TEST REPORT No.: (5223)069-0329(C)

TEST REPORT

To :	**SILVERLIT TOYS MANUFACTORY LTD.**	Fax :	--
Attn :	Mr Edmond Chan Mr Horace Chau	Email :	edmond@silverlit.com horace@silverlit.com wt.angelzhang@silverlit.com
Address :	RM 1102, EAST OCEAN CENTER, 98 GRANVILLE ROAD, TSIM SHA TSUI, KOWLOON, HONG KONG		
Cc :	--	Fax/Email:	--
Attn :	--		

Folder No.:	--	Date of Receipt:	2023-02-22
		Test date :	2023-02-22 to 2023-03-06

MANUFACTURER OR SUPPLIER NAME :	--
MANUFACTURER OR SUPPLIER ADDRESS :	--
PRODUCT :	SPEED CHASER
MODEL REFERENCE :	20644
ADDITIONAL MODEL & MODEL DIFFERENCE :	SK17060
RATED VOLTAGE :	Remote: 3Vd.c. (“AA” size battery x 2) Car: 3.7Vd.c. (“Rechargeable battery x 1)
REMARKS :	--
SAMPLE NO. :	(5223)069-0329

The submitted sample of the above equipment has been tested according to the requirements of the following standards:

EN IEC 55014-1:2021
EN IEC 55014-2:2021

CONCLUSION: The submitted sample was found to <u>COMPLY</u> with the test requirement

Assistant Manager,
EMC Department

Name: Kinko Wong
Date: March 30, 2023

BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No.: (5223)069-0329(C)

Table of Contents

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No.: (5223)069-0329(C)

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
CE2302WDG0182	Original release	Mar. 07, 2023

BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No.: (5223)069-0329(C)

1 GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	SPEED CHASER
MODEL NO.	20644
ADDITIONAL MODEL	SK17060
POWER SUPPLY	Car: DC 3.7 From Li-ion Battery Remote Control: DC 3V(1.5V*2*AA) From Battery Charging: DC 5V From USB Host Unit
GROUP / CATEGORY	Category III
THE HIGHEST CLOCK FREQUENCY	Below 15MHz
CABLE SUPPLIED	USB Line: Detachable, Unshielded, 0.6m

Notes:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 2302WDG0182) for detailed product photo.
4. Additional models SK17060 are identical with the test model 20644 except the shell of the appearance and model number for trading purpose.

1.2 DESCRIPTION OF TEST MODES

The EUT was tested under the **Charging** mode for all tests.

1.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as a dependent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	PROVIDED BY
1	Adapter	N/A	5V 1A	N/A	Lab

BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

1.4 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EMISSION			
Standard	**Test Type**	**Result**	**Remark**
EN IEC 55014-1: 2021	Terminal continuous disturbance voltage emission test (AC Mains)	PASS	Meets limits minimum passing margin is -11.99dB at 0.54790MHz
	Terminal continuous disturbance voltage emission test (DC Port)	PASS	Meets requirement limit Minimum passing margin is -6.15 dB at 10.26600 MHz
	Radiated Test (30MHz~1GHz)	PASS	Meets Limits Minimum passing margin is -9.68dB at 159.99MHz

IMMUNITY EN IEC 55014-2			
Standard	**Test Type**	**Result**	**Remark**
IEC 61000-4-2:2008 ED. 2.0	Electrostatic discharge immunity test	PASS	Meets the requirements of Performance Criterion A
IEC 61000-4-4:2012 ED. 3.0	Electrical fast transient / burst immunity test.	PASS	Meets the requirements of Performance Criterion A
IEC 61000-4-5:2017 ED. 3.1	Surge immunity test	PASS	Meets the requirements of Performance Criterion A
IEC 61000-4-6:2013 ED. 4.0	Immunity to conducted disturbances, induced by radio-frequency fields	PASS	Meets the requirements of Performance Criterion A

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

2 EMISSION TEST

2.1 TERMINAL CONTINUOUS DISTURBANCE VOLTAGE EMISSION MEASUREMENT

2.1.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101494	Jan. 10,24
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	Jan. 11,24
Artificial Mains Network	Rohde&Schwarz	ESH3-Z5	100317	Jan. 10,24
Voltage probe	SCHWARZBECK	TK 9421	TK 9421-176	Jul. 27, 23
Coaxial RF Cable	/	CE CABLE	C2310066DG	Jul. 24, 23
Test software	ADT	ADT_Cond_V7.3.7	N/A	N/A

NOTES:
1. The test was performed in shielded room 553.
2. Peak and average detector quick scan are showed on the graph and final quasi-peak and average detector data are measured, the worst-case is recorded in the following graph and table.
3. Frequency range scanned: 150kHz to 30MHz.
4. Only emissions significantly above equipment noise floor are reported.
5. Uncertainty: ±2.68dB at a level of confidence of 95%.
6. The calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

