FCC TEST REPORT

FCC ID: 2ATPH-JPP

On Behalf of

JUGANU Ltd.

JPROTECT

Model No.: See model list

Prepared for	:	JUGANU Ltd.
Address	:	1 Yahadut Canada 1A, terminal center, building A, 2nd Floor, Or Yehuda, Israel

Prepared By	:	Shenzhen Alpha Product Testing Co., Ltd.
Address	:	Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

Report Number	:	A2104199-C01-R01
Date of Receipt	:	April 26, 2021
Date of Test	:	April 26, 2021– April 29, 2021
Date of Report	:	May 6, 2021
Version Number	:	V0

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TEST REPORT DECLARATION

Applicant	:	JUGANU Ltd.
Address	:	1 Yahadut Canada 1A, terminal center, building A, 2nd Floor, Or Yehuda, Israel
Manufacturer	:	JUGANU Ltd.
Address	:	1 Yahadut Canada 1A, terminal center, building A, 2nd Floor, Or Yehuda, Israel
EUT Description	:	JPROTECT
(A) Model No.	:	See model list
(B) Trademark	:	

Measurement Standard Used:

FCC Rules and Regulations Part 15 Subpart B Class B, ANSI C63.4:2014

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed full responsibility for the accuracy and completeness of test. Also, this report shows that the EUT is technically compliant with the FCC Part 15 requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....…..:	Lucas Pang Project Engineer	
Approved by (name + signature)…....:	Simple Guan Project Manager	
Date of issue……..:	May 6, 2021	

Revision History

Revision	Issue Date	Revisions	Revised By
V0	May 6, 2021	Initial released Issue	Lucas Pang

1. General Information

1.1.Description of Device (EUT)

Product Name : JPROTECT

Model Number : See model list
See model list.

Diff : All the models are the same, except the model number for different size and appearance, All tests are made with the model JPP-C-R-TU-B-30-D03-P1.

Highest Frequency : 915.1MHz

Test Voltage : AC 120V/60Hz

Antenna Type : External Antenna

EUT information : Input : DC 48V from DC Power

Trademark :

Note: The EUT has only receiver function.

Software version : N/A

Hardware version : N/A

1.2. Accessories of Device (EUT)

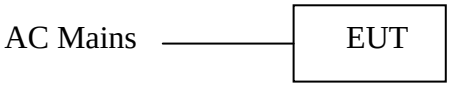
Power Source : N/A

1.3.Tested Supporting System Details.

No.	Description	Manufacturer	Model	Serial Number	Certification or DOC
1.	DC Power	JUNKE	JK12010S	20140927-6	N/A

1.4.Block Diagram of connection between EUT and simulators

For Tests



Signal Cable Description of the above Support Units

No.	Port Name	Cable	Length	Shielded (Yes or No)	Detachable (Yes or No)
/	/	/	/	/	/
/	/	/	/	/	/

2. Summary of Standards and Results

2.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

EMISSION			
Description of Test Item	**Standard**	**Limits**	**Results**
Power Line Conducted Emission Test	FCC Part 15 ANSI C63.4:2014	Class B	**P**
Radiated Emission Test	FCC Part 15 ANSI C63.4:2014	Class B	**P**

Note: 1. P is an abbreviation for Pass.
2. F is an abbreviation for Fail.
3. N/A is an abbreviation for Not Applicable.

2.2.Test Mode Description

For Conducted Emission and Radiated Emission Test		
Mode No.	Test Mode	Test Voltage
1.	RX&Working	AC 120V/60Hz

2.3.Test Equipment List

For Power Line Conducted Emission Test Equipment:						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	101165	2020.09.02	1 Year
2.	L.I.S.N.#1	Schwarz beck	NSLK8126	8126466	2020.09.02	1 Year
3.	L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2020.09.02	1 Year
4.	Pulse Limiter	Schwarz beck	9516F	9618	2020.09.02	1 Year

For Frequency Range 30MHz~1GHz Radiated Emission Test Equipment:						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde&Schwarz	ESR	1316.3003K03-102082-Wa	2020.09.02	1 Year
2	Bilog Antenna	Schwarz beck	VULB 9168	9168-627	2020.04.12	2 Year

For Frequency Range above 1GHz Radiated Emission Test Equipment:						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	ROHDE&SCHWARZ	FSU	1166.1660.26	2020.09.02	1 Year
2	Horn Antenna	Schwarz beck	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2 Year
3	Amplifier	Agilent	8449B	3008A02664	2020.09.02	1 Year

2.4.Test Facility

Shenzhen Alpha Product Testing Co., Ltd.

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
Registration Number: 293961

2.5.Measurement Uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.74dB
Uncertainty for Radiation Emission test (<1G)	3.77 dB (Distance: 3m Polarize: V)
	3.80 dB (Distance: 3m Polarize: H)
Uncertainty for Radiation Emission test (>1G)	4.13 dB (Distance: 3m Polarize: V)
	4.16 dB (Distance: 3m Polarize: H)
(95% confidence levels, k=2)	

3. Power Line Conducted Emission Test

3.1.Test Limits

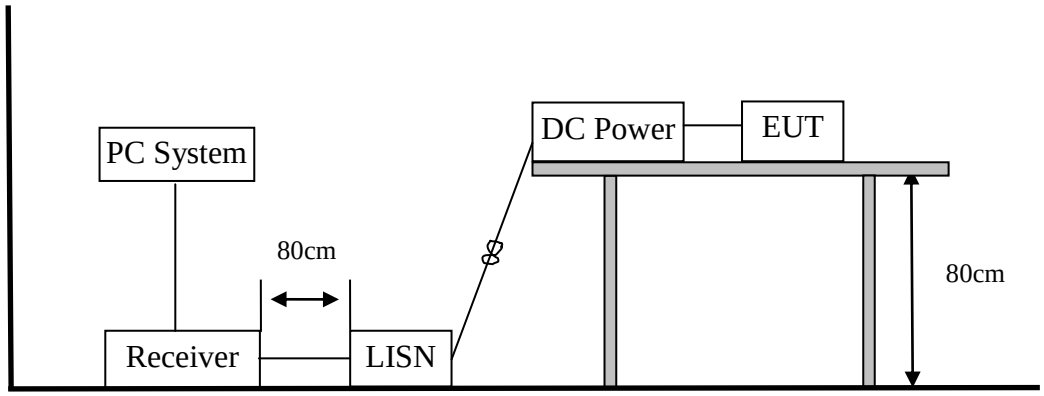
Frequency			Maximum RF Line Voltage	
			Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz	~	500kHz	66 ~ 56*	56 ~ 46*
500kHz	~	5MHz	56	46
5MHz	~	30MHz	60	50

Notes: 1. Emission level=Read level + LISN factor-Preamp factor + Cable loss

2. * Decreasing linearly with logarithm of frequency.

3. The lower limit shall apply at the transition frequencies.

3.2.Block Diagram of Test Setup



3.3.Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

3.4.Operating Condition of EUT

（1） Setup the EUT as shown as Section 3.2.

（2） Turn on the power of all equipment.

（3） Let the EUT work in test mode and 15 minutes before taking the test.

3.5.Test Procedure

（1） The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4:2014 on conducted Emission test.

（2） The frequency range from 150kHz to 30MHz is checked, the bandwidth of test receiver (R&S TEST RECEIVER ESCI) is set at 9kHz.

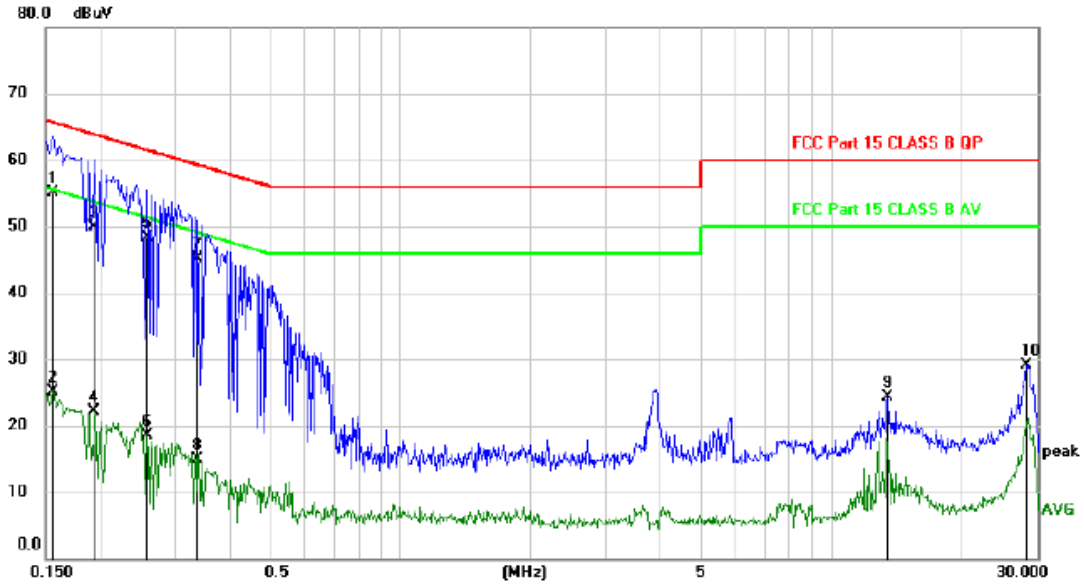
3.6.Test Results

Test Date	: 2021.4.25	Temperature	: 24℃
Test Engineer	: Lucas Pang	Humidity	: 56%
Test Mode	: Working		
Test Results	: Pass		

Note: 1. The test results are listed in next pages.

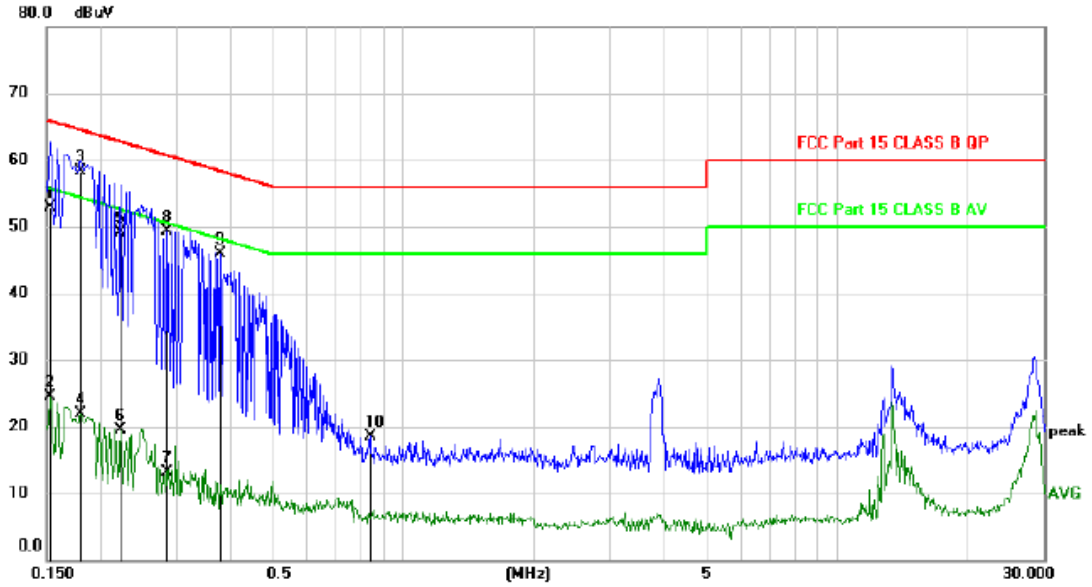
2. If the limits for the measurement with the average detector are met when using a receiver with a quasi-peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector need not be carried out.

