

your BEST camera module partner

KLT-U4MA-OV8858 V1.0

8MP OmniVision OV8858 MIPI Interface Auto Focus Camera Module



Front View

Back View

Specifications

Camera Module No. Tech.com Resolution			
Resolution	8MP		
Image Sensor	OV8858		
Sensor Type	1/4"		
Pixel Size	1.12 um x 1.12 um		
EFL	2.93 mm		
F.NO	2.00		
Pixel	3264 x 2448		
View Angle	75.0°(DFOV) 62.8°(HFOV) 49.3°(VFOV)		
Lens Dimensions Tech con	₩ <u>₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩</u>		
Module Size	53.50 x 8.60 mm		
Module Type	Auto Focus		
Interface	MIPI		
Auto Focus VCM Driver IC	DW9714P		
Lens Model	KLT-LENS-9570A3		
Lens Type	650nm IR Cut		
Operating Temperature	-30°C to +85°C		
Mating Connector	AXT530124		

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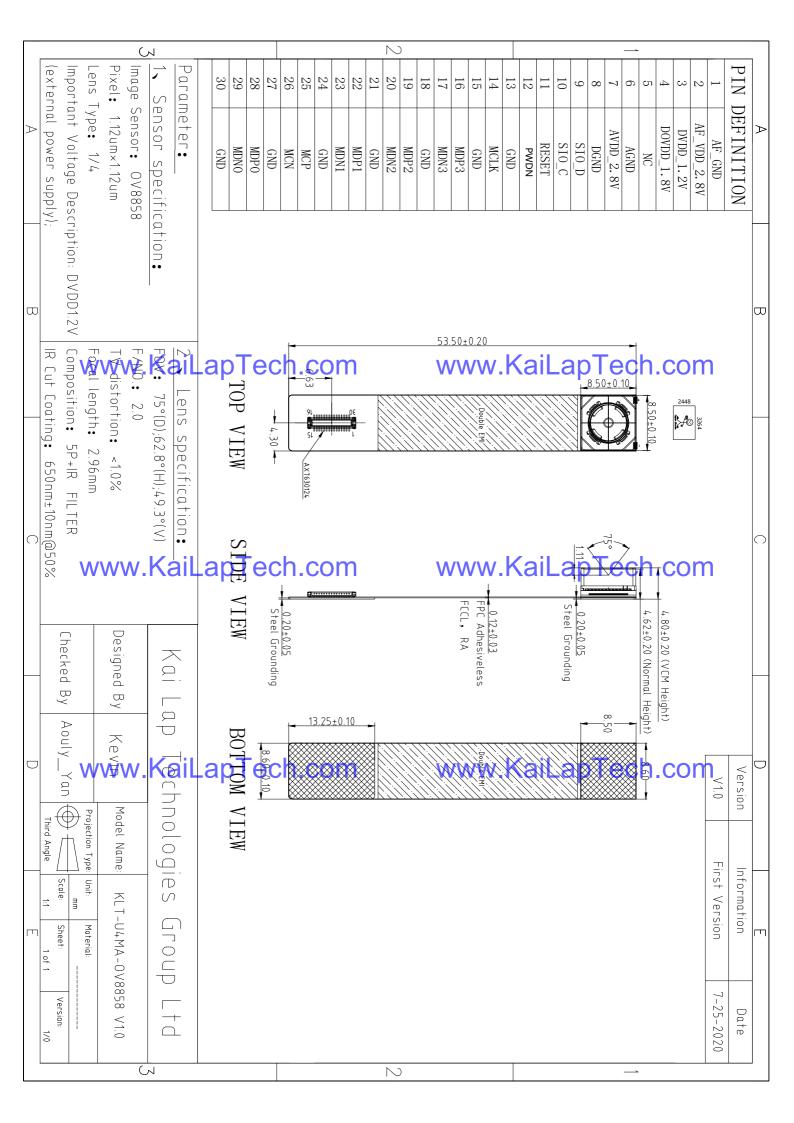
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8MP OmniVision OV8858 MIPI Interface Auto Focus Camera Module



