FCC TEST REPORT

Product	:	Mobile Printer
Trade mark	:	Rongta
Model/Type reference	:	RPP02N-BU
Serial Number	:	N/A
Report Number	:	EED32I00089501
FCC ID	:	2AD6G-RPP02N-BU
Date of Issue	:	Aug. 16, 2016
Test Standards	:	47 CFR Part 15 Subpart B (2015)
Test result	:	PASS

Prepared for:

XIAMEN RONGTA TECHNOLOGY CO., LTD.
3F-1/E Building, No.195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xiamen City

Prepared by:

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Report Seal

Date: Aug. 16, 2016

Check No.: 2392191403

1 Version

Version No.	Date	Description
00	Aug. 16, 2016	Original

2 Test Summary

Test Item	Test Requirement	Test method	Result
Radiated Emission	47 CFR Part 15B	ANSI C63.4-2014	PASS
Conducted Emission (150KHz to 30MHz)	47 CFR Part 15B	ANSI C63.4-2014	PASS

Remark:

The tested sample and the sample information are provided by the client.

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4 General Information

4.1 Client Information

Applicant:	XIAMEN RONGTA TECHNOLOGY CO., LTD.
Address of Applicant:	3F-1/E Building, No.195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xiamen City
Manufacturer:	XIAMEN RONGTA TECHNOLOGY CO., LTD.
Address of Manufacturer:	3F-1/E Building, No.195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xiamen City
Factory:	XIAMEN RONGTA TECHNOLOGY CO., LTD.
Address of Factory:	3F-1/E Building, No.195 Gaoqishe, Gaodian Village, Dianqian Street Office, Huli District, Xiamen City

4.2 General Description of EUT

Product Name:	Mobile Printer
Mode No.(EUT):	RPP02N-BU
Trade Mark:	Rongta
AC adapter:	AC 100-240V, 50/60Hz, 0.5A Output: DC 12V, 1.0A

4.3 Product Specification subjective to this standard

Test voltage:	AC 120V, 60Hz
Sample Received Date:	Apr. 21, 2016
Sample tested Date:	Apr. 21, 2016 to Aug. 16, 2016

4.4 Test Environment and Mode

Operating Environment:	
Temperature:	26°C
Humidity:	51% RH
Atmospheric Pressure:	1010mbar
Test mode:	
Normal operation:	Keep the EUT at normal operation mode.

4.5 Description of Support Units

Description	Manufacturer	Model No.	Supplied by
laptop	LENOVO	E46L	CTI
Mouse	LENOVO	LXH-EMS-10ZA	CTI
Keyboard	L.Selectron	GL-204	CTI
Keyboard	LENOVO	LXH-EKB-10YA	CTI

4.6 Test Location

All tests were performed at:
Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao’an 70 District, Shenzhen, Guangdong, China 518101
Telephone: +86 (0) 755 3368 3668 Fax:+86 (0) 755 3368 3385
No tests were sub-contracted.

4.7 Test Facility

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

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 886427

Centre Testing International Group Co., Ltd. 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 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of

Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

4.8 Deviation from Standards

None.

4.9 Abnormalities from Standard Conditions

None.

4.10 Other Information Requested by the Customer

None.

4.11 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9 x 10^{-8}
2	Radiated Spurious emission	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
3	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
4	Temperature	0.64°C
5	Humidity	2.8%
6	DC power voltages	0.025%

5 Equipment List

Conducted disturbance Test					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100009	06-16-2016	06-15-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
LISN	R&S	ENV216	100098	06-16-2016	06-15-2017
LISN	schwarzbeck	NNLK8121	8121-529	06-16-2016	06-15-2017
Voltage Probe	R&S	ESH2-Z3	--	07-09-2014	07-07-2017
Current Probe	R&S	EZ17	100106	07-09-2014	07-08-2017
Current Probe	R&S	EZ17	100106	06-16-2016	06-15-2017
ISN	TESEQ GmbH	ISN T800	30297	01-29-2015	01-27-2017

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Mode No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2016	05-22-2017
Microwave Preamplifier	Agilent	8449B	3008A02425	02-04-2016	02-03-2017
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Horn Antenna	A.H.SYSTEMS	SAS-574	374	06-30-2015	06-28-2018
Spectrum Analyzer	R&S	FSP40	100416	06-16-2016	06-15-2017
Receiver	R&S	ESCI	100435	06-16-2016	06-15-2017
Multi device Controller	maturo	NCD/070/10711112	---	01-12-2016	01-11-2017
LISN	schwarzbeck	NNBM8125	81251547	06-16-2016	06-15-2017
LISN	schwarzbeck	NNBM8125	81251548	06-16-2016	06-15-2017
Signal Generator	Agilent	E4438C	MY45095744	04-01-2016	03-31-2017
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2016	01-11-2017
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2016	01-11-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-12-2016	01-11-2017

6 Test results and Measurement Data

6.1 Conducted Emissions

Test Requirement: 47 CFR Part 15B

Test Method: ANSI C63.4

Test frequency range: 150kHz to 30MHz

Limit:

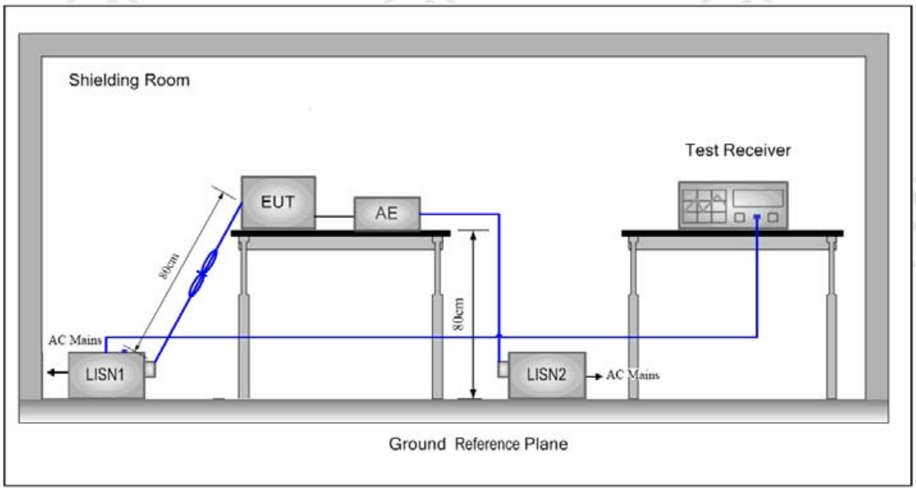
Frequency range (MHz)	Limit (dBµV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Procedure:

1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50µH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 on conducted measurement.

Test Setup:



Instruments Used: Refer to section 6 for details

Test Mode: Normal operation

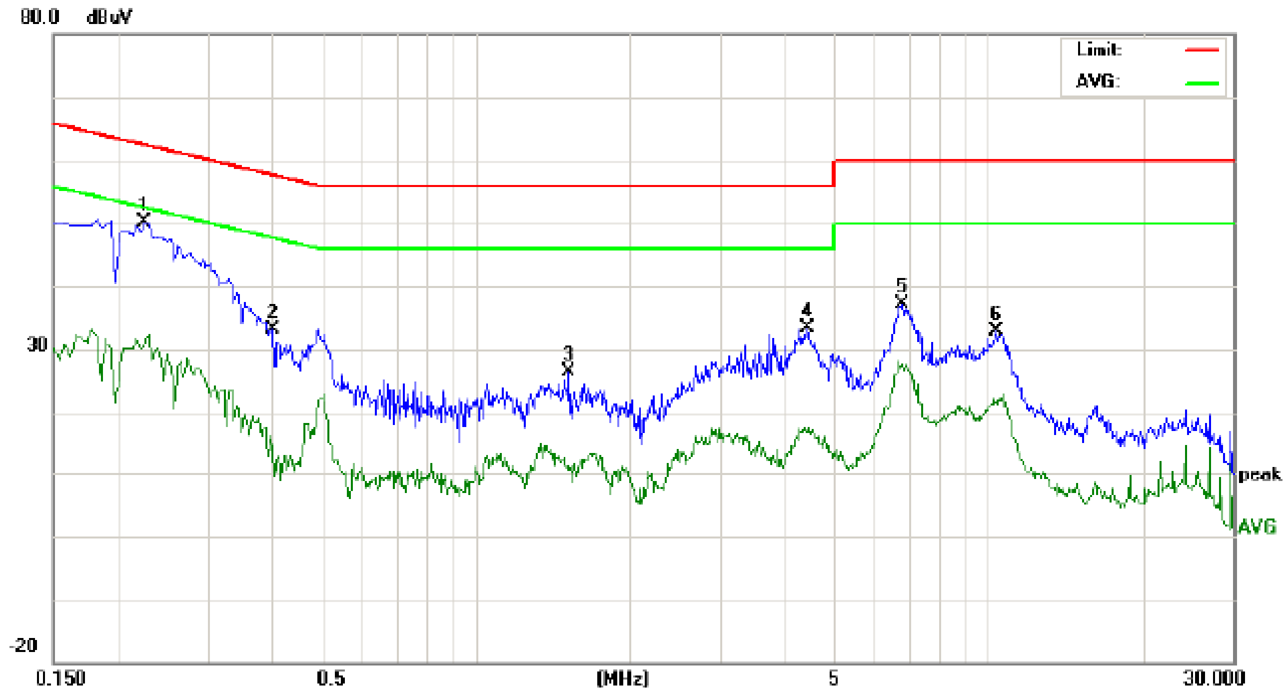
Test Results: Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

