

# TEST REPORT

Report No.: BCTC2009001841EN1

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Applicant: Pivot1080 Limited

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Product Name: Nudge

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Product Type: Smart Wristband

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Tested Date: Sep. 22, 2020 to Sep. 26, 2020

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Issued Date: Nov.26.2020

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**Shenzhen BCTC Testing Co., Ltd**

# FCC ID:2AW5QN1

Product Name: Nudge  
Trademark: N/A  
Model /Type Ref.: Smart Wristband  
Prepared For: Pivot1080 Limited  
Address: Kemp House, 152 - 160 City Road, London EC1V 2NX,  
United Kingdom  
Manufacturer: Elecrow  
Address: West of F-building 8th floor, Fusen industry park, Gushu  
Hangcheng road, Bao'an Ave  
Prepared By: Shenzhen BCTC Testing Co., Ltd.  
Address: 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st  
Road, Qiaotou Community, Fuyong Street, Bao'an District,  
Shenzhen, China  
Sample Received Date: Sep. 22, 2020  
Sample tested Date: Sep. 22, 2020 to Sep. 26, 2020  
Issue Date: Nov.26.2020  
Report No.: BCTC2009001841EN1  
Test Standards FCC Part 15B, ANSI C63.4-2014  
Test Results PASS

Test by:

Tony

Tony

Compiled by:

Andrew Zhu

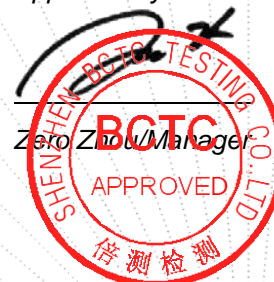
Andrew Zhu

Reviewed by:

Eric Yang

Eric Yang

Approved by:



Zero Zhou/Manager

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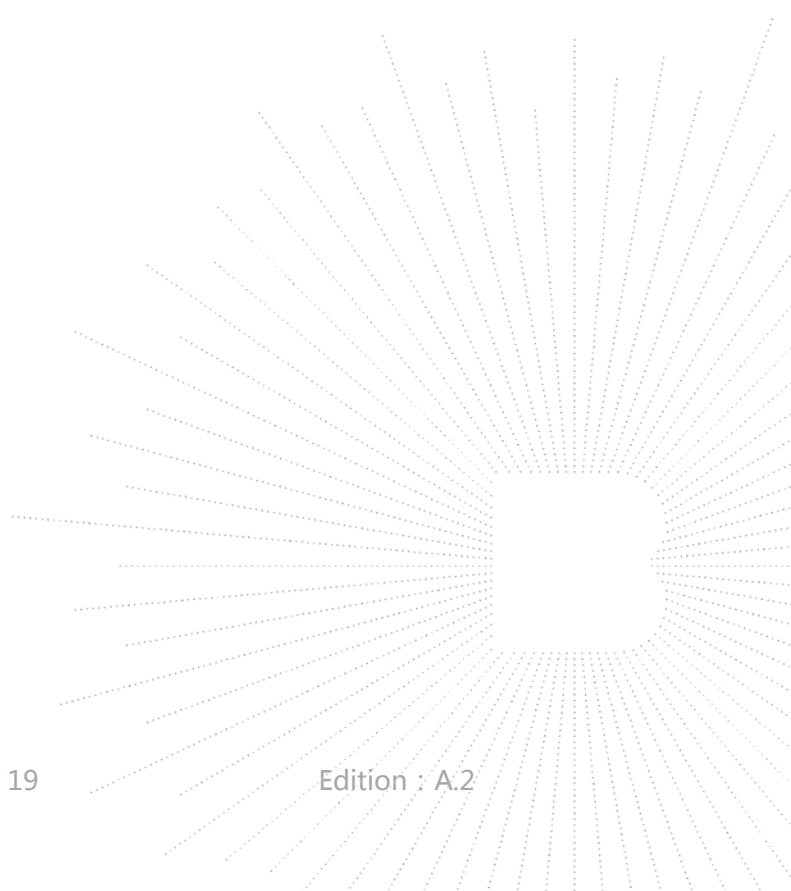
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(Note: N/A means not applicable)



## 1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2009001841E	Sep. 27, 2020	Original	invalid
BCTC2009001841EN1	Nov.26.2020	Reversion	Valid



## 2. TEST SUMMARY

The Product has been tested according to the following specifications:

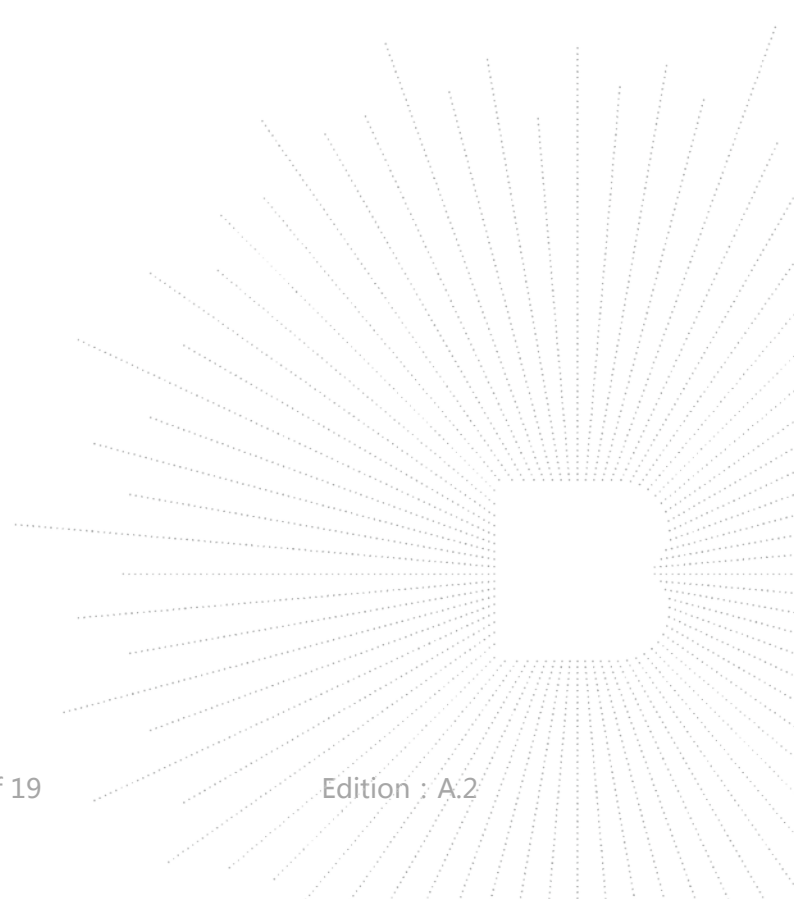
Standard	Test Item	Test result
FCC § 15.107	Conducted Emission	Pass
FCC § 15.109	Radiated Emission	Pass



### 3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

Test item	Value (dB)
Conducted Emission (150kHz-30MHz)	3.20
Radiated Emission(30MHz~1GHz)	4.80



## 4. PRODUCT INFORMATION AND TEST SETUP

### 4.1 Product Information

Ratings:

USB: DC 5V

Battery: DC 3.7V 90mAh

The highest frequency of the internal sources of the EUT is (less than 108)MHz:

☒ less than 108 MHz, the measurement shall only be made up to 1 GHz.

☐ between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.

☐ between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.

☐ above 1 GHz, the measurement shall be made up to 6 GHz.

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Specification	Note
2	--	--	BCTC	--	Unshielded	--

### 4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

### 4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	ADAPTER	UGREEN	CN122	---	---	---

#### Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

### 4.4 Test Mode

Test item	Test Mode	Test Voltage
Conducted emissions from the AC mains power ports (150KHz-30MHz) Class B	Charge	AC120V/60Hz
Radiated emissions(30MHz-1GHz)Class B	Charge	AC120V/60Hz
	Working	DC 3.7V
All test mode were tested and passed, only Conducted Emissions, Radiated Emissions shows (*) is the worst case mode which were recorded in this report.		

## 5. TEST FACILITY AND TEST INSTRUMENT USED

### 5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

### 5.2 Test Instrument Used

Conducted emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
LISN	R&S	ENV216	101375	Jun. 04, 2020	Jun. 03, 2021
ISN	HPX	ISN T800	S1509001	Jun. 04, 2020	Jun. 03, 2021
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

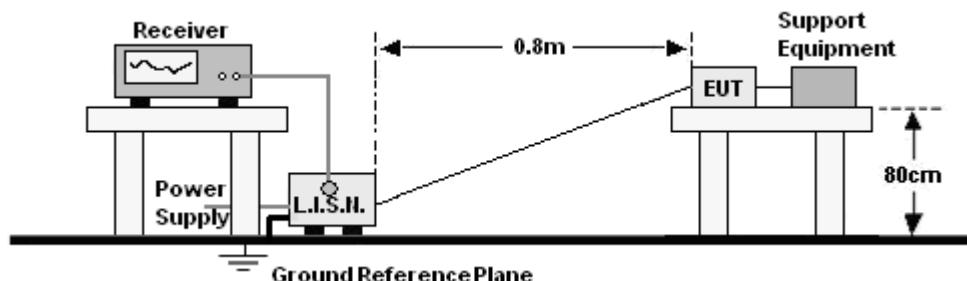
Radiated emissions Test (966 chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06, 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
Receiver	R&S	ESRP	101154	Jun. 08, 2020	Jun. 07, 2021
Amplifier	Schwarzbeck	BBV9718	9718-309	Jun. 04, 2020	Jun. 03, 2021
Amplifier	Schwarzbeck	BBV9744	9744-0037	Jun. 04, 2020	Jun. 03, 2021
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-9 42	Jun. 08, 2020	Jun. 07, 2021
Horn Antenna	SCHWARZBEC K	BBHA9120D	1541	Jun. 10, 2020	Jun. 09, 2021
Software	Frad	EZ-EMC	FA-03A2 RE	\	\



