Report No.: DDT-R18012202-1E1

Issued Date: Feb. 06, 2018

FCC CERTIFICATION TEST REPORT

FOR

Applicant	:	ION Audio, LLC
Address	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.
Equipment under Test	:	BT water-resistant speaker system
Model No.	:	Pathfinder 2, EXPLORER OUTBACK 2, iPA100, iPA105C
Project Code	:	iPA100, iPA105C
Trade Mark	:	ION
FCC ID	:	2AB3E-IPA100
Manufacturer	:	ION Audio, LLC
Address	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel: +86-0769-89201699, **E-mail:** ddt@dgddt.com, http://www.dgddt.com

REPORT

TABLE OF CONTENTS

TEST REPORT DECLARE

Applicant	:	ION Audio, LLC
Address	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.
Equipment under Test	:	BT water-resistant speaker system
Model No.	:	Pathfinder 2, EXPLORER OUTBACK 2, iPA100, iPA105C
Trade Mark	:	ION
FCC ID	:	2AB3E-IPA100
Manufacturer	:	ION Audio, LLC
Address	:	200 Scenic View Drive, Cumberland, RI 02864 U.S.A.

Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C, 2015.

Test procedure used:

ANSI C63.10:2013, ANSI C63.4:2014.

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No.:	DDT-R18012202-1E1		
Date of Receipt:	Jan. 23, 2018	**Date of Test:**	Jan. 23, 2018~ Feb. 05, 2018

Prepared By: ***Approved By:***

Sam Li

Sam Li /Engineer ***Kevin Feng/EMC Manager***

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision history

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Feb. 06, 2018	

1. Summary of test results

Description of Test Item	Standard	Results
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2013 ANSI C63.4:2014	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10 :2013 ANSI C63.4:2014	PASS

Note 1: N/A is an abbreviation for Not Applicable.
Note 2: There are two batteries add in this report base on the original report: DDT-R17111004-1E1, This change don't influence the RF performance, so power line conducted and radiated emission(below 1GHz) were tested and recorded in this report only, and the original test data were retained in this report.

2. General test information

2.1. Description of EUT

EUT* Name	:	BT water-resistant speaker system
Model Number	:	Pathfinder 2, EXPLORER OUTBACK 2, iPA100, iPA105C
Model Number	:	All models are identical, only the model number and appearance are different; therefore the test performed on the model Pathfinder 2.
EUT function description	:	Please reference user manual of this device
Power supply	:	AC 100-240V 50/60Hz DC 12V built-in battery
Radio Specification	:	Bluetooth V4.2 （BDR/EDR）
Operation frequency	:	2402MHz -2480MHz
Modulation	:	GFSK, π/4 DQPSK, 8-DPSK
Data rate	:	1Mbps, 2Mbps, 3Mbps
Antenna Type	:	Integrated antenna, maximum PK gain: 2.3dBi
Sample Type	:	Series production

Note 1: EUT is the ab. of equipment under test.
Note 2: EUT can powered from AC 120V/60Hz and built-in battery, according exploration test, when powered from AC 120V/60Hz will have worse EMC performance, so all the final tests were performed with AC 120V/60Hz.

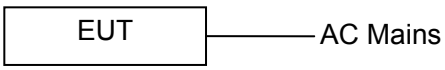
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Parameter	Remark
Built-in Power Board	Dongguan Guanjin Electronics Technology Co., Ltd.	K65P160410－X	Input:100-240Vac 50/60Hz, output: DC 16V, 4.1A	Alternative
Built-in Power Board	Dongguan Royal Electronics Co., Ltd.	BI67-160410-O5	Input:100-240Vac 50/60Hz, output: DC 16V, 4.1A	
Built-in Battery	Shenzhen Ritar Power Co., Ltd.	RT1270	12V7.0Ah	Alternative
Built-in Battery	Jia Hua Battery (Ruijin) Co., Ltd.	PL7-12	12V7.0Ah	
Built-in Battery	Shenzhen Ritar Power Co., Ltd.	RT1290	12V9.0Ah	Alternative
Built-in Battery	SHENZHEN LEOCH BATTERY TECHNOLOGY CO., LTD.	DJW12-9.0	12V9.0AH	

2.3. Assistant equipment used for test

Description of Assistant equipment	Manufacturer	Model number	EMC Compliance	Other
/	/	/	/	/

2.4. Block diagram of EUT configuration for test



The test software was used to control EUT work in Continuous Tx mode, and select test channel, wireless mode as blow table.
Test software: BlueSuite2.6.0.exe.

Tested mode, channel, information		
Mode	Channel	Frequency (MHz)
GFSK hopping on Tx mode	CH0 to CH78	2402 to 2480
π/4 DQPSK hopping on Tx mode	CH0 to CH78	2402 to 2480
8-DPSK hopping on Tx mode	CH0 to CH78	2402 to 2480
GFSK hopping off Tx mode	CH0	2402
	CH39	2441
	CH78	2480
π/4 DQPSK hopping off Tx mode	CH0	2402
	CH39	2441
	CH78	2480
8-DPSK hopping off Tx mode	CH0	2402
	CH39	2441
	CH78	2480

Note: For π/4 DQPSK its same modulation type with 8-DPSK, and based exploratory test, there is no significant difference of that two types test result, so except output power, all other items final test were only performed with the worse case 8-DPSK and GFSK.

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25℃
Humidity range:	40-75%
Pressure range:	86-106kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd

Add: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel: +86-0769-89201699, http://www.dgddt.com, Email: ddt@dgddt.com

CNAS Accreditation No.L6451; A2LA Accreditation No. 3870.01

Designation Number: CN1182; Test Firm Registration Number: 540522

Industry Canada site registration number: 10288A-1

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power(Conducted)(Spectrum analyzer)	0.86dB(10 MHz ≤ f < 3.6GHz);
	1.38dB(3.6GHz≤ f < 8GHz)
Peak Output Power(Conducted)(Power Sensor)	0.74dB
Power Spectral Density	0.74dB(10 MHz ≤ f < 3.6GHz);
	1.38dB(3.6GHz≤ f < 8GHz)
Frequencies Stability	6.7×10^{-8}(Antenna couple methed)
	5.5×10^{-8}(Conducted method)
Conducted spurious emissions	0.86dB(10 MHz ≤ f < 3.6GHz);
	1.40dB(3.6GHz≤ f < 8GHz)
	1.66dB(8GHz≤ f < 22GHz)
Uncertainty for radio frequency (RBW<20KHz)	3×10-8
Temperature	0.4℃
Humidity	2%
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1GHz-26GHz)	4.10dB(1-6GHz)
	4.40dB (6GHz-18GHz)
	3.54dB (18GHz-26GHz)
Uncertainty for Power line conduction emission test	3.32dB (150KHz-30MHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

