

FCC Test Report

Applicant : Shenzhen Grepow Battery Co., Ltd.

Address : Complex building (1st to 3rd floor) ,2nd building (1st to 4th floor) ,1st building (1st to 4th floor) ,Shenzhen Grepow Battery Co.,Ltd, Huarong Road Gaofeng Community,Dalang Street,Longhua District,Shenzhen City

Product Name : Jump starter

Report Date : Oct. 17, 2024



Shenzhen Anbotech Compliance Laboratory Limited

Shenzhen Anbotech Compliance Laboratory Limited

Address: Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.
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Contents

1. General Information 4

1.1. Client Information 4

1.2. Description of Device (EUT) 4

1.3. Auxiliary Equipment Used During Test 4

1.4. Description of Test Modes 5

1.5. Measurement Uncertainty 5

1.6. Test Summary 5

1.7. Description of Test Facility 6

1.8. Test Equipment List 7

2. Conducted emissions on AC mains 8

2.1. EUT Operation 8

2.2. Test Setup 8

2.3. Test Data 9

3. Radiated emissions (Below 1GHz) 11

3.1. EUT Operation 11

3.2. Test Setup 11

3.3. Test Data 12

APPENDIX I -- TEST SETUP PHOTOGRAPH 16

APPENDIX II -- Photo documentation 17



TEST REPORT

Applicant : Shenzhen Grepow Battery Co., Ltd.

Manufacturer : Shenzhen Grepow Battery Co., Ltd.

Product Name : Jump starter

Model No. : J1350 PRO

Trade Mark :

LOKITHOR

Rating(s) :

Nominal Voltage: 12.8V

Capacity: 2000mAh 25.6Wh

Starting Current: 700Amp

Peak Current: 1350Amp

USB-A Output: 5V= 3A, 9V= 2A, 12V= 1.5A

USB-C Input&Output: 5V= 3A, 9V= 3A, 12V= 2.5A, 15V= 2A, 20V= 1.5A

Test Standard(s) :

FCC 47 CFR Part 15 Subpart B

ANSI C63.4-2014

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with above listed standard(s) requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt:

Aug. 07, 2024

Date of Test:

Aug. 07, 2024 to Sept. 25, 2024

Prepared By:

Yee Huang

(Yee Huang)

Approved & Authorized Signer:

KingKong Jin

(KingKong Jin)



1. General Information

1.1. Client Information

Applicant	:	Shenzhen Grepow Battery Co., Ltd.
Address	:	Complex building (1st to 3rd floor) ,2nd building (1st to 4th floor) ,1st building (1st to 4th floor) ,Shenzhen Grepow Battery Co.,Ltd, Huarong Road Gaofeng Community,Dalang Street,Longhua District,Shenzhen City
Manufacturer	:	Shenzhen Grepow Battery Co., Ltd.
Address	:	Complex building (1st to 3rd floor) ,2nd building (1st to 4th floor) ,1st building (1st to 4th floor) ,Shenzhen Grepow Battery Co.,Ltd, Huarong Road Gaofeng Community,Dalang Street,Longhua District,Shenzhen City
Factory	:	Shenzhen Grepow Battery Co., Ltd.
Address	:	Complex building (1st to 3rd floor) ,2nd building (1st to 4th floor) ,1st building (1st to 4th floor) ,Shenzhen Grepow Battery Co.,Ltd, Huarong Road Gaofeng Community,Dalang Street,Longhua District,Shenzhen City

1.2. Description of Device (EUT)

Product Name	:	Jump starter
Model No.	:	J1350 PRO
Trade Mark	:	
Test Power Supply	:	DC 20V via adapter / DC 12.8V
Test Sample No.	:	1-1-1
Adapter	:	N/A
Remark: (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

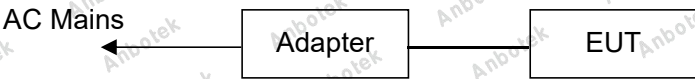
Title	Manufacturer	Model No.	Serial No.
Xiaomi 67W adapter(CE)	Xiaomi	MDY-13-ES	WA622091100375G
Apple Computer Adapter(New, dual Type-C)	Apple	A1947	/



1.4. Description of Test Modes

Pretest Modes	Descriptions
TM1	Charging mode
TM2	Full load mode

For Mode 1 Block Diagram of Test Setup



For Mode 2 Block Diagram of Test Setup



1.5. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.4dB
Radiated emissions (30MHz~1000MHz)	Horizontal: 3.96dB; Vertical: 4.60dB
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.6. Test Summary

Test Items	Test Modes	Status
Conducted emissions on AC mains	Mode1	P
Radiated emissions (Below 1GHz)	Mode1,2	P
Note: P: Pass N: N/A, not applicable		



1.7. Description of Test Facility

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

FCC-Registration No.:434132

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory 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. Registration No. 434132.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.



