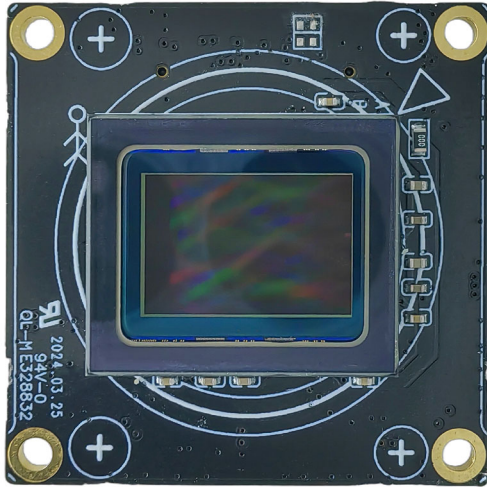
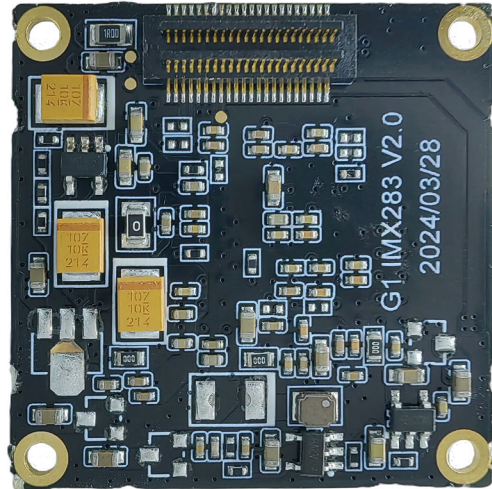


YDS-CMNL-IMX283 V1.0

20.3MP Sony IMX283 No Lens Camera Module



Front View



Back View

Overview

The YDS-CMNL-IMX283 V1.0 camera module No Lens image sensor board uses the Sony IMX283 high-quality image sensor, which has a diagonal of 15.86mm (1 inch) CMOS image sensor, a pixel of 2.4um, a color square pixel display, an effective pixel of 20.30 megapixels, and a high-definition image.

When used with the master board, it can support 20MP pixel high-definition photography, up to 4K@60FPS (differential), 4K@30FPS video shooting, with the characteristics of true color restoration and excellent image quality. It is connected by a board-to-board socket or coaxial cable adaptor. The board PCB frame size is 32x32mm.



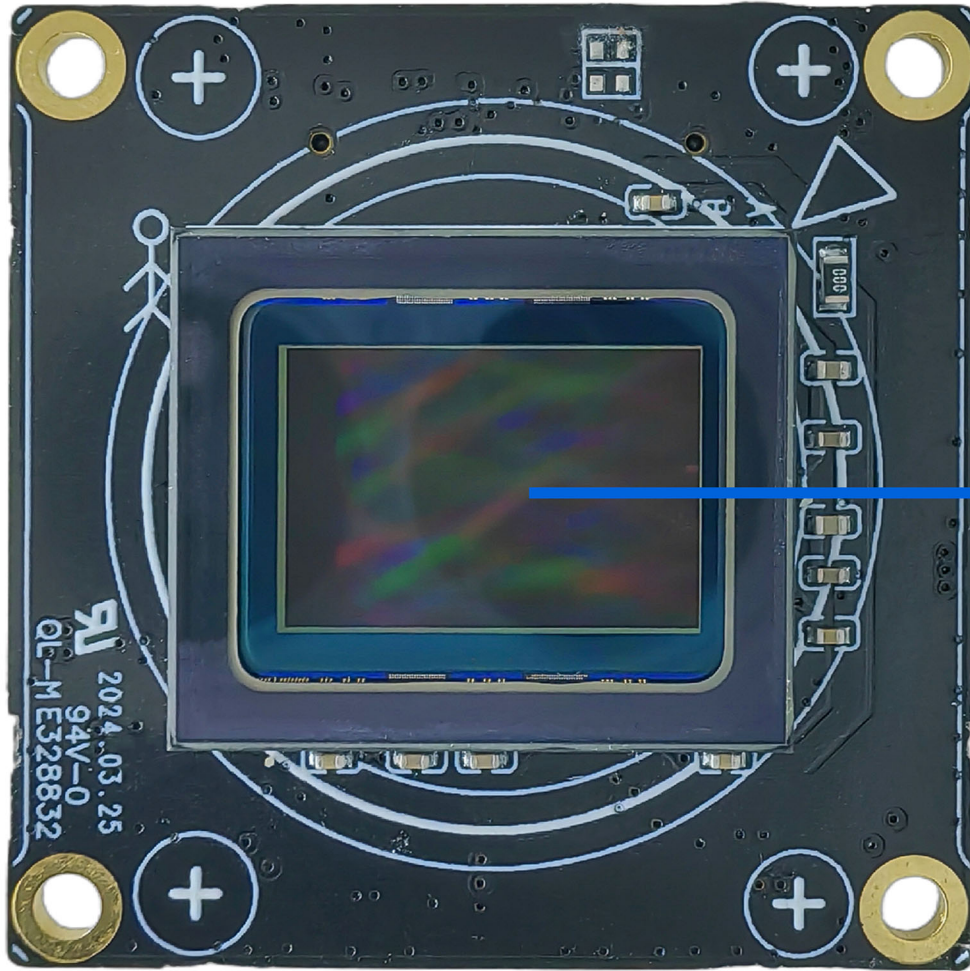
YDS-CMNL-IMX283 V1.0 20.3MP Sony IMX283 No Lens Camera Module

