TCT 通测检测
TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	2BERZSR-1903	
Test Report No..... :	TCT240122E039	
Date of issue..... :	Jan. 30, 2024	
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	shen zhen shi jing rui ke ji you xian gong si	
Address..... :	fu hai jie dao qiao tou she qu fu hai gong ye qu si dong si lou jing rui ke ji, shen zhen shi, China	
Manufacturer's name ... :	shen zhen shi jing rui ke ji you xian gong si	
Address..... :	fu hai jie dao qiao tou she qu fu hai gong ye qu si dong si lou jing rui ke ji, shen zhen shi, China	
Standard(s) ..... :	FCC CFR Title 47 Part 15 Subpart C	
Product Name..... :	Facial Cleansing Brush	
Trade Mark ..... :	N/A	
Model/Type reference..... :	SR-1903	
Rating(s)..... :	DC 5V	
Date of receipt of test item ..... :	Jan. 22, 2024	
Date (s) of performance of test..... :	Jan. 22, 2024 ~ Jan. 30, 2024	
Tested by (+signature) ... :	Ronaldo LUO	Ronaldo Luo
Check by (+signature).... :	Beryl ZHAO	Beryl Zhao
Approved by (+signature):	Tomsin	Tomsin

SHENZHEN TONGCE TESTING LAB TCT

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1. General Product Information

1.1. EUT description

Product Name.....:	Facial Cleansing Brush
Model/Type reference.....:	SR-1903
Sample Number.....:	TCT240122E039-0101
Operation Frequency .....:	234.18kHz ~ 236.52kHz
Output power.....:	0.66W
Modulation Technology .....:	Load modulation
Antenna Type.....:	Inductive loop coil Antenna
Rating(s).....:	DC 5V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious Emission	§15.209(a)(f)	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

3. General Information

3.1. Test environment and mode

Operating Environment:		
Condition	Conducted Emission	Radiated Emission
Temperature:	23.5 °C	24.2 °C
Humidity:	52 % RH	51 % RH
Atmospheric Pressure:	1010 mbar	1010 mbar

Test Mode:		
AC mode:	Mode 1	Full Load(Load battery level <1%)
	Mode 2	Full Load(Load battery level 50%)
	Mode 3	Full Load(Load battery level >99%)
Remark	All modes have been tested. The worst mode (Mode 1) reported for Conducted emission test and The worst mode (Mode 1) reported for Radiated emission test.	

The sample was placed 0.8m for the measurement below above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.

3.2. Description of Support Units

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.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
Adapter	EP-TA200	R37M4PR7QD4SE3	/	SAMSUNG

Note:

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. Facilities and Accreditations

4.1. Facilities

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

- FCC - Registration No.: 645098
  SHENZHEN TONGCE TESTING LAB
  Designation Number: CN1205
  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.
- IC - Registration No.: 10668A-1
  SHENZHEN TONGCE TESTING LAB
  CAB identifier: CN0031
  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

4.2. Location

SHENZHEN TONGCE TESTING LAB
Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China
TEL: +86-755-27673339

4.3. Measurement Uncertainty

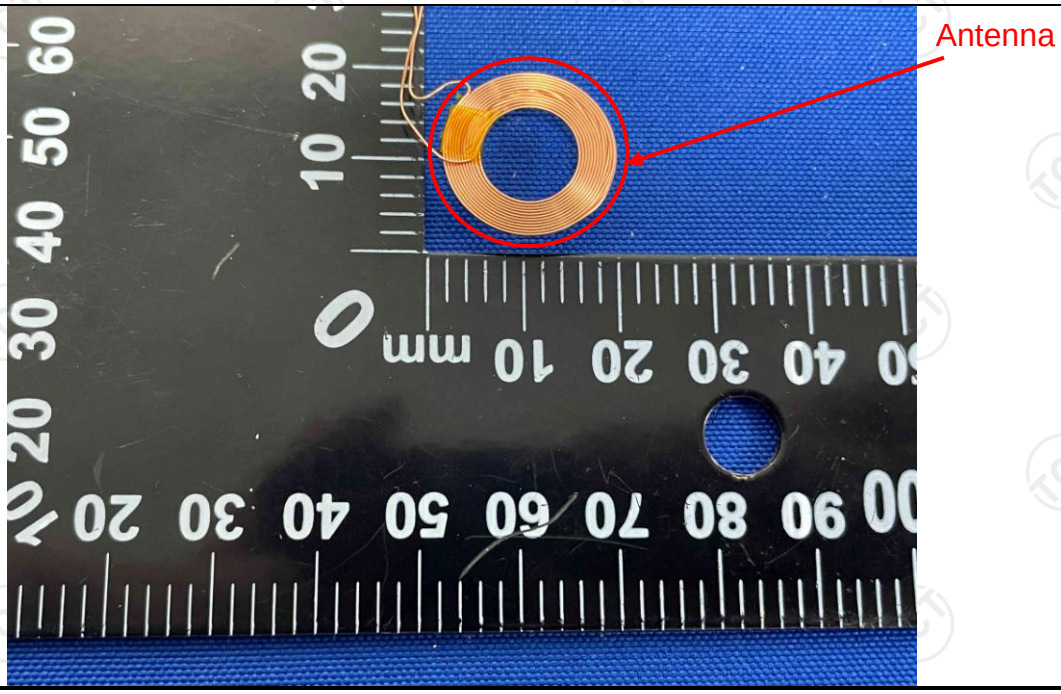
The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB

5. Test Results and Measurement Data

5.1. Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
E.U.T Antenna:	
The antenna is inductive loop coil antenna which permanently attached.	



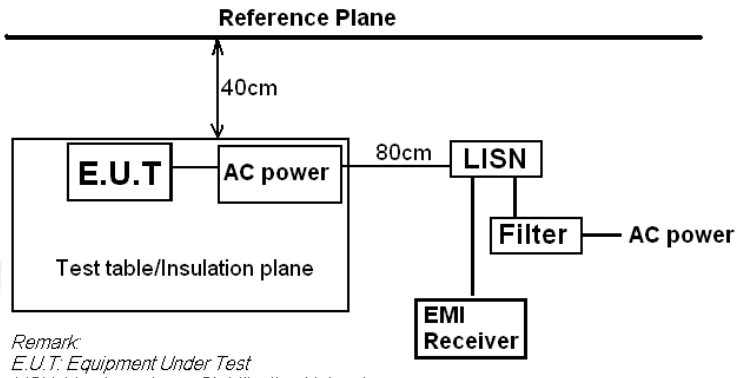
5.2. Conducted Emission

5.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10: 2013
Frequency Range:	150 kHz to 30 MHz
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto
Limits:	

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

Test Setup:



Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

Test Mode:	Refer to item 3.1
Test Procedure:	1. The E.U.T is connected to an adapter through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.
Test Result:	PASS

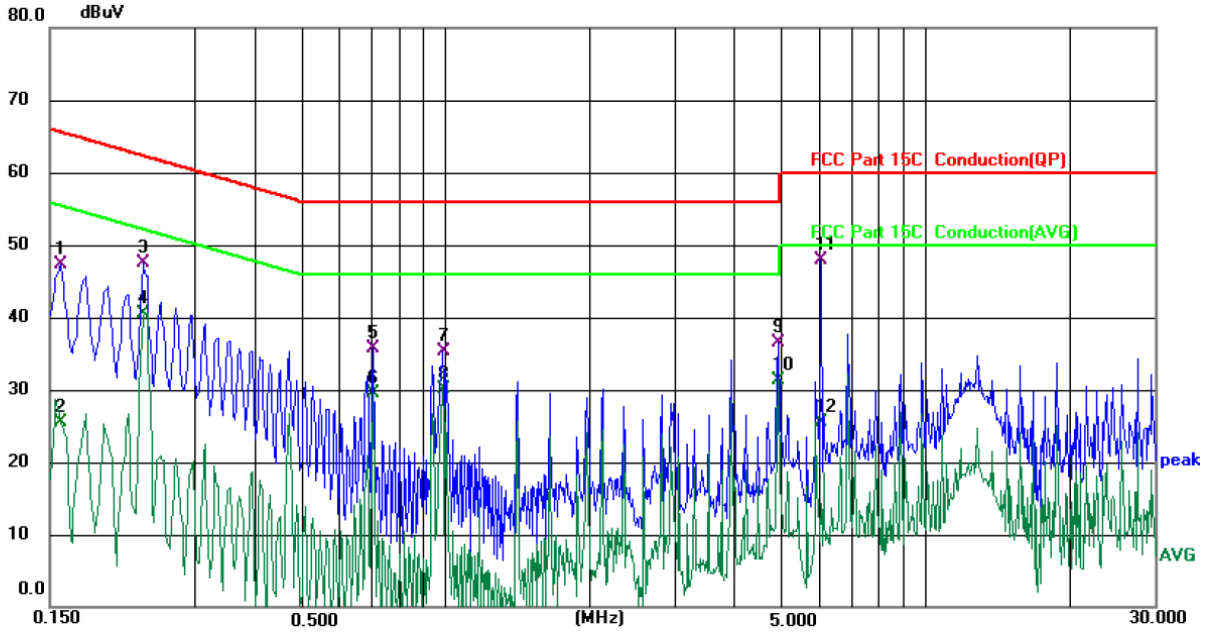
5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)				
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESCI3	100898	Jun. 29, 2024
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Feb. 20, 2024
Line-5	TCT	CE-05	/	Jul. 03, 2024
EMI Test Software	Shurple Technology	EZ-EMC	/	/

