FCC Test Report

For

Shantou Chenghai chengmixiong Electric Appliance Factory

EUT Name: Ultrasonic multi-function cleaning machine

Model No: GS350，GS100，GS200，GS300，GS400，GS500，GS600，GS700，GS800，GS900，GS150，GS250，GS450，GS550，GS650

Brand Name: N/A

Prepared By:

Dongguan Yaxu (AiT) Technology Limited

Date of Receipt: Jul.27,2023

Date of Test: Jul.28,2023~Aug.01,2023

Date of Issue: Aug.01,2023

Dongguan Yaxu (AiT) Technology Limited
No.22, Jinqianling Third Street, Jitigang,
Huangjiang,Dongguan, Guangdong, China.

Client Information:

Applicant:	Shantou Chenghai chengmixiong Electric Appliance Factory
Applicant add.:	Erpan new area, Fengxiang jiejiefen village, Chenghai District, Shantou City

EUT Information:

EUT Name:	Ultrasonic multi-function cleaning machine
Model No:	GS350
Brand Name:	N/A

Test standard used: FCC Part 15 Subpart B

This device described above has been tested by Dongguan Yaxu (AiT) Technology Limited and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Reviewed by: Gimba Huang
Test director

Approved by: Seal-Chen
Technical director

Dongguan Yaxu (AiT) Technology Limited
No.22, Jinqianling Third Street, Jitigang,
Huangjiang,Dongguan, Guangdong, China.

1 CONTENTS

2 TEST SUMMARY

Test	Test Requirement	Test Method	Criterion	Result
Mains Terminals Disturbance Voltage, 150kHz to 30MHz	FCC Part 15 Subpart B	FCC Part 15 Subpart B ANSI C63.4: 2014	Limits	PASS
Radiated Emissions 30MHz to 1GHz 1GHz to 18GHz	FCC Part 15 Subpart B	FCC Part 15 Subpart B ANSI C63.4: 2014	Limits	PASS
Note: N/A				

2.1 MEASUREMENT UNCERTAINTY

The report uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty Multiplied by a coverage factor of **k=2** , providing a level of confidence of approximately 95% .

No.	Item	Frequency Range	U , Value
1	Power Line Conducted Emission	150KHz~30MHz	1.20 dB
2	Disturbance Power Emission	30MHz~300MHz	2.96 dB
3	Radiated Emission Test	30MHz~1GHz	3.75 dB
4	Radiated Emission Test	1GHz~18GHz	3.88 dB

3 TEST FACILITY

The test facility is recognized, certified or accredited by the following organizations:

. CNAS- Registration No: L6177

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2017 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on April 18, 2020

FCC-Registration No.: 703111 Designation Number: CN1313

Dongguan Yaxu (AiT) technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —Registration No.: 6819A CAB identifier: CN0122

The 3m Semi-anechoic chamber of Dongguan Yaxu (AiT) technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6819A

A2LA-Lab Cert. No.: 6317.01

Dongguan Yaxu (AiT) technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

3.1 DEVIATION FROM STANDARD

None

3.2 ABNORMALITIES FROM STANDARD CONDITIONS

None

4 GENERAL INFORMATION

4.1 GENERAL DESCRIPTION OF EUT

Manufacturer:	Shantou Chenghai chengmixiong Electric Appliance Factory
Manufacturer Address:	Erpan new area, Fengxiang jiejiefen village, Chenghai District, Shantou City
EUT Name:	Ultrasonic multi-function cleaning machine
Model No:	GS350
Serial No:	GS100，GS200，GS300，GS400，GS500，GS600，GS700，GS800，GS900，GS150，GS250，GS450，GS550，GS650
Brand Name:	N/A
Power Range:	Adapter: 1220 INOUT: AC 120-240V 50/60Hz OUTPUT: DC 12V2A
Test Supply:	AC 120V60Hz with AC Adapter

4.2 EUT TEST MODE

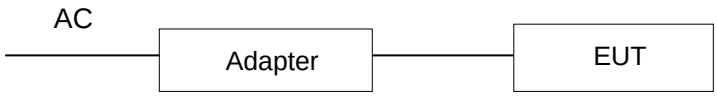
Mode 1	The EUT is in working mode

4.3 DESCRIPTION OF TEST SETUP

EUT was tested in normal Configuration (Please See following Block diagrams)

1. Block diagram of EUT Configuration-EMI

Mode 1:



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4.4 TEST PERIPHERAL LIST

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4.5 EUT PERIPHERAL LIST

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1	AC Adapter	N/A	FCC SDOC	1220	N/A	N/A	N/A

5 Equipments List for All Test Items

☒ Radiation Test Equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2022.09.02	2023.09.01
2	Low Noise Pre Amplifier	HP	HP8447E	1205323	2022.09.02	2023.09.01
3	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2021.08.28	2024.08.27
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2022.09.02	2023.09.01
5	Spectrum Analyzer	R&S	FSV40	101160	2022.09.02	2023.09.01
6	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2022.09.02	2023.09.01
7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2021.08.28	2024.08.27
8	RE Software	EZ	EZ-EMC_ RE	Ver.AIT-03A	N/A	N/A

☒ Conduction Test equipment						
No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Test Receiver	R&S	ESCI	100124	2022.09.02	2023.09.01
2	LISN	Kyoritsu	KNW-242	8-837-4	2022.09.02	2023.09.01
3	LISN	R&S	ESH3-Z5	892785/016	2022.09.02	2023.09.01
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2022.09.02	2023.09.01
5	CE Software	EZ	EZ-EMC_ CE	Ver.AIT-03A	N/A	N/A

Note:

1. ☐ is not applicable in this Test Report. ☒ is applicable in this Test Report.

