HUAK TESTING

FCC
TEST REPORT

Prepared for :

Shenzhen Margotan Tech Co., Ltd.

12F, Bldg.A, Rongchao Binhai Mansion, Haixiu Road No.2021, Xin'an Str, Bao'an District, Shenzhen, China

Product:	**Facial Cleansing Brush LED & EMS**
Trade Name:	**N/A**
Model Name:	**1008**
Date of Test:	**Apr. 22, 2020 - Apr. 28, 2020**
Date of Report:	**Apr. 28, 2020**
Report Number:	**HK2004160640-1ER**

Prepared By :

Shenzhen HUAK Testing Technology Co., Ltd.

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TEST REPORT VERIFICATION

Applicant	:	Shenzhen Margotan Tech Co., Ltd.
Address	:	12F, Bldg.A, Rongchao Binhai Mansion, Haixiu Road No.2021, Xin'an Str, Bao'an District, Shenzhen, China
Manufacturer	:	Shenzhen Margotan Tech Co., Ltd.
Address	:	12F, Bldg.A, Rongchao Binhai Mansion, Haixiu Road No.2021, Xin'an Str, Bao'an District, Shenzhen, China
EUT Description	:	Facial Cleansing Brush LED & EMS
(A) Model No.	:	1008
(B) Serial Model	:	N/A
(C) Power Supply	:	DC5V From Micro USB or DC 3.7V From Battery

Standards..... FCC Part 15 Subpart B
ANSI C63.4:2014

This device described above has been tested by HUAK, and the test results show that the equipment under test (EUT) is in compliance with Part 15 of FCC Rules. And it is applicable only to the tested sample identified in the report.

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Test Result..... **Pass**

Date of Test: Apr. 22, 2020 - Apr. 28, 2020

Testing Engineer: (Gary Qian)

Technical Manager: (Eden Hu)

Authorized Signatory: (Jason Zhou)

Revison	Description	Issued Data	Remark
Revsion 1.0	Initial Test Report Release	2020/04/28	James Zhou

1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part 15 Subpart B ANSI C63.4:2014	Conducted Emission	Class B	PASS	
	Radiated Emission	Class B	PASS	

NOTE:

(1) 'N/A' denotes test is not applicable in this Test Report

(2) For client's request and manual description, the test will not be executed.

1.1 TEST FACILITY

Shenzhen HUAK Testing Technology Co., Ltd.
Add. : 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, China

1.2 MEASUREMENT UNCERTAINTY

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

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	3.2	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
A01	ANSI	30MHz ~ 1000MHz	4.7	

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Facial Cleansing Brush LED & EMS
Model Name	1008
Serial Model	N/A
Model Difference	N/A
Product Description	The EUT is a Facial Cleansing Brush LED & EMS. Operating frequency: N/A Connecting I/O port: N/A Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.
Power Source	DC Voltage
Power Rating	DC5V From USB Micro or DC 3.7V From Battery

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

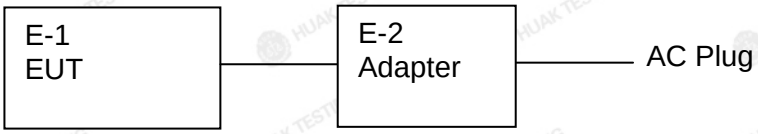
Pretest Mode	Description
Mode 1	Charging
Mode 2	Running

For Conducted Test	
Final Test Mode	Description
Mode 1	Charging
Mode 2	Running

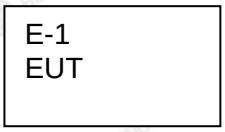
For Radiated Test	
Final Test Mode	Description
Mode 1	Charging
Mode 2	Running

2.3 DESCRIPTION OF TEST SETUP

Mode 1:



Mode 2:



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Facial Cleansing Brush LED & EMS	N/A	1008	N/A	EUT
E-2	Adapter	HUAWEI	HW-051000CHQ	N/A	

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	R&S	ENV216	HKE-002	Dec. 26, 2019	1 Year
2.	Receiver	R&S	ESCI 7	HKE-010	Dec. 26, 2019	1 Year
3.	RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2019	1 Year
4.	Spectrum analyzer	R&S	FSP40	HKE-025	Dec. 26, 2019	1 Year
5.	Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2019	1 Year
6.	Preamplifier	Schwarzbeck	BBV 9743	HKE-006	Dec. 26, 2019	1 Year
7.	EMI Test Receiver	Rohde & Schwarz	ESCI 7	HKE-010	Dec. 26, 2019	1 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	HKE-012	Dec. 26, 2019	1 Year
9.	Loop Antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 26, 2019	1 Year
10.	Horn Antenna	Schewarzbeck	9120D	HKE-013	Dec. 26, 2019	1 Year
11.	Pre-amplifier	EMCI	EMC051845SE	HKE-015	Dec. 26, 2019	1 Year
12.	Pre-amplifier	Agilent	83051A	HKE-016	Dec. 26, 2019	1 Year
13.	EMI Test Software EZ-EMC	Tonscend	JS1120-B Version	HKE-083	Dec. 26, 2019	N/A
14.	Power Sensor	Agilent	E9300A	HKE-086	Dec. 26, 2019	1 Year
15.	Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2019	1 Year
16.	Signal generator	Agilent	N5182A	HKE-029	Dec. 26, 2019	1 Year
17.	Signal Generator	Agilent	83630A	HKE-028	Dec. 26, 2019	1 Year
18.	Shielded room	Shiel Hong	4*3*3	HKE-039	Dec. 26, 2019	1 Year

