

# DVI KVM Matrix Switches

## DVI KVM Matrix Switches

Matrix Switches for the simultaneous operation of multiple computers via several consoles

# DVICenter 7.4



**Leading the way in digital KVM**

## The company

Experience the whole world of

KVM

## Leading the way in digital KVM

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

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

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

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

Trust in G&D for your optimal KVM solution.

## The System

Thanks to its **16, 32 or 64 dynamic ports**, the KVM matrix switch DVICenter connects multiple number of computers and consoles.

Example: A system consisting of 6 consoles & 58 computers can be expanded to up to **4,738 computers**.

### A working system consists of at least:

- 1 × central module DVICenter DP16/32/64
- 1 × computer module DVI-CPU
- 1 × user module DVI-CON
- 2 × CAT transmission cable (type 5e, 6, 7)

### The DVICenter switches the following signals:

- Keyboard/mouse [PS/2 and USB]
- Video [DVI single-Link and DisplayPort] as well as VGA video sources possible
- Audio bidirectional
- RS232 & USB 2.0 transparent

The DVICenter is available as DP16, DP32 and DP64 variant.



## Highlights / System

### Video

- Switch and extender combined in one system
- HDIP2 (High Dynamic Image Processing 2) for highest video and mouse quality in all applications
- Transmission up to 140 m over CAT cable at maximum resolution between all modules

### Signals

- Switches bidirectional audio signals
- Supports PS/2 and USB keyboard/mouse
- RS232 & USB 2.0 transparent
- U2-R-CPU & U2-R-CON now also via IP-Control-API switchable
- user rights configuration for transparent USB 2.0

### Expansion

- Expandable to up to 6,750 computers or 62 consoles
- Expansion of the switchable signals either through port grouping or stacking
- Multi-monitor workstations
- Expandable with power-switching component
- Increases the system range to up to 10,000 m over fibre optics
- Firmware expansion for multi-monitor consoles (TS function)
- Innovative **CrossDisplay-Switching** enables users to switch between channels by using the mouse
- Firmware expansion for moving/getting own or external screen contents (**Push-Get function**)
- Firmware expansion for preparing the switching over network (**IP-Control-API**)

- Expansion of the switchable signals either through **port grouping or stacking**
- Expansion of the user range: access to computer over multiple DVICenter-Cluster due to Dynamic-UserCenter32

### DynamicPorts

- The DVICenter dynamic ports can be configured as computer or user port
- Freely configurable number of computer and user ports

### Network / Communication

- Access protection and user administration can be switched off
- Auto-recognition and visualization of the system structure
- Two network ports
- Configuration over web interface
- Central update of all DVICenter components over network
- Text-based media control over TCP/IP e.g. AXM and Crestron; Monitoring values can also be sent to AMX or Crestron media control
- Also available as 12V or 24V variant

### Safety

- Failover connection (in the unlikely event that the central modules should fail, you can directly connect DVI-CPU and DVI-CON to operate the system; max. distance up to 140m).
- Support of external authentication via LDAP, Active Directory, TACACS+, Radius
- Redundant power supply

## Highlights Monitoring / SNMP

**Function:** receive DVICenter status info  
**Operation via:** web interface/SNMP  
**Sphere of effectiveness:** 1 cluster

The DC-Monitoring feature enables you to detect the system status of G&D devices. The web interface provides information that can be sent (SNMP trap) or queried (via SNMP GET) as well. Monitoring values can also be sent to AMX or Crestron media control. Both monitoring function and SNMP trap and agent are included in the scope of supply.

The information section shows the device configuration settings and the detected status values.

Among others, the following status values can be monitored:

- device main power supply (On/Off)
- device redundant power supply (On/Off)
- device temperature (°C)
- network interfaces (Up/Down)
- fan speed (RPM)
- current (A)
- voltage (V)

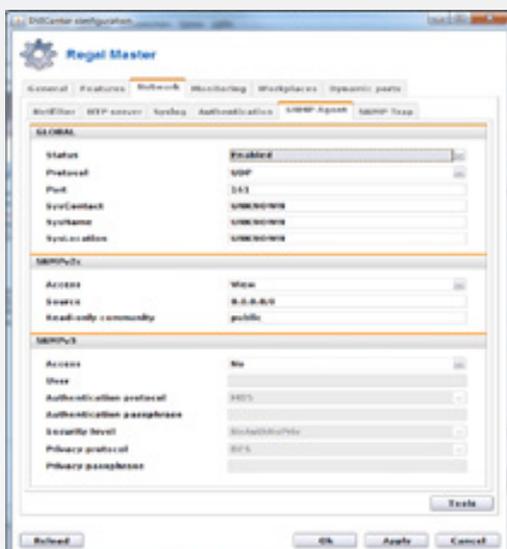
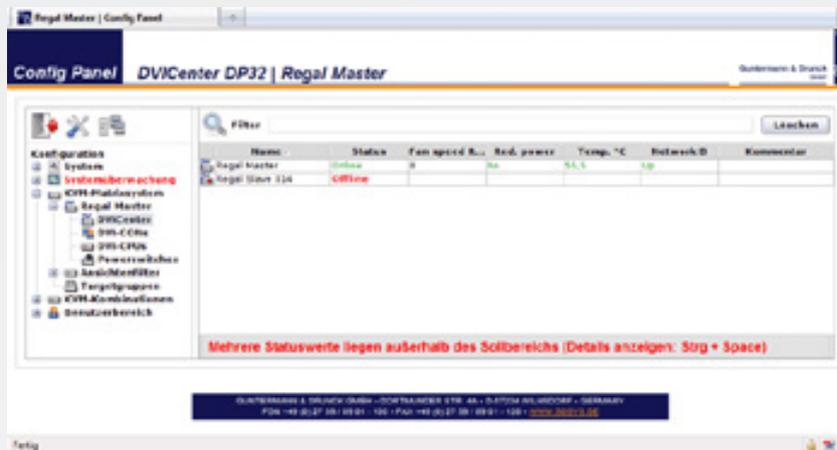
Status changes (e.g. power on/off) and exceeding defined threshold values (e.g. temperatures) highlight these values in red in the web interface. The administrator will also be notified based on predefined network parameters.

The monitoring function is also provided for the peripheral devices (DVI-CPU & DVI-CON), e.g.:

- status (Online/Offline)
- main and redundant power supply (On/Off)
- temperature (°C)
- display type
- peripheral devices (connected/disconnected)
- Video cable (connected/disconnected)

Among others, the following user activity values can be sent via Syslog and/or SNMP-Traps:

- user login/-out on consoles
- failed user logins
- connected/disconnected targets
- failed target connections



## Features

### Video

- DVI single-link video resolution up to 1920 × 1200 @ 60 Hz: DisplayPort up to 1920 x 1200 @ 60 Hz (at user modules also VGA 1280 × 1024 @ 85 Hz)
- 24 bit colour depth
- multi-channel Video
- E-DDC support
- maximum transmission distance up to 560m:
  - computer module to central module 140 m
  - central module to user module 140 m
  - central module to other central modules (up to 2 ×) 140 m

### Audio

- bidirectional transmission of audio signals
- resolution 24 bits digital
- bandwidth 22 kHz / refresh rate 96 kHz

### Device

- accessing computer standard interfaces
- no software installation required
- available as desktop and 19" variant
- aluminium casing for best possible protection against interferences
- redundant power supply
- hot pluggable system components
- stay-alive function for computers
- optional integration of power switches (Hardboot CCX)

## New Features & Functions

### Port grouping

In addition to combining multiple computers to a console, the DVICenter also supports multi-monitor workstations for computers with several video outputs. Here, multiple channels can easily be combined as **port groups**.

As always, you can administrate all functions in the DVICenter web interface. In addition to multiple screens, you can include other signals in these groups. The system also transmits and switches transparent USB2.0 signals as well as RS232.

#### Example:

To transmit a second video signal and a USB 2.0 signal of the same computer, in addition to the DVI-CPU computer module, a second DVI-CPU module (second video channel) and a U2-CPU module (USB2.0/RS232) must be connected to the computer.

In addition to the DVI-CON user module, the DVI-CON-Video (second video channel) and a U2-CPU module should be connected.

Therefore with the DVICenter, you can switch various computer modules of one computer or various user modules of one console at the same time.

### Stacking function

The stacking function enhances the system's flexibility even further. The feature increases the number of ports by combining up to ten DVICenter devices via bus port. The ports

of the stacked switches are switched in parallel to the master system. Now you can create multi monitor workstations and assign consoles with USB or RS232 channels.

Example: All ports of a DVICenter DP64 matrix switch are occupied with 16 consoles accessing 48 computers. However, each console requires five channels: 4 video signals per computer and transparent USB 2.0. Stacking 5 DVICenter DP64 provides you with the required 320 ports.

### USB-Pinning

If several DVICenter ports are grouped as a multi-channel configuration, the newest USB pinning function enables you to hold the USB transmission on the current computer even if the user switches to another channel. In this case the USB transmission is not interrupted, but transmitted to the end.