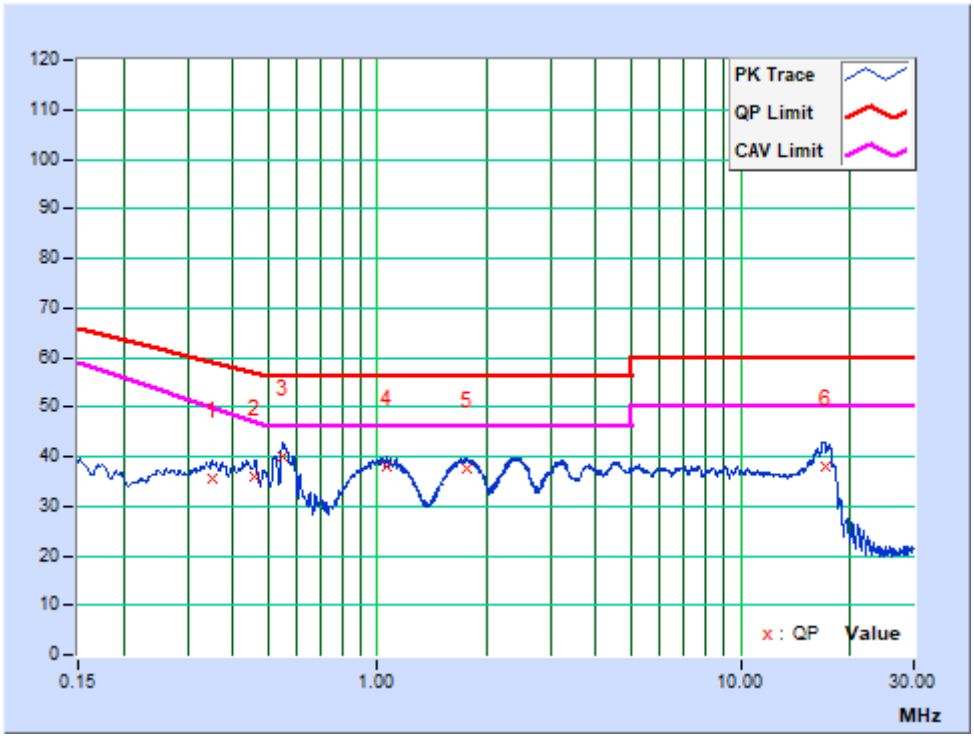
BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

2.1.2 TEST RESULTS

AC Mains:

TEST MODE	Charging	**6DB BANDWIDTH**	9 kHz
TEST VOLTAGE	DC 5V From USB Host Unit	**PHASE**	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 58% RH	**TESTED BY**	Summer

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.35025	10.19	25.54	16.50	35.73	26.69	58.96	49.84	-23.23	-23.15
2	0.45906	10.20	25.81	19.52	36.01	29.72	56.71	46.92	-20.70	-17.20
3	**0.54790**	**10.22**	**29.68**	**23.79**	**39.90**	**34.01**	**56.00**	**46.00**	**-16.10**	**-11.99**
4	1.05736	10.24	27.60	21.75	37.84	31.99	56.00	46.00	-18.16	-14.01
5	1.75875	10.26	27.33	21.46	37.59	31.72	56.00	46.00	-18.41	-14.28
6	17.05650	10.86	26.98	16.45	37.84	27.31	60.00	50.00	-22.16	-22.69

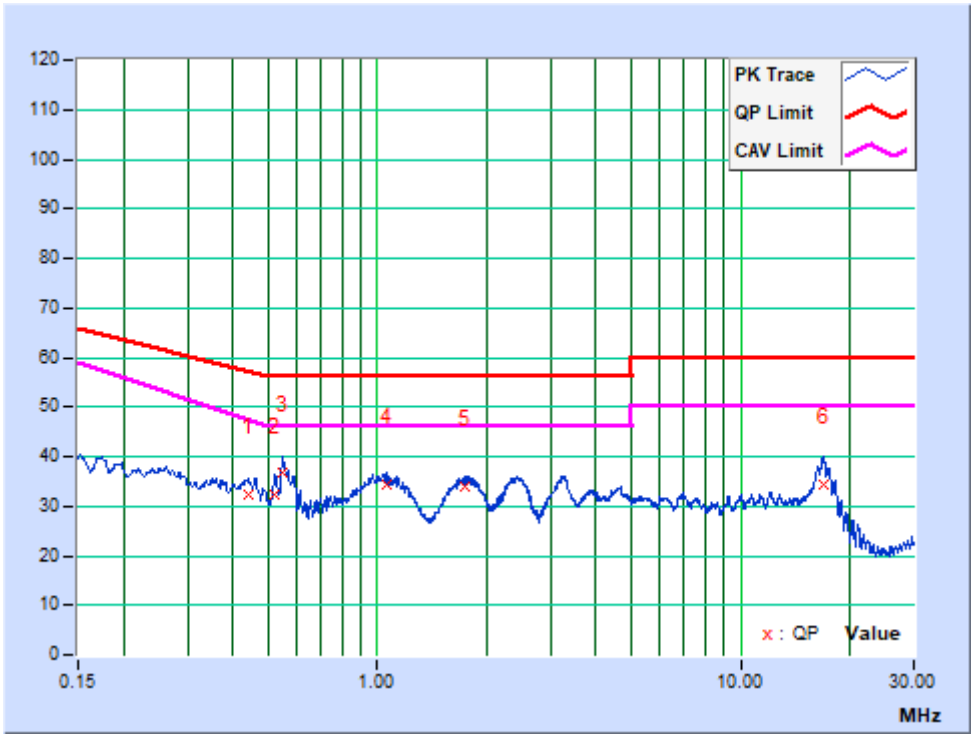


BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No.: (5223)069-0329(C)

TEST MODE	Charging	**6DB BANDWIDTH**	9 kHz
TEST VOLTAGE	DC 5V From USB Host Unit	**PHASE**	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 58% RH	**TESTED BY**	Summer

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.43891	10.16	22.02	16.15	32.18	26.31	57.08	47.41	-24.90	-21.10
2	0.52109	10.17	22.04	16.21	32.21	26.38	56.00	46.00	-23.79	-19.62
3	0.54825	10.18	26.47	21.28	36.65	31.46	56.00	46.00	-19.35	-14.54
4	1.05736	10.20	24.25	18.48	34.45	28.68	56.00	46.00	-21.55	-17.32
5	1.73625	10.23	23.74	18.02	33.97	28.25	56.00	46.00	-22.03	-17.75
6	16.83825	11.15	23.21	10.39	34.36	21.54	60.00	50.00	-25.64	-28.46

