FCC Test Report

Report No.: AGC07716190701FE03A

FCC ID	:	2AFENWK03A
APPLICATION PURPOSE	:	Class II Equipment
PRODUCT DESIGNATION	:	LED Projector
BRAND NAME	:	XGIMI
MODEL NAME	:	WK03A, WK04A, WK05A, WK06A, WK07A, WK08A, WK09A, WK10A, WK11A, WK12A, WK13A, WK14A
APPLICANT	:	Chengdu XGIMI Technology Co., Ltd.
DATE OF ISSUE	:	Jan. 09, 2021
STANDARD(S)	:	FCC Part 15.247
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jan. 09, 2021	Valid	Re-certification Report

Note:

The original test report Ref. No. AGC07716190701FE03 dated Sep. 16, 2019 was modified on Jan. 09, 2021 to include the following changes:

- Change the name of the applicant;
- Change the name of the manufacture;
- Change the name and address of the factory;
- Change the main chip packaging substrate;
- Change the photos of EUT;
- So the Conducted Emission and Radiated Emission had been tested for the Class II permissive change.

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1. VERIFICATION OF CONFORMITY

Applicant	Chengdu XGIMI Technology Co., Ltd.
Address	Building A4, Tianfu Software Park, High-tech zone, Chengdu, Sichuan, China 610041
Manufacturer	Chengdu XGIMI Technology Co., Ltd.
Address	Building A4, Tianfu Software Park, High-tech zone, Chengdu, Sichuan, China 610041
Factory 1	TCL KING ELECTRICAL APPLIANCE(CHENG DU)CO., LTD.
Address 1	No.18 Kexin Road, Hi-Tech Development Zone (West Park), Chengdu, Sichuan
Factory 2	Yibin XGIMI Optoelectronics Co., Ltd.
Address 2	(1) A3, Intelligent Terminal Industrial Park, Cuiping Disrict, Yibin City, Sichuan Province P.R. China (2) Room 328, Enterprise Service Center, No.17, West Section 3, Changjiang North Road, Lingang Economic Development Zone, Yibin City, Sichuan Province P.R. China
Product Designation	LED Projector
Brand Name	XGIMI
Test Model	WK03A
Series Model	WK04A, WK05A, WK06A, WK07A, WK08A, WK09A, WK10A, WK11A, WK12A, WK13A, WK14A
Difference description	All the same except for the model name and different appearance color
Date of test	Dec. 04, 2020 to Jan. 08, 2021
Deviation	None
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, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC PART 15.247.

Prepared By	Sky Dong (Project Engineer)	Jan. 08, 2021
Reviewed By	Max Zhang (Reviewer)	Jan. 09, 2021
Approved By	Forrest Lei (Authorized Officer)	Jan. 09, 2021

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as “LED Projector”. It is designed by way of utilizing the GFSK, Pi/4 DQPSK and 8DPSK technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power	7.123dBm(Max)
Bluetooth Version	V 4.2
Modulation	BR ☒GFSK, EDR ☒π /4-DQPSK, ☒8DPSK BLE ☒GFSK 1Mbps ☐GFSK 2Mbps
Number of channels	79
Hardware Version	V03
Software Version	V1.0.0
Antenna Designation	FPC Antenna
Antenna Gain	3.49dBi
Power Supply	DC 11.01V by battery or DC 19V by adapter

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2402~2480MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	:	:
	77	2479 MHZ
	78	2480 MHZ

2.3. RECEIVER INPUT BANDWIDTH

The input bandwidth of the receiver is 1.3MHZ,In every connection one Bluetooth device is the master and the other one is slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection(e.g. single of multislot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings.

Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

2.4. EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE

Example of a 79 hopping sequence in data mode:

40, 21, 44, 23, 04, 15, 66, 56, 19, 78, 07, 28, 69, 55,
36, 45, 05, 13, 43, 74, 57, 35, 67, 76, 02, 34, 54, 63,
42, 11, 30, 06, 64, 25, 75, 48, 17, 33, 58, 01, 29, 14,
51, 72, 03, 31, 50, 61, 77, 18, 10, 47, 12, 68, 08, 49,
20, 00, 73, 09, 16, 60, 71, 41, 24, 53, 38, 26, 46, 37,
65, 32, 70, 52, 27, 59, 22, 62, 39

2.5. EQUALLY AVERAGE USE OF FREQUENCIES AND BEHAVIOUR

The generation of the hopping sequence in connection mode depends essentially on two input values:

1. LAP/UAP of the master of the connection.
2. Internal master clock

The LAP(lower address part) are the 24 LSB's of the 48 BD_ADDRESS. The BD_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP(upper address part) are the 24MSB's of the 48BD_ADDRESS

The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For ehavior zation with other units only offset are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5us.The clock has a cycle of about one day(23h30).In most case it is implemented as 28 bit counter. For the deriving of the hopping sequence the entire. LAP(24 bits),4LSB's(4bits)(Input 1) and the 27MSB's of the clock(Input 2) are used. With this input values different mathematical procedures(permutations, additions, XOR-operations)are performed to generate te Sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions the Bluetooth system has the following ehavior:

The first connection between the two devices is established, a hopping sequence was generated. For Transmitting the wanted data the complete hopping sequence was not used. The connection ended.

The second connection will be established. A new hopping sequence is generated. Due to the fact the Bluetooth clock has a different value, because the period between the two transmission is longer(and it Cannot be shorter) than the minimum resolution of the clock(312.5us).The hopping sequence will always Differ from the first one.

2.6. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AFENWK03A** filing to comply with the FCC PART 15.247 requirements.

2.7. 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.

2.8. SPECIAL ACCESSORIES

Refer to section 5.2.

2.9. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in measurement” (GUM) published by CISPR and ANSI.

- 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 total RF power, conducted, Uc = ±0.8dB
- Uncertainty of spurious emissions, conducted, Uc = ±2.7dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %
- Uncertainty of Dwell Time: Uc = ±2 %
- Uncertainty of Frequency: Uc = ±2 %

4. DESCRIPTION OF TEST MODES

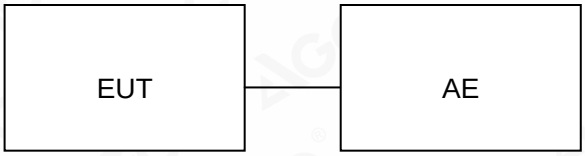
NO.	TEST MODE DESCRIPTION
1	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK
4	Low channel π/4-DQPSK
5	Middle channel π/4-DQPSK
6	High channel π/4-DQPSK
7	Low channel 8DPSK
8	Middle channel 8DPSK
9	High channel 8DPSK
10	Hopping mode GFSK
11	Hopping mode π/4-DQPSK
12	Hopping mode 8DPSK

Note:

1. Only the result of the worst case was recorded in the report, if no other cases.
2. The test software is the SecureCRTSecure_V7.0.0.326 which can set the EUT into the individual test modes.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM



5.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	LED Projector	WK03A	2AFENWK03A	EUT
3	Adapter	HKA09019047-6P	Input: AC 100-240V, 50/60Hz, 1.5A Output: DC 19V, 4.74A	Market with EUT
4	Loudspeaker	--	--	AE
5	PC	Xiaomi	Air 13.3	AE

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247&15.209	Radiated Emission	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

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. 07, 2020	Dec. 06, 2021
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2019	Sep. 20, 2021
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	Jan. 09, 2019	Jan. 08, 2021
Test software	FARA	EZ-EMC (Ver RA-03A)	N/A	N/A	N/A

7. RADIATED EMISSION

7.1. 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 RBW and 3MHz VBW for peak reading. 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.