### CrossDisplay-Switching (see page 36)

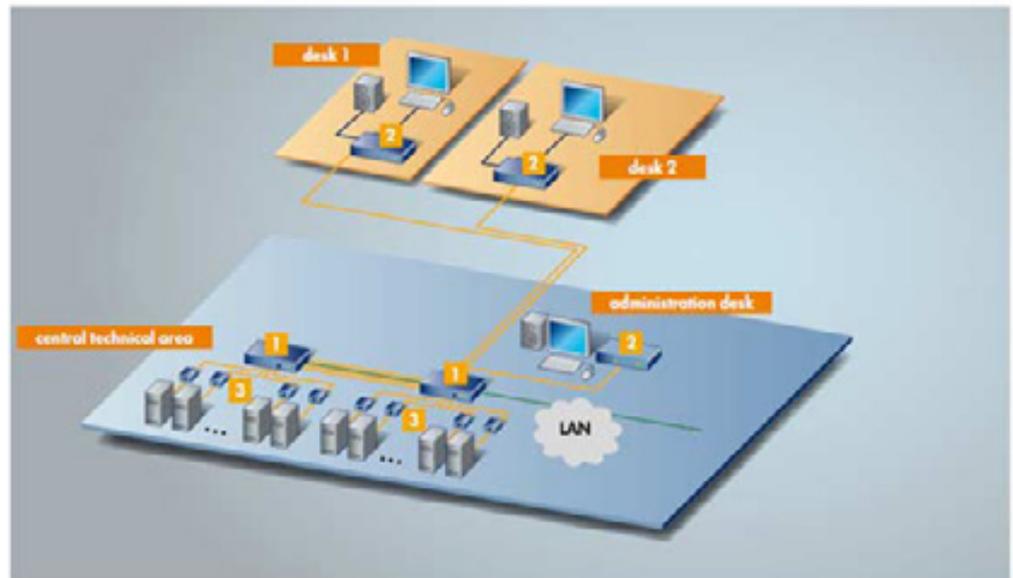
Switching by using the mouse

### Screen-freeze-function

If the display loses the video signal due to a broken connection or a problem with the computer's graphics card, the Screen-Freeze function „freezes“ the image last displayed on the monitor. This state is highlighted by a red semi-transparent frame. Meanwhile, the current time and the downtime of the video signal is displayed. The function is automatically cancelled when the display receives an active video signal.

## Application scheme

- 1 DVICenter DP32
- 2 DVI-CON
- 3 DVI-CPU



**Example:** The computers are housed in a central control room, separated from the users. In the technical area, an administration console allows the administrator to operate the computers. The desks can be provided with both digital and analog monitors. Two DVICenter DP32 (1 x master, 1 x slave) connect the user modules and the computer. A dedicated CAT-x link integrates the productive workplaces into the operational concept (DVI-CON) where they

work on the computers like a 1:1 connection. The DVICenter DP32 can be integrated into the network for configuring the device via web interface, sending messages to a Syslog server or using directory services. Each user module can access every computer. Flexible operation concepts can be implemented, which creates perfect conditions for both users and computers.

## Use

Thanks to its dynamic ports the DVICenter can be applied in applications where multiple computers are operated over multiple simultaneous consoles.

Quantitative and functional adjustments are easily carried out within the modular system design meeting expansion requirements. The system is for example used in control centres, OB vans and studios.

## Variants

### Design

The DVICenter is shipped as desktop device. The package contains a 19" rack mount set.

The DVICenter is available as DP16, DP32 and DP64 variant.

## DVICenter DP16



left: DVICenter DP16 - front view  
right: DVICenter DP16 - rear view

	DVICenter DP16
<b>Console</b>	
Type of console ports	RJ45 socket
Console ports per device	Dynamic: min. 1 - max. 15
Transmission type user module	Dedicated 1:1 CAT-x link
Transmission length to user module	140 m
Interfaces for user modules	RJ45 sockets
Network port	2 × RJ45 socket
<b>Computer</b>	
Type of computer ports	RJ45 socket
Computer ports	Dynamic: min. 1 - max. 15
Computer ports cascade level 1	Dynamic: min. 11 - max. 225
Computer ports cascade level 2	Dynamic min. 13 - max. 686
Transmission length between cascades	140 m
Transmission type to computer module	Dedicated 1:1 CAT-x link
Transmission length to computer module	140 m
Interfaces to computer module	RJ45 sockets
<b>Main power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0,4A - 0,2A
<b>Redundant power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0,4A - 0,2A
<b>Housing</b>	
Casing	Anodised aluminium
Desktop (W × H × D)	435 × 44 × 286 mm
Rackmount (W × H × D)	19" × 1U × 286 mm
Weight	Approx. 3.0 kg
<b>Update</b>	
Process	Via web interface „Config Panel“
Connection	Via network port
<b>Power Switching</b>	
Interface	RJ11 socket
<b>Operating conditions</b>	
Temperature	+5 to +45 °C
Humidity	< 85% non-condensing
Conformity	CE, RoHs

## DVICenter DP32



left: DVICenter DP32 - front view  
right: DVICenter DP32 - rear view

	DVICenter DP32
<b>Console</b>	
Type of console ports	RJ45 socket
Console ports per device	Dynamic: min. 1 - max. 31
Transmission type user module	Dedicated 1:1 CAT-x link
Transmission length to user module	140 m
Interfaces for user modules	RJ45 sockets
Network port	2 × RJ45 socket
<b>Computer</b>	
Type of computer ports	RJ45 socket
Computer ports	Dynamic: min. 1 - max. 31
Computer ports cascade level 1	Dynamic: min. 19 - max. 961
Computer ports cascade level 2	Dynamic: min. 21 - max. 6,750
Transmission length between cascades	140 m
Transmission type to computer module	Dedicated 1:1 CAT-x link
Transmission length to computer module	140 m
Interfaces to computer module	RJ45 sockets
<b>Main power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0,8A - 0,3A
<b>Redundant power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0,8A - 0,3A
<b>Housing</b>	
Casing	Anodised aluminium
Desktop (W × H × D)	435 × 44 × 286 mm
Rackmount (W × H × D)	19" × 1U × 286 mm
Weight	Approx. 3.0 kg
<b>Update</b>	
Mode	Via web interface „Config Panel“
Connection	Via network port
<b>Power Switching</b>	
Interface	RJ11 socket
<b>Operating conditions</b>	
Temperature	+5 to +45 °C
Humidity	< 85% non-condensing
Conformity	CE, RoHs

## DVICenter DP64



left: DVICenter DP64 - front view  
right: DVICenter DP64 - rear view

	DVICenter DP64
<b>Console</b>	
Type of console ports	RJ45 socket
Console ports per device	Dynamic: min. 1 - max. 63
Transmission type user module	Dedicated 1:1 CAT-x link
Transmission length to user module	140 m
Interfaces for user modules	RJ45 sockets
Network port	2 × RJ45 socket
<b>Computer</b>	
Type of computer ports	RJ45 socket
Computer ports	Dynamic: min. 1 - max. 63
Computer ports cascade level 1	Dynamic: min. 35 - max. 3,696
Computer ports cascade level 2	Dynamic: min. 37 - max. 4,738
Transmission length between cascades	140 m
Transmission type to computer module	Dedicated 1:1 CAT-x link
Transmission length to computer module	140 m
Interfaces to computer module	RJ45 sockets
<b>Main power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	1.5A - 0.6A
<b>Redundant power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	1.5A - 0.6A
<b>Housing</b>	
Casing	Anodised aluminium
Desktop (W × H × D)	435 × 88 × 284.5 mm
Rackmount (W × H × D)	19" × 2U × 284.5 mm
Weight	Approx. 4.0 kg
<b>Update</b>	
Mode	Via web interface „Config Panel“
Connection	Via network port
<b>Power Switching</b>	
Interface	RJ11 socket
<b>Operating conditions</b>	
Temperature	+5 to +35 °C
Humidity	< 80% non-condensing
Conformity	CE, RoHs

## Computer modules

The **DVI-CPU computer modules** link external keyboard, video, mouse, and audio interfaces to the DVICenter system.

The DVI-CPU's combine signals, process them and use CAT cables to transmit the signals to the KVM matrix switch. Any DVI-CPU has a unique ID that helps identify the device within a DVICenter system.

**NEW:** DVI-CPU and DVI-CON can also be connected directly and used as extender line. Now users can operate computers placed up to 140 m away from your console.

We provide the following DVI-CPU variants:



DVI-CPU - front view

## DVI-CPU

**Standard variant transmitting the following signals:**

- single-link DVI-D
- PS/2 + USB keyboard/mouse
- Audio (Line In / Line Out)
- 

The common firmware version for DVI-CPU is compatible to Wintu3 and Wintu4 and supports the communication with Wacom Intuos3, 4 or 5@ tablets.

The DVI-CPU is also available without a supplied AC adapter. Order the MultiPower-12 if the computer modules have to be supplied with power from a central source. The MultiPower-12 functions as a central and external power supply for up to 12 computer modules ( DVI-CPU).

**Installation:**

We provide **19" rack mount solutions** facilitating the installation of DVI-CPU computer modules into a server rack. The rack solutions are listed under KVM Accessories.

