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# FCC Test Report

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Report No.: AGC00931150414FE03

**FCC ID** : OYC-HXP920  
**APPLICATION PURPOSE** : Class II Permissive Change  
**PRODUCT DESIGNATION** : Bluetooth speaker  
**BRAND NAME** : N/A  
**MODEL NAME** : HX-P920  
**CLIENT** : Dongguan Taide Industrial Co., Ltd  
**DATE OF ISSUE** : July 22,2015  
**STANDARD(S)** : FCC Part 15 Rules  
**TEST PROCEDURE(S)**  
**REPORT VERSION** : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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**Report Revise Record**

<b>Report Version</b>	<b>Revise Time</b>	<b>Issued Date</b>	<b>Valid Version</b>	<b>Notes</b>
V1.0	/	July 22,2015	Valid	Original Report

## Product Change Record

The original report can be referred to AGC00931150305FE03  
Only Radiated Emission below 1GHz was verified for the differences based on the original product.  
Compared to original product, some internal components different, while Bluetooth module same

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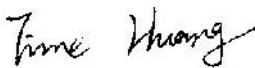


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### 1. VERIFICATION OF CONFORMITY

<b>Applicant</b>	Dongguan Taide Industrial Co., Ltd.
<b>Address</b>	Taide Technology Park, Jinfenghuang Industrial Distrial, Fenggang Town,Dongguan City,China
<b>Manufacturer</b>	Dongguan Taide Industrial Co., Ltd.
<b>Address</b>	Taide Technology Park, Jinfenghuang Industrial Distrial, Fenggang Town,Dongguan City,China
<b>Product Designation</b>	Bluetooth speaker
<b>Brand Name</b>	N/A
<b>Test Model</b>	HX-P920
<b>Date of test</b>	Jun.05,2015 to Jun.09,2015
<b>Deviation</b>	None
<b>Condition of Test Sample</b>	Normal
<b>Report Template</b>	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Compliance Certification Service(Shenzhen) Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Prepared By	
	_____ Time Huang      July 22,2015
Checked By	
	_____ Forrest Lei      July 22,2015
Authorized By	
	_____ Solger Zhang      July 22,2015

## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

<b>Operation Frequency</b>	2.402 GHz to 2.480GHz
<b>Bluetooth Version</b>	V4.0
<b>Modulation</b>	GFSK, $\pi/4$ -DQPSK, 8DPSK
<b>Number of channels</b>	79 for traditional BT 40 for BLE
<b>Hardware Version</b>	V1.0
<b>Software Version</b>	V1.0
<b>Antenna Designation</b>	PCB Antenna (Met 15.203 Antenna requirement)
<b>Antenna Gain</b>	0dBi
<b>Power Supply</b>	DC7.4V

### 2.2. TABLE OF CARRIER FREQUENCIES

Traditional Bluetooth channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	:	:
	77	2479 MHZ
	78	2480 MHZ

BLE Channel List

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2404MHZ
	:	:
	38	2478 MHZ
	39	2480 MHZ

### 3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 3.18\text{dB}$
2	All emissions, radiated	$\pm 3.91\text{dB}$
3	Temperature	$\pm 0.5^\circ\text{C}$
4	Humidity	$\pm 2\%$

### 4. DESCRIPTION OF TEST MODES

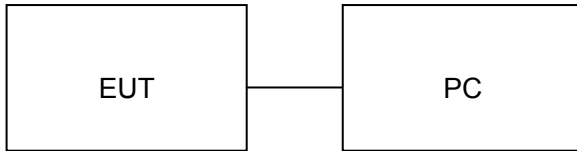
NO.	TEST MODE DESCRIPTION
1	BT Link with Charging for traditional BT
2	BT Link with Charging for BLE
<p>Note:</p> <ol style="list-style-type: none"> <li>All the test modes can be supply by battery, only the result of the worst case traditional BT was recorded in the report.</li> <li>For Radiated Emission, 3axis were chosen for testing for each applicable mode.</li> <li>The mode for BLE has enough margin</li> </ol>	



## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF EUT SYSTEM

Configure 1: (Normal hopping)



### 5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Bluetooth speaker	N/A	HX-P920	EUT
2	PC	Dell	A1465	A.E

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249	Radiated Emission	Compliant

## 6. TEST FACILITY

<b>Site</b>	Compliance Certification Service(Shenzhen) Inc.
<b>Location</b>	No.10-1 Mingkeda Logistics Park, No.18 Huanguan South RD. Guan lan Town,Baoan Distr
<b>FCC Registration No.</b>	441872
<b>Description</b>	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009.

## 7 ALL TEST EQUIPMENT LIST

Radiated Emission Test Site 966(2)					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2015	03/01/2016
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2015	03/08/2016
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2015	03/17/2016
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2015	03/17/2016
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	07/10/2015	07/09/2016
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/01/2015	03/01/2016
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/01/2015	03/01/2016
Loop Antenna	COM-POWER	AL-130	121044	09/27/2014	09/26/2015
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/28/2015	02/27/2016
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

## 8. RADIATED EMISSION

### 8.1 TEST LIMIT

#### Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
900-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

#### Standard FCC 15.209

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		$\mu$ V/m	dB( $\mu$ V)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
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	Other:74.0 dB( $\mu$ V)/m (Peak) 54.0 dB( $\mu$ V)/m (Average)	

Remark: (1) Emission level dB  $\mu$  V = 20 log Emission level  $\mu$  V/m  
(2) The smaller limit shall apply at the cross point between two frequency bands.  
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 8.2. MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

