EMC TEST REPORT

Report No.: 17070736-FCC-E

Supersede Report No: N/A

Applicant	Shenzhen Huafurui Technology Co. Ltd
Product Name	SmartWatch
Model No.	F1
Serial No.	CUBOT F1
Test Standard	FCC Part 15 Subpart B Class B:2016, ANSI C63.4: 2014
Test Date	August 18 to August 31, 2017
Issue Date	September 01, 2017
Test Result	☑ Pass ☐ Fail
Equipment complied with the specification	☑
Equipment did not comply with the specification	☐

Evans He	David Huang	
Evans He Test Engineer	David Huang Checked By	

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Test result presented in this test report is applicable to the tested sample only

Issued by:

SIEMIC (SHENZHEN-CHINA) LABORATORIES

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Laboratories Introduction

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Accreditations for Conformity Assessment

Country/Region	Scope
USA	EMC, RF/Wireless, SAR, Telecom
Canada	EMC, RF/Wireless, SAR, Telecom
Taiwan	EMC, RF, Telecom, SAR, Safety
Hong Kong	RF/Wireless, SAR, Telecom
Australia	EMC, RF, Telecom, SAR, Safety
Korea	EMI, EMS, RF, SAR, Telecom, Safety
Japan	EMI, RF/Wireless, SAR, Telecom
Singapore	EMC, RF, SAR, Telecom
Europe	EMC, RF, SAR, Telecom, Safety

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CONTENTS

1. REPORT REVISION HISTORY 5

2. CUSTOMER INFORMATION 5

3. TEST SITE INFORMATION 5

4. EQUIPMENT UNDER TEST (EUT) INFORMATION 6

5. TEST SUMMARY 7

6. MEASUREMENTS, EXAMINATION AND DERIVED RESULTS 8

6.1 AC POWER LINE CONDUCTED EMISSIONS 8

6.2 RADIATED EMISSIONS 14

ANNEX A. TEST INSTRUMENT 19

ANNEX B. EUT AND TEST SETUP PHOTOGRAPHS 20

ANNEX C. TEST SETUP AND SUPPORTING EQUIPMENT 30

ANNEX D. USER MANUAL / BLOCK DIAGRAM / SCHEMATICS / PARTLIST 33

ANNEX E. DECLARATION OF SIMILARITY 34

1. Report Revision History

Report No.	Report Version	Description	Issue Date
17070736-FCC-E	NONE	Original	September 01, 2017

2. Customer information

Applicant Name	Shenzhen Huafurui Technology Co. Ltd
Applicant Add	Unit 1401 14/F, Jin qi zhi gu mansion Liu xian street ,Xili, Nan shan district Shenzhen, China
Manufacturer	Shenzhen Huafurui Technology Co. Ltd
Manufacturer Add	Unit 1401 14/F, Jin qi zhi gu mansion Liu xian street ,Xili, Nan shan district Shenzhen, China

3. Test site information

Lab performing tests	SIEMIC (Shenzhen-China) LABORATORIES
Lab Address	Zone A, Floor 1, Building 2 Wan Ye Long Technology Park South Side of Zhoushi Road, Bao' an District, Shenzhen, Guangdong China 518108
FCC Test Site No.	535293
IC Test Site No.	4842E-1
Test Software of Radiated Emission	Radiated Emission Program-To Shenzhen v2.0
Test Software of Conducted Emission	EZ-EMC(ver.lcp-03A1)

4. Equipment under Test (EUT) Information

Description of EUT:	SmartWatch
Main Model:	F1
Serial Model:	CUBOT F1
Antenna Gain:	0 dBi
Antenna Type:	Patch antenna
Input Power:	Battery: Spec: 3.7V, 0.925Wh
Equipment Category :	JBP
Type of Modulation:	BLE: GFSK
RF Operating Frequency (ies):	BLE: 2402-2480 MHz
Number of Channels:	BLE: 40CH
Port:	charging port and data port
Trade Name :	CUBOT
FCC ID:	2AHZ5CUBOTF1
Date EUT received:	August 17, 2017
Test Date(s):	August 18 to August 31, 2017

5. Test Summary

The product was tested in accordance with the following specifications.

All testing has been performed according to below product classification:

FCC Rules	Description of Test	Result
§15.107; ANSI C63.4: 2014	AC Power Line Conducted Emissions	Compliance
§15.109; ANSI C63.4: 2014	Radiated Emissions	Compliance

Measurement Uncertainty

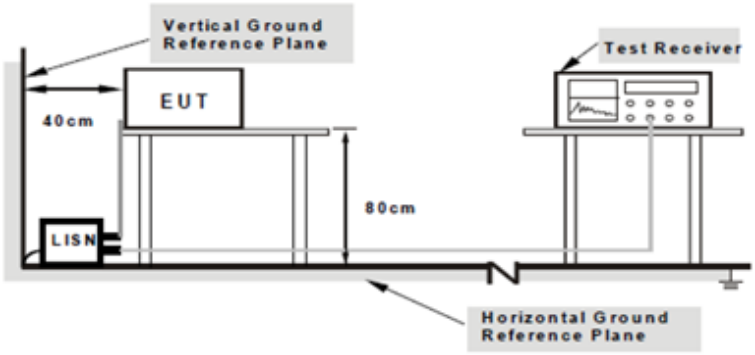
Parameter	Uncertainty
AC Power Line Conducted Emissions (150kHz~30MHz)	±3.11dB
Radiated Emission(30MHz~1GHz)	±5.12dB
Radiated Emission(1GHz~6GHz)	±5.34dB

6. Measurements, Examination And Derived Results

6.1 AC Power Line Conducted Emissions

Temperature	27 °C
55%	55%
1012mbar	1023mbar
July 10, 2017	August 22, 2017
Tested By :	Evans He

Requirement(s):

<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.107</td><td>a)</td><td>For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 [mu] H/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequencies ranges.
<table>
<tr><th rowspan="2">Frequency ranges (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>QP</th><th>Average</th></tr>
<tr><td>0.15 ~ 0.5</td><td>66 – 56</td><td>56 – 46</td></tr>
<tr><td>0.5 ~ 5</td><td>56</td><td>46</td></tr>
<tr><td>5 ~ 30</td><td>60</td><td>50</td></tr>
</table></td><td>☑</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 

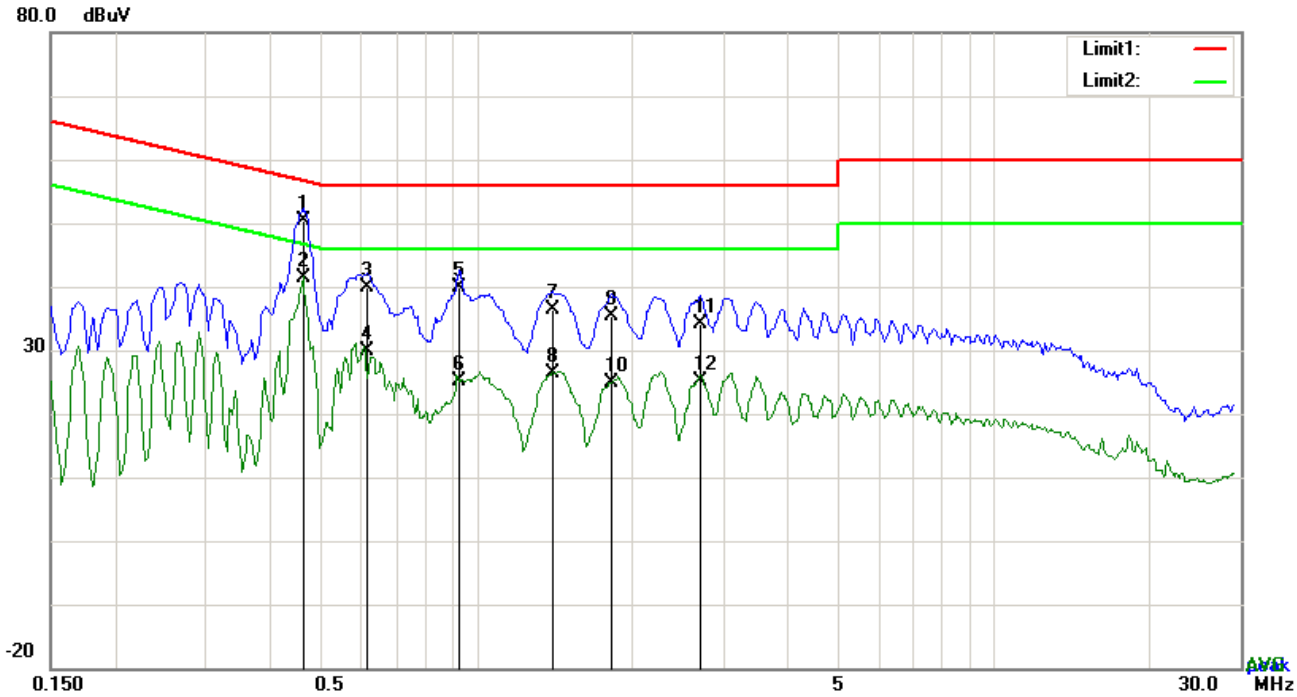
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.</td></tr>
<tr><td>Procedure</td><td colspan="3">1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.
2. The power supply for the EUT was fed through a 50Ω /50mH EUT LISN, connected to filtered mains.</td></tr>
</table>

