-HY)
Switch Control Mainframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Mar. 24, 2022~May 21, 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-FN	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
--	--------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 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 (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2 dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
--	--------

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu	Temperature:	21~25	°C
Test Date:	2022/3/24~2022/5/21	Relative Humidity:	51~54	%

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

Band IV 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	149	5745	24.73	23.18	41.15	39.40	16.44	16.39	0.5	Pass
11a	6Mbps	2	157	5785	24.63	24.13	40.60	39.60	16.39	16.39	0.5	Pass
11a	6Mbps	2	165	5825	24.33	23.68	39.95	39.25	16.44	16.39	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 4	Ant 3	SUM	Ant 4	Ant 3	Ant 4	Ant 3	
11a	6Mbps	2	149	5745	21.20	20.90	24.06	30.00		-2.50		Pass
11a	6Mbps	2	157	5785	21.50	21.10	24.31	30.00		-2.50		Pass
11a	6Mbps	2	165	5825	21.20	21.10	24.16	30.00		-2.50		Pass
HT20	MCS0	2	149	5745	21.20	20.90	24.06	30.00		-2.50		Pass
HT20	MCS0	2	157	5785	21.40	21.10	24.26	30.00		-2.50		Pass
HT20	MCS0	2	165	5825	21.20	21.00	24.11	30.00		-2.50		Pass
HT40	MCS0	2	151	5755	21.60	20.70	24.18	30.00		-2.50		Pass
HT40	MCS0	2	159	5795	21.60	20.70	24.18	30.00		-2.50		Pass
VHT20	MCS0	2	149	5745	21.30	21.00	24.16	30.00		-2.50		Pass
VHT20	MCS0	2	157	5785	21.50	21.20	24.36	30.00		-2.50		Pass
VHT20	MCS0	2	165	5825	21.30	21.10	24.21	30.00		-2.50		Pass
VHT40	MCS0	2	151	5755	21.70	20.80	24.28	30.00		-2.50		Pass
VHT40	MCS0	2	159	5795	21.70	20.80	24.28	30.00		-2.50		Pass
VHT80	MCS0	2	155	5775	21.60	20.80	24.23	30.00		-2.50		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV MIMO																
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
					Ant 4	Ant 3	Ant 4	Ant 3	Ant 4	Ant 3	SUM	Ant 4	Ant 3	Ant 4	Ant 3	
11a	6Mbps	2	149	5745	0.31	0.30	2.22		6.66	6.49	9.67	30.00		-0.12		Pass
11a	6Mbps	2	157	5785	0.31	0.30	2.22		7.04	6.41	10.05	30.00		-0.12		Pass
11a	6Mbps	2	165	5825	0.31	0.30	2.22		6.73	6.50	9.74	30.00		-0.12		Pass

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)

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

Band IV 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	149	5745	Full	25.62	25.02	45.00	45.90	18.84	17.89	0.5	Pass
HE20	MCS0	2	157	5785	Full	25.82	25.82	46.75	46.25	18.64	18.24	0.5	Pass
HE20	MCS0	2	165	5825	Full	25.42	25.32	47.35	47.35	18.94	18.99	0.5	Pass
HE40	MCS0	2	151	5755	Full	53.75	48.45	91.30	81.35	37.51	37.51	0.5	Pass
HE40	MCS0	2	159	5795	Full	50.85	46.45	88.61	82.33	37.51	37.33	0.5	Pass
HE80	MCS0	2	155	5775	Full	78.40	77.92	179.98	161.83	75.96	75.96	0.5	Pass

TEST RESULTS DATA
Average Power Table

Band IV MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 4	Ant 3	SUM	Ant 4	Ant 3	Ant 4	Ant 3	
HE20	MCS0	2	149	5745	Full	21.40	21.10	24.26	30.00		-2.50		Pass
HE20	MCS0	2	149	5745	26/0	12.30	11.80	15.07	30.00		-2.50		Pass
HE20	MCS0	2	149	5745	52/37	15.40	14.80	18.12	30.00		-2.50		Pass
HE20	MCS0	2	149	5745	106/53	18.00	17.90	20.96	30.00		-2.50		Pass
HE20	MCS0	2	157	5785	Full	21.60	21.30	24.46	30.00		-2.50		Pass
HE20	MCS0	2	157	5785	26/4	12.40	11.90	15.17	30.00		-2.50		Pass
HE20	MCS0	2	157	5785	52/38	15.40	14.70	18.07	30.00		-2.50		Pass
HE20	MCS0	2	157	5785	106/53	18.30	18.00	21.16	30.00		-2.50		Pass
HE20	MCS0	2	165	5825	Full	21.40	21.20	24.31	30.00		-2.50		Pass
HE20	MCS0	2	165	5825	26/8	11.90	11.40	14.67	30.00		-2.50		Pass
HE20	MCS0	2	165	5825	52/40	14.80	14.40	17.61	30.00		-2.50		Pass
HE20	MCS0	2	165	5825	106/54	17.80	17.80	20.81	30.00		-2.50		Pass
HE40	MCS0	2	151	5755	Full	21.80	20.90	24.38	30.00		-2.50		Pass
HE40	MCS0	2	159	5795	Full	21.80	20.90	24.38	30.00		-2.50		Pass
HE80	MCS0	2	155	5775	Full	21.70	20.90	24.33	30.00		-2.50		Pass

TEST RESULTS DATA
Power Spectral Density

Band IV MIMO																	
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	RU Config	Duty Factor (dB)		10log (500kHz /RBW) Factor (dB)		Average Power Density with Duty Factor (dBm/500kHz)			Average PSD Limit (dBm/500kHz)		DG (dBi)		Pass /Fail
						Ant 4	Ant 3	Ant 4	Ant 3	Ant 4	Ant 3	SUM	Ant 4	Ant 3	Ant 4	Ant 3	
HE20	MCS0	2	149	5745	Full	0.18	0.18	2.22		6.10	5.83	9.11	30.00		-0.12	Pass	
HE20	MCS0	2	149	5745	26/0	0.48	0.49	2.22		6.01	5.60	9.02	30.00		-0.12	Pass	
HE20	MCS0	2	149	5745	52/37	0.52	0.52	2.22		6.01	5.53	9.02	30.00		-0.12	Pass	
HE20	MCS0	2	149	5745	106/53	0.58	0.60	2.22		5.94	5.62	8.95	30.00		-0.12	Pass	
HE20	MCS0	2	157	5785	Full	0.18	0.18	2.22		6.39	5.78	9.40	30.00		-0.12	Pass	
HE20	MCS0	2	157	5785	26/4	0.48	0.49	2.22		6.08	5.70	9.09	30.00		-0.12	Pass	
HE20	MCS0	2	157	5785	52/38	0.52	0.52	2.22		6.10	5.48	9.11	30.00		-0.12	Pass	
HE20	MCS0	2	157	5785	106/53	0.58	0.60	2.22		6.13	5.73	9.14	30.00		-0.12	Pass	
HE20	MCS0	2	165	5825	Full	0.18	0.18	2.22		6.10	5.90	9.11	30.00		-0.12	Pass	
HE20	MCS0	2	165	5825	26/8	0.48	0.49	2.22		5.96	5.41	8.97	30.00		-0.12	Pass	
HE20	MCS0	2	165	5825	52/40	0.52	0.52	2.22		5.81	5.42	8.82	30.00		-0.12	Pass	
HE20	MCS0	2	165	5825	106/54	0.58	0.60	2.22		5.89	5.70	8.90	30.00		-0.12	Pass	
HE40	MCS0	2	151	5755	Full	0.34	0.35	2.22		3.30	2.79	6.31	30.00		-0.12	Pass	
HE40	MCS0	2	159	5795	Full	0.34	0.35	2.22		3.25	2.66	6.26	30.00		-0.12	Pass	
HE80	MCS0	2	155	5775	Full	0.65	0.65	2.22		0.42	-0.19	3.43	30.00		-0.12	Pass	

Note: PSD Sum = Max PSD(Ant. 1, Ant. 2) + 10 log (n)