## 6. CONDUCTED EMISSION AT THE MAINS TERMINALS TEST

### 6.1 Block Diagram Of Test Setup

For mains ports:



### 6.2 Limit

Limits for Class B devices

(MHz)	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56*	56 to 46*
0,50 to 5	56	46
5 to 30	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
2. The lower limit shall apply at the transition frequencies.

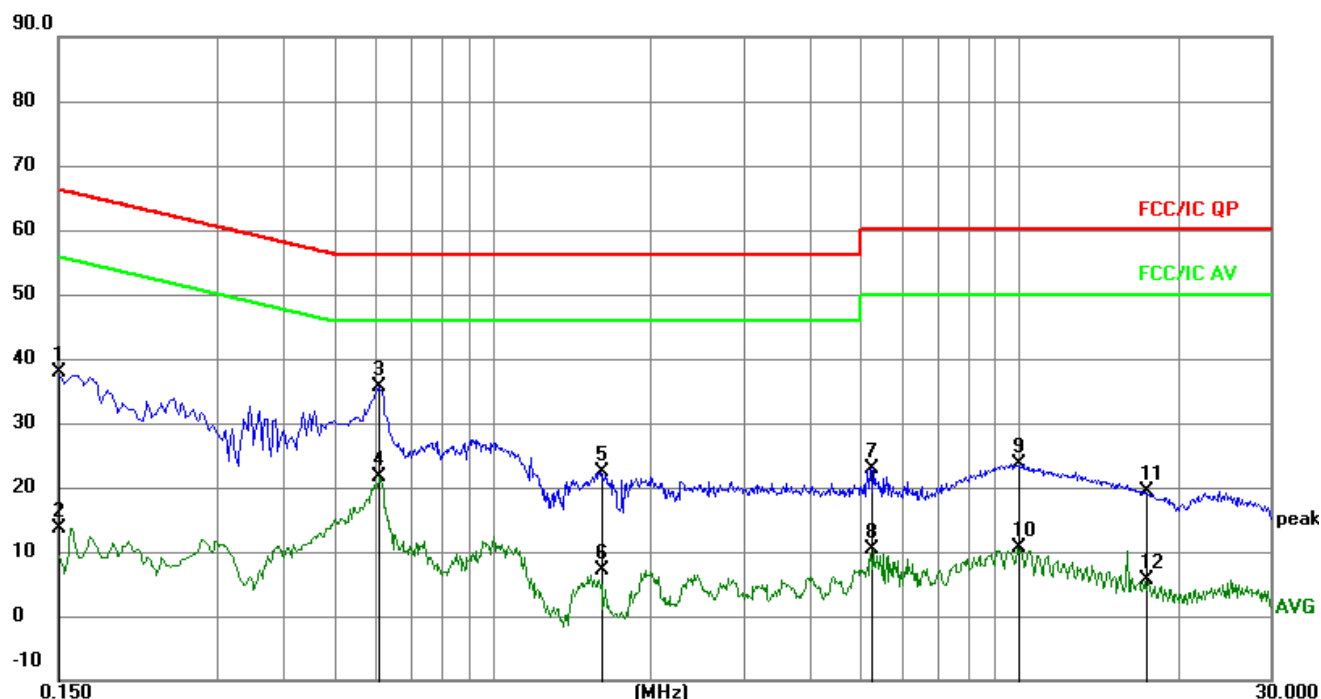
### 6.3 Test procedure

For mains ports:

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

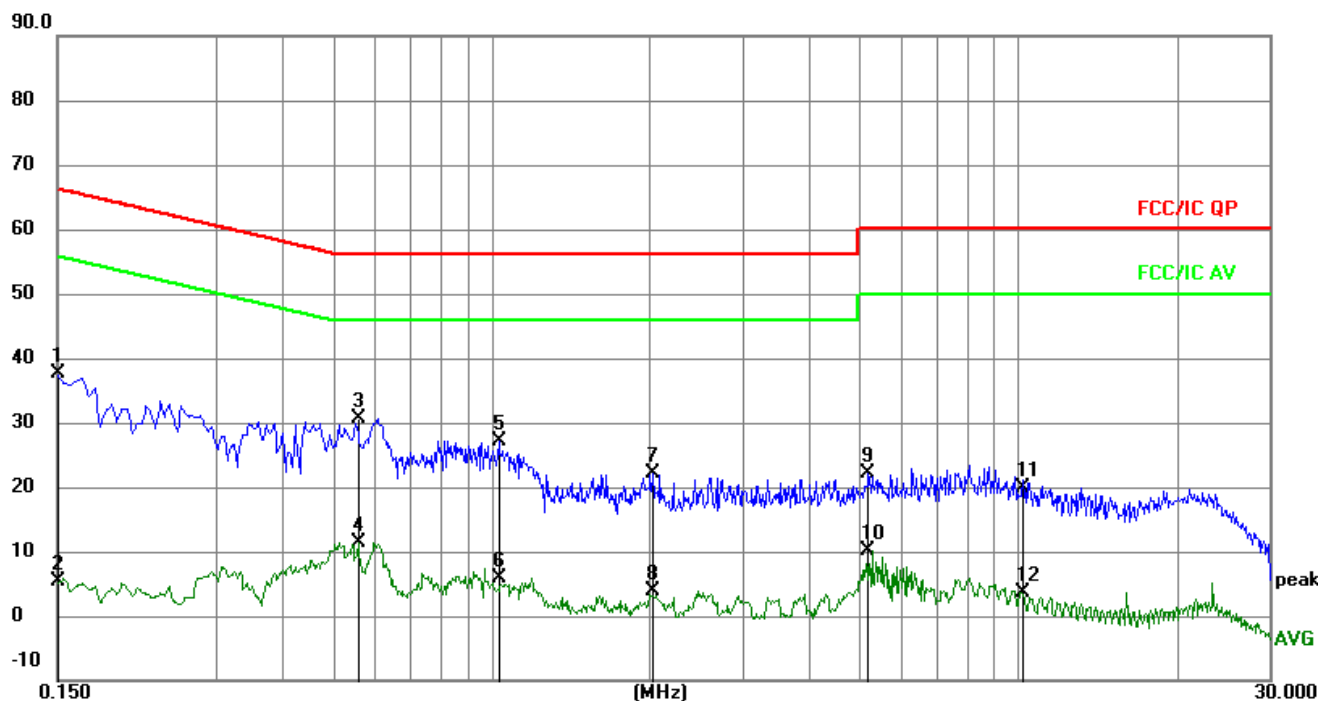
## 6.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC120V/60Hz	Test Mode:	Charge



No.	Mk.	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit	Over	Detector	Comment
1		0.1500	28.26	9.52	37.78	66.00	-28.22	QP	
2		0.1500	4.15	9.52	13.67	56.00	-42.33	AVG	
3	*	0.6090	25.58	9.97	35.55	56.00	-20.45	QP	
4		0.6090	11.63	9.97	21.60	46.00	-24.40	AVG	
5		1.6080	12.85	9.58	22.43	56.00	-33.57	QP	
6		1.6080	-2.48	9.58	7.10	46.00	-38.90	AVG	
7		5.2215	13.20	9.79	22.99	60.00	-37.01	QP	
8		5.2215	0.68	9.79	10.47	50.00	-39.53	AVG	
9		9.9420	13.88	9.69	23.57	60.00	-36.43	QP	
10		9.9420	0.90	9.69	10.59	50.00	-39.41	AVG	
11		17.3895	9.71	9.74	19.45	60.00	-40.55	QP	
12		17.3895	-4.10	9.74	5.64	50.00	-44.36	AVG	

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC120V/60Hz	Test Mode:	Charge



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
				dB	dBuV	dBuV	dB		
1		0.1500	28.06	9.52	37.58	66.00	-28.42	QP	
2		0.1500	-4.15	9.52	5.37	56.00	-50.63	AVG	
3	*	0.5581	20.79	9.83	30.62	56.00	-25.38	QP	
4		0.5581	1.48	9.83	11.31	46.00	-34.69	AVG	
5		1.0320	17.48	9.57	27.05	56.00	-28.95	QP	
6		1.0320	-3.73	9.57	5.84	46.00	-40.16	AVG	
7		2.0225	12.48	9.59	22.07	56.00	-33.93	QP	
8		2.0225	-5.71	9.59	3.88	46.00	-42.12	AVG	
9		5.1937	12.38	9.79	22.17	60.00	-37.83	QP	
10		5.1937	0.37	9.79	10.16	50.00	-39.84	AVG	
11		10.1254	10.08	9.69	19.77	60.00	-40.23	QP	
12		10.1254	-6.03	9.69	3.66	50.00	-46.34	AVG	