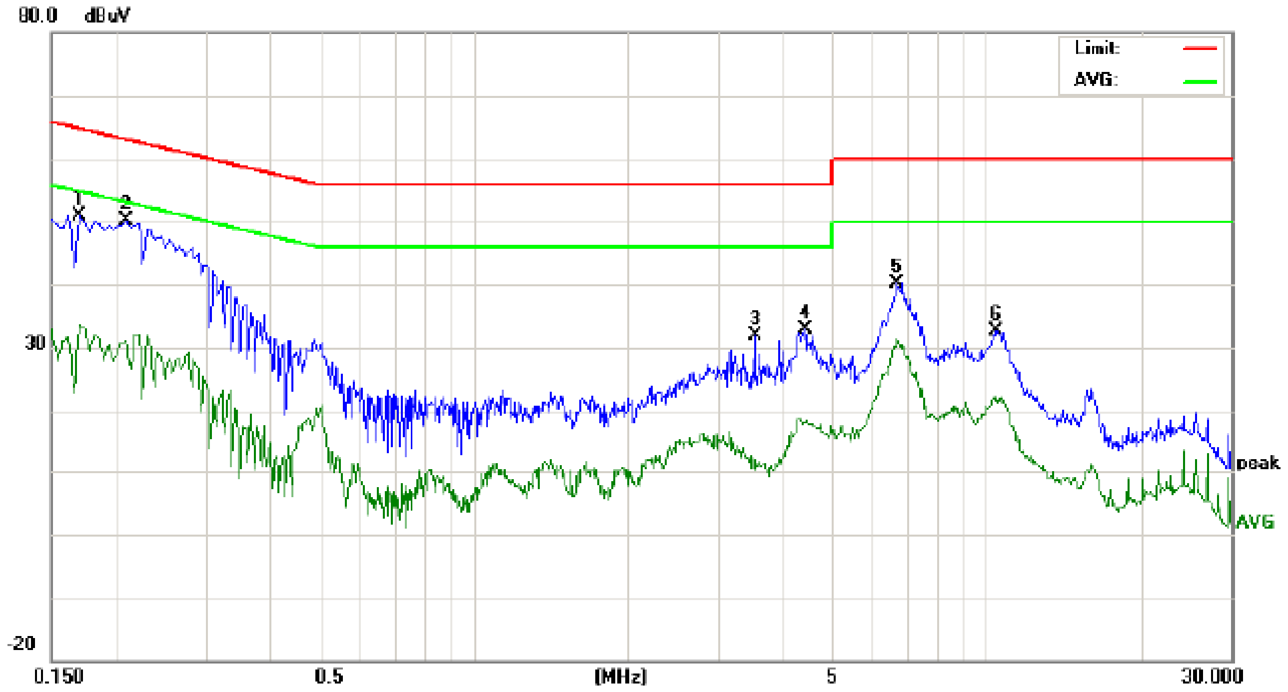
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.2260	40.45	37.52	20.93	9.80	50.25	47.32	30.73	62.59	52.59	-15.27	-21.86	P	
2	0.4020	23.35	22.31	4.84	9.90	33.25	32.21	14.74	57.81	47.81	-25.60	-33.07	P	
3	1.5220	16.32	15.84	1.72	10.00	26.32	25.84	11.72	56.00	46.00	-30.16	-34.28	P	
4	4.4420	23.34	21.85	6.95	10.00	33.34	31.85	16.95	56.00	46.00	-24.15	-29.05	P	
5	6.7980	27.20	25.31	17.57	10.00	37.20	35.31	27.57	60.00	50.00	-24.69	-22.43	P	
6	10.3580	22.82	20.74	11.72	10.01	32.83	30.75	21.73	60.00	50.00	-29.25	-28.27	P	

Neutral Line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1700	41.16	38.63	23.94	9.80	50.96	48.43	33.74	64.96	54.96	-16.53	-21.22	P	
2	0.2100	40.39	38.25	21.31	9.80	50.19	48.05	31.11	63.20	53.20	-15.15	-22.09	P	
3	3.5420	21.75	20.37	0.47	10.00	31.75	30.37	10.47	56.00	46.00	-25.63	-35.53	P	
4	4.4460	22.87	18.85	8.24	10.00	32.87	28.85	18.24	56.00	46.00	-27.15	-27.76	P	
5	6.7060	30.17	27.21	21.41	10.00	40.17	37.21	31.41	60.00	50.00	-22.79	-18.59	P	
6	10.4980	22.65	20.74	12.07	10.01	32.66	30.75	22.08	60.00	50.00	-29.25	-27.92	P	

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. AC120V and 240V are tested and found the worst case is 120V, So only the 120V data were shown in the above.

6.2 Radiated Emission

Test Requirement:	47 CFR Part 15B
Test Method:	ANSI C63.4
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)

Receiver setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value

Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber (Above 18GHz the distance is 1 meter).

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.

i. Repeat above procedures until all frequencies measured was complete.

Test Setup:

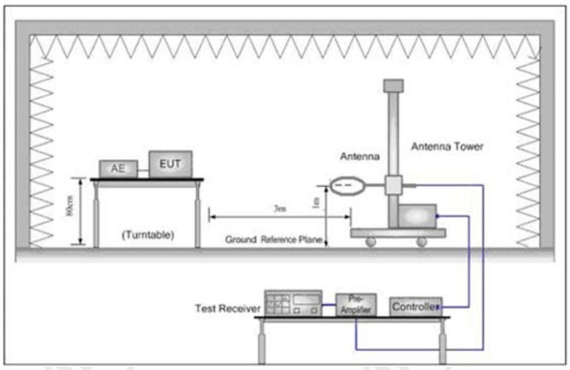


Figure 1. Below 30MHz

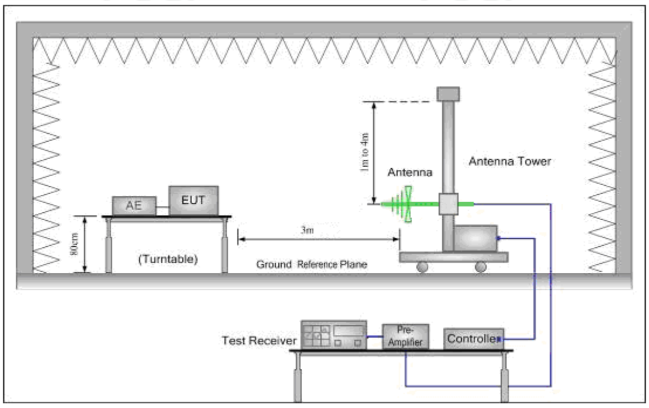


Figure 2. 30MHz to 1GHz

Instruments Used: Refer to section 6 for details

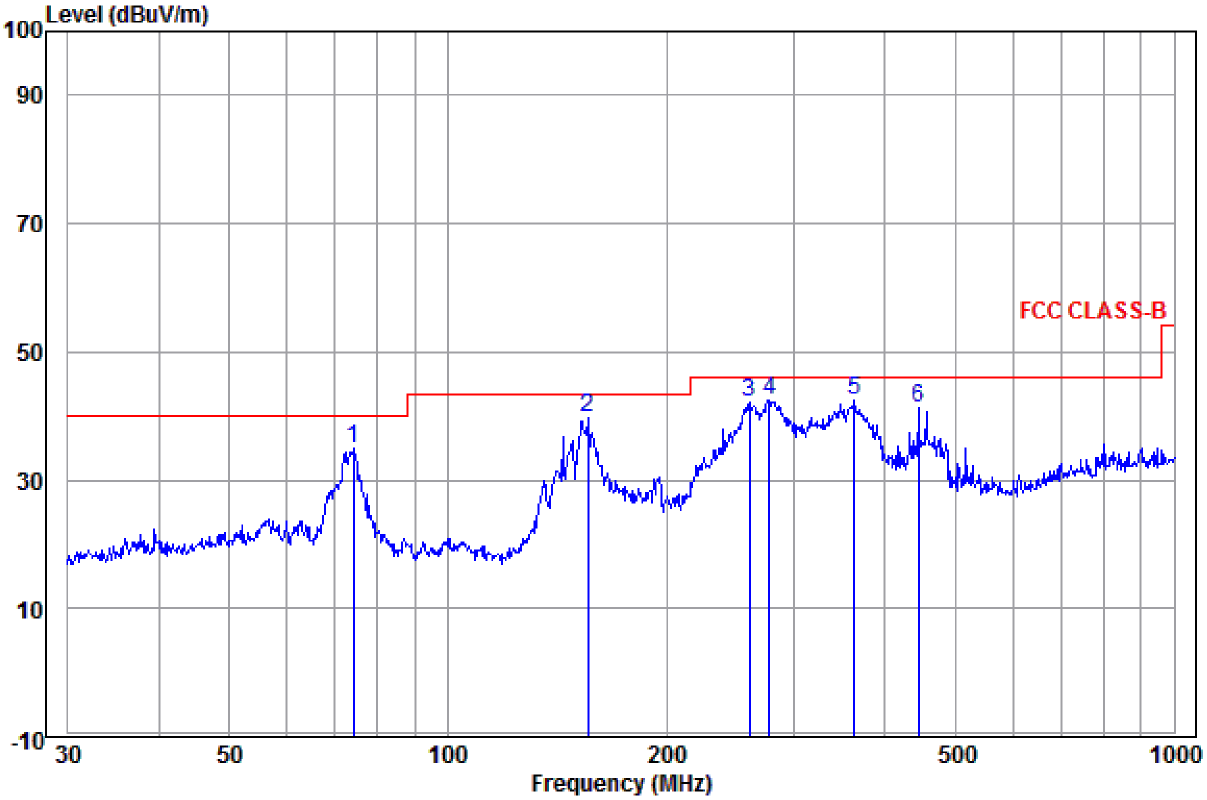
Test Mode: Normal operation

Test Results: Pass

Test data:

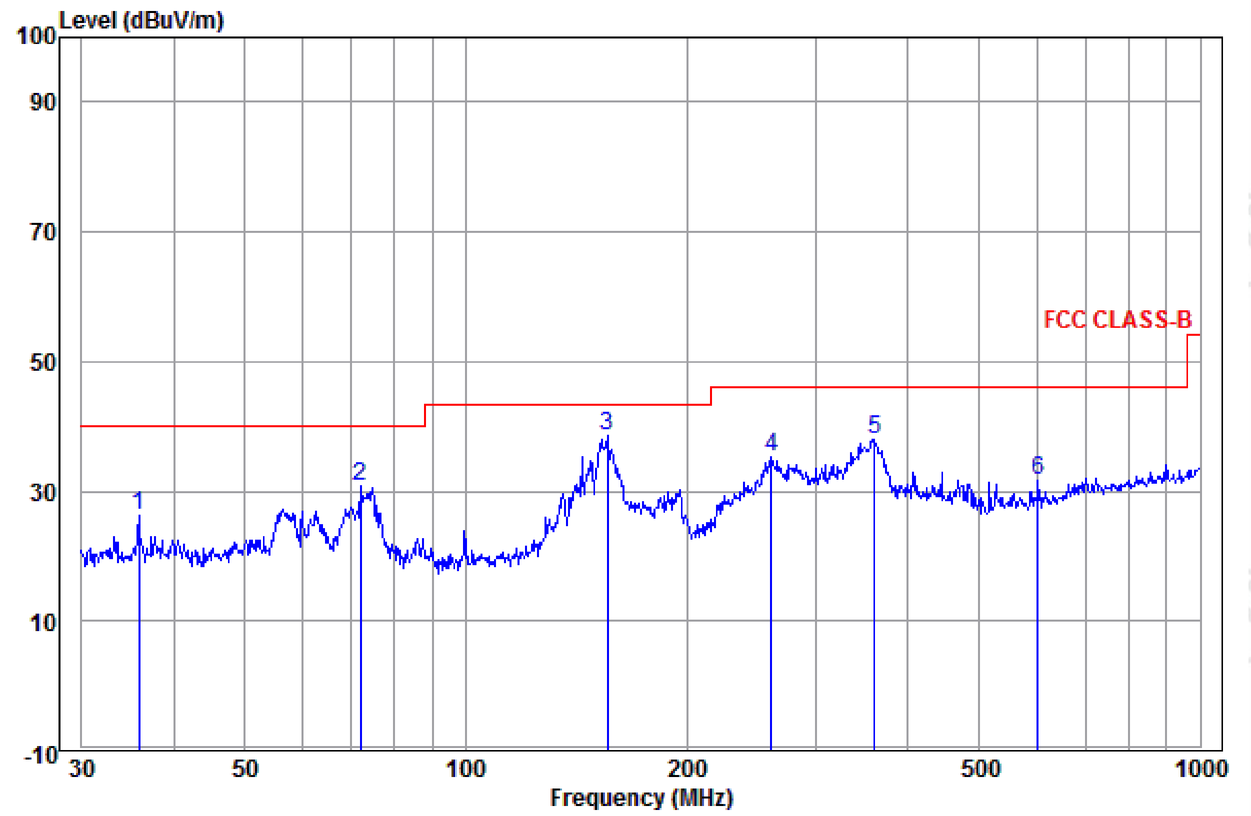
Below 1GHz

Horizontal



		Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1		74.135	9.63	1.50	23.87	35.00	40.00	-5.00	Horizontal	
2		155.910	9.96	1.66	28.08	39.70	43.50	-3.80	Horizontal	
3		260.144	12.64	2.36	27.05	42.05	46.00	-3.95	Horizontal	
4		277.094	13.02	2.37	27.17	42.56	46.00	-3.44	Horizontal	
5	pp	362.985	15.21	2.73	24.64	42.58	46.00	-3.42	Horizontal	
6		444.851	17.02	2.97	21.19	41.18	46.00	-4.82	Horizontal	

Vertical



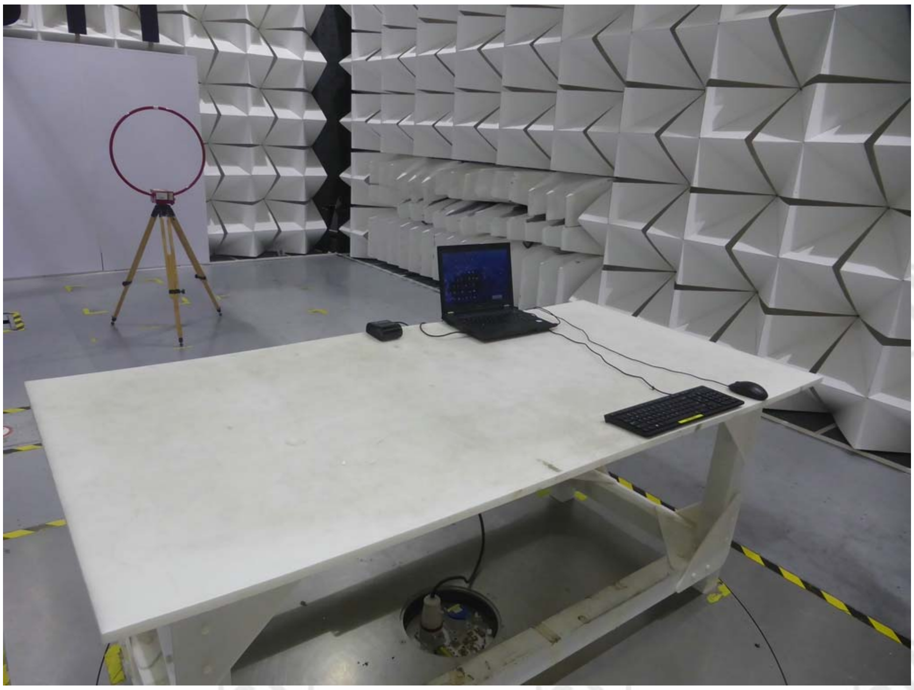
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	35.875	13.56	0.78	11.83	26.17	40.00	-13.83	Vertical	
2	71.832	10.05	1.47	19.24	30.76	40.00	-9.24	Vertical	
3 pp	155.910	9.96	1.66	26.96	38.58	43.50	-4.92	Vertical	
4	261.058	12.66	2.36	20.23	35.25	46.00	-10.75	Vertical	
5	360.448	15.13	2.73	20.05	37.91	46.00	-8.09	Vertical	
6	601.427	18.82	3.51	9.41	31.74	46.00	-14.26	Vertical	

Remark:

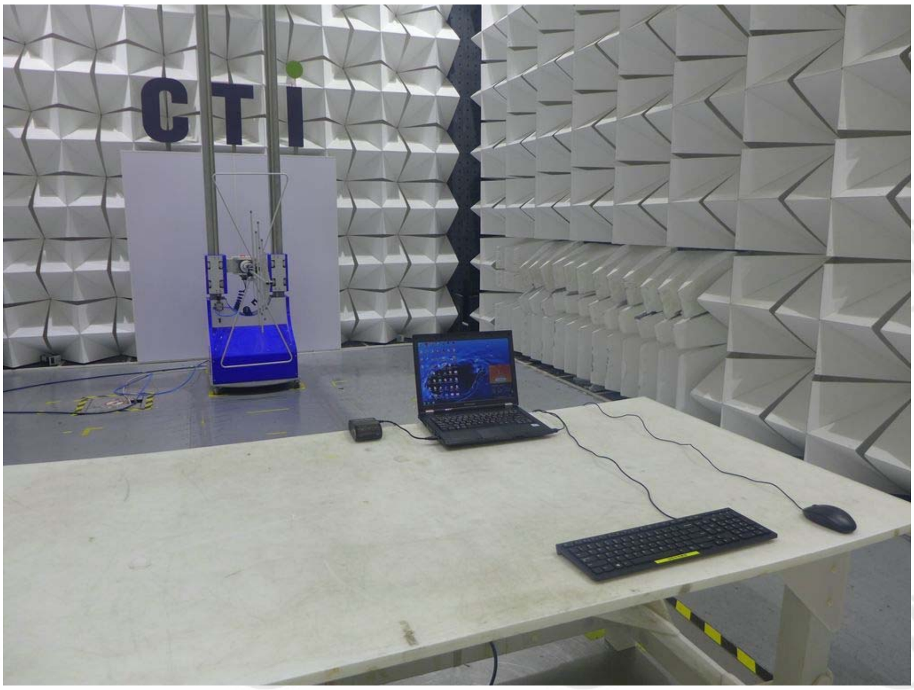
1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
   Final Test Level =Receiver Reading - Correct Factor
   Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor
2) Scan from 9kHz to 1GHz, the disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3) The highest frequency of the internal sources of the EUT is 80 MHz, so the measurement shall only be made up to 1 GHz.

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

Test Model No.: RPP02N-BU



Radiated emission Test Setup-1(Below 30MHz)



Radiated emission Test Setup-2 (30MHz-1GHz)