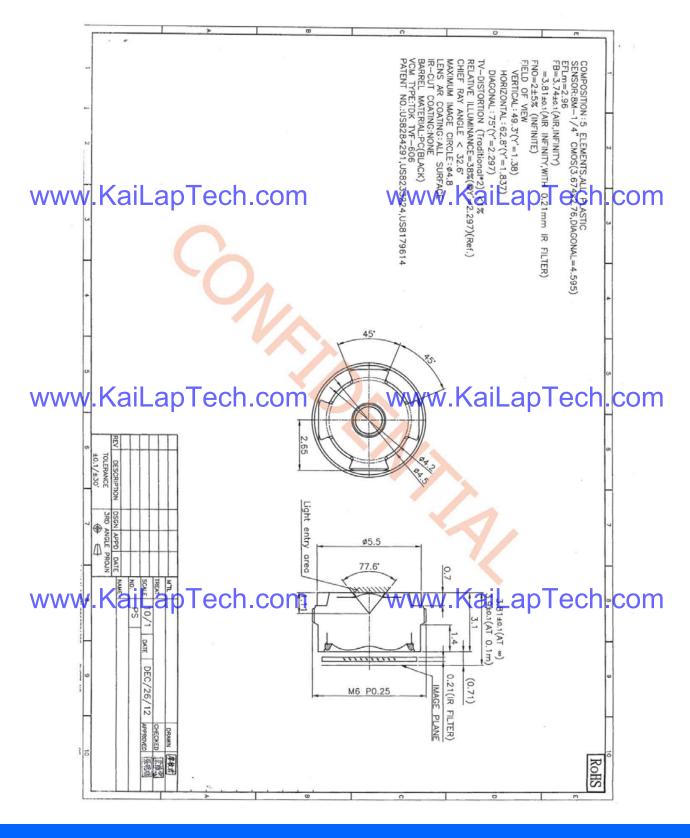
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Lens Model: KLT-LENS-9570A3



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DONGWOON ANATECH

DW9714P

Upgraded Conventional AF Driver IC

FEATURES

120mA output driver with 10-bit resolution DAC Smart Actuator Control (SACTM) modes Supply voltage (V_{DD}): 2.3V to 4.3V I/O voltage (V_{IN}): 1.8V to V_{DD} Fast mode and Fast mode plus I²C interface compatible Power On Reset (POR) Power Down (PD) mode current consumption less than 1uA WWW KaiLapTech.com Package: 6-pin WLCSP (0.77mm x 1.14mm x 0.30mm)

APPLICATIONS

Mobile camera Digital still camera Camcorder Web camera Action camera

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TYPICAL APPLICATION CIRCUIT

GENERAL DESCRIPTION

The DW9714P designed for linear control of Voice Coil Motors (VCM). This device is compatible with DW9714. The DW9714P has a single 10-bit DAC with 120mA output current sink capability. This device features SACTM mode which can minimize the mechanical vibration and achieve very fast mechanical settling time. The SACTM is protected by patent and registered trademark of DONGWOON ANATECH.

The DW9714P operates from a single 2.3V to 4.3V supply. The internal DAC is controlled via an I^2C serial interface that operates at clock rate up to 1MHz. The I^2C address for the DW9714P is 0x18. The DW9714P offers PD mode with current consumption less than 1uA.

The DW9714P can be used for auto focus applications in mobile cameras, digital still cameras, camcorders, web cameras and action cameras CO.COM

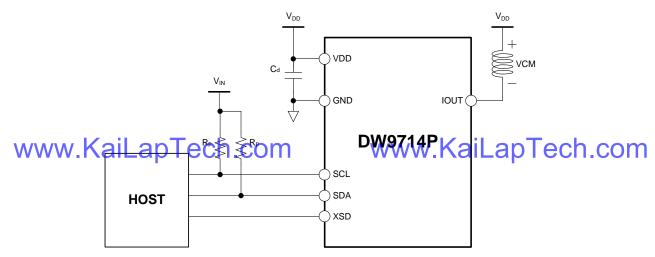
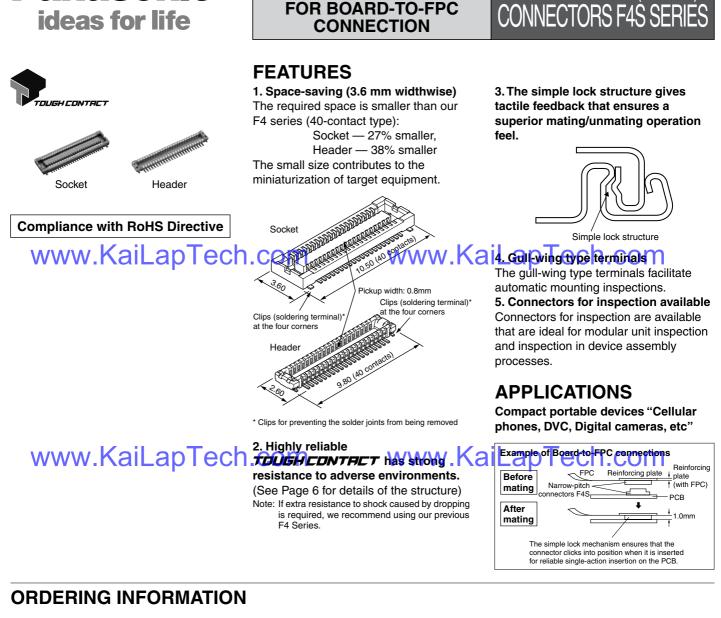


