



Shenzhen Certification Technology Service Co., Ltd.
2F, Building B, East Area of Nanchang Second Industrial
Zone, Gushu 2nd Road, Bao'an District, Shenzhen
518126, P.R. China

TEST REPORT

FCC ID: OJ3-IBF5

Applicant: Blue Anatomy Limited

Address: Room 615, 6 Floor, East Ocean Centre, 98 Granville Road, Tsimshatsui,
Kowloon, HongKong

Equipment Under Test (EUT):

Name : Wireless Body Scale

Model : iBF5

In Accordance with: FCC 15.247

Report No : STE120604673

Date of Test : June 05-26, 2012

Date of Issue : June. 27, 2012

Test Result: **PASS**

In the configuration tested, the EUT complied with the standards specified above

Authorized Signature

A handwritten signature in black ink, appearing to read "Mark Zhu". It is written in a cursive, flowing style and is positioned above a horizontal line.

(Mark Zhu)

General Manager

The manufacturer should ensure that all the products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Certification Technology Service Co., Ltd. Or test done by Shenzhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Certification Technology Service Co., Ltd. Approvals in writing.

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1. General Information

1.1. Description of Device (EUT)

EUT : Wireless Body Scale

Model No. : iBF5

Trademark : Blue Anatomy

Power supply : DC 6V from battery

Radio Technology : Bluetooth

FCC Operation frequency : 2402MHz -2480MHz

Modulation : FHSS

Antenna Type : Integral antenna, Gain: 0dBi

Applicant : Blue Anatomy Limited

Address : Room 615, 6 Floor, East Ocean Centre, 98 Granville Road, Tsimshatsui, Kowloon, HongKong

Manufacturer : Blue Anatomy Limited

Address : Room 615, 6 Floor, East Ocean Centre, 98 Granville Road, Tsimshatsui, Kowloon, HongKong

1.2. Accessories of device (EUT)

Accessories 1 : N/A

M/N : N/A

1.3. Test Lab information

Shenzhen Certification Technology Service Co., Ltd.
2F, Building B, East Area of Nanchang Second Industrial Zone,
Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China
FCC Registered No.:197647
IC Registered No.:8258B

2. Summary of test

2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) ANSI C63.10 :2009	PASS
20dB Bandwidth	FCC Part 15: 15.215 ANSI C63.10 :2009	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) ANSI C63.10 :2009	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10 :2009	Not applicable
Antenna requirement	FCC Part 15: 15.203	PASS
MPE ESTIMATION	FCC Part 2: 2.1093	PASS

Note: The Radiated spurious emissions Test with our Shenzhen Certification Technology Service Co.,Ltd. lab. Other test Refer to original test report EF/2005/C0012.

Bluetooth module and the original module, just the antenna change, Bluetooth module antenna gain:0dBi, original gain: 0.5dBi.

EUT can be powered Supply by battery, according to exploratory test, so all the final test were performed using a new battery.

2.2. Assistant equipment used for test

Description	:	N/A
Manufacturer	:	N/A
Model No.	:	N/A

2.3. Block Diagram

1, For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground. EUT was be set into BT test mode by Bluesuite software before test.



2.4. Test mode

The test software “Bluesuite” was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
FHSS	Low :CH1	2402
	Middle: CH40	2441
	High: CH79	2480

2.5. Test Conditions

Temperature range	21-25°C
Humidity range	40-75%
Pressure range	86-106kPa

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

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	1×10 ⁻⁹	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2°C	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

2.7. Test Equipment

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	05.08, 2011	1 Year
Spectrum analyzer	Agilent	E4443A	MY46185649	05.08, 2011	1 Year
Receiver	R&S	ESCI	100492	05.08, 2011	1 Year
Receiver	R&S	ESCI	101202	05.08, 2011	1 Year
Bilog Antenna	Sunol	JB3	A121206	15.12.2011	1 Year
Horn Antenna	EMCO	3115	640201028-06	15.12.2011	1 Year
Power Meter	Anritsu	ML2487A	6K00001491	05.08, 2011	1 Year
ETS Horn Antenna	ETS	3160	SEL0076	05.08, 2011	1 Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15.12.2011	1 Year
Cable	Resenberger	N/A	No.1	05.08, 2011	1 Year
Cable	SCHWARZBEC K	N/A	No.2	05.08, 2011	1 Year
Cable	SCHWARZBEC K	N/A	No.3	05.08, 2011	1 Year
Pre-amplifier	R&S	AFS42-00101 800-25-S-42	SEL0081	05.08, 2011	1 Year
Pre-amplifier	R&S	AFS33-18002 650-30-8P-44	SEL0080	05.08, 2011	1 Year
Base station	Agilent	E5515C	GB44300243	05.08, 2011	1 Year
Temperature controller	Terchy	MHQ	120	05.08, 2011	1 Year
Power divider	Anritsu	K240C	020346	05.08, 2011	1 Year
Signal Generator	HP	83732B	VS3449051	05.08, 2011	1 Year
Attenuator	Agilent	8491B	MY39262165	05.08, 2011	1 Year

3. Maximum Peak Output power

3.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts, the e.i.r.p shall not exceed 4W

Refer to original test report EF/2005/C0012, Page 16.

See original test report EF/2005/C0012 Page 16, The original test result :

CH	Frequency (MHz)	Reading Power dBm	Cable Loss	Output Power dBm	Output Power W	Limit (W)
LOW	2402.0	2.25	0.20	2.45	0.00176	1
MID	2441.0	2.07	0.20	2.27	0.00169	1
HIGH	2480.0	3.26	0.20	3.46	0.00222	1

The max out power is 3.46 dBm, max antenna gain is 0dBi,
So max out power is 3.46 dBm.

4. 20dB bandwidth

4.1. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Refer to original test report EF/2005/C0012, Page 19.

See original test report EF/2005/C0012 Page 19 ,The original test result :

CH	Bandwidth (MHz)
Lower	933.16
Mid	929.17
Higher	932.21

5. Carrier Frequency Separation

Refer to original test report EF/2005/C0012, Page 41.

6. Number Of Hopping Channel

Refer to original test report EF/2005/C0012, Page 43.

7. Dwell Time

Refer to original test report EF/2005/C0012, Page 45.

8. Conducted spurious emissions

Refer to original test report EF/2005/C0012, Page 29 to 31.

9. Radiated emissions

9.1. Limit

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.

