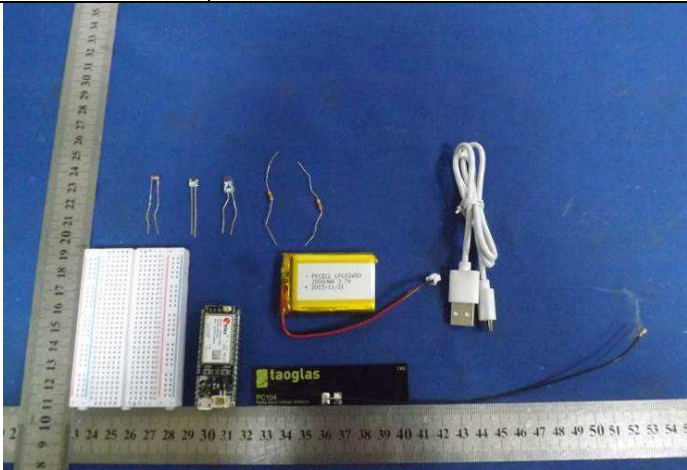




**BUREAU
VERITAS**

TEST REPORT No.: (5217)088-0417(A)

TEST REPORT

To:	PARTICLE INDUSTRIES, INC	To:	-
Attn:	Eric Yuan	Attn:	-
Address:	1475 Folsom St, Suite 200, San Francisco CA 94103	Address:	-
Fax:	--	Fax:	-
E-mail:	--	E-mail:	-
Folder No.:	BVCZ17MA234ETHS-B		
Factory Name:	ABO ELECTRONICS (SHENZHEN) CO., LTD		
Location:	1475 Folsom St, Suite 200, San Francisco CA 94103		
Product:	ELECTRON		
Model No.:	U260 (Brand Name: Particle)		
Additional Model No.:	--		
	Sample No:	HK170324/022	
	Date of Receipt:	Mar 22, 2017	
	Test date:	Mar 16, 2017 to Mar 19, 2017	
	Test Requested:	Industry Canada Interference Causing Equipment Standard ICES-003 Issue 6	
	Test Method:	ANSI C63.4 - 2014	

The results given in this report are related to the tested specimen of the described electrical apparatus.

CONCLUSION: The submitted sample was found to COMPLY with requirement of Industry Canada ICES-003.

Assistant Manager,
EMC Department

Name: Law Man Kit
Date: April 10, 2017



TEST REPORT No.: (5217)088-0417(A)

Equipment Under Test:

Product : ELECTRON
Model No. : U260
Power Supply : USB Input: 5Vd.c. /
3.7Vd.c. ("Rechargeable battery" x 1)
Data Cable : 0.5m shielded USB cable
Power Line Cable : --
Accessory Device : --
Highest operating Frequency : 1900MHz

Description of Adaptor

Adaptor : --
Model : --
Input : --
Input power line cable : --
Output : --
Output power line cable : --

Additional Product Name:

--

Additional Model No.:

--

Additional Model Information:

--

Description of Test modes:

Charging mode
GPRS 850MHz link mode
GRPS 1900MHz link mode
Band V 850MHz link mode
Band II 1900MHz link mode

Report Revision & Sample Re-submit History:

--

Remark: -

This report was basic on the report No.151201N010 to changing version number of the PCB, and add one capacitance in the PCB. So we retest the radiation emission item only.



TEST REPORT No.: (5217)088-0417(A)

Test Result Summary

EMISSION TEST			
Test requirement: ICES-003 Issue 6			
Test Condition	Test Method	Test Result	
		Pass	Failed
Conducted Emission Test, 0.15MHz to 30MHz	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Radiated Emission Test, 30MHz to 1GHz	ANSI C63.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>



TEST REPORT No.: (5217)088-0417(A)

Test Laboratory & Test Instruments List

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2014. An Open Area Test Site (IC OATS Registration No. 7450B-1) is set up for investigation and located at:

BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

Test Instrument List

Conducted Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.
EMI TEST RECEIVER	R&S	ESCS30	830986/030
LISN	R&S	ENV216	100024

Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.
EMI TEST RECEIVER	R&S	ESCI	100379
OPEN AREA TEST SITE	BVCPS	N/A	N/A
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B
BICONICAL ANTENNA	ROHDE & CHWARZ	HK116	100179
LOG-PERIODIC DIPOLE ARRAY ANTENNA	ROHDE & CHWARZ	HL223	832369/001