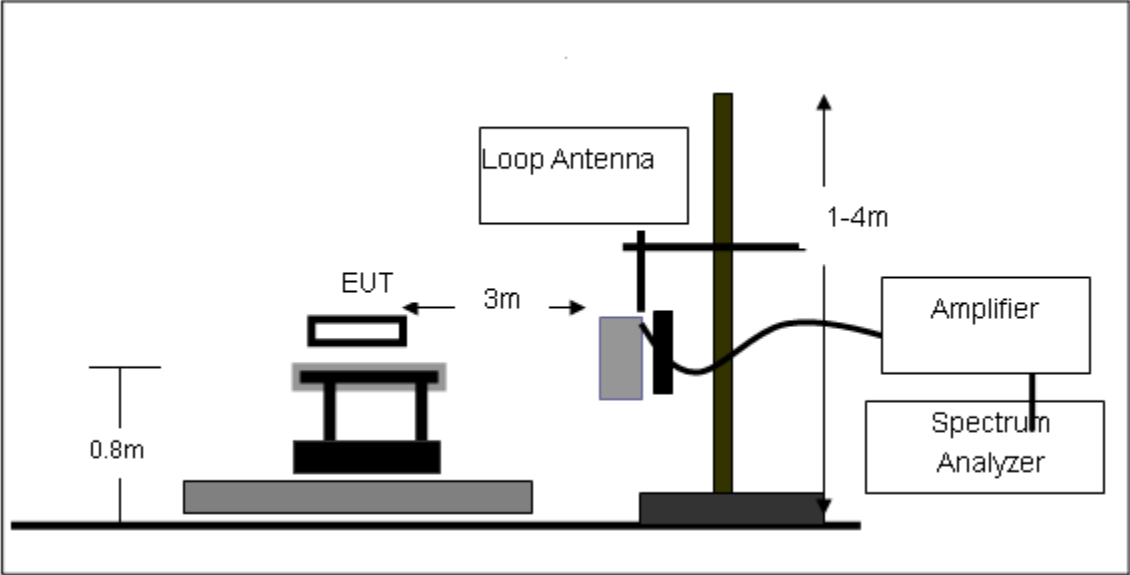
The following table is the setting of spectrum analyzer and receiver.

<b>Spectrum Parameter</b>	<b>Setting</b>
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/1MHz for Peak, 1MHz/10Hz for Average

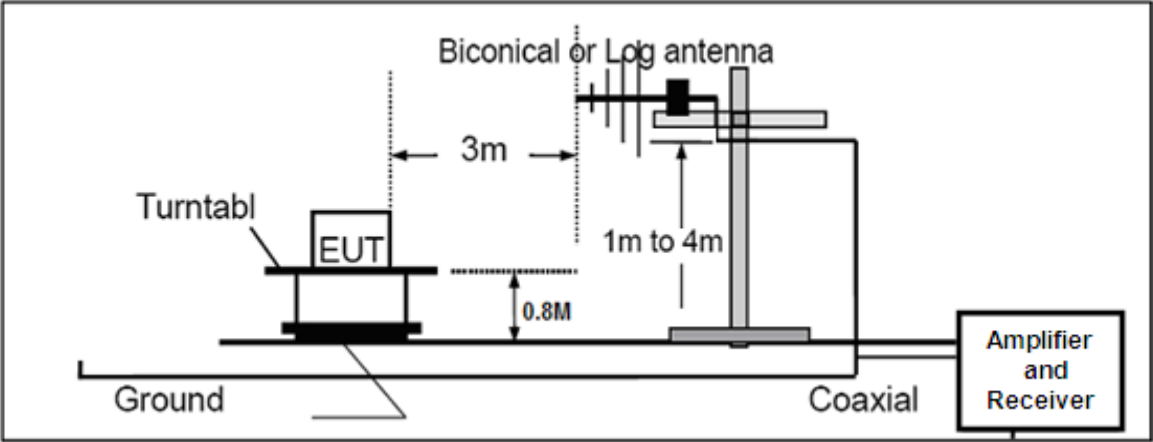
<b>Receiver Parameter</b>	<b>Setting</b>
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