15.205 Restricted frequency band

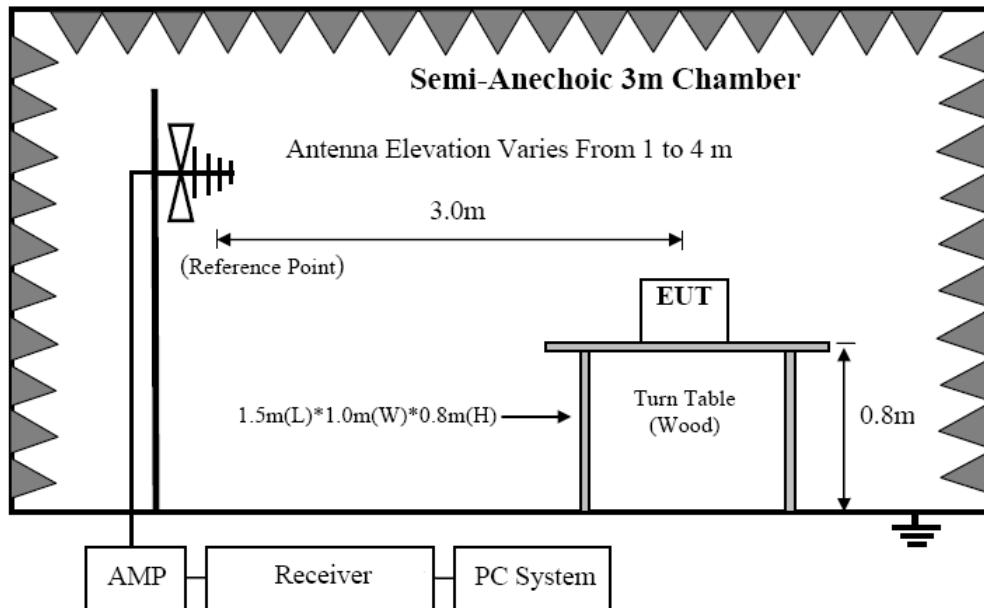
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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)

15.209 Limit

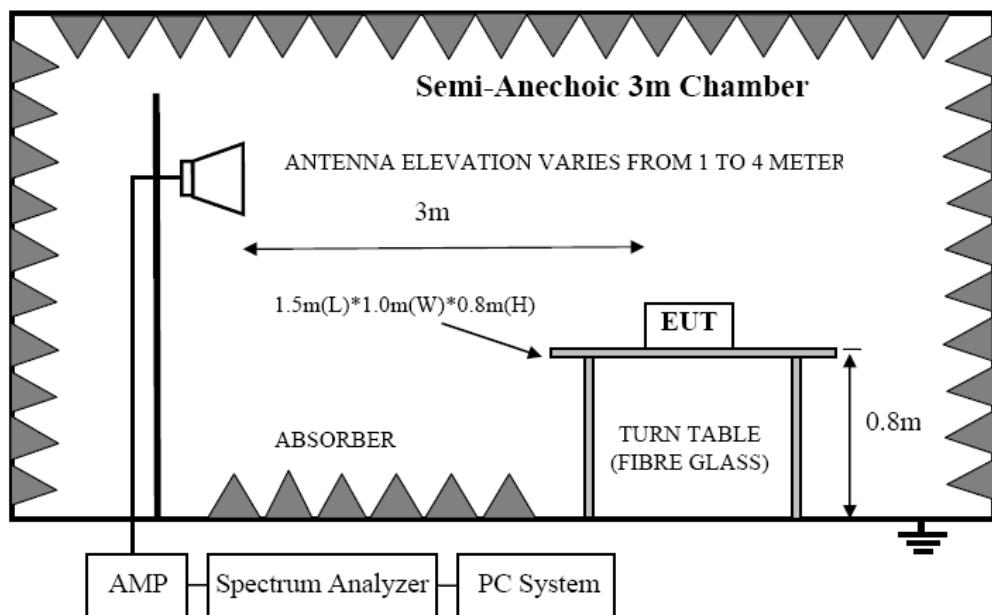
FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		µV/m	dB(µV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(µV)/m (Peak) 54.0 dB(µV)/m (Average)	

9.2. Block Diagram of Test setup

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



9.2.2. 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.

9.3. Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and simulator as shown in section 1.4 and 6.1
- (3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Change power supply range from 85% to 115% of the rated supply voltage for AC power supply.
 - (d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
- (4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated
- (5) For final emissions measurements at each frequency of interest, the EUT were 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 2009 on Radiated Emission test.
- (6) 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; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

9.4. Test Result

We have scanned the 5th harmonic from 9KHz to the EUT.

Detailed information please see the following page.

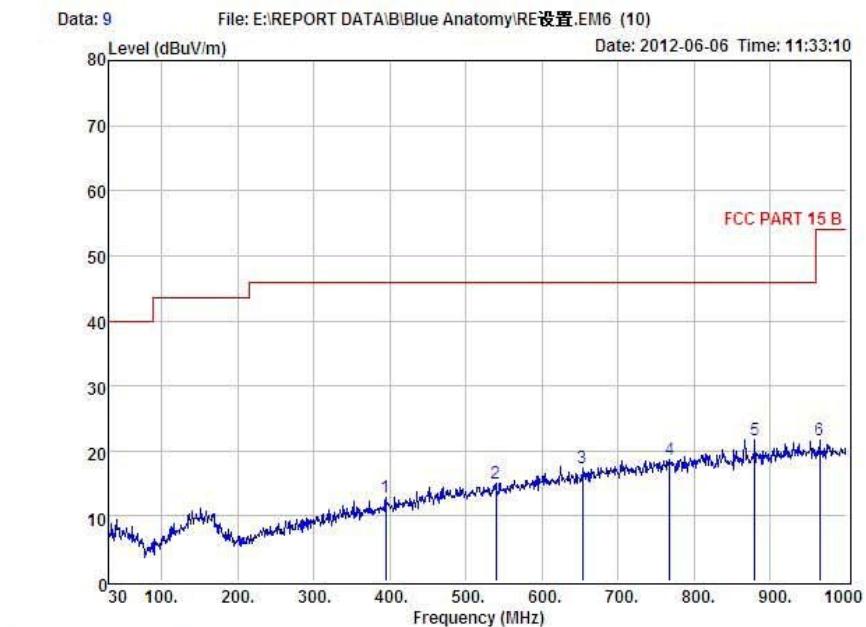
From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

From 30MHz to 1GHz



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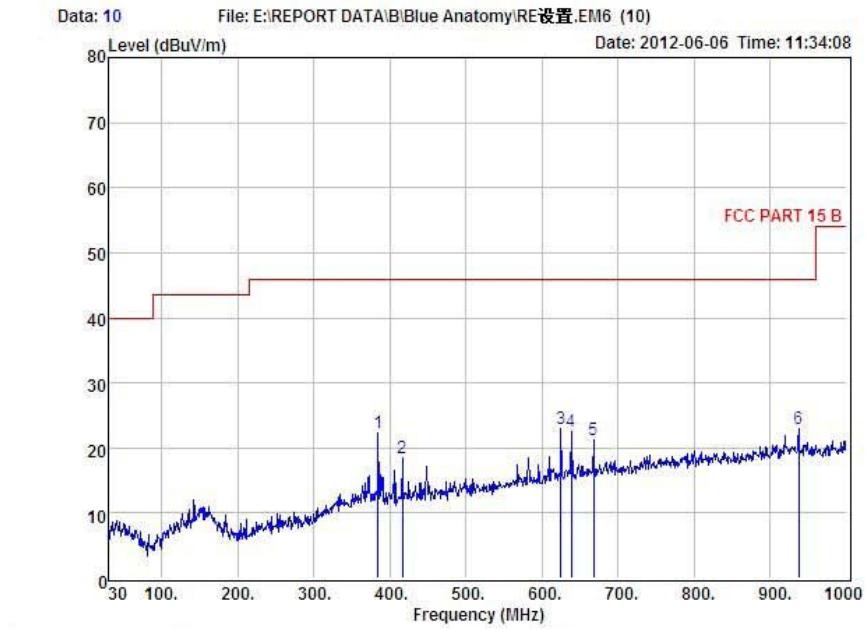