Conducted Emissions

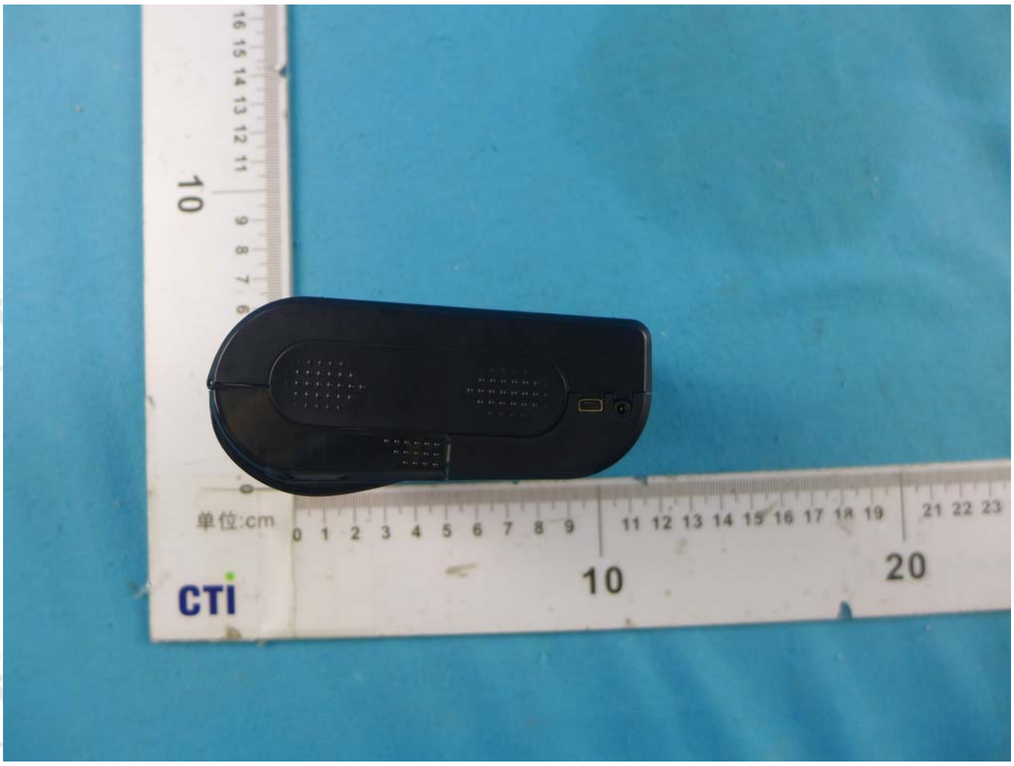
APPENDIX 2 PHOTOGRAPHS OF EUT

Test mode No.: RPP02N-BU

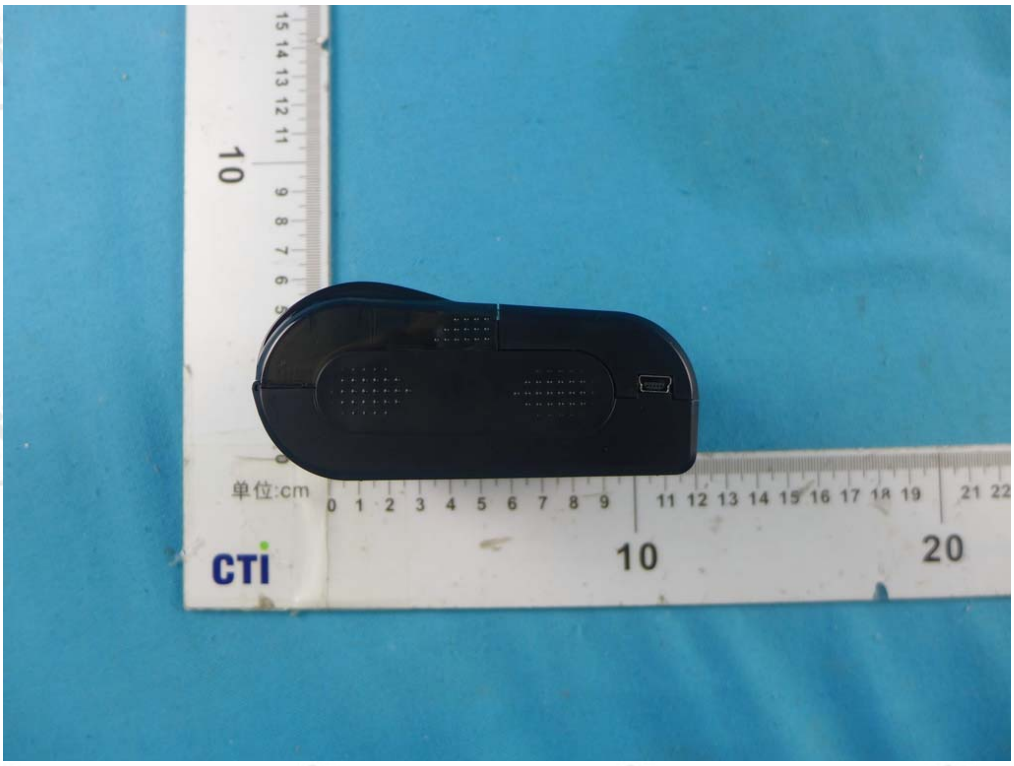
View of Product-1

View of Product-2

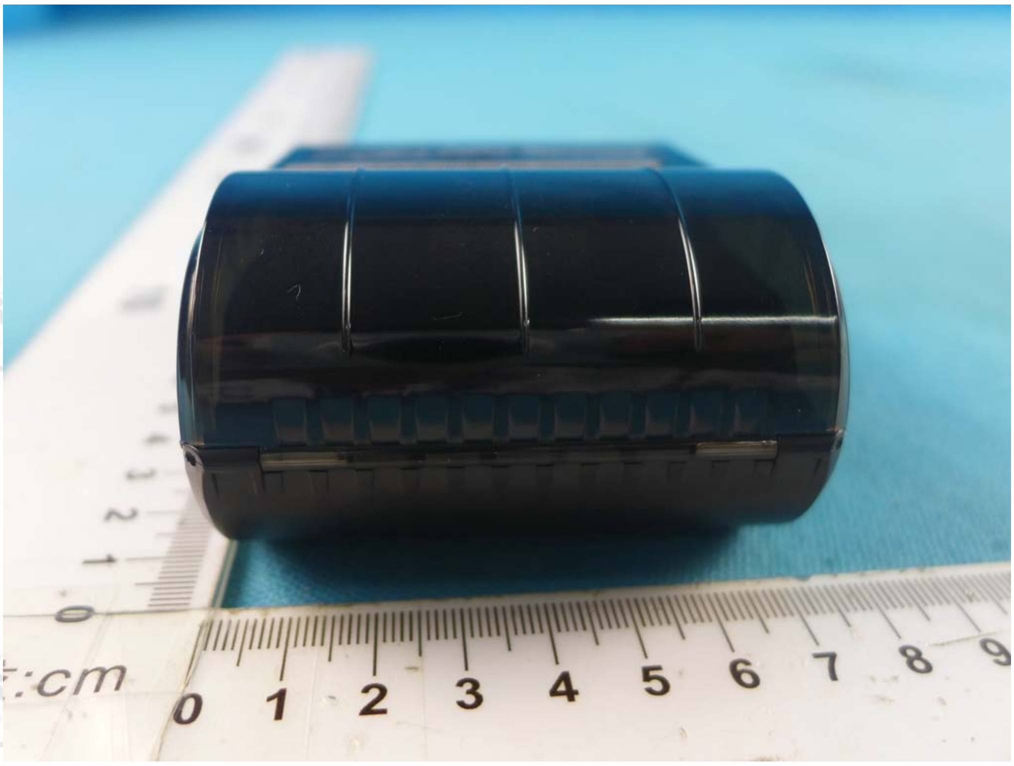
View of Product-3



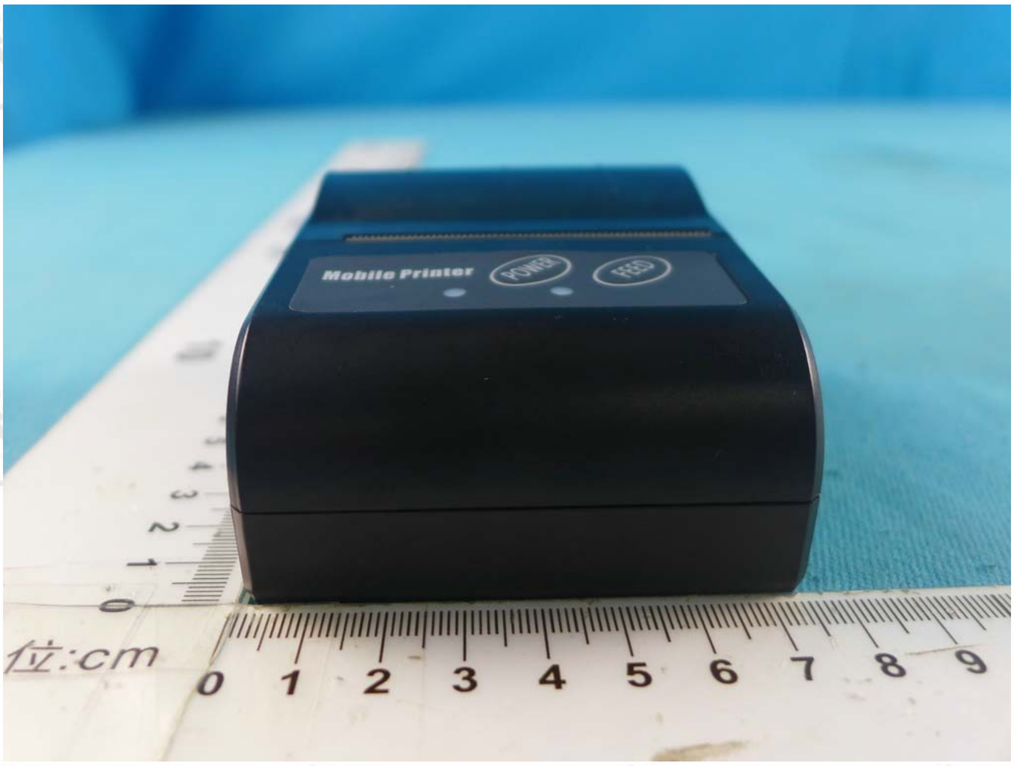
View of Product-4



View of Product-5