	3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. 4. All other supporting equipment were powered separately from another main supply. 5. The EUT was switched on and allowed to warm up to its normal operating condition. 6. A scan was made on the NEUTRAL line (for AC mains) or Earth line (for DC power) over the required frequency range using an EMI test receiver. 7. High peaks, relative to the limit line, The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10 kHz. 8. Step 7 was then repeated for the LIVE line (for AC mains) or DC line (for DC power).
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode :	Charging Mode

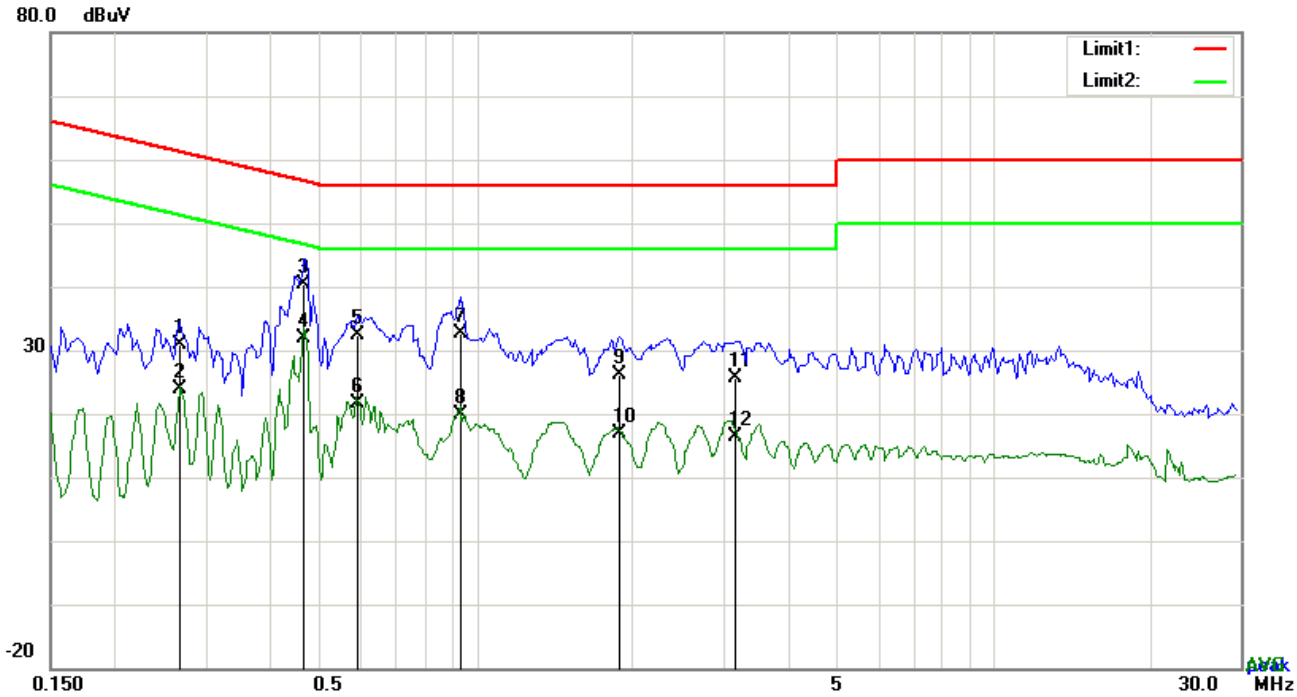


Test Data

Phase Line Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.4620	40.30	QP	10.03	50.33	56.66	-6.33
2	L1	0.4620	31.39	AVG	10.03	41.42	46.66	-5.24
3	L1	0.6141	29.81	QP	10.03	39.84	56.00	-16.16
4	L1	0.6141	19.73	AVG	10.03	29.76	46.00	-16.24
5	L1	0.9261	29.95	QP	10.03	39.98	56.00	-16.02
6	L1	0.9261	15.02	AVG	10.03	25.05	46.00	-20.95
7	L1	1.4058	26.26	QP	10.04	36.30	56.00	-19.70
8	L1	1.4058	16.37	AVG	10.04	26.41	46.00	-19.59
9	L1	1.8270	25.28	QP	10.04	35.32	56.00	-20.68
10	L1	1.8270	14.82	AVG	10.04	24.86	46.00	-21.14
11	L1	2.7123	24.01	QP	10.05	34.06	56.00	-21.94
12	L1	2.7123	15.18	AVG	10.05	25.23	46.00	-20.77

