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Report No.: CQASZ161101340E-03  
Report Version: V01

# MEASUREMENT REPORT

## FCC Report

**Applicant:** Zhuhai HengYu New Technology Company Limited

**Address of Applicant:** Yunong Village North, Sanzao Town, ZhuHai, Guangdong, China

**Manufacturer:** Zhuhai HengYu New Technology Company Limited

**Address of Manufacturer:** Yunong Village North, Sanzao Town, ZhuHai, Guangdong, China

**Equipment Under Test (EUT):**

**Product:** Bluetooth keyboard

**Model No.:** Poker IV

**FCC ID:** 2AKWP-POKERIV

**Standards:** 47 CFR Part 15B

**Date of Test:** 2016-12-06 to 2016-12-30

**Date of Issue:** 2016-12-30

**Test Result :** **PASS\***

**Reviewed By:**

  
(Aaron Ma)

**Approved By:**

  
(Owen Zhou)



\* In the configuration tested, the EUT complied with the standards specified above.

**Revision History Of Report**

Report No.	Version	Description	Issue Date
CQASZ161101340E-03	Rev.01	Initial report	2016-12-30

## 2 Test Summary

Test Item	Test Requirement	Test method	Result
Radiated Emission	47 CFR Part 15B	ANSI C63.4 (2014)	PASS
Conducted Emission (150KHz to 30MHz)	47 CFR Part 15B	ANSI C63.4 (2014)	PASS

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## 4 General Information

### 4.1 Client Information

Applicant:	Zhuhai HengYu New Technology Company Limited
Address of Applicant:	Yunong Village North, Sanzao Town, ZhuHai, Guangdong, China
Manufacturer:	Zhuhai HengYu New Technology Company Limited
Address of Manufacturer:	Yunong Village North, Sanzao Town, ZhuHai, Guangdong, China

### 4.2 General Description of EUT

Product Name:	Bluetooth keyboard	
Model No.:	Poker IV	
Trade Mark:	ikbc	
Hardware Version:	V1.0	
Software Version:	V1.0	
Highest Operating Frequency:	2.4GHz	
Sample Type:	Portable production	
	EUT Power Supply:	DC5.0V(Power Supply by PC)

### 4.3 Test Environment

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1008 mbar

### 4.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Remark	FCC certification
Mouse	ASUS	UT280	Provide by lab	DOC
PC	ASUS	M32CD	Provide by lab	DOC
Displayer	HKC	X3	Provide by lab	DOC

### 4.5 Test Location

All tests were performed at:

**Shenzhen Tongce Testing Lab,**

1F, Leinu Watch Building, Fuyong Town, Baoan Dist, Shenzhen, China

### 4.6 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Tongce Testing Lab** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for **TCT** laboratory is reported:

Test	Range	Uncertainty	Notes
Radiated Emission	Below 1GHz	±3.92dB	(1)
Radiated Emission	Above 1GHz	±4.28dB	(1)
Conducted Disturbance	0.15~30MHz	±2.56dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

#### **4.7 Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

**FCC – Registration No.: 572331**

**Shenzhen Tongce Testing Lab** has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 572331

#### **4.8 Deviation from Standards**

None.

#### **4.9 Abnormalities from Standard Conditions**

None.

#### **4.10 Other Information Requested by the Customer**

None.

## 4.11 Equipment List

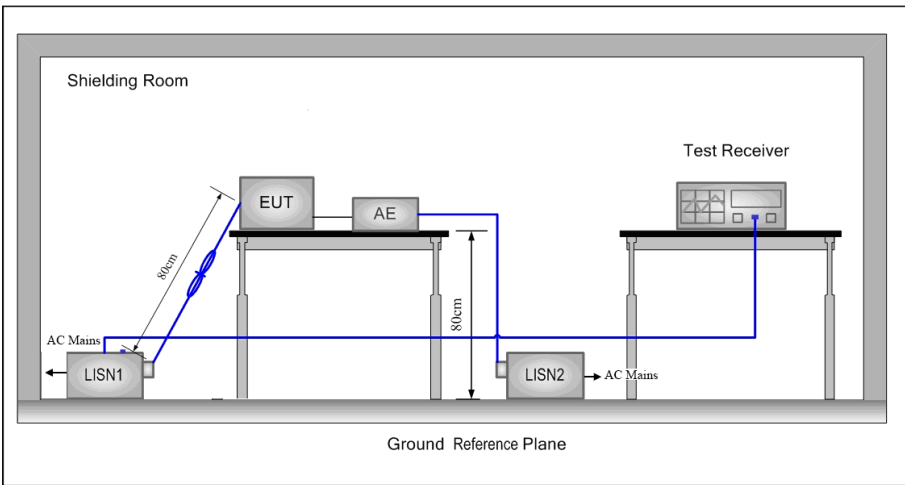
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Due Date
1	ESPI Test Receiver	R&S	ESVD	100008	2017/08/11
2	Spectrum Analyzer	R&S	FSEM	848597/001	2017/08/11
3	Spectrum Analyzer	Agilent	N9020A	MY49100060	2017/08/12
4	Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	2017/08/11
5	Pre-amplifier	HP	8447D	2727A05017	2017/08/11
6	Broadband Antenna	R&S	VULB9163	340	2017/08/13
7	Horn Antenna	R&S	BBHA 9120D	631	2017/08/13
8	Horn Antenna	R&S	BBHA 9170	373	2017/08/13
9	Antenna Mast	CCS	CC-A-4M	N/A	N/A
10	Coax cable (9KHz~40GHz)	TCT	RE-low-01	N/A	2017/08/11
11	Coax cable (9KHz~40GHz)	TCT	RE-high-02	N/A	2017/08/11
12	LISN	R&S	NSLK 8126	8126453	2017/08/16



## 5 Test results and Measurement Data

### 5.1 Conducted Emissions

Test Requirement:	47 CFR Part 15B		
Test Method:	ANSI C63.4: 2014		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test Procedure:	<ol style="list-style-type: none"> <li>1) The mains terminal disturbance voltage test was conducted in a shielded room.</li> <li>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a <math>50\Omega/50\mu\text{H} + 5\Omega</math> linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</li> <li>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,</li> <li>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</li> <li>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</li> </ol>		

