



# FCC RADIO TEST REPORT

FCC ID : S9GR550  
Equipment : Wireless Access Point  
Brand Name : Ruckus  
Model Name : R550  
Applicant : Ruckus Wireless Inc.  
350 W. Java Dr., Sunnyvale CA 94089 USA  
Manufacturer : Ruckus Wireless Inc.  
350 W. Java Dr., Sunnyvale CA 94089 USA  
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jul. 06, 2022 and testing was performed from Jul. 11, 2022 to Jul. 26, 2022. We, Sporton International (USA) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Approved by: Neil Kao

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



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**History of this test report**

Report No.	Version	Description	Issue Date
FR200117001-08B	01	Initial issue of report	Aug. 08, 2022
FR200117001-08B	02	Revised the section 1.4 Revised the section 3.2.3 & 3.2.7	Aug. 22, 2022



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403(i)	26dB Bandwidth	Not Required	-
-	2.1049	99% Occupied Bandwidth	Reporting only	-
3.1	15.407(a)	Maximum Conducted Output Power	Pass	-
-	15.407(a)	Power Spectral Density	Not Required	-
3.2	15.407(b)	Unwanted Emissions	Pass	3.58 dB under the limit at 5726.200 MHz
-	15.207	AC Conducted Emission	Not Required	-
3.3	15.203 15.407(a)	Antenna Requirement	Pass	-

**Note:**

1. Not required means after assessing, test items are not necessary to carry out.
2. This is a variant report in which the section 1.1 can be referred for detailed product information and the change notes. All the test cases performed and presented in this test report are basically the worst cases identified from the original report (Sporton Report Number FR200117001D & FR200117001E) in order to validate the representativeness of the original report in the light of the change notes declared by the manufacturer.

**Conformity Assessment Condition:**

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

**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.



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n/ax, Wi-Fi 5GHz 802.11a/n/ac/ax, and Zigbee.

Product Feature	
Antenna Type	WLAN <Ant. 1>: Internal Antenna <Ant. 2>: Internal Antenna Bluetooth: Metal Antenna Zigbee: Metal Antenna

Antenna information		
5150 MHz ~ 5250 MHz	Peak Gain (dBi)	Ant. 1: 2.5 dBi Ant. 2: 1.0 dBi
5250 MHz ~ 5350 MHz	Peak Gain (dBi)	Ant. 1: 2.5 dBi Ant. 2: 1.0 dBi
5470 MHz ~ 5725 MHz	Peak Gain (dBi)	Ant. 1: 2.5 dBi Ant. 2: 1.0 dBi

**Remark:**

1. The EUT's information above is declared by manufacturer. Please refer to Comments and Explanations in report summary.
2. R550 is a product previously certified, according to the manufacturer's declaration, due to components shortage, some changes of passive components have been made to the PCB.

Hereunder is the main change list:

1. Change Wi-Fi Diplexer which needs RF schematic, layout and BOM change, needs add another two filter on 2G circuit to align with new diplexer.
2. Digital component replacements are made that require schematic, layout and BOM change.

The new design will be electrically identical to the original one as declared by the manufacturer.

- Dimensions of the PCB board and enclosure remains the same, slight change on the layout.
- Transmitting frequency does not change.
- Output power does not exceed the original modular approval.
- I/O ports are identical to original product and internal clocks are not touched.

As requested by the manufacturer, spot checks on RF portion including power check and the worst cases of radiated spurious emission identified from the original test reports are required to be performed, while EMC will be fully retested to substantiate there is no degradation of the RF parameters, no RF power increase in order to maintain the representativeness of the original test reports issued for the initial design.



### 1.2 Modification of EUT

No modifications made to the EUT during the testing.

### 1.3 Testing Location

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

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

FCC Designation No.: US1250

### 1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 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. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report



## 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: 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 adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find Y plane as worst plane.

### 2.1 Carrier Frequency and Channel

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

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2 (U-NII-2A)	52	5260	60	5300
	54*	5270	62*	5310
	56	5280	64	5320
	58#	5290		

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5725 MHz Band 3 (U-NII-2C)	100	5500	112	5560
	102*	5510	116	5580
	104	5520	132	5660
	106#	5530	134*	5670
	108	5540	136	5680
	110*	5550	140	5700



Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
Straddle Channel	138#	5690	144	5720
	142*	5710		

Note:

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

## 2.2 Test Mode

The 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
802.11ax HE40	MCS0
802.11ax HE80	MCS0

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

Ch. #		Band I : 5150-5250 MHz	Band II : 5250-5350 MHz	Band III : 5470-5725MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	-	-	-
H	High	-	-	140
Straddle		-	-	144

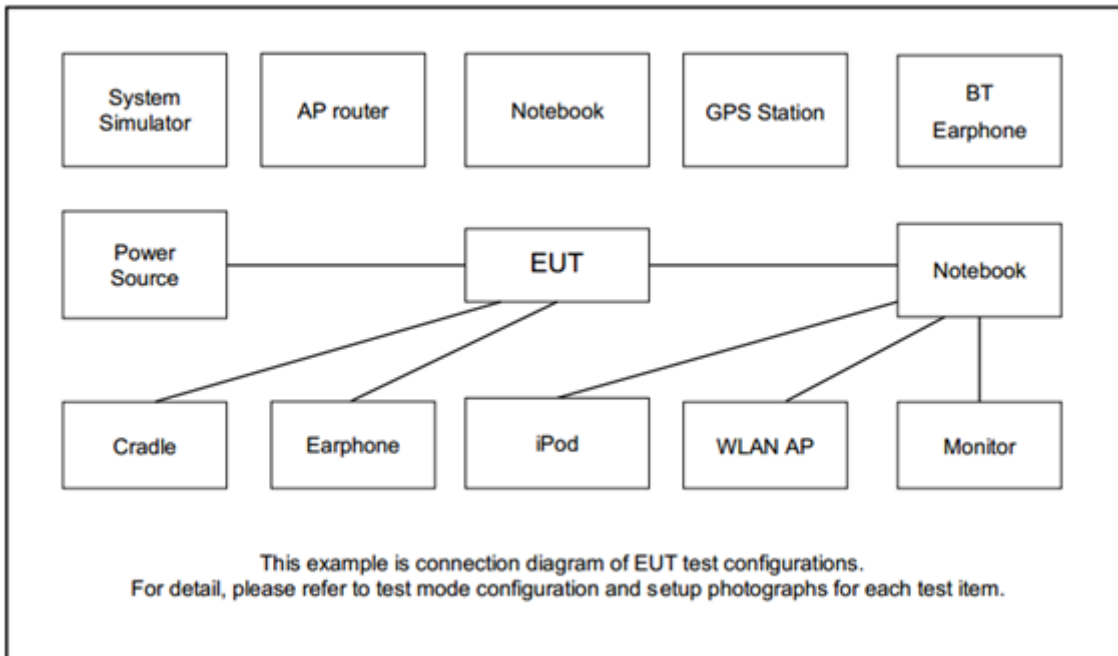
Ch. #		Band I : 5150-5250 MHz
		802.11ax HE40
L	Low	38
M	Middle	-
H	High	-
Straddle		-



