FCC Test Report

Report No.: AGC00210200909FE03

FCC ID	:	2AVUHTT-DL095
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	LED Floor Lamp Remote control
BRAND NAME	:	TAOTRONICS
MODEL NAME	:	TT-DL095RC
APPLICANT	:	Shenzhen NearbyExpress Technology Development Company Limited
DATE OF ISSUE	:	Oct. 30, 2020
STANDARD(S) **TEST PROCEDURE(S)**	:	FCC Part 15 Subpart C Section 15.231
REPORT VERSION	:	V1.0

Attestation of ***G***lobal ***C***ompliance (Shenzhen) Co., Ltd

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct. 30, 2020	Valid	Initial release

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1. VERIFICATION OF CONFORMITY

Applicant	Shenzhen NearbyExpress Technology Development Company Limited
Address	Room 701, 702, 703, 705, 706, 708, 709, Building E, Galaxy World Phase II, Minle Community, Minzhi Street, Longhua District, Shenzhen, Guangdong, China 518000
Manufacturer	Shenzhen NearbyExpress Technology Development Company Limited
Address	Room 701, 702, 703, 705, 706, 708, 709, Building E, Galaxy World Phase II, Minle Community, Minzhi Street, Longhua District, Shenzhen, Guangdong, China 518000
Factory	Shenzhen Derl Technology Co., Ltd.
Address	Floor 3, Building B of Meisheng Industrial Area, Chongqi Rd, Fuyong heping, Baoan Dist, Shenzhen, China
Product Designation	LED Floor Lamp Remote control
Brand Name	TAOTRONICS
Test Model	TT-DL095RC
Date of test	Oct. 10, 2020 to Oct. 30, 2020
Deviation	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.231. The test results of this report relate only to the tested sample identified in this report.

Prepared By	Sky Dong (Project Engineer)	Oct. 30, 2020
Reviewed By	MaxZhang (Reviewer)	Oct. 30, 2020
Approved By	Forrest Lei (Authorized Officer)	Oct. 30, 2020

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	433.92MHz
Field Strength(3m)	54.04dBuV/m(Peak)@3m
Modulation	ASK
Number of channels	1
Hardware Version	DS916FY
Software Version	0
Antenna Designation	PCB antenna(Comply with requirements of the FCC part 15.203)
Antenna Gain	0dBi
Power Supply	DC 3.7V by battery or DC 5V by LED lamp

Note: The normal allowable frequency error of the product is ±25KHz

2.2. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013).
Radiated testing was performed at an antenna to EUT distance 3 meters.

2.3. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

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%.

- Uncertainty of Conducted Emission, Uc = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %

4. DESCRIPTION OF TEST MODES

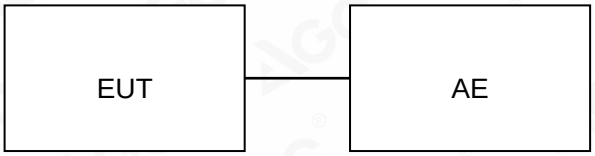
NO.	TEST MODE DESCRIPTION
1	Transmitting mode(Manual operated)

Note:
1. All the test modes can be supply by new battery, and only the data of the worst case recorded in the test report.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. For battery operated equipment, the battery is full charged during test.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure 1:



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	Remark
1	LED Floor Lamp Remote control	TAOTRONICS	2AVUHTT-DL095	EUT
2	Adapter	K36V240150U	DC 24V	AE
3	LED Floor Lamp	TT-DL095	DC 5V	AE

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§15.231(a)(2)	Manual operated	Compliant
ANSI C63.10 Clause 7.5	Average Factor	N/A
§15.231(b) & §15.209	Field Strength of Fundamental and Spurious Emission	Compliant
§15.231(c)	Bandwidth	Compliant
15.207	Conducted Emission	Compliant

6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

7. TEST EQUIPMENT LIST

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	May 15, 2020	May 14, 2021
LISN	R&S	ESH2-Z5	100086	Jul. 03,2020	Jul. 02,2021
Test software	R&S	ES-K1(Ver.V1.71)	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

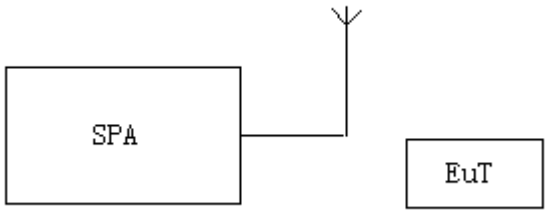
Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 12, 2019	Dec. 11, 2020
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 17, 2019	May. 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Sep. 20, 2019	Sep. 19, 2021
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

8. PROVISION FOR MOMENTARY OPERATION

8.1 MEASUREMENT PROCEDURE

1. Set the parameters of SPA as below:
   Centre frequency = Operation Frequency
   RBW=1MHz, VBW=3MHz
   Span: 0Hz
   Sweep time: 10S
2. Set the EUT to transmit activated automatically. Use the “View” function of SPA to find the transmission time of being released.
3. Record the data and Reported.

8.2 TEST SETUP

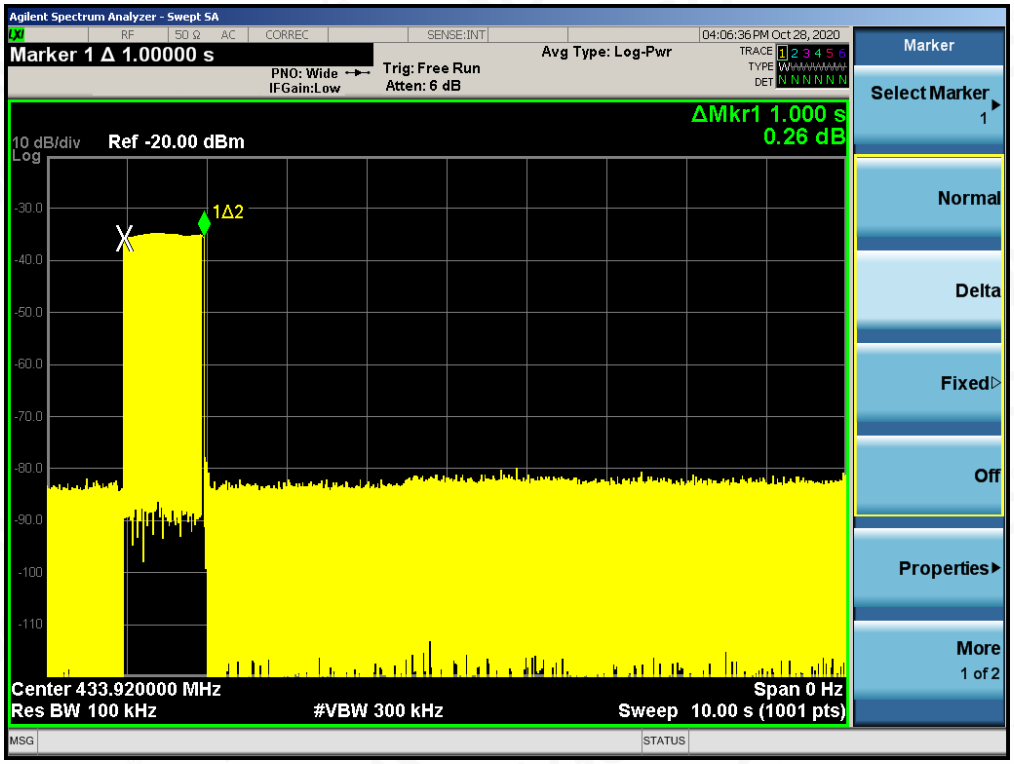


8.3 TEST RESULT

Mode 1(Manual operated):

Test Mode: EUT @ 433.92MHz for RF Transmitter

The time of stopping transmission	Limit (s)
1.00	5.00



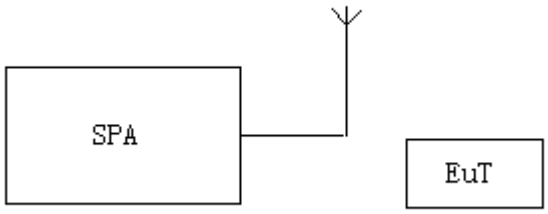
RESULT: PASS

9. DUTY CYCLE CORRECTION FACTOR

9.1 MEASUREMENT PROCEDURE

1. Set the parameters of SPA as below:
   Centre frequency = Operation Frequency
   RBW=1MHz; VBW=3MHz
   Span: 0Hz
   Sweep time: more than two pulse trains or more than each type of pulse occupancy time
2. Set the EUT to transmit by manually operated. Use the “Delta mark” function of SPA to find the period time between two pulse trains and each type of pulse occupancy time.
3. Record the plots and Reported.