## DVI-CPU-UC

**Dual module for connecting a computer to two DVICenter clusters transmitting the following signals:**

- single-link DVI-D
- PS/2 + USB keyboard/mouse
- Audio (Line In / Line Out)

The DVI-CPU-UC devices allow you to connect more consoles **than ports provided at the device.**

Use **DVI-CPU-UC modules** instead of the usual DVI-CPU computer modules to increase the number of consoles or to establish a redundant system.



DVI-CPU-UC - rear view

## DVI-CPU-FSC & DVI-CPU-UC-FSC

DVI-CPU-FSC computer modules connect the external keyboard, video, mouse and audio interfaces to the matrix switch central module. For easier rack mounting, all interfaces at the device's back are redirected to the front via cables.

The DVI-CPU-UC-FSC is a UserCenter module connecting a computer to two matrix switch clusters (for example to create a fully redundant system). Here, all interfaces are placed at the front side as well.



DVI-CPU-FSC - front view

## Computer modules

### DVI-CPU-MC2

Computer module to establish multi-monitor workstations and transmitting the following signals:

- Single-Link DVI-D
- PS / 2 + USB keyboard / mouse
- Audio (Line In / Line Out)

Using a DVI-CPU-MC2 multi-channel video computers can be now easily integrated into the DVICenter.

The DVI-CPU-MC2 combines signals, process them, and use CAT cables to transmit the signals to the DVICenter.



DVI-CPU-MC2 - front view

### DVI-CPU-MC2-UC

Dual computer module for connecting a multi-video computer to two DVICenter clusters.

Transmits the following signals:

- Single-Link DVI-D
- PS/2 + USB keyboard/mouse
- Audio ( Line In / Line Out)

Use DVI-CPU-MC2-UC modules instead of the usual DVI-CPU-MC2 computer modules to increase the number of multi-monitor consoles or to establish a redundant system.

Installation:

We provide 19" rack mount solutions facilitating the installation of DVI-CPU-MC2-UC computer modules into a server rack.



DVI-CPU-MC2-UC - rear view

## Computer modules

### DP-CPU

DP-CPU is a standard module for the integration of DisplayPort into the DVICenter matrix.

The DP-CPU combines keyboard, video, mouse, and audio signals, converts DisplayPort into single-link DVI and uses CAT cables to link them to the KVM matrix switch. Integrating the user module DVI-CON the signals are provided at the remote workstation.



DP-CPU - front view

### DP-CPU-UC

Dual module for connecting one DisplayPort computer to two DVICenter clusters.

Transmits the following signals:

- Single-Link DVI-D
- PS/2 + USB Keyboard/Mouse
- Audio ( Line In / Line Out)

Use DP-CPU-UC modules to increase the number consoles or to establish a redundant system.



DP-CPU-UC - rear view

### VGA-CPU-UC

VGA-CPU-UC ist a module to connect a VGA computer to two matrix clusters. The VGA-CPU-UC combines keyboard, video, mouse, and audio signals and uses CAT cables to link them to both central modules.

Integrating the user module DVI-CON the signals are provided at the remote workstation.

The module transmits the following signals:

- VGA
- Keyboard/Mouse (USB & PS/2)
- Audio bidirectional

Resolution: VGA up to 1920 x 1440 @ 75 Hz



VGA-CPU-UC - front view

## Computer modules

### U2-R-CPU

In combination with the relevant DVICenter components the **U2-R-CPU** computer modules link external **USB 2.0** and **RS232** interfaces to the DVICenter system.

A U2-R-CPU module combines and processes USB2.0 and RS232 signals. Via CAT cabling they are then transmitted to the KVM matrix switch.

The transmission of the signals takes place transparently. The maximum distance between the U2-R CPU module and the KVM matrix switch can be up to 140 meters.

The U2-R-CPU are distributed including external power pack.

#### Standard variant transmitting the following signals:

- USB 2.0
- RS232

#### Application

CPU module for connecting external USB2.0 and RS232 interfaces to DVICenter.



U2-R-CPU - front view

#### Mounting

19" rack mount solutions are available for optimized mounting of the U2-R-CON modules. You can find them in KVM Accessories.

#### Operating / Updates:

System upgrades can be managed over wizard at service socket (Mini USB TypB).

## DVI-CPU & DVI-CPU-UC



left: DVI-CPU - front view  
right: DVI-CPU-UC - front view

	DVI-CPU	DVI-CPU-UC
<b>Video</b>		
Signal type/Video	single-link DVI-D	
Resolution	1920 × 1200 @ 60 Hz	
Colour depth	24 bits	
<b>Audio</b>		
Resolution	24 bits digital	
Refresh rate	96 kHz	
Bandwidth	22 kHz	
<b>Transmission</b>		
Interfaces to central module	1 x RJ45 socket	2 x RJ45 socket
Cabling type	dedicated 1:1 connection via CAT-x cable	
Transmission length	140 m to central module	
<b>Power supply</b>		
Main Type	via external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC / 500mA	+12VDC / 600mA
<b>Interfaces to computer</b>		
Video	DVI-D socket	
Keyb./Mouse	2 × Mini-DIN 6 socket/1 × USB-B socket	
Audio	2 × 3.5mm jack socket	
<b>Other interfaces</b>		
Service	Mini-USB-B socket	
<b>Update</b>		
Mode	via DVICenter Config panel	
<b>Casing</b>		
Total length incl. cable	approx. 2 m	
Material	anodised aluminium	
Dimensions (W×H×D)	105 × 26 × 104 mm	105 × 26 × 124 mm
Weight	approx. 240 g	
<b>Operating conditions</b>		
Temperature	+5 to +45 °C	
Humidity	< 85% non-condensing	
Conformity	CE, RoHS	

## DVI-CPU-FSC & DVI-CPU-UC-FSC



left: DVI-CPU-FSC - front view  
right: DVI-CPU-UC-FSC - front view

	DVI-CPU-FSC	DVI-CPU-UC-FSC
<b>Video</b>		
Signal type/Video	single-link DVI-D	
Resolution	1920 × 1200 @ 60 Hz	
Colour depth	24 bits	
<b>Audio</b>		
Resolution	24 bits digital	
Refresh rate	96 kHz	
Bandwidth	22 kHz	
<b>Transmission</b>		
Interfaces to central module	1 x RJ45 socket	2 x RJ45 socket
Cabling type	dedicated 1:1 connection via CAT-x cable	
Transmission length	140 m to central module	
<b>Power supply</b>		
Main Type	via external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC / 500mA	+12VDC / 600mA
<b>Interfaces to computer</b>		
Video	DVI-D socket	
Keyb./Mouse	2 × Mini-DIN 6 socket/1 × USB-B socket	
Audio	2 × 3.5mm jack socket	
<b>Other interfaces</b>		
Service	Mini-USB-B socket	
<b>Update</b>		
Mode	via DVICenter Config panel	
<b>Casing</b>		
Total length incl. cable	approx. 2 m	
Material	anodised aluminium	
Dimensions (W×H×D)	105 × 26 × 104 mm	105 × 26 × 124 mm
Weight	approx. 370 g	approx. 402 g
Dimensions front panel (W×H)	105 × 52 mm	
<b>Operating conditions</b>		
Temperature	+5 to +45 °C	
Humidity	< 85% non-condensing	
Conformity	CE, RoHs	

# DVI-CPU-MC2 & DVI-CPU-MC2-UC



left: DVI-CPU-MC2 - front view  
 right: DVI-CPU-MC2-UC - rear view

	DVI-CPU-MC2	DVI-CPU-MC2-UC
<b>Video</b>		
Signal type/Video	single-link DVI-D	
Resolution	1920 × 1200 @ 60 Hz	
Colour depth	24 bits	
<b>Audio</b>		
Resolution	24 bits digital	
Refresh rate	96 kHz	
Bandwidth	22 kHz	
<b>Transmission</b>		
Interfaces to central module	1 x RJ45 socket	2 x RJ45 socket
Transmission type	dedicated 1:1 connection via CAT-x cable	
Transmission length	140 m to central module	
<b>Power supply</b>		
Main Type	via external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC / 800mA	+12VDC / 1000mA
<b>Interfaces to computer</b>		
Video	2 x DVI-D socket	
Keyb./Mouse	2 × Mini-DIN 6 socket/1 × USB-B socket	
Audio	2 × 3.5mm jack socket	
<b>Other interfaces</b>		
Service	Mini-USB-B socket	
<b>Update</b>		
Mode	via DVICenter Config panel	
<b>Casing</b>		
Total length incl. cable	approx. 2 m	
Material	anodised aluminium	
Dimensions (W×H×D)	105 × 46 × 104 mm	105 × 46 × 124 mm
Weight	approx. 240 g	
<b>Operating conditions</b>		
Temperature	+5 to +45 °C	
Humidity	< 85% non-condensing	
Conformity	CE, RoHS	