Measurement Uncertainty

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz to 30MHz	2.9dB
Radiated emissions	9kHz to 30MHz	4.2dB
	30MHz to 200MHz	4.5dB
	200MHZ to 1GHz	5.6dB
	1GHz to 18GHz	4.7dB

Remarks: -

N/A: Not Applicable or Not Available

TEST REPORT No.: (5217)088-0417(A)

Test Results

Conducted Emissions (150kHz to 30MHz)

Test Requirement: ICES-003
 Test Method: ANSI C63.4
 Test Limits: Class B, table 2
 Test Date(s): 2016-01-04
 Temperature: 25.0 °C
 Humidity: 67.0 %
 Atmospheric Pressure: 101.6 kPa
 Mode of Operation: Charging mode
 Tested Voltage: USB Input: 5Vd.c.
 Computer: 117Va.c., 60Hz

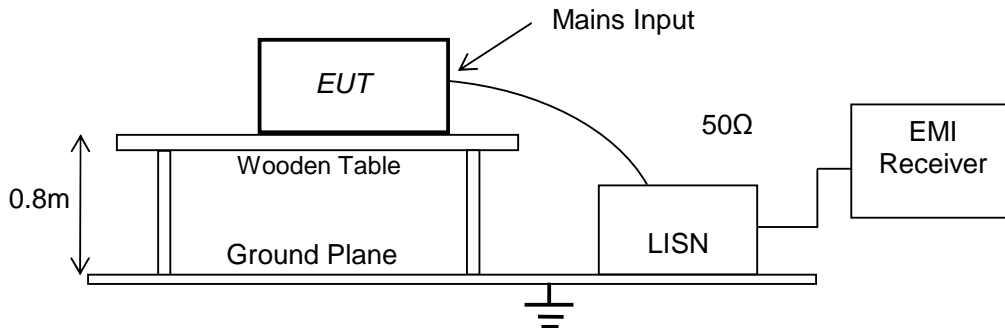
Test Method:

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2014. The EUT was setup as described in the procedures, and both lines were measured.

Initial measurements were performed in peak and average detection modes on the live and neutral line, any emissions recorded within 30dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Location: No. 603, 6/F., Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Shielding Room





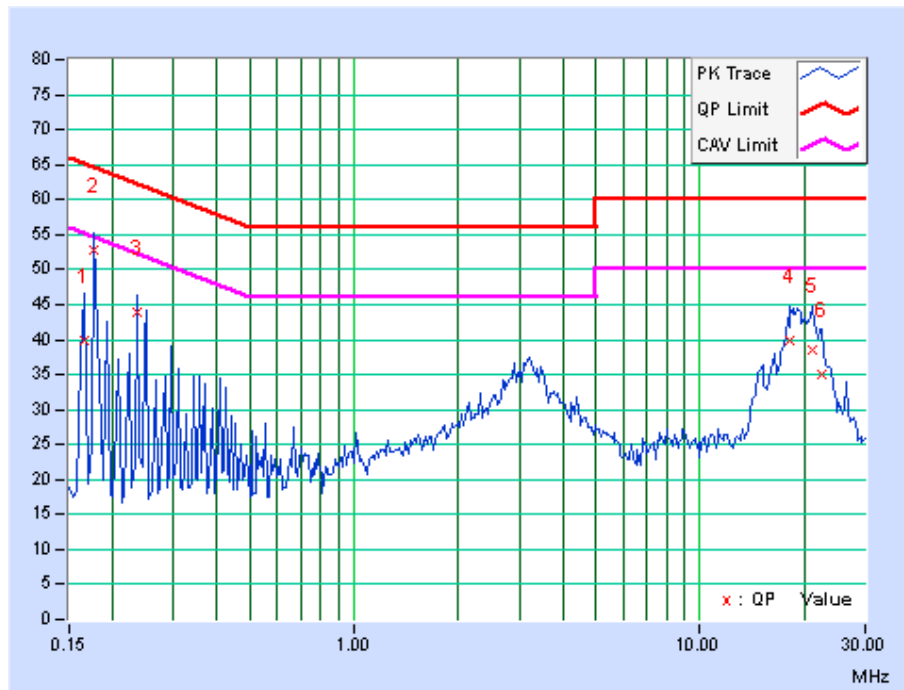
TEST REPORT No.: (5217)088-0417(A)

Measurement Data: Live

Test Result of (Charging mode): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.