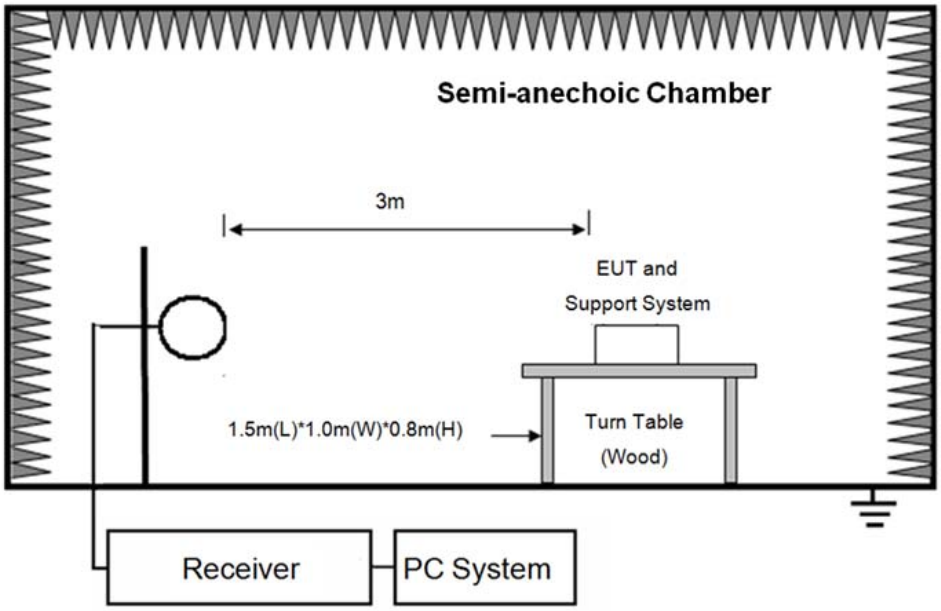
3. Equipment used during test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
RF Connected Test (Tonscent RF Measurement System)					
Spectrum analyzer	R&S	FSU26	200071	Oct. 23, 2017	1Year
Wideband Radio Communication tester	R&S	CMW500	117491	Jun. 16, 2017	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Oct. 23, 2017	1Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Jun.16, 2017	1Year
Power Sensor	Agilent	U2021XA	MY55150010	Oct. 21, 2017	1Year
Power Sensor	Agilent	U2021XA	MY55150011	Oct. 23, 2017	1Year
DC Power Source	MATRIS	MPS-3005L-3	D813058W	Aug. 18, 2017	1Year
Attenuator	Mini-Circuits	BW-S10W2	101109	Aug. 18, 2017	1Year
RF Cable	Micable	C10-01-01-1	100309	Oct. 21, 2017	1Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	Oct. 21, 2017	1Year
Test Software	JS Tonscent	JS1120-3	Ver.2.7	N/A	N/A
USB Data acquisition	Agilent	U2531A	TW55043503	N/A	N/A
Radiated Emission Test Chamber 1#					
EMI Test Receiver	R&S	ESU8	100316	Oct. 21, 2017	1 Year
Spectrum analyzer	R&S	FSU26	1166.1660.26	Oct. 21, 2017	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	Oct. 27, 2017	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Oct. 21, 2017	1 Year
Broadband Horn antenna	Schwarzbeck	BBHA 9170	BBHA 9170 #790	Aug. 11, 2017	1 Year
Double Ridged Horn Antenna	R&S	HF907	100276	Oct. 21, 2017	1 Year
Pre-amplifier	A.H.	PAM-0118	360	Oct. 21, 2017	1 Year
RF Cable	HUBSER	CP-X2	W11.03	Oct. 21, 2017	1 Year
RF Cable	HUBSER	CP-X1	W12.02	Oct. 21, 2017	1 Year
MI Cable	HUBSER	C10-01-01-1M	1091629	Oct. 21, 2017	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Power Line Conducted Emissions Test					
Test Receiver	R&S	ESU8	100316	Oct. 21, 2017	1 Year
LISN 1	R&S	ENV216	101109	Oct. 21, 2017	1 Year
LISN 2	R&S	ESH2-Z5	100309	Oct. 21, 2017	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Oct. 21, 2017	1 Year
CE Cable 1	HUBSER	ESU8/RF2	W10.01	Oct. 21, 2017	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A

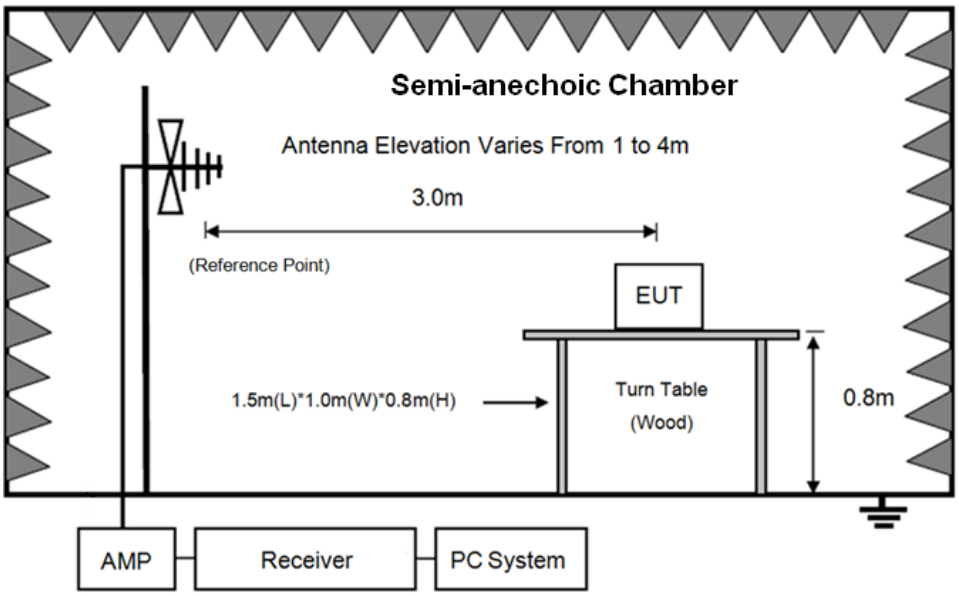
4. Radiated emission

4.1. Block diagram of test setup

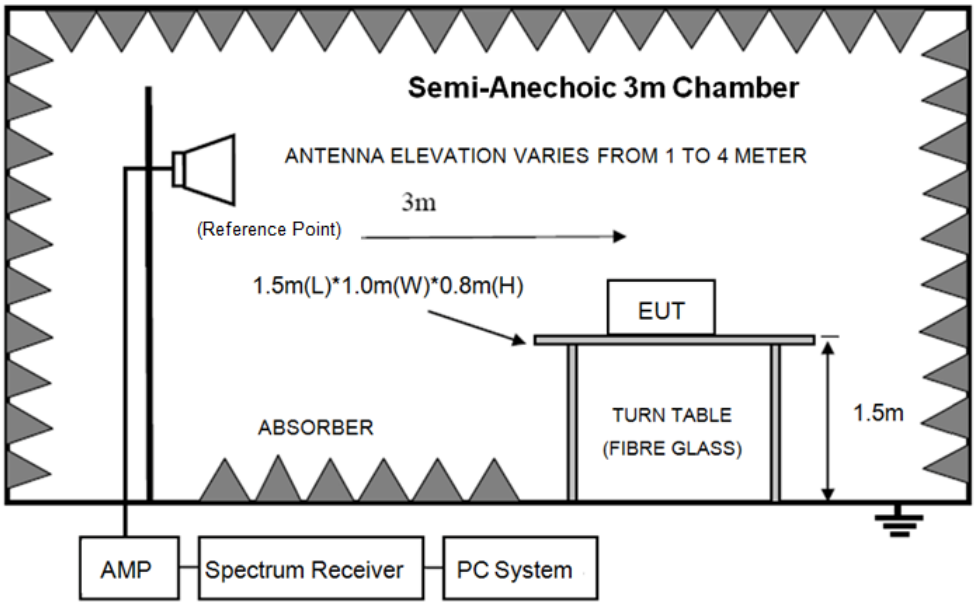
In 3m Anechoic Chamber Test Setup Diagram for 9kHz-30MHz



In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

4.2. Limit

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
10.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.G
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

(2) FCC 15.209 Limit.

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(KHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(KHz)	87.6-20log(F)
1.705 ~ 30.0	30	30	29.54
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note: (1)The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9-90KHz, 110-490KHz and above 1000MHz.Radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30MHz, measurement may be performed at a distance closer then that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m)$$

(3) Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

4.3. Test Procedure

(1) EUT was placed on a non-metallic table, 150 cm above the ground plane inside a semi-anechoic chamber.

(2) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used
9kHz-30MHz	Active Loop antenna
30MHz-1GHz	Trilog Broadband Antenna
1GHz-18GHz	Double Ridged Horn Antenna(1GHz-18GHz)
18GHz-40GHz	Horn Antenna(18GHz-40GHz)

According ANSI C63.10:2013 clause 6.4.4.2 and 6,5.3, for measurements below 30 MHz, the loop antenna was positioned with its plane vertical from the EUT and rotated about its vertical axis for maximum response at each azimuth position around the EUT. And the loop antenna also be positioned with its plane horizontal at the specified distance from the EUT. The center of the loop is 1 m above the ground. For measurement above 30MHz, the Trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the horizontal and vertical planes of Polarization, and the measurement antenna was

varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9kHz to 25GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1m to 4m(Except loop antenna, it's fixed 1m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9kHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18GHz to 25GHz, so below final test was performed with frequency range from 9kHz to 18GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2013 on Radiated Emission test.

(5) The emissions from 9kHz to 1GHz were measured based on CISPR QP detector except for the frequency bands 9-90kHz, 110-490kHz, for emissions from 9kHz-90kHz,110kHz-490kHz and above 1GHz were measured based on average detector, for emissions above 1GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9kHz to 1GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9kHz-150kHz	200Hz
150kHz-30MHz	9kHz
30MHz-1GHz	120kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure; RMS detector RBW 1MHz VBW 3MHz for Average measure(according ANSI C63.10:2013 clause 4.2.3.2.3 procedure for average measure).

(8) X axis, Y axis, Z axis are tested, and worse setup X axis is reported.

4.4. Test result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9 kHz to 25GHz were comply with 15.209 limits.

Note1: According exploratory test no any obvious emission were detected from 9kHz to 30MHz and 18GHz to 25GHz, so the final test was performed with frequency range from 30MHz to 18GHz and recorded in below.

Note2: For emissions below 1GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1GHz, the final test was only performed with EUT working in GFSK, Tx 2441MHz mode.

Note3: For emissions above 1GHz. If peak results comply with AV limit, AV Result is deemed to comply with AV limit.