Phase: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1559	45.07	9.94	55.01	65.68	-10.67	QP	
2		0.1559	15.24	9.94	25.18	55.68	-30.50	AVG	
3		0.1949	39.90	9.92	49.82	63.83	-14.01	QP	
4		0.1949	12.12	9.92	22.04	53.83	-31.79	AVG	
5		0.2580	38.32	9.96	48.28	61.50	-13.22	QP	
6		0.2580	8.49	9.96	18.45	51.50	-33.05	AVG	
7		0.3390	35.25	9.94	45.19	59.23	-14.04	QP	
8		0.3390	5.04	9.94	14.98	49.23	-34.25	AVG	
9		13.4819	14.02	10.29	24.31	60.00	-35.69	peak	
10		28.2360	18.56	10.59	29.15	60.00	-30.85	peak	

Phase: N



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1529	42.92	9.94	52.86	65.84	-12.98	QP	
2		0.1529	14.56	9.94	24.50	55.84	-31.34	AVG	
3	*	0.1800	48.33	9.93	58.26	64.49	-6.23	QP	
4		0.1800	11.90	9.93	21.83	54.49	-32.66	AVG	
5		0.2220	39.22	9.94	49.16	62.74	-13.58	QP	
6		0.2220	9.62	9.94	19.56	52.74	-33.18	AVG	
7		0.2849	3.27	9.93	13.20	50.67	-37.47	AVG	
8		0.2850	39.43	9.93	49.36	60.67	-11.31	peak	
9		0.3780	36.01	9.94	45.95	58.32	-12.37	peak	
10		0.8370	8.54	9.95	18.49	56.00	-37.51	peak	

4. Radiated Emission Test

4.1.Test Limit

Frequency MHz			Distance (Meters)	Limits dB(μV)/m
30	~	88	3	40.0
88	~	216	3	43.5
216	~	960	3	46.0
960	~	1000	3	54.0
Above 1GHz			3	74(Peak) 54(Average)

Notes: 1. The smaller limit shall apply at the cross point between two frequency bands.

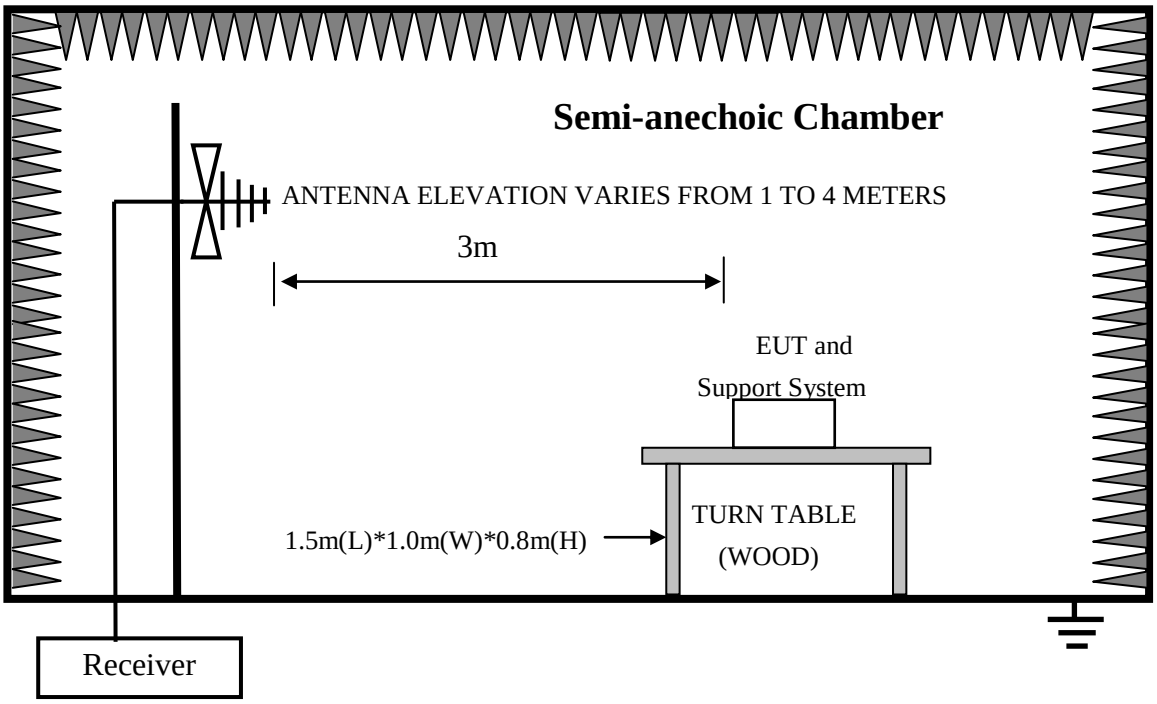
2. Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

3. Frequency range of radiated measurements:

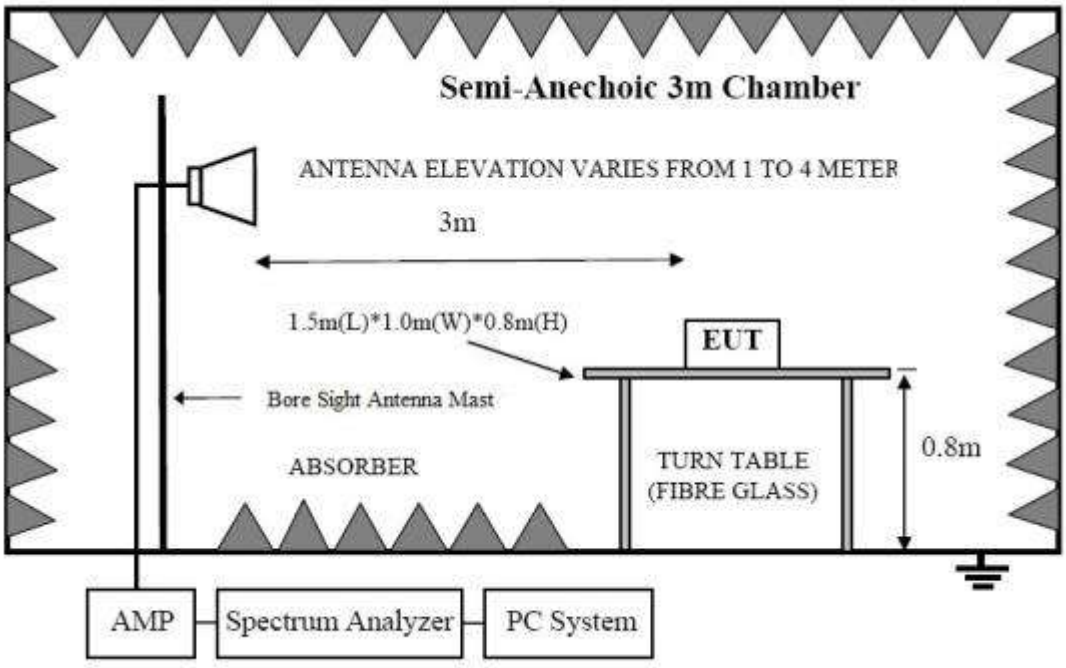
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705-108	1000
108-500	2000
500-1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

4.2.Block Diagram of Test Setup

In Semi Anechoic Chamber (3m) Test Setup Diagram for 30MHz~1000MHz



In Semi Anechoic Chamber (3m) Test Setup Diagram for Above 1GHz



4.3.Configuration of EUT on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner that tends to maximize its emission characteristics in normal application.

4.4.Operating Condition of EUT

（1） Setup the EUT as shown as Section 4.2.

（2） Turn on the power of all equipment.

（3） Let the EUT work in test mode and 15 minutes before taking the test.

4.5.Test Procedure

（1） The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4:2014 on Radiated Emission test.

（2） For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

（3） The frequency range from 30MHz to 1000MHz is checked, the bandwidth of test receiver (R&S TEST RECEIVER ESR) is set at 120kHz.

（4） The frequency range from above 1GHz is checked, the bandwidth of spectrum analyzer (Spectrum Analyzer FSU) is set at 1MHz.

（5） The frequency range from 30MHz to 1000MHz was pre-scanned with a peak detector and all final readings of measurement from Test Receiver are Quasi-Peak values, the frequency range from 1GHz to 6GHz was pre-scanned with a peak detector and all final readings of measurement from Spectrum Analyzer are peak and average values checked, all measurement distance is 3m in 3m semi anechoic chamber.

（6） The test results are reported on Section 4.7.

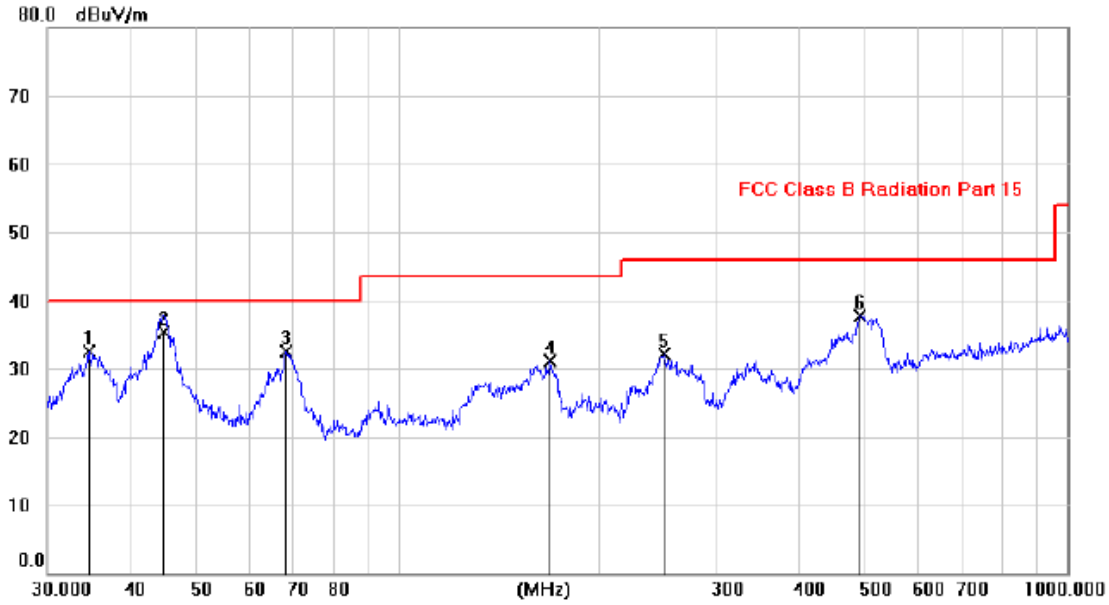
4.6.Test Results

Frequency Range	:	**30MHz~1000MHz**		
Test Date	:	2021.4.26	Temperature	: 24℃
Test Engineer	:	Lucas Pang	Humidity	: 56%
Test Mode	:	Working		
Test Results	:	**PASS**		

Note: 1. The test results are listed in next pages.

