ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C REQUIREMENT

OF

Docking Bluetooth Stereo FM Clock Radio with Apple Watch Charging

Model No.: iPLWBT5

Trademark: iHome

FCC ID: EMOIPLWBT5

Report No.: ED160729002E2

Issue Date: August 18, 2016

Prepared for

SDI TECHNOLOGIES INC.
1299, Main Street, Rahway, NJ 07065, U.S.A.

Prepared by

EMTEK(DONGGUAN) CO., LTD.

No.281, Guantai Road, Nancheng District,
Dongguan, Guangdong, China
TEL: 86-769-22807078
FAX: 86-769-22807079

VERIFICATION OF COMPLIANCE

Applicant:	SDI Technologies Inc. 1299, Main Street, Rahway, NJ 07065, U.S.A.
Manufacturer:	SDI Technologies Inc. 1299, Main Street, Rahway, NJ 07065, U.S.A.
Factory:	Zhong Shan City LI TAI Electronic Industrial Co., Ltd. No.3 Industrial District, Wuguishan Town, Zhongshan, Guangdong, China.
Product Description:	Docking Bluetooth Stereo FM Clock Radio with Apple Watch Charging
Trade Mark:	iHome
Model Number:	iPLWBT5

We hereby certify that:

The above equipment was tested by EMTEK(Dongguan) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10-2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247(2016).

Date of Test : August 01, 2016 to August 14, 2016

Prepared by : Yolanda Liang/Editor

Reviewer : Alan He/Supervisor

Approved & Authorized Signer : Sam Lv/Manager

Table of Contents

1 General Information

1.1 Product Description

Characteristics	Description
Product Name	Docking Bluetooth Stereo FM Clock Radio with Apple Watch Charging
Model number	iPLWBT5
Power Supply	Adapter model No.: GQ30-090300-AU Input:100-240V~50/60Hz 1.0A Max Output: DC9V⎓3A
Operating Frequency	326.5 KHz
Modulation Technique	Induction
Antenna Type	Induction coil
Radio Software Version	A1443
Radio Hardware version	A1443

1.2 Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended for FCC ID: EMOIPLWBT5 filing to comply with the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description		
EMC Lab.	:	Registered on FCC, June 18, 2014 The Certificate Number is 247565. Registered on Industry Canada, February 19, 2014 The Certificate Number is 9444A
Name of Firm	:	EMTEK(DONGGUAN) CO., LTD.
Site Location	:	No.281, Guantai Road, Nancheng District, Dongguan, Guangdong, China

2 System Test Configuration

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the fixed in a particular direction according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013.

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

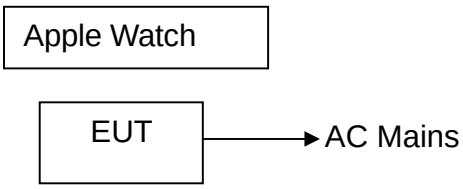


Table 2-1 Equipment Used in Tested System

Item	Equipment	Trade Mark	Model No.	FCC ID	Series No.	Note
1.	Docking Bluetooth Stereo FM Clock Radio with Apple Watch Charging	iHome	iPLWBT5	EMOIPLWBT5	N/A	***EUT***
2.	Adapter	N/A	GQ30-090300-AU Input:100-240V~50/60Hz 1.0A Max Output: DC9V⎓3A	N/A	N/A	***Support Equipment***
3.	Apple Watch	Apple	A1443	N/A	N/A	***Support Equipment***

Note:
(1) Unless otherwise denoted as EUT in『Remark』column, device(s) used in tested system is a support equipment.

3 Summary of Test Results

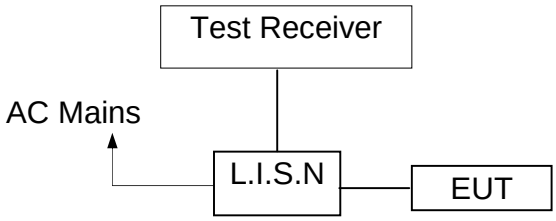
FCC Rules	Description Of Test	Result
§15.207	AC Power Conducted Emission	Compliant
§15.209	Radiated Emission	Compliant
§2.1049	20dB Bandwidth	Compliant
§15.203	Antenna Requirement	Compliant

4 Conducted Emissions Test

4.1 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

4.2 Test SET-UP (Block Diagram of Configuration)



4.3 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**Last Cal.**	**Due date**
Test Receiver	Rohde & Schwarz	ESCS30	100018	06/24/2016	06/23/2017
L.I.S.N	Rohde & Schwarz	ENV216	100017	06/24/2016	06/23/2017
RF Switching Unit	CDS	RSU-M2	38401	06/24/2016	06/23/2017
Coaxial Cable	CDS	79254	46107086	06/24/2016	06/23/2017

4.4 Conducted Emission Limit

Conducted Emission

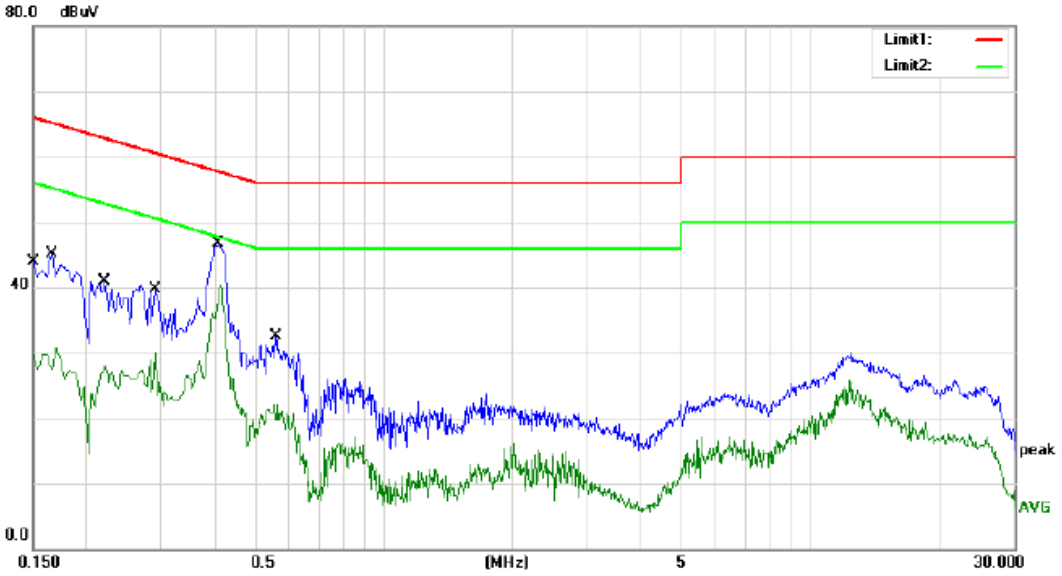
Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.5 Measurement Result

We pretested the mid load for EUT. The test data see follow the table.
Please refer to the following data.



Site site #1 Phase: L1 Temperature: 24

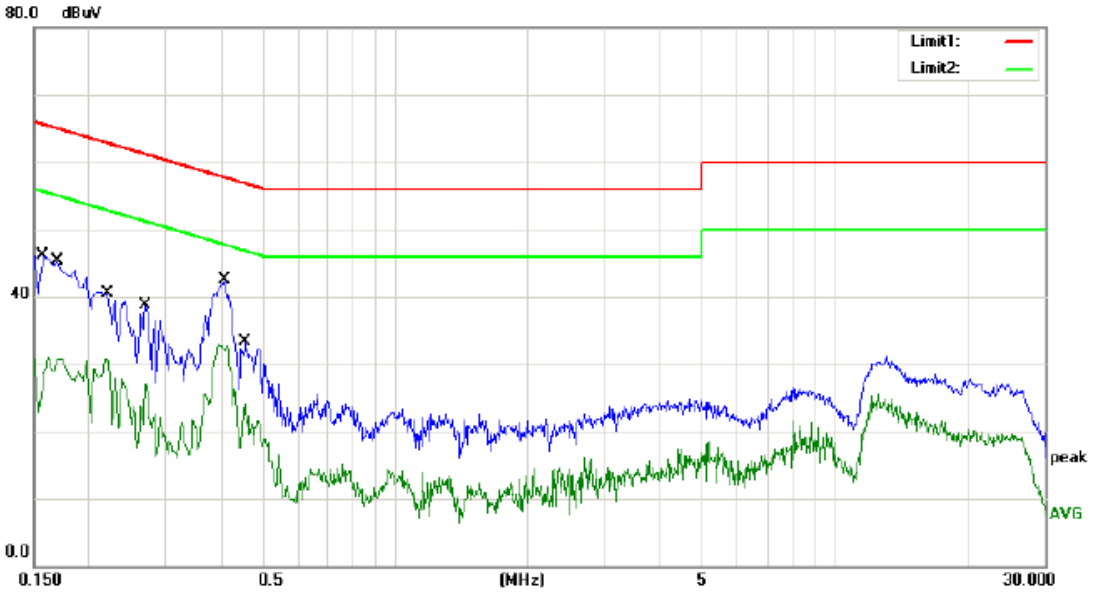
Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 55 %

Mode: Wireless Charging

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	31.85	10.01	41.86	66.00	-24.14	QP	
2		0.1500	19.60	10.01	29.61	56.00	-26.39	AVG	
3		0.1660	33.15	10.01	43.16	65.16	-22.00	QP	
4		0.1660	19.63	10.01	29.64	55.16	-25.52	AVG	
5		0.2220	28.80	10.03	38.83	62.74	-23.91	QP	
6		0.2220	17.82	10.03	27.85	52.74	-24.89	AVG	
7		0.2900	27.59	10.05	37.64	60.52	-22.88	QP	
8		0.2900	20.09	10.05	30.14	50.52	-20.38	AVG	
9		0.4140	34.04	10.08	44.12	57.57	-13.45	QP	
10	*	0.4140	30.16	10.08	40.24	47.57	-7.33	AVG	
11		0.5580	20.40	10.10	30.50	56.00	-25.50	QP	
12		0.5580	12.01	10.10	22.11	46.00	-23.89	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: YE



Site site #1 Phase: N Temperature: 24

Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 55 %

Mode: Wireless Charging

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1581	36.00	10.01	46.01	65.56	-19.55	QP	
2		0.1581	20.90	10.01	30.91	55.56	-24.65	AVG	
3		0.1700	35.20	10.02	45.22	64.96	-19.74	QP	
4		0.1700	20.61	10.02	30.63	54.96	-24.33	AVG	
5		0.2220	30.38	10.03	40.41	62.74	-22.33	QP	
6		0.2220	20.69	10.03	30.72	52.74	-22.02	AVG	
7		0.2700	28.57	10.04	38.61	61.12	-22.51	QP	
8		0.2700	17.03	10.04	27.07	51.12	-24.05	AVG	
9		0.4100	32.48	10.08	42.56	57.65	-15.09	QP	
10	*	0.4100	22.75	10.08	32.83	47.65	-14.82	AVG	
11		0.4540	23.29	10.09	33.38	56.80	-23.42	QP	
12		0.4540	13.98	10.09	24.07	46.80	-22.73	AVG	