6 EMISSION TEST RESULTS

6.1 MAINS TERMINALS DISTURBANCE VOLTAGE MEASUREMENT

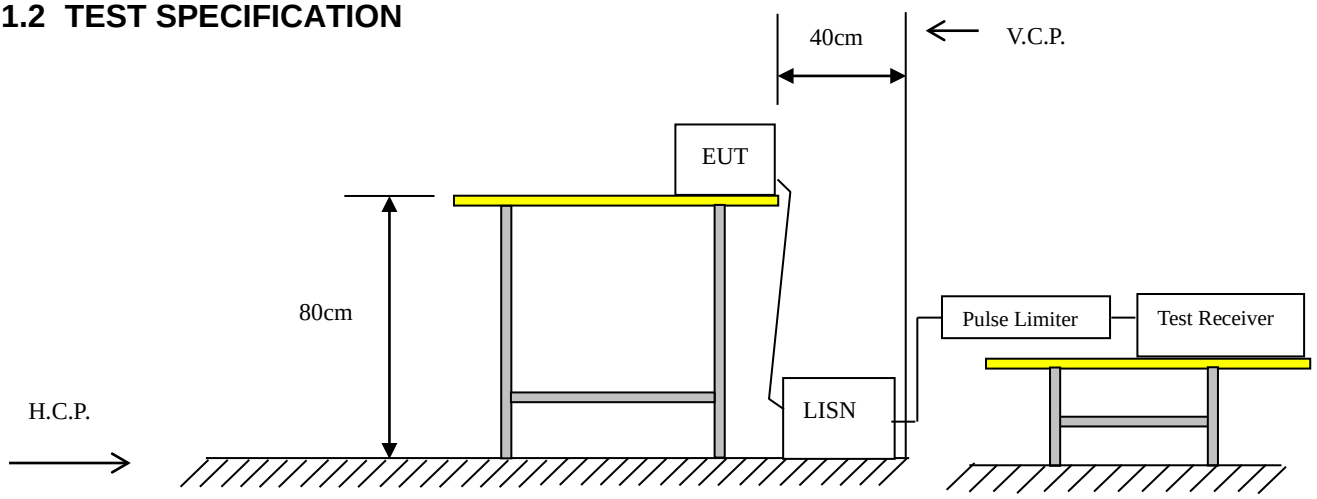
Frequency (MHz)	☐ Class A (dBμV)		☒ Class B (dBμV)	
	Q.P. (Quasi-Peak)	A.V. (Average)	Q.P. (Quasi-Peak)	A.V. (Average)
0.15 ~ 0.50	79	66	66 to 56	56 to 46
0.50 ~ 5.0	73	60	56	46
5.0 ~ 30	73	60	60	50

Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximized peak within 6dB of Average Limit

6.1.1 E.U.T. OPERATION

Temperature:	26	Humidity:	50	Atmospheric Pressure:	1006	Kpa
Test Mode:	Mode 1		The worst mode		Mode 1	

6.1.2 TEST SPECIFICATION



EUT was placed upon a wooden test table 0.8m above the horizontal metal reference plane and 0.4m from the vertical ground plane, and it was connected to an AMN. The closest distance between the boundary of the EUT and the surface of the AMN is 0.8m. All peripherals were connected to another AMN, and placed at a distance of 10cm from each other. A spectrum and receiver was connected to the RF output port of the AMN. Both average and quasi-peak value were detected.