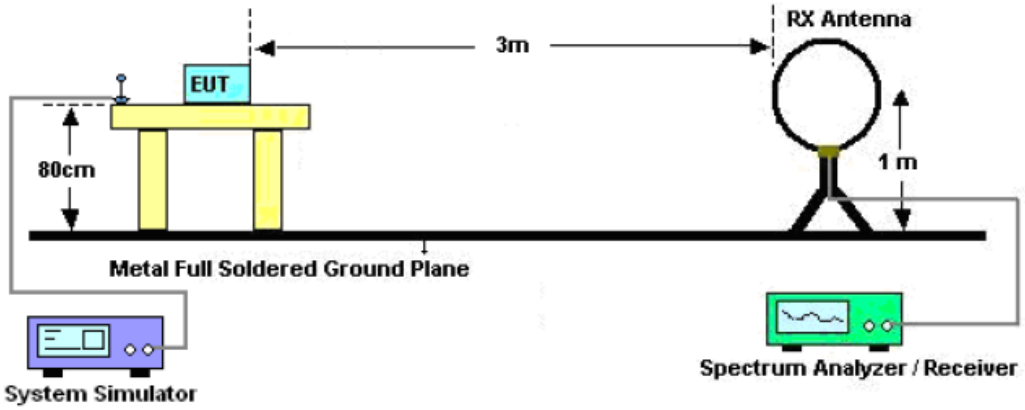
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average

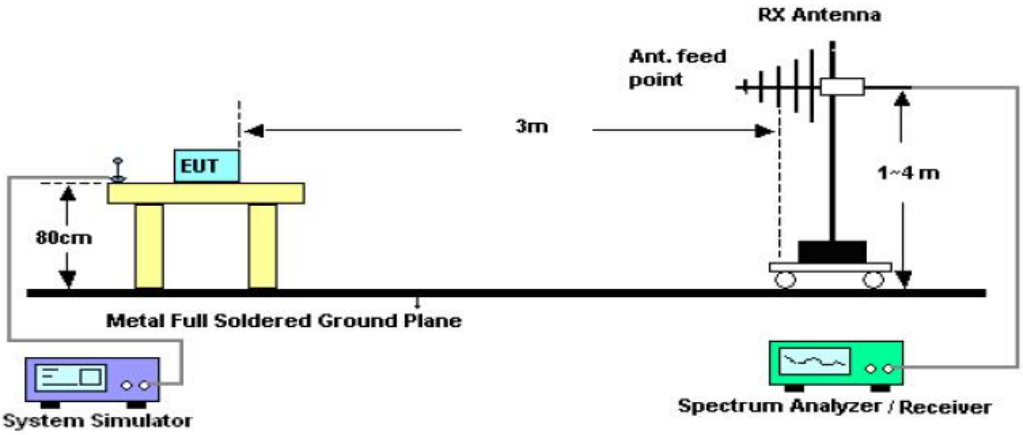
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

7.2. TEST SETUP

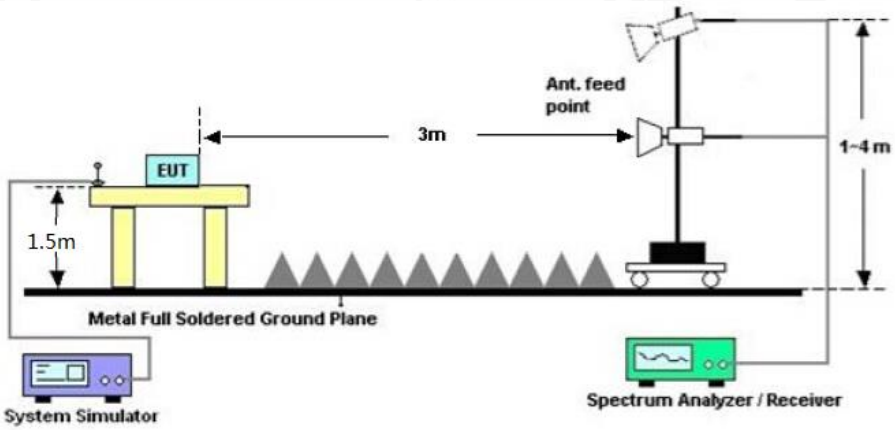
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



