

# DVI KVM Extender

# DL-Vision 7.3

## KVM Extender

Extender systems to bridge IT-distances



**Leading the way in digital KVM**

## The company



## Leading the way in digital KVM

Guntermann & Drunck GmbH has been established in 1985 and is named after its founders. Over 25 years have since past, and we are now a leading manufacturer of digital and analog KVM switching systems.

As an owner-managed company we work with a broad range in both digital and analog KVM closely with the marketplace and make our decisions with and in the interests of our customers. It is our philosophy to meet our customers while making decisions, to accompany them in the process and ensure that they achieve their goals.

We can do this because as a medium sized company we have short communication paths and all core competencies are in house – from development through to production. This way we can even make the impossible possible at times. If it is thanks to the modularity of the products or by implementing a customised solution. We orient ourselves towards the needs of the customer – and not the other way round.

Organisations, service providers and companies of all sizes managing numerous computers, servers and other network devices trust the comprehensive advice and service provided by Guntermann & Drunck GmbH.

Thanks to these different fields of specialisation, the demands placed on the products are many and are manifold. Our products have to provide a long-life service, be secure, uncomplicated, user-friendly, understandable and adaptable.

The DL-Vision(M/S) KVM extender system extends the following signals:

- Keyboard/mouse
- Dual-link DVI
- Audio
- RS232
- USB 2.0

The system consists of a computer module (transmitter) and a user module (receiver) and enables the remote operation of one computer. At each module, a console can be connected.

DL-Vision(M/S) uses fibre optics (two fibres per video channel) to transmit uncompressed and lossless signals up to 300 or 10,000 m. The devices are available as variants displaying one, two or four video channels (MC4 in preparation).

With its network connection, web interface, and DLV-Monitoring function, the DL-Vision(M/S) system offers important features for mission-critical applications.



above: DL-Vision(S)-ARU2-CPU computer module  
below: DL-Vision(S)-ARU2-CPU user module

## Highlights

### Video

- Single- and dual-link DVI
- 2k x 2k resolution (2048 x 2048 @ 60 Hz)
- With DL-Vision-MC2 also support of 4K-resolution
- Uncompressed, lossless transmission in 1:1 performance
- EDID-support for "plug and play" experience of the connected displays
- Support of Barco PVS graphics card
- Single- and multi-channel variants

### Operation

- At both modules console with all video channels

### Signals

- PS/2 and USB keyboard/mouse support
- Audio, RS232 and USB 2.0 transmission

### Network / Communication / Safety

- Two network interfaces can be used in separated sub-networks or as redundancy via network bonding (link aggregation) and increase reliability
- Configuration over web interface
- Monitoring and reporting of operating status over web interface
- Report and request of system status via SNMP trap and agent
- The **IP-Forwarding** feature lets you route SNMP packets of independent devices between two different network segments using the fibre optics connections of the DL-Vision. Here, the local device of the DL-Vision extender system receives addressed SNMP packets from the connected network segments, forwards them to its counterpart using fibre optics and once again transfers them to the connected network segment. Now independent devices with SNMP support, which are part of the same network segment as the DL-Vision console

device (CON), can be monitored in a different network segment containing the DL-Vision computer module CPU) using the fibre optics connection of both DL-Vision devices.

- Logbook: electronic notes about the device; can be exported as .csv file
- Ident-LED facilitate locating of devices in complex installations
- Redundant power supply

### DLV-Monitoring and SNMP

The DLV-Monitoring function enables you to auto-output device status messages to Syslog servers or SNMP. The web interface lets you monitor the device manually. The Monitoring function of the DL-Vision(M/S) queries the following values:

- Proactive monitoring of device states
- Event reporting function (Syslog or SNMP traps)
- Status power supply unit (on/off)
- Status temperature threshold device (in/over limit)
- Status connection cable (ok/nok)
- Status computer (on/off)
- Status image signal graphics card computer (available/not available)
- Status of access settings (what rights are assigned to the user?)

### Screen-Freeze Function

If the display 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 state is highlighted by a colour inverted frame. Meanwhile, the downtime of the video signal is displayed. The function is automatically cancelled when the display receives an active video signal.