TEST REPORT No.: (5217)088-0417(A)

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following tables.

Frequency (MHz)	Quasi Peak (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.16562	39.94	9.000	L1	-25.24	65.18
0.17734	52.78	9.000	L1	-11.83	64.61
0.23594	44.01	9.000	L1	-18.23	62.24
18.26953	39.91	9.000	L1	-20.09	60
21.03125	38.48	9.000	L1	-21.52	60
22.52344	34.95	9.000	L1	-25.05	60

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.16562	15.91	9.000	L1	-39.27	55.18
0.17734	37.42	9.000	L1	-17.19	54.61
0.23594	27.46	9.000	L1	-24.78	52.24
18.26953	33.32	9.000	L1	-16.68	50
21.03125	33.24	9.000	L1	-16.76	50
22.52344	29.77	9.000	L1	-20.23	50



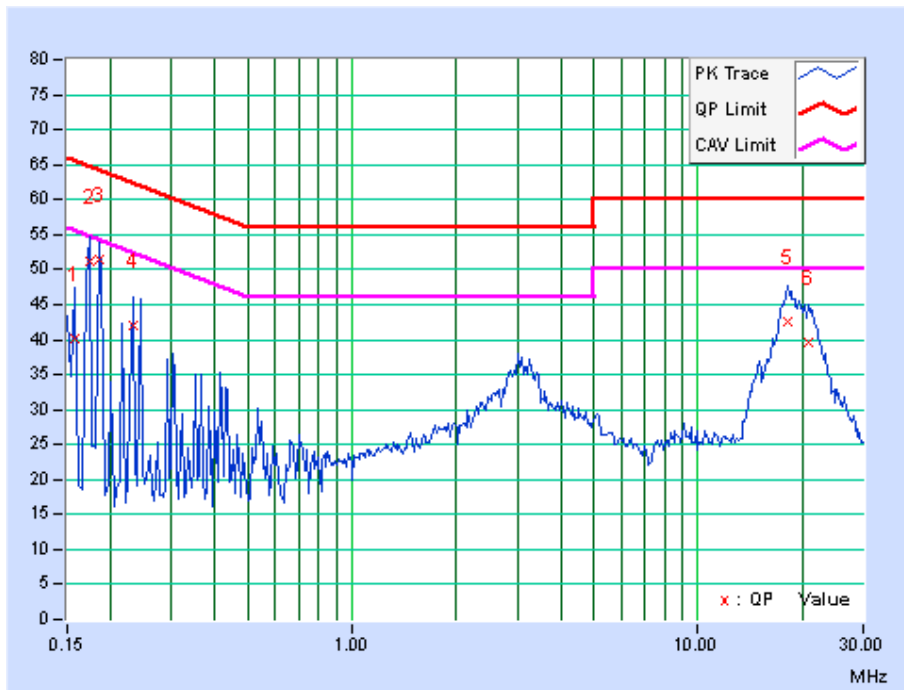
TEST REPORT No.: (5217)088-0417(A)

Measurement Data: Neutral

Test Result of (Charging mode): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.





TEST REPORT No.: (5217)088-0417(A)

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following tables.

Frequency (MHz)	Quasi Peak (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.15781	40.26	9.000	N	-25.32	65.58
0.17344	51.08	9.000	N	-13.71	64.79
0.18516	51.53	9.000	N	-12.72	64.25
0.23203	42.00	9.000	N	-20.38	62.38
18.09375	42.57	9.000	N	-17.43	60
20.85938	39.52	9.000	N	-20.48	60

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dB μ V)
0.15781	13.34	9.000	N	-42.24	55.58
0.17344	32.45	9.000	N	-22.34	54.79
0.18516	34.48	9.000	N	-19.77	54.25
0.23203	22.24	9.000	N	-30.14	52.38
18.09375	34.04	9.000	N	-15.96	50
20.85938	34.74	9.000	N	-15.26	50

TEST REPORT No.: (5217)088-0417(A)

Radiated Emissions (30MHz to 1GHz)