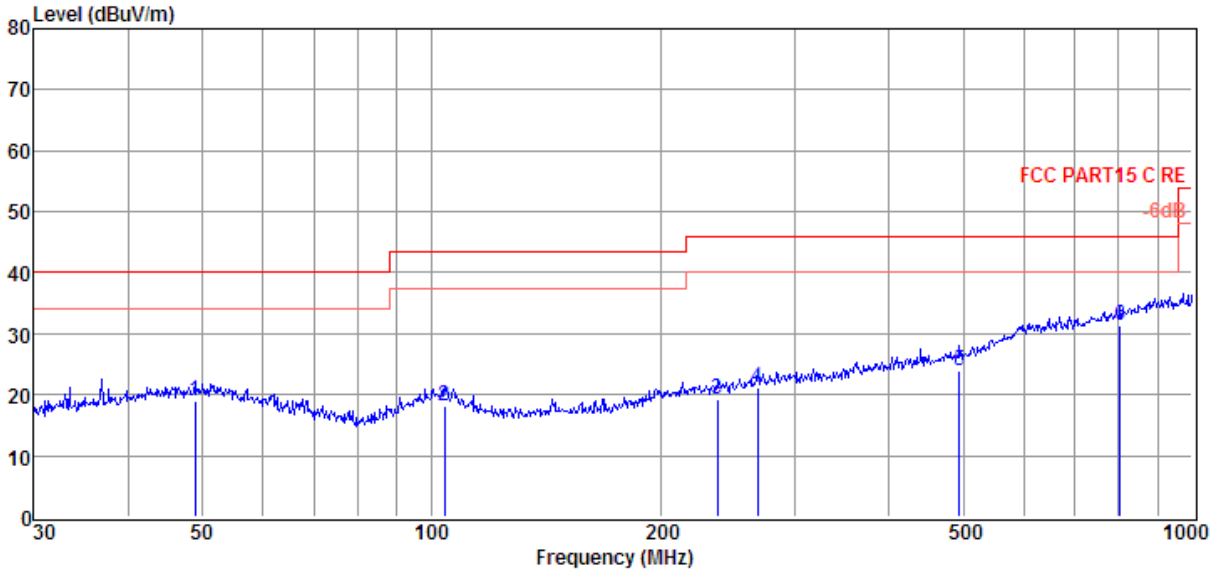
Radiated Emission test (below 1GHz)

Note: All modes have been tested，only recorded the worst data in the report.

TR-4-E-009 Radiated Emission Test Result

Test Site	:	DDT 3m Chamber 1#	D:\2018 RE1# Report Data\Q18012202-1E IPA105C\RE.EM6		
Test Date	:	2018-02-05	**Tested By**	:	Sunny
EUT	:	BT water-resistant speaker system	**Model Number**	:	Pathfinder 2
Power Supply	:	AC 120V/60Hz	**Test Mode**	:	Tx mode
Condition	:	Temp:24.5'C,Humi:55%, Press:100.1kPa	**Antenna/Distance**	:	2017 VULB 9163 1#/3m/HORIZONTAL
Memo	:	Built-in battery: 12V9.0AH			

Data: 4



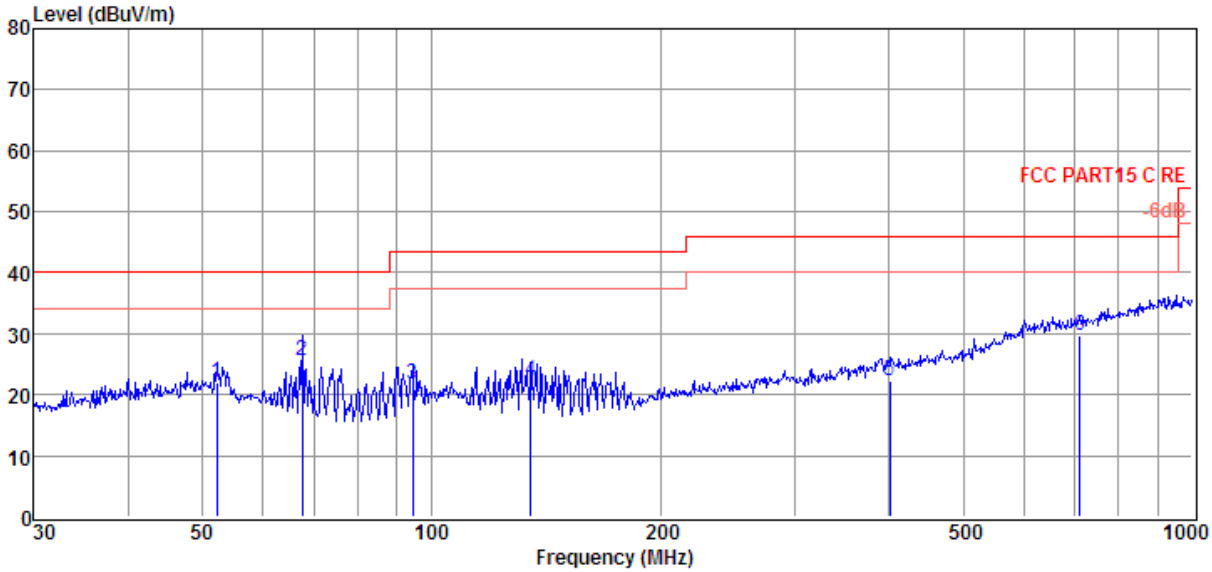
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	48.84	1.25	13.67	3.98	18.90	40.00	-21.10	QP	HORIZONTAL
2	104.17	2.67	10.98	4.45	18.10	43.50	-25.40	QP	HORIZONTAL
3	237.48	1.82	12.26	5.23	19.31	46.00	-26.69	QP	HORIZONTAL
4	268.49	3.00	12.81	5.38	21.19	46.00	-24.81	QP	HORIZONTAL
5	494.20	1.24	17.38	5.35	23.97	46.00	-22.03	QP	HORIZONTAL
6	804.60	2.57	21.36	7.32	31.25	46.00	-14.75	QP	HORIZONTAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Site	:	DDT 3m Chamber 1#	D:\2018 RE1# Report Data\Q18012202-1E IPA105C\RE.EM6		
Test Date	:	2018-02-05	**Tested By**	:	Sunny
EUT	:	BT water-resistant speaker system	**Model Number**	:	Pathfinder 2
Power Supply	:	AC 120V/60Hz	**Test Mode**	:	Tx mode
Condition	:	Temp:24.5'C,Humi:55%, Press:100.1kPa	**Antenna/Distance**	:	2017 VULB 9163 1#/3m/VERTICAL
Memo	:	Built-in battery: 12V9.0AH			

Data: 3

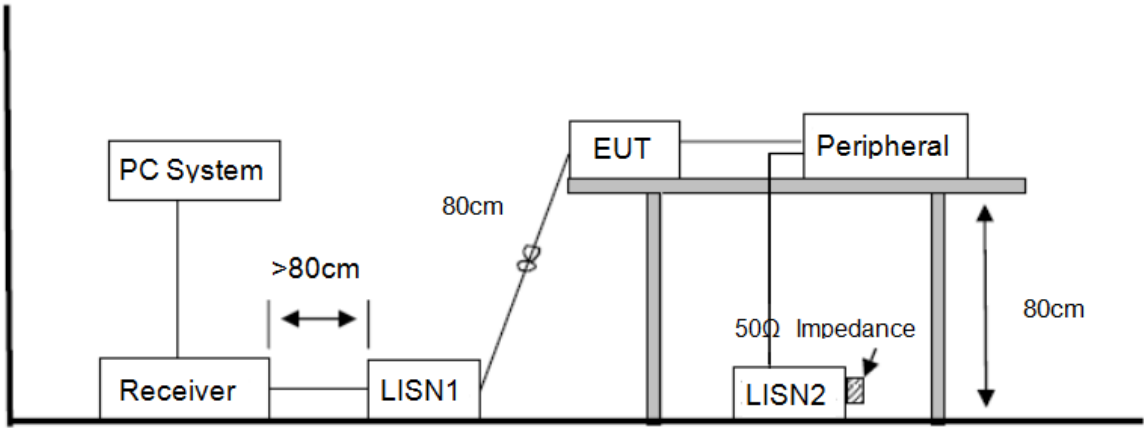


Item (Mark)	Freq. (MHz)	Read Level (dBµV)	Antenna Factor (dB/m)	Cable Loss dB	Result Level (dBµV/m)	Limit Line (dBµV/m)	Over Limit (dB)	Detector	Polarization
1	52.21	4.71	13.23	4.02	21.96	40.00	-18.04	QP	VERTICAL
2	67.68	11.73	9.68	4.16	25.57	40.00	-14.43	QP	VERTICAL
3	94.43	7.06	10.36	4.37	21.79	43.50	-21.71	QP	VERTICAL
4	135.03	9.70	7.82	4.67	22.19	43.50	-21.31	QP	VERTICAL
5	400.43	1.07	15.21	5.95	22.23	46.00	-23.77	QP	VERTICAL
6	711.67	2.85	19.90	7.05	29.80	46.00	-16.20	QP	VERTICAL