5.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room | Phase: *L1* | Temperature: 23.5 (℃) | Humidity: 52 %

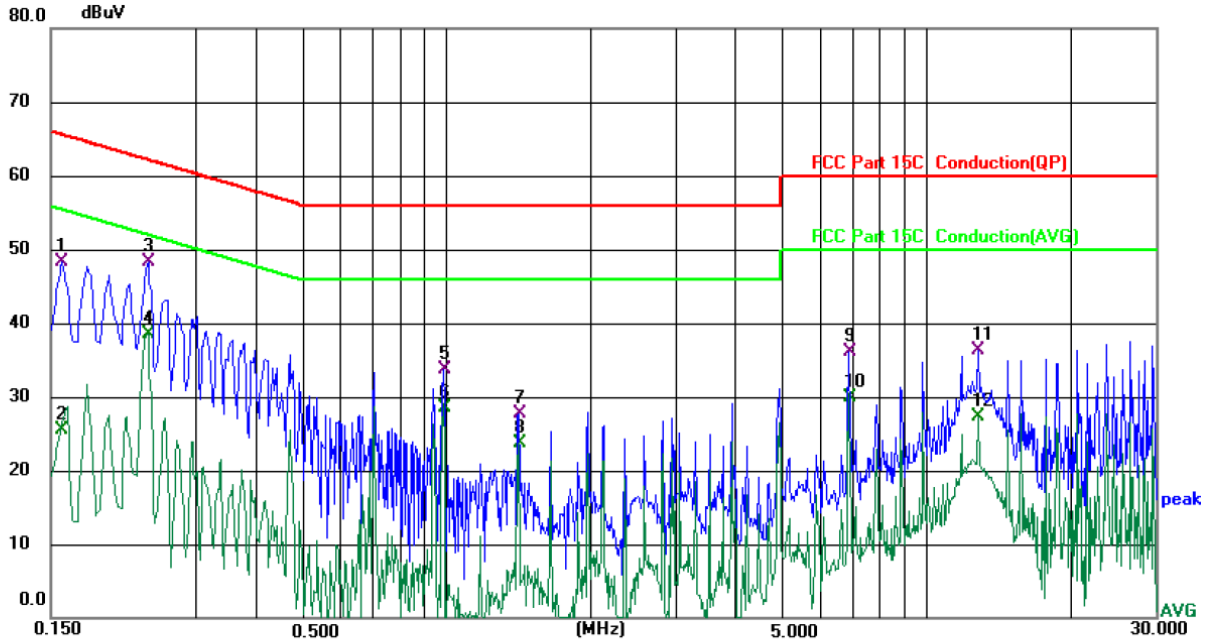
Limit: FCC Part 15C Conduction(QP) | Power: DC 5V(Adapter Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1580	37.16	10.12	47.28	65.57	-18.29	QP	
2		0.1580	15.45	10.12	25.57	55.57	-30.00	AVG	
3		0.2340	37.47	9.95	47.42	62.31	-14.89	QP	
4	*	0.2340	30.64	9.95	40.59	52.31	-11.72	AVG	
5		0.7060	26.47	9.25	35.72	56.00	-20.28	QP	
6		0.7060	20.20	9.25	29.45	46.00	-16.55	AVG	
7		0.9860	26.31	8.99	35.30	56.00	-20.70	QP	
8		0.9860	21.03	8.99	30.02	46.00	-15.98	AVG	
9		4.9260	26.38	10.10	36.48	56.00	-19.52	QP	
10		4.9260	21.16	10.10	31.26	46.00	-14.74	AVG	
11		6.0860	37.70	10.11	47.81	60.00	-12.19	QP	
12		6.0860	15.41	10.11	25.52	50.00	-24.48	AVG	

Note:

Freq. = Emission frequency in MHz
Reading level (dBµV) = Receiver reading
Corr. Factor (dB) = LISN factor + Cable loss
Measurement (dBµV) = Reading level (dBµV) + Corr. Factor (dB)
Limit (dBµV) = Limit stated in standard
Margin (dB) = Measurement (dBµV) – Limits (dBµV)
Q.P. =Quasi-Peak
AVG =average
** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz*

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room | Phase: N | Temperature: 23.5 (℃) | Humidity: 52 %

Limit: FCC Part 15C Conduction(QP) | Power: DC 5V(Adapter Input AC 120V/60Hz)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1580	38.13	10.10	48.23	65.57	-17.34	QP	
2		0.1580	15.50	10.10	25.60	55.57	-29.97	AVG	
3		0.2379	38.33	9.95	48.28	62.17	-13.89	QP	
4	*	0.2379	28.57	9.95	38.52	52.17	-13.65	AVG	
5		0.9859	24.71	9.00	33.71	56.00	-22.29	QP	
6		0.9859	19.46	9.00	28.46	46.00	-17.54	AVG	
7		1.4139	17.65	10.01	27.66	56.00	-28.34	QP	
8		1.4139	13.73	10.01	23.74	46.00	-22.26	AVG	
9		6.8979	25.93	10.13	36.06	60.00	-23.94	QP	
10		6.8979	19.85	10.13	29.98	50.00	-20.02	AVG	
11		12.8100	26.13	10.23	36.36	60.00	-23.64	QP	
12		12.8100	17.07	10.23	27.30	50.00	-22.70	AVG	

Note:

Freq. = Emission frequency in MHz
Reading level (dBµV) = Receiver reading
Corr. Factor (dB) = LISN factor + Cable loss
Measurement (dBµV) = Reading level (dBµV) + Corr. Factor (dB)
Limit (dBµV) = Limit stated in standard
Margin (dB) = Measurement (dBµV) – Limits (dBµV)
Q.P. =Quasi-Peak AVG =average
** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz*

5.3. Radiated Spurious Emission Measurement

5.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.209
Test Method:	ANSI C63.10: 2013
Frequency Range:	9 kHz to 25 GHz
Measurement Distance:	3 m
Antenna Polarization:	Horizontal & Vertical
Operation mode:	Refer to item 3.1
Receiver Setup:	

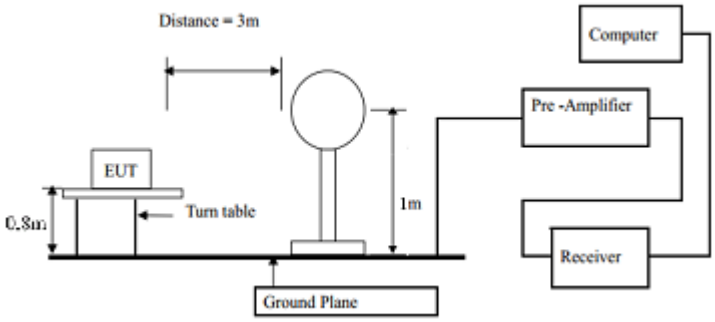
Frequency	Detector	RBW	VBW	Remark
9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value

Limit:

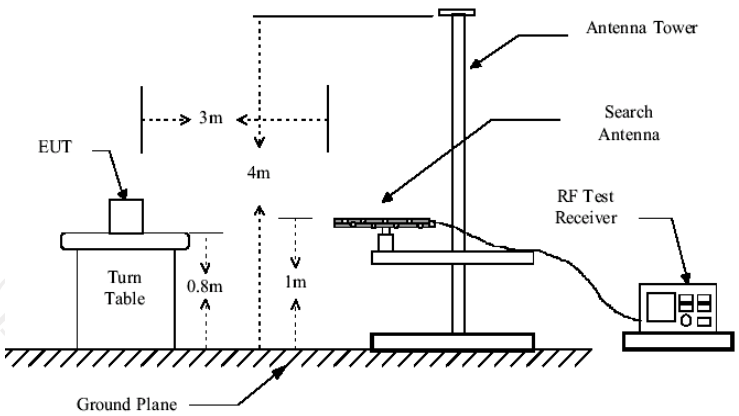
Frequency	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F(KHz)	300
0.490-1.705	24000/F(KHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test setup:

For radiated emissions below 30MHz



30MHz to 1GHz

	
Test Procedure:	1. For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. 2. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 3. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 4. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=120 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test mode:	Refer to section 3.1 for details
Test results:	PASS

5.3.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Due**
EMI Test Receiver	R&S	ESIB7	100197	Jun. 29, 2024
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 29, 2024
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	Feb. 20, 2024
Pre-amplifier	SKET	LNPA_1840G-50	SK202109203500	Feb. 20, 2024
Pre-amplifier	HP	8447D	2727A05017	Jun. 27, 2024
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jul. 02, 2024
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 01, 2024
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jul. 01, 2024
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Feb. 24, 2024
Antenna Mast	Keleto	RE-AM	/	/
Coaxial cable	SKET	RC-18G-N-M	/	Feb. 24, 2024
Coaxial cable	SKET	RC_40G-K-M	/	Feb. 24, 2024
EMI Test Software	Shurple Technology	EZ-EMC	/	/

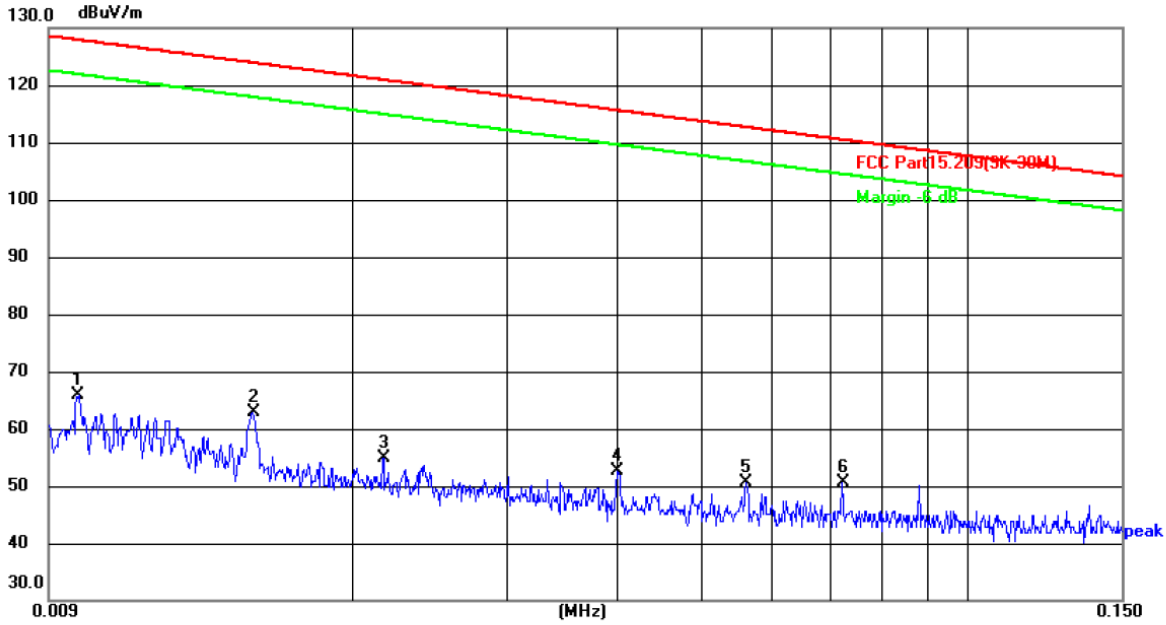
5.3.3. Test Data

Please refer to following diagram for individual

9KHz-30MHz

9KHz-150KHz:

Coaxial:

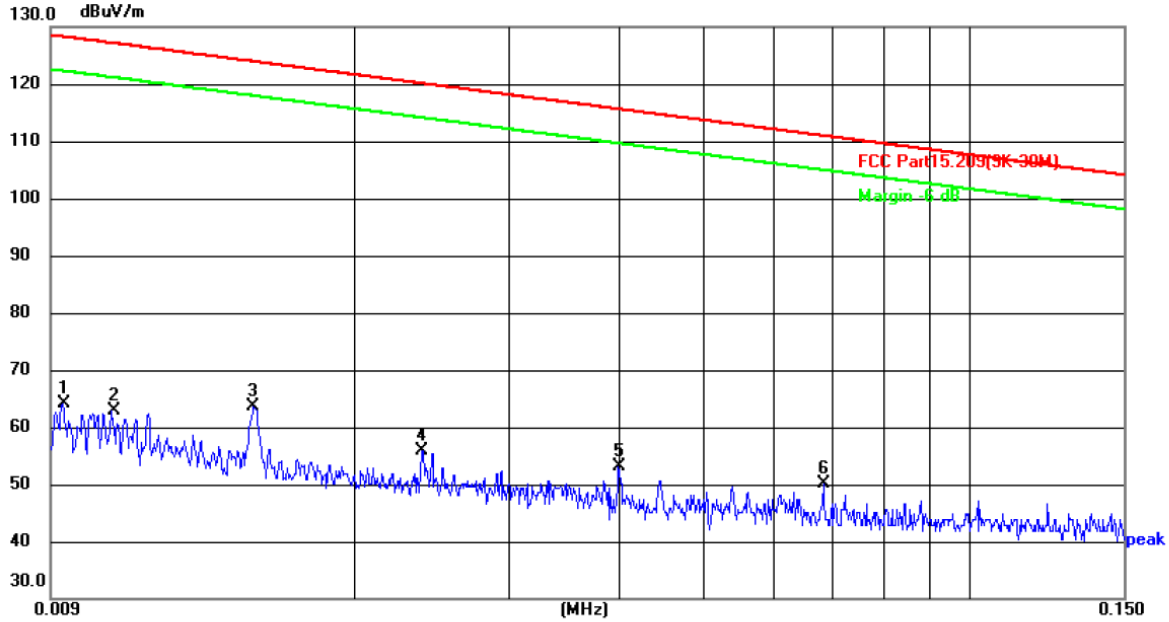


Site: #3 3m Anechoic Chamber Polarization: ***Coaxial*** Temperature: 23.3(℃) Humidity: 52 %

Limit: FCC Part15.209(9K-30M) Power:DC 5V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.0097	45.03	20.79	65.82	127.87	-62.05	peak	P	
2	0.0154	42.18	20.67	62.85	123.85	-61.00	peak	P	
3	0.0216	34.42	20.58	55.00	120.92	-65.92	peak	P	
4	0.0400	32.20	20.54	52.74	115.56	-62.82	peak	P	
5	0.0560	29.94	20.76	50.70	112.64	-61.94	peak	P	
6 *	0.0720	29.62	21.05	50.67	110.46	-59.79	peak	P	

Coplanar:



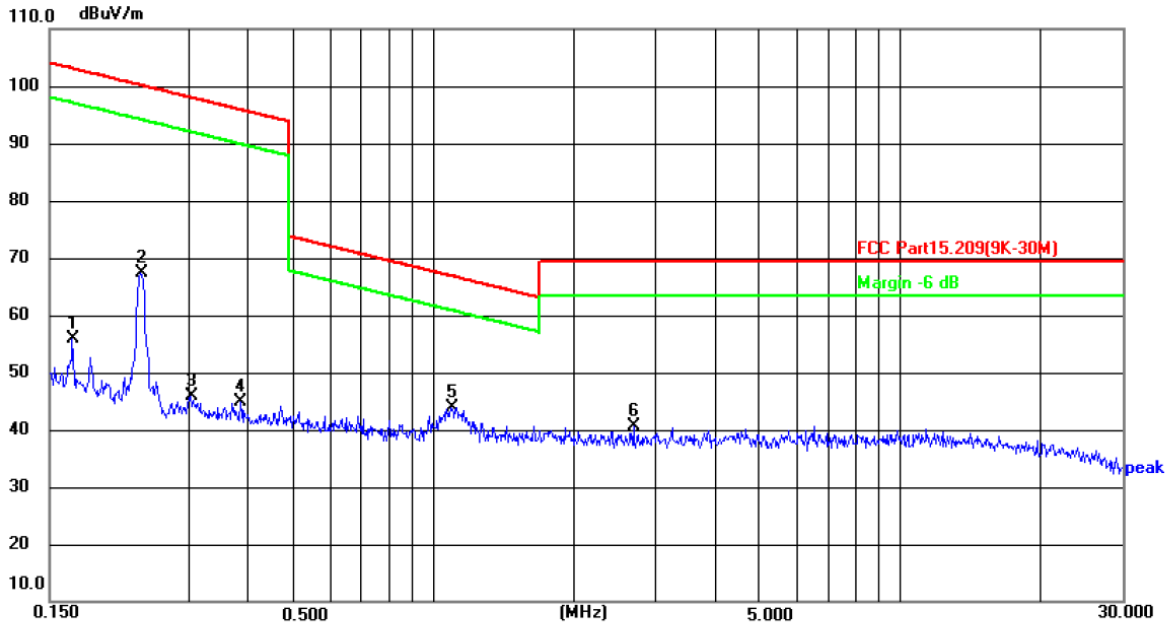
Site: #3 3m Anechoic Chamber Polarization: ***Coplanar*** Temperature: 23.3(℃) Humidity: 52 %

