

# DVI KVM Switches

# DL-MUX 7.0

## KVM Switches

Switches for the effective operation of multiple computers  
via one workstation





## 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 KVM Switch DL-MUX4 enables you to operate four computers over one user console.

The DL-MUX4 switches the following signals:

- keyboard/mouse
- dual-link DVI and VGA
- audio
- USB 2.0

The device is available in variants transmitting one, two, three, or four video channels.

With its network connection, the web interface and the DLM-Monitoring, the DL-MUX4 offers numerous features for mission-critical applications.

A working system consists of one DL-MUX4 and the relevant computer connection cable sets.



DL-MUX4-MC4 - Rear view

## Highlights

### Video

- mixed DVI/VGA operation on input and output side
- E-DDC support
- single- and multi-channel variants
- supports Barco PVS graphics cards
- DVI dual-link 330 Mbps

### Signals

- supports PS/2 and USB keyboard/mouse
- switches audio and transparent USB 2.0 signals

### Network / Communication / Safety

- two network ports
- configuration via web interface
- monitoring via SNMP and web interface
- reports device conditions (temperature, voltage, computer status etc.)
- identification LED for locating the device in complex installations
- redundant power supply
- Logbook: electronic notes regarding the device; can be exported as .csv file

### DLM monitoring function

The integrated DLM-Monitoring auto-transmits device status messages to syslog servers or sends them as SNMP. Manual monitoring is carried out over the web interface.

### The DL-MUX monitoring function queries the following values:

- power supplies (on/off)
- temperature limit (above/below average)
- connection cable (interrupted/uninterrupted)
- computer (on/off)
- DVI video input (available/not available)
- access settings (set preferences)

The DLM-Monitoring enables proactive monitoring instead of reactive maintenance.

## Features

### Video

- DVI resolution up to 2560 × 1600 @ 60Hz or 2048 × 2048 @ 60 Hz per channel
- VGA resolution up to 1920 × 1440 @ 75 Hz per channel
- video bandwidth DVI dual-link: 330 Mbps
- video bandwidth VGA up to 400 MHz
- digital colour mode 24 bits or analog
- backward-compatible to single-link

### System upgrade

- updates via flash upgrades at device and over network (web interface)

### Device

- only access the standard computer interfaces
- dual network connectivity
- configuration over web interface
- redundant power supply
- no software installation required
- available as desktop and rack mount variant
- shipped in an aluminium casing for best interference resistance
- hot-pluggable

## Variants

### Design

- available as desktop (DT) or rack mount (RM) variant

### Video channels

- Single-Channel, MC2, MC3, MC4

## Expansion

### DevCon Support

The DL-MUX supports network based communication with the appliance DevCon-Center.

Several DL-MUX devices can be centrally monitored and configured using the DevCon-Center.

## Installation

Connect the computer to the back side of the devices. Standard cables link keyboard, video, mouse, audio, and USB interfaces to the switch.

Cable length of PS/2 cable sets: 2 m, 5 m  
Cable length of USB cable sets: 2 m, 5 m

For installing the user console simply connect keyboard, monitor, mouse, speakers, and USB devices to the intended interface.

Feel free to download the DL-MUX manual to find out more details about the start-up.

## DL-MUX4



left: DL-MUX4 - Front view  
right: DL-MUX4 - Rear view

DL-MUX4	
<b>Video</b>	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 x 1440 @ 75 Hz
Digital resolution	btw. 640 x 480 @ 100 Hz and 2560 x 1600 @ 60 Hz / 2048 x 2048 @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
No. of switchable video sources per computer	1
Computer connection	KVM cable set
Computer ports	4
Interfaces for user console	1 x DVI-I socket
Interfaces to computer	1 x DVI-I socket
Network	2 x RJ45 socket
<b>Keyboard/Mouse</b>	
Interfaces for user console	2 x Mini-DIN 6 socket
	2 x USB-A socket
Interfaces to computer	1 x Mini-DIN 6 socket
	2 x USB-B socket
<b>Audio</b>	
Connection	analog
Bandwidth	22 kHz
Interfaces for user console	1 x 3.5 mm jack plug (speaker)
Interfaces to computer	2 x 3.5 mm jack plug (line in)

Transparent USB 2.0	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 x USB-A socket
Interfaces to computer	2 x USB-B socket (also keyboard/mouse)
<b>Main power supply</b>	
Type	internal power pack
Connection	1 x IEC plug
Voltage	AC100-240V/60-50Hz
	0.4-0.2A
<b>Redundant power supply</b>	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.4-0.2A
<b>Casing</b>	
Material	anodised aluminium
Desktop (W x H x D)	435 x 44 x 210 mm
Rackmount (W x H x D)	19" x 1 U x 210 mm
Weight	approx. 2.3 kg
<b>Update</b>	
Process	over network
Connection	over network port
<b>Operating conditions</b>	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