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

5. Power Line Conducted Emission

5.1. Block diagram of test setup



5.2. Power Line Conducted Emission Limits(Class B)

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

5.3. Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 3 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

5.4. Test Result

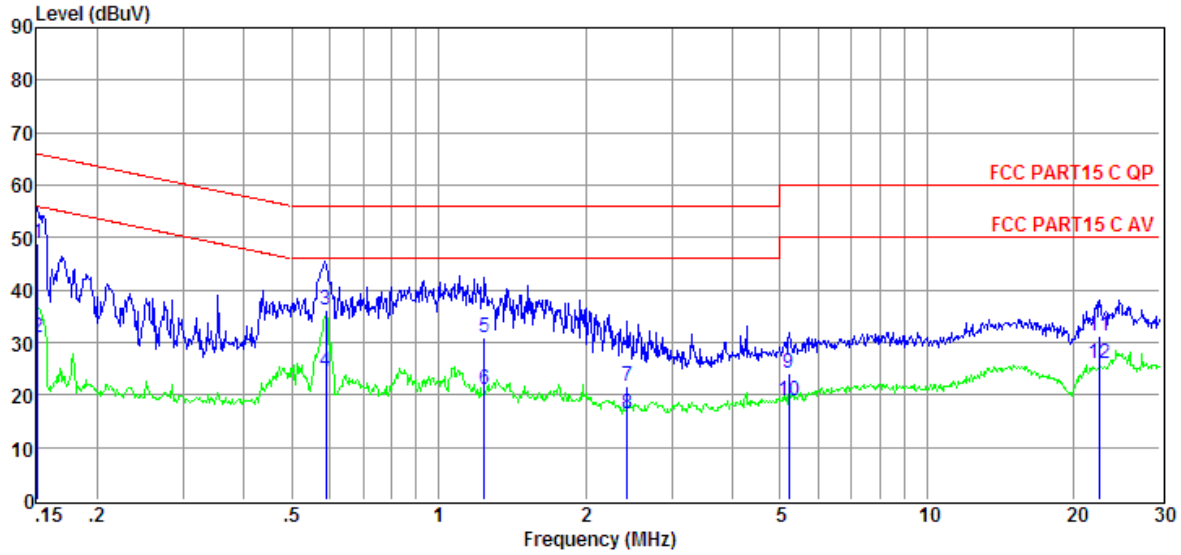
PASS. (See below detailed test result)

Note 1: All emissions not reported below are too low against the prescribed limits.
Note 2: "-----" means Peak detection; "-----" means Average detection
Note 3: All modes have been tested，only recorded the worst data in the report.

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 1# Shield Room	E:\2018 CE report data\IP105C\CE.EM6		
Test Date	: 2018-02-06	**Tested By**	: Jerry	
EUT	: BT water-resistant speaker system	**Model Number**	: Pathfinder 2	
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode	
Condition	: Temp:24.5'C,Humi:55%, Press:100.1kPa	**LISN**	: 2017 ENV216/NEUTRAL	
Memo	: Built-in battery: 12V9.0AH			

Data: 6



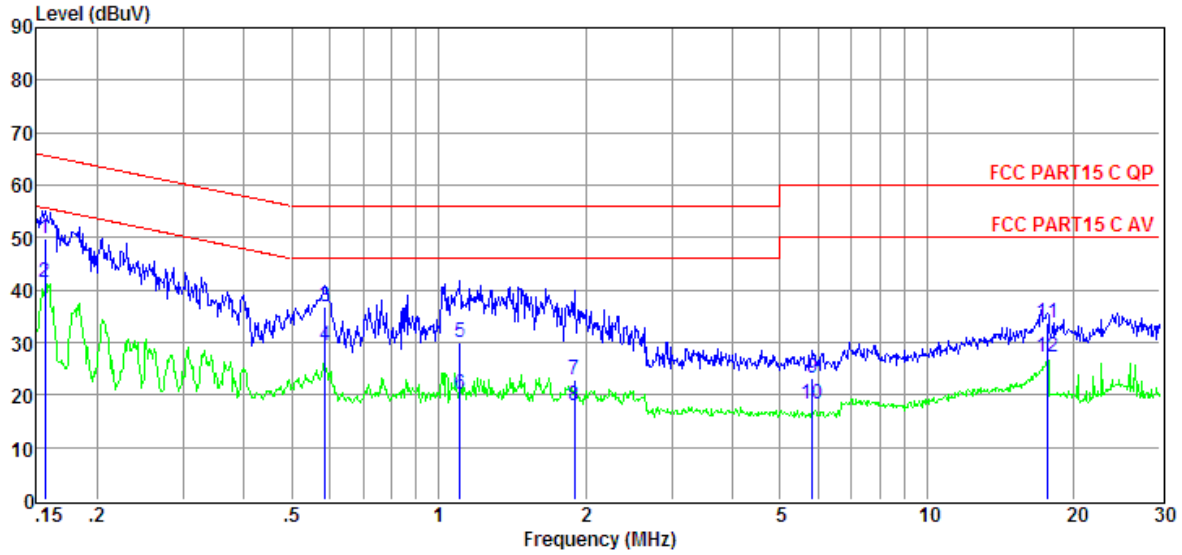
Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.15	29.36	9.49	0.04	9.86	48.75	65.96	-17.21	QP	NEUTRAL
2	0.15	11.38	9.49	0.04	9.86	30.77	55.96	-25.19	Average	NEUTRAL
3	0.59	16.94	9.33	0.06	9.83	36.16	56.00	-19.84	QP	NEUTRAL
4	0.59	5.12	9.33	0.06	9.83	24.34	46.00	-21.66	Average	NEUTRAL
5	1.24	11.76	9.29	0.13	9.86	31.04	56.00	-24.96	QP	NEUTRAL
6	1.24	1.87	9.29	0.13	9.86	21.15	46.00	-24.85	Average	NEUTRAL
7	2.44	2.27	9.40	0.12	9.87	21.66	56.00	-34.34	QP	NEUTRAL
8	2.44	-3.01	9.40	0.12	9.87	16.38	46.00	-29.62	Average	NEUTRAL
9	5.22	4.96	9.29	0.10	9.87	24.22	60.00	-35.78	QP	NEUTRAL
10	5.22	-0.25	9.29	0.10	9.87	19.01	50.00	-30.99	Average	NEUTRAL
11	22.54	11.62	9.54	0.11	9.96	31.23	60.00	-28.77	QP	NEUTRAL
12	22.54	6.52	9.54	0.11	9.96	26.13	50.00	-23.87	Average	NEUTRAL

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

TR-4-E-010 Conducted Emission Test Result

Test Site	: DDT 1# Shield Room	E:\2018 CE report data\IP105C\CE.EM6		
Test Date	: 2018-02-06	**Tested By**	: Jerry	
EUT	: BT water-resistant speaker system	**Model Number**	: Pathfinder 2	
Power Supply	: AC 120V/60Hz	**Test Mode**	: Tx mode	
Condition	: Temp:24.5'C,Humi:55%, Press:100.1kPa	**LISN**	: 2017 ENV216/LINE	
Memo	: Built-in battery: 12V9.0AH			

Data: 8



Item (Mark)	Freq. (MHz)	Read Level (dBµV)	LISN Factor (dB)	Cable Loss (dB)	Pulse Limiter Factor (dB)	Result Level (dBµV)	Limit Line (dBµV)	Over Limit (dB)	Detector	Phase
1	0.16	30.24	9.52	0.04	9.86	49.66	65.65	-15.99	QP	LINE
2	0.16	22.01	9.52	0.04	9.86	41.43	55.65	-14.22	Average	LINE
3	0.59	17.41	9.55	0.06	9.83	36.85	56.00	-19.15	QP	LINE
4	0.59	9.90	9.55	0.06	9.83	29.34	46.00	-16.66	Average	LINE
5	1.11	10.42	9.57	0.14	9.86	29.99	56.00	-26.01	QP	LINE
6	1.11	0.46	9.57	0.14	9.86	20.03	46.00	-25.97	Average	LINE
7	1.90	3.28	9.60	0.12	9.87	22.87	56.00	-33.13	QP	LINE
8	1.90	-1.53	9.60	0.12	9.87	18.06	46.00	-27.94	Average	LINE
9	5.84	3.67	9.67	0.10	9.87	23.31	60.00	-36.69	QP	LINE
10	5.84	-1.42	9.67	0.10	9.87	18.22	50.00	-31.78	Average	LINE
11	17.66	13.83	9.87	0.11	9.93	33.74	60.00	-26.26	QP	LINE
12	17.66	7.41	9.87	0.11	9.93	27.32	50.00	-22.68	Average	LINE