## DP-CPU & DP-CPU-UC



left: DP-CPU - front view  
right: DP-CPU-UC - rear view

	DP-CPU	DP-CPU-UC
<b>Video</b>		
Video-In	DisplayPort	
Video-Out	single-link DVI-D	
Resolution	1920 × 1200 @ 60 Hz	
Colour depth	24 bits	
<b>Audio</b>		
Resolution	24 bits digital	
Refresh rate	96 kHz	
Bandwidth	22 kHz	
<b>Transmission</b>		
Interfaces to central module	1 x RJ45 socket	2 x RJ45 socket
Cabling type	dedicated 1:1 connection via CAT-x cable	
Transmission length	140 m to central module	
<b>Power supply</b>		
Main Type	via external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC / 500mA	+12VDC / 600mA
<b>Interfaces to computer</b>		
Video	1 x DisplayPort socket	
Keyb./Mouse	2 × Mini-DIN 6 socket/1 × USB-B socket	
Audio	2 × 3.5mm jack socket	
<b>Other interfaces</b>		
Service	Mini-USB-B socket	
<b>Update</b>		
Mode	via DVICenter Config panel	
<b>Casing</b>		
Total length incl. cable	approx. 2 m	
Material	anodised aluminium	
Dimensions (W×H×D)	105 × 26 × 104 mm	105 x 26 x124 mm
Weight	approx. 240 g	
<b>Operating conditions</b>		
Temperature	+5 to +45 °C	
Humidity	< 85% non-condensing	
Conformity	CE, RoHs	

## VGA-CPU-UC



left: VGA-CPU-UC - front view  
right: VGA-CPU-UC - rear view

	VGA-CPU-UC
<b>Video</b>	
Signal type/Video	VGA
Resolution	1920 × 1440 @ 75 Hz
Colour depth	24 bits
<b>Audio</b>	
Resolution	24 bits
Refresh rate	96 kHz
Bandwidth	22 kHz
<b>Transmission</b>	
Interfaces to central module	2 x RJ45 socket
Cabling type	dedicated 1:1 connection via CAT-x cable
Transmission length	140 m to central module
<b>Power supply</b>	
Main Type	via external power pack
Connection	Mini-DIN 4 socket
Voltage	+12VDC / 500mA
<b>Interfaces to computer</b>	
Video	VGA socket
Keyb./Mouse	2 × Mini-DIN 6 socket/1 × USB-B socket
Audio	2 × 3.5 mm jack socket
<b>Other interfaces</b>	
Service	Mini-USB-B socket
<b>Update</b>	
Mode	via DVICenter Config panel
<b>Casing</b>	
Total length incl. cable	approx. 2 m
Material	anodised aluminium
Dimensions (W×H×D)	105 x 26 x 124 mm
Weight	approx. 240 g
<b>Operating conditions</b>	
Temperature	+5 to +45 °C
Humidity	< 85% non-condensing
Conformity	CE, RoHS

## U2-R-CPU



left: U2-R-CPU - rear view  
right: U2-R-CPU - front view

	<b>U2-R-CPU</b>
<b>USB 2.0</b>	
Transfer type	transparent
Transfer rate	up to 480 MBit/s
<b>RS232</b>	
Signal type	transparent
Type	RS232-C
Resolution	max. 115.200 bit/s
Signals	RxD, TxD, RTS, CTS, DTR, DSR, DCD
<b>Transmission</b>	
Cabling	dedicated 1:1 connection via CAT-x-cable
Transmission length	140 m
Connection	RJ45 socket
<b>Interfaces to computer</b>	
USB 2.0	USB-B socket
RS232	9 pol. Sub-D socket
<b>more interfaces</b>	
RS232	9 pol. Sub-D socket
<b>Power supply</b>	
Type	external power pack
Connection	Mini-DIN 4 socket
Voltage	AC100-240V/60-50Hz, 300mA
<b>Casing</b>	
Material	anodised aluminium
Desktop (W × H × D)	105 × 26 × 104 mm
Weight	approx. 240 g
<b>Update</b>	
Mode	via Wizard
Connection	via service socket
<b>Operating conditions</b>	
Temperature	+5 to +45 °C
Humidity	below 80%, non-condensing
Conformity	CE, RoHs

## User module

The DVI-CON connects the user consoles to the system.

CAT cabling connects the DVI-CON with the DVICenter. The DVI-CON provide the required interfaces for the following peripherals: monitor, keyboard, mouse, speakers and microphone. The video output of the DVI-CON (DVI-I interface) also provides a VGA video signal. The output can be used to connect a VGA monitor.

**NEW:** DVI-CPU and DVI-CON can also be connected directly and used as extender line. Now users can operate computers placed up to 140 m away from the console. Do you plan for a smaller extender installation that you want to expand at some point in the future and connect it to a matrix system? Then DVI-CPU and DVI-CON come in handy and can always be implemented into a matrix system.



DVI-CON - front view

## DVI-CON

### Application

- remote console
- operates the DVICenter from distances up to 140 metres

### Signals

- single-link DVI-I video
- PS/2 + USB keyboard/mouse
- audio (speakers / Line In)

### Operation

- select computers via OSD or hotkeys
- configuration via OSD or web interface of the DVICenter
- supports TradeSwitch function and Push-Get function

### Design

- desktop or rack mount variant
- twin variant (two devices housed in one 19" casing, shipped as desktop version incl. rack mount kit)

## DVI-CON-Video

The user module DVI-CON-Video enables the integration of an additional monitor or projector on the remote console of a compatible KVM matrix switch. Thus it increases a multi-monitor workstation. The video signal of the accessed computer is displayed at the monitor/projector of the user module.

### Signals

- single-link DVI-I video

### Application

- remote console or a wide screen projection
- transmission of a second video signal at the workplace



DVI-CON-Video - rear view

## DVI-CON-2

The new DVI-CON-2 user module provides the interfaces for peripheral devices (monitor, keyboard, mouse, speaker/microphone) and can be connected to up to two matrix clusters to establish a redundant system that's always available, for example.



## User module

### DVI-CON-MC2

The user module DVI-CON-MC2 connects a multi-monitor consoles to the matrix switch system. The DVI-CON-MC2 provides the required interfaces for the following peripherals:

- multi-monitor video
- keyboard
- mouse
- audio (speakers / Line In)

#### Application

- remote multi-monitor console
- transmission of two video signals at the workplace



DVI-CON-MC2 - rear view

### DVI-CON-MC4

The user module DVI-CON-MC4 connects a multi-monitor consoles to the matrix switch system. DVI-CON-MC4 transmits four video signals at the workplace.

The video output of all DVI-CON devices (DVI-I interface) also provides a VGA video signal. The output can be used to connect a VGA monitor.



DVI-CON-MC4 - rear view

### DP-CON

The user module DP-CON provides the interfaces for any peripheral devices (DisplayPort monitor, keyboard, mouse, speaker/microphone) at the remote console.

**NEW:** You can also use DP-CPU and DP-CON modules to one extender line.

#### It transmits the following signals:

- DisplayPort
- Keyboard/Mouse (USB & PS/2)
- Audio bidirectional

Resolution: DisplayPort 1920 x 1200 @ 60 Hz



DP-CON - rear view

## User module

### U2-R-CON

Peripherals on the remote user console can be connected with the DVICenter via the U2-R-CON module. The module is connected via CAT cable to the KVM matrix switch.

#### Application

- remote user console
- operates peripherals with USB2.0 and RS232
- interfaces over distances up to 140 metres to the DVICenter

#### Signals

- USB 2.0
- RS232

#### Mounting

- For the optimized mounting of the U2-R-CON are 19"-Rackmount solutions available. You can find them in KVM Accessories.



U2-R-CON - rear view

## DVI-CON &amp; DVI-CON-Video



DVI-CON - rear view

	DVI-CON	DVI-CON-Video
Console		
Consoles	1	
Assigned console ports at central module	1	1
Video		
Signal type/Video	DVI single-link	
Resolution DVI / VGA	1920 × 1200 @ 60Hz	
	1280 × 1024 @ 85Hz	
Audio		
Design	internal	
Refresh rate	96 kHz	
Resolution	24 bit digital	
Bandwidth	22 kHz	
Transmission		
Cabling	dedicated 1:1 connection via CAT-x cable	
Transmission length	140 m	
Interfaces to central module	1 x RJ45 socket	1 x RJ45 socket
Interfaces for console		
Video	1 x DVI-I socket	
Keyboard/Mouse	2 × Mini-DIN 6 socket	-
	2 × USB-A socket	-
Audio	2 × 3.5 mm jack socket	
TradeSwitch-LED	1 x D-Sub 9 socket	
Main power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz, 0.4-0.2A	AC100-240V/60-50Hz, 0,3-0,2A
Redundant power supply		
Type	external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC/1.2A	+12VDC/0.9A
Housing		
Material	anodised aluminium	
Desktop (W × H × D)	210 × 44 × 210 mm	
Rackmount (W × H × D)	19" × 1U × 210 mm	
Weight	approx. 1.3 kg	
Update		
Mode	via DVICenter Config panel	
Operating conditions		
Temperature	+5 to +45 °C	
Humidity	below 80%, non-condensing	
Conformity	CE, RoHs	

