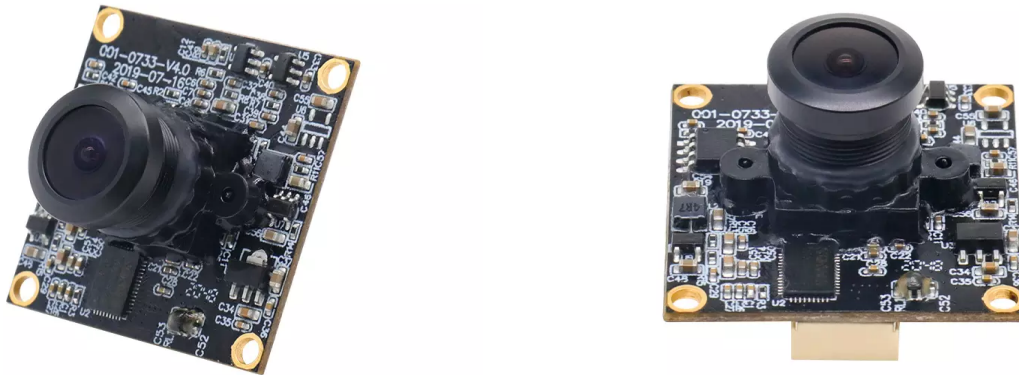




HAMPO-USB-0733-V4.0

2MP OV2718 Fixed Focus USB 2.0 Camera Module



Hampo 003-0733 is a native 16:9 HD Camera that delivers best-in-class low-light sensitivity, HDR, and 1080p HD video. These capabilities make the OV2718 camera module an ideal embedded solution for mainstream security and surveillance systems. Built on advanced 2.8-micron OmniBSI™2 pixel architecture, the module can record 1080p HD video at 30 fps in HDR mode.

The 2MP mini USB camera module with 70°C of operating temperature, which are widely used for smart home such as smart oven cam, Micro-wave oven, security monitoring, and access control system etc.

Key Features

- High dynamic range: The dynamic range up to 86dB, which can provide sharp image and accurate color reproduction even under a backlight environment.
- 1080P HD Resolution: High precision and high quality pictures!
- 1/2.9" OV2718 Image Sensor Processor Functions: Lens correction, defective pixel cancelation and automatic black level correction.
- Applications: This tiny 32mm x 32mm camera board can be installed in most hidden and narrow position for a home surveillance system, smart oven cam, Micro-wave oven, security monitoring, robot, ATM and access control system etc application.



HAMPO-USB-0733-V4.0

2MP OV2718 Fixed Focus USB 2.0 Camera Module

Camera Module No.	HAMPO-USB-0733-V4.0
Resolution	2MP
Image Sensor	OV2718
Sensor Type	1/2.9"
Pixel Size	2.8 um x 2.8 um
EFL	2.85 mm
F.NO	2.0
Pixel	1920 x 1080
View Angle	140°(DFOV) 107°(HFOV) 60°(VFOV)
Lens TTL	14.25mm
Module Type	Fixed Focus
Lens Model	HAMPO-LENS-21
Interface	USB 2.0
Output Format	MJPEG / YUV
Auto Control	Saturation, Contrast, Acutance White Balance, Exposure
Audio	/
Input Voltage	DC 5V
Working Current	Max 200mA
PCB Size	32mm x 32mm
System Compatibility	Windows XP (SP2, SP3), Vista, 7, 8, 10, 11 Android, Mac OS, Linux or OS with UVC Driver Raspberry Pi by USB Port
Software for USB Camera	AMCAP, Webcam Viewer, V4L2 Controls Contacam, VLC Player, MotionEye OS iSpy, ZoneMider, Yawcam
Lens Type	650nm IR Filter
Operating Temperature	-10°C to +70°C
USB Cable	USB-Cable-U015

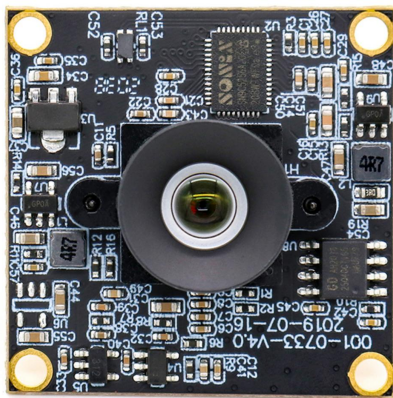
Wide Compatibility with Windows, Android, Mac OS, Linux, or Raspberry Pi