Note: 1. Result Level = Read Level +LISN Factor + Pulse Limiter Factor + Cable loss.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

6. Test setup photograph

6.1. Photos of Power Line Conducted emission test

6.2. Photos of radiated emission test

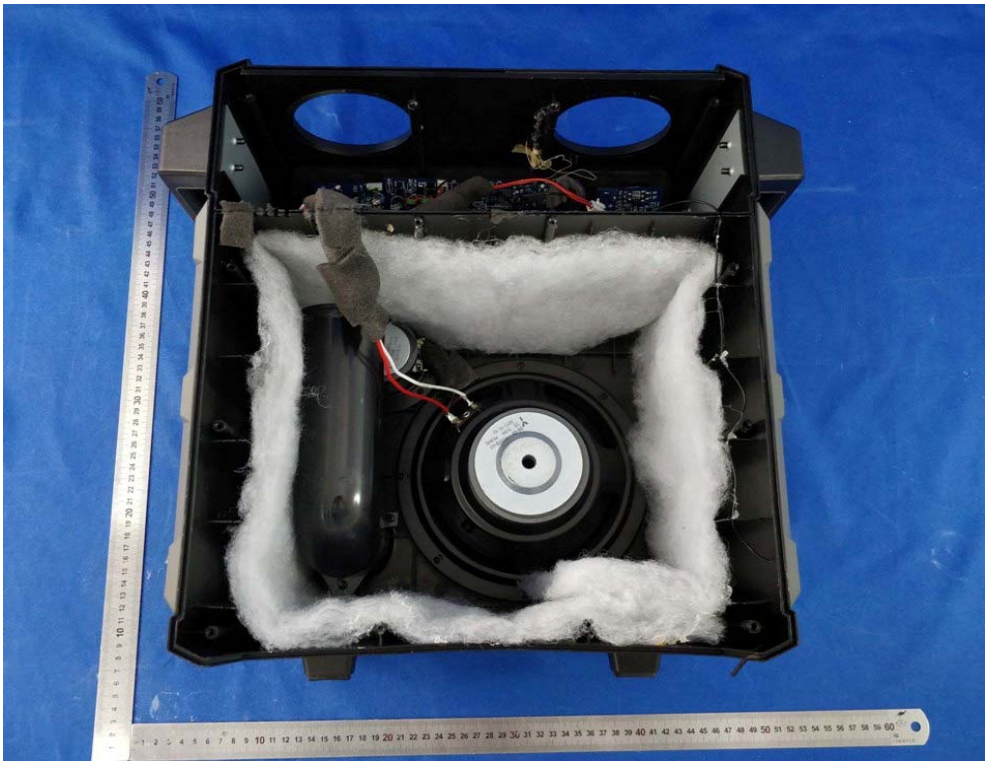
7. Photos of the EUT

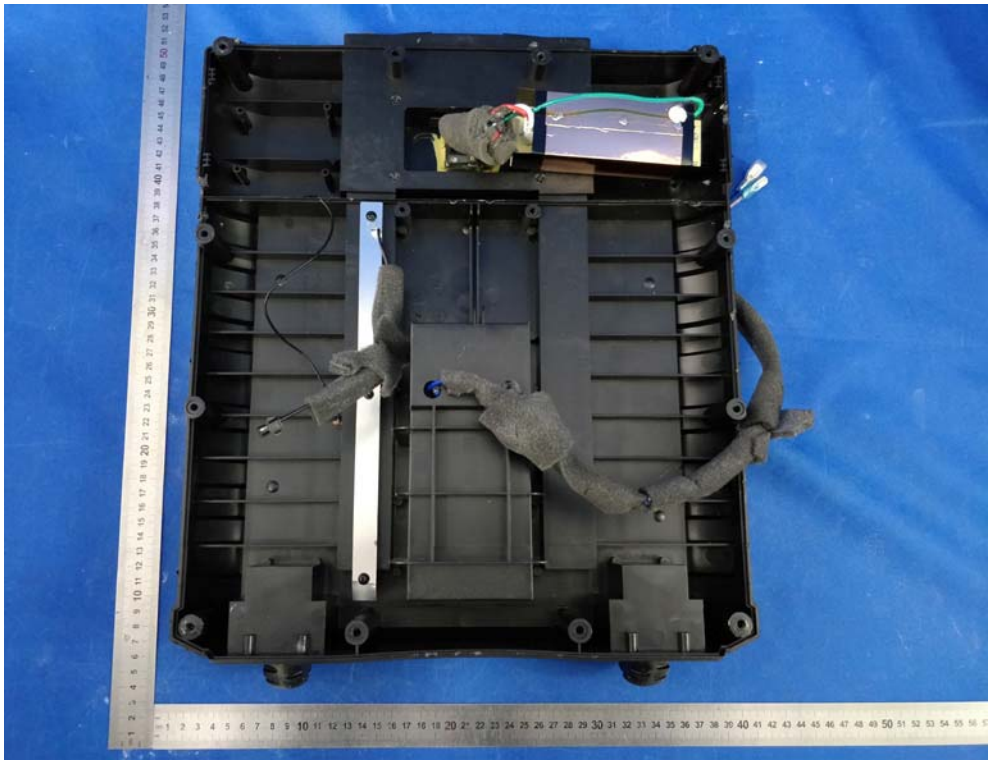
Model No.: EXPLORER OUTBACK 2, iPA100