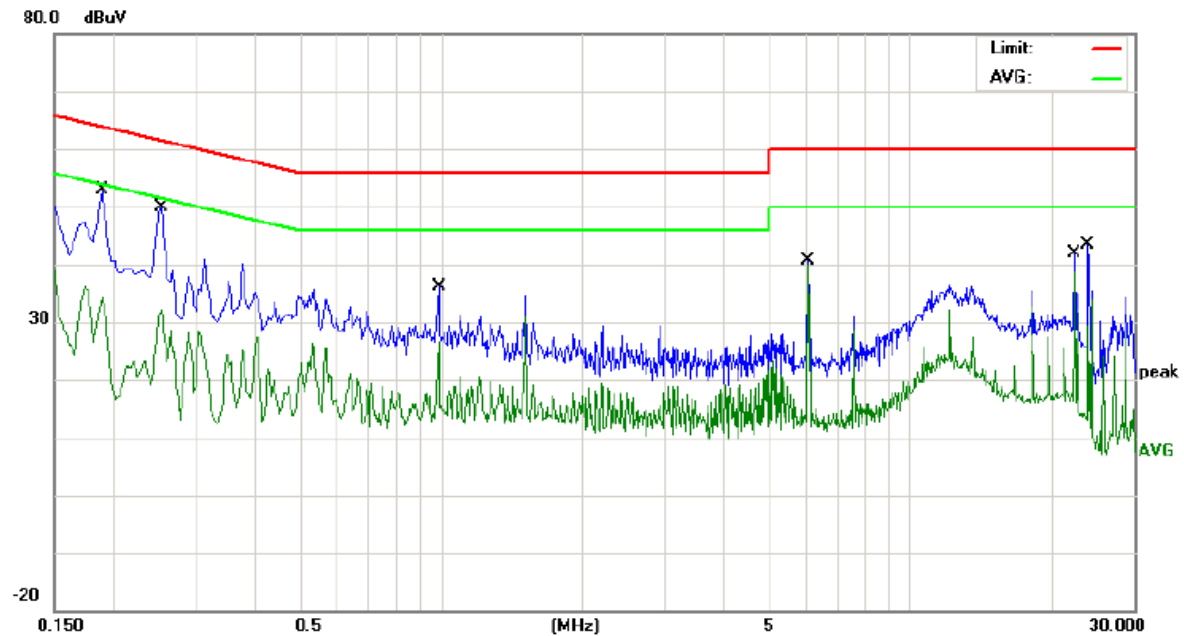
Test setup:	
Instruments Used:	Refer to section 4.10 for details
Test Mode:	Mode a: Connect EUT and PC, exchanging data
Final Test Mode:	Pretest the EUT at different test mode and found the "mode a" which is worst case, the test worst case is recorded in the report.
Test Voltage	AC120V/60Hz
Test Results:	Pass

### Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

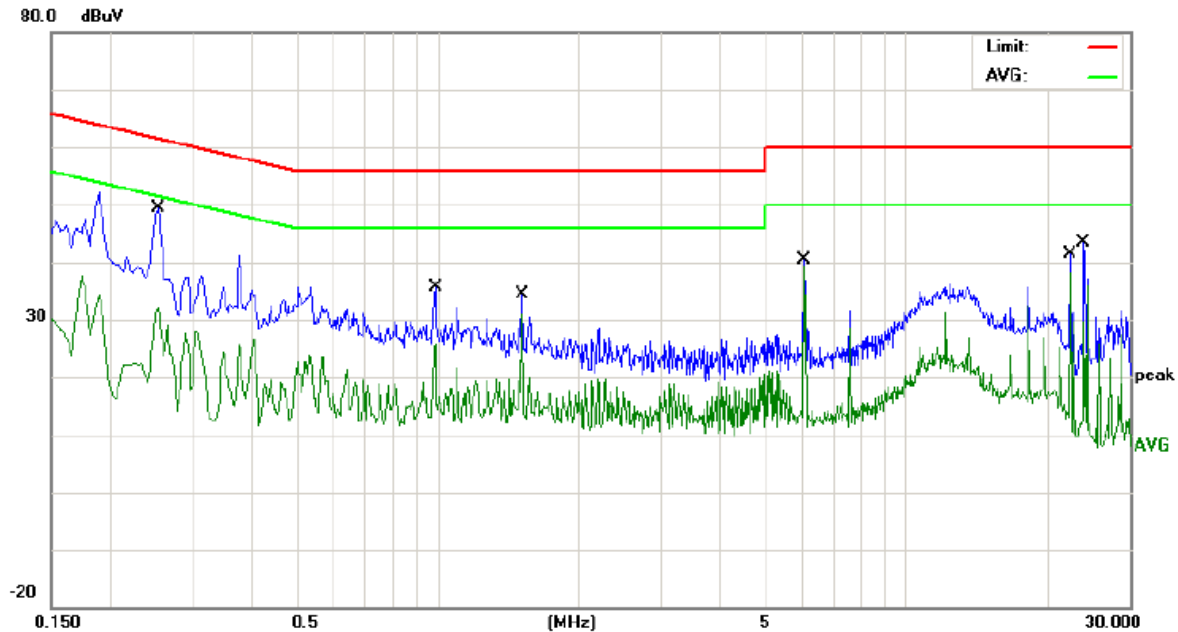
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live Line:



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1900	39.25	10.33	49.58	64.03	-14.45	QP
2		0.1900	24.25	10.33	34.58	54.03	-19.45	AVG
3		0.2540	37.25	10.49	47.74	61.62	-13.88	QP
4		0.2540	21.70	10.49	32.19	51.62	-19.43	AVG
5		0.9900	22.00	10.54	32.54	56.00	-23.46	QP
6		0.9900	14.86	10.54	25.40	46.00	-20.60	AVG
7		6.0860	28.26	10.56	38.82	60.00	-21.18	QP
8		6.0860	28.40	10.56	38.96	50.00	-11.04	AVG
9		22.4220	31.89	10.52	42.41	60.00	-17.59	QP
10	*	22.4220	30.06	10.52	40.58	50.00	-9.42	AVG
11		23.9980	25.43	10.54	35.97	60.00	-24.03	QP
12		23.9980	16.83	10.54	27.37	50.00	-22.63	AVG

Neutral Line:



No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Over dB	Detector
1		0.2540	37.14	10.49	47.63	61.62	-13.99	QP
2		0.2540	21.47	10.49	31.96	51.62	-19.66	AVG
3		0.9900	21.96	10.54	32.50	56.00	-23.50	QP
4		0.9900	14.74	10.54	25.28	46.00	-20.72	AVG
5		1.5220	20.84	10.51	31.35	56.00	-24.65	QP
6		1.5220	20.24	10.51	30.75	46.00	-15.25	AVG
7		6.0860	28.85	10.56	39.41	60.00	-20.59	QP
8	*	6.0860	28.98	10.56	39.54	50.00	-10.46	AVG
9		22.4220	30.44	10.52	40.96	60.00	-19.04	QP
10		22.4220	28.30	10.52	38.82	50.00	-11.18	AVG
11		23.9980	26.13	10.54	36.67	60.00	-23.33	QP
12		23.9980	17.52	10.54	28.06	50.00	-21.94	AVG

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT,
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

