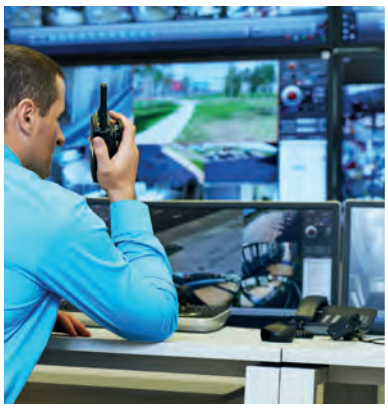
KVM-over-IP extenders

DVI-Vision-IP

KVM extenders
Extender systems to bridge IT-distances

Catalogue V1.0






G&D IF IT'S KVM

G&D IF IT'S KVM

Guntermann & Drunck is regarded as a leading manufacturer of KVM equipment used in control rooms in air traffic control, broadcast studios, on ships and to monitor industrial processes.

With a powerful portfolio consisting of KVM extenders, switches and matrix switches, G&D's users get real added value. G&D provides the broadest KVM product portfolio at the market. Even with different features, all G&D products are compatible and can be combined. Our KVM solutions optimise the application of IT equipment and improve the working conditions for humans and computers.

No matter where KVM devices are installed, there's always one main requirement - robust, reliable, user-friendly and easy to operate KVM systems that can be adapted to future requirements and grow with your demands.

By short lines of communication G&D is able to solve challenging requirements and tailor systems to our customers' needs. We keep direct contact to our customers and are personally available. We are proactive and always keep an eye on the trends in the industry. Functionalities required by our customers are quickly implemented into our products. Our success can only be measured with our customers' satisfaction.

Trust in G&D for your optimal KVM solution.

DVI-Vision-IP – extends single-link DVI signals over standard IP-based networks on Layer 3

The KVM-over-IP extender system **DVI-Vision-IP** extends the following signals:

- Single-link DVI video
- Keyboard/mouse (USB and PS/2)
- Audio + RS232
- USB HID Generic

The system processes single-link DVI image data pixel-perfectly and with very good hand-eye coordination. The maximum possible image resolution corresponds to a pixel rate between 25MPixel/s and 165MPixel/s.

Signals are transmitted using CAT cabling or optical fibers as well as over IP-based networks on layer 3 – even across network boundaries.

The DVI-Vision-IP system consists of a computer module (transmitter) and a console module (receiver) and allows users to operate their computers from great distances.

By means of manual bandwidth management, the transmission can be adapted to a wide range of bandwidth requirements. Video, keyboard, mouse and control data is encrypted with AES-128.

DVI-Vision-IP - rear view

Operating principle

Extenders of the DVI-Vision-IP series use G&D's KVM-over-IP™ technology to transmit signals. The transmission is based on IP networks over gigabit Ethernet (OSI model layer 3). The device provides a network interface for transmitting data, WebIF, configuration, monitoring, SNMP and updates. It is also equipped with a management network interface that provides all of the above functions in addition to data transmission.

For monitoring, DVI-Vision-IP uses G&D's proven monitoring and SNMP technology. The system is configured via web interface or OSD.

Due to predefined IP addresses, plug & play is supported for both console and computer modules. Therefore it couldn't be easier to use existing network infrastructures or CAT cables or optical fibres in a 1:1 connection to put the modules into operation.
Within the KVM-over-IP product family, the different extender variants are compatible with each other, allowing any mix-matching of different video interfaces on console and computer modules. However, data transmission with KVM-over-IP technology is not compatible with classic KVM extenders from G&D. G&D's KVM-over-IP technology provides can be used extremely flexible.

The KVM-over-IP extenders can be operated in a matrix mode using an additional control unit, the ControlCenter-IP. This allows you to distribute and share signals within a LAN infrastructure. Users can also access their systems within the LAN network regardless of actual ranges.

