

TEST REPORT

Application No.: SZEM2203001929BA
Applicant: Flashbay Electronics
Address of Applicant: Building2, Jixun Industrial Park, Xinjiao, Dong'ao Village, Shatian Town, Huiyang District, Huizhou City, Guangdong Province, P.R.China
Manufacturer: Flashbay Electronics
Address of Manufacturer: Building2, Jixun Industrial Park, Xinjiao, Dong'ao Village, Shatian Town, Huiyang District, Huizhou City, Guangdong Province, P.R.China
Factory: Flashbay Electronics
Address of Factory: Building2, Jixun Industrial Park, Xinjiao, Dong'ao Village, Shatian Town, Huiyang District, Huizhou City, Guangdong Province, P.R.China
Equipment Under Test (EUT):
EUT Name: Power Banks
Model No.: Solar Card (SC)
Standard(s) : VCCI-CISPR 32: 2016
Date of Receipt: 2022-03-31
Date of Test: 2022-03-31 to 2022-04-08
Date of Issue: 2022-04-11


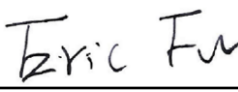
Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
EMC Laboratory Manager



Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-04-11		Original

Authorized for issue by:			
			
		Foray Chen/Project Engineer	
			
		Eric Fu/Reviewer	



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Power Port (150kHz-30MHz)	VCCI-CISPR 32: 2016	VCCI-CISPR 32: 2016	Class B	Pass
Radiated Emissions (30MHz-1GHz)		VCCI-CISPR 32: 2016	Class B	Pass



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4 General Information

4.1 Details of E.U.T.

Power supply:	Input: DC5V 1A Output: DC5V 1A Rechargeable battery: DC3.7V 2600mAh
Cable(s):	EUT cable: 5cm unshielded

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Adapter	Apple	A1443	REF. No.SEA05D11D
Type-C Cable	SGS	N/A	REF. No.SEA07D01D
Load Resistor	SGS	N/A	REF. No.SEA06A00

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at Mains Power Port (150kHz-30MHz)	± 2.9dB
Radiated Emissions (30MHz-1GHz)	± 4.8dB

Remark:

The U_{lab} (lab Uncertainty) is less than $U_{CISPR/ETSI}$ (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI (Member No. 1937)**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



5 Equipment List

Conducted Emissions at Mains Power Port (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI Test Receiver	Rohde&Schwarz	ESCI	SEM004-02	2022-03-23	2023-03-22
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2021-07-09	2022-07-08
LISN	Rohde&Schwarz	ENV216	SEM007-01	2021-09-23	2022-09-22
LISN	ETS-LINDGREN	3816/2	SEM007-02	2022-03-23	2023-03-22

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2021-03-27	2024-03-26
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2021-10-21	2022-10-20
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2021-10-28	2023-10-27
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2022-04-07	2023-04-06
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2020-08-14	2022-08-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2021-07-09	2022-07-08

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2021-09-14	2022-09-13
Humidity/ Temperature Indicator	Anymetre	TH101B	SEM002-09	2021-09-14	2022-09-13
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2022-03-28	2023-03-27



6 Emission Test Results

6.1 Conducted Emissions at Mains Power Port (150kHz-30MHz)

Test Requirement: VCCI-CISPR 32: 2016
 Test Method: VCCI-CISPR 32: 2016

Limit:

0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

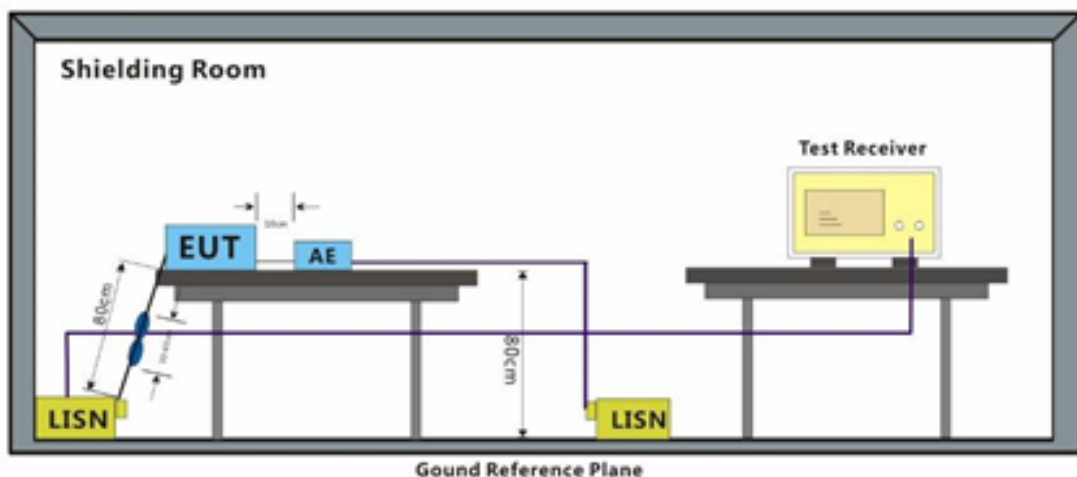
6.1.1 E.U.T. Operation

Operating Environment:
 Temperature: 21.6 °C Humidity: 46.8 % RH Atmospheric Pressure: 1020 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode, keep EUT being charged with adapter.
Final test	02	Charge and discharge mode, keep EUT being charged with adapter and discharging with full load.