## 5.2 Radiated Emission

Test Requirement:	47 CFR Part 15B				
Test Method:	ANSI C63.4: 2014				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.0		Quasi-peak Value	
	88MHz-216MHz	43.5		Quasi-peak Value	
	216MHz-960MHz	46.0		Quasi-peak Value	
	960MHz-1GHz	54.0		Quasi-peak Value	
	Above 1GHz	54.0		Average Value	
		74.0		Peak Value	
	Note:				
	Highest frequency generated or used in the device or on which the device operates or tunes (MHz)		Upper frequency of measurement Range (MHz)		
	Below 1.705		30		
	1.705 to 108		1000		
	108 to 500		2000		
	500 to 1000		5000		
	Above 1000		5th harmonic of the highest frequency or 40GHz, whichever is lower		
Test Procedure:	a. 1) Below 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 2) Above 1G: The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. Note: For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna				

	<p>elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.</p> <ol style="list-style-type: none"> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol>
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#### Test Setup:

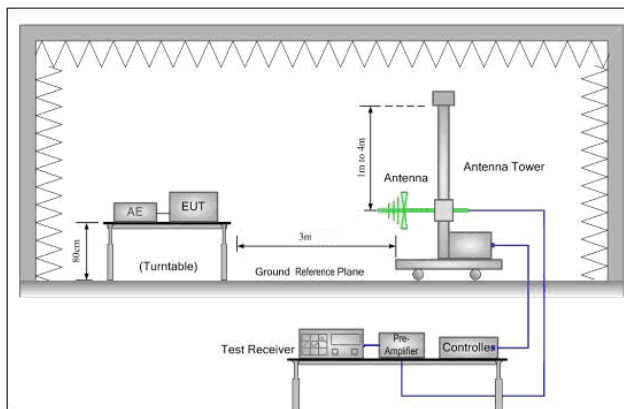


Figure 1. 30MHz to 1GHz

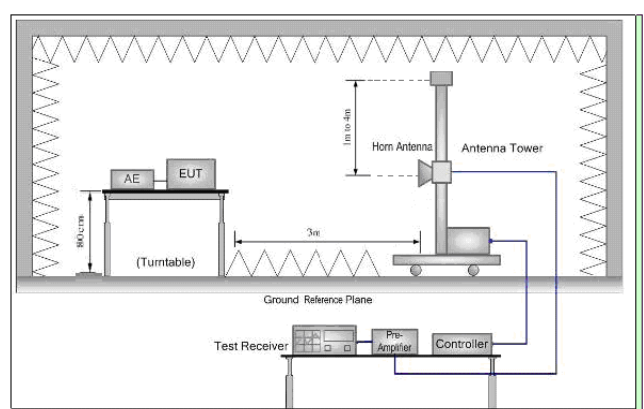
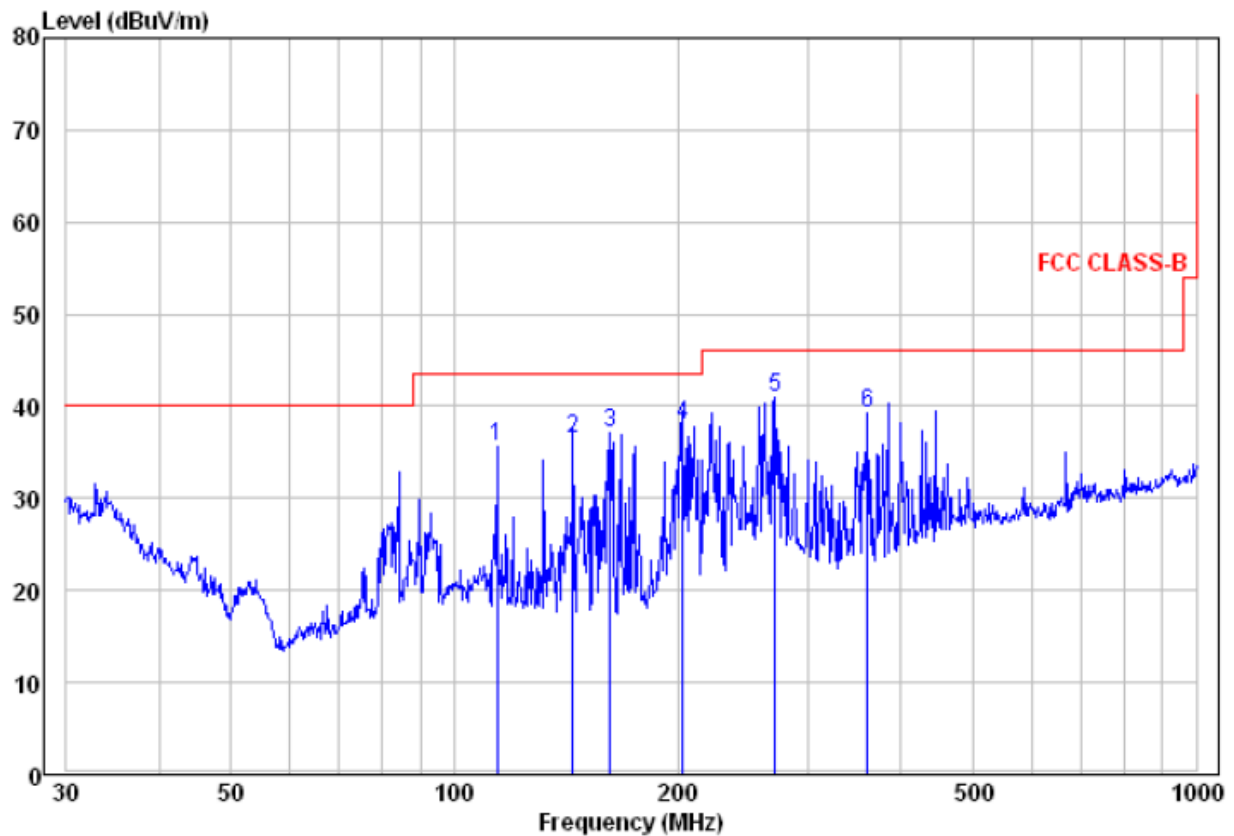


Figure 2. Above 1 GHz

Instruments Used:	Refer to section 4.10 for details
Test Mode:	Mode a: Connect EUT and PC, exchanging data
Final Test Mode:	Pretest the EUT at different test mode and found the "mode a" which is worst case, the test worst case is recorded in the report.
Test Results:	Pass