Highlights

Video

- Support of single-link DVI video
- Resolution with pixel rate between 25MPixel/s and 165MPixel/s
- Horizontal frequency: 25 kHz - 130 kHz
- Vertical frequency: 24 Hz - 120 Hz
- Resolutions up to 1920 × 1200 @ 60 Hz, 1280 × 1024 @ 85 Hz
- Exemplary resolutions: 1920 × 1080 @ 60 Hz, 1600 × 1200 @ 60 Hz. Further VESA and CEA standardized resolutions can be used within the scope of the pixel rate and the horizontal and vertical frequency.
- Supported interlace resolutions: 1920 × 1080i @ 60 Hz (1080i_60 Hz), 1920 × 1080i @ 50 Hz (1080i_50 Hz), 1440 x 576i @ 50 Hz (576i_50 Hz), 1440 × 480i @ 60 Hz (480i_60 Hz)
- Pixel encoding of RGB 4:4:4 with 24bpp/8bpc
- Compressed transmission, pixel perfect, lossless video quality, near-zero latency, ideal hand-eye coordination
- EDID support
- Digital and analogue monitors can be connected on user side

Operation

- Integrated matrix support for use in combination with ControlCenter-IP
- On-screen display for configuration and operation
- Web interface for configuration, monitoring and updates
- Local console at computer module
- Ident LED to quickly find devices in complex installations
- Competing or exclusive operation over local or remote workstation
- Screen-freeze function at remote console

Signals

- Encrypted video, keyboard, mouse and control data (AES-128)
- Support of PS/2 and USB keyboard/mouse (even in mixed mode)
- Permanent keyboard and mouse emulation
- Permanent monitor emulation (CPU)
- Audio stereo bidirectional
- RS232 transparent
- Generic USB HID interface

Transmission

- IP-based signal transmission over standard gigabit Ethernet networks Layer 3, CAT or optical fibers
- HDIP level 1-3
- Secure and trouble-free operation through pairing and encryption with be AES-128 (cannot be manipulated)
- Unlimited transmission distance, with up to 100 meters between 2 active network components when using CAT cabling and up to 10,000 metres when using optical fibres

Device

- Internal power pack for main power supply
- Redundant, external power supply (optional)
- Ident LED to quickly find devices in complex installations
- Shipped as desktop variant (sets for rackmounting are separately available)

System update

- Update via Config Panel 21 (HTML, Java-free, optimised operation)

Features

Configuration and security

- Encrypted video, keyboard, mouse and control data (AES-128)
- Support of Quality of Service (QoS), can be configured by users
- Users can configure network ports of the respective communication channels
- Additional, independent management interface
- Manual bandwidth management to adjust the required bandwidth
- SNMP (trap and agent)
- Galvanic separation of transmitter and receiver (only with Fiber), less sensitive to interfering radiation
- High reliability

Screen freeze function

If the receiver loses the video signal due to a broken connection or a problem with the computer's graphics card, the Screen-freeze function „freezes" the image last displayed on the monitor. This status is highlighted by a red semi-transparent frame. The function is automatically cancelled when the display receives an active video signal.

Features

Monitoring

With the Monitoring function, you can auto-output device status messages to Syslog servers or via SNMP. The web interface lets you monitor the device manually.

The monitoring function of the DVI-Vision-IP queries the following values:

- Status power supply unit (on/off)
- Status temperature threshold device (in/over limit)
- Status connection cables (ok/nok)
- Status computer (on/off)
- Status image signal graphics card computer (available/not available)
- Status network
- Status SFP modules (fiber variant)
- Status interfaces transmitter and receiver
- Freeze status
- Type of display (local and remote)
- Proactive monitoring of device status
- Event reporting function (syslog or SNMP traps)

Variants

Transmission medium

- **DVI-Vision-IP-CAT:** Transmission over CAT x cables
- **DVI-Vision-IP-Fiber:** Transmission over multi-mode or single-mode optical fibers

Connecting a KVM-over-IP extender to a matrix system

The KVM-over-IP extender systems DVI-Vision-IP come with integrated matrix support to be able to adapt to growing installations. This way, you can combine the extension modules with a ControlCenter-IP matrix system even at a later time. Thus, operators benefit from more flexibility through distributed access - and any existing components can still be used as before.

Within the KVM-over-IP product family, the different extender variants are compatible with each other, allowing any mix-matching of different video interfaces on console and computer modules. However, data transmission with KVM-over-IP technology is not compatible with classic KVM extenders from G&D.