9.2 TEST SETUP



9.3 TEST RESULT

Note: The level of the peak emission are less than the average limit, so the average factor need not to be tested.

10. RADIATED EMISSION

10.1. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 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. 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 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.
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.

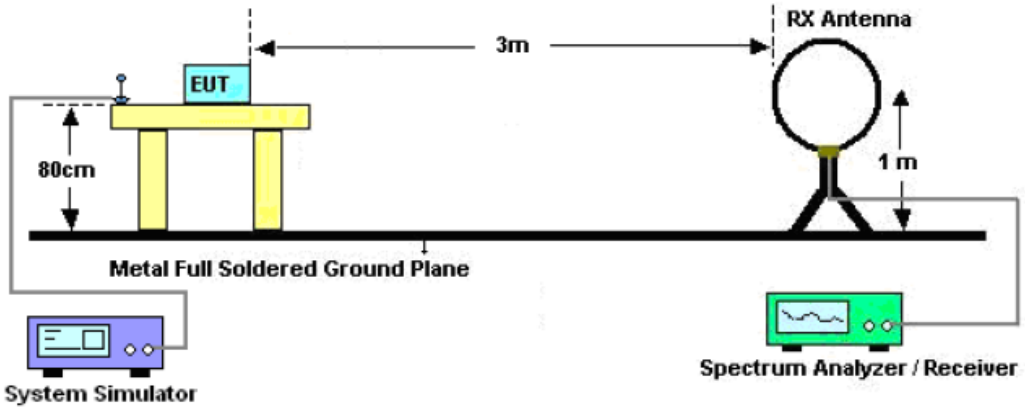
The following table is the setting of spectrum analyzer and receiver.

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

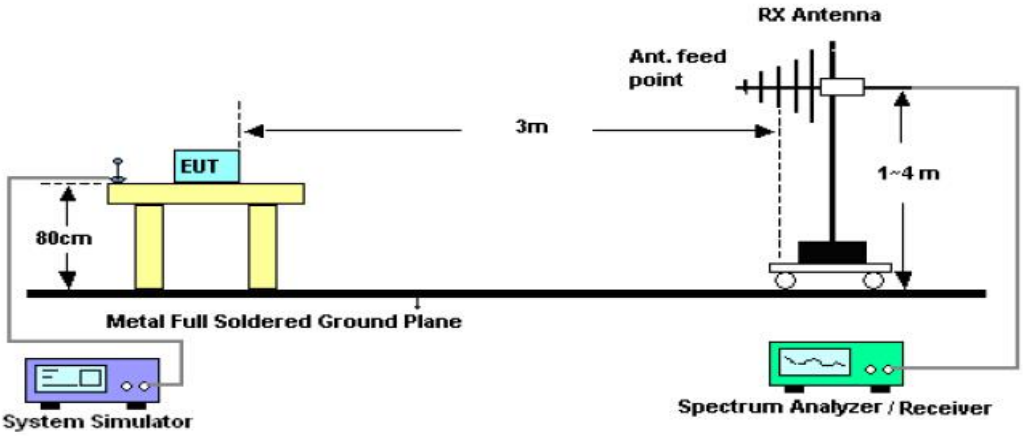
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RBW 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RBW 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RBW 120KHz for QP

10.2. TEST SETUP

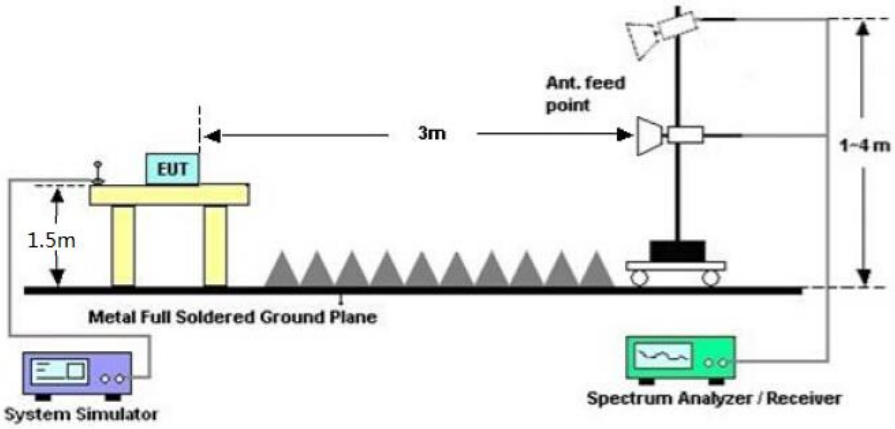
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