**8.3. TEST SETUP**

**Radiated Emission Test-Setup Frequency Below 30MHz**



**RADIATED EMISSION TEST SETUP 30MHz-1000MHz**



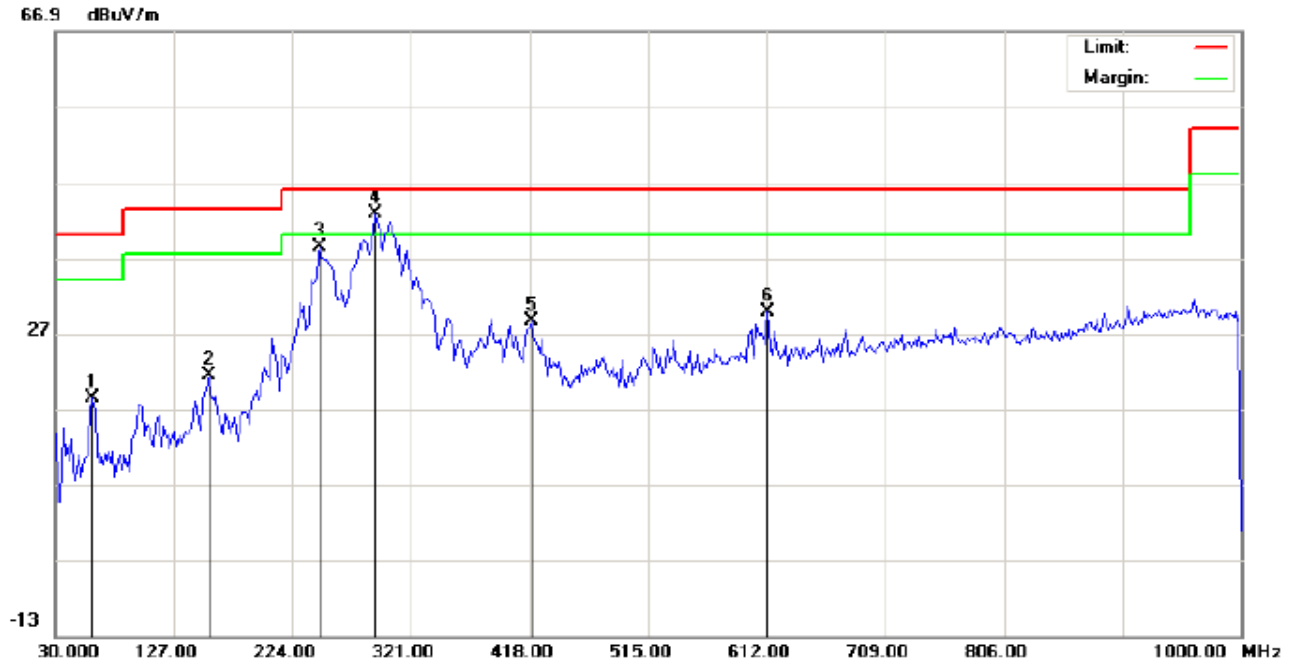
### 8.4. TEST RESULT

#### RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

#### RADIATED EMISSION BELOW 1GHZ

RADIATED EMISSION TEST- (30MHZ-1GHZ)-BT Link with Charging-HORIZONTAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Speaker  
M/N: HX-P920  
Mode: BT Link with charging  
Note:

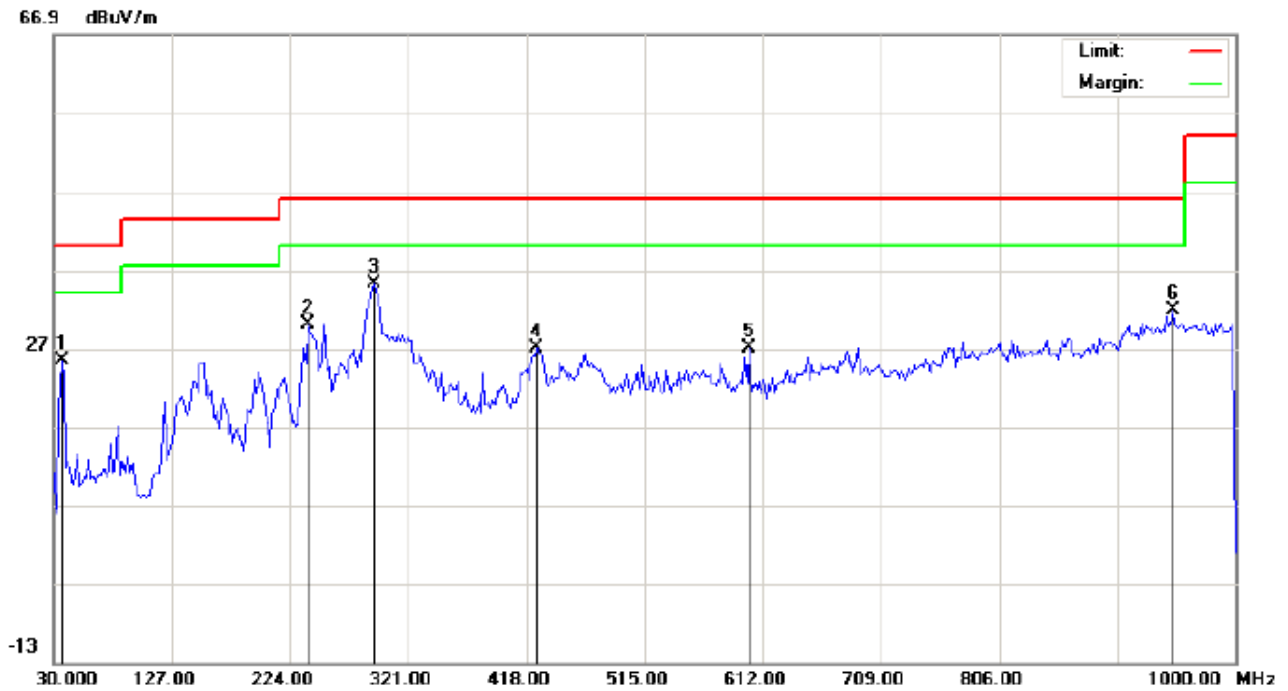
Polarization: *Horizontal*  
Power:  
Distance: 3m

Temperature: 26.3  
Humidity: 54.1 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		60.7167	7.34	11.09	18.43	40.00	-21.57	peak			
2		156.1000	6.02	15.30	21.32	43.50	-22.18	peak			
3		246.6333	24.67	13.77	38.44	46.00	-7.56	peak			
4	*	291.9000	27.60	15.17	42.77	46.00	-3.23	peak			
5		419.6167	8.88	19.67	28.55	46.00	-17.45	peak			
6		612.0000	6.05	23.76	29.81	46.00	-16.19	peak			

**RESULT: PASS**

RADIATED EMISSION TEST- (30MHZ-1GHZ)-BT Link with Charging-VERTICAL



Site: site #1  
Limit: FCC Class B 3M Radiation  
EUT: Bluetooth Speaker  
M/N: HX-P920  
Mode: BT Link with charging  
Note:

Polarization: *Vertical*  
Power:  
Distance: 3m

Temperature: 26.3  
Humidity: 54.1 %

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		36.4667	21.21	4.27	25.48	40.00	-14.52	peak			
2		238.5500	17.25	12.78	30.03	46.00	-15.97	peak			
3	*	293.5167	19.95	15.21	35.16	46.00	-10.84	peak			
4		426.0833	7.11	19.86	26.97	46.00	-19.03	peak			
5		600.6833	4.22	22.75	26.97	46.00	-19.03	peak			
6		948.2667	1.94	29.95	31.89	46.00	-14.11	peak			