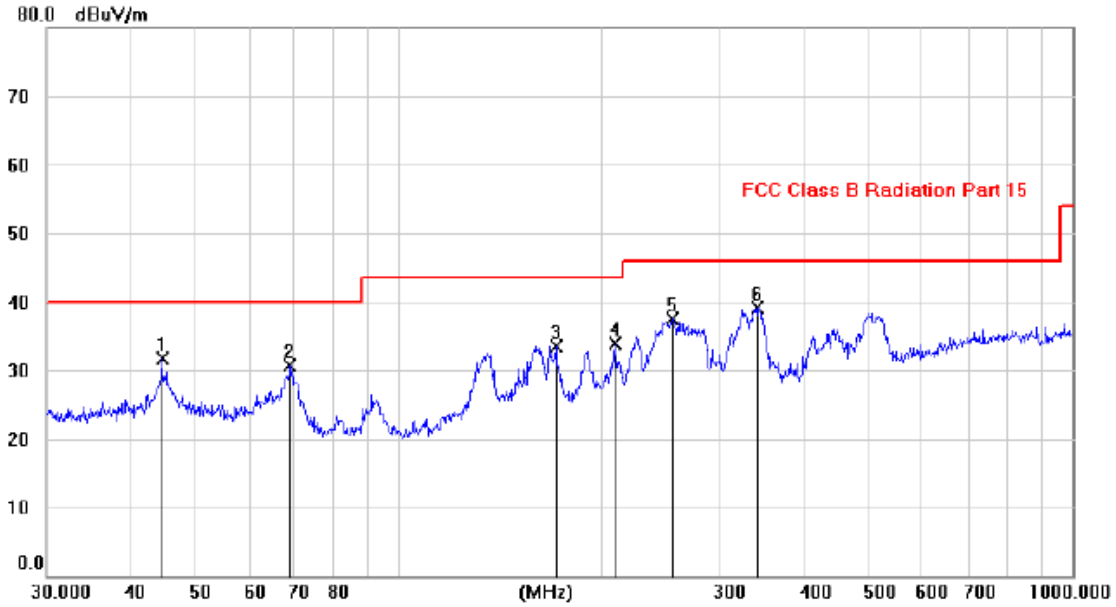
2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out.

Antenna polarity: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		34.5859	18.82	13.72	32.54	40.00	-7.46	peak			
2	*	44.8322	21.16	14.12	35.28	40.00	-4.72	QP			
3		68.2788	20.91	11.68	32.59	40.00	-7.41	peak			
4		169.5197	16.95	14.13	31.08	43.50	-12.42	peak			
5		251.1217	19.28	12.79	32.07	46.00	-13.93	peak			
6		491.7207	19.66	18.10	37.76	46.00	-8.24	peak			

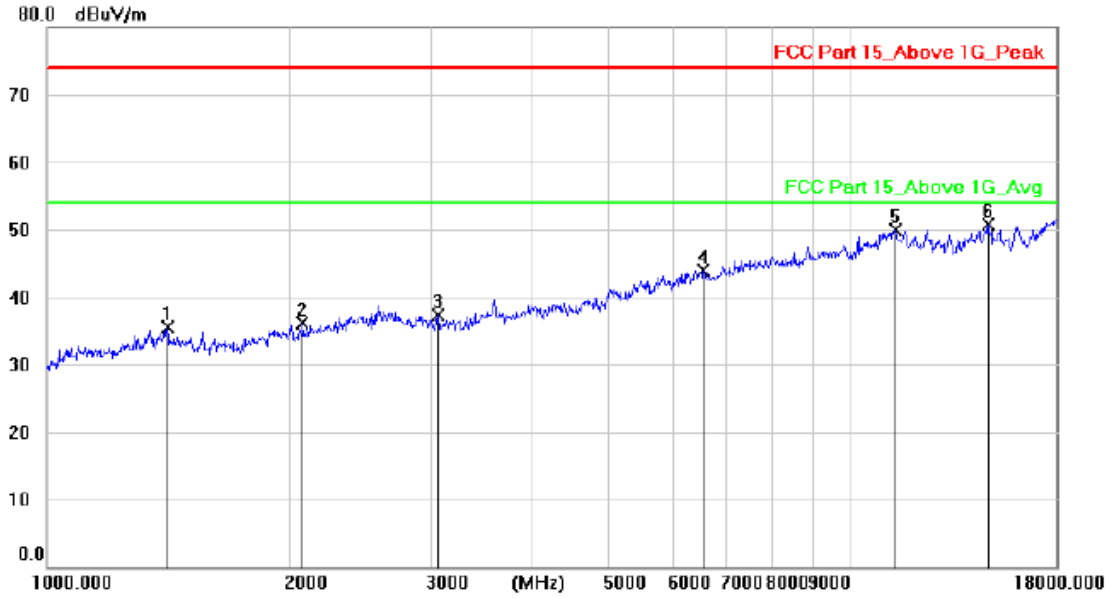
Antenna polarity: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		44.4617	17.49	14.17	31.66	40.00	-8.34	peak			
2		68.8800	19.20	11.46	30.66	40.00	-9.34	peak			
3		171.0921	19.60	13.93	33.53	43.50	-9.97	peak			
4		209.6802	22.77	11.06	33.83	43.50	-9.67	peak			
5		255.1453	24.61	12.87	37.48	46.00	-8.52	peak			
6	*	341.1003	23.99	15.10	39.09	46.00	-6.91	peak			

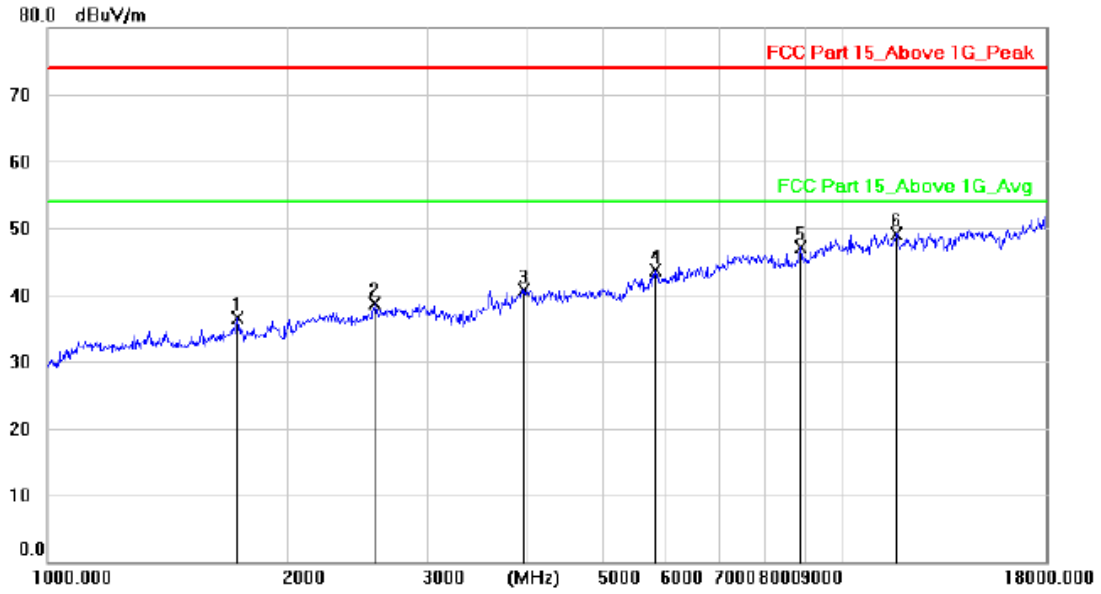
Frequency Range	:	**Above 1GHz**		
Test Date	:	2021.4.26	Temperature	: 24℃
Test Engineer	:	Lucas Pang	Humidity	: 56%
Test Mode	:	Working		
Test Results	:	**PASS**		
Note:	1. The test results are listed in next pages. 2. If the limits for the measurement with the average detector are met when using a receiver with a peak detector, the test unit shall be deemed to meet both limits and the measurement with the average detector and quasi-peak detector need not be carried out.			

Antenna polarity: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1413.370	54.82	-19.24	35.58	74.00	-38.42	peak			
2		2080.109	53.05	-16.99	36.06	74.00	-37.94	peak			
3		3068.458	51.26	-14.04	37.22	74.00	-36.78	peak			
4		6560.416	46.93	-3.09	43.84	74.00	-30.16	peak			
5		11381.15	47.31	2.63	49.94	74.00	-24.06	peak			
6	*	14788.15	45.53	5.27	50.80	74.00	-23.20	peak			

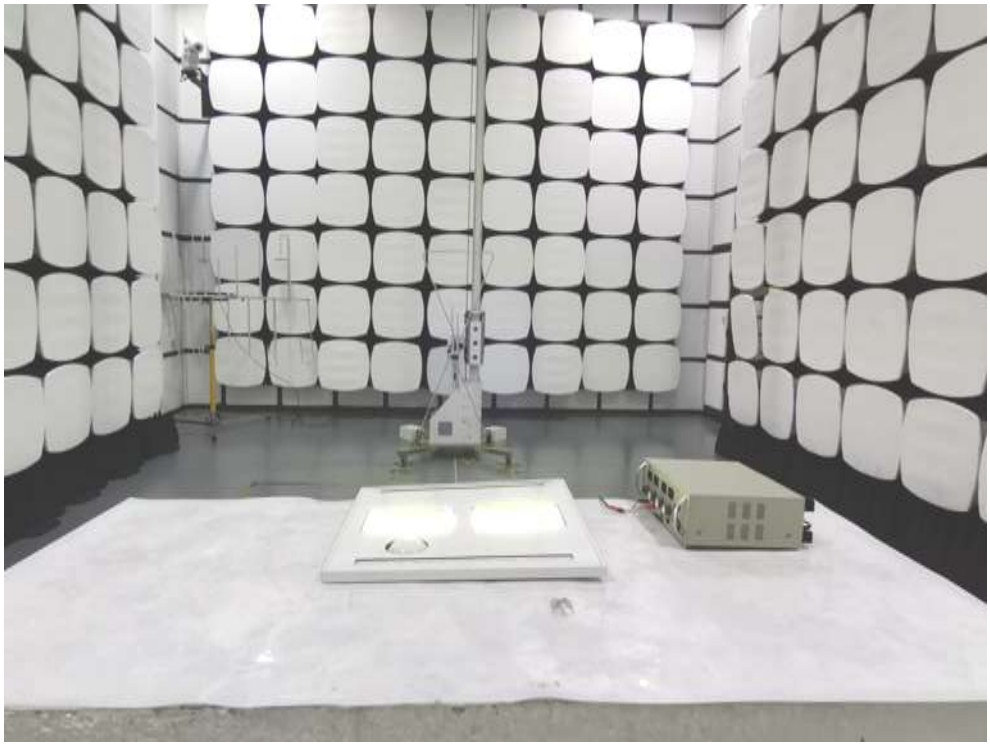
Antenna polarity: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1731.816	55.97	-19.38	36.59	74.00	-37.41	peak			
2		2578.415	54.07	-15.42	38.65	74.00	-35.35	peak			
3		3970.914	52.00	-11.27	40.73	74.00	-33.27	peak			
4		5808.773	49.00	-5.22	43.78	74.00	-30.22	peak			
5		8850.699	47.98	-0.89	47.09	74.00	-26.91	peak			
6	*	11681.10	46.56	2.63	49.19	74.00	-24.81	peak			

