DVI KVM Extender

2011-03

KVM Extender
Extension systems to bridge IT distances

Intelligent solutions

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.

DL-Compact The system

The DL-Compact system extends the signals:
► keyboard/mouse
► dual-link DVI.

It enables an uncompressed transmission via fiber optics (2 fibers) over up to 400 m.

The system consists of two main components: the computer module (transmitter) and the user module (receiver). The modules are connected via fiber optics. The system faciliates the operation of a computer via a receiver-sided workplace.

Highlights

- *single- und dual-link DVI*
- *Resolutions up to 2560 x 1600 @ 60 Hz or 2048 x 2048 @ 60 Hz*
- *E-DDC support*
- *All resolutions within the bandwidth of 330 MHz*
- *24 bit colour depth*
- *Max. transmission length 400 m via fiber optics at max. resolution*
- *Uncompressed transmission in 1:1 performance*
- *PS/2- and USB keyboard/mouse support*
- *Galvanic separation of transmitter*
- *Transmission insusceptibel to interference radiation*

Front view

Rear view

**Computer module
DL-Compact-CPU**

Item no.
A199 0014

Front view

Rear view

**User module
DL-Compact-CON**

Item no.
A199 0015

DL-Compact The system

System features

Computer per system	1
Signal type/video	dual-link DVI
Resolution	up to 2560 x 1600 @ 60 Hz or 2048 x 2048 @ 60 Hz
Standards	E-DDC support
Colour depth	24 bit
Pixel rate	up to 330 MHz
Type of cable connection	
Computer module – user module	dedicated fiber optics link
Transmission length (max.)	400 m via 2 multimode fibers (50/125 µm, 500 MHz*km, OM2) at max. resolution
CPU module - user module	200 m via 2 multimode fibers (62.5/125 µm, 200 MHz*km, OM1) at max. resolution
Transmission cable type	fiber optics (2 fibers)
Update process	with wizard at service socket of computer module or user module
Operating environment	
Temperature	+5 to +45 °C
Air humidity	< 80 %, non-condensing
Conformity	CE, RoHS

System hardware

The system hardware offers a multitude of advantages. The table below illustrates just a few of those.

Connection	Forwarding and saving of enhanced DDC information between remote monitor and computer
	No installation preparation required
	Computer hot plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
LEDs	Operating status

Operating the main components

The system itself needs no explicit operation.

Operation

Individual module features

Technical data			Computer module DL-Compact-CPU	User module DL-Compact-CON
Power supply	Main	Type	external power pack	external power pack
		Connection	Mini-DIN 4 power socket	Mini-DIN 4 power socket
		Voltage	AC100-240V/60-50Hz +12VDC/0.3A	AC100-240V/60-50Hz +12VDC/0.8A
Case	Material		anodised aluminium	anodised aluminium
	Dimensions	W x H x D Desktop	105 x 26 x 104 mm	105 x 26 x 104 mm
Weight			approx. 0.3 kg	approx. 0.3 kg
Interfaces/Specification				
	for workplace	Monitor	–	1 x DVI-D socket
		PS/2 Keyboard/mouse	–	2 x Mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Video CPU	1 x DVI-D socket	–
		PS/2 Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		USB Keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	2 x SC Single socket	2 x SC Single socket
		No. of optical fibers computer module – user module	2	
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket

DL-Compact Order list

DL-Compact

Item no.	Description
A199 0014	DL-Compact-CPU
A199 0015	DL-Compact-CON

Connectivity

Computer connection cables are included, length 2 m. Power supply cable and power packs are included as standard. Alternative lenghts are available and are priced to order.

Item no.	Description	Rubrik in KVM Connectivity	Funktion
	DVI-D-DL-M/M-x	Video cable	computer connection
	Twin-PS/2-M/M-x	Keyboard-/mouse cable	computer connection
see	USB-AM/BM-x	USB cable	computer connection
KVM Connectivity	USB-Service-x	Particular cable	firmware update
	K-LwLm-SCD-x	Ready-made cabke	transmission in multimode
	K-LwLm-out-SCD-x	Ready-made cabke	outdoor transmission in multimode

x = length in metres, see KVM Connectivity for length available.
When ordering please quote the article number and description.

DL-Vision   The system

The DL-Vision extends the signals
► keyboard/mouse
► dual-link DVI
► audio
► RS232
► USB 2.0

It enables uncompressed transmission via fiber optics (2 fibers) over up to 300 or 10,000 m. USB signals are extended transparently up to 2,000 m. The multi-channel variant can transmit 2 video channels.

DL-Vision can be configured and monitored via 2 integrated network ports. An integrated web interface helps visualizing status messages. SNMP traps and Syslog messages dispatch critical system values. Safety is increased by two integrated power supplies.

The system consits of two main components: the computer module (transmitter) and the user module (receiver). The modules are connected via fiber optics. They faciliate the operation of a computer via 2 competing (1 transmitter-side, 1 receiver-side) workplaces.

Highlights

- resolution up to 2560 x 1600 @ 60 Hz or 2048 x 2048 @ 60 Hz
- all resolutions within the bandwidth of 330 MHz
- E-DDC support
- 24 bit colour depth
- uncompressed transmission in 1:1 performance
- support of Barco PVS graphics card
- max. transmission length 10,000 m via fiber optics at max. resolution
- 2 network interfaces
- optional Monitoring-functionality (Syslog + SNMP)
- galvanic separation of transmitter and receiver
- transmission insusceptibel to interference radiation
- PS/2 and USB keyboard/mouse support
- integrated main and redundant power supply with netfilter
- transmission of audio and RS232 (data and handshake) and Screen Freeze function included in standard
- optional feature: USB 2.0 (transparent, high speed)
- at both modules console with all video channels

DL-Vision computer modules transmit the following signals as standard:
- dual-link DVI
- audio + transparent RS232
- 1 x PS/2 or USB keyboard/mouse; also mixed mode

The computer modules are available with 2 video channels.

The following optional feature can also be ordered:
- transparent USB 2.0

Computer module
DL-Vision(S)-MC2-ARU2-CPU

Front view

Item no.
A121 0071

| DVI DL | ⌨ | 🔇 | RS 232 | Fiber optics | 👥 | LAN | WEB If | DEV CON support | ❄ | USB 2.0 | Moni tor | ⏻ |

User module
DL-Vision(S)-MC2-ARU2-CON

Front view

As computer and user modules are basically compatible, the user modules DL-Vision-CON also transmit the following signals as standard:
- dual-link DVI
- audio + transparent RS232
- 1 x PS/2 or USB keyboard/mouse

The user modules are available in the same variants and with the same optional equipment features.

Item no.
A122 0053

System features

User consoles per system	2 (competing)
Number of monitors/workplaces	2
Computer per system	1
Signal type/video	dual-link DVI; downwards compatible to single-link
Resolution	up to 2560 x 1600 @ 60 Hz or 2048 x 2048 @ 60 Hz
Standards	E-DDC support
Colour depth	24 bit
Pixel rate	330 MHz
Type of cable connection CPU module - user module	dedicated fiber optic link
Max. Transmission length at max. resolution	10.000 m via 2 singlemode fibers (9/125 µm, 2,000 MHz*km, OS1)
	300 m via 2 multimode fibers (50/125 µm, 2,000 MHz*km, OM3)
	82 m via 2 multimode fibers (50/125 µm, 500 MHz*km, OM2)
	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)
Transmission cable type	fiber optics (2 fibers)
Update process	with wizard at service socket of computer module or user module
Operating environment	
Temperature	+5 to +35 °C
Air humidity	< 80 %, non-condensing
Conformity	CE, RoHS

System hardware

Connection	Dispatch and storage of enhanced DDC information between remote monitor and computer
	No installation preparation required
	Computer hot plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
Expansion	Remote power switching with additional feature „DLV-Power"
Network access	2 network ports per modul e.g. for KVM service network and productive network
Redundancy	2 integrated self-monitoring power supplies per module with netfilter to reduce electronic interference
LEDs	Identification LED (switching on and off of device LED via web application, for loacting device within a rack), control of power supply, operating status

Operating the main components

The system itself needs no explicit operation. The system automatically switches to the console at which keyboard and mouse inputs are being made.

Operation

Functional features

The switching between the two modules is done automatically by keyboard or mouse inputs. Additional features (e.g. dark switching) can be activated via keyboard hotkeys.

Configuration and operation of the DL-Vision can either be done in the setup mode of the keyboard of one of the workplaces or via the web application „Config Panel". Config Planel is a graphical user interface which is operated via network through a web browser.

Setup mode or Config Panel offer you the following possiblities:

User	Clearly arranged graphical user interface
	Create up to 256 individual accounts
	Create user groups and define individual configuration rights
Operation	Dark switching of workplace which is not in operation
	Activate permanent access from one workplace to a single computer (Permanent Access)
	Integration of special keyboards (multimedia- and SUN special keyboards)
	Change hotkeys
	Carry out mouse reset
	Drag & drop function
Configuration	Configuration of network parameters via graphical user interface
	Define netfilter rules, which regulate access of certain IP addresses
	Enter date and time, select NTP server
Maintenance	Backup of configuration data
	Restore the configuration data
	Set system defaults via push button or web application
Update	Input firmware updates via network/Web interface
Monitoring - optional	Carry out Syslog settings
	Query system information, e.g. current network settings, logs, system configuration
	Forward Syslog updates via network
	Forward SNMP traps
	Supervision of critical device status
DevCon-Support - integrated	Supports communication with the central appliance DevCON-Center (monitoring and configuration)
Directory	Perform authentication against LDAP, Active Directory, TACACS+ and Radius
Logbuch	Intelligent electronic notepad notes
	Note function for scheduled tasks plus status assignment
	Filing of comments on the device
	Exportable in .csv format

Web interface

Configuration as well as monitoring of the system are carried out via web application and can be referred in chapter „Configuration + Monitoring".

Configuration
Monitoring

DL-Vision   Equipment features

Screen-Freeze Function

Included component to hold the video signal

If the display looses the video signal due to a broken connection or a problem with the computer's graphics card, the Sreen-Freeze function „freezes" the last displayed image of the monitor.

This state is highlighted by a red, semi-transparent frame.

The function is automatically cancelled as soon as the display receives an active video signal.

Transparent USB 2.0

Optional component for transmitting transparent USB 2.0 signals

Technical data		Computer module DL-Vision-CPU	User module DL-Vision-CON
Interfaces and specifications			
for workplace		–	4 x USB-A socket
to computer		1 x USB-B socket	–
Transmission	Interface	1 x LC-Duplex socket	1 x LC-Duplex socket
	Additional fiber optics	2	
Design		internal	
USB specifications		transparent USB 2.0	
	Transmission length	up to 2,000 m via singlemode fibers	
		up to 300 m via multimode fibers	
	USB power supply	High Power devices up to 500 mA	
	USB transmission rate	up to 480 Mbit/s	

DL-Vision   Expansion

Expansion DLV-Monitoring

| WEB if | Moni tor | LAN |

Web interface integration for monitoring of system conditions.

Description	DLV-Monitoring monitors the system status of network-compatible G&D products. Any critical system status is visible on the display and also reported via SNMP traps or Syslog messages. The administrator is therefore in a position to step in at an early stage to rectify the situation.
Operation via	Web interface
Required for use	Activation via web interface

Details about DLV-Monitoring can be referred at chapter „Configuration • Monitoring • DevCon-Support".

Expansion DLV-Power

**Component for power switching „DLV-Power";
can be retrofitted on request.**

„DLV-Power" allows remote turning on & off of a computer (reset and ATX power switching).
A slot card is implemented in the computer and connected to the computer module. On the remote side a corresponding hardware (button, etc.) is implemented and connected to the user module.

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

Technical data	Computer module DL-Vision-CPU	User module DL-Vision-CON
Interfaces and specifications		
for workplace	–	RJ11 socket
to computer	RJ11 socket	–
Transmission Additional fiber optics	no	

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1. Single-Channel (1 x video)

DL-Vision-(S)-ARU2-CPU

Computer module

Item no.

A121 0067

rear view

DVI DL | keyboard/mouse | audio | RS 232 | Fiber optics | users | LAN | WEB If | DEV CON support | settings | USB 2.0 | Monitor | power

DL-Vision-ARU2-CON

User module

Item no.

