



# FCC RADIO TEST REPORT

**FCC ID** : UZ7TM2000  
**Equipment** : Trailer Monitoring Unit  
**Brand Name** : ZEBRA  
**Model Name** : TM2000  
**Applicant** : Zebra Technologies Corporation  
1 Zebra Plaza, Holtsville, NY 11742  
**Manufacturer** : Zebra Technologies Corporation  
1 Zebra Plaza, Holtsville, NY 11742  
**Standard** : FCC Part 15 Subpart E §15.407

The product was received on Feb. 07, 2022 and testing was performed from Feb. 24, 2022 to Mar. 22, 2022. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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

Approved by: Louis Wu

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



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### History of this test report

Report No.	Version	Description	Issue Date
FR850206-04C	01	Initial issue of report	Apr. 21, 2022



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403(i)	6dB & 26dB Bandwidth	Not Required	-
-	2.1049	99% Occupied Bandwidth	Not Required	-
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	6.71 dB under the limit at 145.020 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 by external antenna replacement. All the test cases were performed on original report which can be referred to Sporton Report Number FR850206C. Based on the original report, the test cases were verified.

<b>Declaration of Conformity:</b>
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".
<b>Comments and Explanations:</b>
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: Wei Chen**  
**Report Producer: Ruby Zou**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Trailer Monitoring UNIT
Brand Name	ZEBRA
Model Name	TM2000
FCC ID	UZ7TM2000
EUT supports Radios application	WLAN 11a/b/g/n HT20
HW Version	REV B
SW Version	2.0.33
FW Version	2.0.33
MFD	16DEC21
EUT Stage	Engineering Sample

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

## 1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Frequency Range	5745 MHz ~ 5825 MHz
Maximum Output Power to Antenna	802.11a: 12.98 dBm / 0.0199 W 802.11n HT20: 12.98 dBm / 0.0199 W
Antenna Type / Gain	Omni-directional Antenna with gain 3.07 dBi
Type of Modulation	802.11a/n: OFDM (BPSK/QPSK/16QAM/64QAM)

Remark: The EUT's information above is 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

<b>Test Site</b>	Sporton International Inc. EMC & Wireless Communications Laboratory
<b>Test Site Location</b>	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
<b>Test Site No.</b>	<b>Sporton Site No.</b> 03CH07-HY, TH02-HY

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

FCC designation No.: TW1190

### 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.
- ♦ ANSI C63.10-2013

**Remark:**

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

## 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: 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 X plane as worst plane.

### 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
	-	-	-	-
	153	5765	161	5805
	-	-	165	5825

### 2.2 Test Mode

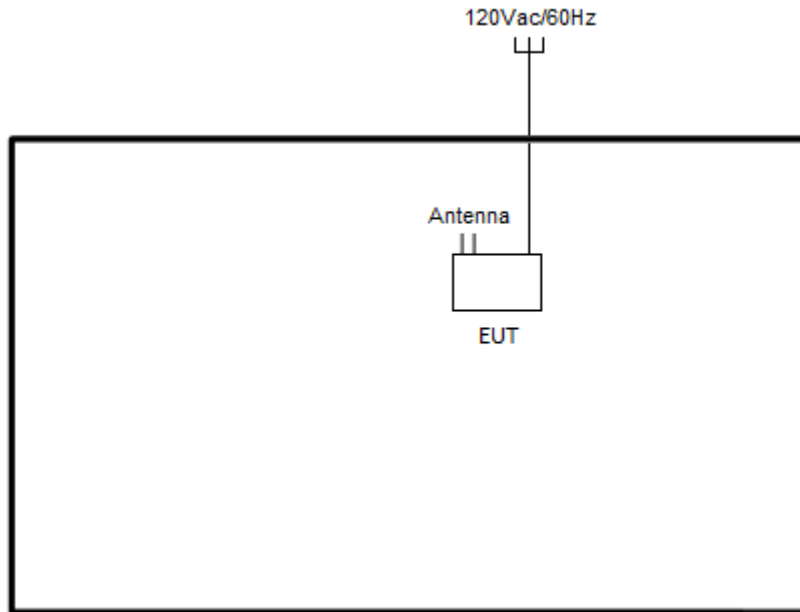
The final test modes consider the modulation and the worst data rates as shown in the table below.

Modulation	Data Rate
802.11a	6Mbps
802.11n HT20	MCS0

Ch. #		Band IV : 5725-5850 MHz	
		802.11a	802.11n HT20
L	Low	149	149
M	Middle	157	157
H	High	165	165

**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 EUT Operation Test Setup

The RF test items, utility "Putty Release 0.60" 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

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.