## Features

### Video

- Resolutions up to 2560 × 1600 @ 60 Hz incl. 2048 × 2048 @ 60 Hz per channel
- Backward-compatible to single-link DVI
- Video bandwidth up to 330 Mp/s
- 24 bit colour mode
- Transparent forwarding of E-DDC information

### Transmission

- 10,000 m over 2 singlemode fibers (9/125 µm, 2,000 MHz\*km, OS1)
- 300 m over 2 multimode fibers (50/125 µm, 2,000 MHz\*km, OM3)
- 82 m over 2 multimode fibers (50/125 µm, 500 MHz\*km, OM2)
- 66 m via 2 multimode fibers (50/125µm, 400 MHz\*km)
- 33 m via 2 multimode fibers (62.5/125 µm, 200 MHz\*km, OM1)
- 26 m via 2 multimode fibers (62,5/125 µm, 160 MHz\*km, FDDI-grade)
- Modules with other wavelengths on request available

- Uncompressed, lossless transmission with 1:1 performance
- Connection over 1 (2) × LC single plugs
- Bidirectional transmission of audio and RS232 as default
- Screen Freeze function as default
- Transparent transmission of USB 2.0

### Device

- Galvanic separation of transmitter and receiver
- Insensitive to interference radiation
- Two integrated network ports
- Configuration via web interface
- Redundant power supply
- PS/2 and USB keyboard/mouse supported; also mixed operation
- Permanent keyboard/mouse emulation
- Suitable as desktop and rack mount version

### System upgrade

- Over network (web interface)

## Variants

### Design

- Units are supplied as desktop variants
- 19" rackmount kit included

### Video channels

- Single-channel or multi-channel 2 variant

## Expansion

### DevCon support

Regarding the IP-Forwarding function DL-Vision(M/S) uses the network to communicate with the appliance DevCon-Center. If you employ more than one DL-Vision(M/S), the devices can be queried and configured via DevCon-Center.

### Move-Function

Using a DevCon-Center, all configurations of the installed DL-Vision can be centrally viewed or edited. If a computer or user module of DL-Vision fails, its settings are still active and visible in the database. After the installation of a new device, the administrator can transfer the „old“ settings by **move-command** to the new device. In this case the complexity of the new setup can be reduced.

### DLV-Power

DLV-Power enables you to power on or power off a computer remotely (reset and ATX power switching) over an implemented slot card, which is connected to the computer module. The customer provides the required operating hardware at the remote side (e.g. a button), which is connected to the user module.

The function is available for all DL-Vision(M/S) variants. For further details, please contact our sales team

## Installation

Link the computer to the back of the DL-Vision(M/S) transmitter. Distinctive cables connect the computer's keyboard, video, mouse, audio, RS232, and USB interfaces to the DL-Vision(M/S) computer module.

Installing the user console is just as easy: simply connect the operating hardware with the corresponding interfaces of the DL-Vision(M/S) receiver.

Use the existing cabling structure to link transmitter and receiver.

The DL-Vision (M/S) manual is additionally included in the scope of supply.

## DL-Vision Single-Channel



left: DL-Vision(S)-ARU2-CPU computer module  
right: DL-Vision(S)-ARU2-CON user module

	Computer module	User module
<b>Video</b>		
Number of monitors	1	1
Signal type/video	dual link DVI, backward-compatible to single link	
Resolution	up to 2560 x 1600 @ 60 Hz incl. 2048 x 2048 @ 60 Hz	
Standards	E-DDC support	
Colour depth	24 bit	
Pixel rate	up to 330 MHz	
Interfaces for user console	1 x DVI-D socket	1 x DVI-D socket
Interfaces to computer	1 x DVI-D socket	
<b>Keyboard/Mouse</b>		
Interfaces for user console	2 x Mini-DIN 6 socket	
	2 x USB-A socket	
Interfaces to computer	2 x Mini-DIN 6 socket	
	1 x USB-B socket	
<b>Audio</b>		
Design	internal	
Sampling rate	96 kHz	
Resolution	24 bit digital, stereo	
Bandwidth	22 kHz	
Interfaces for user console		1 x 3.5 mm jack plug (speaker)
Interfaces to computer	1 x 3.5 mm jack plug (line in)	
<b>RS232</b>		
Design	internal	
Transmission rate	max. 230,400 bit/s	
Transmittable signals	RxD, TxD, RTS, CTS, DTR, DSR, DCD	
Interfaces for user console		1 x D-Sub 9 plug
Interfaces to computer	1 x D-Sub 9 socket	
<b>Transparent USB 2.0</b>		
Design	internal	
Transmission rate	up to 2,000 m	
USB power supply	High Power devices up to 500 mA	
USB transmission rate	up to 480 mbps	
Interfaces for user console		4 x USB-A socket
Interfaces to computer	1 x USB-B socket	