A122 0049

rear view

Individual module features

Technical data			Computer module DL-Vision-(S)-AR-CPU	User module DL-Vision-(S)-AR-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector (IEC-320 C14)	1 x inlet connector (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.5-0.2A	AC100-240V/60-50Hz 0.5-0.2A
	Redundant	Type	internal power pack	internal power pack
		Connection	1 x inlet connector (IEC-320 C14)	1 x inlet connector (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.5-0.2A	AC100-240V/60-50Hz 0.5-0.2A
Case	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 284.5 mm	435 x 44 x 284.5 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 2.3 kg	approx. 2.3 kg
Interfaces/Specifictations				
	for workplace	Monitor	1 x DVI-D socket	1 x DVI-D socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	2 x USB-A socket	2 x USB-A socket
		Audio	-	2 x 3.5 mm socket (micro + speaker)
		Resolution	24 bit digital	
		Sampling rate	48 kHz	
		Bandwith	22 kHz	
		RS232	–	1 x D-Sub 9 plug
		Transmission rate	max. 115 200 bit/s	
		Signals that can be transmitted	TxD, RxD, RTS, CTS, DTR, DSR, DCD	
	to computer	Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		Video CPU	1 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
		Audio (specification s. above)	2 x 3.5 mm socket (line in + line out)	–
		RS232 (specification s. above)	1 x D-Sub 9 socket	-
	for transmission	computer module – user module	LC Duplex socket	LC Duplex socket
		No. of opitcal fibers computer module – user module	2	
	network		2 x RJ45 socket	2 x RJ45 socket
	for service		1 x Mini-USB-B socket	1 x Mini-USB-B socket

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2. Multi-Channel 2 (2 x video)

rear view

DL-Vision-(S)-MC2-ARU2-CPU

Computer module

Aritcle no.

A121 0071

rear view

DL-Vision-(S) MC2-ARU2-CON

User module

Item no.

A122 0053

DVI DL | ⌨ | 🔊 | RS 232 | Fiber optics | 👥 | LAN | WEB If | DEV CON support | ✷ | USB 2.0 | Moni tor | ⏻

Individual module features

Technical data			Computer module DL-Vision-MC2-AR-CPU	User module DL-Vision-(S)-MC2-AR-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector (IEC-320 C14)	1 x inlet connector (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.7-0.3A	AC100-240V/60-50Hz 0.9-0.4A
	Redundant (optional)	Type	internal power pack	internal power pack
		Connection	1 x inlet connector (IEC-320 C14)	1 x inlet connector (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.7-0.3A	AC100-240V/60-50Hz 0.9-0.4A
Case	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 2.4 kg	approx. 2.4 kg
Interfaces/Specifictations				
	for workplace	Monitor	2 x DVI-D socket	2 x DVI-D socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	2 x USB-A socket	2 x USB-A socket
		Audio	–	2 x 3,5 mm socket (micro + speaker)
		Resolution	24 bit digital	
		Sampling rate	48 kHz	
		Bandwith	22 kHz	
		RS232	–	2 x D-Sub 9 plug
		Transmission rate	max. 115 200 bit/s	
		Signals that can be transmitted	TxD, RxD, RTS, CTS, DTR, DSR, DCD	
	to computer	Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		Video CPU	2 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
		Audio (specification s. above)	2 x 3.5 mm socket (line in + line out)	–
		RS232 (specification s. above)	2 x D-Sub 9 socket	–
	for transmission	computer module – user module	2 x LC Duplex socket	2 x LC Duplex socket
		No. of opitcal fibers computer module – user module	4	
	network		2 x RJ45 socket	2 x RJ45 socket
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket10

To ensure that the computer module and user module match, please check that the additional features (letters „ARU2") are identical for both modules.

Single-Channel (1 x video) Multimode

Computer module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A121 0068	DL-Vision(M)-AR-CPU	●		●	●*1
A121 0069	DL-Vision(M)-ARU2-CPU	●	●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A122 0050	DL-Vision(M)-AR-CON	●		●	●*1
A122 0051	DL-Vision(M)-ARU2-CON	●	●	●	●*1

Single-Channel (1 x video) Singlemode

Computer module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A121 0066	DL-Vision(S)-AR-CPU	●		●	●*1
A121 0067	DL-Vision(S)-ARU2-CPU	●	●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A122 0048	DL-Vision(S)-AR-CON	●		●	●*1
A122 0049	DL-Vision(S)-ARU2-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.

DL-Vision Order list

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Multi-Channel (2 x video) Multimode

Computer module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A121 0072	DL-Vision(M)-MC2-AR-CPU	●		●	●*1
A121 0073	DL-Vision(M)-MC2-ARU2-CPU	●	●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A122 0054	DL-Vision(M)-MC2-AR-CON	●		●	●*1
A122 0055	DL-Vision(M)-MC2-ARU2-CON	●	●	●	●*1

Multi-Channel (2 x video) Singlemode

Computer module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A121 0070	DL-Vision(S)-MC2-AR-CPU	●		●	●*1
A121 0071	DL-Vision(S)-MC2-ARU2-CPU	●	●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 2.0	Desktop	Rackmount
A122 0052	DL-Vision(S)-MC2-AR-CON	●		●	●*1
A122 0053	DL-Vision(S)-MC2-ARU2-CON	●	●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.

DL-Vision   Order list

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Connectivity

According to the equipment features selected, the computer connection cables are included, length 2 m. Power supply cable, power packs and 19" mounting are included as standard. Alternative lenghts are available and are priced to order.

Item no.	Description	Category in KVM Connectivity	Function
	DVI-D-DL-M/M-x	Video cable	computer connection
	USB-AM/BM-x	USB cable	computer connection
	Twin-PS/2-M/M-x	Keyboard-/mouse cable	computer connection
	RS232-M/F-x	Serial cable	computer connection
see	Audio-M/M-x mit Ferrit	Audio cable	computer connection
KVM Connectivity	USB-Service-x	Particular cable	firmware update
	K-LwLs-LCD-x	Ready-made cables	transmission in singlemode
	K-LwLm-LCD-x	Ready-made cables	transmission in multimode

Expansion
DLV-Monitoring Function

Item no.	Description
A820 0009	DLV-Monitoring

DLV-Power

Item no.	Description
A180 0009	DLV-Power

x = lenght in metres, see KVM Connectivity for length available.
When ordering please quote the article number and description.

Configuration • Monitoring • DevCon-Support

High operational safety and reliability are essential to G&D products. Enhancing these well-established attributes, our latest products come fully equipped with network ports.

Network-capable G&D products therefore offer the following possibilities:

1. **Configuration**   adjust device settings
2. **Monitoring**   display and report the device status
3. **DevCon Support** support the communication by applying the DevCon-Center for central configuration and monitoring

Any critical operational status can be recognised in advance and the system administrator can act accordingly. System availability and safety are increased for mission-critical applications such as Air or Ground Traffic Control, live broadcast etc.

Supported products

Monitoring, configuration via network or DevCon support is currently supported by the following products:

*   DL-Vision   KVM Extender
*   DL-MUX4   KVM Switch
*   DevCon-Center   KVM ADD-On

Further network-compatible products are projected.

1. Configuration via web interface (integrated)

The respective settings are supplied by the „Config-Panel" web interface of the devices and cover specific settings for the device as well as network settings.

The access is password-protected. The web interface is provided both in German and English.
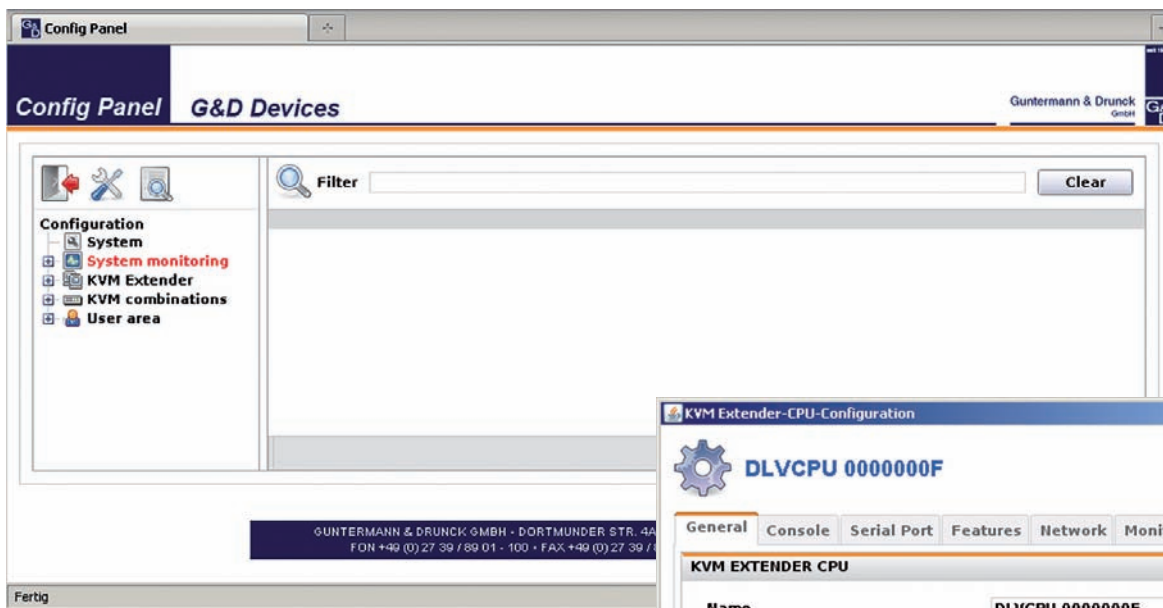
◀ Figure: „Config Panel" of a DL-Vision

Within the **configuration menu** all relevant settings of the product can be executed online.

Configuring the network the user can define netfilter rules and activate the support of a central NTP and Syslog server.

Figure: „CPU Configuration" of a DL-Vision ▶

Configuration • Monitoring • DevCon support
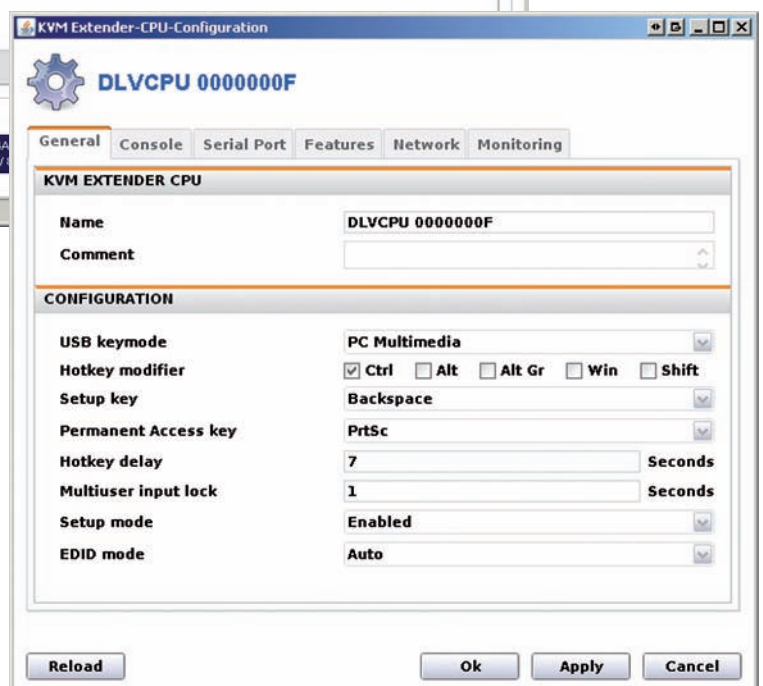
2. Monitoring the device status via web interface (optional)

The „**Monitoring**" feature enables the detection of device status information. The information is displayed in the web interface of the devices.