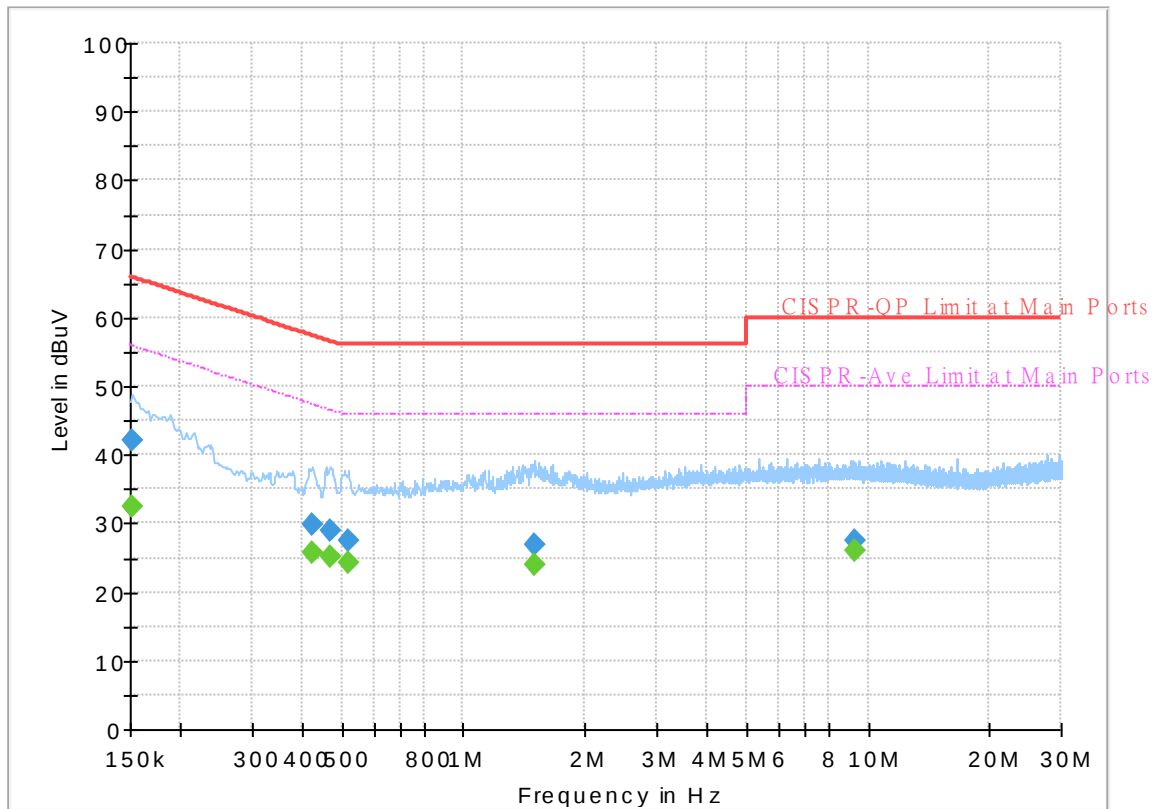
Appendix B. AC Conducted Emission Test Results

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

EUT Information

Report NO : 1O2843-05
Test Mode : Mode 1
Test Voltage : 120Vac/60Hz
Phase : Line

Full Spectrum



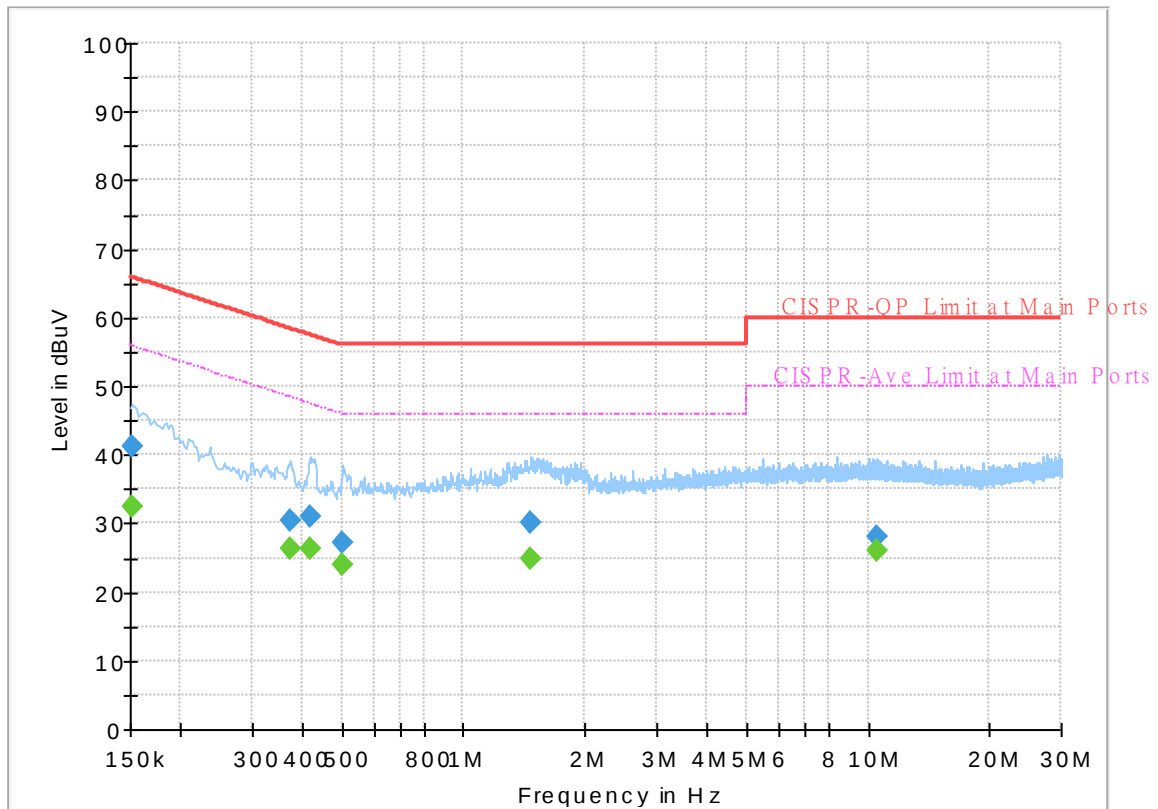
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	32.54	55.88	23.34	L1	OFF	19.6
0.152250	42.16	---	65.88	23.72	L1	OFF	19.6
0.424500	---	25.87	47.36	21.49	L1	OFF	19.6
0.424500	29.80	---	57.36	27.56	L1	OFF	19.6
0.467250	---	25.16	46.56	21.40	L1	OFF	19.6
0.467250	28.84	---	56.56	27.72	L1	OFF	19.6
0.519000	---	24.31	46.00	21.69	L1	OFF	19.6
0.519000	27.61	---	56.00	28.39	L1	OFF	19.6
1.493250	---	23.95	46.00	22.05	L1	OFF	19.7
1.493250	26.98	---	56.00	29.02	L1	OFF	19.7
9.330000	---	25.96	50.00	24.04	L1	OFF	20.0
9.330000	27.52	---	60.00	32.48	L1	OFF	20.0

EUT Information

Report NO : 1O2843-05
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	---	32.41	55.88	23.47	N	OFF	19.6
0.152250	41.09	---	65.88	24.79	N	OFF	19.6
0.372750	---	26.29	48.44	22.15	N	OFF	19.6
0.372750	30.35	---	58.44	28.09	N	OFF	19.6
0.417750	---	26.38	47.49	21.11	N	OFF	19.6
0.417750	31.02	---	57.49	26.47	N	OFF	19.6
0.503250	---	23.94	46.00	22.06	N	OFF	19.6
0.503250	27.12	---	56.00	28.88	N	OFF	19.6
1.473000	---	24.91	46.00	21.09	N	OFF	19.7
1.473000	30.22	---	56.00	25.78	N	OFF	19.7
10.473000	---	26.13	50.00	23.87	N	OFF	20.1
10.473000	27.96	---	60.00	32.04	N	OFF	20.1



