

USB CAMERA MODULE SPECIFICATION

CLIENT NAME _____

PRODUCT No. GXIVISION-S2M07

PRODUCT NAME _____

SUBMIT DATE _____

VERSION _____

EDIT _____

CHECK _____

CLIENT CONFIRM _____

CLIENT SEAL

CATALOGUE

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1. Key Sepecifications

Module No.	GXIVISION-S2M07
Module Size	32mm*32mm*22mm $\pm$ 0.3mm
Temperature(Operation)	-30℃ to 70℃
Temperature(Stable Image)	0℃ to 50℃
Assembly technique	SMT(ROSH)
Focus	Fixed
Object distance	1cm-infinity
Interface	USB2.0
Power supply	USB bus power
Supply voltage	DC 5V $\pm$ 5%
Maximum Power consumption	1.23W
Operating system request	Windows/android/mac/Linux with uvc
Sensor	1/2.7"
Sensor Package	CSP,Bare Die
Maximum resolution	1920*1080
Pixel Size	3.0 μ m*3.0 μ m
Maximum Image Transfer Rate	MJEG 1920*1080 30FPS MJEG 1280*1024 30FPS MJEG 1280*960 30FPS MJEG 1280*720 30FPS MJEG 1024*768 30FPS MJEG 800*600 30FPS MJEG 640*480 30FPS MJEG 640*360 30FPS MJEG 352*288 30FPS MJEG 320*240 30FPS
S/N Ratio	38.6db
Max Dynamic Range	72db
Shutter type	Electronic rolling shutter
AGC/AEC/Whiter balance	Auto
Output Formats	MJPEG
Module Package	Anti-electrostatic tray
Certifications	FCC/CE/ROSH

3. Appearance Specification

APPRARANCE				
SN	ITEMS	REQUESTS	INSPECTION METHOD	NONCONFORMANCE GRADE
1	MODULE APPEARANCE	No dirt on the surface of the module, no visible scratches, no impurities in the plastic	Eight times Magnifying glass	—
2	LENS	No visible scars or smudges shall be observed during head-up examination with 45 degree reflected light under $800\pm 100\text{Lux}$ intensity	Eight times Magnifying glass	—
3	THREADLOCKER	The dispensing length is 1/3-1/2 of the circumference. The dispensing glue should not overflow to the end face of the lens and the lens base	Eight times Magnifying glass	—
4	SEALANT	The sealant should be evenly filled between the base and FPC, and there should be no gap without uneven thickness, and there should be no glue overflow at the edge of FPC, leading to the phenomenon of excessive size	Eight times Magnifying glass	—
5	PCB	1. No smudges on the surface and the typeface is clear; 2. Edge burr length less than 1mm, width less than 0.3mm; 3. The length of edge notch is less than 1mm and the width is less than 0.1mm. There are no more than 2 edges per edge	Forty five times microscope (continuous zooming)	—
EXTERNAL DIMENSION				
SN	ITEMS	REQUESTS	INSPECTION METHOD	NONCONFORMANCE GRADE
1	HEIGHT	conform to requirement of the drawing	Digital caliper	—
2	LENGTH	conform to requirement of the drawing	Digital caliper	—
3	WIDTH	conform to requirement of the drawing	Digital caliper	—

4. Image Specification

OPTICAL PERFORMANCE TESTING REQUIREMENTS				
SN	ITEMS	REQUESTS	INSPECTION METHOD	NONCONFORM- ANCE GRADE
1	Dust	Under the white field, the image is obtained. No visible foreign matter is allowed in the whole visual image	Test fixture, light box, 6500K white backlight	—
2	Image direction	conform to requirement of the drawing	Test fixture	—
3	Dead&Wound Pixel	1.Dark field: the total number of bright spots is less than 400pixel;The cluster light of 2 adjacent pixel is less than 20. No more than 3 pixel cluster highlights; 2.Under white field: total dark points less than 400pixel; The cluster dark point of 2 adjacent pixel is less than 20;No more than 3 pixel cluster highlights	Test fixture, light box, 6500K white backlight	—
4	Resolution	Hd 2 megapixel: The center is not less than 600LW/PH	MTF test program	—
5	FOV	Horizontal Vertical Diagonal	Test fixture, Field Angle marker board	—
6	Shading	The mean brightness of the four corners away from the center 90% of the test field should reach at least 45% of the brightness of the center test field. The brightness of each Angle is above 35% of the central brightness (the size of the sampling frame is 40*40 pixels, and the sensor dark Angle compensation function is not enabled)	Test fixture, light box, 3400Lux, 6500K white backlight	—
7	Color	The color reduction error is not greater than 20%	Testing software Color checker card	—
8	TV dis-tortion	Neither pillow distortion (positive) nor barrel distortion (negative) is greater than 1%	Test software, IS012233 standard board	—
9	Grayscale	The interpolation of two adjacent resolvable grayscale luminance must be less than 8	Test software, grey scale board	—
10	CA	less than 0.5	Test software, IS012233 standard board	—
11	Torsional	No less than 1 kgf.cm	torque wrench	—
12	Thrust	No less than 2 N	thrust meter	—