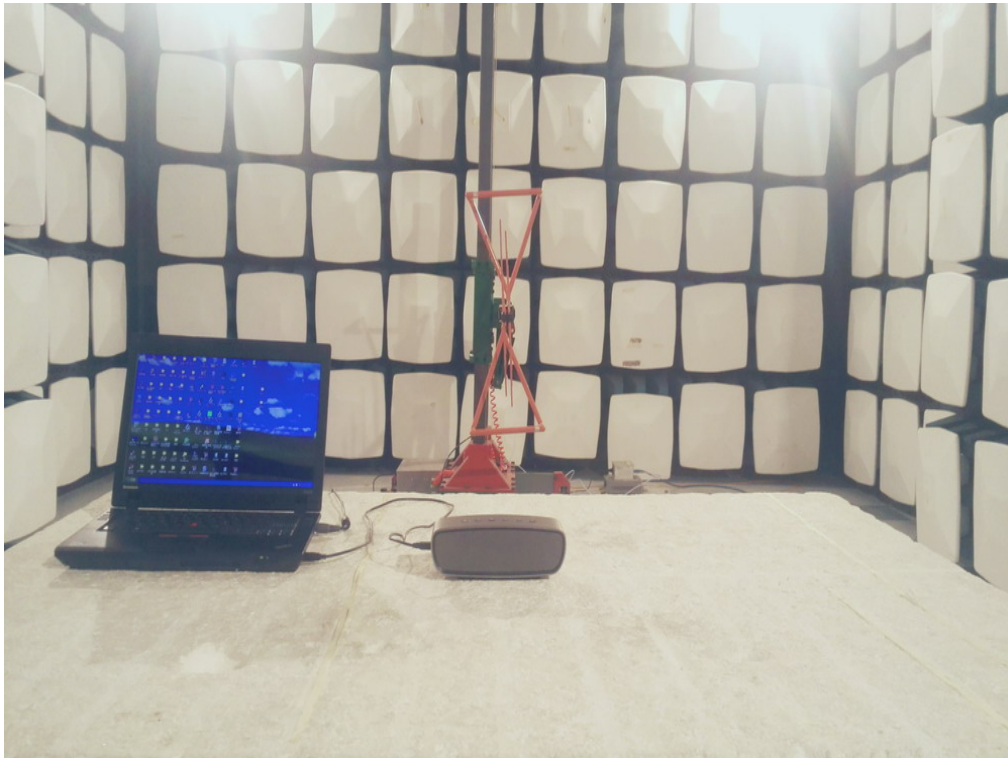
**RESULT: PASS**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. The "Factor" value can be calculated automatically by software of measurement system.