Condition : FCC PART 15 B 3m POL: VERTICAL
 EUT : Wireless Body Scale
 Model No. : iBFS
 Test Mode : Weighing
 Power : DC 6.0V
 Test Engineer : Eric
 Remark :

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	394.72	27.10	14.64	31.41	2.44	12.77	46.00	-33.23	QP
2	539.25	26.47	17.19	31.69	3.08	15.05	46.00	-30.95	QP
3	652.74	26.77	19.14	31.79	3.30	17.42	46.00	-28.58	QP
4	767.20	26.38	20.45	31.67	3.53	18.69	46.00	-27.31	QP
5	879.72	28.13	21.37	31.67	3.76	21.59	46.00	-24.41	QP
6	965.08	27.15	22.18	31.61	3.93	21.65	54.00	-32.35	QP



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Condition : FCC PART 15 B 3m POL: HORIZONTAL
 EUT : Wireless Body Scale
 Model No. : iBFS
 Test Mode : Weighing
 Power : DC 6.0V
 Test Engineer : Eric
 Remark :

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	384.05	36.73	14.48	31.38	2.38	22.21	46.00	-23.79	QP
2	416.06	32.20	15.13	31.45	2.55	18.43	46.00	-27.57	QP
3	624.61	32.73	18.76	31.81	3.25	22.93	46.00	-23.07	QP
4	638.19	32.08	18.94	31.80	3.28	22.50	46.00	-23.50	QP
5	667.29	30.30	19.30	31.78	3.33	21.15	46.00	-24.85	QP
6	936.95	28.66	22.05	31.62	3.87	22.96	46.00	-23.04	QP

1GHz—25GHz Radiated emission Test result									
EUT: Wireless Body Scale M/N:iBF5									
Power: DC 6V supply by battery									
Test date: 2012-06-07 Test site: 3m Chamber Tested by: Simple									
Test mode: Tx CH1 2402MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2402	/	/	/	/	/	/	/	/
2	4804	45.73	34.36	10.53	35.37	55.25	74.00	18.75	PK
3	4804	32.11	34.36	10.53	35.37	41.63	54.00	12.37	AV
4	7206	/							
5	9608	/							
6	12010	/							
Antenna Polarity: Horizontal									
1	2402	/	/	/	/	/	/	/	/
2	4804	43.92	34.36	10.53	35.37	53.44	74.00	20.56	PK
3	4804	30.66	34.36	10.53	35.37	40.18	54.00	13.82	AV
4	7206	/							
5	9608	/							
6	12010	/							
Note:									
1,Measuring frequency from 1GHz to 25GHz									
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK									
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK									
3,Result = Read level + Antenna factor + cable loss-Amp factor									
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

1GHz—25GHz Radiated emission Test result									
EUT: Wireless Body Scale M/N:iBF5									
Power: DC 6V supply by battery									
Test date: 2012-06-07 Test site: 3m Chamber Tested by: Simple									
Test mode: Tx CH40 2441MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441	/	/	/	/	/	/	/	/
2	4882	42.58	34.78	10.57	35.36	52.57	74.00	21.43	PK
3	4882	28.27	34.78	10.57	35.36	38.26	54.00	15.74	AV
4	7323	/							
5	9764	/							
6	12205	/							
Antenna Polarity: Horizontal									
1	2441	/	/	/	/	/	/	/	/
2	4882	43.05	34.78	10.57	35.36	53.04	74.00	20.96	PK
3	4882	29.20	34.78	10.57	35.36	39.19	54.00	14.81	AV
4	7323	/							
5	9764	/							
6	12205	/							
Note:									
1,Measuring frequency from 1GHz to 25GHz									
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK									
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK									
3,Result = Read level + Antenna factor + cable loss-Amp factor									
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

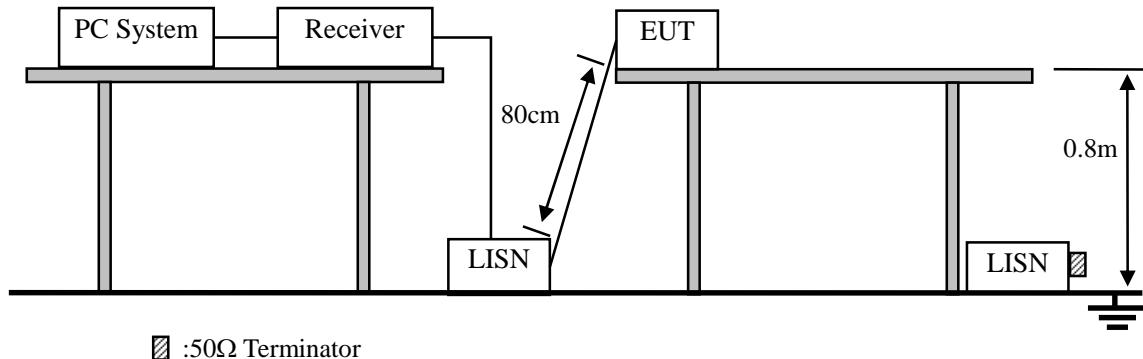
1GHz—25GHz Radiated emission Test result									
EUT: Wireless Body Scale M/N:iBF5									
Power: DC 6V supply by battery									
Test date: 2012-06-07 Test site: 3m Chamber Tested by: Simple									
Test mode: Tx CH79 2480MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480	/	/	/	/	/	/	/	/
2	4960	42.21	35.29	10.59	35.37	52.72	74.00	21.28	PK
3	4960	28.76	35.29	10.59	35.37	39.27	54.00	14.73	AV
4	7440	/							
5	9920	/							
6	12400	/							
Antenna Polarity: Horizontal									
1	2480	/	/	/	/	/	/	/	/
2	4960	42.54	35.29	10.59	35.37	53.05	74.00	20.95	PK
3	4960	29.63	35.29	10.59	35.37	40.14	54.00	13.86	AV
4	7440	/							
5	9920	/							
6	12400	/							
Note:									
1,Measuring frequency from 1GHz to 25GHz									
2,Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz ,Sweep time=Auto,Detector:PK									
2,Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz ,Sweep time=Auto,Detector:PK									
3,Result = Read level + Antenna factor + cable loss-Amp factor									
4,All the other emissions not reported were too low to read and deemed to comply with FCC limit.									

10. Band Edge Compliance

Refer to original test report EF/2005/C0012, Page 22.

11. Power Line Conducted Emissions

11.1. Block Diagram of Test Setup



11.2. Limit

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

Notes: 1. * Decreasing linearly with logarithm of frequency.

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

11.3. Test Procedure

- (1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
- (2) Setup the EUT and simulator as shown in 10.1
- (3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N1), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4 2009 and ANSI C64.10:2009 on conducted Emission test.
- (4) The bandwidth of test receiver is set at 10KHz.
- (5) The frequency range from 150 KHz to 30MHz is checked.

11.4. Test Result

EUT power supply by battery, so the test not applicable.