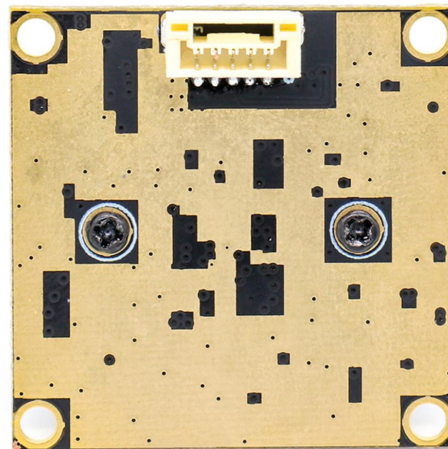


HAMPO-USB-0733-V4.0

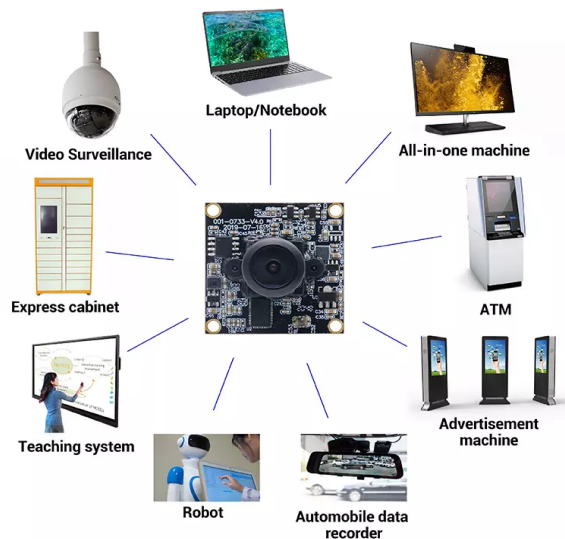
2MP OV2718 Fixed Focus USB 2.0 Camera Module



Top View



Bottom View



Application



Mating Connector

Lens parameter:4G+IR

EFL:2.1mm

F.NO:2.0

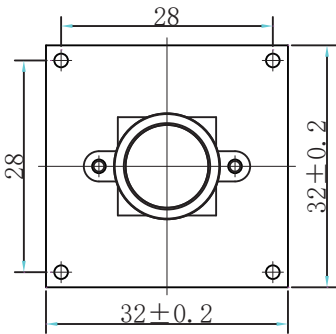
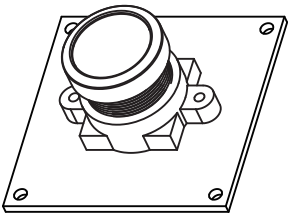
View Angle:D140° H107° V60°

TV Distortion:<-41.8%

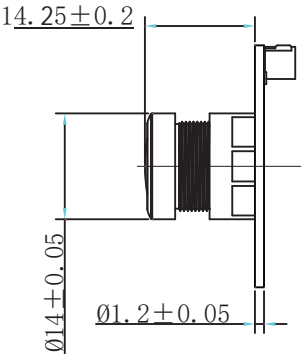
Chip Type:1/2.9"