##### 3.1.2 Measuring Instruments

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

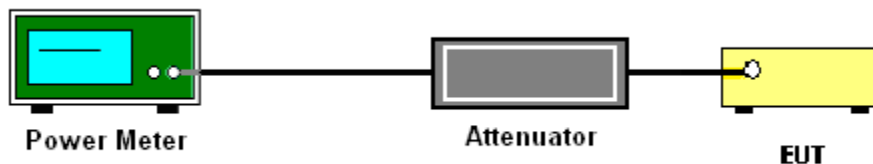
##### 3.1.3 Test Procedures

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.

##### 3.1.4 Test Setup





3.1.5 Test Result of Maximum Conducted Output Power

Band IV single antenna												
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	1	149	5745	12.98	-	-	30.00	-	3.07	-	Pass
11a	6Mbps	1	157	5785	12.38	-		30.00	-	3.07	-	Pass
11a	6Mbps	1	165	5825	12.73	-		30.00	-	3.07	-	Pass
HT20	MCS0	1	149	5745	12.98	-		30.00	-	3.07	-	Pass
HT20	MCS0	1	157	5785	12.82	-		30.00	-	3.07	-	Pass
HT20	MCS0	1	165	5825	12.77	-		30.00	-	3.07	-	Pass



### 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 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.

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

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.

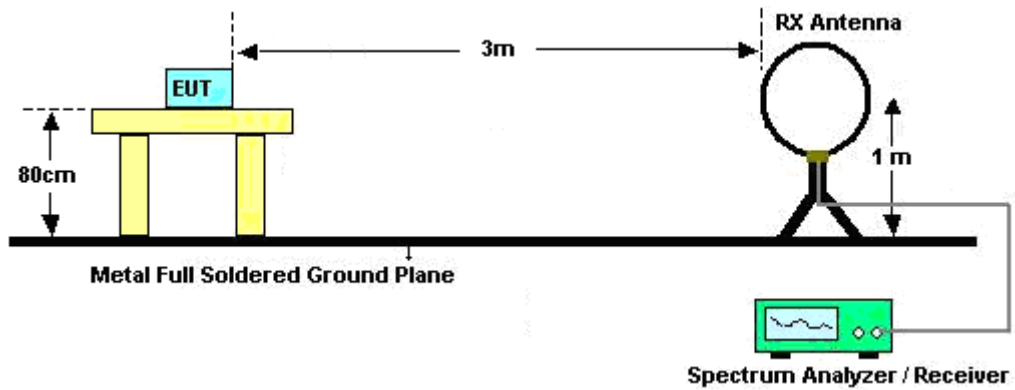
### 3.2.3 Test Procedures

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  $\geq$  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.

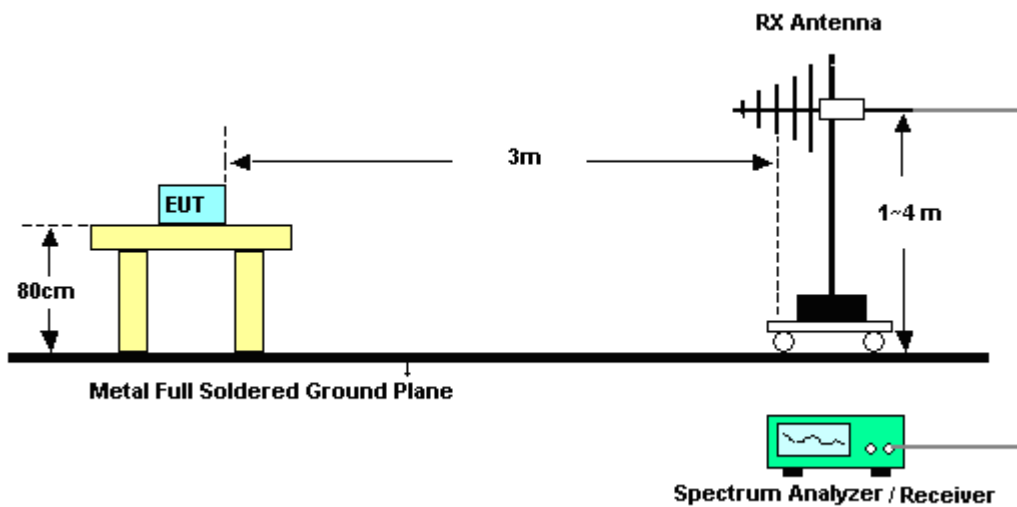
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit 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 “-“.