View of Product-6

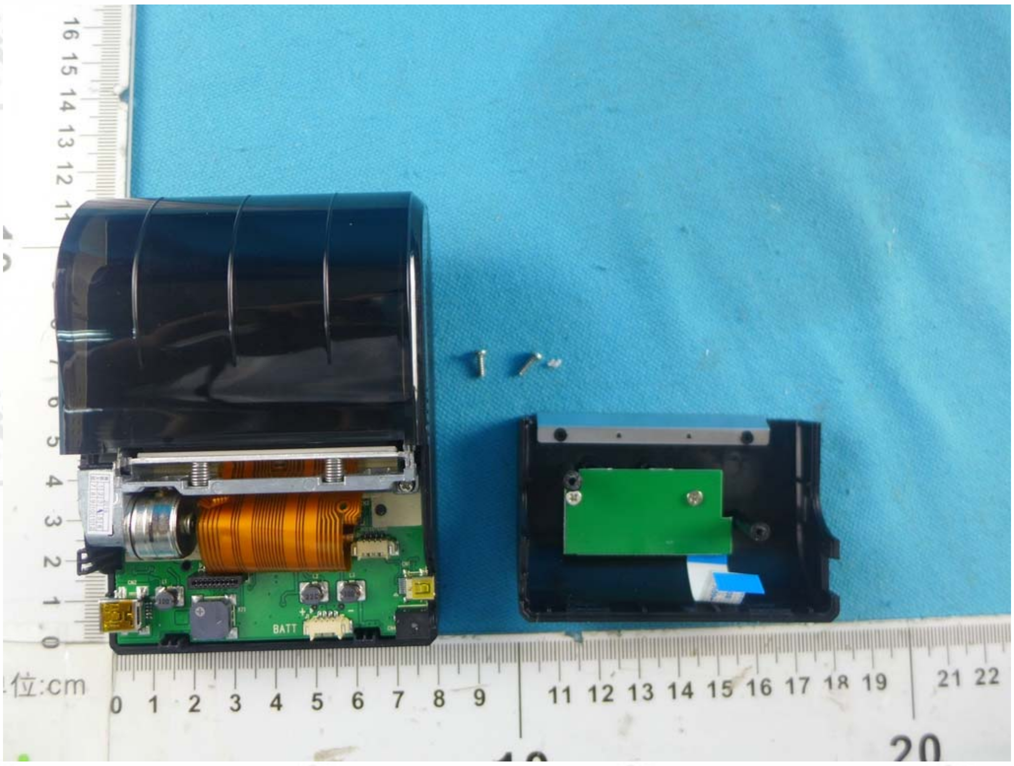


View of Product-7

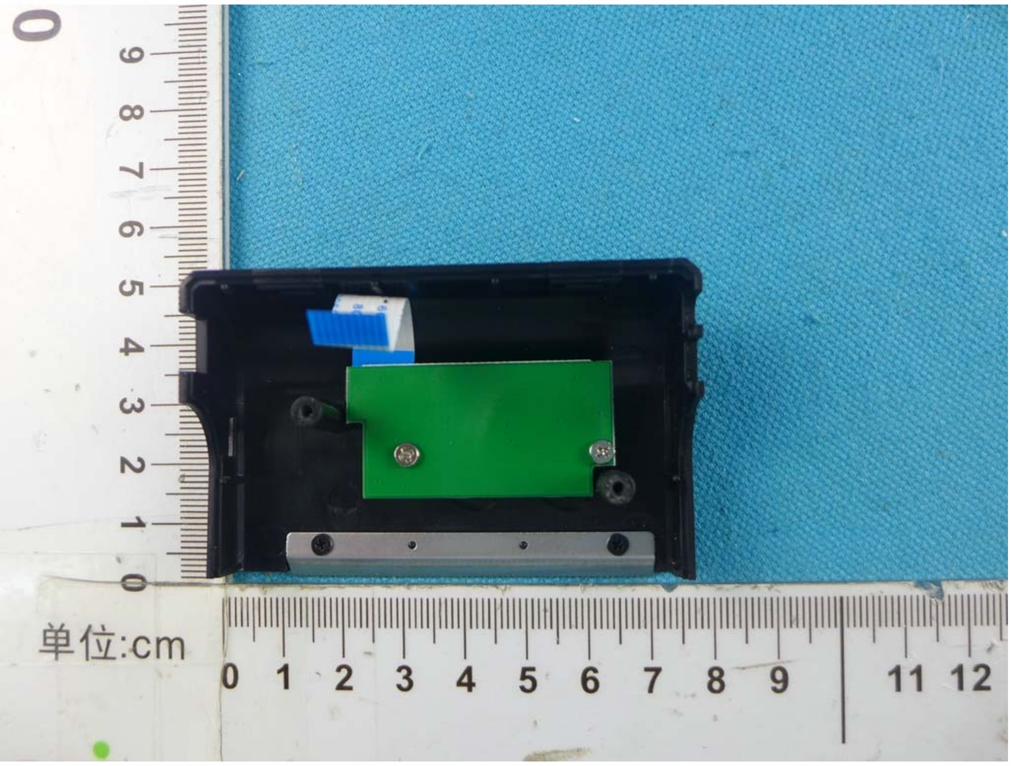
View of Product-8

View of Product-9

View of Product-10

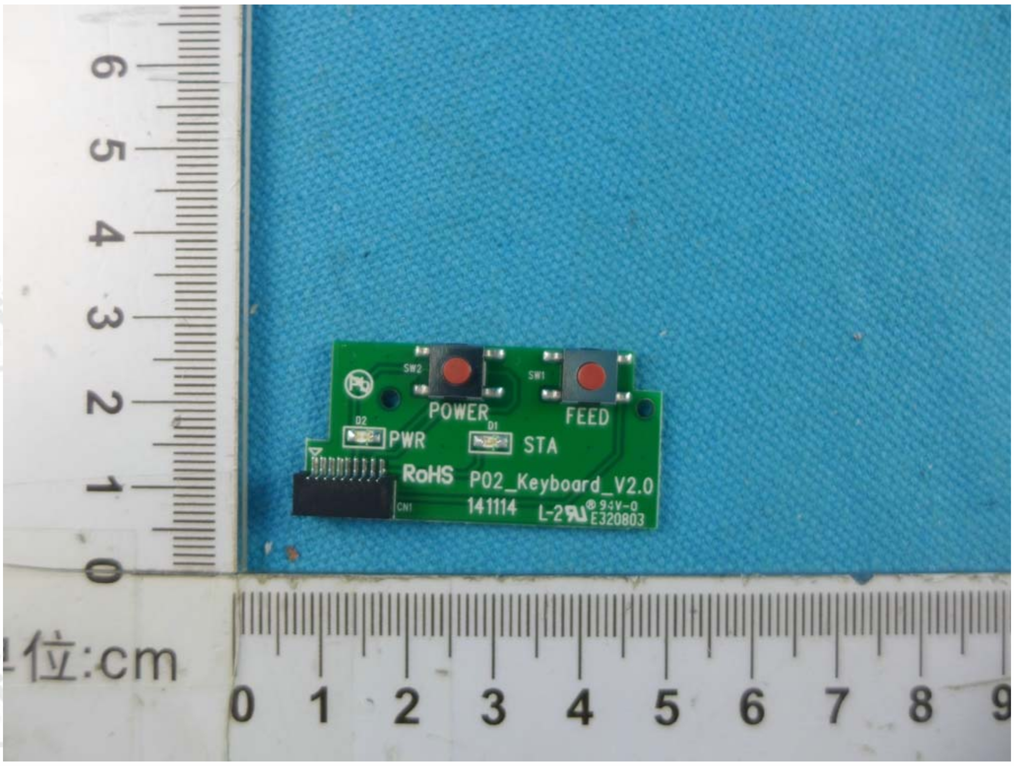


View of Product-11

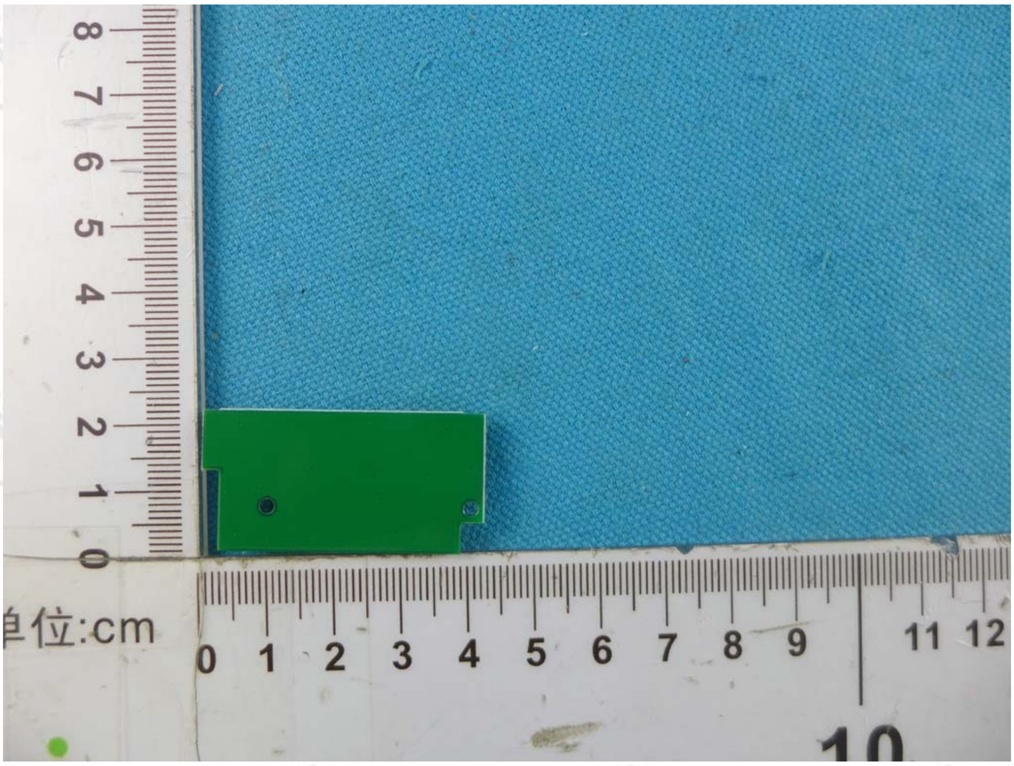


View of Product-12

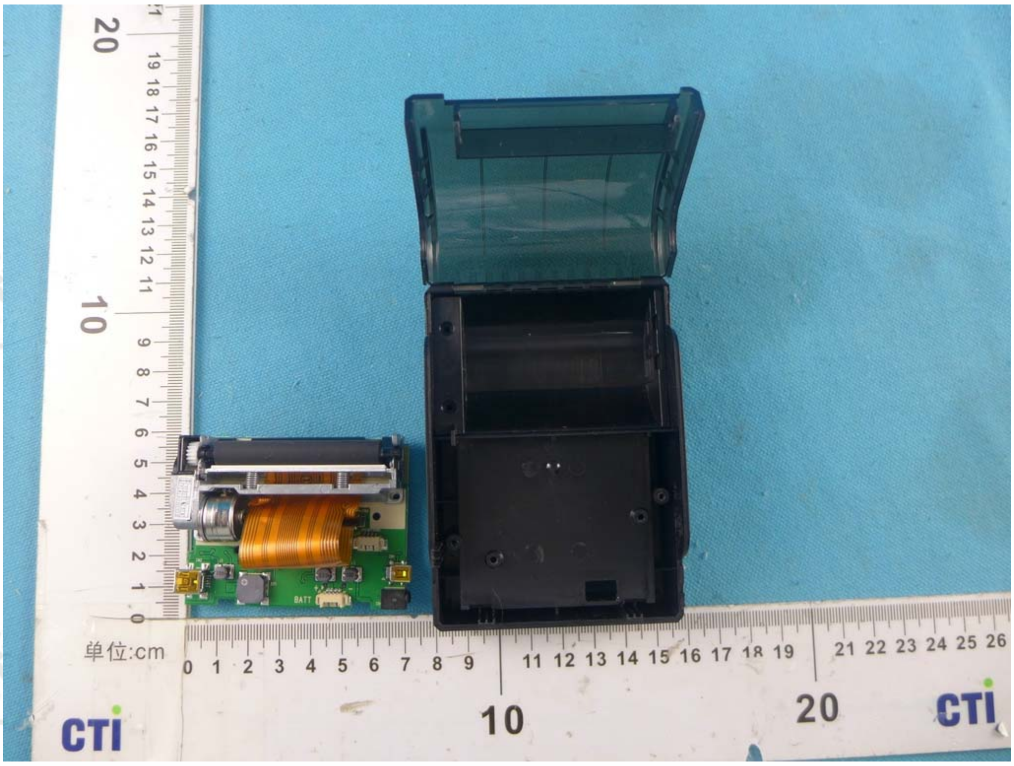