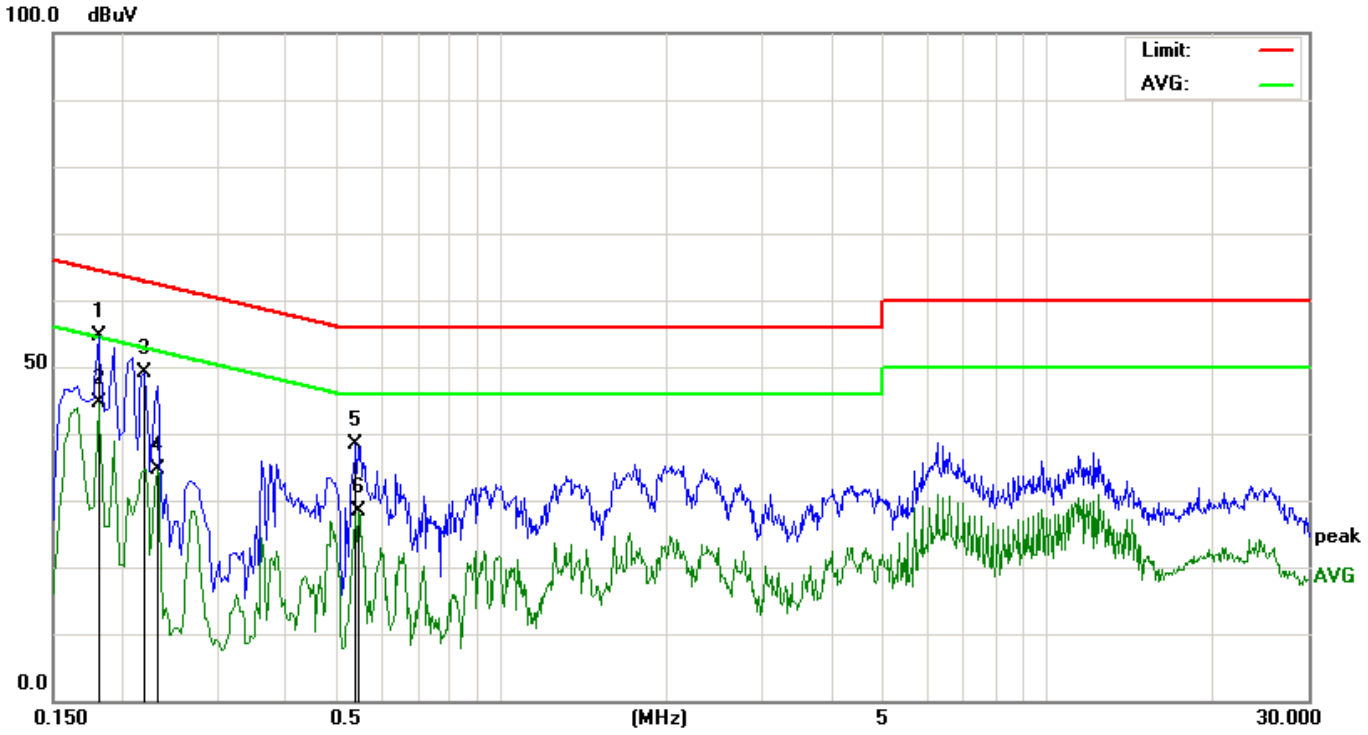
6.1.3 MEASUREMENT DATA

An initial pre-scan was performed on the live and neutral lines.

Quasi-peak or average measurements were performed at the frequency which maximum peak emissions were detected.

Please refer to the attached quasi-peak & average measurement data for reference.

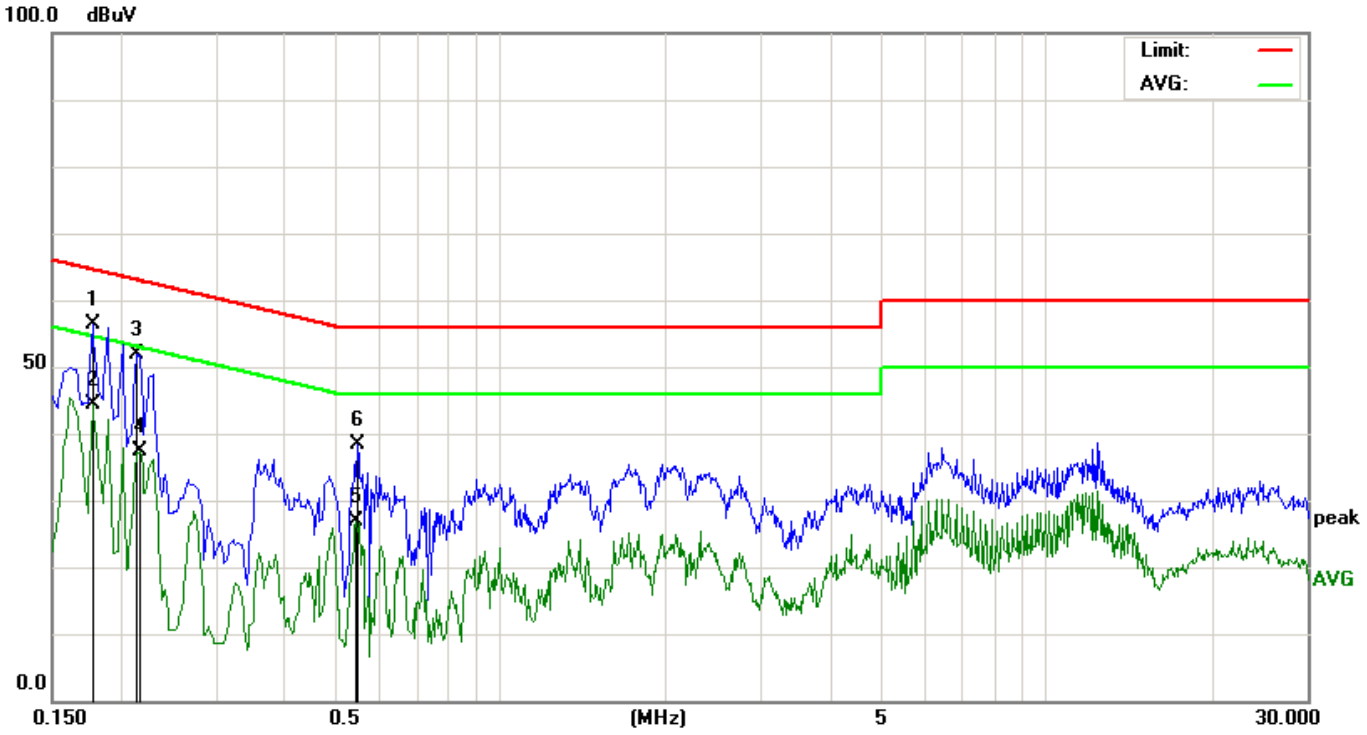
Test Mode:	Mode 1	Phase:	Line
Model:	GS350	Date:	2023-08-01



Remark: Factor = LISN Factor + Cable Loss+Pulse limiter.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1819	43.19	11.36	54.55	64.39	-9.84	QP
2	*	0.1819	33.35	11.36	44.71	54.39	-9.68	AVG
3		0.2220	38.20	10.98	49.18	62.74	-13.56	QP
4		0.2340	23.68	10.94	34.62	52.30	-17.68	AVG
5		0.5380	28.35	9.97	38.32	56.00	-17.68	QP
6		0.5460	18.33	9.97	28.30	46.00	-17.70	AVG

Test Mode:	Mode 1	Phase:	Neutral
Model:	GS350	Date:	2023-08-01



Remark: Factor = LISN Factor + Cable Loss+Pulse limiter.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1780	45.04	11.41	56.45	64.57	-8.12	QP
2		0.1780	32.93	11.41	44.34	54.57	-10.23	AVG
3		0.2140	40.84	11.03	51.87	63.04	-11.17	QP
4		0.2180	26.32	11.00	37.32	52.89	-15.57	AVG
5		0.5420	16.82	9.97	26.79	46.00	-19.21	AVG
6		0.5460	28.42	9.97	38.39	56.00	-17.61	QP