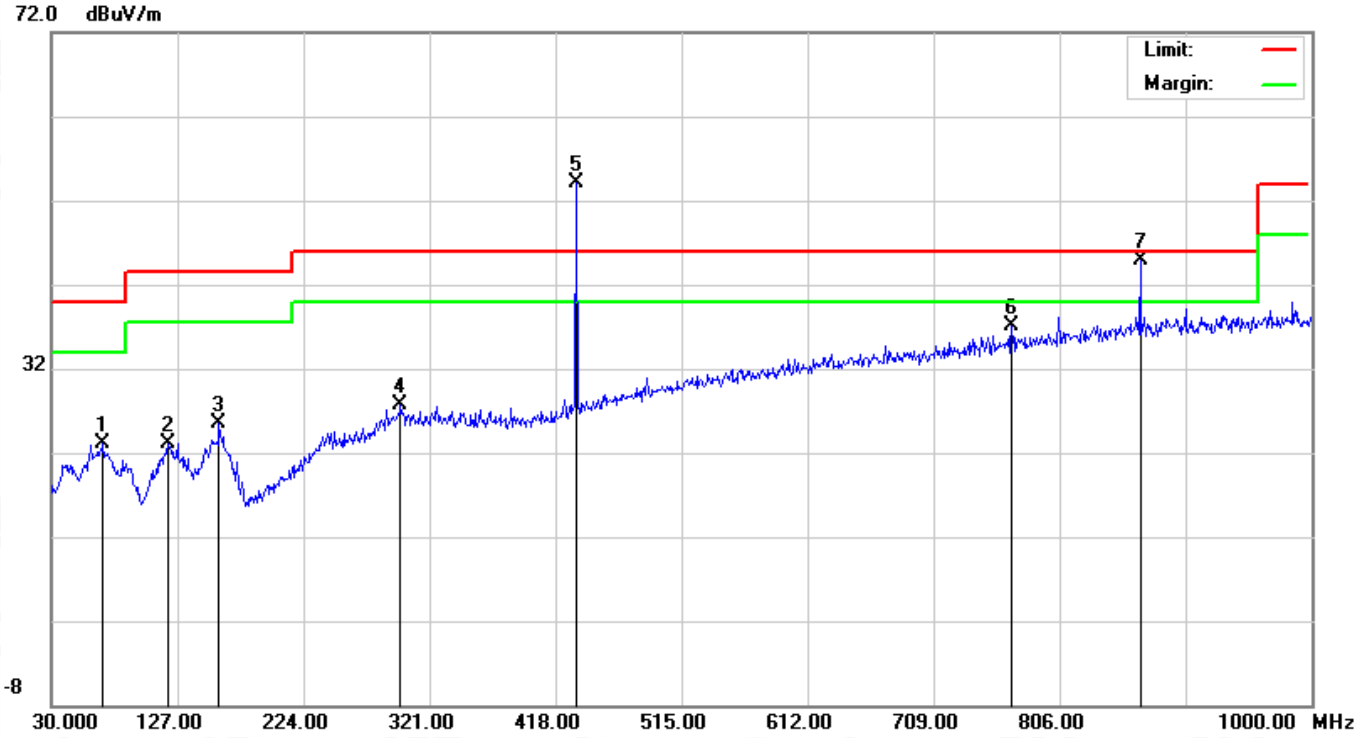
10.3. TEST RESULT

Test Mode: EUT @ 433.92MHz for RF Transmitter

RADIATED EMISSION BELOW 30MHz

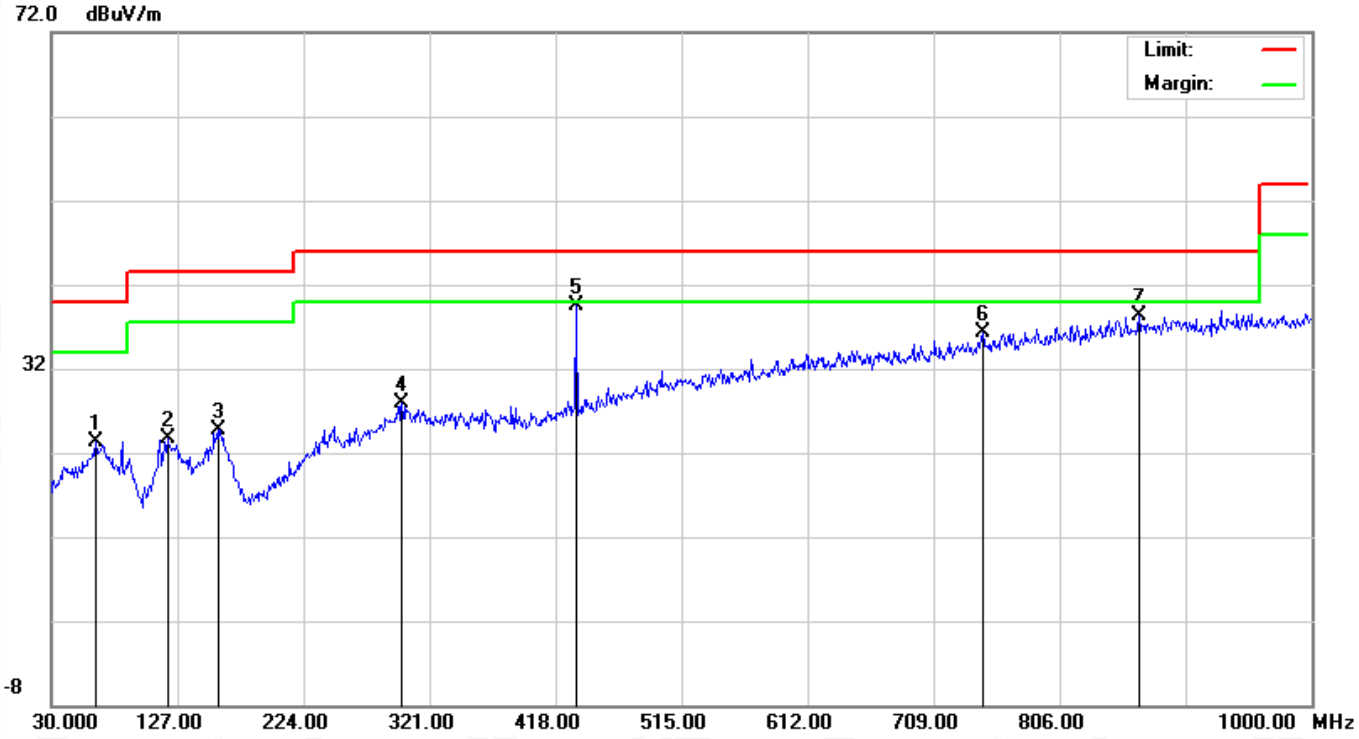
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

RADIATED EMISSION BELOW 1GHZ-Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		69.7699	6.00	17.08	23.08	40.00	-16.92	peak
2		119.2399	5.44	17.71	23.15	43.50	-20.35	peak
3		159.0099	6.47	18.94	25.41	43.50	-18.09	peak
4		298.6899	6.27	21.37	27.64	46.00	-18.36	peak
5	*	433.9200	31.72	22.32	54.04	80.80	-26.76	peak
6		769.1399	7.31	29.71	37.02	46.00	-8.98	peak
7	!	867.8400	13.63	31.29	44.92	60.80	-15.88	peak

RADIATED EMISSION BELOW 1GHZ-Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		63.9500	6.87	16.36	23.23	40.00	-16.77	peak
2		119.2399	6.08	17.71	23.79	43.50	-19.71	peak
3		158.0399	6.01	18.70	24.71	43.50	-18.79	peak
4		299.6600	6.54	21.44	27.98	46.00	-18.02	peak
5	*	433.9200	17.24	22.32	39.56	80.80	-41.24	peak
6		746.8300	7.07	29.21	36.28	46.00	-9.72	peak
7		867.8400	7.11	31.28	38.39	60.80	-22.41	peak

RESULT: PASS

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

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

3. The amplitude of other spurious emissions from 1G to 5 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

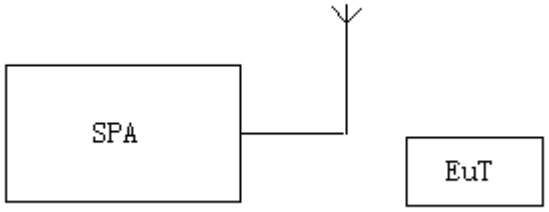
4. The peak emissions on the above plots are fundamental wave and need not to compare with the limit.

11. BANDWIDTH

11.1. MEASUREMENT PROCEDURE

1. Set the parameters of SPA as below:
   Centre frequency = Operation Frequency
   RBW=0.3KHz
   VBW=1.0KHz
   Span: 60kHz
   Sweep time: Auto
2. Set the EUT to continue transmitting mode. Allow the trace to stabilize. Use the “N dB down” function of SPA to define the bandwidth.
3. Record the plots and Reported.

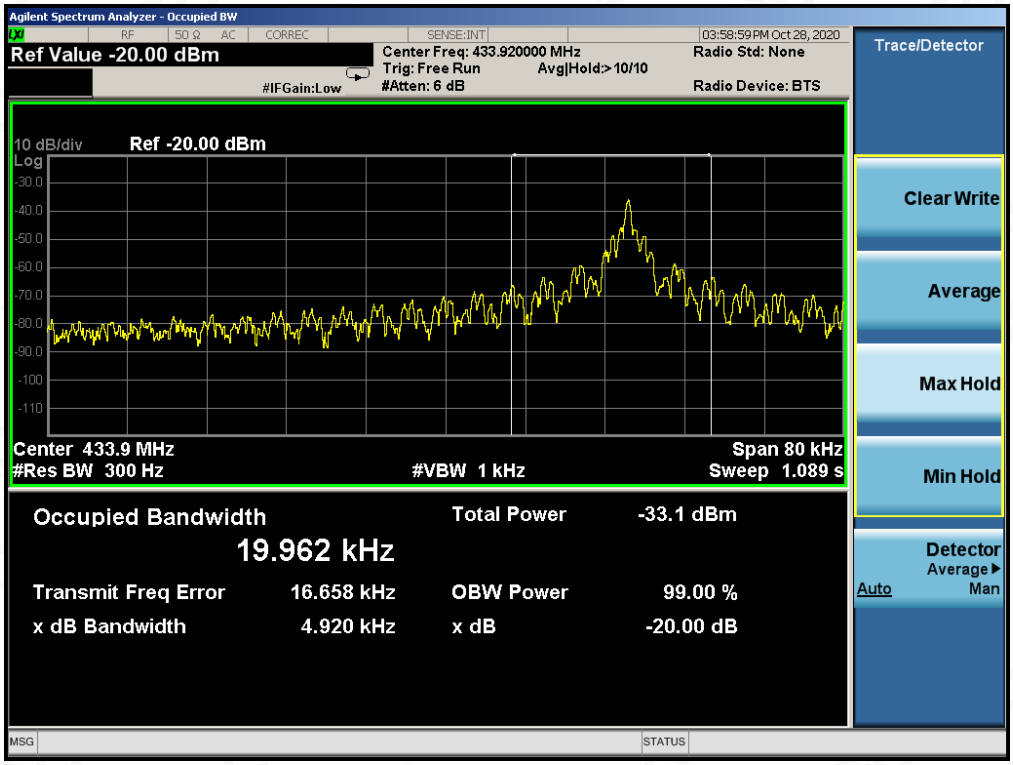
11.2. TEST SETUP



11.3. TEST RESULT

Test Mode: EUT @ 433.92MHz for RF Transmitter

-20dB bandwidth	99%dB Bandwidth	LIMIT	RESULT
4.920kHz	19.962 kHz	1084.8KHz	Pass
Note: Limit= Operation Frequency ×0.25%			