Figure 1. Typical application circuit

Confidential



NARROW PITCH (0.4 mm)



NARROW-PITCH, THIN

AND SLIM CONNECTOR FOR BOARD-TO-FPC

Panasonic

5: Narrow Pitch Connector F4S (0.4 mm pitch) Socket 6: Narrow Pitch Connector F4S (0.4 mm pitch) Header OM	www.KaiLapTech.com
Number of contacts (2 digits)	
Mated height <socket> 1: For mated height 1.0 mm 2: For mated height 1.2 mm <header> 1: For mated height 1.0 mm 2: For mated height 1.2 mm</header></socket>	
Functions <socket, header=""> 2: Without positioning bosses</socket,>	
Surface treatment (Contact portion / Terminal portion) <socket> 4: Base: Ni plating Surface: Au plating (for Ni barrier available) <header> 4: Base: Ni plating Surface: Au plating</header></socket>	
Note: Please note that models with a mated height of 1.0 mm (7th digit of part number	per is "1") and 1.2 mm (7th digit of part number is "2") are not compatible.

AXT5, 6 **PRODUCT TYPES** TOUGH CONTRET

lated height	Number of contacts	Part nu	umber	Packing		
lated neight	Number of contacts	Socket	Header	Inner carton	Outer carton	
	10	AXT510124	AXT610124			
	12	AXT512124	AXT612124			
	14	AXT514124	AXT614124			
	16	AXT516124	AXT616124			
	18	AXT518124	AXT618124			
	20	AXT520124	AXT620124			
	22	AXT522124	AXT622124			
	24	AXT524124	AXT624124			
	26	AXT526124	AXT626124			
	28	AXT528124	AXT628124			
	30	AXT530124	AXT630124			
	32	AXT532124	AXT632124			
1.0mm	34	AXT534124	AXT634124			
1.0mm	36	AXT536124	AXT636124			
	38	AXT538124	AXT638124			
	40	AXT540124	AXT640124	3,000 pieces	6,000 pieces	
	v.Kattap7	AXT542124	AXT642124	.KaiLapT	hch con	
	v.na4_api	CAXT544124	AXT644 424 VV VV	naiLapi		
	46	AXT546124	AXT646124			
	48	AXT548124	AXT648124			
	50	AXT550124	AXT650124			
	54	AXT554124	AXT654124			
	60	AXT560124	AXT660124			
	64	AXT564124	AXT664124			
	70	AXT570124	AXT670124			
	80	AXT580124	AXT680124			
	10	AXT510224	AXT610224			
	30	AXT530224	AXT630224			
1.2mm	40	AXT540224	AXT640224			
	50	AXT550224	AXT650224			
	80	AXT580224	AXT680224	KaiLapT		

Samples for mounting check: in 50-connector units. Please contact our sales office.

Samples: Small lot orders are possible. Please contact our sales office. 2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.