3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

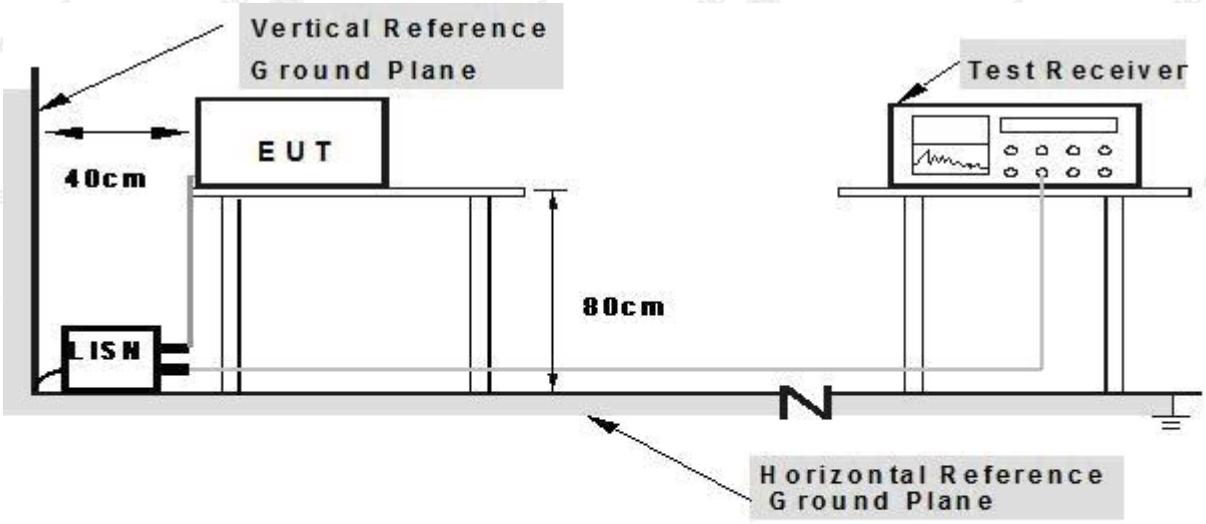
The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

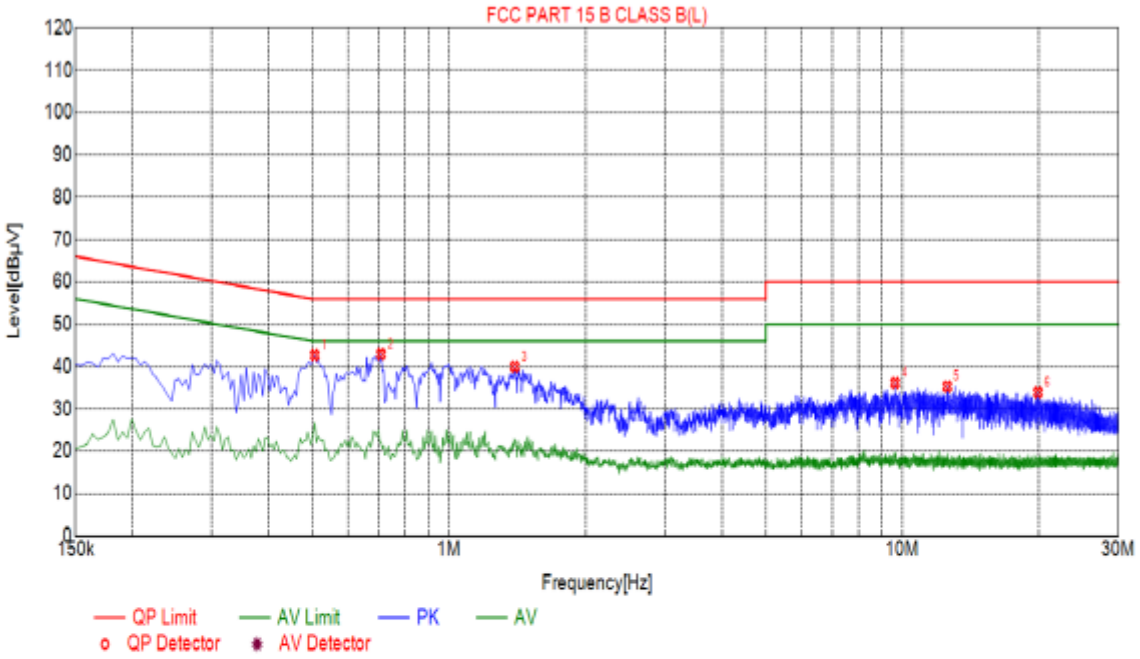
3.1.5 TEST RESULTS

Note:

All the test modes completed for test. only the worst result of was reported.

as below:

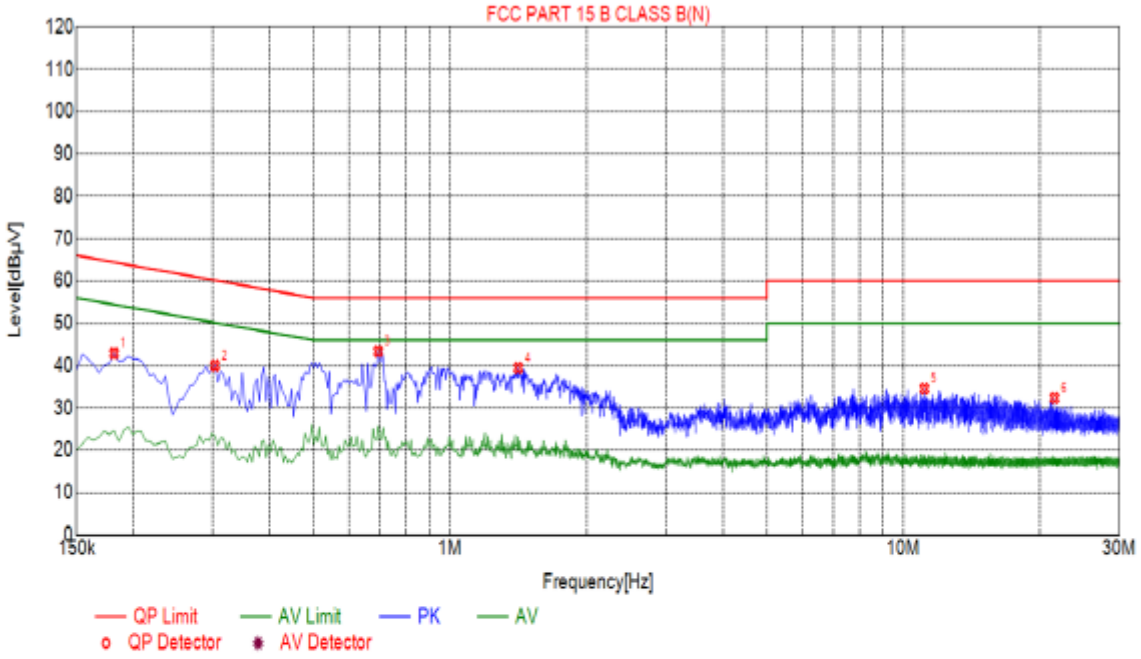
EUT：	Facial Cleansing Brush LED & EMS	Model Name. ：	1008
Temperature：	24.5℃	Relative Humidity：	55%
Pressure：	1010hPa	Test Date :	2020-04-26
Test Mode：	Mode 1	Phase :	L
Test Voltage ：	DC5V From Micro USB		