Ch. #		Band II : 5250-5350 MHz	
		802.11ax HE80	
L	Low	-	
M	Middle	58	
H	High	-	
Straddle		-	

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

### 2.3 Connection Diagram of Test System



### 2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Notebook	Lenovo	SL11H55466	N/A	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

### 2.5 EUT Operation Test Setup

The RF test items, utility “PuTTY” 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.



### 3 Test Result

#### 3.1 Maximum Conducted Output Power Measurement

##### 3.1.1 Limit of Maximum Conducted Output Power

<FCC 14-30 CFR 15.407>

**For the 5.15–5.25 GHz bands:**

■ For mobile and portable client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

**For the 5.25–5.725 GHz bands:**

■ The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or  $11 \text{ dBm} + 10 \log B$ , where B is the 26 dB emission bandwidth in megahertz.

For Straddle Channel, according to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, if the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

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.

Note that U-NII-2 band, devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

##### 3.1.2 Measuring Instruments

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

### 3.1.3 Test Procedures

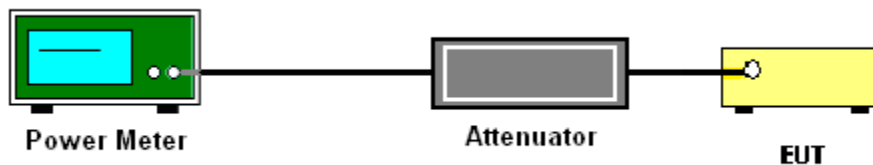
The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

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

For Straddle Channel, according to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, if the power and PSD of the devices are uniform and comply with the lower limits specified for the U-NII-2 bands, a single measurement over the entire emission bandwidth can be performed to show compliance.

### 3.1.4 Test Setup



### 3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



### 3.2 Unwanted Emissions Measurement

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

#### 3.2.1 Limit of Unwanted Emissions

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

For transmitters operating in the 5250-5350 MHz band: all emissions outside of the 5150-5350 MHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5250-5350 MHz band that generate emissions in the 5150-5250 MHz band must meet all applicable technical requirements for operation in the 5150-5250 MHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5150-5250 MHz band.

For transmitters operating in the 5470-5600 MHz and 5650-5725MHz band: all emissions outside of the 5470-5600 MHz and 5650-5725MHz band shall not exceed an EIRP of -27 dBm/MHz.

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

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

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

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



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.

### 3.2.2 Measuring Instruments

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

### 3.2.3 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 ≥ 3 MHz
- Detector = Peak
- Sweep time = auto
- Trace mode = max hold

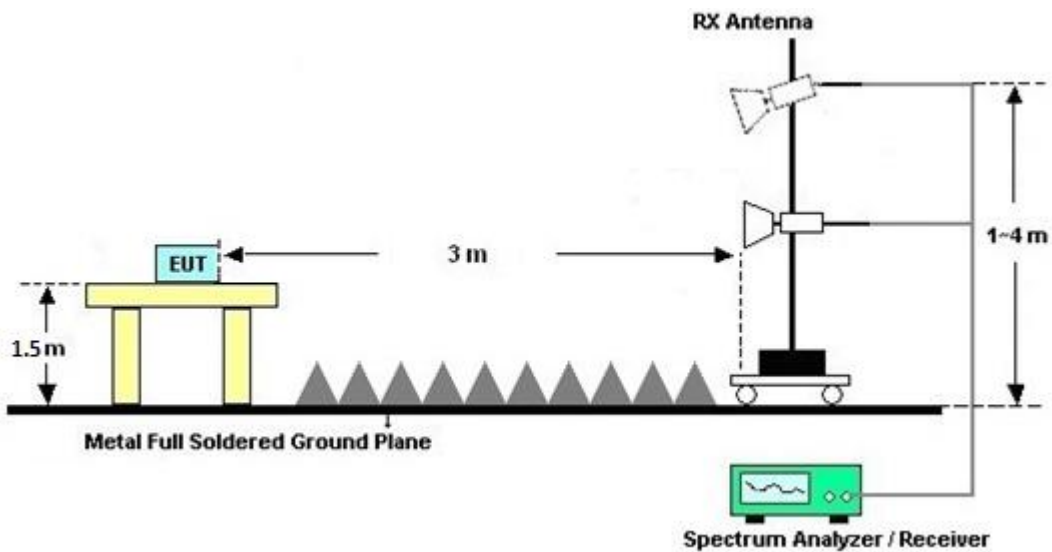
(3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz

- 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 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 “-“.

### 3.2.4 Test Setup

For radiated test above 1GHz





### **3.2.5 Test Result of Radiated Spurious at Band Edges**

Please refer to Appendix B and C.

### **3.2.6 Duty Cycle**

Please refer to Appendix D.