1.8. Test Equipment List

Conducted emissions on AC mains						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	2024-01-18	2025-01-17
2	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040D T001	2024-01-17	2025-01-16
3	Software Name EZ-EMC	Farad Technology	ANB-03A	N/A	/	/
4	EMI Test Receiver	Rohde & Schwarz	ESPI3	100926	2023-10-12	2024-10-11

Radiated emissions (Below 1GHz)						
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	2024-01-17	2025-01-16
2	Pre-amplifier	Schwarzbeck	BBV-9745	9745-075	2024-01-17	2025-01-16
3	Bilog Broadband Antenna	SCHWARZBECK	VULB 9163	01109	2022-10-16	2025-10-15
4	Software Name EZ-EMC	Farad Technology	EMEC-3A1	N/A	/	/



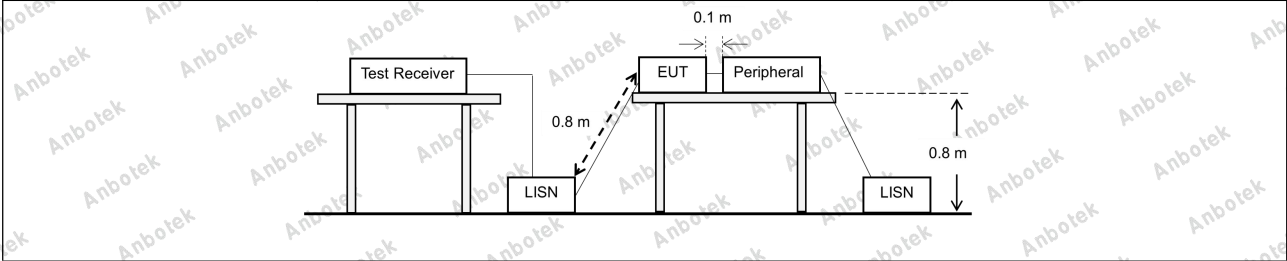
2. Conducted emissions on AC mains

Test Requirement:	15.107, Class B		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dBμV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	*Decreases with the logarithm of the frequency.		
Test Method:	ANSI C63.4-2014		
Procedure:	An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor		

2.1. EUT Operation

Operating Environment:	
Test mode:	1: TM1: Charging mode

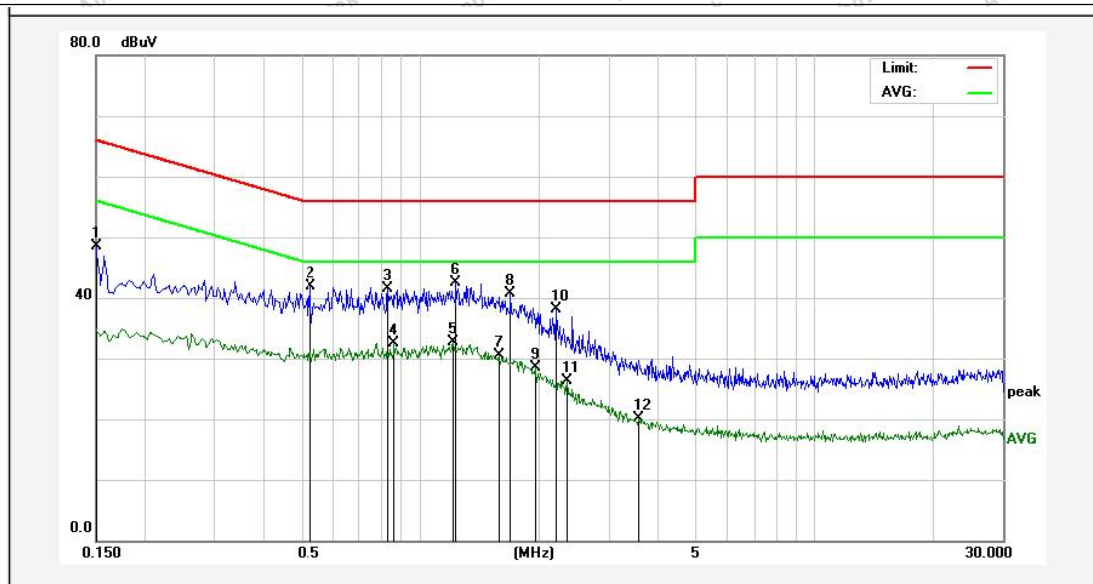
2.2. Test Setup



2.3. Test Data

Temperature:	23.1 °C	Humidity:	50 %	Atmospheric Pressure:	101 kPa
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TM1 / Line: Line