Specifications

Model No.	YDS-CMNL-IMX283 V1.0
Image Sensor	IMX283
Image Sensor Type	CMOS
Effective Pixels	20.30 Megapixels
Sensor Size	1"
Pixel Size	2.40 um x 2.40 um
Video Frame Rate	4K@24/25/30/FPS, 4K@48/50/60FPS (Differential) 2.7K@24/25/30/48/50/60FPS 1440@24/25/30/48/50/60FPS 1080P@24/25/30/48/50/60/120FPS 720P@24/25/30/48/50/60/120/240FPS
Video Slow Motion	OFF, 4K2X, 1080P4X, 720P8X
Photo Format	JPG
Photo Resolution (with Master Board)	20MP (5200x3900) 13MP (4160x3120) 12MP (4000x3000) 10MP (3648x2736) 8MP (3264x2448) 5MP (2592x1944) 3MP (2048x1536) 2MP (1920x1080)
Operating Temperature	-10°C to +60°C
Storage Temperature	-20°C to +80°C
Humidity	20% to 80%
PCB Dimensions	32 x 32 mm
PCB Screw Hole Spacing	28 x 28 mm
PCB Screw Hole Diameter	2 mm
Lens Mount Screw Diameter	1.6 mm



YDS-CMNL-IMX283 V1.0 20.3MP Sony IMX283 No Lens Camera Module



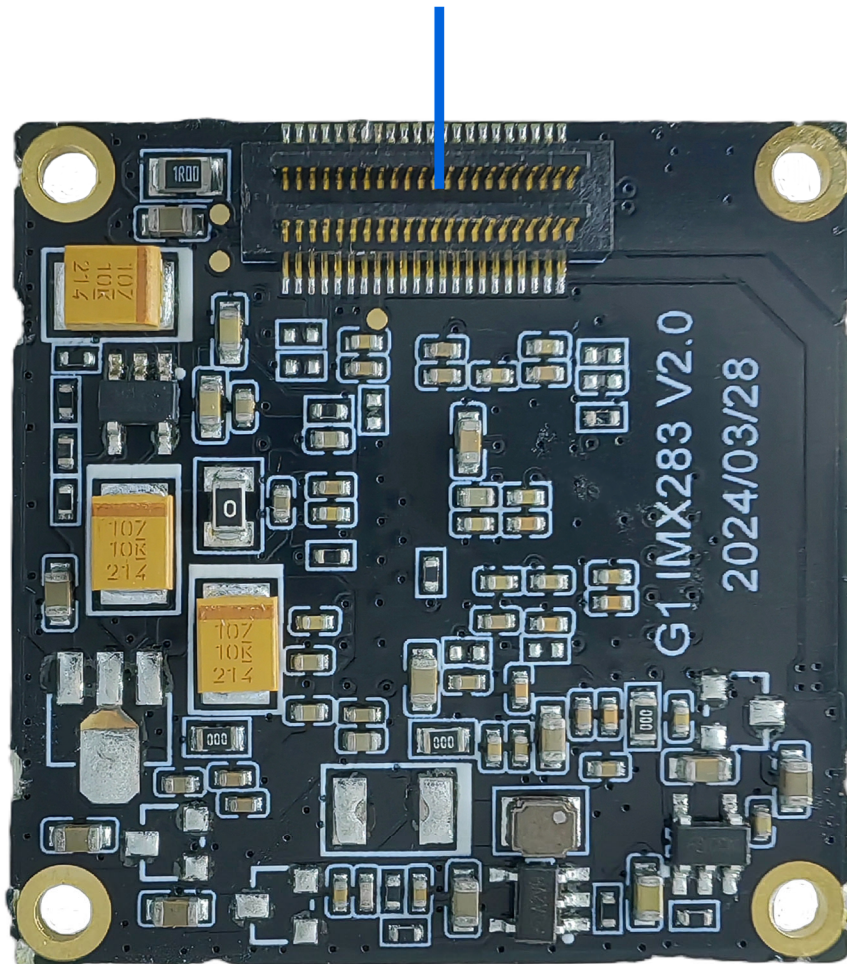
Sony IMX283 sensor



YDS-CMNL-IMX283 V1.0
20.3MP Sony IMX283 No Lens Camera Module

Sensor通过板对板 连接器连接G1主板

sensor Connect to the G1 motherboard



[Product Information]

Ver.1.0

IMX283CQJ

Diagonal 15.86 mm (Type 1) CMOS Image Sensor with Square Pixel for Color Cameras

Description

The IMX283CQJ is a diagonal 15.86 mm (Type 1) CMOS image sensor with a color square pixel array and approximately 20.30 M effective pixels. 12-bit digital output makes it possible to output the signals of approximately 20.30 M effective pixels with high definition for shooting still pictures. It also operates with three power supply voltages: analog 2.9 V, digital 1.2 V and 1.8 V, and achieves low power consumption. Furthermore, it realizes 12-bit digital output for shooting high-speed and high-definition moving pictures by horizontal and vertical addition and subsampling. Realizing high-sensitivity, low dark current, this sensor also has an electronic shutter function with variable storage time.

