

TEST REPORT

Applicant Name : Shenzhen Creality 3D Technology Co.,Ltd.
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Shenzhen, China 518131
Report Number : RA221128-57514E-RF-00A1
FCC ID: 2AXH6HALOT-SKY

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type: 3D printer
Model No.: HALOT-SKY 2022
Multiple Model(s) No.: N/A
Trade Mark: CREALITY
Date Received: 2022/11/28
Report Date: 2023/02/06

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

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Roger Ling
EMC Engineer

Approved By:

Candy Li

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EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

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REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA221128-57514E-RF-00A1	Original Report	2023/02/06

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
TEST METHODOLOGY	4
MEASUREMENT UNCERTAINTY	5
SYSTEM TEST CONFIGURATION.....	6
DESCRIPTION OF TEST CONFIGURATION	6
EQUIPMENT MODIFICATIONS	6
EUT EXERCISE SOFTWARE	6
SUPPORT EQUIPMENT LIST AND DETAILS	6
EXTERNAL I/O CABLE.....	6
BLOCK DIAGRAM OF TEST SETUP	7
SUMMARY OF TEST RESULTS	8
TEST EQUIPMENT LIST	9
FCC §15.247 (I) & §1.1307 (B) (3) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE).....	10
APPLICABLE STANDARD	10
RESULT	10
FCC §15.203 - ANTENNA REQUIREMENT.....	11
APPLICABLE STANDARD	11
ANTENNA CONNECTOR CONSTRUCTION	11
FCC §15.207 (A) – AC LINE CONDUCTED EMISSIONS	12
APPLICABLE STANDARD	12
EUT SETUP.....	12
EMI TEST RECEIVER SETUP.....	12
TEST PROCEDURE	12
TRANSD FACTOR & MARGIN CALCULATION	13
TEST DATA	13
FCC §15.209, §15.205 & §15.247(D) - SPURIOUS EMISSIONS.....	16
APPLICABLE STANDARD	16
EUT SETUP.....	16
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	17
TEST PROCEDURE	17
FACTOR & MARGIN CALCULATION	17
TEST DATA	17
FCC §15.247(B) (3) - MAXIMUM CONDUCTED OUTPUT POWER	25
APPLICABLE STANDARD	25
TEST PROCEDURE	25
TEST DATA	25

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	Wi-Fi: 2412-2462MHz
Maximum Conducted Peak Output Power	22.18dBm
Modulation Technique	Wi-Fi: DSSS, OFDM
Antenna Specification*	2.54dBi (provided by the applicant)
Voltage Range	AC 100-240V, 50/60Hz
Sample serial number	1SOX-1 (Assigned by ATC)
Sample/EUT Status	Good condition

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Note: This is CIIPC application base on original equipment granted on 2021-07-02, the details as follow:

- (1) Changing the Model No. to "HALOT-SKY 2022", Weight reduced by 1kg (Thinning of an internal part).
- (2) Changing the Mainboard video driver chip from "LT6911C" to "RK628D", and the relevant peripheral circuits are updated accordingly, which the highest frequency is 1600MHz.
- (3) Changing the Print screen to "9.25 inch 6K.screen"
- (4) Changing the Print size to "198 * 123 * 200"

Based on above differences, it will affected the test item of "spurious emissions", "Conducted emissions" and "Peak Output Power Measurement", so the changed items were performed, the same test item is refer to the original report.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		0.082×10^{-7}
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.66dB
	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz - 26.5GHz	5.06dB
	26.5GHz - 40GHz	4.72dB
Temperature		1°C
Humidity		6%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

For Wi-Fi mode, total 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	/	/
6	2437	/	/
7	2442	/	/

802.11b, 802.11g, 802.11n-HT20 mode was tested with Channel 1, 6 and 11.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

“adb”* software was used to test and power level as below:

Mode	Data rate	Power Level*		
		Low Channel	Middle Channel	High Channel
802.11b	1Mbps	20	20	30
802.11g	6Mbps	40	45	60
802.11n-HT20	MCS0	40	45	60

The software and power level was provided by applicant.

Support Equipment List and Details

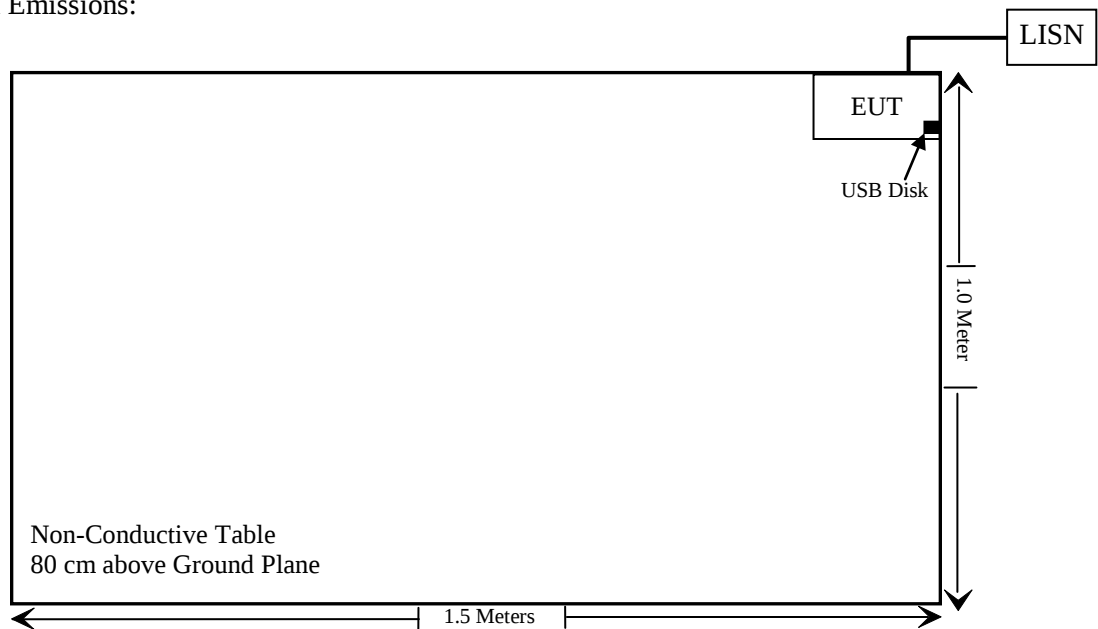
Manufacturer	Description	Model	Serial Number
Unknown	USB Disk	Unknown	Unknown