4.6 Conducted Measurement Photo

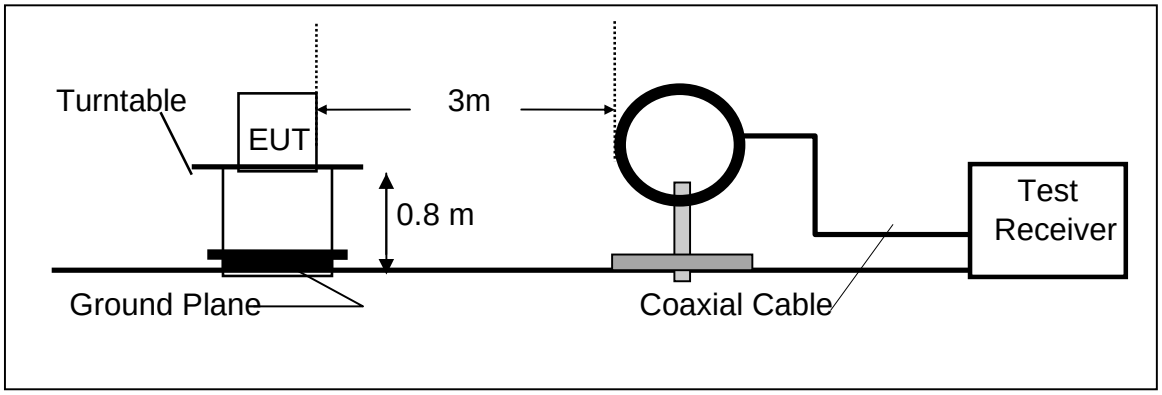
5 Radiated Emission Test

5.1 Measurement Procedure

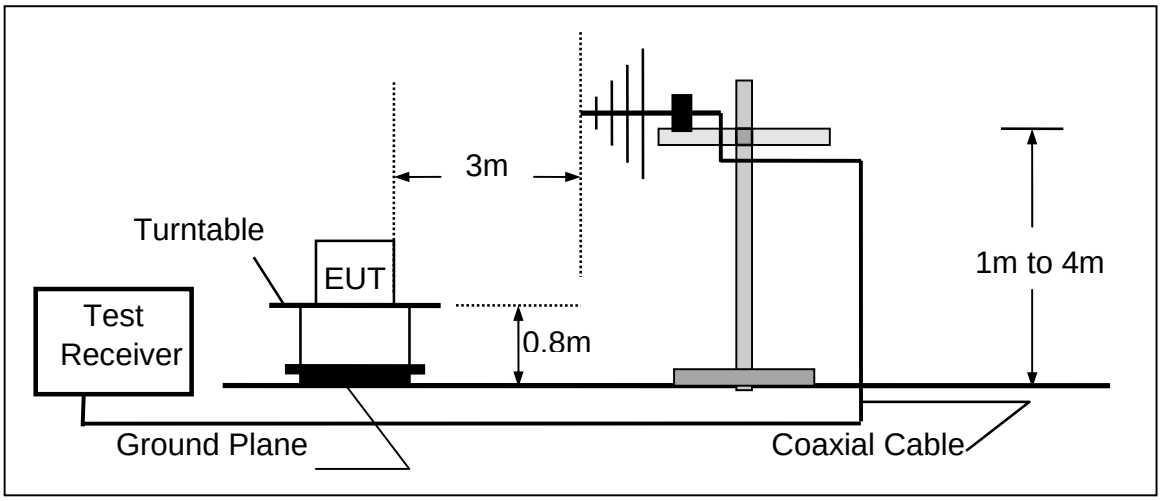
1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)

(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



5.3 Measurement Equipment Used

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due date
Test Receiver	Rohde & Schwarz	ESCI	1166.5950.03	06/24/2016	06/23/2017
Signal Analyzer	Rohde & Schwarz	FSV30	103040	06/24/2016	06/23/2017
Loop Antenna	Schwarzbeck	FMZB 1519	012	06/24/2016	06/23/2017
Bilog Antenna	Schwarzbeck	VULB9163	000141	06/24/2016	06/23/2017
Power Amplifier	CDS	RSU-M352	818	06/24/2016	06/23/2017
Power Amplifier	HP	8447F	OPT H64	06/24/2016	06/23/2017
Color Monitor	SUNSPO	SP-140A	N/A	06/24/2016	06/23/2017
Single Line Filter	JIANLI	XL-3	N/A	06/24/2016	06/23/2017
Single Phase Power Line Filter	JIANLI	DL-2X100B	N/A	06/24/2016	06/23/2017
3 Phase Power Line Filter	JIANLI	DL-4X100B	N/A	06/24/2016	06/23/2017
DC Power Filter	JIANLI	DL-2X50B	N/A	06/24/2016	06/23/2017
Cable	Schwarzbeck	PLF-100	549489	06/24/2016	06/23/2017
Cable	Rosenberger	CIL02	A0783566	06/24/2016	06/23/2017
Cable	Rosenberger	RG 233/U	525178	06/24/2016	06/23/2017

5.4 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

FCC Part 15.209				
Frequency (MHz)	Field Strength Limitation		Field Strength Limitation Frequency tion at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 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
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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 - 24.0
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])

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

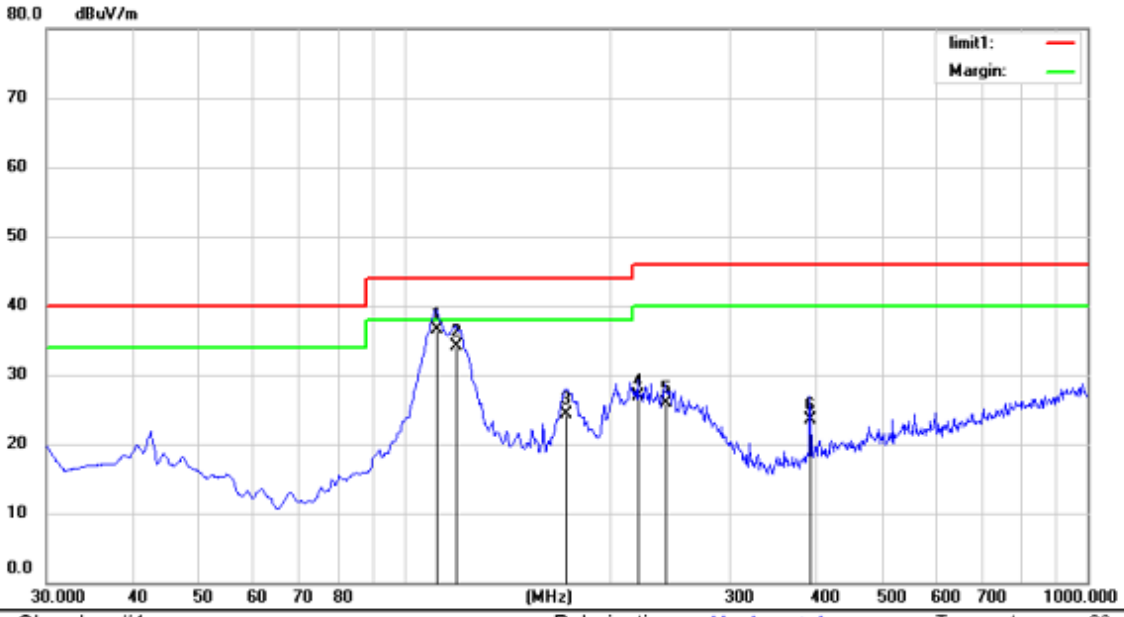
5.5 Measurement Result

We pretested the mid load for EUT. The test data see follow the table. Please refer to the following data.

Operation Mode:	Low frequency	Test Date :	August 01, 2016
Frequency Range:	9KHz~30MHz	Temperature :	20℃
Test Result:	PASS	Humidity :	55 %
Measured Distance:	3m	Test By:	KYO

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)	Note
0.327(F)	H	73.64	105.94	-32.30	PK
0.412	H	49.55	96.18	-46.63	PK
0.688	H	46.37	72.85	-26.48	PK
2.064	H	43.87	69.13	-25.26	PK
2.339	H	44.54	69.08	-24.54	PK
0.327(F)	V	76.32	106.77	-30.45	PK
0.412	V	46.45	96.03	-49.58	PK
0.688	V	43.23	73.11	-29.88	PK
0.963	V	40.64	69.04	-28.40	PK
1.238	V	41.74	68.41	-26.67	PK

Note: (1) All Readings are Peak Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) The average measurement was not performed when the peak measured data under the limit of average detection.
(4) EUT lying on the table position is the worst case result in the report.



Site Chamber #1 Polarization: *Horizontal* Temperature: 26

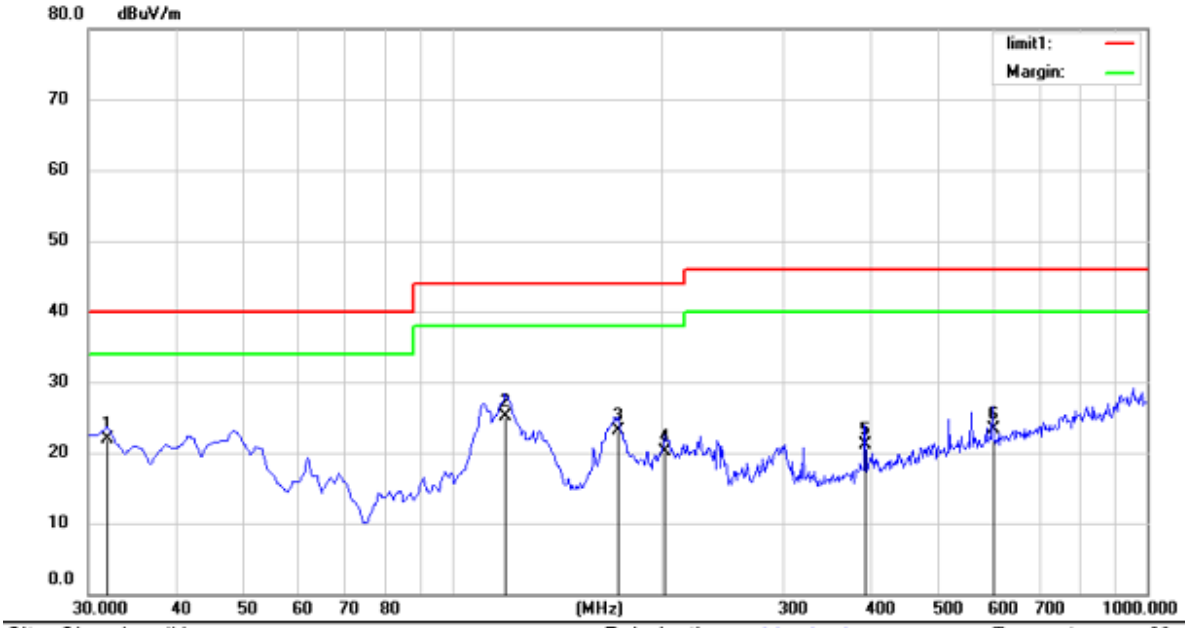
Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %

Mode:Wireless charging

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	111.4800	55.13	-18.57	36.56	44.00	-7.44	QP			
2		119.2400	52.06	-18.04	34.02	44.00	-9.98	QP			
3		172.5900	43.90	-19.61	24.29	44.00	-19.71	QP			
4		220.1200	44.15	-17.19	26.96	46.00	-19.04	QP			
5		241.4600	42.63	-16.72	25.91	46.00	-20.09	QP			
6		392.7800	35.60	-12.14	23.46	46.00	-22.54	QP			

*:Maximum data x:Over limit !:over margin Operator: washington



Site Chamber #1 Polarization: *Vertical* Temperature: 26

Limit: (RE)FCC PART 15 class B 3m Power: AC 120V/60Hz Humidity: 55 %

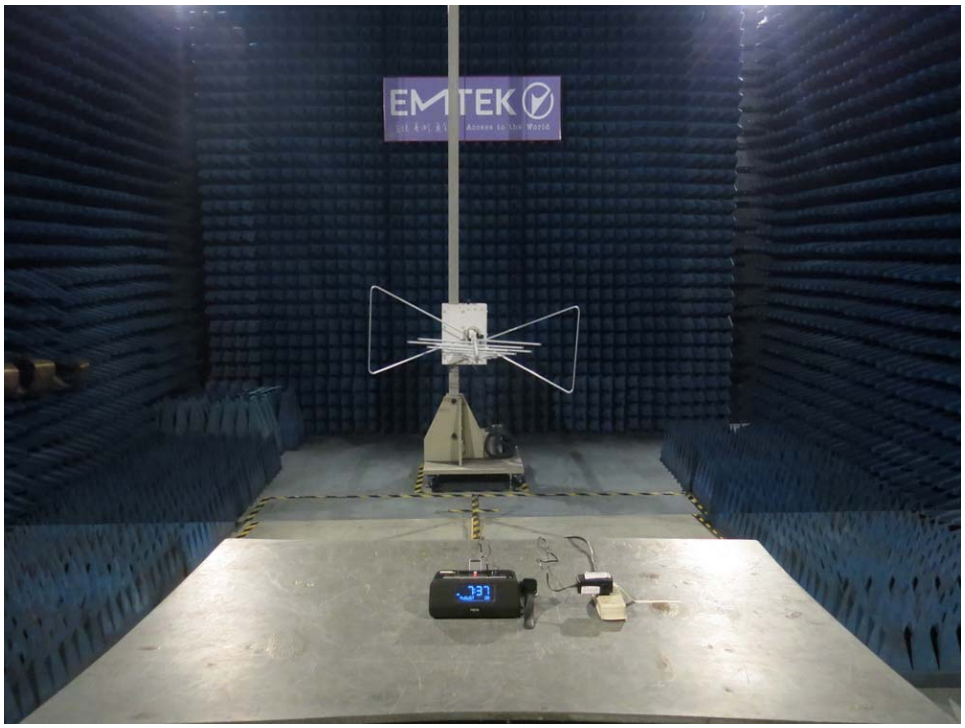
Mode:Wireless charging

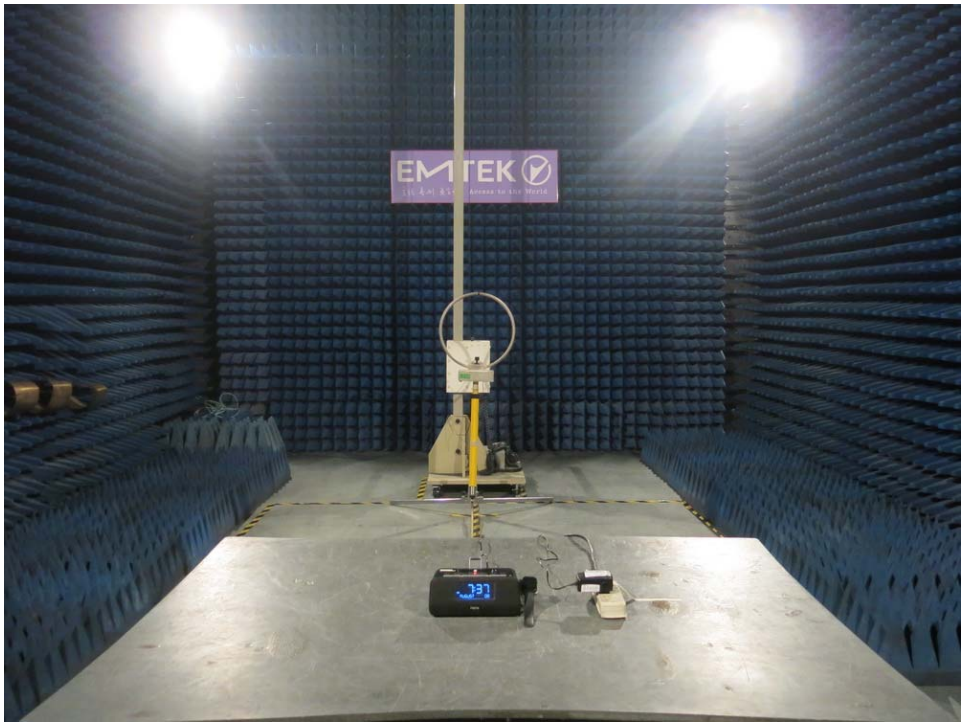
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	31.9400	36.23	-14.41	21.82	40.00	-18.18	QP			
2		119.2400	43.15	-18.04	25.11	44.00	-18.89	QP			
3		173.5600	42.66	-19.65	23.01	44.00	-20.99	QP			
4		202.6600	38.60	-18.58	20.02	44.00	-23.98	QP			
5		392.7800	33.25	-12.14	21.11	46.00	-24.89	QP			
6		600.3600	31.59	-8.21	23.38	46.00	-22.62	QP			

*:Maximum data x:Over limit !:over margin Operator: washington

5.6 Radiated Measurement Photos





6 20db Bandwidth

6.1 20dB Bandwidth Limit

None: for reporting purposed only.

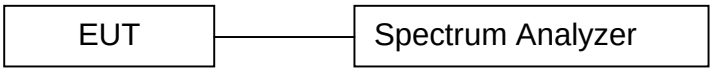
6.2 Test Instruments

Refer a test equipment and calibration data table in this test report.

6.3 Test Procedure

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30Hz RBW and 30Hz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

