# DVI-VISION-FIBER(M)-MC4-ARU2-CPU

KVM extenders, Article number A1410182



Front



Back

The matrix-compatible KVM extenders of the DVI-Vision series extend keyboard, video, and mouse signals, as well as other peripheral data (e.g., audio and USB), via a dedicated CAT or fiber connection (up to 10,000 m). An extender system consists of a computer module (CPU) and a compatible console module (CON). Computers can be controlled in near real-time – both in extender and matrix applications. The DVI-Vision series supports SingleLink DVI for digital video resolutions up to 1920 × 1200 (60 Hz). Video data is processed pixel-perfectly and offers excellent hand-eye coordination, thanks to bluedec™ – G&D's advanced, multi-stage, lossless compression technology.

## SCOPE OF DELIVERY

| Quantity | Description | Article number |
|---|---|---|
| 1 | PowerCable-2 Standard cable 2m | A6300057 |
| 4 | DVI-D-DL-M/M-2 cable DVI-D 2m | A6300100 |
| 2 | USB-AM/BM-2 cable USB 2m | A6300113 |
| 1 | RS232-M/F-2 cable RS232 2m | A6300023 |
| 2 | Audio-M/M-2-ferrite cable 2m | A6300083 |
| 1 | 19" RM-Set-436-1RU | A7000003 |
| 1 | Safety instructions flyer - FCC class B | A9100371 |

# DETAILS

## VIDEO

- bluedec™ – advanced developed multi-stage compression for best video quality and practically latency-free transmission. This method enables pixel-perfect video transmission with efficient bandwidth use.
- The end devices can be flexibly combined with each other, even if they process different video signals (Mix & Match)
- EDID data utilization from the workplace monitor
- Flexible EDID profile options for optimized monitor settings
- Resolution up to
  1920 × 1200 @ 60 Hz,
  1280 × 1024 @ 85 Hz
- Resolution up to
  1920 × 1200 @ 60 Hz,
  1280 × 1024 @ 85 Hz

## SIGNALS

- Transparent audio signals (stereo, analog)
- Transparent RS232 (max. 115,200 bps)
- USB 2.0 with Hi-Speed (separate transmission line, transparent, all USB classes)

## TRANSMISSION

- The transmission distance is up to 400 meters over fiber multimode optics, incl. transmission module(s)/SFP transceiver(s)

## DEVICE

- Improved security through physical separation between workplaces and computers
- Access to standard interfaces of the computer, with no software installation required
- The devices are compatible with the ControlCenter-Digital and ControlCenter-Compact series (matrix operation) and other end devices for computer and workplace connections (extender operation)
- Internal power pack for main power supply
- CON-2 variant: console module with two transmission lines for redundancy
  - These modules can be connected to various counterparts, such as compatible computer modules or KVM matrix switches, whereby switching is carried out via pushbuttons, hotkeys or automatically, depending on the configuration
- UC variant: computer module with two transmission lines for redundancy

  - These modules can be connected to various counterparts, such as compatible console modules or KVM matrix switches
- MultiChannel variants (MC): Modules for multi-monitor workplaces with multi-channel video
  - MC mode uses the full bandwidth for each video channel, whereby a separate transmission line is required for each channel

## WARRANTY

- A 3-year, free of charge product guarantee
- For an additional fee guarantee extension possible