## DL-Vision Single-Channel

Transmission		
Type of cable connection	dedicated fiber optic link (crossover)	
Transmission cable type	fiber optics	
Transmission length	10,000 m over singlemode fibers (9/125 µm, 2.000 MHz*km, OS1) at max. resolution	
	2,000 m over singlemode fibers (9/125 µm, 2,000 MHz*km, OS1) at max. resolution (only when transmitting USB2.0)	
	300 m over multimode fibers (50/125 µm, 2000 MHz*km, OM3) at max. resolution	
	82 m over multimode fibers (50/125 µm, 500 MHz*km, OM2) at max. resolution	
	66 m over multimode fibers (50/125 µ, 400 MHz*km) at max. resolution	
	33 m over multimode fibers (62,5/125 µ, 200 MHz*km, OM1) at max. resolution	
	26 m over multimode fibers (62,5/125 µ, 160 MHz*km, FDDI-grade) at max. resolution	
Connection	1 x LC duplex socket	
No. of fiber optics	2	
Connection with USB 2.0	1 additional LC duplex socket	
USB 2.0 transmission	2 additional fiber optics	
Audio/RS232 transmission	no additional fiber optics	
Network interfaces	2 x RJ45 socket	
Main power supply		
Type	internal power pack	
Connection	1 x IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.5-0.2A	0.5-0.2A
When equipped with USB 2.0	0.5-0.2A	0.7-0.3A
Redundant power supply		
Type	internal power pack	
Connection	1 x IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.5-0.2A	0.5-0.2A
USB 2.0 variant	0.5-0.2A	0.7-0.3A
Casing		
Material	anodised aluminium	
Desktop (W x H x D)	435 x 44 x 285 mm	
Rackmount (W x H x D)	19" x 1 U x 285 mm	
Weight	approx. 2.2 kg	
When equipped with USB 2.0	approx. 2.3 kg	
Update		
Process	via network	
Connection	network port	
Operating environment		
Temperature	+5 to +45 °C	
Air humidity	< 80% non-condensing	
Conformity	CE, RoHs	

## DL-Vision Multi-Channel 2



left: DL-Vision-(S)-MC2-ARU2-CPU computer module  
right: DL-Vision-(S)-MC2-ARU2-CON user module

	Computer module	User module
<b>Video</b>		
Number of monitors	2	2
Signal type/video	dual link DVI, backward-compatible to single link	
Resolution	up to 2 x 2560 x 1600 @ 60 Hz incl. 2048 x 2048 @ 60 Hz	
Standards	E-DDC support	
Colour depth	24 bit	
Pixel rate	up to 330 MHz	
Interfaces for user console	2 x DVI-D socket	2 x DVI-D socket
Interfaces to computer	2 x DVI-D socket	
<b>Keyboard/Mouse</b>		
Interfaces for user console	2 x Mini-DIN 6 socket	
	2 x USB-A socket	
Interfaces to computer	2 x Mini-DIN 6 socket	
	1 x USB-B socket	
<b>Audio</b>		
Design	internal	
Sampling rate	96 kHz	
Resolution	24 bit digital, stereo	
Bandwidth	22 kHz	
Interfaces for user console		1 x 3.5 mm jack plug (speaker)
Interfaces to computer	1 x 3.5 mm jack plug (line in)	
<b>RS232</b>		
Design	internal	
Transmission rate	max. 230,400 bit/s	
Transmittable signals	RxD, TxD, RTS, CTS, DTR, DSR, DCD	
Interfaces for user console		2 x D-Sub 9 plug
Interfaces to computer	2 x D-Sub 9 socket	
<b>Transparent USB 2.0</b>		
Design	internal	
Transmission rate	up to 2,000 m	
USB power supply	High Power devices up to 500 mA	
USB transmission rate	up to 480 mbps	
Interfaces for user console		4 x USB-A socket
Interfaces to computer	1 x USB-B socket	