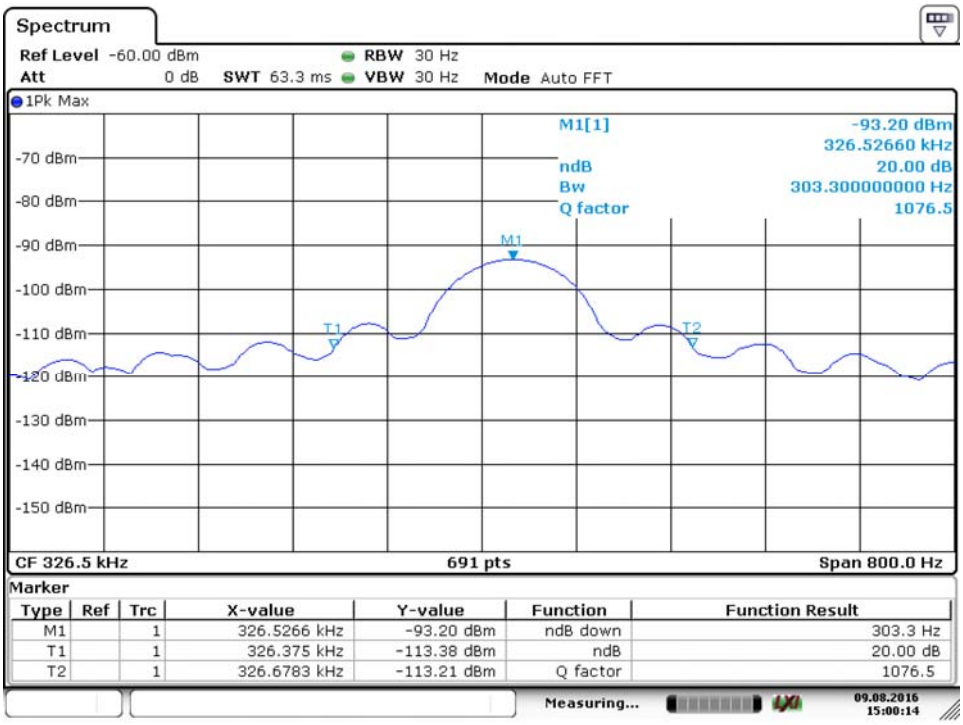
6.4 Test Setup



6.5 Test Result

Frequency (KHz)	20dB Bandwidth (Hz)	Results
326.5	303.3	PASS

20 dB Bandwidth Test plot



7 Antenna Application

7.1 Antenna requirement

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

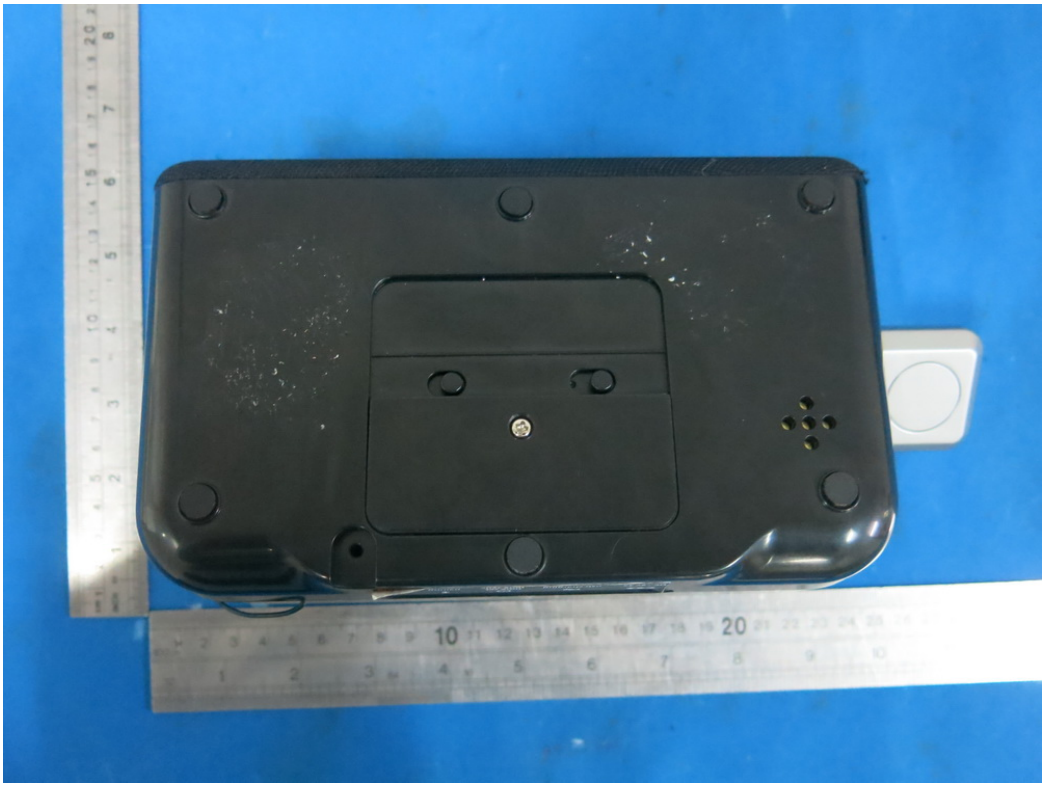
7.2 Result

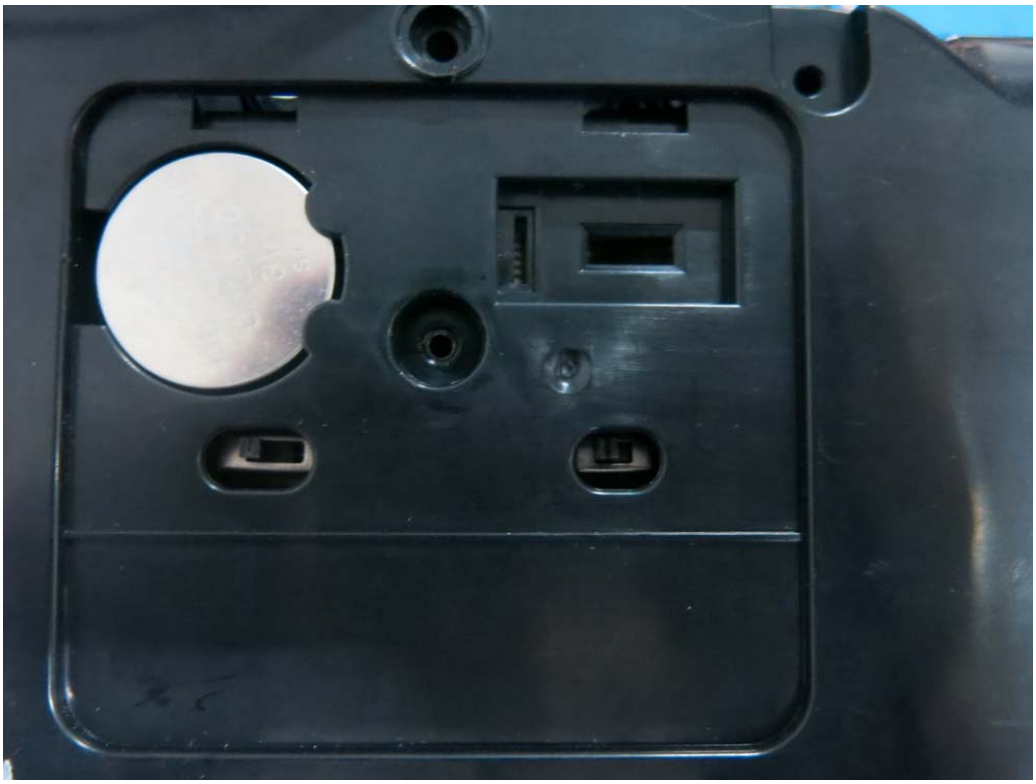
The EUT's antenna, used an Induction coil and specially-designed pin connector connected on PCB, The antenna's gain meets the requirement.

APPENDIX I
(Photos of EUT)