In addition, this product is designed for use in consumer use digital still camera and consumer use camcorder. When using this for another application, Sony Semiconductor Solutions Corporation does not guarantee the quality and reliability of the product. Therefore, don't use this for applications other than consumer use digital still camera and consumer use camcorder.

In addition, individual specification change cannot be supported because this is a standard product.

Consult your Sony Semiconductor Solutions Corporation sales representative if you have any questions.

Features

- ◆ CMOS active pixel type pixels
- ◆ Input clock frequency 6 to 27 MHz
- ◆ MIPI Specifications (CSI-2 high-speed serial interface)
- ◆ All-pixel scan mode
 - Various readout modes (*)
- ◆ High-sensitivity, low dark current, no smear, excellent anti-blooming characteristics
- ◆ Vertical and horizontal arbitrary cropping function
- ◆ Variable-speed shutter function (minimum unit: 1 horizontal period)
- ◆ Low power consumption
- ◆ H driver, V driver and I²C communication circuit on chip
- ◆ CDS/PGA on chip: Gain +27 dB (step pitch 0.1 dB)
- ◆ 9-bit/10-bit/12-bit A/D conversion on chip
- ◆ R, G, B primary color mosaic filters on chip
- ◆ 118-pin high-precision ceramic package

* Please refer to the datasheet for binning/subsampling details of readout modes.

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Sony logo is a registered trademark of Sony Corporation.