3. Please contact us for connectors having a number of contacts other than those listed above.

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SPECIFICATIONS

1. Characteristics

	Item	Specifications	Conditions	
	Rated current	0.3A/contact (Max. 5 A at total contacts)		
	Rated voltage	60V AC/DC		
Electrical	Breakdown voltage	150V AC for 1 min.	No short-circuiting or damage at a detection current of 1 m/ when the specified voltage is applied for one minute.	
	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)	
	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.	
	Composite insertion force	Max. 0.981N/contacts × contacts (initial)		
<i>N</i> echanical	Composite removal force	Min. 0.165N/contacts \times contacts		
characteristics	Contact holding force (Socket contact)	Min. 0.49N/contacts	Measuring the maximum force. As the contact is axially pull out.	
	Ambient temperature	–55°C to +85°C	No freezing at low temperatures. No dew condensation.	
	Soldering heat resistance	Peak temperature: 260°C or less (on the surface of the PC board around the connector terminals)	Infrared reflow soldering	
		300°C within 5 sec. 350°C within 3 sec.	Soldering iron	
	Storage temperature	-55° C to $+85^{\circ}$ C (product only) -40° C to $+50^{\circ}$ C (emboss packing)	No freezing at low temperatures. No dew condensation.	
Environmental characteristics	Thermal shock resistance (header and socket mated)	insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Sequence 1 -55 °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 °3 °C, 30 minutes 4. ~, Max. 5 minutes	
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M Ω , contact resistance max. 90m Ω	Bath temperature 40±2°C, humidity 90 to 95% R.H.	
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%	
	H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. 90m Ω	Bath temperature $40\pm2^{\circ}$ C, gas concentration 3 ± 1 ppm, humidity 75 to 80% R.H.	
_ifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/ hours	
Jnit weight		20-contact type: Socket: 0.03 g Header: 0.01 g		

2. Material and surface treatment

2. Material	2. Material and surface treatment				
Partname	Material	apiech.com Vsuriase treatmentalLapiech.com			
Molded portion	LCP resin (UL94V-0)				
Contact and Post	Copper alloy	Contact portion: Base: Ni plating Surface: Au plating Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips) The socket terminals close to the portion to be soldered have nickel barriers (exposed nickel portions). Metal clips: Sockets: Base: Ni plating Surface: Pd+Au flash plating (except the terminal tips) Headers: Base: Ni plating Surface: Au plating (except the terminal tips)			

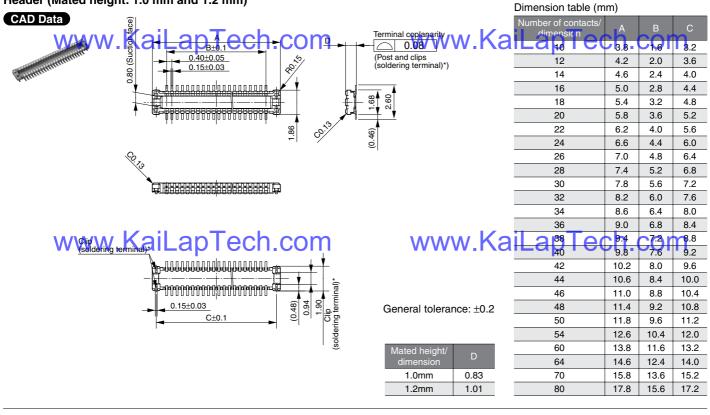
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AXT5, 6

DIMENSIONS (Unit: mm) The CAD data of the products with a **CAD Data** mark can be downloaded from: http://panasonic-electric-works.net/ac Socket (Mated height: 1.0 mm and 1.2 mm)

Socket (Maled height. 1.0 min and 1.2 min)			Dimension table (m	ım)		
CAD Data 0000005 0.15±0.03 0.15±0.03		coplanarity 0.08	Number of contacts/ dimension	A	В	С
.5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5 .5		and clips	10	4.5	1.6	3.4
0.15±0.03	(Soldering	g terminal)*)	12	4.9	2.0	3.8
			14	5.3	2.4	4.2
			16	5.7	2.8	4.6
	3:60 23:36 −1		18	6.1	3.2	5.0
	"i _ ∽i		20	6.5	3.6	5.4
	<u></u> •		22	6.9	4.0	5.8
	(0.62)		24	7.3	4.4	6.2
C0.15	0.0		26	7.7	4.8	6.6
			28	8.1	5.2	7.0
			30	8.5	5.6	7.4
			32	8.9	6.0	7.8
			34	9.3	6.4	8.2
			36	9.7	6.8	8.6
			38	10.1	7.2	9.0
MANA International antroph com	14/14/1	w.Ka	iLa ^{to} Teo	10.5	7.6	9.4
www.KailanTech.com		w.r\a		10.9		9.8
			44	11.3	8.4	10.2
			46	11.7	8.8	10.6
│	General tolerar	nce: ±0.2	48	12.1	9.2	11.0
			50	12.5	9.6	11.4
$ C \pm 0.1$ (1) (2) (3) $(3$			54	13.3	10.4	12.2
	Mated height/	D	60	14.5	11.6	13.4
	dimension		64	15.3	12.4	14.2
	1.0mm	0.97	70	16.5	13.6	15.4
Note: Since the clip (soldering terminal)* has a single-piece construction, sections Y and Z are electrically connected.	1.2mm	1.17	80	18.5	15.6	17.4
Header (Mated height: 1.0 mm and 1.2 mm)			Dimension table (m	m)		



