China

EMC - TEST REPORT

Report Number	:	**60.960.19.133.02E01**	Date of Issue	: December 1, 2020
Model	:	**HD-WRC136/00186333/HD-WRC046**		
Product Type	:	**Plastic RC Wall Clock**		
Applicant	:	Hondy Far East Limited		
Address	:	Flat C, 9/F , WINNER FTY BLDG., 55 HUNG TO ROAD , KWUN Tong , KOWLOON, HONG KONG		
Production Facility	:	Dongguan Shengbang Electric Technology Co.,Ltd		
Address	:	Jinfu Road, Jinxia Hexia District, Cheung On, Dongguan City, Guangdong, China		
Test Result	:	n **Positive** o **Negative**		
Total pages including Appendices	:	26		

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2 Description of the Equipment Under Test

Description of the Equipment Under Test

Product:	**Plastic RC Wall Clock**
Model no.:	HD-WRC136/00186333/HD-WRC046
Rating:	3.0 VDC (2 x 1.5 VDC size “AA” Battery)
Frequency:	77.5kHz
Description of the EUT:	The EUT is considered as wireless device, the frequency range is 77.5kHz. More details of EUT technical specification please refer to the User's Manual.

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3 Summary of Test Standards

Test Standards
ETSI EN 301 489-1 V2.2.3 (2019-11) ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU and the essential requirements of article 6 of Directive 2014/30/EU
ETSI EN 301 489-3 V2.1.1 (2019-03) ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU

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4 Details about the Test Laboratory

Site 1

Company name: TÜV SÜD Hong Kong Ltd.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin, Hong Kong

Site 2

Company name: TÜV SÜD Certification and Testing (China) Co., Ltd. Shenzhen Branch
Building 12&13 Zhiheng Wisdomland Business Park,
Nantou Checkpoint Road 2,
Shenzhen 518052, P.R.China

Emission Tests	
Test Item	Test Site
EN301489-1	
Radiated Emission	Site 2
Conduct Emission	NIL
Immunity Tests	
Test Item	Test Site
EN301489-1	
Electrostatic Discharge (IEC 61000-4-2)	Site 2
Radiated Immunity (IEC 61000-4-3)	Site 2
Electrical Fast Transient (IEC 61000-4-4)	NIL
Surges (IEC 61000-4-5)	NIL
Conducted Immunity (IEC 61000-4-6)	NIL
Voltage Dips and Interruption (IEC 61000-4-11)	NIL
Power Frequency Magnetic Field (IEC 61000-4-8)	NIL

4.1 Test Equipment Site List

Radiated emission Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
EMI Test Receiver	Rohde & Schwarz	ESR 26	101269	2021-7-6
Trilog Super Broadband Test Antenna	Schwarzbeck	VULB 9163	707	2021-6-28
Horn Antenna	Rohde & Schwarz	HF907	102294	2021-6-28
Pre-amplifier	Rohde & Schwarz	SCU 18	102230	2021-7-6
Signal Generator	Rohde & Schwarz	SMY01	839369/005	2021-7-6
Attenuator	Agilent	8491A	MY39264334	2021-7-6
3m Semi-anechoic chamber	TDK	9X6X6	----	2021-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.00	N/A

Radiated Immunity Test – Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Signal Generator	Rohde & Schwarz	SMB100A	177600	2021-7-6
Power Amplifier	Rohde & Schwarz	BBA100	101238	2021-7-6
Power Amplifier	Rohde & Schwarz	BBA150	101671	2021-7-6
Power Amplifier	Rohde & Schwarz	BBA150-E100	102640	2021-7-6
Log-Periodic Antenna	Rohde & Schwarz	HL046E	100160	2021-7-6
Microwave Log-Periodic Antenna	Rohde & Schwarz	STLP 9149	9149-453	2021-7-6
Power Meter	Rohde & Schwarz	NRP2	103497	2021-6-20
Average Power Sensor	Rohde & Schwarz	NRP-Z91	102538	2021-6-20
Average Power Sensor	Rohde & Schwarz	NRP-Z91	102539	2021-6-20
Starprobe Laser-Powered Probe	AMPLIFIER RESEARCH	FL7006/KIT	0433720	2021-7-6
Fully Anechoic Chamber	TDK	8X4X4	--	2021-7-7
Test software	Rohde & Schwarz	EMC32	Version 9.15.03	N/A

Electrostatic Discharge Test– Site 2

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL. DUE DATE
Electrostatic Discharge Simulator	Noiseken	ESS-2002	ESS0615075	2021-7-3

4.2. Measurement System Uncertainty

Measurement System Uncertainty Emissions

Items	Extended Uncertainty
Uncertainty for Radiated Emission in 3m chamber 30MHz-1000MHz	Horizontal: 4.83dB Vertical: 4.91dB

Measurement System Uncertainty immunity

The measurement expanded uncertainties for defined systems are for a 95% confidence level, in accordance with the recommendations of ISO 17025.

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5 Summary of Test Results

Emission Tests				
EN301489-1				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
Radiated Emission	11-12	☒	☐	☐
Conduct Emission	NIL	☐	☐	☒

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Summary of Test Results

Immunity Tests				
EN301489-1				
Test Condition	Pages	Test Result		
		Pass	Fail	N/A
Electrostatic Discharge (IEC 61000-4-2)	14-15	☒	☐	☐
Radiated Immunity (IEC 61000-4-3)	16	☒	☐	☐
Electrical Fast Transient (IEC 61000-4-4)	NIL	☐	☐	☒
Surges (IEC 61000-4-5)	NIL	☐	☐	☒
Conducted Immunity (IEC 61000-4-6)	NIL	☐	☐	☒
Voltage Dips and Interruption (IEC 61000-4-11)	NIL	☐	☐	☒

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6 General Remarks

Remarks

All operation conditions have been tested. Only worst case data is shown.