Device Structure

◆ CMOS image sensor	
◆ Image size	Diagonal 15.86 mm (Type 1)
◆ Total number of pixels	5592 (H) × 3710 (V) approx. 20.75 M pixels
◆ Number of effective pixels	
- Type 1 approx. 20.30 M pixels use	5496 (H) × 3694 (V) approx. 20.30 M pixels
- Type 1/1.4 approx. 8.42 M pixels use	3872 (H) × 2174 (V) approx. 8.42 M pixels
◆ Number of active pixels	
- Type 1 approx. 20.30 M pixels use	5496 (H) × 3672 (V) approx. 20.18 M pixels diagonal 15.86 mm
- Type 1/1.4 approx. 8.42 M pixels use	3872 (H) × 2168 (V) approx. 8.39 M pixels diagonal 10.65 mm
◆ Number of recommended recording pixels	
- Type 1 approx. 20.30 M pixels use	5472 (H) × 3648 (V) approx. 19.96 M pixels aspect ratio 3:2
- Type 1/1.4 approx. 8.42 M pixels use	3840 (H) × 2160 (V) approx. 8.29 M pixels aspect ratio 16:9
◆ Chip size	16.226 mm (H) × 12.654 mm (V) (include scribe area)
◆ Unit cell size	2.40 μm (H) × 2.40 μm (V)
◆ Optical black	Horizontal (H) direction : Front 48 pixels, rear 0 pixel Vertical (V) direction : Front 16 pixels, rear 0 pixel
◆ Package	118 pin LGA

Image Sensor Characteristics

(T_j = 60 °C)

Item	Value	Remarks
Sensitivity (F5.6)	Typ. 1874 digit	1/30 s integration
Saturation signal	Min. 3824 digit	

Basic Drive Mode

Type 1 Approx. 20.30 M Pixels (3:2)

Drive mode	Number of recording pixels	Max frame rate [frame/s]	Output data bit length [bit]
Readout mode 0	5472 (H) × 3648 (V) approx. 19.96 M pixels	21.40	12
Readout mode 1	5472 (H) × 3648 (V) approx. 19.96 M pixels	25.48	10
Readout mode 1A	5472 (H) × 3078 (V) approx. 16.84 M pixels	30.17	10
Readout mode 1S	3000 (H) × 3000 (V) approx. 9.00 M pixels	42.96	10
Readout mode 2	2736 (H) × 1824 (V) approx. 4.99 M pixels	51.80	12
Readout mode 2A	2736 (H) × 1538 (V) approx. 4.21 M pixels	60.27	12
Readout mode 3	1824 (H) × 1216 (V) approx. 2.22 M pixels	60.36	12
Readout mode 4	1824 (H) × 370 (V) approx. 0.67 M pixels	240.21	12
Readout mode 5	1824 (H) × 190 (V) approx. 0.35 M pixels	452.03	12
Readout mode 6	2736 (H) × 1538 (V) approx. 4.21 M pixels	60.01	10

Type 1/1.4 Approx. 8.42 M Pixels (16:9)

Drive mode	Number of recording pixels	Max frame rate [frame/s]	Output data bit length [bit]
Readout mode 1	3840 (H) × 2160 (V) approx. 8.29 M pixels	60.16	10