View of Product-13



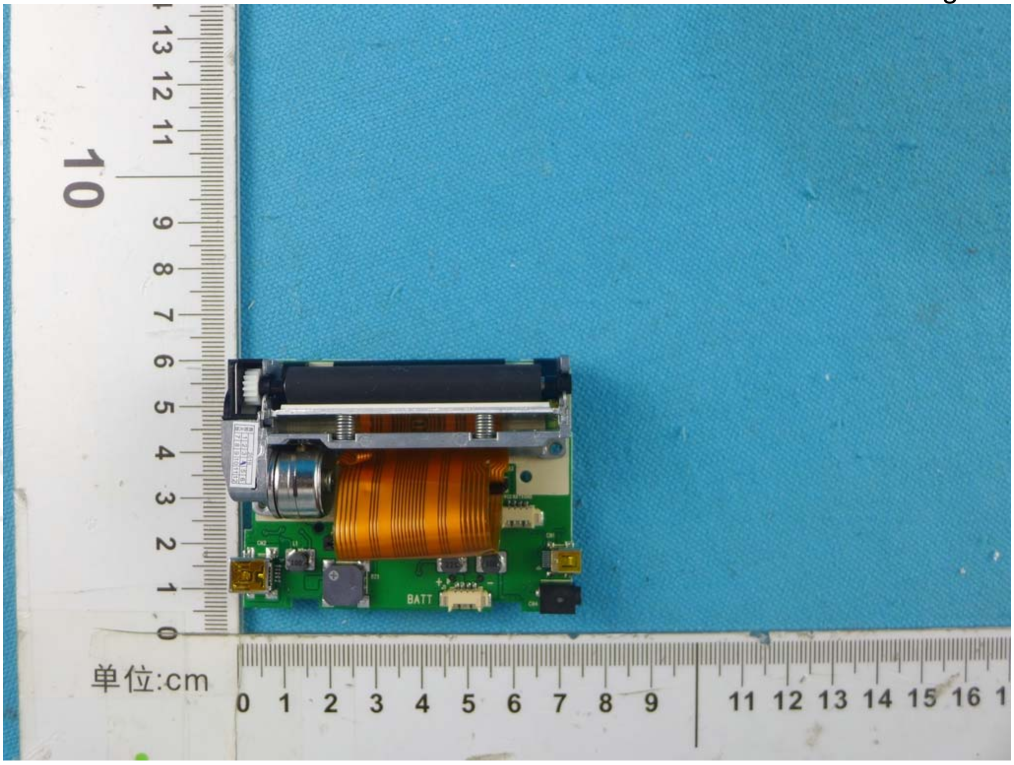
View of Product-14



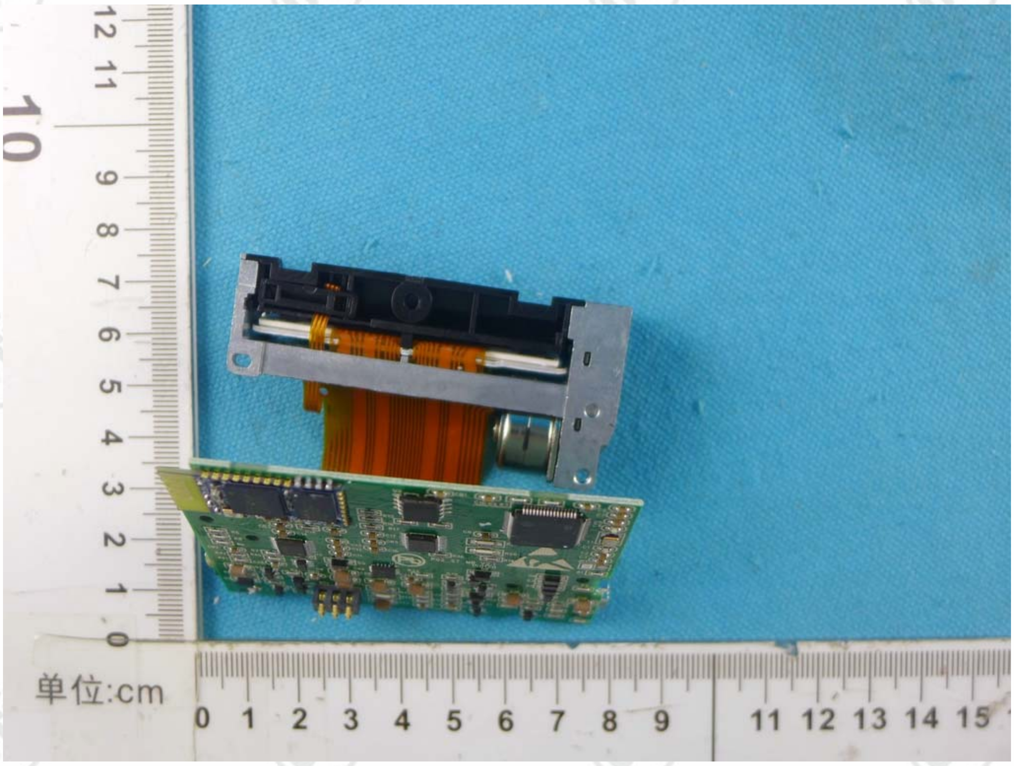
View of Product-15



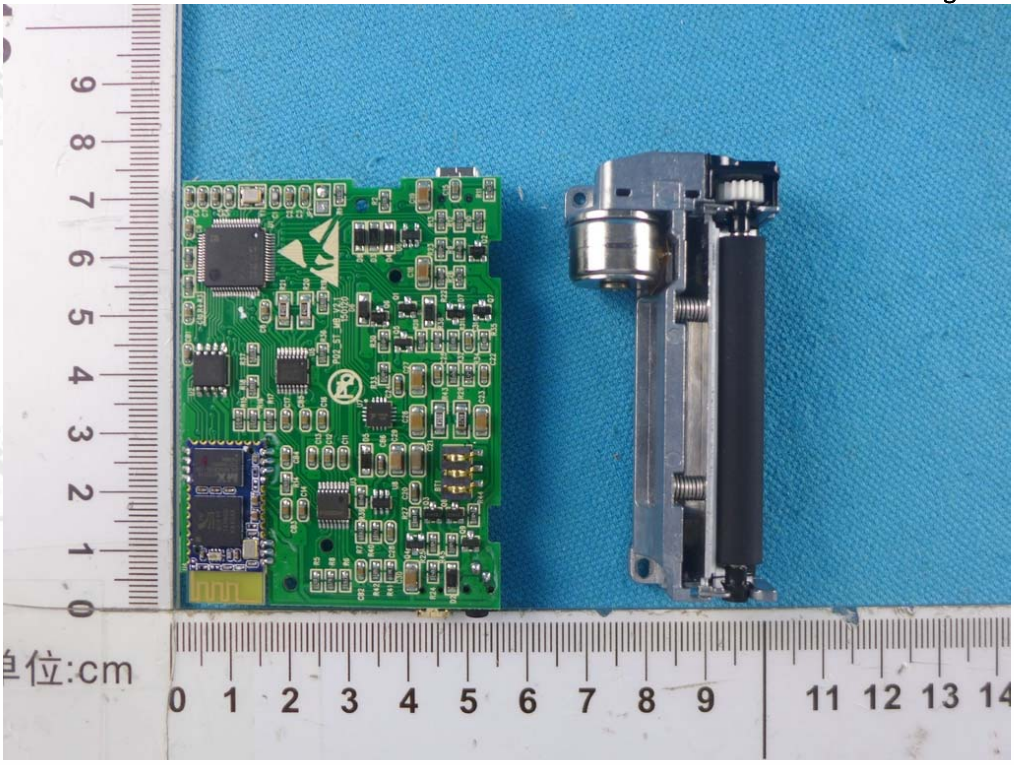
View of Product-16



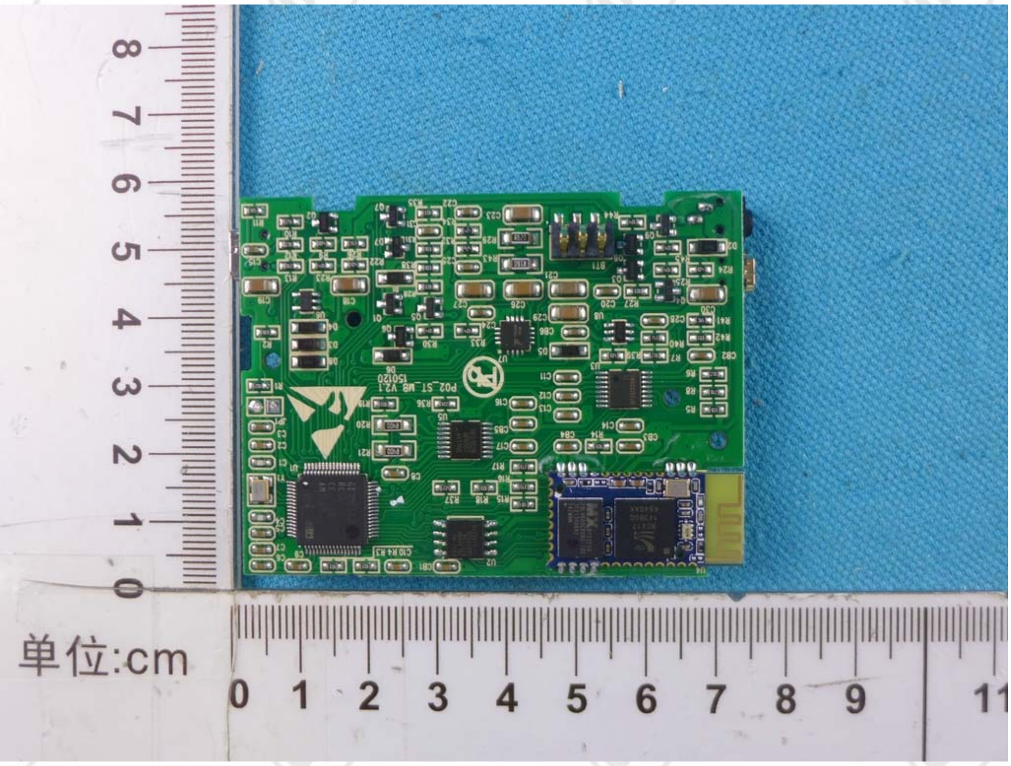
View of Product-17



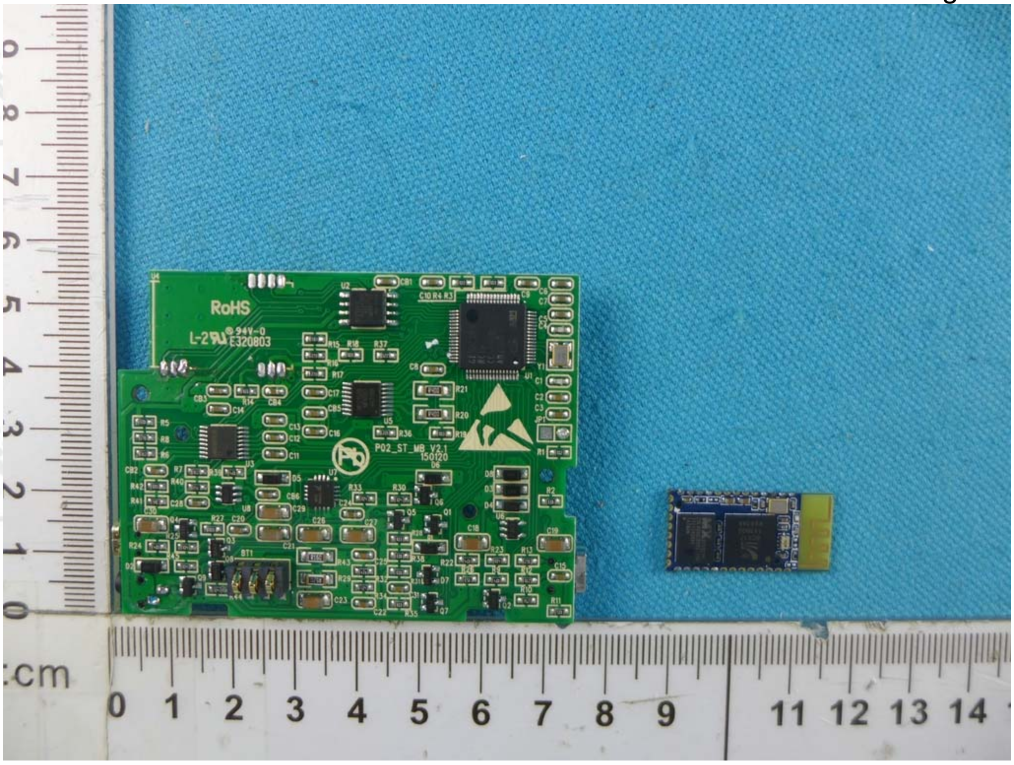
View of Product-18