External I/O Cable

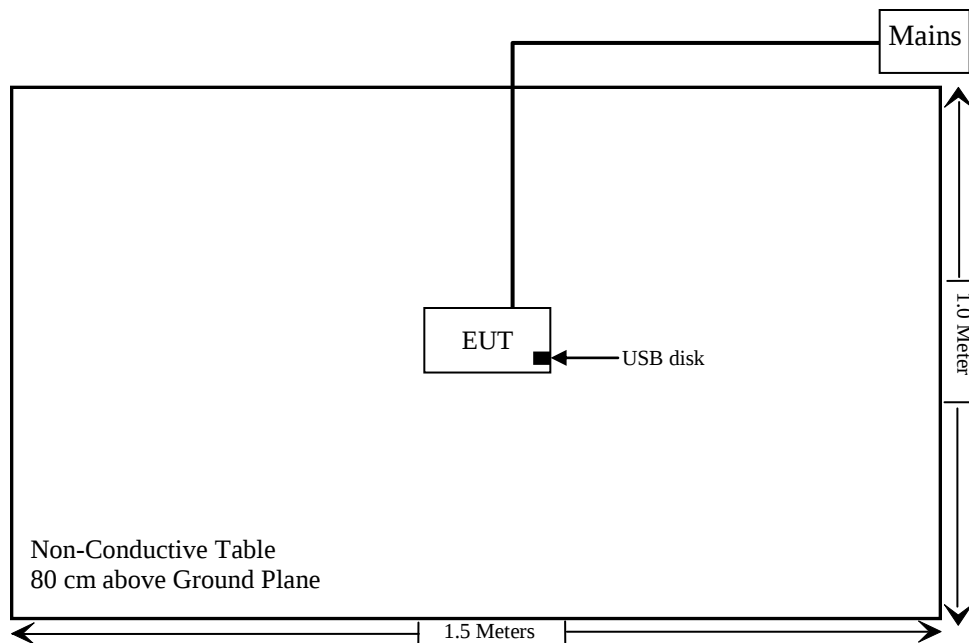
Cable Description	Length (m)	From Port	To
/	/	/	/

Block Diagram of Test Setup

For Conducted Emissions:



For Radiated Emissions:



SUMMARY OF TEST RESULTS

RULES	Description Of Test	Result	Remark
§15.247 (i) & §1.1307 (b) (3) & §2.1091	Maximum Permissible Exposure(MPE)	Compliant	/
§15.203	Antenna Requirement	Compliant	/
§15.207 (a)	AC Line Conducted Emissions	Compliant	/
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliant	/
§15.247 (a)(2)	6 dB Emission Bandwidth & Occupied Bandwidth	-	See Note
§15.247(b)(3)	Maximum Conducted Output Power	Reporting	See Note
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	-	See Note
§15.247(e)	Power Spectral Density	-	See Note

Note:

1. The manufacturer declared the Wi-Fi module installed in EUT is identical to the original device (FCC ID:2AXH6HALOT-SKY), which granted on 2021-06-17 by Bay Area Compliance Laboratories Corp. (Dongguan).
2. The RF output power was spot checked and it's consistently with the original report.
3. The ATC is responsible for all the information provided in this report, except when information is provided by the customer as identified in this report

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde& Schwarz	EMI Test Receiver	ESCI	100784	2022/11/25	2023/11/24
Rohde & Schwarz	L.I.S.N.	ENV216	101314	2022/11/25	2023/11/24
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2022/12/07	2023/12/06
Unknown	RF Coaxial Cable	No.17	N0350	2022/11/25	2023/11/24
Conducted Emission Test Software: e3 19821b (V9)					
Radiated Emissions Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2022/11/25	2023/11/24
SONOMA INSTRUMENT	Amplifier	310 N	186131	2022/11/08	2023/11/07
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Unknown	RF Coaxial Cable	No.12	N040	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.13	N300	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.14	N800	2022/11/25	2023/11/24
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2022/11/25	2023/11/24
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2022/11/08	2023/11/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2022/11/08	2023/11/07
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2022/11/30	2025/11/29
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2022/12/26	2025/12/25
Unknown	RF Coaxial Cable	No.10	N050	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.11	N1000	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.15	N600	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2023/11/24
Wainwright	Band Reject Filter	WRCG2400/2485-2375/2510-60/11SS	10	2022/11/25	2023/11/24
Radiated Emission Test Software: e3 19821b (V9)					
RF conducted test					
Agilent	USB wideband power sensor	U2021XA	MY54250003	2022/06/27	2023/06/26
WEINSCHEL	10dB Attenuator	5324	AU 3842	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.31	RF-01	Each time	Each time

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.247 (i) & §1.1307 (b) (3) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

According to KDB 447498 D04 Interim General RF Exposure Guidance

MPE-Based Exemption:

General frequency and separation-distance dependent MPE-based effective radiated power(ERP) thresholds are in Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] to support an exemption from further evaluation from 300 kHz through 100 GHz.

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.

R is the minimum separation distance in meters

f = frequency in MHz

Result

Frequency (MHz)	Antenna Gain		Tune up conducted power (dBm)	ERP		Evaluation Distance (m)	ERP Limit (W)
	(dBi)	(dBd)		(dBm)	(W)		
2412-2462	2.54	0.39	23.00	23.39	0.218	0.2	0.768

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has an internal antenna arrangement, which was permanently attached and the antenna gain is 2.54dBi, fulfill the requirement of this section. Please refer to the EUT photos.