### **3.2.7 Test Result of Radiated Spurious Emissions**

Please refer to Appendix B and C.



### **3.3 Antenna Requirements**

#### **3.3.1 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.

#### **3.3.2 Antenna Anti-Replacement Construction**

An embedded-in antenna design is used.

#### **3.3.3 Antenna Gain**

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.





## 4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	45142595	N/A	Aug. 30, 2021	Jul. 11, 2022	Aug. 29, 2022	Conducted (TH01-CA)
Power Sensor	EM Electronics Corporation	RPR3006W	RPR6W-1901026	10MHz-6GHz	May 10, 2022	Jul. 11, 2022	May 09, 2023	Conducted (TH01-CA)
Switch Box & RF Cable	EM Electronics	EMSW18	SW1070902	N/A	Aug. 03, 2021	Jul. 11, 2022	Aug. 02, 2022	Conducted (TH01-CA)
Spectrum Analyzer	Rohde & Schwarz	FSL6	101303	9kHz-6GHz	May 31, 2022	Jul. 11, 2022	May 30, 2023	Conducted (TH01-CA)
Horn Antenna	SCHWARZBECK	BBHA 9120D	01895	1GHz~18GHz	Aug. 25, 2021	Jul. 12, 2022~ Jul. 26, 2022	Aug. 24, 2022	Radiation (03CH02-CA)
Preamplifier	Keysight	83017A	MY53270323	1GHz~26.5GHz	May 11, 2022	Jul. 12, 2022~ Jul. 26, 2022	May 10, 2023	Radiation (03CH02-CA)
Preamplifier	E-instrument	ERA-100M-18G-56-01-A70	EC1900251	1GHz~18GHz	May 10, 2022	Jul. 12, 2022~ Jul. 26, 2022	May 09, 2023	Radiation (03CH02-CA)
RF Cable	HUBER+SUHNER	SUCOFLEX 102	8024032/2, 802406/2, 802875/2	N/A	Jun. 22, 2022	Jul. 12, 2022~ Jul. 26, 2022	Jun. 21, 2023	Radiation (03CH02-CA)
Spectrum Analyzer	Keysight	N9010A	MY57420221	10Hz~44GHz	Sep. 22, 2021	Jul. 12, 2022~ Jul. 26, 2022	Sep. 21, 2022	Radiation (03CH02-CA)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN8	6.75GHz High Pass Filter	Jul. 22, 2021	Jul. 12, 2022~ Jul. 20, 2022	Jul. 21, 2022	Radiation (03CH02-CA)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN8	6.75GHz High Pass Filter	Jul. 21, 2022	Jul. 21, 2022~ Jul. 26, 2022	Jul. 20, 2023	Radiation (03CH02-CA)
Hygrometer	TESEO	608-H1	45142602	N/A	Aug. 04, 2021	Jul. 12, 2022~ Jul. 26, 2022	Aug. 03, 2022	Radiation (03CH02-CA)
Controller	ChainTek	EM-1000	060876	NA	N/A	Jul. 12, 2022~ Jul. 26, 2022	N/A	Radiation (03CH02-CA)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Jul. 12, 2022~ Jul. 26, 2022	N/A	Radiation (03CH02-CA)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Jul. 12, 2022~ Jul. 26, 2022	N/A	Radiation (03CH02-CA)
Software	Audix	E3	N/A	N/A	N/A	Jul. 12, 2022~ Jul. 26, 2022	N/A	Radiation (03CH02-CA)



## 5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	6.2 dB
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### Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	6.4 dB
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## Appendix A. Test Result of Conducted Test Items

Test Engineer:	Liliana Gonzalez	Temperature:	23.2~23.8	°C
Test Date:	2022/7/11	Relative Humidity:	51.1~52	%

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band I MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
11a	6Mbps	2	36	5180	19.06	19.74	22.42	30.00		2.50		Pass

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band II MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	52	5260	18.05	18.58	21.33	23.98		2.50		30	Pass

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band III MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	100	5500	18.38	19.46	21.96	23.98		2.50		30	Pass
11a	6Mbps	2	140	5700	17.98	18.84	21.44	23.98		2.50		30	Pass

FCC Band III straddle channel MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
11a	6Mbps	2	144	5720	18.27	19.34	21.85	23.98		2.50		30	Pass

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band I MIMO													
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
						Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	
HE40	MCS0	2	38	5190	Full	15.30	15.12	18.22	30.00		2.50		Pass

**TEST RESULTS DATA**  
**Average Power Table**

FCC Band II MIMO														
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	RU Config	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		EIRP Power Limit (dBm)	Pass/Fail
						Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2		
HE80	MCS0	2	58	5290	Full	15.78	16.04	18.92	23.98		2.50		30	Pass





## Appendix B. Radiated Spurious Emission

Test Engineer :	Fu Chen	Temperature :	20~23°C
		Relative Humidity :	42~47%



Band 1 - 5150~5250MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Margin ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
		10360	47.08	-21.12	68.2	60.06	39.41	16.78	69.17	-	-	P	H
		11785	49.53	-24.47	74	59.99	39.24	18.26	67.96	-	-	P	H
		11785	37.97	-16.03	54	48.43	39.24	18.26	67.96	-	-	A	H
		14491	51.78	-22.22	74	57.39	41.94	20.43	67.98	-	-	P	H
		14491	41.9	-12.1	54	47.51	41.94	20.43	67.98	-	-	A	H
		15540	47.94	-26.06	74	57.36	38.19	20.69	68.3	-	-	P	H
		17989	58.55	-15.45	74	57.77	48.53	22.1	69.85	-	-	P	H
		17989	49.31	-4.69	54	48.53	48.53	22.1	69.85	-	-	A	H
													H
													H
													H
													H
802.11a CH 36 5180MHz		10360	46.53	-21.67	68.2	59.59	39.33	16.78	69.17	-	-	P	V
		12049	49.58	-24.42	74	59.36	39.21	18.52	67.51	-	-	P	V
		12049	38.33	-15.67	54	48.11	39.21	18.52	67.51	-	-	A	V
		14491	50.93	-23.07	74	56.53	41.95	20.43	67.98	-	-	P	V
		14491	41.79	-12.21	54	47.39	41.95	20.43	67.98	-	-	A	V
		15540	48.03	-25.97	74	57.35	38.29	20.69	68.3	-	-	P	V
		18000	59.38	-14.62	74	57.95	49.04	22.11	69.72	-	-	P	V
		18000	49.84	-4.16	54	48.41	49.04	22.11	69.72	-	-	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 1 5150~5250MHz