6.1.4 Test Setup Photograph

6.2 RADIATED EMISSION MEASUREMENT

Limits of Radiated Emission Measurement

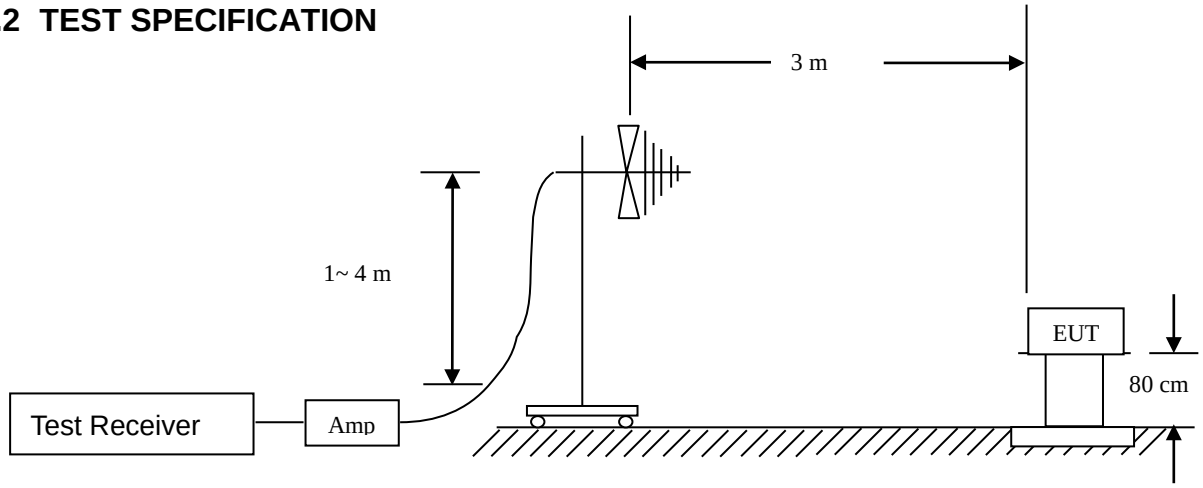
Frequency (MHz)	☐ ICES-003 Class B (3m)	☒ FCC Part 15 Class B (3m)
	Quasi-Peak dB(μV/m)	Quasi-Peak dB(μV/m)
30 ~ 88	40.0	40.0
88 ~ 216	43.5	43.5
216 ~230	46.0	46.0
230 ~960	47.0	46.0
Above 960	54.0	54.0

Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximum peak within 6dB of limit

6.2.1 E.U.T. OPERATION

Temperature:	25°C	Humidity:	50% RH	Atmospheric Pressure:	1006	Kpa
Test Mode:	Mode 1		The worst mode		Mode 1	

6.2.2 TEST SPECIFICATION



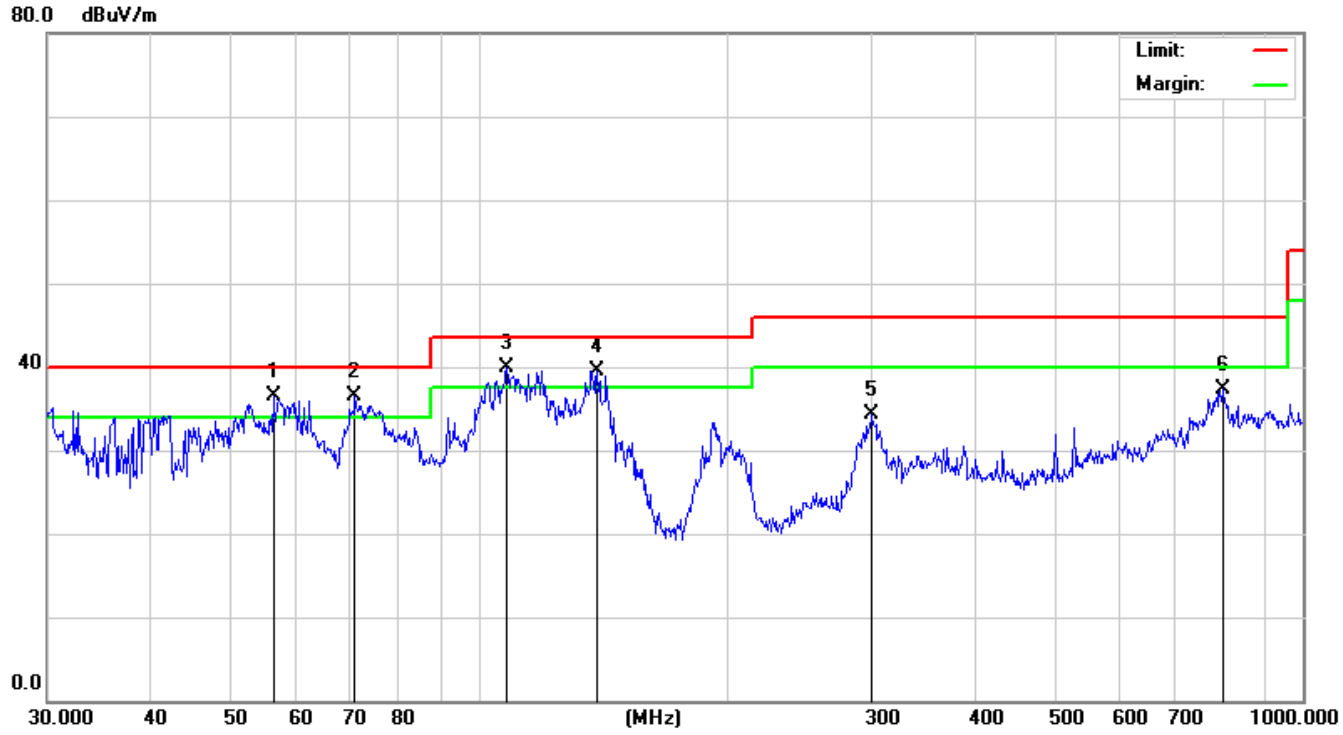
EUT was placed upon a wooden test table which was placed on the turn table 0.8m above the horizontal metal ground plane, and operating in the mode as mentioned above. A receiving antenna was placed 3m away from the EUT. During testing, turn around the turn table and move the antenna from 1m to 4m to find the maximum field-strength reading. All peripherals were placed at a distance of 10cm between each other. Both horizontal and vertical antenna polarities were tested.