Limit: FCC Part15.209(9K-30M) Power:DC 5V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.0093	43.23	20.90	64.13	128.24	-64.11	peak	P	
2	0.0106	42.23	20.72	62.95	127.10	-64.15	peak	P	
3 *	0.0153	43.03	20.67	63.70	123.91	-60.21	peak	P	
4	0.0238	35.23	20.54	55.77	120.07	-64.30	peak	P	
5	0.0399	32.49	20.54	53.03	115.59	-62.56	peak	P	
6	0.0682	29.07	21.02	50.09	110.93	-60.84	peak	P	

150KHz-30MHz:

Coaxial:

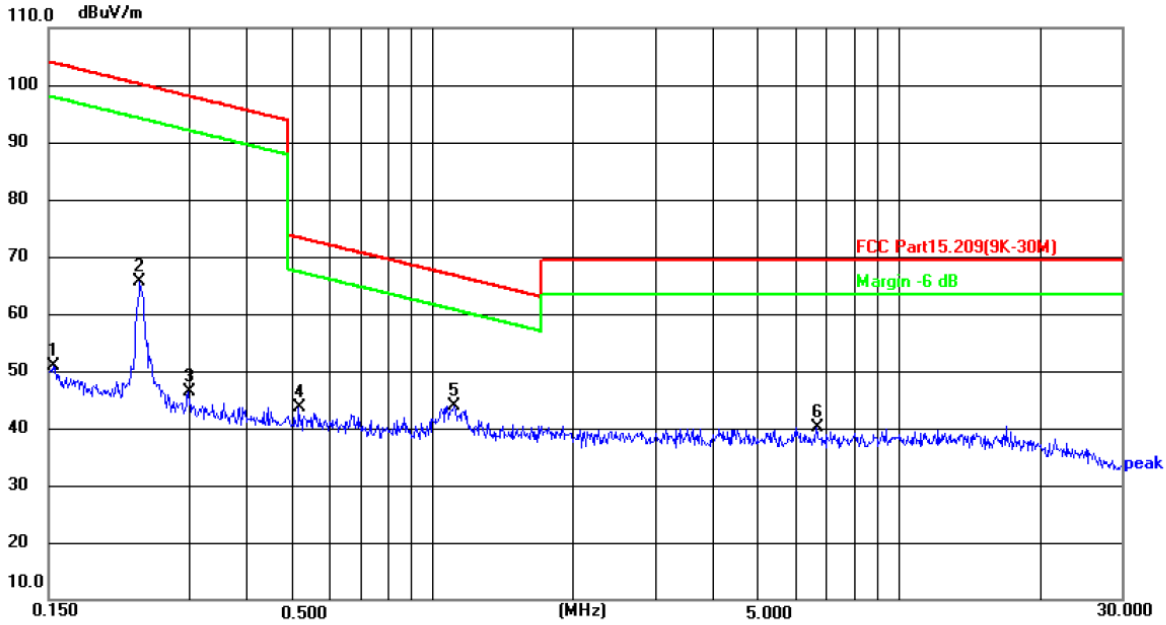


Site: #3 3m Anechoic Chamber Polarization: ***Coaxial*** Temperature: 23.3(℃) Humidity: 52 %

Limit: FCC Part15.209(9K-30M) Power:DC 5V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1683	35.20	20.77	55.97	103.08	-47.11	peak	P	
2	0.2357	46.55	20.93	67.48	100.16	-32.68	peak	P	
3	0.3008	24.69	21.07	45.76	98.04	-52.28	peak	P	
4	0.3860	23.57	21.28	44.85	95.87	-51.02	peak	P	
5 *	1.0939	20.99	22.84	43.83	66.84	-23.01	peak	P	
6	2.6824	14.57	26.13	40.70	69.50	-28.80	peak	P	

Coplanar:



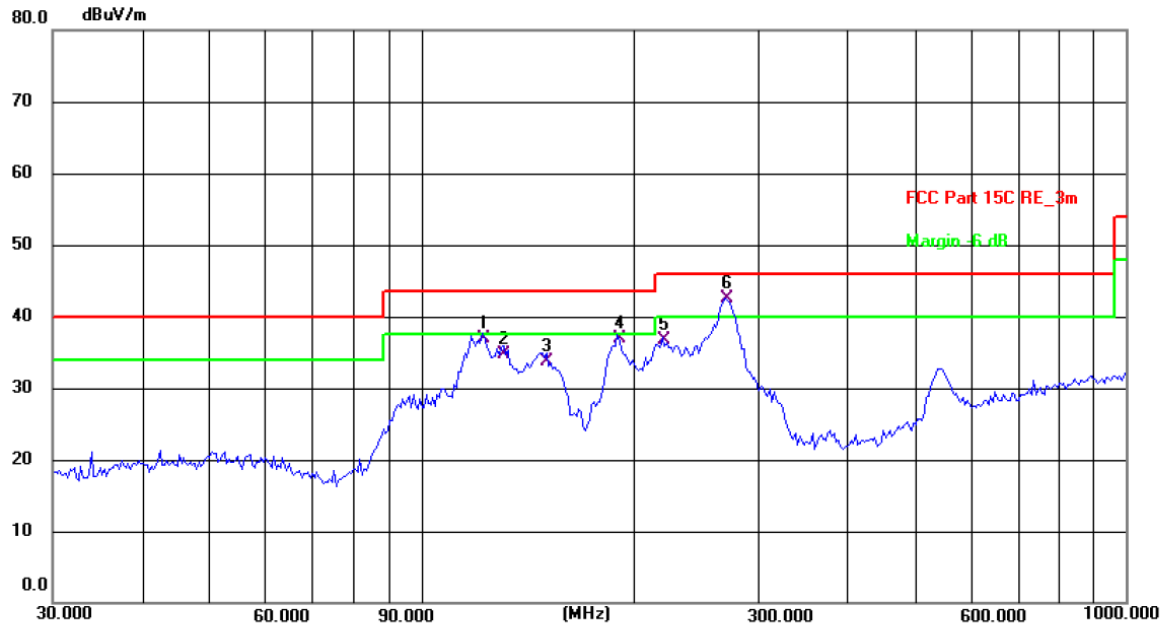
Site: #3 3m Anechoic Chamber Polarization: *Coplanar* Temperature: 23.3(℃) Humidity: 52 %

Limit: FCC Part15.209(9K-30M) Power:DC 5V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	0.1535	30.07	20.72	50.79	103.88	-53.09	peak	P	
2	0.2363	44.77	20.93	65.70	100.13	-34.43	peak	P	
3	0.2987	25.32	21.07	46.39	98.10	-51.71	peak	P	
4	0.5163	22.12	21.58	43.70	73.35	-29.65	peak	P	
5 *	1.1167	21.08	22.91	43.99	66.67	-22.68	peak	P	
6	6.6518	6.44	33.78	40.22	69.50	-29.28	peak	P	

30MHz-1GHz

Horizontal:

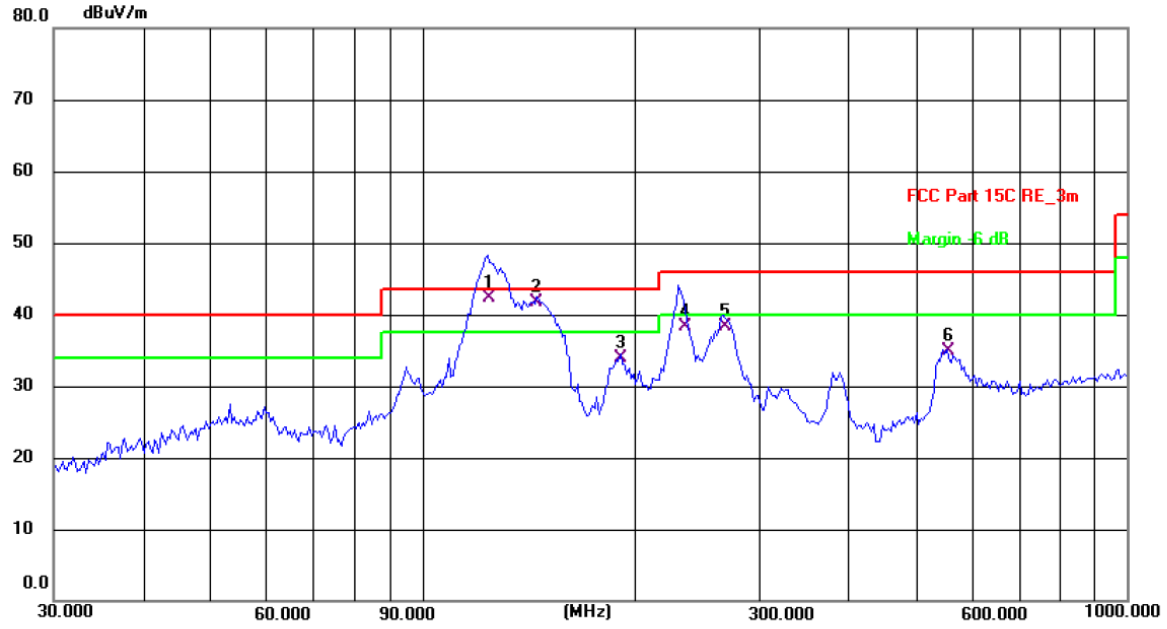


Site: #1 3m Anechoic Chamber Polarization: ***Horizontal*** Temperature: 24.2(C) Humidity: 51 %

Limit: FCC Part 15C RE_3m Power: DC 5V(Adapter Input AC 120V/60Hz)

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	121.9755	24.23	12.61	36.84	43.50	-6.66	QP	P	
2	130.8369	21.48	13.21	34.69	43.50	-8.81	QP	P	
3	150.5377	19.20	14.47	33.67	43.50	-9.83	QP	P	
4	189.7385	25.97	10.94	36.91	43.50	-6.59	QP	P	
5	219.8448	25.44	11.28	36.72	46.00	-9.28	QP	P	
6 *	269.4284	29.30	13.13	42.43	46.00	-3.57	QP	P	

Vertical:



Site: #1 3m Anechoic Chamber Polarization: ***Vertical*** Temperature: 24.2(C) Humidity: 51 %

Limit: FCC Part 15C RE_3m Power: DC 5V(Adapter Input AC 120V/60Hz)

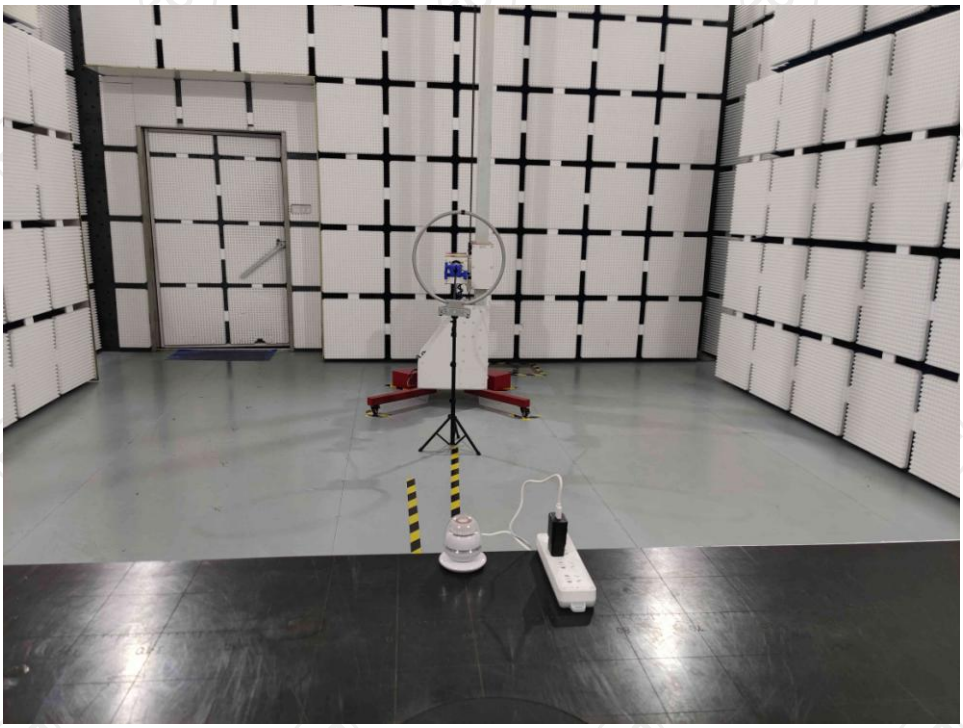
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	123.8385	29.58	12.82	42.40	43.50	-1.10	QP	P	
2 !	145.3505	27.46	14.19	41.65	43.50	-1.85	QP	P	
3	191.0738	23.09	10.82	33.91	43.50	-9.59	QP	P	
4	234.3768	26.20	12.10	38.30	46.00	-7.70	QP	P	
5	267.5453	25.24	13.01	38.25	46.00	-7.75	QP	P	
6	554.8253	15.41	19.46	34.87	46.00	-11.13	QP	P	

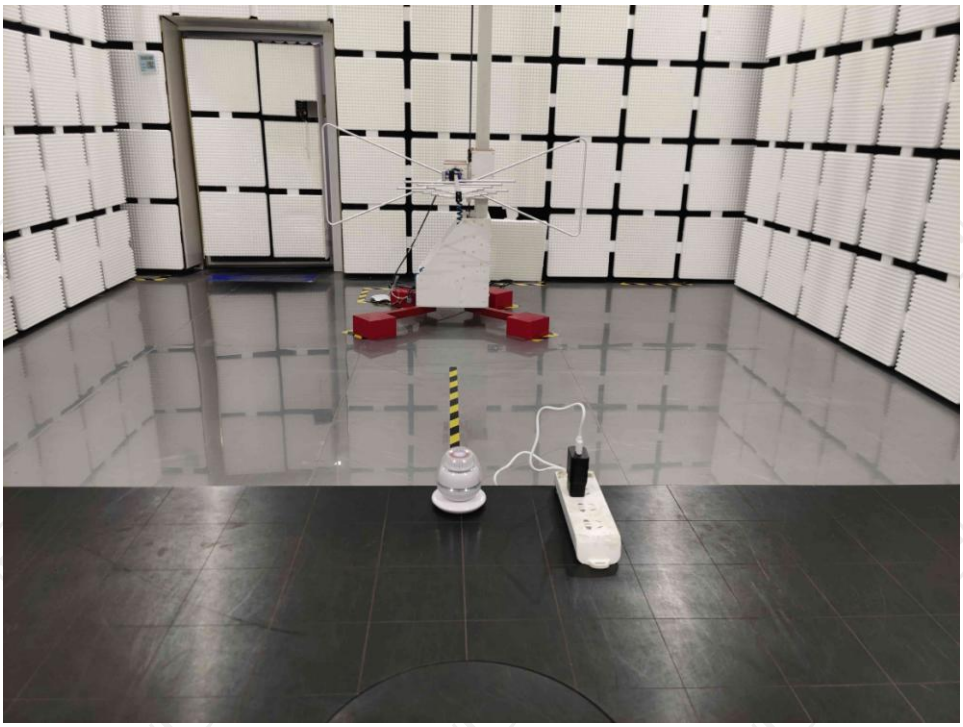
Note:

Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier

Appendix A: Photographs of Test Setup

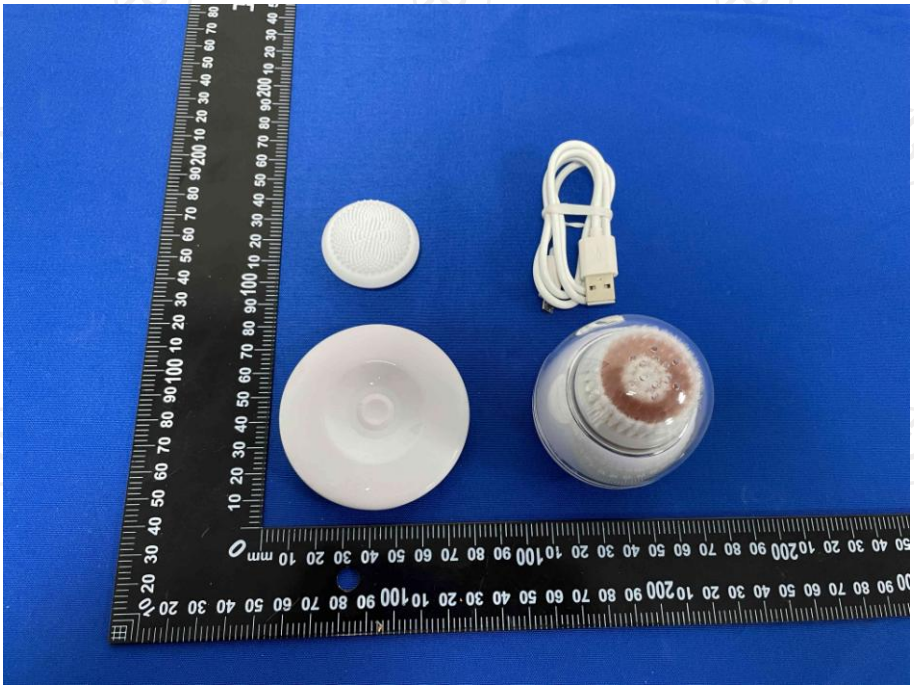
Product: Facial Cleansing Brush
Model: SR-1903
Radiated Emission