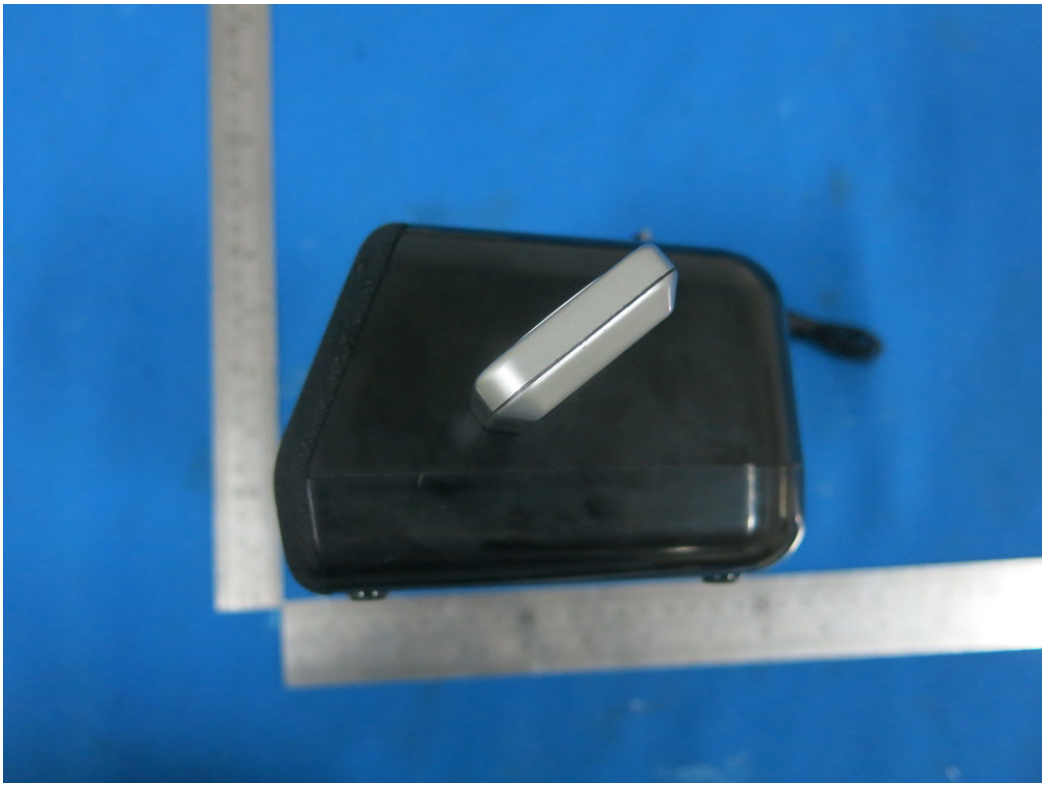

mode
play-pause
sleep
power
talk / end
alarm 1
alarm 2
display


iHome



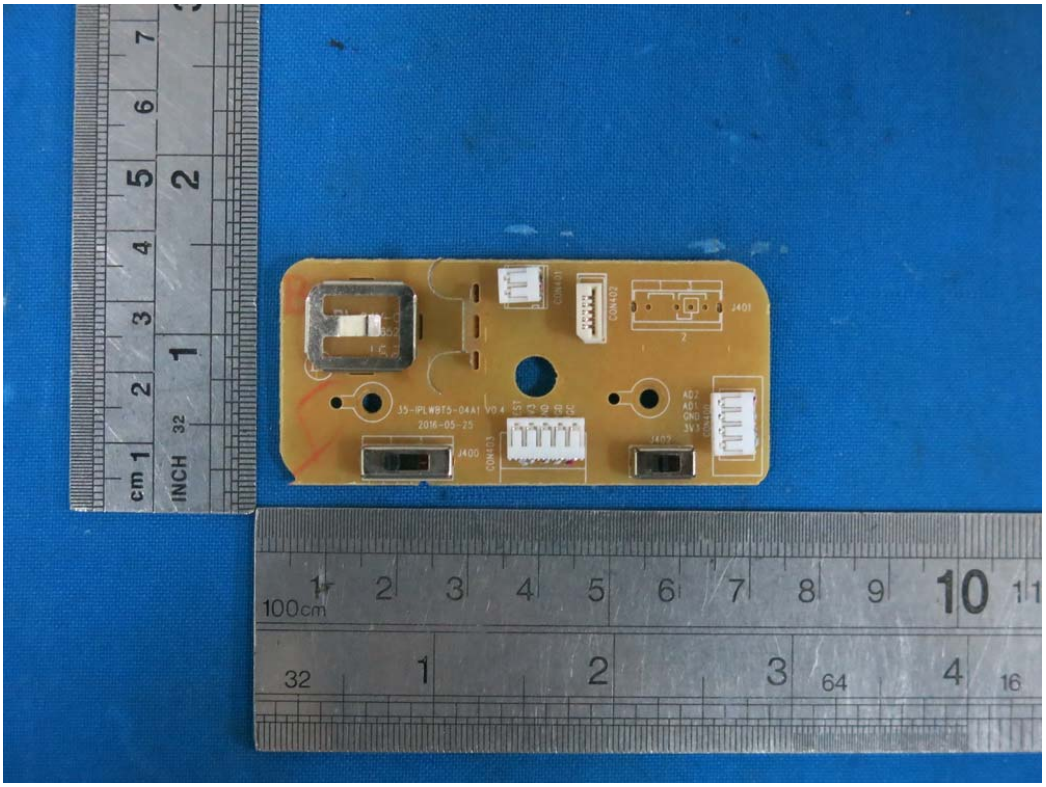


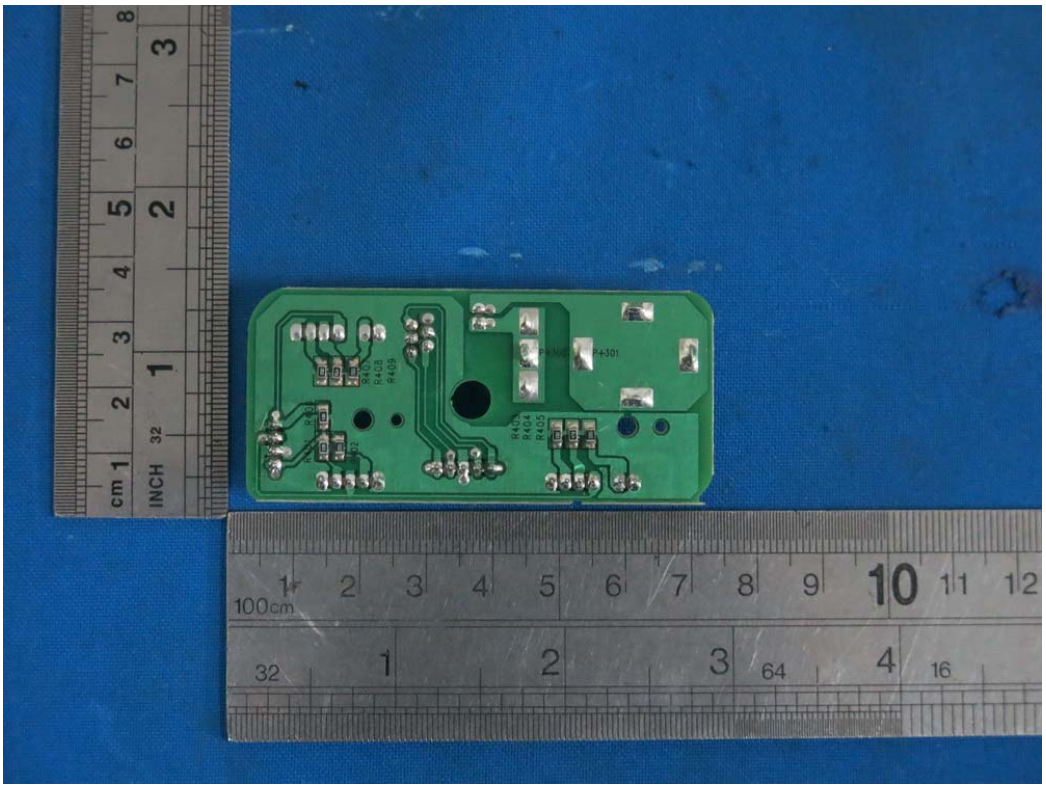

DC=9V 3A
usb charging
time set
time sync
pairing
aux-in

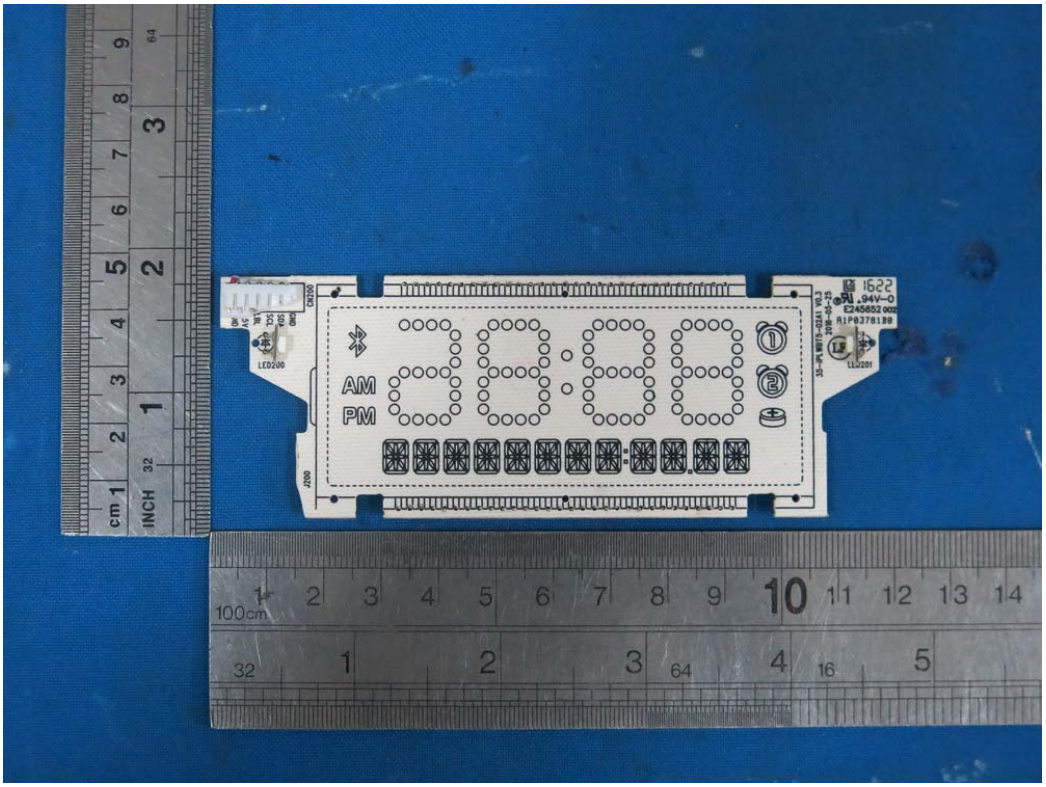


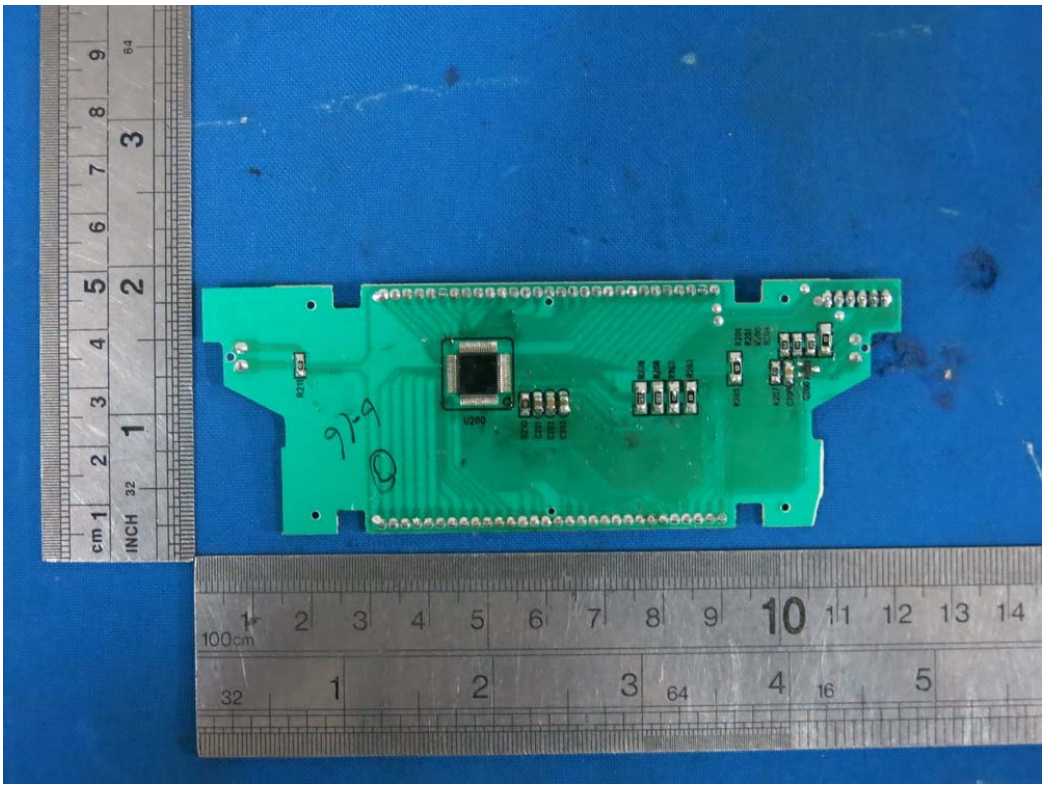

DC⎓9V 3A
usb charging
time set
time sync
pairing
aux-in

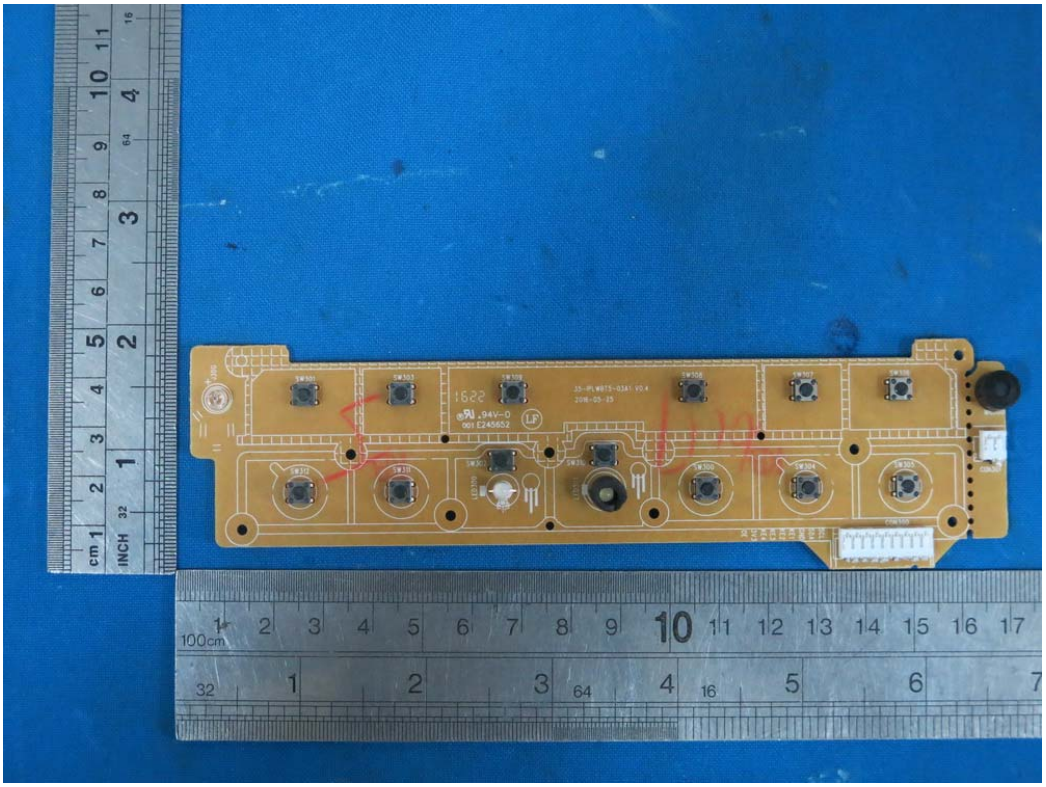

iHome
SWITCHING ADAPTER
Model No: GQ30-050300-AU
Input: 100-240V~ 50/60Hz 1.0A Max
Output: 9.0V
E338360
LISTED
3TS6
Toll Free:1-800-288-2792
SDI Technologies Inc.
www.ihome.com
MADE IN CHINA