**3.2.4 Test Setup**

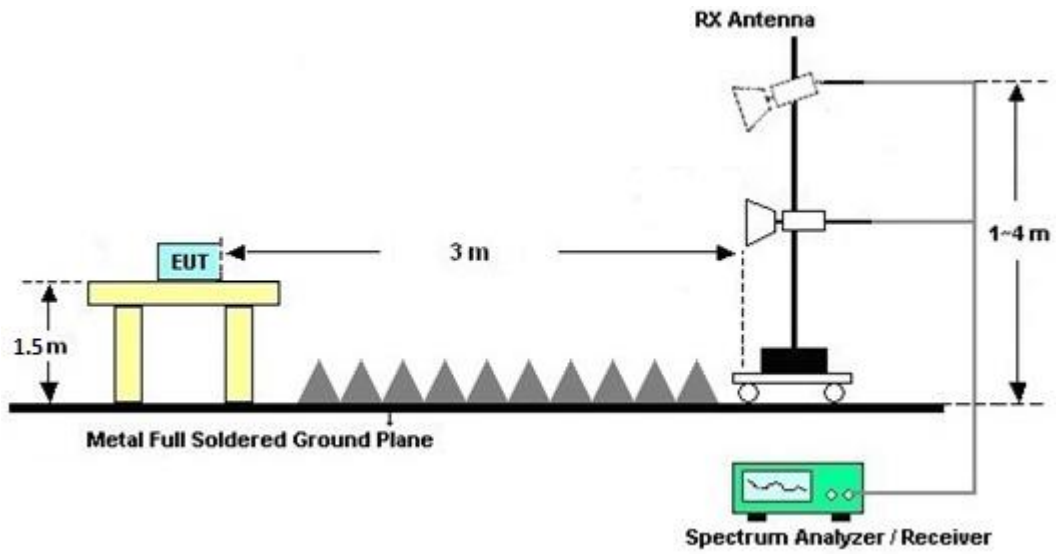
**For radiated emissions below 30MHz**



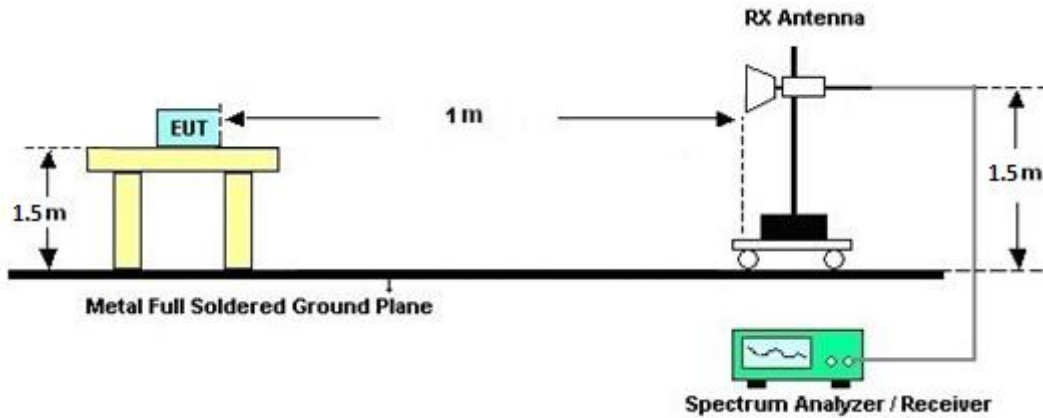
**For radiated emissions from 30MHz to 1GHz**



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





### **3.2.5 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.

### **3.2.6 Test Result of Radiated Band Edges**

Please refer to Appendix A and B.

### **3.2.7 Duty Cycle**

Please refer to Appendix C.

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

Please refer to Appendix A and B.