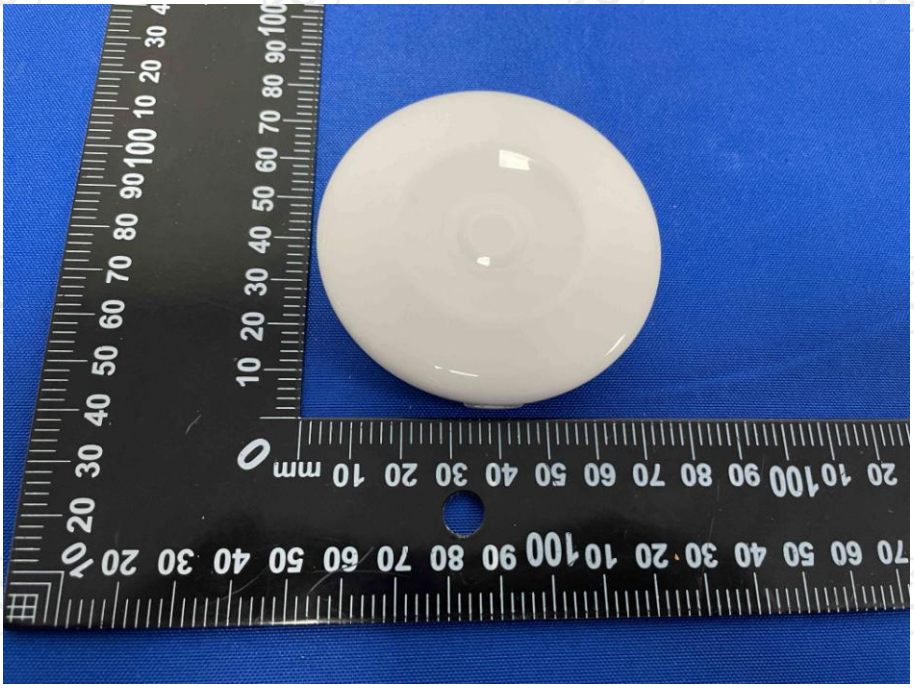


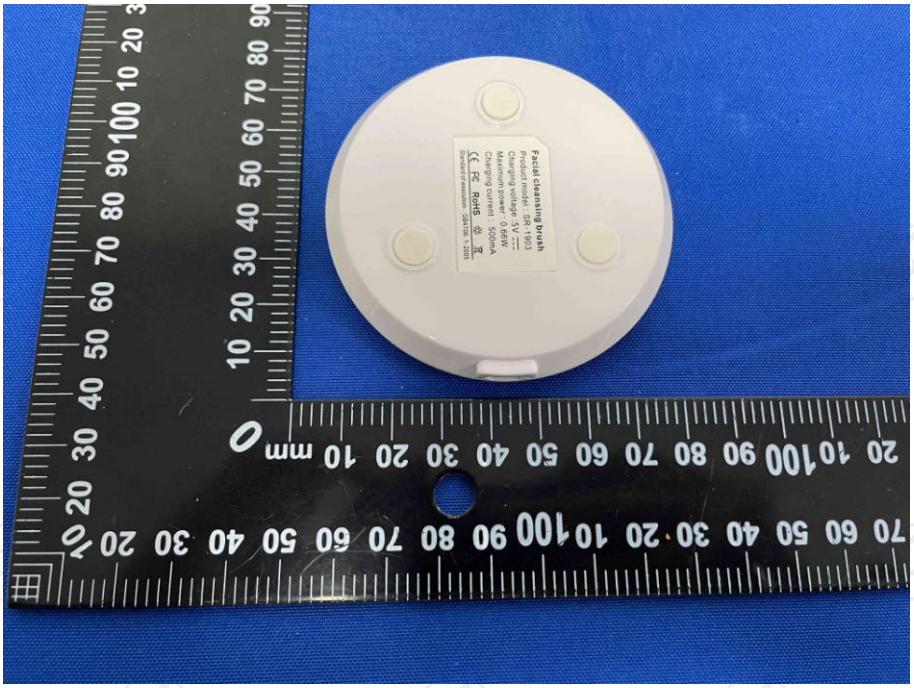


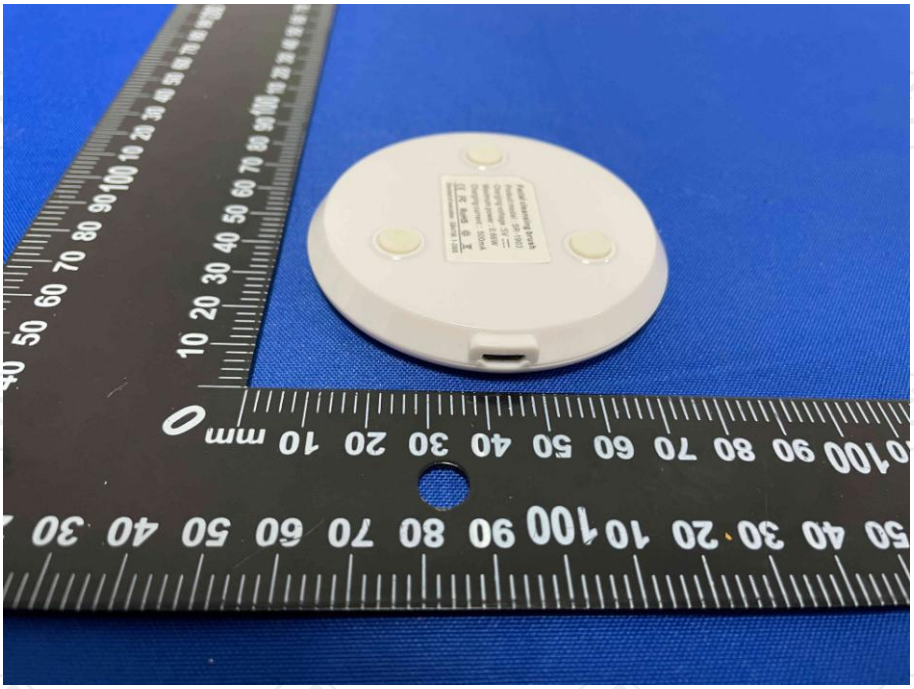
Conducted Emission

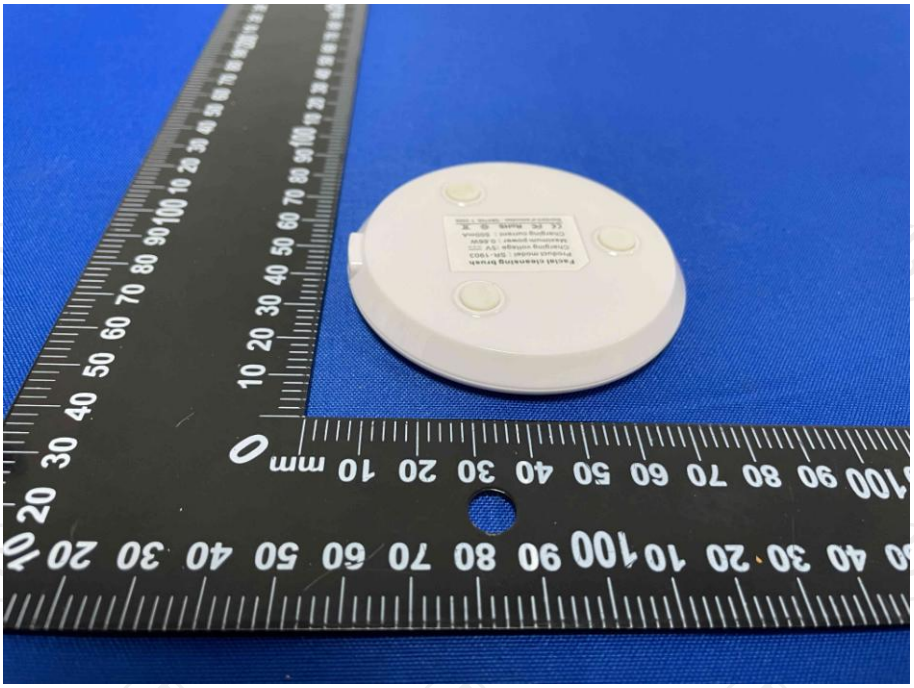
Appendix B: Photographs of EUT
Product: Facial Cleansing Brush
Model: SR-1903
External Photos