7.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

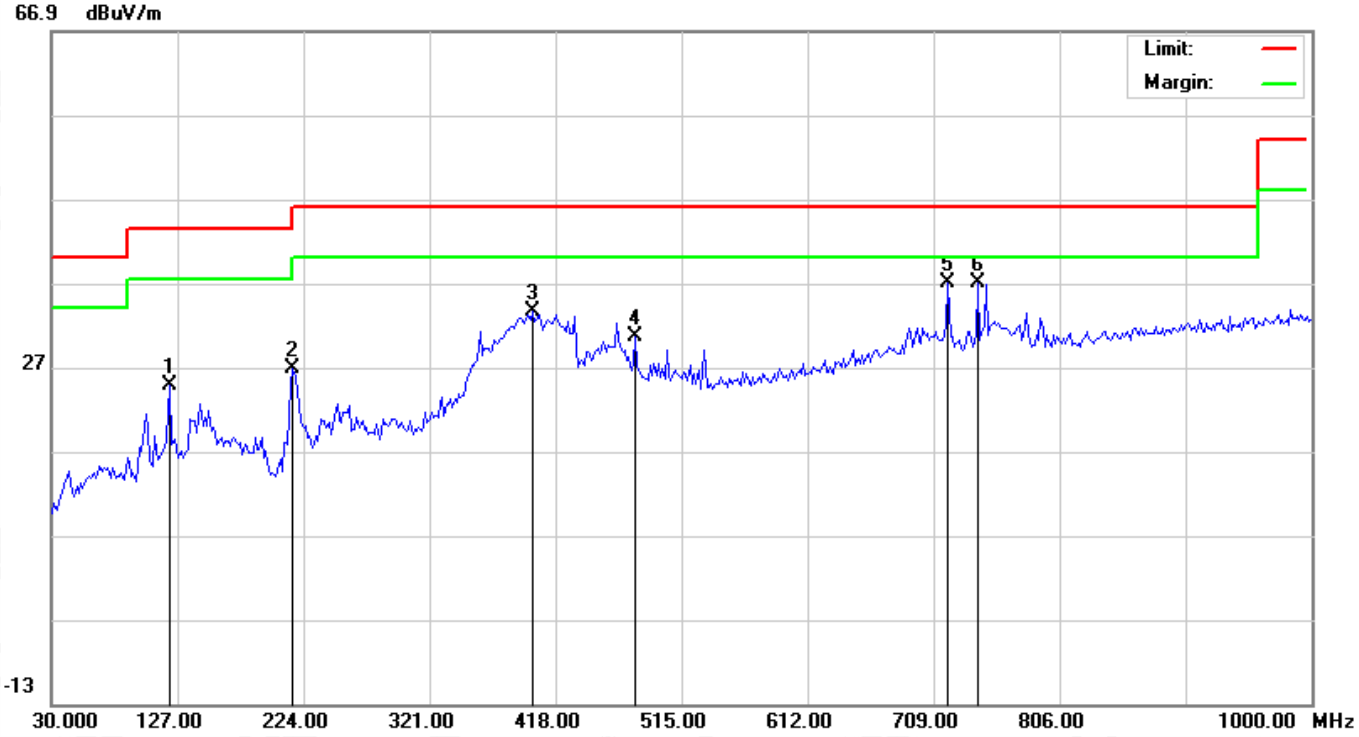
7.4. TEST RESULT

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

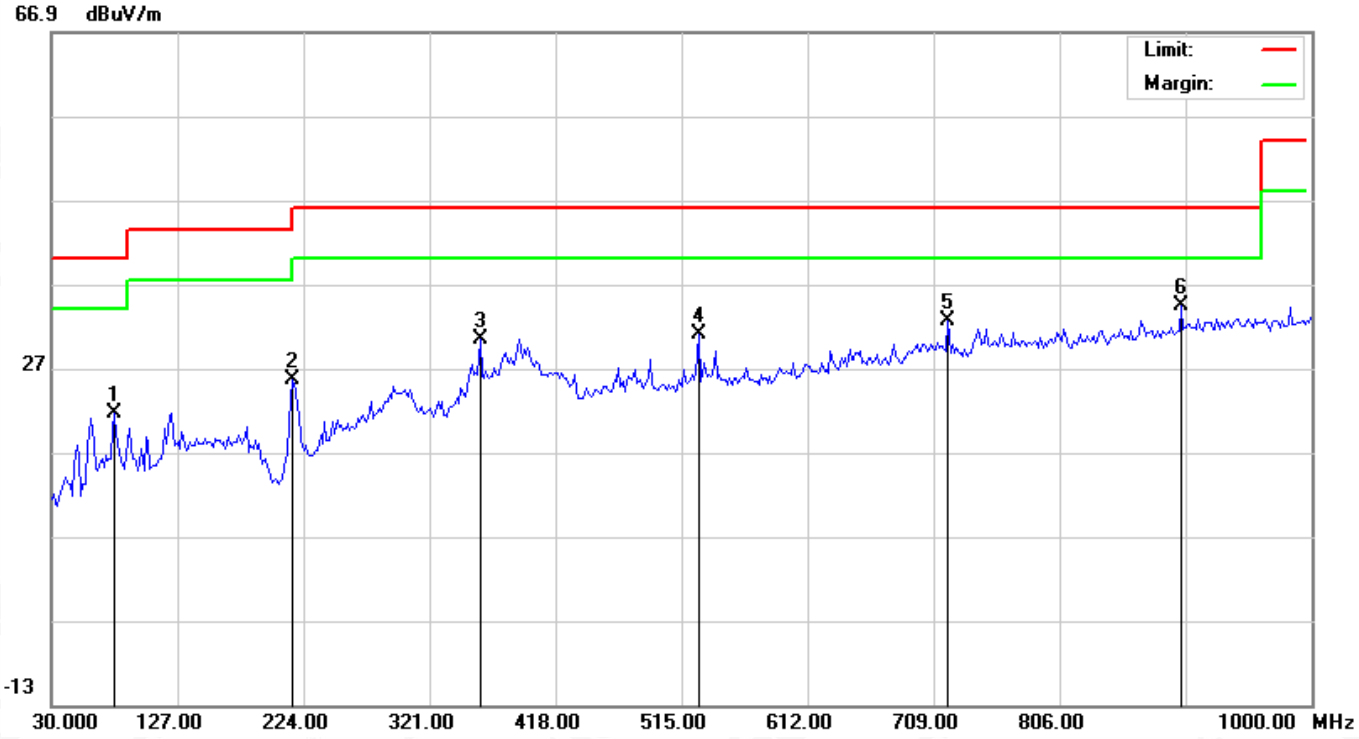
EUT	LED Projector	Model Name	WK03A
Temperature	25°C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		120.5333	6.75	18.00	24.75	43.50	-18.75	peak
2		215.9167	12.04	14.79	26.83	43.50	-16.67	peak
3		400.2167	10.63	22.98	33.61	46.00	-12.39	peak
4		479.4333	5.99	24.58	30.57	46.00	-15.43	peak
5	*	720.3167	8.47	28.61	37.08	46.00	-8.92	peak
6		742.9500	7.89	29.12	37.01	46.00	-8.99	peak

RESULT: PASS

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		78.5000	6.42	15.27	21.69	40.00	-18.31	peak
2		215.9167	10.80	14.79	25.59	43.50	-17.91	peak
3		359.8000	8.87	21.57	30.44	46.00	-15.56	peak
4		527.9333	5.39	25.54	30.93	46.00	-15.07	peak
5		720.3167	4.05	28.61	32.66	46.00	-13.34	peak
6	*	899.7667	2.67	31.70	34.37	46.00	-11.63	peak

RESULT: PASS

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

2. All test modes had been pre-tested. The mode 1 is the worst case and recorded in the report.

RADIATED EMISSION ABOVE 1GHZ

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4804.022	52.42	0.08	52.50	74.00	-21.50	peak
4804.022	46.27	0.08	46.35	54.00	-7.65	AVG
7206.033	48.13	2.21	50.34	74.00	-23.66	peak
7206.033	39.47	2.21	41.68	54.00	-12.32	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4804.022	53.17	0.08	53.25	74.00	-20.75	peak
4804.022	46.29	0.08	46.37	54.00	-7.63	AVG
7206.033	44.18	2.21	46.39	74.00	-27.61	peak
7206.033	36.94	2.21	39.15	54.00	-14.85	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4882.022	51.37	0.14	51.51	74.00	-22.49	peak
4882.022	43.49	0.14	46.98	54.00	-7.02	AVG
7323.033	47.58	2.36	48.61	74.00	-25.39	peak
7323.033	39.55	2.36	46.00	54.00	-8.00	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4882.022	53.48	0.14	53.62	74.00	-20.38	peak
4882.022	47.26	0.14	47.40	54.00	-6.60	AVG
7323.033	49.25	2.36	51.61	74.00	-22.39	peak
7323.033	42.18	2.36	44.54	54.00	-9.46	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.022	53.48	0.22	53.70	74.00	-20.30	peak
4960.022	46.74	0.22	46.96	54.00	-7.04	AVG
7440.033	49.51	2.64	52.15	74.00	-21.85	peak
7440.033	40.18	2.64	42.82	54.00	-11.18	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	LED Projector	Model Name	WK03A
Temperature	25℃	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.022	51.27	0.22	51.49	74.00	-22.51	peak
4960.022	43.57	0.22	43.79	54.00	-10.21	AVG
7440.033	46.27	2.64	48.91	74.00	-25.09	peak
7440.033	39.27	2.64	41.91	54.00	-12.09	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RESULT: PASS

Note:

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

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

All test modes had been tested. The GFSK modulation is the worst case and recorded in the report.

8. FCC LINE CONDUCTED EMISSION TEST

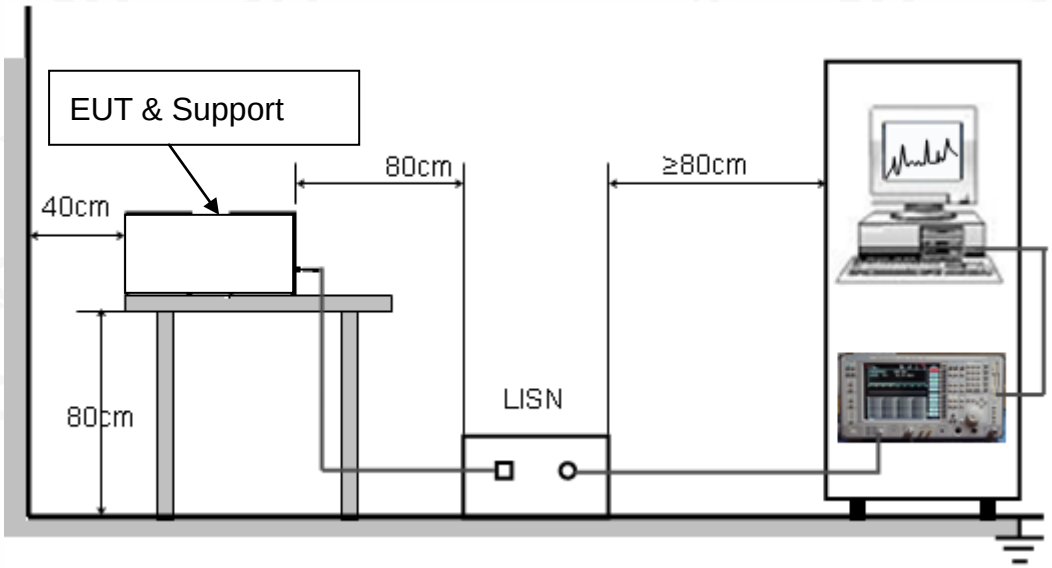
8.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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.