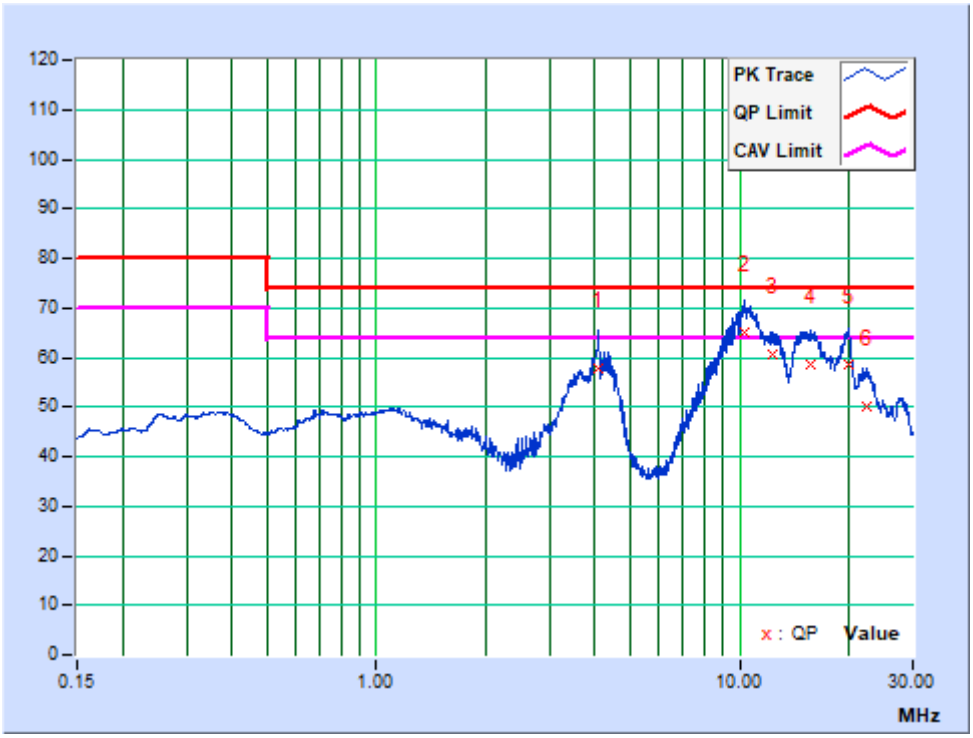


BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

DC Port:

TEST MODE	Charging	**6DB BANDWIDTH**	9 kHz
TEST VOLTAGE	DC 5V From USB Host Unit	**PHASE**	Positive (+)
ENVIRONMENTAL CONDITIONS	25deg. C, 58% RH	**TESTED BY**	Summer

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	4.08975	29.84	27.98	12.11	57.82	41.95	74.00	64.00	-16.18	-22.05
2	**10.26600**	**29.94**	**35.25**	**27.91**	**65.19**	**57.85**	**74.00**	**64.00**	**-8.81**	**-6.15**
3	12.36300	29.98	30.58	24.42	60.56	54.40	74.00	64.00	-13.44	-9.60
4	15.75150	30.06	28.66	23.00	58.72	53.06	74.00	64.00	-15.28	-10.94
5	20.01975	30.15	28.27	21.51	58.42	51.66	74.00	64.00	-15.58	-12.34
6	22.37550	30.16	19.80	12.57	49.96	42.73	74.00	64.00	-24.04	-21.27

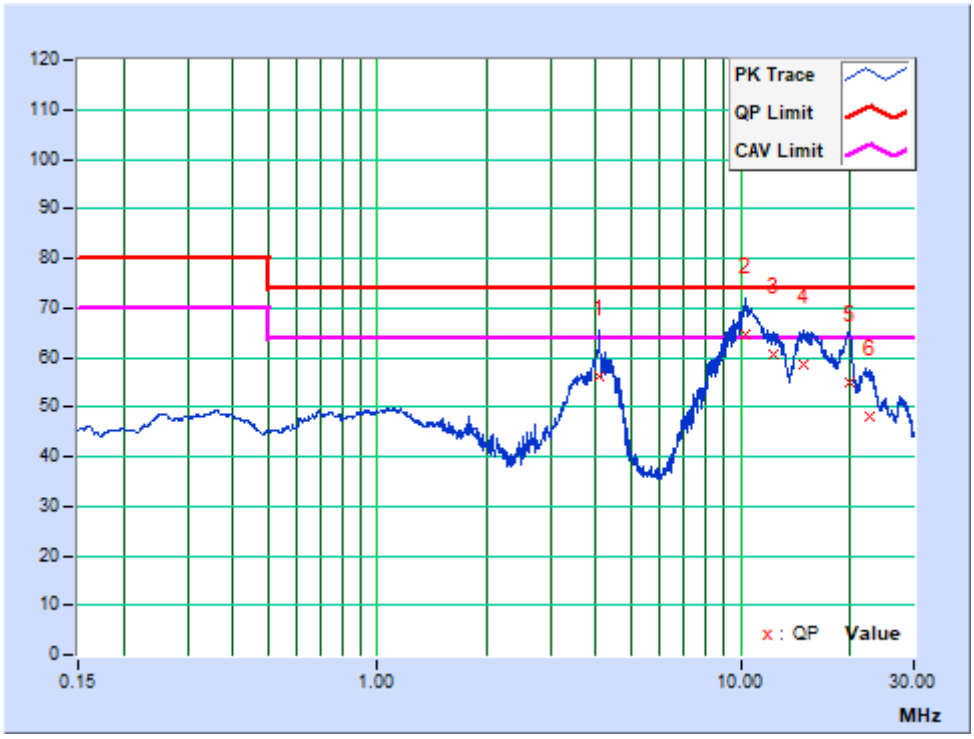


BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No.: (5223)069-0329(C)

TEST MODE	Charging	**\6DB BANDWIDTH**	9 kHz
TEST VOLTAGE	DC 5V From USB Host Unit	**PHASE**	Negative (-)
ENVIRONMENTAL CONDITIONS	25deg. C, 58% RH	**TESTED BY**	Summer