The Monitoring function can be activated by loading an activation key via the web interface. Additionally, that activation enables the use of SNMP trap and agent.
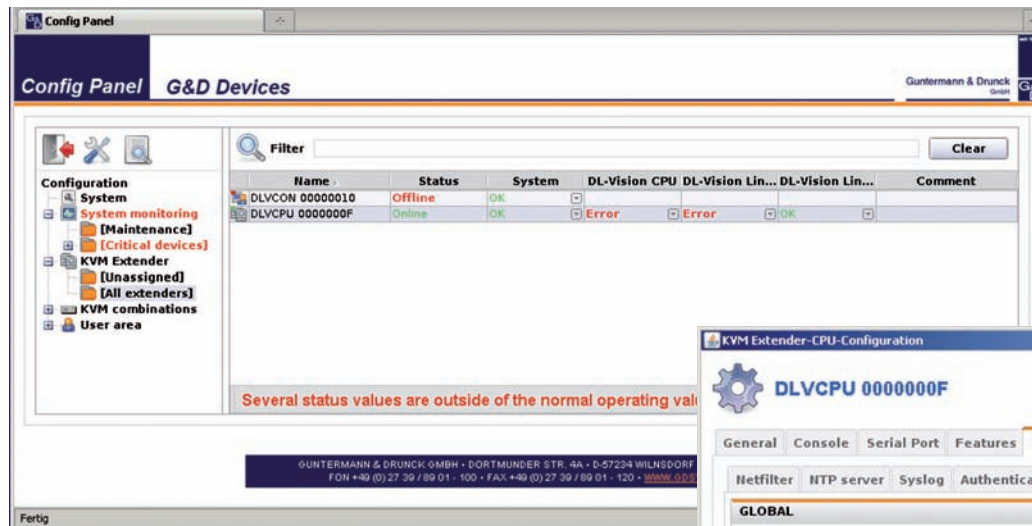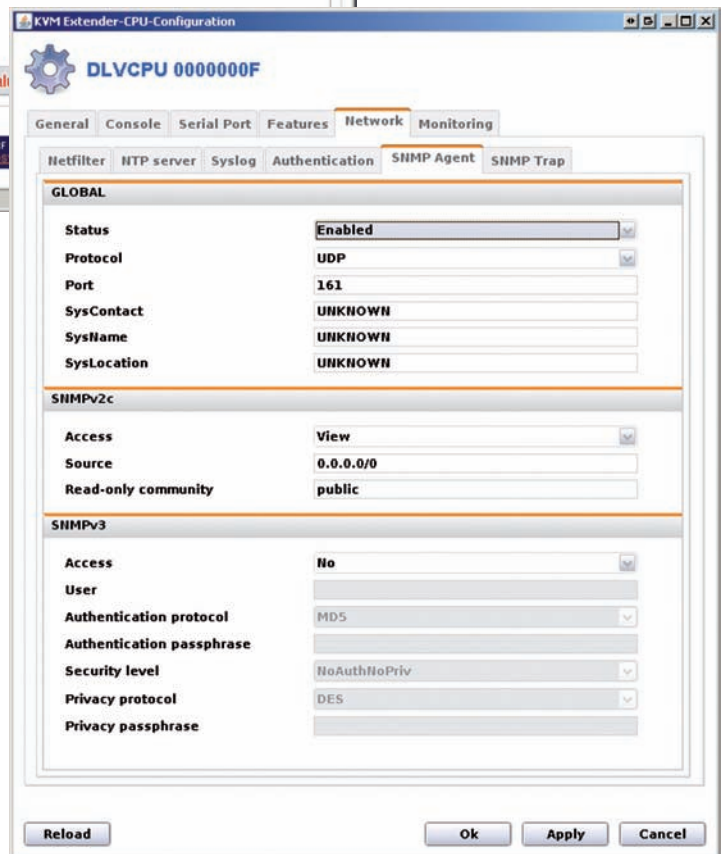

◄ Figure:
Web interface of DL-Vision showing monitoring values

Next to displaying the detected values in the web interface, they can either be sent (SNMP Trap) or requested (SNMP GET).

The web interface offers the settings for external querying of the SNMP agent. Versions SNMPv2c and V3 are supported. Additionally, the forwarding of SNMP traps is integrated.

Figure: SNMP agent settings of a DL-Vision ▶

DL-MUX Feature

Sending an SNMP SET request, the DL-MUX can be switched to another channel remotely.

**DL-MUX
Feature**

Configuration • Monitoring • DevCon support

The **information menu** displays the values set in the configuration menu and the detected status values of the device.

Among others, the following status values are provided:

- main power supply - device
- redundant power supply - device
- temperature - device
- power supply - computer
- DVI video input channel 1
- DVI video input channel 2
- uninterrupted transmission on all transmission cables

Values changing their statuses (e.g. power on/off) and values exceeding predefined limits (e.g. temperatures) are highlighted in red in the web interface.
Furthermore, the device informs the administrator according to preset parameters.
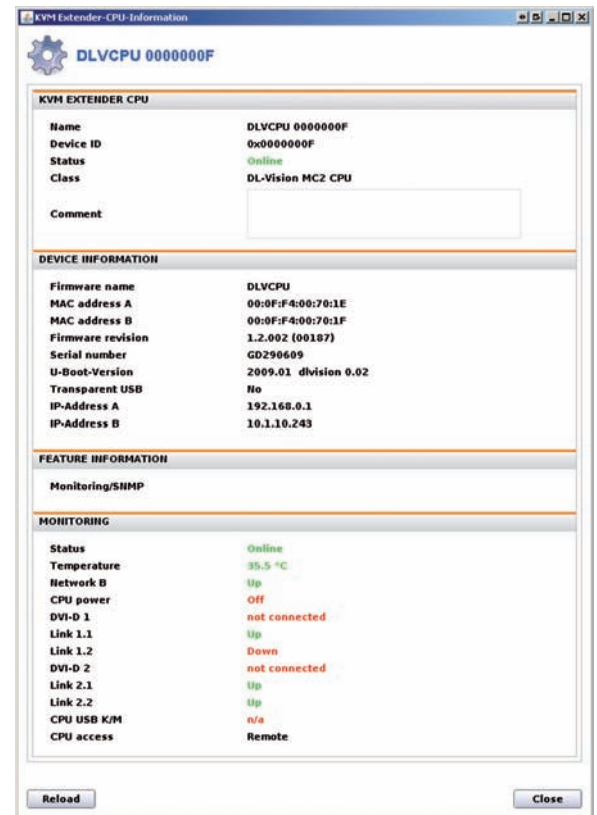

Figure: Information menu of a monitored DL-Vision ▶

3. Central configuration and central monitoring via the appliance DevCon-Center and devices with DevCon support

If several network-capable products are deployed, the use of the **DevCon-Center** is recommended. The DevCon-Center appliance is in permanent contact with all devices over network.

Using the DevCon-Center appliance, all connected **G&D devices with the required support** can be centrally configured, updated and monitored within one user interface. Monitoring, configuration and updates can be carried out via one IP address.

The DevCon-Center shows the monitoring values of all G&D products connected via network within an interface and therefore enables the user to:

- view an overview of the entire system und all device statuses
- view a list of all individual devices showing information such as IP addresses and other configuration values
- create device folders within the DevCon-Center (e.g. folders for all extender transmitters and all extender receivers)
- create combined device folders within the DevCon-Center (e.g. a folder for all extenders and switches of a particular location)

As the device comes with a second network interface, monitoring and productive LAN can be separated.

For using SNMP-SET or GET, each device has to be connected to the network irrespective of the use of the DevCon-Center.

FIBREVision The system

The FIBREVision system extends the signals
► keyboard/mouse
► single-link DVI
► audio
► RS232
► USB 1.1 or USB 2.0

It enables the transparent transmission via fiber optics (2 fibers) over up to 550 m or 10000 m. USB signals are transmitted transparent up to 2000 m. The video outlet can be operated either digitally or analog. The multi-channel variants transmit 2, 3 and 4 video channels.

The system consists of two main components: the computer module (transmitter) and the user module (receiver).
The modules are connected via fiber optics. The system facilitates the operation of a computer via 2 competing (1 x transmitter-side, 1 x receiver-side) workplaces.

Highlights

- *resolution up to 1920 x 1200 @ 60 Hz and 1280 x 1024 @ 85 Hz*
- *E-DDC support*
- *max. transmission length up to 10000 m via fiber optics at max. resolution*
- *galvanic separation of transmitter and receiver*
- *reads out quality of fiber optics connection*
- *transmission insusceptible to interference radiation*
- *PS/2 and USB keyboard/mouse support*
- *digital as well as analog monitors connectable*
- *local console with all video channels at both modules*
- *redundant power supply (optional)*
- *optional features: audio and RS232 (data and handshake), USB 1.1 and USB 2.0 (transparent, high power)*
- *integrated power pack*
- *Screen-Freeze function*
- *multi-channel variant for up to 4 video transmissions*

FIBREVision computer modules transmit the following signals as standard:
1 x digital single-link video
1 x PS/2 or USB keyboard/mouse; also mixed mode

Computer modules are available with up to 4 video channels.

The following optional features can also be ordered:
- audio + transparent RS232 (only in combination)
- transparent USB 1.1 or USB 2.0

Computer module FIBREVision(S)-MC4-ARU-CPU

Front view

Item no.
A141 0038

DVI SL | Fiber optics | RS 232 | USB 1.1 | USB 2.0

User module FIBREVision(S)-MC4-ARU-CON

Front view

As computer and user modules are basically compatible, the user modules FIBREVision-CON also transmit the following signals as standard:
1 x digital single-link video
1 x PS/2 or USB keyboard/mouse

The user modules are available in the same variants and with the same optional equipment features.

Item no.
A142 0028

System features

User consoles per system	2 (competing)
Number of monitors/workplace	1 to 4
Computers per system	1
Signal type/video	digital single-link video
Resolution analog (only connection to workplace)	to 1920 x 1200 @ 60Hz and 1280 x 1024 @ 85 Hz
Resolution digital	from 640 x 480 @ 100 Hz to 1920 x 1200 @ 60 Hz
Standards	E-DDC support at DVI
Digital color depth	24 bit
Type of cable connection CPU module – user module	dedicated fiber optic link
Transmission length (max.) CPU – user module	275 m via 2 multimode fibers (62,5/125µm) at max. resolution 550 m via 2 multimode fibers (50/125 µm) at max. resolution
Transmission length (max.) CPU – user module	10000 m via 2 singlemode fibers (9/125 µm) at max. resolution; with USB max. 2000 m
Transmission cable type	multimode fibers (62,5/125 µm, 200 MHz*km), class OM1 multimode fibers (50/125 µm, 500 MHz*km), class OM2 singlemode fibers (9/125 µm, 2000 MHz*km), class OS1
Update process	with wizard at service socket of computer module or user module
Operating environment	
Temperature	Single Channel +5 bis +45°C Multi Channel 2 +5 bis + 40°C Multi Channel 4 +5 bis + 35°C
Air humidity	20 - 80 %, non-condensing
Conformity	CE, RoHS

System hardware

The system hardware offers a multitude of advantages. The table below illustrates just a few of those.

Connection	Forwarding and saving of enhanced DDC information between remote monitor and computer
	No installation preparation required
	Computer hot plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
Expansion	Remote power switching with additional component „FIBRE-Power"

Operating the main components

The system itself needs no explicit operation. The system automatically switches to the console at which keyboard and mouse inputs are being made.

Operation

Equipment

Each FIBREVision system can be ordered with the following optional equipment features:
- **Audio and RS232 (only in combination)**
- **Transparent USB 1.1 or USB 2.0**
- **Screen-Freeze Funktion**

The given equipment features make the corresponding equipment of a FIBREVision device.
These features can also be retrofitted at the factory on request.