6.1.3 Test Setup Diagram



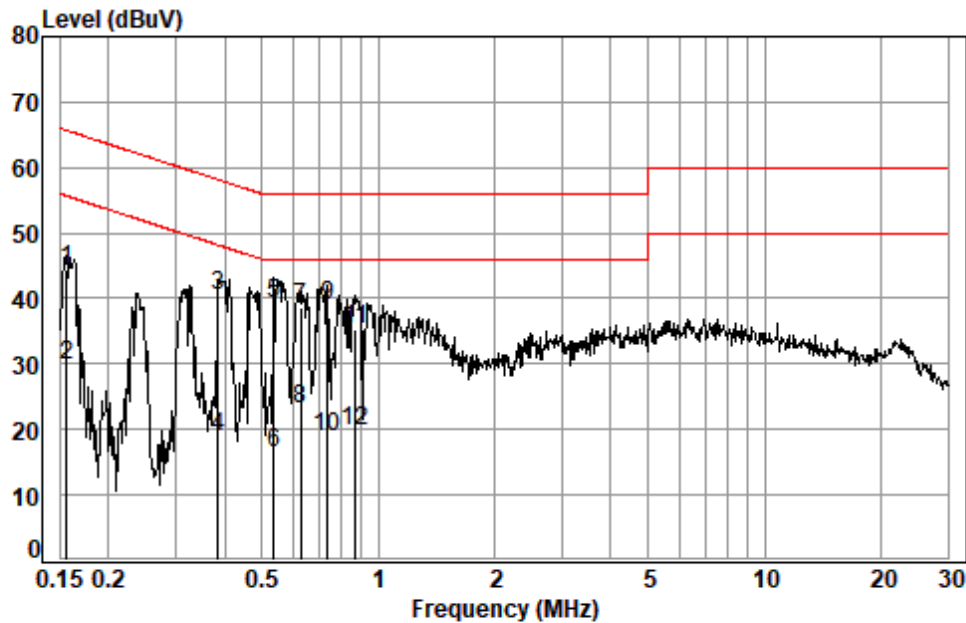
6.1.4 Measurement Procedure and Data

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



Test Mode: 02; Line: Live line



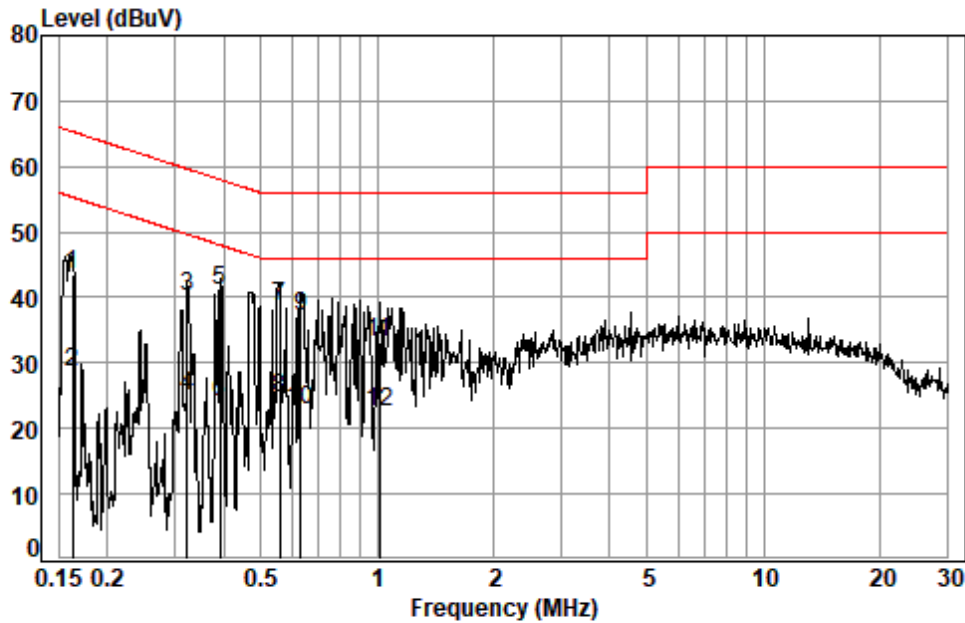
Site : Shielding Room
Condition: Line
Job No. : 01929BA
Test mode: 02