Array Size:1080P

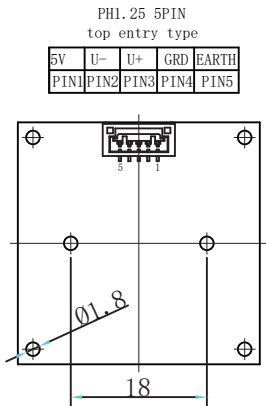
Lens Size:14.25mm



TOP VIEW



SIDE VIEW



BOTTOM VIEW

NOTE

1.The unmarked tolerance of linear dimension is $\pm 0.1\text{mm}$

2.Sensor :OV2718-H77A-2B-CSP5 77PI

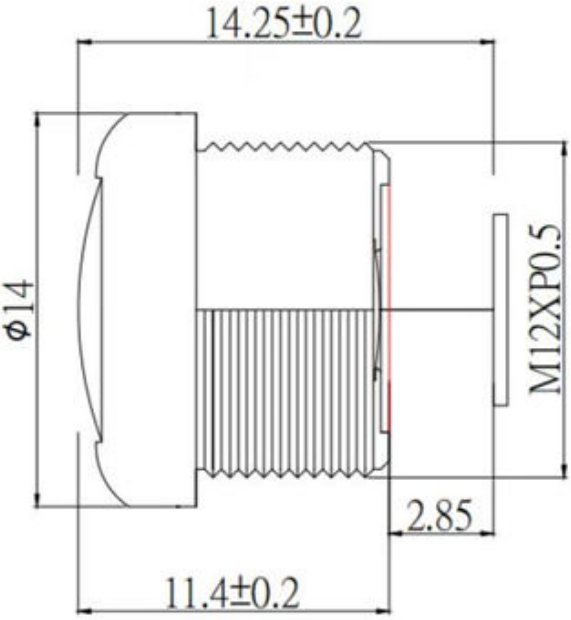
3.Lens:2118

UNSPECIFIED TOL:		SIGNATURE		DATE		R & D Center		DONGGUAN HAMPO ELECTRONIC TECHNOLOGY CO.,LTD	
.XXX	± 0.005	DWN. BY	MIKE	2022. 05. 13		PART NAME		USB Camera	
.XX	± 0.05	CHK. BY				DWG NO		2. 03. 0733. 0422-PCBA	
.X	± 0.1	APP. BY				UNIT	SHEET	SIZE	PART NO.
∠	$\pm 0.5^{\circ}$	MATERIAL	/	SCALE		mm	1/1	A4	/
		TREATMENT	/	1:1					

Spec :

- 1.Sensor Size : 1 /2.9"
- 2.Focal Length(EFL) : f= 2.1mm ± 0.3
- 3.F/NO(Infinie) : F/NO= 2.0
- 4.MechanicalBFL : MBFL= 2.85mm.± 0.3
- 5Field of View : D140 ° H107 ° V60 °
- 6.TV Distortion ≤-41.8%
- 7.Thread Size : M12*P0.5
- 8Element : 4G+IR
- 9.Chief Ray Angel : <21.7°
- 10.Max Imxage Circle : Ø6.6
- 11. REL.Illumination : ≥ 64 %
- 12. Working Tenperature : -30°C --80°C
- 13.IR FILTER SPEC.(Built-in , Othersavai lable)

Tavg>=88% @ 440-620 nm
T=50% @ 648±10 nm
Tavg<=3% @ 700-1000 nm
T<5% @ >1050nm



							-TOLERANCES- UNLESS OTHERWISE SPECIFIED		DRAW:		Product Title:	
							XX	±0.15	绘图:		品名:	
							XX.XX	±0.10	DEN			
							XXXX	±0.05	设计:		Part No.:	
							ANG	±0.5	CHECK:		料号:	
									校对:		Dwg No.:	
									APPD:		图号:	
									核准:			



Confidential for
Kinghorn only



datasheet

PRELIMINARY SPECIFICATION

1/2.9" color CMOS 1080p (1920 x 1080) high dynamic range (HDR)
high definition (HD) image sensor

OV2718

applications

- security and surveillance cameras
- video applications
- smart home

ordering information

- **OV02718-H77A-2A** (color, lead-free)
77-pin CSP
- **OV02718-H77A-PA** (color, lead-free)
77-pin CSP with protective film



note Since it is impossible to check compatibility with all displays, check the interoperability before committing to mass production.

features

- support for image size: 1920x1080, VGA, QVGA, and any cropped size
- high dynamic range
- high sensitivity
- low power consumption
- image sensor processor functions: lens correction, defective pixel cancelation, and automatic black level correction
- supported output formats: RAW
- horizontal and vertical sub-sampling
- SCCB for register programming
- high speed serial data transfer with MIPI CSI-2/LVDS
- parallel 12-bit DVP output
- external frame synchronization capability
- one time programmable (OTP) memory



note To reduce image artifacts from Infrared light, and provide the best image quality, OmniVision recommends an IR cut filter

key specifications (typical)

- **active array size:** 1920 x 1080
- **power supply:**
analog: 3.14 ~ 3.47V
digital: 1.2 ~ 1.4V
DOVDD: 1.7 ~ 1.9V
AVDD: 1.7 ~ 1.9V
- **power requirements:**
active: 350 mW
standby: 1.14 mW
- **temperature range:**
operating: -30°C to 85°C junction temperature (see **table 8-2**)
stable image: 0°C to +60°C junction temperature (see **table 8-2**)
- **output interfaces:** up to 4-lane MIPI CSI-2/LVDS, 12-bit DVP
- **input clock frequency:** 6 ~ 36 MHz
- **lens size:** 1/2.9"
- **lens chief ray angle:** 9° (see **figure 10-2**)
- **output formats:** linear - 12 bit RAW; HDR - 2x12 bit DCG RAW, 16 bit combined DCG, 12 bit compressed combined DCG
- **scan mode:** progressive
- **shutter:** rolling shutter
- **maximum image transfer rate:** 30 fps full resolution HDR, 30 fps full resolution linear
- **sensitivity:** 26200 e/lux.sec @ 530 nm
- **max S/N ratio:** 42.6 dB
- **dynamic range:** 120 dB
- **pixel size:** 2.8 μm x 2.8 μm
- **dark current:** 16 e⁻/s
- **image area:** 5482.35 μm x 3202 μm
- **package dimensions:** 6534 μm x 5724 μm