Test Mode :	Charging Mode

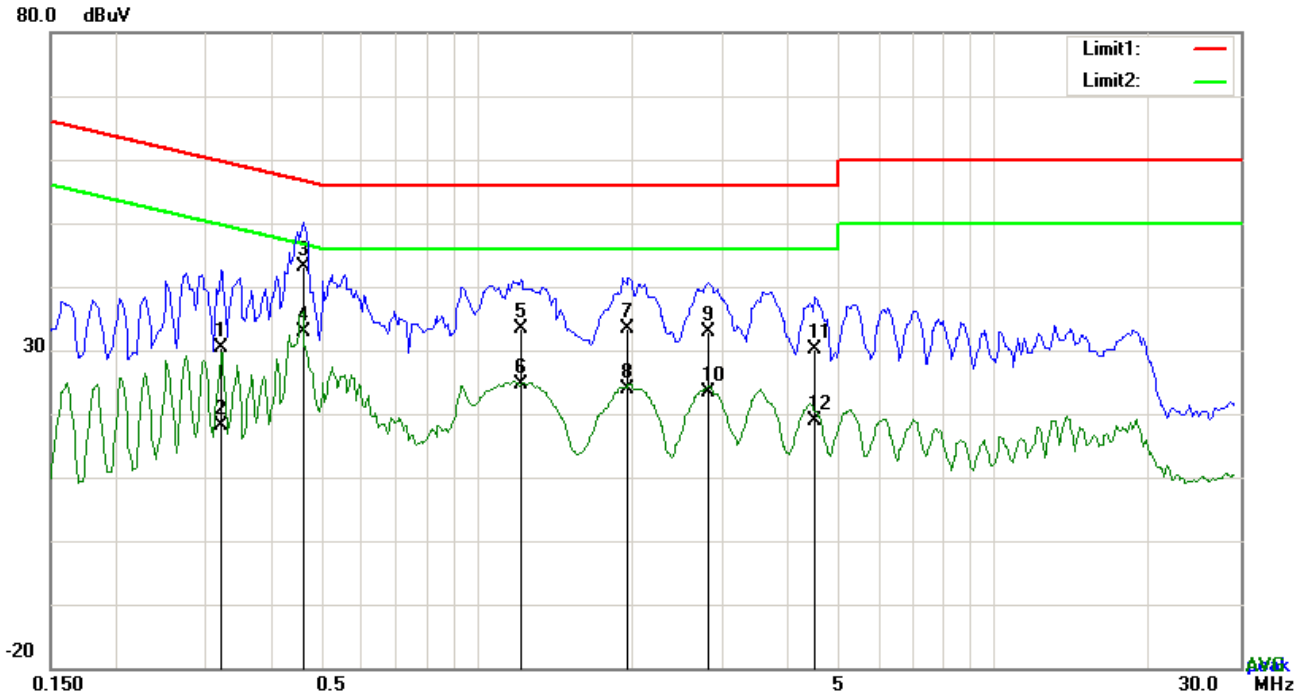


Test Data

Phase Neutral Plot at 120Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.2670	20.84	QP	10.02	30.86	61.21	-30.35
2	N	0.2670	13.95	AVG	10.02	23.97	51.21	-27.24
3	N	0.4659	30.41	QP	10.02	40.43	56.59	-16.16
4	N	0.4659	21.92	AVG	10.02	31.94	46.59	-14.65
5	N	0.5907	22.39	QP	10.02	32.41	56.00	-23.59
6	N	0.5907	11.60	AVG	10.02	21.62	46.00	-24.38
7	N	0.9300	22.60	QP	10.03	32.63	56.00	-23.37
8	N	0.9300	9.92	AVG	10.03	19.95	46.00	-26.05
9	N	1.8894	16.08	QP	10.04	26.12	56.00	-29.88
10	N	1.8894	6.85	AVG	10.04	16.89	46.00	-29.11
11	N	3.1638	15.59	QP	10.05	25.64	56.00	-30.36
12	N	3.1638	6.23	AVG	10.05	16.28	46.00	-29.72

Test Mode :	Charging Mode

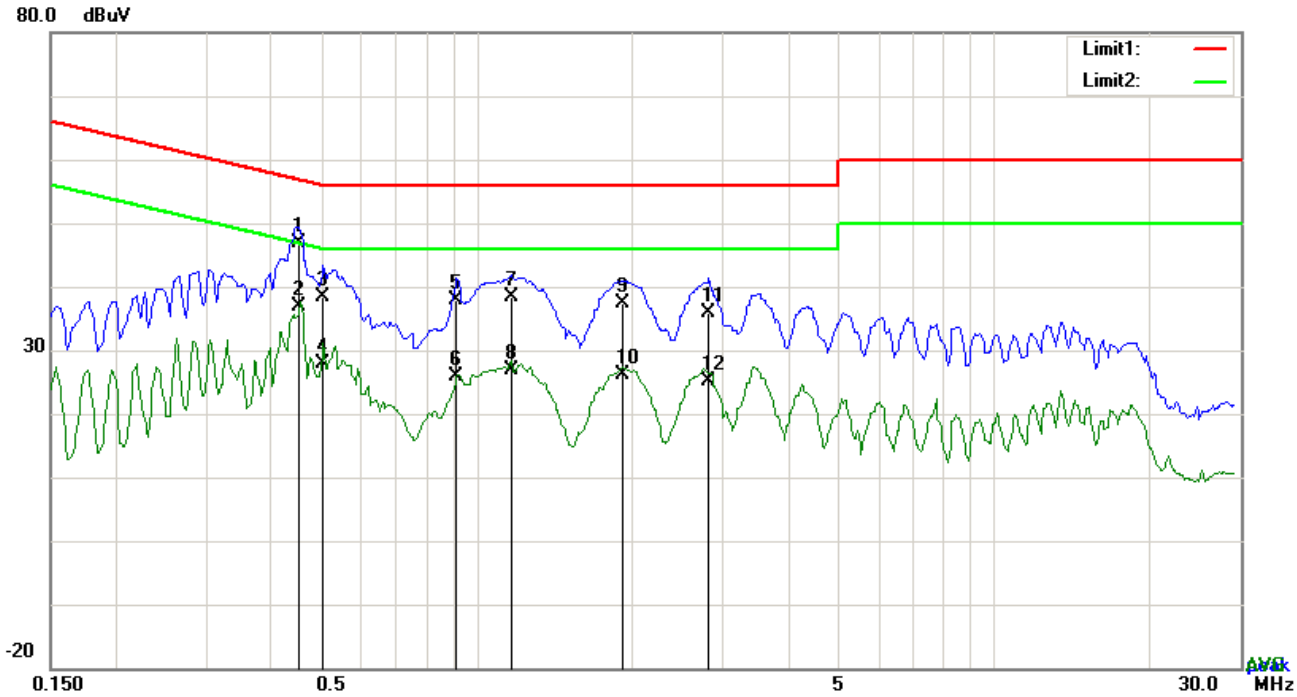


Test Data

Phase Line Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	L1	0.3216	20.38	QP	10.03	30.41	59.67	-29.26
2	L1	0.3216	8.11	AVG	10.03	18.14	49.67	-31.53
3	L1	0.4620	33.08	QP	10.03	43.11	56.66	-13.55
4	L1	0.4620	22.73	AVG	10.03	32.76	46.66	-13.90
5	L1	1.2186	23.47	QP	10.03	33.50	56.00	-22.50
6	L1	1.2186	14.56	AVG	10.03	24.59	46.00	-21.41
7	L1	1.9674	23.36	QP	10.04	33.40	56.00	-22.60
8	L1	1.9674	13.82	AVG	10.04	23.86	46.00	-22.14
9	L1	2.7942	22.81	QP	10.05	32.86	56.00	-23.14
10	L1	2.7942	13.44	AVG	10.05	23.49	46.00	-22.51
11	L1	4.5171	20.06	QP	10.07	30.13	56.00	-25.87
12	L1	4.5171	8.93	AVG	10.07	19.00	46.00	-27.00

Test Mode :	Charging Mode



Test Data

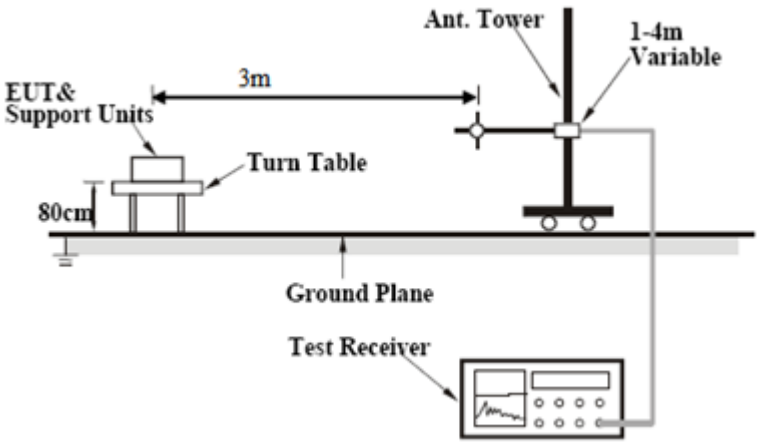
Phase Neutral Plot at 240Vac, 60Hz

No.	P/L	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
		(MHz)	(dBuV)		(dB}	(dBuV)	(dBuV)	(dB)
1	N	0.4542	36.83	QP	10.02	46.85	56.80	-9.95
2	N	0.4542	26.80	AVG	10.02	36.82	46.80	-9.98
3	N	0.5049	28.34	QP	10.02	38.36	56.00	-17.64
4	N	0.5049	17.74	AVG	10.02	27.76	46.00	-18.24
5	N	0.9144	27.95	QP	10.03	37.98	56.00	-18.02
6	N	0.9144	15.73	AVG	10.03	25.76	46.00	-20.24
7	N	1.1679	28.29	QP	10.03	38.32	56.00	-17.68
8	N	1.1679	16.81	AVG	10.03	26.84	46.00	-19.16
9	N	1.9206	27.42	QP	10.04	37.46	56.00	-18.54
10	N	1.9206	16.16	AVG	10.04	26.20	46.00	-19.80
11	N	2.8137	25.91	QP	10.05	35.96	56.00	-20.04
12	N	2.8137	14.99	AVG	10.05	25.04	46.00	-20.96