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1565	0.11	9.70	34.72	44.53	65.65	-21.12	QP
2	0.1565	0.11	9.70	19.85	29.66	55.65	-25.99	Average
3	0.3852	0.13	9.76	30.43	40.32	58.17	-17.85	QP
4	0.3852	0.13	9.76	8.88	18.77	48.17	-29.40	Average
5 *	0.5378	0.15	9.77	29.23	39.15	56.00	-16.85	QP
6	0.5378	0.15	9.77	6.46	16.38	46.00	-29.62	Average
7	0.6305	0.16	9.77	28.83	38.76	56.00	-17.24	QP
8 *	0.6305	0.16	9.77	13.17	23.10	46.00	-22.90	Average
9	0.7391	0.17	9.77	28.93	38.87	56.00	-17.13	QP
10	0.7391	0.17	9.77	8.97	18.91	46.00	-27.09	Average
11	0.8757	0.19	9.78	25.41	35.38	56.00	-20.62	QP
12	0.8757	0.19	9.78	9.82	19.79	46.00	-26.21	Average



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Test Mode: 02; Line: Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 01929BA
Test mode: 02

	Freq	Cable Loss	LISN Factor	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.1624	0.11	9.71	33.81	43.63	65.34	-21.71	QP
2	0.1624	0.11	9.71	18.86	28.68	55.34	-26.66	Average
3	0.3217	0.12	9.74	30.17	40.03	59.66	-19.63	QP
4	0.3217	0.12	9.74	15.03	24.89	49.66	-24.77	Average
5 *	0.3914	0.13	9.75	31.08	40.96	58.03	-17.07	QP
6	0.3914	0.13	9.75	14.08	23.96	48.03	-24.07	Average
7	0.5581	0.15	9.77	28.67	38.59	56.00	-17.41	QP
8 *	0.5581	0.15	9.77	14.79	24.71	46.00	-21.29	Average
9	0.6338	0.16	9.77	27.17	37.10	56.00	-18.90	QP
10	0.6338	0.16	9.77	12.75	22.68	46.00	-23.32	Average
11	1.0157	0.20	9.78	23.26	33.24	56.00	-22.76	QP
12	1.0157	0.20	9.78	12.63	22.61	46.00	-23.39	Average



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6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: VCCI-CISPR 32: 2016
 Test Method: VCCI-CISPR 32: 2016
 Measurement Distance: 10m

Limit:

FREQUENCY (MHz)	dBuV/m (At 10m)	dBuV/m (At 3m)
	Class B	Class B
30 ~ 230	30	40
230 ~ 1000	37	47
Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz		

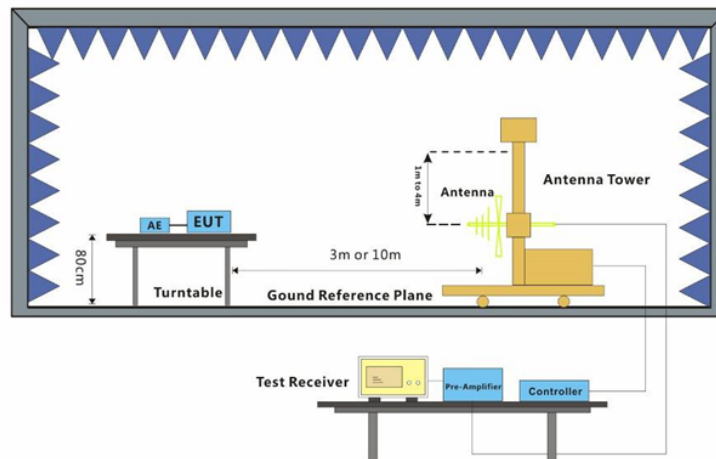
6.2.1 E.U.T. Operation

Operating Environment:
 Temperature: 23.6 °C Humidity: 49.5 % RH Atmospheric Pressure: 1015 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Pre-scan	00	Charge mode, keep EUT being charged with adapter.
Pre-scan	01	Discharge mode, keep EUT discharging with full load.
Final test	02	Charge and discharge mode, keep EUT being charged with adapter and discharging with full load.
Pre-scan	03	Idle mode.