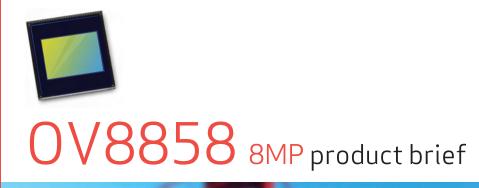
• Socket and Header are mated





Mated height: 1.0 mm

Mated height: 1.2 mm





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package

Cost-Effective 1/4-Inch 8-Megapixel Image Sensor with Video-in-Video Support for Mainstream Mobile Devices

OmniVision's OV8858 is a 1/4-inch 8-megapixel PureCel[®] image sensor for the rapidly growing mainstream smartphone and tablet market. The compact and costeffective OV8858 sensor delivers dramatically reduced power consumption and best-in-class performance, making it a highly competitive solution for the next-

www.KalLaplech.com

Compared to OmniVision's previous-generation 1/4-inch 8-megapixel sensor, the OV8858 delivers a number of performance enhancements, including dramatically improved full-well capacity (FWC) and sensitivity for enhanced high- and low-light performance. It also offers a significant reduction in power consumption and form factor.

The sensor also features OmniVision's Video-in-Video (ViV°) technology, which stitches together images from the front- and rear-cameras, applies enhancements such as independent lens correction and color compensation, and sends the combined image to the host ISP. In ViV mode, users can capture a portrait scene perfectly alongside their own face, record video while narrating for

high quality video blogging, or utilize the feature for video conferencing. This is made possible by a special input MIPI receiver on the OV8858 that can accept image data from a wide range of OmniVision image sensors designed for front-facing applications of 2-megapixel and below, thus saving a camera port on the host ISP.

W 146 0V 88 58 apport aparti @ 67 ap of 3204 72448

pixels (8-megapixel) operating at 30 frames per second (fps) for zero shutter lag, enabling high-speed photography. The sensor is capable of recording 1080p high definition (HD) video at 60 fps, or 720p HD video at 90 fps, each with additional pixels for electronic image stabilization (EIS). The OV8858, when paired with OmniVision's latest 2-megapixel sensors, can provide full resolution ViV snapshot images at 15 fps and preview ViV video at 30 fps.

The OV8858 fits into an 8.5 x 8.5 mm camera module with a build height of approximately 4 mm.

Find out more at www.ovt.com.





Applications

- Cellular Phones
- Tablets

Product Features

- 1.12 µm x 1.12 µm pixel
- optical size of 1/4"
- 32.9 ° CRA for ~4 mm Z-height
- programmable controls for: - frame rate - mirror and flip - cropping windowing
- supports images sizes: 8WP(4.37.3204x2448)
 BMP (16.97.3264x2448)
 EIS 1080p (2112x1188)
 1080p (1920x1080)
 EIS 720p (1408x792), and more ас
- 8MP at 30 fps (720 Mbps/4-lane or 10-8 DPCM 1.104 Gbps/2-lane)
- two on-chip phase lock loops (PLLs)
- two-wire serial bus control (SCCB)
- built-in temperature sensor

 frame exposure mode for still image (with mechanical shutter) 4k bits of embedded one-time

PC Multimedia

- programmable (OTP) memory for customer use supports Video-in-Video (ViV*) mode using an on-chip 1-lane MIPI receiver
- and a secondary sensor
- special ViV features include:
- ViV video at up to 30 fps ViV snapshot at up to 15 fps arbitrary positions and shapes for ViV window separate AWB compensation for secondary sensor, and more
- image quality control:
 defect pixel correction automatic black level calibration lens shading correction
 alternate row HDR
- suitable for module size of 8.5 x 8.5 x -4 mm