### **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
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	35419 & 03	30MHz~1GHz	Apr. 28, 2021	Mar. 18, 2022~Mar. 22, 2022	Apr. 27, 2022	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 03, 2021	Mar. 18, 2022~Mar. 22, 2022	Dec. 02, 2022	Radiation (03CH07-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Mar. 18, 2022~Mar. 22, 2022	Jan. 06, 2023	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590075	1GHz~18GHz	Apr. 22, 2021	Mar. 18, 2022~Mar. 22, 2022	Apr. 21, 2022	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	Oct. 04, 2021	Mar. 18, 2022~Mar. 22, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 04, 2021	Mar. 18, 2022~Mar. 22, 2022	Oct. 03, 2022	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	0600789	18-40GHz	Jul. 23, 2021	Mar. 18, 2022~Mar. 22, 2022	Jul. 22, 2022	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jul. 22, 2021	Mar. 18, 2022~Mar. 22, 2022	Jul. 21, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY15682/4	30MHz to 18GHz	Feb. 23, 2022	Mar. 18, 2022~Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 18, 2022~Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4	9kHz to 18GHz	Feb. 23, 2022	Mar. 18, 2022~Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126	532078/126E	30MHz~18GHz	Sep. 17, 2021	Mar. 18, 2022~Mar. 22, 2022	Sep. 16, 2022	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2	18GHz~40GHz	Feb. 23, 2022	Mar. 18, 2022~Mar. 22, 2022	Feb. 22, 2023	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801606/2	9KHz ~ 40GHz	Apr. 03, 2021	Mar. 18, 2022~Mar. 22, 2022	Apr. 02, 2022	Radiation (03CH07-HY)
Controller	EMEC	EM1000	N/A	Control Ant Mast	N/A	Mar. 18, 2022~Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Controller	MF	MF-7802	N/A	Control Turn table	N/A	Mar. 18, 2022~Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Antenna Mast	EMEC	AM-BS-4500E	N/A	Boresight mast 1M~4M	N/A	Mar. 18, 2022~Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Mar. 18, 2022~Mar. 22, 2022	N/A	Radiation (03CH07-HY)
Attenuator	HONOVA	5910 SMA-50-005-19-NE	ATT-36	N/A	Oct. 30, 2021	Mar. 18, 2022~Mar. 22, 2022	Oct. 29, 2022	Radiation (03CH07-HY)
Software	Audix	E3	N/A	N/A	N/A	Mar. 18, 2022~Mar. 22, 2022	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB1148	N/A	Oct. 25, 2021	Mar. 18, 2022~Mar. 22, 2022	Oct. 24, 2022	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 30, 2021	Mar. 18, 2022~Mar. 22, 2022	Nov. 29, 2022	Radiation (03CH07-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Feb. 24, 2022~ Feb. 25, 2022	Nov. 15, 2022	Conducted (TH02-HY)
USB Power Sensor	DARE	RPR3006W	16I00054SNO 12 (NO:113)	10MHz~6GHz	Dec. 16, 2021	Feb. 24, 2022~ Feb. 25, 2022	Dec. 15, 2022	Conducted (TH02-HY)
Power Meter	Anritsu	ML2495A	932001	N/A	Sep. 30, 2021	Feb. 24, 2022~ Feb. 25, 2022	Sep. 29, 2022	Conducted (TH02-HY)
Power Sensor	Anritsu	MA2411B	846202	300MHz~40GHz	Sep. 30, 2021	Feb. 24, 2022~ Feb. 25, 2022	Sep. 29, 2022	Conducted (TH02-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Feb. 24, 2022~ Feb. 25, 2022	Aug. 29, 2022	Conducted (TH02-HY)
Switch Control Manframe	E-IUSTRUMENT	ETF-1405-0	EC1900067 (BOX7)	N/A	Aug. 12, 2021	Feb. 24, 2022~ Feb. 25, 2022	Aug. 11, 2022	Conducted (TH02-HY)



## 5 Uncertainty of Evaluation

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

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

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	4.0 dB
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## Appendix A. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	23.2~25.4°C
		Relative Humidity :	52.5~53.6%

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

WIFI Ant.	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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		5633.2	47.85	-20.35	68.2	36.05	34.7	12.25	35.15	196	56	P	H	
		5683.6	47.73	-45.37	93.1	35.78	34.83	12.28	35.16	196	56	P	H	
		5719.4	52.24	-58.39	110.63	40.09	35.02	12.29	35.16	196	56	P	H	
		5724.8	57.71	-64.03	121.74	45.52	35.05	12.3	35.16	196	56	P	H	
	*	5745	99.75	-	-	87.44	35.17	12.31	35.17	196	56	P	H	
	*	5745	92.68	-	-	80.37	35.17	12.31	35.17	196	56	A	H	
														H
														H
			5612.4	48.99	-19.21	68.2	37.18	34.7	12.25	35.14	177	310	P	V
			5696.6	52.1	-50.59	102.69	40.09	34.89	12.28	35.16	177	310	P	V
			5719.4	57.76	-52.87	110.63	45.61	35.02	12.29	35.16	177	310	P	V
			5725	68.04	-54.16	122.2	55.85	35.05	12.3	35.16	177	310	P	V
	*	5745	109.49	-	-	97.18	35.17	12.31	35.17	177	310	P	V	
	*	5745	102.33	-	-	90.02	35.17	12.31	35.17	177	310	A	V	
														V
													V	



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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 )
		5609	47.45	-20.75	68.2	35.65	34.7	12.24	35.14	191	56	P	H
		5687.4	47.21	-48.7	95.91	35.24	34.85	12.28	35.16	191	56	P	H
		5712.4	47.7	-60.97	108.67	35.6	34.97	12.29	35.16	191	56	P	H
		5724.2	46.16	-74.22	120.38	33.97	35.05	12.3	35.16	191	56	P	H
	*	5785	99.62	-	-	87.27	35.2	12.32	35.17	191	56	P	H
	*	5785	92.42	-	-	80.07	35.2	12.32	35.17	191	56	A	H
		5852	48.09	-69.55	117.64	35.66	35.2	12.41	35.18	191	56	P	H
		5863.8	49.16	-59.17	108.33	36.73	35.2	12.42	35.19	191	56	P	H
		5892.2	48.86	-43.58	92.44	36.39	35.2	12.46	35.19	191	56	P	H
		5933.8	49.09	-19.11	68.2	36.64	35.13	12.52	35.2	191	56	P	H
													H
													H
<b>802.11a</b>													
<b>CH 157</b>													
<b>5785MHz</b>		5638.6	50.32	-17.88	68.2	38.51	34.7	12.26	35.15	190	309	P	V
		5665.2	49.8	-29.68	79.48	37.92	34.76	12.27	35.15	190	309	P	V
		5704.2	50.04	-56.34	106.38	37.98	34.93	12.29	35.16	190	309	P	V
		5724.2	48.63	-71.75	120.38	36.44	35.05	12.3	35.16	190	309	P	V
	*	5785	108.38	-	-	96.03	35.2	12.32	35.17	190	309	P	V
	*	5785	101.16	-	-	88.81	35.2	12.32	35.17	190	309	A	V
		5853.6	49.56	-64.43	113.99	37.13	35.2	12.41	35.18	190	309	P	V
		5867.6	49.86	-57.41	107.27	37.42	35.2	12.43	35.19	190	309	P	V
		5895	49.71	-40.65	90.36	37.23	35.2	12.47	35.19	190	309	P	V
		5931.4	49.38	-18.82	68.2	36.92	35.14	12.52	35.2	190	309	P	V
													V
													V