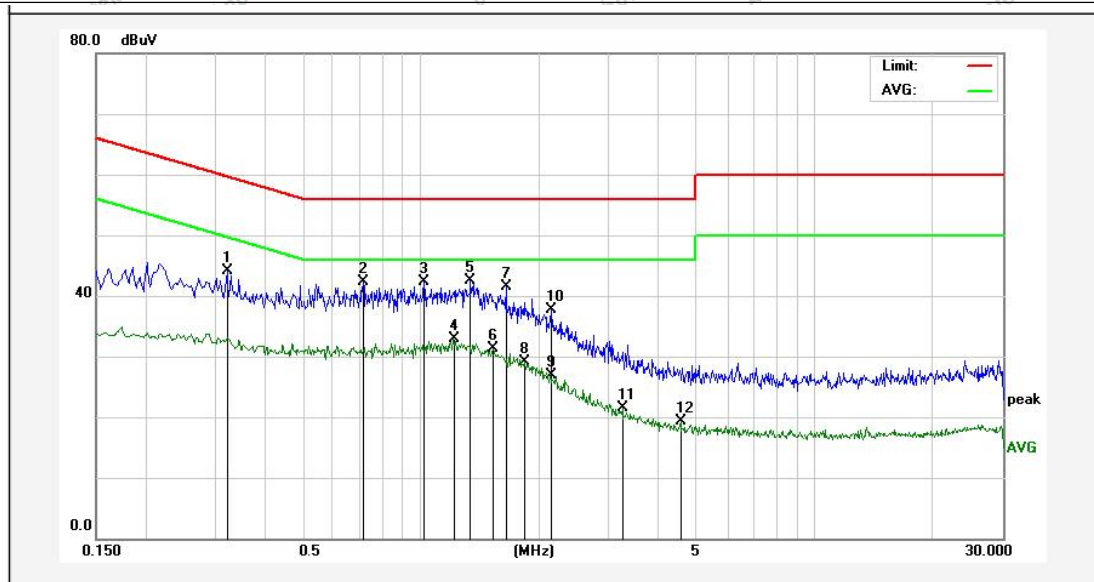


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	30.64	17.82	48.46	65.99	-17.53	QP	
2	0.5260	24.00	17.85	41.85	56.00	-14.15	QP	
3	0.8300	23.62	17.86	41.48	56.00	-14.52	QP	
4	0.8580	14.61	17.86	32.47	46.00	-13.53	AVG	
5	1.2100	14.94	17.84	32.78	46.00	-13.22	AVG	
6	1.2340	24.58	17.84	42.42	56.00	-13.58	QP	
7	1.5820	12.74	17.84	30.58	46.00	-15.42	AVG	
8	1.6980	22.77	17.84	40.61	56.00	-15.39	QP	
9	1.9580	10.59	17.83	28.42	46.00	-17.58	AVG	
10	2.2100	20.18	17.83	38.01	56.00	-17.99	QP	
11	2.3500	8.48	17.83	26.31	46.00	-19.69	AVG	
12	3.5780	2.32	17.85	20.17	46.00	-25.83	AVG	



Temperature:	23.1 °C	Humidity:	50 %	Atmospheric Pressure:	101 kPa
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TM1 / Line: Neutral



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.3220	26.32	17.83	44.15	59.65	-15.50	QP	
2	0.7180	24.41	17.87	42.28	56.00	-13.72	QP	
3	1.0220	24.37	17.85	42.22	56.00	-13.78	QP	
4	1.2100	15.11	17.84	32.95	46.00	-13.05	AVG	
5	1.3380	24.66	17.84	42.50	56.00	-13.50	QP	
6	1.5300	13.41	17.84	31.25	46.00	-14.75	AVG	
7	1.6460	23.73	17.84	41.57	56.00	-14.43	QP	
8	1.8380	11.24	17.83	29.07	46.00	-16.93	AVG	
9	2.1380	9.17	17.83	27.00	46.00	-19.00	AVG	
10	2.1500	19.87	17.83	37.70	56.00	-18.30	QP	
11	3.2500	3.63	17.84	21.47	46.00	-24.53	AVG	
12	4.5580	1.36	17.85	19.21	46.00	-26.79	AVG	



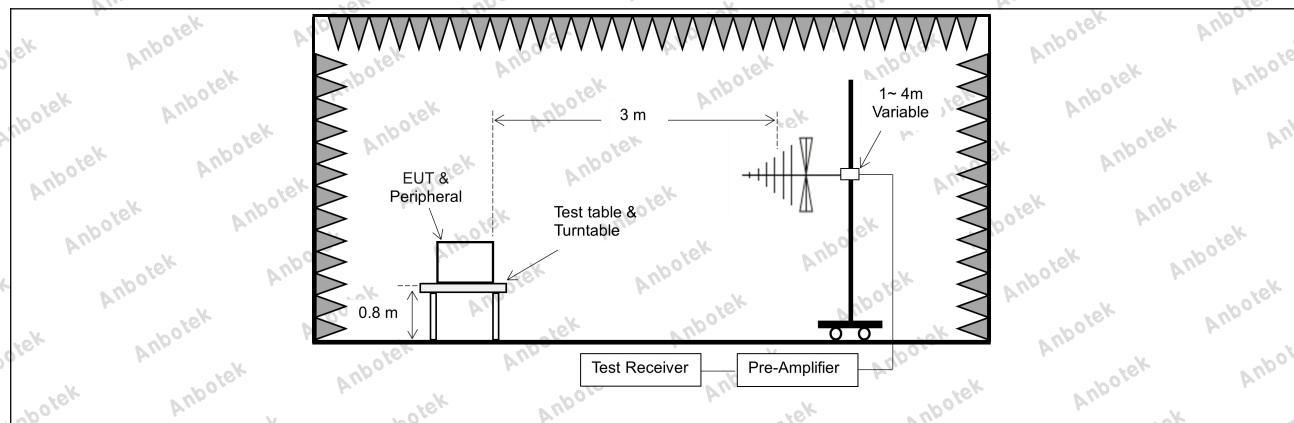
3. Radiated emissions (Below 1GHz)

Test Requirement:	15.109, Class B				
Test Limit:	Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:				
	Frequency of emission (MHz)	Field strength @3m		Field strength @10m	
		(uV/m)	(dBuV/m)	(uV/m)	(dBuV/m)
	30 – 88	100	40	30	29.5
	88 – 216	150	43.5	45	33.1
	216 – 960	200	46	60	35.6
	Above 960	500	54	150	43.5
Test Method:	ANSI C63.4-2014				
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor				