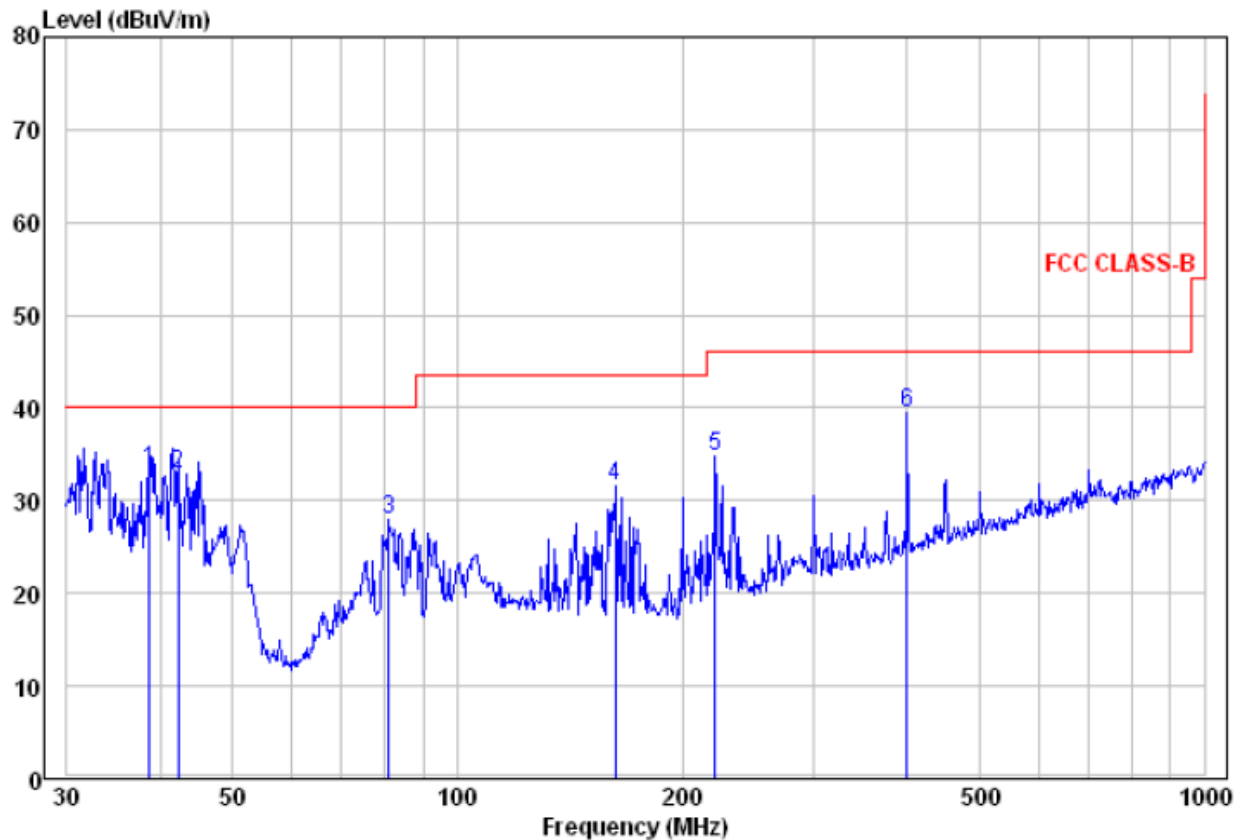
### 30MHz~1GHz

Horizontal



	Freq	Read Level	Cable Loss	Ant Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB		
1	114.11	25.09	0.48	9.96	35.53	43.50	-7.97	Peak	HORIZONTAL
2	144.33	28.23	0.56	7.80	36.59	43.50	-6.91	QP	HORIZONTAL
3	162.04	29.26	0.60	7.16	37.02	43.50	-6.48	Peak	HORIZONTAL
4	203.52	28.96	0.69	8.30	37.95	43.50	-5.55	QP	HORIZONTAL
5 pp	270.37	31.38	0.77	8.87	41.02	46.00	-4.98	QP	HORIZONTAL
6	360.45	25.56	0.91	12.78	39.25	46.00	-6.75	Peak	HORIZONTAL

Vertical



	Freq	Read Level	Cable Loss	Ant Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB		
1	38.75	17.33	0.30	15.57	33.20	40.00	-6.80	QP	VERTICAL
2	42.30	19.23	0.30	13.27	32.80	40.00	-7.20	QP	VERTICAL
3	80.93	17.99	0.39	9.52	27.90	40.00	-12.10	Peak	VERTICAL
4	162.61	23.88	0.60	7.15	31.63	43.50	-11.87	Peak	VERTICAL
5	221.39	24.93	0.71	9.05	34.69	46.00	-11.31	Peak	VERTICAL
6 pp	400.43	25.49	0.95	13.11	39.55	46.00	-6.45	Peak	VERTICAL



### Above 1GHz:

HORIZONTAL						
Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Mesurement (dBμV/m)	Limit ((dBμV/m)	Over (dB)	Detector
1010.0000	64.60	-9.70	54.90	74	-19.10	PK
1110.0000	55.40	-8.70	46.70	74	-27.30	PK
1160.0000	54.40	-8.20	46.20	74	-27.80	PK
1550.0000	53.20	-6.10	47.10	74	-26.90	PK
4050.0000	45.50	5.50	51.00	74	-23.00	PK
5770.0000	44.80	8.00	52.80	74	-21.20	PK
1010.0000	49.70	-9.70	40.00	54	-14.00	AV
1110.0000	42.10	-8.70	33.40	54	-20.60	AV
1160.0000	41.50	-8.20	33.30	54	-20.70	AV
1550.0000	40.00	-6.10	33.90	54	-20.10	AV
4050.0000	33.00	5.50	38.50	54	-15.50	AV
5770.0000	32.20	8.00	40.20	54	-13.80	AV

VERTICAL						
Frequency (MHz)	Reading Level (dBμV)	Correct Factor (dB)	Mesurement (dBμV/m)	Limit ((dBμV/m)	Over (dB)	Detector
1010.0000	65.10	-9.70	55.40	74	-18.60	PK
1340.0000	56.60	-7.00	49.60	74	-24.40	PK
1430.0000	57.60	-6.70	50.90	74	-23.10	PK
2990.0000	46.20	0.60	46.80	74	-27.20	PK
4030.0000	45.60	5.60	51.20	74	-22.80	PK
5650.0000	45.00	8.10	53.10	74	-20.90	PK
1010.0000	51.10	-9.70	41.40	54	-12.60	AV
1340.0000	40.40	-7.00	33.40	54	-20.60	AV
1430.0000	40.60	-6.70	33.90	54	-20.10	AV
2990.0000	33.40	0.60	34.00	54	-20.00	AV
4030.0000	32.90	5.60	38.50	54	-15.50	AV
5650.0000	32.20	8.10	40.30	54	-13.70	AV