## DVI-CON-2



DVI-CON-2 - Rear view

Console	DVI-CON-2
Consoles	1
Video	
Signal type/Video	DVI single-link
Resolution DVI / VGA	1920 × 1200 @ 60Hz 1280 × 1024 @ 85Hz
Audio	
Design	internal
Refresh rate	96 kHz
Resolution	24 bit digital
Bandwidth	22 kHz
Transmission	
Cabling	dedicated 1:1 connection via CAT-x cable
Transmission length	140 m
Interfaces to central module	2 x RJ45 socket
Interfaces for console	
Video	1 x DVI-I socket
Keyboard/Mouse	2 × Mini-DIN 6 socket 3 × USB-A socket
Audio	2 × 3.5 mm jack socket
TradeSwitch-LED	1 x D-Sub 9 socket
Main power supply	
Type	internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz, 0.4-0.2A
Redundant power supply	
Type	external power pack
Connection	Mini-DIN 4 socket
Voltage	+12VDC/1.2A
Housing	
Material	anodised aluminium
Desktop (W × H × D)	210 × 44 × 210 mm
Rackmount (W × H × D)	19" × 1U × 210 mm
Weight	approx. 1.3 kg
Update	
Mode	via DVICenter Config panel
Operating conditions	
Temperature	+5 to +45 °C
Humidity	below 80%, non-condensing
Conformity	CE, RoHs

## DP-CON



DP-CON - rear view

	DP-CON
Console	
Consoles	1
Assigned console ports at central module	1
Video	
Signal type/Video	DisplayPort
Resolution DVI / VGA	1920 × 1200 @ 60Hz
Audio	
Design	internal
Refresh rate	96 kHz
Resolution	24 bit digital
Bandwidth	22 kHz
Transmission	
Cabling	dedicated 1:1 connection via CAT-x cable
Transmission length	140 m
Interfaces to central module	1 x RJ45 socket
Interfaces for console	
Video	1 x DisplayPort socket
Keyboard/Mouse	2 x Mini-DIN 6 socket
	3 x USB-A socket
Audio	2 x 3.5 mm jack socket
TradeSwitch-LED	1 x D-Sub 9 socket
Main power supply	
Type	internal power pack
Connection	1 x IEC plug
Voltage	AC100-240V/60-50Hz, 0.4-0.2A
Redundant power supply	
Type	external power pack
Connection	Mini-DIN 4 socket
Voltage	+12VDC/1.2A
Housing	
Material	anodised aluminium
Desktop (W × H × D)	210 × 44 × 210 mm
Rackmount (W × H × D)	19" × 1U × 210 mm
Weight	approx. 1.3 kg
Update	
Mode	via DVICenter Config panel
Operating conditions	
Temperature	+5 to +45 °C
Humidity	below 80%, non-condensing
Conformity	CE, RoHs

## DVI-CON-MC2 &amp; DVI-CON-MC4



DVI-CON-MC4 - rear view

	DVI-CON-MC2	DVI-CON-MC4
Console		
Consoles		1
Assigned console ports at central module	2	4
Video		
Signal type/Video	DVI single-link	
Resolution DVI / VGA	1920 × 1200 @ 60Hz	
	1280 × 1024 @ 85Hz	
Audio		
Design	internal	
Refresh rate	96 kHz	
Resolution	24 bit digital	
Bandwidth	22 kHz	
Transmission		
Cabling	dedicated 1:1 connection via CAT-x cable	
Transmission length	140 m	
Interfaces to central module	2 x RJ45 socket	4 x RJ45 socket
Interfaces for console		
Video	2 x DVI-I socket	4 x DVI-I socket
Keyboard/Mouse	2 × Mini-DIN 6 socket	2 × Mini-DIN 6 socket
	2 × USB-A socket	2 × USB-A socket
Audio	2 × 3.5 mm jack socket	
TradeSwitch-LED	1 x D-Sub 9 socket	
Main power supply		
Type	internal power pack	
Connection	1 × IEC plug	
Voltage	AC100-240V/60-50Hz, 0,6-0,3A	AC100-240V/60-50Hz, 0,9-0,5A
Redundant power supply		
Type	external power pack	
Connection	Mini-DIN 4 socket	
Voltage	+12VDC/2A	+12VDC/3,6A
Housing		
Material		anodised aluminium
Desktop (W × H × D)	435 x 44 x 210 mm	
Rackmount (W × H × D)	19" × 1U × 210 mm	
Weight	approx. 3 kg	ca. 3,0 kg
Update		
Mode	via DVICenter Config panel	
Operating conditions		
Temperature	+5 to +45 °C	
Humidity	below 80%, non-condensing	
Conformity	CE, RoHs	

# U2-R-CON



left: U2-R-CON - front view  
 right: U2-R-CON - rear view

	U2-R-CON
Console	
Consoles	1
Assigned console ports at central module	1
USB 2.0	
Transfer type	transparent
Transfer rate	up to 480 MBit/s
Support	high power devices (500mA)
RS232	
Signal type	transparent
Type	RS232-C
Transmission rate	max. 115.200 bit/s
Signals	RxD, TxD, RTS, CTS, DTR, DSR, DCD
Transmission	
Cabling	dedicated 1:1 connection via CAT-x-cable
Transmission length	140 m
Interfaces to central module	1 x RJ45 socket
Interfaces for console	
USB 2.0	4 x USB-A socket
RS232	1 x 9 pol. Sub-D plug
Power supply	
Type	external power pack
Connection	Mini-DIN 4 socket
Voltage	+12V DC, 1.3A
Casing	
Material	anodised aluminium
Desktop (W x H x D)	105 x 26 x 104 mm
Weight	approx. 240 g
Update	
Mode	via wizard
Connection	via service socket
Operating conditions	
Temperature	+5 to +40 °C
Humidity	below 80%, non-condensing
Conformity	CE, RoHs

## Operation & Configuration

The DVICenter system is operated/configured via:

- OSD & hotkeys
- web interface (ConfigPanel)

Both OSD and hotkeys are available at all DVI-CON user modules; the web interface can be accessed from any console that is connected to the network. The configuration can be performed via web interface or OSD. All configurations are systemwide available. This ensures quick and easy operation.

### OSD

The OSD enables you to operate and configure the DVICenter independently from any network. The DVI-CON modules provide the OSD at all user consoles. The OSD only covers the currently visible screen content partially - not fully.

The OSD complies with the individual user requirements and/or your internal safety regulations.

The OSD can be accessed via keyboard/mouse and configurable hotkeys. Hotkey combinations open the menus.

The following menus are available:

- Select (select a computer)
- Operation (frequent operations)
- Personal Profile (adjust user-related details)
- Configuration (change system settings)
- Information (query system status)

Operating options:

#### User settings

- create up to 256 individual user accounts
- integrated multi-level user/rights administration
- create password protection for all consoles
- create groups for effective rights management
- assign individual configuration rights
- assign access rights for each computer
- define a computer that is automatically accessed after the login
- multiuser-mode: multiple users having simultaneous access to one and the same computer
- user activities at the remote console can be limited through individual rights management or disabled OSD

#### Computer settings

- create, edit, or delete computer names
- select or search computers by names using the select menu
- Free Seating: access a user-related computer by logging in at any console
- set permanent information display (computer & user console name) for easy navigation
- create groups for effective access management
- select 3 scan modes to auto-scan the connected computers
- show computer routing – even over cascades

#### Power-Switching

- switch the computer's power supply (requires additional

hardware)

#### System info

- recognise components with automatic assignment of the known configuration information
- schematic figure of the system structure from computer to console
- show all computers in one list - even over cascades; no switching though multiple OSDs
- show busy states console <-> computer

#### Console settings

- connect PS/2 keyboards with special functions
- create open access without querying password
- enable access protection per auto-log off when leaving the console
- block OSD to prevent access to certain consoles
- install a video console (e.g. projector) that can be remotely controlled by other consoles (requires Push-Get and TradeSwitch module)

Configuration	Console 1
User	
User group	
Target	
Target group	
View filter	
EDID	
Console	
Cascade	
System	
Power switch	
Network	
ESC: Select	F9 : Operation
F10 : Pers.Profile	F12 : Info

Operation	Console 1
A - Autoscan	
B - Autoskip	
C - Stepscan	
D - Disconnect	
E - User Logout	
F - Mouse utility	
G - Return to last target	
H - Target info	off
I - Target power	
ESC: Select	F10 : Pers.Profile
F11 : Config	F12 : Info

## Web-Interface

The „Config Panel“ web application offers a graphical user interface to configure the DVICenter.

The clearly organized user interface shows the comprehensive OSD settings and therefore makes the web interface the primary configuration tool.