Client informs that the HD-WRC136/00186333/HD-WRC046 have the same technical construction including circuit diagram, PCB layout, components and component layout, all electrical construction and mechanical construction. The difference lies only on color, model & receiver frequency of different model. (Client's conformation letter shown at Appendix)

SUMMARY:

- All tests according to the regulations cited on page 5 were

  n - Performed

  o - **Not** Performed

- The Equipment Under Test

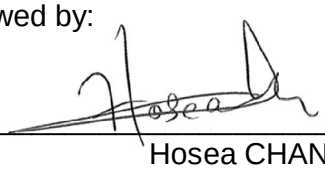
  n - **Fulfills** the general approval requirements.

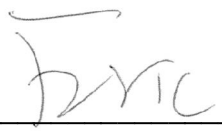
  o - **Does not** fulfill the general approval requirements.

Sample Received Date:	November 12, 2020
Testing Start Date:	November 13, 2020
Testing End Date:	November 20, 2020

- TÜV SÜD HONG KONG LTD. -

Reviewed by: Prepared by:





Hosea CHAN
EMC Project Engineer

Eric LI
EMC Project Manager

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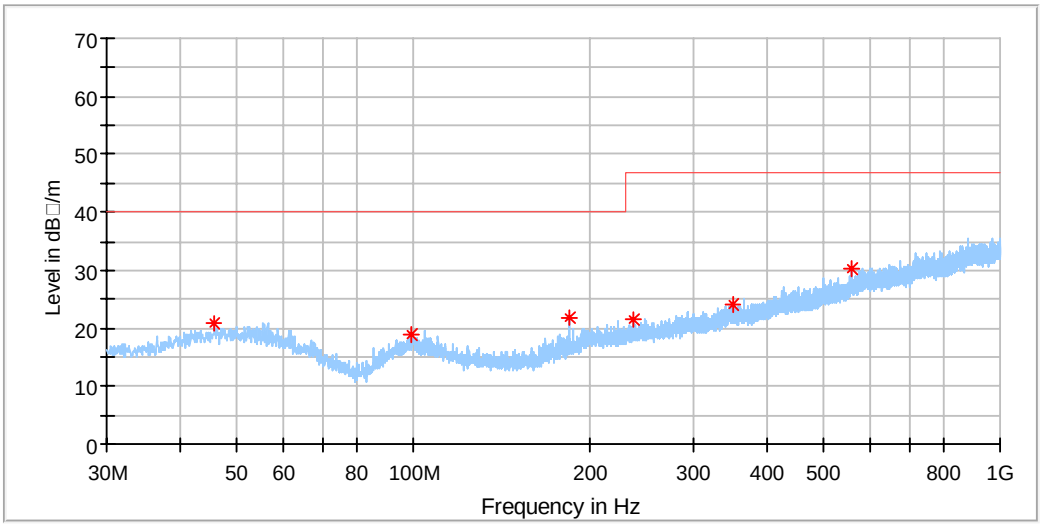
7 Emission Test Results

7.1 Radiated Emission

EUT: HD-WRC136
Op Condition: Operated, Normal Link
Test Specification: EN301489, Antenna: Horizontal
Comment: 3.0VDC

Test Result
☒ Passed
☐ Not Passed

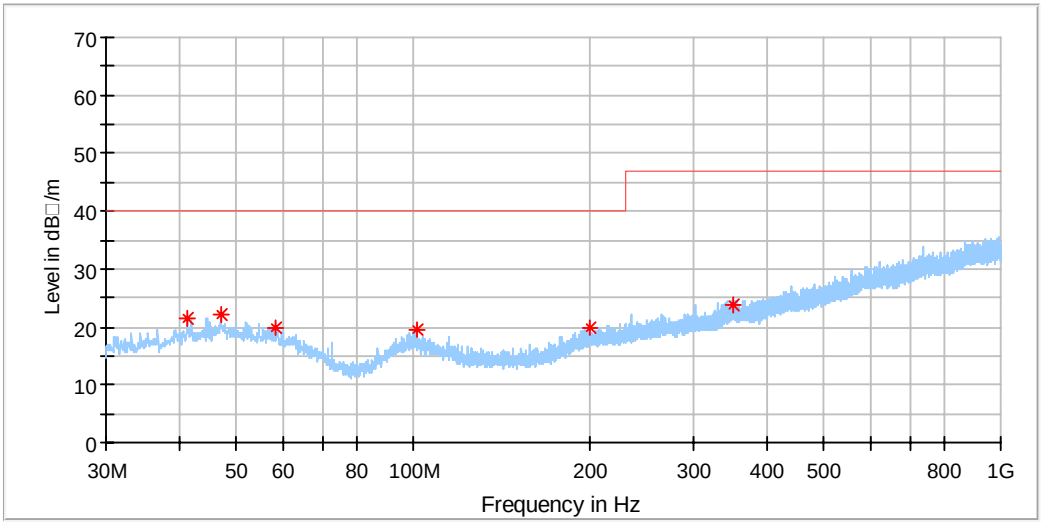


Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)
45.762500	20.73	40.00	-19.27
98.870000	18.80	40.00	-21.20
183.866250	21.97	40.00	-18.03
237.701250	21.65	47.00	-25.35
349.675625	24.14	47.00	-22.86
559.074375	30.18	47.00	-16.82

Radiated Emission Test

EUT:	HD-WRC136
Op Condition:	Operated, Normal Link
Test Specification:	EN301489, Antenna: Vertical
Comment:	3.0VDC

Test Result
☒ Passed
☐ Not Passed



Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)
41.155000	21.45	40.00	-18.55
47.035625	22.00	40.00	-18.00
58.190625	19.89	40.00	-20.11
101.052500	19.49	40.00	-20.51
200.053125	19.88	40.00	-20.12
350.221250	23.63	47.00	-23.37

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8 Performance Criteria

EN301489-1:

Criteria	Performance Criteria
CT/CR	During and after the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer when the apparatus is used as intended.
TT/TR	After the test, the apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a permissible performance level specified by the manufacturer, when the apparatus is used as intended.