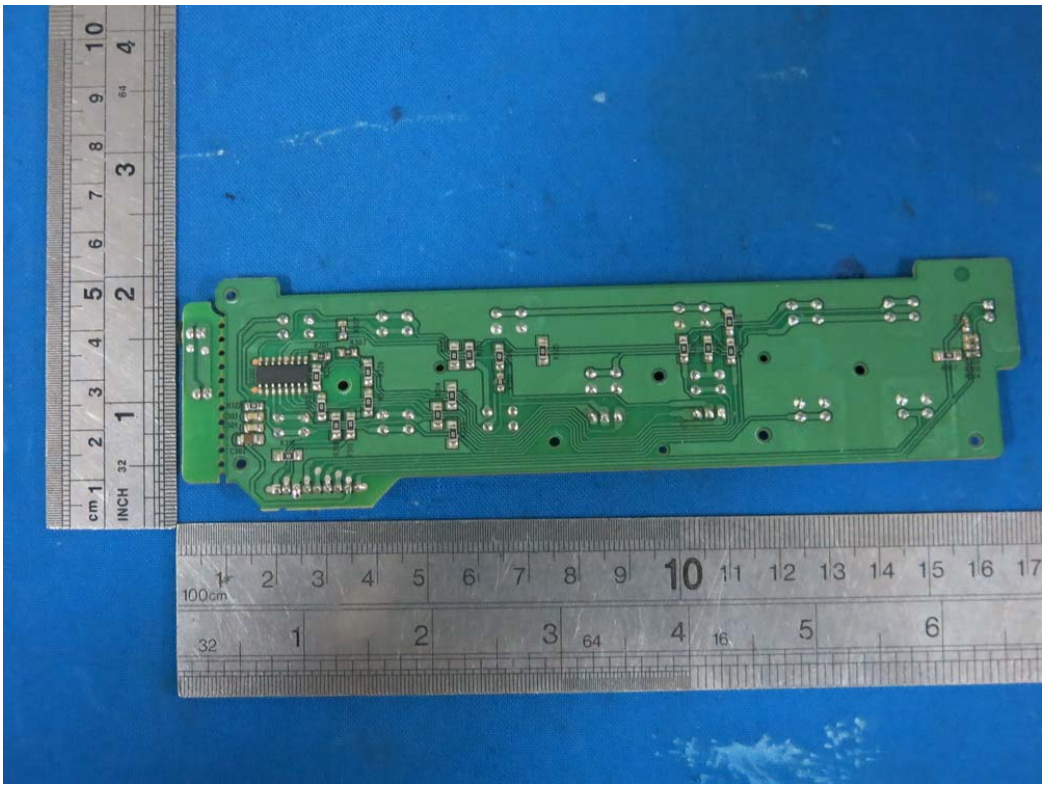


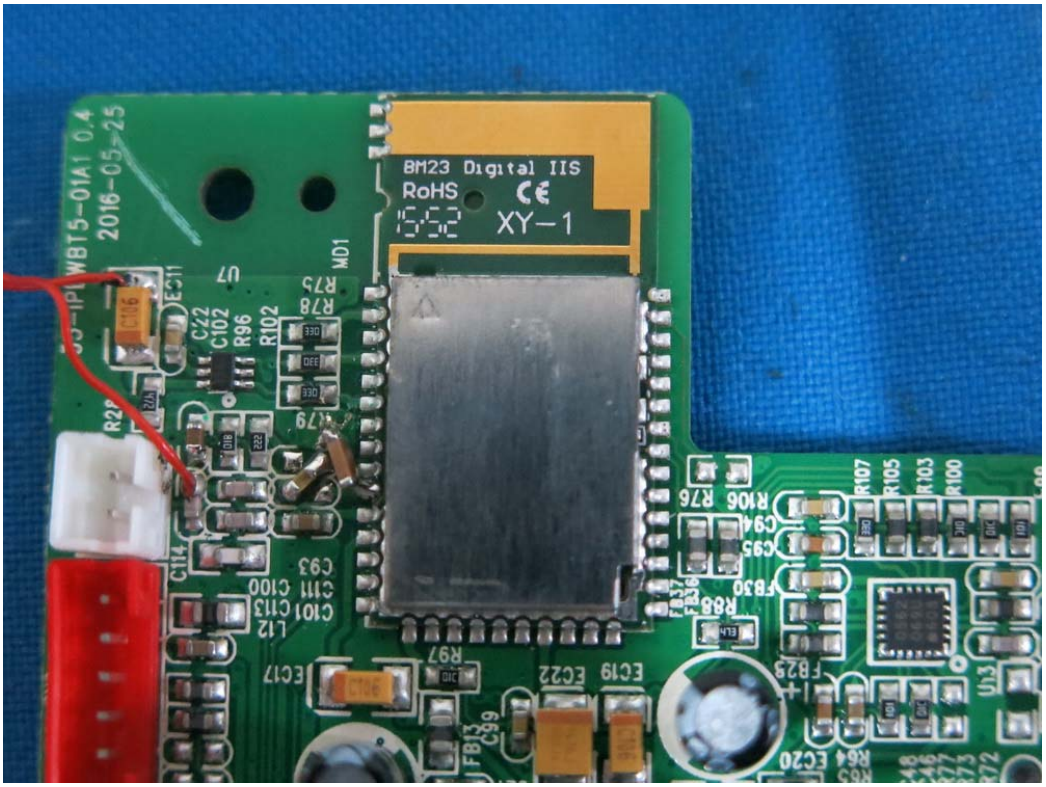


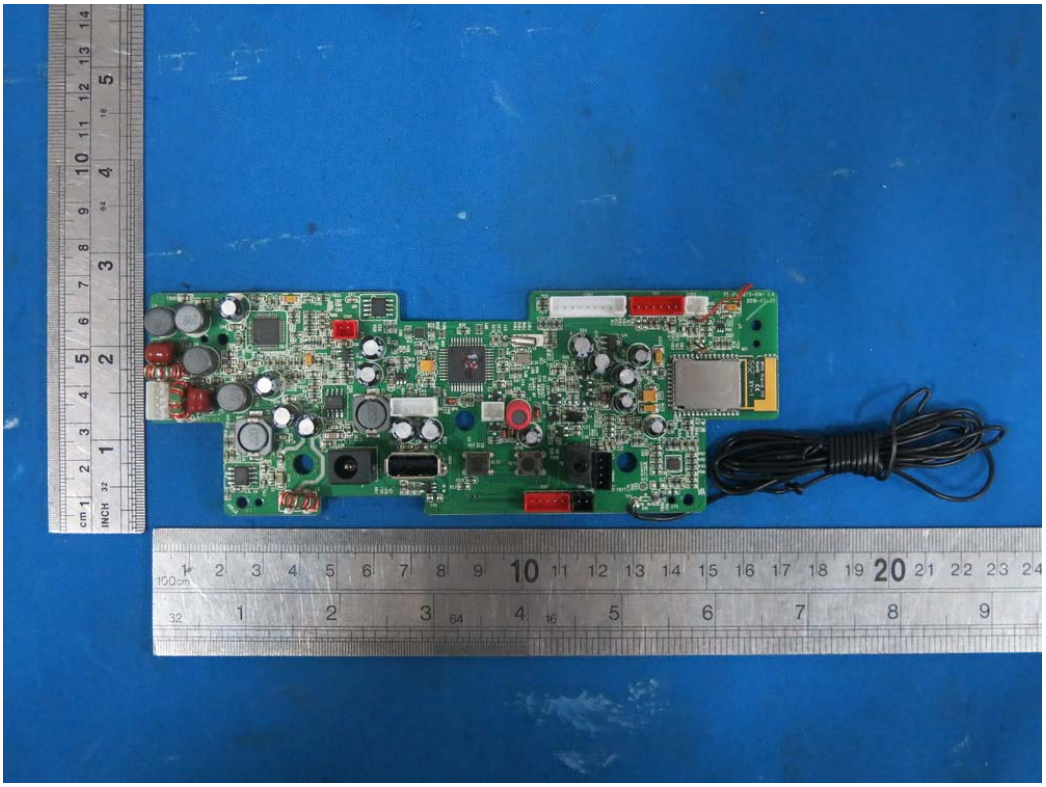

AM
PM
100cm
INCH

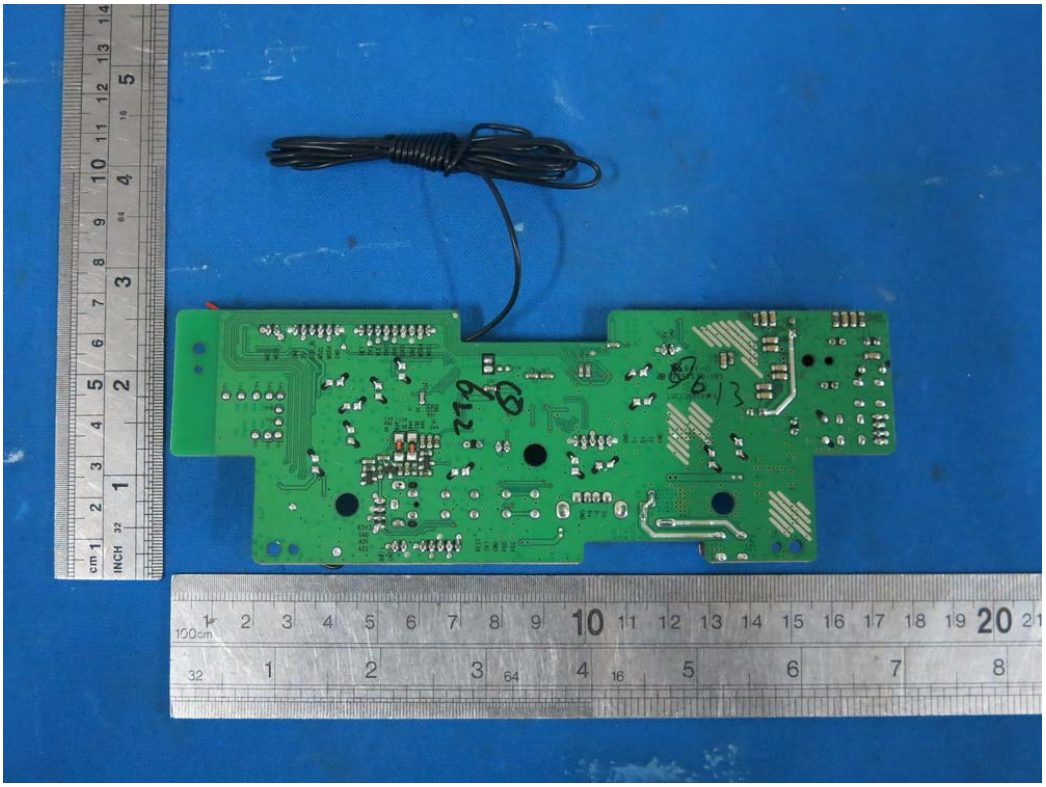

100cm
INCH

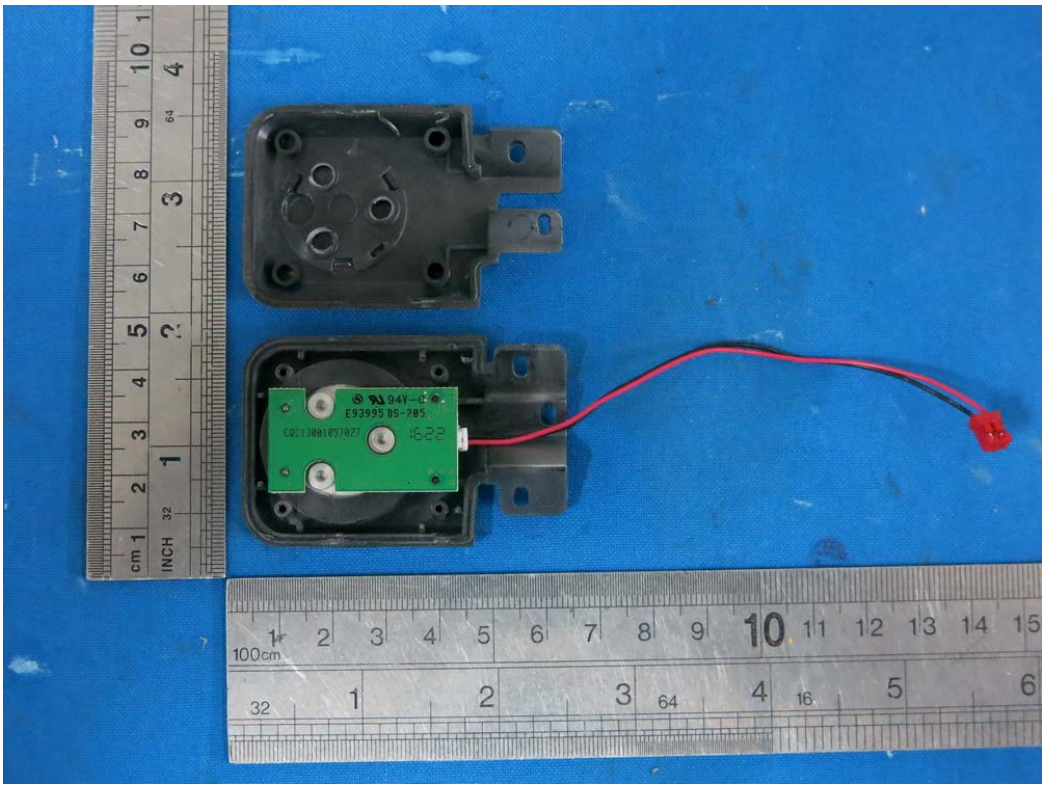