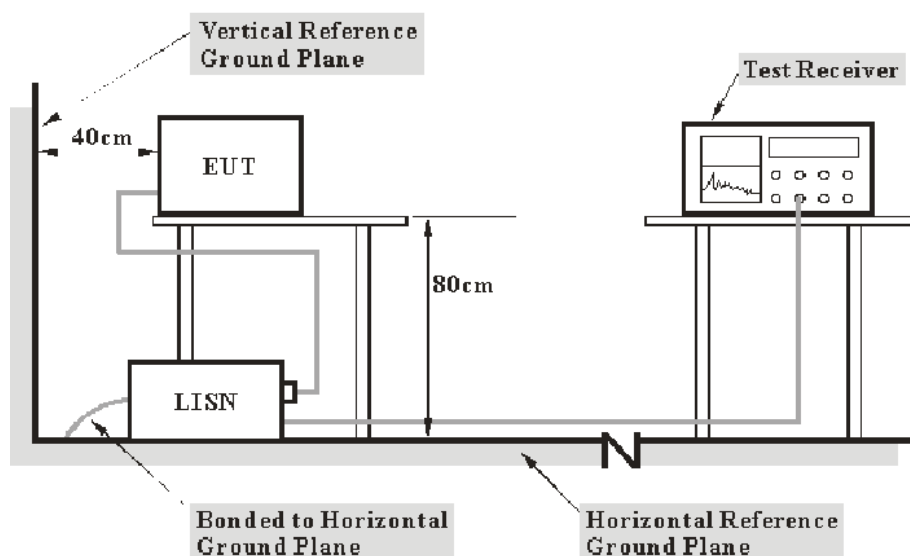
Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the device was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Transd Factor & Margin Calculation

The Transd factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Transd Factor} = \text{LISN VDF} + \text{Cable Loss}$$

The “**Over Limit**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a over limit of -7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Over Limit} = \text{level} - \text{Limit}$$

$$\text{Level} = \text{reading level} + \text{Transd Factor}$$

Test Data

Environmental Conditions

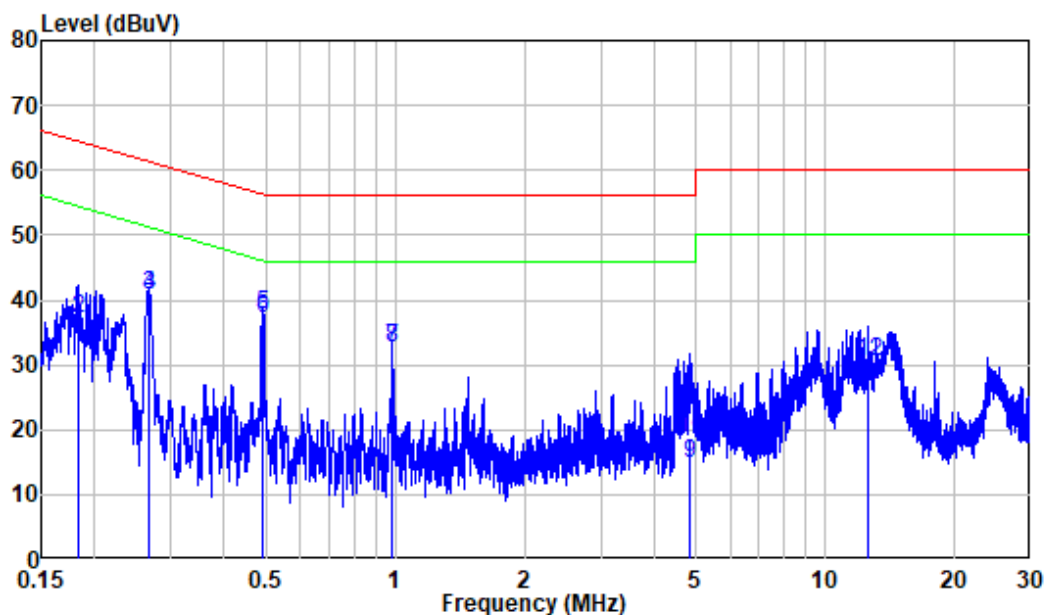
Temperature:	21 °C
Relative Humidity:	42 %
ATM Pressure:	101.0 kPa

The testing was performed by Chen Jie on 2022-12-12.

EUT operation mode: Transmitting

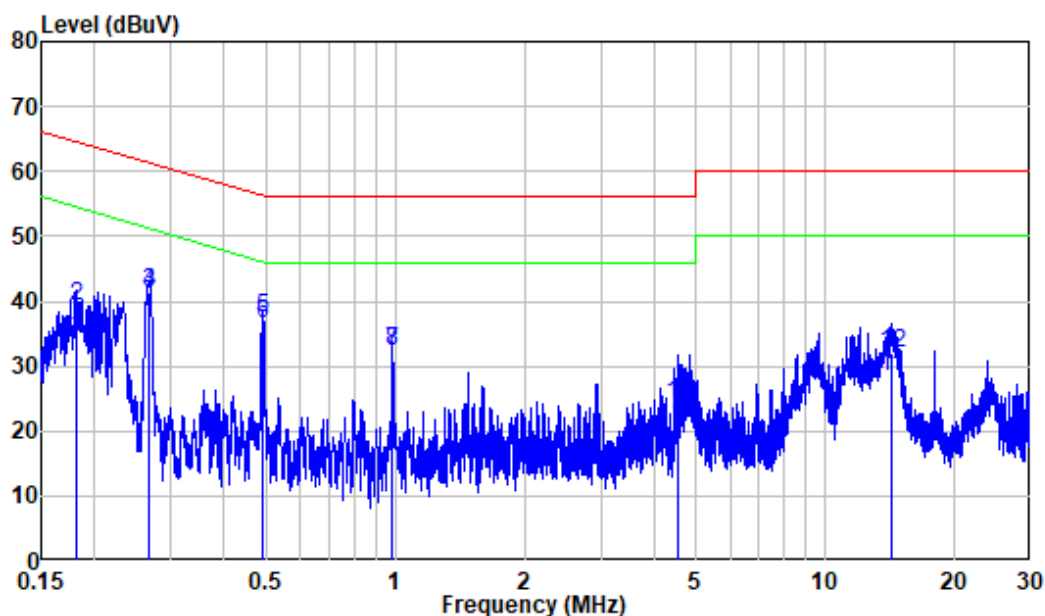
Wi-Fi: (Worst case is 802.11b mode, low Channel)