Audio-RS232

Component for transmitting audio and transparent RS232 signals

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Interfaces and specifications			
for workplace	Audio	–	2 x 3.5 mm socket (speaker, micro in)
	RS232	–	1 x D-Sub 9 plug
to computer	Audio	2 x 3.5 mm socket (Line in, Line out)	–
	RS232	1 x D-Sub 9 socket	–
Transmission	Additional fiber optics	no	
Design		internal	
Audio specification	Resolution	24 bit digital	
	Sampling rate	96 kHz	
	Bandwidth	22 kHz	
	Microphone preamplification	20 dB	
RS232 specification	Transmission rate	max. 115.200 bit/s	
	Signals transmitted	RxD, TxD, RTS, CTS, DTR, DSR, DCD	

Transparent USB 1.1

Component for transparent transmitting USB 1.1 signals

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Interfaces and specifications			
for workplace		–	4 x USB-A socket
to computer		1 x USB-B socket (for both keyboard/mouse)	–
Transmission	Additional fiber optics	no	
Design		internal	
USB specification		transparent USB 1.1	
	Transmission length	up to 2000 m	
	USB power supply	high power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

FIBREVision Equipment features + Expansion

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Equipment Transparent USB 2.0

USB 2.0

Component for transparent transmitting USB 2.0 signals

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Intefaces and specifications			
for workplace		–	4 x USB-A socket
to computer		1 x USB-B socket	–
Transmission	Computer module – user module	1 x LC Duplex socket	1 x LC Duplex socket
	Number of additional fiber optics computer module – user module	2	
Design		internal	
USB specifications		transparent USB 2.0	
	Transmission length	up to 2000 m	
	USB power supply	high power devices up to 500 mA	
	USB transmission rate	up to 480 Mbit/s	

Expansion Screen-Freeze Function

❄

Component to hold the video signal

If the display looses the video signal due to a broken connection or a problem with the computer's graphics card, the Sreen-Freeze function „freezes" the last displayed image of the monitor.

This state is highlighted by a red, semi-transparent frame.

The function is automatically cancelled as soon as the display recei-ves an active video signal.

Expansion FIBRE-Power

⏻

This component can be retrofitted on request.

The component "FIBRE Power" permits the computer to be switched on and off remotely (reset and ATX power switching). To do this, a slot card is inserted into the computer to be controlled and con-nected to the computer module.
On the remote workplace there is corresponding operating hard-ware from the customer (button, etc.) which is connected to the user module.

The function is normally available for all FIBREVision variants. "FIBRE-Power" requires an existing "Audio-RS232" component like the variants FIBREVision-AR or FIBREVision-ARU. For further details, please contact our sales team.

Technical data		Computer module FIBREVision-CPU	User module FIBREVision-CON
Interfaces and specifications			
for workplace		–	RJ11 socket
to computer		RJ11 socket	–
Transmission	additional fiber optics	no	

Single-Channel (1 x video)

FIBREVision single-channel is provided in 2 variants:
Using multimode fibers (50/125 µm), FIBREVision(M) bridges up to 550 m.
Using singlemode fibers (9/125 µm), FIBREVision(S) bridges up to 10000 m.

Rear view

**FIBREVision(S)-
ARU-CPU**
Computer module

Item no.
A111 0093

Rear view

**FIBREVision(S)-
ARU-CON**
User module

Item no.
A112 0090

The FIBREVision single-channel is also available as a **twin variant**. It combines two computer or user modules in a single 1HU 19" casing. This provides a space-saving way of operating two computers remotely.

Single-Channel (1 x Video) mit USB 2.0

Rear view

**FIBREVision(S)-
ARU2-CPU**
Computer module

Item no.
A111 0146

Rear view

**FIBREVision(S)-
ARU2-CON**
User module

Item no.
A112 0138

FIBREVision Variants

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Individual module features

Technical data			Computer module FIBREVision-CPU	User module FIBREVision-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x IEC plug (IEC-320 C14)	1 x IEC plug (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.3-0.2A	AC100-240V/60-50Hz 0.3-0.2A
		when equipped with USB 2.0	0.3-0.2A	0.6-0.3A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	Mini-DIN 4 power socket	Mini-DIN 4 power socket
		Power supply	+12VDC/1.0A	+12VDC/1.0A
		when equipped with USB 2.0	+12VDC/1.2A	+12VDC/2.1A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	210 x 44 x 210 mm	210 x 44 x 210 mm
		when equipped with USB 2.0	270 x 44 x 210 mm	270 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 1.2 kg approx. 1.2 kg	approx. 1.3 kg approx. 1.3 kg
Interfaces/specifications				
	for workplace	Monitor	1 x DVI-I socket	1 x DVI-I socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Video CPU	1 x DVI-D socket	–
		Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	CPU module – user module	1 x LC Duplex socket	1 x LC Duplex socket
		No. of fiber optics CPU module – user module	2	
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket

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Multi-channel 2 (2 x video)

FIBREVision multi-channel 2 is provided in 2 variants:
Using multimode fibers (50/125 µm), FIBREVision(M) bridges up to 550 m.
Using singlemode fibers (9/125 µm), FIBREVision(S) bridges up to 10000 m.

**FIBREVision(S)-
MC2-ARU2-CPU**
Computer module

Rear view

Item no.
A121 0087

**FIBREVision(S)-
MC2-ARU2-CON**
User module

Rear view

Item no.
A122 0067

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Individual module features

Technical data			Computer module FIBREVision-MC2-CPU	User module FIBREVision-MC2-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x IEC plug (IEC-320 C14)	1 x IEC plug (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.5-0.2A	AC100-240V/60-50Hz 0.4-0.2A
		when equipped with USB 2.0	0.6-0.3A	0.5-0.3A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	Mini-DIN 4 power socket	Mini-DIN 4 power socket
		Voltage	+12VDC/1.7A	+12VDC/1.5A
		when equipped with USB 2.0	+12VDC/2.6A	+12VDC/2.6A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 3.0 kg	approx. 3.0 kg
		when equipped with USB 2.0	approx. 3.0 kg	approx. 3.0 kg
Interfaces/specifications				
	for workplace	Monitor	2 x DVI-I socket	2 x DVI-I socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Video CPU	2 x DVI-D socket	–
		Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	CPU module – user module	2 x LC Duplex socket	2 x LC Duplex socket
		No. of fiber optics		
		CPU module – user module	4	
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket

FIBREVision Variants

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Multi-channel 4 (up to 4 x video)

The FIBREVision multi-channel 4 is provided in 2 variants:
Using multimode fibers (50/125 µm), FIBREVision(M) bridges up to 550 m.
Using singlemode fibers (9/125 µm), FIBREVision(S) bridges up to 10,000 m.

**FIBREVision(S)-
MC4-ARU2-CPU**
Computer module

Item no.
A141 0038

Rear view

**FIBREVision(S)-
MC4-ARU2-CON**
User module

Item no.
A142 0028

Rear view

FIBREVision Variants

Individual module features

Technical data			Computer module FIBREVision-MC4-CPU	User module FIBREVision-MC4-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x IEC plug (IEC-320 C14)	1 x IEC plug (IEC-320 C14)
		Voltage	AC100-240V/60-50Hz 0.8-0.4A	AC100-240V/60-50Hz 0.6-0.3A
		when equipped with USB 2.0	0.9-0.4A	0.9-0.4A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	Mini-DIN 4 power socket	Mini-DIN 4 power socket
		Voltage	+12VDC/3.2A	+12VDC/2.6A
		when equipped with USB 2.0	+12VDC/3.3A	+12VDC/3.2A
Casing	Material	Front, rear panel, upper blade	anodised aluminium	anodised aluminium
		Sub blade	zinc coated steel plate	zinc coated steel plate
	Dimensions	Desktop	435 x 44 x 285 mm	435 x 44 x 285 mm
	(W x H x D)	Rackmount	19" x 1 HU x 285 mm	19" x 1 HU x 285 mm
Weight			approx. 3.1 kg	approx. 2.9 kg
Interfaces/specifications				
	for workplace	Monitor	4 x DVI-I socket	4 x DVI-I socket
		Keyboard/mouse	2 x Mini-DIN 6 socket	2 x Mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Video CPU	4 x DVI-D socket	–
		Keyboard/mouse CPU	2 x Mini-DIN 6 socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	CPU module – user module	4 x LC Duplex socket	4 x LC Duplex socket
		No. of fiber optics CPU module – user module	8	
	for updates		1 x Mini-USB-B socket	1 x Mini-USB-B socket

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-Channel (1 x video) Multimode

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0079	FIBREVision (M)-CPU				●	
A111 0080	FIBREVision (M)-CPU-RM					●
A111 0083	FIBREVision (M)-AR-CPU	●			●	
A111 0084	FIBREVision (M)-AR-CPU-RM	●				●
A111 0081	FIBREVision (M)-U-CPU		●		●	
A111 0082	FIBREVision (M)-U-CPU-RM		●			●
A111 0140	FIBREVision (M)-U2-CPU			●	●	
A111 0141	FIBREVision (M)-U2-CPU-RM			●		●
A111 0085	FIBREVision (M)-ARU-CPU	●	●		●	
A111 0086	FIBREVision (M)-ARU-CPU-RM	●	●			●
A111 0142	FIBREVision (M)-ARU2-CPU	●		●	●	
A111 0143	FIBREVision (M)-ARU2-CPU-RM	●		●		●
A111 0095	Twin-FIBREVision (M)-CPU				●	●*1
A111 0096	Twin-FIBREVision (M)-AR-CPU	●			●	●*1
A111 0097	Twin-FIBREVision (M)-U-CPU		●		●	●*1
A111 0098	Twin-FIBREVision (M)-ARU-CPU	●	●		●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0076	FIBREVision (M)-CON				●	
A112 0077	FIBREVision (M)-CON-RM					●
A112 0080	FIBREVision (M)-AR-CON	●			●	
A112 0081	FIBREVision (M)-AR-CON-RM	●				●
A112 0078	FIBREVision (M)-U-CON		●		●	
A112 0079	FIBREVision (M)-U-CON-RM		●			●
A112 0132	FIBREVision (M)-U2-CON			●	●	
A112 0133	FIBREVision (M)-U2-CON-RM			●		●
A112 0082	FIBREVision (M)-ARU-CON	●	●		●	
A112 0083	FIBREVision (M)-ARU-CON-RM	●	●			●
A112 0134	FIBREVision (M)-ARU2-CON	●		●	●	
A112 0135	FIBREVision (M)-ARU2-CON-RM	●		●		●
A112 0092	Twin-FIBREVision (M)-CON				●	●*1
A112 0093	Twin-FIBREVision (M)-AR-CON	●			●	●*1
A112 0094	Twin-FIBREVision (M)-U-CON		●		●	●*1
A112 0095	Twin-FIBREVision (M)-ARU-CON	●	●		●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.
When ordering, please quote the article number and the description.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-Channel (1 x video) Singlemode

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0087	FIBREVision(S)-CPU				●	
A111 0088	FIBREVision(S)-CPU-RM					●
A111 0091	FIBREVision(S)-AR-CPU	●			●	
A111 0092	FIBREVision(S)-AR-CPU-RM	●				●
A111 0089	FIBREVision(S)-U-CPU		●		●	
A111 0090	FIBREVision(S)-U-CPU-RM		●			●
A111 0144	FIBREVision(S)-U2-CPU			●	●	
A111 0145	FIBREVision(S)-U2-CPU-RM			●		●
A111 0093	FIBREVision(S)-ARU-CPU	●	●		●	
A111 0094	FIBREVision(S)-ARU-CPU-RM	●	●			●
A111 0146	FIBREVision(S)-ARU2-CPU	●		●	●	
A111 0147	FIBREVision(S)-ARU2-CPU-RM	●		●		●
A111 0099	Twin-FIBREVision(S)-CPU				●	●*1
A111 0100	Twin-FIBREVision(S)-AR-CPU	●			●	●*1
A111 0101	Twin-FIBREVision(S)-U-CPU		●		●	●*1
A111 0102	Twin-FIBREVision(S)-ARU-CPU	●	●		●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0084	FIBREVision(S)-CON				●	
A112 0085	FIBREVision(S)-CON-RM					●
A112 0088	FIBREVision(S)-AR-CON	●			●	
A112 0089	FIBREVision(S)-AR-CON-RM	●				●
A112 0086	FIBREVision(S)-U-CON		●		●	
A112 0087	FIBREVision(S)-U-CON-RM		●			●
A112 0136	FIBREVision(S)-U2-CON			●	●	
A112 0137	FIBREVision(S)-U2-CON-RM			●		●
A112 0090	FIBREVision(S)-ARU-CON	●	●		●	
A112 0091	FIBREVision(S)-ARU-CON-RM	●	●			●
A112 0138	FIBREVision(S)-ARU2-CON	●		●	●	
A112 0139	FIBREVision(S)-ARU2-CON-RM	●		●		●
A112 0096	Twin-FIBREVision(S)-CON				●	●*1
A112 0097	Twin-FIBREVision(S)-AR-CON	●			●	●*1
A112 0098	Twin-FIBREVision(S)-U-CON		●		●	●*1
A112 0099	Twin-FIBREVision(S)-ARU-CON	●	●		●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.
When ordering, please quote the article number and the description.