6.2.3 Test Setup Diagram



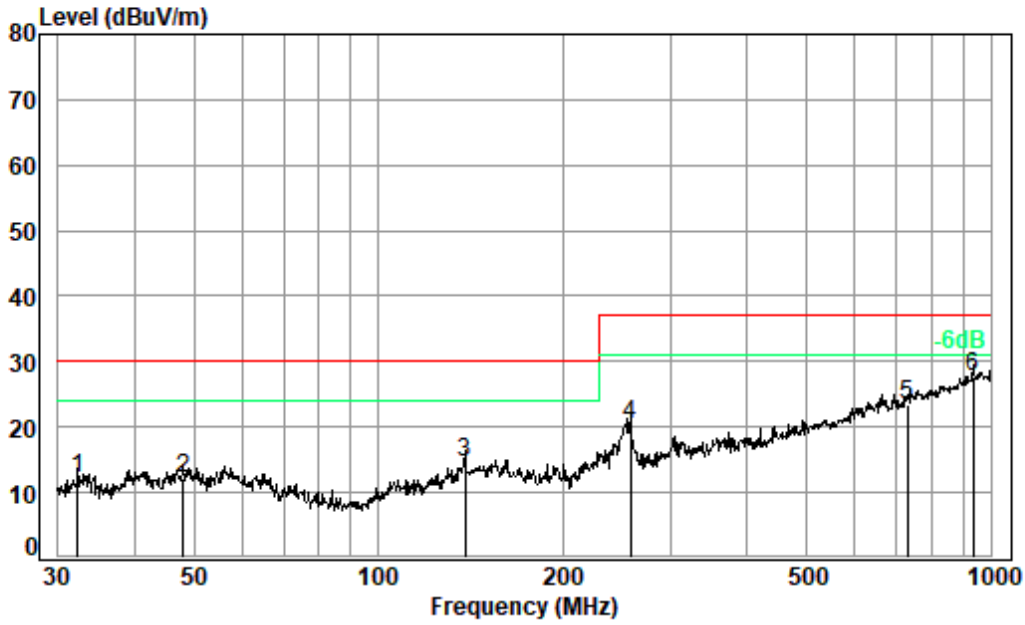
6.2.4 Measurement Procedure and Data

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



Test Mode: 02; Polarity: Horizontal



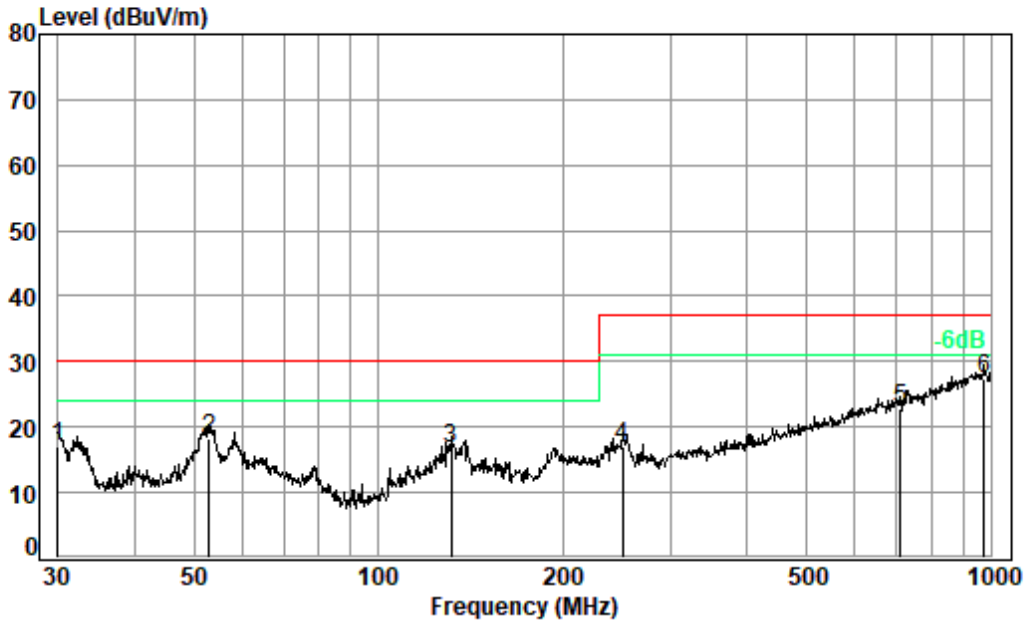
Condition: 10m HORIZONTAL
Job No. : 01929BA
Test Mode: 02

	Read Freq	Ant Level	Cable Factor	Preamp Loss	Level	Limit	Over	Remark
	MHz	dBuV	dB/m	dB	dBuV/m	dBuV/m	dB	
1	32.293	27.12	16.29	1.07	32.46	12.02	30.00	-17.98 QP
2	47.994	26.37	17.22	1.14	32.41	12.32	30.00	-17.68 QP
3	138.387	28.80	16.88	1.41	32.40	14.69	30.00	-15.31 QP
4	258.326	34.40	16.40	1.88	32.40	20.28	37.00	-16.72 QP
5	731.920	26.85	25.54	3.32	32.44	23.27	37.00	-13.73 QP
6 pp	935.546	27.29	28.28	3.55	31.38	27.74	37.00	-9.26 QP



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Test Mode: 02; Polarity: Vertical



Condition: 10m VERTICAL
Job No. : 01929BA
Test Mode: 02

	Read	Ant	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	30.000	32.03	16.36	1.05	32.47	16.97	30.00 -13.03 QP
2	52.945	32.27	17.25	1.15	32.40	18.27	30.00 -11.73 QP
3	131.297	31.78	15.82	1.38	32.40	16.58	30.00 -13.42 QP
4	250.301	31.41	16.14	1.85	32.40	17.00	37.00 -20.00 QP
5	711.674	26.62	25.27	3.31	32.48	22.72	37.00 -14.28 QP
6 pp	975.753	26.65	28.22	3.65	31.02	27.50	37.00 -9.50 QP