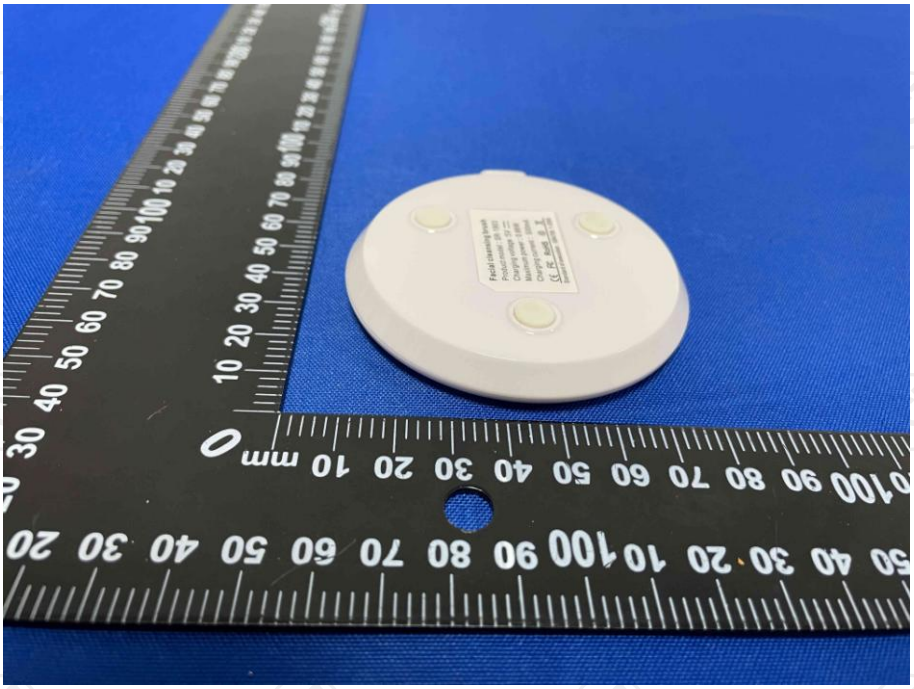


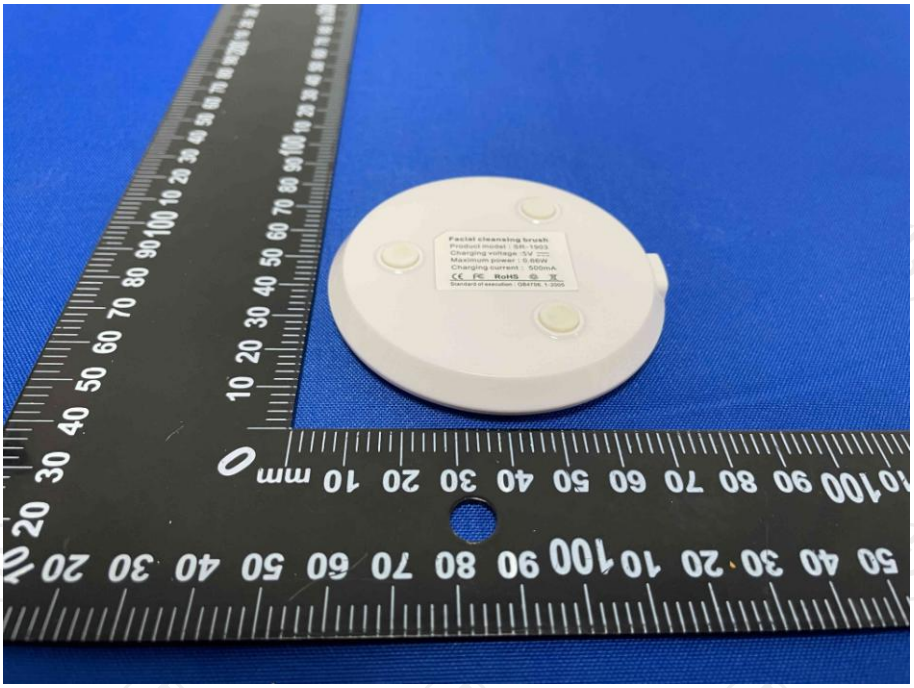




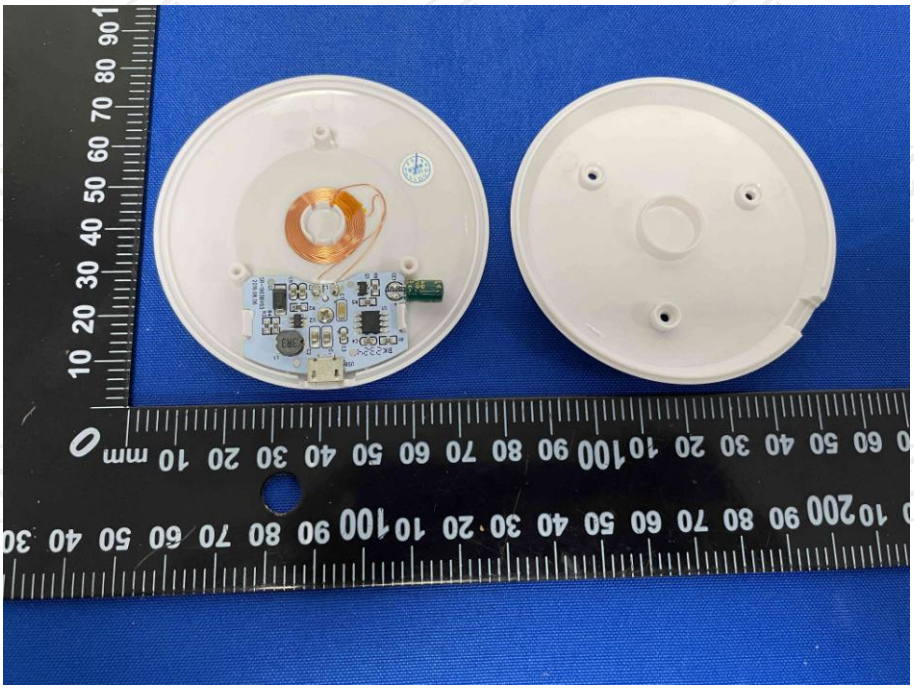


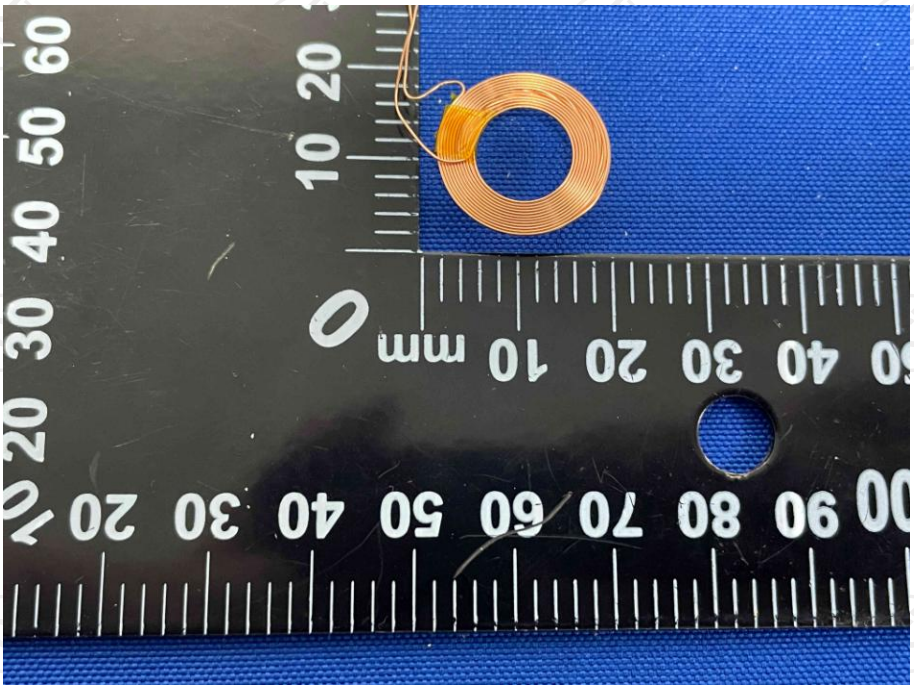


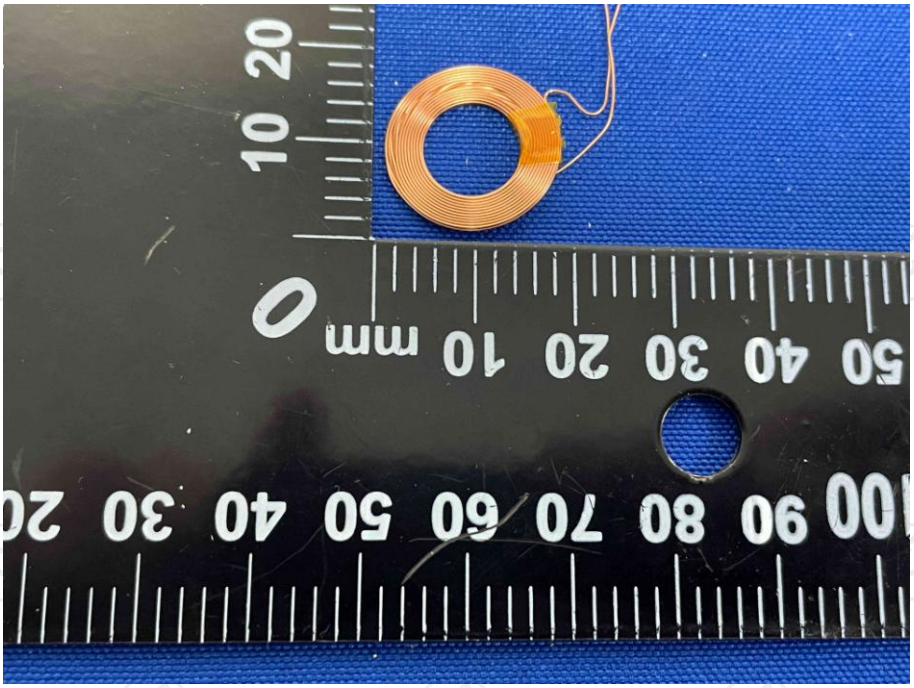


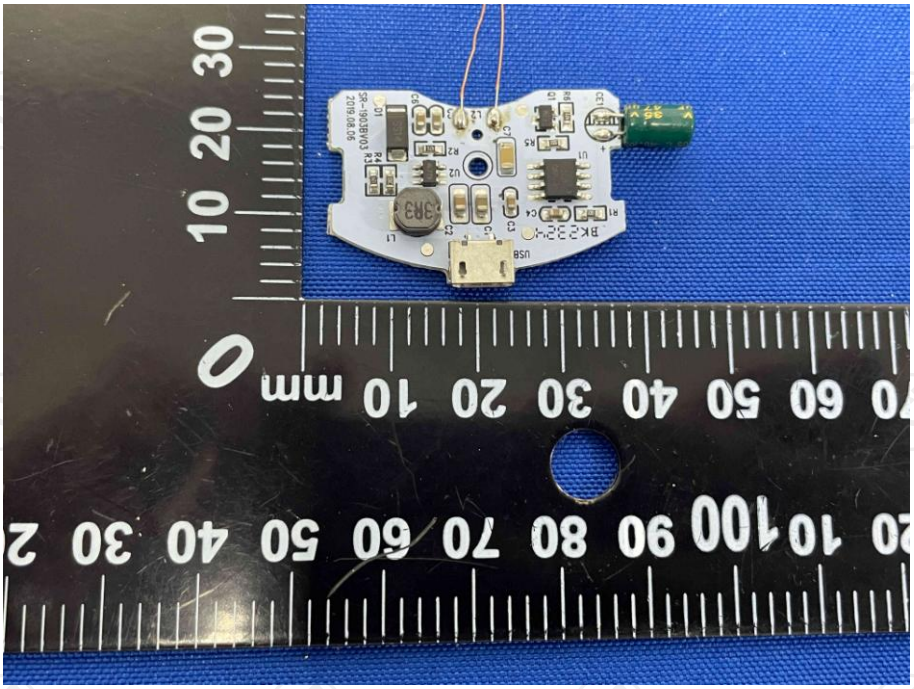

Facial cleansing brush
Product model : SR-1903