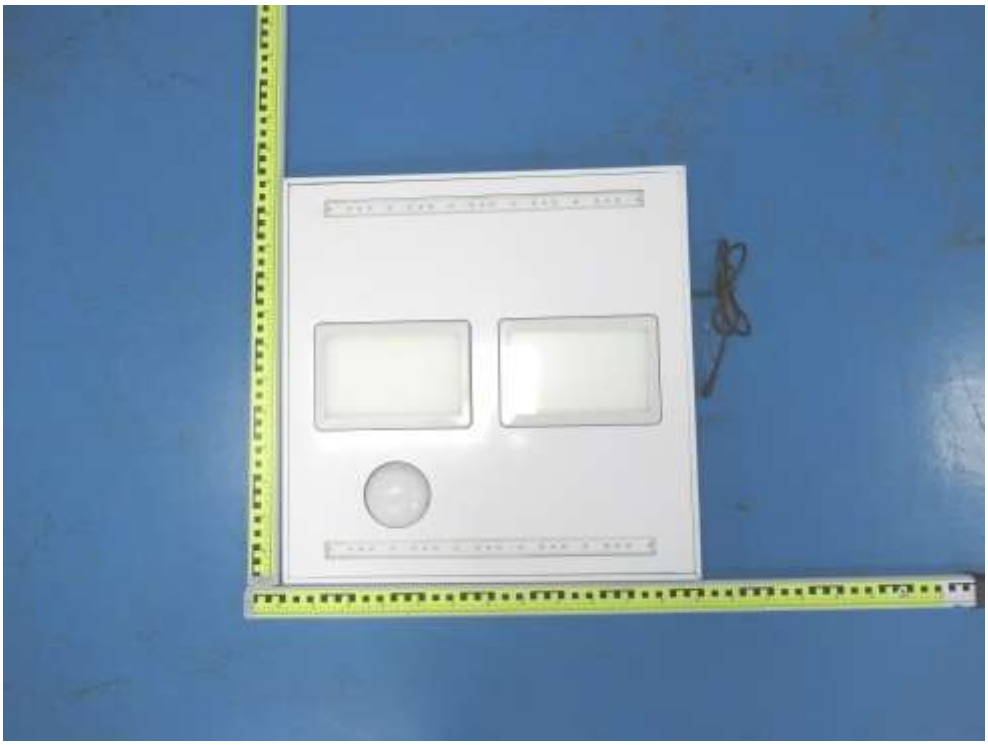
5. Photograph

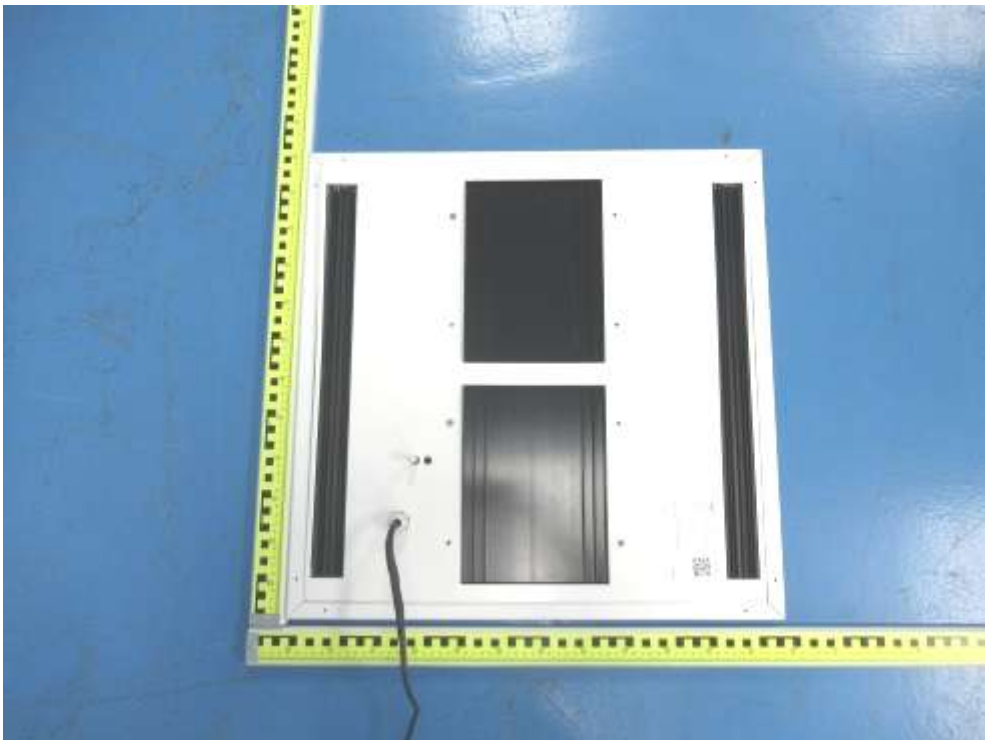
5.1.Photo of Radiated Emission Test (In Semi Anechoic Chamber)

