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.

OMNIVISION™

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Ordering Information

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

Applications

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

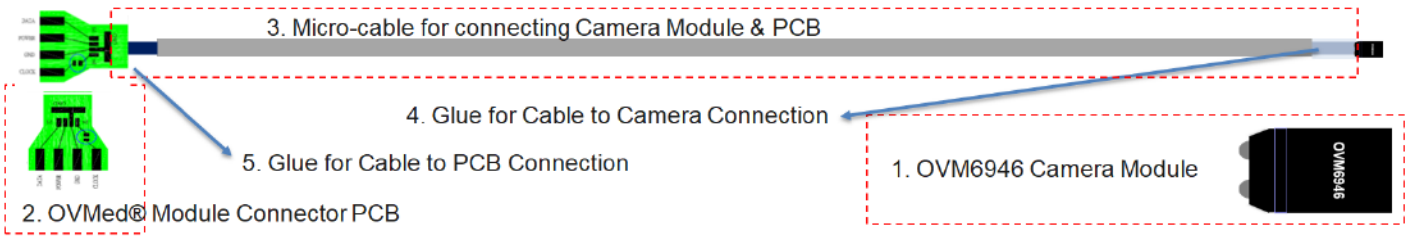
Product Features

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

Technical 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
- **optical size:** 1/18"
- **diagonal field of view (FOV):** 120°
- **f no.:** 5.0
- **focal length:** 0.418 mm
- **maximum exposure:** 876 x Tline
- **minimum exposure time:** 2.16 ms
- **scan mode:** progressive
- **frame rate:**
  - 160 Kpixel (400x400): 30 fps
- **max S/N ratio:** 36.8 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
- **image area:** 714 µm x 707 µm
- **tip x-y dimensions:** 1.10 ±0.05 mm x 1.10 ±0.05 mm
- **rigid parts z-dimension:** max. z-dimension <5 mm
- **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
- **cable length:**
  - KJ1C-0B2A: 1500 ±20 mm
  - KJ1C-2D2A: 1500 ±40 mm
  - KJ1E-0B2A: 2500 ±20 mm
  - KJ1H-0B2A: 4000 ±20 mm
- **end connector dimensions:**
  - KJ1C-2D2A: 11 mm x 30.3 mm
  - others: 10.6 mm x 25 mm (4-pin)

Functional Block Diagram



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