Suspected List

NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.5055	42.72	10.04	56.00	13.28	32.68	PK	L
2	0.7080	42.95	10.05	56.00	13.05	32.90	PK	L
3	1.3965	40.00	10.11	56.00	16.00	29.89	PK	L
4	9.6450	36.15	10.08	60.00	23.85	26.07	PK	L
5	12.5700	35.34	9.98	60.00	24.66	25.36	PK	L
6	19.9275	33.89	10.10	60.00	26.11	23.79	PK	L

EUT：	Facial Cleansing Brush LED & EMS	Model Name. ：	1008
Temperature：	24.5 ℃	Relative Humidity：	55%
Pressure：	1010hPa	Test Date：	2020-04-26
Test Mode：	Mode 1	Phase：	N
Test Voltage ：	DC5V From Micro USB		



Suspected List

NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Reading [dBµV]	Detector	Type
1	0.1815	42.89	10.06	64.42	21.53	32.83	PK	N
2	0.3030	40.04	10.04	60.16	20.12	30.00	PK	N
3	0.6945	43.36	10.05	56.00	12.64	33.31	PK	N
4	1.4145	39.46	10.11	56.00	16.54	29.35	PK	N
5	11.1345	34.54	10.01	60.00	25.46	24.53	PK	N
6	21.5610	32.33	10.14	60.00	27.67	22.19	PK	N

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Notes:

(1) The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

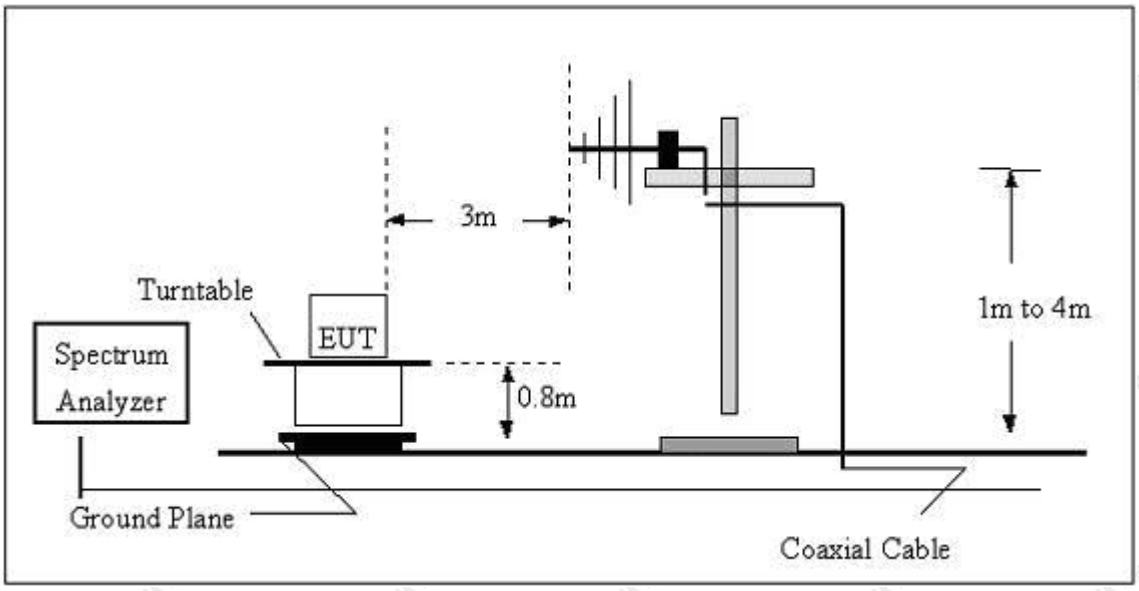
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured, above 1G Average detector mode will be instead.

e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP(AV) Limits and then no additional QP Mode measurement performed.

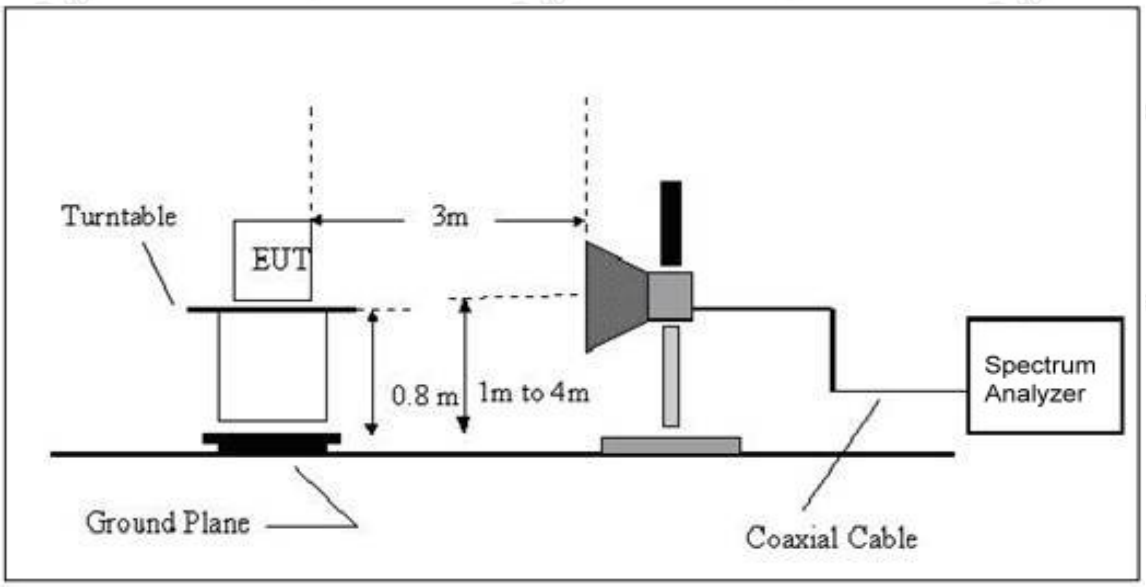
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up Frequency Below 1 GHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz



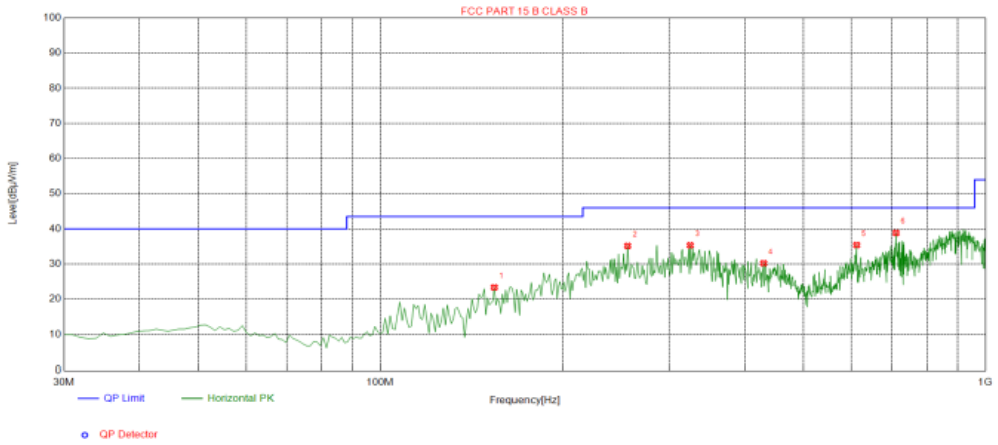
3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 TEST RESULTS

Note:
All the test modes completed for test. only the worst result of was reported.
as below:

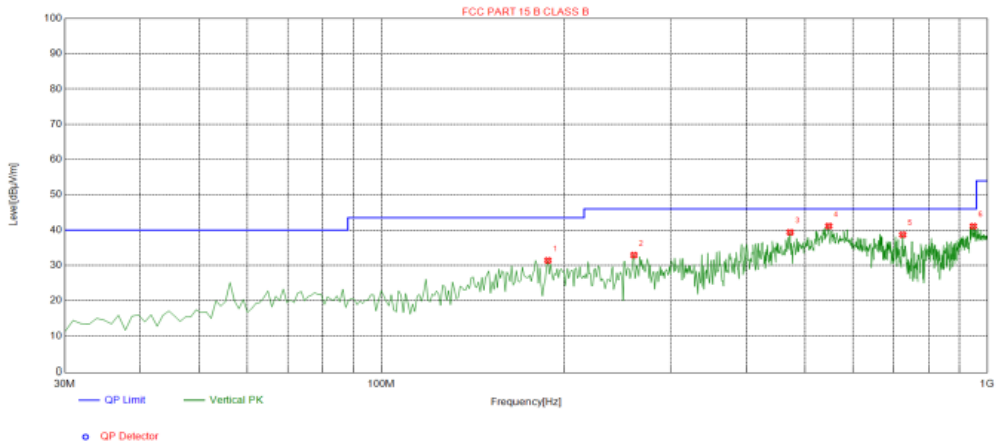
EUT：	Facial Cleansing Brush LED & EMS	Model Name ：	1008
Temperature：	24.5 ℃	Relative Humidity：	55%
Pressure：	1010 hPa	Test Date：	2020-04-26
Test Mode ：	Mode 1	Polarization：	Horizontal
Test Power ：	DC5V From Micro USB		



Suspected List

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	154.2843	-18.63	41.98	23.35	43.50	20.15	100	252	Horizontal
2	256.2362	-13.47	48.63	35.16	46.00	10.84	100	76	Horizontal
3	325.1752	-11.84	47.17	35.33	46.00	10.67	100	287	Horizontal
4	430.0400	-9.85	40.08	30.23	46.00	15.77	100	271	Horizontal
5	612.5826	-5.55	40.94	35.39	46.00	10.61	100	348	Horizontal
6	711.6216	-4.85	43.69	38.84	46.00	7.16	100	303	Horizontal

EUT：	Facial Cleansing Brush LED & EMS	Model Name ：	1008
Temperature：	24.5 ℃	Relative Humidity：	55%
Pressure：	1010 hPa	Test Date：	2020-04-26
Test Mode ：	Mode 1	Polarization：	Vertical
Test Power ：	DC5V From Micro USB		



Suspected List

Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	188.2683	-16.16	47.54	31.38	43.50	12.12	100	12	Vertical
2	261.0911	-13.54	46.45	32.91	46.00	13.09	100	357	Vertical
3	472.7628	-8.37	47.74	39.37	46.00	6.63	100	311	Vertical
4	547.5275	-7.02	48.17	41.15	46.00	4.85	100	321	Vertical
5	725.2152	-4.62	43.32	38.70	46.00	7.30	100	224	Vertical
6	948.5385	-1.27	42.36	41.09	46.00	4.91	100	330	Vertical

3.2.6 TEST RESULTS(Above 1GHz)

EUT：	Facial Cleansing Brush LED & EMS	Model Name ：	1008
Temperature：	N/A	Relative Humidity：	N/A
Pressure：	N/A	Test Date :	N/A
Test Mode ：	N/A		
Test Power ：	N/A		

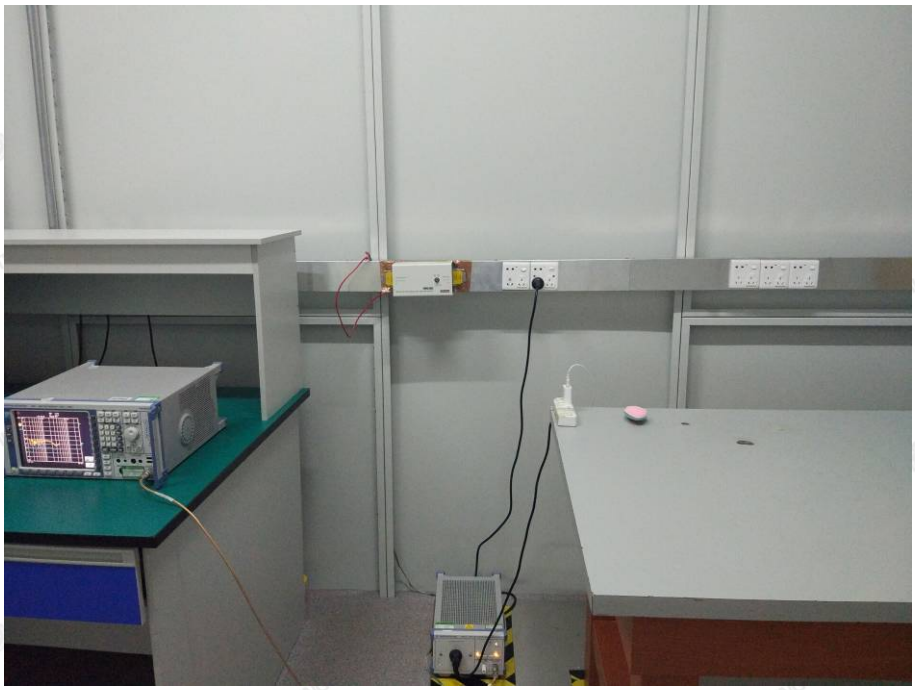
Note:

1) N/A - denotes test is not applicable in this test report

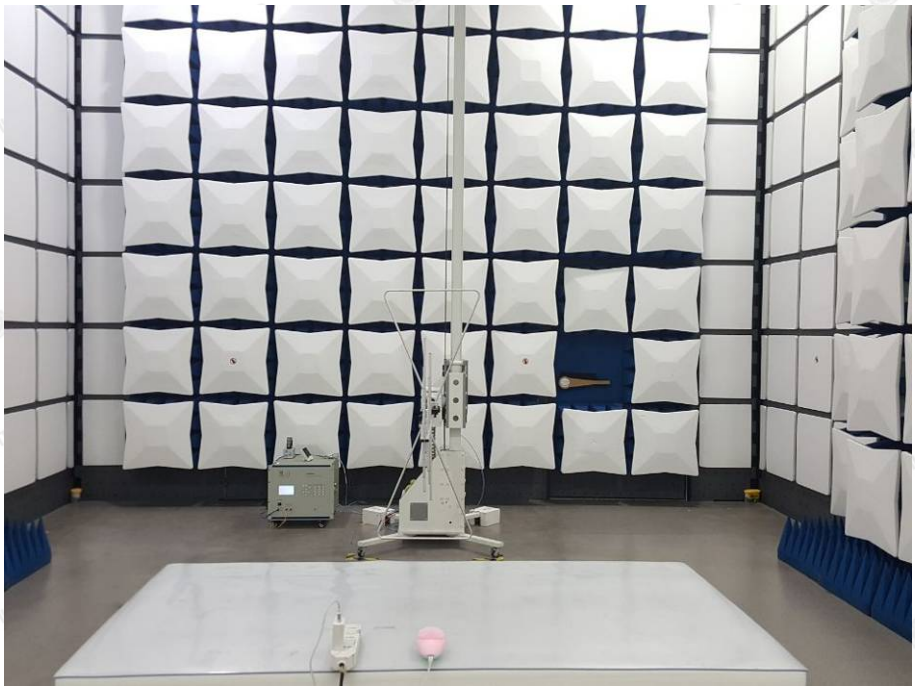
2) There was not any unintentional transmission in standby mode

4. **EUT TEST PHOTO**

Conducted Emission



Radiated Emission



ATTACHMENT PHOTOGRAPHS OF EUT

Photo 1

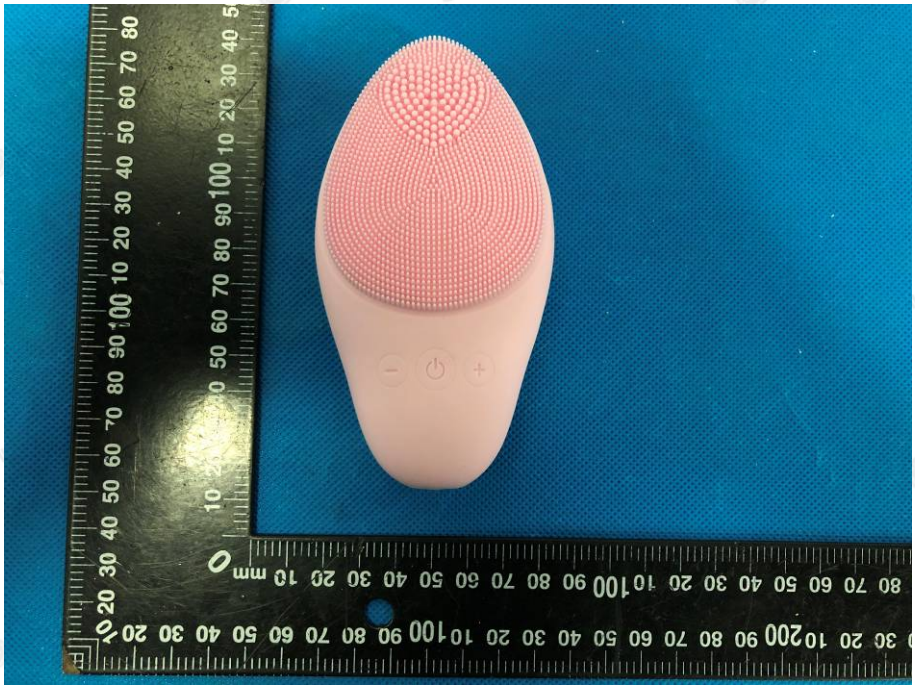
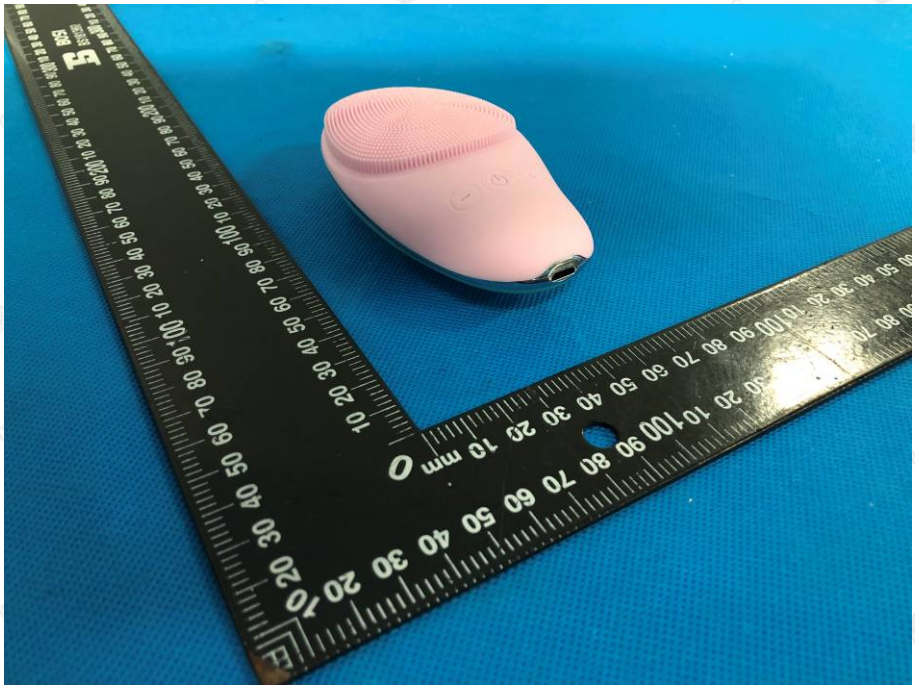