DVI-Vision-IP extender system

ControlCenter-IP

DVI-Vision-IP-CAT/-Fiber

DVI-Vision-IP-CAT-CON - front view

DVI-Vision-IP-CAT-CON - rear view

GENERAL FEATURES
DVI-VISION-IP

	DVI-Vision-IP-CPU	DVI-Vision-IP-CON
Interfaces for computers		
Video:	1 × DVI-D socket	-
PS/2 keyboard:	2 × PS/2 socket	-
USB keyboard/mouse:	1 × USB B socket	-
Audio:	3.5 mm jack plug (line in) 3.5 mm jack plug (line out)	-
RS232:	1 × RS232-Buchse	-
Interfaces for remote workstation		
Monitor:	-	1 × DVI-I socket
PS/2 keyboard/mouse:	-	2 × PS/2 socket
USB keyboard/mouse:	-	2 × USB A socket
Generic HID:	-	1 × USB A socket
Audio:	-	3.5 mm jack plug (speakers) 3.5 mm jack plug (micro in)
RS232:	-	1 x RS232 plug
Interfaces for lokal workstation		
Monitor:	1 × DVI-I socket	-
PS/2 keyboard:	1 × PS/2 socket	-
USB keyboard/mouse:	2 × USB A socket	-
Interfaces for network transmission		
KVM, audio and RS232	see specific features	
Other interfaces		
Network management:	1 × RJ45 socket (100 MBit/s)	
Service:	1 × Mini USB socket (type B)	
Graphics		
Format:	Single-link DVI	
Pixel coding:	RGB 4:4:4 with 24 bpp/8 bpc	
Pixel rate:	25 MP/s to 165 MP/s	
Max. resolution:	1920 × 1200 @ 60 Hz 1280 × 1024 @ 85Hz	

GENERAL FEATURES
DVI-VISION-IP

	DVI-Vision-IP-CPU	DVI-Vision-IP-CON
Exemplary resolutions:	1920 × 1080 @ 60 Hz 1600 × 1200 @ 60Hz) Other standard resolutions possible	
Supported interlace reslutions:	1920 × 1080i @ 60 Hz (1080i_60 Hz), 1920 × 1080i @ @ 50 Hz (576i_50 Hz), 1440 × 576i @ 50 Hz (480i_60 Hz) 1440 × 480i @ 60 Hz (480i_60 Hz)	
Vertical frequency:	24 Hz to 120 Hz	
Horizontal frequency:	25 kHz to 130 kHz	
DDC:	EDDC 1.2, DDC/CI	
Audio		
Transmission type:	Transparent, bidirectional	
Resolution:	24 bit digital, stereo	
Sampling rate	96 kHz	
Bandwidth:	22 kHz	
RS232		
Transmission type:	Transparent	
Transmission rate:	Max. 115,200 bit/s	
Supported signals:	RxD, TxD, RTS, CTS, DTR, DSR, DCD	
Main power supply		
Type:	Internal power pack	
Connector:	IEC plug (IEC-320 C14)	
Voltage:	AC100-240V/60-50Hz	
Redundant power supply		
Type:	External power pack	
Connector:	MiniDIN-4 Power socket	
Voltage:	+12VDC	

SPECIFIC FEATURES
DVI-VISION-IP-CAT

	DVI-VISION-IP-CAT-AR-CPU	DVI-VISION-IP-CAT-AR-CON
Interface for network transmission		
KVM, audio and RS232:	1 x RJ45 socket	
Housing		
Material:	Anodised aluminium	
Dimensions (W × H × D):	210 × 44 × 210 mm (desktop) 19″ × 1 HE × 210 mm (rackmount set separately available)	
Weight:	Approx. 1.4 kg	
Power consumption		
Main power supply:	100-240 VAC/60-50Hz/0.3-0.2	
Redundant power supply:	12 VDC/0.9 A	12 VDC/1.1 A
Operating environment		
Temperature:	+5 to +45 °C	
Air humidity:	< 80 %, non-condensing	