Appendix C. Radiated Spurious Emission

Test Engineer :	Karl Hou, Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~60%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Margin Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5635.8	56.73	-11.47	68.2	40.15	33.27	12.9	29.59	100	60	P	H
		5693.6	62.78	-37.7	100.48	46.15	33.3	12.93	29.6	100	60	P	H
		5718.8	72.77	-37.69	110.46	56.02	33.41	12.95	29.61	100	60	P	H
		5724.4	84.95	-35.88	120.83	68.16	33.45	12.95	29.61	100	60	P	H
	*	5745	114.73	-	-	97.81	33.57	12.96	29.61	100	60	P	H
	*	5745	106.98	-	-	90.06	33.57	12.96	29.61	100	60	A	H
													H
													H
		5609.6	55.72	-12.48	68.2	39.2	33.22	12.89	29.59	339	113	P	V
		5696	60.8	-41.45	102.25	44.18	33.3	12.93	29.61	339	113	P	V
		5719.8	74.58	-36.16	110.74	57.82	33.42	12.95	29.61	339	113	P	V
		5724.4	84.94	-35.89	120.83	68.15	33.45	12.95	29.61	339	113	P	V
	*	5745	113.46	-	-	96.54	33.57	12.96	29.61	339	113	P	V
	*	5745	105.73	-	-	88.81	33.57	12.96	29.61	339	113	A	V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 157 5785MHz		5645.8	55.99	-12.21	68.2	39.39	33.29	12.91	29.6	100	60	P	H
		5654.6	55.46	-16.16	71.62	38.85	33.3	12.91	29.6	100	60	P	H
		5719.2	59.39	-51.19	110.58	42.63	33.42	12.95	29.61	100	60	P	H
		5723	55.66	-61.98	117.64	38.88	33.44	12.95	29.61	100	60	P	H
	*	5785	114.06	-	-	97.03	33.67	12.98	29.62	100	60	P	H
	*	5785	106.58	-	-	89.55	33.67	12.98	29.62	100	60	A	H
		5853.6	55.68	-58.31	113.99	38.49	34	12.82	29.63	100	60	P	H
		5868	56.09	-51.07	107.16	38.96	34	12.77	29.64	100	60	P	H
		5894.6	55.96	-34.7	90.66	38.92	34	12.68	29.64	100	60	P	H
		5943	55.25	-12.95	68.2	38.28	34.09	12.53	29.65	100	60	P	H
													H
													H
		5601.8	55.69	-12.51	68.2	39.2	33.2	12.88	29.59	298	110	P	V
		5671.4	56.04	-28.04	84.08	39.42	33.3	12.92	29.6	298	110	P	V
		5718.2	54.78	-55.52	110.3	38.03	33.41	12.95	29.61	298	110	P	V
		5725	58.34	-63.86	122.2	41.55	33.45	12.95	29.61	298	110	P	V
	*	5785	113.27	-	-	96.24	33.67	12.98	29.62	298	110	P	V
	*	5785	105.34	-	-	88.31	33.67	12.98	29.62	298	110	A	V
		5850.6	55.51	-65.32	120.83	38.31	34	12.83	29.63	298	110	P	V
		5857.8	55.6	-54.41	110.01	38.43	34	12.8	29.63	298	110	P	V
		5901.2	56	-29.77	85.77	38.98	34	12.66	29.64	298	110	P	V
		5934.8	55.15	-13.05	68.2	38.18	34.07	12.55	29.65	298	110	P	V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 165 5825MHz	*	5825	113.98	-	-	96.85	33.85	12.91	29.63	100	59	P	H
	*	5825	106.01	-	-	88.88	33.85	12.91	29.63	100	59	A	H
		5853.2	71.1	-43.8	114.9	53.91	34	12.82	29.63	100	59	P	H
		5857.2	68.39	-41.79	110.18	51.22	34	12.8	29.63	100	59	P	H
		5877.4	63.21	-40.21	103.42	46.11	34	12.74	29.64	100	59	P	H
		5947.8	55.94	-12.26	68.2	38.98	34.1	12.51	29.65	100	59	P	H
													H
													H
	*	5825	112.54	-	-	95.41	33.85	12.91	29.63	280	142	P	V
	*	5825	105.05	-	-	87.92	33.85	12.91	29.63	280	142	A	V
		5850.2	72.7	-49.04	121.74	55.5	34	12.83	29.63	280	142	P	V
		5855.4	67.51	-43.18	110.69	50.33	34	12.81	29.63	280	142	P	V
		5875.4	59.69	-45.21	104.9	42.59	34	12.74	29.64	280	142	P	V
		5949.6	55.06	-13.14	68.2	38.11	34.1	12.5	29.65	280	142	P	V
													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 802.11a (Harmonic @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 149 5745MHz		11488	47.32	-26.68	74	44.25	38.85	19.23	55.01	-	-	P	H
		14471	48.91	-25.09	74	41.1	40.4	21.73	54.32	-	-	P	H
		14471	42.47	-11.53	54	34.66	40.4	21.73	54.32	-	-	A	H
		17235	49.36	-18.84	68.2	42.13	37.81	25.11	55.69	-	-	P	H
		17235	38.4	-15.6	54	31.17	37.81	25.11	55.69	-	-	A	H
		17967	53.5	-20.5	74	41.88	42.74	25.46	56.58	-	-	P	H
		17967	43.4	-10.6	54	31.78	42.74	25.46	56.58	-	-	A	H
													H
													H
													H
													H
													H
		11490	48.8	-25.2	74	45.74	38.84	19.23	55.01	100	122	P	V
		11490	39.13	-14.87	54	36.07	38.84	19.23	55.01	100	122	A	V
		14471	48.72	-25.28	74	40.91	40.4	21.73	54.32	-	-	P	V
		14471	42.27	-11.73	54	34.46	40.4	21.73	54.32	-	-	A	V
		17235	52.72	-15.48	68.2	45.49	37.81	25.11	55.69	-	-	P	V
		17934	53.14	-20.86	74	41.78	42.47	25.45	56.56	-	-	P	V
		17934	42.69	-11.31	54	31.33	42.47	25.45	56.56	-	-	A	V
													V
													V
													V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 157 5785MHz		11570	46.96	-27.04	74	43.87	38.8	19.27	54.98	-	-	P	H
		14471	48.76	-25.24	74	40.95	40.4	21.73	54.32	-	-	P	H
		14471	42.55	-11.45	54	34.74	40.4	21.73	54.32	-	-	A	H
		17355	48.39	-19.81	68.2	41.01	38.17	25.16	55.95	-	-	P	H
		17978	53.27	-20.73	74	41.57	42.82	25.47	56.59	-	-	P	H
		17978	43.15	-10.85	54	31.45	42.82	25.47	56.59	-	-	A	H
													H
													H
													H
													H
													H
													H
		11570	47.84	-26.16	74	44.75	38.8	19.27	54.98	-	-	P	V
		14471	49.83	-24.17	74	42.02	40.4	21.73	54.32	-	-	P	V
		14471	42.34	-11.66	54	34.53	40.4	21.73	54.32	-	-	A	V
		17355	50.38	-17.82	68.2	43	38.17	25.16	55.95	-	-	P	V
		17956	53.27	-20.73	74	41.73	42.65	25.46	56.57	-	-	P	V
		17956	43.1	-10.9	54	31.56	42.65	25.46	56.57	-	-	A	V
													V
													V
													V
													V
													V
													V

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant. 4+3		(MHz)	(dBμV/m)	Limit (dB)	Line (dBμV/m)	Level (dBμV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V)	
802.11a CH 165 5825MHz		11650	47.04	-26.96	74	43.99	38.7	19.3	54.95	-	-	P	H	
		14471	48.04	-25.96	74	40.23	40.4	21.73	54.32	-	-	P	H	
		14471	42.66	-11.34	54	34.85	40.4	21.73	54.32	-	-	A	H	
		17475	47.37	-20.83	68.2	39.91	38.45	25.22	56.21	-	-	P	H	
		17945	53.48	-20.52	74	42.03	42.56	25.45	56.56	-	-	P	H	
		17945	42.84	-11.16	54	31.39	42.56	25.45	56.56	-	-	A	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
		11650	47.11	-26.89	74	44.06	38.7	19.3	54.95	-	-	P	V	
		14471	48.71	-25.29	74	40.9	40.4	21.73	54.32	-	-	P	V	
		14471	42.36	-11.64	54	34.55	40.4	21.73	54.32	-	-	A	V	
		17475	48.73	-19.47	68.2	41.27	38.45	25.22	56.21	-	-	P	V	
		17978	53.8	-20.2	74	42.1	42.82	25.47	56.59	-	-	P	V	
		17978	43.17	-10.83	54	31.47	42.82	25.47	56.59	-	-	A	V	
														V
														V
														V
														V
														V
													V	
Remark	1. No other spurious found.													
	2. All results are PASS against Peak and Average limit line.													
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.													
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.													