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	4.08623	29.84	26.45	11.93	56.29	41.77	74.00	64.00	-17.71	-22.23
2	10.37850	29.94	34.53	27.85	64.47	57.79	74.00	64.00	-9.53	-6.21
3	12.25050	29.98	30.79	24.64	60.77	54.62	74.00	64.00	-13.23	-9.38
4	14.98200	30.04	28.35	20.13	58.39	50.17	74.00	64.00	-15.61	-13.83
5	19.85550	30.15	24.95	18.06	55.10	48.21	74.00	64.00	-18.90	-15.79
6	22.82775	30.16	17.83	11.31	47.99	41.47	74.00	64.00	-26.01	-22.53



BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

2.2 RADIATED EMISSION MEASUREMENT

2.2.1 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU26	100005	Apr. 19, 23
EMI Test Receiver	Rohde&Schwarz	ESR7	101564	Jan. 10, 24
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-555	Jan. 08, 24
Trilog-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-554	Jan. 08, 24
Preamplifier	EMCI	EMC1135	980378	Mar. 09, 23
Preamplifier	EMCI	EMC1135	980423	Mar. 09, 23
10m Semi-anechoic Chamber	CHANGLING	21.4m*12.1m*8.8m	NSEMC006	Oct. 15, 23
Coaxial RF Cable	/	10m Below 1GHz	C2310084DG	Jul. 26, 23
Coaxial RF Cable	/	10m Below 1GHz	C2310085DG	Jul. 26, 23
Test Software	ADT	ADT_Radiated_V8.7.07	N/A	N/A

NOTES: 1. The test was performed in 10m Chamber.

2. Peak detector quick scan is showed on the graph and final quasi-peak detector data is measured corresponding to relevant limit and recorded in the data table.

3. Negative sign (–) in the margin column signify levels below the limit.

4. Frequency range scanned: 30MHz to 1000MHz.

5. Only emissions significantly above equipment noise floor are reported.

6. Uncertainty: ±4.62 dB at a level of confidence of 95%.

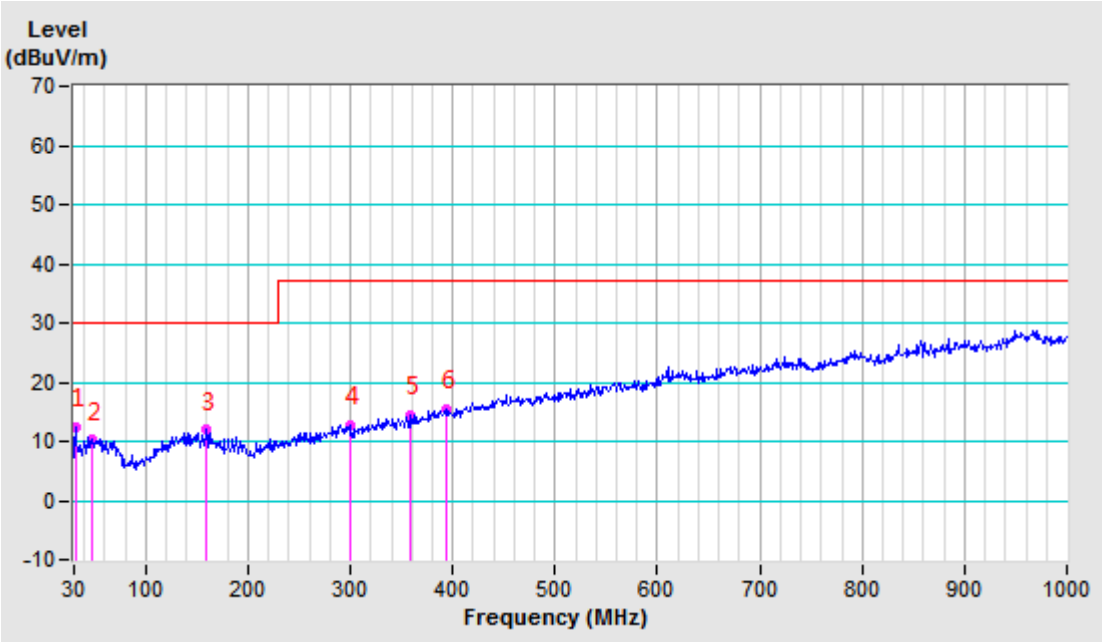
7. The calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

2.2.2 TEST RESULTS

TEST MODE	Charging	**FREQUENCY RANGE**	30-1000 MHz
TEST VOLTAGE	DC 5V From USB Host Unit	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 55% RH	**TESTED BY**: Jay	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	31.21	-22.07	34.47	12.40	30.00	-17.60	200	26
2	48.55	-20.99	31.21	10.22	30.00	-19.78	200	150
3	159.25	-19.48	31.39	11.91	30.00	-18.09	400	99
4	299.42	-18.33	31.16	12.83	37.00	-24.17	400	286
5	359.19	-16.83	31.28	14.45	37.00	-22.55	200	110
6	394.24	-15.74	31.15	15.41	37.00	-21.59	200	26