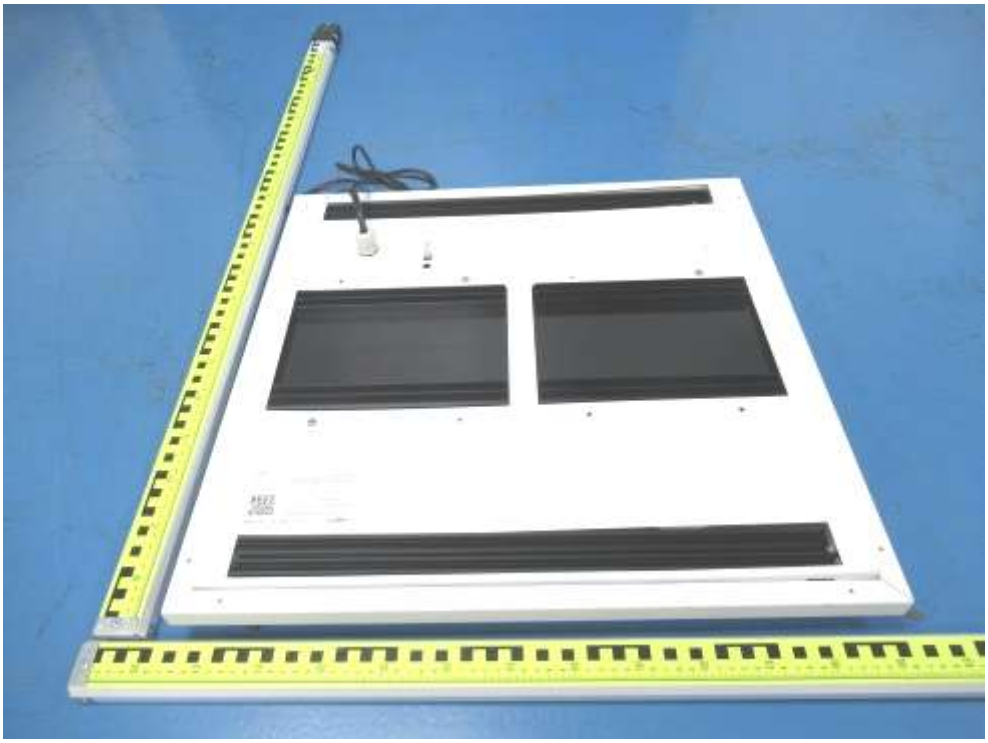


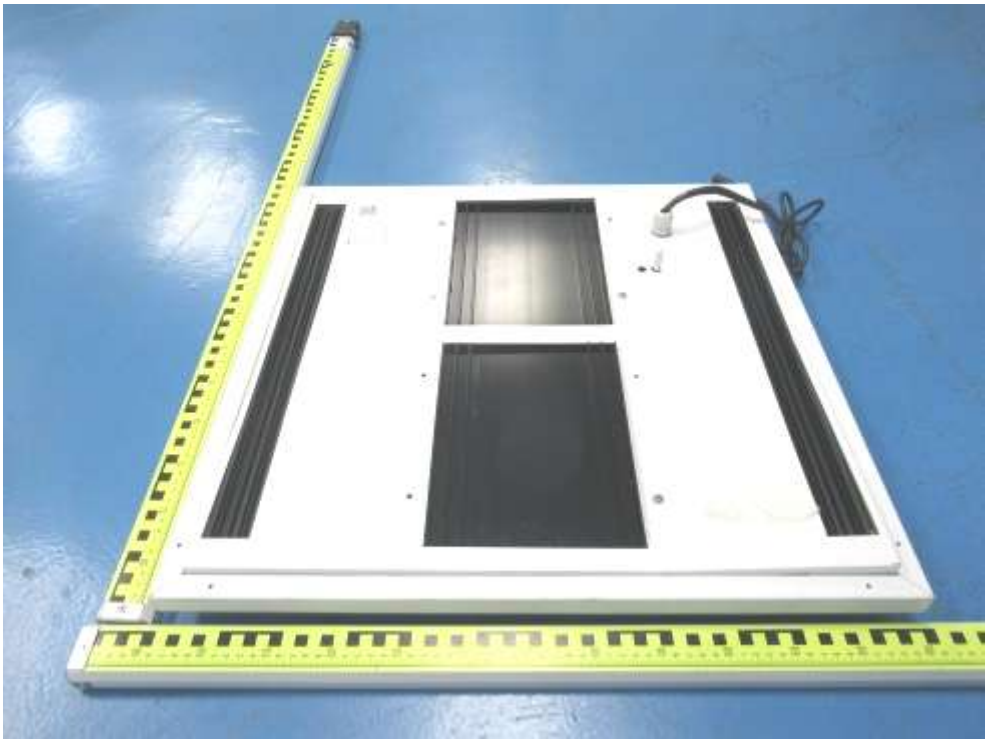
5.2.Photo of Power Line Conducted

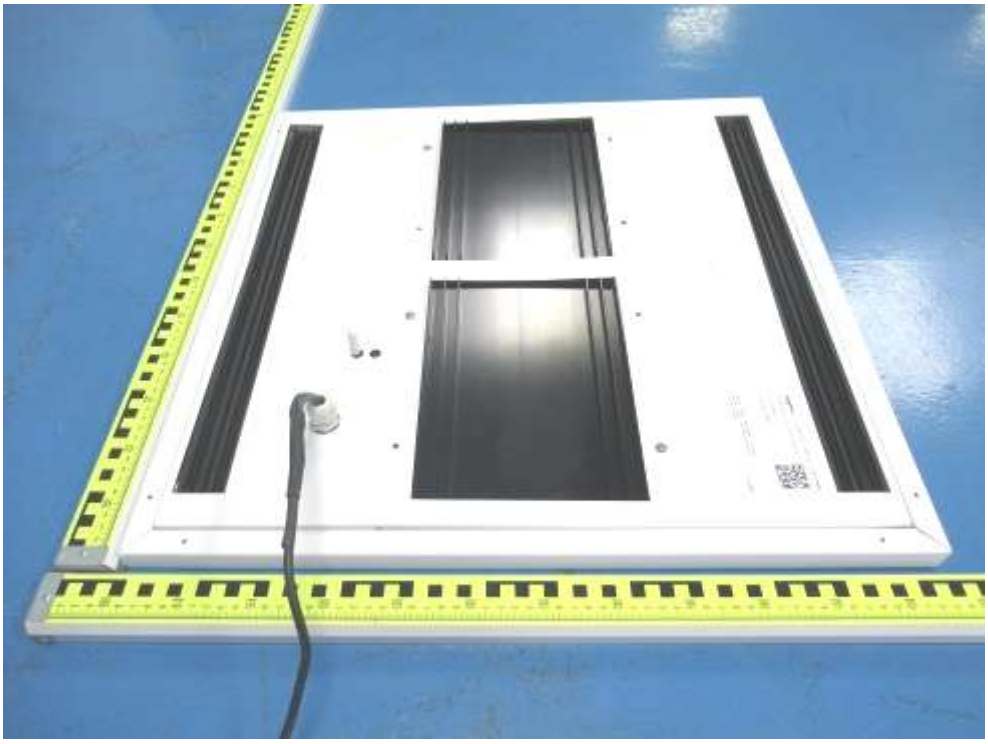
6. Photos of the EUT

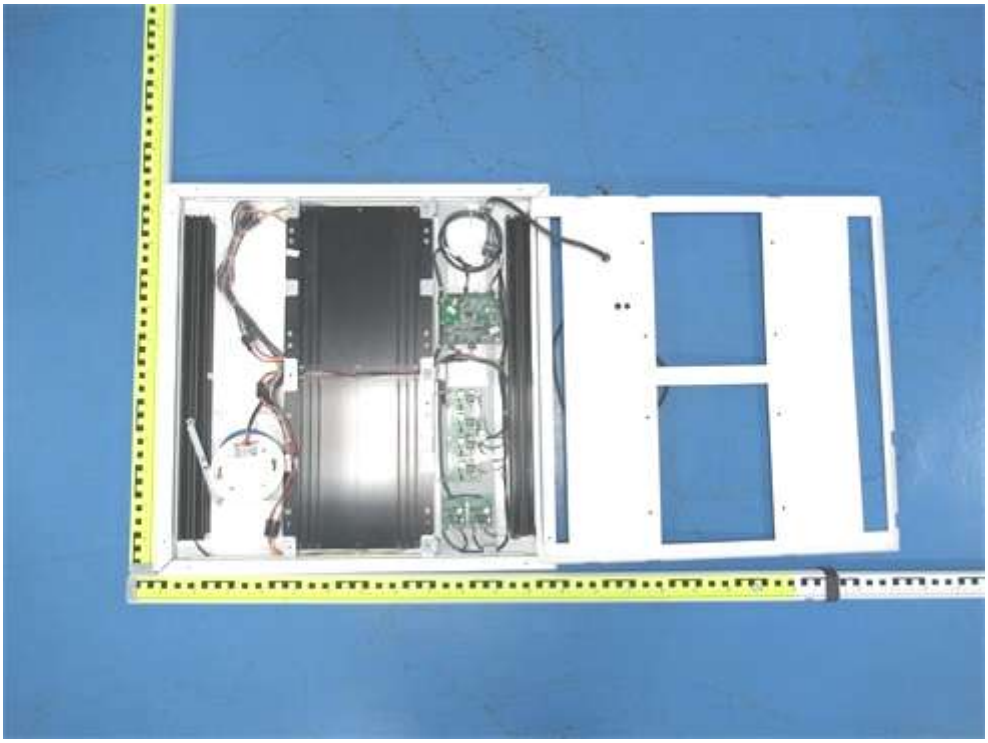


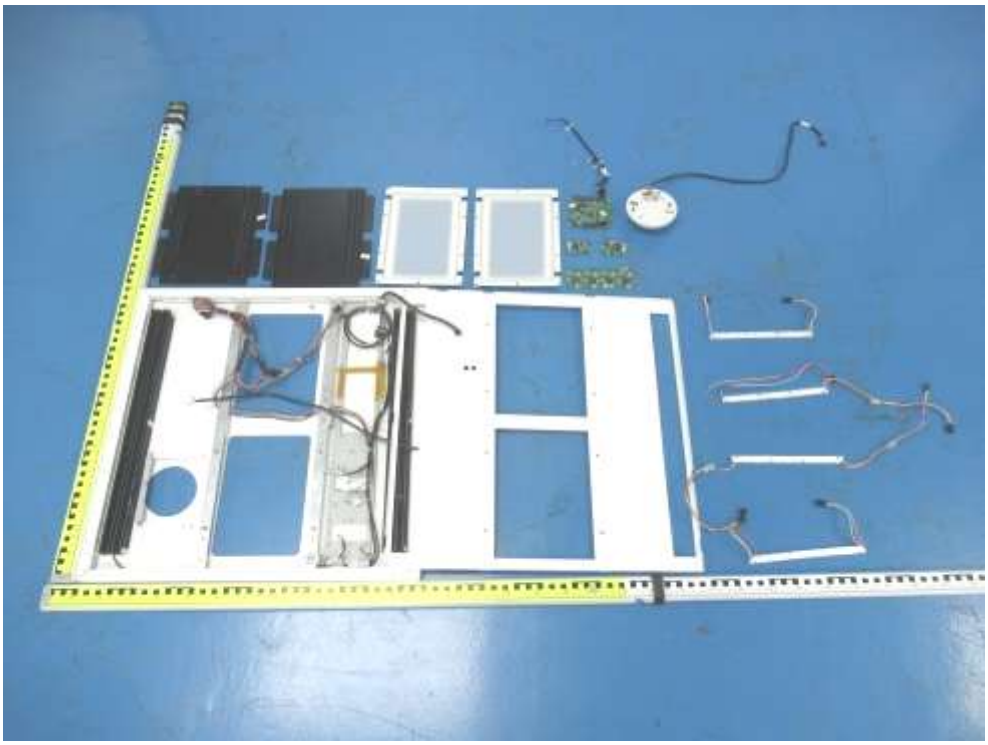


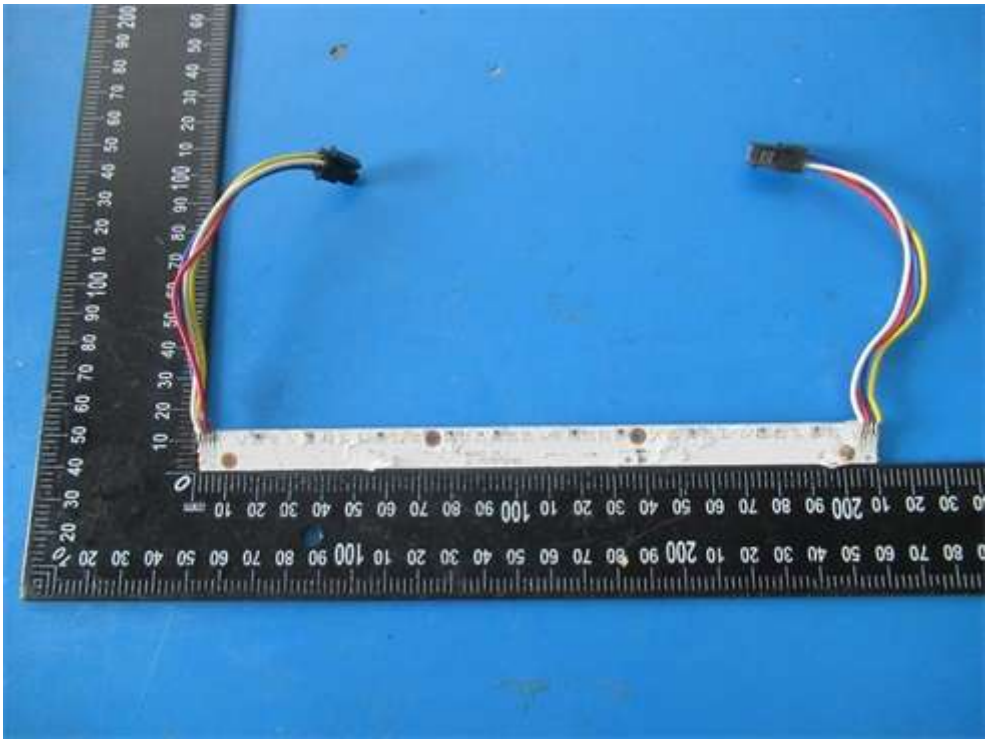