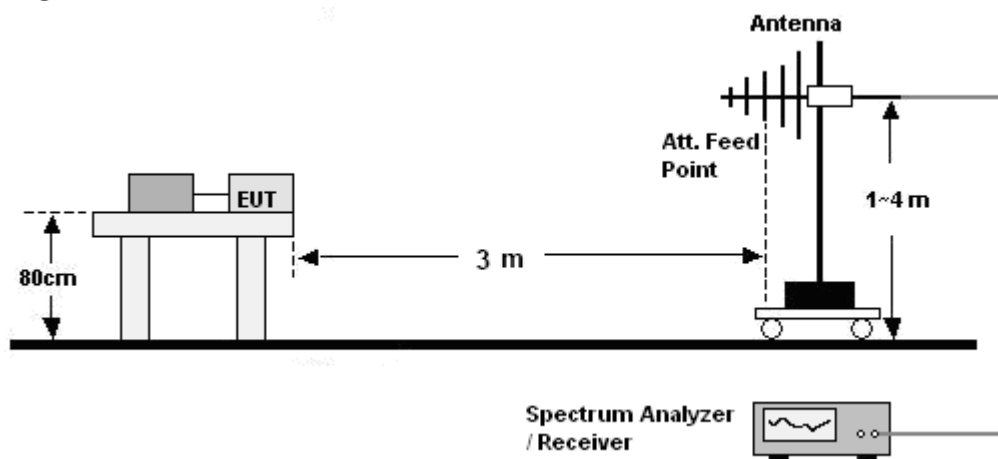
#### Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

## 7. RADIATION EMISSION TEST

### 7.1 Block Diagram Of Test Setup

30MHz ~ 1GHz:



### 7.2 Limit

Limits for Class B devices

Frequency (MHz)	limits at 3m dB( $\mu$ V/m)		
	QP Detector	PK Detector	AV Detector
30-88	40.0	--	--
88-216	43.5	--	--
216-960	46.0	--	--
960 to 1000	54.0	--	--
Above 1000	--	74.0	54.0

**Note:** The lower limit shall apply at the transition frequencies.

### 7.3 Test Procedure

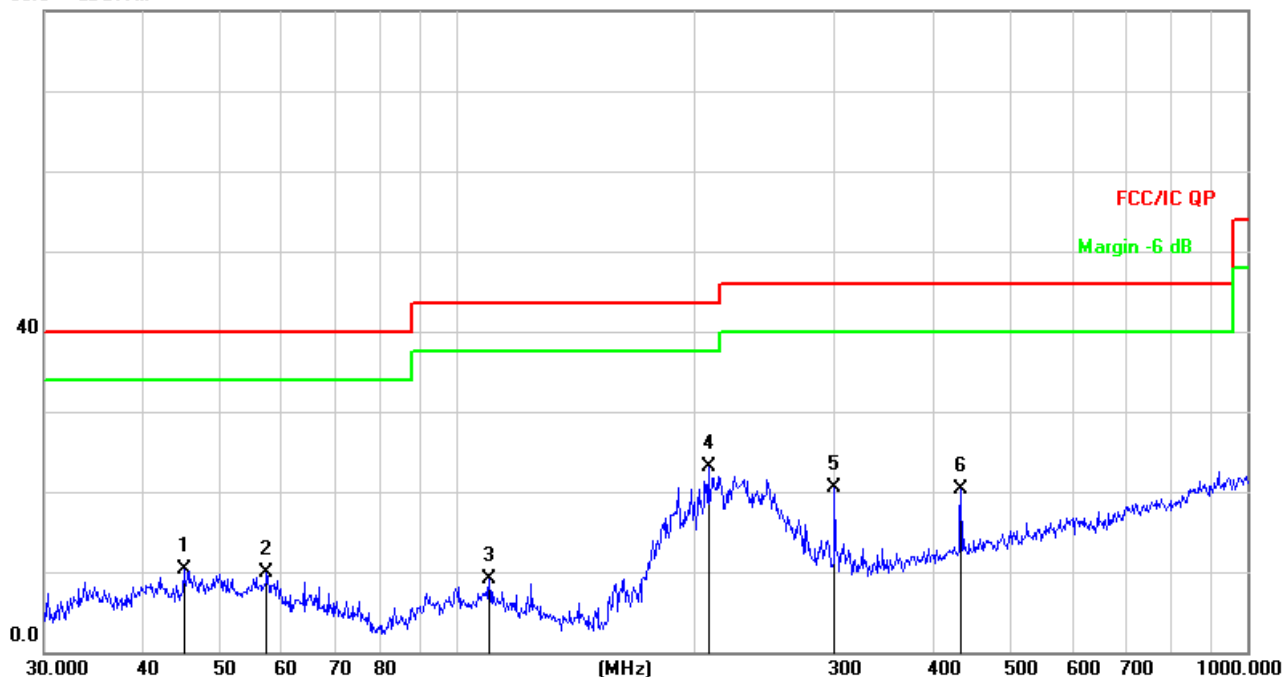
30MHz ~ 1GHz:

- The Product was placed on the nonconductive turntable 0.8 m above the ground at a chamber.
- Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.
- For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

## 7.4 Test Result

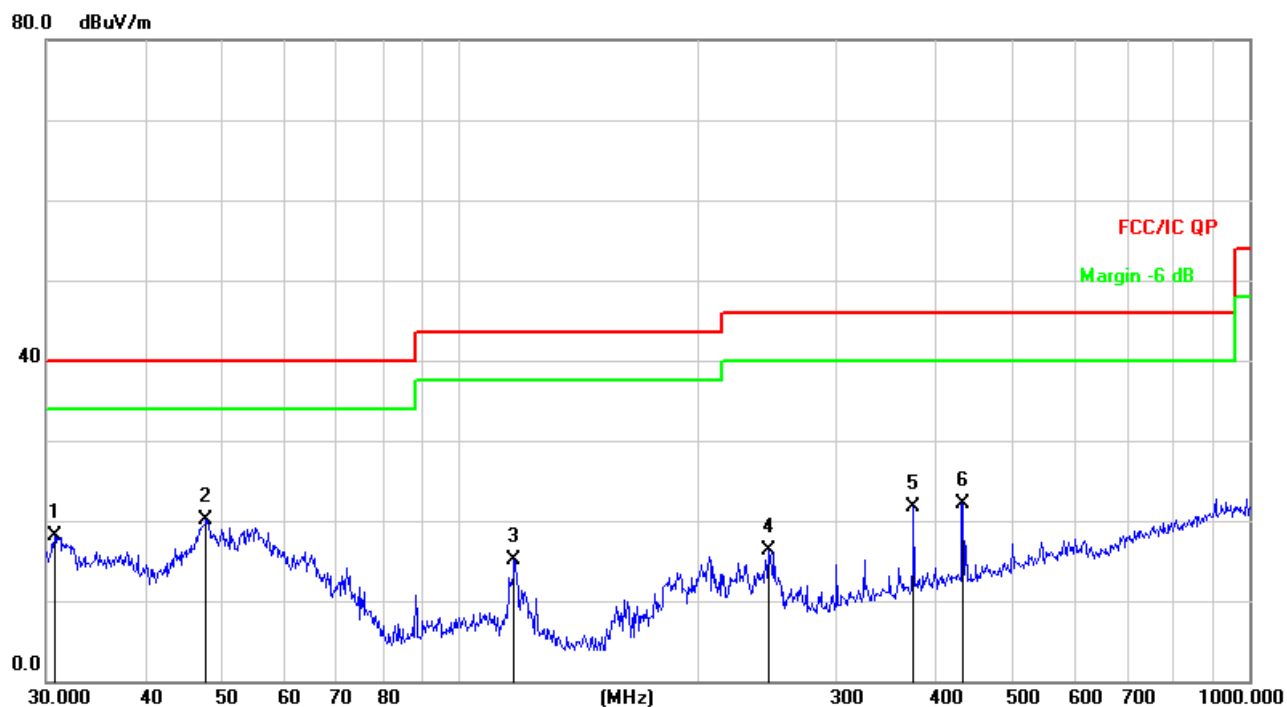
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Horizontal
Test Voltage :	AC120V/60Hz	Test Mode:	The worst mode

80.0 dBuV/m



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	cm	degree	Comment
1		45.0583	25.40	-15.13	10.27	40.00	-29.73	QP		
2		57.3923	25.47	-15.63	9.84	40.00	-30.16	QP		
3		109.7960	25.99	-16.91	9.08	43.50	-34.42	QP		
4	*	207.8501	39.31	-16.12	23.19	43.50	-20.31	QP		
5		300.3672	34.17	-13.59	20.58	46.00	-25.42	QP		
6		434.0651	30.70	-10.33	20.37	46.00	-25.63	QP		

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101kPa	Phase :	Vertical
Test Voltage :	AC120V/60Hz	Test Mode:	The worst mode