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

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Margin ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE40 Full CH 38 5190MHz		5150	54.86	-19.14	74	42.05	32.03	11.13	30.35	138	121	P	H
		5150	47.49	-6.51	54	34.68	32.03	11.13	30.35	138	121	A	H
		4774	54.07	-19.93	74	42.31	31.43	10.76	30.43	-	-	P	H
		4774	43.55	-10.45	54	31.79	31.43	10.76	30.43	-	-	A	H
	*	5190	106.86	-	-	94.2	31.83	11.19	30.36	138	121	P	H
	*	5190	97.22	-	-	84.56	31.83	11.19	30.36	138	121	A	H
		5418	52.86	-21.14	74	40.02	31.76	11.43	30.35	138	121	P	H
		5443.48	43.55	-10.45	54	30.63	31.83	11.45	30.36	138	121	A	H
		5147.42	56.64	-17.36	74	43.84	32.02	11.13	30.35	214	119	P	V
		5148.72	48.19	-5.81	54	35.39	32.02	11.13	30.35	214	119	A	V
		4816	54.04	-19.96	74	42.09	31.54	10.83	30.42	-	-	P	V
		4816	43.93	-10.07	54	31.98	31.54	10.83	30.42	-	-	A	V
	*	5190	110.18	-	-	97.52	31.83	11.19	30.36	214	119	P	V
	*	5190	99.02	-	-	86.36	31.83	11.19	30.36	214	119	A	V
		5431.16	54.29	-19.71	74	41.45	31.76	11.44	30.36	214	119	P	V
		5444.6	44.08	-9.92	54	31.19	31.8	11.45	30.36	214	119	A	V
Remark	<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> </ol>												



Band 2 - 5250~5350MHz

WIFI 802.11a (Harmonic @ 3m)

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Margin ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)	
802.11a CH 52 5260MHz		10520	47.54	-20.66	68.2	59.5	39.74	16.95	68.65	-	-	P	H	
		11180	49.33	-24.67	74	60.18	39.75	17.64	68.24	-	-	P	H	
		11180	37.32	-16.68	54	48.17	39.75	17.64	68.24	-	-	A	H	
		14491	51.18	-22.82	74	56.79	41.94	20.43	67.98	-	-	P	H	
		14491	42.06	-11.94	54	47.67	41.94	20.43	67.98	-	-	A	H	
		15780	47.68	-26.32	74	58.21	37.48	20.74	68.75	-	-	P	H	
		18000	59.15	-14.85	74	57.94	48.82	22.11	69.72	-	-	P	H	
		18000	49.5	-4.5	54	48.29	48.82	22.11	69.72	-	-	A	H	
														H
														H
														H
														H
			10520	47.8	-20.4	68.2	59.83	39.67	16.95	68.65	-	-	P	V
			11543	49.96	-24.04	74	59.56	40.05	18.01	67.66	-	-	P	V
			11543	39.04	-14.96	54	48.64	40.05	18.01	67.66	-	-	A	V
			14491	52.12	-21.88	74	57.72	41.95	20.43	67.98	-	-	P	V
			14491	41.91	-12.09	54	47.51	41.95	20.43	67.98	-	-	A	V
			15780	48.53	-25.47	74	58.92	37.62	20.74	68.75	-	-	P	V
			18000	59.86	-14.14	74	58.43	49.04	22.11	69.72	-	-	P	V
			18000	49.82	-4.18	54	48.39	49.04	22.11	69.72	-	-	A	V
													V	
													V	
													V	
													V	

**Remark**

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



**Band 2 5250~5350MHz**

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

WIFI Ant. 1+2	Note	Frequency ( MHz )	Level ( dBμV/m )	Margin ( dB )	Limit Line ( dBμV/m )	Read Level (dBμV)	Antenna Factor ( dB/m )	Path Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
802.11ax HE80 Full CH 58 5290MHz		5139.74	53.57	-20.43	74	40.74	32.06	11.12	30.35	235	253	P	H
		5102	44.02	-9.98	54	31.17	32.16	11.06	30.37	235	253	A	H
		4822	55.34	-18.66	74	43.44	31.49	10.83	30.42	-	-	P	H
		4822	44.72	-9.28	54	32.82	31.49	10.83	30.42	-	-	A	H
	*	5290	104.4	-	-	91.96	31.49	11.29	30.34	235	253	P	H
	*	5290	95	-	-	82.56	31.49	11.29	30.34	235	253	A	H
		5409.12	55.71	-18.29	74	42.9	31.74	11.42	30.35	235	253	P	H
		5351.04	45.41	-8.59	54	32.81	31.6	11.36	30.36	235	253	A	H
		5128.52	53.48	-20.52	74	40.72	32.02	11.1	30.36	100	117	P	V
		5146.54	44.09	-9.91	54	31.29	32.02	11.13	30.35	100	117	A	V
		4858	54.19	-19.81	74	42.27	31.49	10.85	30.42	-	-	P	V
		4858	44.81	-9.19	54	32.89	31.49	10.85	30.42	-	-	A	V
	*	5290	103.97	-	-	91.59	31.43	11.29	30.34	100	117	P	V
	*	5290	94.57	-	-	82.19	31.43	11.29	30.34	100	117	A	V
		5363.28	55.24	-18.76	74	42.69	31.54	11.37	30.36	100	117	P	V
	5353.92	47.57	-6.43	54	35.06	31.51	11.36	30.36	100	117	A	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> </ol>												