Cameras Applications



Automotive Driver Pilot



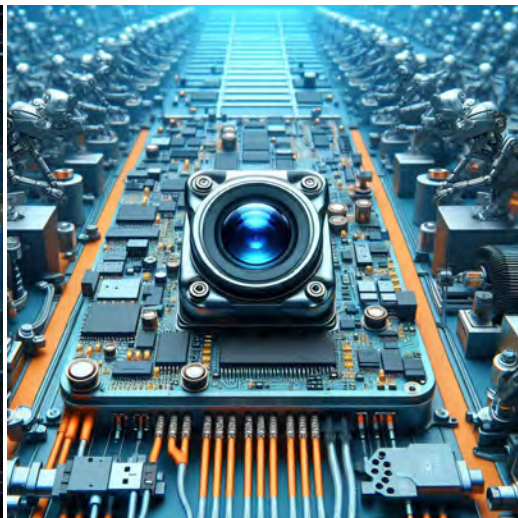
Live Streaming



Video Conference



Eye Tracker Biometric Detection



Machine Vision



Agricultural Monitor



Night Vision Security



Drone and Sports Eagle Eyes



Interactive Pet Camera



YDS CAMERA MODULE

your best camera partner

Camera Module Pinout Definition Reference Chart

OmniVision	Sony	Samsung	On-Semi	Aptina	Himax	GalaxyCore	PixArt	SmartSens	Sensors
Pin Signal		Description							
DGND GND		ground for digital circuit							
AGND		ground for analog circuit							
PCLK DCK		DVP PCLK output							
XCLR PWDN XSHUTDOWN STANDBY		power down active high with internal pull-down resistor							
MCLK XVCLK XCLK INCK		system input clock							
RESET RST		reset active low with internal pull-up resistor							
NC NULL		no connect							
SDA SIO_D SIOD		SCCB data							
SCL SIO_C SIOC		SCCB input clock							
VSYNC XVS FSYNC		DVP VSYNC output							
HREF XHS		DVP HREF output							
DOVDD		power for I/O circuit							
AFVDD		power for VCM circuit							
AVDD		power for analog circuit							
DVDD		power for digital circuit							
STROBE FSTROBE		strobe output							
FSIN		synchronize the VSYNC signal from the other sensor							
SID		SCCB last bit ID input							
ILPWM		mechanical shutter output indicator							
FREQ		frame exposure / mechanical shutter							
GPIO		general purpose inputs							
SLASEL		I2C slave address select							
AFEN		CEN chip enable active high on VCM driver IC							
MIPI Interface									
MDN0 DN0 MD0N DATA_N DMO1N		MIPI 1st data lane negative output							
MDP0 DP0 MD0P DATA_P DMO1P		MIPI 1st data lane positive output							
MDN1 DN1 MD1N DATA2_N DMO2N		MIPI 2nd data lane negative output							
MDP1 DP1 MD1P DATA2_P DMO2P		MIPI 2nd data lane positive output							
MDN2 DN2 MD2N DATA3_N DMO3N		MIPI 3rd data lane negative output							
MDP2 DP2 MD2P DATA3_P DMO3P		MIPI 3rd data lane positive output							
MDN3 DN3 MD3N DATA4_N DMO4N		MIPI 4th data lane negative output							
MDP3 DP3 MD3P DATA4_P DMO4P		MIPI 4th data lane positive output							
MCN CLKN CLK_N DCKN		MIPI clock negative output							
MCP CLKP MCP CLK_P DCKN		MIPI clock positive output							
DVP Parallel Interface									
D0 DO0 Y0		DVP data output port 0							
D1 DO1 Y1		DVP data output port 1							
D2 DO2 Y2		DVP data output port 2							
D3 DO3 Y3		DVP data output port 3							
D4 DO4 Y4		DVP data output port 4							
D5 DO5 Y5		DVP data output port 5							
D6 DO6 Y6		DVP data output port 6							
D7 DO7 Y7		DVP data output port 7							
D8 DO8 Y8		DVP data output port 8							
D9 DO9 Y9		DVP data output port 9							
D10 DO10 Y10		DVP data output port 10							
D11 DO11 Y11		DVP data output port 11							

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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	The Naked Eye	Major Difference is Not Allowed.	
		Be Torn/Chopped	The Naked Eye	Copper Crack Exposure is Not Allowed.	
		Marking	The Naked Eye	Clear, Recognizable (Within 30cm Distance)	
	Holder	Scratches	The Naked Eye	The Inside Crack Exposure is Not Allowed	
		Gap	The Naked Eye	Meet the Height Standard	
		Screw	The Naked Eye	Make Sure Screws Are Presented (If Any)	
		Damage	The Naked Eye	The Inside Crack Exposure is Not Allowed	
	Lens	Scratch	The Naked Eye	No Effect On Resolution Standard	
		Contamination	The Naked Eye	No Effect On Resolution Standard	
		Oil Film	The Naked Eye	No Effect On Resolution Standard	
		Cover Tape	The Naked Eye	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		