Guntermann & Drunck GmbH

Damit Rechner- und Arbeitsplatzmodul zusammenpassen, achten Sie bitte darauf, dass die Funktionsmerkmale (Buchstaben „ARU" sowie „M" und „S") bei beiden Modulen identisch sind.

Multi-Channel 2 (2 x video) Multimode

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0103	FIBREVision(M)-MC2-CPU				●	●*1
A111 0104	FIBREVision(M)-MC2-AR-CPU	●			●	●*1
A111 0105	FIBREVision(M)-MC2-U-CPU		●		●	●*1
A121 0084	FIBREVision(M)-MC2-U2-CPU			●	●	●*1
A111 0106	FIBREVision(M)-MC2-ARU-CPU	●	●		●	●*1
A121 0085	FIBREVision(M)-MC2-ARU2-CPU	●		●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0104	FIBREVision(M)-MC2-CON				●	●*1
A112 0105	FIBREVision(M)-MC2-AR-CON	●			●	●*1
A112 0106	FIBREVision(M)-MC2-U-CON		●		●	●*1
A122 0064	FIBREVision(M)-MC2-U2-CON			●	●	●*1
A112 0107	FIBREVision(M)-MC2-ARU-CON	●	●		●	●*1
A122 0065	FIBREVision(M)-MC2-ARU2-CON	●		●	●	●*1

Multi-Channel 2 (2 x Video) Singlemode

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0111	FIBREVision(S)-MC2-CPU				●	●*1
A111 0112	FIBREVision(S)-MC2-AR-CPU	●			●	●*1
A111 0113	FIBREVision(S)-MC2-U-CPU		●		●	●*1
A121 0086	FIBREVision(S)-MC2-U2-CPU			●	●	●*1
A111 0114	FIBREVision(S)-MC2-ARU-CPU	●	●		●	●*1
A121 0087	FIBREVision(S)-MC2-ARU2-CPU	●		●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0112	FIBREVision(S)-MC2-CON				●	●*1
A112 0113	FIBREVision(S)-MC2-AR-CON	●			●	●*1
A112 0114	FIBREVision(S)-MC2-U-CON		●		●	●*1
A122 0066	FIBREVision(S)-MC2-U2-CON			●	●	●*1
A112 0015	FIBREVision(M)-MC2-ARU-CON	●	●		●	●*1
A122 0067	FIBREVision(S)-MC2-ARU2-CON	●		●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack
When ordering, please quote the article number and description.

FIBREVision Order list

> To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Multi-Channel 4 (up to 4 x video) Multimode

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0107	FIBREVision(M)-MC4-CPU				●	●*1
A111 0108	FIBREVision(M)-MC4-AR-CPU	●			●	●*1
A111 0109	FIBREVision(M)-MC4-U-CPU		●		●	●*1
A141 0035	FIBREVision(M)-MC4-U2-CPU			●	●	●*1
A111 0110	FIBREVision(M)-MC4-ARU-CPU	●	●		●	●*1
A141 0036	FIBREVision(M)-MC4-ARU2-CPU	●		●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0108	FIBREVision(M)-MC4-CON				●	●*1
A112 0109	FIBREVision(M)-MC4-AR-CON	●			●	●*1
A112 0110	FIBREVision(M)-MC4-U-CON		●		●	●*1
A142 0025	FIBREVision(M)-MC4-U2-CON			●	●	●*1
A112 0111	FIBREVision(M)-MC4-ARU-CON	●	●		●	●*1
A142 0026	FIBREVision(M)-MC4-ARU2-CON	●		●	●	●*1

Multi-Channel 4 (bis zu 4 x Video) Singlemode

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0115	FIBREVision(S)-MC4-CPU				●	●*1
A111 0116	FIBREVision(S)-MC4-AR-CPU	●			●	●*1
A111 0117	FIBREVision(S)-MC4-U-CPU		●		●	●*1
A141 0037	FIBREVision(S)-MC4-U2-CPU			●	●	●*1
A111 0118	FIBREVision(S)-MC4-ARU-CPU	●	●		●	●*1
A141 0038	FIBREVision(S)-MC4-ARU2-CPU	●		●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0116	FIBREVision(S)-MC4-CON				●	●*1
A112 0117	FIBREVision(S)-MC4-AR-CON	●			●	●*1
A112 0118	FIBREVision(S)-MC4-U-CON		●		●	●*1
A142 0027	FIBREVision(S)-MC4-U2-CON			●	●	●*1
A112 0119	FIBREVision(S)-MC4-ARU-CON	●	●		●	●*1
A142 0028	FIBREVision(S)-MC4-ARU2-CON	●		●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack
When ordering, please quote the article number and description.

Connectivity

According to the equipment features selected, the computer connection cables are included, length 2 m. Power supply cable, power packs and 19" mouting are included as standard, redundant power supply to be ordered separately if desired. Alternative lengths are available and are priced to order.

Item no.	Description	Category in KVM Connectivity	Function
	DVI-D-SL-M/M-x	Video cables	Computer connection
	ADAPTER DVI-I-HD15F	Adapters (passive)	Adaption computer connection
	Twin-PS/2-M/M-x	Keyboard/mouse cables	Computer connection
	RS232-M/F-x	Serial cables	Computer connection
see	Audio-M/M-x mit Ferrit	Audio cables	Computer connection
KVM Connectivity	USB-AM/BM-x	USB cables	Computer connection
	USB-Service-2	Particular cables	Firmware update
	K-LwLm-LCD-x	Ready-made cables	Transmission in multimode
	K-LwLs-LCD-x	Ready-made cables	Transmission in singlemode

Expansion Screen-Freeze Function

To order, please speak to our sales department.

Expansion FIBRE-Power

Item no.	Description
A180 0008	FIBRE-Power (requires an existing AR- component)

Accessories

Item no.	Description	
A411 0008	Power-Set 12-Typ 2	Power supply redundant

x = length in metres, see KVM Connectivity for lengths available.
When ordering, please quote the article number and the description.

DVIVision The system

The DVIVision system extends the signals
► keyboard/mouse
► digital single-link video
► audio
► RS232
► USB 1.1 and USB 2.0

It enables the transparent transmission via CAT-x cable over up to 140 m. The video outlet can be operated either digitally or analog. The multi-channel variants transmit 2, 3 or 4 video channels.

The system consists of two main components; the computer module (transmitter) and the user module (receiver). The modules are connected via CAT-x cable. The system facilitates the operation of a computer via 2 competing (1 x transmitter-side, 1 x receiver-side) workplaces.

Highlights

- *resolution up to 1920 x 1200 @ 60Hz and 1280 x 1024 @ 85 Hz*
- *E-DDC support*
- *24 Bit colour depth*
- *max. transmission length up to 140 m via CAT-x cable at max. resolution*
- *PS/2 and USB keyboard/mouse support*
- *digital as well as analog monitors connectable*
- *redundant power supply (optional)*
- *optional equipment features: audio, RS232 (data and handshake), USB 1.1 and USB 2.0 (transparent, high power)*
- *multi-channel variants for up to 4 video transmissions*
- *at both modules console with all video channels*
- *integrated power pack*
- *Screen-Freeze function*
- *suitable for all operating systems*

The DVIVision computer modules transmit the following signals as standard:
1 x digital single-link video and
1 x PS/2 or USB keyboard/mouse; also mixed mode

The computer modules are available in variants with up to 4 video channels.

The following optional features can also be ordered:
- audio + transparent RS232 (only in combination)
- transparent USB 1.1 or USB 2.0

Computer module DVIVision-MC4-ARU2-CPU

Front view

Item no.
A141 0034

DVI SL | CAT cable | RS 232 | USB 1.1 | USB 2.0

User module DVIVision-MC4-ARU2-CON

Front view

As computer and user modules are fundamentally compatible, the user modules DVIVision-CON also transmit the following signals as standard:
1 x digital single-link video and
1 x PS/2 or USB keyboard/mouse

The user modules are available in the same variants and with the same optional equipment features.

Item no.
A142 0024

System features

User consoles per system	2 (competing)
Number of monitors/workplaces	1 to 4
Computers per system	1
Signal type/video	digital video
Analog resolution (only connection to workplace)	up to 1920 x 1200 @ 60 Hz and 1280 x 1024 @ 85 Hz
Digital resolution	from 640 x 480 @ 100 Hz to 1920 x 1200 @ 60 Hz
Standards	E-DDC support at DVI
Digital color depth	24 Bit
Type of cable connection Computer module – user module	dedicated CAT-x link
Transmission length (max.) Computer module – user module	140 m at max. resolution (depending on cable)
Transmission cable type	CAT-x cable
Update process	with wizard at service socket of computer module or user module
Operation environment Temperature	Single Channel +5 bis +45°C Multi Channel 2 +5 bis + 40°C Multi Channel 4 +5 bis + 35°C
Air humidity	20 – 80 %, non-condensing
Conformity	CE, RoHS

x = 5e, 6, 7

System hardware

The system hardware offers a multitude of advantages. The table below illustrates just a few of those.

Area:

|	
Video	Forwarding and saving of enhanced DDC info between remote monitor and computer
Connection	Computer hot plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected
Expansion	Thanks to the different types of signal, the variants always provide the right transmission solution
	Remote power switching with "DVI Power" add-on component

Operating the main components

The system itself needs no explicit operation. The system automatically switches to the console at which keyboard and mouse inputs are being made.

Operation

System diagram

1 DVIVision-
MC2-ARU-CPU
2 DVIVision-
MC2-ARU-CON

Central technology room

CAT-x cable
140 m

Remote multimedia user workplace
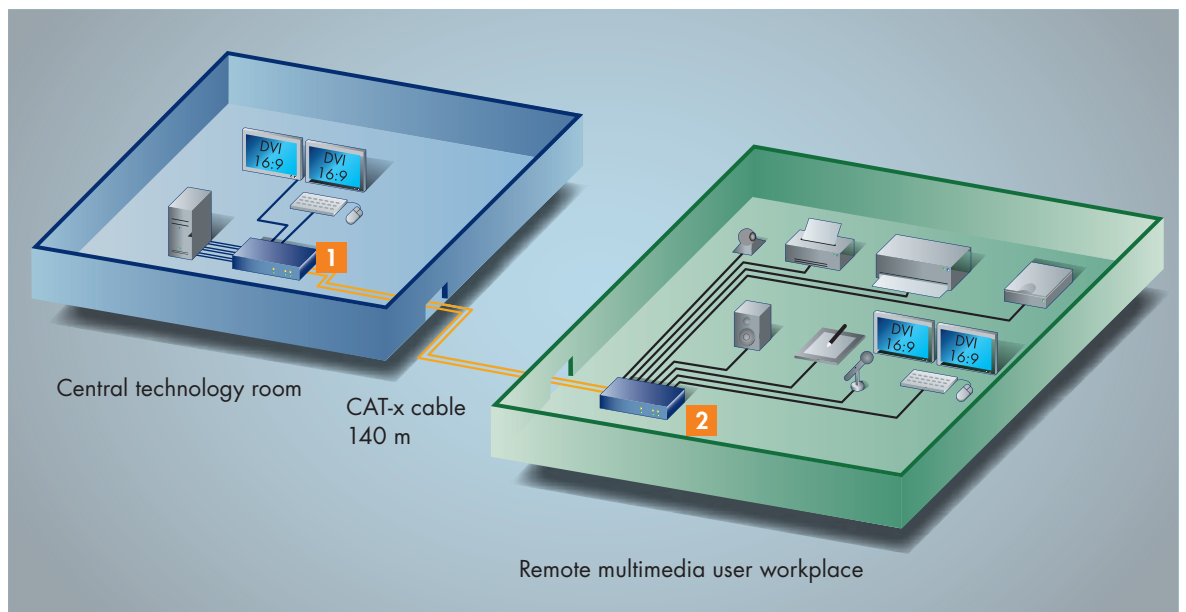
Example: Multimedia workplace

The multimedia computer is positioned in an air-conditioned, sound-proofed technology room. For maintenance purposes the computer can be accessed in the technology room via the connected boot monitor.