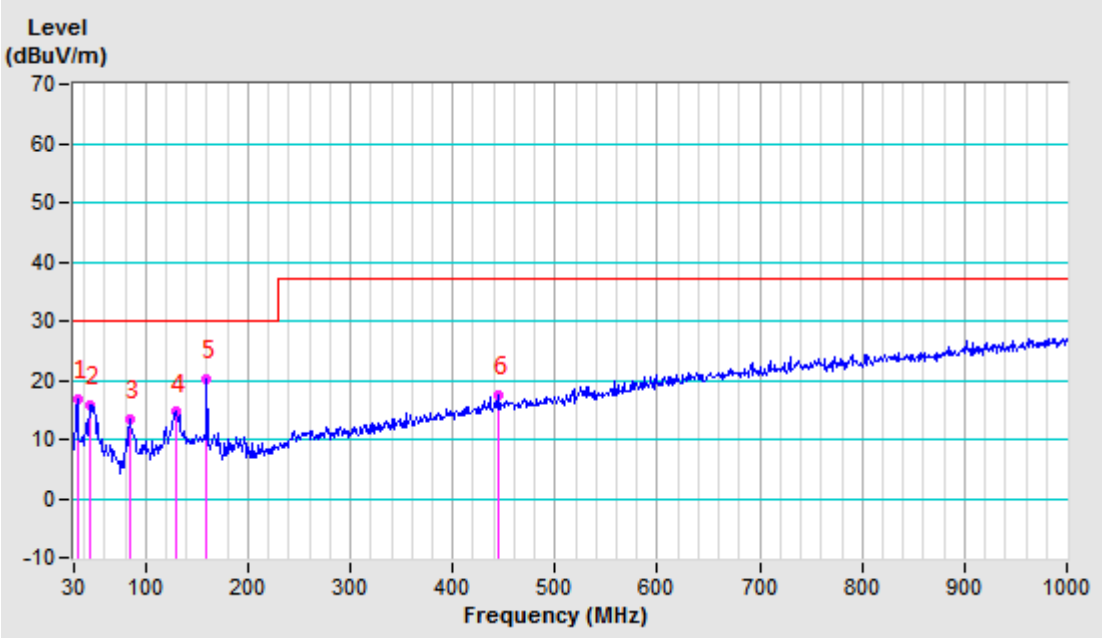


BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

TEST REPORT No.: (5223)069-0329(C)

TEST MODE	Charging	**FREQUENCY RANGE**	30-1000 MHz
TEST VOLTAGE	DC 5V From USB Host Unit	**DETECTOR FUNCTION & BANDWIDTH**	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	26deg. C, 55% RH	**TESTED BY**: Jay	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	33.59	-21.68	38.39	16.71	30.00	-13.29	100	221
2	45.52	-20.62	36.42	15.80	30.00	-14.20	100	249
3	84.08	-24.96	38.44	13.48	30.00	-16.52	300	220
4	128.99	-20.89	35.54	14.65	30.00	-15.35	100	84
5	**159.99**	**-19.47**	**39.79**	**20.32**	**30.00**	**-9.68**	**100**	**17**
6	445.47	-13.89	31.32	17.43	37.00	-19.57	300	203



BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3 IMMUNITY TEST

3.1 GENERAL PERFORMANCE CRITERIA DESCRIPTION

CRITERION A	The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
CRITERION B	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however, No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
CRITERION C	Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.2 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

3.2.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Discharge Voltage:	Air Discharge : 8 kV (Direct)
	Contact Discharge : 4 kV (Direct & Indirect)
Polarity:	Positive & Negative
Number of Discharge:	20 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1 second

3.2.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
ESD Generator	TESEQ	NSG 437	279	Feb. 20, 24
Test Software	TESEQ	V03.03	N/A	N/A

NOTES: 1. The test was performed in ESD Room.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.2.3 TEST RESULTS

TEST MODE	Battery charging	TEST VOLTAGE	DC 5V From USB Host Unit
ENVIRONMENTAL CONDITIONS	21.2deg. C, 50.1% RH, 100.2kPa	**TESTED BY:** Zhuolin Peng	

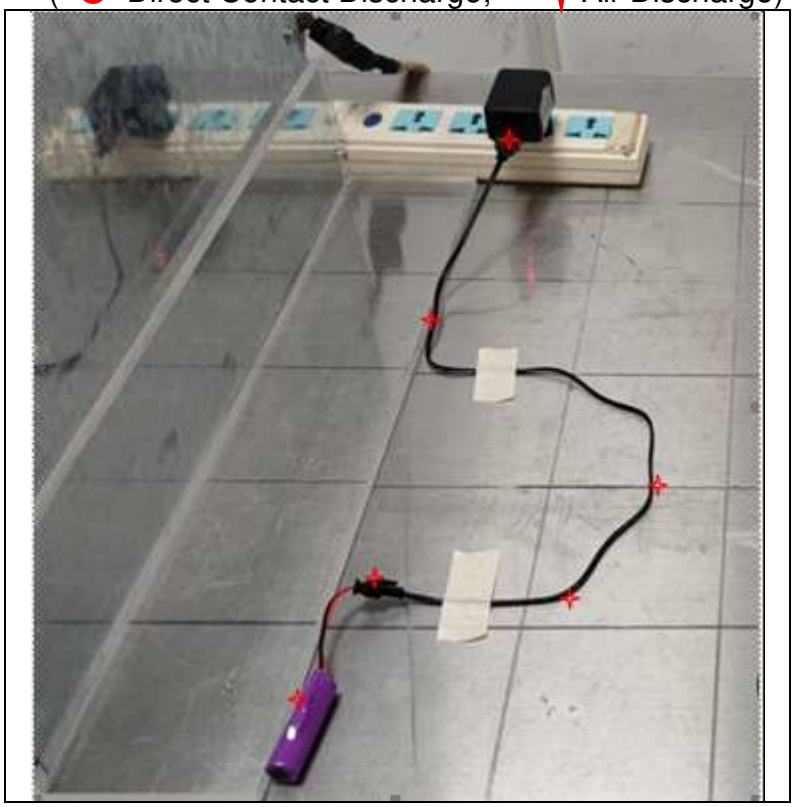
Direct Discharge Application				
Test Level (kV)	**Polarity**	**Test Point**	**Test Result of Contact Discharge**	**Test Result of Air Discharge**
8	+/-	All non-metal Parts	N/A	A

Indirect Discharge Application				
Discharge Level (kV)	**Polarity**	**Test Point**	**Test Result of HCP**	**Test Result of VCP**
4	+/-	HCP	A	N/A
4	+/-	VCP	N/A	A

NOTES: A: There was no change compared with initial operation during the test.

