

# **FCC Test Report**

Report No.: AGC07716190701FE02A

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

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the condicated resting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC, where test result presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 2 of 47

#### **REPORT REVISE RECORD**

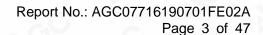
Report Version	Report Version Revise Time		Valid Version	Notes
V1.0	/	Jan. 09, 2021	Valid	Re-certification Report

#### Note:

The original test report Ref. No. AGC07716190701FE02 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.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC he test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc=cert.com.

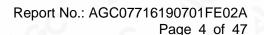




# **TABLE OF CONTENTS**

1. VERIFICATION OF COMPLIANCE	
2.GENERAL INFORMATION	5
2.1PRODUCT DESCRIPTION 2.2. TABLE OF CARRIER FREQUENCYS 2.3 RELATED SUBMITTAL(S)/GRANT(S) 2.4TEST METHODOLOGY 2.5 SPECIAL ACCESSORIES 2.6 EQUIPMENT MODIFICATIONS	5
3. MEASUREMENT UNCERTAINTY	
4. DESCRIPTION OF TEST MODES	8
5. SYSTEM TEST CONFIGURATION	
5.1 CONFIGURATION OF TESTED SYSTEM	9 9
6. TEST FACILITY	10
7. RADIATED EMISSION	11
7.1. MEASUREMENT PROCEDURE	12 13
8. FCC LINE CONDUCTED EMISSION TEST	
8.1. LIMITS OF LINE CONDUCTED EMISSION TEST	19 20 20
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	23
A POEMBLY D. DUGTO OD A DUG OF EUT	

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





# 1. VERIFICATION OF COMPLIANCE

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, Cl 610041				
Factory 1	TCL KING ELECTRICAL APPLIANCE(CHENG DU)CO., LTD.				
Address	No.18 Kexin Road, Hi-Tech Development Zone (West Park), Chengdu, Sichuan				
Factory 2	Yibin XGIMI Optoelectronics Co., Ltd.				
Address	<ul> <li>(1) A3, Intelligent Terminal Industrial Park, Cuiping Disrict, Yibin City, Sichuan Province P.R. China</li> <li>(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</li> </ul>				
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-BLE/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	
c.C	Sky Dong (Project Engineer)	Jan. 08, 2021
Reviewed By	Max Zhang	P. 10.
	Max Zhang (Reviewer)	Jan. 09, 2021
Approved By	Towardies	
	Forrest Lei (Authorized Officer)	Jan. 09, 2021

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Past not/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 5 of 47

# 2.GENERAL INFORMATION

#### 2.1PRODUCT DESCRIPTION

The EUT is designed as a "LED Projector". It is designed by way of utilizing the GFSK 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	4.065dBm(Max)
Bluetooth Version	V 4.2
Modulation	BR ⊠GFSK, EDR ⊠π /4-DQPSK, ⊠8DPSK BLE ⊠GFSK 1Mbps □GFSK 2Mbps
Number of channels	40 Channel
Antenna Designation	FPC Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	3.49dBi
Hardware Version	V03
Software Version	V1.0.0
Power Supply DC 11.01V by battery or DC 19V by adapter	

#### 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
100	0	2402MHZ
	69	2404MHZ
2400~2483.5MHZ	。	C : F
	38	2478 MHZ
	39	2480 MHZ

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Dedicated Festivo/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC he test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 6 of 47

# 2.3 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.

#### 2.4TEST 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.

#### 2.5 SPECIAL ACCESSORIES

Refer to section 2.2.

#### 2.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 7 of 47

#### 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 total RF power, conducted, Uc = ±0.8dB
- Uncertainty of RF power density, conducted, Uc = ±2.6dB
- Uncertainty of spurious emissions, conducted, Uc = ±2.7dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Factorian (Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of ACC whe test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc=cert.com.