# FEATURES

## SECURITY FEATURES

- Console modules do not store security-relevant information such as login credentials, which could be extracted in the event of device loss
- Monitoring of system states such as status, power supply, temperature and computer modules and console modules are monitored as well
- Each monitoring value can be enabled individually; critical states raise an alarm, which authorized users can acknowledge to downgrade it to warning level
- Syslog logging locally and to up to two servers, via TCP or UDP, with configurable port, eight severity levels per the syslog standard and ISO 8601 timestamps
- Logged events include user logins, failed login attempts, changes to user rights, connections to remote targets and failed backups
- SNMP agent supporting SNMPv2c and SNMPv3; for SNMPv3, authentication via SHA-1 through SHA-512, encryption with AES128, AES192 or AES256, and security levels up to authPriv
- Access to the SNMP agent can be restricted to defined source IP addresses or network segments (IPv4 and IPv6)
- SNMP notifications to multiple receivers, sent either as traps or as acknowledged informs, with a configurable severity threshold
- Comprehensive rights management and user administration, allowing precise control over which user can access which resources
- Option for activatable access protection (default operating mode in matrix systems), in which authentication is required before accessing computer sources
- Support for external directory services (Active Directory, Radius, LDAP) to meet company security policies
- To comply with individual password policies and improve security, password complexity can be configured system-wide
- Configurable login options, such as displaying terms of use or setting the maximum acceptable number of failed login attempts, can enhance system security
- Auto Backup Function: Automates backups at user-defined intervals and replaces manual intervention – ensuring reliable, timely data protection without the need for continuous monitoring
- Freeze function: If the video signal is lost, the last displayed image is frozen and highlighted with a colored frame and timer
- 2-Factor-Authentication (2FA) – is integrated by default in KVM extenders and enhances security by requiring a second, possession-based factor during user authentication:
  - The traditional password authentication is combined with a time-limited, single-use code (Time-Based-One-Time-Password - TOTP)
  - You can choose between using the internal authentication server provided in the device or an external directory service

- Authenticator apps or hardware token can be used
- This additional layer of protection prevents unauthorized access and ensures the highest level of security, particularly in sensitive IT environments

### OPERATION FEATURES

- Ready for operation out of the box, no additional configuration required
- Permanent keyboard/mouse emulation ensures a stable system
- Compatibility with special USB-HID input devices
- Operation via multilingual on-screen display (OSD) and hotkeys
- Configuration and update via the multilingual HTML5 web interface “Config Panel 21” (Java-free)
- Support of DDC/CI (Display Data Channel / Command Interface) to enable centralized software-side control of monitor settings such as brightness
- Local console at the computer module allows on-site operation, including all video channels
- Exclusive or concurrent operation: The KVM extender allows computer control both remotely and locally. When an input is detected, the extender automatically locks the competing console. The lock is lifted after a preset timeout if no further input is detected. A key combination can activate exclusive operation, immediately disabling the competing console. Another key combination restores shared control.

## EXTENSIONS

### DEVICE

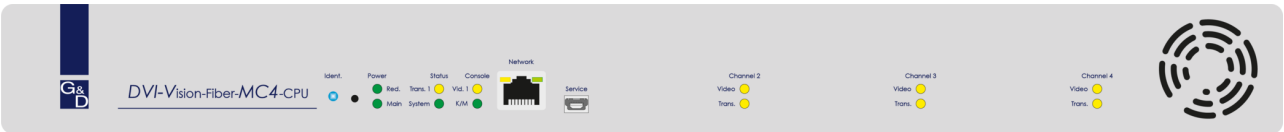
- External power supply via external 12V power pack or G&D-MultiPower, providing a central and redundant power supply
- Device mounting via RackMount sets, TableMount sets or other mounting tools

### SYSTEM EXTENSION

- You can integrate the matrix-compatible extenders into a complete installation with a ControlCenter-Compact or ControlCenter-Digital, even at a later point in time. This provides you with even greater flexibility through the possibility of distributed access – and the existing components can continue to be used.