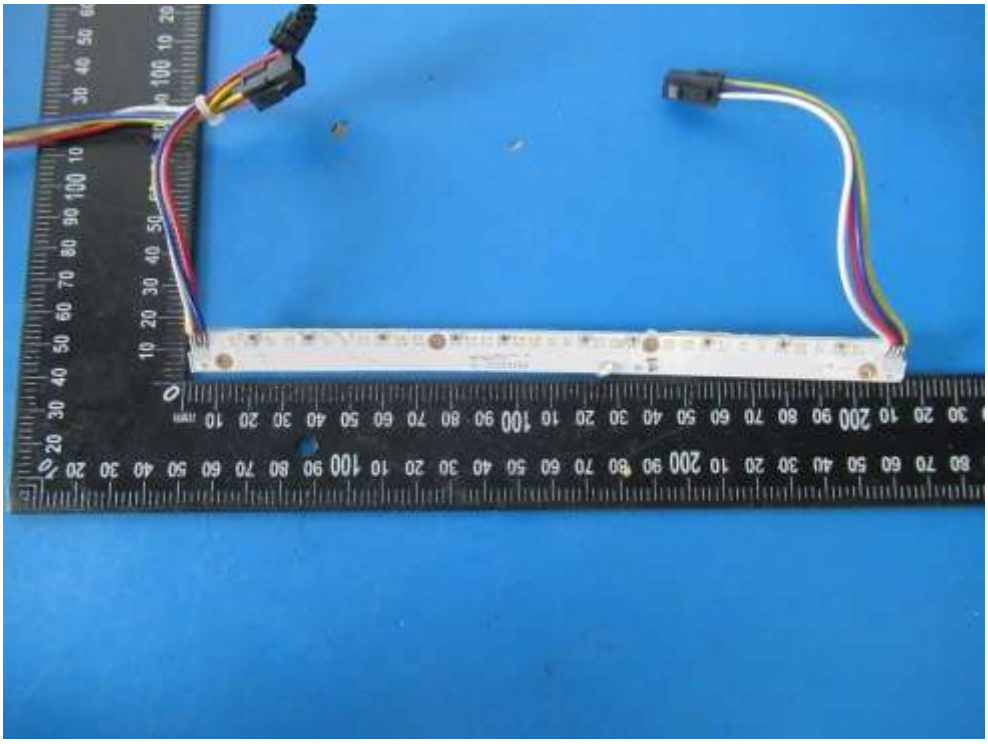


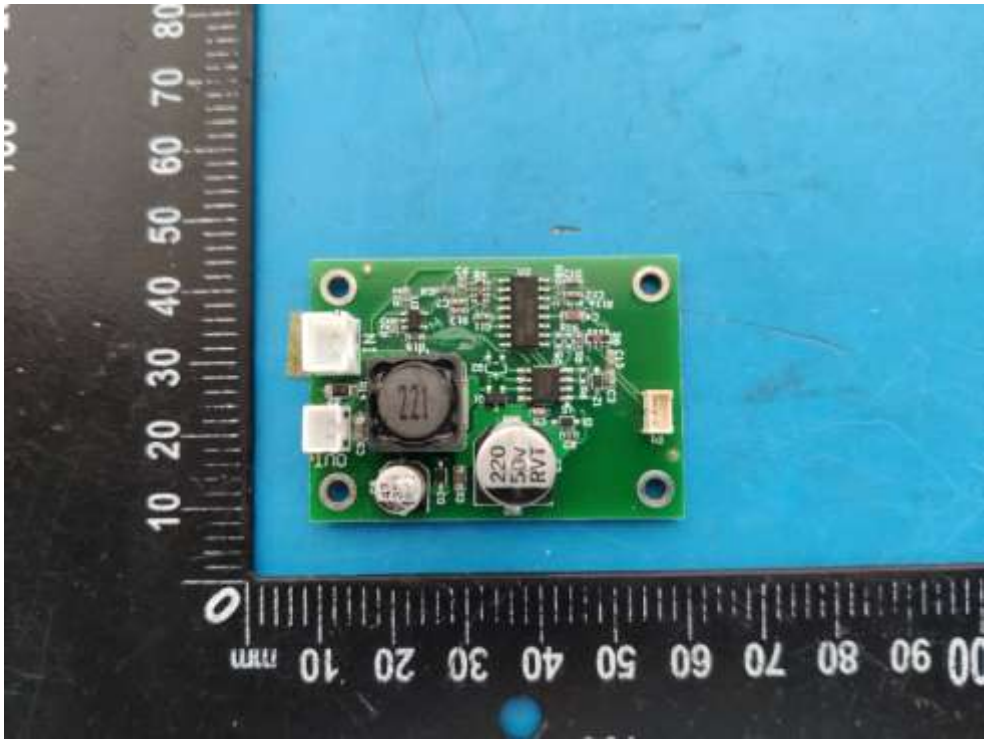








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220
50V
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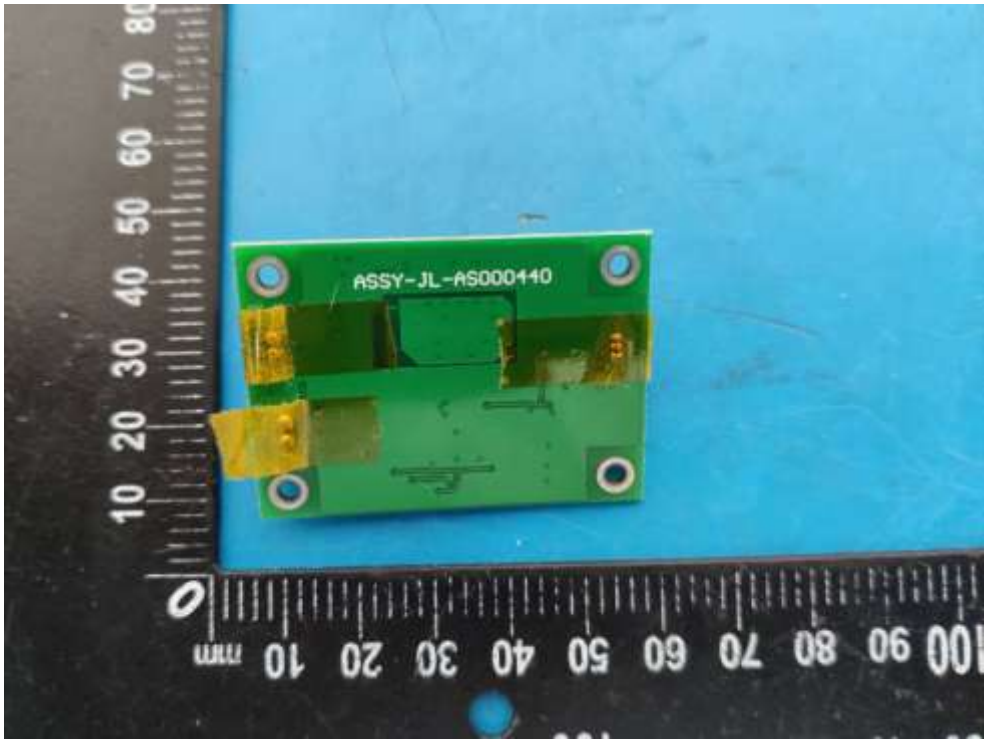
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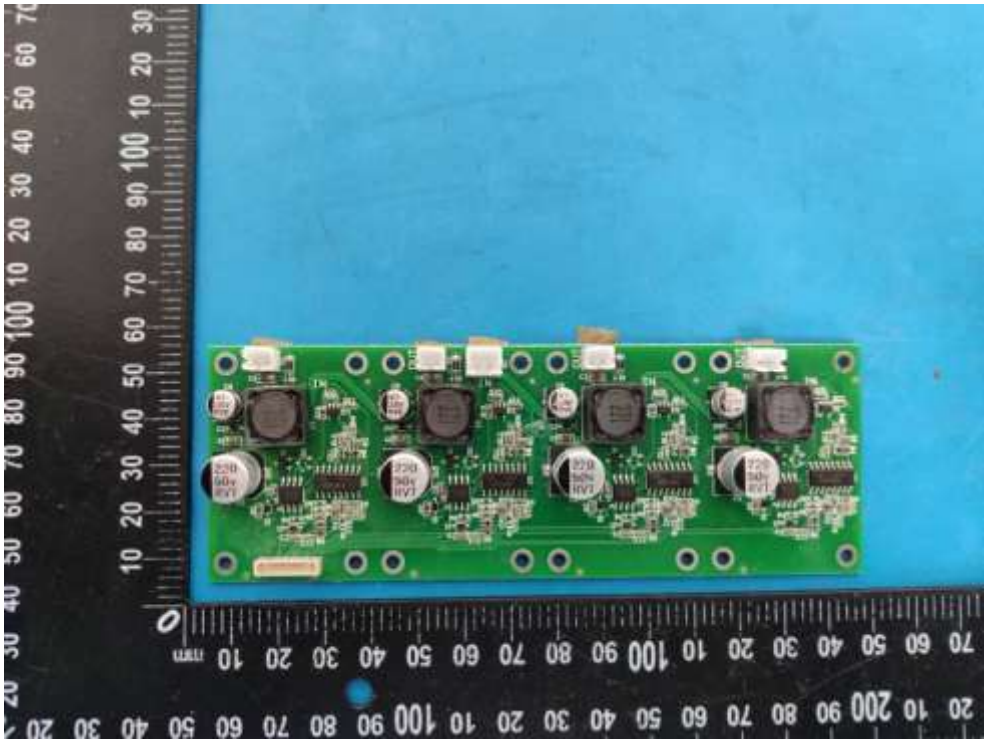