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dB/m	dB	cm	degree	Comment
1		30.7455	35.22	-17.14	18.08	40.00	-21.92	QP		
2	*	47.8260	35.15	-14.97	20.18	40.00	-19.82	QP		
3		117.3603	32.56	-17.40	15.16	43.50	-28.34	QP		
4		245.9509	31.63	-15.24	16.39	46.00	-29.61	QP		
5		375.9385	33.34	-11.64	21.70	46.00	-24.30	QP		
6		434.0651	32.47	-10.33	22.14	46.00	-23.86	QP		

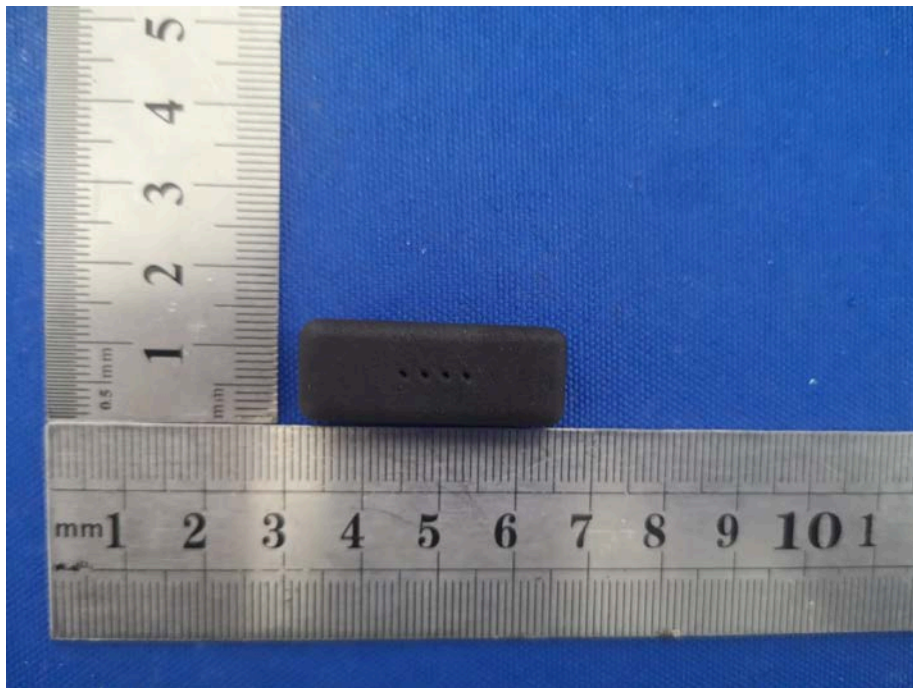
Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