12. Antenna Requirements

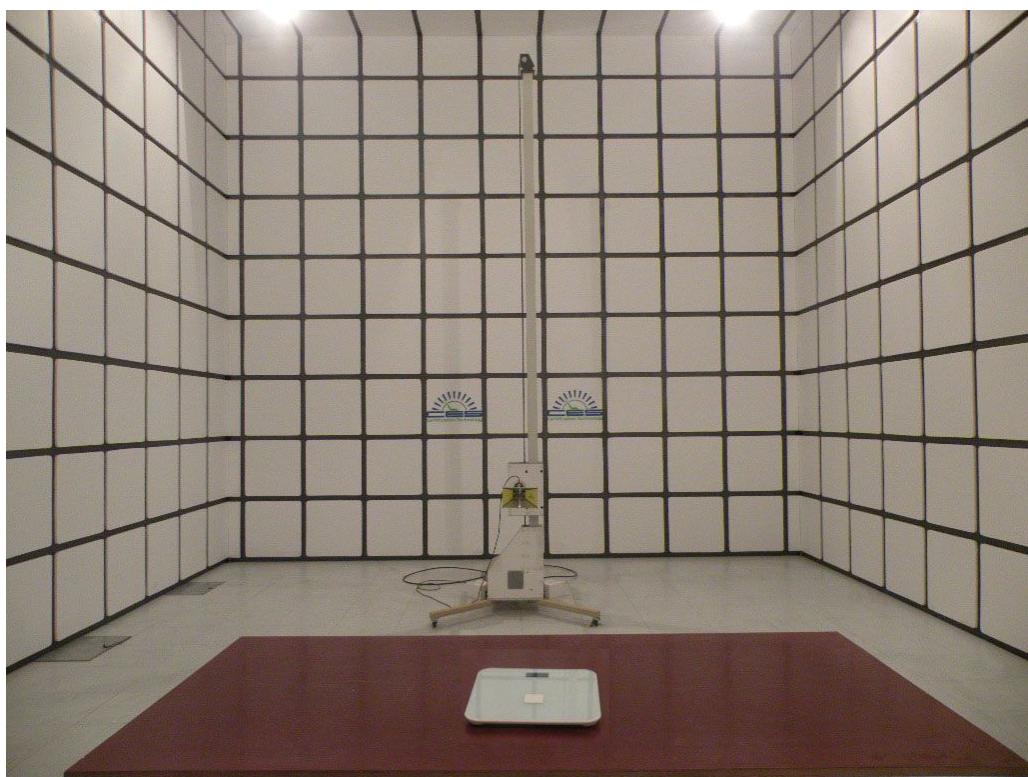
12.1. Limit

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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