Page 8 of 47

# 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX

#### 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.

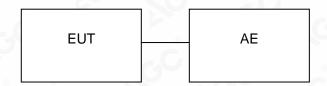
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Restriction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written application of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Page 9 of 47

# 5. SYSTEM TEST CONFIGURATION

#### **5.1 CONFIGURATION OF TESTED SYSTEM**



#### **5.2 EQUIPMENT USED IN TESTED SYSTEM**

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

#### **5.3. SUMMARY OF TEST RESULTS**

FCC RULES	FCC RULES DESCRIPTION OF TEST	
15.209	Radiated Emission	Compliant
15.207	Conducted Emission	Compliant

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 10 of 47

# 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

1201 2GOII IIIZITI GI GOTTE ZIIIIGGIGTT 1201						
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

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



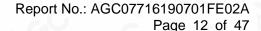
Page 11 of 47

#### 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.
- 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.

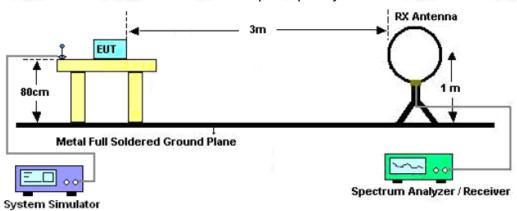
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Festivo/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc=cert.com.



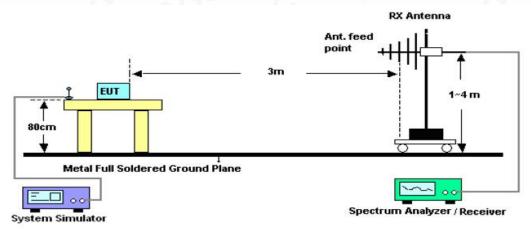


#### 7.2. TEST SETUP

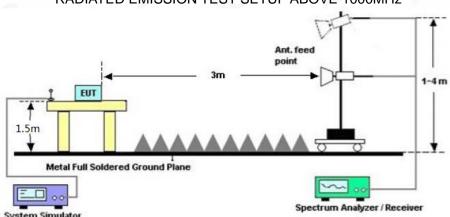
# Radiated Emission Test-Setup Frequency Below 30MHz



#### RADIATED EMISSION TEST SETUP 30MHz-1000MHz



# RADIATED EMISSION TEST SETUP ABOVE 1000MHz



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Coedicated Postuagina Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written pathorization of AGC where the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 13 of 47

#### 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,

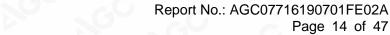
the test records reported below are the worst result compared to other modes.

#### 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.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





#### **RADIATED EMISSION BELOW 1GHZ**

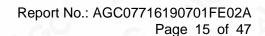
EUT	LED Projector	Model Name	WK03A
Temperature	25° C	Relative Humidity	58%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		120.5333	6.30	18.00	24.30	43.50	-19.20	peak
2		217.5333	12.36	14.97	27.33	46.00	-18.67	peak
3		359.8000	17.62	21.57	39.19	46.00	-6.81	peak
4		390.5167	13.59	22.65	36.24	46.00	-9.76	peak
5	*	720.3167	10.76	28.61	39.37	46.00	-6.63	peak
6		742.9500	9.52	29.12	38.64	46.00	-7.36	peak

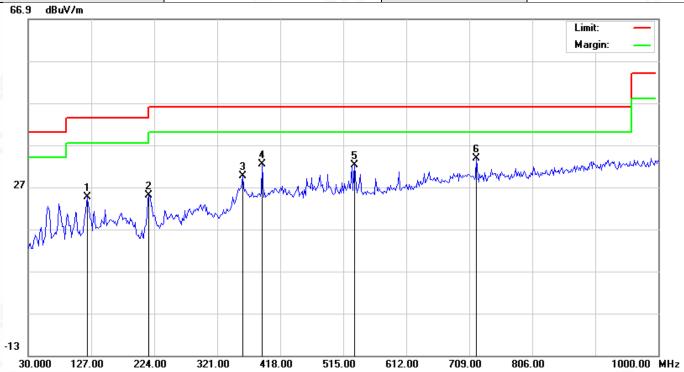
RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





EUT	LED Projector	Model Name	WK03A
Temperature	25° C	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		120.5333	6.61	18.00	24.61	43.50	-18.89	peak
2		215.9167	10.21	14.79	25.00	43.50	-18.50	peak
3		359.8000	8.06	21.57	29.63	46.00	-16.37	peak
4		390.5167	9.77	22.65	32.42	46.00	-13.58	peak
5		532.7833	6.50	25.63	32.13	46.00	-13.87	peak
6	*	720.3167	5.15	28.61	33.76	46.00	-12.24	peak

# RESULT: PASS

- 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.
- 2. All test modes had been tested. The mode 1 is the worst case and recorded in the report.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the bedicated restrou/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Page 16 of 47

he test results the test report.