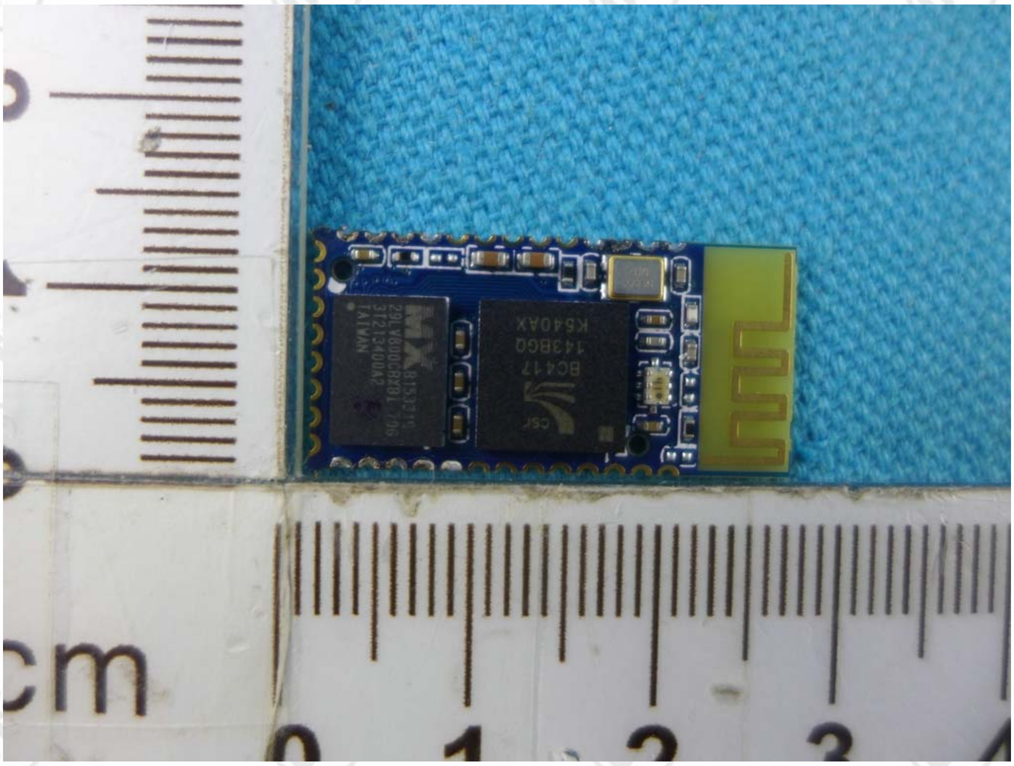
View of Product-19



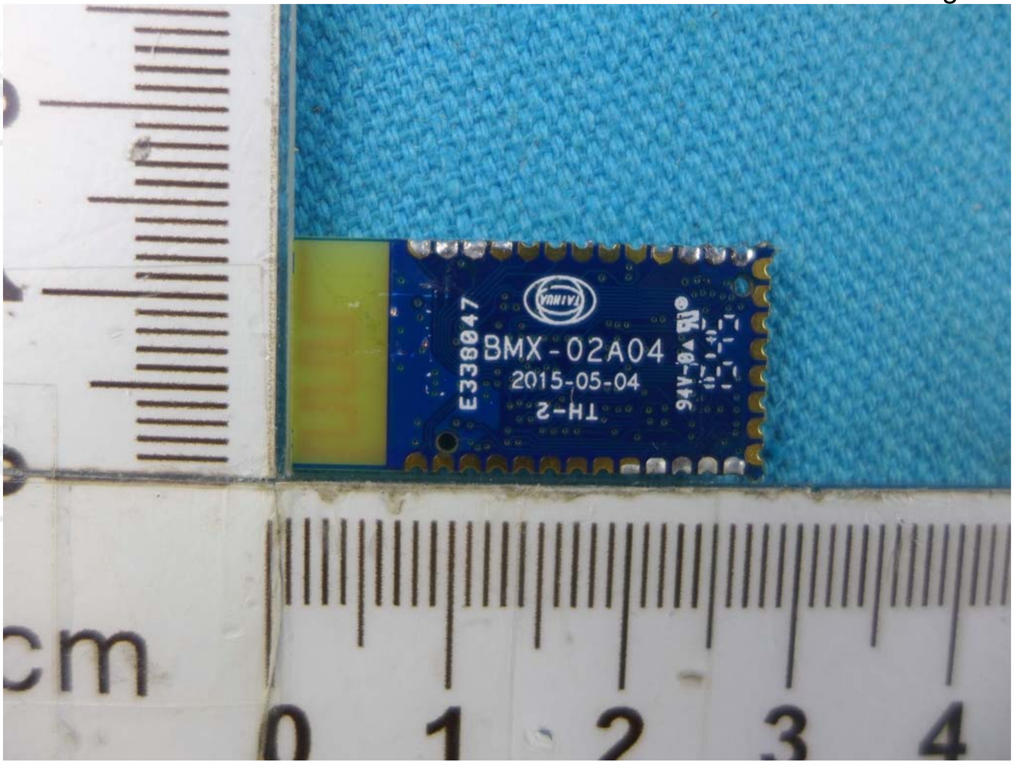
View of Product-20



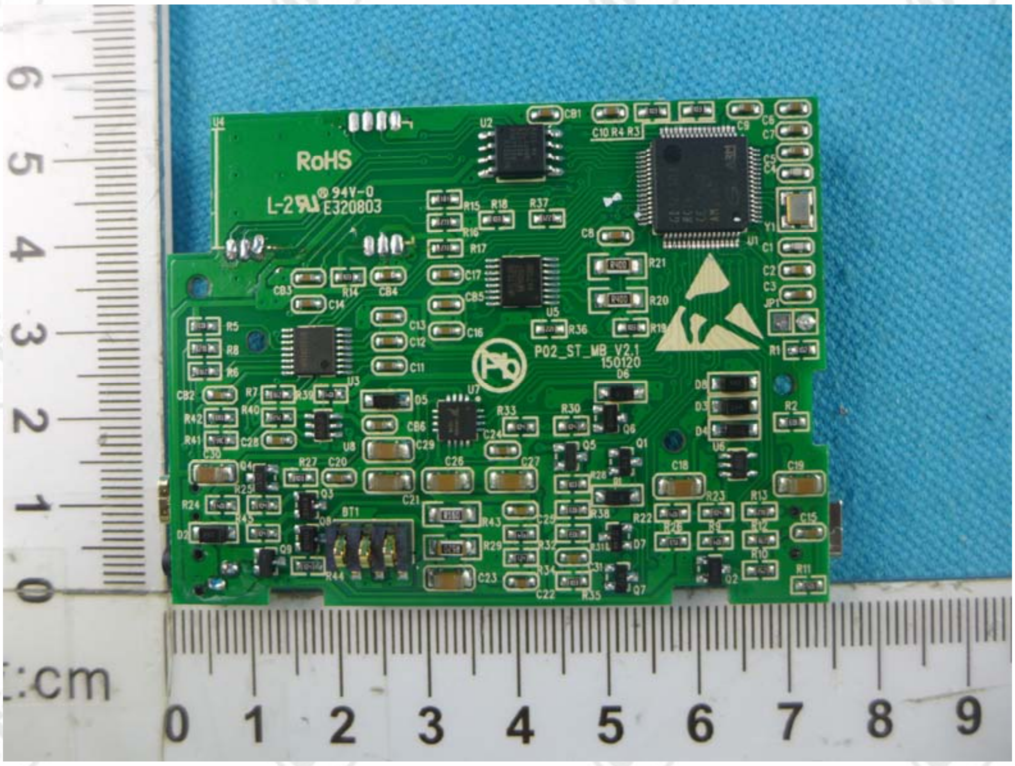
View of Product-21



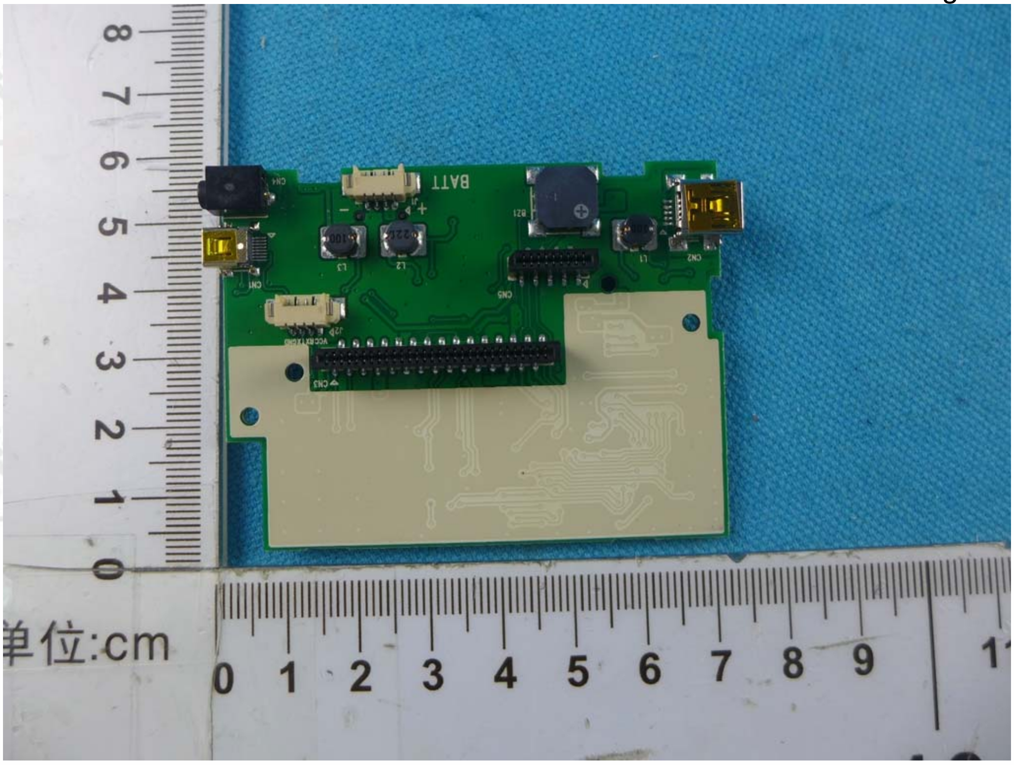
View of Product-22



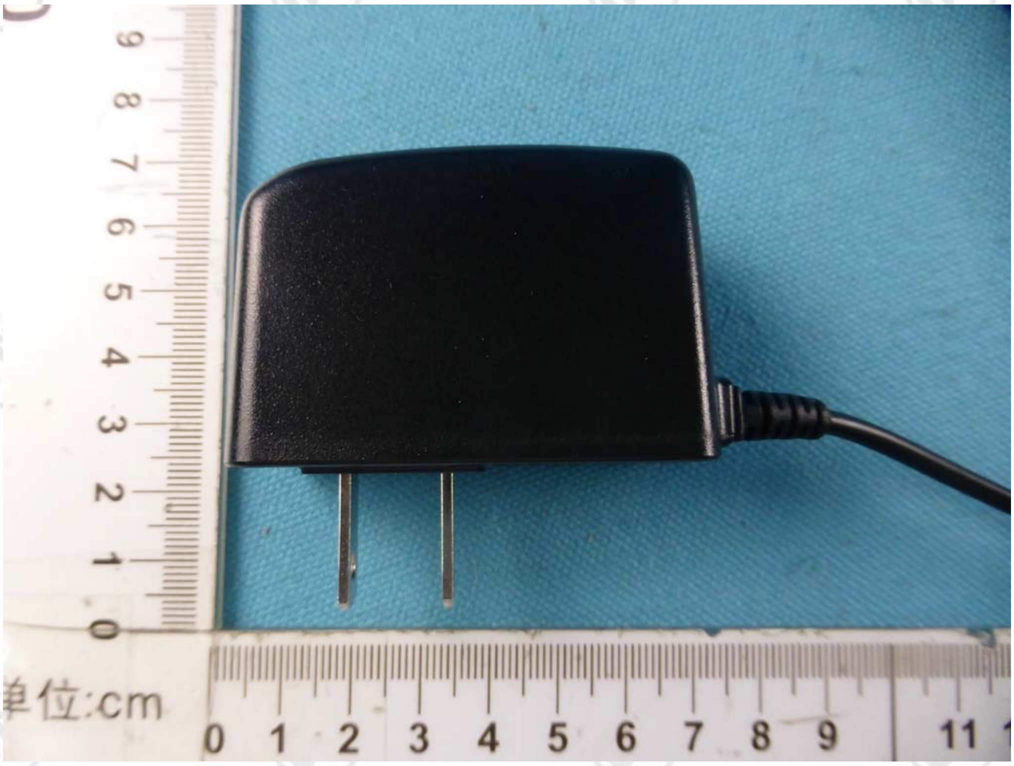
View of Product-23



View of Product-24