**APPENDIX A: PHOTOGRAPHS OF TEST SETUP**  
FCC RADIATED EMISSION TEST SETUP



**APPENDIX B: PHOTOGRAPHS OF EUT**  
TOP VIEW OF EUT



BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



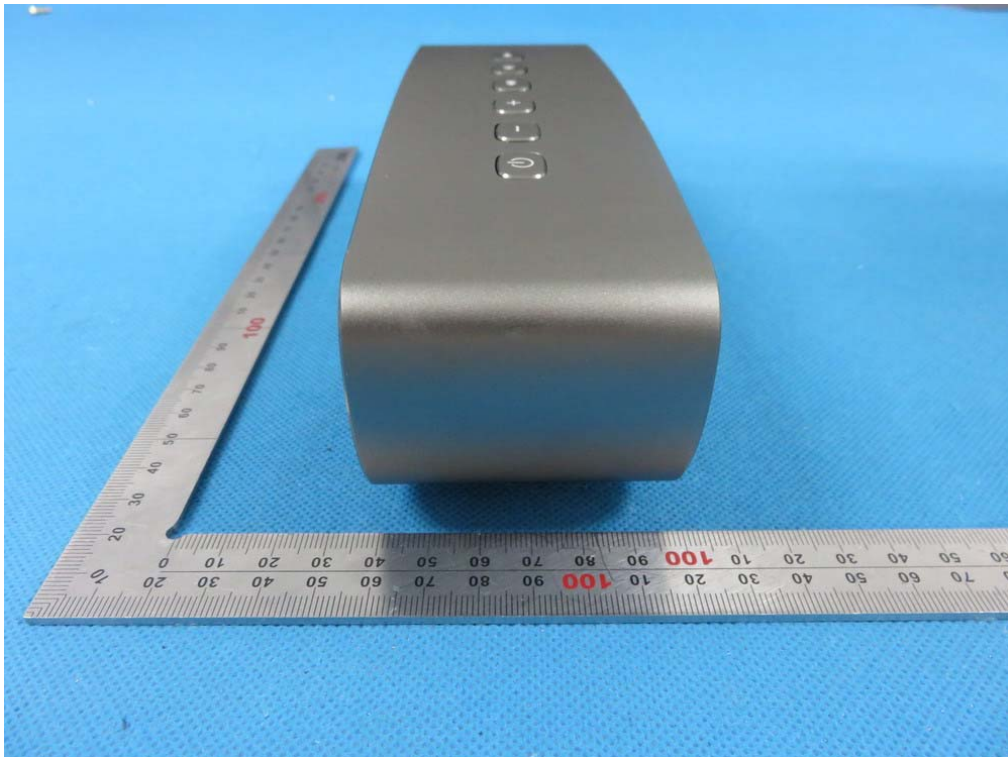
BACK VIEW OF EUT



LEFT VIEW OF EUT



RIGHT VIEW OF EUT



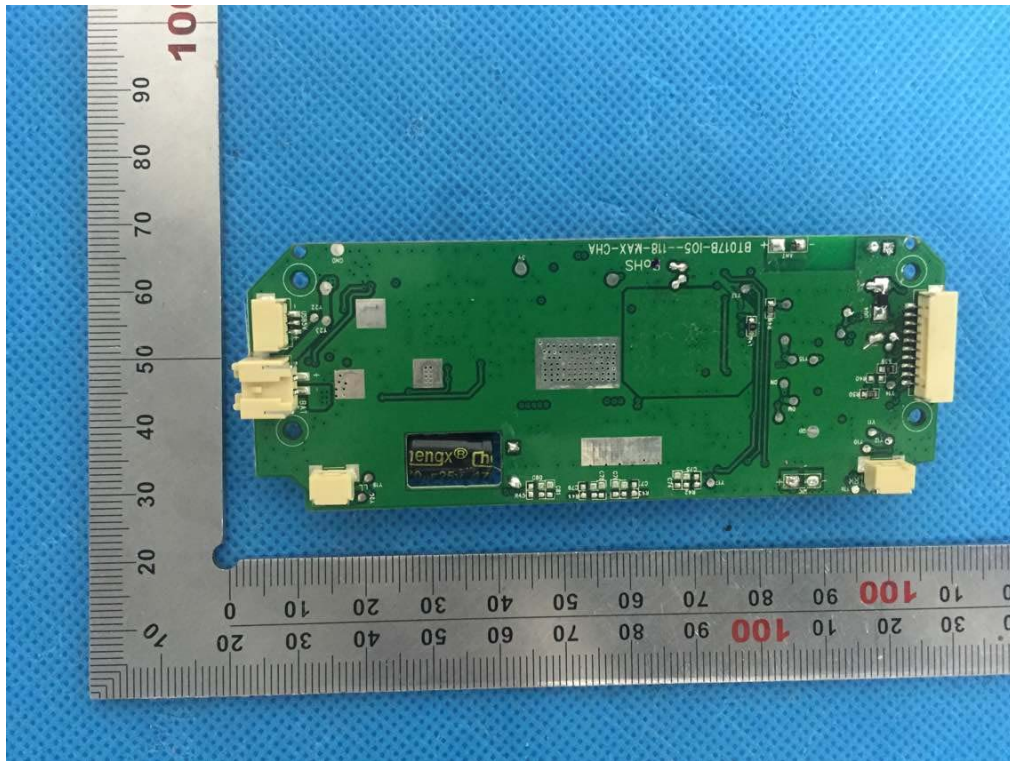
VIEW OF EUT (PORT)