AC 120V/60 Hz, Line



Site : Shielding Room
 Condition: Line
 Job No. : RA221128-57514E-RF
 Mode : Transmitting
 Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.182	9.80	23.86	33.66	54.38	-20.72	Average
2	0.182	9.80	27.35	37.15	64.38	-27.23	QP
3	0.266	9.80	30.85	40.65	51.24	-10.59	Average
4	0.266	9.80	31.02	40.82	61.24	-20.42	QP
5	0.491	9.80	27.88	37.68	46.15	-8.47	Average
6	0.491	9.80	27.21	37.01	56.15	-19.14	QP
7	0.983	9.81	22.74	32.55	46.00	-13.45	Average
8	0.983	9.81	22.72	32.53	56.00	-23.47	QP
9	4.842	9.85	5.09	14.94	46.00	-31.06	Average
10	4.842	9.85	8.81	18.66	56.00	-37.34	QP
11	12.516	9.93	16.99	26.92	50.00	-23.08	Average
12	12.516	9.93	20.52	30.45	60.00	-29.55	QP

AC 120V/60 Hz, Neutral

Site : Shielding Room
 Condition: Neutral
 Job No. : RA221128-57514E-RF
 Mode : Transmitting
 Power : AC 120V 60Hz

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dBuV	dBuV	dBuV	dB	
1	0.180	9.80	24.68	34.48	54.47	-19.99	Average
2	0.180	9.80	29.50	39.30	64.47	-25.17	QP
3	0.268	9.80	31.54	41.34	51.18	-9.84	Average
4	0.268	9.80	31.47	41.27	61.18	-19.91	QP
5	0.492	9.80	27.63	37.43	46.13	-8.70	Average
6	0.492	9.80	26.78	36.58	56.13	-19.55	QP
7	0.983	9.81	22.53	32.34	46.00	-13.66	Average
8	0.983	9.81	22.42	32.23	56.00	-23.77	QP
9	4.552	9.87	11.08	20.95	46.00	-25.05	Average
10	4.552	9.87	14.21	24.08	56.00	-31.92	QP
11	14.203	10.04	18.30	28.34	50.00	-21.66	Average
12	14.203	10.04	21.82	31.86	60.00	-28.14	QP

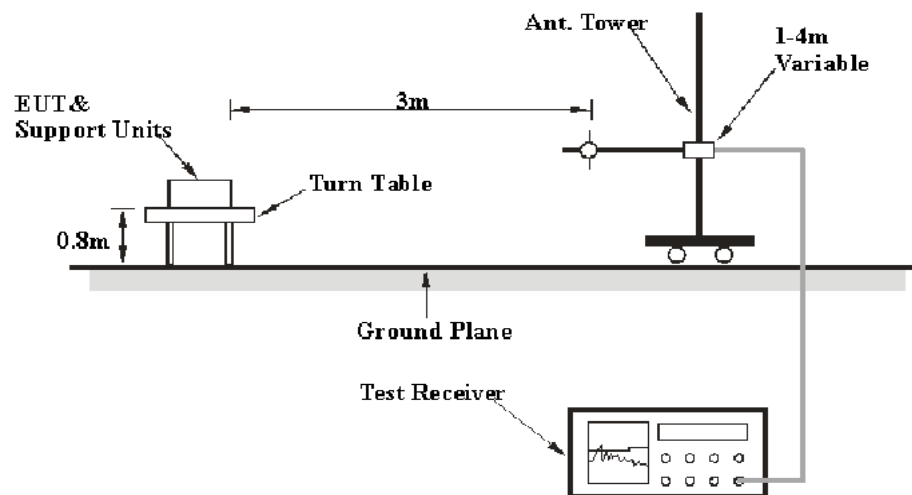
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

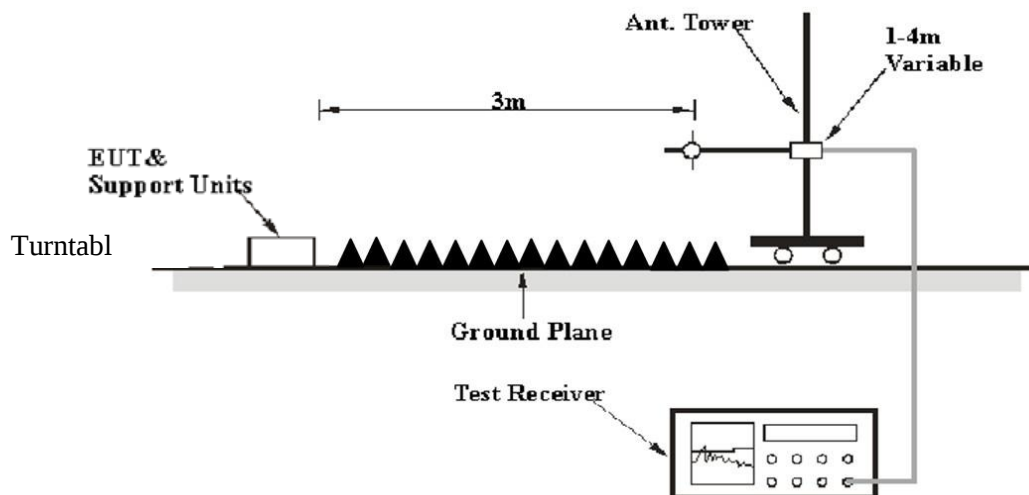
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.247.

EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz ^{Note 1}	/	Average
	1MHz	> 1/T ^{Note 2}	/	Average

Note 1: when duty cycle is no less than 98%

Note 2: when duty cycle is less than 98%

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Factor & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Over Limit or Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a overlimit/margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\begin{aligned} \text{Margin/Over Limit} &= \text{Corrected Amplitude/Level-Limit} \\ \text{Corrected Amplitude/Level} &= \text{Reading} + \text{Corrected Factor} \end{aligned}$$

Test Data

Environmental Conditions

Temperature:	22.5~24°C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

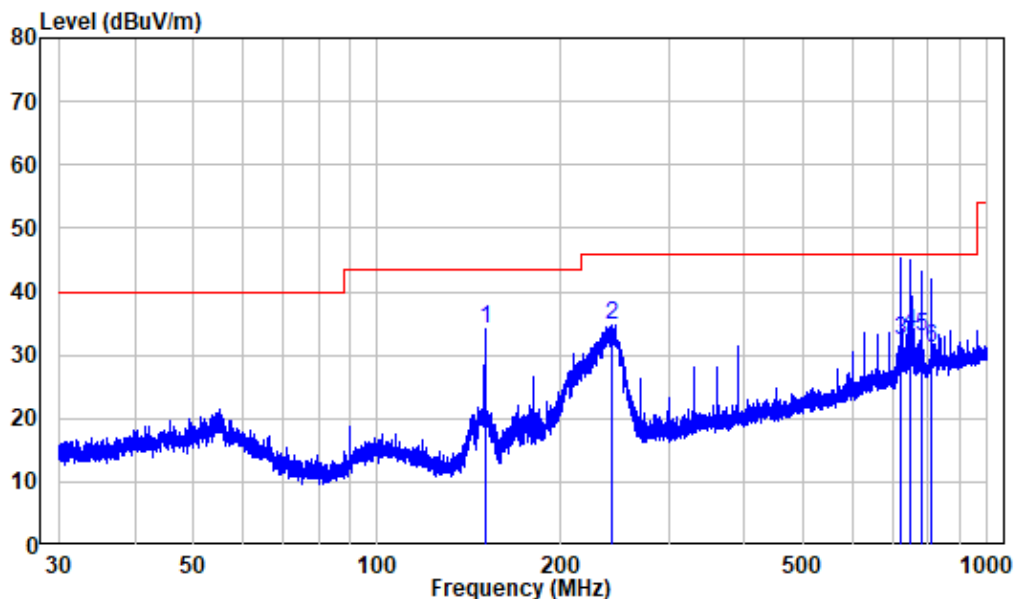
The testing was performed by Jimi on 2022-12-09 for below 1GHz and Jason Liu on 2023-02-06 for above 1GHz.

EUT operation mode: Transmitting

30MHz-1GHz: (Worst case is 802.11b mode, low channel)

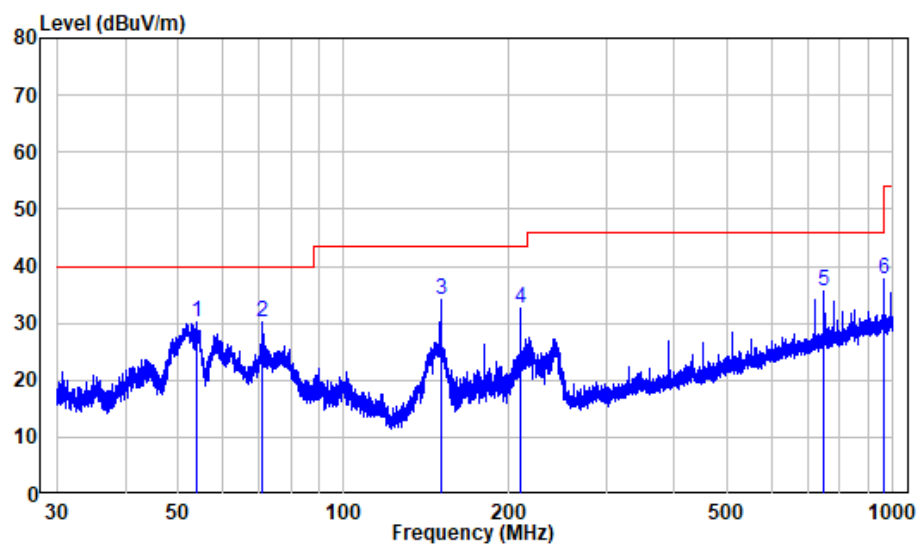
Note: When the test result of peak was less than the limit of QP more than 6dB, just peak value were recorded.

Horizontal



Site : chamber
Condition: 3m HORIZONTAL
Job No. : RA221128-57514E-RF
Test Mode: Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	150.011	-15.27	49.46	34.19	43.50	-9.31	Peak
2	242.632	-10.74	45.47	34.73	46.00	-11.27	Peak
3	720.146	-1.35	33.50	32.15	46.00	-13.85	QP
4	750.108	-0.87	34.40	33.53	46.00	-12.47	QP
5	780.291	0.07	32.70	32.77	46.00	-13.23	QP
6	810.265	-0.42	31.41	30.99	46.00	-15.01	QP

Vertical

Site : chamber
Condition: 3m VERTICAL
Job No. : RA221128-57514E-RF
Test Mode: Transmitting

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	54.000	-10.35	40.56	30.21	40.00	-9.79	Peak
2	71.080	-15.24	45.42	30.18	40.00	-9.82	Peak
3	150.011	-15.27	49.23	33.96	43.50	-9.54	Peak
4	210.048	-11.85	44.51	32.66	43.50	-10.84	Peak
5	750.108	-0.87	36.54	35.67	46.00	-10.33	Peak
6	960.056	2.36	35.36	37.72	54.00	-16.28	Peak

1-25 GHz:

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11b									
Low Channel(2412MHz)									
2310	61.33	PK	171	1.4	H	-7.24	54.09	74	-19.91
2310	48.83	AV	171	1.4	H	-7.24	41.59	54	-12.41
2310	61.28	PK	62	1.1	V	-7.24	54.04	74	-19.96
2310	48.78	AV	62	1.1	V	-7.24	41.54	54	-12.46
2390	62.58	PK	131	1.1	H	-7.22	55.36	74	-18.64
2390	50.45	AV	131	1.1	H	-7.22	43.23	54	-10.77
2390	62.93	PK	304	1.2	V	-7.22	55.71	74	-18.29
2390	50.67	AV	304	1.2	V	-7.22	43.45	54	-10.55
4824	61.79	PK	92	2.4	H	-3.53	58.26	74	-15.74
4824	54.44	AV	92	2.4	H	-3.53	50.91	54	-3.09
4824	59.41	PK	332	2.4	V	-3.53	55.88	74	-18.12
4824	52.70	AV	332	2.4	V	-3.53	49.17	54	-4.83
Middle Channel(2437MHz)									
4874	60.61	PK	276	1.1	H	-3.42	57.19	74	-16.81
4874	53.64	AV	276	1.1	H	-3.42	50.22	54	-3.78
4874	58.97	PK	42	1.6	V	-3.42	55.55	74	-18.45
4874	51.93	AV	42	1.6	V	-3.42	48.51	54	-5.49
High Channel(2462 MHz)									
2483.5	63.72	PK	207	2.3	H	-7.20	56.52	74	-17.48
2483.5	50.61	AV	207	2.3	H	-7.20	43.41	54	-10.59
2483.5	64.04	PK	1	1.4	V	-7.20	56.84	74	-17.16
2483.5	50.84	AV	1	1.4	V	-7.20	43.64	54	-10.36
2500	63.41	PK	30	1.4	H	-7.18	56.23	74	-17.77
2500	50.29	AV	30	1.4	H	-7.18	43.11	54	-10.89
2500	63.29	PK	333	2	V	-7.18	56.11	74	-17.89
2500	50.11	AV	333	2	V	-7.18	42.93	54	-11.07
4924	60.11	PK	290	1.9	H	-3.16	56.95	74	-17.05
4924	53.28	AV	290	1.9	H	-3.16	50.12	54	-3.88
4924	58.89	PK	57	1.2	V	-3.16	55.73	74	-18.27
4924	51.55	AV	57	1.2	V	-3.16	48.39	54	-5.61

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11g									
Low Channel(2412MHz)									
2310	61.96	PK	82	1.3	H	-7.24	54.72	74	-19.28
2310	48.90	AV	82	1.3	H	-7.24	41.66	54	-12.34
2310	62.11	PK	267	1.9	V	-7.24	54.87	74	-19.13
2310	48.68	AV	267	1.9	V	-7.24	41.44	54	-12.56
2390	63.50	PK	284	2.2	H	-7.22	56.28	74	-17.72
2390	50.54	AV	284	2.2	H	-7.22	43.32	54	-10.68
2390	63.37	PK	285	1.5	V	-7.22	56.15	74	-17.85
2390	50.59	AV	285	1.5	V	-7.22	43.37	54	-10.63
4824	63.55	PK	279	1.3	H	-3.53	60.02	74	-13.98
4824	53.98	AV	279	1.3	H	-3.53	50.45	54	-3.55
4824	62.60	PK	114	1.5	V	-3.53	59.07	74	-14.93
4824	53.26	AV	114	1.5	V	-3.53	49.73	54	-4.27
Middle Channel(2437MHz)									
4874	63.58	PK	229	1.2	H	-3.42	60.16	74	-13.84
4874	54.25	AV	229	1.2	H	-3.42	50.83	54	-3.17
4874	62.74	PK	116	2.2	V	-3.42	59.32	74	-14.68
4874	53.32	AV	116	2.2	V	-3.42	49.90	54	-4.10
High Channel(2462 MHz)									
2483.5	67.20	PK	146	1.6	H	-7.20	60.00	74	-14.00
2483.5	52.99	AV	146	1.6	H	-7.20	45.79	54	-8.21
2483.5	65.09	PK	291	2.1	V	-7.20	57.89	74	-16.11
2483.5	51.86	AV	291	2.1	V	-7.20	44.66	54	-9.34
2500	63.74	PK	296	2.3	H	-7.18	56.56	74	-17.44
2500	50.54	AV	296	2.3	H	-7.18	43.36	54	-10.64
2500	63.70	PK	157	1.1	V	-7.18	56.52	74	-17.48
2500	50.29	AV	157	1.1	V	-7.18	43.11	54	-10.89
4924	63.09	PK	110	1.9	H	-3.16	59.93	74	-14.07
4924	53.56	AV	110	1.9	H	-3.16	50.40	54	-3.60
4924	62.18	PK	331	1.1	V	-3.16	59.02	74	-14.98
4924	53.14	AV	331	1.1	V	-3.16	49.98	54	-4.02