The DVIVision extends the signals 2-way digital single-link video, RS232, audio and USB 1.1 via 140 m CAT-x cable to the remote workplace. The operator has up to 4 USB devices available; a serial graphics panel, bidirectional audio signals in the form of microphone and loudspeaker as well as two digital 16:9 graphics displays.

The workplace is not affected by fan noise or heat developing from the computer. Optimum access to the computer is provided in the technology room.

DVIVision   Equipment features

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Equipment

Every DVIVision system can be ordered with the following optional equipment features:
- **Audio and RS232 (only in combination)**
- **Transparent USB 1.1 or USB 2.0**

The equipment features given make up the corresponding equipment of a DVIVision device.
These can also be retrofitted at the factory on request.

Audio-RS232

Component for transmitting audio and transparent RS232 signals

Technical data		Computer module DVIVision CPU	User module DVIVision CON
Interfaces and specifications			
for user	audio	–	2 x 3.5 mm socket (speaker, micro in)
	RS232	–	1 x D-sub 9 plug
to computer	Audio	2 x 3.5 mm socket (line in, line out)	–
	RS232	1 x D-sub 9 socket	–
Transmission	Additional CAT-x cable	no	
Design		internal	
Audio specification	Resolution	24-bit digital	
	Sampling rate	96 kHz	
	Bandwidth	22 kHz	
	Microphone preamplification	20 dB	
RS232 specification	Transmission rate	max. 115200 bit/s	
	Signals transmitted	RxD, TxD, RTS, CTS, DTR, DSR, DCD	

Transparent USB 1.1

Component for transparently transmitting of USB 1.1 signals

Technical data		Computer module DVIVision CPU	User module DVIVision CON
Interfaces and specifications			
for user		–	4 x USB-A socket
to computer		1 x USB-B socket (both for keyboard/mouse)	–
Transmission	Additional CAT-x cable	no	
Design		internal	
USB specifications		transparent USB 1.1	
	Transmission length	up to 140 m	
	USB power supply	High power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

x = 5e, 6, 7

Transparent USB 2.0   USB 2.0

Component for transparently transmitting of USB 2.0 signals

Technical data		Computer module DVIVision-CPU	User module DVIVision-CON
Interfaces and specifications			
for workplace		–	4 x USB-A socket
	to computer	1 x USB-B socket	–
Transmission	Additional CAT-x cable		
	Computer module – user module	1	
	Interface	1 x RJ45 socket	1 x RJ45 socket
Design		internal	
USB specifications		transparent USB 2.0	
	Transmission length	up to 140 m	
	USB power supply	High power devices up to 500 mA	
	USB transmission rate	up to 480 Mbit/s	

Expansion Screen-Freeze Function ❄

Component to hold the video signal

If the display looses the video signal due to a broken connection or a problem with the computer's graphics card, the Sreen-Freeze function „freezes" the last displayed image of the monitor.

This state is highlighted by a red, semi-transparent frame.

The function is automatically cancelled as soon as the display receives an active video signal.

Expansion DVI Power ⏻

This component can be retrofitted at the factory on request.

The component "DVI Power" permits the computer to be switched on and off remotely (reset and ATX power switching). To do this, a slot card is inserted into the computer to be controlled and connected to the computer module.
On the remote workplace there is corresponding operating hardware from the customer (button, etc.) which is connected to the user module.

The function is normally available for all DVIVision variants. The prerequisite for "DVI-Power" is an "Audio-RS232" component being fitted. For more details, please contact our sales team.

Technical data		Computer module DVIVision CPU	User module DVIVision CON
Interfaces and specifications			
for workplace		–	RJ9 socket (modular 4/4)
to computer		RJ9 socket (modular 4/4)	–
Transmission	Additional CAT-x cable	no	

x = 5e, 6, 7

DVIVision Variants

Single-channel (1 x video)

DVIVision-ARU-CPU

Computer module

Rear view

Artikel-Nr.
A111 0071

DVIVision-ARU-CON

User module

Rear view

Artikel-Nr.
A112 0069

The DVIVision single-channel is also available as a **twin variant**. It combines two computer or user modules in a single 1HU 19" casing. This provides a space-saving way of operating two computers remotely.

Single-channel (1 x video) with USB 2.0

DVIVision-ARU2-CPU

Computer module

Rear view

Artikel-Nr.
A111 0134

DVIVision-ARU2-CON

User module

Rear view

Artikel-Nr.
A112 0129

DVIVision Variants

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Individual module features

Technical data			Computer module DVIVision-CPU	User module DVIVision-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.4-0.2A	AC100-240V/60-50Hz 0.4-0.2A
		when equipped with USB 2.0	0.4-0.2A	0-5-0-3A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/1.2A	+12VDC/1.2A
		when equipped with USB 2.0	+12VDC/1.2A	+12VDC/2.0A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	210 x 44 x 210 mm	210 x 44 x 210 mm
	(W x H x D)	when equipped with USB 2.0	270 x 44 x 210 mm	270 x 44 x 210 mm
		Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 1.2 kg	approx. 1.2 kg
		when equipped with USB 2.0	approx. 1.5 kg	approx. 1.5 kg
Interfaces				
	for workplace	Monitor	1 x DVI-I socket	1 x DVI-I socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/mouse CPU	2 x mini-DIN 6 socket	–
		Video CPU	1 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	1 x RJ45 socket	1 x RJ45 socket
		No. of CAT-x cables		
		Computer module – user module	1	
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5e, 6, 7

Multi-channel 2 (2 x video)

Rear view

**DVIVision-MC2-
ARU2-CPU**

Computer module

Item no.
A121 0079

DVI SL | CAT cable | RS 232 | USB 1.1 | USB 2.0

Rear view

**DVIVision-MC2-
ARU2-CON**

User module

Item no.
A122 0061

DVIVision Variants

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Individual module features

Technical data			Computer module DVIVision-MC2-CPU	User module DVIVision-MC2-CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.4-0.3A	AC100-240V/60-50Hz 0.4-0.2A
		when equipped with USB 2.0	0.6-0.3A	0.6-0.3A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/1.7A	+12VDC/1.5A
		when equipped with USB 2.0	+12VDC/2.1A	+12VDC/2.6A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 3.0 kg	approx. 3.0 kg
		when equipped with USB 2.0	approx. 3.1 kg	approx. 3.1 kg
Interfaces				
	for workplace	Monitor	2 x DVI-I socket	2 x DVI-I socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/mouse CPU	2 x mini-DIN 6 socket	–
		Video CPU	2 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	2 x RJ45 socket	2 x RJ45 socket
		No. of CAT-x cables		
		Computer module – user module	2	
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5e, 6, 7

Multi-channel 4 (4 x video)

Rear view

DVIVision-MC4-ARU2-CPU
Computer module

Item no.
A141 0034

DVI SL | CAT cable | RS 232 | USB 1.1 | USB 2.0

Rear view

DVIVision-MC4-ARU2-CON
User module

Item no.
A142 0024

DVIVision Variants

Individual module features

Technical data			Computer module DVIVision-MC4 CPU	User module DVIVision-MC4 CON
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-120V/210-240V 60-50Hz 0.9-0.4A	AC100-120V/210-240V 60-50Hz 0.9-0.4A
		when equipped with USB 2.0	0.9-0.4A	0.9-0.4A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/3.3A	+12VDC/3.2A
		when equipped with USB 2.0	+12VDC/3.4A	+12VDC/3.3A
Casing	Material	Front, rear panel, upper blade	anodised aluminium	anodised aluminium
		Sub blade	zinc coated steel plate	zinc coated steel plate
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 3.0 kg	approx. 2.8 kg
		when equipped with USB 2.0	approx. 3.1 kg	approx. 2.9 kg
Interfaces				
	for workplace	Monitor	4 x DVI-I socket	4 x DVI-I socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
	to computer	Keyboard/mouse CPU	2 x mini-DIN 6 socket	–
		Video CPU	4 x DVI-D socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
	for transmission	Computer module – user module	4 x RJ45 socket	4 x RJ45 socket
		No. of CAT-x cables		
		Computer module – user module	4	
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

x = 5e, 6, 7

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To ensure that the computer module and user module match, please check that the functional features (letters "ARU") are identical for both modules.

Single-channel (1 x video)

Computer module

Art.-no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0063	DVIVision-CPU				●	
A111 0064	DVIVision-CPU-RM					●
A111 0069	DVIVision-AR-CPU	●			●	
A111 0070	DVIVision-AR-CPU-RM	●				●
A111 0065	DVIVision-U-CPU		●		●	
A111 0066	DVIVision-U-CPU-RM		●			●
A111 0132	DVIVision-U2-CPU			●	●	
A111 0133	DVIVision-U2-CPU-RM			●		●
A111 0071	DVIVision-ARU-CPU	●	●		●	
A111 0072	DVIVision-ARU-CPU-RM	●	●			●
A111 0134	DVIVision-ARU2-CPU	●		●	●	
A111 0135	DVIVision-ARU2-CPU-RM	●		●		●
A111 0067	Twin-DVIVision-CPU				●	●*1
A111 0073	Twin-DVIVision-AR-CPU	●			●	●*1
A111 0068	Twin-DVIVision-U-CPU		●		●	●*1
A111 0074	Twin-DVIVision-ARU-CPU	●	●		●	●*1

User modules

Art.-no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0049	DVIVision-CON				●	
A112 0050	DVIVision-CON-RM					●
A112 0067	DVIVision-AR-CON	●			●	
A112 0068	DVIVision-AR-CON-RM	●				●
A112 0051	DVIVision-U-CON		●		●	
A112 0052	DVIVision-U-CON-RM		●			●
A112 0127	DVIVision-U2-CON			●	●	
A112 0128	DVIVision-U2-CON-RM			●		●
A112 0069	DVIVision-ARU-CON	●	●		●	
A112 0070	DVIVision-ARU-CON-RM	●	●			●
A112 0129	DVIVision-ARU2-CON	●		●	●	
A112 0130	DVIVision-ARU2-CON-RM	●		●		●
A112 0053	Twin-DVIVision-CON				●	●*1
A112 0071	Twin-DVIVision-AR-CON	●			●	●*1
A112 0054	Twin-DVIVision-U-CON		●		●	●*1
A112 0072	Twin-DVIVision-ARU-CON	●	●		●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack

Multi-channel 2 (2 x video)

To ensure that the computer module and user module match, please check that the functional features (letters "ARU") are identical for both modules.

Computer modules

Art.-no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A121 0053	DVIVision-MC2-CPU				●	●*1
A121 0058	DVIVision-MC2-AR-CPU	●			●	●*1
A121 0055	DVIVision-MC2-U-CPU		●		●	●*1
A121 0078	DVIVision-MC2-U2-CPU			●	●	●*1
A121 0060	DVIVision-MC2-ARU-CPU	●	●		●	●*1
A121 0079	DVIVision-MC2-ARU2-CPU	●		●	●	●*1

User modules

Art.-no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A122 0034	DVIVision-MC2-CON				●	●*1
A122 0039	DVIVision-MC2-AR-CON	●			●	●*1
A122 0036	DVIVision-MC2-U-CON		●		●	●*1
A122 0060	DVIVision-MC2-U2-CON			●	●	●*1
A122 0041	DVIVision-MC2-ARU-CON	●	●		●	●*1
A122 0061	DVIVision-MC2-ARU2-CON	●		●	●	●*1

Multi-channel 4 (4 x video)

Computer module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A141 0025	DVIVision-MC4-CPU				●	●*1
A141 0026	DVIVision-MC4-AR-CPU	●			●	●*1
A141 0027	DVIVision-MC4-U-CPU		●		●	●*1
A141 0033	DVIVision-MC4-U2-CPU			●	●	●*1
A141 0028	DVIVision-MC4-ARU-CPU	●	●		●	●*1
A141 0034	DVIVision-MC4-ARU2-CPU	●		●	●	●*1

User module

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A142 0015	DVIVision-MC4-CON				●	●*1
A142 0016	DVIVision-MC4-AR-CON	●			●	●*1
A142 0017	DVIVision-MC4-U-CON		●		●	●*1
A142 0023	DVIVision-MC4-U2-CON			●	●	●*1
A142 0018	DVIVision-MC4-ARU-CON	●	●		●	●*1
A142 0024	DVIVision-MC4-ARU2-CON	●		●	●	●*1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.
When ordering, please quote the article number and description.