## DL-Vision Multi-Channel 2

<b>Transmission</b>	
Type of cable connection	dedicated fiber optic link (crossover)
Transmission cable type	fiber optics
Transmission length	10,000 m over singlemode fibers (9/125 µm, 2.000 MHz*km, OS1) at max. resolution
	2,000 m over singlemode fibers (9/125 µm, 2,000 MHz*km, OS1) at max. resolution (only when transmitting USB2.0)
	300 m over multimode fibers (50/125 µm, 2000 MHz*km, OM3) at max. resolution
	82 m over multimode fibers (50/125 µm, 500 MHz*km, OM2) at max. resolution
	66 m over multimode fibers (50/125 µ, 400 MHz*km) at max. resolution
	33 m over multimode fibers (62,5/125 µ, 200 MHz*km, OM1) at max. resolution
	26 m over multimode fibers (62,5/125 µ, 160 MHz*km, FDDI-grade) at max. resolution
Connection	2 x LC duplex socket
No. of fiber optics	4
Connection with USB 2.0	1 additional LC duplex socket
USB 2.0 transmission	2 additional fiber optics
Audio/RS232 transmission	no additional fiber optics
Network interfaces	2 x RJ45 socket
<b>Main power supply</b>	
Type	internal power pack
Connection	1 x IEC plug
Voltage	AC100-240V/60-50Hz
	0.5-0.2A
	0.5-0.2A
When equipped with USB 2.0	0.5-0.2A
	0.7-0.3A
<b>Redundant power supply</b>	
Type	internal power pack
Connection	1 x IEC plug
Voltage	AC100-240V/60-50Hz
	0.5-0.2A
	0.5-0.2A
USB 2.0 variant	0.5-0.2A
	0.7-0.3A
<b>Casing</b>	
Material	anodised aluminium
Desktop (W x H x D)	435 x 44 x 285 mm
Rackmount (W x H x D)	19" x 1 U x 285 mm
Weight	approx. 2.2 kg
When equipped with USB 2.0	approx. 2.3 kg
<b>Update</b>	
Process	via network
Connection	network port
<b>Operating environment</b>	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHS



## List of Item Numbers Single-Channel

Item No.	Target module	Audio- RS232	USB 1.1	USB 2.0	Desktop	Rack- mount
A1210066	DL-Vision(S)-AR-CPU	AR			DT	RM
A1210067	DL-Vision(S)-ARU2-CPU	AR	U	U2	DT	RM
A1210068	DL-Vision(M)-AR-CPU	AR			DT	RM
A1210069	DL-Vision(M)-ARU2-CPU	AR	U	U2	DT	RM
CON	User module					
A1220048	DL-Vision(S)-AR-CON	AR			DT	RM
A1220049	DL-Vision(S)-ARU2-CON	AR	U	U2	DT	RM
A1220050	DL-Vision(M)-AR-CON	AR			DT	RM
A1220051	DL-Vision(M)-ARU2-CON	AR			DT	RM
A1800009	DLV-Power					

## List of Item Numbers Multi-Channel 2


Item No.	Target module	Audio- RS232	USB 1.1	USB 2.0	Desktop	Rack- mount
A1210070	DL-Vision(S)-MC2-AR-CPU	AR			DT	RM
A1210071	DL-Vision(S)-MC2-ARU2-CPU	AR	U	U2	DT	RM
A1210072	DL-Vision(M)-MC2-AR-CPU	AR			DT	RM
A1210073	DL-Vision(M)-MC2-ARU2-CPU	AR	U	U2	DT	RM
CON	User module					
A1220052	DL-Vision(S)-MC2-AR-CON	AR			DT	RM
A1220053	DL-Vision(S)-MC2-ARU2-CON	AR	U	U2	DT	RM
A1220054	DL-Vision(M)-MC2-AR-CON	AR			DT	RM
A1220055	DL-Vision(M)-MC2-ARU2-CON	AR			DT	RM
A1800009	DLV-Power					

## Legend

### ABBREVIATIONS

CPU	=	Computer module	M	=	Multimode
PC	=	Computer module	S	=	Singlemode
CON	=	User module	RM	=	For assembly in a 19" rack
REM	=	User module	DT	=	Available as desktop variant
MC2	=	Multichannel 2	A	=	Audio
MC3	=	Multichannel 3	AR	=	Audio + RS232
MC4	=	Multichannel 4	R	=	RS232
			U	=	transparent USB 1.1
			U2	=	transparent USB 2.0
			D	=	Delay

### EQUIPMENT FEATURES

 = modular setup	 = Fire Wire
 = keyboard/mouse	 = VT100
 = dual-link DVI video	 = KVM IP access
 = single-link DVI video	 = Network connection
 = DisplayPort 1.1	 = Web interface
 = single-link DVI + VGA	 = DevCon support
 = VGA video	 = Monitoring
 = Audio	 = CAT cable
 = RS232	 = Fiber optics
 = USB 1.1	 = Single user
 = USB 2.0	 = Multi user
 = Delay	 = Separat local/remote user
 = Screen Freeze	
 = Power Switching	