YDSCAM Package Solutions

YDS Camera Module



Complete with Lens Protection Film



Tray with Grid and Space

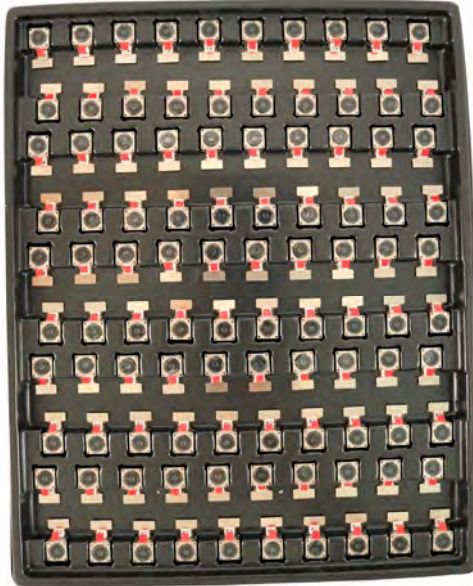


Place Cameras on the Tray

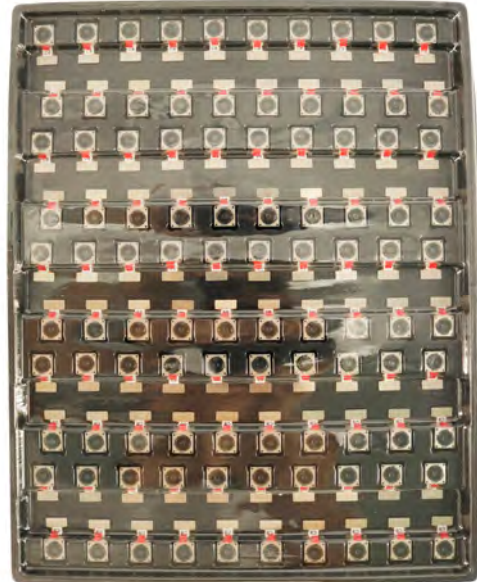


YDSCAM Package Solutions

Full Tray of Cameras



Cover Tray with Lid



Place Tray into Anti-Static Bag



Vacuum the Anti-Static Bag



YDSCAM Package Solutions

Sealed Vacuum Anti-Static Bag with Labels

1. Model and Description 2. Quantity 3. Manufacturing Date Code 4. Caution



YDSCAM Package Solutions

Place Foam Sheets Between Tray Bags



Foam Sheets are Larger Than Trays



Place Foam Sheets and Trays into Box



Foam Sheets are Tightly Fitting in Box



Seal the Carbon Box



Label the Carbon Shipping Box

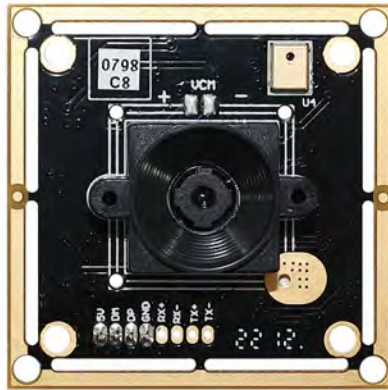




YDSCAM Package Solutions

USB Camera Module

Complete with Lens Protection Film



Place Camera Sample into Anti-Static Bag

Place USB Cameras into Tray



Seal the Tray with Anti-Static Bag

Label the Carbon Shipping Box



YDSCAM Package Solutions

Place Camera Sample into Anti-Static Bag



Place Connectors into Anti-Static Bag



Label the Sample Bags



Place Connectors into Reel



Place Samples into the Carbon Box



Place Connectors into the Carbon Box





YDS CAMERA MODULE

your best camera partner

Company YDSCAM

YingDeShun Co. Ltd. (YDS) was established in 2017, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. YDS is occupying 20,000 square feet automated plants with 100 employees of annual throughput 30,000,000 units cameras.

YDS 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. YDS 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

YDS provides the following limited warranty if you purchased the Product(s) directly from YDS company or from YDS's website www.YDSCAM.com. Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. YDS 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, YDS 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 YDS is solely limited to repair and/or replacement on the terms set forth above. YDS is not reliable or responsible for any subsequent events.



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YDS Strength

Powerful Factory



Professional Service



Promised Delivery



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