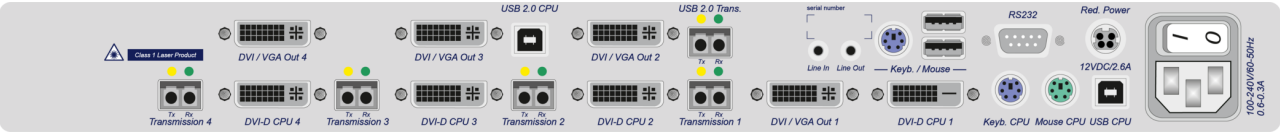
# PANELS AND CONNECTORS

## FRONT




| Aperture designation | Design | Description |
|---|---|---|
| Network | RJ45 socket | Network connection |
| Service | Mini USB socket | Connection for service purpose |

## BACK




| Aperture designation | Design | Description |
|---|---|---|
| Transmission 4 | LC Duplex socket | Data transmission between modules |
| DVI-D CPU 4 | DVI-D jack | Connection to the computer |
| DVI / VGA Out 4 | DVI-I jack | Connecting a monitor |
| Transmission 3 | LC Duplex socket | Data transmission between modules |
| DVI-D CPU 3 | DVI-D jack | Connection to the computer |
| DVI / VGA Out 3 | DVI-I jack | Connecting a monitor |
| Transmission 2 | LC Duplex socket | Data transmission between modules |
| USB 2.0 CPU | USB B socket | Connection to the computer |
| DVI-D CPU 2 | DVI-D jack | Connection to the computer |
| DVI / VGA Out2 | DVI-I jack | Connecting a monitor |
| Transmission 1 | LC Duplex socket | Data transmission between modules |
| USB 2.0 Trans. | LC Duplex socket | Data transmission between modules |
| DVI / VGA Out 1 | DVI-I jack | Connecting a monitor |
| DVI-D CPU 1 | DVI-D jack | Connection to the computer |
| Line In | 3,5-mm jack plug | Connection to the computer |
| Line Out | 3,5-mm jack plug | Connection to the computer |
| Keyb./Mouse | PS/2 jack | Connection of a keyboard / mouse |
| Keyb./Mouse | USB A socket | Connection of a keyboard / mouse |
| Keyb. CPU | PS/2 jack | Connection to the computer |
| Mouse CPU | PS/2 jack | Connection to the computer |
| RS232 | D-Sub 9 socket | Serial data transmission |
| USB CPU | USB B socket | Connection to the computer |
| Red. Power | Mini DIN 4 socket | Redundant power supply |
| Main Power | IEC plug (IEC-320 C14) | Stromversorgung |

# TECHNICAL DATA

| | | |
|---|---|---|
| General | Brand | G&D |
| | Product group | KVM extenders |
| | Product Family | Vision |
| | Country of origin | Germany |
| | KVM matrix system component | Computer module (digital) |
| | Power Supply | Redundancy without load balancing |
| Input options | USB mouse | yes |
| | USB keyboard | yes |
| | PS/2 mouse | yes |
| | PS/2 keyboard | yes |
| Transmission | Number of transmission channels | 5 |
| | Redundant transmission channels | no redundant KVM transmission |
| | Range | 100 m (62.5/125µm)<br>200 m (50.0/125µm, OM2)<br>400 m (50.0/125µm, OM3)<br>70 m (62.5/125µm)<br>150 m (50.0/125µm)<br>400 m (50.0/125µm, OM4 - 4700MHz*km) |
| | Laser class | Class 1 |
| | Type of interface | LC-Duplex |
| | Wavelength | 850 nm |
| | Medium | Fiber MM |

| | | |
|---|---|---|
| | Data rate | 2.5 Gbit/s |
| Video input | Quantity | 4 |
| | Format | Singlelink DVI |
| | Colour depth | 24 bit |
| | Pixel rate ca. | 25 MHz to 165 MHz |
| | Vertical frequency | 24 Hz to 120 Hz |
| | Horizontal frequency | 25 kHz to 130 kHz |
| | Exemplary resolutions | 1920 × 1200 (60 Hz)<br>1920 × 1080 (60 Hz)<br>1600 × 1200 (60 Hz)<br>1280 × 1024 (85 Hz) |
| | General Notes | Further VESA and CTA standardised resolutions possible within pixel rate and horizontal/vertical frequency. |
| | Supported interlace resolutions | 1920 × 1080i (60 Hz)<br>1920 × 1080i (50 Hz)<br>1440 × 576i (50 Hz)<br>1440 × 480i (60 Hz) |
| | Only the listed interlace formats are supported | yes |
| Video output | Quantity | 4 |
| | Format | Singlelink DVI |
| | Colour depth | 24 bit |
| | Pixel rate ca. | 25 MHz to 165 MHz |
| | Vertical frequency | 24 Hz to 120 Hz |