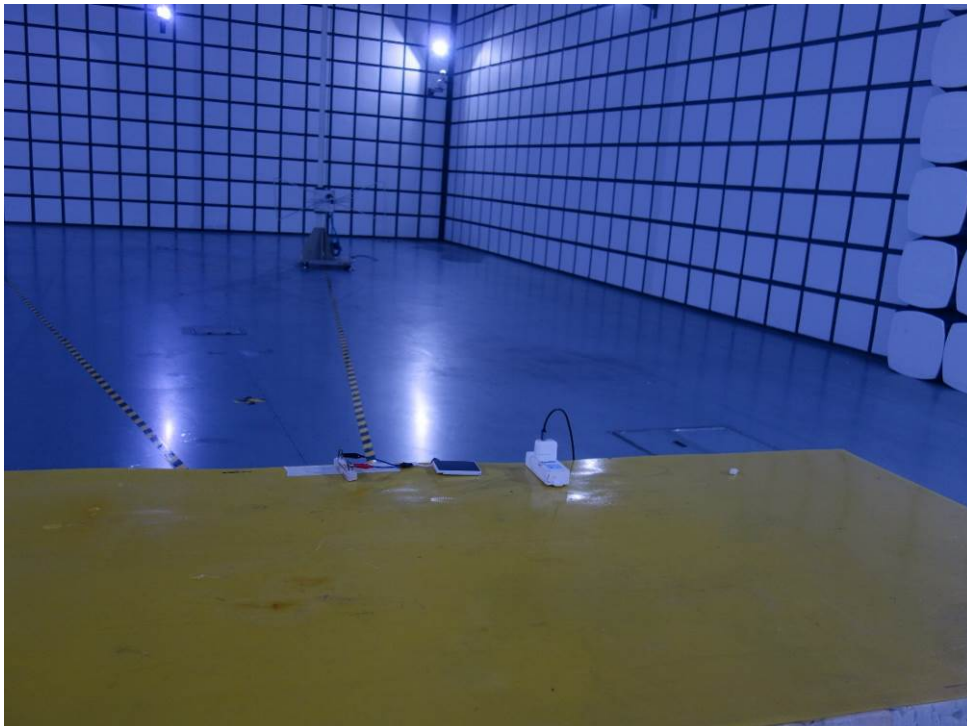


7 Test Setup Photo

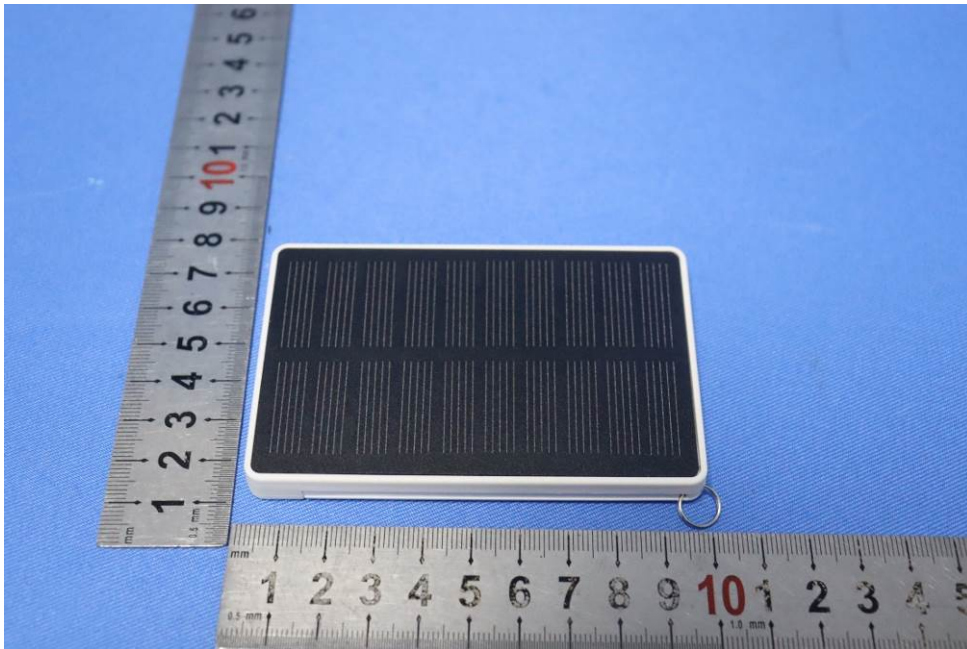
Conducted Emissions at Mains Power Port (150kHz-30MHz)