The Config Panel is divided into the following sections. The list below highlights the most important settings:

### Basic configuration

- network parameter
- tools (backup/restore, firmware update, resetting the defaults)
- query of syslog messages

### Dynamic port configuration

- define ports as console or computer connection in any order

### Rights configuration

- user rights
- user group rights
- computer rights
- computer group rights

### Matrix switch configuration

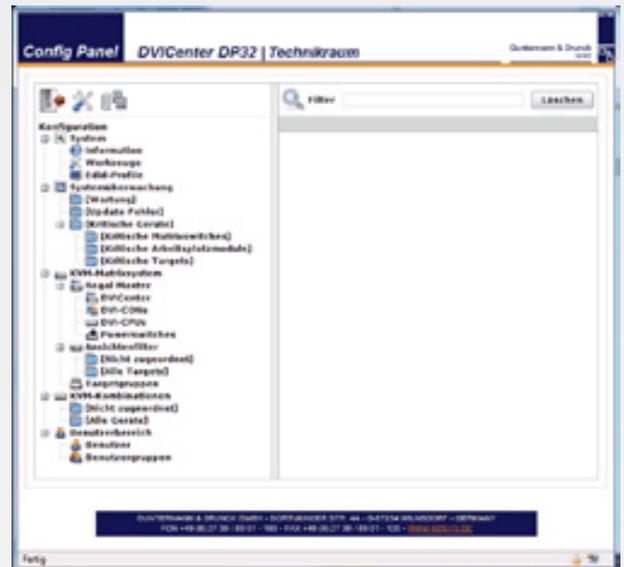
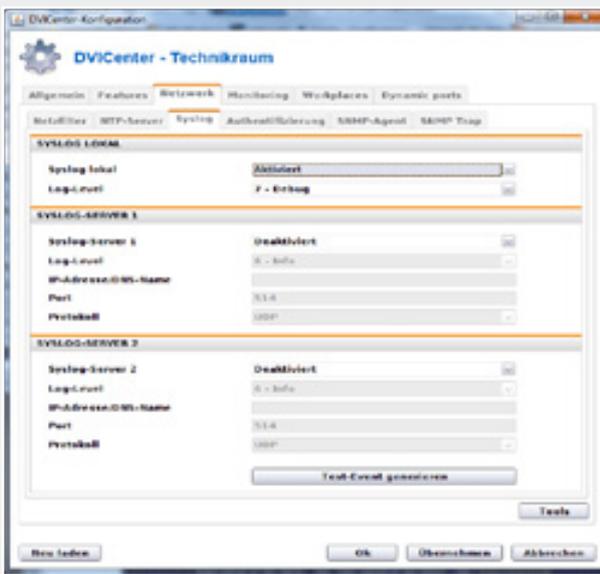
- name, hotkeys etc.
- activation of communication modules
- network settings

### User module configuration

- name
- cascade information
- console type
- special keyboard

### Computer configuration

- configuration of the computer module
- cascade information



## Hardware / Expansion

The hardware components are connected to the DVICenter and fully integrated into operation. This way e.g. the power-switching can be carried out in the OSD.

The user range can be increased by using the computer modules DVI-CPU-UC.

Through installation of the Dynamic UserCenter32 several computers can be accessed from multiple DVICenter clusters.

### We provide the following hardware expansions:

- remote power-switching with HardBoot CCX
- increase the number of computers by cascading with other DVICenters
- double the number of consoles with the DVI-CPU-UC computer modules (also applicable for backup systems/ mirrored systems)
- increase the system's range up to 10,000 m by integrating a fibre optics line (DVI-FiberLink)
- access to computers from multiple DVICenter-Clusters by using Dynamic-UserCenter32

## Power Switch

The HardBoot CCX is especially designed to be operated with G&D matrix switches. It enables the user to switch up to 128 users with one matrix switch.

The HardBoot CCX provides eight AC outputs per device. Two separate power circuits each contain four outputs. A power cluster contains up to 16 HardBoot devices (= 128 outputs).

The 128 outputs can be randomly grouped. This way, even redundant power packs are supported. The HardBoot CCX is connected to the DVICenter and operated via the DVICenter's OSD.

For more information on the HardBoot, please visit Power Switches at [www.gdsys.de](http://www.gdsys.de).



HardBoot plus

## MultiPower

The MultiPower serves as the central power source of G&D devices that require an external power pack (for example DVI-CPU or DVI-Extender-F).

The Multipower-12 and the MultiPower-6 are functional and a space-saving solution for applications as in a server room and computer rack.

MultiPower-12 provides up to 12 output interfaces (12V, max. 600mA) and MultiPower-6 provides up to 6 output interfaces (12V, max. 1,2A). Optimally suitable for the power supply of DVI-CPU or DVI-CPU-MC2 in a rack.

- power supply for up to twelve devices
- central power source e.g. in a rack or when applied in a server room
- MultiPower-12 twelve interfaces 12VDC (max. 600mA)
- MultiPower-6: six interfaces 12VDC (max. 1,2A)
- redundant power supply



above: MultiPower-12  
below: MultiPower-6

## Hardware / Expansion

### more Consoles

The DVI-CPU-UC devices allow you to connect more consoles **than ports provided at the device**.

Use **DVI-CPU-UC modules** instead of the usual DVI-CPU computer modules to increase the number of consoles or to establish a redundant system.

Using a **second RJ-45 socket**, the DVI-CPU-UC module **doubles** the keyboard, video, mouse, and audio **interfaces** to the DVICenter. Thus, a computer can be connected to two DVICenter clusters. Combining the DVI clusters with the corresponding central and user modules increases the number of consoles.

This requires:

- 1 x computer module DVI-CPU-UC per computer
- + number of DVI-CON modules according to the number of additional consoles
- + DVICenter DP32 according to the number in cluster 1

Details regarding the DVI-CPU-UC are given in the section *Computer modules*.



DVI-CPU-UC - rear view

## Hardware / Expansion: more consoles

### Dynamic-UserCenter32

The Dynamic UserCenter allows you to access multiple computers via several DVICenter clusters. This way the Dynamic-UserCenter expands the user range of the DVICenter.

#### For example:

When configuring the Dynamic-UserCenter with

- 1 CPU you can operate this computer via up to 31 simultaneous DVICenter-Clusters
- 4 CPUs you can access those computers over 7 simultaneous DVICenter-Cluster

Thus, the number of users can be increased significant.



Dynamic-UserCenter32 - rear view

## Highlights/System

The Dynamic UserCenter is a supporting module for the DVICenter Series and can be used to realize large installations. The product offers 32 dynamic ports, which can be freely configured as computer or user port by web interface.

#### System Features

- Centralised configuration of the dynamic ports (cluster / CPUs) via web interface
- Hot plug und hot swap capability
- Finder-LED on the front and back side

#### Design

The Dynamic-UserCenter is shipped as desktop device. The package contents contain a 19" rack mount set.

#### Network / Communication / Security

- Redundant power supply
- Monitoring function integrated
- SNMP-Trap & -Agent support
- Syslog message output
- Backup and Restore of device configuration via web-interface

## Capacity

No. of port groups	No. of clusters per group
1	31
2	15
3	9
4	7
5	5
6	4
7	3
8	3
9	2
10	2

## Dynamic-UserCenter32



left: Dynamic-UserCenter32 - front view  
right: Dynamic-UserCenter32 - rear view

	Dynamic-UserCenter32
<b>Cluster</b>	
Type of cluster ports	RJ45 socket
Cluster ports per device	Dynamic: min. 2 - max. 31
Transmission type computer module	Dedicated 1:1 connection via CAT-x cable
Transmission length to central module	140 m
Interfaces for central module	RJ45 sockets
<b>Computer</b>	
Type of computer ports	RJ45 socket
Computer ports	Dynamic: min. 1 - max. 10
Transmission type to computer module	Dedicated 1:1 connection via CAT-x cable
Transmission length to computer module	140 m
Interfaces to computer module	RJ45 sockets
<b>Main power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0,8A - 0,3A
<b>Redundant power supply</b>	
Type	Internal power pack
Connection	1 × IEC plug
Voltage	AC100-240V/60-50Hz
	0,8A - 0,3A
<b>Casing</b>	
Material	Anodised aluminium
Desktop (W × H × D)	435 x 44 x 211 mm
Rackmount (W × H × D)	19" x 1HE x 211 mm
Weight	Approx. 4.0 kg
<b>Update</b>	
Mode	Via network
<b>Operating conditions</b>	
Temperature	+5 to +40 °C
Humidity	< 80% non-condensing
Conformity	CE, RoHs

## more Computers

When **cascaded into three levels**, the DVICenter DP32 system increases the number of connectable computers. The master device takes over all controlling tasks. The listed possibilities guarantee the **full access of all consoles** to all computers over all cascade levels.

Cascading allows for an **additional transmission distance of 140 m** per DVICenter DP32. When fully cascaded, the distance from computer through to the cascaded central modules up to the user module can be up to 560 m.

### How to read the following table 2 (e.g. the row „2 Console ports“)

When configuring the DVICenter with

- **2 console ports and 30 computer ports** (stand-alone)
- you can operate **450 computers** via 2 simultaneous consoles in the first cascade. This requires **16 DVICenters**.

The first DVICenter provides no ports for connecting computers. Its 30 computer ports transmit  $15 \times 2 = 30$  console accesses to the 15 DVICenters of the first cascade level.