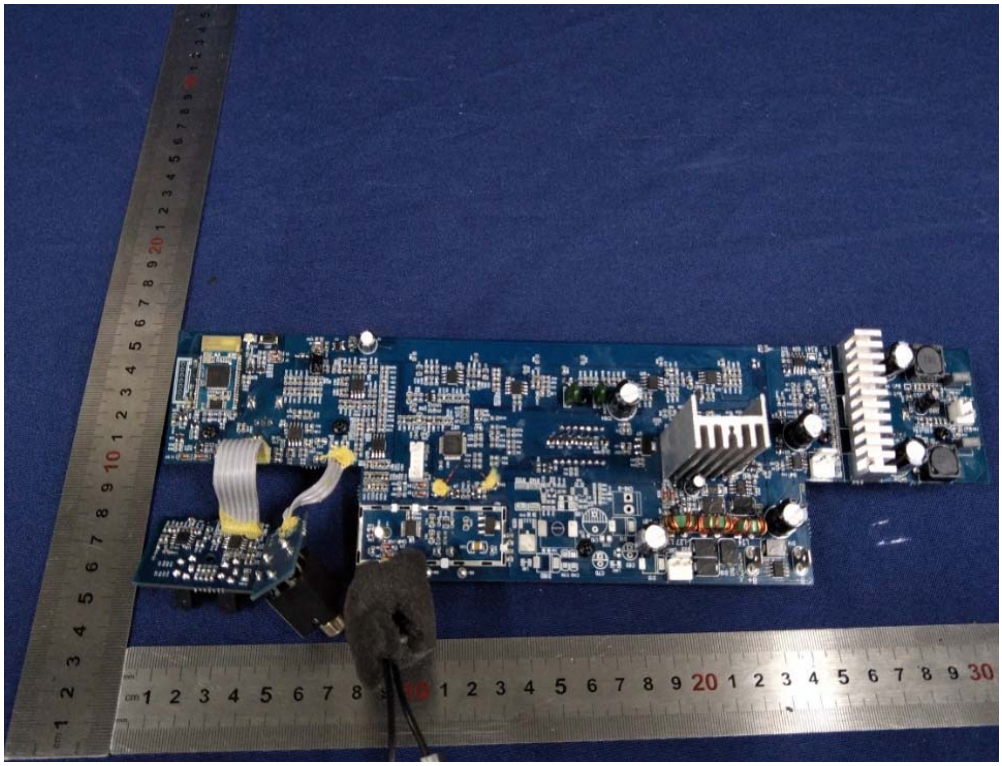

ION
EXPLORER OUTBACK 2

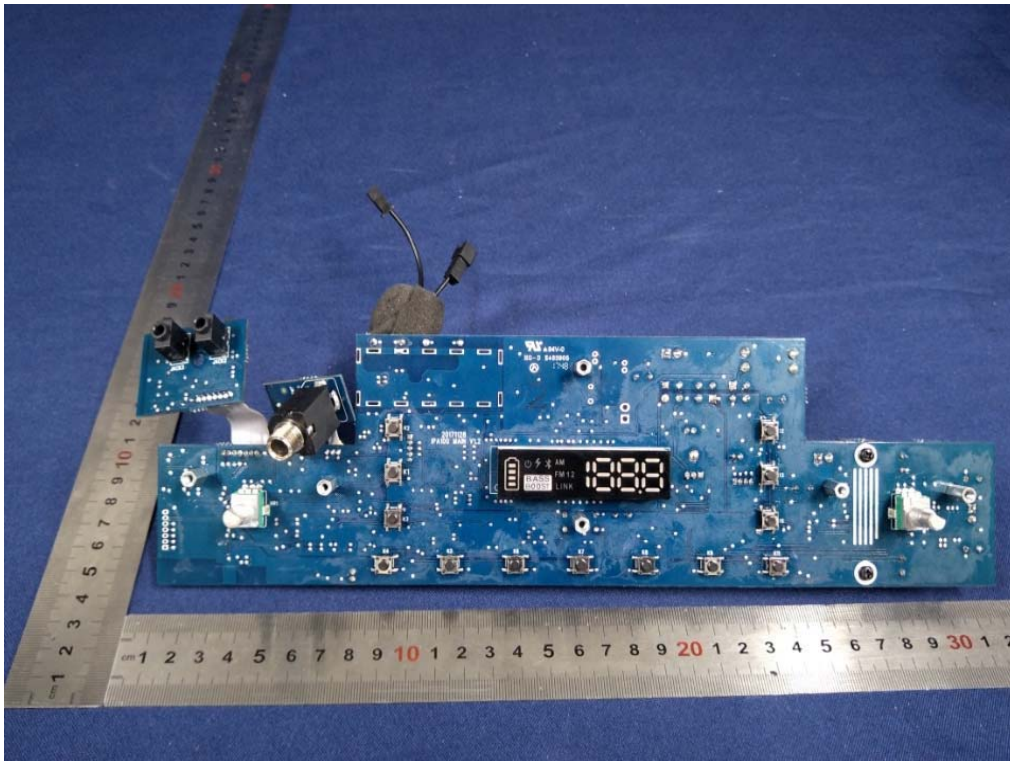

BOTTLE OPENER

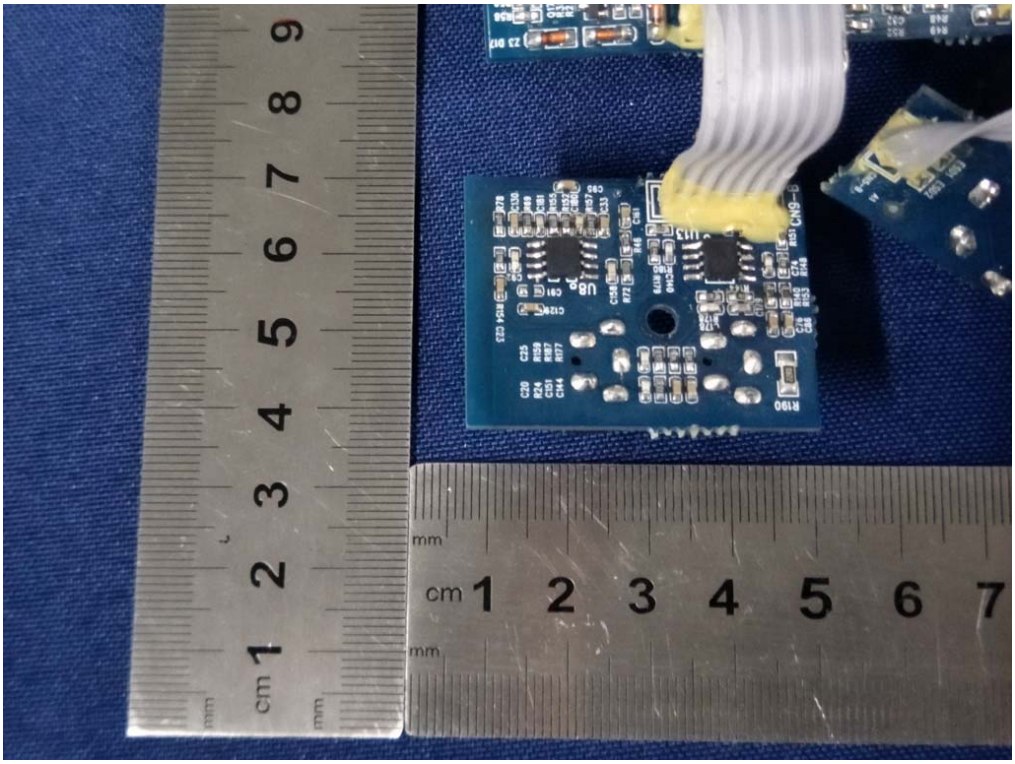

ION
iPA100
EXPLORER OUTBACK 2
FOR MAXIMUM BATTERY LIFE:
- CHARGE FULLY BEFORE USE
- CHARGE FULLY BEFORE STORING
- FOR HELP VISIT IONAUDIO.COM
FREQ. RANGE:
AM 520-1710KHZ
FM 87.5-107.9 MHZ
INPUT RANGE
100-240V~50/60HZ, 100W
FUSE
T2AL 250V