3.1. EUT Operation

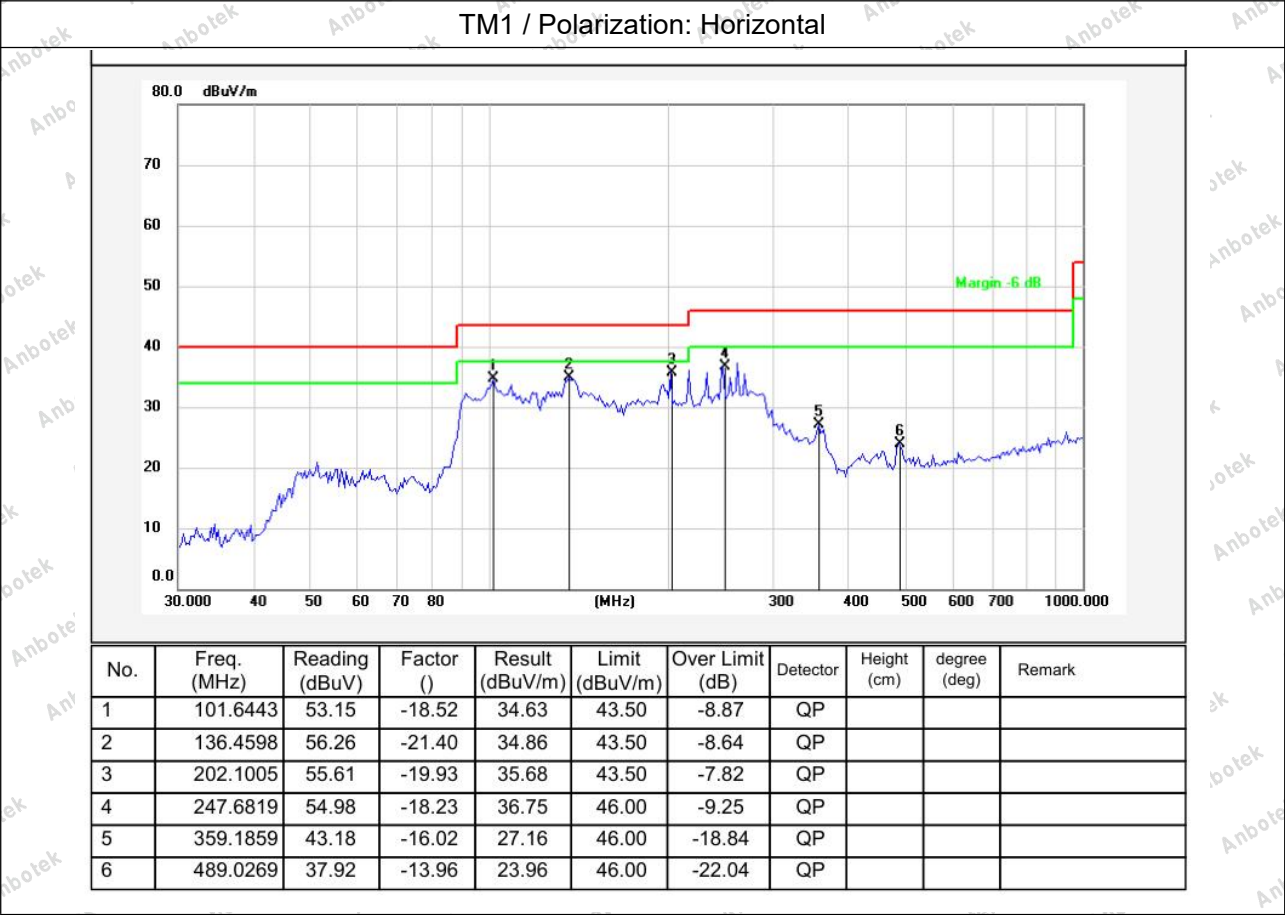
Operating Environment:	
Test mode:	1: TM1: Charging mode 2: TM2: Full load mode