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9 Immunity Test Results

9.1 Electrostatic Discharge Test

EUT:	HD-WRC136	Ambient Temperature (°C):	25.0
Op Mode:	Operated, Normal Working	Relative Humidity (%):	50.0
Type of EUT:	☒ Table Top ☐ Floor Stand	Atmospheric Pressure (mbar):	1009
Comment:	3.0VDC		

Test regulation: ☒ EN 301489-1 ☒ IEC 61000-4-2

Indirect Discharge: ☐ Draw points in the appendix

Point	Contact (kV)		Number and Polarity At each voltage level	
1: VCP-Front Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
2: VCP-Right Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
3: VCP-Rear Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
4: VCP-Left Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
5: HCP-Front Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
6: HCP-Right Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
7: HCP-Rear Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg
8: HCP-Left Side	☐..2	☒..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..10 pos	☒..10 neg

Remarks: VCP = Vertical Coupling Plane; HCP = Horizontal Coupling Plane
No Abnormality and malfunction was found during and after test.

Result: ☒ Complies ☐ Does not comply ☐ Photo Done

Criterion Required : B Criterion Met : A

Date: November 13, 2020 Test Engineer: Chan Kwong Ngai

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Electrostatic Discharge Test

EUT:	HD-WRC136	Ambient Temperature (°C):	25.0
Op Mode:	Operated, Normal Working	Relative Humidity (%):	50.0
Type of EUT:	☒ Table Top ☐ Floor Stand	Atmospheric Pressure (mbar):	1009
Comment:	3.0VDC		

Test regulation: ☒ EN 301489-1 ☒ IEC 61000-4-2

Indirect Discharge: ☐ Draw points in the appendix

Point	Contact (kV)		Air (kV)		Number and Polarity at each voltage level	
1. Each non conductive Location touchable by hand	☐..2	☐..4	☒..2	☒...4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☒..8	☐..	☒..10 pos	☒..10 neg
2. Each conductive Location touchable by hand	☐..2	☒..4	☐..2	☐..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☐..8	☐..	☒..10 pos	☒..10 neg
3.	☐..2	☐..4	☐..2	☐..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☐..8	☐..	☐..10 pos	☐..10 neg
4.	☐..2	☐..4	☐..2	☐..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☐..8	☐..	☐..10 pos	☐..10 neg
5.	☐..2	☐..4	☐..2	☐..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☐..8	☐..	☐..10 pos	☐..10 neg
6.	☐..2	☐..4	☐..2	☐..4	☐..25 pos	☐..25 neg
	☐..6	☐..8	☐..8	☐..	☐..10 pos	☐..10 neg

Remarks: No Abnormality and malfunction was found during and after test.

Result: ☒ Complies ☐ Does not comply ☐ Photo Done

Criterion Required : B Criterion Met : A

Date: November 13, 2020 Test Engineer: Chan Kwong Ngai

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9.2 Radiated Immunity Test

EUT:	HD-WRC136	Ambient Temperature (°C):	25.0
Op Mode:	Standby mode	Relative Humidity (%):	50.0
Type of EUT:	☒ Table Top ☐ Floor Stand	Atmospheric Pressure (mbar):	1009
Comment:	3.0VDC		

Test regulation: ☒EN 301489-1 ☒IEC 61000-4-3

Frequency (MHz)	Side	Field Strength level	Criteria	Remarks
80-2700MHz	0	3V/m (rms)	A	NIL
80-2700MHz	90°	3V/m (rms)	A	NIL
80-2700MHz	180°	3V/m (rms)	A	NIL
80-2700MHz	270°	3V/m (rms)	A	NIL

Remarks: No Abnormality and malfunction was found during and after test.

Result: ☒ Complies ☐ Does not comply ☐ Photo Done

Criterion Required : A Criterion Met : A

Date: November 13, 2020 Test Engineer: Eric Li

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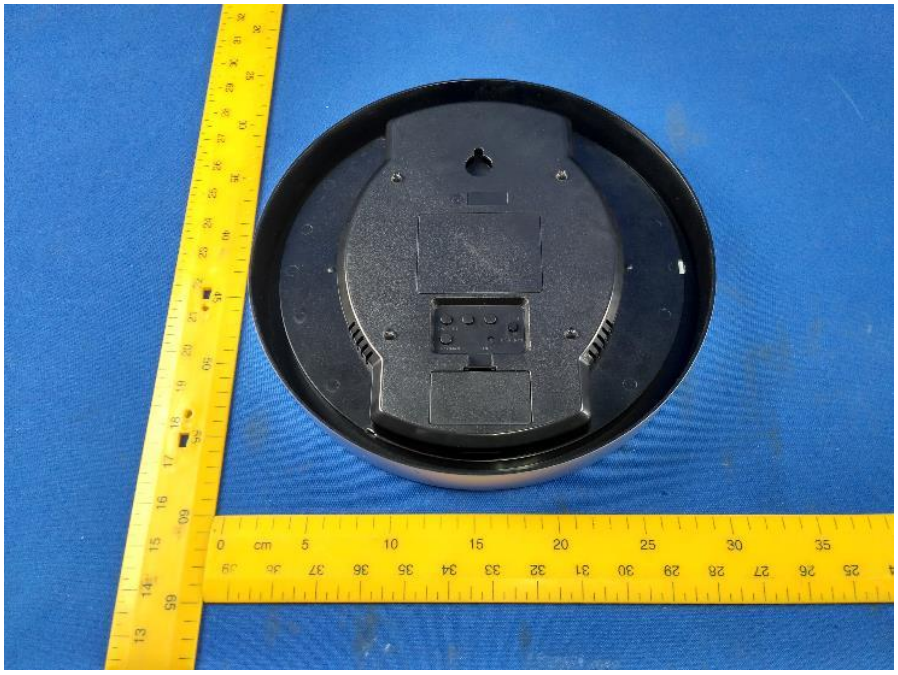
10 Appendix A - Photographs of EUT