## DL-MUX4-MC2



left: DL-MUX4-MC2 - front view  
right: DL-MUX4-MC2 - rear view

	DL-MUX4-MC2
<b>Video</b>	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 x 1440 @ 75 Hz
Digital resolution	btw. 640 x 480 @ 100 Hz and 2560 x 1600 @ 60 Hz / 2048 x 2048 @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
Video sources per computer	2
Computer connection	KVM cable set
Computer ports	4
Interfaces for user console	2 x DVI-I socket
Interfaces to computer	2 x DVI-I socket
Network	2 x RJ45 socket
<b>Keyboard/Mouse</b>	
Interfaces for user console	2 x Mini-DIN 6 socket 2 x USB-A socket
Interfaces to computer	1 x Mini-DIN 6 socket 2 x USB-B socket
<b>Audio</b>	
Connection	analog
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>Transparent USB 2.0</b>	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 x USB-A socket
Interfaces to computer	2 x USB-B socket (also keyboard/mouse)

<b>Main power supply</b>	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.5-0.2A
<b>Redundant power supply</b>	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.5-0.2A
<b>Casing</b>	
Material	anodised aluminium
Desktop (W × H × D)	435 × 66 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 2.7 kg
<b>Update</b>	
Process	over network
Connection	over network port
<b>Operating environment</b>	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHS



## DL-MUX4-MC3



left: DL-MUX4-MC3 - front view  
right: DL-MUX4-MC3 - rear view

DL-MUX4-MC3	
<b>Video</b>	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 x 1440 @ 75 Hz
Digital resolution	btw. 640 x 480 @ 100 Hz and 2560 x 1600 @ 60 Hz / 2048 x 2048 @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
No. of switchable video sources per computer	3
Computer connection	KVM cable set
Computer ports	4
Interfaces for user console	3 x DVI-I socket
Interfaces to computer	3 x DVI-I socket
Network	2 x RJ45 socket
<b>Keyboard/Mouse</b>	
Interfaces for user console	2 x Mini-DIN 6 socket
	2 x USB-A socket
Interfaces to computer	1 x Mini-DIN 6 socket
	2 x USB-B socket
<b>Audio</b>	
Connection	analog
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>Transparent USB 2.0</b>	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 x USB-A socket
Interfaces to computer	2 x USB-B socket (also keyboard/mouse)
<b>Main power supply</b>	
Type	internal power pack
Connection	1 x IEC plug
Voltage	AC100-240V/60-50Hz
	0.6-0.3A
<b>Redundant power supply</b>	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.6-0.3A
<b>Casing</b>	
Material	anodised aluminium
Desktop (W x H x D)	435 x 88 x 210 mm
Rackmount (W x H x D)	19" x 1 U x 210 mm
Weight	approx. 3.1 kg
<b>Update</b>	
Process	over network
Connection	over network port
<b>Operating environment</b>	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

## DL-MUX4-MC4



left: DL-MUX4-MC4 front view  
right: DL-MUX4-MC4 rear view

	DL-MUX4-MC4
<b>Video</b>	
User console connection per device	1
Signal type/video	analog/digital video
Analog resolution	up to 1920 x 1440 @ 75 Hz
Digital resolution	btw. 640 x 480 @ 100 Hz and 2560 x 1600 @ 60 Hz / 2048 x 2048 @ 60Hz
Analog video bandwidth	400 MHz
Digital video bandwidth	DVI single-link 165 mbps DVI dual-link 330 mbps
Standards	E-DDC support
Digital colour mode	24 bit
No. of switchable video sources per computer	4
Computer connection	KVM cable set
Computer ports	4
Interfaces for user console	4 x DVI-I socket
Interfaces to computer	4 x DVI-I socket
Network	2 x RJ45 socket
<b>Keyboard/Mouse</b>	
Interfaces for user console	2 x Mini-DIN 6 socket
	2 x USB-A socket
Interfaces to computer	1 x Mini-DIN 6 socket
	2 x USB-B socket
<b>Audio</b>	
Connection	analog
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>Transparent USB 2.0</b>	
USB power supply	high power up to 500 mA
USB transmission rate	up to 480 Mbps
Transmission range	5 m
Interfaces for user console	2 x USB-A socket
Interfaces to computer	2 x USB-B socket (also keyboard/mouse)

<b>Main power supply</b>	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0.7-0.3A
<b>Redundant power supply</b>	
Type	internal power pack
Connection	IEC plug
Voltage	AC100-240V/60-50Hz
	0.7-0.3A
<b>Casing</b>	
Material	anodised aluminium
Desktop (W × H × D)	435 × 132 × 210 mm
Rackmount (W × H × D)	19" × 1 U × 210 mm
Weight	approx. 3.5 kg
<b>Update</b>	
Process	over network
Connection	over network port
<b>Operating environment</b>	
Temperature	+5 to +45 °C
Air humidity	< 80% non-condensing
Conformity	CE, RoHs

## List of Item Numbers


























Item No.	Description	CPU	PS/2	U2	DT	RM
A2100097	DL-MUX4	4	PS/2	U2	DT	RM
A2100096	DL-MUX4-MC2	4	PS/2	U2	DT	RM
A2100116	DL-MUX4-MC3	4	PS/2	U2	DT	RM
A2100117	DL-MUX4-MC4	4	PS/2	U2	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	A	=	Audio
MC2	=	Multichannel 2	AR	=	Audio + RS232
MC3	=	Multichannel 3	R	=	RS232
MC4	=	Multichannel 4	U	=	transparent USB 1.1
			U2	=	transparent USB 2.0
			D	=	Delay

### EQUIPMENT FEATURES

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