Band 4 5725~5850MHz

WIFI 802.11ax HE20_Full (Band Edge @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 149 5745MHz		5602	56.22	-11.98	68.2	39.73	33.2	12.88	29.59	100	59	P	H
		5687.8	63.18	-33.02	96.2	46.55	33.3	12.93	29.6	100	59	P	H
		5719.8	78.25	-32.49	110.74	61.49	33.42	12.95	29.61	100	59	P	H
		5723.8	87.16	-32.3	119.46	70.38	33.44	12.95	29.61	100	59	P	H
	*	5745	114.69	-	-	97.77	33.57	12.96	29.61	100	59	P	H
	*	5745	104.97	-	-	88.05	33.57	12.96	29.61	100	59	A	H
													H
													H
		5620.8	56.17	-12.03	68.2	39.63	33.24	12.89	29.59	320	114	P	V
		5687.4	60.61	-35.3	95.91	43.98	33.3	12.93	29.6	320	114	P	V
		5719.6	78.44	-32.25	110.69	61.68	33.42	12.95	29.61	320	114	P	V
		5725	85.63	-36.57	122.2	68.84	33.45	12.95	29.61	320	114	P	V
	*	5745	113.52	-	-	96.6	33.57	12.96	29.61	320	114	P	V
	*	5745	103.87	-	-	86.95	33.57	12.96	29.61	320	114	A	V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 157 5785MHz		5642.6	55.53	-12.67	68.2	38.94	33.29	12.9	29.6	103	58	P	H
		5663.4	56.23	-21.92	78.15	39.62	33.3	12.91	29.6	103	58	P	H
		5720	57.02	-53.78	110.8	40.26	33.42	12.95	29.61	103	58	P	H
		5720.2	57.29	-53.97	111.26	40.53	33.42	12.95	29.61	103	58	P	H
	*	5785	114.64	-	-	97.61	33.67	12.98	29.62	103	58	P	H
	*	5785	104.44	-	-	87.41	33.67	12.98	29.62	103	58	A	H
		5853.8	56.21	-57.33	113.54	39.02	34	12.82	29.63	103	58	P	H
		5861.6	57.15	-51.8	108.95	40	34	12.79	29.64	103	58	P	H
		5919.6	55.48	-16.7	72.18	38.49	34.04	12.6	29.65	103	58	P	H
		5926.6	55.54	-12.66	68.2	38.56	34.05	12.58	29.65	103	58	P	H
													H
													H
		5619.6	56.07	-12.13	68.2	39.53	33.24	12.89	29.59	299	108	P	V
		5651.8	55.47	-14.07	69.54	38.86	33.3	12.91	29.6	299	108	P	V
		5720	57.72	-53.08	110.8	40.96	33.42	12.95	29.61	299	108	P	V
		5720	57.72	-53.08	110.8	40.96	33.42	12.95	29.61	299	108	P	V
	*	5785	112.84	-	-	95.81	33.67	12.98	29.62	299	108	P	V
	*	5785	102.85	-	-	85.82	33.67	12.98	29.62	299	108	A	V
		5851	54.81	-65.11	119.92	37.62	34	12.82	29.63	299	108	P	V
		5858.2	55.97	-53.93	109.9	38.8	34	12.8	29.63	299	108	P	V
		5922.4	55.38	-14.74	70.12	38.4	34.04	12.59	29.65	299	108	P	V
		5945.2	54.93	-13.27	68.2	37.97	34.09	12.52	29.65	299	108	P	V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 165 5825MHz	*	5825	113.85	-	-	96.72	33.85	12.91	29.63	100	60	P	H
	*	5825	103.78	-	-	86.65	33.85	12.91	29.63	100	60	A	H
		5850.2	78.06	-43.68	121.74	60.86	34	12.83	29.63	100	60	P	H
		5856.8	70.64	-39.66	110.3	53.46	34	12.81	29.63	100	60	P	H
		5875.6	59	-45.75	104.75	41.9	34	12.74	29.64	100	60	P	H
		5930.4	56.41	-11.79	68.2	39.43	34.06	12.57	29.65	100	60	P	H
													H
													H
	*	5825	112.44	-	-	95.31	33.85	12.91	29.63	326	135	P	V
	*	5825	102.61	-	-	85.48	33.85	12.91	29.63	326	135	A	V
		5850	77.28	-44.92	122.2	60.08	34	12.83	29.63	326	135	P	V
		5857.2	71.4	-38.78	110.18	54.23	34	12.8	29.63	326	135	P	V
		5876.6	56.2	-47.81	104.01	39.1	34	12.74	29.64	326	135	P	V
		5940.6	55.21	-12.99	68.2	38.25	34.08	12.53	29.65	326	135	P	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 HE20 Full (Harmonic @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 149 5745MHz		10880	48.38	-25.62	74	45.91	38.88	18.99	55.4	-	-	P	H
		10880	38.68	-15.32	54	36.21	38.88	18.99	55.4	-	-	A	H
		11490	47.53	-26.47	74	44.47	38.84	19.23	55.01	-	-	P	H
		14491	48.3	-25.7	74	40.48	40.4	21.75	54.33	-	-	P	H
		14491	40.22	-13.78	54	32.4	40.4	21.75	54.33	-	-	A	H
		17235	48.95	-19.25	68.2	41.72	37.81	25.11	55.69	-	-	P	H
		18000	53.56	-20.44	74	41.68	43	25.48	56.6	-	-	P	H
		18000	43.94	-10.06	54	32.06	43	25.48	56.6	-	-	A	H
													H
													H
													H
													H
		10883	48.15	-25.85	74	45.69	38.87	18.99	55.4	-	-	P	V
		10883	38.32	-15.68	54	35.86	38.87	18.99	55.4	-	-	A	V
		11490	47.82	-26.18	74	44.76	38.84	19.23	55.01	-	-	P	V
		14491	48.94	-25.06	74	41.12	40.4	21.75	54.33	-	-	P	V
		14491	39.78	-14.22	54	31.96	40.4	21.75	54.33	-	-	A	V
		17235	52.22	-15.98	68.2	44.99	37.81	25.11	55.69	-	-	P	V
		17956	53.08	-20.92	74	41.54	42.65	25.46	56.57	-	-	P	V
		17956	43.97	-10.03	54	32.43	42.65	25.46	56.57	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 157 5785MHz		10883	48.31	-25.69	74	45.85	38.87	18.99	55.4	-	-	P	H
		10883	38.76	-15.24	54	36.3	38.87	18.99	55.4	-	-	A	H
		11570	46.98	-27.02	74	43.89	38.8	19.27	54.98	-	-	P	H
		14491	48.47	-25.53	74	40.65	40.4	21.75	54.33	-	-	P	H
		14491	40.33	-13.67	54	32.51	40.4	21.75	54.33	-	-	A	H
		17355	48.54	-19.66	68.2	41.16	38.17	25.16	55.95	-	-	P	H
		17945	53.81	-20.19	74	42.36	42.56	25.45	56.56	-	-	P	H
		17945	44.05	-9.95	54	32.6	42.56	25.45	56.56	-	-	A	H
													H
													H
													H
													H
		10880	48.12	-25.88	74	45.65	38.88	18.99	55.4	-	-	P	V
		10880	38.08	-15.92	54	35.61	38.88	18.99	55.4	-	-	A	V
		11570	47.59	-26.41	74	44.5	38.8	19.27	54.98	-	-	P	V
		14491	48.93	-25.07	74	41.11	40.4	21.75	54.33	-	-	P	V
		14491	40.26	-13.74	54	32.44	40.4	21.75	54.33	-	-	A	V
		17355	49.87	-18.33	68.2	42.49	38.17	25.16	55.95	-	-	P	V
		17945	53.79	-20.21	74	42.34	42.56	25.45	56.56	-	-	P	V
		17945	43.84	-10.16	54	32.39	42.56	25.45	56.56	-	-	A	V
													V
													V
													V
													V

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.		(MHz)	(dBμV/m)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3				(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE20 Full CH 165 5825MHz		10883	48.21	-25.79	74	45.75	38.87	18.99	55.4	-	-	P	H
		10883	39.03	-14.97	54	36.57	38.87	18.99	55.4	-	-	A	H
		11650	47.6	-26.4	74	44.55	38.7	19.3	54.95	-	-	P	H
		14491	48.44	-25.56	74	40.62	40.4	21.75	54.33	-	-	P	H
		14491	40.53	-13.47	54	32.71	40.4	21.75	54.33	-	-	A	H
		17475	48.09	-20.11	68.2	40.63	38.45	25.22	56.21	-	-	P	H
		17967	54.21	-19.79	74	42.59	42.74	25.46	56.58	-	-	P	H
		17967	43.86	-10.14	54	32.24	42.74	25.46	56.58	-	-	A	H
													H
													H
													H
													H
		10880	48.09	-25.91	74	45.62	38.88	18.99	55.4	-	-	P	V
		10880	38.76	-15.24	54	36.29	38.88	18.99	55.4	-	-	A	V
		11650	47.3	-26.7	74	44.25	38.7	19.3	54.95	-	-	P	V
		14491	48.24	-25.76	74	40.42	40.4	21.75	54.33	-	-	P	V
		14491	40.31	-13.69	54	32.49	40.4	21.75	54.33	-	-	A	V
		17475	49.01	-19.19	68.2	41.55	38.45	25.22	56.21	-	-	P	V
		17967	53.53	-20.47	74	41.91	42.74	25.46	56.58	-	-	P	V
		17967	43.89	-10.11	54	32.27	42.74	25.46	56.58	-	-	A	V
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only. 4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