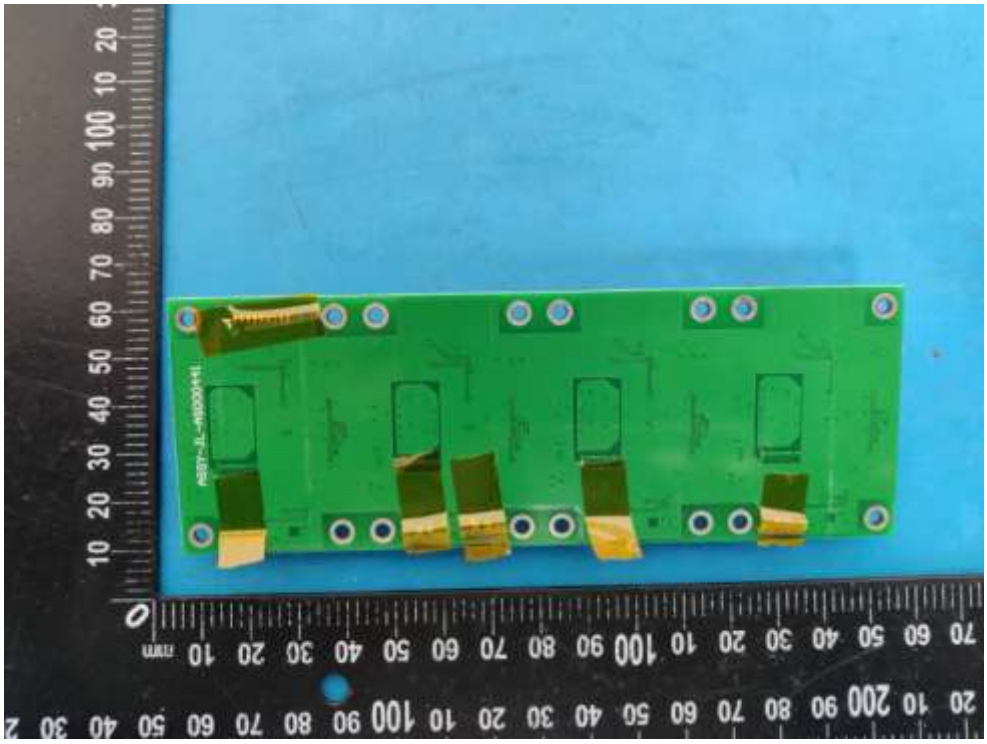

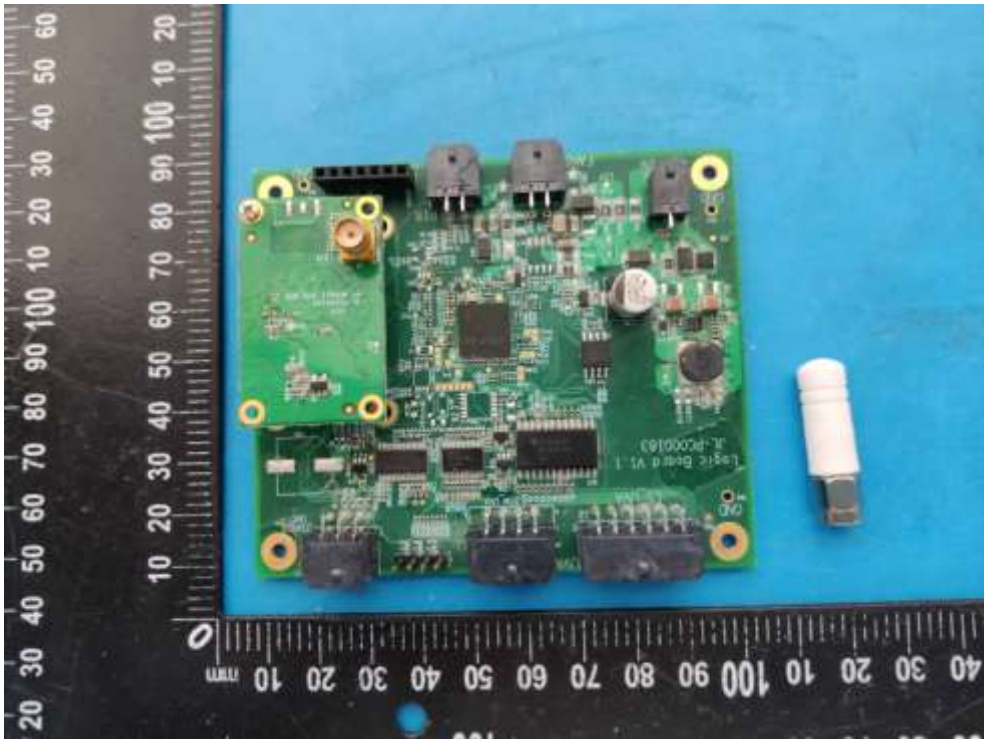

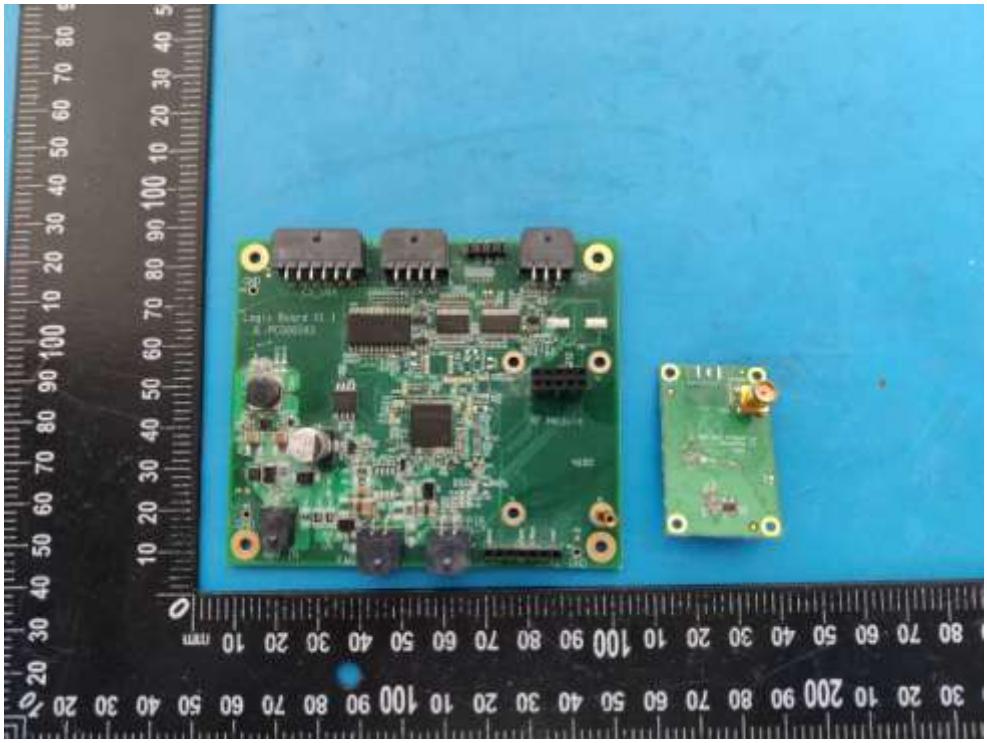

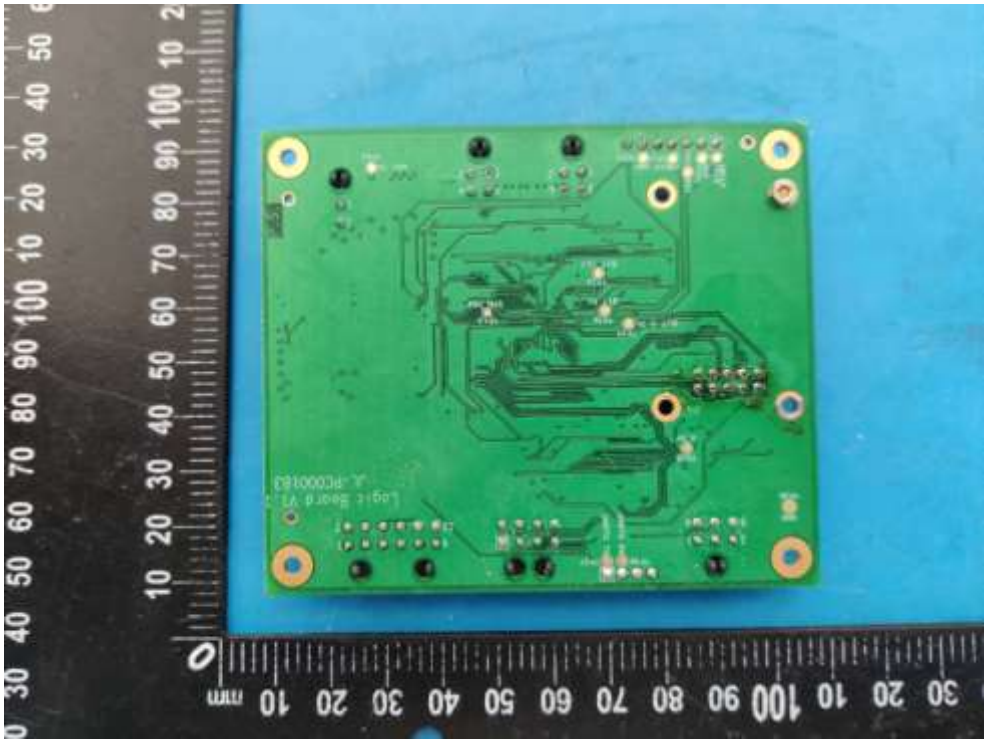

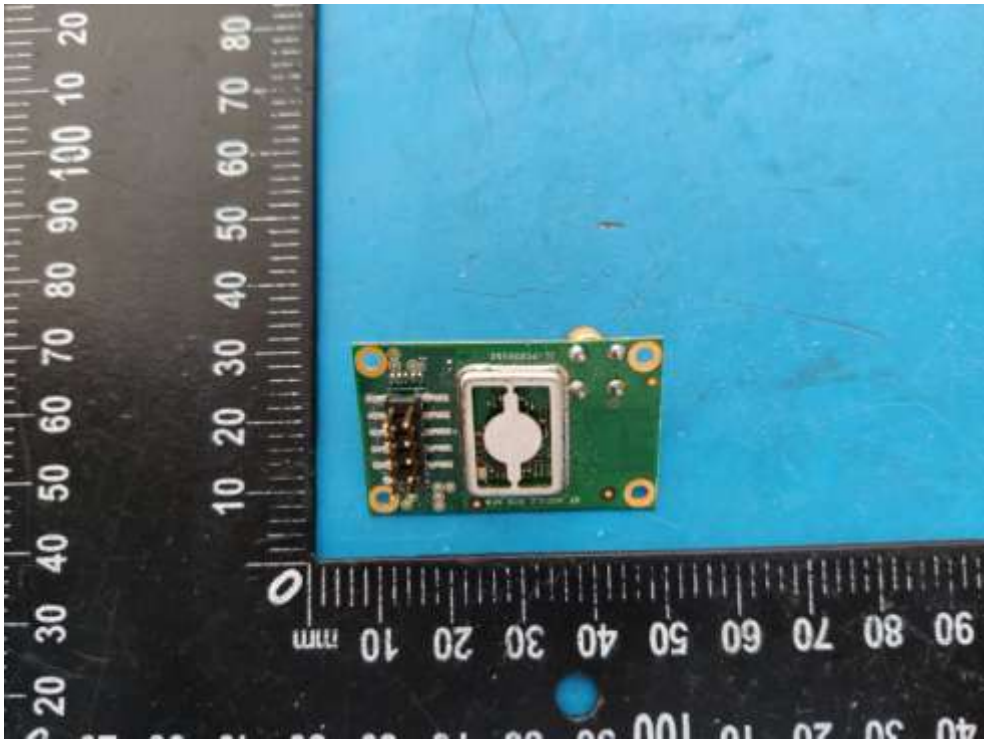

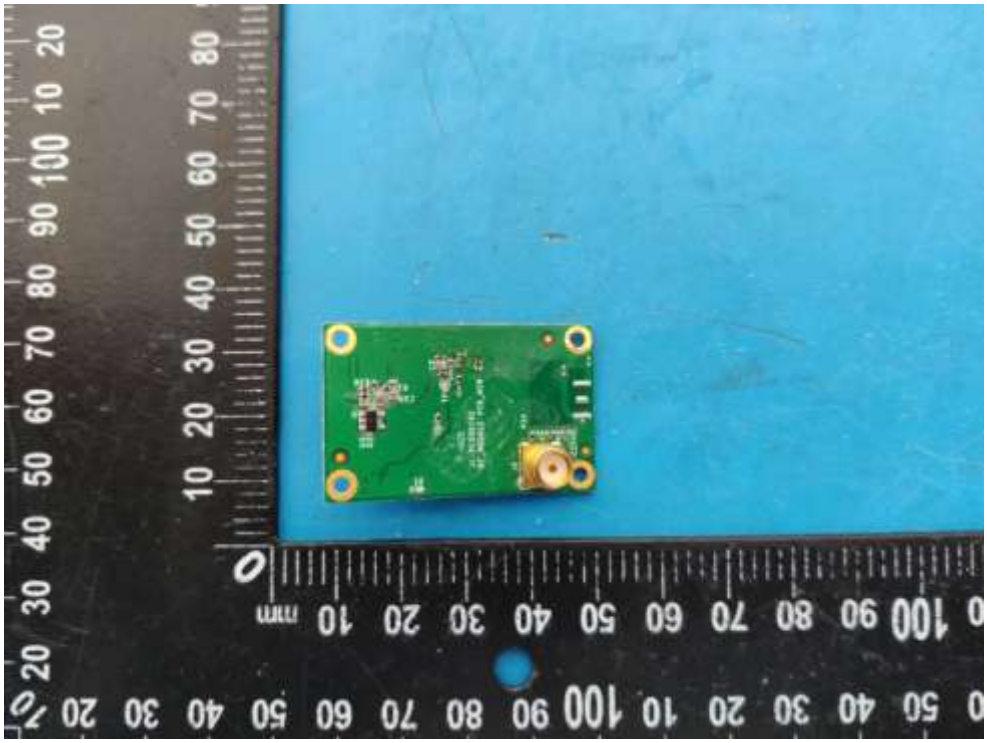

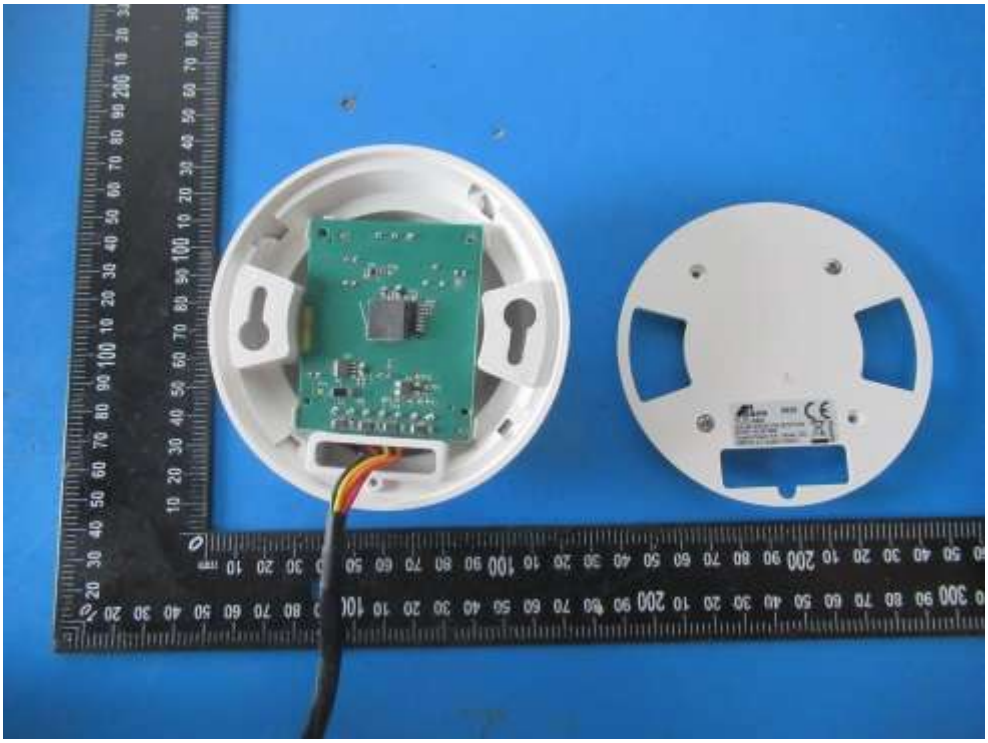

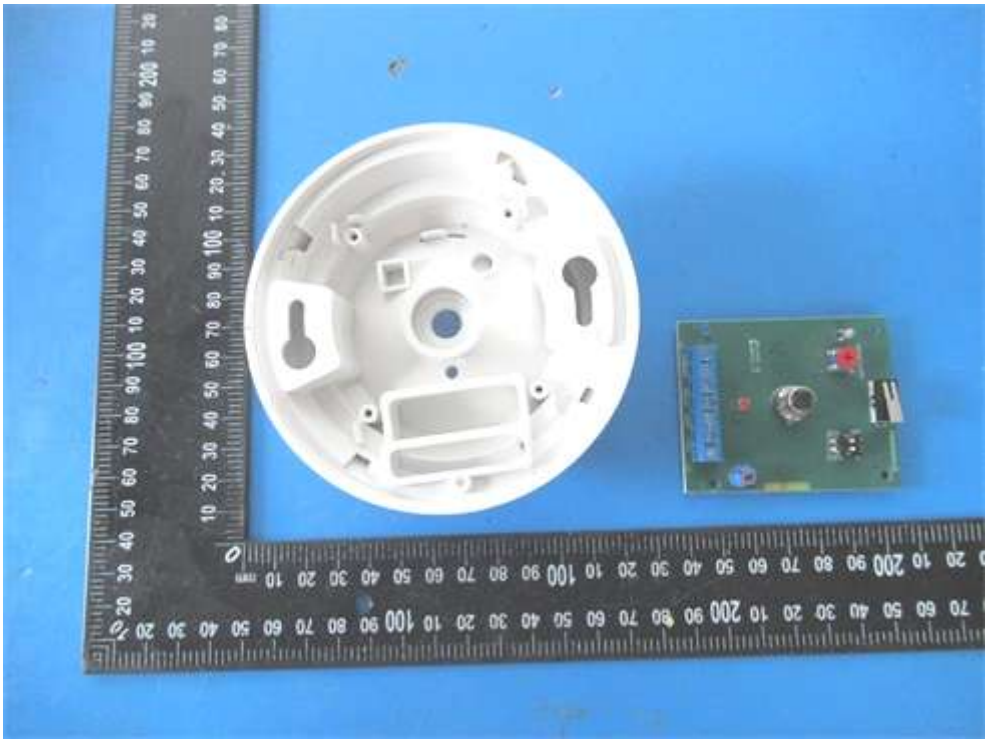

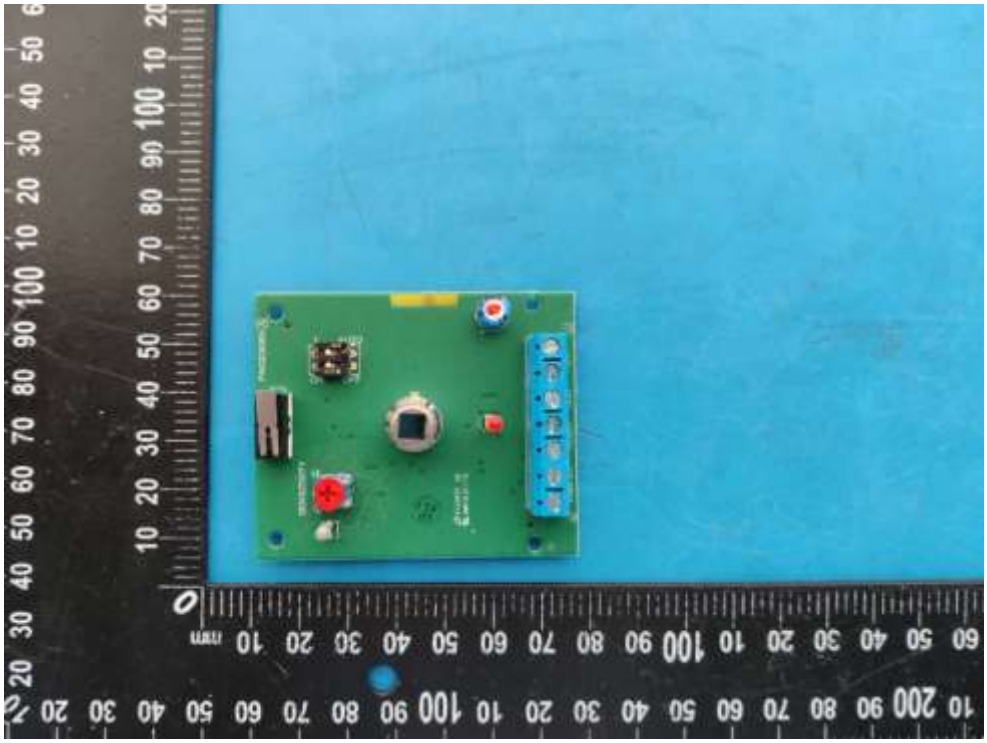