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

ESD TEST POINT
(O- Direct Contact Discharge; ✦Air Discharge)



BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.3 LECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)

3.3.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-4
Test Voltage:	Power Line : 1 kV
Polarity:	Positive & Negative
Impulse Frequency:	5 kHz
Impulse Waveshape :	5/50 ns
Burst Duration:	15 ms
Burst Period:	300 ms
Test Duration:	2 minutes

3.3.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
EFT Module	TESEQ	NSG 3060 Mainframe	1404	Jan. 11, 24
Automated 3- Phase Coupling/ Decoupling Network	TESEQ	CDN 3063	2131	Jan. 11, 24
EFT Coupling Clamp	HAEFELY	IP4A	150407	Jan. 10, 24
Test Software	TESEQ	CDM 3061_0002.30	1361	N/A
Test Software	TESEQ	HVM 3060_0002.30	293	N/A

NOTES: 1. The test was performed in EMS Test Room 1.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.3.3 TEST RESULTS

TEST MODE	Battery charging	**TEST VOLTAGE**	DC 5V From USB Host Unit
ENVIRONMENTAL CONDITIONS	21.0deg. C, 51.0% RH	**TESTED BY:** Cheng Zhong	

Pulse Voltage	1.0 kV		0.5 kV		___ kV		___ kV	
Pulse Polarity	+	—	+	—	+	—	+	—
L	A	A	A	A	/	/	/	/
N	A	A	A	A	/	/	/	/
L+ N	A	A	A	A	/	/	/	/

NOTE: A: There was no change compared with initial operation during the test.

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.4 SURGE IMMUNITY TEST

3.4.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-5
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8 /20 us Short Circuit Current
Test Voltage:	Power Line : 1kV
Surge Input/Output:	L-N
Generator Source Impedance:	2 ohm between networks
Polarity:	Positive/Negative
Phase Angle:	90°/270°
Pulse Repetition Rate:	1 time / 60 Sec.
Number of Tests:	5 positive and 5 negative at selected points

3.4.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Telecom Surge Module	TESEQ	NSG 3060 Mainframe	1404	Jan. 11, 24
Automated 3- Phase Coupling/ Decoupling Network	TESEQ	CDN 3063	2131	Jan. 11, 24
CDN	TESEQ	CDN HSS-2	34275	Jan. 11, 24
CDN	TESEQ	CDN 118	30741	Jan. 10, 24
Test Software	TESEQ	CDM 3061_0002.30	1361	N/A
Test Software	TESEQ	HVM 3060_0002.30	293	N/A

NOTES: 1. The test was performed in EMS Room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA

3.4.3 TEST RESULTS

TEST MODE	Battery charging	TEST VOLTAGE	DC 5V From USB Host Unit
ENVIRONMENTAL CONDITIONS	21.0deg. C, 51.0% RH	TESTED BY: Cheng Zhong	

\Phase angle \ Test result \Voltage (kV) \ Test point\ Polarity			0°	90°	180°	270°		DC Power Port
1.0	L-N	+	/	A	/	/	/	/
		—	/	/	/	A	/	/

NOTE: A: There was no change compared with initial operation during the test.

BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.5 IMMUNITY TO CONDUCTED DISTURBANCES INDUCED BY RF FIELDS (CS)

3.5.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-6
Frequency Range:	0.15 MHz - 80 MHz
Field Strength:	3 $V_{r.m.s.}$
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Coupled Cable:	Power Mains
Coupling Device:	CDN-M2

3.5.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Signal Generator	Rohde&Schwarz	SMB 100A	102382	Jan. 11, 24
CDN	Luthi	L-801M2/M3	2015	Jul. 27, 23
CDN	TESEQ	T200A	26944	Jan. 11, 24
CDN	TESEQ	T800	28623	Aug. 18, 23
CDN	FCC	FCC-801-T8-SRJ45	160168	Aug. 10, 23
CDN	TESEQ	CDN M532	37300	Jun. 01, 23
6dB 150Watt Attenuator	Bird	150-A-FFN-06	1507	Jul. 27, 23
Bulk Current Injection Probe	FCC	F-120-9A	160053	Jul. 27, 23
Power Amplifier	PRANA	DR 220	1512-1788	NA
Electromagnetic Injection Clamp	Luthi	EM101	35640	Aug. 12, 23
Audio analyzer	Rohde&Schwarz	UPV	101397	Jul. 27, 23
Conditioning Amplifier	B&K	2690-W-013	3241205	Feb. 19, 24
EAR SIMULATOR	B&K	4192	2764719	Apr. 15, 23
Test Software	Tonscend	TS+	3.0.0.1	N/A
Test Software	ADT	BVADT_CS_V7.6.2	N/A	N/A

NOTES: 1. The test was performed in CS test room.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

3.5.3 TEST RESULTS

TEST MODE	Battery charging	TEST VOLTAGE	DC 5V From USB Host Unit
ENVIRONMENTAL CONDITIONS	21.0deg. C, 51.0% RH	**TESTED BY:** Zhuolin	

Voltage (V)	Test Frequency Note#1 (MHz)	Tested Line	Injection Method.	Test Result	Remark
3	0.15 -80 MHz	AC Line	CDN-M2	A	Pass