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Connectivity

According to the equipment features selected, the computer connection cables are included, length 2 m. Power supply cable and 19" mounting included as standard, redundant power supply always needs to be ordered separately. Alternative lengths are available and are priced to order.

Item no.	Description	Category in KVM Connectivity	Function
	DVI-D-SL-M/M-x	Video cables	computer connection
	RS232-M/F-x	Serial cables	computer connection
	Audio-M/M-x	Audio cables	computer connection
see	USB-AM/BM-x	USB cables	computer connection
KVM Connectivity	Twin-PS/2-M/M-x	Keyboard/mouse cables	computer connection
	Update-Cable-2	Particular cable	firmware updates
	ADAPTER DVI-I-HD15F	Adapters (passive)	adapter for comp. connect.
	K-C5/HR-x	Ready-made cables	transmission up to 100 m
	K-C7/LD-x	Ready-made cables	transmission up to 140 m

x = length in metres, see KVM Connectivity for lengths available

Expansion
Screen-Freeze Function

To order, please speak to our sales department.

Expansion DVI Power

Item no.	Description
A180 0003	DVI-Power-CPU (requires an existing AR component)
A180 0004	DVI-Power-CON (requires an existing AR component)

Accessories

Item no.	Description	
A411 0008	Power-Set 12-Type 2	Power supply, redundant

x = 5e, 6, 7   When ordering, please quote the article number and description.

LwLVision The system

The LwLVision system extends the signals
► keyboard/mouse
► single-link DVI and VGA
► audio
► RS232
► USB 1.1
► USB 2.0.

It enables the transparent transmission via fibre optics (2 fibres) over up to 10,000 m. USB-signals are transmitted tranparent over up to 2,000 m. The multi-channel variant can transmit 2 video channels.

The system consists of two main components; the computer module (transmitter) and the user module (receiver). The modules are connected via fibre optic. The system facilitates the operation of a computer via 2 competing (1 x transmitter-side, 1 x receiver-side) workplaces.

Highlights

- *Resolution up to 1920 x 1200 @ 60 Hz*
- *DDC support*
- *Digital as well as analog monitors connectable*
- *Max. transmission length up to 10,000 m via fibre optics at max. resolution*
- *Galvanic separation of transmitter and receiver*
- *Transmission insusceptibel to interference radiation*
- *PS/2 and USB keyboard/mouse support*
- *Access protection and user management which can be switched off*
- *Redundant power supply (optional)*
- *Transmission of audio and RS232 signals (data and handshake) included as standard*
- *Optional equipment feature: USB 1.1 and USB 2.0 (transparent, high power)*
- *Multi-channel variants for 2 video transmissions*
- *At both modules console with all video channels*
- *Integrated power pack*

The LwLVision computer modules transmit the following signals as standard:
1 x single-link DVI and VGA
1 x PS/2 or USB keyboard/mouse; also mixed mode
1 x audio + transparent RS232
(in combination)

The computer modules are available as a variant with 2 video channels. Both versions are available with the equipment feature:
- transparent USB 1.1
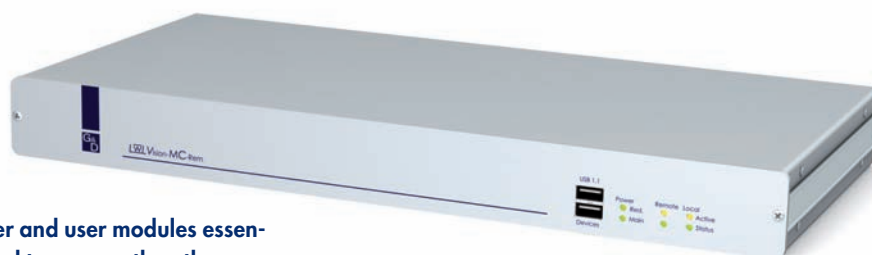- transparent USB 2.0 (currently available just for the single-channel variant)

**Computer module
LwLVision(S)
MC2-ARU-PC**

Item no.
A121 0051

Front view

| DVI &VGA | ⌨ | 🔊 | RS 232 | Fiber optics | 👥 | USB 1.1 |

As the computer and user modules essentially correspond to one another, the user modules LwLVision-REM also transmit the following signals as standard:
1 x single-link DVI and VGA
1 x PS/2 or USB keyboard/mouse
1 x audio + transparent RS232
(in combination)

**User module
LwLVision(S)
MC2-ARU-REM**

Front view

The user modules are available in the same variant and with the same optional equipment features.

Item no.
A122 0027

System features

User consoles per system	2 (competing)
Number of monitors/workplace	1 to 2
Computers per system	1
Signal type/video	single-link DVI and VGA
Resolution	from 640 x 350 @ 120 Hz
	to 1920 x 1200 @ 60 Hz (multi-channel per channel)
Standards	DDC support at DVI
Type of cable connection	
Computer module – user module	dedicated fibre optic link
Transmission length (max.)	275 m via 2 multimode fibres (62,5/125µm) at max. resolution
Computer module – user module	550 m via 2 multimode fibres (50/125 µm) at max. resolution
Transmission length (max.)	10000 m via 2 singlemode fibres (9/125 µm) at max. resolution
Computer module – user module	with USB max. 2000 m
Transmission cable type	multimode cable (62,5 / 125 µm, 200 MHz*km), class OM1)
	multimode cable (50 / 125 µm, 500 MHz*km), class OM2)
	singlemode cable (9 / 125 µm, 2000 MHz*km), class OS1)
Update process	with wizard at service socket of computer module or user module
Operation/configuration via	OSD (AdonIS) at the remote console
	Hotkeys
Operation environment	
Temperature	+5 to +40 °C
Air humidity	20 – 80 %, non-condensing
Conformity	CE, RoHS

System hardware

The system hardware offers a multitude of advantages. The table below illustrates just a few of those.

Area:

Video	Resolutions (VGA + DVI) from 640 x 350 @ 120 Hz to 1920 x 1200 @ 60 Hz (Multi-channel per channel)
Connection	No prior installation work
	Computer hot-plug: Computer and system modules can be connected during operation
	Stay-alive: When switching off the extender the computer remains unaffected

Operating the main components

The system itself needs no explicit operation. The system automatically switches to the console at which keyboard and mouse inputs are being made. Additional functions (e.g. blanking) are initiated automatically or by keyboard hotkeys. The configuration of the system is also carried out via AdonIS.
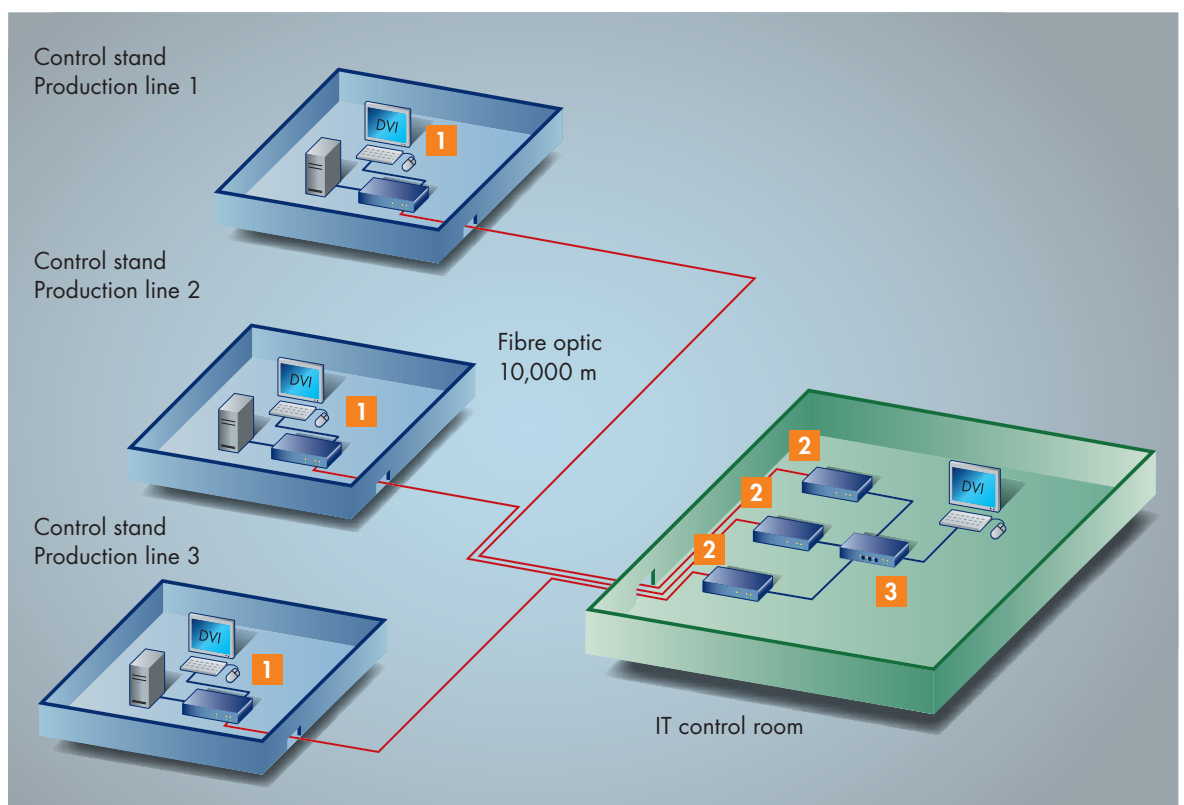
OSD (AdonIS)

Functional features

Users are provided with a wide range of functions which can be used to modify the operation of the LwLVision to your individual requirements and safety guidelines.

User	Up to 8 individual accounts can be configured (+ supervisor and open access account)
	Define user-based OSD displays
	Assign individual configuration rights
	Assign user-based configuration rights
	Set up viewing rights only on the computer
	Workplace logs itself off automatically following inactivity (optional)
System info	Viewing information on image parameters of the signal input
	Show DDC information on the monitors used
Workplace	OSD position and size can be freely defined
	Password protection can be activated
	Activate access protection via auto log-off when leaving the workplace
	Blanking a workplace while working on the other workplace (optional)
	Activate continuous access to a workplace on the computer
	Protected Mode: Enable image and access to a workplace only after a hotkey is entered
	Edit description of the remote workplace
	Activate permanent display of the workplace name on the remote screen
	Exclusive operating mode available for every workplace
Update	Perform firmware updates via service socket
Video	Automatic video adjustment: Automatic setting of image position, clock and phase
	Automatic video scaling: Automatic adjustment of the resolution on the workplace
	Manual fine adjustment possible for analog image signals
	Set fixed resolution
	Set upper resolution limit

System diagram

1 LwLVision(S)-
  AR-PC
2 LWLVision(S)-
  AR-Rem
3 DVIMUX4-PS/2
  or -USB

Control stand
Production line 1

Control stand
Production line 2

Fibre optic
10,000 m

Control stand
Production line 3

IT control room

Example: Monitoring three production lines

Three production lines are monitored via local control stands. These three control stands are connected to the administration office of the IT control centre 10,000 m away via LwLVision and singlemode fibre optics.
In the event of an error, the administrator can access all three production lines at all times on the control computer. The LwLVision system receivers have been centralised via a DVIMUX4 and collected together on an admin workplace. The admin can therefore switch to the relevant line and needs only one monitor, one keyboard and one mouse. The fibre optic transmission is not susceptible to interference from this environment.
The control stand computers can be operated and maintained by the machine operator and the remote administrator. The IT administrator does not need to be on site in the production environment.

Equipment

Each LwLVision system can be ordered with the following optional equipment features:
- **Transparent USB 1.1**
- **Transparent USB 2.0** (currently available just for single-channel versions)

This equipment feature can be retrofitted at the factory on request.

Transparent USB 1.1

Component for transmitting transparent USB 1.1 signals

Technical data		Computer module LwLVision-PC	User module LwLVision-REM
Interfaces and specifications			
for workplace		–	4 x USB-A socket
to computer		1 x USB-B socket	–
Transmission	Additional fibre optic cable	no	
Design		internal	
USB specifications		transparent USB 1.1	
	Transmission length	multimode fibres up to 550 m	
		singlemode fibres up to 2000 m	
	USB power supply	high power devices up to 500 mA	
	USB transmission rate	up to 12 Mbit/s	

Transparent USB 2.0

Component for transmitting transparent USB 2.0 signals is currently available just for single-channel versions.