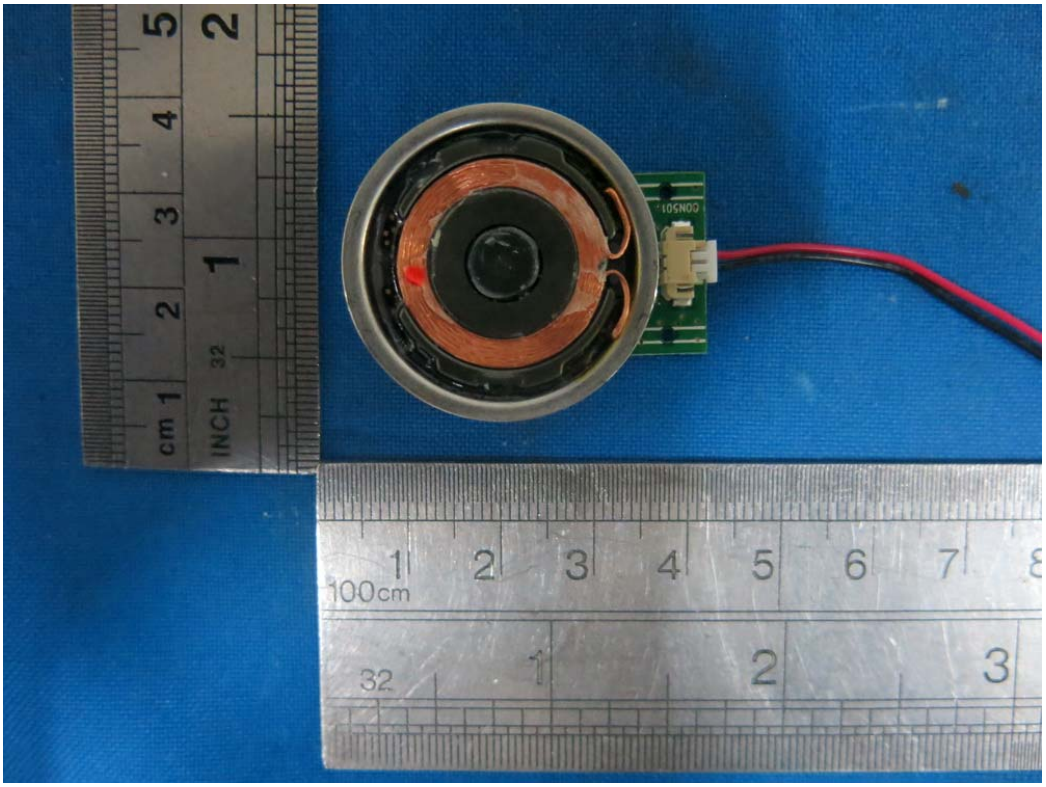


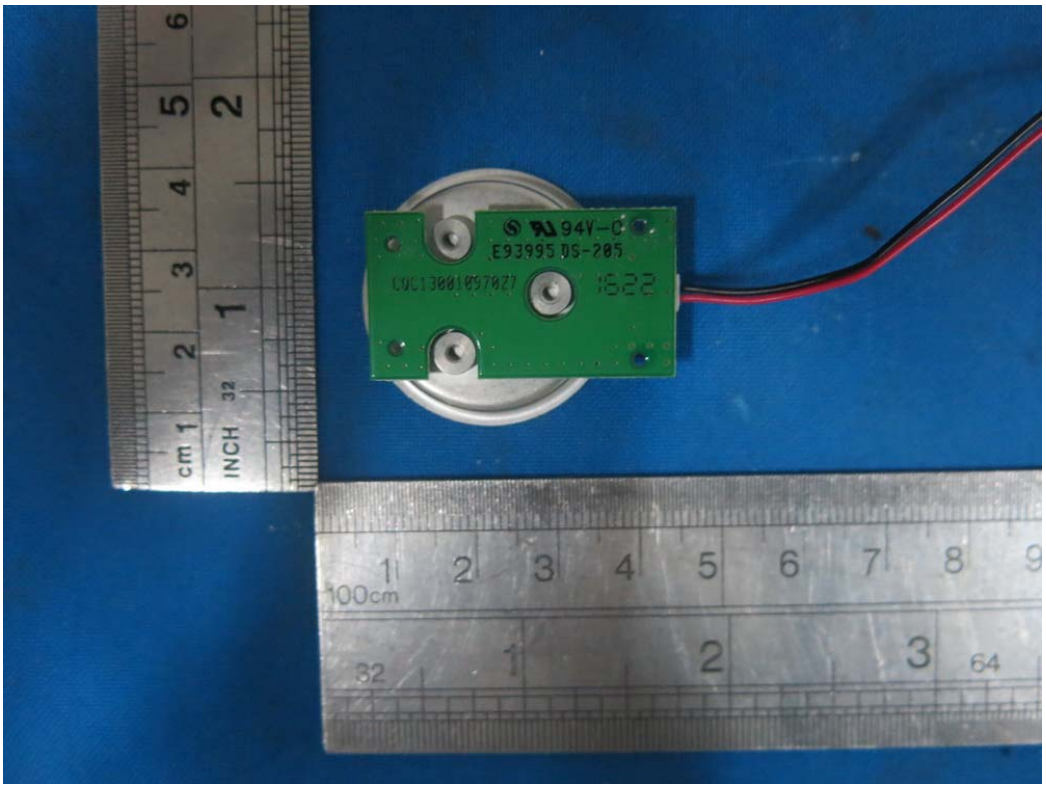

BM23 Digital IIS
RoHS
XY-1

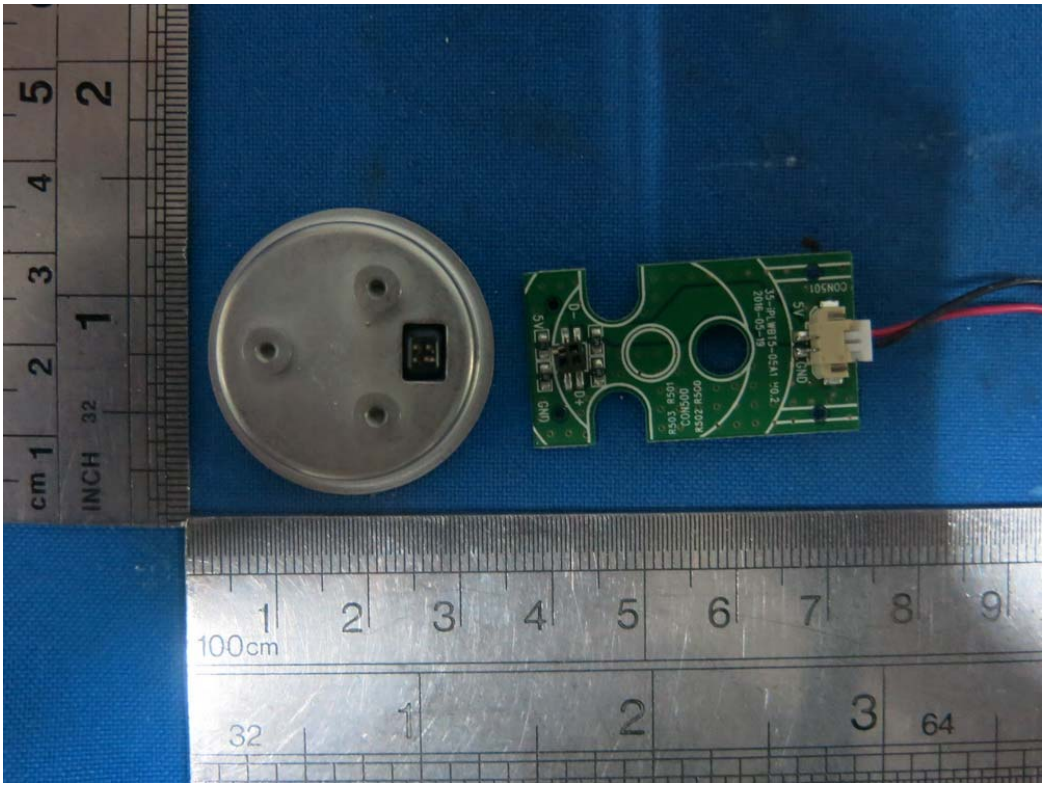


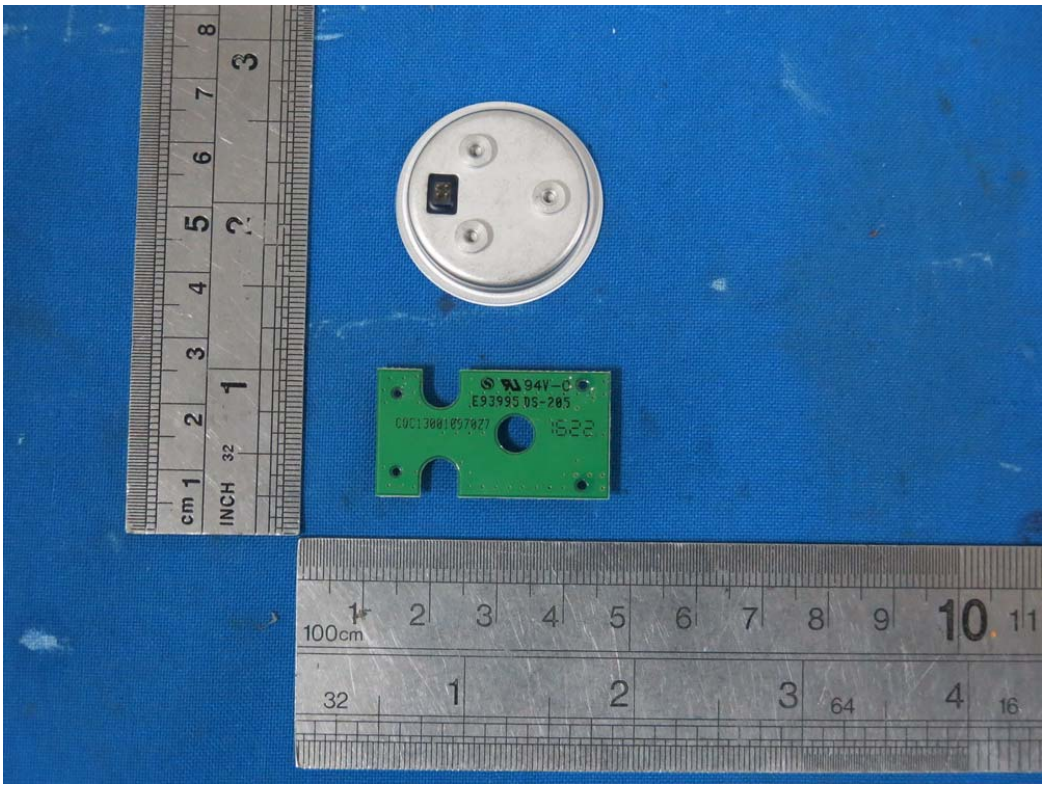