Appendix A

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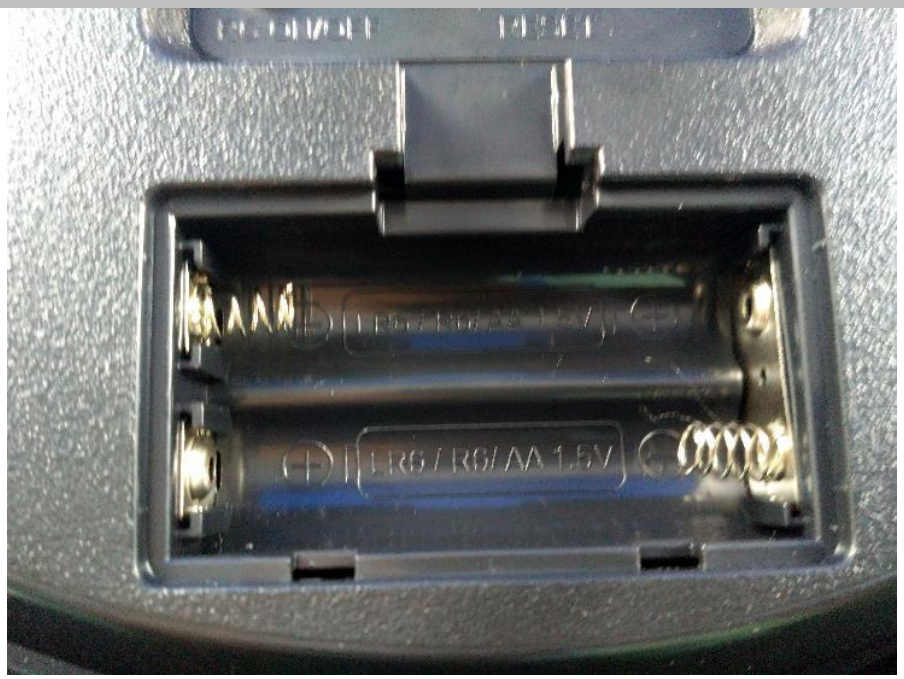
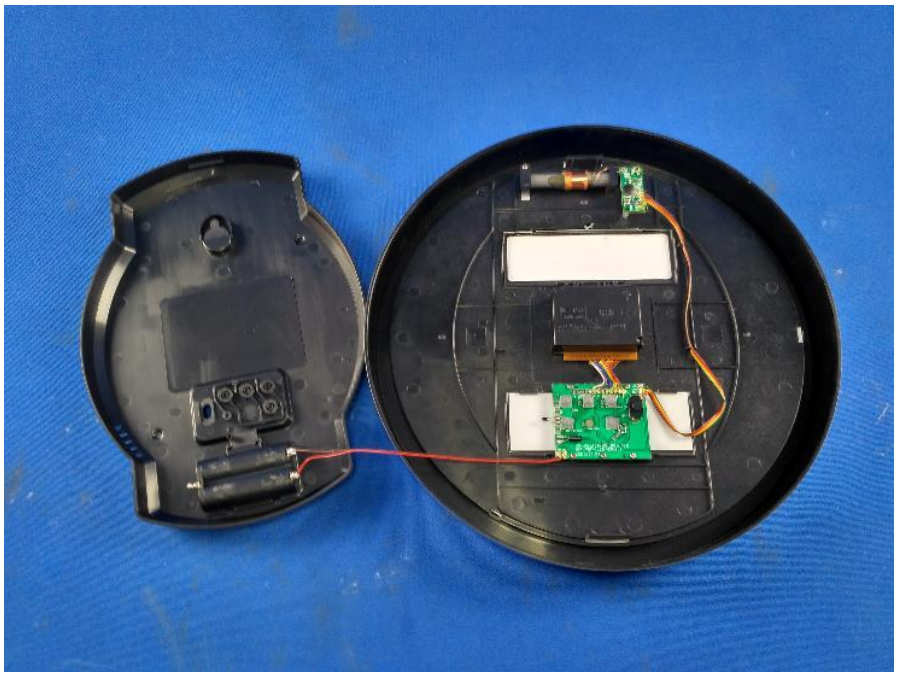
Appendix A