Technical data		Computer module LwLVision-PC	User module LwLVision-REM
Interfaces and specifications			
for workplace		–	4 x USB-A socket
to computer		1 x USB-B socket	–
Transmission	Additional fibre optic cable	no	
Design		internal	
USB specifications		transparent USB 2.0	
	Transmission length	multimode fibres up to 550 m	
		singlemode fibres up to 2000 m	
	USB power supply	high power devices up to 500 mA	
	USB transmission rate	up to 480 Mbit/s	

1. Single-channel (1 x video)

The LwLVision single-channel is available in 2 variants:
When used with multimode fibres (50/125 µm), LwLVision(M) bridges up to 550 m.
When used with singlemode fibres (9/125 µm), LwLVision(S) bridges up to 10,000 m.

Rear view

LwLVision(S)-ARU-PC
Computer module

Item no.
A111 0057

LwLVision(S)-ARU-REM
User module

Item no.
A112 0029

2. Single-Channel (1 x Video) with USB 2.0

The LwLVision single-channel with USB 2.0 is available in 2 variants:
When used with multimode fibres (50/125 µm), LwLVision(M) bridges up to 550 m.
When used with singlemode fibres (9/125 µm), LwLVision(S) bridges up to 10,000 m.

Rear view

LwLVision(S)-ARU2-PC
Computer module

Item no.
A111 0152

LwLVision(S)-ARU2-Rem
User module

Item no.
A112 0146

The LwLVision single-channel is also available as a twin variant. It combines two computer or user modules in a single 1HU 19" casing. This provides a space-saving way of operating two computers remotely.

www.gdsys.de

Individual module features

Technical data			Computer module LwLVision-AR-PC	User module LwLVision-AR-REM
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.3-0.2A	AC100-240V/60-50Hz 0.4-0.2A
		when equipped with USB 2.0	0.3-0.2A	0.5-0.3A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/1.2A	+12VDC/1.2A
		when equipped with USB 2.0	+12VDC/0.9A	+12VDC/2.1A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	210 x 44 x 210 mm	210 x 44 x 210 mm
		when equipped with USB 2.0	270 x 44 x 210 mm	270 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 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
Interfaces/specifications				
	for workplace	Monitor	1 x DVI-I socket	1 x DVI-D socket / 1 x D-sub HD 15 socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
		Audio	–	2 x 3.5 mm socket (micro in, speaker)
		Resolution	18 bit digital	
		Sampling rate	48 kHz	
		Bandwidth	22 kHz	
		Microphone pre-amplification	20 dB	
		RS232	–	1 x D-sub 9 plug
		Transmission rate	max. 57,600 bit/s	
		Signals that can be transmitted:	TxD, RxD, RTS, CTS, DTR, DSR, DCD	
	to computer	Keyboard/Mouse CPU	1 x D-sub HD 15 plug	–
		Video CPU	1 x DVI-I-socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
		Audio (for specifications, see above)	2 x 3.5 mm socket (Line in, Line out)	–
		RS232 (for specifications, see above)	1 x D-sub 9 socket	–
	for transmission	Computer module – user module	1 x SC Duplex socket	1 x SC Duplex socket
		No. of optical fibres		
		Computer module – user module	2	
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

2. Multi-channel 2 (2 x video)

The LwLVision Multi-channel is available in 2 variants:
When used with multimode fibres (50/125 µm), LwLVision(M)-MC2 bridges up to 550 m.
When used with singlemode fibres (9/125 µm), LwLVision(S)-MC2 bridges up to 10,000 m.

Rear view

LwLVision(S)-MC2-ARU-PC
Computer module

Item no.
A121 0051

DVI &VGA | RS 232 | Fiber optics | USB 1.1

Rear view

LwLVision(S)-MC2-ARU-REM
User module

Item no.
A122 0027

LwLVision Variants

Individual module features

Technical data			Computer module LwLVision-MC2-AR-PC	User module LwLVision-MC2-AR-REM
Power supply	Main	Type	internal power pack	internal power pack
		Connection	1 x inlet connector for non-heating devices (IEC-320 C14)	1 x inlet connector for non-heating devices (IEC-320 C14)
		Power supply	AC100-240V/60-50Hz 0.4-0.2A	AC100-240V/60-50Hz 0.4-0.2A
	Redundant (optional)	Type	external power pack	external power pack
		Connection	mini-DIN 4 Power socket	mini-DIN 4 Power socket
		Power supply	+12VDC/1.9A	+12VDC/1.9A
Casing	Material		anodised aluminium	anodised aluminium
	Dimensions	Desktop	435 x 44 x 210 mm	435 x 44 x 210 mm
	(W x H x D)	Rackmount	19" x 1 HU x 210 mm	19" x 1 HU x 210 mm
Weight			approx. 2.1 kg	approx. 2.1 kg
Interfaces/specifications				
	for workplace	Monitor	2 x DVI-I socket –	2 x DVI-D socket 2 x D-sub HD 15 socket
		Keyboard/mouse	2 x mini-DIN 6 socket	2 x mini-DIN 6 socket
		USB keyboard/mouse	–	2 x USB-A socket
		Audio	–	2 x 3.5 mm socket (micro in, speaker)
		Resolution	18 bit digital	
		Sampling rate	48 kHz	
		Bandwidth	22 kHz	
		Microphone pre-amplification	20 dB	
		RS232	–	1 x D-sub 9 plug
		Transmission rate	max. 57,600 bit/s	
		Signals that can be transmitted:	TxD, RxD, RTS, CTS, DTR, DSR, DCD	
	to computer	Keyboard/Mouse CPU	1 x D-sub HD 15 plug	–
		Video CPU	1 x DVI-I socket	–
		USB keyboard/mouse CPU	1 x USB-B socket	–
		Audio (for specifications, see above)	2 x 3.5 mm socket (Line in, Line out)	–
		RS232 (for specifications, see above)	1 x D-sub 9 socket	–
	for transmission	Computer module – user module	2 x SC Duplex socket	2 x SC Duplex socket
		No. of fibre optics Computer module – user module	3	
	for updates		1 x 2.5 mm socket	1 x 2.5 mm socket

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-channel (1 x video) Multimode

Computer modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0041	LwLVision(M)-AR-PC	●			●	
A111 0042	LwLVision(M)-AR-PC-RM	●				●
A111 0045	LwLVision(M)-ARU-PC	●	●		●	
A111 0046	LwLVision(M)-ARU-PC-RM	●	●			●
A111 0150	LwLVision(M)-ARU2-PC	●		●	●	
A111 0151	LwLVision(M)-ARU2-PC-RM	●		●		●
A111 0048	Twin-LwLVision(M)-AR-PC	●			●	● *1
A111 0050	Twin-LwLVision(M)-ARU-PC	●	●		●	● *1
A111 0154	Twin-LwLVision(M)-ARU2-PC	●		●	●	● *1

User modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0017	LwLVision(M)-AR-Rem	●			●	
A112 0018	LwLVision(M)-AR-Rem-RM	●				●
A112 0021	LwLVision(M)-ARU-Rem	●	●		●	
A112 0022	LwLVision(M)-ARU-Rem-RM	●	●			●
A112 0144	LwLVision(M)-ARU2-Rem	●		●	●	
A112 0145	LwLVision(M)-ARU2-Rem-RM	●		●		●
A112 0055	Twin-LwLVision(M)-AR-Rem	●			●	● *1
A112 0056	Twin-LwLVision(M)-ARU-Rem	●	●		●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.
When ordering, please quote the article number and description.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Single-channel (1 x video) Singlemode

Computer modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A111 0053	LwLVision(S)-AR-PC	●			●	
A111 0054	LwLVision(S)-AR-PC-RM	●				●
A111 0057	LwLVision(S)-ARU-PC	●	●		●	
A111 0058	LwLVision(S)-ARU-PC-RM	●	●			●
A111 0152	LwLVision(S)-ARU2-PC	●		●	●	
A111 0153	LwLVision(S)-ARU2-PC-RM	●		●		●
A111 0060	Twin-LwLVision(S)-AR-PC	●			●	● *1
A111 0062	Twin-LwLVision(S)-ARU-PC	●	●		●	● *1
A111 0155	Twin-LwLVision(S)-ARU2-PC	●		●	●	● *1

User modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A112 0025	LwLVision(S)-AR-Rem	●			●	
A112 0026	LwLVision(S)-AR-Rem-RM	●				●
A112 0029	LwLVision(S)-ARU-Rem	●	●		●	
A112 0030	LwLVision(S)-ARU-Rem-RM	●	●			●
A112 0146	LwLVision(S)-ARU2-Rem	●		●	●	
A112 0147	LwLVision(S)-ARU2-Rem-RM	●		●		●
A112 0057	Twin-LwLVision(S)-AR-Rem	●			●	● *1
A112 0058	Twin-LwLVision(S)-ARU-Rem	●	●		●	● *1

Multi-channel 2 (2 x video) Multimode

Computer modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A121 0039	LwLVision(M)-MC2-AR-PC	●			●	● *1
A121 0043	LwLVision(M)-MC2-ARU-PC	●	●		●	● *1

User modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A122 0015	LwLVision(M)-MC2-AR-Rem	●			●	● *1
A122 0019	LwLVision(M)-MC2-ARU-Rem	●	●		●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.
When ordering, please quote the article number and description.

To ensure that the computer module and user module match, please check that the functional features (letters "ARU" as well as "M" and "S") are identical for both modules.

Multi-channel 2 (2 x video) Singlemode

Computer modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A121 0047	LwLVision(S)-MC2-AR-PC	●			●	● *1
A121 0051	LwLVision(S)-MC2-ARU-PC	●	●		●	● *1

User modules

Item no.	Description	Audio RS232	transp. USB 1.1	transp. USB 2.0	Desktop	Rackmount
A122 0023	LwLVision(S)-MC2-AR-Rem	●			●	● *1
A122 0027	LwLVision(S)-MC2-ARU-Rem	●	●		●	● *1

*1 Devices with rackmount kits can be installed at the front or rear of the rack.
When ordering, please quote the article number and description.

Connectivity

Depending on the equipment features selected, the computer connection cable is included, length 2 m. Power supply cable and power packs are included as standard, redundant power supply always needs to be ordered separately. Alternative lengths are available and are priced to order.

Art. no.	Description	Category in KVM Connectivity	Function
	VGA-M/DVI-A-M-x	Video cables	computer connection
	DVI-D-SL-M/M-x	Video cables	computer connection
	ADAPTER DVI-I-HD15F	Adapters (passive)	adapter for comp. connect.
	SOKA-G-2	Particular cables	computer connection
	RS232-M/F-x	Serial cables	computer connection
see	Audio-M/M-x	Audio cables	computer connection
KVM Connectivity	USB-AM/BM-x	USB cables	computer connection
	K-LwLm-SCD-x	Ready-made cables	transmission in multimode
	K-LwLs-SCD-x	Ready-made cables	transmission in singlemode
	K-LwLm-out-SCD-x	Ready-made cables	outside transmission in multimode
	K-LwLm-out-2SCD-x	Ready-made cables	dual outside transmission in multimode

x = length in metres, see KVM Connectivity for lengths available.

Accessories

Art. no.	Description	
A411 0008	Power-Set 12-Type 2	Power supply, redundant

When ordering, please quote the article number and description.

Legend

ABBREVIATIONS

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

EQUIPMENT FEATURES

Icon	Description		Icon	Description
	= keyboard/mouse		VT100	= VT100
DVI DL	= DVI dual-link video		KVM IP	= KVM IP access
DVI SL	= DVI single-link video		LAN	= Network connection
DVI &VGA	= DVI single-link + analog video		WEB If	= Web interface
VGA	= analog video		DEV CON support	= DevCon support
			Moni tor	= Monitoring
	= Audio			
RS 232	= RS232		CAT cable	= CAT cable
USB 1.1	= USB 1.1		Fiber optics	= Fiber optics
USB 2.0	= USB 2.0			
	= Delay			= Single user
	= Screen Freeze			= Multi user
	= Power Switching			= Competing local/remote user
FIRE wire	= Fire Wire			

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