#### Remark:

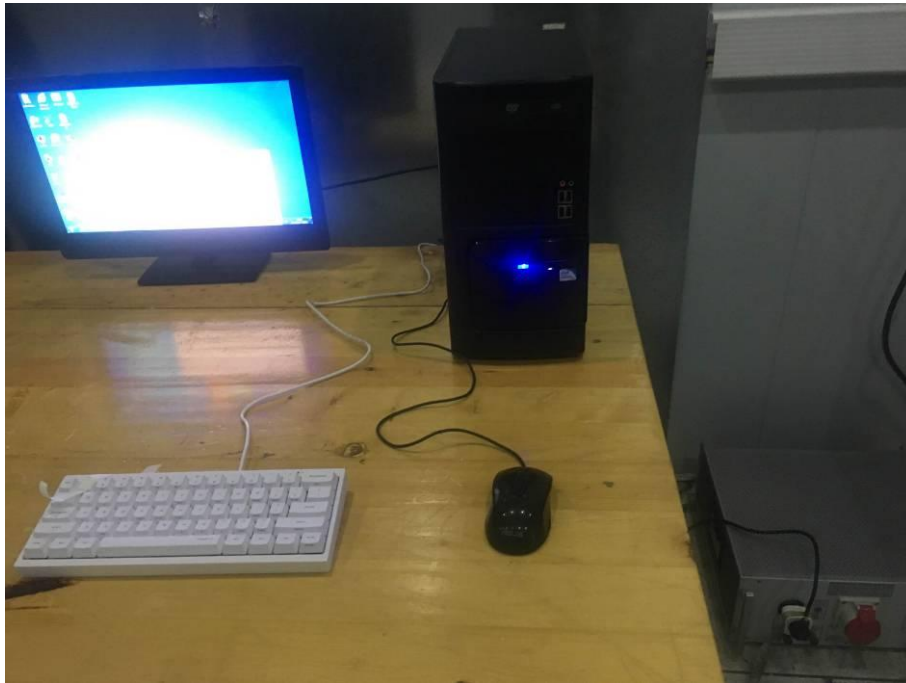
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

The test range is from 1 GHz to 25 GHz, only the worst six points were recorded in the report.

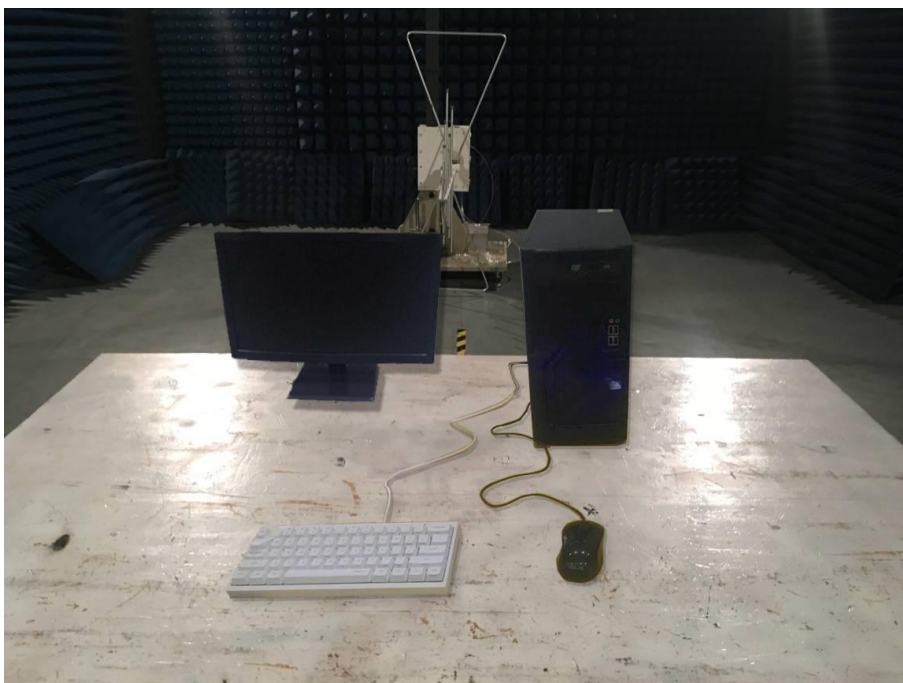
## 6 Photographs - EUT Test Setup

### 6.1 Conducted Emission

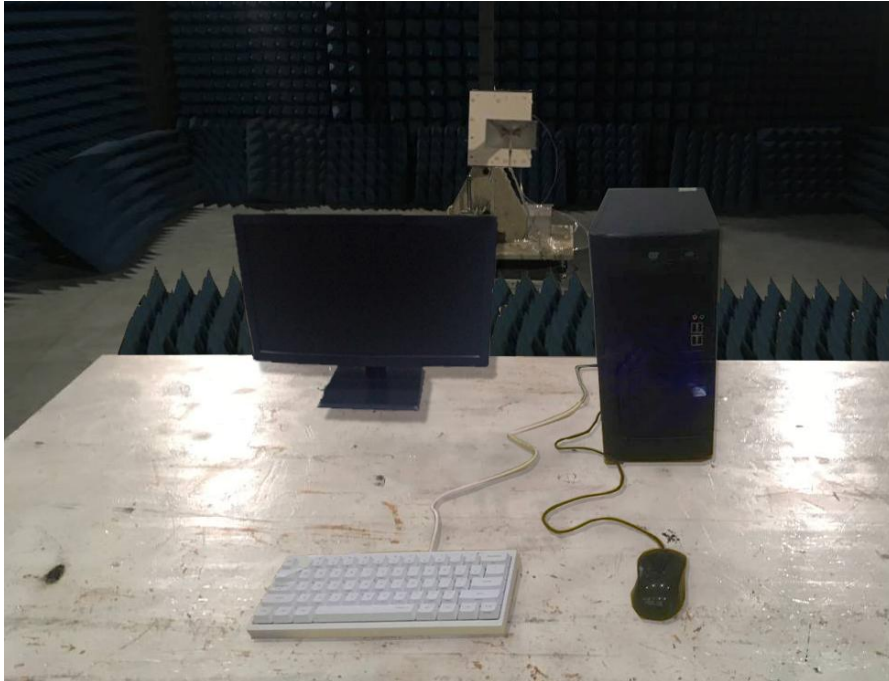


### 6.2 Radiated Emission

30MHz~1GHz:

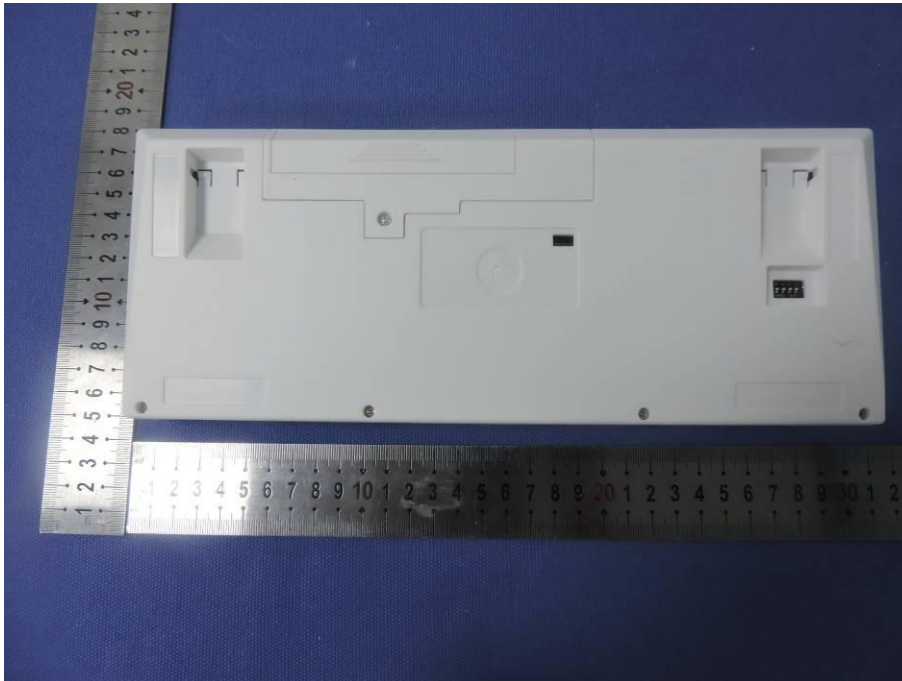


Above 1GHz



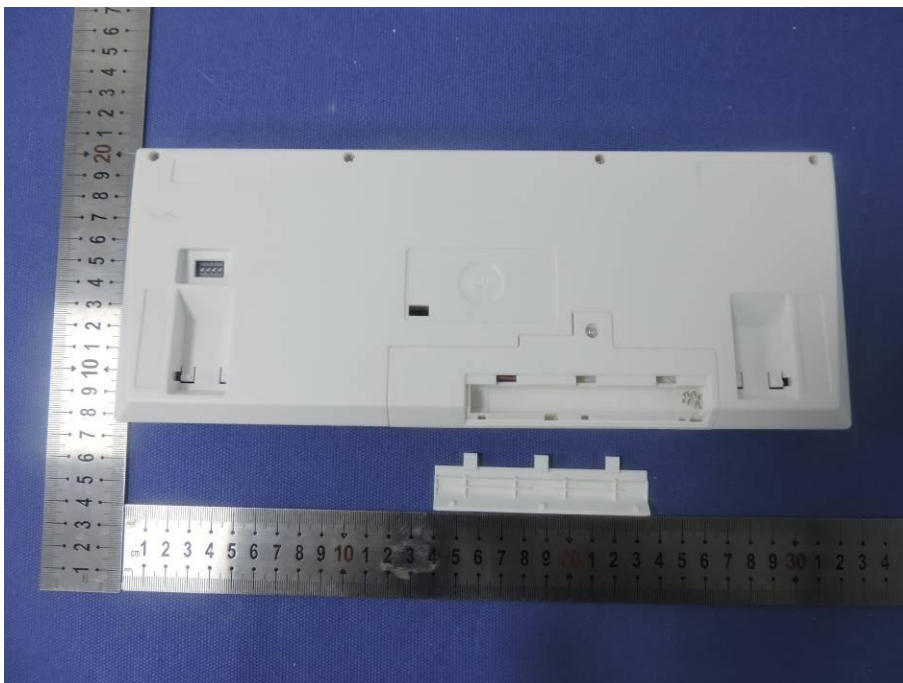
## 7 Photographs of EUT Constructional Details

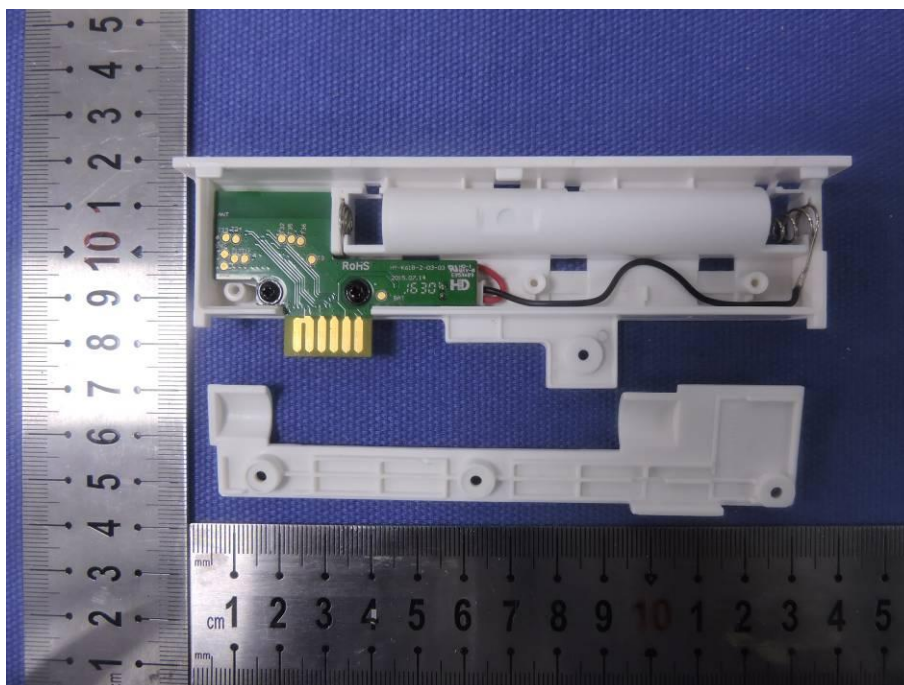
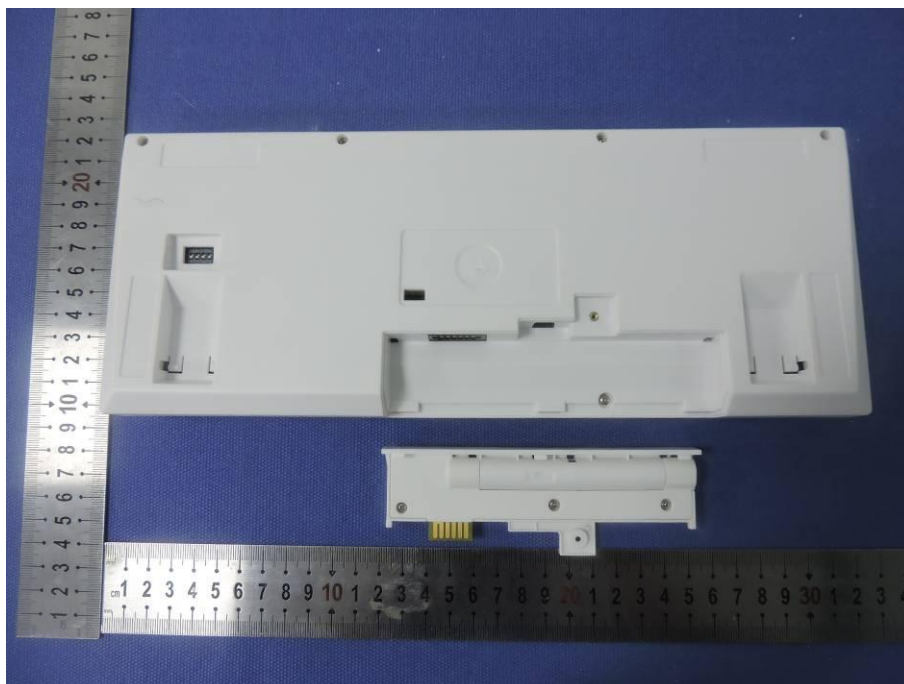




