# OCHFA Cable Module

## 720 x 720 product brief

## High Resolution Cable Module Combined with OMNIVISION's CameraCubeChip® Modules and OVMed® ISP Boards, Provide Complete Medical Imaging Subsystems for Single-Use 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.

### High Resolution 720 x 720 Camera Module

The OCHFA cable module features OMNIVISION's CameraCubeChip® wafer-level technology and provides a tiny 1.15 mm x 1.15 mm camera module, with 720 x 720, or 518 KPixel resolution, for high quality image captures. The cable module also features the latest OVMed® cables that are highly flexible and come in a thin micro-coaxial form factor.

OMNIVISION's OVMed® cable modules are medical-grade, trusted components, undergoing comprehensive certification, qualification and testing, including testing for banned substances, sterilization, biocompatibility, workmanship, operational tests and stress tests. This increases the likelihood and speed of FDA certification for medical device OEMs, while providing hospitals, surgeons and patients with a high level of confidence in the endoscope device.

Find out more at www.ovt.com.

OMNIVISION™

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## Ordering Information

- **OCHFA10-KL1C-0A3E-Z** (color, lead-free) OVMed® cable module with single channel, no illumination, connector A, 1.5 m, 6 wires (4 wires for AntLinx™ Analog, 2 wires for LED connection), generation 1

- **OCHFA10-KL1C-0B2A-Z** (color, lead-free) OVMed® cable module with single channel, no illumination, connector B, 1.5 m, AntLinx™ Analog, generation 1

- **OCHFA10-KL1E-0B2E-Z** (color, lead-free) OVMed® cable module with single channel, no illumination, connector B, 2.5 m, AntLinx™ Analog, generation 1

## Applications

- medical, dental, veterinarian, and industrial endoscopes

## Product Features

- optical size of 1/18"
- non-autoclavable
- analog output
- single 3.3V power supply
- on-chip PLL
- serial peripheral interface (SPI)
- exposure and gain control
- pseudo-global shutter (LED mode)
- PureCel®Plus-S pixel structure
- improved sensitivity, FWC, zero blooming, low noise, and low power consumption
- enhanced NIR sensitivity
- square aspect ratio
- minimum package size (total 4 pads)
- 4m drive distance
- different lengths of cable and LED configurations are available upon request
- six-wire design includes 4 wires for AntLinx™ Analog and 2 wires for LED connection by customer
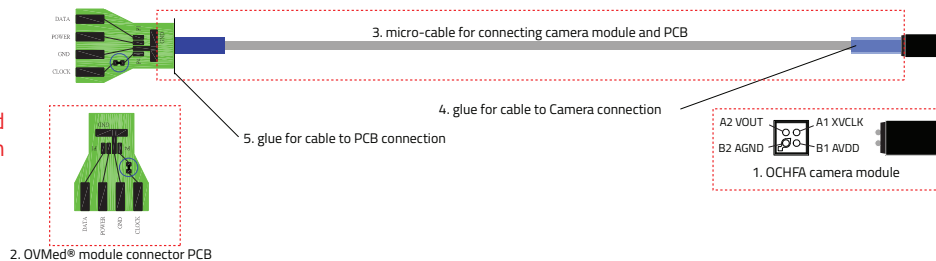
## Technical Specifications

- **active array size:** 720 x 720
- **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° ±3°
- **f no.:** 5.0
- **focal length:** 0.418 mm
- **maximum exposure:** 2480 x Tline
- **scan mode:** progressive
- **frame rate:**
  - 518 Kpixel (720x720): 30 fps

- **color mosaic:** RGB Bayer pattern
- **pixel size:** 1.008 µm x 1.008 µm
- **image area:** 733.824 µm x 733.824 µm
- **tip x-y dimensions:**
  - maximum x-dimension: <1.15 mm
  - maximum y-dimension: <1.15 mm
- **rigid parts z-dimension:** <5 mm
- **cable diameter:**
  - KL1C-0A3E: 0.43 ±0.05 mm
  - KL1C-0B2A: 0.52 ±0.1 mm
  - KL1E-0B2E: 0.45 ±0.03 mm
- **cable length:**
  - KL1C-0A3E: 1500 ±20 mm
  - KL1C-0B2A: 1500 ±20 mm
  - KL1E-0B2E: 2500 ±20 mm
  - custom cable length available
- **end connector PCB:**
  - 6-pin connector A (4 wires for AntLinx™ Analog, 2 wires for LED connection): 15.6 mm x 25 mm; 0.1" pitch
  - 4-pin connector B: 10.6 mm x 25 mm; 0.1" pitch
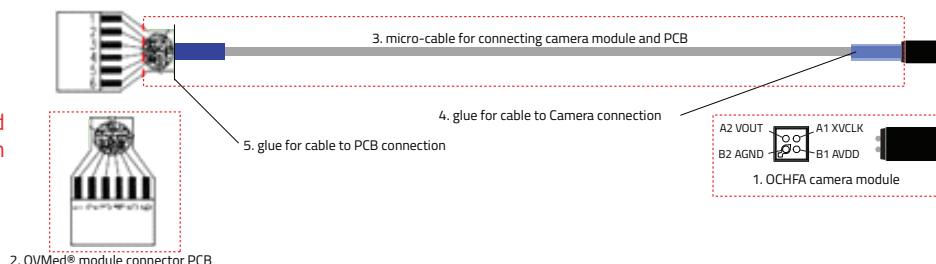  - custom cable connectors available

## Diagrams



OCHFA10 OVMed® cable module system diagram
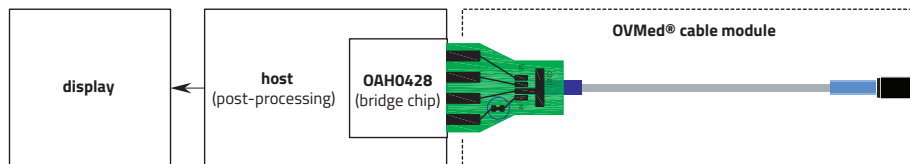


4-pin cable and interface diagram



6-pin cable and interface diagram

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