| | | |
|---|---|---|
| | Horizontal frequency | 25 kHz to 130 kHz |
| | Exemplary resolutions | 1920 × 1200 (60 Hz)<br>1920 × 1080 (60 Hz)<br>1600 × 1200 (60 Hz)<br>1280 × 1024 (85 Hz) |
| | General Notes | Further VESA and CTA standardised resolutions possible within pixel rate and horizontal/vertical frequency. |
| | Supported interlace resolutions | 1440 × 480i (60 Hz)<br>1440 × 576i (50 Hz)<br>1920 × 1080i (50 Hz)<br>1920 × 1080i (60 Hz) |
| | Only the listed interlace formats are supported | yes |
| Audio | Transmission type | Stereo<br>Transparent |
| | Resolutions | 24 bit digital |
| | Sampling rate | up to 96 kHz |
| | Bandwidth | 22 kHz |
| | Audio support | Analog |
| USB | Separate USB transmission port | yes |
| | Specification | USB 2.0 |
| | Medium | Fiber MM |
| | Transmission rate | max. 480 Mbit/s (Hi-Speed) |
| | Range | max. 550 m |
| | Power (output) | 500 mA (HighPower) |

| | | |
|---|---|---|
| | USB classes | All |
| Serial | Standard | RS232 |
| | Transparent transmission | yes |
| | Data rate | max. 115,200 bps |
| | Signals | TxD<br>RxD<br>DTR<br>DSR<br>RTS<br>CTS<br>DCD |
| Network | Quantity | 1 |
| | Medium | CAT5<br>CAT6<br>CAT7 |
| | Data rate | 10 Mbit/s<br>100 Mbit/s |
| Maintenance | Update via | ConfigPanel (Network) |
| | Serviceport settings | 115200bps (8/N/1) |
| Housing | Material | Anodised aluminium |
| | Active cooling (fan) | yes |
| | Width ca. | 436 mm / 17.17 in |
| | Height ca. | 44 mm / 1.73 in |
| | Depth ca. | 210 mm / 8.27 in |
| | IP protection class | IP20 |

| | | |
|---|---|---|
| | Weight ca. | 2.58 kg / 5.69 lb |
| Operating conditions | Operating environment temperature | 5 °C to 45 °C / 41 °F to 113 °F |
| | Operating air humidity, non-condensing | 20 % to 80 % |
| | Area of application | Indoor use |
| | Maximum operating altitude above sea level | 3,048 m |
| | Storage environment temperature | -20 °C to 60 °C / -4 °F to 140 °F |
| | Storage air humidity, non-condensing | 15 % to 85 % |
| | MTBF | 146,000 h at 25°C (77 °F) |
| | Conformities | CE compliant (see downloads)<br>UKCA compliant (see downloads)<br>FCC compliant (see manual)<br>TAA compliant (see downloads)<br>RoHS compliant (see downloads)<br>WEEE (reg. no. DE30763240)<br>REACH compliant (see downloads) |
| Power supply 1 | Quantity | 1 |
| | Type | Internal |
| | Input voltage | 100-240 VAC |
| | Input frequency | 60-50 Hz |
| | Current consumption | 0.6-0.3 A |
| | Power consumption max. | 34.5 W |
| | Heat output max. | 31.6 W / 107.82 BTU/h |

| Power supply 2 | | |
|---|---|---|
| | Quantity | 1 |
| | Type | External |
| | Input voltage | 12 VDC |
| | Current consumption | 2.6 A |
| | Power consumption max. | 29.7 W |
| | Heat output max. | 26.7 W / 91.10 BTU/h |