8.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



8.3. 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 0.8 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 equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC charging voltage by adapter which received AC120V/60Hz power by 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.

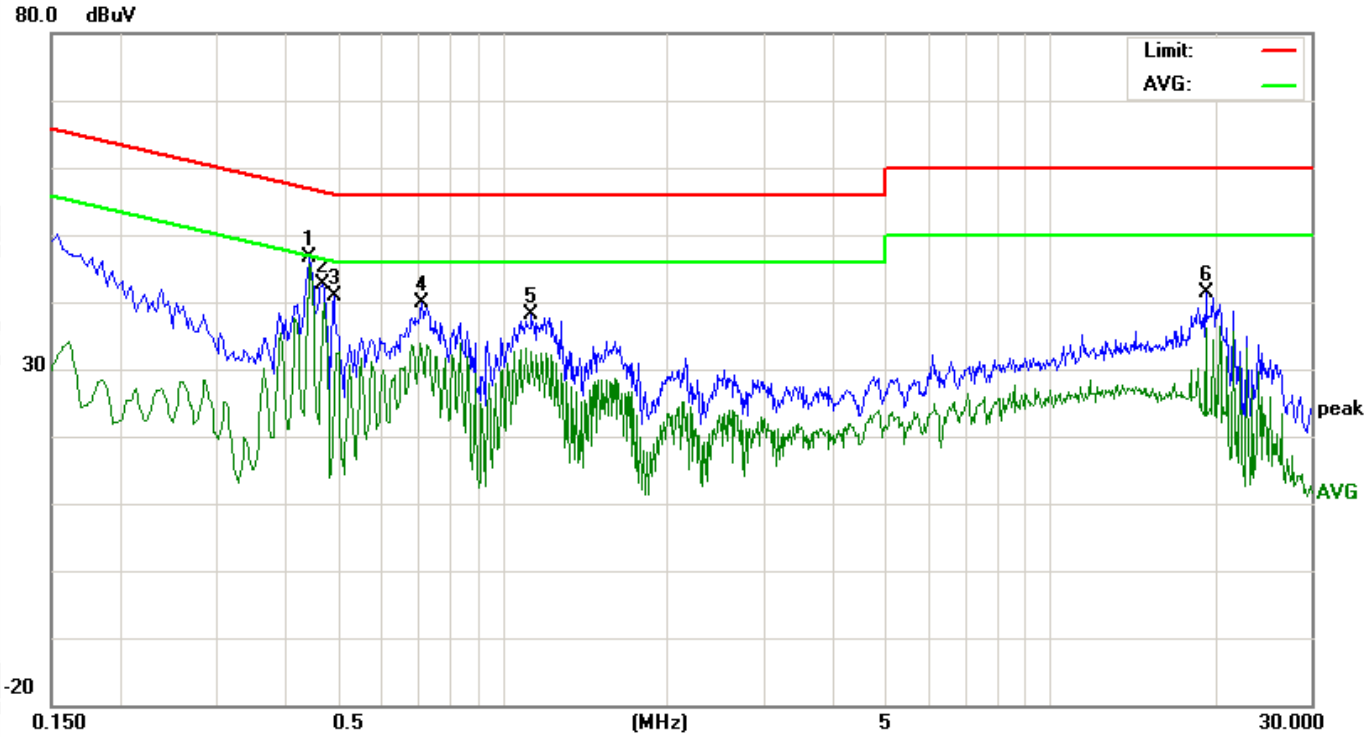
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

8.4. 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.

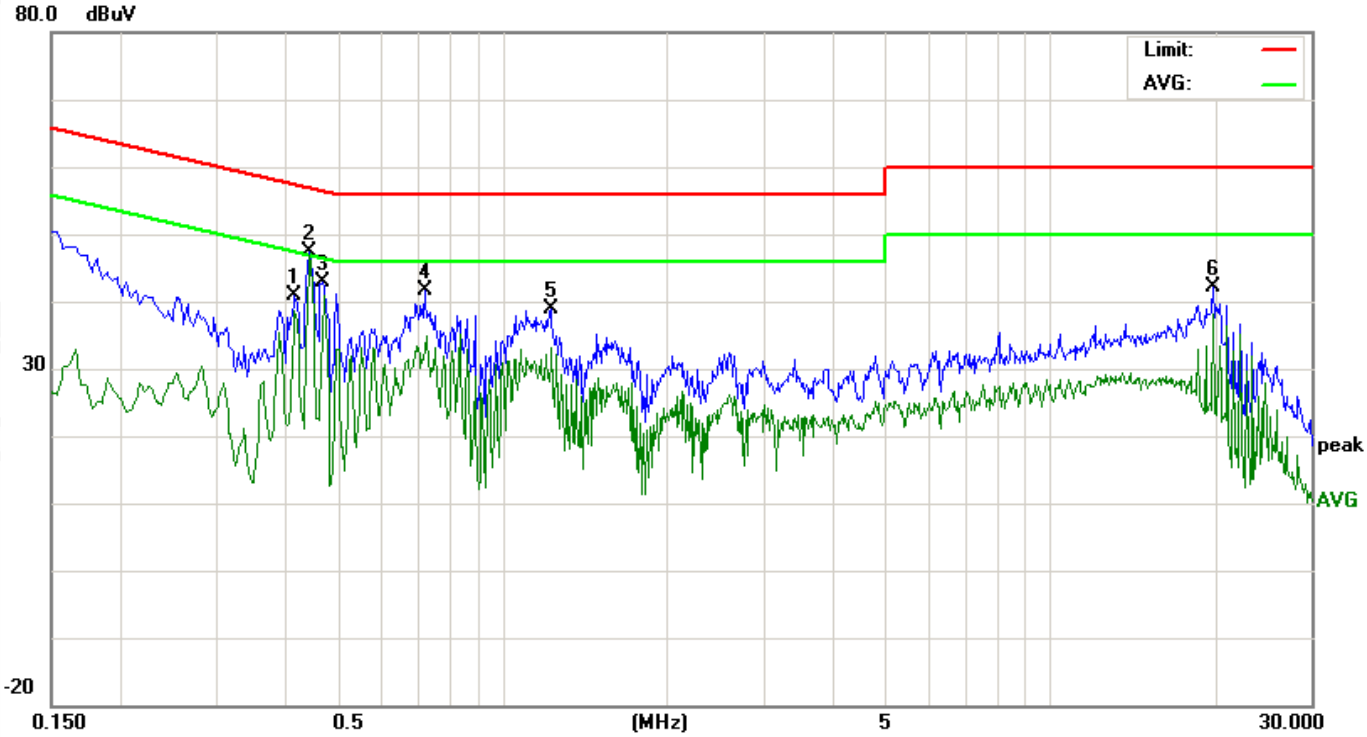
8.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Line Conducted Emission Test Line 1-L