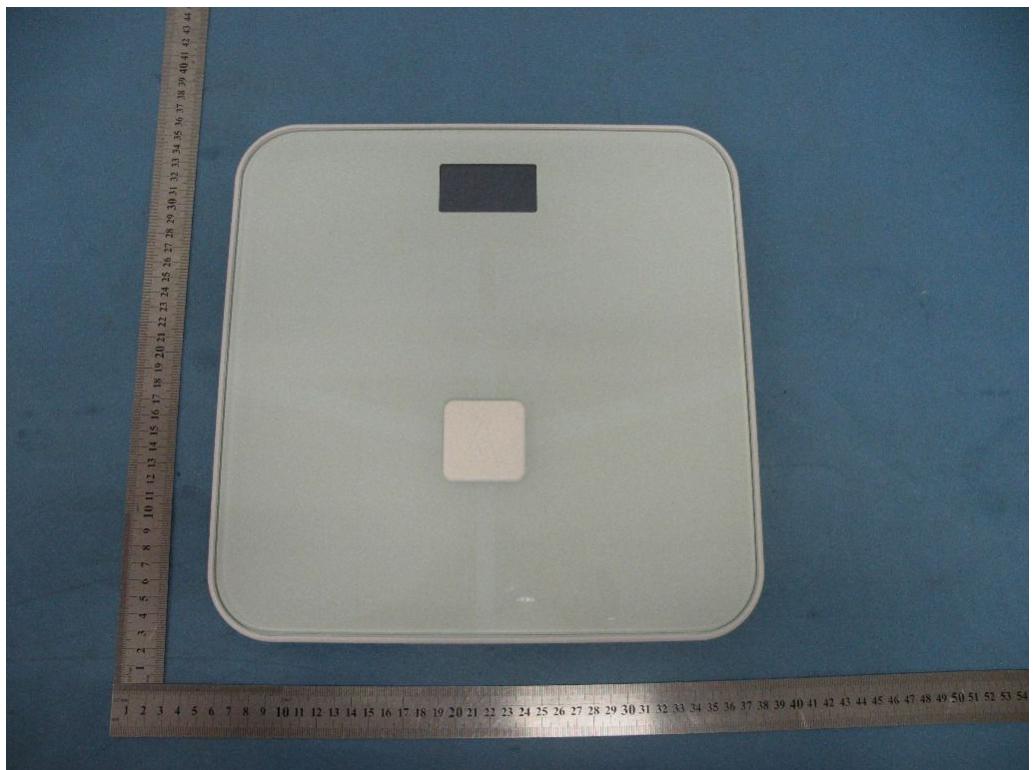
12.2. Result

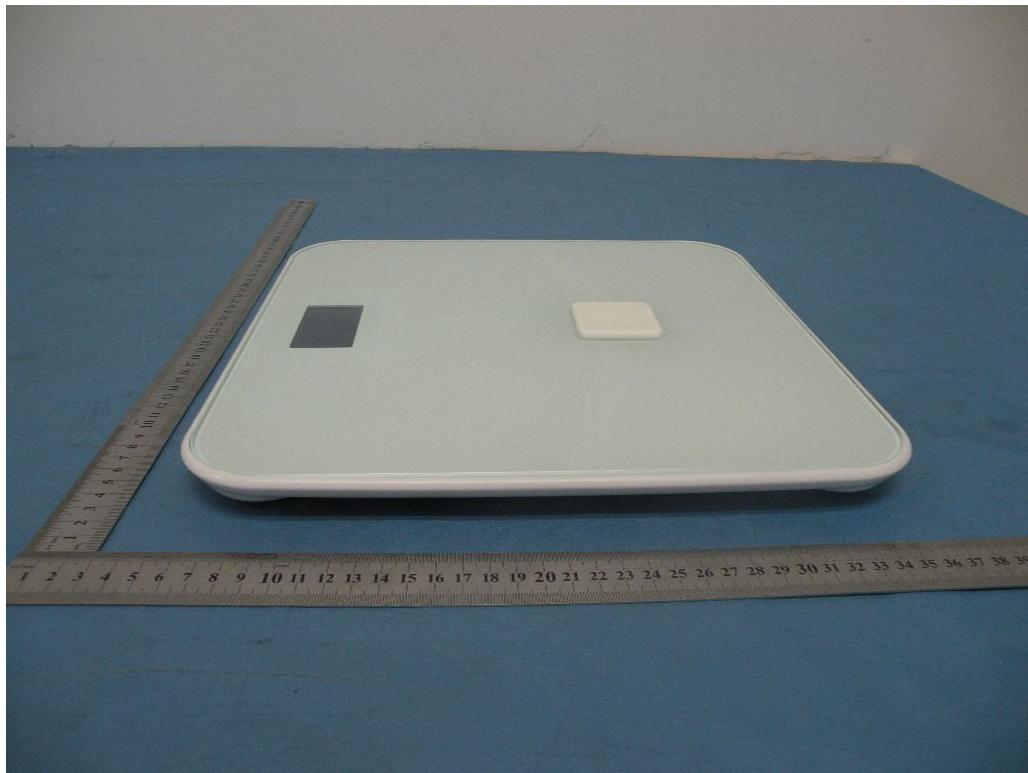
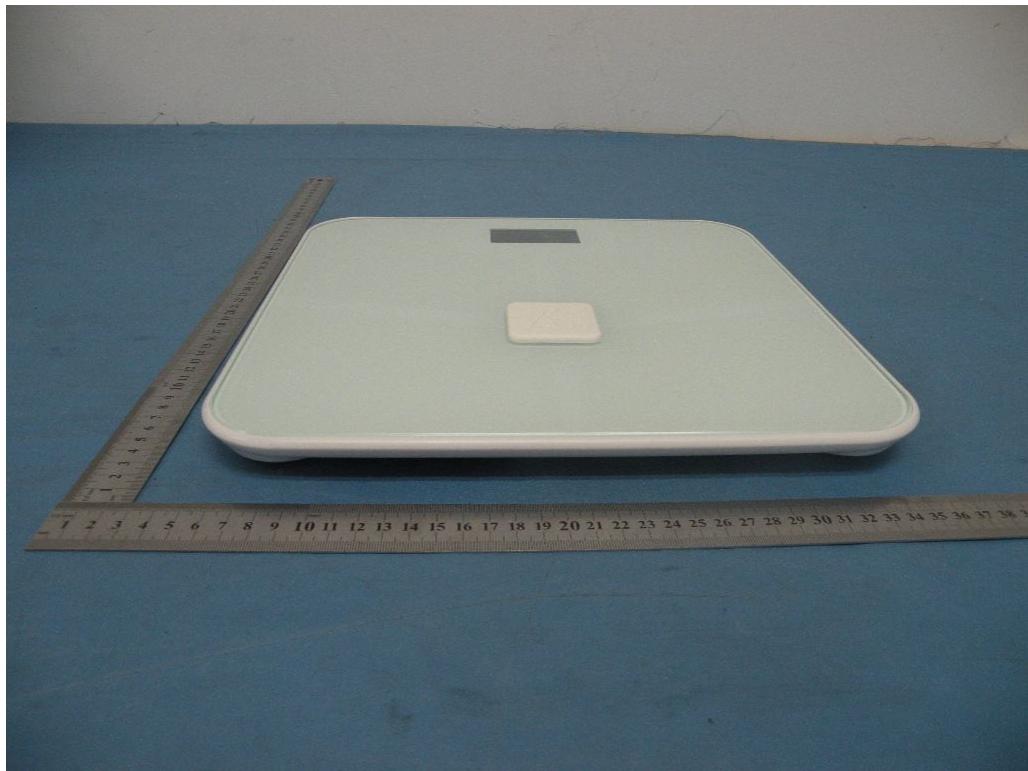
The antennas used for this product are integral Patch Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