Band 4 5725~5850MHz

WIFI 802.11ax HE40_Full (Band Edge @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 151 5755MHz		5631.2	56.17	-12.03	68.2	39.6	33.26	12.9	29.59	100	59	P	H
		5698.2	68.98	-34.89	103.87	52.36	33.3	12.93	29.61	100	59	P	H
		5719.6	84.24	-26.45	110.69	67.48	33.42	12.95	29.61	100	59	P	H
		5723.6	86.41	-32.6	119.01	69.63	33.44	12.95	29.61	100	59	P	H
	*	5755	112.24	-	-	95.28	33.61	12.97	29.62	100	59	P	H
	*	5755	101.57	-	-	84.61	33.61	12.97	29.62	100	59	A	H
		5852.6	58.06	-58.21	116.27	40.87	34	12.82	29.63	100	59	P	H
		5856.2	58.39	-52.07	110.46	41.21	34	12.81	29.63	100	59	P	H
		5877.4	55.59	-47.83	103.42	38.49	34	12.74	29.64	100	59	P	H
		5939	54.85	-13.35	68.2	37.88	34.08	12.54	29.65	100	59	P	H
													H
													H
		5647.4	57.42	-10.78	68.2	40.82	33.29	12.91	29.6	321	116	P	V
		5699.4	68.09	-36.67	104.76	51.47	33.3	12.93	29.61	321	116	P	V
		5720	84.36	-26.44	110.8	67.6	33.42	12.95	29.61	321	116	P	V
		5723.2	85.51	-32.59	118.1	68.73	33.44	12.95	29.61	321	116	P	V
	*	5755	110.92	-	-	93.96	33.61	12.97	29.62	321	116	P	V
	*	5755	100.78	-	-	83.82	33.61	12.97	29.62	321	116	A	V
		5850.2	56.73	-65.01	121.74	39.53	34	12.83	29.63	321	116	P	V
		5858.2	56.89	-53.01	109.9	39.72	34	12.8	29.63	321	116	P	V
		5879	57.34	-44.89	102.23	40.25	34	12.73	29.64	321	116	P	V
		5949.4	57.18	-11.02	68.2	40.23	34.1	12.5	29.65	321	116	P	V
													V
													V



WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (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 159 5795MHz		5611	56.9	-11.3	68.2	40.38	33.22	12.89	29.59	100	59	P	H
		5698	58.86	-44.87	103.73	42.24	33.3	12.93	29.61	100	59	P	H
		5718.2	60.5	-49.8	110.3	43.75	33.41	12.95	29.61	100	59	P	H
		5722.4	63.88	-52.39	116.27	47.11	33.43	12.95	29.61	100	59	P	H
	*	5795	110.96	-	-	93.9	33.69	12.99	29.62	100	59	P	H
	*	5795	100.94	-	-	83.88	33.69	12.99	29.62	100	59	A	H
		5852.8	70.58	-45.24	115.82	53.39	34	12.82	29.63	100	59	P	H
		5856.4	67.64	-42.77	110.41	50.46	34	12.81	29.63	100	59	P	H
		5878.8	60.84	-41.54	102.38	43.75	34	12.73	29.64	100	59	P	H
		5925.2	55.21	-12.99	68.2	38.23	34.05	12.58	29.65	100	59	P	H
													H
													H
		5647.8	55.88	-12.32	68.2	39.27	33.3	12.91	29.6	333	117	P	V
		5679	57.12	-32.58	89.7	40.5	33.3	12.92	29.6	333	117	P	V
		5716.8	58.93	-50.98	109.91	42.2	33.4	12.94	29.61	333	117	P	V
		5725	61.32	-60.88	122.2	44.53	33.45	12.95	29.61	333	117	P	V
	*	5795	109.86	-	-	92.8	33.69	12.99	29.62	333	117	P	V
	*	5795	99.67	-	-	82.61	33.69	12.99	29.62	333	117	A	V
		5854.2	66.59	-46.03	112.62	49.41	34	12.81	29.63	333	117	P	V
		5855.2	64.1	-46.64	110.74	46.92	34	12.81	29.63	333	117	P	V
		5877.6	62.87	-40.4	103.27	45.77	34	12.74	29.64	333	117	P	V
		5942	55.45	-12.75	68.2	38.49	34.08	12.53	29.65	333	117	P	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 Limit (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 151 5755MHz		10883	48.11	-25.89	74	45.65	38.87	18.99	55.4	-	-	P	H
		10883	38.79	-15.21	54	36.33	38.87	18.99	55.4	-	-	A	H
		11510	47.8	-26.2	74	44.76	38.8	19.24	55	-	-	P	H
		14491	49.16	-24.84	74	41.34	40.4	21.75	54.33	-	-	P	H
		14491	40.48	-13.52	54	32.66	40.4	21.75	54.33	-	-	A	H
		17265	48.71	-19.49	68.2	41.45	37.9	25.11	55.75	-	-	P	H
		17956	53.68	-20.32	74	42.14	42.65	25.46	56.57	-	-	P	H
		17956	43.96	-10.04	54	32.42	42.65	25.46	56.57	-	-	A	H
													H
													H
													H
													H
		10880	48.2	-25.8	74	45.73	38.88	18.99	55.4	-	-	P	V
		10880	38.75	-15.25	54	36.28	38.88	18.99	55.4	-	-	A	V
		11510	47.4	-26.6	74	44.36	38.8	19.24	55	-	-	P	V
		14491	49.03	-24.97	74	41.21	40.4	21.75	54.33	-	-	P	V
		14491	40.31	-13.69	54	32.49	40.4	21.75	54.33	-	-	A	V
		17265	49.41	-18.79	68.2	42.15	37.9	25.11	55.75	-	-	P	V
		17956	53.9	-20.1	74	42.36	42.65	25.46	56.57	-	-	P	V
		17956	43.89	-10.11	54	32.35	42.65	25.46	56.57	-	-	A	V
													V
													V
													V
													V

[illegible]



Band 4 5725~5850MHz

WIFI 802.11ax HE80_Full (Band Edge @ 3m)

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 155 5775MHz		5645.8	61.64	-6.56	68.2	45.04	33.29	12.91	29.6	100	57	P	H
		5696.8	78.4	-24.44	102.84	61.78	33.3	12.93	29.61	100	57	P	H
		5719.2	82	-28.58	110.58	65.24	33.42	12.95	29.61	100	57	P	H
		5724.4	83.74	-37.09	120.83	66.95	33.45	12.95	29.61	100	57	P	H
	*	5775	107.72	-	-	90.71	33.65	12.98	29.62	100	57	P	H
	*	5775	98.57	-	-	81.56	33.65	12.98	29.62	100	57	A	H
		5850.2	76.64	-45.1	121.74	59.44	34	12.83	29.63	100	57	P	H
		5859	75.9	-33.78	109.68	58.73	34	12.8	29.63	100	57	P	H
		5875.4	68.48	-36.42	104.9	51.38	34	12.74	29.64	100	57	P	H
		5927.4	56.27	-11.93	68.2	39.29	34.05	12.58	29.65	100	57	P	H
													H
													H
		5646.2	60.59	-7.61	68.2	43.99	33.29	12.91	29.6	300	117	P	V
		5694.8	77.66	-23.71	101.37	61.04	33.3	12.93	29.61	300	117	P	V
		5719.2	80.65	-29.93	110.58	63.89	33.42	12.95	29.61	300	117	P	V
		5723	82.1	-35.54	117.64	65.32	33.44	12.95	29.61	300	117	P	V
	*	5775	106.89	-	-	89.88	33.65	12.98	29.62	300	117	P	V
	*	5775	97.19	-	-	80.18	33.65	12.98	29.62	300	117	A	V
		5854	77.73	-35.35	113.08	60.55	34	12.81	29.63	300	117	P	V
		5855.2	76.21	-34.53	110.74	59.03	34	12.81	29.63	300	117	P	V
		5875	70.98	-34.22	105.2	53.87	34	12.75	29.64	300	117	P	V
		5942.6	58.57	-9.63	68.2	41.6	34.09	12.53	29.65	300	117	P	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 HE80_Full (Harmonic @ 3m)