Test Requirement:	ICES-003
Test Method:	ANSI C63.4
Test Limits:	Class B, table 5
Test Date(s):	2016-01-13
Temperature:	25.0 °C
Humidity:	51.0 %
Atmospheric Pressure:	101.6 kPa
Mode of Operation:	Band II 1900MHz link mode
Tested Voltage:	3.7Vd.c. ("Rechargeable battery" x 1)

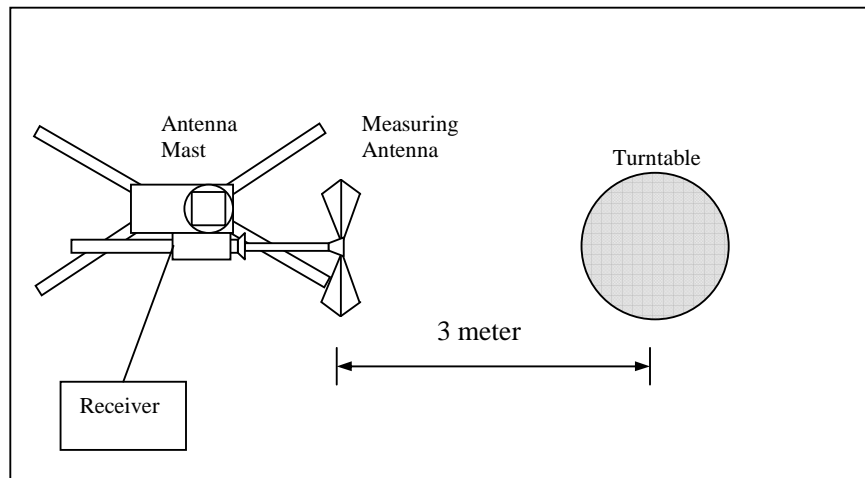
Test Method:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2014.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site





TEST REPORT No.: (5217)088-0417(A)

Limits for Radiated Emission: ICES-003

Table 5 – Class B Radiated Limits below 1 GHz

Frequency Range [MHz]	Limits [dB μ V/m @ 3m]
	Quasi-Peak
30-88	40.0
88-216	43.5
216-960	46.0
960-1000	54.0

Measurement Data

Test Result of (Band II 1900MHz link mode): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
30.00	H	18.35	40.00	-21.65
134.15	H	17.45	43.50	-26.05
162.13	H	23.16	43.50	-20.34
255.40	H	35.78	46.00	-10.22
263.17	H	27.75	46.00	-18.25
424.84	H	27.54	46.00	-18.46

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
31.55	V	19.39	40.00	-20.61
99.95	V	22.42	43.50	-21.08
134.15	V	22.59	43.50	-20.91
162.13	V	26.54	43.50	-16.96
188.56	V	23.30	43.50	-20.20
255.40	V	26.74	46.00	-19.26

Note: Field Strength includes Antenna Factor and Cable Loss.



TEST REPORT No.: (5217)088-0417(A)

Measurement Data (1-18GHz)

Test Result of (Band II 1900MHz link mode): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
1511.00	H	56.22	74.00	-17.78
1844.70	H	53.53	74.00	-20.47
3850.00	H	61.03	74.00	-12.97
1395.00	V	57.45	74.00	-16.55
1599.00	V	58.01	74.00	-15.99
3328.80	V	60.14	74.00	-13.86

Detection mode: Average

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
1511.00	H	35.01	54.00	-18.99
1844.70	H	35.24	54.00	-18.76
3850.00	H	36.89	54.00	-17.11
1395.00	V	33.12	54.00	-20.88
1599.00	V	33.86	54.00	-20.14
3328.80	V	36.45	54.00	-17.55

Note: Field Strength includes Antenna Factor and Cable Loss.



TEST REPORT No.: (5217)088-0417(A)

Appendix I

1. Labeling requirements for the ICES-003:

The label shall be permanently affixed to the ITE or displayed electronically and its text must be clearly legible. When the dimension of the device is too small or it is otherwise not practical to place the label on the ITE, the label shall be placed in a prominent location in the user manual supplied with the ITE. The user manual may be in an electronic format and must be readily available.

2. Industry Canada ICES-003 Compliance Label:

CAN ICES-3 (*)/NMB-3(*)

* Insert either "A" or "B" but not both to identify the applicable Class of ITE.

******* End of Report *******