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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	99.04	-	-	86.65	35.2	12.37	35.18	190	55	P	H	
	*	5825	91.82	-	-	79.43	35.2	12.37	35.18	190	55	A	H	
		5851.6	49.71	-68.84	118.55	37.29	35.2	12.4	35.18	190	55	P	H	
		5874.4	48.2	-57.17	105.37	35.75	35.2	12.44	35.19	190	55	P	H	
		5883.8	49.28	-49.39	98.67	36.82	35.2	12.45	35.19	190	55	P	H	
		5941.8	49.11	-19.09	68.2	36.65	35.12	12.54	35.2	190	55	P	H	
														H
														H
	*	5825	108.49	-	-	96.1	35.2	12.37	35.18	194	309	P	V	
	*	5825	100.65	-	-	88.26	35.2	12.37	35.18	194	309	A	V	
		5851.4	58.53	-60.48	119.01	46.11	35.2	12.4	35.18	194	309	P	V	
		5856.6	54.75	-55.6	110.35	42.32	35.2	12.41	35.18	194	309	P	V	
		5899	51.03	-36.37	87.4	38.55	35.2	12.47	35.19	194	309	P	V	
		5928.2	49.84	-18.36	68.2	37.38	35.14	12.52	35.2	194	309	P	V	
														V
														V
													V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



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

WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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		11490	48.43	-25.57	74	48.54	38.11	19.32	57.54	202	182	P	H	
		11490	39.2	-14.8	54	39.31	38.11	19.32	57.54	202	182	A	H	
		17235	52.71	-15.49	68.2	43.83	41.5	23.89	56.51	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11490	46.08	-27.92	74	46.19	38.11	19.32	57.54	-	-	P	V
			17235	52.42	-15.78	68.2	43.54	41.5	23.89	56.51	-	-	P	V
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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	47.2	-26.8	74	46.98	38.24	19.39	57.41	-	-	P	H
		17355	52.43	-15.77	68.2	43.4	41.44	23.99	56.4	-	-	P	H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
			11570	46.22	-27.78	74	46	38.24	19.39	57.41	-	-	P
		17355	52.48	-15.72	68.2	43.45	41.44	23.99	56.4	-	-	P	V
													V
													V
													V
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WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBµV/m )	Over 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		11650	46.99	-27.01	74	46.42	38.4	19.45	57.28	-	-	P	H	
		17475	52.38	-15.82	68.2	43.27	41.33	24.08	56.3	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11650	47.05	-26.95	74	46.48	38.4	19.45	57.28	-	-	P	V
			17475	52.73	-15.47	68.2	43.62	41.33	24.08	56.3	-	-	P	V
													V	
													V	
													V	
													V	
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													V	
													V	
													V	
													V	
													V	
													V	
													V	
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are PASS against Peak and Average limit line.</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.</li> </ol>													



**Band 4 5725~5850MHz**  
**WIFI 802.11n HT20 (Band Edge @ 3m)**

WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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 )	
802.11n HT20 CH 149 5745MHz		5636.8	46.78	-21.42	68.2	34.97	34.7	12.26	35.15	192	54	P	H	
		5683.2	47.39	-45.41	92.8	35.44	34.83	12.28	35.16	192	54	P	H	
		5719.2	53.4	-57.18	110.58	41.25	35.02	12.29	35.16	192	54	P	H	
		5725	60.63	-61.57	122.2	48.44	35.05	12.3	35.16	192	54	P	H	
	*	5745	99.39	-	-	87.08	35.17	12.31	35.17	192	54	P	H	
	*	5745	92.47	-	-	80.16	35.17	12.31	35.17	192	54	A	H	
														H
														H
			5629.8	49.98	-18.22	68.2	38.18	34.7	12.25	35.15	171	312	P	V
			5694	50.51	-50.27	100.78	38.51	34.88	12.28	35.16	171	312	P	V
			5719.4	59.09	-51.54	110.63	46.94	35.02	12.29	35.16	171	312	P	V
			5723.8	68.39	-51.07	119.46	56.21	35.04	12.3	35.16	171	312	P	V
	*		5745	109.16	-	-	96.85	35.17	12.31	35.17	171	312	P	V
	*		5745	101.85	-	-	89.54	35.17	12.31	35.17	171	312	A	V
														V
													V	