12. FCC LINE CONDUCTED EMISSION TEST

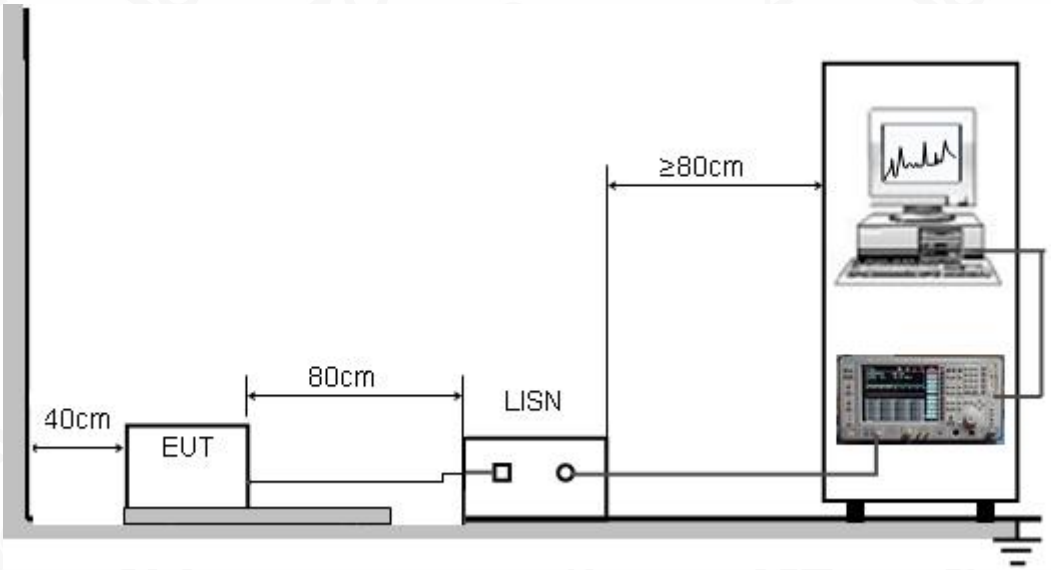
12.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

12.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



12.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.1 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipment received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC 5V power from adapter which received AC120V/60Hz power from a LISN.
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

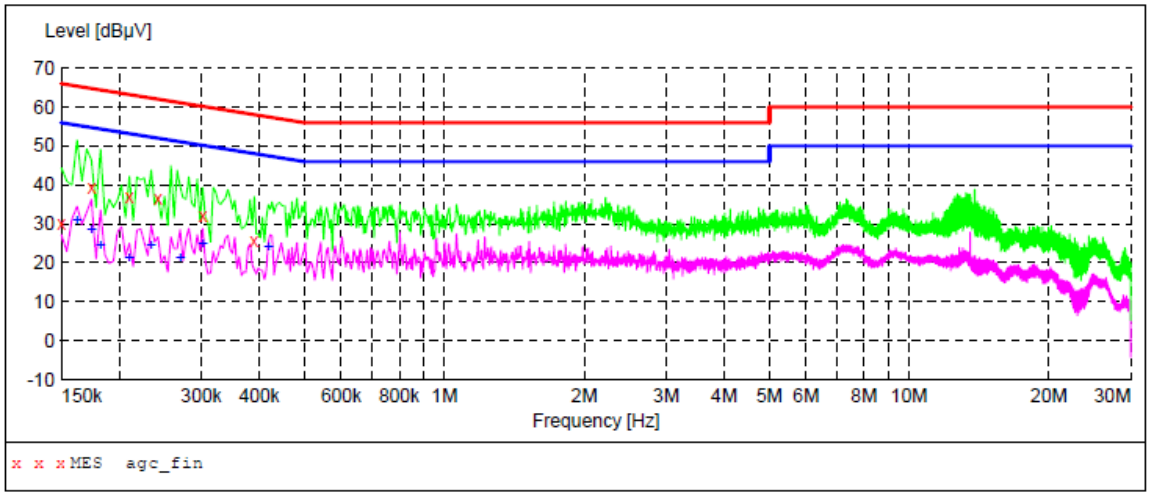
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

12.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

12.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Line Conducted Emission Test Line 1-L



MEASUREMENT RESULT: "agc_fin"

2020/9/18 9:58

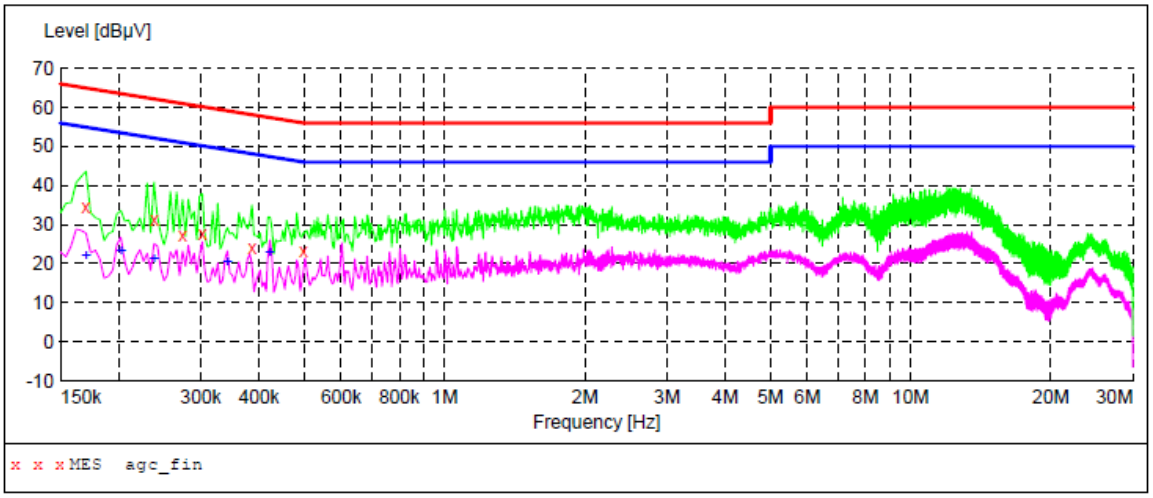
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.150000	30.00	11.3	66	36.0	QP	L1
0.174000	39.50	11.3	65	25.3	QP	L1
0.210000	36.90	11.3	63	26.3	QP	L1
0.242000	36.40	11.3	62	25.6	QP	L1
0.302000	32.10	11.3	60	28.1	QP	L1
0.390000	25.50	11.3	58	32.6	QP	L1

MEASUREMENT RESULT: "agc_fin2"

2020/9/18 9:58

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.162000	30.90	11.3	55	24.5	AV	L1
0.174000	28.40	11.3	55	26.4	AV	L1
0.182000	24.40	11.3	54	30.0	AV	L1
0.210000	21.10	11.3	53	32.1	AV	L1
0.234000	24.60	11.3	52	27.7	AV	L1
0.270000	21.30	11.3	51	29.8	AV	L1
0.302000	25.00	11.3	50	25.2	AV	L1
0.418000	24.00	11.3	48	23.5	AV	L1

Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "agc_fin"