- OV08858-G04A
- (color, chip probing, 200 µm backgrinding, reconstructed wafer with good die)

Product Specifications

- active array size: 3264 x 2448
- power supply:
 analog: 2.6 to 3.0V (2.8V nominal)
 core: 1.14 to 1.26V (1.2V nominal)
- I/O: 1.7 to 3.0V (1.8V or 2.8V nomina **A**
- power requirements:
 active: 153 mW
 standby: 160 µW
- XSHUTDOWN: 0.3 µW
- temperature range:
 operating: -30°C to +85°C junction temperature - stable image: 0°C to +60°C junction temperature
- output formats: up to 4-lane MIPI serial output
- output formats: 10-bit RAW RGB data
- lens chief ray angle: 32.9° non-linear
- lens size: 1/4"

-3264 × 1836: 30 fps - 2112 x 1184 60 fps 1920 x 1080: 60 fps -1408 x 792: 90 fps

max S/N ratio: 35.8 dB

■ input clock frequency: 6 - 27 MHz

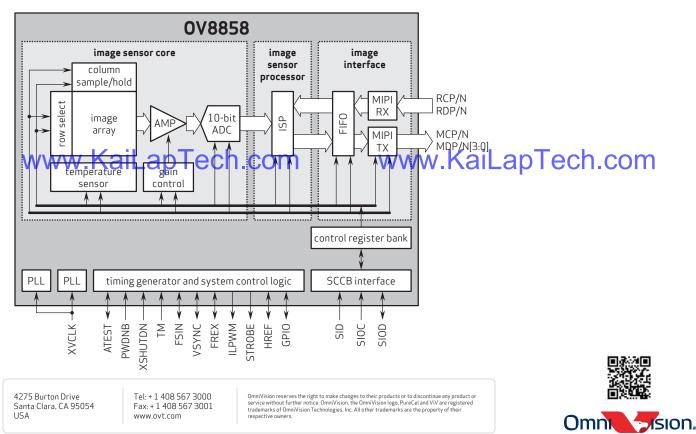
■ dynamic range: 64.4 dB @ 8x gain

- sensitivity: 486 mV/Lux-sec
- scan mode: progressive
- pixel size: 1.12 µm x 1.12 µm
- dark current: 17 e-/sec @ 60°C junction temperature
- image area: 3678.3 μm x 2767.68 μm
- die dimensions: - COB: 5040 μm x 4590 μm - RW: 5090 μm x 4640 μm

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Functional Block Diagram

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Version 1.6, September, 2017





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Camera Module Pinout Definition Reference Chart

	ina 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			
HRAFVXHKalLaplech.com	DVP HREF OUTPUTW, Kallap ech.con			
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			
FREX	frame exposure / mechanical shutter			
GPIO	general purpose inputs			
SLASEL	I2C slave address select			
AFERW.KaiLapTech.com	CEN chip enable active high on CM driver O. CON			
MIPI Interface				
MDN0 DN0 MD0N DATA N DM01N	MIPI 1st data lane negative output			
MDP0 DP0 MD0P DATA P DM01P	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 ECh.COM	www.KaiLapTech.con			
D0 D00 Y0	DVP data output port 0			
D1 D01 Y1	DVP data output port 1			
D2 D02 Y2	DVP data output port 2			
D3 D03 Y3	DVP data output port 3			
D4 D04 Y4	DVP data output port 4			
D5 D05 Y5	DVP data output port 5			
D6 D06 Y6	DVP data output port 6			
D7 D07 Y7	DVP data output port 7			
D8 D08 Y8	DVP data output port 8			
D9 D09 Y9	DVP data output port 9			
D10 D010 Y10	DVP data output port 10			
D11 D011 Y11	DVP data output port 10			