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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 )
		5601	48.14	-20.06	68.2	36.34	34.7	12.24	35.14	194	55	P	H
		5679.2	47.63	-42.22	89.85	35.68	34.82	12.28	35.15	194	55	P	H
		5708.2	48.1	-59.4	107.5	36.02	34.95	12.29	35.16	194	55	P	H
		5725	46.43	-75.77	122.2	34.24	35.05	12.3	35.16	194	55	P	H
	*	5785	99.64	-	-	87.29	35.2	12.32	35.17	194	55	P	H
	*	5785	92.38	-	-	80.03	35.2	12.32	35.17	194	55	A	H
		5851	48.01	-71.91	119.92	35.59	35.2	12.4	35.18	194	55	P	H
		5857.2	48.39	-61.79	110.18	35.96	35.2	12.41	35.18	194	55	P	H
		5919.6	49.22	-22.96	72.18	36.76	35.16	12.5	35.2	194	55	P	H
		5950	48.93	-19.27	68.2	36.48	35.1	12.55	35.2	194	55	P	H
802.11n													H
HT20													H
CH 157		5637	48.63	-19.57	68.2	36.82	34.7	12.26	35.15	191	309	P	V
5785MHz		5700	48.57	-56.63	105.2	36.55	34.9	12.28	35.16	191	309	P	V
		5717.4	50.41	-59.66	110.07	38.28	35	12.29	35.16	191	309	P	V
		5723.4	48.68	-69.87	118.55	36.5	35.04	12.3	35.16	191	309	P	V
	*	5785	108.2	-	-	95.85	35.2	12.32	35.17	191	309	P	V
	*	5785	100.95	-	-	88.6	35.2	12.32	35.17	191	309	A	V
		5852.6	49.13	-67.14	116.27	36.7	35.2	12.41	35.18	191	309	P	V
		5870.8	49.4	-56.97	106.37	36.96	35.2	12.43	35.19	191	309	P	V
		5919.6	49.43	-22.75	72.18	36.97	35.16	12.5	35.2	191	309	P	V
		5932	49.04	-19.16	68.2	36.58	35.14	12.52	35.2	191	309	P	V
													V
													V



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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 )	
802.11n HT20 CH 165 5825MHz	*	5825	98.99	-	-	86.6	35.2	12.37	35.18	199	54	P	H	
	*	5825	91.76	-	-	79.37	35.2	12.37	35.18	199	54	A	H	
		5850	53.57	-68.63	122.2	41.15	35.2	12.4	35.18	199	54	P	H	
		5860.4	48.96	-60.33	109.29	36.53	35.2	12.42	35.19	199	54	P	H	
		5898.6	49.65	-38.05	87.7	37.17	35.2	12.47	35.19	199	54	P	H	
		5934.4	47.89	-20.31	68.2	35.44	35.13	12.52	35.2	199	54	P	H	
														H
														H
	*	5825	107.89	-	-	95.5	35.2	12.37	35.18	190	308	P	V	
	*	5825	100.74	-	-	88.35	35.2	12.37	35.18	190	308	A	V	
		5851.4	63.23	-55.78	119.01	50.81	35.2	12.4	35.18	190	308	P	V	
		5857	59.19	-51.05	110.24	46.76	35.2	12.41	35.18	190	308	P	V	
		5883	50.01	-49.25	99.26	37.55	35.2	12.45	35.19	190	308	P	V	
		5928.4	50.35	-17.85	68.2	37.89	35.14	12.52	35.2	190	308	P	V	
														V
													V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.													



**Band 4 5725~5850MHz  
WIFI 802.11n HT20 (Harmonic @ 3m)**

WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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 )	
802.11n HT20 CH 149 5745MHz		11490	46.97	-27.03	74	47.08	38.11	19.32	57.54	-	-	P	H	
		17235	51.75	-16.45	68.2	42.87	41.5	23.89	56.51	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11488	46.37	-27.63	74	46.48	38.11	19.32	57.54	-	-	P	V
			17235	52.56	-15.64	68.2	43.68	41.5	23.89	56.51	-	-	P	V
														V
														V
														V
														V
													V	
													V	
													V	
													V	



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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)	
802.11n HT20 CH 157 5785MHz		11570	45.84	-28.16	74	45.62	38.24	19.39	57.41	-	-	P	H	
		17355	51.69	-16.51	68.2	42.66	41.44	23.99	56.4	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11570	46.58	-27.42	74	46.36	38.24	19.39	57.41	-	-	P	V
			17355	53.41	-14.79	68.2	44.38	41.44	23.99	56.4	-	-	P	V
														V
														V
														V
														V
														V
														V
													V	
													V	