**Band 3 - 5470~5725MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

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 )	Avg.	(H/V)
1+2					Line	Level	Factor	Loss	Factor	Pos	Pos	(P/A)	(H/V)
802.11a CH 100 5500MHz		5457.2	53.61	-20.39	74	40.65	31.86	11.46	30.36	400	227	P	H
		5466.8	54.69	-13.51	68.2	41.72	31.87	11.47	30.37	400	227	P	H
		5457.68	44.5	-9.5	54	31.54	31.86	11.46	30.36	400	227	A	H
		4960	53.77	-20.23	74	41.76	31.51	10.9	30.4	-	-	P	H
		4960	45.3	-8.7	54	33.29	31.51	10.9	30.4	-	-	A	H
	*	5500	113.32	-	-	100.28	31.93	11.49	30.38	400	227	P	H
	*	5500	105.77	-	-	92.73	31.93	11.49	30.38	400	227	A	H
		5458	55.56	-18.44	74	42.62	31.84	11.46	30.36	231	113	P	V
		5466.8	60.23	-7.97	68.2	47.26	31.87	11.47	30.37	231	113	P	V
		5460	47.22	-6.78	54	34.27	31.85	11.46	30.36	231	113	A	V
		4834	53.99	-20.01	74	42.03	31.54	10.84	30.42	-	-	P	V
		4834	45.08	-8.92	54	33.12	31.54	10.84	30.42	-	-	A	V
	*	5500	115.83	-	-	102.76	31.96	11.49	30.38	231	113	P	V
	*	5500	108.01	-	-	94.94	31.96	11.49	30.38	231	113	A	V
802.11a CH 140 5700MHz		5086	53.69	-20.31	74	40.93	32.09	11.04	30.37	-	-	P	H
		5086	46	-8	54	33.24	32.09	11.04	30.37	-	-	A	H
		5434	53.29	-20.71	74	40.41	31.8	11.44	30.36	-	-	P	H
		5434	46.18	-7.82	54	33.3	31.8	11.44	30.36	-	-	A	H
	*	5700	112.89	-	-	99.61	31.98	11.72	30.42	359	247	P	H
	*	5700	105.24	-	-	91.96	31.98	11.72	30.42	359	247	A	H
		5725	60.75	-7.45	68.2	47.34	32.07	11.76	30.42	359	247	P	H
		5086	54.1	-19.9	74	41.43	32	11.04	30.37	-	-	P	V
		5086	45.88	-8.12	54	33.21	32	11.04	30.37	-	-	A	V
		5440	54.57	-19.43	74	41.7	31.79	11.44	30.36	-	-	P	V
		5440	46.29	-7.71	54	33.42	31.79	11.44	30.36	-	-	A	V
	*	5700	114.99	-	-	101.71	31.98	11.72	30.42	207	114	P	V
	*	5700	107.53	-	-	94.25	31.98	11.72	30.42	207	114	A	V
	5726.2	64.62	-3.58	68.2	51.22	32.06	11.76	30.42	207	114	P	V	
Remark	<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> </ol>												



Band 3 - Straddle Channel

WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Margin	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )	
802.11a CH 144 5720MHz		11440	53.68	-20.32	74	63.6	40.09	17.9	67.91	320	133	P	H	
		11440	45.82	-8.18	54	55.74	40.09	17.9	67.91	320	133	A	H	
		12159	49.23	-24.77	74	58.37	39.27	18.62	67.03	-	-	P	H	
		12159	38.96	-15.04	54	48.1	39.27	18.62	67.03	-	-	A	H	
		14491	51.65	-22.35	74	57.26	41.94	20.43	67.98	-	-	P	H	
		14491	42.22	-11.78	54	47.83	41.94	20.43	67.98	-	-	A	H	
		17164	50.95	-17.25	68.2	57.61	40.48	21.57	68.71	-	-	P	H	
		18000	58.98	-15.02	74	57.77	48.82	22.11	69.72	-	-	P	H	
		18000	49.44	-4.56	54	48.23	48.82	22.11	69.72	-	-	A	H	
														H
														H
														H
			11440	54.04	-19.96	74	64.02	40.03	17.9	67.91	400	205	P	V
			11440	45.5	-8.5	54	55.48	40.03	17.9	67.91	400	205	A	V
			12137	49.31	-24.69	74	58.52	39.26	18.61	67.08	-	-	P	V
			12137	38.44	-15.56	54	47.65	39.26	18.61	67.08	-	-	A	V
			14491	51.28	-22.72	74	56.88	41.95	20.43	67.98	-	-	P	V
			14491	42.09	-11.91	54	47.69	41.95	20.43	67.98	-	-	A	V
			17160	50.79	-17.41	68.2	57.31	40.64	21.56	68.72	-	-	P	V
			17989	59.12	-14.88	74	58.08	48.79	22.1	69.85	-	-	P	V
		17989	49.49	-4.51	54	48.45	48.79	22.1	69.85	-	-	A	V	
													V	
													V	
													V	

**Remark**

- No other spurious found.
- All results are PASS against Peak and Average limit line.
- The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or noise floor only.
- The emission level close to 18GHz is checked that the average emission level is noise floor only.