No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.4460	33.04	32.24	29.97	13.62	46.66	45.86	43.59	56.95	46.95	-11.09	-3.36	P
2	0.4700	28.92	26.84	24.89	13.67	42.59	40.51	38.56	56.51	46.51	-16.00	-7.95	P
3	0.4940	27.23	17.94	11.62	13.73	40.96	31.67	25.35	56.10	46.10	-24.43	-20.75	P
4	0.7140	26.13	21.72	18.34	13.81	39.94	35.53	32.15	56.00	46.00	-20.47	-13.85	P
5	1.1300	24.44	21.51	17.65	13.79	38.23	35.30	31.44	56.00	46.00	-20.70	-14.56	P
6	19.2780	28.30	24.54	22.64	13.03	41.33	37.57	35.67	60.00	50.00	-22.43	-14.33	P

Line Conducted Emission Test Line 2-N



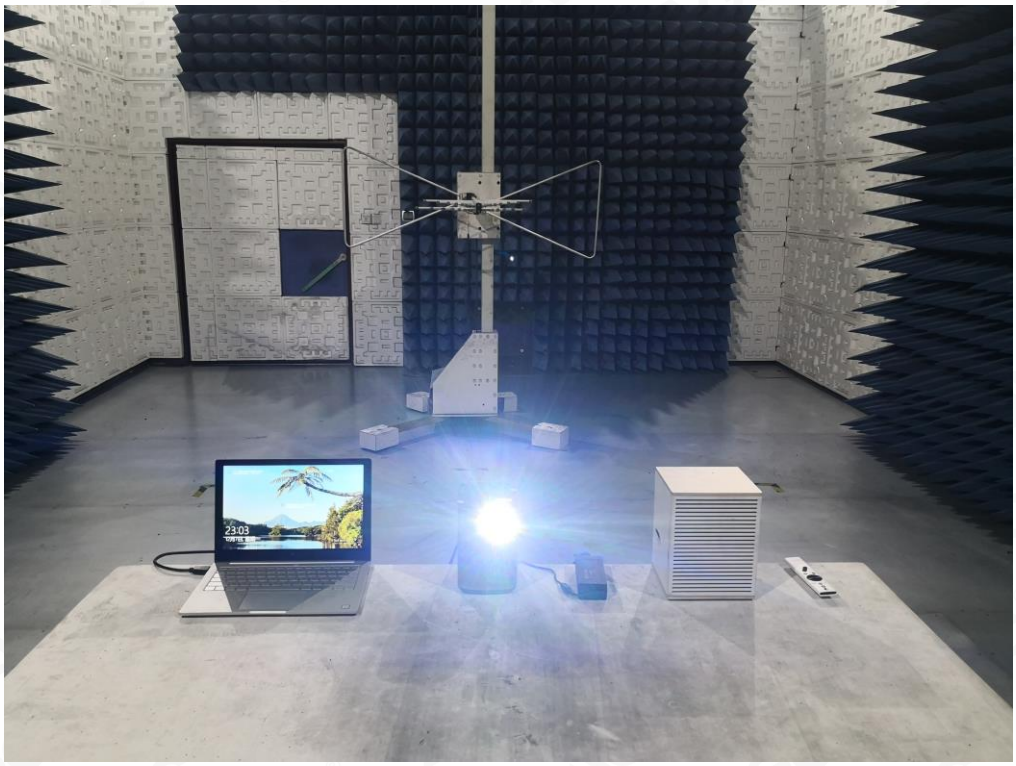
No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.4180	27.40	25.91	25.55	13.55	40.95	39.46	39.10	57.49	47.49	-18.03	-8.39	P
2	0.4460	33.86	33.07	30.14	13.62	47.48	46.69	43.76	56.95	46.95	-10.26	-3.19	P
3	0.4700	29.14	26.92	24.70	13.67	42.81	40.59	38.37	56.51	46.51	-15.92	-8.14	P
4	0.7220	27.71	21.59	18.32	13.81	41.52	35.40	32.13	56.00	46.00	-20.60	-13.87	P
5	1.2260	25.19	20.58	17.59	13.78	38.97	34.36	31.37	56.00	46.00	-21.64	-14.63	P
6	19.8779	29.05	26.61	24.95	13.12	42.17	39.73	38.07	60.00	50.00	-20.27	-11.93	P