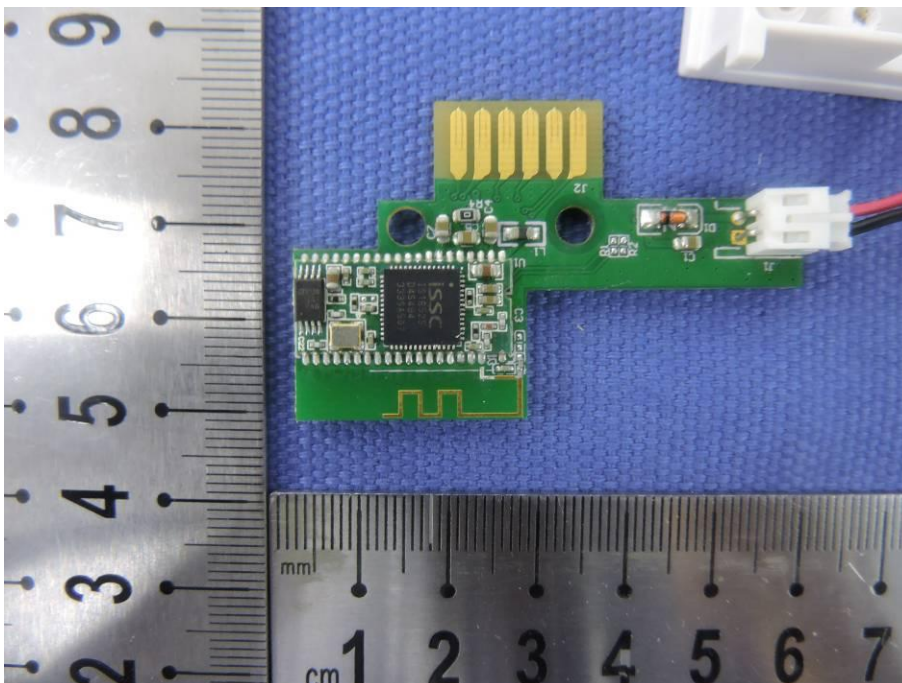
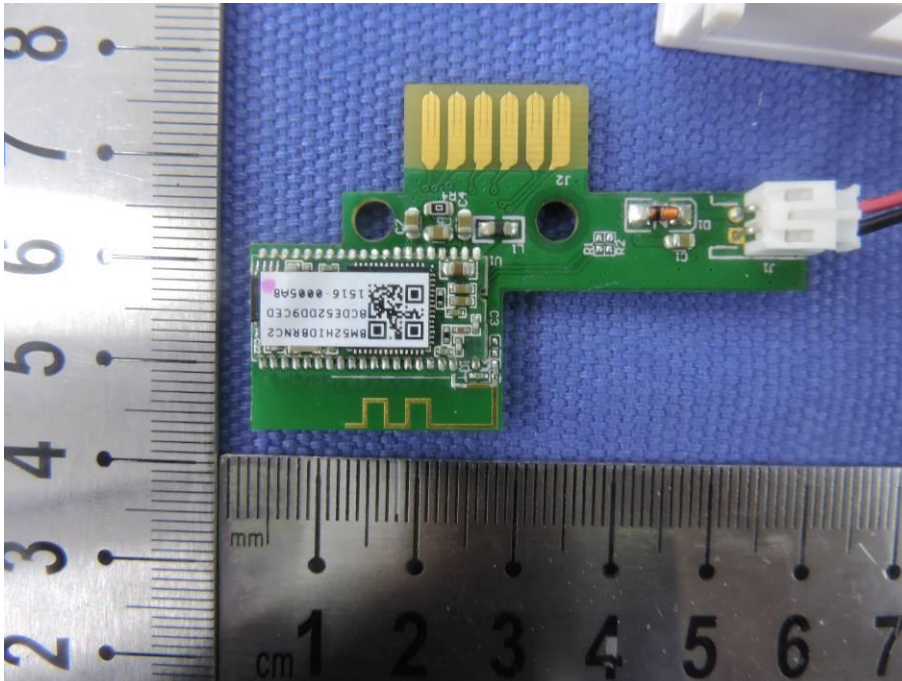


