



KLT-USB1A-OVM6946 V1.0

OmniVision OVM6946 USB Interface Fixed Focus 400x400 Half VGA Camera Module



Camera Module No.	KLT-USB1A-OVM6946 V1.0	
Image Sensor	OVM6946	Output Format: MJPG, YVY2
EFL	0.418 mm	Frame Per Second
Pixel	400 x 400	30 FPS at 400 x 400
View Angle	120°	Supporting OS
Lens Type	1/18 inch	Windows 7, 8.1, 10, Vista
Lens Dimensions	2.00 mm Diameter	Windows XP SP2 under UVC
Module Size	3.60 mm Diameter x 19.10 mm	Linux Kernel V2.6.2.1 or later
Module Type	Fixed Focus	MAC OS 10.4 or later
Interface	USB 2.0	Operating Voltage: 5V +/- 5%
Mating Connector	USB 2.0	Compliant with UVC Version 1.0

Mating USB Cable Part No. KLT-USB1A-Cable

USB Cable Extension Cord. Sold Separately.



OVM6946 400x400 product brief



Compact, Cost-Effective Wafer-Level Camera Module for Single-Use Endoscopes



available in
a lead-free
package

OmniVision's OVM6946 is a compact camera module for medical applications such as minimally-invasive endoscopes. The 1/18-inch OVM6946 utilizes OmniVision's market-proven CameraCubeChip™ wafer-level module technology to streamline manufacturing processes and shorten time-to-market, and is the industry's most cost-effective single-chip imaging solution for single-use endoscopes.

Built on OmniVision's OmniBSI+™ pixel architecture, the OVM6946 captures high quality 400 x 400 resolution video at 30 frames per second (fps). The OVM6946

comes in a compact 1.05 mm x 1.05 mm package with a z-height of 2.27 mm, enabling a wide 120-degree field of view with an extended focusing range of 3 mm to infinity. The OVM6946 is well-suited to a wide range of endoscope applications, including medical, veterinarian, and industrial.

Find out more at www.ovt.com.



Applications

- Medical, Dental, Veterinarian, Industrial Endoscopes

Product Features

- optical size of 1/18"
- analog output
- automatic/manual control of exposure and gain
- on-chip PLL
- low power consumption
- single 3.3V power supply
- serial peripheral interface (SPI)
- OmniBSI™ pixel structure using 0.11 μm process

OVM6946



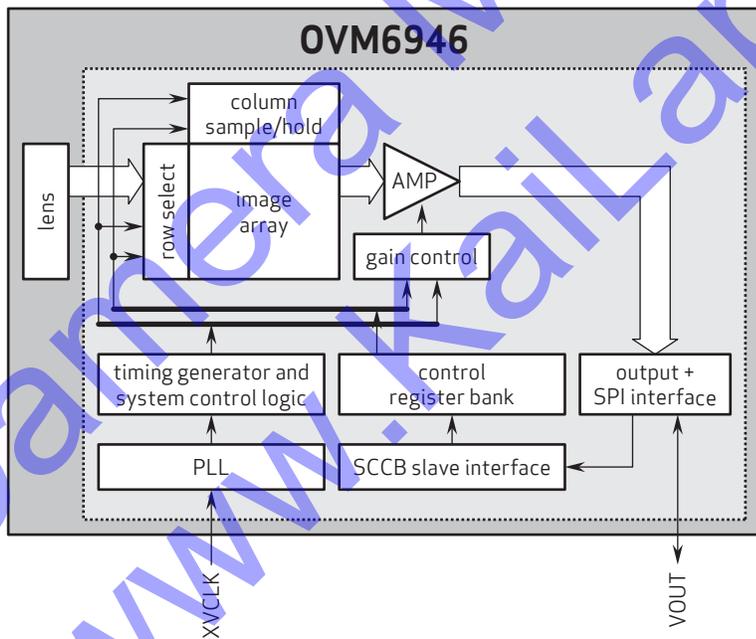
Ordering Information

- OVM6946-RAJA
(color, lead-free) CameraCubeChip™ with black coating

Product Specifications

- active array size: 400 x 400
- power supply:
 - analog: 3.3V ± 5%
- power requirements:
 - 25 mW (with IO consumption)
- temperature range:
 - operating: -20°C to +70°C junction temperature
 - stable image: 0°C to +50°C junction temperature
- output formats: analog signal output
- lens size: 1/18"
- diagonal field of view (FOV): 120°
- f no.: 5.0
- focal length: 0.418 mm
- frame rate:
 - half VGA (400x400): 30 fps
- maximum exposure: 876 x T_{LINE}
- minimum exposure time: 72.15 μs
- scan mode: progressive
- max S/N ratio: 34.4 dB
- dynamic range: 65.8 dB @ 4x gain
- sensitivity: 1000 mV/lux-sec
- color mosaic: RGB Bayer pattern
- pixel size: 1.75 μm x 1.75 μm
- dark current: 42 e⁻/sec @ 60°C junction temperature
- image area: 714 μm x 707 μm
- net weight: 4.62 mg
- package dimensions (including ball height): 1050 x 1050 x 2266 μm

Functional Block Diagram



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