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

RADIATED EMISSION TEST SETUP BELOW 1GHZ



RADIATED EMISSION TEST SETUP ABOVE 1GHZ

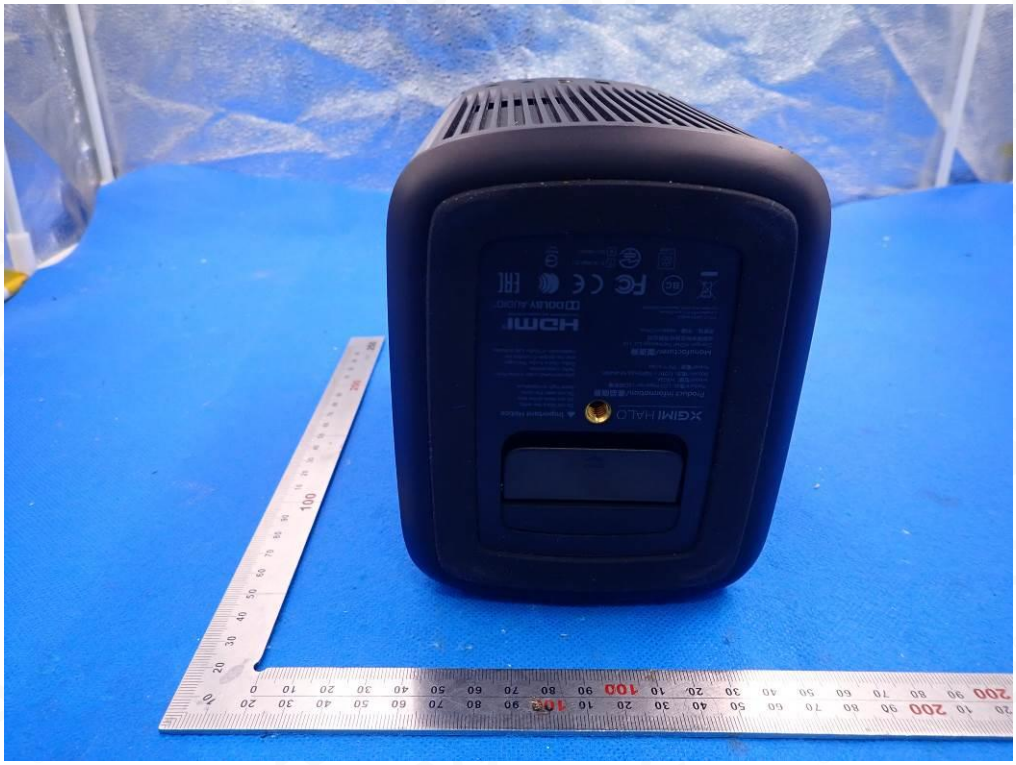
CONDUCTED EMISSION TEST SETUP

APPENDIX B: PHOTOGRAPHS OF EUT

ALL VIEW OF EUT

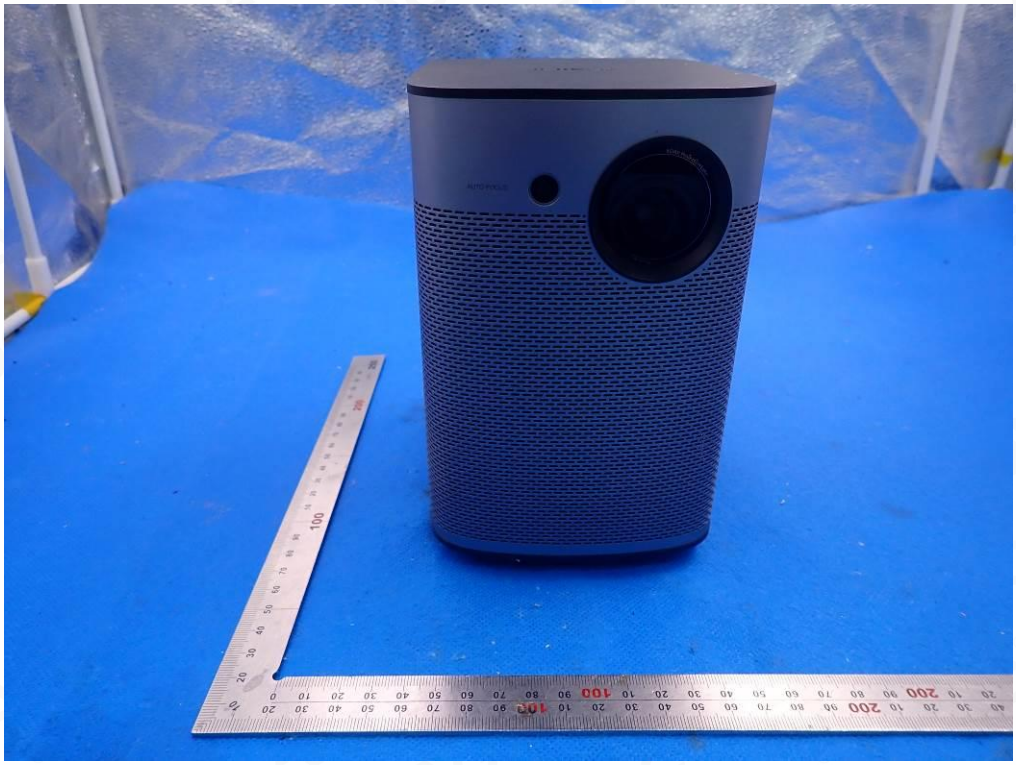
TOP VIEW OF EUT

BOTTOM VIEW OF EUT