6.2 Radiated Emissions

Temperature	27 °C
Relative Humidity	55%
Atmospheric Pressure	1023mbar
Test date :	August 22, 2017
Tested By :	Evans He

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.109(d)	a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges Frequency range (MHz) / Field Strength (μV/m) 30 – 88 / 100 88 – 216 / 150 216 - 960 / 200 Above 960 / 500	☑
Test Setup			
Procedure	1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. The test was carried out at the selected frequency points obtained from the EUT characterization. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: a. Vertical or horizontal polarization (whichever gave the higher emission level		

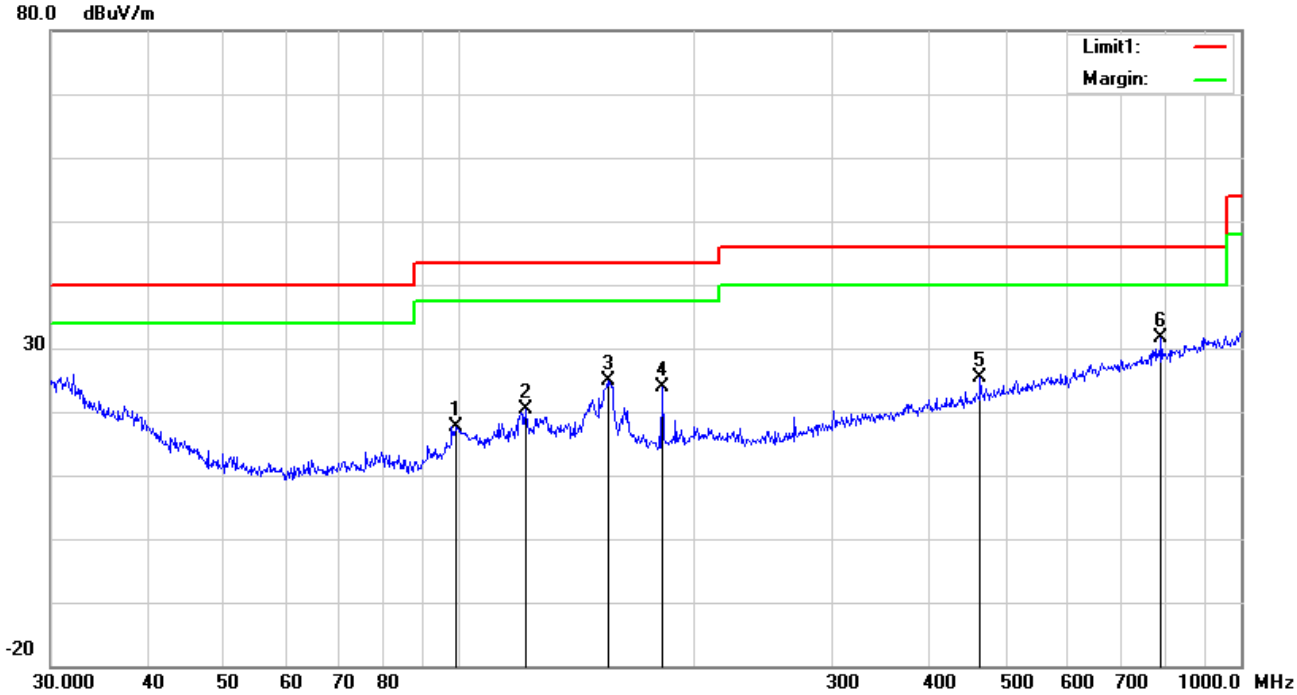
	over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasiy Peak detection at frequency below 1GHz. 4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak measurement at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth with Peak detection for Average Measurement as below at frequency above 1GHz. ■ 1 kHz (Duty cycle < 98%) □ 10 Hz (Duty cycle > 98%) 5. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
Remark	
Result	☑ Pass ☐ Fail

Test Data ☑ Yes ☐ N/A

Test Plot ☑ Yes (See below) ☐ N/A

Test Mode :	Charging Mode

Below 1GHz

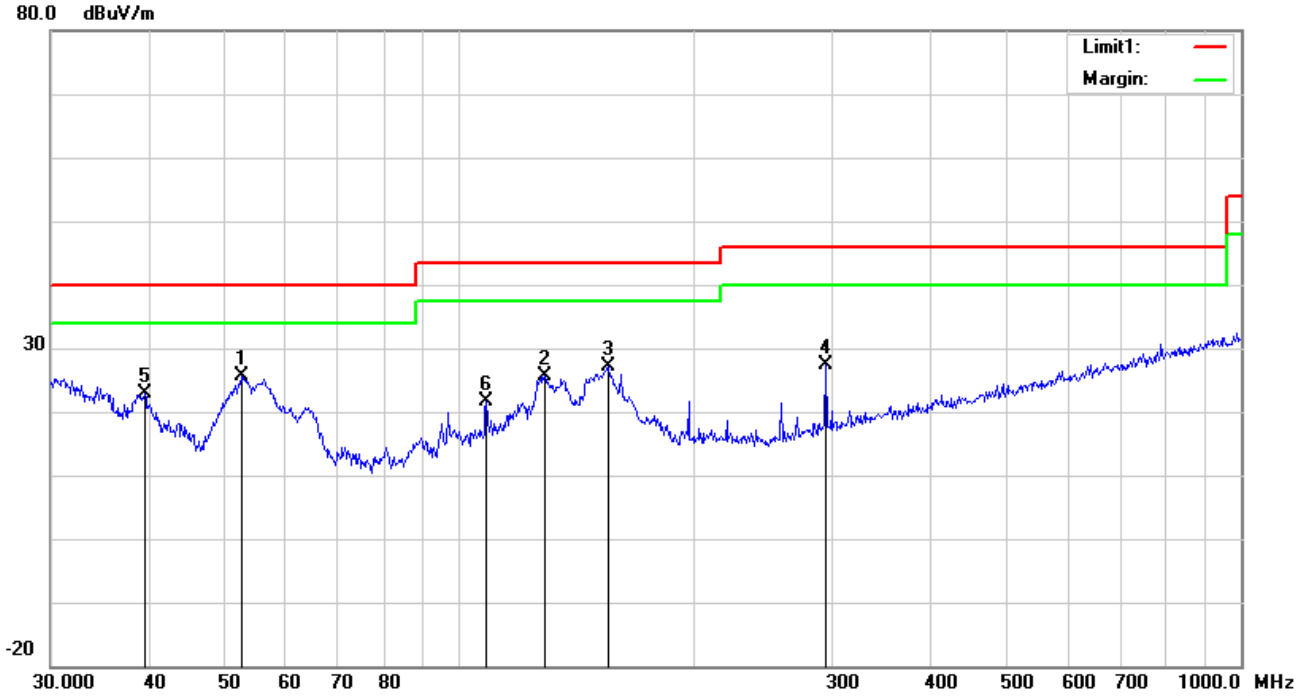


Test Data

Horizontal Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	H	98.8326	28.77	peak	10.12	22.32	1.09	17.66	43.50	-25.84	100	27
2	H	121.5486	27.81	peak	13.80	22.36	1.17	20.42	43.50	-23.08	100	45
3	H	154.8205	33.12	peak	12.60	22.31	1.36	24.77	43.50	-18.73	100	82
4	H	181.9202	33.60	peak	11.11	22.26	1.39	23.84	43.50	-19.66	100	343
5	H	463.9696	28.13	peak	16.98	21.88	2.21	25.44	46.00	-20.56	100	80
6	H	790.6188	28.65	peak	21.29	21.17	2.94	31.71	46.00	-14.29	100	157

Below 1GHz



Test Data

Vertical Polarity Plot @3m

No.	P/L	Frequency	Reading	Detector	Ant_F	PA_G	Cab_L	Result	Limit	Margin	Height	Degree
		(MHz)	(dBuV/m)		(dB/m)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	( )
1	V	52.5753	39.00	peak	8.12	22.39	0.79	25.52	40.00	-14.48	100	82
2	V	128.5630	33.44	peak	13.34	22.38	1.19	25.59	43.50	-17.91	200	295
3	V	154.8205	35.44	peak	12.60	22.31	1.36	27.09	43.50	-16.41	100	70
4	V	294.1137	34.65	peak	13.34	22.29	1.78	27.48	46.00	-18.52	100	316
5	V	39.5757	30.24	peak	14.21	22.28	0.79	22.96	40.00	-17.04	100	228
6	V	108.2667	30.91	peak	11.85	22.34	1.16	21.58	43.50	-21.92	100	41