SPECIFIC FEATURES
DVI-VISION-IP-FIBER

	DVI-VISION-IP-FIBER-AR-CPU	DVI-VISION-IP-FIBER-AR-CON
Interface for network transmission		
KVM, audio and RS232:	1 x LC duplex socket	
Housing		
Material:	Anodised aluminium	
Dimensions (W × H × D):	210 × 44 × 210 mm (desktop) 19″ × 1 HE × 210 mm (rackmount set separately available)	
Weight:	Approx. 1.6 kg	Approx. 1.4 kg
Power consumption		
Main power supply:	100-240 VAC/60-50Hz/0.3-0.2 A	
Redundant power supply:	12 VDC/1.1 A	12 VDC/1.0 A
Operating environment		
Temperature:	+5 to +45 °C	
Air humidity:	< 80 %, non-condensing	

FEATURES OF TRANSMISSION MODULES – TRANSMISSION AND CABLE LENGTH

DVI-VISION-IP-FIBER

MULTIMODE TRANSMISSION MODULE	
Data transmission	
Type:	Optical fibers (2 fiber cores)
Type of interface:	LC duplex
Cable length (max.)	
Multimode 50/125 µm, Class OM2:	550 meters (fibres with 500 MHz*km) 500 meters (fibres with 400 MHz*km)
Multimode 62,5/125 µm, Class OM1:	275 meters (fibres with 200 MHz*km) 220 meters (fibres with 160 MHz*km)

SINGLEMODE TRANSMISSION MODULE	
Data transmission	
Type:	Optical fibers (2 fiber cores)
Type of interface:	LC duplex
Cable length (max.)	
Singlemode 9/125 µm, Class OS1:	10 kilometers

Item numbers DVI-Vision-IP

Item no.	Description	Design
A1120332	DVI-Vision-IP-AR-CON	Desktop
A1110238	DVI-Vision-IP-AR-CPU	Desktop
A1120344	DVI-Vision-IP-Fiber(M)-AR-CON	Desktop
A1110250	DVI-Vision-IP-Fiber(M)-AR-CPU	Desktop
A1120346	DVI-Vision-IP-Fiber(S)-AR-CON	Desktop
A1110252	DVI-Vision-IP-Fiber(S)-AR-CPU	Desktop

Legend

ABBREVIATIONS

CPU = Computer module
PC = Computer module
CON = User module
REM = User module

MC2 = Multi-channel 2
MC3 = Multi-channel 3
MC4 = Multi-channel 4

M = Multimode
S = Singlemode
S+ = Singlemode+

RM = For assembly in a 19“ rack Desktop device
DT = Desktop device
DP = DisplayPort™

A = Audio
R = RS232
U = Integr. USB 2.0 up to 16 MBit/s
U2 = Transp. USB 2.0 Hi-Speed 480 Mbit/s
D = Delay

EQUIPMENT FEATURES

- Audio
- CAT cable
- Compact setup
- CrossDisplay-Switching
- Delay
- DisplayPort™
- DVI dual link video
- DVI single link video
- Expansion
- Fiber optics
- High Definition Multimedia Interface
- Keyboard/Mouse
- KVM-over-IP™
- Media control
- Mix & Match
- Modular setup
- Monitoring
- Multi user
- Multi-channel video
- Network connection
- Power switching
- Remote IP
- RS232
- Screen-Freeze
- Separate local/remote user
- Single user
- USB 2.0
- USB 3.0
- VGA video
- Web Interface

COLOUR CATEGORY

- KVM extenders
- KVM switches
- Analog KVM matrix systems
- Digital KVM matrix systems
- Digital signage
- KVM add-ons
- Monitoring & SNMP
- KVM MultiPower
- Accessories

G&D
IF IT'S KVM

From professionals to professionals:

Trust in our professional solutions - from planning through to aftersales support.

Main office

Guntermann & Drunck GmbH
Systementwicklung
Obere Leimbach 9
D-57074 Siegen

Phone +49 271 23872-0
Fax +49 271 23872-120

sales@gdsys.de
www.gdsys.de

US office

G&D North America Inc.
4001 W. Alameda Avenue
Suite 100, Burbank, CA 91505

Phone +1-818-748-3383

sales@gd-northamerica.com
www.gd-northamerica.com

Follow us on:

WEEE-Reg.-Nr. DE30763240