## 8. EUT PHOTOGRAPHS

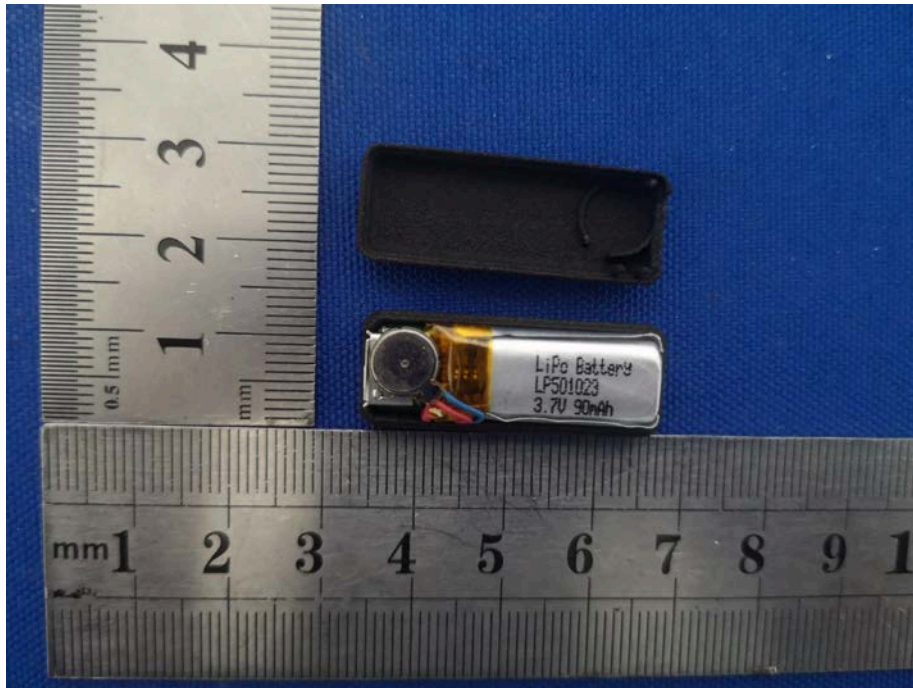
EUT Photo 1



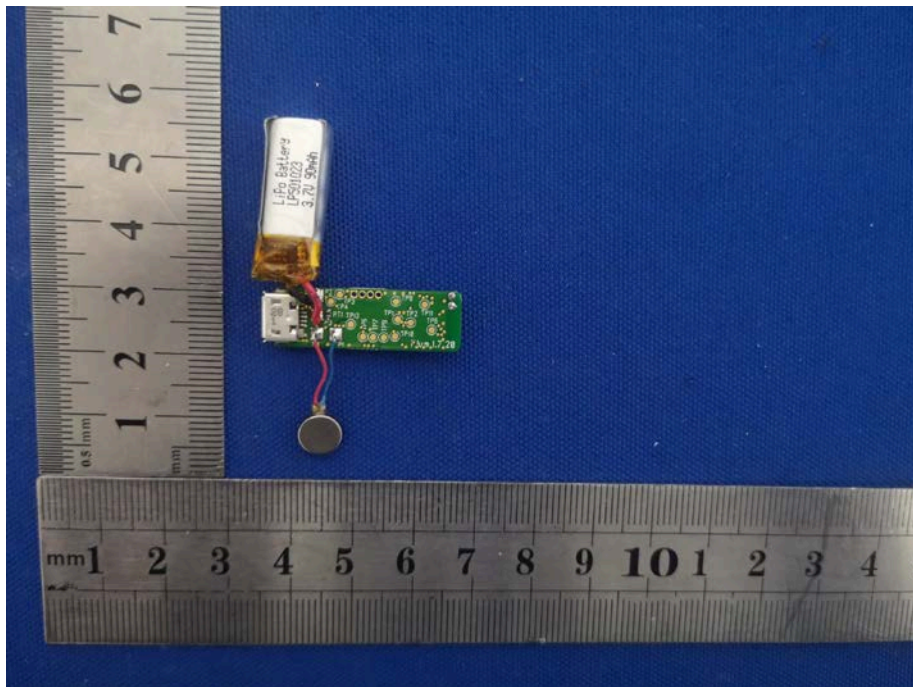
EUT Photo 2



EUT Photo 3

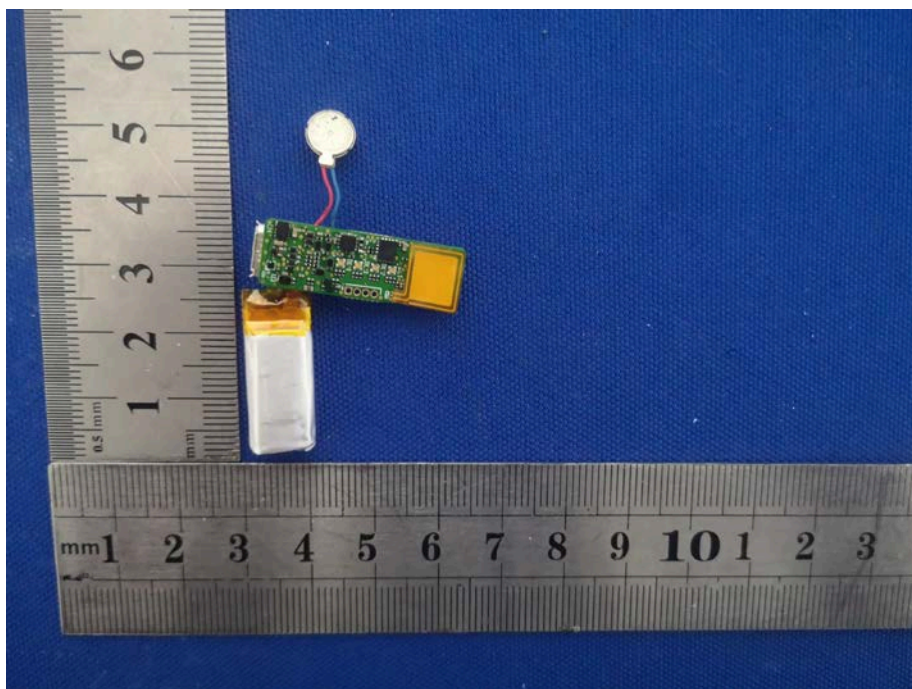


EUT Photo 4





EUT Photo 5



## 9. EUT TEST SETUP PHOTOGRAPHS

### Conducted emission



### Radiated emission



## STATEMENT

The equipment lists are traceable to the national reference standards.

The test report can not be partially copied unless prior written approval is issued from our lab.

The test report is invalid without stamp of laboratory.

The test report is invalid without signature of person(s) testing and authorizing.

The test process and test result is only related to the Unit Under Test.

The quality system of our laboratory is in accordance with ISO/IEC17025.

If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

**Address:**

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\*\*\*\*\* END OF REPORT \*\*\*\*\*