WIFI Ant. 1	Note	Frequency ( MHz )	Level ( dBμV/m )	Over 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 )	
802.11n HT20 CH 165 5825MHz		11650	46.84	-27.16	74	46.27	38.4	19.45	57.28	-	-	P	H	
		17475	52.67	-15.53	68.2	43.56	41.33	24.08	56.3	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			11650	46.49	-27.51	74	45.92	38.4	19.45	57.28	-	-	P	V
			17475	51.82	-16.38	68.2	42.71	41.33	24.08	56.3	-	-	P	V
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
													V	
<b>Remark</b>	1. No other spurious found. 2. All results are PASS against Peak and Average limit line. 3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.													



Emission below 1GHz

5GHz WIFI 802.11n HT20 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.	
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.		
1		( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )	
802.11n HT20 LF		49.44	24.18	-15.82	40	38.59	14.58	1.04	30.03	-	-	P	H	
		145.02	36.79	-6.71	43.5	47.46	17.28	1.93	29.88	-	-	P	H	
		180.93	31.46	-12.04	43.5	44.16	14.96	2.2	29.86	-	-	P	H	
		729.1	31.33	-14.67	46	29.42	26.89	4.5	29.48	-	-	P	H	
		883.8	32.62	-13.38	46	27.85	28.66	5	28.89	-	-	P	H	
		960.1	37.2	-16.8	54	29.77	30.83	5.22	28.62	-	-	P	H	
														H
														H
														H
														H
														H
														H
			30	30.26	-9.74	40	34.83	24.57	0.97	30.11	-	-	P	V
			91.29	22.77	-20.73	43.5	36.48	14.79	1.52	30.02	-	-	P	V
			145.02	36.64	-6.86	43.5	47.31	17.28	1.93	29.88	-	-	P	V
			479.9	35.11	-10.89	46	37.69	23.55	3.65	29.78	-	-	P	V
			848.8	32.47	-13.53	46	28.01	28.63	4.89	29.06	-	-	P	V
			960.1	39.68	-14.32	54	32.25	30.83	5.22	28.62	-	-	P	V
														V
														V
													V	
													V	
													V	

**Remark**

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





**Note symbol**

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



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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		( 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. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 5650MHz:**

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. Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.45(dBμV/m) – 68.2(dBμV/m)  
= -12.75 (dB)

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



## Appendix B. Radiated Spurious Emission Plots

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	23.2~25.4°C
		Relative Humidity :	52.5~53.6%

### 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	
1	Horizontal	Fundamental
<b>Peak</b>	<p>Site : 03CH07-HY            Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY            Condition : PEAK(LIN)1 3m HF_ANT_00075962 HORIZONTAL            : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>

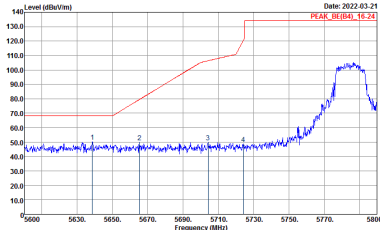
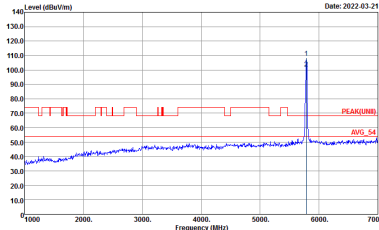
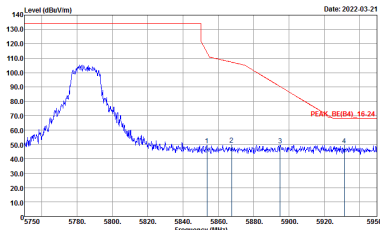


WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH149 5745MHz	
1	Vertical	Fundamental
Peak	<p>Date: 2022-03-21 PEAK_BE(B4)_16-24</p> <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Date: 2022-03-21 PEAK(UIN)</p> <p>Site : 03CH07-HY Condition : PEAK(UIN) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK(UIN) 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH157 5785MHz	
1	Vertical	Fundamental
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	 <p>Site : 03CH07-HY Condition : PEAK(UIN) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>
Peak	 <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK(LIN)I 3m HF_ANT_00075962 HORIZONTAL : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>





WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11a CH165 5825MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY          Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL          : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY          Condition : PEAK(LIN)I 3m HF_ANT_00075962 VERTICAL          : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>



Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

Table with 2 columns: WIFI (Band 4 5725~5850MHz Band Edge @ 3m), ANT (802.11n HT20 CH149 5745MHz). Row 1: 1, Horizontal, Fundamental. Includes two spectral plots showing Level (dBV/m) vs Frequency (MHz) with peak markers and technical parameters.