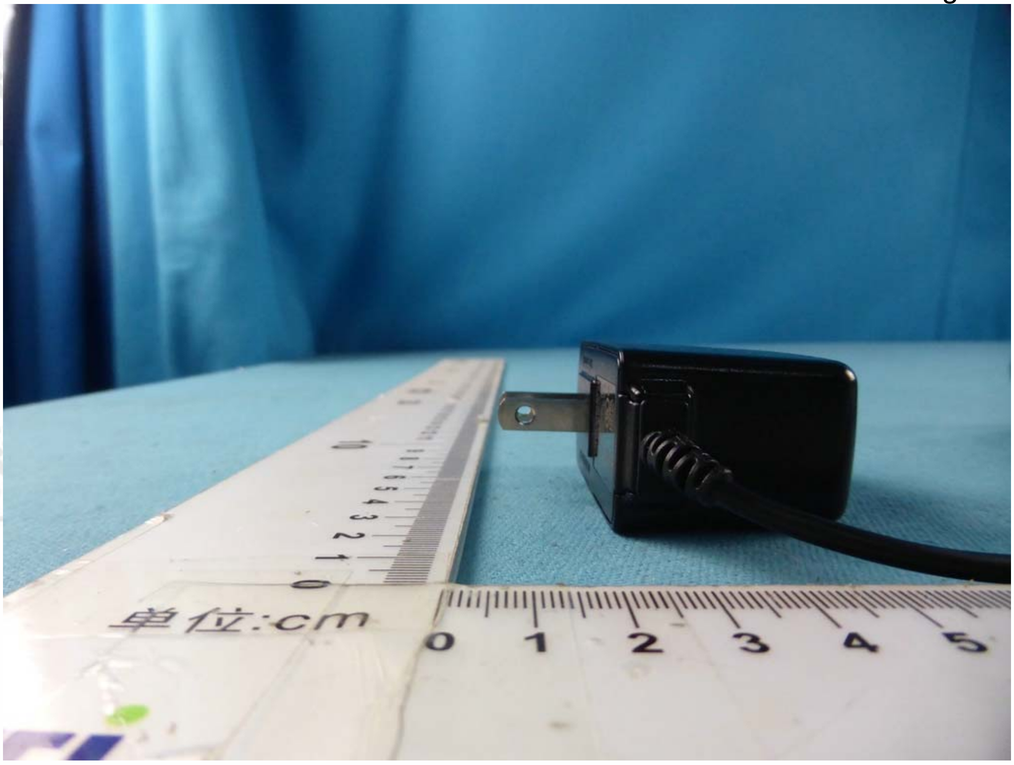
View of Product-25



View of Product-26

View of Product-27

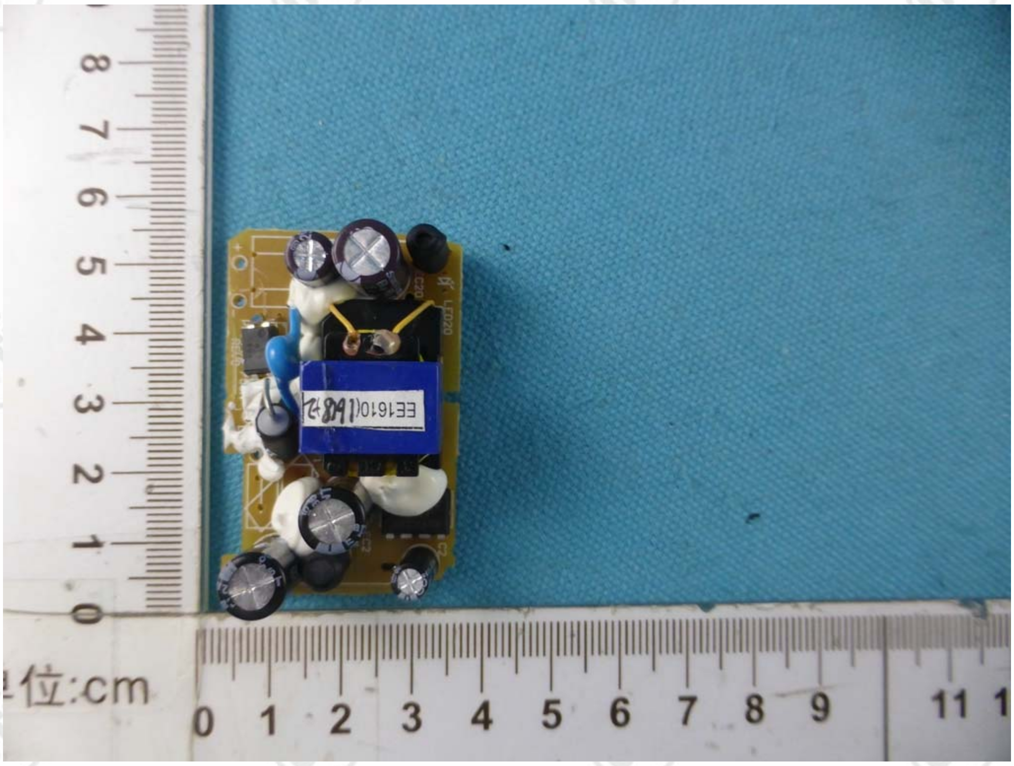
View of Product-28



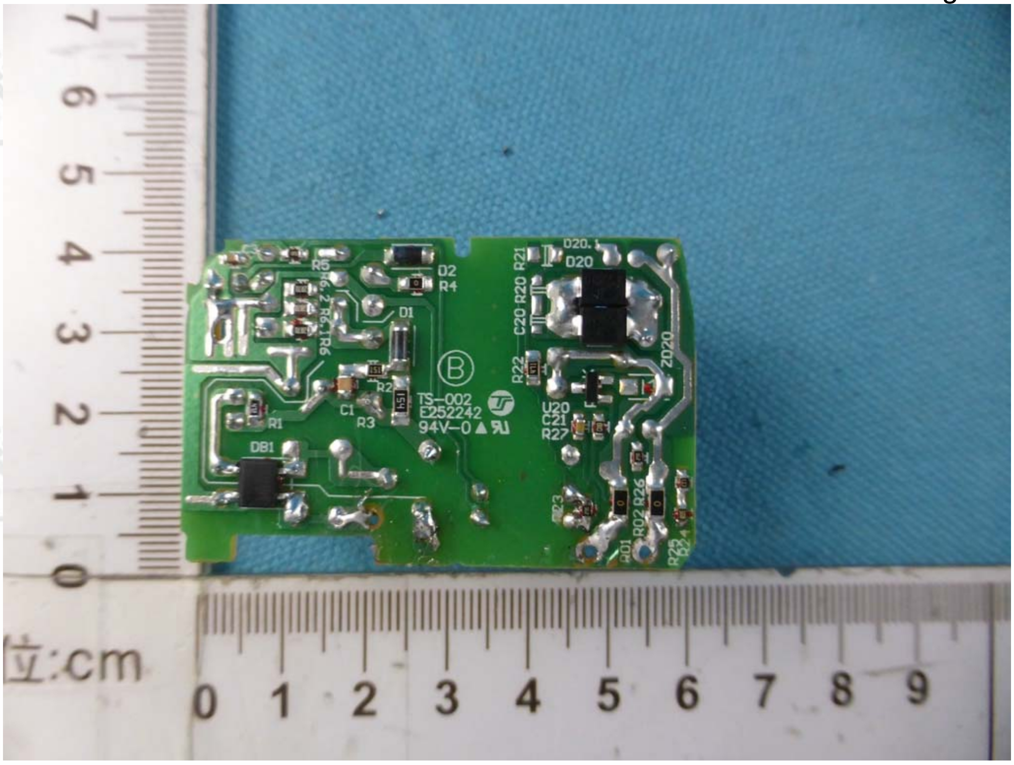
View of Product-29

View of Product-30

View of Product-31



View of Product-32



View of Product-33

*** End of Report ***