**Band 3 - Straddle Channel**

**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.					Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
802.11a		5150	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 36		5150	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H
5180MHz													

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

**For Peak Limit @ 5150MHz:**

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

**For Average Limit @ 5150MHz:**

1. Level(dBμV/m)  
= Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)  
= 43.54 (dBμV/m)
2. Margin 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 C. Radiated Spurious Emission

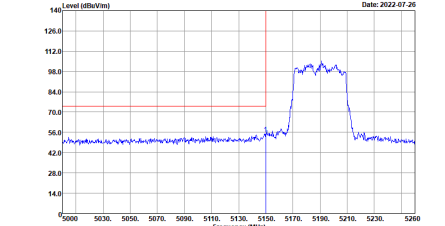
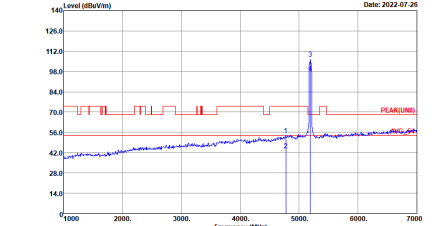
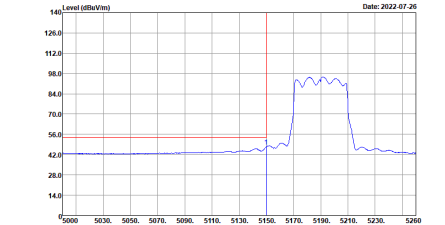
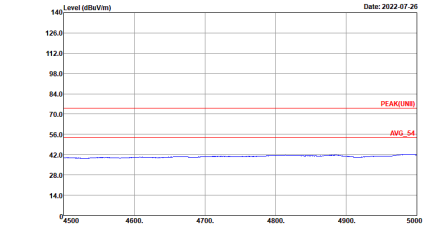
Test Engineer :	Fu Chen	Temperature :	20~23°C
		Relative Humidity :	42~47%

### Note symbol

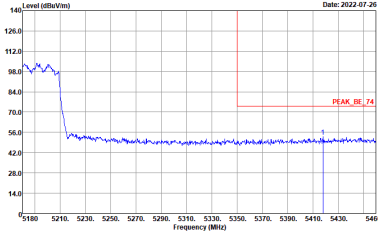
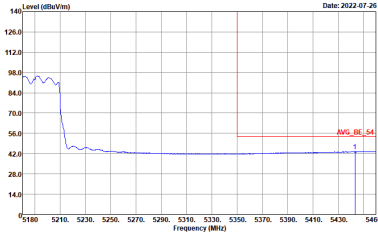
-L	Low channel location
-R	High channel location



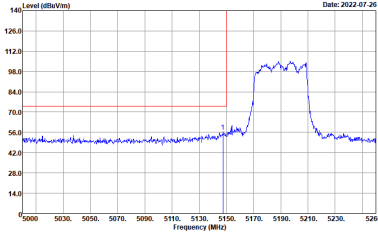
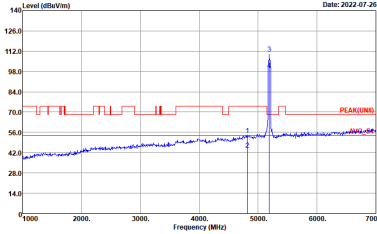
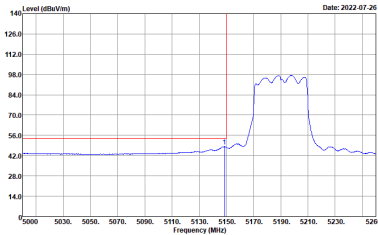
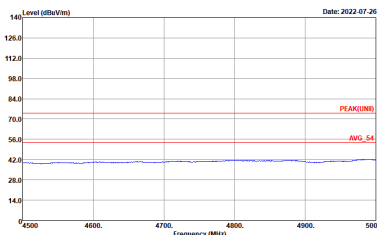
**Band 1 - 5150~5250MHz**  
**WIFI 802.11ax HE40 Full (Band Edge @ 3m)**

WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - L	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH02-CA          Condition : PEAK_BE_74 3m HORN-HF_01895_2021 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	 <p>Site : 03CH02-CA          Condition : PEAK(LINE)I 3m HORN-HF_01895_2021 HORIZONTAL          : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
Avg.	 <p>Site : 03CH02-CA          Condition : AVG_BE_54 3m HORN-HF_01895_2021 HORIZONTAL          : RBW:1000.000kHz VBW:0.300kHz SWT:Auto</p>	 <p>Site : 03CH02-CA          Condition : PEAK(LINE)I 3m HORN-HF_01895_2021 HORIZONTAL</p>

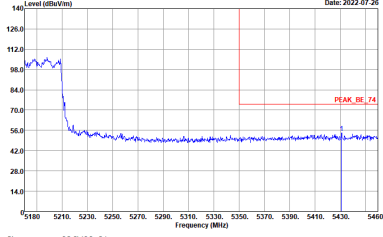
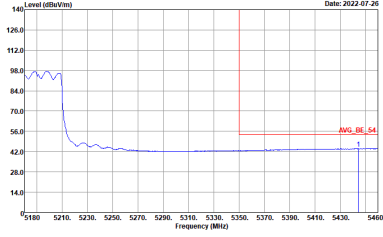


WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - R	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE_54 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	Left blank



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - L	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE_54 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 VERTICAL</p>



WIFI	Band 1 5150~5250MHz Band Edge @ 3m	
ANT	802.11ax HE40 Full CH38 5190MHz - R	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN.HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE_54 3m HORN.HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank

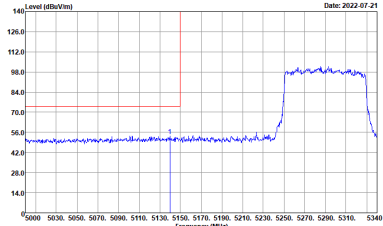
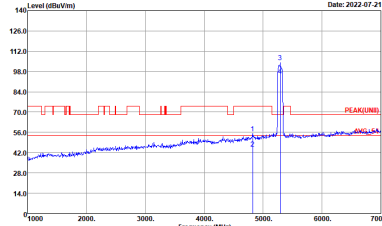
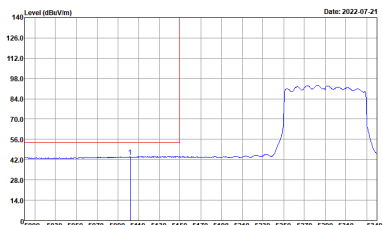
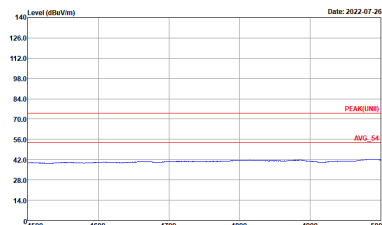


Band 1 - 5150~5250MHz
WIFI 802.11a (Harmonic @ 3m)

Table with 4 columns: WIFI, ANT, 1+2, and two sub-columns for Horizontal and Vertical. Rows are labeled 'Peak' and 'Avg.' containing spectral plots of Level (dBuV/m) vs Frequency (MHz).