2020/9/18 10:07

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.170000	34.60	11.3	65	30.4	QP	N
0.238000	31.20	11.3	62	31.0	QP	N
0.274000	27.40	11.3	61	33.6	QP	N
0.302000	27.50	11.3	60	32.7	QP	N
0.386000	24.10	11.3	58	34.0	QP	N
0.498000	23.20	11.3	56	32.8	QP	N

MEASUREMENT RESULT: "agc_fin2"

2020/9/18 10:07

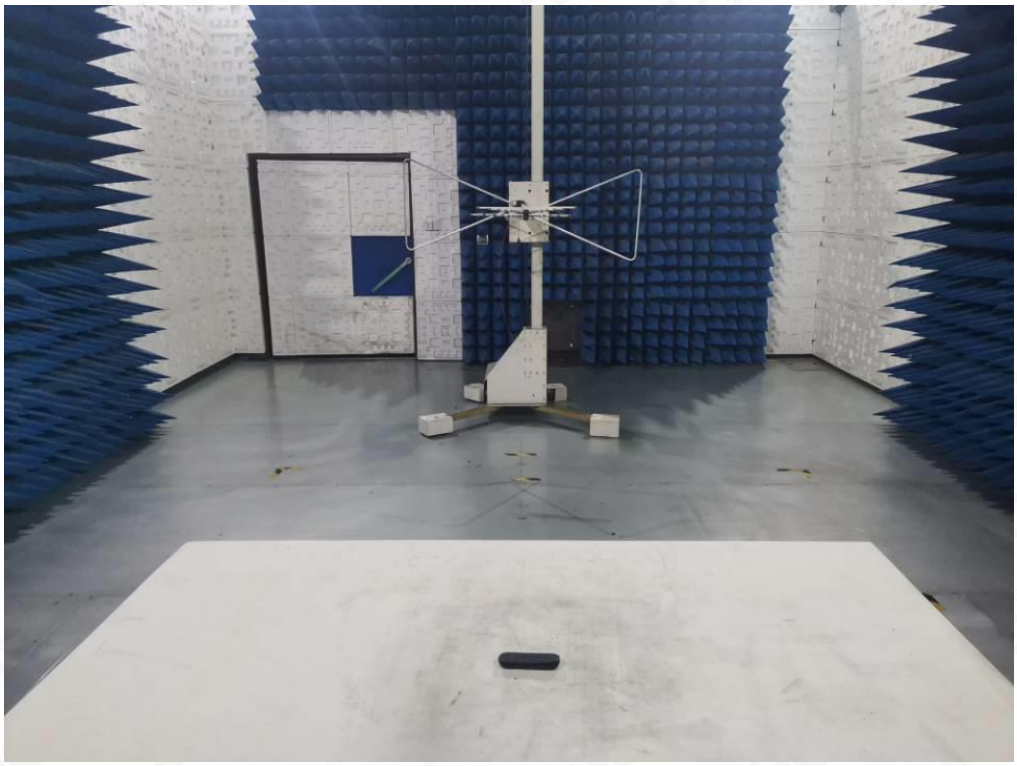
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.170000	22.10	11.3	55	32.9	AV	N
0.202000	23.10	11.3	54	30.4	AV	N
0.238000	21.30	11.3	52	30.9	AV	N
0.342000	20.30	11.3	49	28.9	AV	N
0.422000	22.70	11.3	47	24.7	AV	N

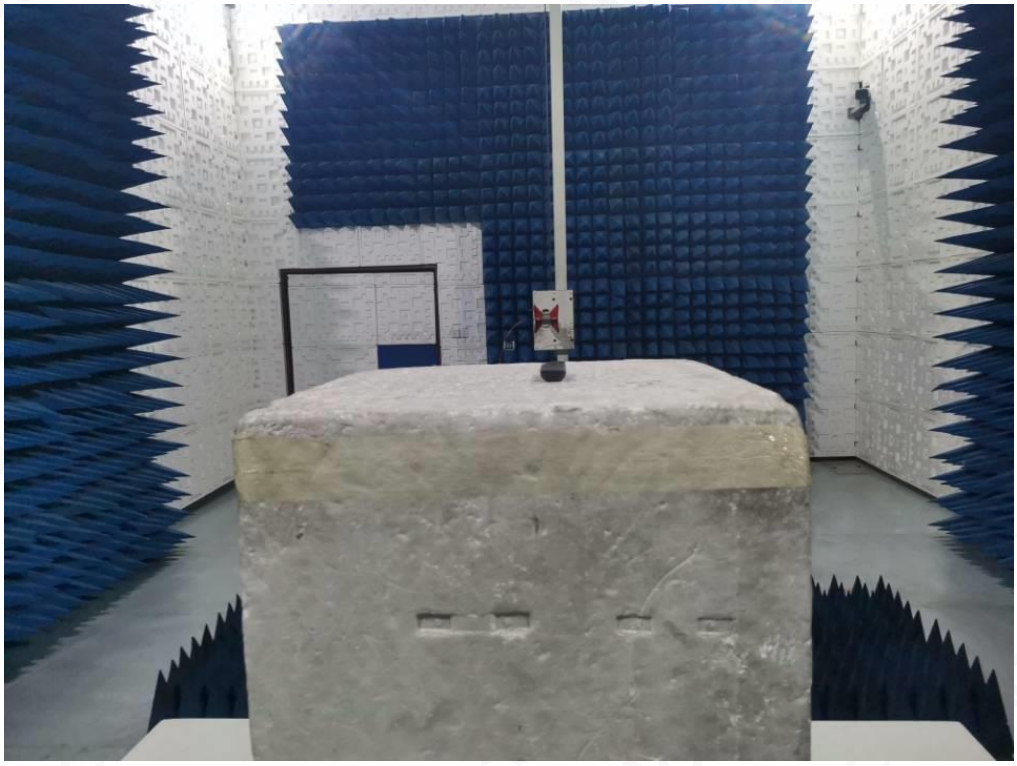
RESULT: PASS

Note: All the test modes had been tested, the mode 1 was the worst case. Only the data of the worst case would be record in this test report.

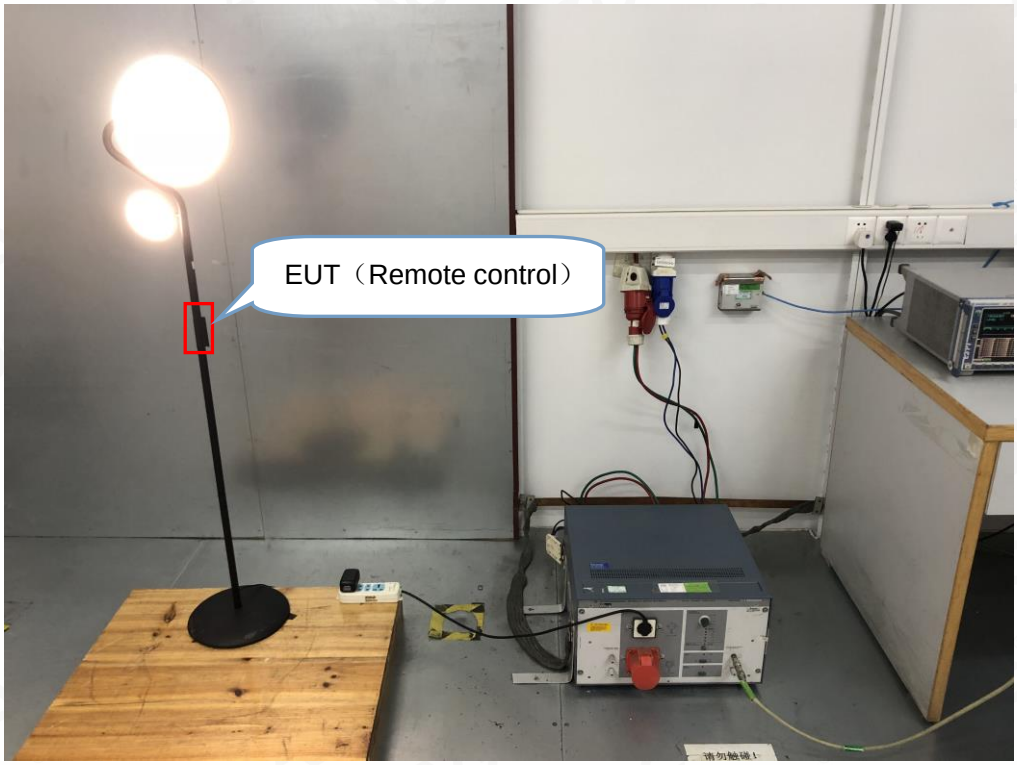
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP



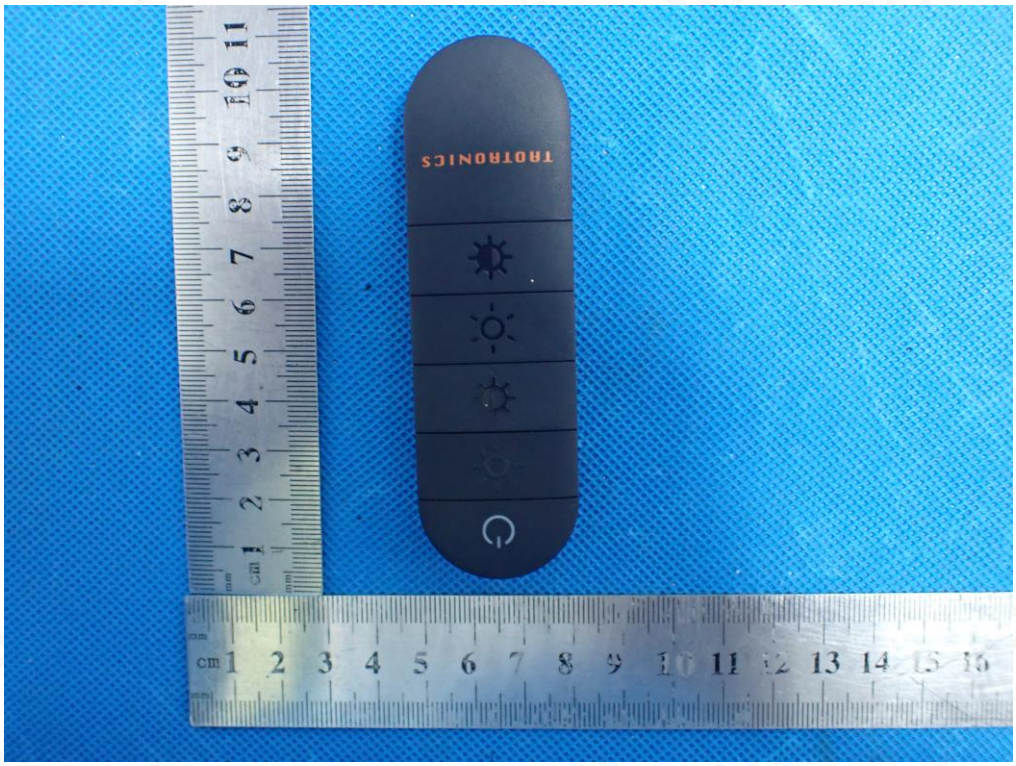


CONDUCTED EMISSION TEST SETUP

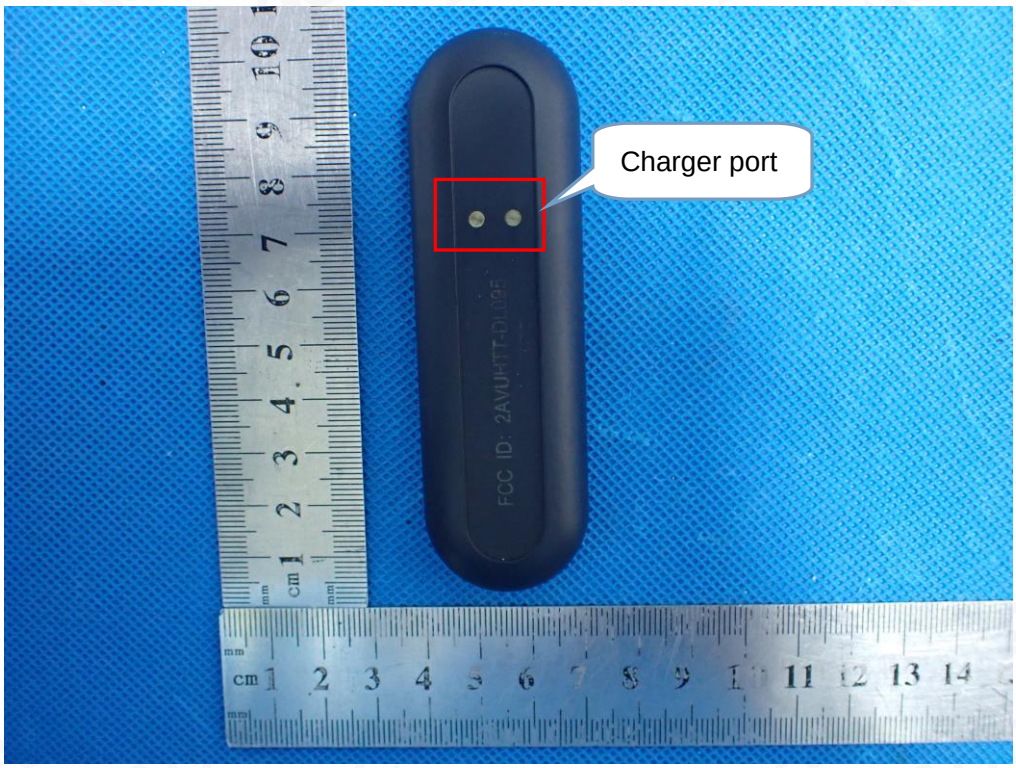


APPENDIX B: PHOTOGRAPHS OF EUT

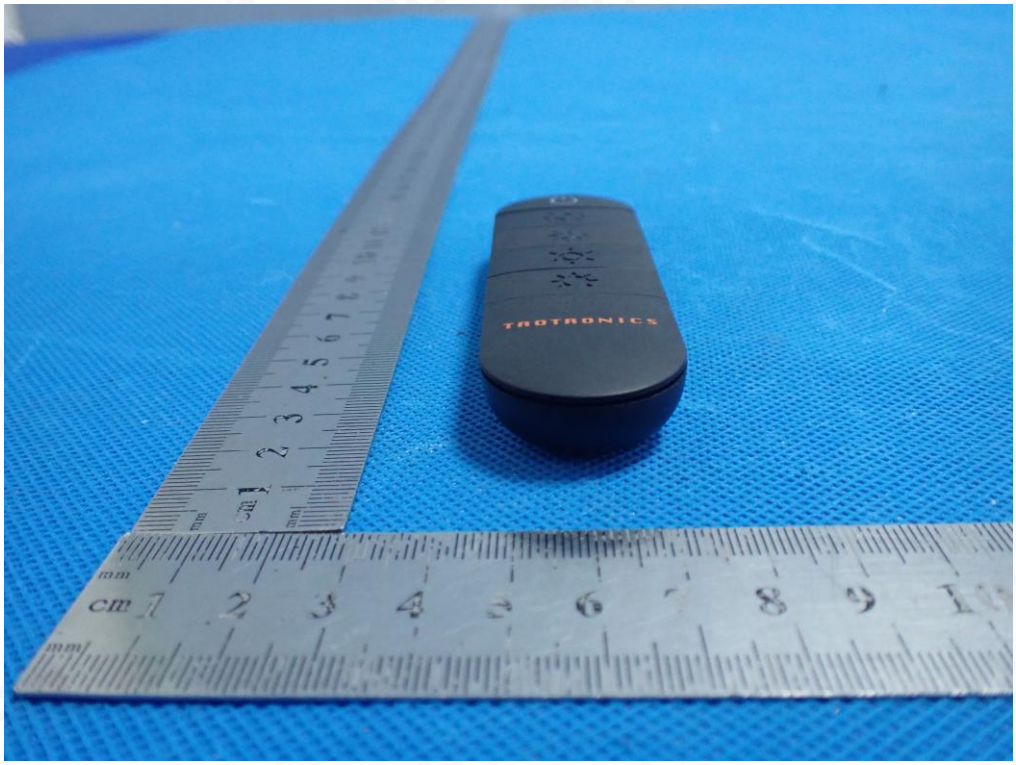
TOP VIEW OF EUT



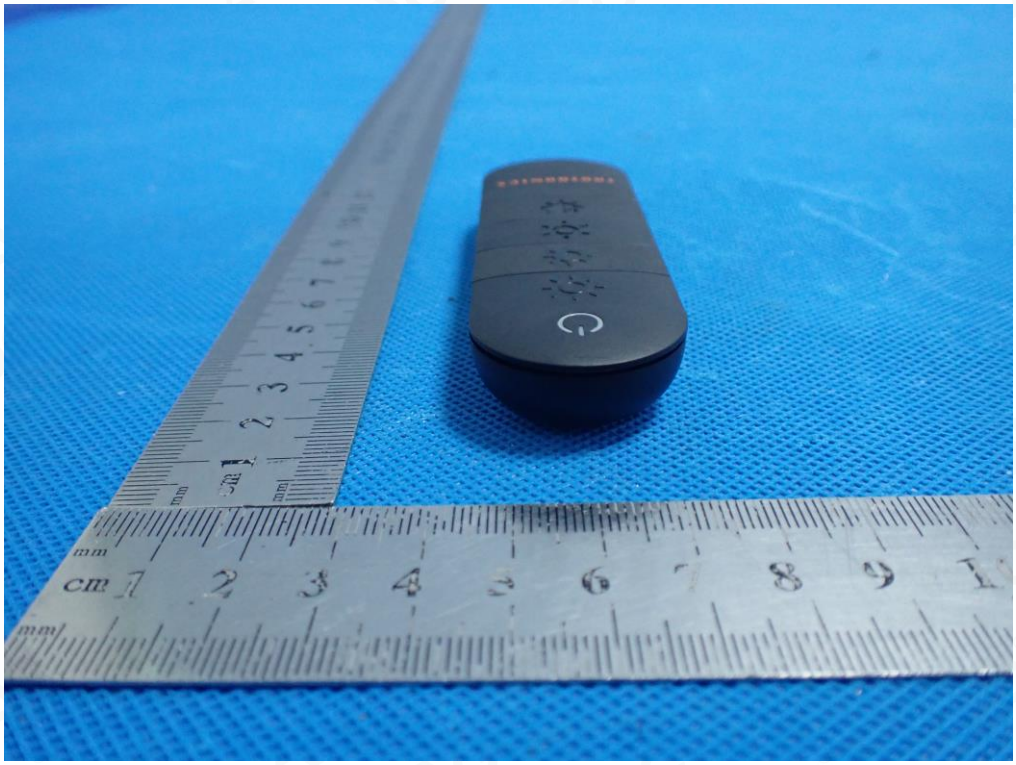
BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