# ACCESSORY PRODUCTS

| Image | Description | Article number |
|---|---|---|
| | **USB-Service-2 cable 2m**<br>Cable for system updates and configuration | A6200103 |
| | **PowerCable-3 Standard cable 3m**<br>Cable to connect the power supply type Germany | A6300066 |
| | **PowerCable-5 Standard cable 5m**<br>Cable to connect the power supply type Germany | A6300065 |
| | **Audio-M/M-3-ferrite cable 3m**<br>Audio connection cable with ferrite core | A6300118 |
| | **Audio-M/M-5-ferrite cable 5m**<br>Audio connection cable with ferrite core | A6300085 |
| | **DP1.4-Cable-M/M-3 SK13358 3m**<br>Single cable to connect a DisplayPort video channel (DP1.4) | A6300174 |
| | **DP1.4-Cable-M/M-5 SK13359 5m**<br>Single cable to connect a DisplayPort video channel (DP1.4) | A6300175 |
| | **USB-AM/BM-3 cable USB 3m**<br>USB cable, Type-A Plug/Type-B Plug | A6300114 |
| | **USB-AM/BM-5 cable USB 5m**<br>USB cable, Type-A Plug/Type-B Plug | A6300111 |
| | **PowerPack 12 Type 2 12V/5A**<br>60W power supply with 2m powercable | A4110008 |
| | **PowerPack 12 Type 2 12V/5A TAA**<br>60W power supply with 2m powercable, TAA compliant | A4110061 |

# MORE VARIANTS

| Description | Article number |
|---|---|
| **DVI-Vision-Fiber(M)-AR-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1110172 |
| **DVI-Vision-Fiber(M)-AR-CPU-UC**<br>Splitter computer module for transmission of single link DVI signals to 2 different counterpart stations (extenders or matrix switches) via fiber multimode | A1110229 |
| **DVI-Vision-Fiber(M)-ARU-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1110171 |
| **DVI-Vision-Fiber(M)-ARU-CPU-UC**<br>Splitter computer module for transmission of single link DVI signals to 2 different counterpart stations (extenders or matrix switches) via fiber multimode | A1110230 |
| **DVI-Vision-Fiber(M)-ARU2-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1110168 |
| **DVI-Vision-Fiber(M)-MC2-AR-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1210176 |
| **DVI-Vision-Fiber(M)-MC2-ARU-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1210184 |
| **DVI-Vision-Fiber(M)-MC2-ARU2-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1210183 |
| **DVI-Vision-Fiber(M)-MC4-AR-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1410175 |
| **DVI-Vision-Fiber(M)-MC4-ARU-CPU**<br>Computer module to extend single link DVI signals via fiber multimode | A1410183 |

# CONTACT

## WE ARE HERE FOR YOU!

If you have any further questions, we are looking forward to advising you on your individual project requirements.

### TECHNICAL SALES

Tel.: +1-833-928-1976
Fax: +1-833-928-1976
E-Mail: sales.us@gdsys.com

### HEADQUARTERS

Panoptec Europe GmbH
Obere Leimbach 9 | 57074 Siegen | NRW | Deutschland

Tel.: +49 271 23872-0
Fax: +49 271 23872-120
E-Mail: sales@panoptec.com

### US OFFICE

G&D North America Inc.
4540 Kendrick Plaza Drive | Suite 100
Houston, TX 77032 | United States

Tel.: +1-346-620-4362
E-Mail: sales.us@gdsys.com

### MIDDLE EAST OFFICE

Panoptec Europe GmbH
Dubai Studio City | DSC Tower
12th Floor, Office 1208 | Dubai, UAE

Tel.: +971 4 5586178
E-Mail: sales@panoptec.com

### APAC OFFICE

Panoptec Europe GmbH
60 Anson Road #17-01
Singapore 079914

Tel.: +65 9685 8807
E-Mail: sales@panoptec.com