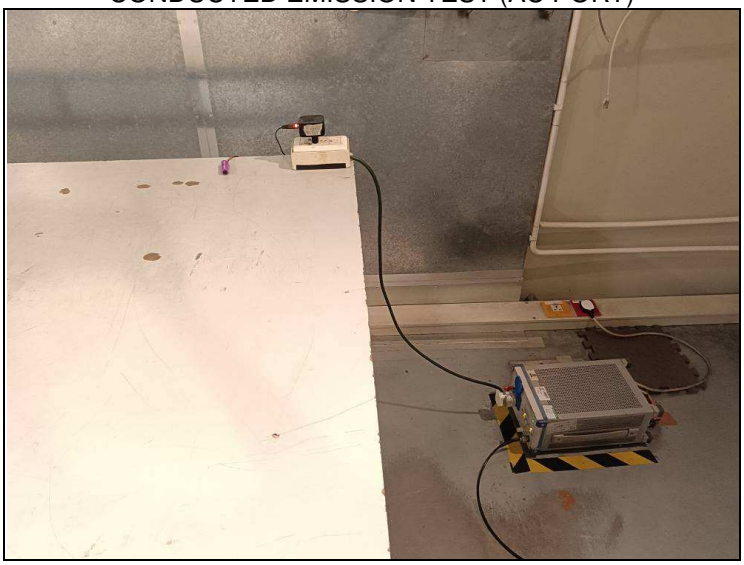
Note#1: Tested Israel SII Frequencies 0.2,0.53,1,1.5,7.1,13.56,21,27.12,40.68,65,68 MHz

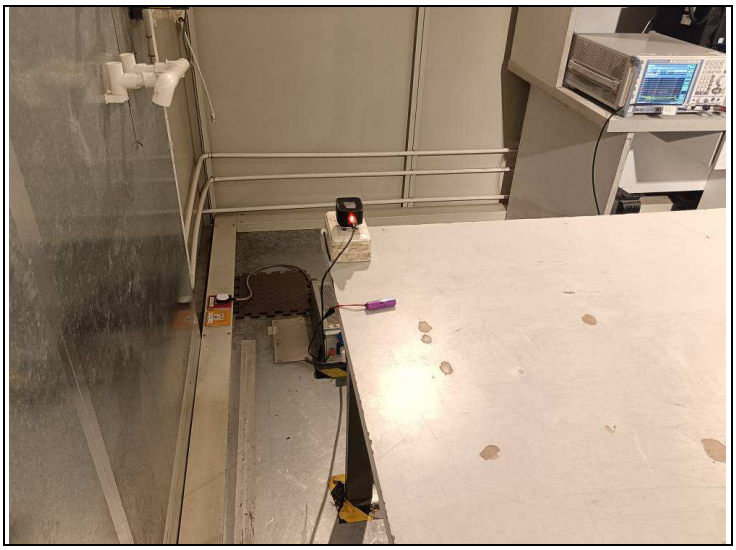
NOTE: A: There was no change compared with initial operation during the test.

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

4 PHOTOGRAPHS OF THE TEST CONFIGURATION

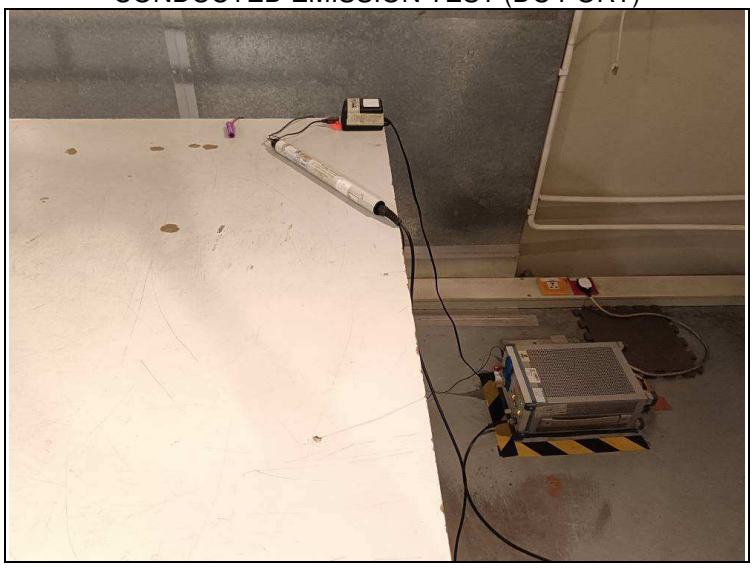
CONDUCTED EMISSION TEST (AC PORT)