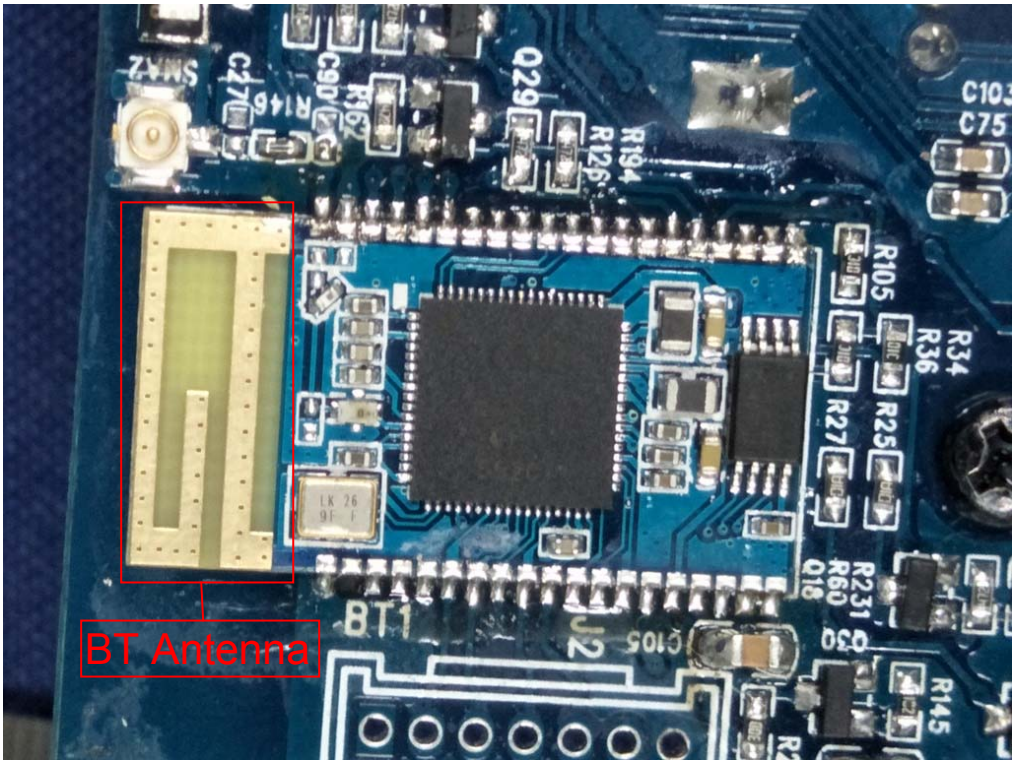


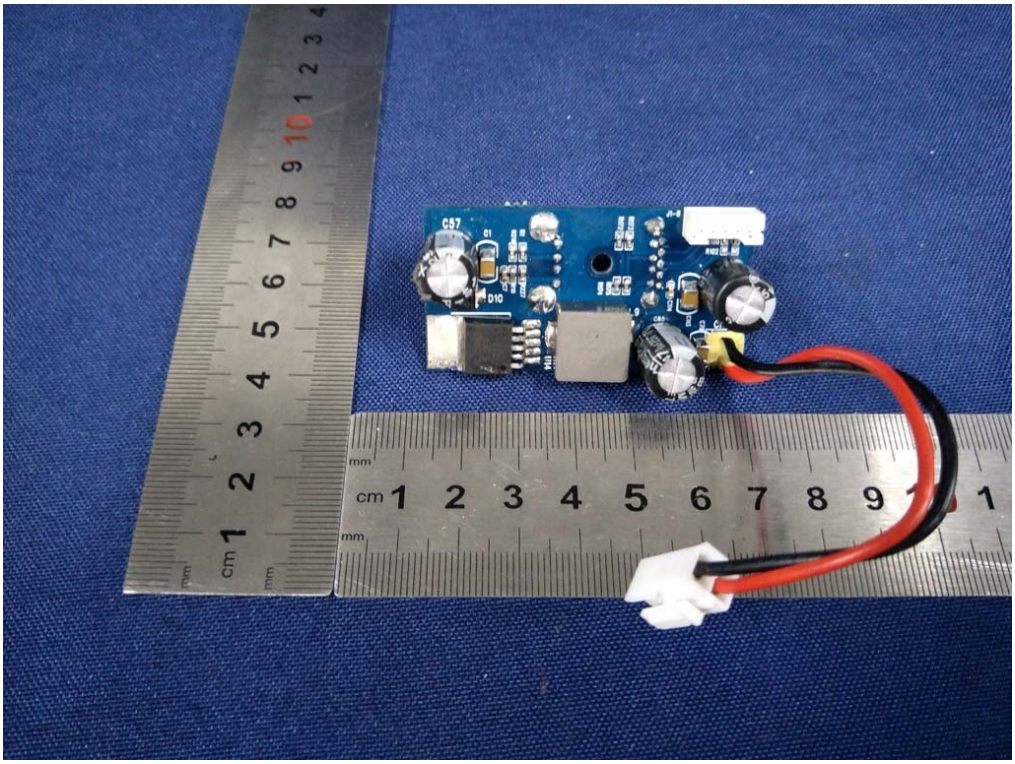


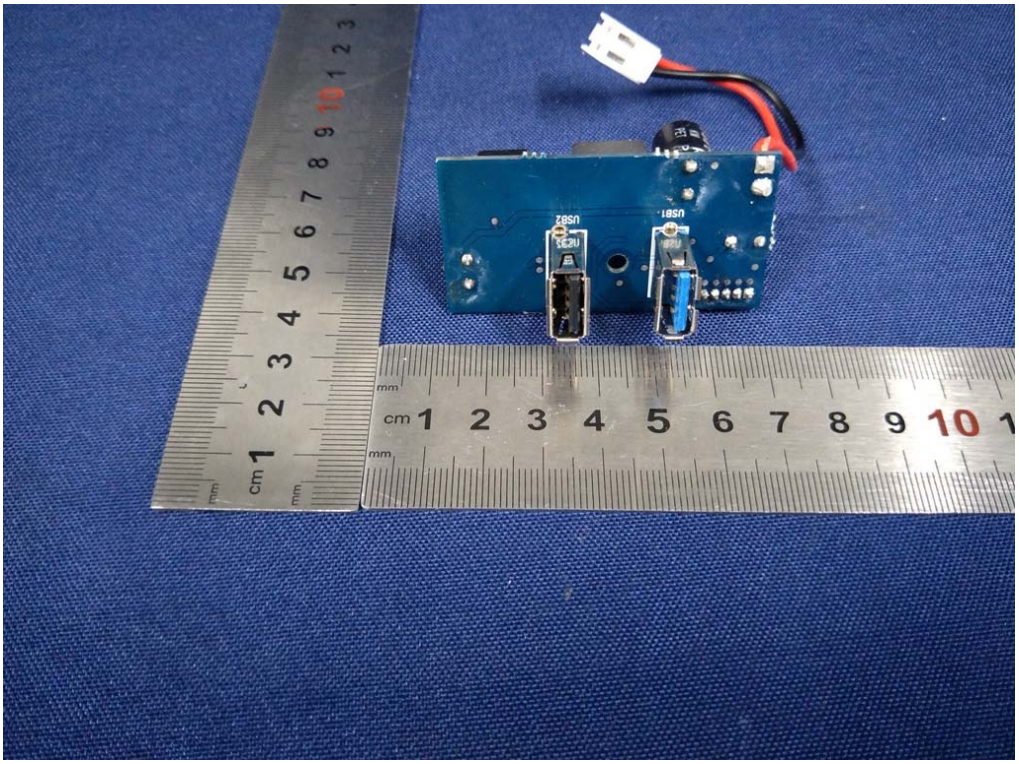




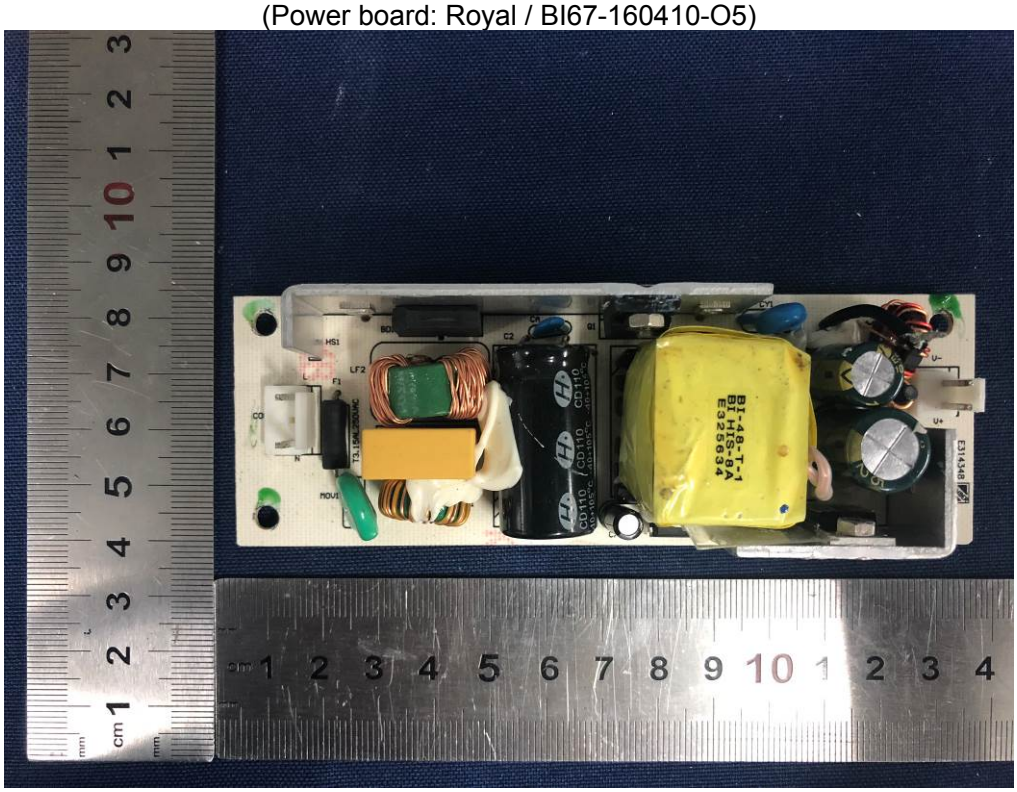


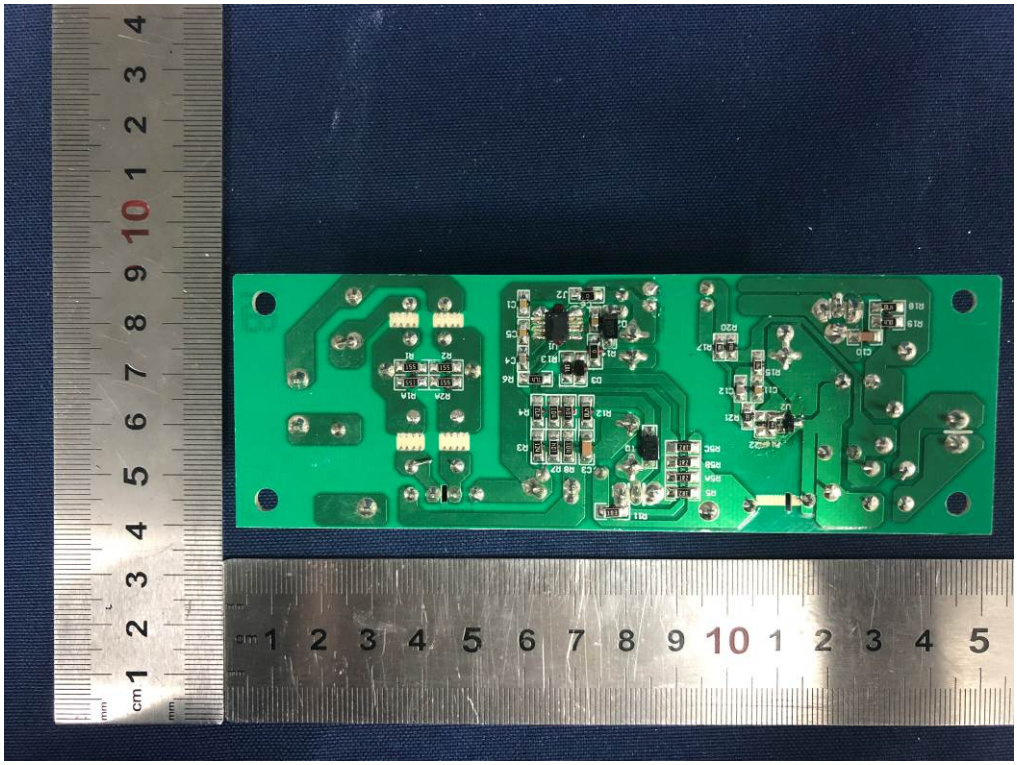

BT Antenna
BT1
J2
Q29
R194
R126
R105
R36
R34
R25
R27
R231
R60
Q18
Q30
R145
C103
C75
C105