Photo 2



HUAK Testing Lab TEL : +86-755 2302 9901 FAX : +86-755 2302 9901 E-mail : service@cer-mark.com
Add: 1/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Photo 3

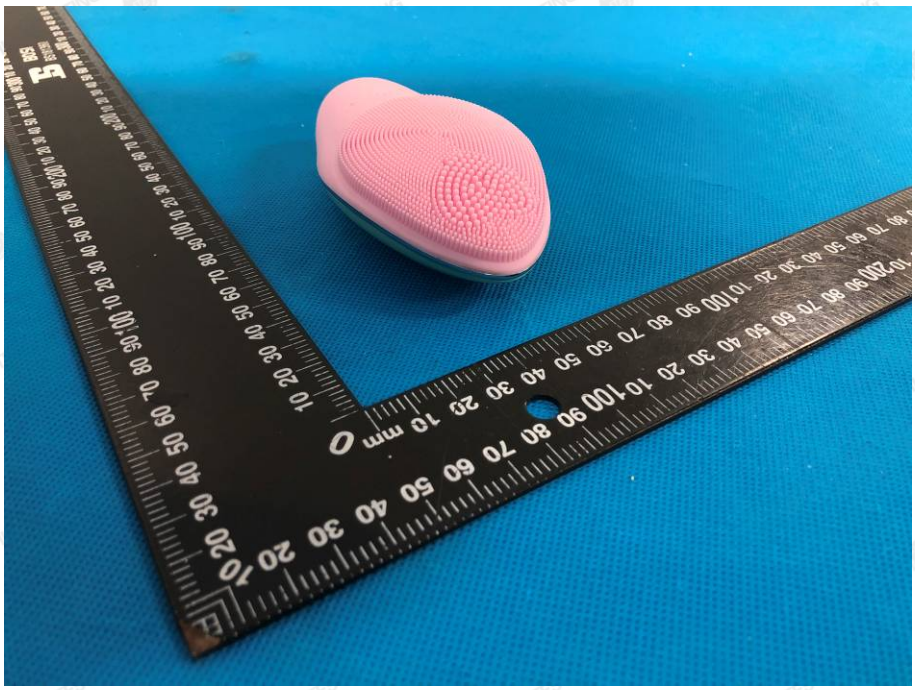


Photo 4