3.2. Test Setup



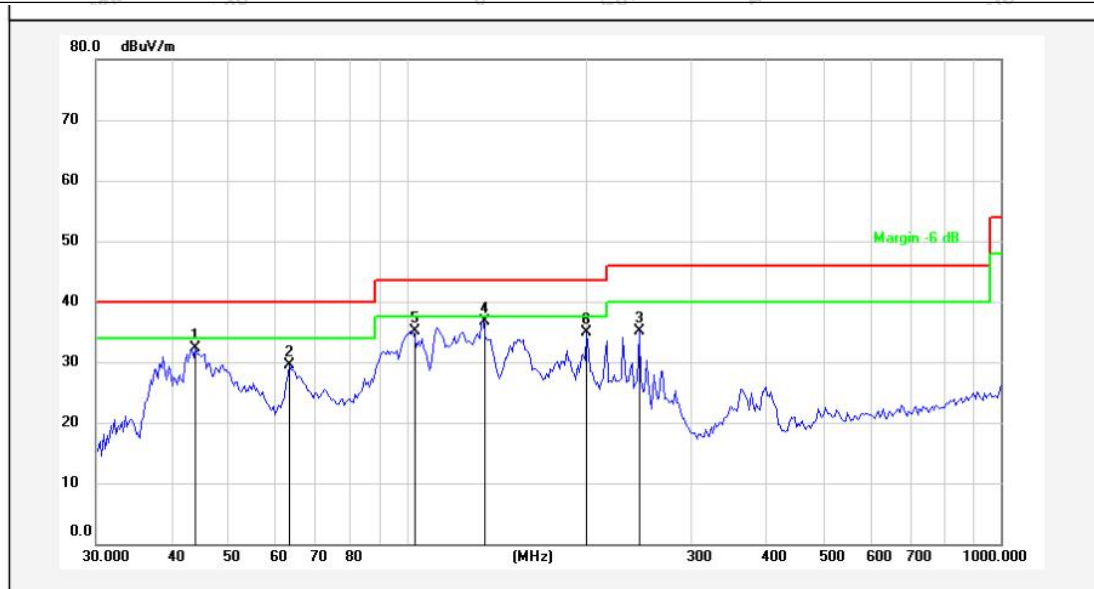
3.3. Test Data

Temperature:	23.5 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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Temperature:	23.5 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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TM1 / Polarization: Vertical

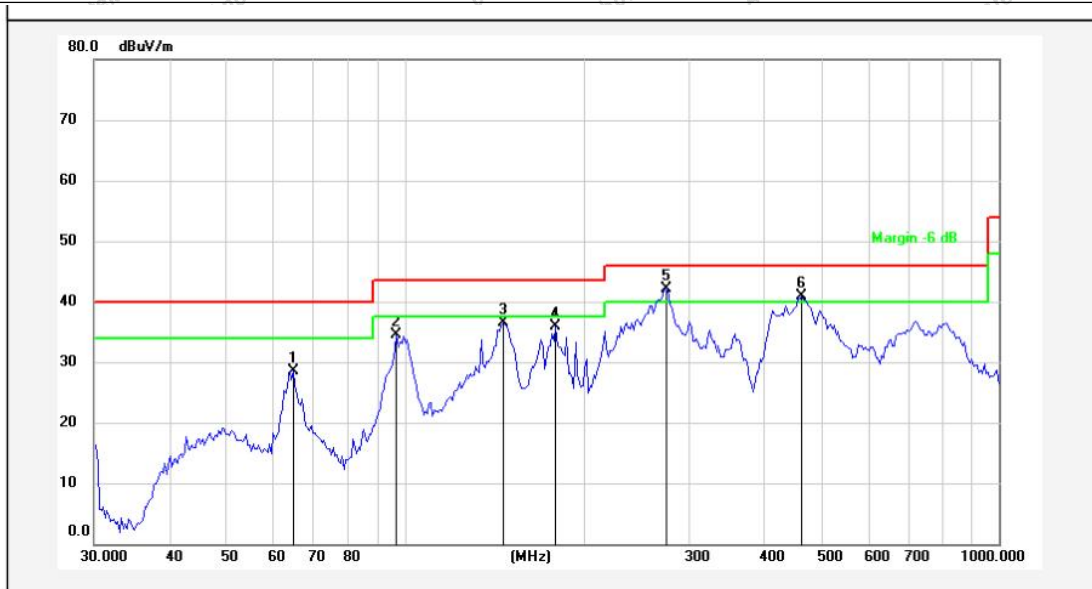


No.	Freq. (MHz)	Reading (dBuV)	Factor ()	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	44.1202	49.22	-16.86	32.36	40.00	-7.64	QP			
2	63.5356	49.71	-20.14	29.57	40.00	-10.43	QP			
3	245.9509	53.38	-18.30	35.08	46.00	-10.92	QP			
4	134.5592	59.64	-23.03	36.61	43.50	-6.89	QP			
5	102.3597	53.79	-18.62	35.17	43.50	-8.33	QP			
6	200.6879	54.82	-19.97	34.85	43.50	-8.65	QP			