Description of nonconforming product classification:

- a) Serious nonconformities: batch nonconformities judged by inspection, or nonconformities that cause great economic losses and directly affect product quality, main functions, performance and technical indexes, etc., shall be denoted by letter A
- b) General nonconformity: General nonconformity refers to the nonconforming product that can meet the following conditions at the same time, which is represented by letter B
 - i. Does not affect the appearance quality of the final product;
 - ii. Does not affect the technical performance of the final product
 - iii. Raw materials or final products do not affect the processing or assembly of the following process

5. Sample Plan

IMAGING AND RELIABILITY				
SN	ITEMS	SAMPLING FREQUENCY	INSPECTION METHOD	REMARK
1	Dust	each batch N=5, C=0	Same as production	Production full inspection project
2	Image direction	each batch N=5, C=0	Test fixture	Production full inspection project
3	Dead &Wound Pixel	each batch N=5, C=0	Same as production	Production full inspection project
4	Resolution	each batch N=5, C=0	MTF test program	Production full inspection project
5	FOV	each batch N=5, C=0	Test fixture、Field Angle marker board	Sample phase full inspection and evaluation project QA sampling inspection project
6	Shading	each batch N=5, C=0	Test fixture、light box 3400Lux, 6500K white backlight	Production full inspection project
7	Color	each batch N=5, C=0	testing software、Color checker card	Sample phase full inspection and evaluation project QA sampling inspection project
8	TV distortion	each batch N=5, C=0	Test software、ISO12233 standard board	Sample phase full inspection and evaluation project QA sampling inspection project
9	Grayscale	each batch N=5, C=0	Test software grey scale board	Sample phase full inspection and evaluation project QA sampling inspection project
10	Reliability test	Sample trial production stage: sampling plan: 2PCS/Per production lot, acceptable quality level 0/1 Production stabilization stage: sampling plan “Each project 5PCS/monthly, acceptable quality level 0/1		
APPRARANCE ITEMS				
1	MODULE APPEARANCE	AQL=0.65	Eight times Magnifying glass	Production full inspection project
2	LENS	AQL=0.65	Eight times Magnifying glass	Production full inspection project
3	THREADLOCKER	AQL=0.65	Eight times Magnifying glass	Production full inspection project
4	SEALANT	AQL=0.65	Eight times Magnifying glass	Production full inspection project
5	PCB	AQL=0.65	Forty five times microscope(continuous zooming)	Production full inspection project
6	connector	AQL=0.65	Forty five times microscope(continuous zooming)	Production full inspection project
APPRARANCE SIZE				
1	HEIGHT	AQL=0.65	Same as production	Production full inspection project
2	LENGTH	AQL=0.65	Same as production	Production full inspection project
3	WIDTH	AQL=0.65	Same as production	Production full inspection project

4	Torsional	each batch N=5, C=0	torque wrench	QA sampling inspection project
5	Thrust	each batch N=5, C=0	thrust meter	QA sampling inspection project

6. Reliability Specification

SN	ITEMS	CONDITIONS AND REQUIREMENTS	TESTING EQUIPMENT
1	low temperature storage	-30℃, 96 hours Lift and cool for 30 minutes each	low-temperature cabinet
2	cold operation	-30℃, 96 hours Lift and cool for 30 minutes each	low-temperature cabinet
3	high-temperature storage	80℃, 96 hours Lift and cool for 30 minutes each	high-temperature cabinet
4	hot operation	70℃, 96 hours Lift and cool for 30 minutes each	high-temperature cabinet
5	High temperature and high humidity storage	60℃, 90%RH, 120 hours Lift and cool for 30 minutes each	High temperature humidity cabinet
6	High temperature and high humidity operation	40℃, 90%RH, 48 hours Lift and cool for 30 minutes each	High temperature humidity cabinet
7	Thermal Shock Test	-30℃ to 80℃ (30min): convert high-temperature to low-temperature less than 5 minutes, 10 times	low-temperature cabinet / high-temperature cabinet
8	Free drop test after packing	Height 150cm, 10 times	Oak floor
9	Vibration test after packing	10Hz-200Hz-10Hz, amplitude 2mm, XYZ the triple threat, vibrate 2 hours	vibration table
10	Electrostatic test (power off)	150Pf, 330Ω±8KV, air discharge, test 10 times	Static electricity tester
1. After reliability testing, the size, appearance, torque and optical properties of the product meet the requirements 2. test condition: Illumination: small light box 1500±10%LUX; big light box 6000±10%LUX color temperature: 4400±150K			PC testing software、MODULE test platform