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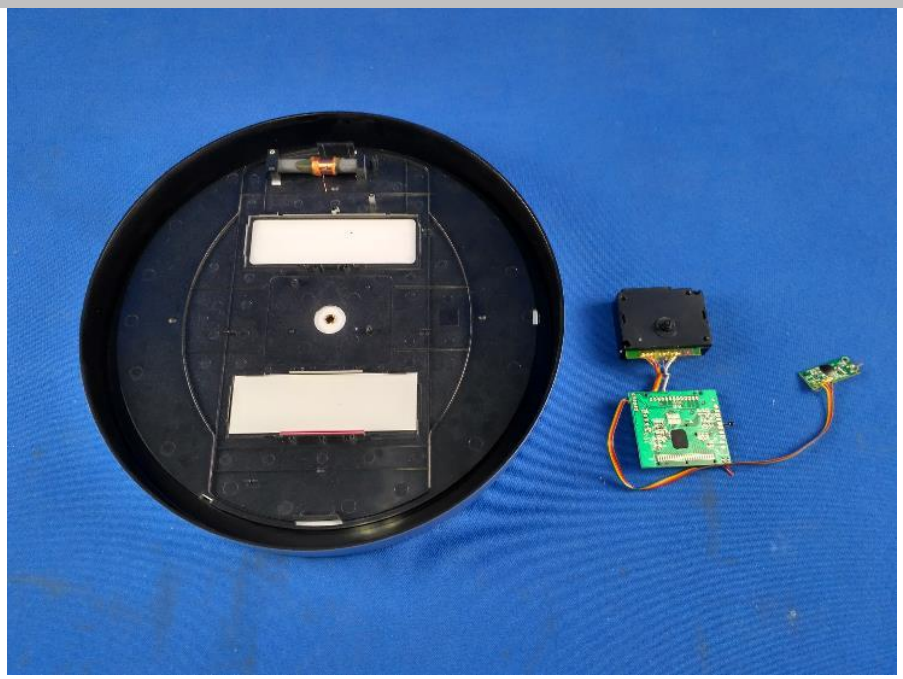

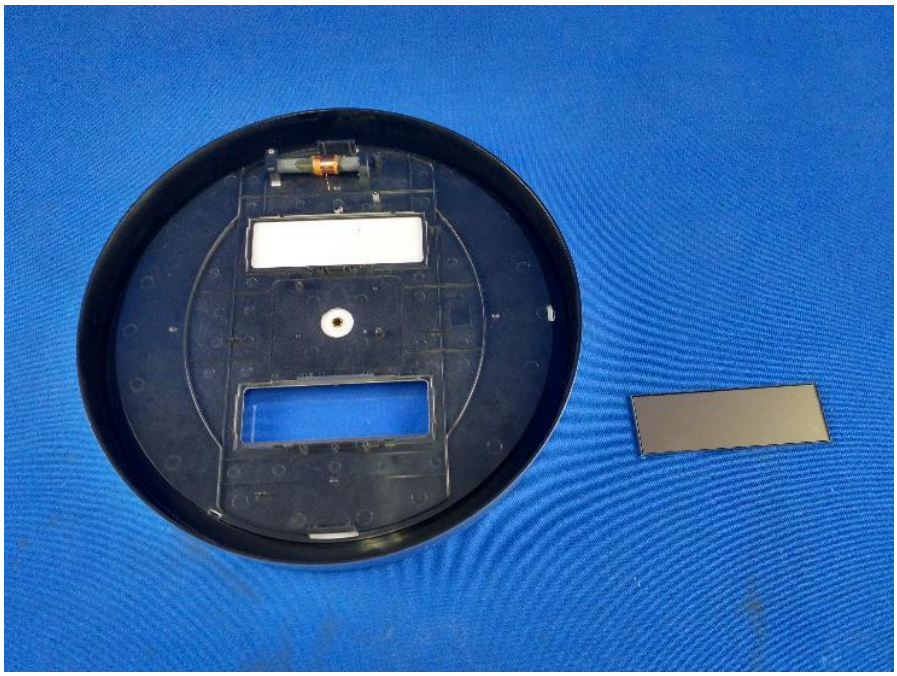

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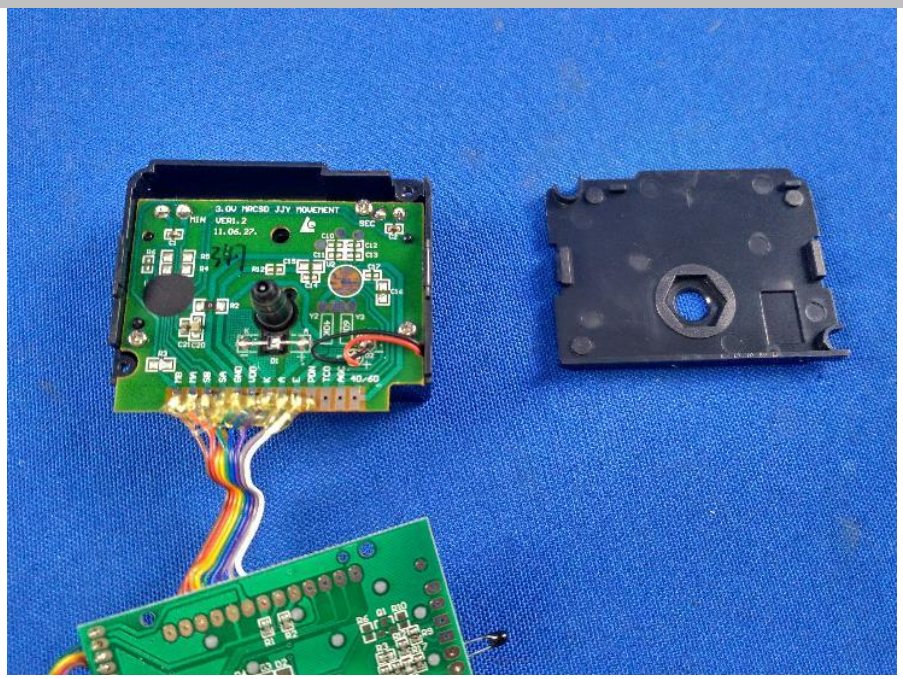