6.2.3 MEASUREMENT DATA

An initial pre-scan was performed in the 3m chamber using the spectrum analyzers in peak detection mode. The EUT was measured by Biology antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following quasi-peak measurements were performed on the EUT.

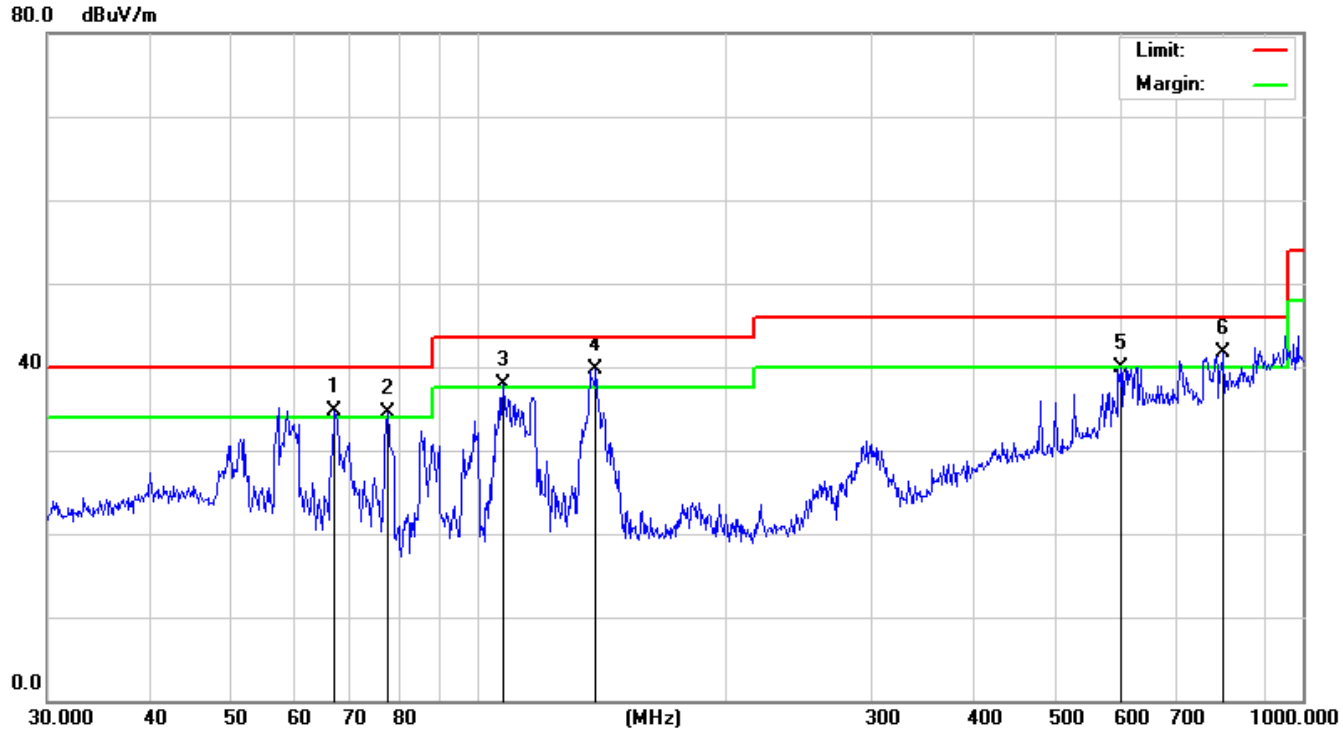
Test Mode:	Mode 1	Polarization:	Vertical
Model:	GS350	Date:	2023-08-01



Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	56.3947	37.59	-1.00	36.59	40.00	-3.41	QP
2	!	70.8315	40.99	-4.44	36.55	40.00	-3.45	QP
3	!	108.2667	41.71	-1.79	39.92	43.50	-3.58	QP
4	!	139.3611	41.33	-1.80	39.53	43.50	-3.97	QP
5		300.3672	32.68	1.68	34.36	46.00	-11.64	QP
6		798.9797	24.33	12.90	37.23	46.00	-8.77	QP