Photo 5

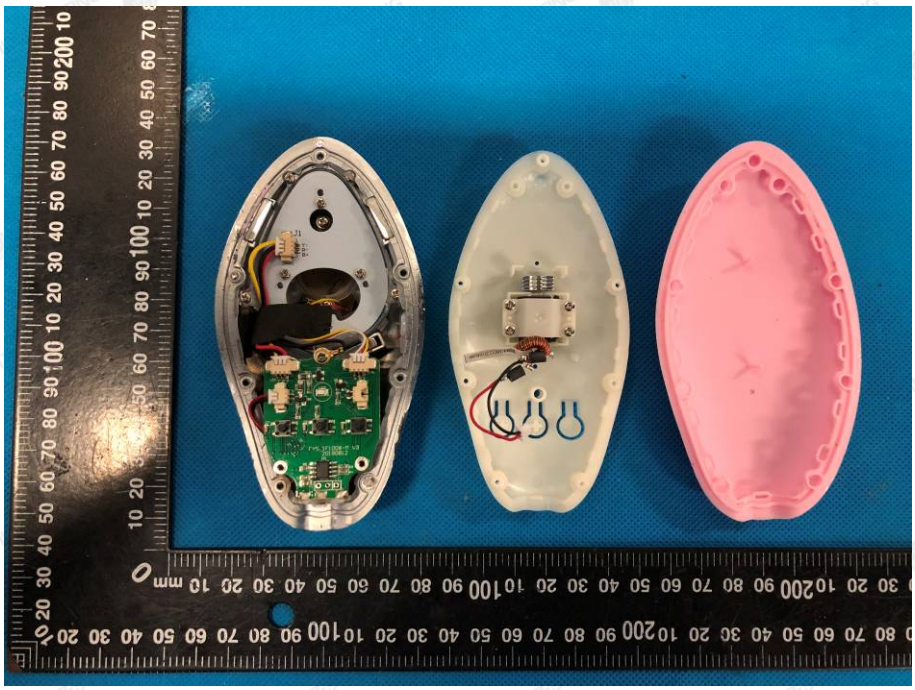


Photo 6

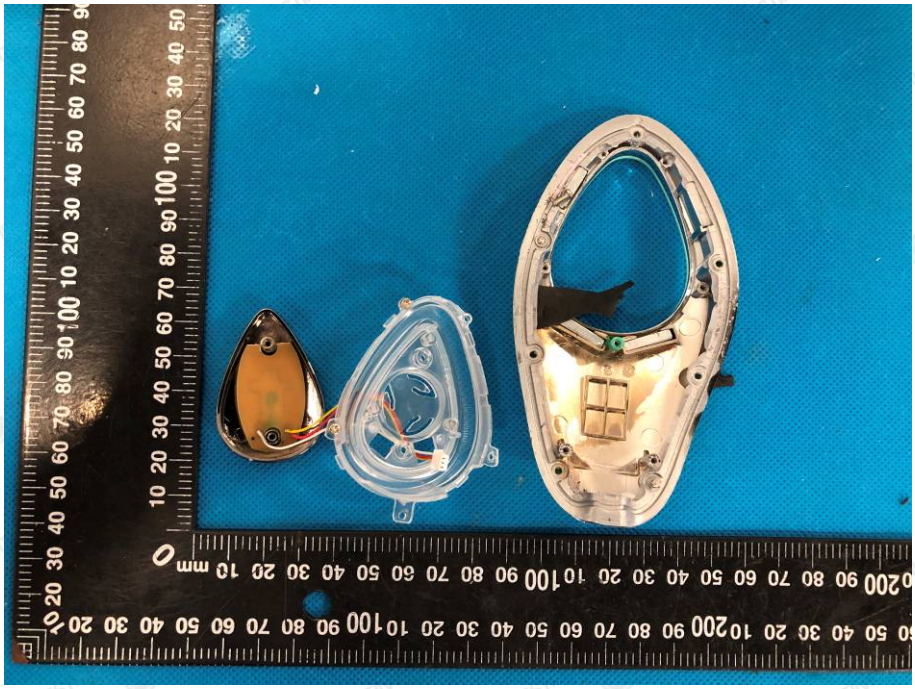


Photo 7

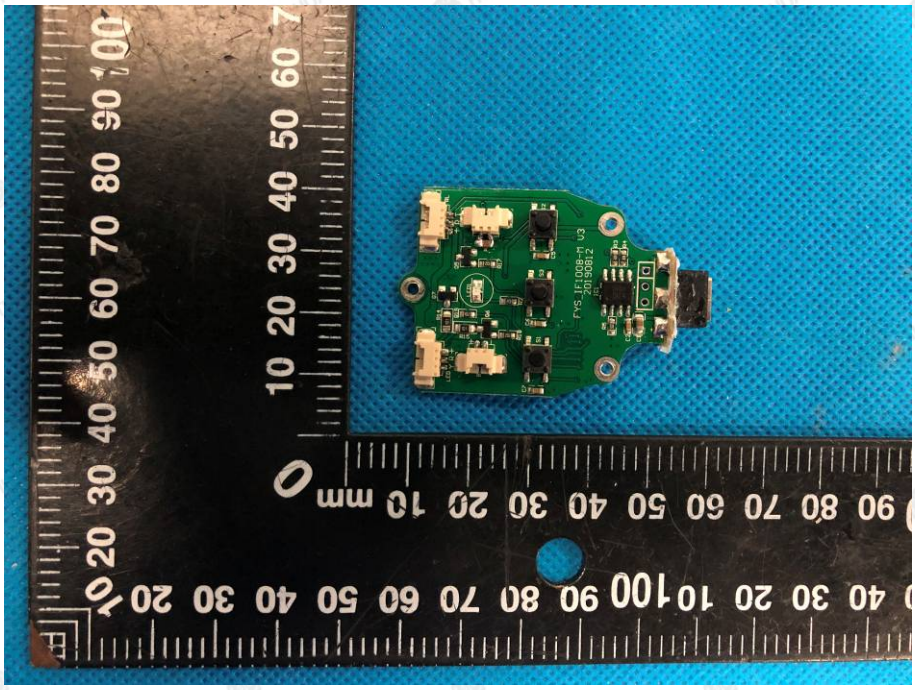


Photo 8

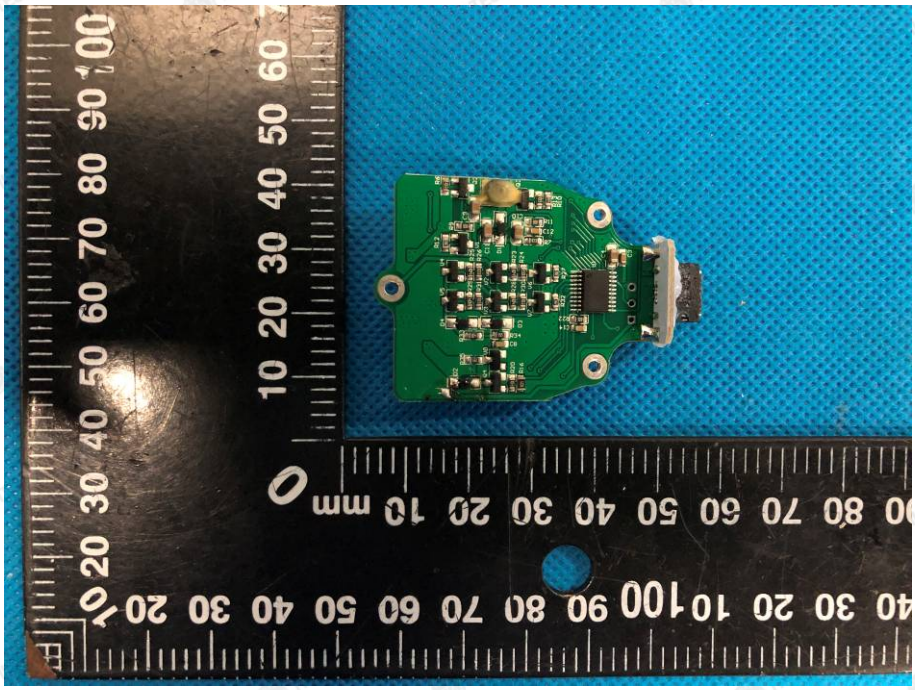


Photo 9