[illegible]

Emission above 18GHz

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

WIFI Ant. 4+3	Note	Frequency (MHz)	Level (dBμV/m)	Margin Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full SHF		24752	38.75	-29.45	68.2	55.67	39	-2.82	53.1	-	-	P	H
		31572	41.5	-32.5	74	59.45	40.6	-1.98	56.57	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		20432	35.91	-38.09	74	56.36	37.95	-3.5	54.9	-	-	P	V
		37396	43.64	-24.56	68.2	60.04	42.32	-1.06	57.66	-	-	P	V
													V
													V
													V
													V
													V
													V
													V
												V	
Remark	1. No other spurious found.												
	2. All results are PASS against limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												

Emission below 1GHz

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

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11ax HE80 Full LF		96.93	24.81	-18.69	43.5	39.8	15.54	1.78	32.31	-	-	P	H
		188.11	22.05	-21.45	43.5	36.99	14.82	2.48	32.24	-	-	P	H
		295.78	20.82	-25.18	46	30.75	19.29	3.07	32.29	-	-	P	H
		493.66	25.31	-20.69	46	29.78	23.93	3.96	32.36	-	-	P	H
		639.16	27.9	-18.1	46	29.66	26.31	4.44	32.51	-	-	P	H
		783.69	31.43	-14.57	46	30.78	28.04	4.89	32.28	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
		34.85	25.79	-14.21	40	34.91	22.27	0.92	32.31	-	-	P	V
		94.99	23.41	-20.09	43.5	38.76	15.2	1.76	32.31	-	-	P	V
		180.35	27.18	-16.32	43.5	41.92	15.05	2.43	32.22	-	-	P	V
		451.95	25	-21	46	30.42	23.27	3.74	32.43	-	-	P	V
		638.19	28.57	-17.43	46	30.34	26.31	4.43	32.51	-	-	P	V
		854.5	33.31	-12.69	46	30.95	29.13	5.14	31.91	-	-	P	V
													V
												V	
												V	
												V	
												V	
												V	
												V	
Remark	1. No other spurious found. 2. All results are PASS against limit line. 3. The emission position marked as “-” means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.												



Note symbol

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



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

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
4+3		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11a CH 149 5745MHz		5650	55.45	-12.75	68.2	54.51	32.22	4.58	35.86	103	308	P	H

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

For Peak Limit @ 2390MHz:

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) – 68.2(dBμV/m)
 = -12.75 (dB)

For Average Limit @ 11490MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 40.1(dB/m) + 19.23(dB) + 44.95(dBμV) – 60.62 (dB)
 = 43.66 (dBμV/m)
2. Over Limit(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 43.66(dBμV/m) – 54(dBμV/m)
 = -10.34(dB)

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



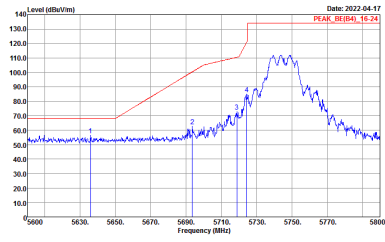
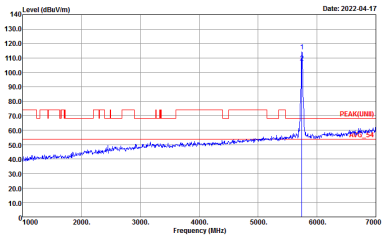
Appendix D. Radiated Spurious Emission Plots

Test Engineer :	Karl Hou, Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~60%

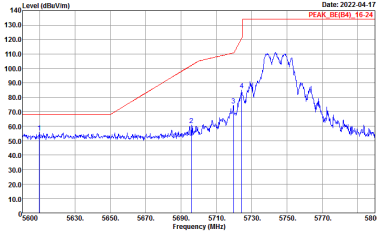
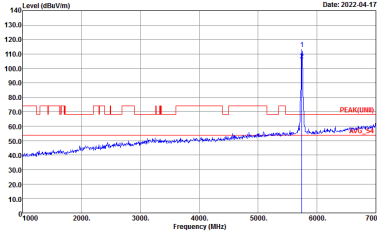
Note symbol

-L	Low channel location
-R	High channel location

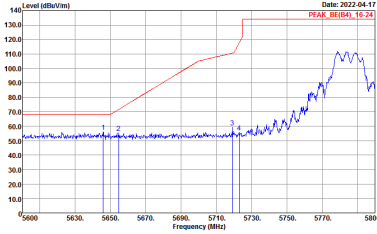
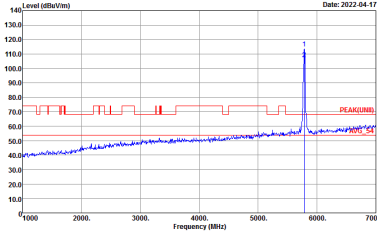
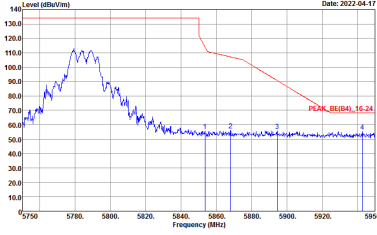
Band 4 - 5725~5850MHz
WIFI 802.11a (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-4HY Condition : PEAK_BE(84)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-4HY Condition : PEAK(UNII) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-14Y Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-14Y Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

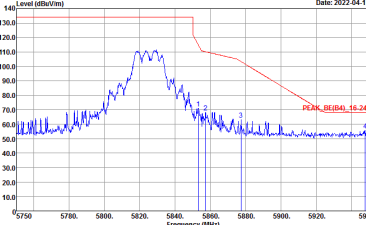
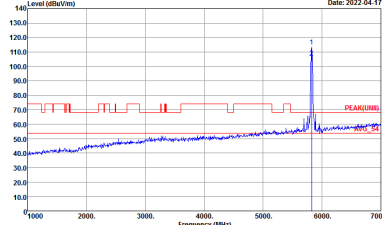


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Left blank

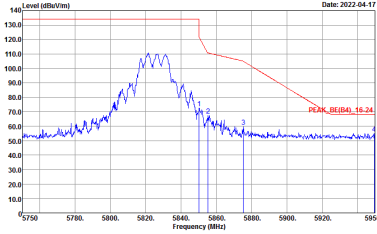
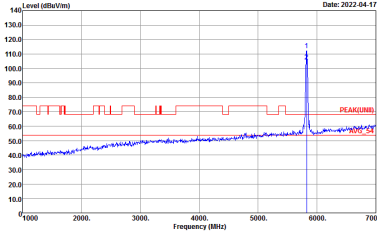


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
4+3	Vertical	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



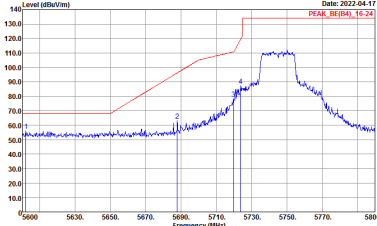
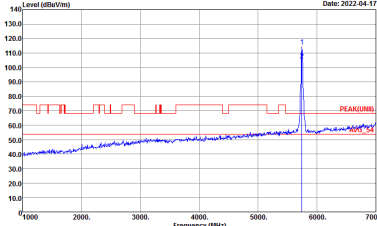
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-11Y Condition : PEAK_8E(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-11Y Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



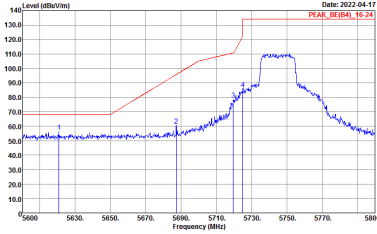
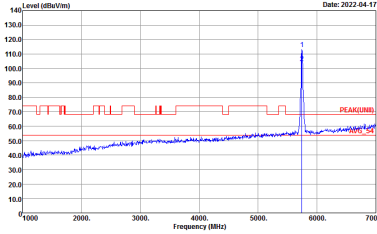
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-1FY Condition : PEAK_8E(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-1FY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