## DP16

Stand-Alone		1 Cascade		2 Cascade	
Console Ports	Computer Ports	No. of Computers	No. of DVICenter	No. of Computers	No. of DVICenter
1	15	225	16	--	--
2	14	98	8	686	57
3	13	53	5	213	21
4	12	36	4	108	13
5	11	23	3	47	7
6	10	14	2	18	3
7	9	11	2	13	3
8	8	--	--	--	--

Table 1

## DP32

Stand-Alone		1 Cascade		2 Cascade	
Console Ports	Computer Ports	No. of Computers	No. of DVICenter	No. of Computers	No. of DVICenter
1	31	961	32	--	--
2	30	450	16	6.750	241
3	29	263	10	2.396	91
4	28	196	8	1.372	57
5	27	137	6	687	31
6	26	106	5	426	21
7	25	79	4	241	13
8	24	72	4	216	13
9	23	51	3	107	7
10	22	46	3	94	7
11	21	31	2	41	3
12	20	28	2	36	3
13	19	25	2	31	3
14	18	22	2	26	3
15	17	19	2	21	3
16	16	--	--	--	--

Table 2

## DP64

Stand-Alone		1 Cascade		2 Cascade	
Console Ports	Computer Ports	No. of Computers	No. of DVICenter	No. of Computers	No. of DVICenter
1	63	3696	64	--	--
2	62	1922	32	--	--
3	61	1221	21	--	--
4	60	900	16	--	--
5	59	653	12	--	--
6	58	526	10	4738	91
7	57	457	9	3657	73
8	56	392	8	2744	43
9	55	331	7	1987	43
10	54	274	6	1374	31
11	53	221	5	893	21
12	52	212	5	852	21
13	51	165	4	507	13
14	50	158	4	482	13
15	49	151	4	457	13
16	48	144	4	432	13
17	47	107	3	227	7
18	46	102	3	214	7
19	45	97	3	201	7
20	44	92	3	188	7
21	43	87	3	175	7
22	42	62	2	82	3
23	41	59	2	77	3
24	40	56	2	72	3
25	39	53	2	67	3
26	38	50	2	62	3
27	37	47	2	57	3
28	36	44	2	52	3
29	35	41	2	47	3
30	34	38	2	42	3
31	33	35	2	37	3
32	32	--	--	--	--

## more Range

The DVI-FiberLink increases the system range within a DVICenter cluster to up to 10,000 m. The system consists of two identical modules (transceivers) and is available in two variants:

- **DVI-FiberLink(M)**  
Transmission via 2 **multi-mode** fiber optics (50/125µm)  
Range **up to 550 m**
- **DVI-FiberLink(S)**  
Transmission via 2 **single-mode** fiber optics (9/125µm)  
Range **up to 10,000 m**

The pair of DVI-FiberLink devices can be placed between any DVICenter module. One pair of DVI-FiberLink devices extends one access (console).

### Installation:

We provide **19" rack mount solutions** for easily installing a DVI-FiberLink(S) into a server rack. The solutions are listed under KVM Accessories.



DVI-FiberLink(S) - rear view

# DVI-FiberLink



left: DVI-FiberLink(S) - front view  
 right: DVI-FiberLink(S) - rear view

	DVI-FiberLink(S)	DVI-FiberLink(M)
Main power supply	external power pack	
Type	Mini-DIN 4 power socket	
Connection	+12VDC/0.3A	
Voltage	yes	
Power loop support	yes	
Transmission CAT side	dedicated 1:1 connection via CAT-x cable	
Transmission mode	1 × RJ45 socket	
Interface	up to 140 m	
Transmission length	2 fiber optic strands (cross-over connection)	
Transmission fiber side	1 × LC duplex socket	
Transmission mode	2 single-mode fiber optic strands	2 multi-mode fibre optic strands
Interface	10,000 m (9/125 µm, 2,000 MHz*km, OS1)	550 m (50/125 µm, 500 MHz*km, OM2)
Transmission lenght		275 m (62.5/125 µm, 200 MHz*km, OM1)
		220 m (62.5/125 µm, 160 MHz*km, FDDI grade)
Casing	anodised aluminium	
Material	105 × 26 × 86 mm	
Desktop (W × H × D)	see KVM Accessories/19" Device Carrier	
Rackmount	approx. 240 g	
Weight	via wizard	
Update	1 × Mini-USB-B socket	
Mode	Operating conditions	
Connection	Temperature	
Operating conditions	Humidity	
Temperature	Conformity	
Humidity	+5 to +40 °C	
Conformity	< 80% non-condensing	
	CE, RoHs	

## Firmware / Expansion

Use the devices' web interface to install and activate any firmware expansions.

We provide the following firmware expansions:

- **Push-Get function**  
(push the image and/or operation of your console to another DVI-CON or get the image from there)
- **TradeSwitch function**  
(turn multiple DVI-CONs into a multi-monitor console, and operate this console through only one keyboard/mouse).
- **CrossDisplay-Switching**  
(Automatic switching by mouse between channels. With CrossDisplay-Switching (CDS), users can use the mouse to switch between the modules of a Tradeswitch configuration)
- **IP-Control-API**  
(use a third-party program to build an interface for switching/operating the DVICenter over network)

## Push-Get

**Function:** DVI-CON interaction

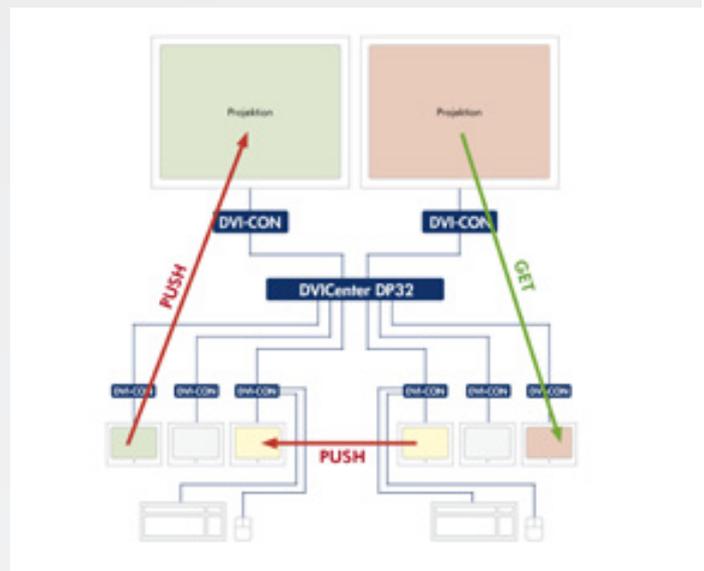
**Operation via:** OSD

**Operating requirement:** activation within master

**Efficiency:** 1 cluster

The Push-Get function allows you to push the image of a target to - or get it from - the display of another console. This display can be a large screen projection, for example.

All consoles can exchange computer and screen contents to work together on a common task.



## Screen-Freeze Function

If the display loses the video signal due to a broken connection or a problem with the computer's graphics card, the Screen-Freeze function „freezes“ the image last displayed on the monitor.

This status is highlighted by a red semi-transparent frame. The function is automatically cancelled when the display receives an active video signal.



FIBREVison-CON and WACOM® display with active Screen-Freeze function.

## TS-Function

**Function:** DVI-CON pooling

**Operation:** via hotkeys

**Operating requirement:** activation within master

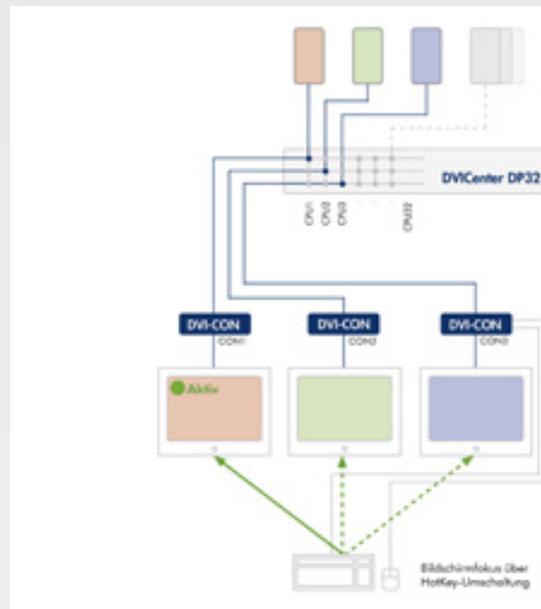
**Efficiency:** 1 cluster

The TradeSwitch function combines multiple user modules (DVI-CON) into one logical console.

The logical console can be operated with one keyboard and one mouse while providing multiple displays (multi-monitor console). Large screen projections can also be integrated.

A hotkey assigns keyboard and mouse to the DVI-CON devices of the logical console. The size and amount of user groups is optional.

With the innovative **CrossDisplay-Switching** as part of the TS-function (DVICenter), users can use the mouse to easily switch between channels.



## CrossDisplay-Switching

**Function:** Switching by using the mouse

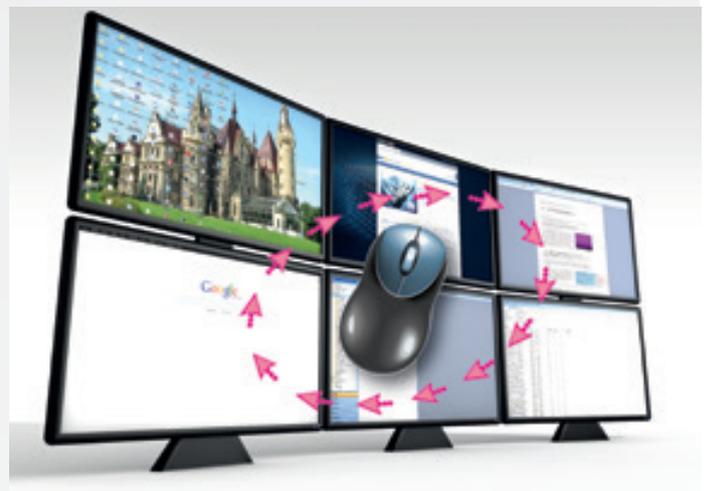
**Operation:** using mouse cursor

**Operating requirement:** activated TS-Function

**Efficiency:** 1 Cluster

The mouse acts as if on a “virtual desktop” and can be moved seamlessly across the connected displays. Moving the cursor from the active to another display, the keyboard-mouse focus automatically switches to the connected computer. Now users can create a multi-monitor console and need only one keyboard and one mouse to operate all computers. The mouse becomes the ultimate intuitive switching tool.