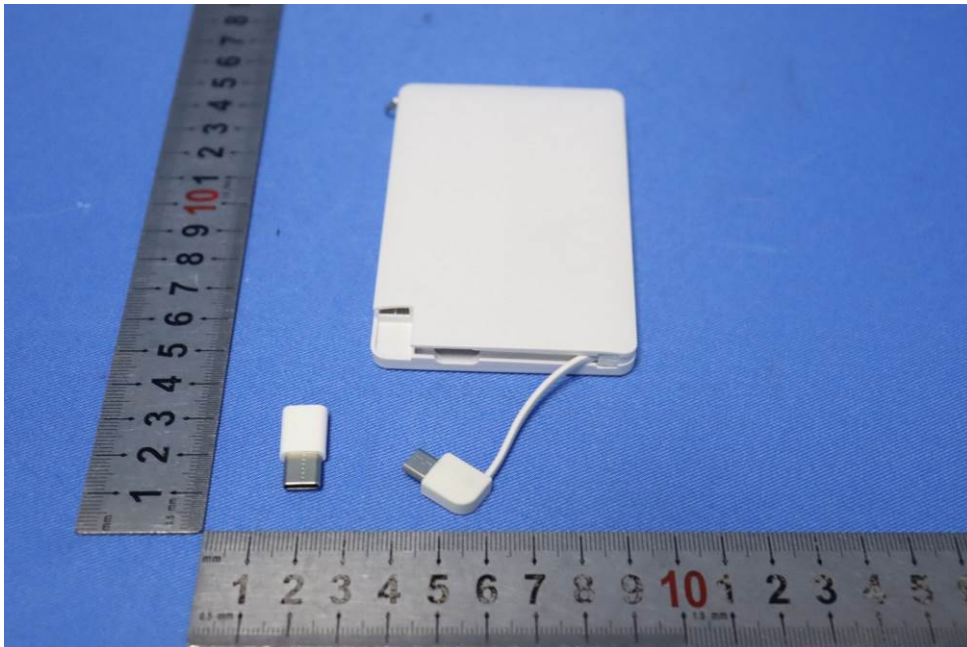
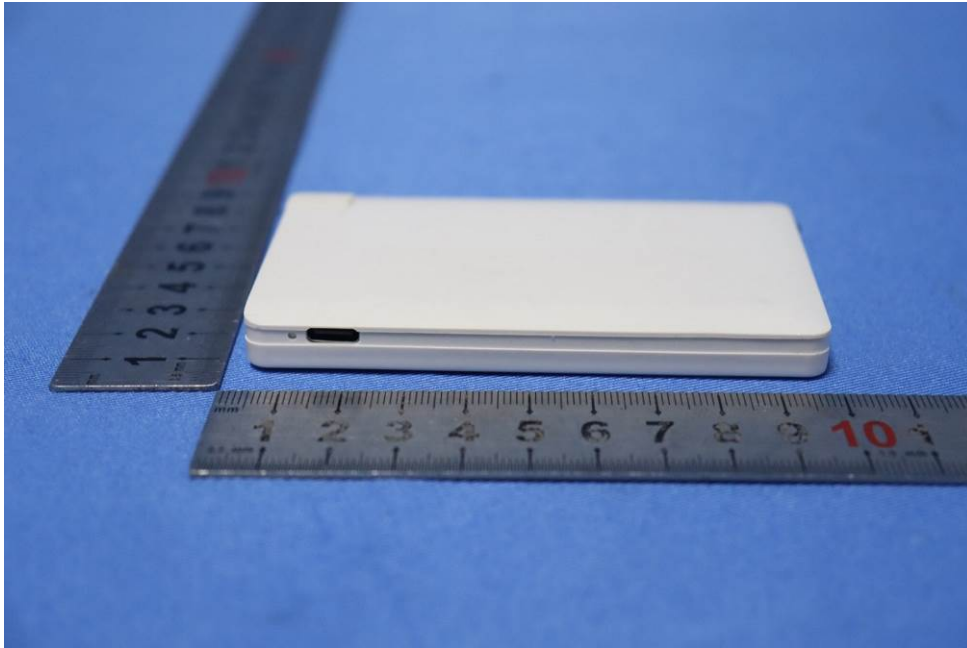