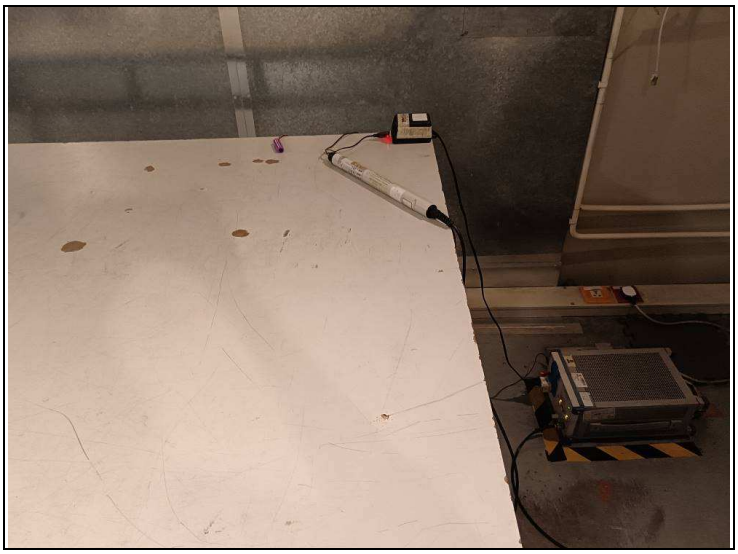




BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

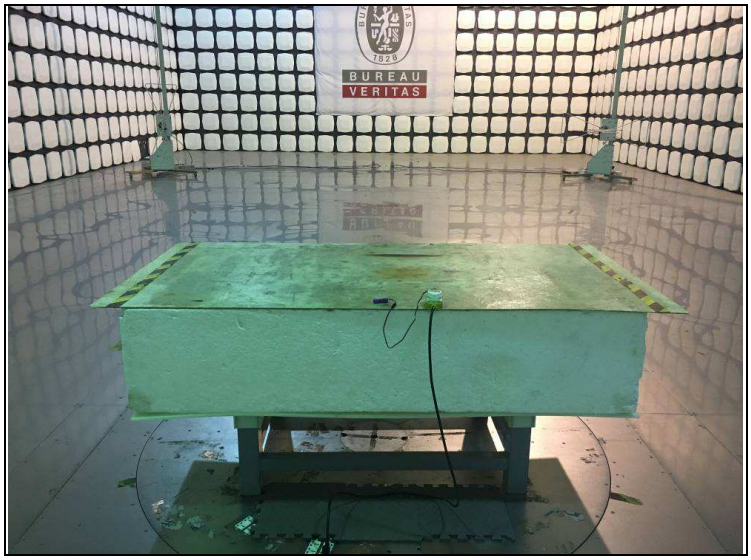
CONDUCTED EMISSION TEST (DC PORT)



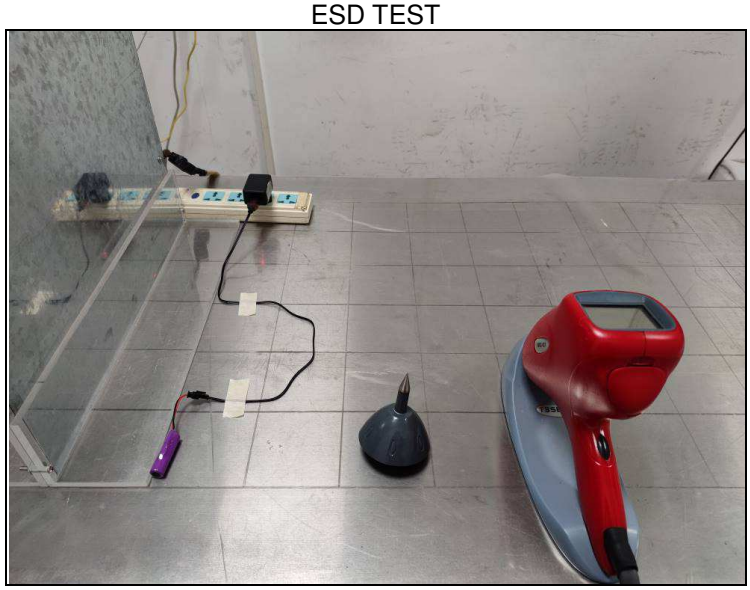


BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

RADIATED EMISSION TEST< 30MHz~1GHz>

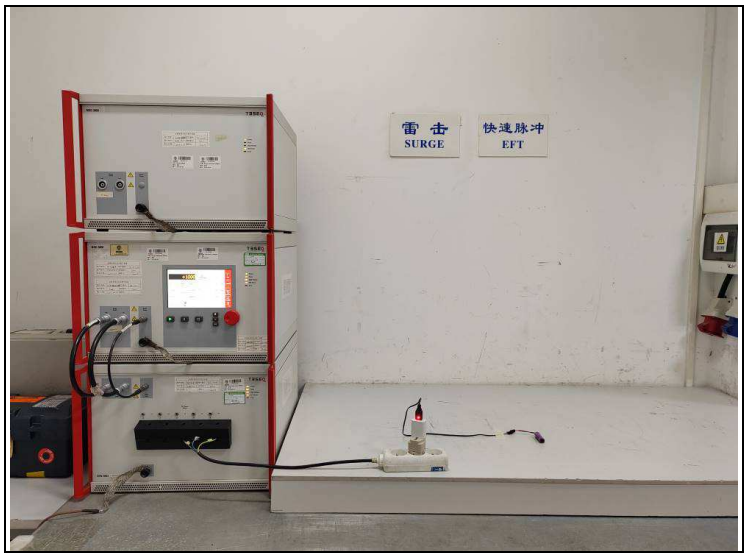


ESD TEST

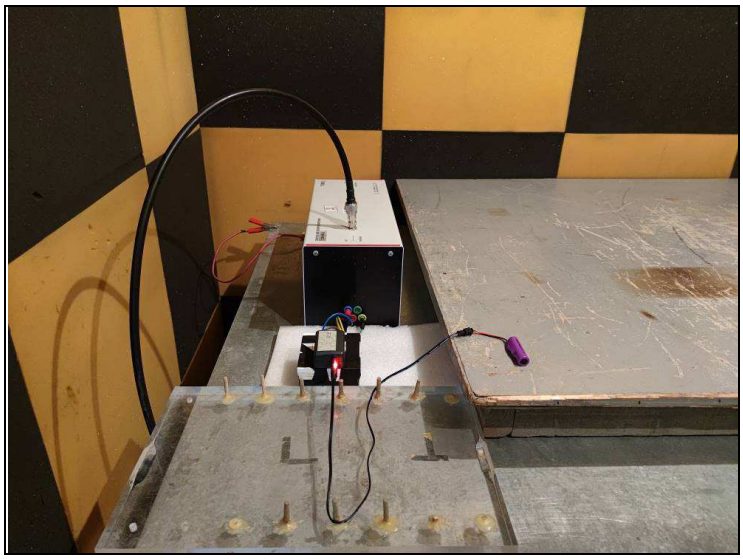


BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

EFT & SURGE TESTS



CS TEST



BUREAU VERITAS HONG KONG LIMITED –
Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---

BUREAU VERITAS HONG KONG LIMITED – Kowloon Bay Office
1/F Pacific Trade Centre,
2 Kai Hing Road, Kowloon Bay,
Kowloon,HONG KONG
Tel: +852 2331 0888
Fax: +852 2331 0889
www.cps.bureauveritas.com