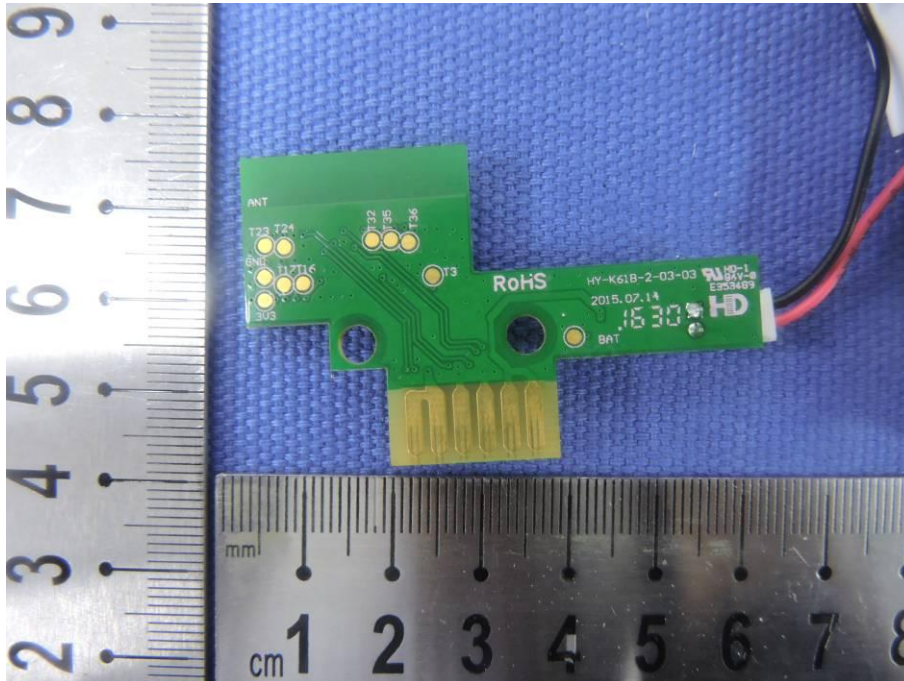




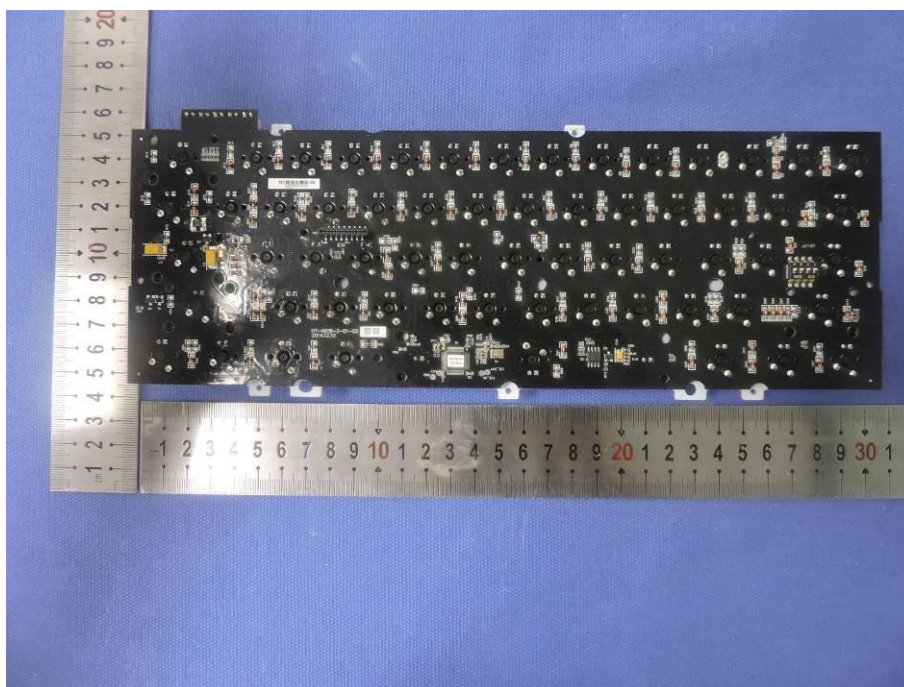


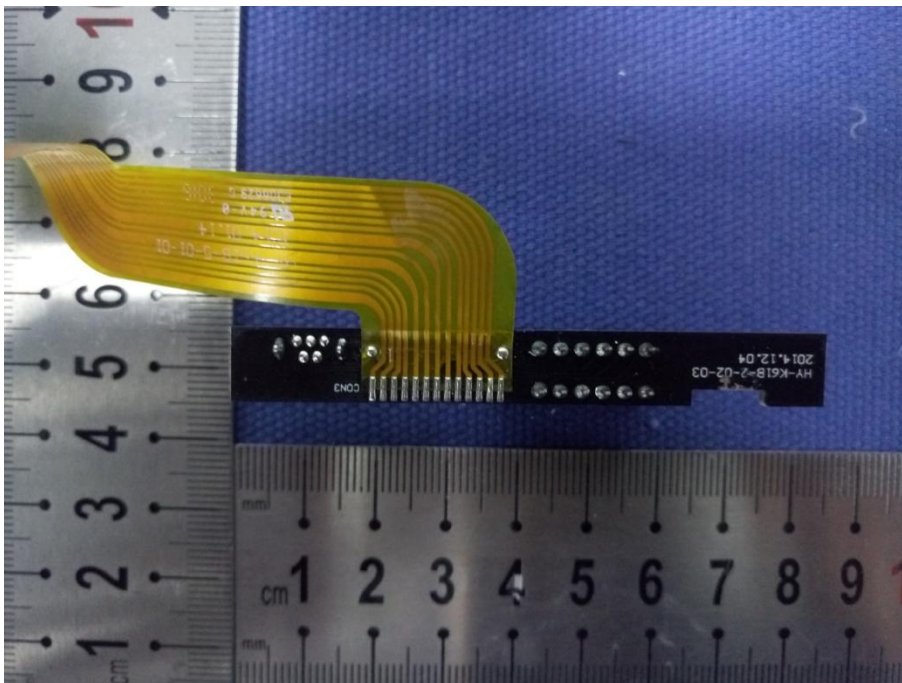
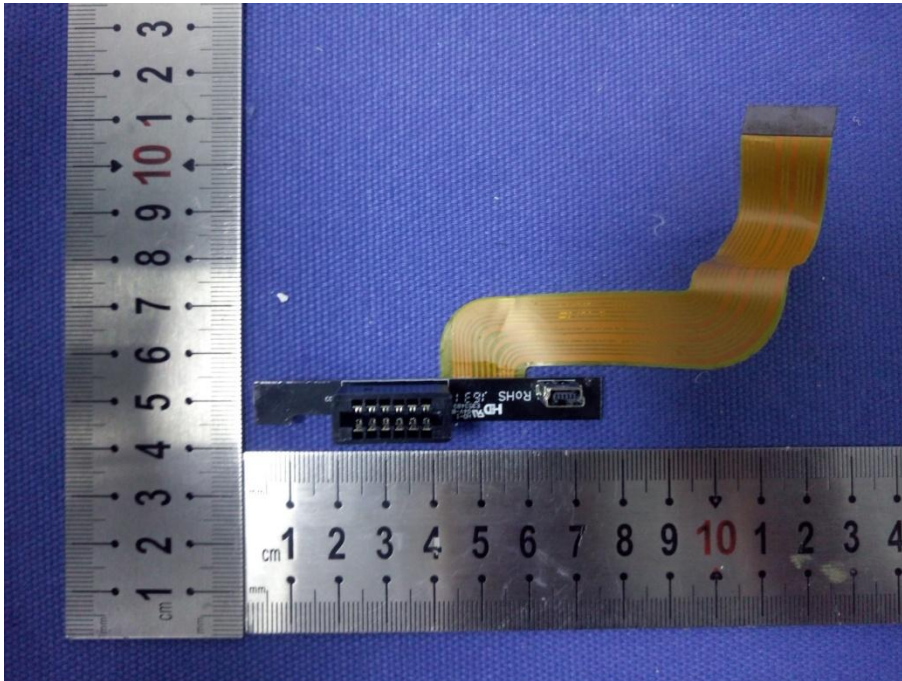












**END OF THE REPORT**