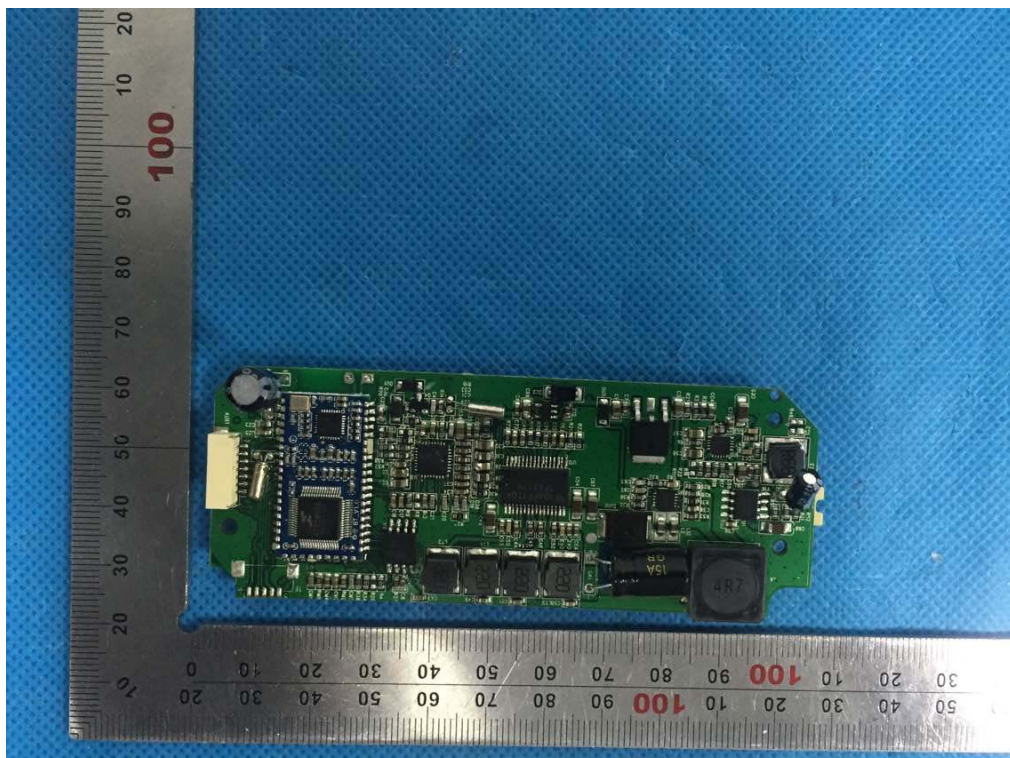
OPEN VIEW OF EUT-1



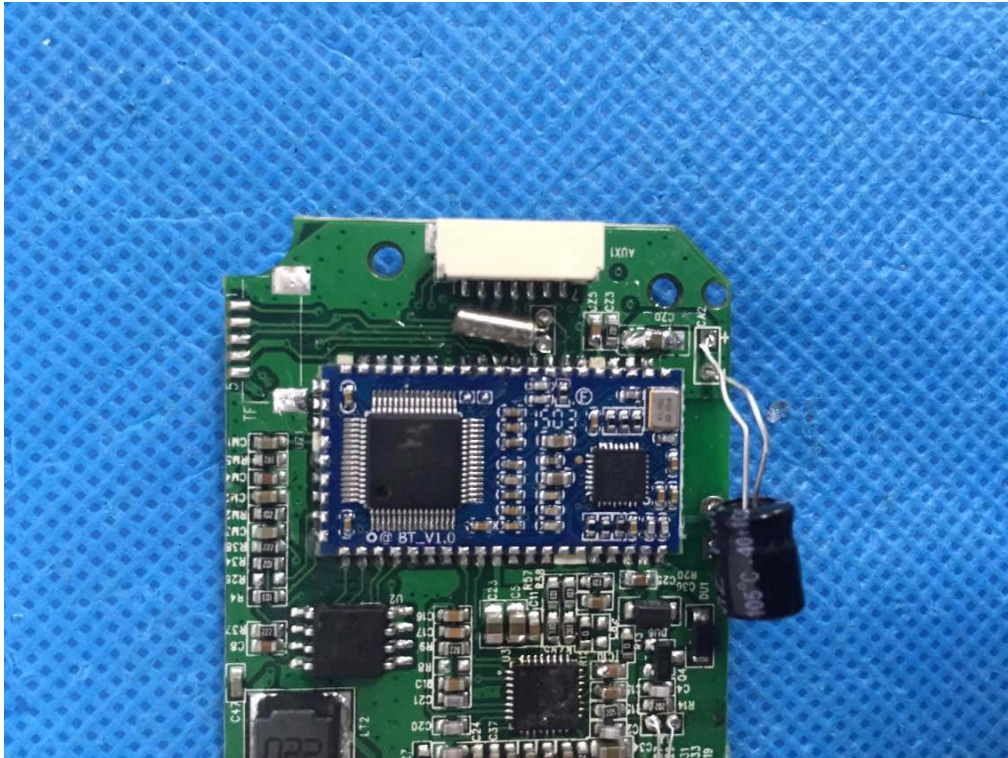
INTERNAL VIEW OF EUT-1



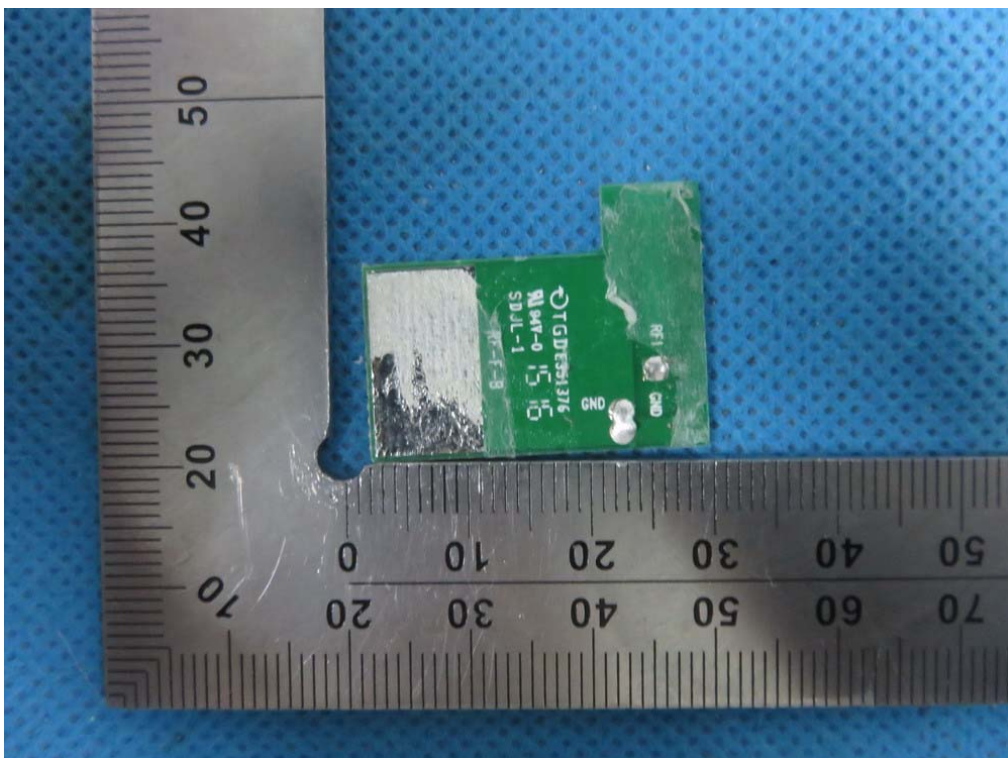
INTERNAL VIEW OF EUT-2