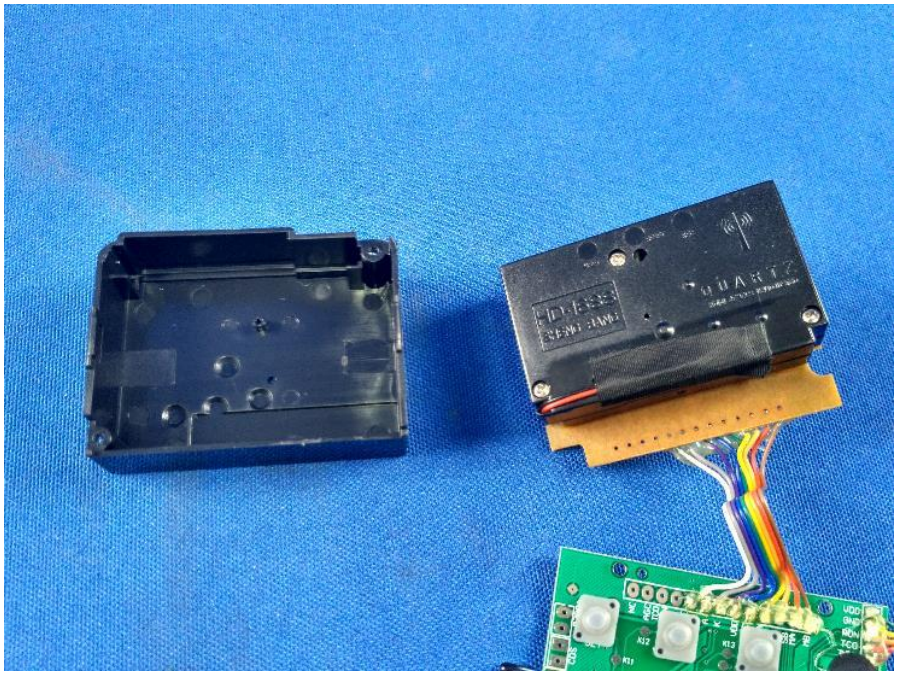

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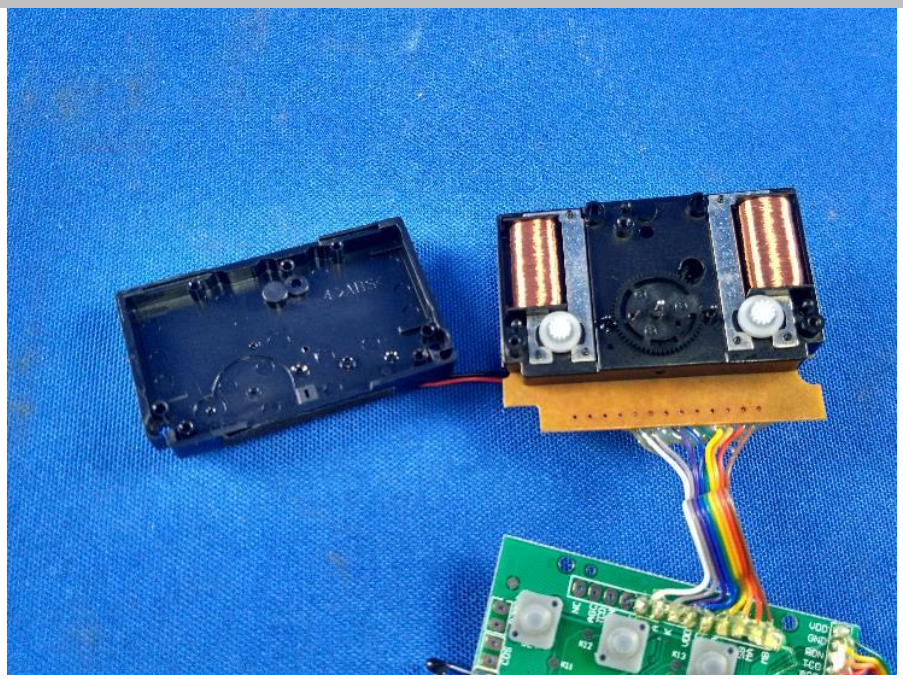