Above 1GHz

Frequency (MHz)	Read_level (dBμV/m)	Azimuth	Height (cm)	Polarity (H/V)	Level (dBμV/m)	Factors (dB)	Limit (dBμV/m)	Margin (dB)	Detector (PK/AV)
1521.2	67.75	100	31	V	-18.55	49.2	74	-24.8	PK
2123.5	60.84	100	124	V	-14.64	46.2	74	-27.8	PK
2465.6	61.15	100	28	V	-13.7	47.45	74	-26.55	PK
1656.6	62	100	67	H	-17.26	44.74	74	-29.26	PK
2532.5	60.59	100	180	H	-13.46	47.13	74	-26.87	PK
2657.9	56.94	200	47	H	-13.46	43.48	74	-30.52	PK

*Note1: The highest frequency of the EUT is 2480 MHz, so the testing has been conformed to 5*2480MHz=12,400MHz.*

Note2: The frequency that above 3GHz is mainly from the environment noise.

Note3: The AV measurement performed, more than 20dB below limit so AV test data was not presented.

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Due	In use
AC Line Conducted Emissions					
EMI test receiver	ESCS30	8471241027	09/16/2016	09/15/2017	☑
Line Impedance Stabilization Network	LI-125A	191106	09/24/2016	09/23/2017	☑
Line Impedance Stabilization Network	LI-125A	191107	09/24/2016	09/23/2017	☑
ISN	ISN T800	34373	09/24/2016	09/23/2017	☐
Transient Limiter	LIT-153	531118	08/31/2016	08/30/2017	☑
Radiated Emissions					
EMI test receiver	ESL6	100262	09/16/2016	09/15/2017	☑
OPT 010 AMPLIFIER (0.1-1300MHz)	8447E	2727A02430	08/31/2016	08/30/2017	☑
Microwave Preamplifier (1 ~ 26.5GHz)	8449B	3008A02402	03/23/2017	03/22/2018	☑
Bilog Antenna (30MHz~6GHz)	JB6	A110712	09/20/2016	09/19/2017	☑
Double Ridge Horn Antenna	AH-118	71259	09/23/2016	09/22/2017	☑

Annex B. EUT And Test Setup Photographs

Annex B.i. Photograph: EUT External Photo

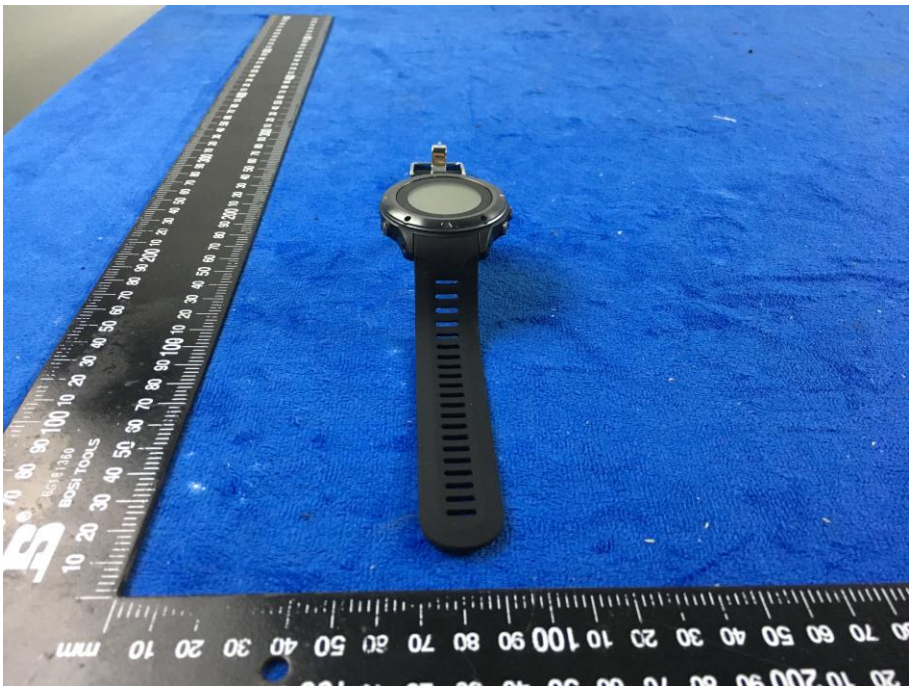
Whole Package View

EUT - Front View

EUT - Rear View

EUT - Top View

EUT - Bottom View



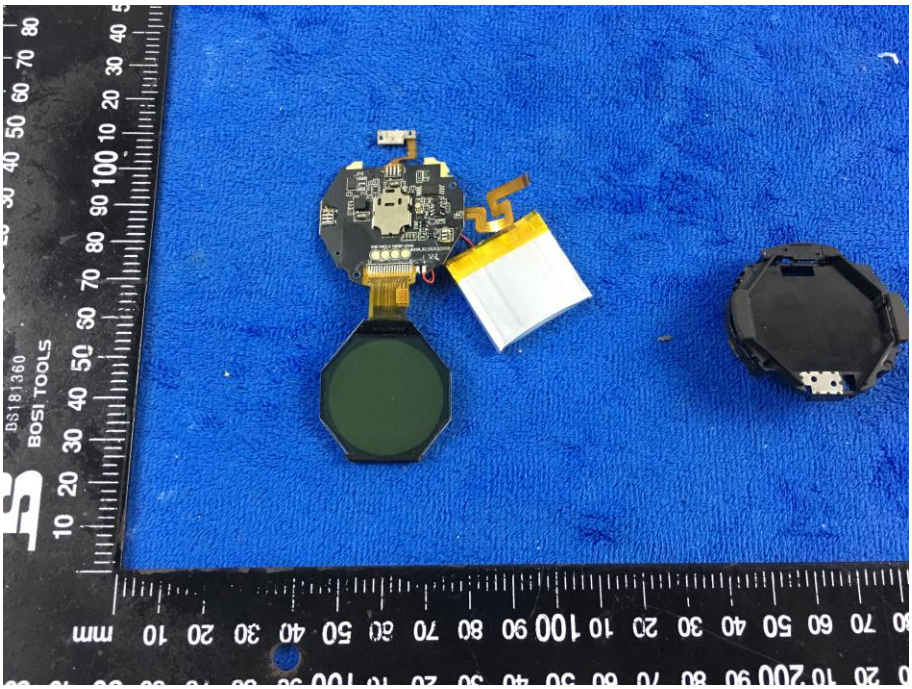
EUT - Left View

EUT - Right View

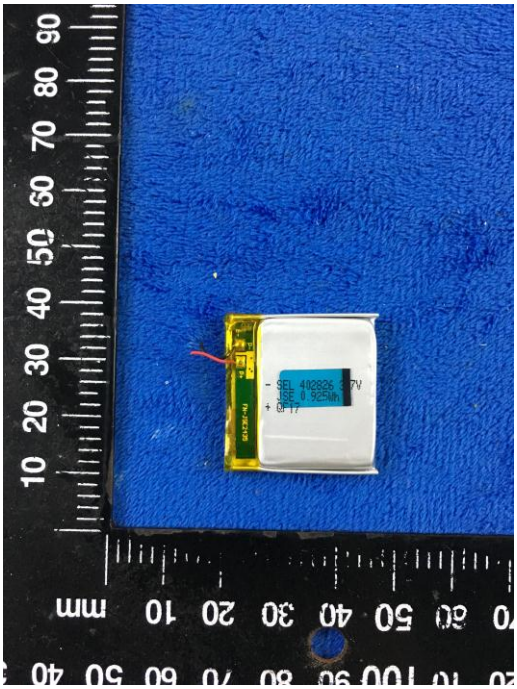
Annex B.ii. Photograph: EUT Internal Photo