Temperature:	23.5 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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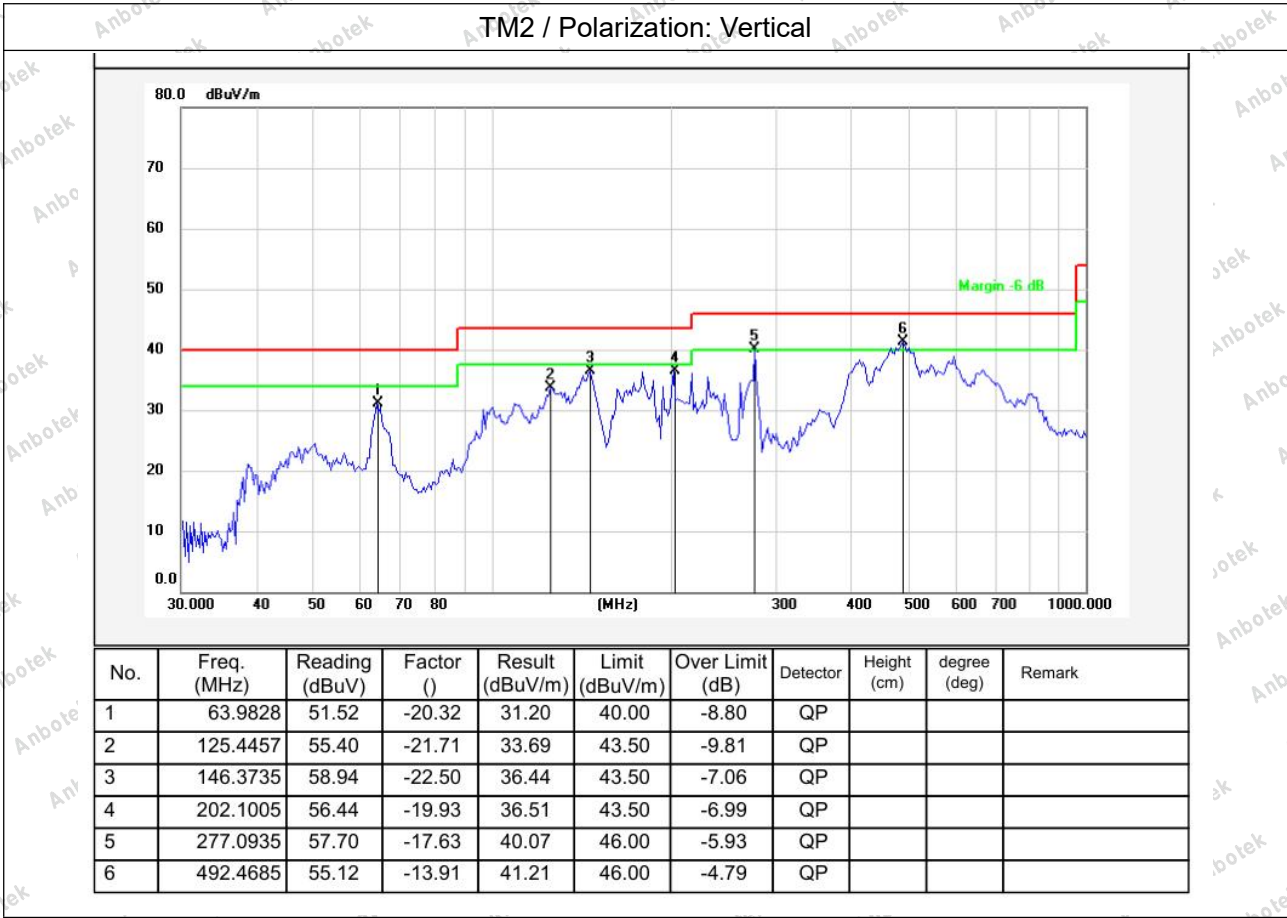
TM2 / Polarization: Horizontal



No.	Freq. (MHz)	Reading (dBUV)	Factor ()	Result (dBUV/m)	Limit (dBUV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	64.8865	50.72	-22.15	28.57	40.00	-11.43	QP			
2	96.7749	53.16	-18.71	34.45	43.50	-9.05	QP			
3	146.3735	58.60	-22.05	36.55	43.50	-6.95	QP			
4	179.3863	57.08	-21.11	35.97	43.50	-7.53	QP			
5	273.2341	59.90	-17.71	42.19	46.00	-3.81	QP			
6	465.5994	55.27	-14.28	40.99	46.00	-5.01	QP			



Temperature:	23.5 °C	Humidity:	49 %	Atmospheric Pressure:	101 kPa
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APPENDIX I -- TEST SETUP PHOTOGRAPH

Conducted emissions on AC mains



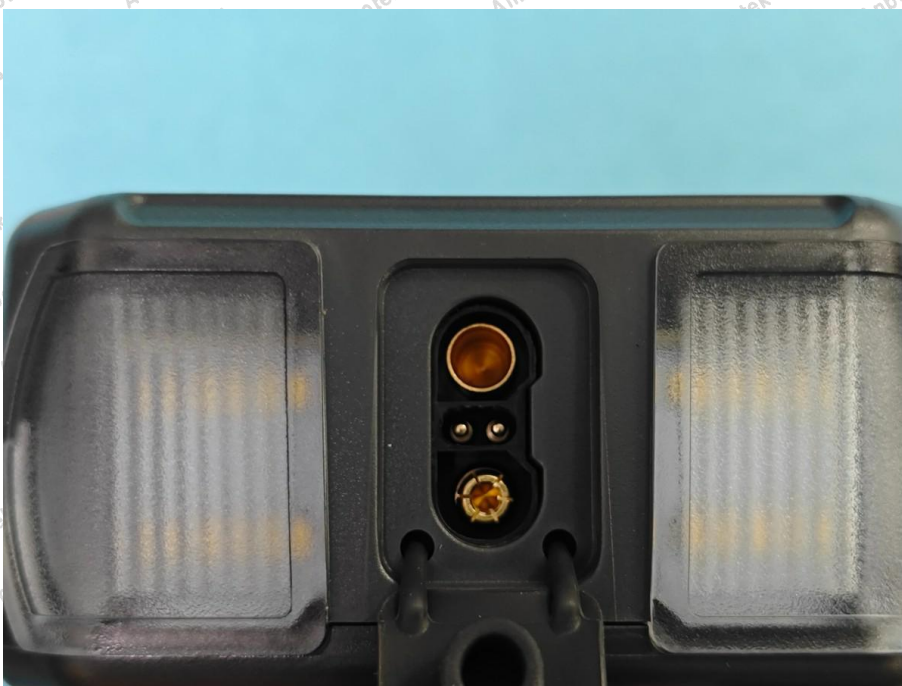
Radiated emissions (Below 1GHz)