The CrossDisplay-Switching is also available in multi-user mode.

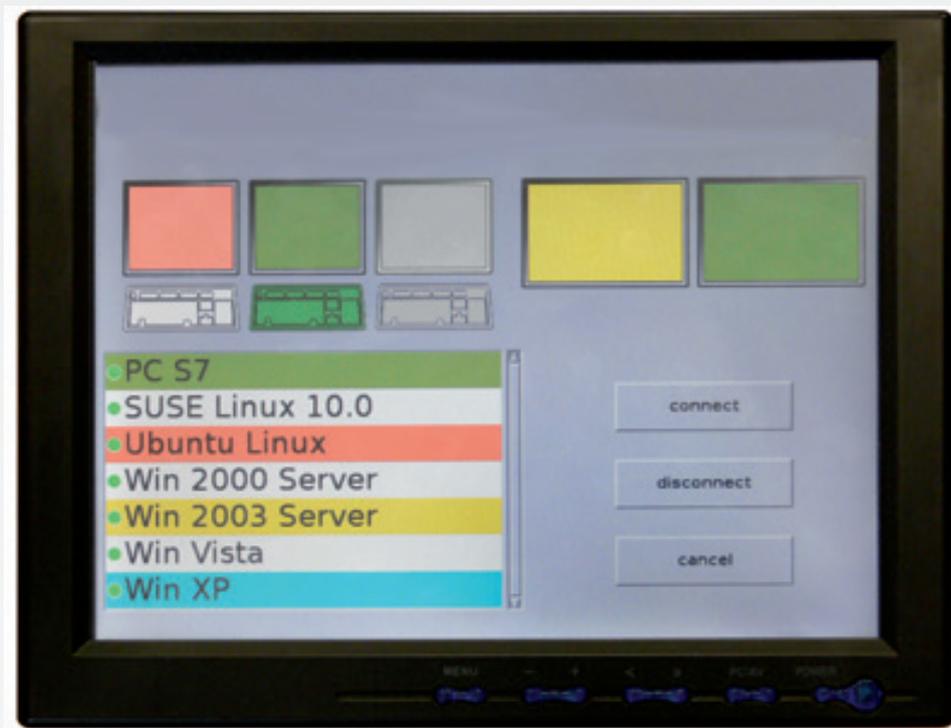
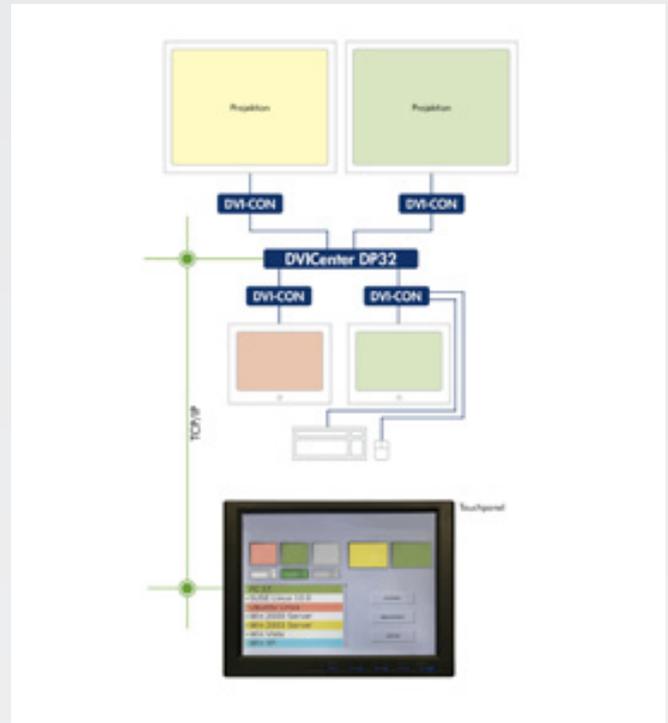


## IP-Control

**Function:** DVICenter remote control over IP  
**Operation via:** customer-programmed user interface or media control  
**Operating requirement:** activation within master + programming of user interface  
**Effectiveness:** system (several clusters)

The IP-Control-API function allows you to send switching commands to the DVICenter. The commands are sent via network.  
 The system is operated independently from a DVI-CON user module. Regardless of the location, each computer can access the desired projection media and/or operator screens.  
 To program the user interface you are provided with the necessary Windows DLL or Linux SO interface.

- IP-Switching also allows you to:**
- receive information about current switching conditions
  - cancel all switching conditions (disconnect)
  - receive information about the computer status
  - execute the Push-Get function via network (but no OSD integration)



Illustration

## List of Item Numbers Central Module

Item No.	Description	User	Computer
A2300036	DVICenter DP16 (16 dynamic ports)	1 to 15	15 to 1
A2300035	DVICenter DP32 (32 dynamic ports)	1 to 31	31 to 1
A2300035-12V	DVICenter DP32 - 12V	1 to 31	31 to 1
A2300053	DVICenter DP64 (64 dynamic ports)	1 to 63	63 to 1

## List of Item Numbers Computer Modules

Item No.	Description	USB 2.0	RS232	PS/2	USB	Video	Audio	Clusters
A2320071	DVI-CPU	-	-	PS/2	USB	DVI-SL	Audio	1
A2320070	DVI-CPU without-power-pack	-	-	PS/2	USB	DVI-SL	Audio	1
A2320075	DVI-CPU-UC	-	-	PS/2	USB	DVI-SL	Audio	2
A2320074	DVI-CPU-UC without power-pack	-	-	PS/2	USB	DVI-SL	Audio	2
A2320063	U2-R-CPU	USB 2.0	RS232	-	-	-	-	
A2320072	DVI-CPU-MC2	-	-	PS/2	USB	2 x DVI-SL	Audio	1
A2320073	DVI-CPU-MC2-UC	-	-	PS/2	USB	2 x DVI-SL	Audio	2
A2320078	DP-CPU	-	-	PS/2	USB	1 x DP	Audio	1
A2320079	DP-CPU-UC	-	-	PS/2	USB	1 x DP	Audio	2
A2320083	DVI-CPU-FSC	-	-	PS/2	USB	1 x DVI-SL	Audio	1
A2320085	DVI-CPU-UC-FSC	-	-	PS/2	USB	2 x DVI-SL	Audio	2
A2320086	VGA-CPU-UC	-	-	PS/2	USB	VGA	Audio	2
A2320096	VGA-CPU-UC without PowerPack	-	-	PS/2	USB	VGA	Audio	2

## List of Item Numbers User Modules

Item No.	Description	USB 2.0	RS232	PS/2	USB	DVI	Audio	Clusters
A1120157	DVI-CON	-	-	PS/2	USB	DVI-SL	Audio	1
A1120157-12V	DVI-CON-12V	-	-	PS/2	USB	DVI-SL	Audio	1
A1120159	DVI-CON-RM	-	-	PS/2	USB	DVI-SL	Audio	1
A1120161	Twin-DVI-CON	-	-	PS/2	USB	DVI-SL	Audio	1
A1120168	DVI-CON-2	-	-	PS/2	USB	DVI-SL	Audio	2
A1120151	U2-R-CON	USB 2.0	RS232	-	-	-	-	1
A1120160	DVI-CON-Video	-	-	-	-	DVI-SL	Audio	1
A1120158	DVI-CON-MC2	-	-	PS/2	USB	2 x DVI-SL	Audio	1
A1120166	DVI-CON-MC4	-	-	PS/2	USB	4 x DVI-SL	Audio	1
A1120166	DVI-CON-MC4	-	-	PS/2	USB	4 x DVI-SL	Audio	1

## List of Item Numbers Expansions DVICenter

Item No.	Description	
PowerSwitching		
A4100001	HardBootCCX	Power Switch, Rackmount
A4110030	MultiPower-12	Power Supply, Rackmount
A4110032	MultiPower-6	Power Supply, Rackmount
more Range		
A2300044	DVI-FiberLink(S)	Single-mode transceiver up to 10,000 m
A2300052	DVI-FiberLink(M)	Multi-mode transceiver up to 550 m
Firmware expansions		
A8200014	TS-Function DVICenter	TradeSwitch module
A8200013	Push-Get-Function DVICenter	Push-Get module
A8200015	IP-Control-API DVICenter	IP-Switching module
Hardware expansions		
A2200016	Dynamic-UserCenter32	Expanding the number of workplaces

## Legend

### ABBREVIATIONS

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

### EQUIPMENT FEATURES

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