

# DVI / VGA KVM Extender

# LwLVision 7.6

## KVM Extender

Extender systems to bridge IT-distances



**Leading the way in digital KVM**



The company

Experience the whole world of

KVM

## Leading the way in digital KVM

Guntermann & Drunck is regarded as a leading manufacturer of digital and analogue 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.

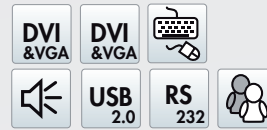
Trust in G&D for your optimal KVM solution.

The KVM extender system LwLVision extends the following signals:

- keyboard/mouse
- single-link DVI and VGA
- audio
- RS232
- USB 2.0  
(currently only available for single-channel variants).

The system consists of a computer module (transmitter) and a user module (receiver) and enables you to operate a computer remotely. You can connect a console to each module.

LwLVision transmits uncompressed signals over fiber optics (2 fibres) up to 10,000 m. The devices are available as variants displaying one or two video channels.



above: LwLVision(S)-MC2-AR-PC computer module  
below: LwLVision(S)-MC2-AR-CON user module

## Highlights

### Video

- single-link DVI and VGA at input and output side
- single- and multi-channel variants

### Operation

- at both modules console with all video channels
- access protection and user management can be switched off

### Signals

- transmission up to 10,000 m over fibre optics at maximum resolution
- PS/2 and USB keyboard/mouse support
- audio and RS232 transmission included in standard

### Communication / Safety

- redundant power supply

## Features

### Video

- single-link DVI + VGA
- resolutions per channel up to 1920 × 1200 @ 60 Hz
- video bandwidth up to 165 MPixel/s
- 24 bit colour mode
- both digital and analog monitors can be connected

### Transmission

- distances up to 10,000 m (2 × Singlemode 9/125 μ fiber optics) at maximum resolution
- distances up to 550 m (2 × Multimode 50/125 μ fiber optics) at maximum resolution
- distances up to 275 m (2 × Multimode 62.5/125 μ fiber optics) at maximum resolution
- modules with other wavelengths on request available
- bidirectional transmission of audio and RS232 integrated in standard
- transparent USB up to 2,000 m (optional)

### Device

- galvanic separation of transmitter and receiver
- insensitive to interference radiation
- PS/2 and USB keyboard/mouse supported; also mixed operation
- 100 % permanent keyboard/mouse emulation
- redundant power supply (optional)
- available as desktop, rackmount, and twin version

### System upgrade

- at service socket

## Variants

### Design

- available as desktop (DT) or rack mount (RM) variant
- twin variant combines two identical LwLVision modules behind one panel

### Video channels

- single-channel and multi-channel 2 variant

## Expansion

No product expansions available.

## Installation

The computer is linked to the back of the LwLVision transmitter. Distinctive cables connect the computer's keyboard, video, mouse, audio, and USB interfaces to the LwLVision computer module.

Installing the user console is just as easy: simply connect the operating hardware with the corresponding interfaces of the LwLVision receiver.

Use the existing cabling structure to link transmitter and receiver (multimode or singlemode fibre optics). Feel free to download the LwLVision manual to find out more details about the start-up.

## LwLVision Single-Channel



left: LwLVision(S)-ARU2-PC computer module  
right: LwLVision(S)-ARU2-REM user module

	Computer module	User module
<b>Video</b>		
Number of monitors	1	
Signal type/video	analog/digital single link video	
Resolution	btw. 640 × 480 @ 100 Hz and 1920 × 1200 @ 60 Hz	
Standards	DDC support	
Interfaces for user console	1 × DVI-I socket	1 × DVI-D socket, 1 × D-sub HD 15 socket
Interfaces to computer	1 × DVI-I socket	
<b>Keyboard/Mouse</b>		
Interfaces for user console	2 × Mini-DIN 6 socket	
Interfaces to computer	1 × D-sub HD 15 plug	2 × USB-A socket
	1 × USB-B socket	
<b>Audio</b>		
Design	internal	
Sampling rate	48 kHz	
Resolution	18 bit digital	
Bandwidth	22 kHz	
Microphone preamplification	20 dB	
Interfaces for user console		2 × 3.5 mm jack plug (speaker, micro in)
Interfaces to computer	2 × 3.5 mm jack plug (line in, line out)	
<b>RS232</b>		
Design	internal	
Transmission rate	max. 57,600 bit/s	
Transmittable signals	RxD, TxD, RTS, CTS, DTR, DSR, DCD	
Interfaces for user console		1 × D-Sub 9 plug
Interfaces to computer	1 × D-Sub 9 plug	