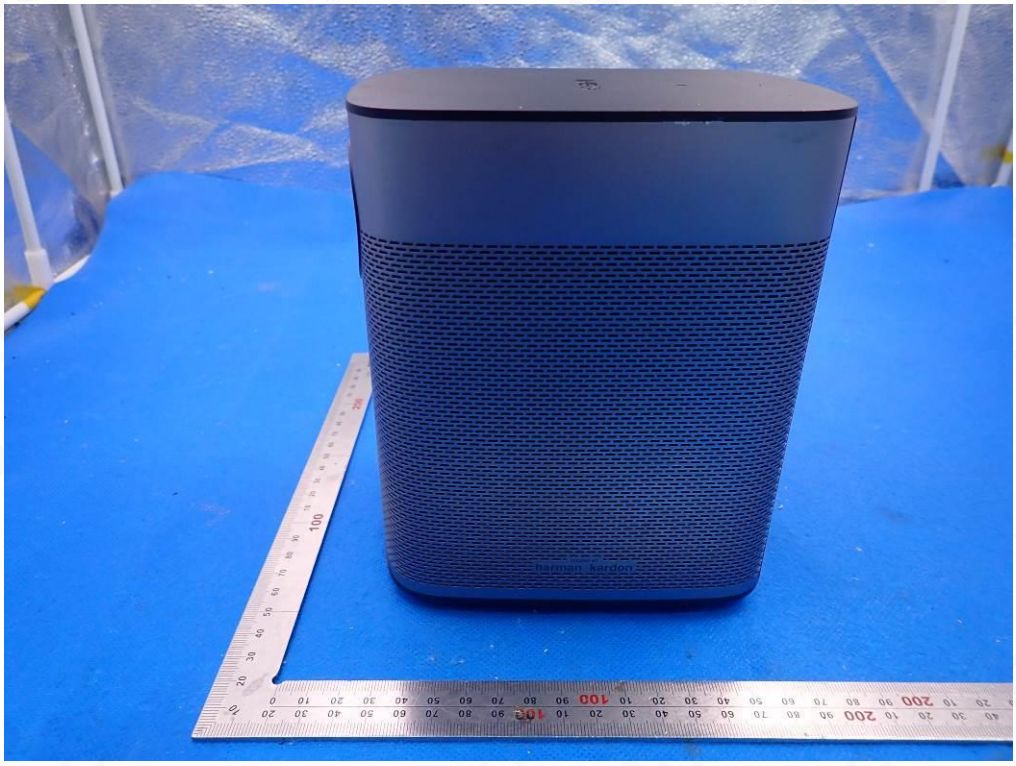


FRONT VIEW OF EUT

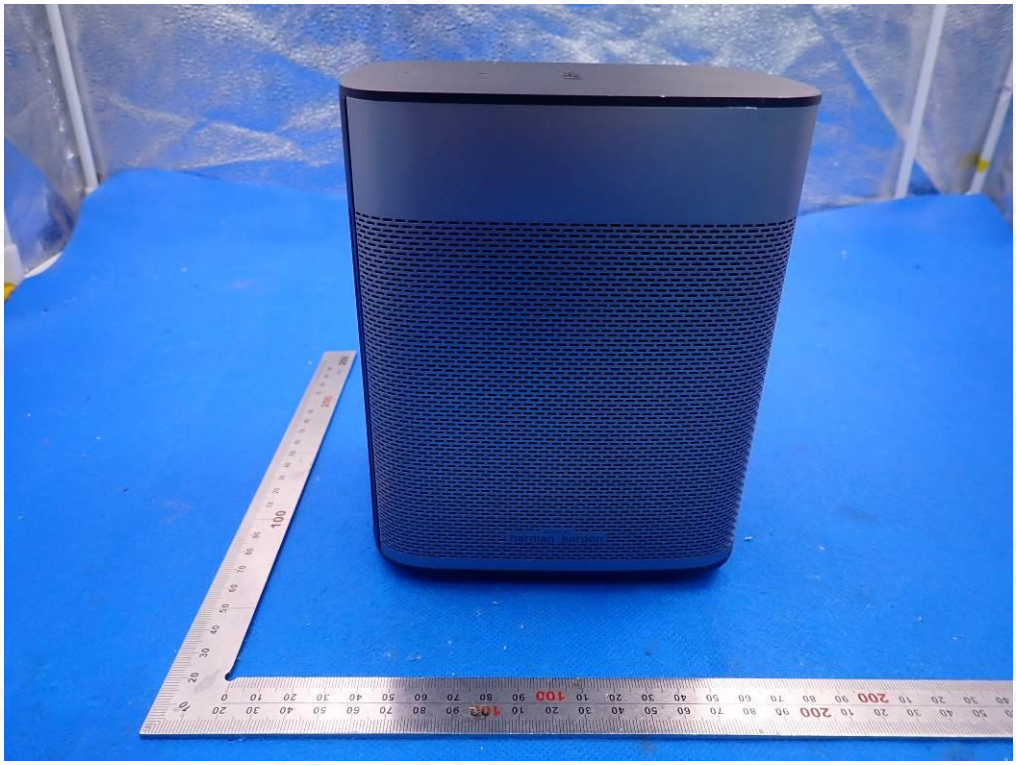
BACK VIEW OF EUT



LEFT VIEW OF EUT



RIGHT VIEW OF EUT

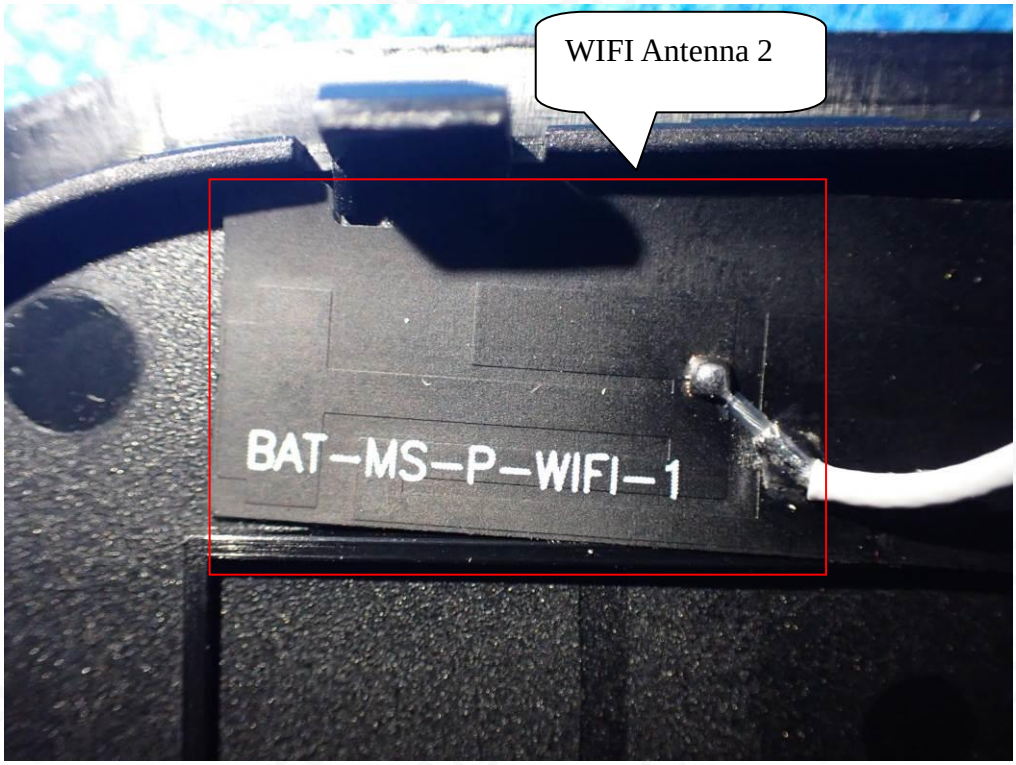


VIEW OF EUT (PORT)-1

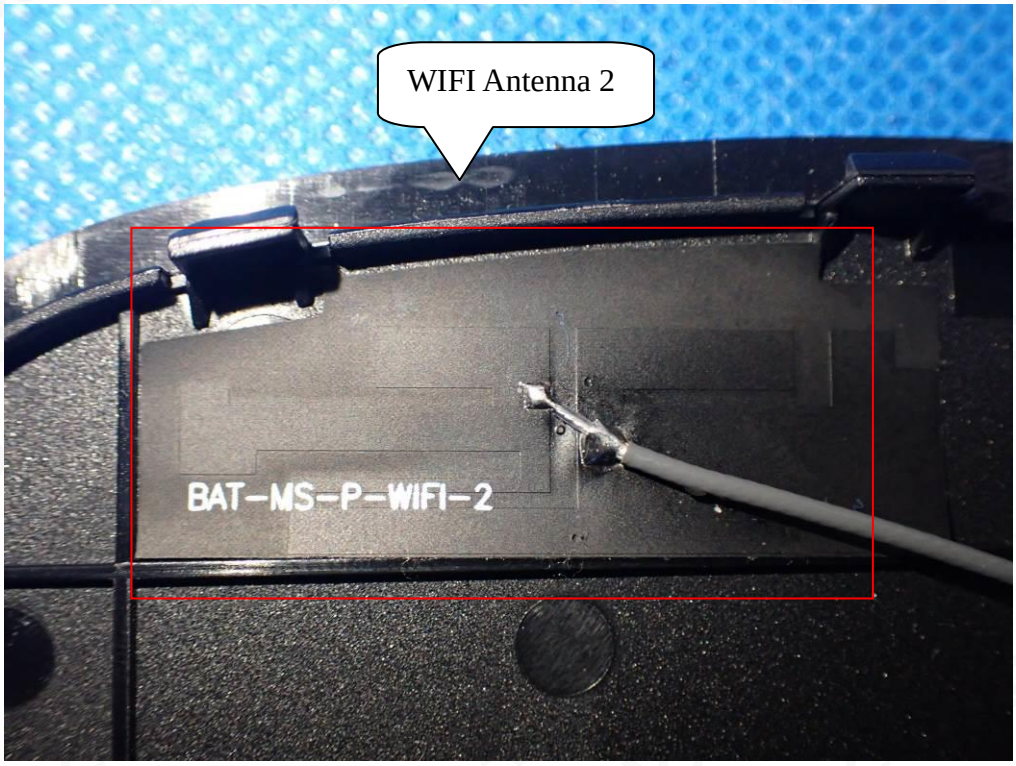
VIEW OF EUT (PORT)-2

OPEN VIEW - OF EUT-1