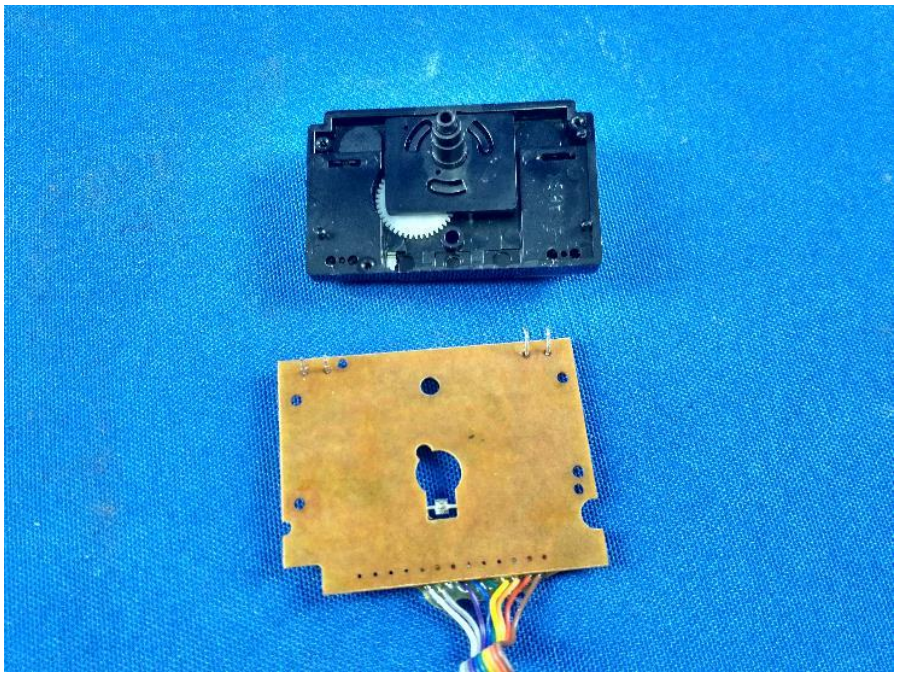

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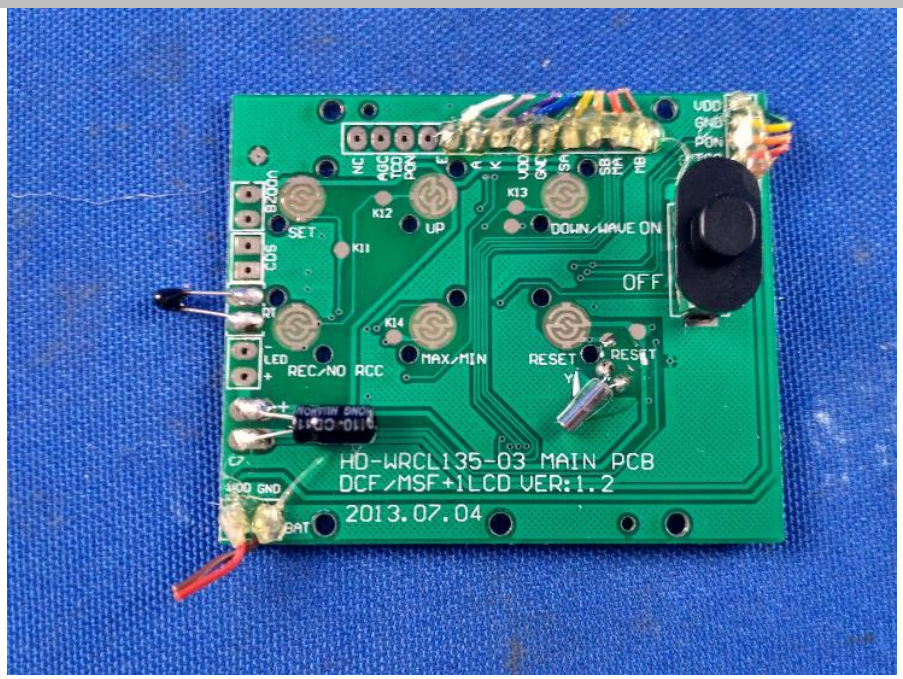
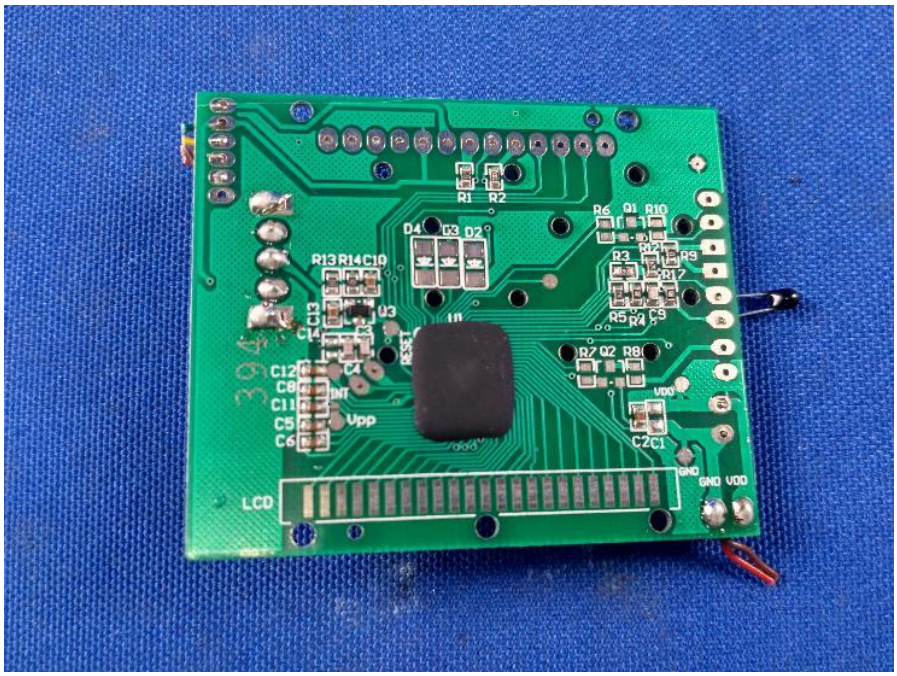
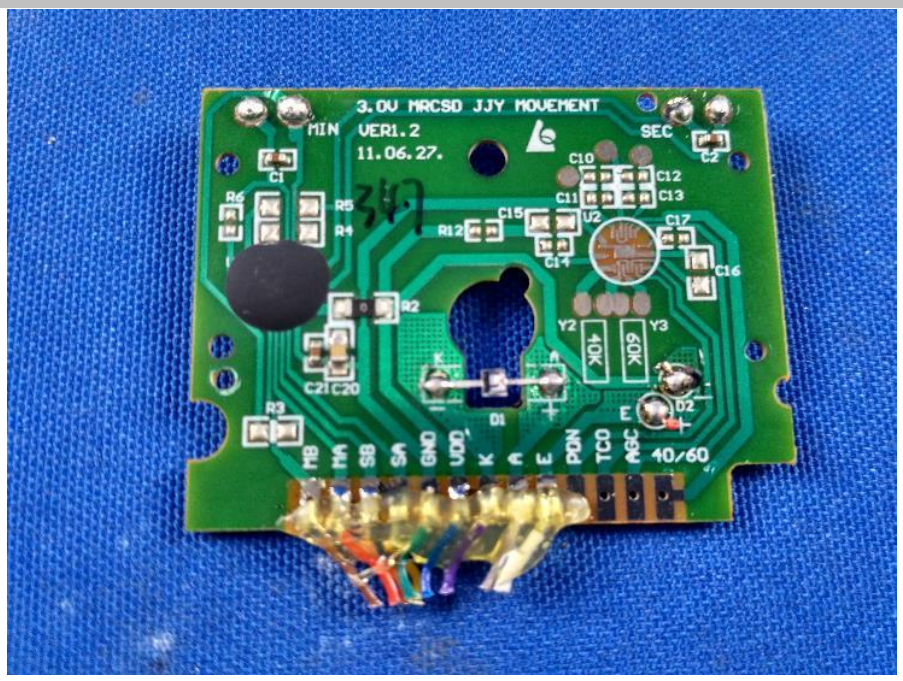
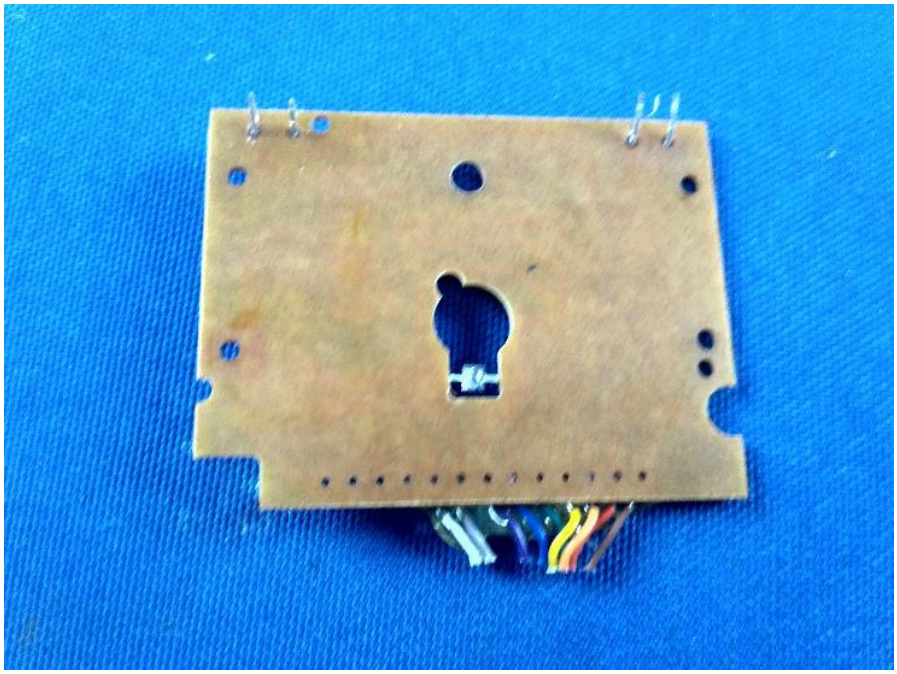