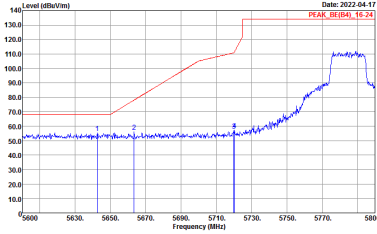
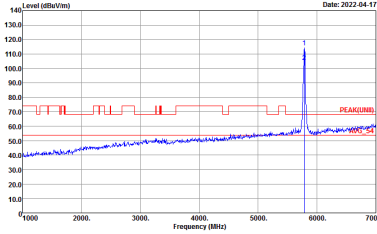
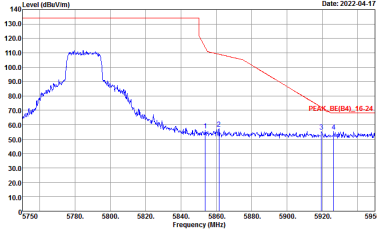
Band 4 5725~5850MHz
WIFI 802.11ax HE20 Full (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(84)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

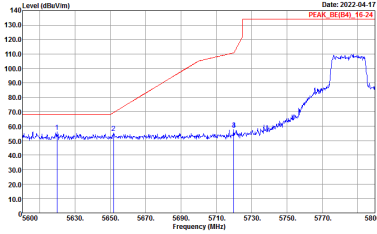
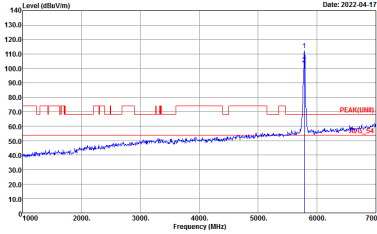
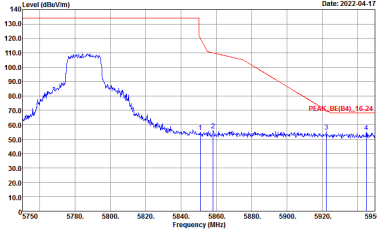


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-11Y Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-11Y Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto

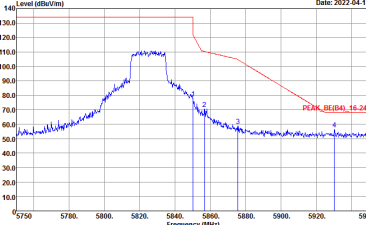
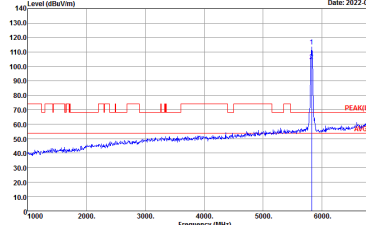


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



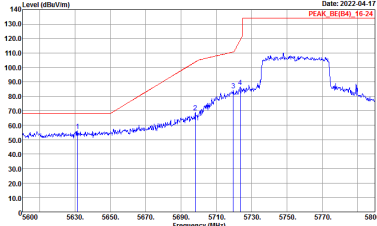
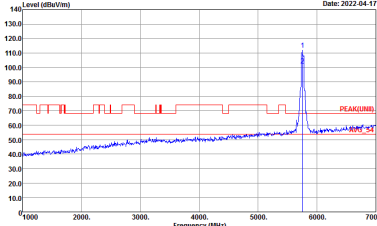
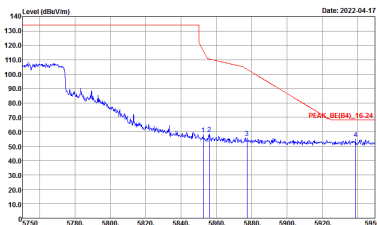
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-11Y Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-11Y Condition : PEAK(FUND) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



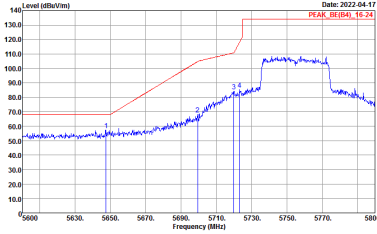
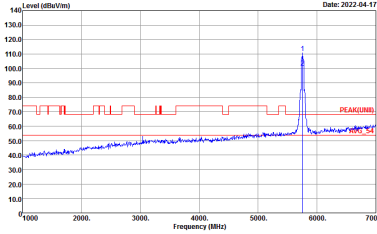
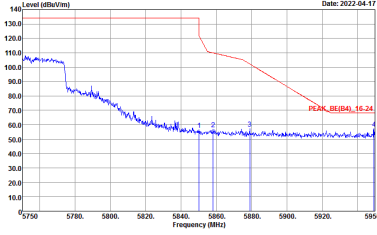
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
4+3	Vertical	Fundamental
Peak	Site : 03CH16-11Y Condition : PEAK_8E(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-11Y Condition : PEAK(UNIT)_3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto



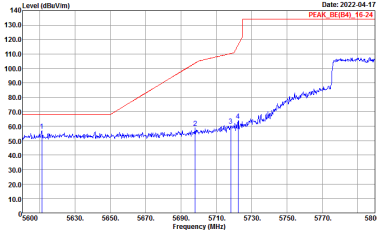
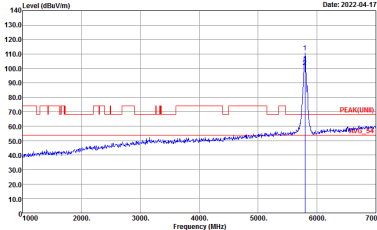
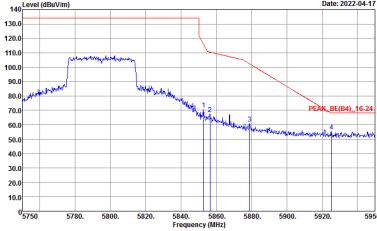
Band 4 5725~5850MHz
WIFI 802.11ax HE40 Full (Band Edge @ 3m)

WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank

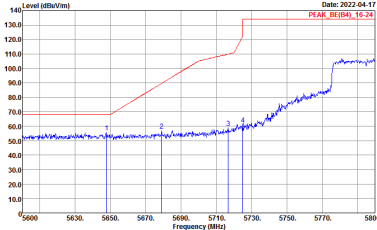
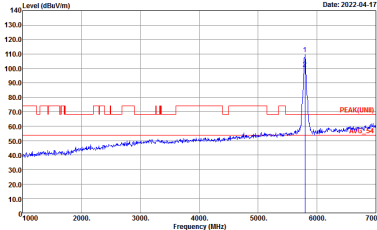
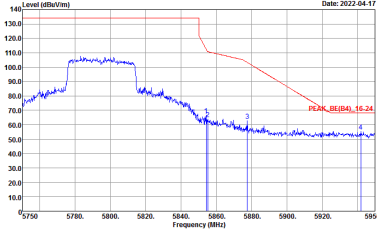


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full HT40 CH159 5795MHz	
4+3	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



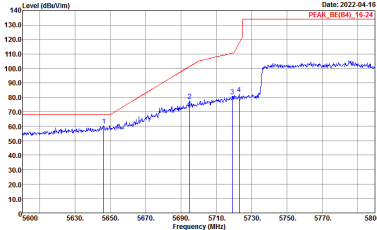
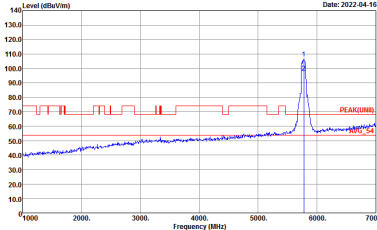
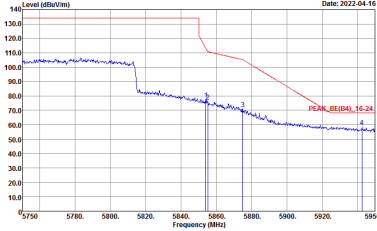
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



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

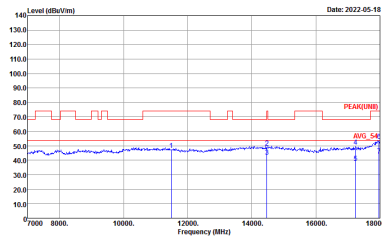
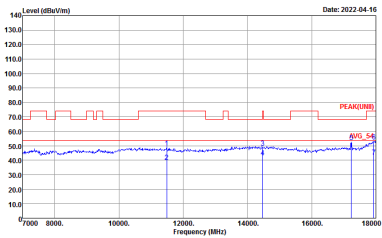
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
4+3	Horizontal	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Peak	Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