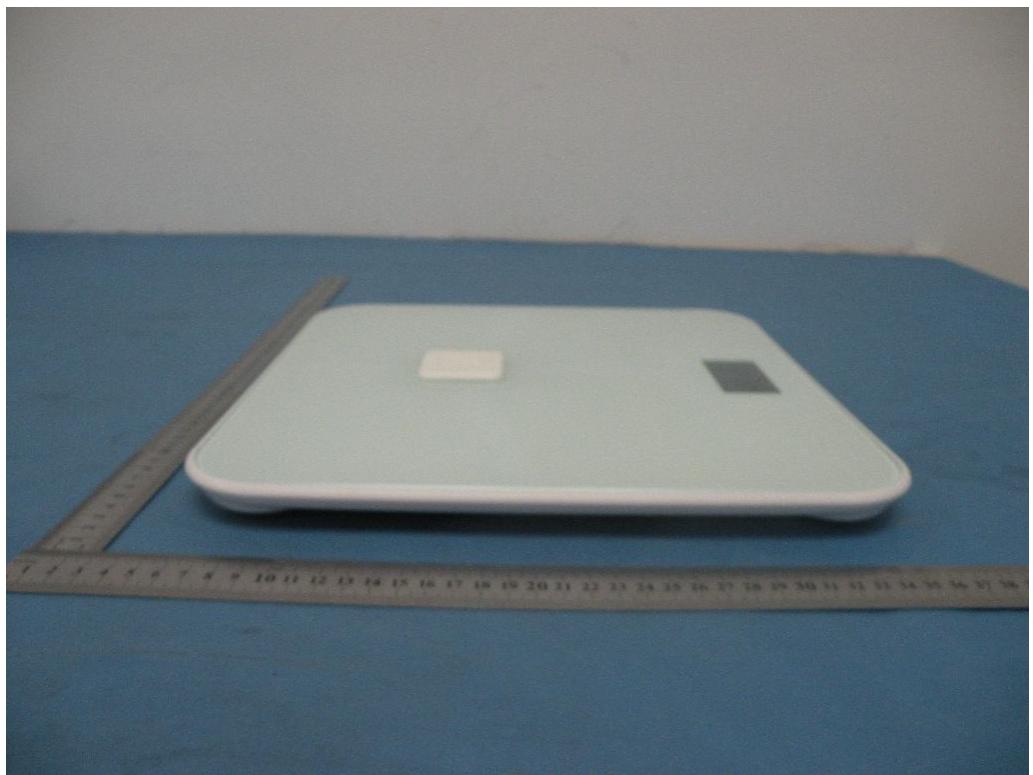
13. Test setup photo

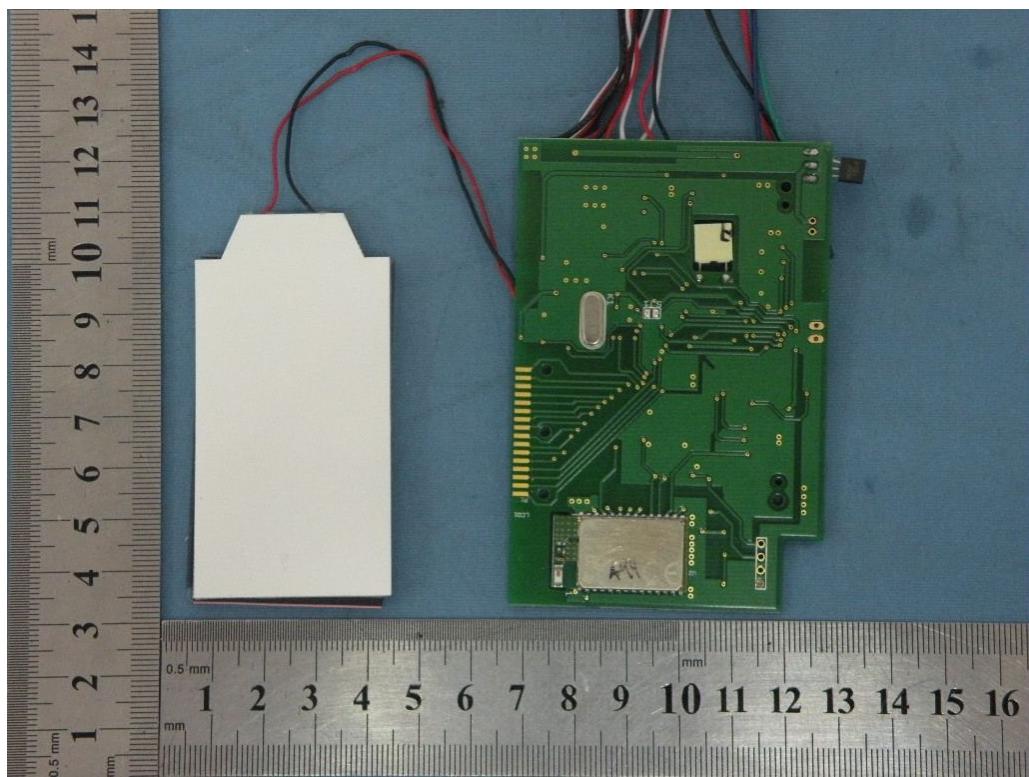
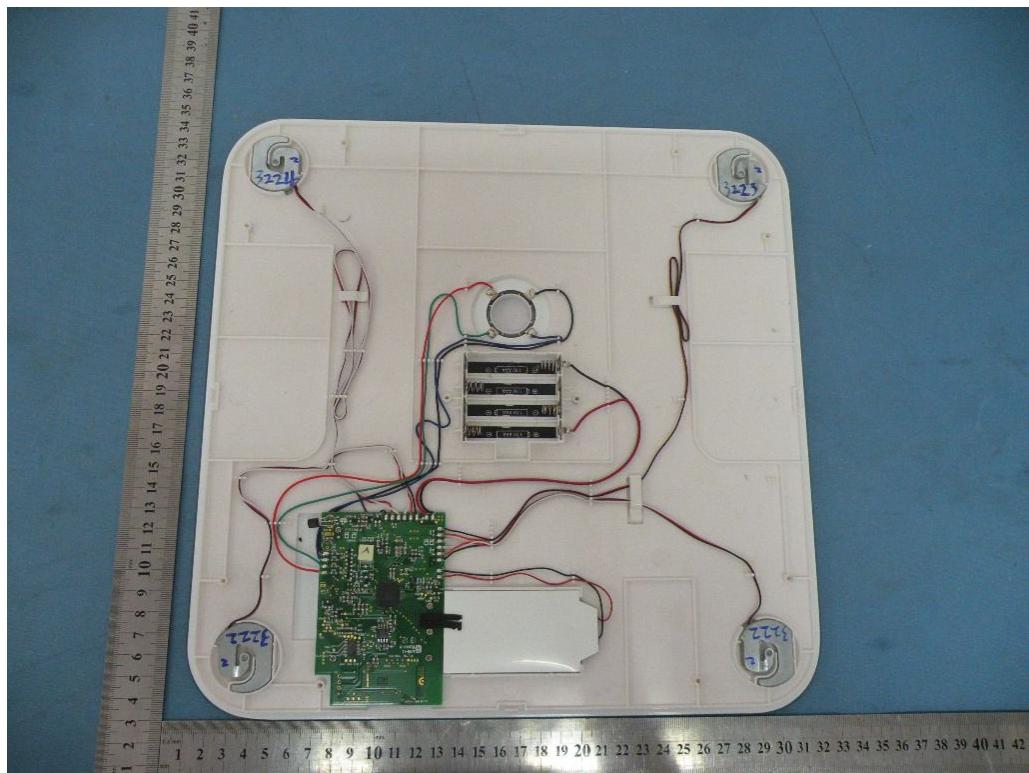


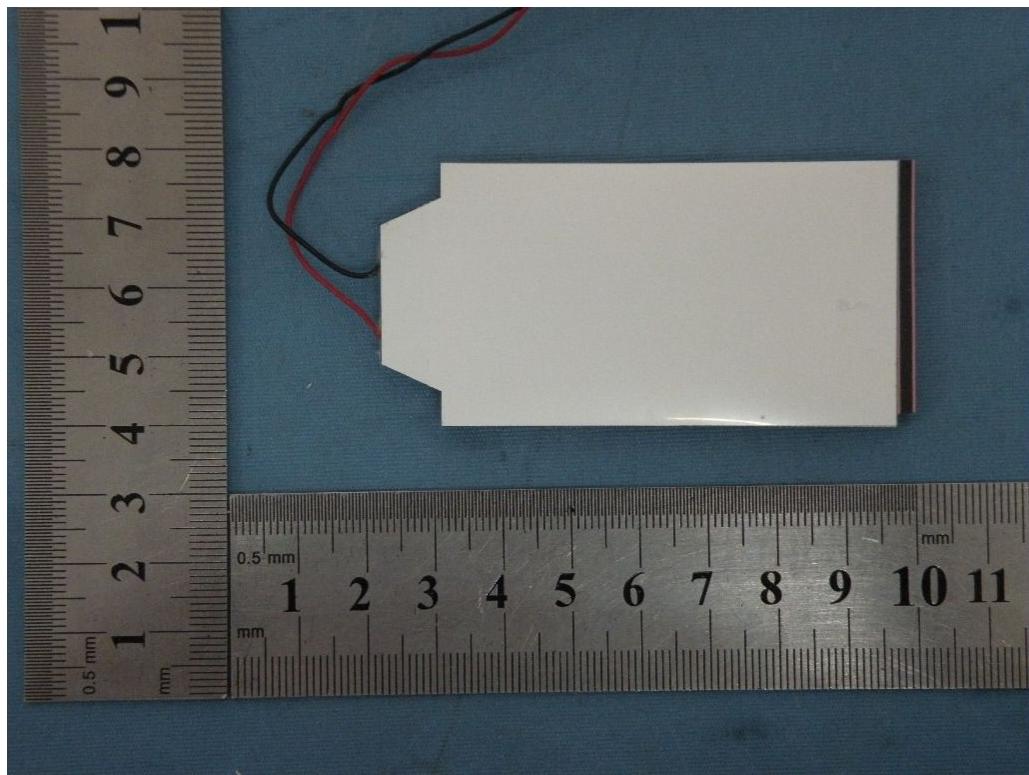
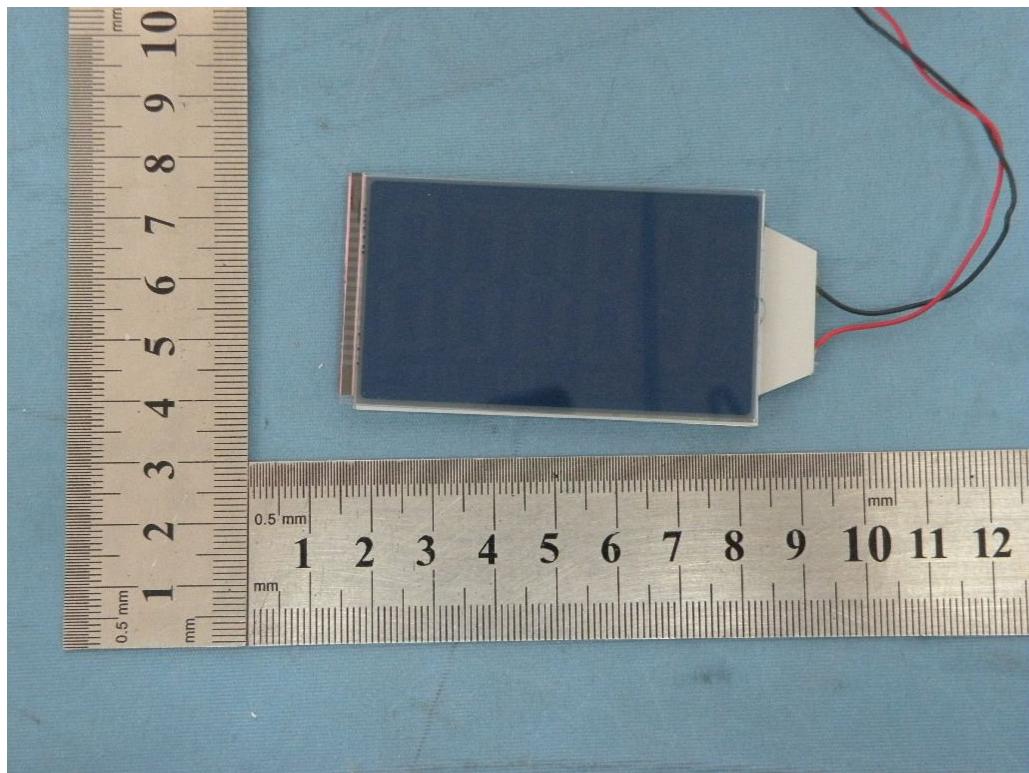
14. Photos of EUT