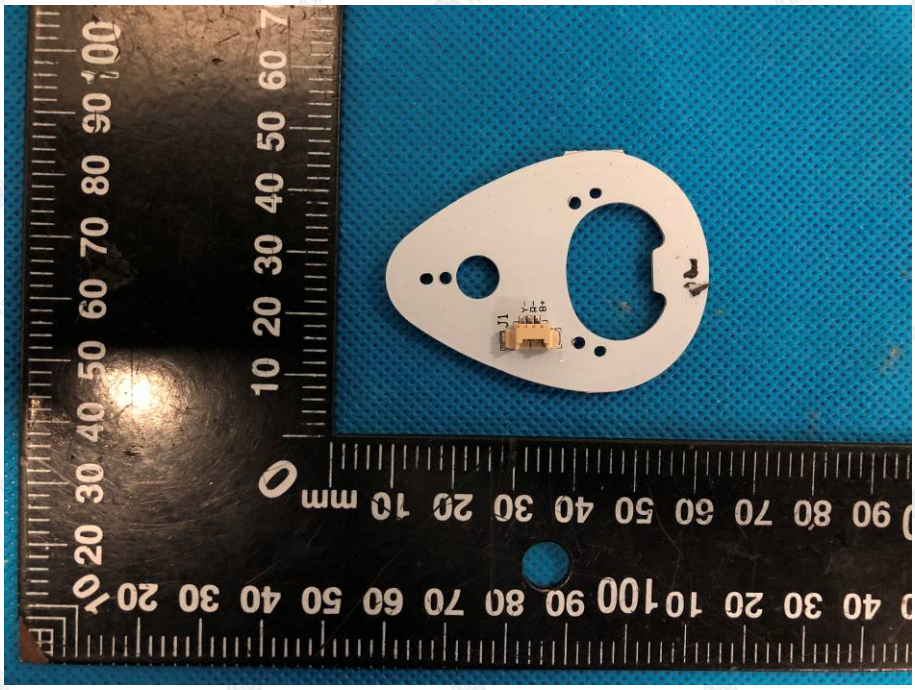


Photo 10

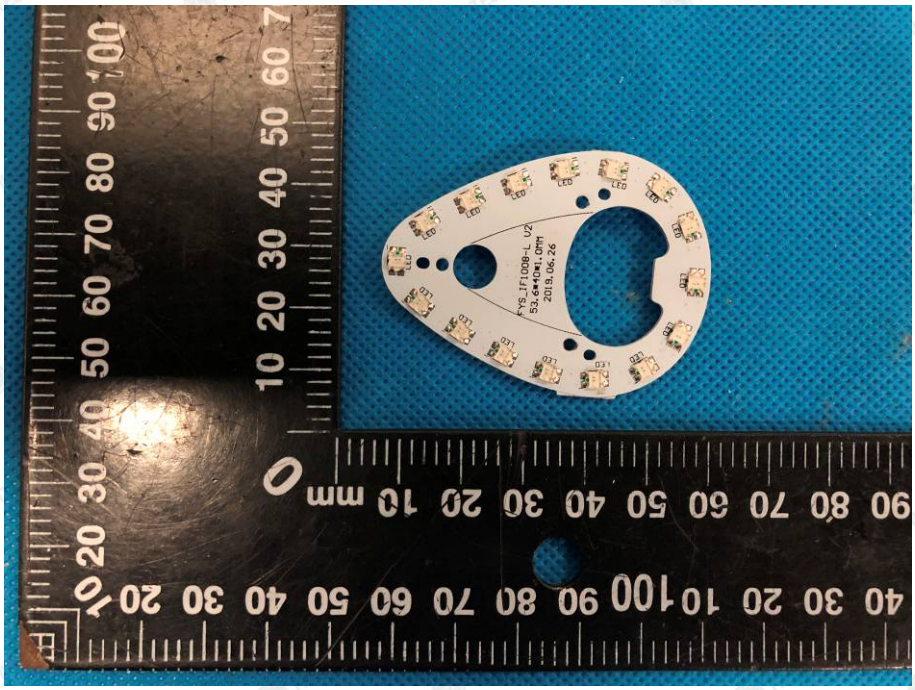


Photo 11

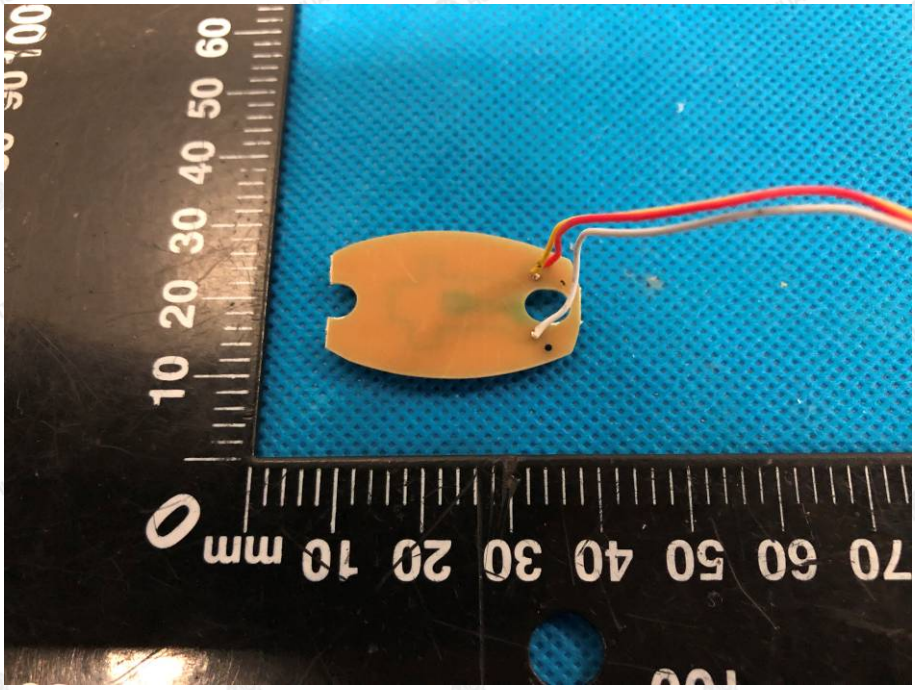
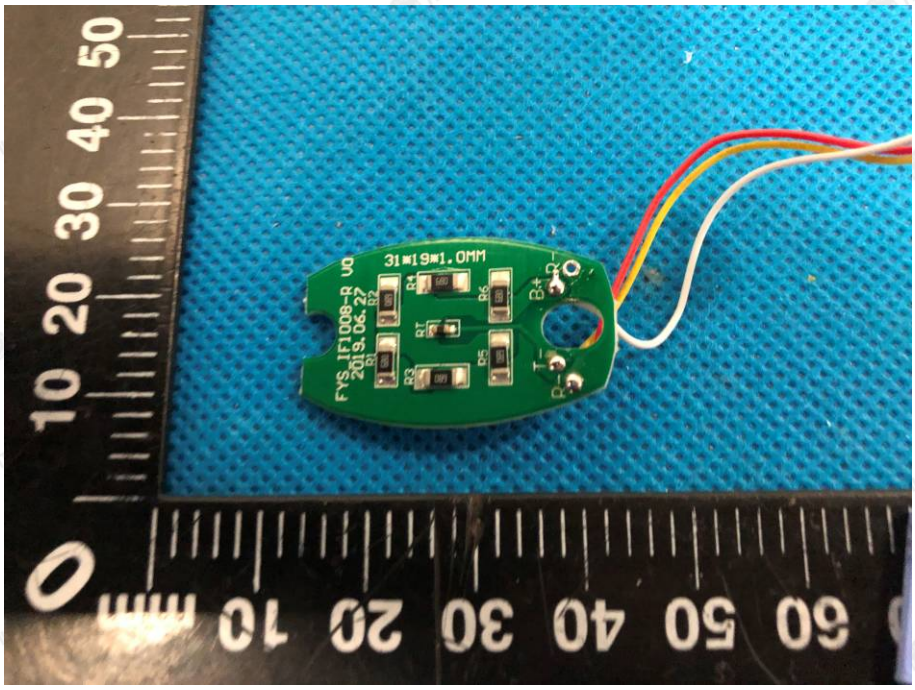


Photo 12



.....End of Report.....