Transparent USB 2.0		
Design	internal	
Transmission length	multimode fibres up to 550 m	
	singlemode fibres up to 2,000 m	
USB power supply	high power devices up to 500 mA	
USB 2.0 transmission rate	up to 480 Mbit/s	
Interfaces for user console		4 × USB-A socket
Interfaces to computer	1 × USB-B socket	
Transmission		
Type of cable connection	dedicated fibre optic link	
Transmission cable type	singlemode/multimode fibres	
Transmission length (max.)	275 m over 2 multimode fibres (62.5/125µm) at max. resolution	
	550 m over 2 multimode fibres (50/125µm) at max. resolution	
	10,000 m over 2 singlemode fibres (9/125µm) at max. resolution, with USB max. 2,000 m	
Connection	1 × SC duplex socket	
No. of fibre optics	2	
Audio - RS232 transmission	no additional fibre optics	
USB 2.0 transmission	2 additional fibre optics	
Main power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz	
	0.3-0.2A	0.4-0.2A
USB variant	0.3-0.2A	0.5-0.3A
Redundant power supply		
Typ	external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC/0.9A	+12VDC/1.0A
USB 2.0 variant	+12VDC/0.9A	+12VDC/2.1A
Casing		
Material	anodised aluminium	
Desktop (W × H × D)	210 × 44 × 210 mm	
when equipped with USB 2.0	270 × 44 × 210 mm	
Rackmount (W × H × D)	19" × 1 U × 210 mm	
Weight	approx. 1.4 kg	approx. 1.3 kg
when equipped with USB 2.0	approx. 1.7 kg	approx. 1.7 kg
Update		
Process	at service socket of computer module or user module	
Connection	1 × 2.5 mm jack plug	
Operating environment		
Temperature	+5 to +40 °C	
Air humidity	20 - 80% non-condensing	
Conformity	CE, RoHS	

## LwLVision Multi-Channel 2



left: LwLVision(S)-MC2-AR-PC computer module  
right: LwLVision(S)-MC2-AR-REM user module

	Computer module	User module
<b>Video</b>		
Number of monitors	2	
Signal type/video	analog/digital single link video	
Resolution	btw. 640 × 480 @ 100 Hz and 1920 × 1200 @ 60 Hz	
Standards	DDC support	
Interfaces for user console	2 × DVI-I socket	2 × DVI-D socket, 2 × D-sub HD 15 socket
Interfaces to computer	1 × DVI-I socket	
<b>Keyboard/Mouse</b>		
Interfaces for user console	2 × Mini-DIN 6 socket	
		2 × USB-A socket
Interfaces to computer	1 × D-sub HD 15 plug	
	1 × USB-B socket	
<b>Audio</b>		
Design	internal	
Sampling rate	48 kHz	
Resolution	18 bit digital	
Bandwidth	22 kHz	
Microphone preamplification	20 dB	
Interfaces for user console		2 × 3.5 mm jack plug (speaker, micro in)
Interfaces to computer	2 × 3.5 mm jack plug (line in, line out)	
<b>RS232</b>		
Design	internal	
Transmission rate	max. 57,600 bit/s	
Transmittable signals	RxD, TxD, RTS, CTS, DTR, DSR, DCD	
Interfaces for user console		1 × D-Sub 9 plug
Interfaces to computer	1 × D-Sub 9 plug	