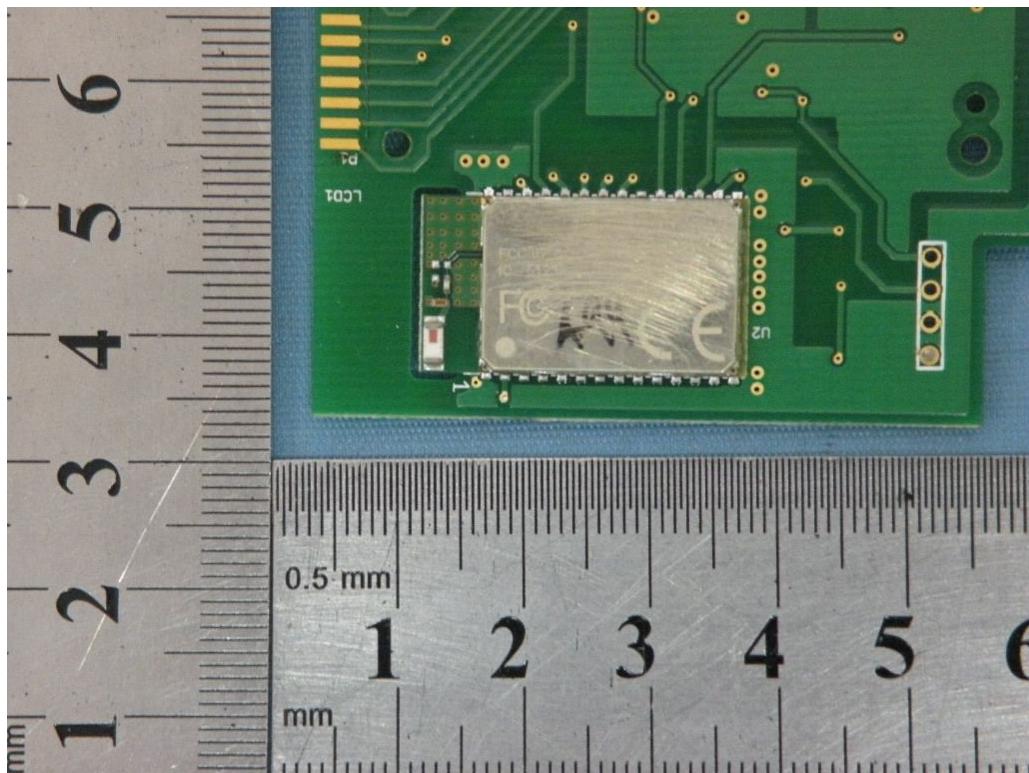
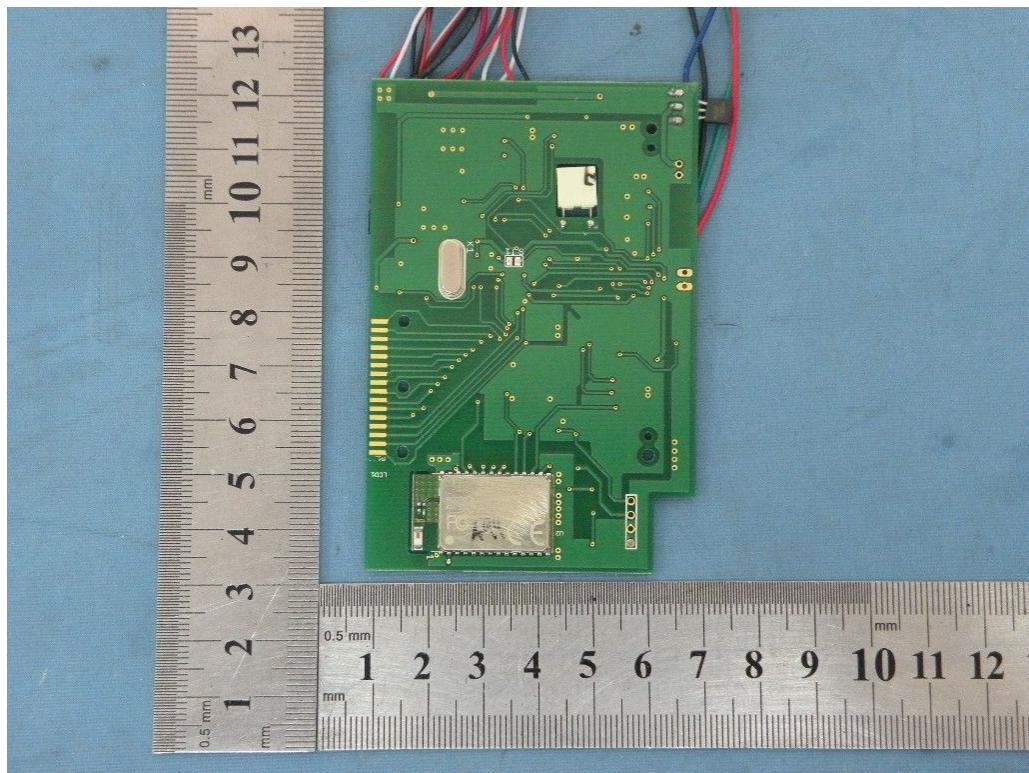