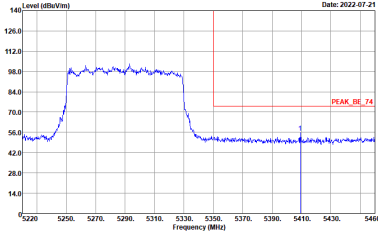
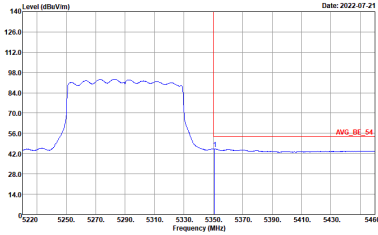


**Band 2 - 5250~5350MHz**  
**WIFI 802.11ax HE80 Full (Band Edge @ 3m)**

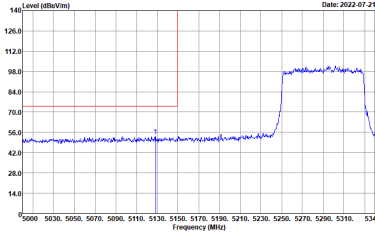
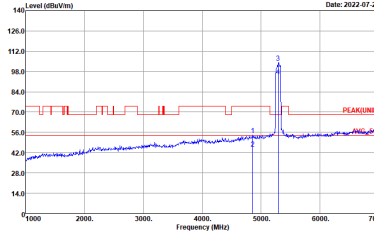
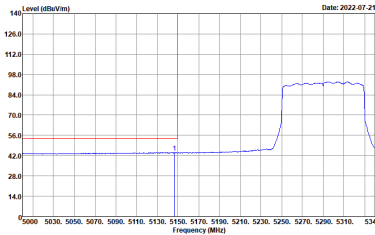
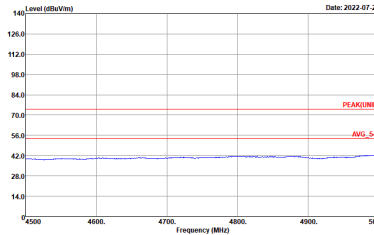
WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH58 5290MHz - L	
1+2	Horizontal	Fundamental
<b>Peak</b>	 <p>Site : 03CH02-CA            Condition : PEAK_BE_74 3m HORN-HF_01895_2021 HORIZONTAL            : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA            Condition : PEAK(LINE) 3m HORN-HF_01895_2021 HORIZONTAL            : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
<b>Avg.</b>	 <p>Site : 03CH02-CA            Condition : AVG_BE_54 3m HORN-HF_01895_2021 HORIZONTAL            : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	 <p>Site : 03CH02-CA            Condition : PEAK(LINE) 3m HORN-HF_01895_2021 HORIZONTAL</p>



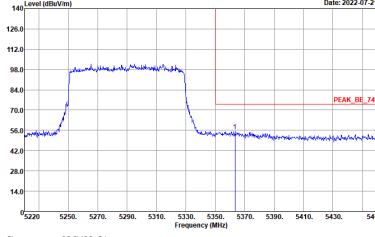
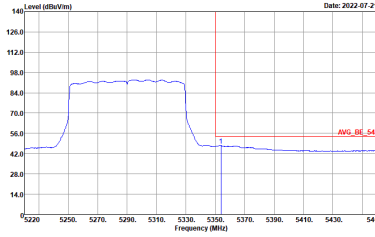


WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH58 5290MHz - R	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE_54 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	Left blank



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH58 5290MHz - L	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK(LIN1) 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE_54 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK(LIN1) 3m HORN-HF_01895_2021 VERTICAL</p>



WIFI	Band 2 5250~5350MHz Band Edge @ 3m	
ANT	802.11ax HE80 Full CH58 5290MHz - R	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE_74 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	Left blank
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE_54 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:0.300KHz SWT:Auto</p>	Left blank



**Band 2 - 5250~5350MHz**  
**WIFI 802.11a (Harmonic @ 3m)**

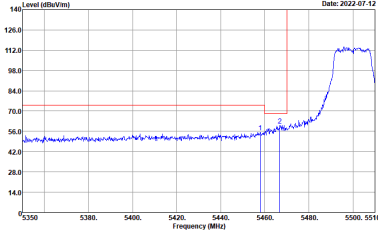
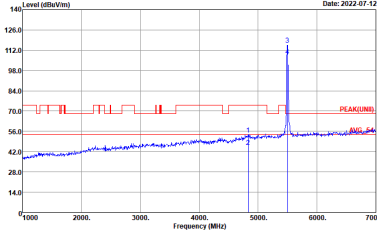
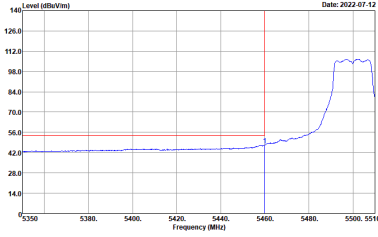
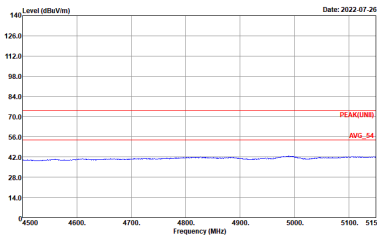
WIFI	Band 2 5250~5350MHz Harmonic @ 3m	
ANT	802.11a CH52 5260MHz	
1+2	Horizontal	Vertical
Peak	<p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 HORIZONTAL Detector : Peak</p>	<p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 VERTICAL</p>
Avg.	<p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 HORIZONTAL</p>	<p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 VERTICAL</p>