# **RADIATED EMISSION ABOVE 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

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4804.022	53.47	0.08	53.55	74.00	-20.45	peak
4804.022	46.28	0.08	46.36	54.00	-7.64	AVG
7206.033	48.35	2.21	50.56	74.00	-23.44	peak
7206.033	39.41	2.21	41.62	54.00	-12.38	AVG
_ C	(8)				8	
		8			- 6	8
emark:			8.			- C
	enna Factor + C	able Loss –	Pre-amplifier.			

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

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4804.022	51.27	0.08	51.35	74.00	-22.65	peak
4804.022	45.29	0.08	45.37	54.00	-8.63	AVG
7206.033	46.77	2.21	48.98	74.00	-25.02	peak
7206.033	40.58	2.21	42.79	54.00	-11.21	AVG
				@		
emark:						

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Pest Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issue of Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 17 of 47

//Inspection The test results the test report.

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

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4880.022	52.49	0.14	52.63	74.00	-21.37	peak
4880.022	44.28	0.14	44.42	54.00	-9.58	AVG
7320.033	48.27	2.36	50.63	74.00	-23.37	peak
7320.033	41.03	2.36	43.39	54.00	-10.61	AVG
	®				@	
		3				8
Remark:			@			0
actor = Ante	enna Factor + Ca	ble Loss –	Pre-amplifier.			

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

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4880.022	54.19	0.14	54.33	74.00	-19.67	peak
4880.022	46.28	0.14	46.42	54.00	-7.58	AVG
7320.033	47.29	2.36	49.65	74.00	-24.35	peak
7320.033	41.06	2.36	43.42	54.00	-10.58	AVG
•			-6	©		
emark:				30		(S)
actor = Ante	enna Factor + Ca	ble Loss – P	re-amplifier			

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Dedicated Pesth Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGC presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuence of Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 18 of 47

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

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	V/m) (dBµV/m) (dB) 41 74.00 -21.59 59 54.00 -7.41 86 74.00 -24.14 22 54.00 -10.78	(dB)	value Type	
4960.022	52.19	0.22	52.41	74.00	-21.59	peak	
4960.022	46.37	0.22	46.59	54.00	-7.41	AVG	
7440.033	47.22	2.64	49.86	74.00	-24.14	peak	
7440.033	40.58	2.64	43.22	54.00	-10.78	AVG	
	8				8		
						@	
emark:			0			- C	
actor = Ante	nna Factor + Ca	ble Loss -	Pre-amplifier.				
	nna Factor + Ca	ble Loss –	Pre-amplifier.	1000	10G		

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

					(2)	
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4960.022	53.46	0.22	53.68	74.00	-20.32	peak
4960.022	48.12	0.22	48.34	54.00	-5.66	AVG
7440.033	48.24	2.64	50.88	74.00	-23.12	peak
7440.033	41.69	2.64	44.33	54.00	-9.67	AVG
		-6				
Remark:			-60		0	
actor = Ante	enna Factor + Ca	ble Loss –	Pre-amplifier.			(8)

# **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.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the bedicated restroy/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 19 of 47

# 8. FCC LINE CONDUCTED EMISSION TEST

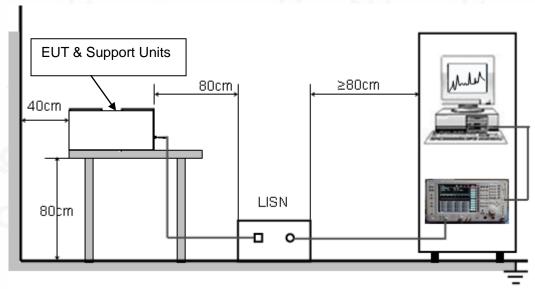
#### 8.1. LIMITS OF LINE CONDUCTED EMISSION TEST

F	Maximum RF Line Voltage							
Frequency	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



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 20 of 47

#### 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 adpater 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.

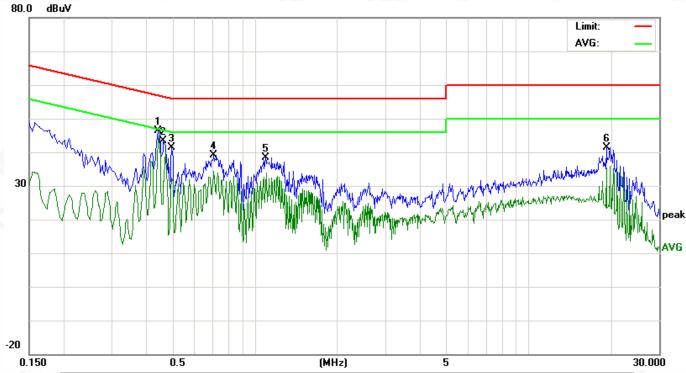
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