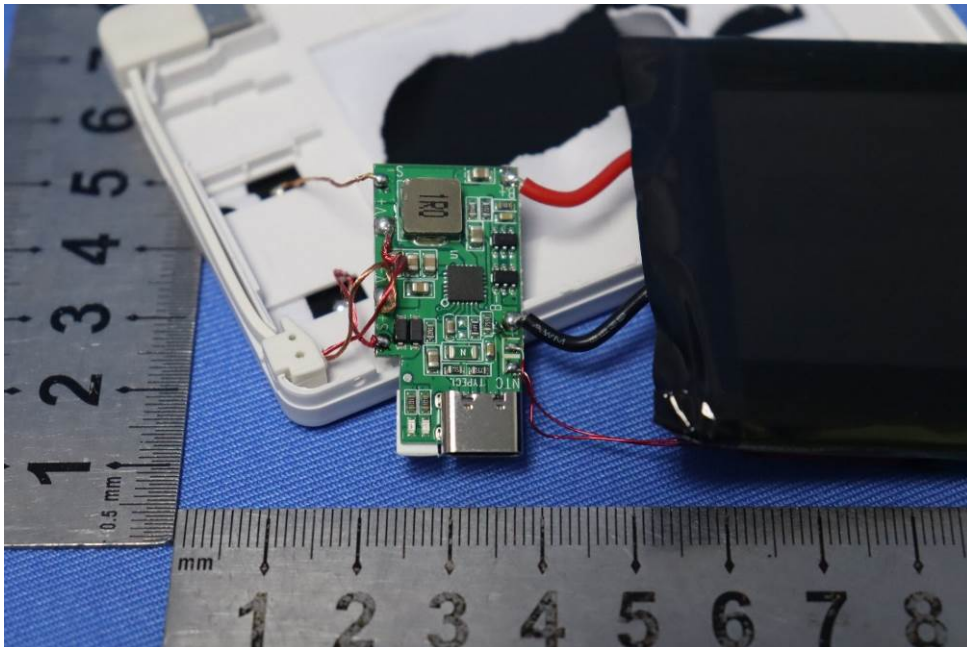
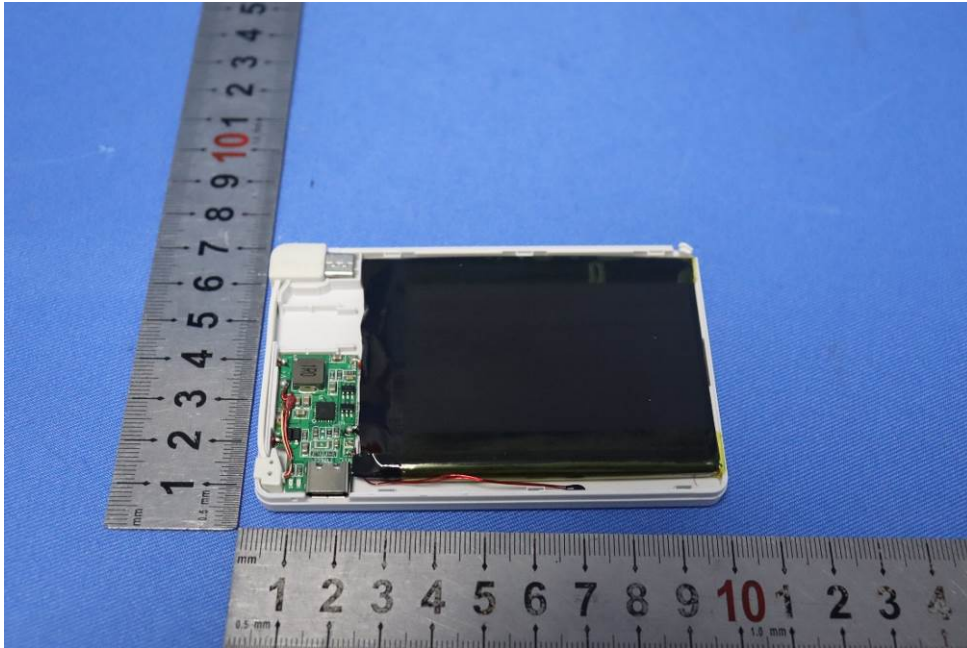
Radiated Emissions (30MHz-1GHz)