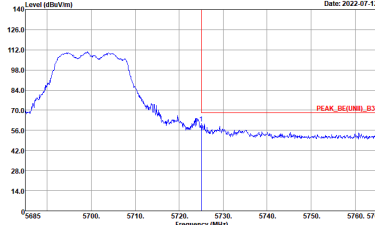
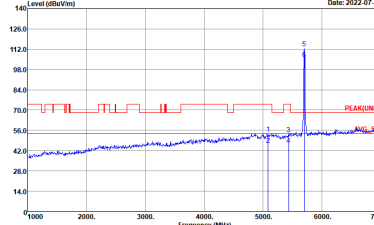
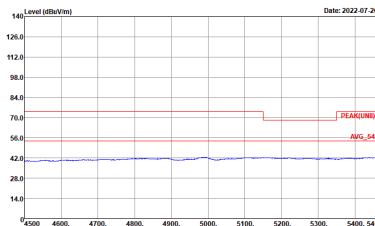
**Band 3 - 5470~5725MHz**  
**WIFI 802.11a (Band Edge @ 3m)**

WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1+2	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH02-CA Condition : PEAK_BE(UNII)_B3 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>	<p>Site : 03CH02-CA Condition : PEAK(LINE1) 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWT:Auto</p>
<b>Avg.</b>	<p>Site : 03CH02-CA Condition : AVG_BE(UNII)_B3 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000kHz VBW:1.000kHz SWT:Auto</p>	<p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 HORIZONTAL</p>

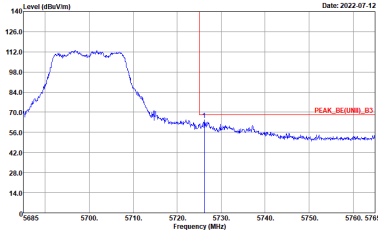
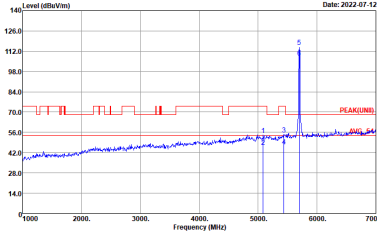
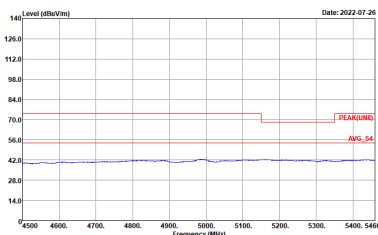


WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH100 5500MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE(UNIT)_B3 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK(UNIT)_3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH02-CA Condition : AVG_BE(UNIT)_B3 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK(UNIT)_3m HORN-HF_01895_2021 VERTICAL</p>



WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1+2	Horizontal	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE[UNET],B3 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK[UNET] 3m HORN-HF_01895_2021 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH02-CA Condition : PEAK[UNET] 3m HORN-HF_01895_2021 HORIZONTAL</p>	Left blank

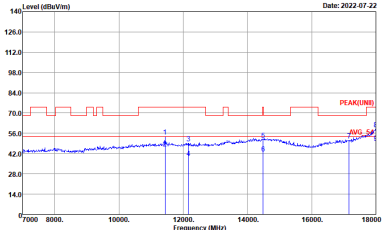
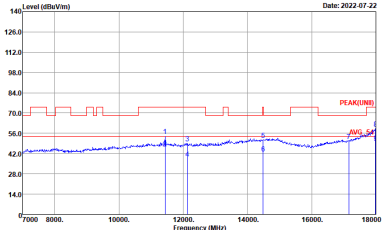
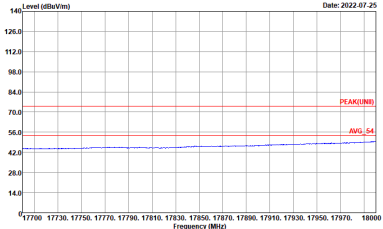
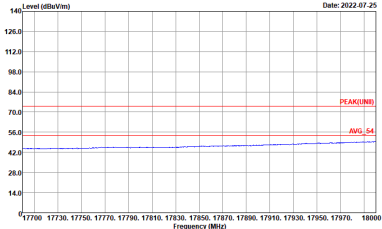


WIFI	Band 3 5470~5725MHz Band Edge @ 3m	
ANT	802.11a CH140 5700MHz	
1+2	Vertical	Fundamental
Peak	 <p>Site : 03CH02-CA Condition : PEAK_BE[UNITE]_B3 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>	 <p>Site : 03CH02-CA Condition : PEAK[UNITE] 3m HORN-HF_01895_2021 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p>
Avg.	 <p>Site : 03CH02-CA Condition : PEAK[UNITE] 3m HORN-HF_01895_2021 VERTICAL</p>	Left blank





**Band 3 - Straddle Channel**  
**WIFI 802.11a (Harmonic @ 3m)**

WIFI	Band 3 Straddle Channel Harmonic @ 3m	
ANT	802.11a CH144 5720MHz	
1+2	Horizontal	Vertical
Peak	 <p>Level (dBuV/m) vs Frequency (MHz) - Horizontal Peak</p> <p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 HORIZONTAL</p>	 <p>Level (dBuV/m) vs Frequency (MHz) - Vertical Peak</p> <p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 VERTICAL</p>
Avg.	 <p>Level (dBuV/m) vs Frequency (MHz) - Horizontal Avg.</p> <p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 HORIZONTAL</p>	 <p>Level (dBuV/m) vs Frequency (MHz) - Vertical Avg.</p> <p>Site : 03CH02-CA Condition : PEAK(UNII) 3m HORN-HF_01895_2021 VERTICAL</p>



## Appendix D. Duty Cycle Plots

Antenna	Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
1+2	802.11a	94.27	1975	0.51	1kHz
1+2	5GHz 802.11ax HE40 Full RU	95.49	5400	0.19	300Hz
1+2	5GHz 802.11ax HE80 Full RU	96.03	5445	0.18	300Hz

### MIMO <Ant. 1+2>