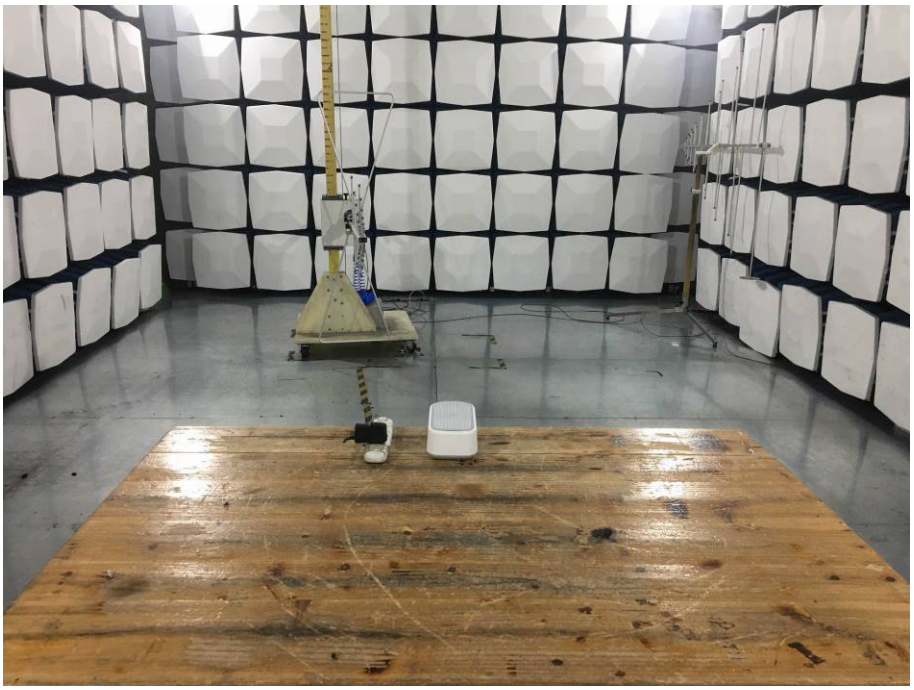
Test Mode:	Mode 1	Polarization:	Horizontal
Model:	GS350	Date:	2023-08-01



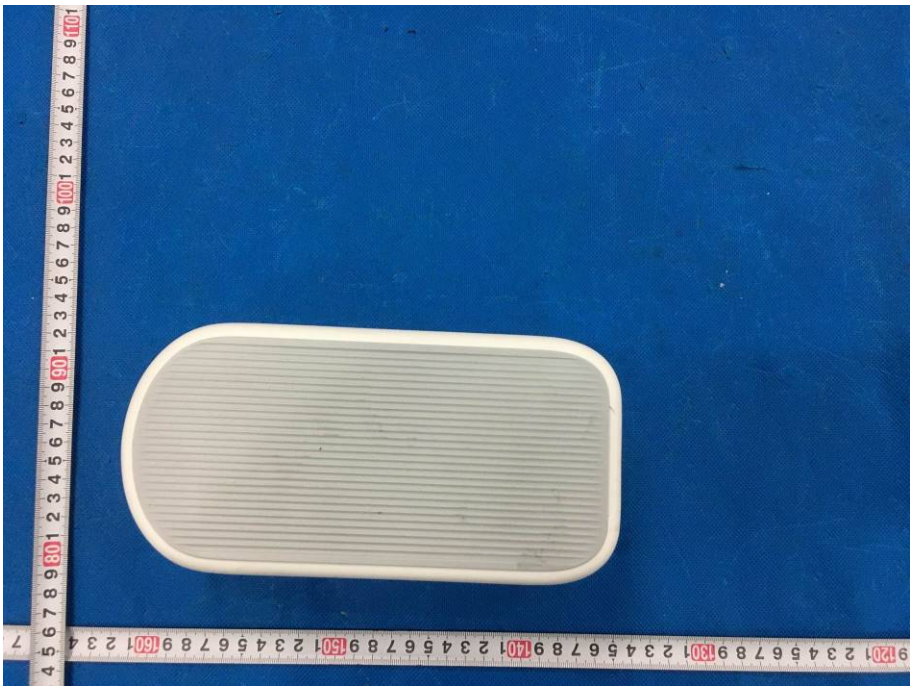
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

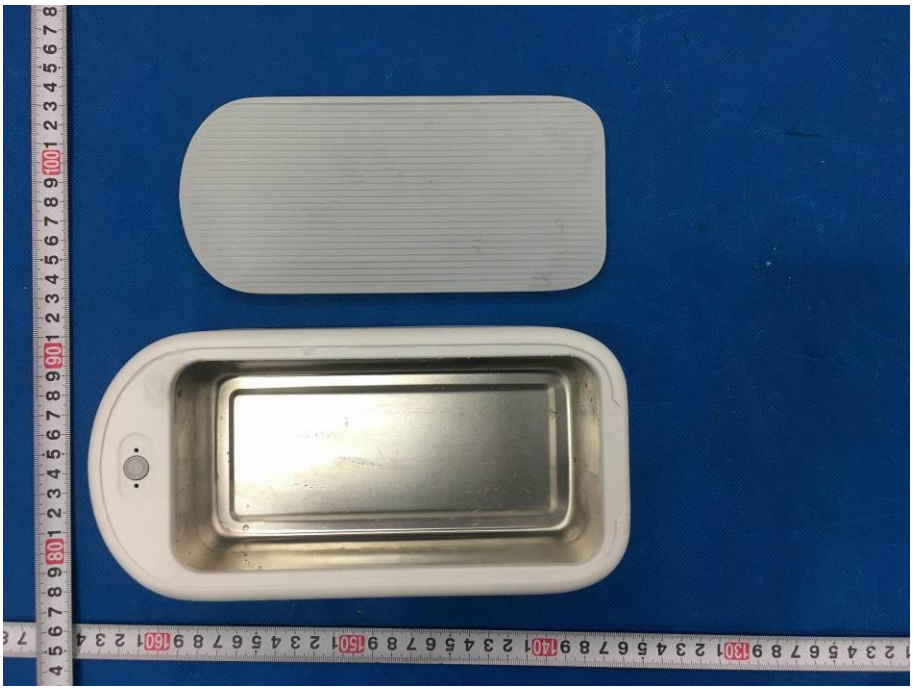
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	66.9668	37.18	-2.45	34.73	40.00	-5.27	QP
2	!	77.5927	39.07	-4.64	34.43	40.00	-5.57	QP
3	!	107.1337	39.20	-1.24	37.96	43.50	-5.54	QP
4	*	138.8735	40.97	-1.21	39.76	43.50	-3.74	QP
5		601.4265	30.63	9.37	40.00	46.00	-6.00	QP
6	!	801.7862	29.23	12.47	41.70	46.00	-4.30	QP