Cover Off - Top View 1

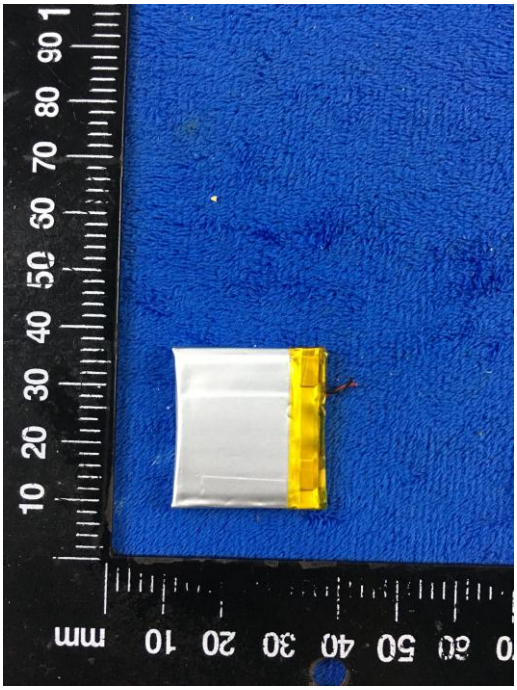
Cover Off - Top View 2



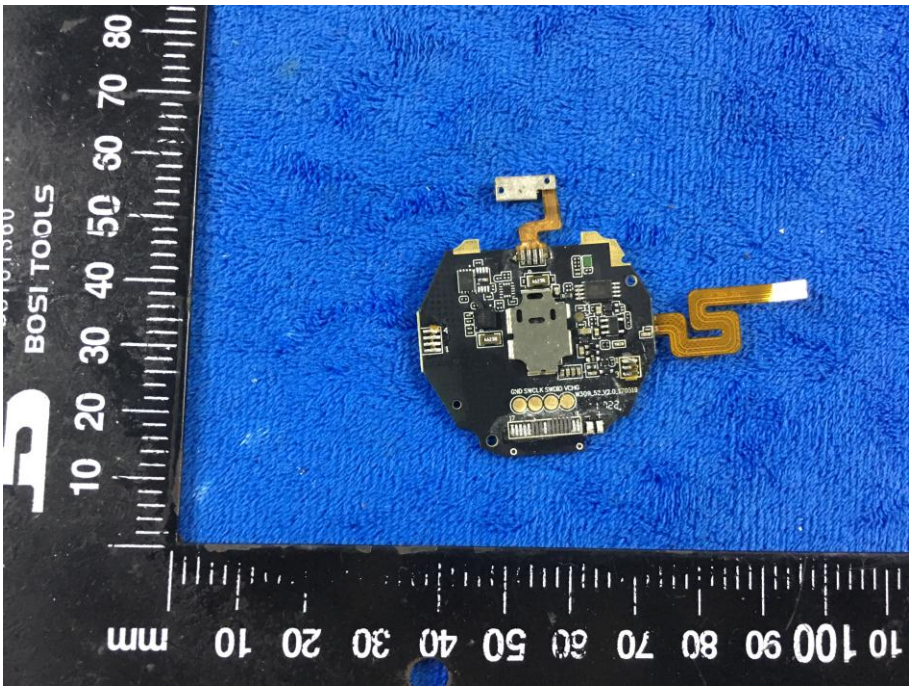
Battery - Front View



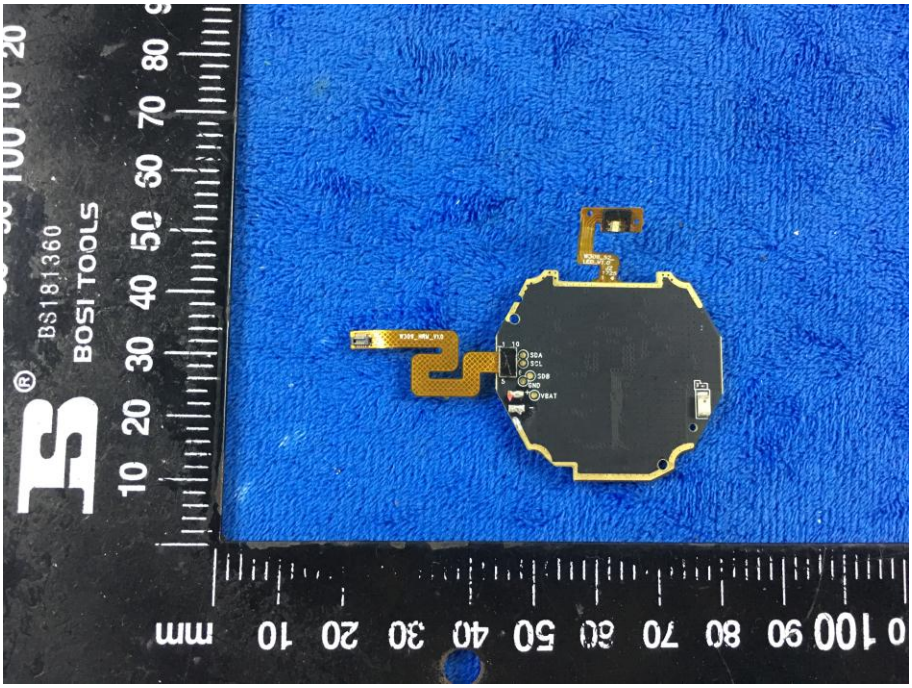
Battery - Rear View



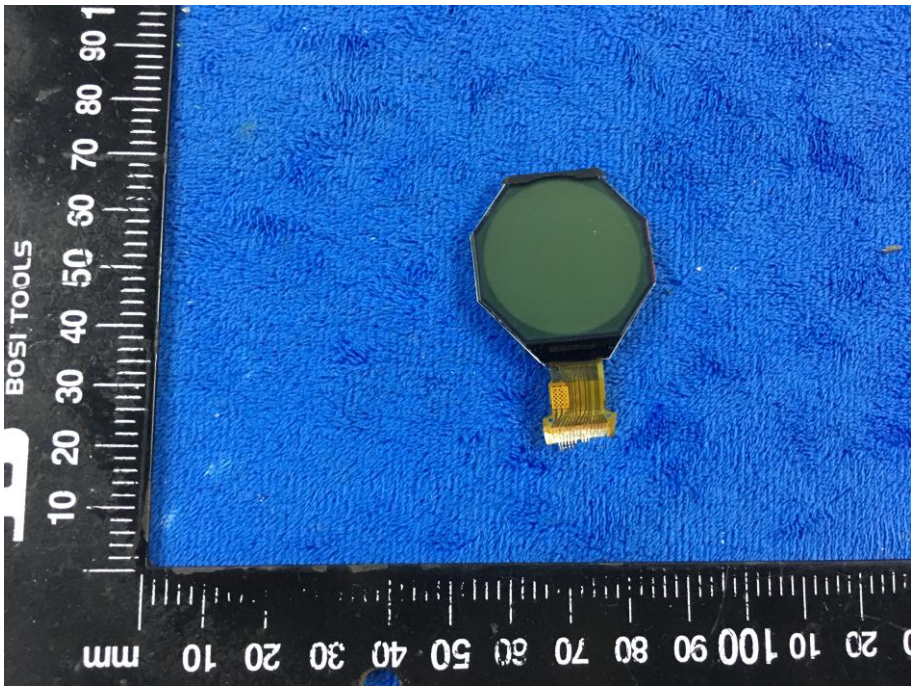
Mainboard - Front View