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Cameras Applications

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Camera Reliability Test

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



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Camera Inspection Standard

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Inspection		n Item	Inspection Method	Standard of Inspection	
Category		ltem	inspection method		
		Color The Naked Eye		Major Difference is Not Allowed.	
	FPC/ PCB	Be Torn/Chopped	The Naked Eye	Copper Crack Exposure is Not Allowed.	
		Marking	The Naked Eye	Clear, Recognizable (Within 30cm Distance)	
		Scratches	The Naked Eye	The Inside Crack Exposure is Not Allowed	
	Holdor	Gap	The Naked Eye	Meet the Height Standard	
Appearance	Holder	Screw	The Naked Eye	Make Sure Screws Are Presented (If Any)	
WW	w.KaiL	ap Terefr.con	∩ The Naked ₩	The Inside Crack Exposure is Not Allowed	
		Scratch	The Naked Eye	No Effect On Resolution Standard	
	Long	Contamination	The Naked Eye	No Effect On Resolution Standard	
	Lens	Oil Film	The Naked Eye	No Effect On Resolution Standard	
		Cover Tape	The Naked Eye	No Issue On Appearance.	
		No Communication	Test Board	Not Allowed	
		Bright Pixel	Black Board	Not Allowed In the Image Center	
	17 - 11	Dark Pixel	White board	Not Allowed In the Image Center	
WW	w.KaiL	ap lech.con	The Naked Eye	Not Allowed ap Lech.com	
		No Image	The Naked Eye	Not Allowed	
		Vertical Line	The Naked Eye	Not Allowed	
		Horizontal Line	The Naked Eye	Not Allowed	
Function Image		Light Leakage	The Naked Eye	Not Allowed	
		Blinking Image	The Naked Eye	Not Allowed	
	w.KaiL	Bruise	Inspection Jig	Not Allowed	
W/W		an Resolution con	Chart W/W/	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	
	•	Height	The Naked Eye	Follows Approval Data Sheet	
D '		Width	The Naked Eye	Follows Approval Data Sheet	
Dimer	ISION	Length	The Naked Eye	Follows Approval Data Sheet	
		Overall	The Naked Eye	Follows Approval Data Sheet	

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KLT Package Solutions

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KLT Camera Module

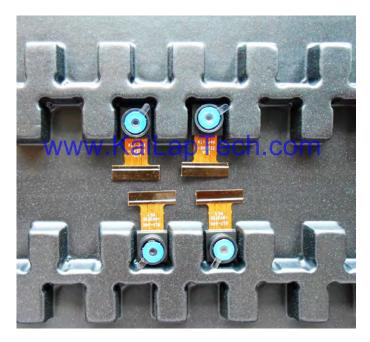
Tray with Grid and Space



Complete with Lens Protection Film



Place Cameras on the Tray



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Camera Modules Package Solution

Full Tray of Cameras



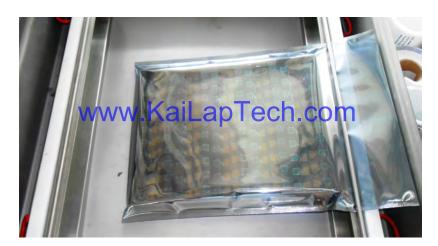
Put Tray into Anti-Static Bag

Cover Tray with Lid



Vacuum the Anti-Static Bag





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Camera Modules Package Solution

Sealed Vacuum Bag with Labels 1. Model and Description 2. Quantity 3. Shipping Date 4. Caution



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Large Order Package Solution

Place Foam Sheets Between Trays

Foam Sheets are Slightly Larger than Trays



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Place Foam Sheets and Trays into Box

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Foam Sheets are Tightly Fitting Box



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Small Order Package Solution

Place Foam Sheets and Trays into Small Box



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Package in Small Box for Shipment

Foam Sheets are Nicely Fitting the Small Box



Place Small Boxes into Larger Box



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Carbon Box Package Solution

Seal the Carbon Box

Final Package Labelled Box



1. Delivery Address and Phone No. 2. Box No. and Ship Date 3. Fragile Caution



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Sample Order Package Solution

Place Sample into Small Anti-Static Bag



Place Connectors into Small Ant-Static Bag



Sample Labels on the Small Bag 1. Camera Module or Connector Model 2. Shipping Date and Quantity 3. Caution



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Connectors Large Order Package Solution

Connectors in a Wheel



The Wheel is Perfectly Fitting the Box

Label Connectors in the Wheel



Connectors Box Ready for Shipment



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Company Kai Lap Technologies (KLT)

Kai Lap Technologies Group Limited. (KLT) was established in 2009, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. KLT is occupying 20,000 square feet automated plants with 100 employees of annual throughput 30,000,000 units cameras.

KLT 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. KLT 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

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



KUT

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Promised Delivery



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