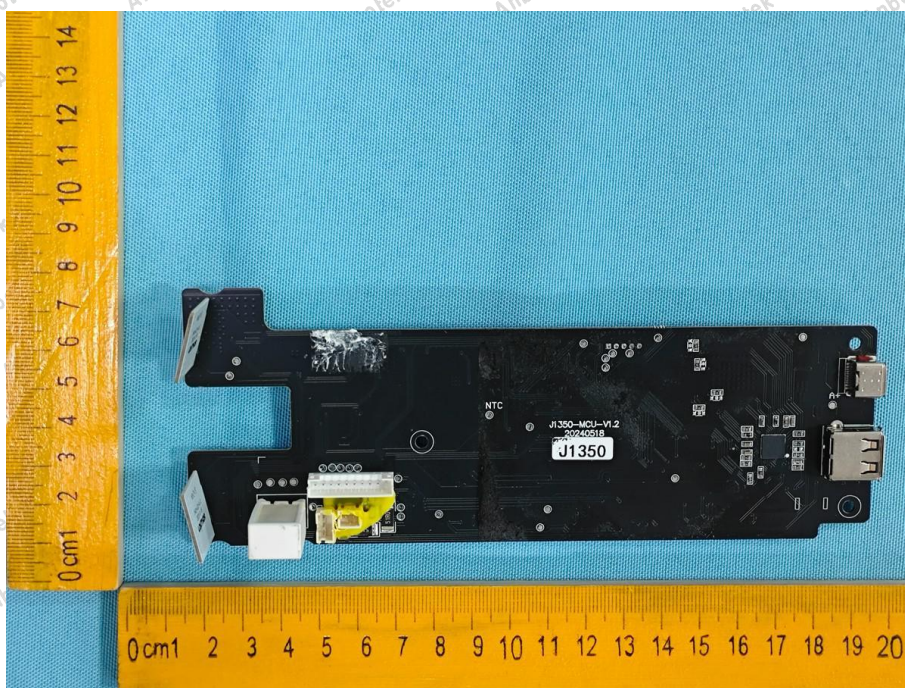
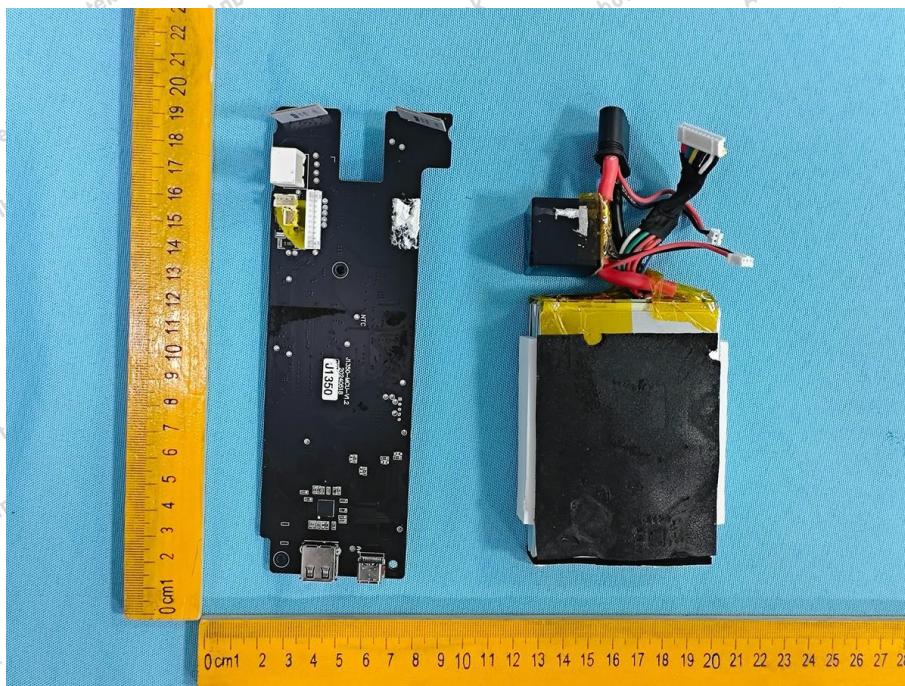
APPENDIX II -- Photo documentation