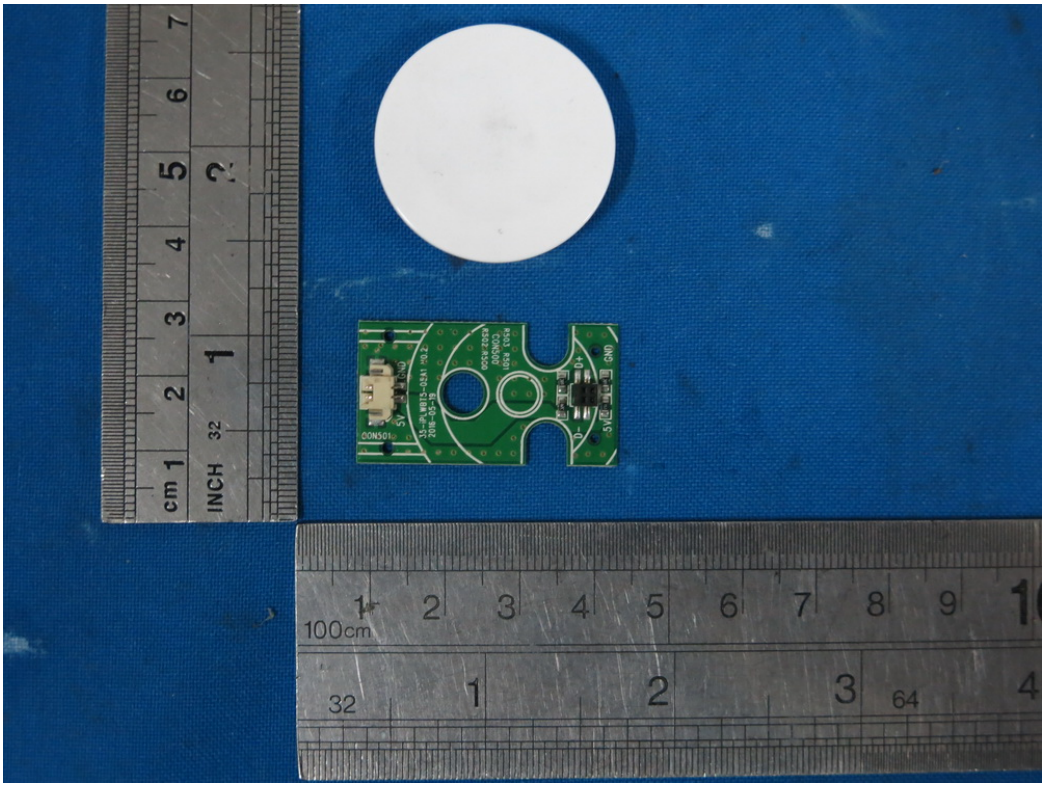

E93995 DS-205

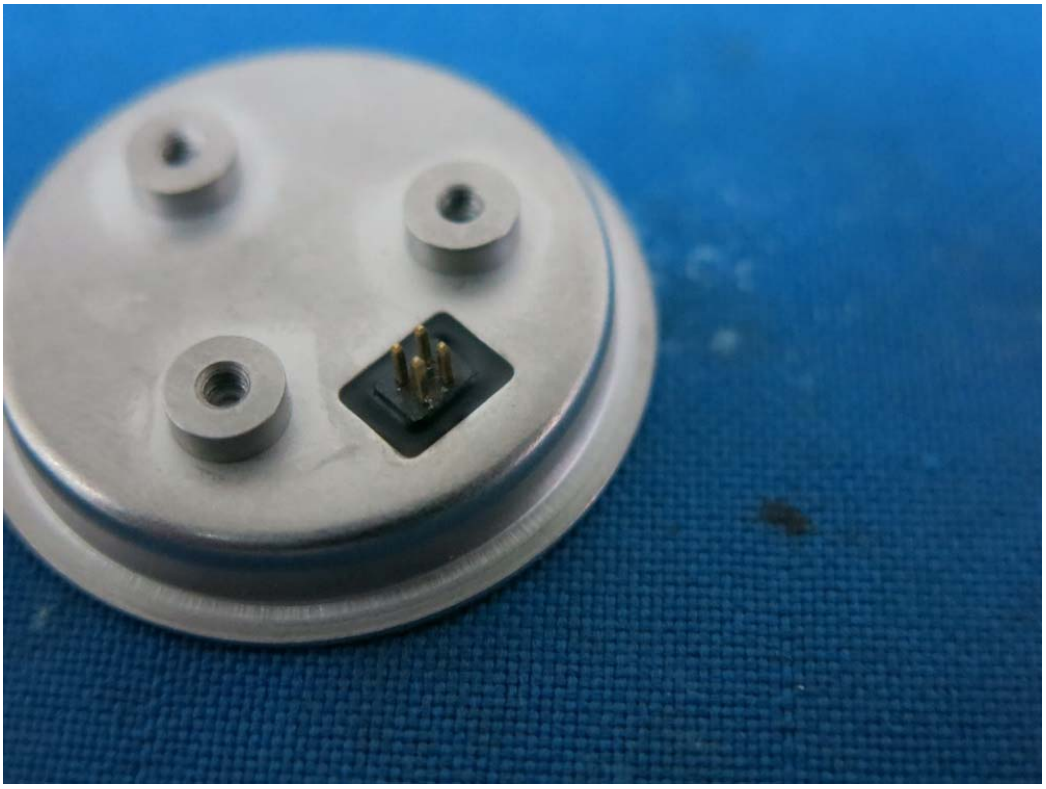


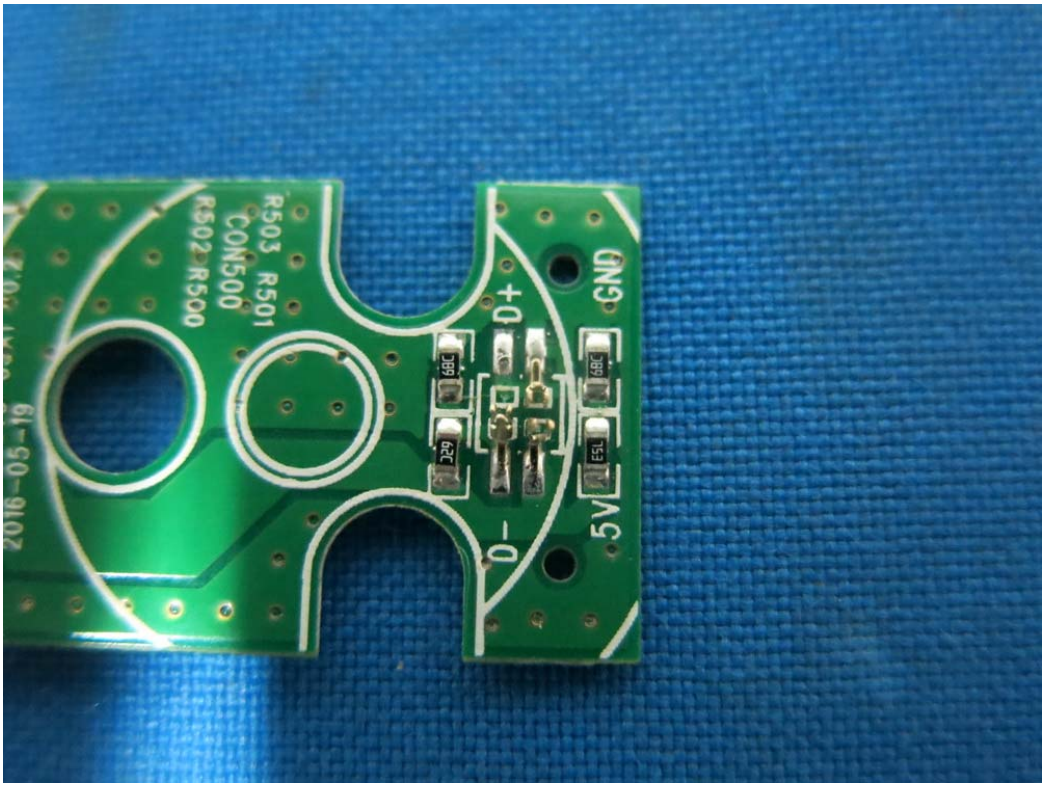







cm 1
INCH 32
100cm
32
64




R503 R501
CON500
R502 R500
D+
D-
GND
5V
2016-05-19