<b>Transmission</b>	
Type of cable connection	dedicated fibre optic link
Transmission cable type	singlemode/multimode fibres
Transmission length (max.)	275 m over 2 multimode fibres (62.5/125µm) at max. resolution
	550 m over 2 multimode fibres (50/125µm) at max. resolution
	10,000 m over 2 singlemode fibres (9/125µm) at max. resolution
Connection	2 × SC duplex socket
No. of fibre optics	2
Audio - RS232 transmission	no additional fibre optics
<b>Main power supply</b>	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.4-0.2A
	04.-0.2A
<b>Redundant power supply</b>	
Type	external power pack
Connection	Mini-DIN 4 socket
Voltage	+12VDC/1.9A
<b>Casing</b>	
Material	anodised aluminium
Desktop (W × H × D)	210 × 44 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 2.1 kg
<b>Update</b>	
Process	at service socket of computer module or user module
Connection	1 × 2.5 mm jack plug
<b>Operating environment</b>	
Temperature	+5 to +40 °C
Air humidity	20 - 80% non-condensing
Conformity	CE, RoHS



## List of Item Numbers Single-Channel (Multimode)

Item No.	Computer modules	AR	U2	DT	RM
A1110041	LwLVision(M)-AR-PC	AR		DT	
A1110042	LwLVision(M)-AR-PC-RM	AR			RM
A1110150	LwLVision(M)-ARU2-PC	AR	U2	DT	
A1110151	LwLVision(M)-ARU2-PC-RM	AR	U2		RM
A1110048	Twin-LwLVision(M)-AR-PC	AR		DT	
A1110154	Twin-LwLVision(M)-ARU2-PC	AR	U2	DT	RM
Item No.	User modules	AR	U2	DT	RM
A1120017	LwLVision(M)-AR-Rem	AR		DT	
A1120018	LwLVision(M)-AR-Rem-RM	AR			RM
A1120144	LwLVision(M)-ARU2-Rem	AR	U2	DT	
A1120145	LwLVision(M)-ARU2-Rem-RM	AR	U2		RM
A1120055	Twin-LwLVision(M)-AR-Rem	AR		DT	RM

## List of Item Numbers Single-Channel (Singlemode)

Item No.	Computer modules	AR	U2	DT	RM
A1110053	LwLVision(S)-AR-PC	AR		DT	
A1110054	LwLVision(S)-AR-PC-RM	AR			RM
A1110152	LwLVision(S)-ARU2-PC	AR	U2	DT	
A1110153	LwLVision(S)-ARU2-PC-RM	AR	U2		RM
A1110060	Twin-LwLVision(S)-AR-PC	AR		DT	RM
A1110155	Twin-LwLVision(S)-ARU2-PC	AR	U2	DT	RM
Item No.	User modules	AR	U2	DT	RM
A1120025	LwLVision(S)-AR-Rem	AR		DT	
A1120026	LwLVision(S)-AR-Rem-RM	AR			RM
A1120146	LwLVision(S)-ARU2-Rem	AR	U2	DT	
A1120147	LwLVision(S)-ARU2-Rem-RM	AR	U2		RM
A1120057	Twin-LwLVision(S)-AR-Rem	AR		DT	RM

## List of Item Numbers Multi-Channel (Multimode)

Art.Nr.	Computer modules (Multimode)	Audio-RS232	USB 2.0	Desktop	Rack-mount
A1210039	LwLVision(M)-MC2-AR-PC	AR		DT	RM
Art.Nr.	User modules (Multimode)				
A1220015	LwLVision(M)-MC2-AR-Rem	AR		DT	RM

## List of Item Numbers Multi-Channel (Singlemode)

























Art.Nr.	Computer modules	Audio-RS232	USB 2.0	Desktop	Rack-mount
A1210047	LwLVision(S)-MC2-AR-PC	AR		DT	RM
Art.Nr.	User modules				
A1220023	LwLVision(S)-MC2-AR-Rem	AR		DT	RM

## 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	DP	=	DisplayPort
MC4	=	Multichannel 4	A	=	Audio
			AR	=	Audio + RS232
			R	=	RS232
			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
	= USB 2.0		= Fiber optics
	= Delay		= Single user
	= Screen Freeze		= Multi user
	= Power Switching		= Separat local/remote user