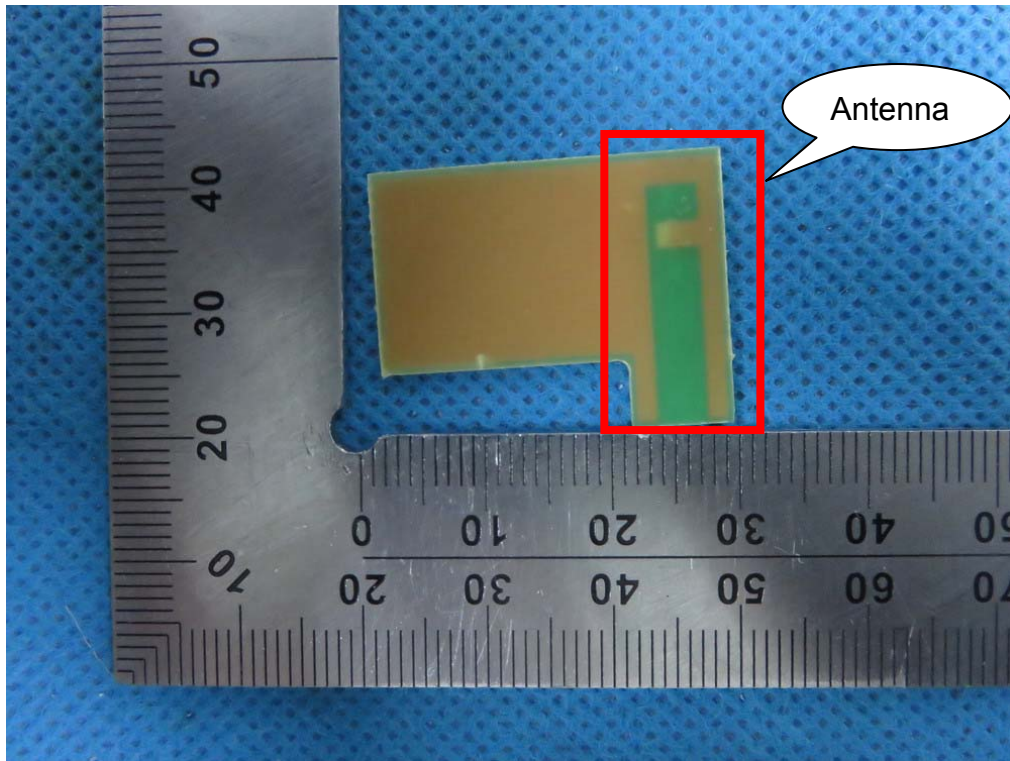
INTERNAL VIEW OF EUT-3



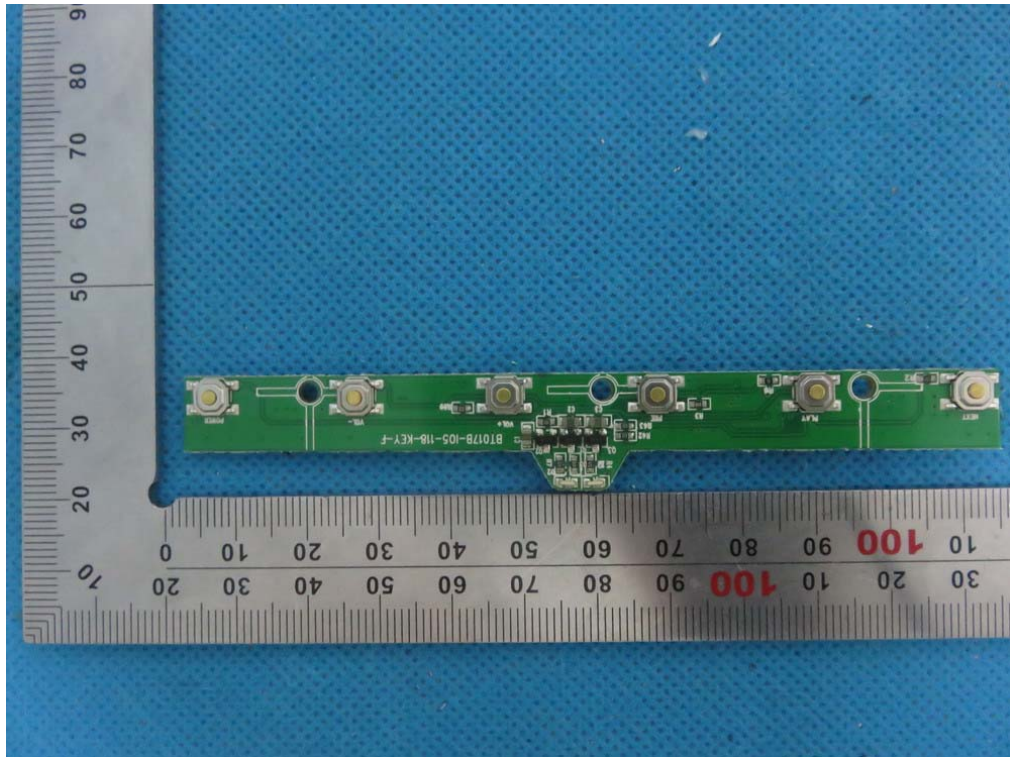
INTERNAL VIEW OF EUT-4



INTERNAL VIEW OF EUT-5

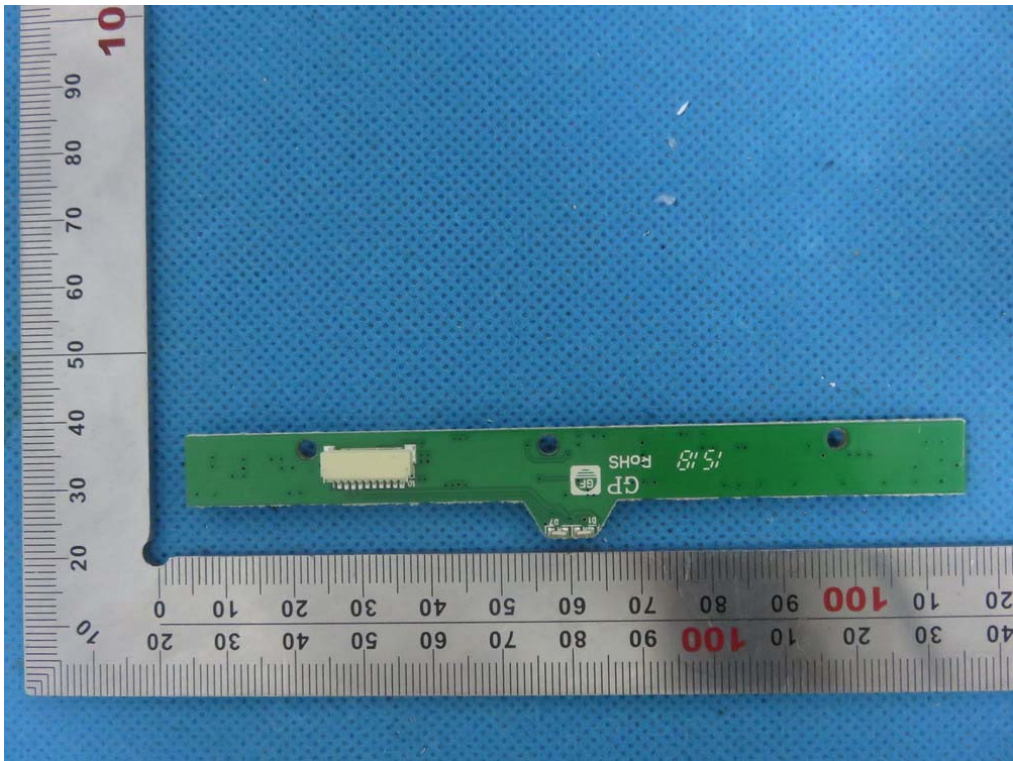