Page 21 of 47

# 8.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Line Conducted Emission Test Line 1-L



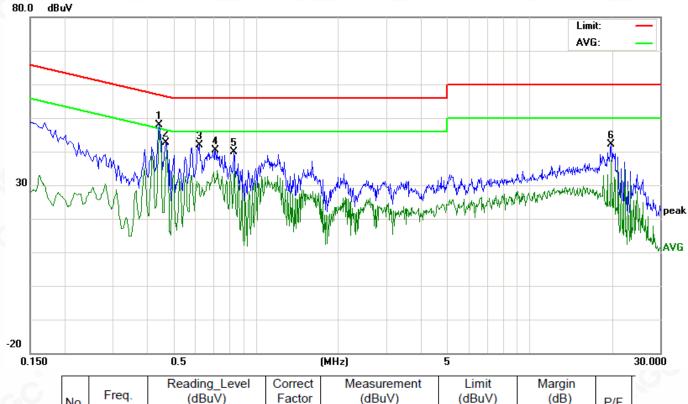
No. Freq.		req. (dBuV)		Correct Factor				Limit (dBuV)		Margin (dB)		P/F	
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.4460	32.76	32.13	29.51	13.62	46.38	45.75	43.13	56.95	46.95	-11.20	-3.82	Р
2	0.4660	29.82	24.84	16.78	13.66	43.48	38.50	30.44	56.58	46.58	-18.08	-16.14	Р
3	0.4980	27.73	19.96	18.92	13.74	41.47	33.70	32.66	56.03	46.03	-22.33	-13.37	Р
4	0.7100	25.38	23.52	19.86	13.81	39.19	37.33	33.67	56.00	46.00	-18.67	-12.33	Р
5	1.0980	24.46	19.23	16.11	13.80	38.26	33.03	29.91	56.00	46.00	-22.97	-16.09	Р
6	19.2780	28.40	24.84	23.00	13.03	41.43	37.87	36.03	60.00	50.00	-22.13	-13.97	Р

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated restriction. Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 22 of 47

#### Line Conducted Emission Test Line 2-N

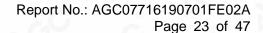


No.	Freq.	Rea	ading_L (dBuV)		Correct Factor		easuren (dBuV)			nit uV)		rgin fB)	P/F
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG	
1	0.4460	34.23	33.01	30.25	13.62	47.85	46.63	43.87	56.95	46.95	-10.32	-3.08	Р
2	0.4700	28.99	27.13	25.25	13.67	42.66	40.80	38.92	56.51	46.51	-15.71	-7.59	Р
3	0.6220	28.16	25.40	16.61	13.82	41.98	39.22	30.43	56.00	46.00	-16.78	-15.57	Р
4	0.7140	26.50	21.73	17.26	13.81	40.31	35.54	31.07	56.00	46.00	-20.46	-14.93	Р
5	0.8340	25.96	20.59	19.03	13.81	39.77	34.40	32.84	56.00	46.00	-21.60	-13.16	Р
6	19.8819	28.89	26.02	23.64	13.12	42.01	39.14	36.76	60.00	50.00	-20.86	-13.24	Р

# **RESULT: PASS**

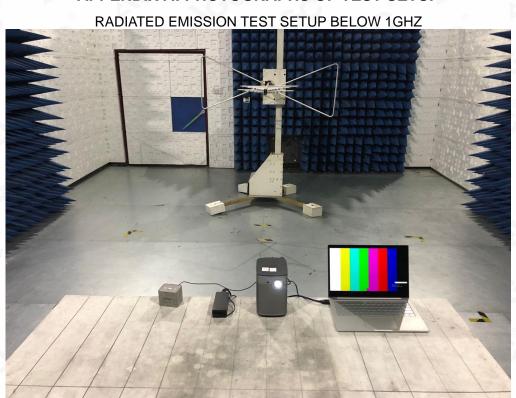
Note: All the test modes had been tested, the mode 1 was the worst case. Only the data of the worst case would be record in this test report.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the steedicated restroutinspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





# APPENDIX A: PHOTOGRAPHS OF TEST SETUP





Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 24 of 47

# CONDUCTED EMISSION TEST SETUP



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Restriction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



Page 25 of 47

#### **APPENDIX B: PHOTOGRAPHS OF EUT**



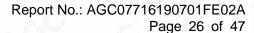


TOP VIEW OF EUT



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated Pest Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written exphorization of AGC presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issue of Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com. g/Inspection The test results he test report.