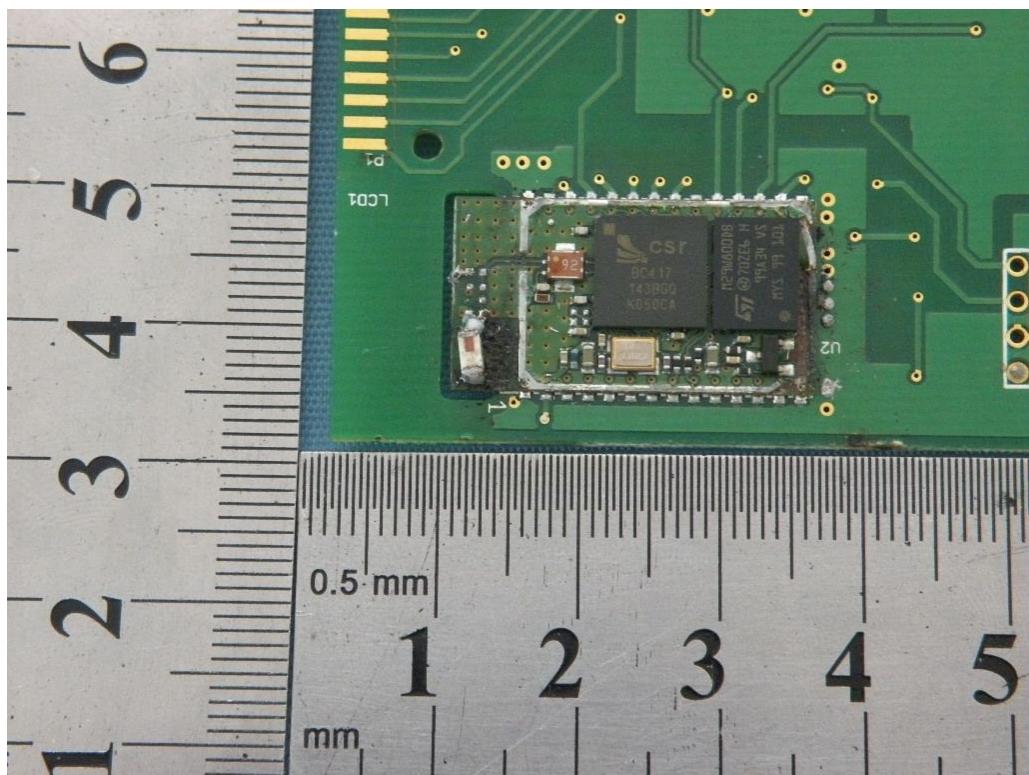
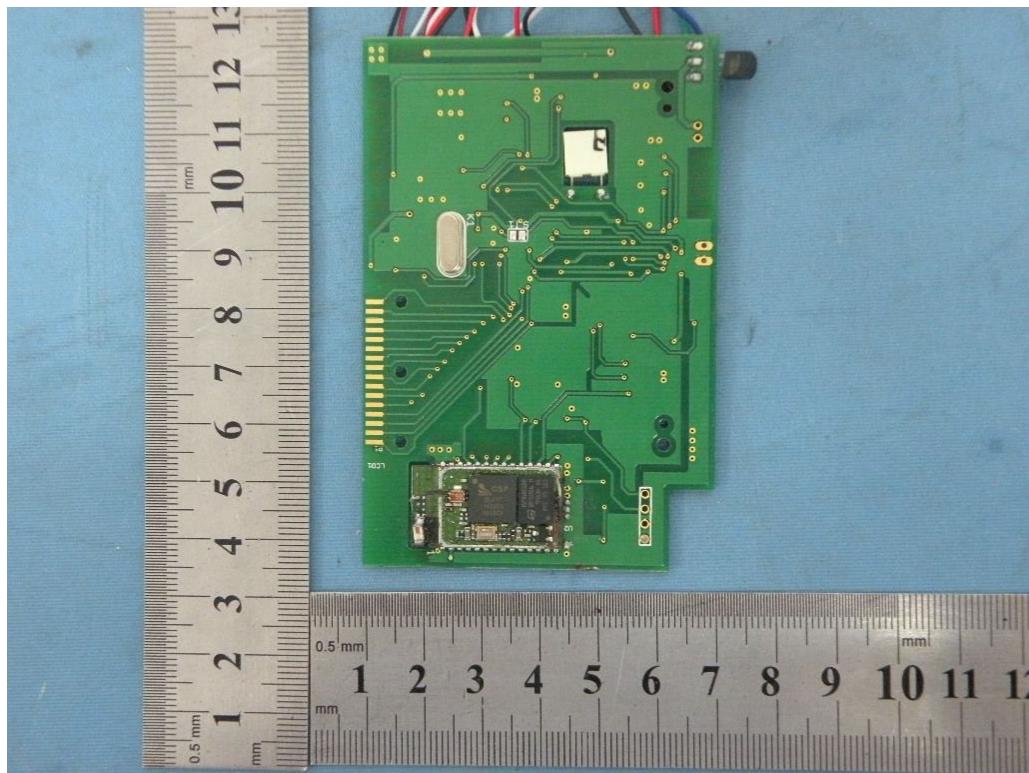


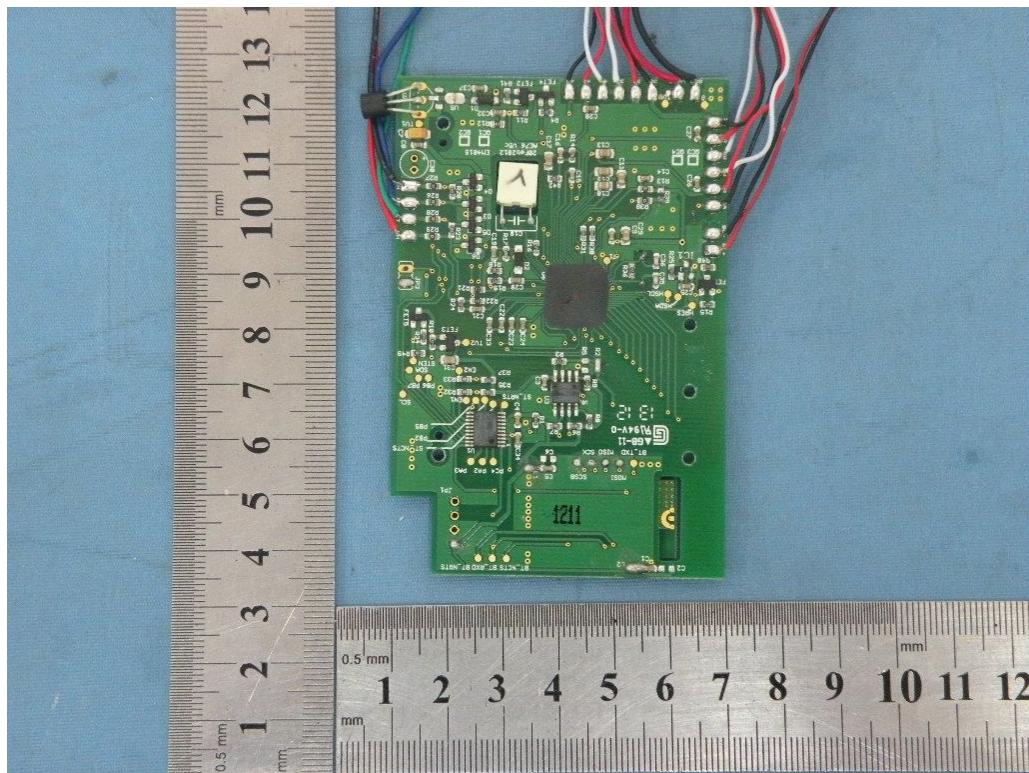












END OF THE REPORT