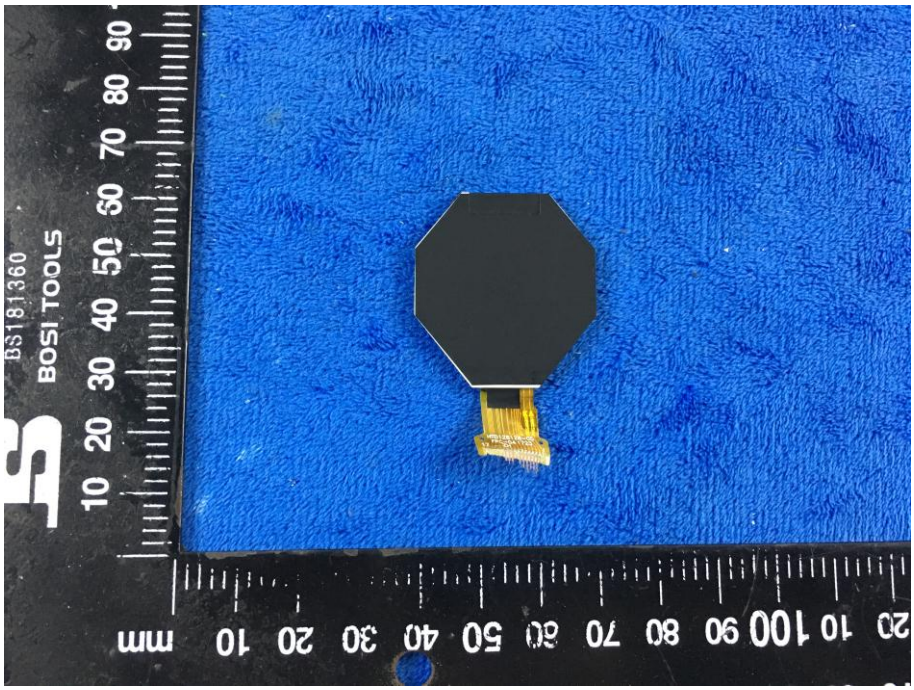
Mainboard - Rear View



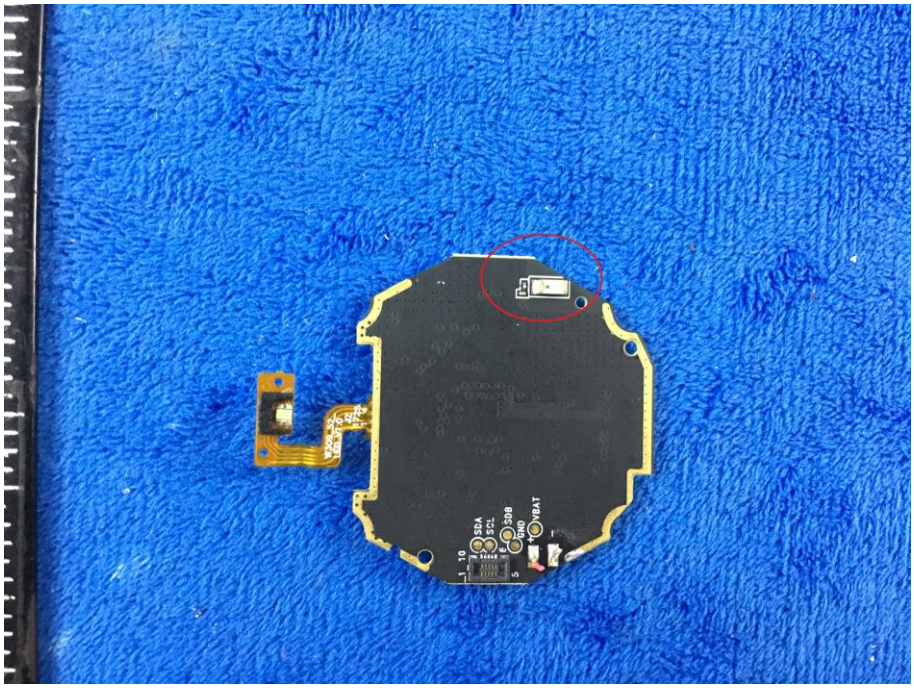
LCD – Front View



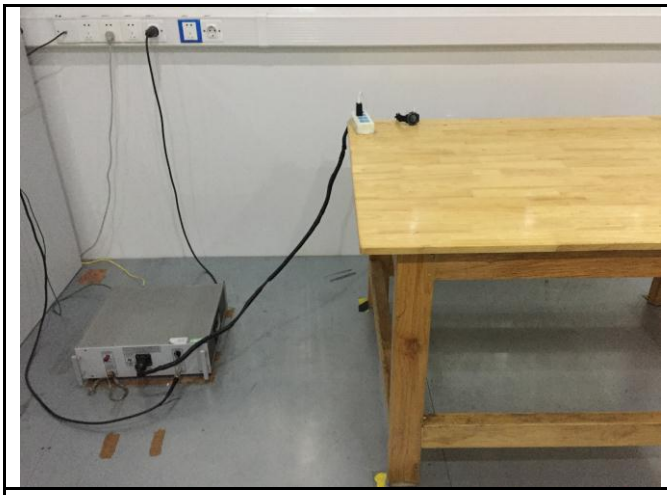
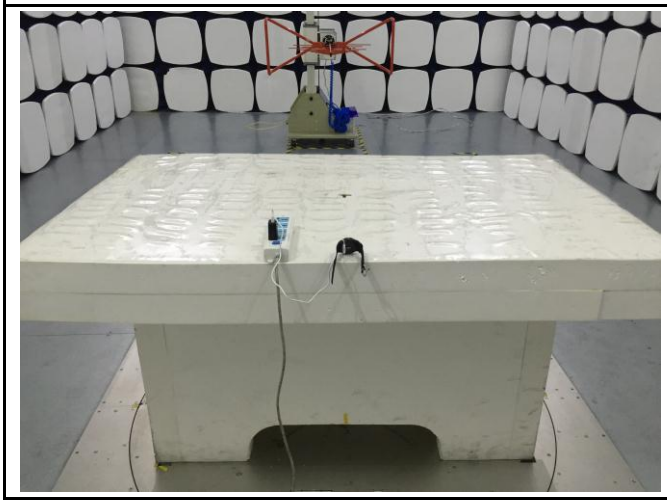
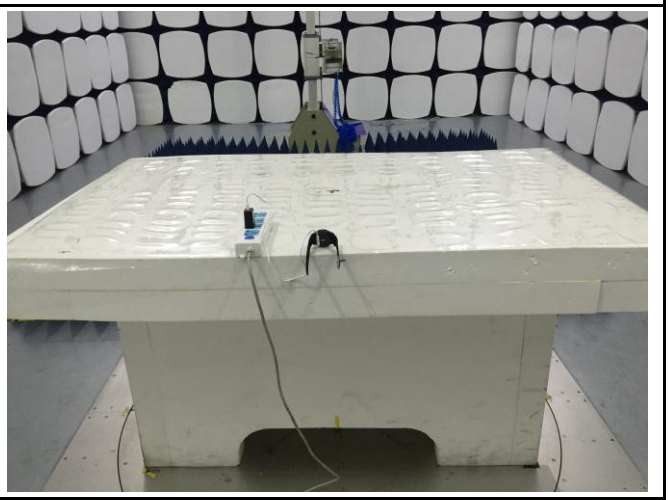
LCD – Rear View