Attestation of Global Compliance(Shenzhen)Co., Ltd Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: http://cn.agc-cert.com/





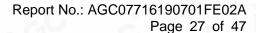








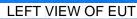
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

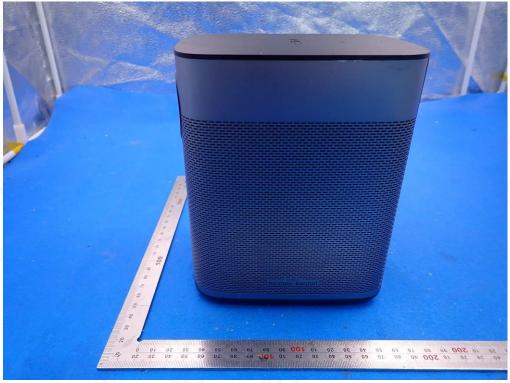




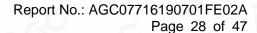
**BACK VIEW OF EUT** 





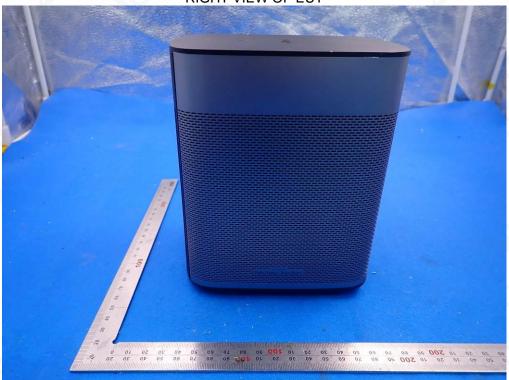


Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





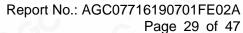
RIGHT VIEW OF EUT



VIEW OF EUT (PORT)-1



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

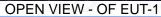




1 ago 25 51 11

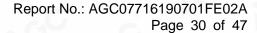
# VIEW OF EUT (PORT)-2







Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.

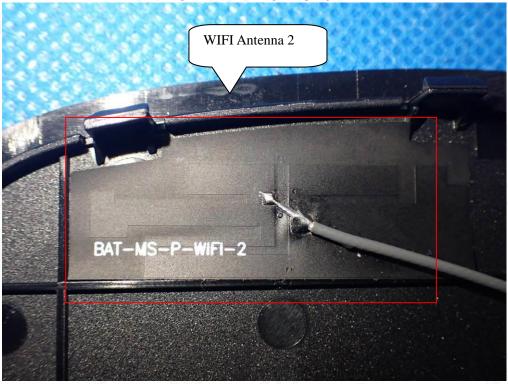




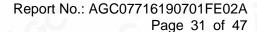
**OPEN VIEW - OF EUT-2** 



**OPEN VIEW - OF EUT-3** 



Compliance Bedicated Festing/Inspection Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Dedicated Pestho/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. The test results Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





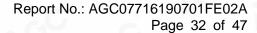
OPEN VIEW - OF EUT-4







Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Dedicated Festing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written portionization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.





INTERNAL VIEW-1 OF EUT

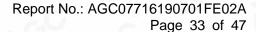






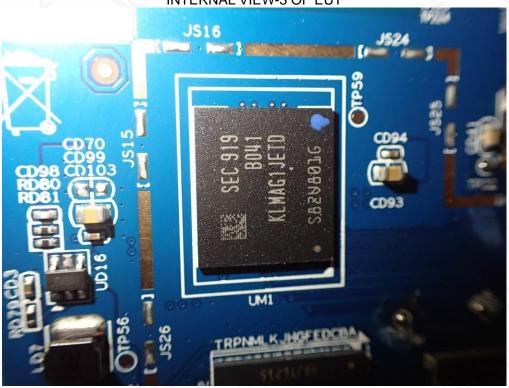
Compliance Dedicated Festing/Inspection Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the conditional report having not been stamped by the conditional report is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written perhorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com. The test results

Attestation of Global Compliance(Shenzhen)Co., Ltd Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd Tel: +86-755 2523 4088 E-mail: agc@agc-cert.com Web: http://cn.agc-cert.com/





**INTERNAL VIEW-3 OF EUT** 







Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.