

# ControlCenter-IP

KVM-over-IP™ in a new dimension –  
discover the matrix system



4K@60Hz over IP



## Experience the diverse functionalities of the G&D matrix systems combined with the flexibility of KVM-over-IP™

With the ControlCenter-IP, G&D added a powerful matrix based on KVM-over-IP™ to their versatile product range. In addition to the possibilities offered by the classic G&D portfolio with dedicated transmission, systems can now also be mapped via standard network structures. Of course, the new matrix also includes all well-known functions and is easy to configure.

The system is based on a series of IP-based extender modules. The ControlCenter-IP adds the switching logic and features necessary for an extensively switchable matrix.



*The ControlCenter-IP scores with innovative technology for user-friendliness in the network.*

### **The ControlCenter-IP enables the switching of the following signals**

- DP 1.2 and DP 1.1a
- Single link and dual link DVI
- Audio stereo bidirectional
- Support of PS/2 and USB keyboard/mouse
- RS232 transparent
- Generic USB HID with a view to other USB classes

### **Device properties of the ControlCenter-IP**

- The device takes over the central system logic
- Redundant power supply
- Redundant network interface
- Access protection and user administration (can be switched off)
- Boot loader, operating system and firmware form a trusted computing platform to protect the system against third-party manipulations

### **The features and enhancements of ControlCenter-IP**

- TradeSwitch function
- CrossDisplay Switching incl. support for multi-head graphic
- Push-Get function
- IP-Control-API incl. Scripting function
- Support for AMX or Crestron control systems
- Channel grouping
- Monitoring, SNMP, Syslog
- Authentication
- Hotkeys, select buttons
- User rights management
- MultiUser access

### **ControlCenter-IP for full matrix functionality**

In order to create a powerful matrix by combining the extender systems based on G&D's KVM-over-IP™ technology, the ControlCenter-IP is also integrated into the network structure.

While the standard network structures handle the central routing of the KVM signals, the ControlCenter-IP contributes the logic in the network and optimizes the accessibility of all devices. This creates an n:m matrix in which you can interconnect CON and CPU modules as required. Thus, users are able to work in a high-performance G&D matrix environment and at the same time benefit from the advantages of a flexible network.

### **Easy to use and compatible**

G&D has taken the features of the classic ControlCenter series and integrated it into the KVM-over-IP™ matrix. The resulting ControlCenter-IP combines the advantages of both devices. This includes the basic administration with extensive user and rights management. Many helpful and popular control room features such as monitoring, scenario circuits, push-get for optimal cooperation and incorporation of video walls to the CrossDisplay switching for absolutely intuitive operation of multi-monitor workstations are also available. The G&D IP devices are compatible with each other and allow optimisations in the customer-side system and its extension at any time.

### **Function of the ControlCenter-IP**

The ControlCenter-IP supplements the series of Vision-IP of G&D with a variety of matrix functions. These functions use G&D's KVM-over-IP™ for the transmission of signals. The transfer takes place under compression via standard IP-based networks (OSI layer model 3) and a Gigabit Ethernet. Using bandwidth management, the user can adjust the transmission to a variety of bandwidth requirements.

The transmission length is almost unlimited, two active network components can be connected to each other over a length of up to 100 m via CAT or optionally also via fiber optic cabling (up to 10 km depending on the variant).

## ControlCenter-IP for powerful and secure system access via network

### **Safety first**

Since dedicated cabling on the device is no longer required and the system works over the network, transmission reliability plays a very important role. For this reason, we have developed various security mechanisms to increase protection in critical environments. All communication and data transmission via the ControlCenter IP is encrypted, ensuring a high level of security in critical environments. - Transmission is permanently encrypted with AES-128

The ControlCenter IP and the end components based on KVM-over-IP™ extenders only access the standard interfaces of the computers and therefore no software installation is required.

### **Trusted Platform Module (TPM)**

Boot loader, operating system and firmware of the ControlCenter-IP form a so-called „Trusted Computing Platform“, which is protected from tampering by third parties. Here, an integrated „Trusted Platform Module“ (TPM hardware module) with an RSA encryption algorithm and a key length of 2048 bits secures all access and configuration data against spying. Sensitive information such as login information and passwords are stored as permanently encrypted. Possible modifications of the firmware can be detected early, and this lead to an interruption of the boot process. Manipulation attempts, such as smuggling of a keyboard sniffer, are prevented.

### **Targeted redundancy – security by RAID**

To protect the rights management and configuration data, the ControlCenter-IP reflects their content on two independent internal SSD storage media that are designed redundantly by a RAID1 network system. Of course, all information of the rights and configuration management are also backed by unique cryptographic keys.