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH149 5745MHz	
1	Vertical	Fundamental
Peak	<p>Date: 2022-03-21 PEAK_BE(B4)_16-24</p> <p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Date: 2022-03-21 PEAK(UIN) AVG_54</p> <p>Site : 03CH07-HY Condition : PEAK(UIN) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Fundamental
Peak		
Peak		Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK(UWB) 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_46-24 3m HF_ANT_00075962 VERTICAL : RBW:1000.000kHz VBW:3000.000kHz SWTA:Auto</p>	Left blank



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 HORIZONTAL : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK(LIN)I 3m HF_ANT_00075962 HORIZONTAL : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>



WIFI	Band 4 5725~5850MHz Band Edge @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Vertical	Fundamental
Peak	<p>Site : 03CH07-HY Condition : PEAK_BE(B4)_16-24 3m HF_ANT_00075962 VERTICAL : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>	<p>Site : 03CH07-HY Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL : RBW:3000.000kHz VBW:3000.000kHz SWTA:Auto</p>



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

<b>WIFI</b>	<b>Band 4 5725~5850MHz Harmonic @ 3m</b>	
<b>ANT</b>	<b>802.11a CH149 5745MHz</b>	
<b>1</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Peak</b> <b>Avg.</b>	<p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL          Detector : Peak</p>	<p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL          Detector : Peak</p>





WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH157 5785MHz	
1	Horizontal	Vertical
<p><b>Peak</b></p> <p><b>Avg.</b></p>	<p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL          Detector : Peak</p>	<p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL          Detector : Peak</p>



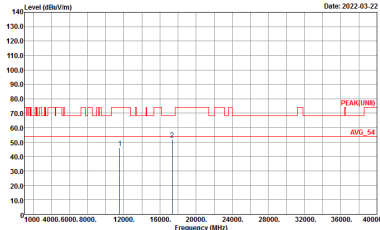
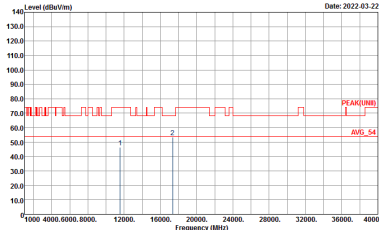
WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11a CH165 5825MHz	
1	Horizontal	Vertical
<p><b>Peak</b></p> <p><b>Avg.</b></p>	<p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL          Detector : Peak</p>	<p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL          Detector : Peak</p>



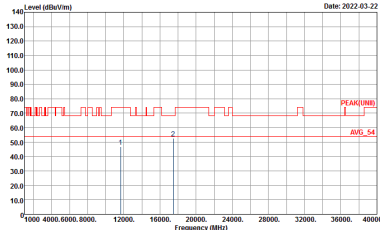
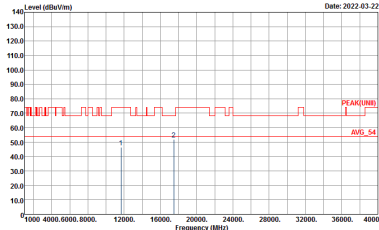
Band 4 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

Table with 2 columns: Horizontal and Vertical. Each column contains a spectral plot showing Level (dBuV/m) vs Frequency (MHz) with Peak and Avg. markers.



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH157 5785MHz	
1	Horizontal	Vertical
<p><b>Peak</b></p> <p><b>Avg.</b></p>	 <p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 HORIZONTAL          Detector : Peak</p>	 <p>Site : 03CH07-HY          Condition : PEAK(UNII) 3m HF_ANT_00075962 VERTICAL          Detector : Peak</p>



WIFI	Band 4 5725~5850MHz Harmonic @ 3m	
ANT	802.11n HT20 CH165 5825MHz	
1	Horizontal	Vertical
<p><b>Peak</b></p> <p><b>Avg.</b></p>	 <p>Site : 03CH07-HY          Condition : PEAK(UNIT) 3m HF_ANT_00075962 HORIZONTAL          Detector : Peak</p>	 <p>Site : 03CH07-HY          Condition : PEAK(UNIT) 3m HF_ANT_00075962 VERTICAL          Detector : Peak</p>



Emission below 1GHz  
 5GHz WIFI 802.11n HT20 (LF @ 3m)

WIFI	5GHz WIFI	
ANT	802.11n HT20 LF	
1	Horizontal	Vertical
QP / Peak	<p>Site : 03CH07-HY          Condition : QP 3m LF-ANT-35415(6) HORIZONTAL          Detector : Peak</p>	<p>Site : 03CH07-HY          Condition : QP 3m LF-ANT-35415(6) VERTICAL          Detector : Peak</p>



## Appendix C. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
5GHz 802.11a	66.99	2060	0.49	1kHz
5GHz 802.11n HT20	65.64	0.52	1kHz	