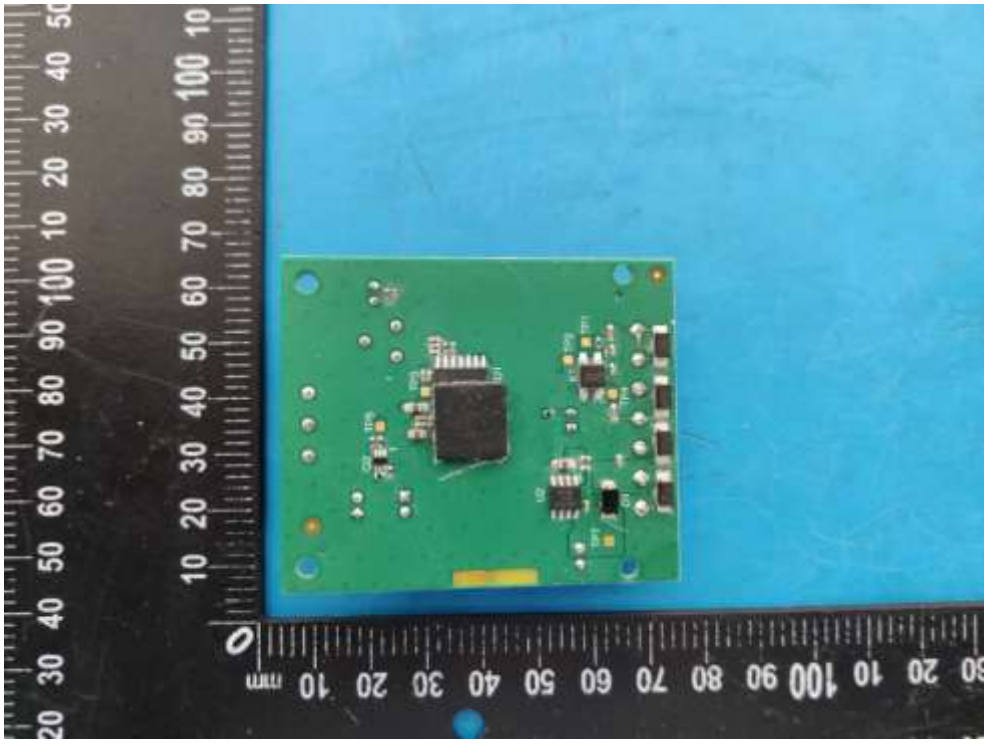

Annex

model list	
Cat No.	**JPP Cat No.**
JPP-C-R-TU-y-30-Dz-Pw	**Presto**
JPA-C-R-TU	**Allegro**
Note: 'y' denotes wavelength, and can be 'A' for 265nm, 'B' for 275nm. 'z' denotes Disinfection Beam Angle, and can be 01, 02, 03 or 04. 'w' can be 1 or 0, and can be '1' means Motion Sensor integrated, '0' means Motion Sensor is external.	

----END OF REPORT----