Camera Reliability Test

Reliability Inspection Item			Testing Method	Acceptance Criteria
Category		Item		
Environmental	Storage Temperature	High 60°C 96 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature	High 60°C 24 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 24 Hours	Temperature Chamber	No Abnormal Situation
	Humidity	60°C 80% 24 Hours	Temperature Chamber	No Abnormal Situation
	Thermal Shock	High 60°C 0.5 Hours Low -20°C 0.5 Hours Cycling in 24 Hours	Temperature Chamber	No Abnormal Situation
Physical	Drop Test (Free Falling)	Without Package 60cm	10 Times on Wood Floor	Electrically Functional
		With Package 60cm	10 Times on Wood Floor	Electrically Functional
	Vibration Test	50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Z-Axis 2mm 30min	Vibration Table	Electrically Functional
	Cable Tensile Strength Test	Loading Weight 4 kg 60 Seconds Cycling in 24 Hours	Tensile Testing Machine	Electrically Functional
Electrical	ESD Test	Contact Discharge 2 KV	ESD Testing Machine	Electrically Functional
		Air Discharge 4 KV	ESD Testing Machine	Electrically Functional
	Aging Test	On/Off 30 Seconds Cycling in 24 Hours	Power Switch	Electrically Functional
	USB Connector	On/Off 250 Times	Plug and Unplug	Electrically Functional





Camera Inspection Standard

Inspection Item		Inspection Method	Standard of Inspection
Category	Item		
Appearance	FPC/ PCB	Color	Major Difference is Not Allowed.
		Be Torn/Chopped	Copper Crack Exposure is Not Allowed.
		Marking	Clear, Recognizable (Within 30cm Distance)
	Holder	Scratches	The Inside Crack Exposure is Not Allowed
		Gap	Meet the Height Standard
		Screw	Make Sure Screws Are Presented (If Any)
		Damage	The Inside Crack Exposure is Not Allowed
	Lens	Scratch	No Effect On Resolution Standard
		Contamination	No Effect On Resolution Standard
		Oil Film	No Effect On Resolution Standard
		Cover Tape	No Issue On Appearance.
Function	Image	No Communication	Test Board Not Allowed
		Bright Pixel	Black Board Not Allowed In the Image Center
		Dark Pixel	White board Not Allowed In the Image Center
		Blurry	The Naked Eye Not Allowed
		No Image	The Naked Eye Not Allowed
		Vertical Line	The Naked Eye Not Allowed
		Horizontal Line	The Naked Eye Not Allowed
		Light Leakage	The Naked Eye Not Allowed
		Blinking Image	The Naked Eye Not Allowed
		Bruise	Inspection Jig Not Allowed
		Resolution	Chart Follows Outgoing Inspection Chart Standard
		Color	The Naked Eye No Issue
		Noise	The Naked Eye Not Allowed
		Corner Dark	The Naked Eye Less Than 100px By 100px
		Color Resolution	The Naked Eye No Issue
Dimension		Height	The Naked Eye Follows Approval Data Sheet
		Width	The Naked Eye Follows Approval Data Sheet
		Length	The Naked Eye Follows Approval Data Sheet
		Overall	The Naked Eye Follows Approval Data Sheet

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Company HAMPO

Dongguan Hampo Electronic Technology Co., Ltd. was established in 2015, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. Hampo is occupying 150,000 square feet automated plants with 500 employees of annual throughput 180,000,000 units cameras.

Hampo provides OEM, ODM design, contract manufacturing, and builds the camera products. You may provide the requirements to us, even with a hand draft, our sales and engineering work together to meet your needs. We consider ourselves your last-term partner in developing practical and innovative solutions.

Our team covers everything from initial concept development to mass produced product. Hampo specializes in customized camera design, raw material, electronic engineering, firmware/software development, product testing, and packing design. Our experienced strategic supply systems offer a robust and dependable manufacturing capacity for orders of various sizes.



Limited Warranty

Hampo provides the following limited warranty if you purchased the Product(s) directly from Hampo company or from Hampo's website, www.hampotech.com. Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. Hampo guarantees that the Product(s) will be free from defects in materials and workmanship under normal use for a period of one (1) year from the date you receive the product ("Warranty Period").

For all Product(s) that contain or develop material defects in materials or workmanship during the Warranty Period, Hampo will, at its sole option, either: (i) repair the Product(s); (ii) replace the Product(s) with a new or refurbished Product(s) (replacement Product(s) being of identical model or functional equivalent); or (iii) provide you a refund of the price you paid for the Product(s).

This Limited Warranty of Hampo is solely limited to repair and/or replacement on the terms set forth above. Hampo is not reliable or responsible for any subsequent events.