SET
UP
DOWN/WAVE ON
OFF
MAX/MIN
RESET
REC/NO RCC
HD-WRCL135-03 MAIN PCB
DCF/MSF+1LCD VER:1.2
2013.07.04


LCD
Vpp

Appendix A





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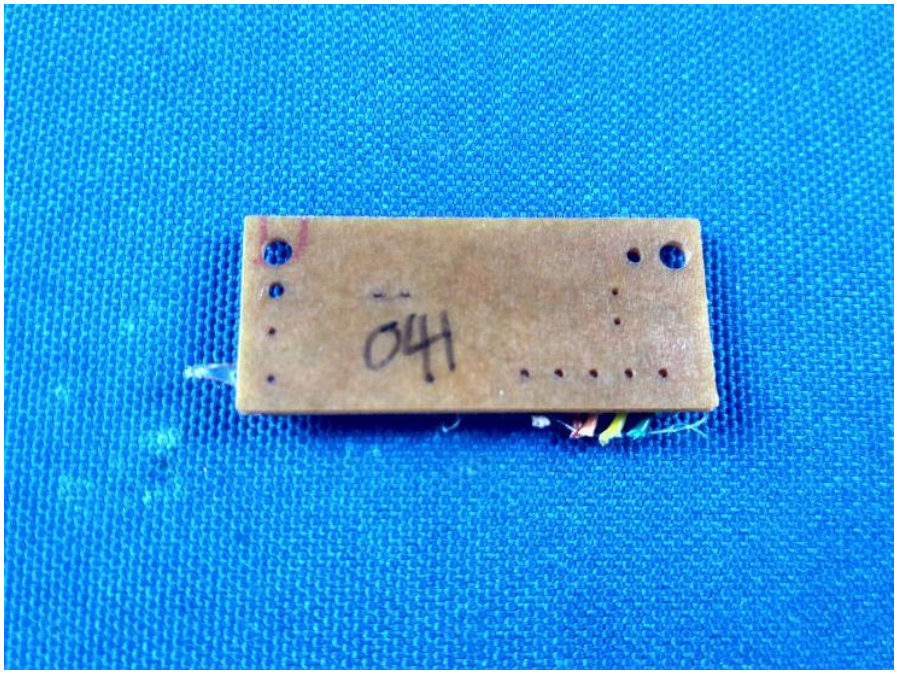

11 Appendix A - General product information

To: TÜV SÜD HKG Ltd.

Attention: **Mr. Anthony Hui**
From: **Hondy Far East Ltd.** Date: December 2, 2020
Fax No: +852 2793 1978 Total Page (Cover Included): 1

Declaration Letter

Subject:

We:

Officially notify TÜV SÜD HKG Ltd. that the <<HD-1688>> have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction, with <<HD-WRC136>>, <<Radio Controlled Wall Clock>>.
The difference lies only on the model number & appearance of the different models.

<<Additional Model >>: HD-1688

<<Main Test Model >>: HD-WRC136/ 186333/ HD-WRC046

<<Product>>: Plastic RC Wall Clock

Applicant: Hondy Far East Limited

23 March, 2020
(Date)

(Applicant's authorized signature and company Chop)

file: declaration letter-template Page 1 of 1