



# OVM6946 Cable Module



## 400 x 400 product brief

OVMed® Cable Modules Combined with OMNIVISION's CameraCubeChip® Modules and OVMed® ISP Boards, Provide Complete Medical Imaging Subsystems for Endoscopes and Catheters

OMNIVISION's OVMed® cable module line of endoscope, catheter and dental cables create a platform, in combination with the company's portfolio of CameraCubeChip® wafer-level camera modules and OVMed® image signal processor (ISP) boards. As the world's top supplier of medical imaging components, this addition makes OMNIVISION the industry's first supplier of complete, end-to-end medical imaging subsystems, enabling medical device OEMs to focus on differentiating their core endoscope and catheter designs, while accelerating time to market and obtaining a competitive materials cost. This single source of supply and support for the entire medical imaging subsystem is also tuned for optimal performance by OMNIVISION's imaging experts.

OVMed® cable modules provide high image quality with minimal artefacts, for the transmission of captured images from the endoscope's distal tip, down the endoscope shaft to the proximal end. These cables are optimized for small module size, thin diameter, flexibility, mechanical robustness and cost. Additionally, they are electrically shielded for electromagnetic compatibility (EMC) and

interference (EMI), which allows the cables to withstand high energy discharges during multimodal medical imaging procedures inside the body, while eliminating interference with other devices in the operating room.

OMNIVISION's flexible design and manufacturing model allows the company to provide semi-custom cable solutions based on customer requirements. Customizable parameters include short cables of 2.5 meters or less, long cables up to 5 meters, analog or digital MIPI output from 200 x 200 at 30 fps up to 720p resolution at 60 fps, as well as a wide range of connectors—all with or without LED illumination. In addition, every OVMed® cable module undergoes comprehensive certification, qualification and testing, including testing for banned substances, operation tests, stress tests, sterilization, bio-compatibility and workmanship, making it more suitable for medical devices.

Find out more at [www.ovt.com](http://www.ovt.com).



# OVM6946 Cable Module

## Ordering Information

- **OVM6946-KJ1C-0B2A** (color, lead-free) OVMed® cable module with AntLinX™ Analog, with single channel, no illumination, connector B, 1.5 m
- **OVM6946-KJ1C-2D2A-Z** (color, lead-free) OVMed® cable module with AntLinX™ Analog, with single channel, 2x LED illumination, connector D, 1.5 m
- **OVM6946-KJ1E-0B2A** (color, lead-free) OVMed® cable module with AntLinX™ Analog, with single channel, no illumination, connector B, 2.5 m
- **OVM6946-KJ1H-0B2A-Z** (color, lead-free) OVMed® cable module with AntLinX™ Analog, with single channel, no illumination, connector B, 4.0 m

## Applications

- medical endoscopes
- dental equipment
- veterinarian endoscopes
- industrial endoscopes

## Product Features

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

## Technical Specifications

- **active array size:** 400 x 400
- **color mosaic:** RGB Bayer pattern
- **frame rate:**
  - 160 Kpixel (400 x 400): 30 fps
- **pixel size:** 1.75 µm x 1.75 µm
- **power supply:** analog: 3.3V ±5%
- **image area:** 714 µm x 707 µm
- **power requirements:** 25 mW (with IO consumption)
- **tip x-y dimensions:** 1.10 ±0.05 mm x 1.10 ±0.05 mm
- **temperature range:**
  - operating: -20°C to +70°C junction temperature
  - stable image: 0°C to +50°C junction temperature
- **rigid parts z-dimension:** max. z-dimension <5 mm
- **output formats:** analog signal output
- **cable diameter:**
  - KJ1C-0B2A: 0.63 ±0.1 mm
  - KJ1C-2D2A: 0.61 ±0.04 mm
  - KJ1E-0B2A: 0.63 ±0.1 mm
  - KJ1H-0B2A: 0.73 ±0.1 mm
- **optical size:** 1/18"
- **cable length:**
  - KJ1C-0B2A: 1500 ±20 mm
  - KJ1C-2D2A: 1500 ±40 mm
  - KJ1E-0B2A: 2500 ±20 mm
  - KJ1H-0B2A: 4000 ±20 mm
- **diagonal field of view (FOV):** 120°
- **end connector dimensions:**
  - KJ1C-2D2A: 11 mm x 30.3 mm
  - others: 10.6 mm x 25 mm (4-pin)
- **f no.:** 5.0
- **focal length:** 0.418 mm
- **scan mode:** progressive

## Functional Block Diagram