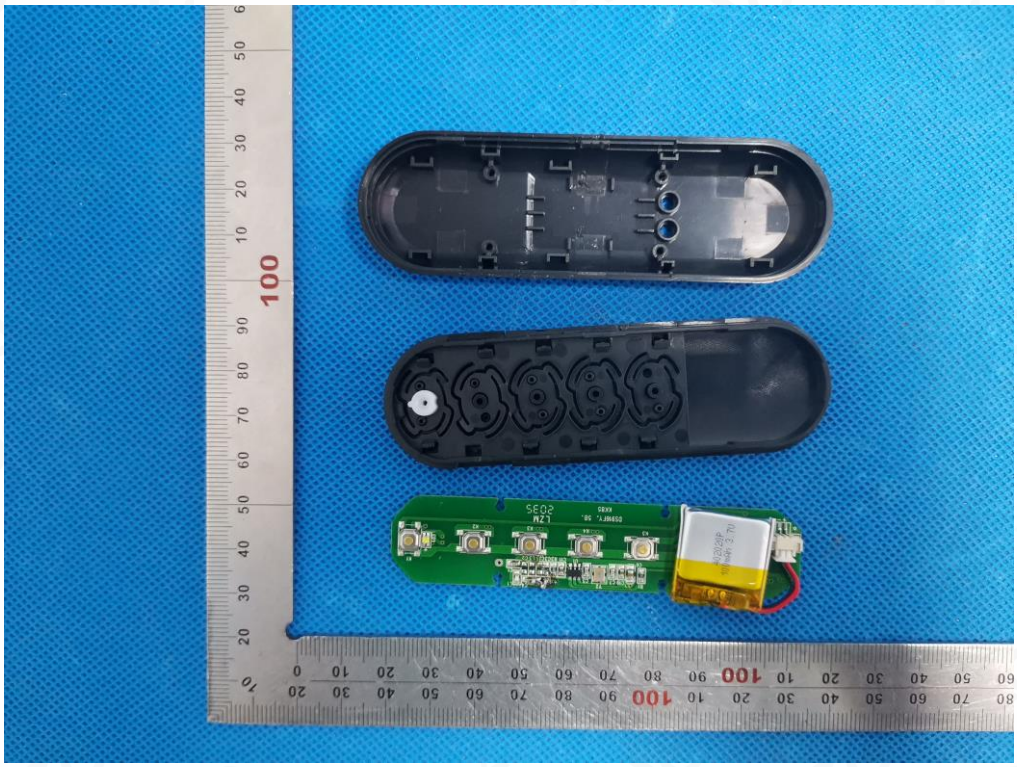
BACK VIEW OF EUT



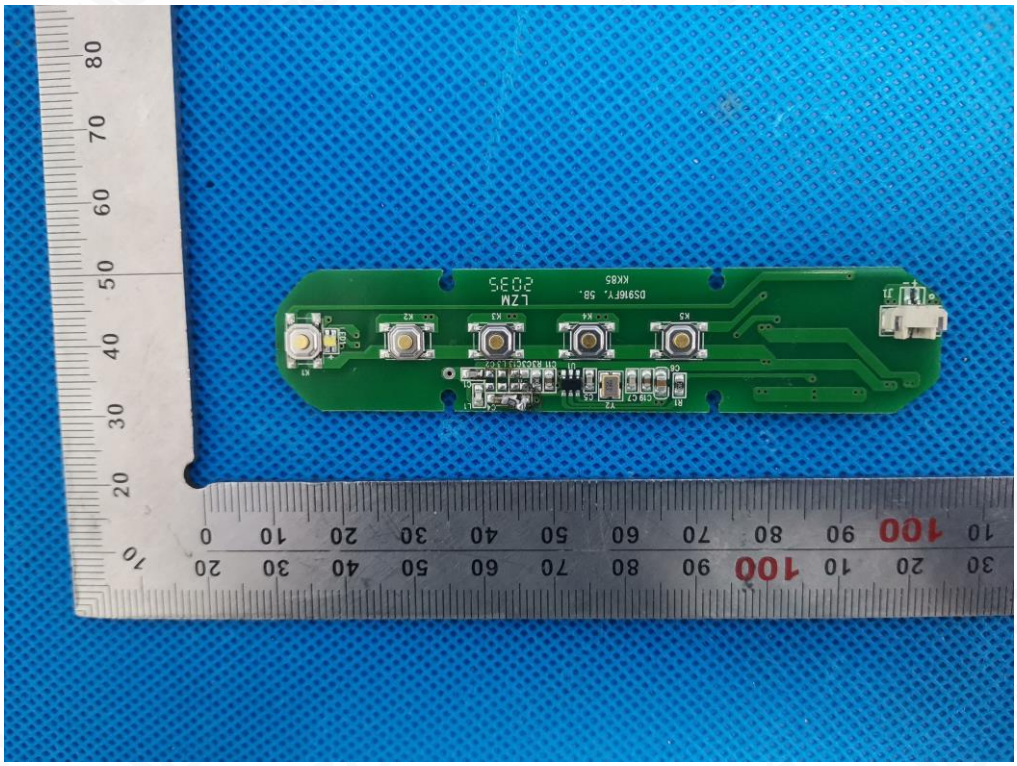
LEFT VIEW OF EUT

RIGHT VIEW OF EUT

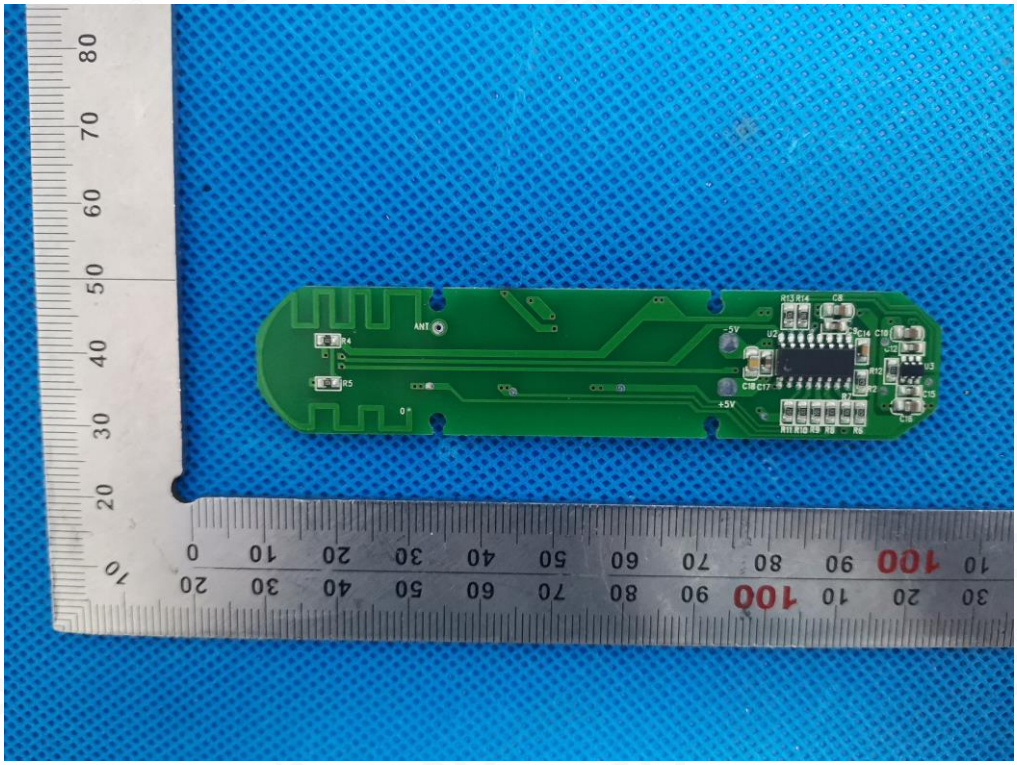
OPEN VIEW OF EUT



INTERNAL VIEW-1 OF EUT

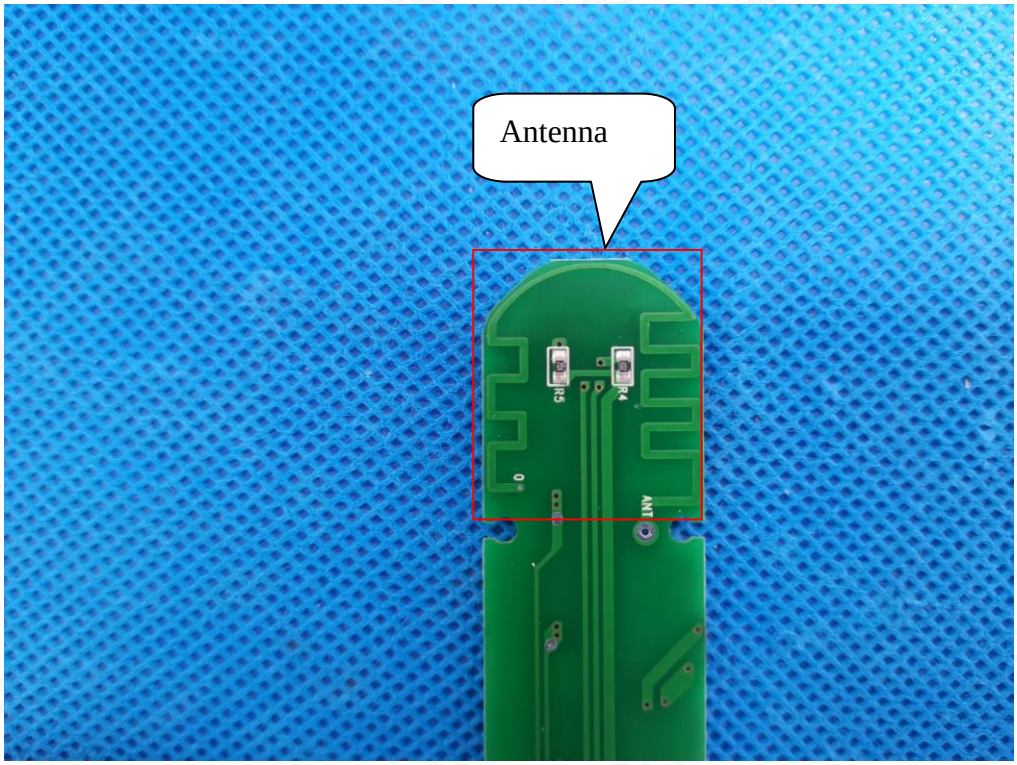


INTERNAL VIEW-2 OF EUT

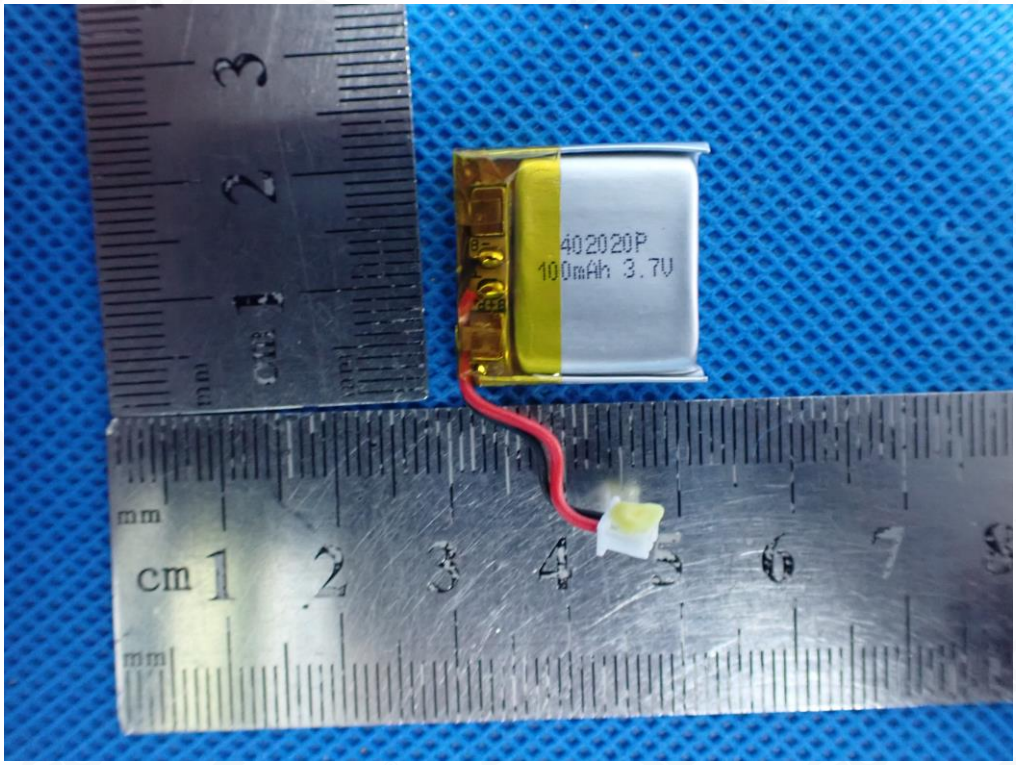


INTERNAL VIEW-3 OF EUT

INTERNAL VIEW-4 OF EUT



VIEW OF BATTERY



----END OF REPORT----

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.

5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

8.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

10. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.