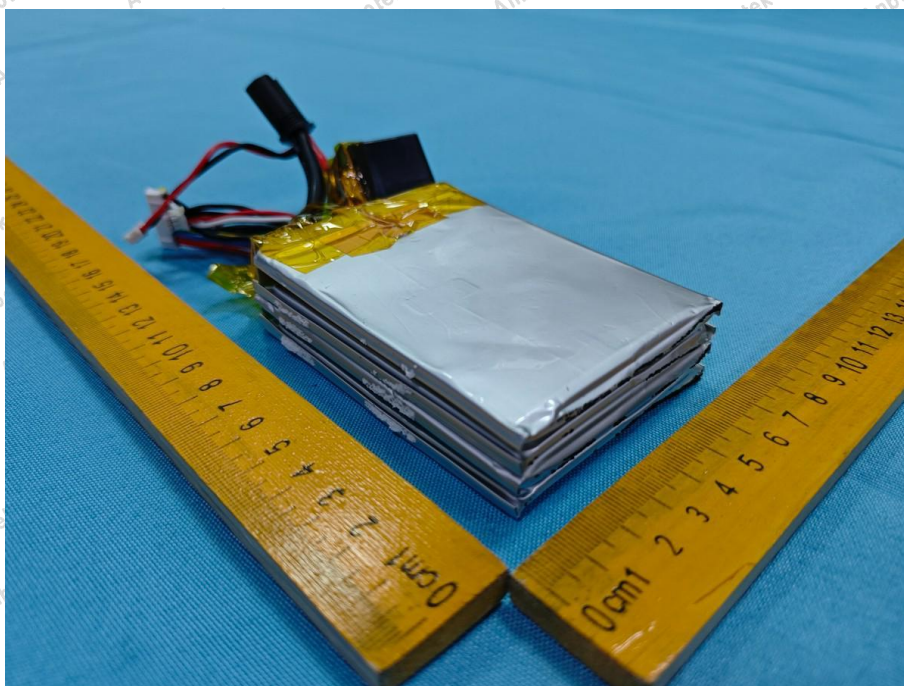
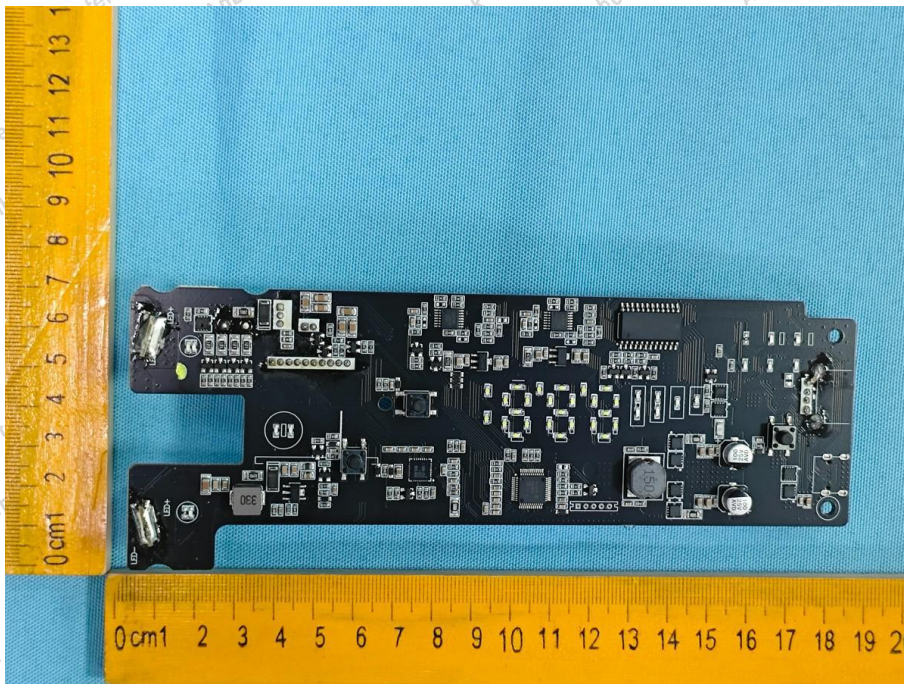


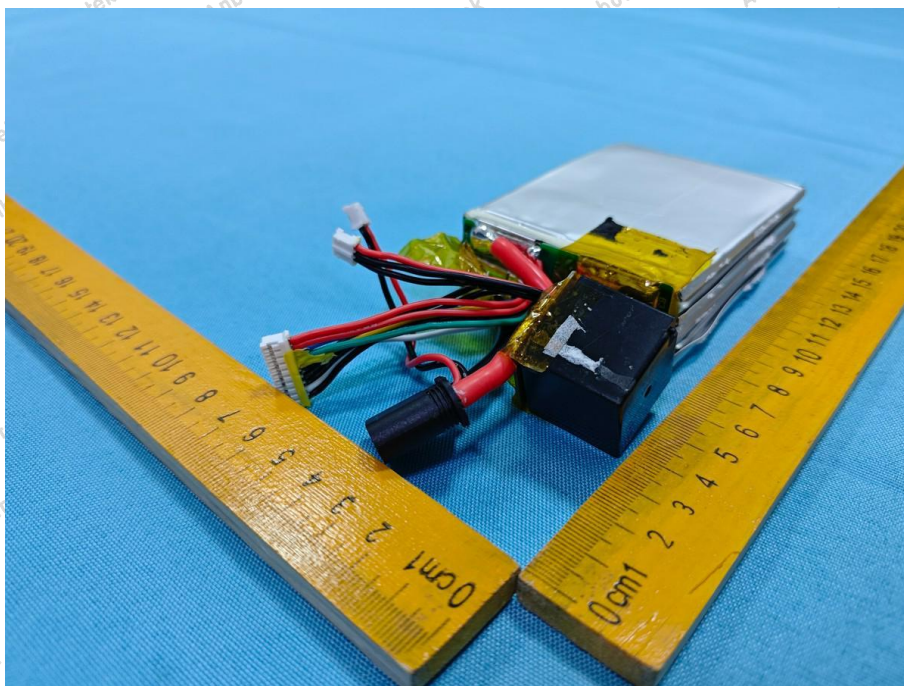












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