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave		Height (m)	Polar (H/V)				
802.11n20									
Low Channel(2412MHz)									
2310	61.96	PK	49	1.4	H	-7.24	54.72	74	-19.28
2310	49.19	AV	49	1.4	H	-7.24	41.95	54	-12.05
2310	61.79	PK	179	2.3	V	-7.24	54.55	74	-19.45
2310	48.78	AV	179	2.3	V	-7.24	41.54	54	-12.46
2390	63.75	PK	295	1.8	H	-7.22	56.53	74	-17.47
2390	50.32	AV	295	1.8	H	-7.22	43.10	54	-10.90
2390	63.94	PK	339	1.1	V	-7.22	56.72	74	-17.28
2390	50.44	AV	339	1.1	V	-7.22	43.22	54	-10.78
4824	63.61	PK	242	1.9	H	-3.53	60.08	74	-13.92
4824	53.95	AV	242	1.9	H	-3.53	50.42	54	-3.58
4824	62.68	PK	37	2.2	V	-3.53	59.15	74	-14.85
4824	52.57	AV	37	2.2	V	-3.53	49.04	54	-4.96
Middle Channel(2437MHz)									
4874	64.11	PK	229	1.7	H	-3.42	60.69	74	-13.31
4874	53.93	AV	229	1.7	H	-3.42	50.51	54	-3.49
4874	63.00	PK	193	1.7	V	-3.42	59.58	74	-14.42
4874	52.58	AV	193	1.7	V	-3.42	49.16	54	-4.84
High Channel(2462 MHz)									
2483.5	66.92	PK	237	1.7	H	-7.20	59.72	74	-14.28
2483.5	52.87	AV	237	1.7	H	-7.20	45.67	54	-8.33
2483.5	66.04	PK	299	2.1	V	-7.20	58.84	74	-15.16
2483.5	52.12	AV	299	2.1	V	-7.20	44.92	54	-9.08
2500	63.71	PK	15	1.5	H	-7.18	56.53	74	-17.47
2500	50.80	AV	15	1.5	H	-7.18	43.62	54	-10.38
2500	63.75	PK	313	1.7	V	-7.18	56.57	74	-17.43
2500	50.96	AV	313	1.7	V	-7.18	43.78	54	-10.22
4924	63.52	PK	56	1.3	H	-3.16	60.36	74	-13.64
4924	53.99	AV	56	1.3	H	-3.16	50.83	54	-3.17
4924	62.20	PK	183	1.4	V	-3.16	59.04	74	-14.96
4924	52.28	AV	183	1.4	V	-3.16	49.12	54	-4.88

Note:

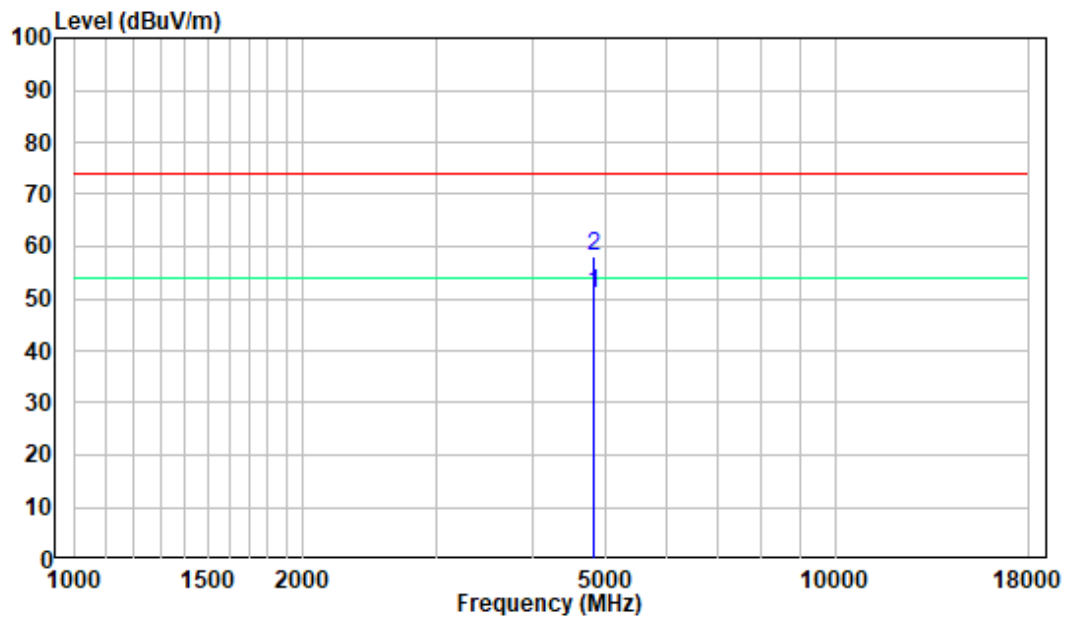
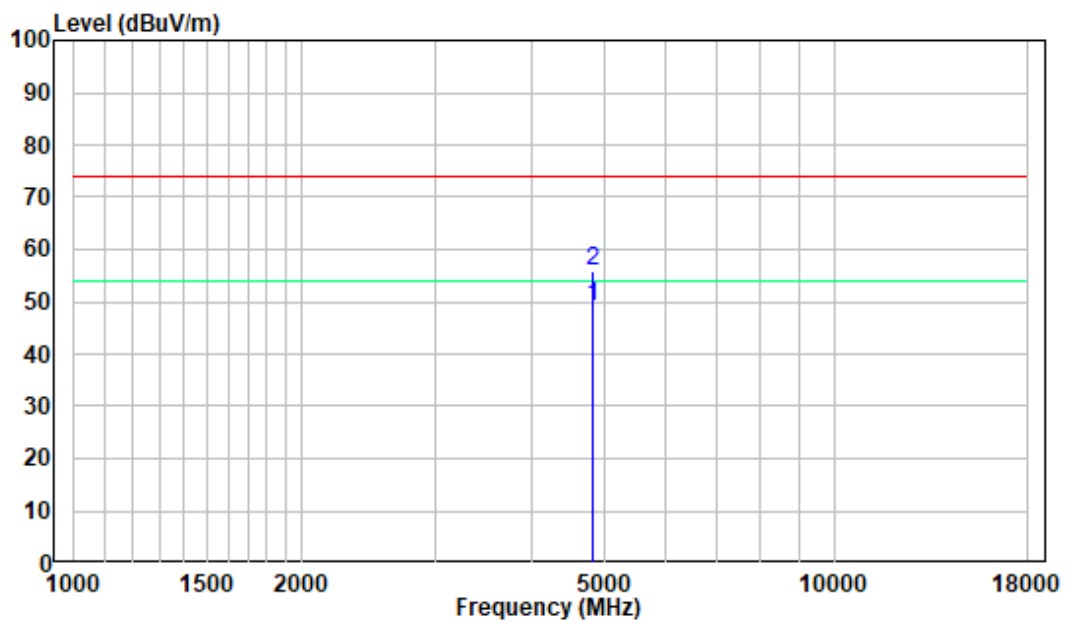
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor

Absolute Level (Corrected Amplitude) = Factor + Reading

Margin = Absolute Level - Limit

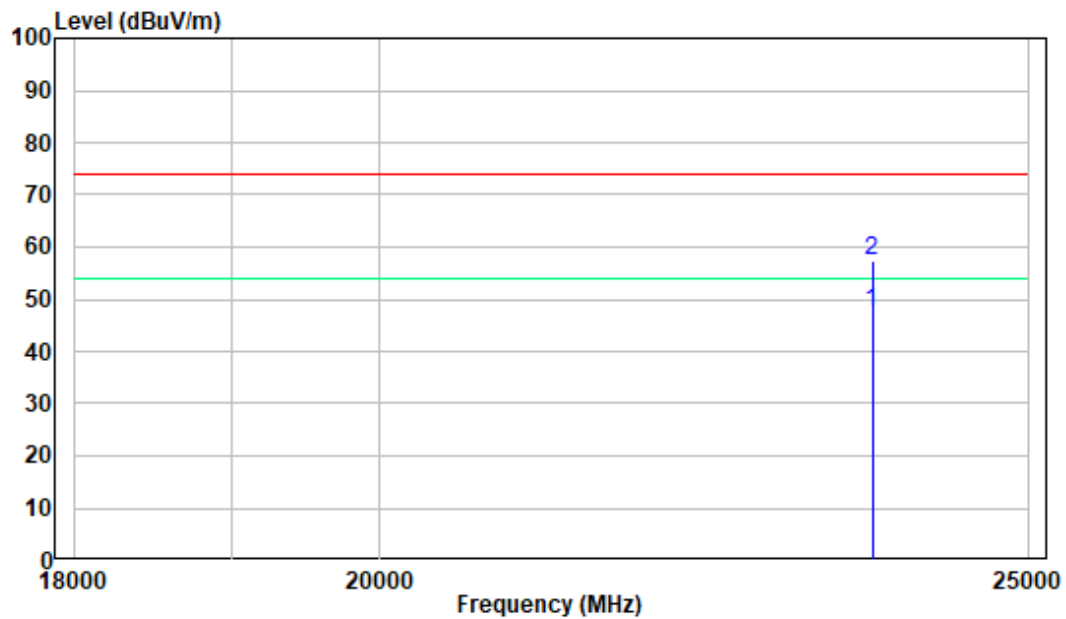
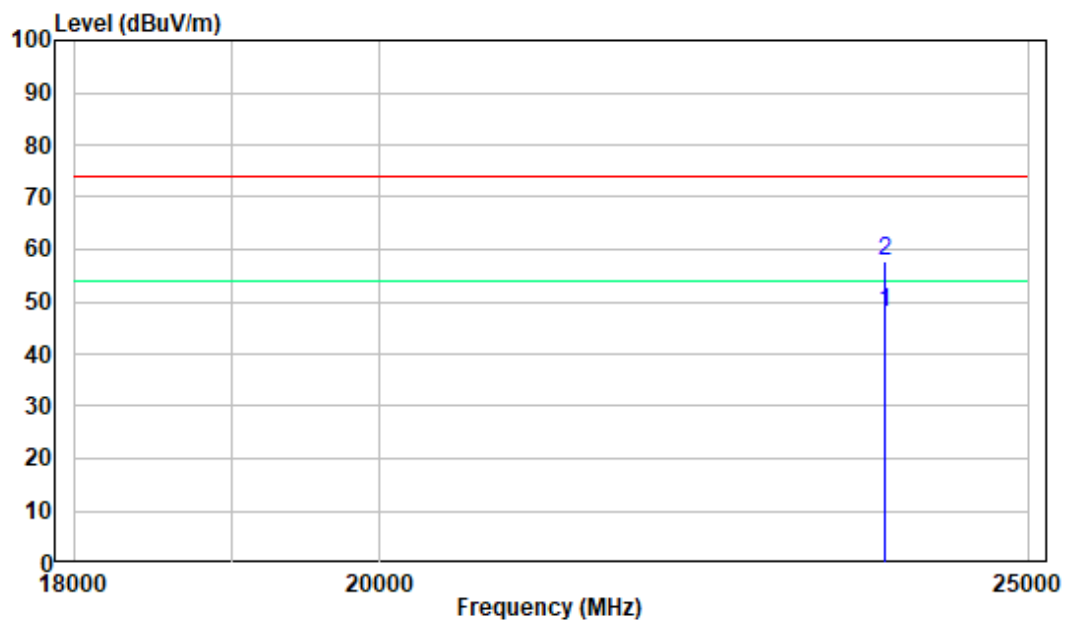
The other spurious emission which is 20dB below to the limit was not recorded.

The test result of peak was less than the limit of average, so just peak values were recorded.

1-18 GHz:**Pre-scan Plots:****802.11 b Low Channel
Horizontal****Vertical**

18 -25GHz:

Pre-scan Plots:

**802.11 b Low Channel
Horizontal****Vertical**

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

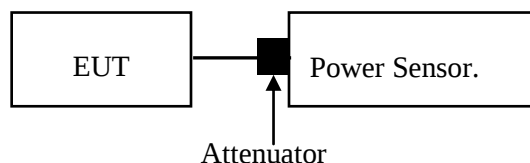
Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.9.1.3

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Glenn Jiang on 2023-01-02.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to below table.

Test Mode	Antenna	Channel	Peak Power [dBm]	Limit[dBm]	Verdict
802.11 b	Ant1	2412	8.51	≤30	PASS
		2437	9.09	≤30	PASS
		2462	11.28	≤30	PASS
802.11 G	Ant1	2412	19.41	≤30	PASS
		2437	20.49	≤30	PASS
		2462	22.08	≤30	PASS
802.11 N20	Ant1	2412	19.31	≤30	PASS
		2437	20.19	≤30	PASS
		2462	22.18	≤30	PASS

******* END OF REPORT *******