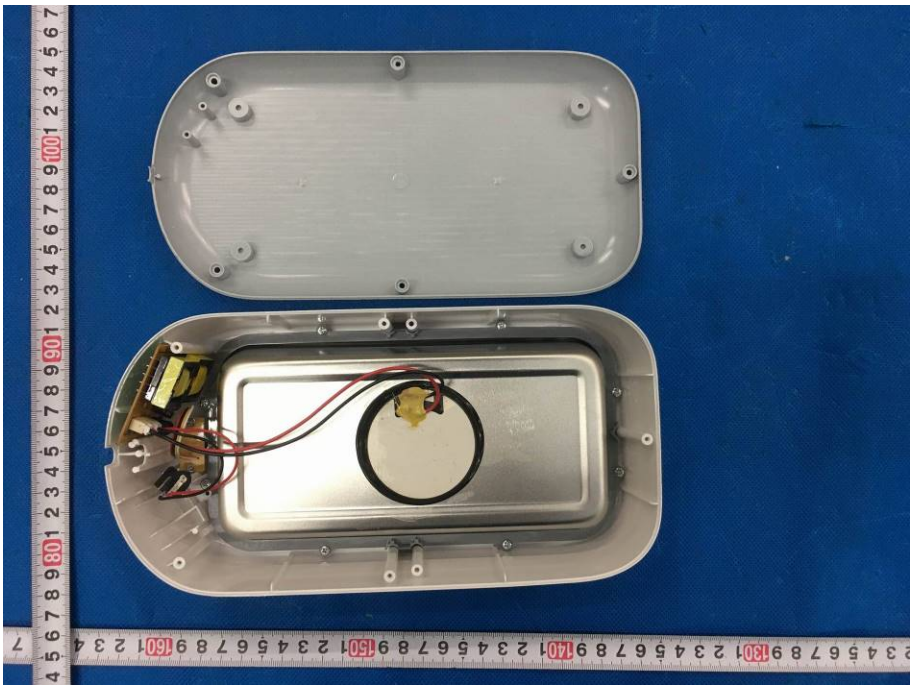
6.2.4 TEST SETUP PHOTOGRAPH

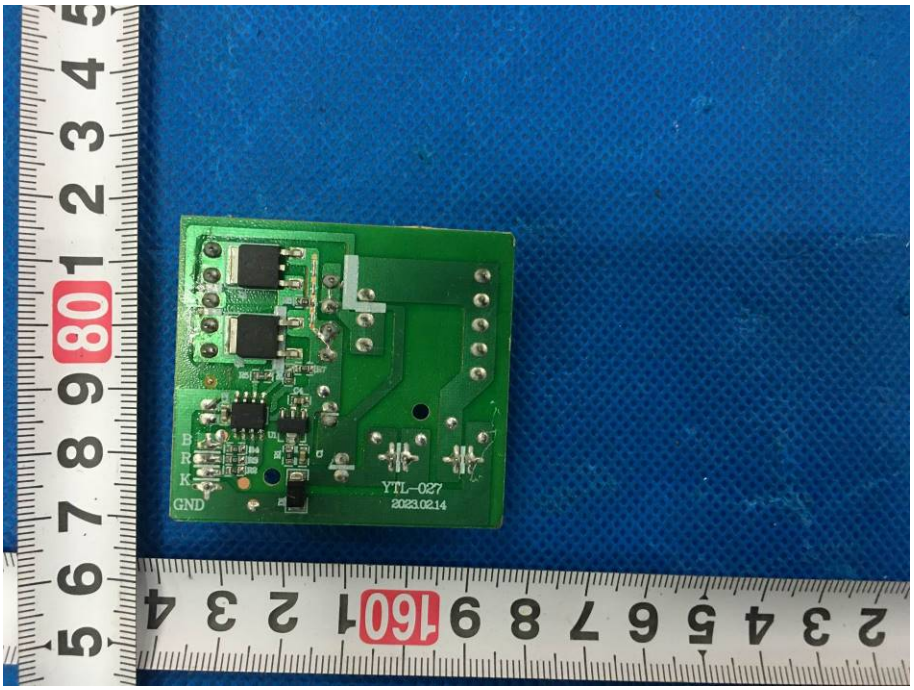


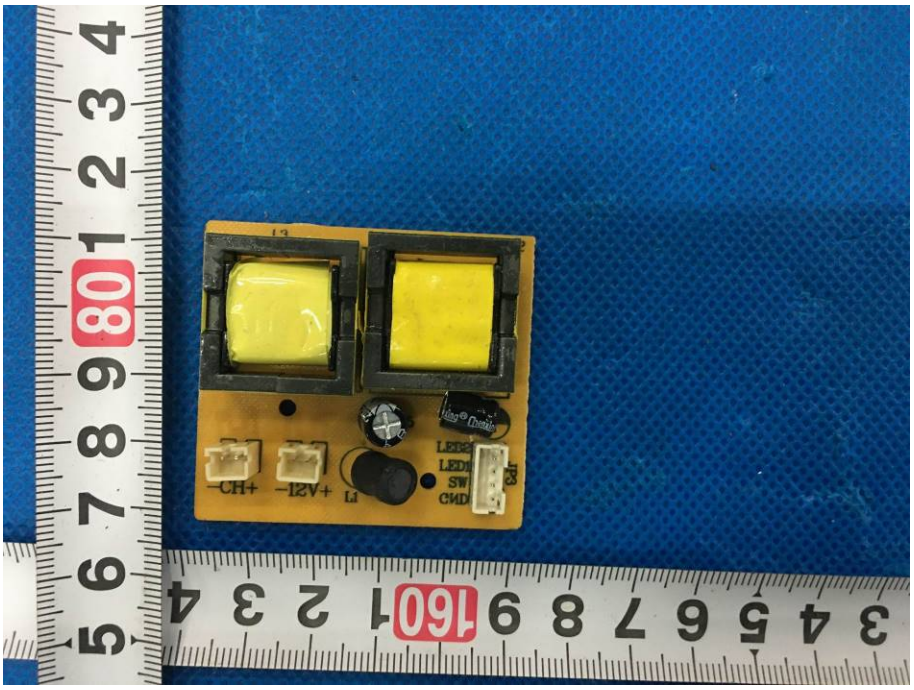
7 APPENDIX-Photographs of EUT Constructional Details