BLE - Antenna View



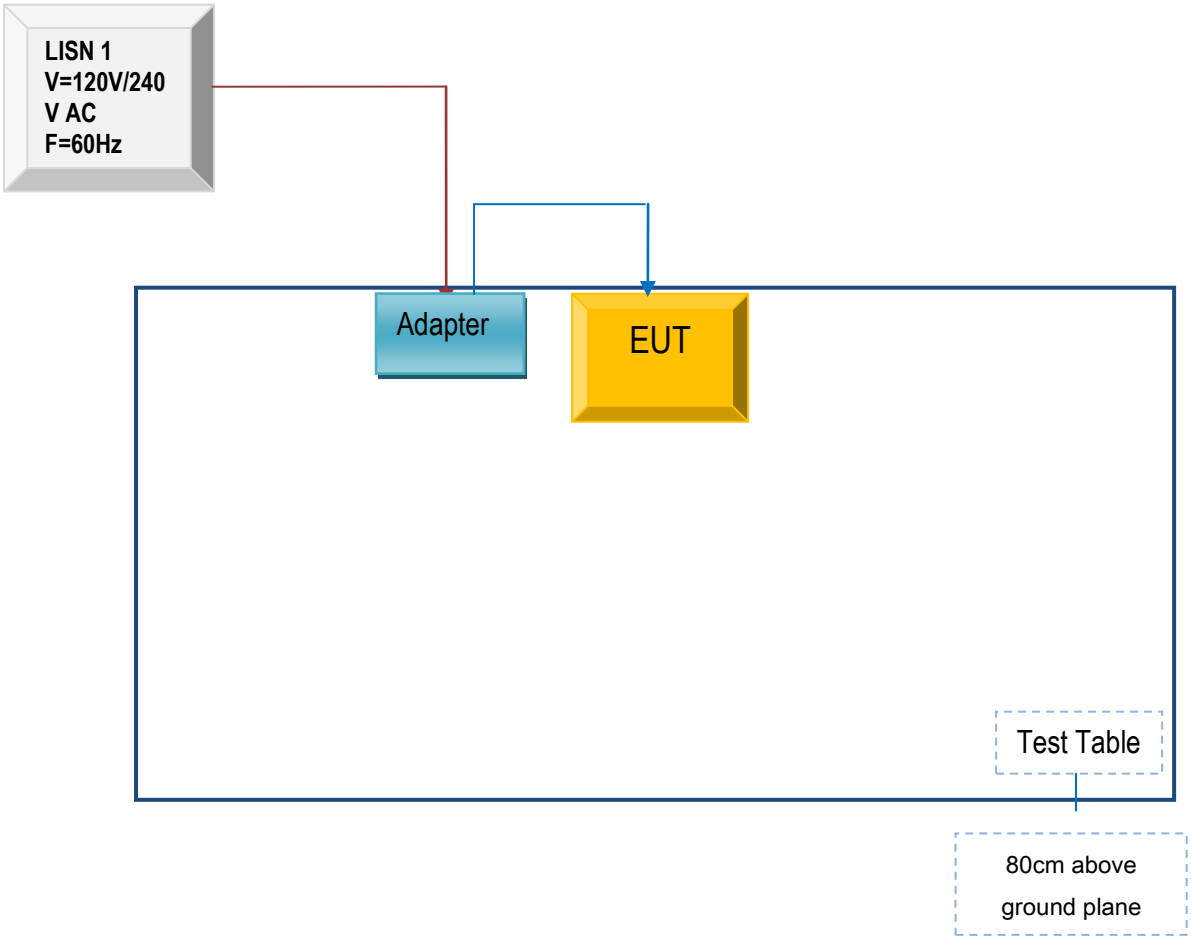
Annex B.iii. Photograph: Test Setup Photo

	
Conducted Emissions Test Setup – Front View	Conducted Emissions Test Setup – Side View
	
Radiated Emissions Test Setup Below 1GHz	Radiated Emissions Test Setup Above 1GHz

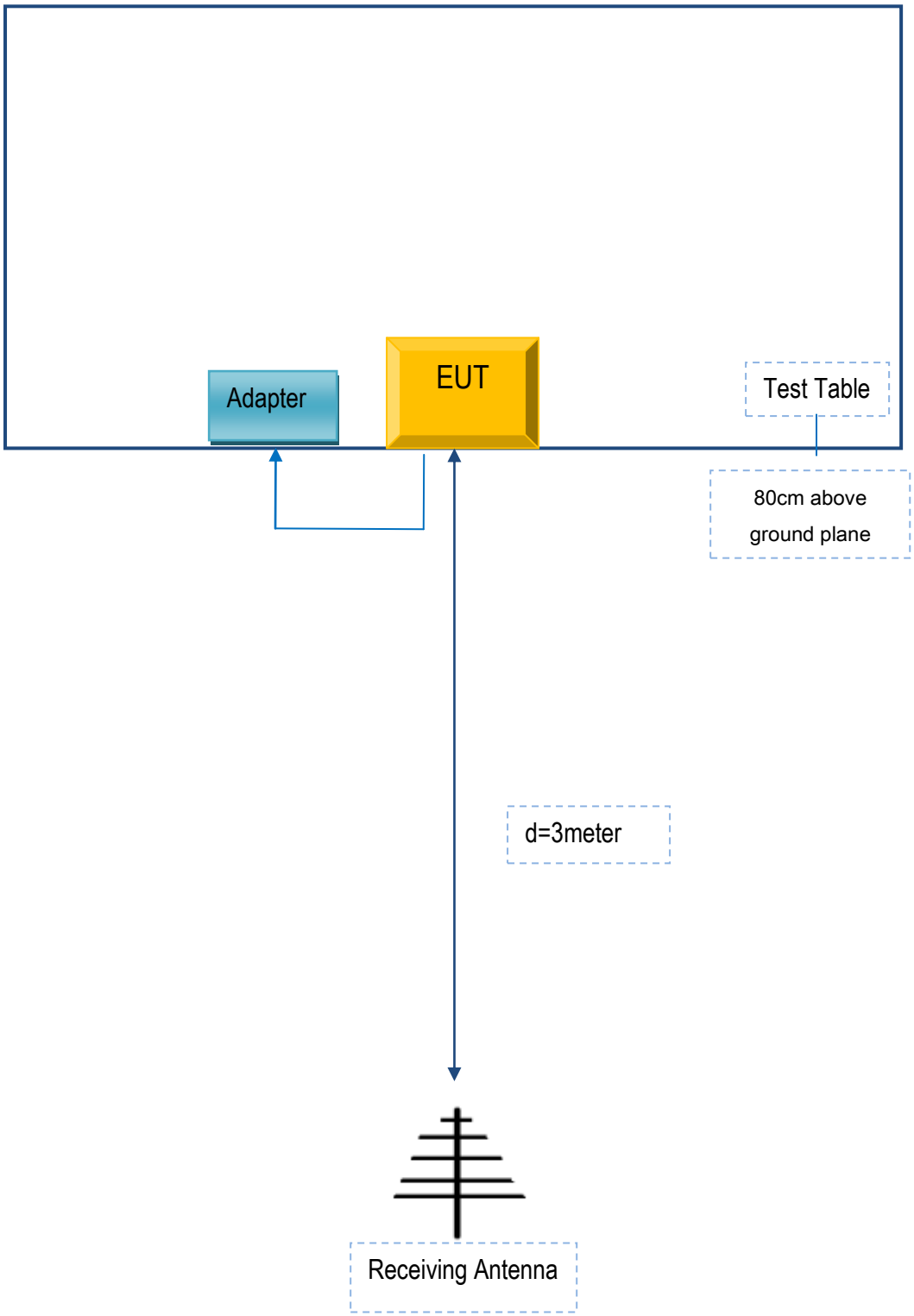
Annex C. TEST SETUP AND SUPPORTING EQUIPMENT

Annex C.ii. TEST SET UP BLOCK

Block Configuration Diagram for Conducted Emissions



Block Configuration Diagram for Radiated Emissions



Annex C. iI. SUPPORTING EQUIPMENT DESCRIPTION

The following is a description of supporting equipment and details of cables used with the EUT.

Supporting Equipment:

Manufacturer	Equipment Description	Model	Serial No
Cherry mobile	Adapter	CM-1000	N/A

Supporting Cable:

Cable type	Shield Type	Ferrite Core	Length	Serial No
USB cable	Un-shielding	No	0.8m	N/A

Annex D. User Manual / Block Diagram / Schematics / Partlist

Please see the attachment

Annex E. DECLARATION OF SIMILARITY

Shenzhen Huafurui Technology Co. Ltd

To: SIEMIC,775MontagueExpressway,Milpitas,CA95035,USA

Declaration Letter

Dear Sir,

For our business issue and marketing requirement, we would like to list 2 model numbers on the FCC certificates and reports, as following:

Model No.: F1,CUBOT F1
We declare that, all the model PCB, Antenna and Appearance shape, accessories are the same. The difference of these is listed as below:

Main Model No	Serial Model No	Difference
F1	CUBOT F1	Different model name

Thank you!

Signature: Paul liu

Printed name/title: Paul liu
Address: Adress :Unit 1401 14/F, Jin qi zhi gu mansion Liu xian street ,Xili, Nan shan district Shenzhen, China