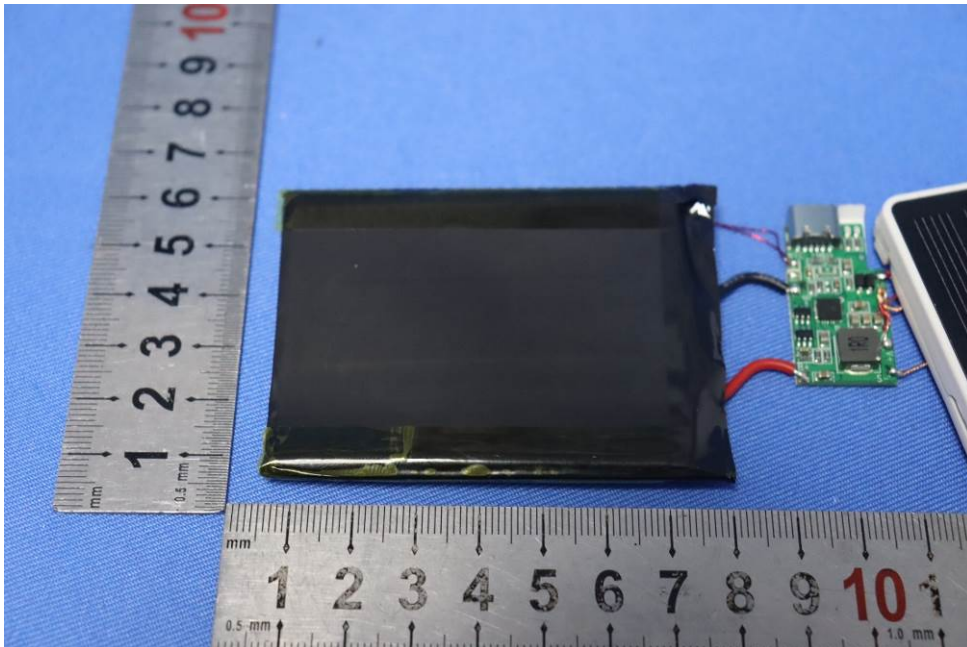
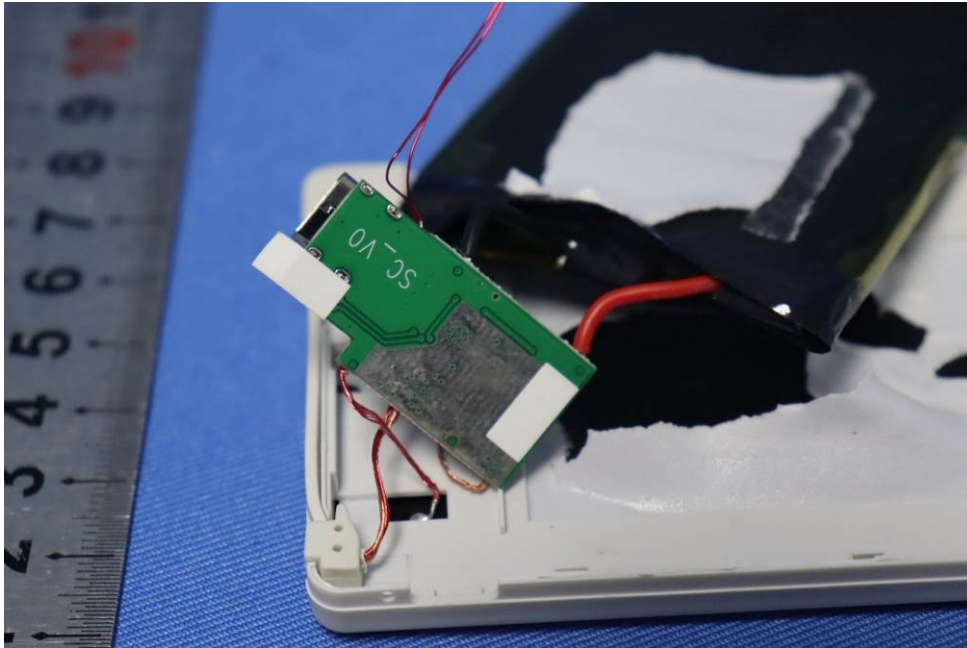
8 EUT Constructional Details (EUT Photos)

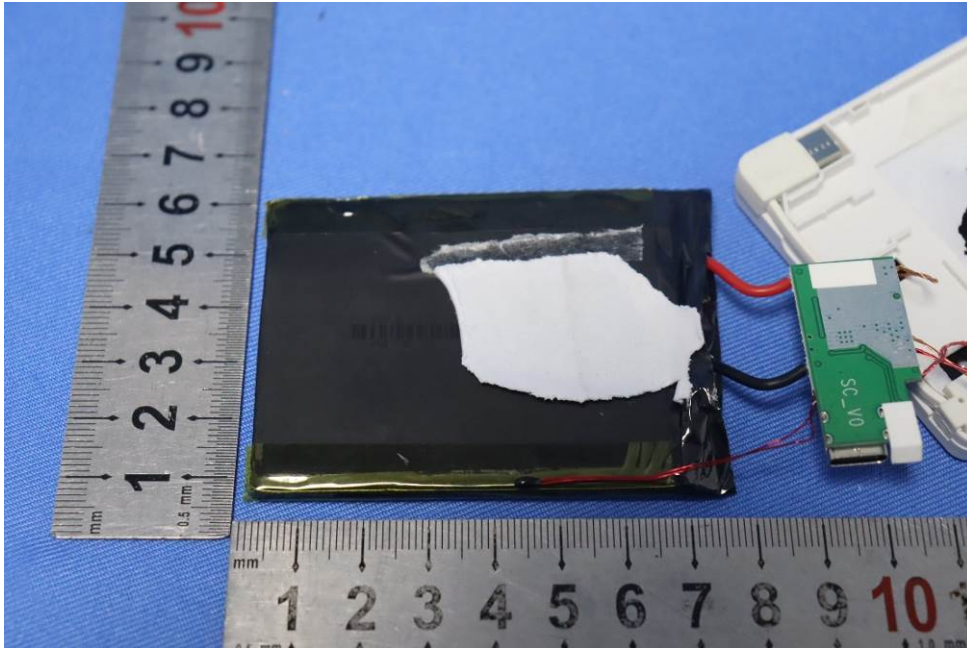






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- End of the Report -