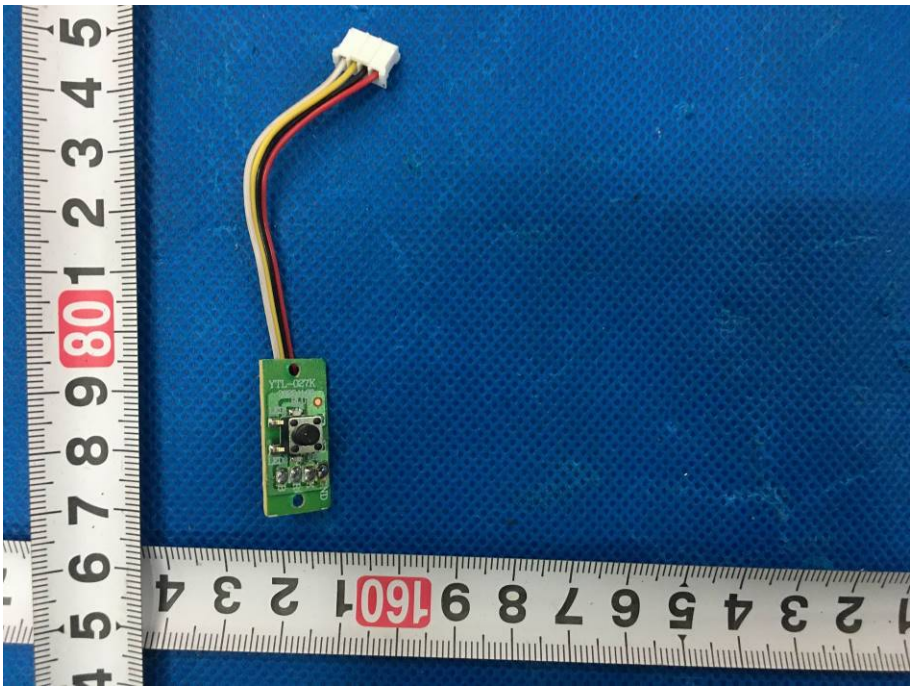


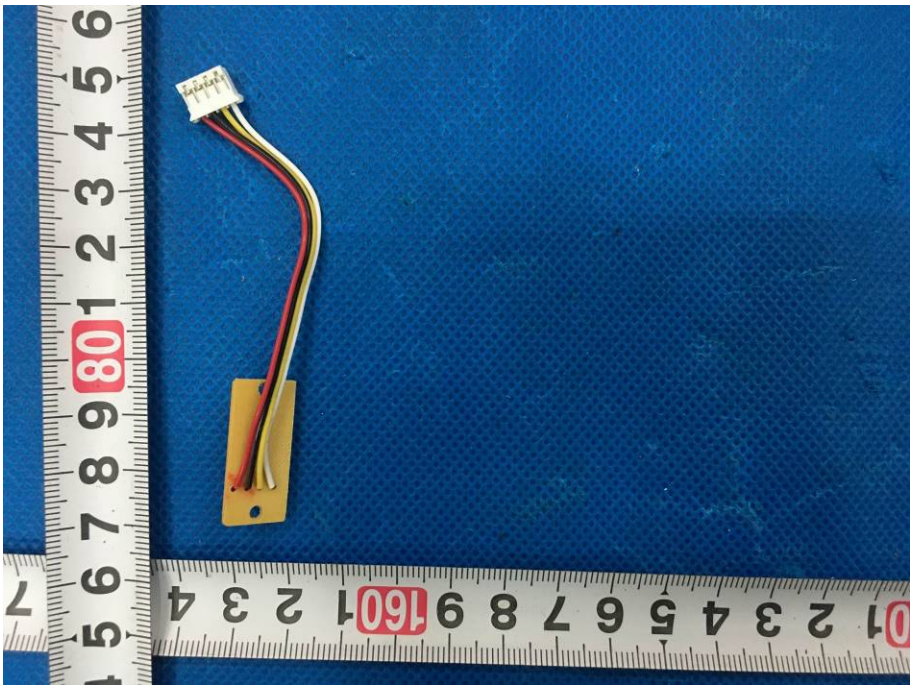





YTL-027
2023.02.14
GND


CH+
12V+
LED2
LED1
SW
CMD
JP2





**** End of report ****