cm 1 2 3 4 5 6 7 8 9
mm

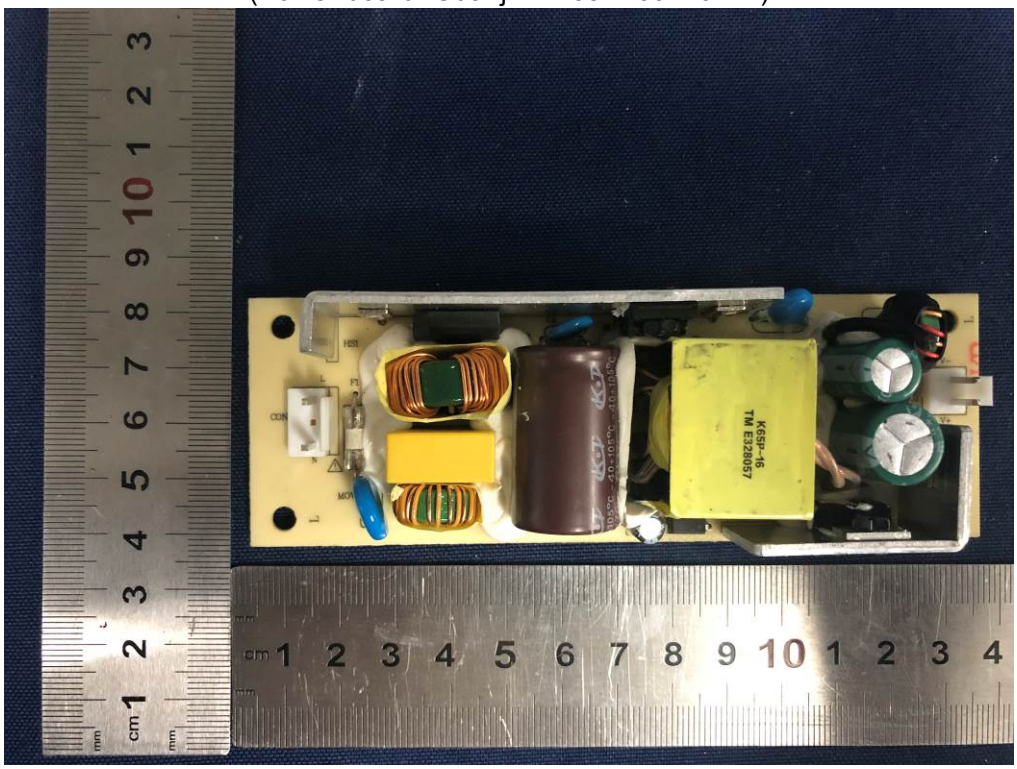


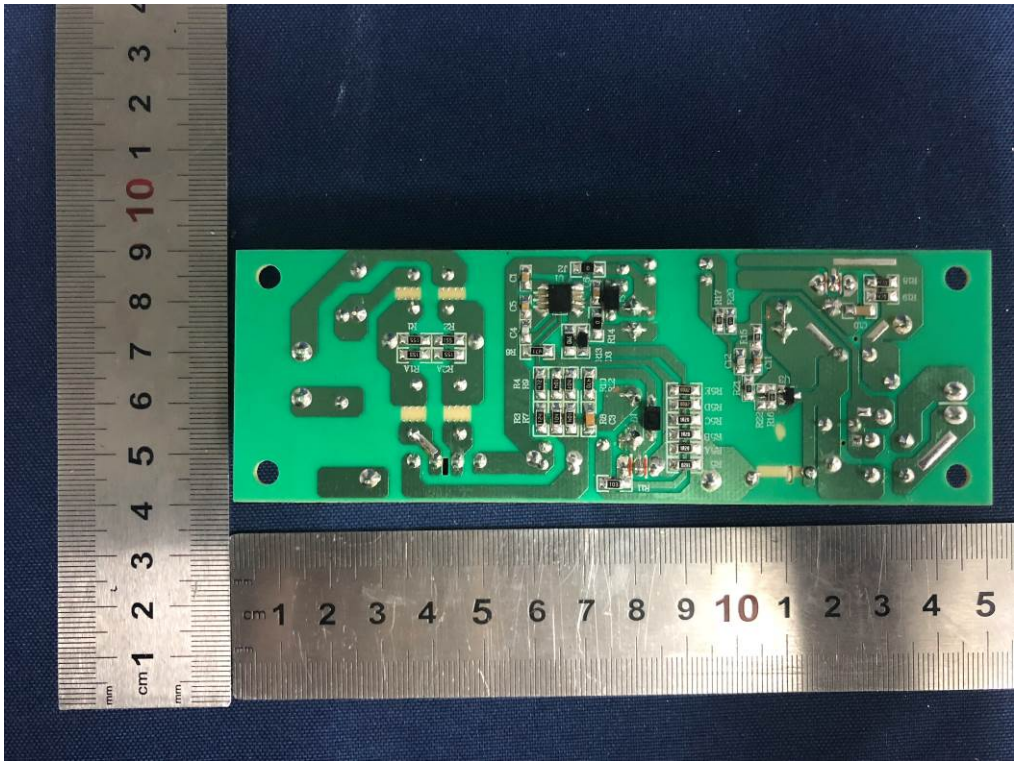
(Power board: Royal / BI67-160410-O5)



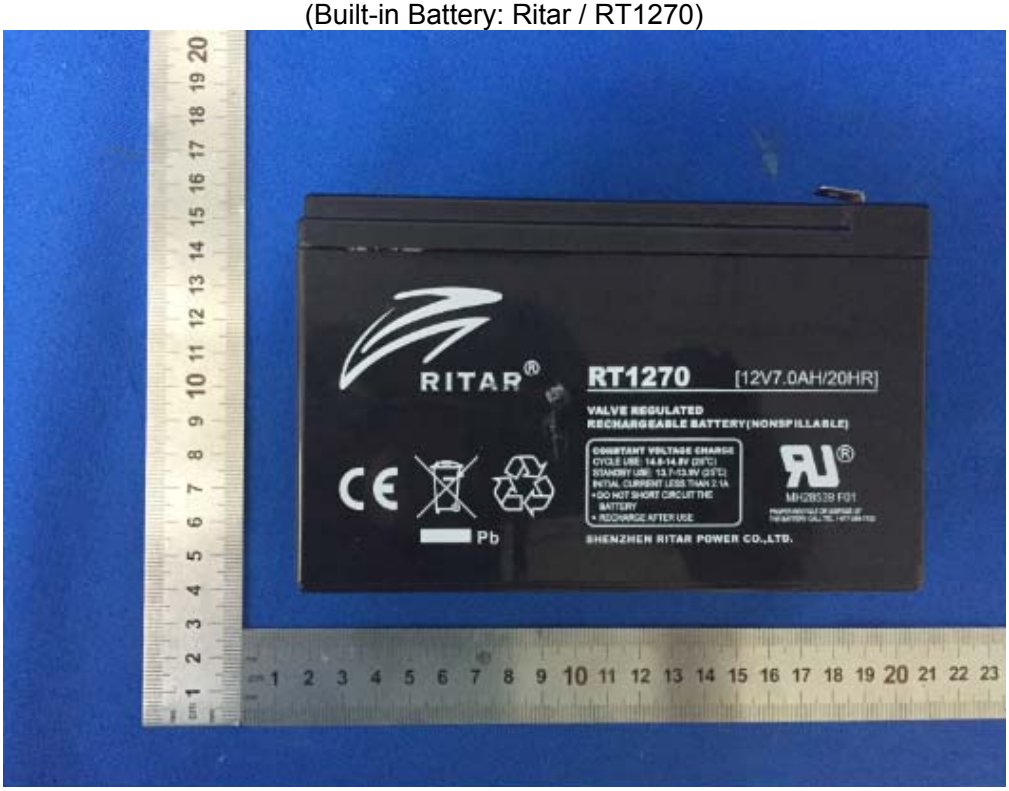


(Power board: Guanjin / K65P160410－X)





(Built-in Battery: Ritar / RT1270)



(Built-in Battery: Jia Hua / PL7-12)

(Built-in Battery: Ritar / RT1290)

(Built-in Battery: LEOCH / DJW12-9.0)

Model No.: Pathfinder 2, iPA105C

END OF REPORT