INTERNAL VIEW OF EUT-6

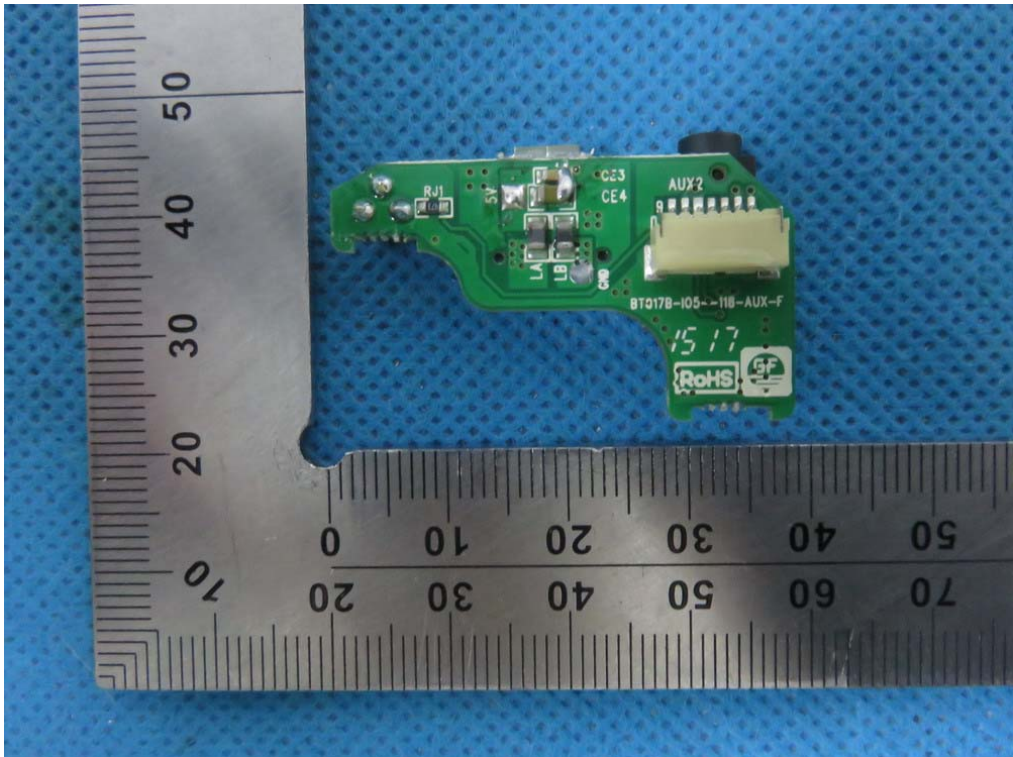




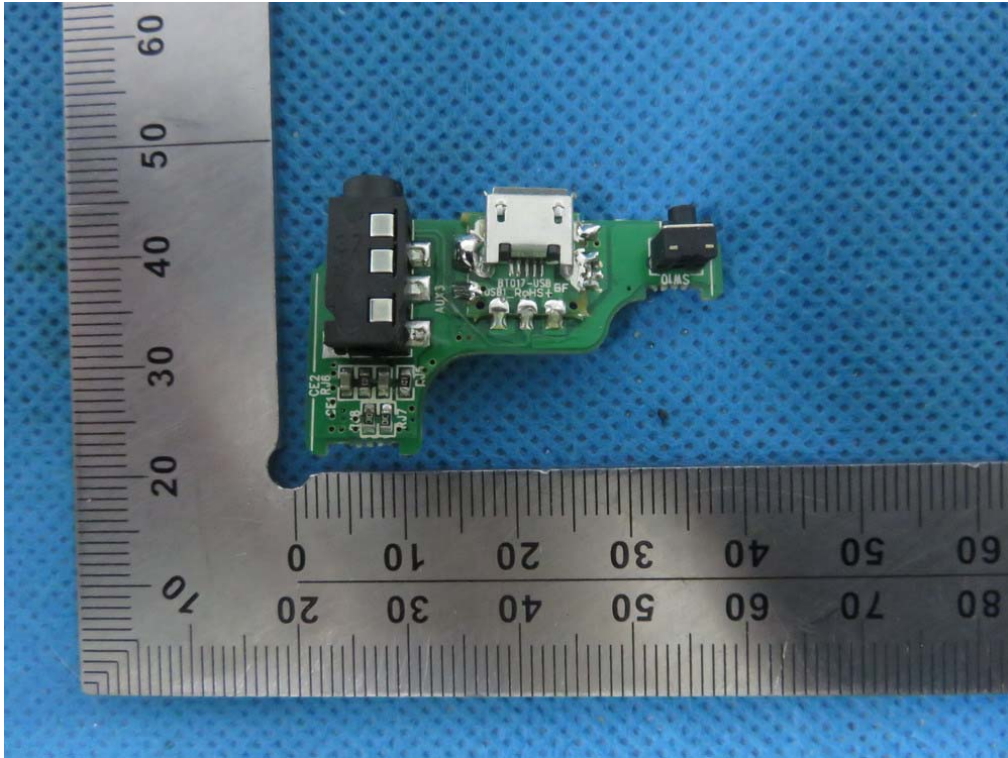
INTERNAL VIEW OF EUT-7



INTERNAL VIEW OF EUT-8



INTERNAL VIEW OF EUT-9



----END OF REPORT----