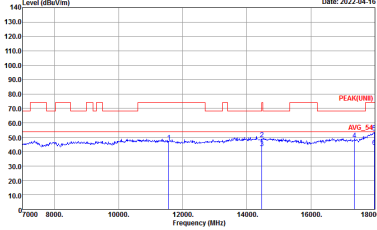
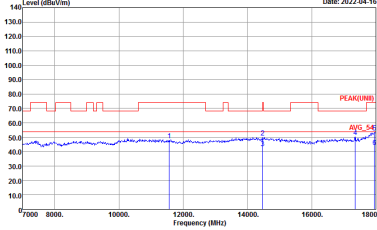
WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
4+3	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
	 Site : 03CH16-HY Condition : PEAK_BE(B4)_16-24 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank



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

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH149 5745MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNIT) 3m 91200_02114_210804 VERTICAL



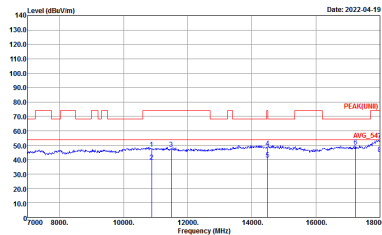
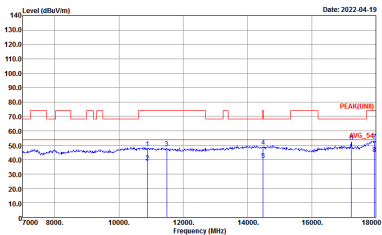
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 VERTICAL



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2022-04-16 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 HORIZONTAL	Level (dBuV/m) Date: 2022-04-16 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 VERTICAL



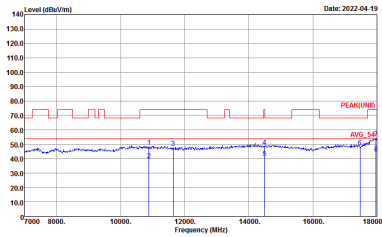
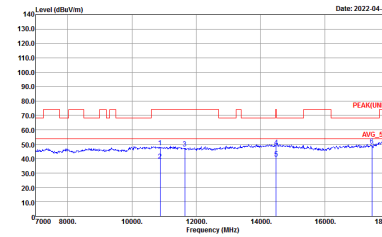
Band 4 5725~5850MHz
WIFI 802.11ax HE20 Full (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH149 5745MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNI) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNI) 3m 91200_02114_210804 VERTICAL



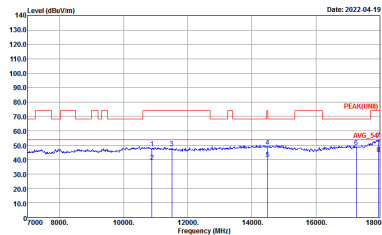
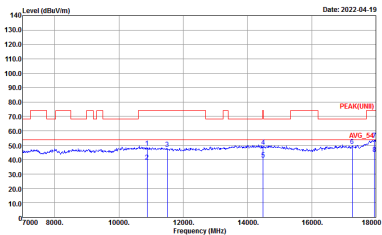
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH157 5785MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2022-04-19 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 HORIZONTAL	Level (dBuV/m) Date: 2022-04-19 Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 VERTICAL



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE20 Full CH165 5825MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2022-04-19  Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 HORIZONTAL	Level (dBuV/m) Date: 2022-04-19  Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 VERTICAL



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

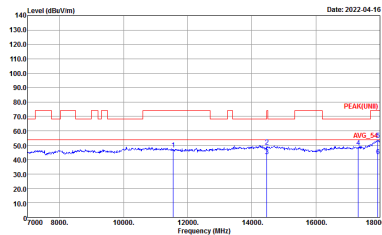
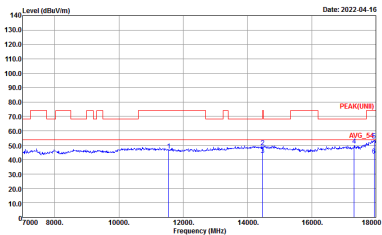
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH151 5755MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNII) 3m 91200_02114_210804 VERTICAL



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE40 Full CH159 5795MHz	
4+3	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2022-04-19 7000 8000 10000 12000 14000 16000 18000 Frequency (MHz) Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 HORIZONTAL	Level (dBuV/m) Date: 2022-04-19 7000 8000 10000 12000 14000 16000 18000 Frequency (MHz) Site : 03CH16-HY Condition : PEAK(UNII) 3m 9120b_02114_210804 VERTICAL

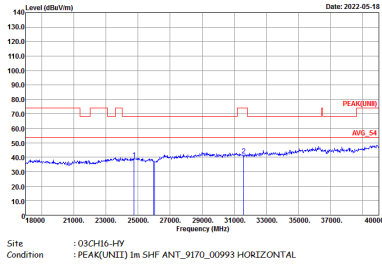
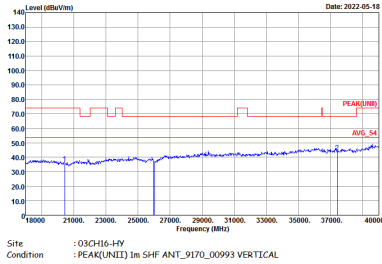


Band 4 5725~5850MHz
WIFI 802.11ax HE80 Full (Harmonic @ 3m)

WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11ax HE80 Full CH155 5775MHz	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNI) 3m 91200_02114_210804 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNI) 3m 91200_02114_210804 VERTICAL

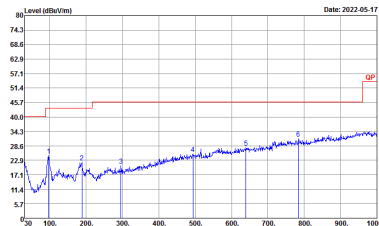
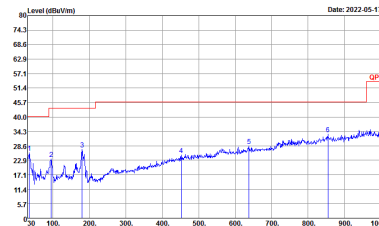


Emission above 18GHz
5GHz WIFI 802.11ax HE80 Full (SHF @ 1m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full SHF	
4+3	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK(UNII) 1m SHF ANT_9170_00993 HORIZONTAL	 Site : 03CH16-HY Condition : PEAK(UNII) 1m SHF ANT_9170_00993 VERTICAL



Emission below 1GHz
5GHz WIFI 802.11ax HE80 Full (LF @ 3m)

WIFI	5GHz WIFI	
ANT	802.11ax HE80 Full LF	
4+3	Horizontal	Vertical
QP / Peak	 Site : 03CH16-HY Condition : QP 3m 81LOG_47020_211009 HORIZONTAL	 Site : 03CH16-HY Condition : QP 3m 81LOG_47020_211009 VERTICAL



Appendix E. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
4+3	802.11a	93.77	1430	0.70	1kHz
4+3	5GHz 802.11ax HE20 Full RU	96.09	2408	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	85.95	624	1.60	3kHz

MIMO <Ant. 4+3>

802.11a



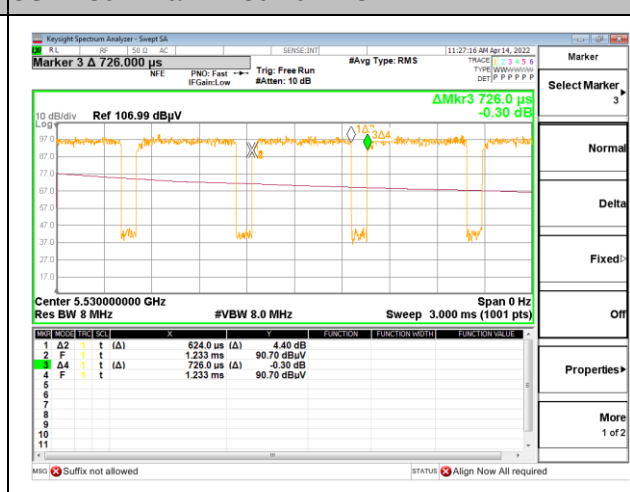
5GHz 802.11ax HE20 Full RU



5GHz 802.11ax HE40 Full RU



5GHz 802.11ax HE80 Full RU



—THE END—