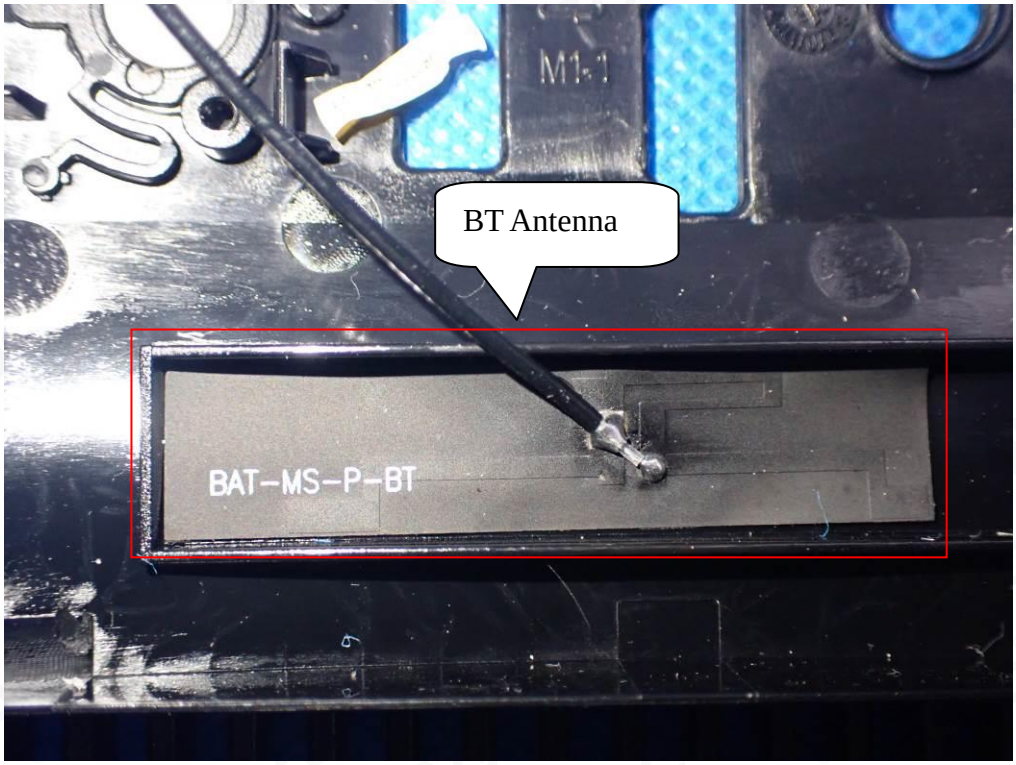
OPEN VIEW - OF EUT-2



OPEN VIEW - OF EUT-3

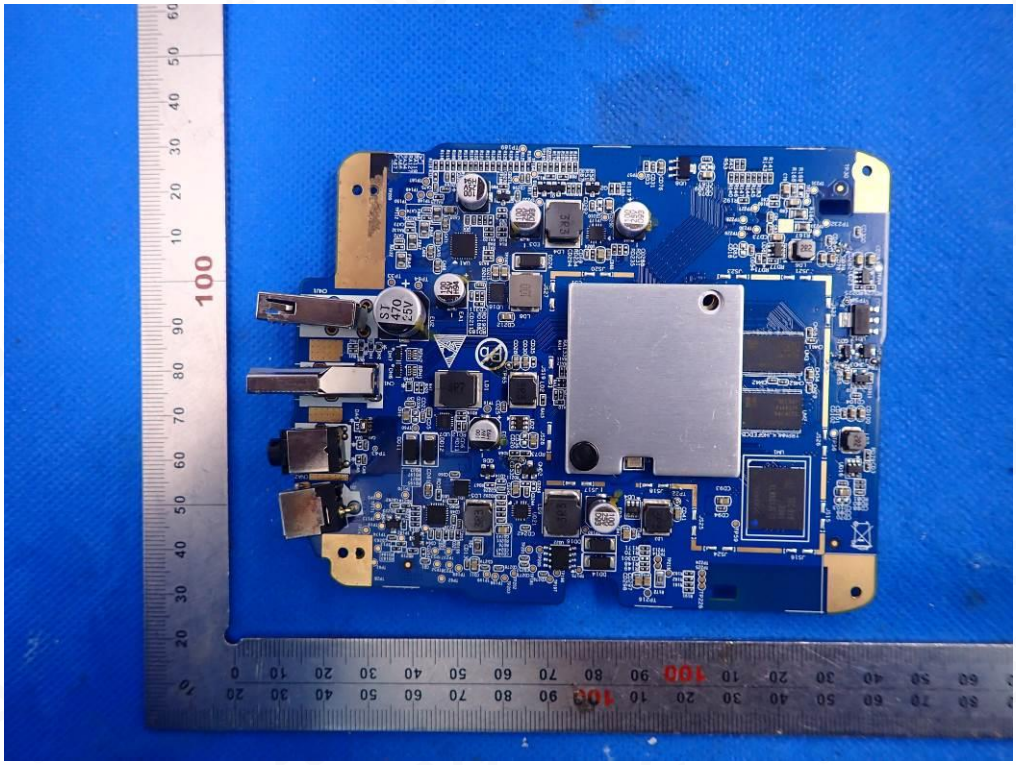


OPEN VIEW - OF EUT-4

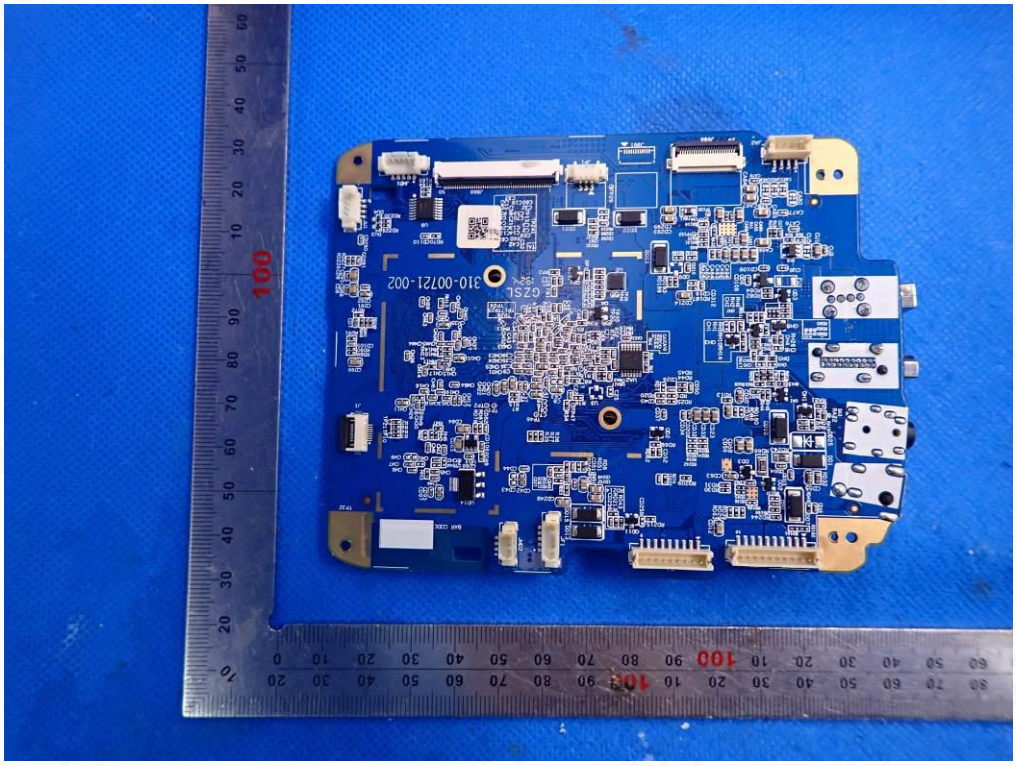


VIEW OF BATTERY

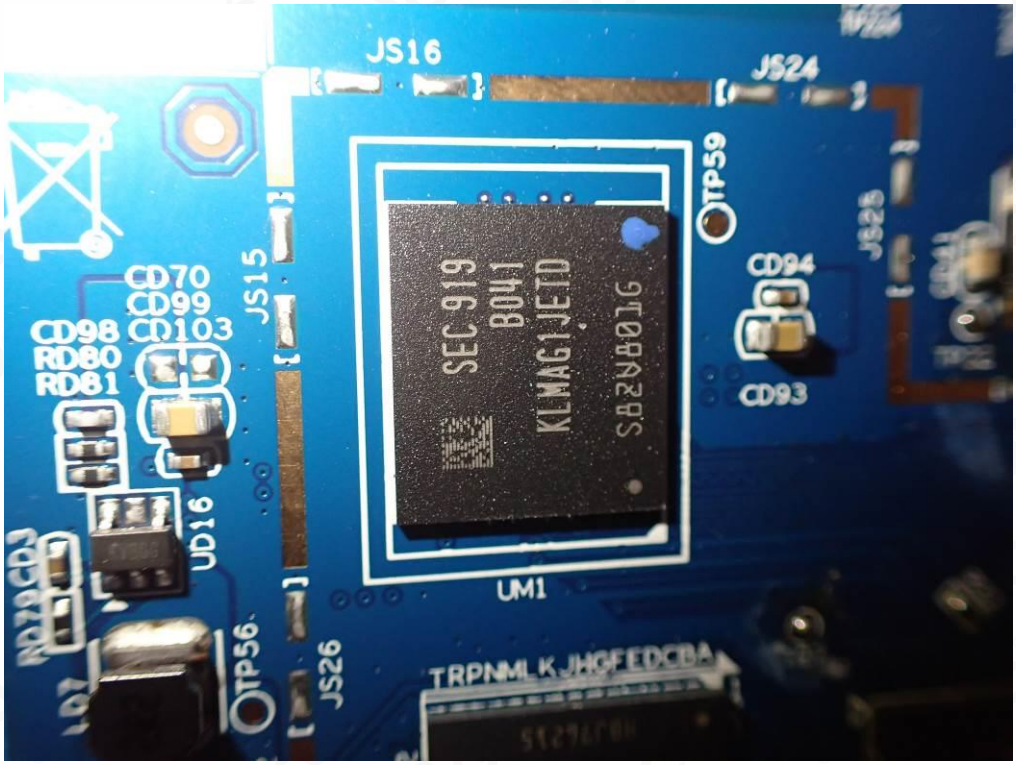
INTERNAL VIEW-1 OF EUT



INTERNAL VIEW-2 OF EUT



INTERNAL VIEW-3 OF EUT



INTERNAL VIEW-4 OF EUT