Charging voltage: 5V
Maximum power : 5.66W
Charging current : 500mA
CE FC RoHS
Standard of execution : QB4706, 1-2005

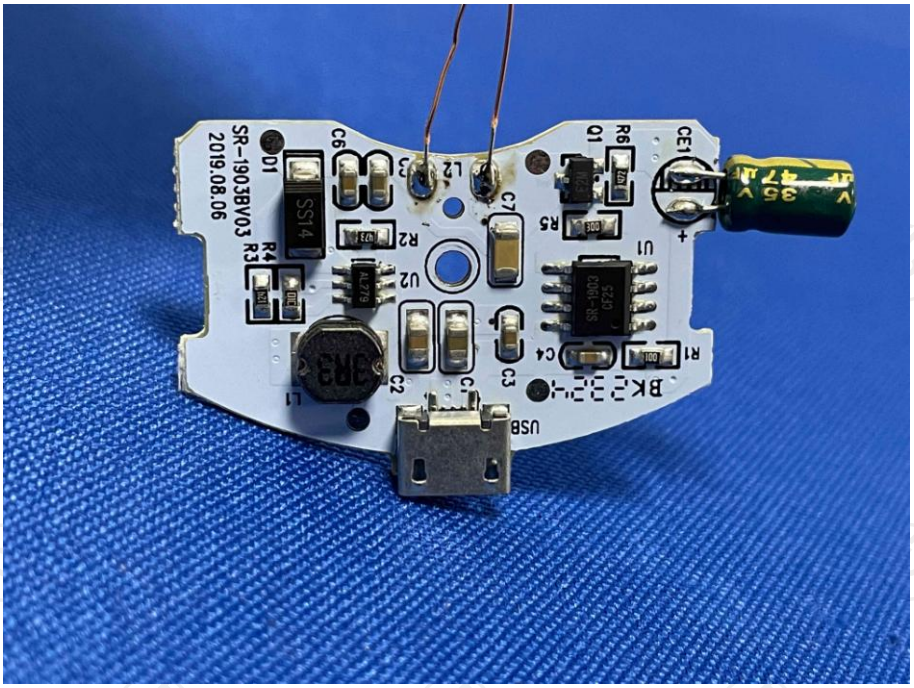
Product: Facial Cleansing Brush
Model: SR-1903
Internal Photos

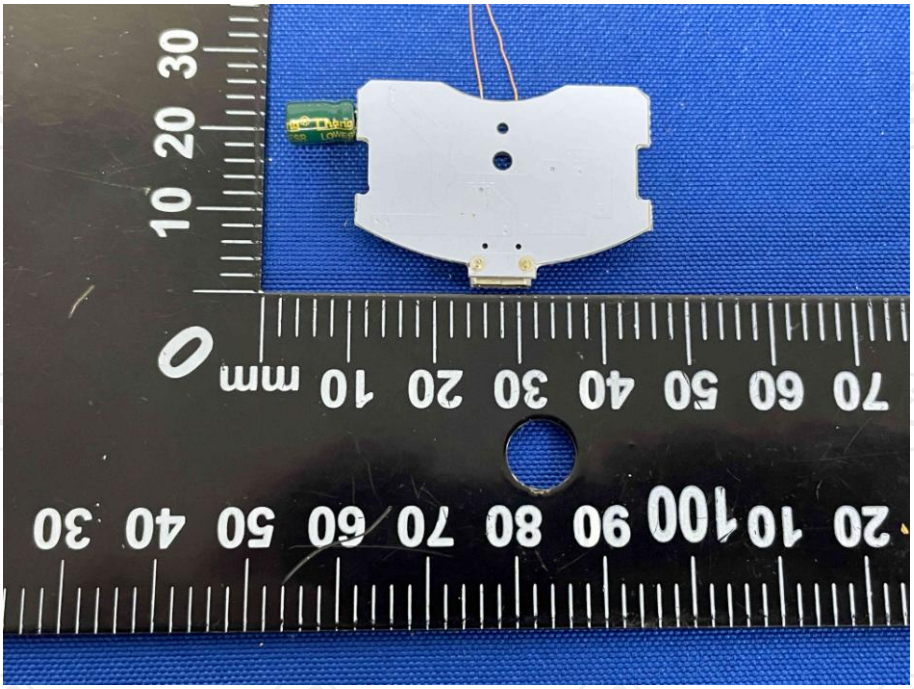












*****END OF REPORT*****