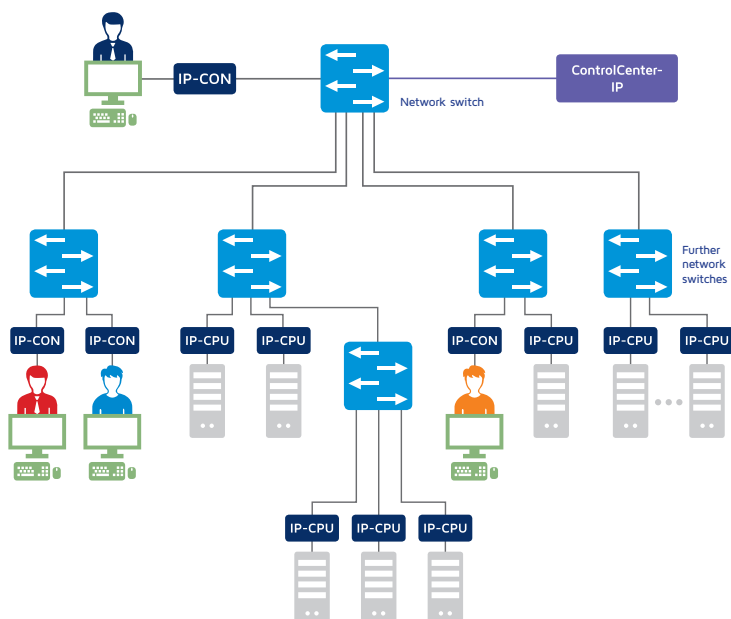
### **Expansion of system size**

Due to the flexible system topology, installations can be scaled arbitrarily and expanded easily via standard network elements. The system sizes of the matrix application are easily enabled for this via license key. Using this, the system can then subsequently expand as needed.

### **UID locking offers even more security**

This security feature that prevents you from unintentionally connecting new IP devices to the ControlCenter-IP

## Example: network topology



**In complex installations, the KVM-over-IP-matrix system shows its strength. Instead of using dedicated wiring, the transfer of KVM signals takes place flexibly via network structures.**

### **Network requirements for KVM-over-IP™**

- At least layer 2 managed switch
- VLAN support
- QoS incl. DiffServ/DSCP support (optional requirement to increase performance): Quality of Service (QoS) is a packet prioritization that ensures that time-critical or important applications receive their data first within a network. With this QoS application method, data packets are marked and processed by the network according to the configuration. DSCP specifies how a packet is processed
- Multicast support for matrix applications
- IGMP snooping support to reduce network load. IGMP Snooping prevents multicast traffic from being flooded to all switch ports, but directs it to where it is needed
- Possibility to assign an IGMP querier: Defined main switch to which all multicast streams are sent. Receives all IGMP commands and thus manages multicast groups

## Our IP-based KVM extender modules offer the right solution for working in network structures

### Mix and match in the IP extenders

In order to be able to use the ControlCenter-IP application in the network, G&D workstation and computer modules are integrated into the network. Select the appropriate IP extender system from our product portfolio. The modules are compatible with each other and thus the technical possibilities are virtually limitless. In all devices, the transmission takes place as compressed and pixel-perfect; the video quality is loss-less and features near-zero latency.



#### DP1.2-Vision-IP-CAT-CON

- DisplayPort 1.2 and 1.1a
- Supports 4K and UltraHD resolutions @ 60Hz
- Resolution up to 4096 x 2160 @ 60 Hz\*
- Embedded Audio

### Common features of IP extender for signal transmission

- Support of PS/2 and USB keyboard/mouse
- Permanent keyboard and mouse emulation
- Permanent monitor emulation (CPU)
- Audio stereo bidirectional
- RS232 transparent
- Cross compatible (DVI <-> DPxx)
- Devices available as CAT or fibre variants

#### DP-Vision-IP-CAT-CON

- DisplayPort 1.1a
- Resolution up to 4096 x 2160 @ 30Hz\*
- Embedded Audio



#### DVI-Vision-IP-CAT-CON

- Single link DVI video
- Resolution up to 1920 x 1200 @ 60 Hz\*



#### DL-DVI-Vision-IP-CAT-CON

- Single link and dual link DVI video
- Resolution up to 2560 x 1600 @ 60 Hz\*



\* Further resolutions are possible within the respective interface standards.

### KVM-over-IP™ – overcome the limits of dedicated cabling

- Easy to scale by using standard network components (COTS)
- Duplex transmission
- Transmission via standard IP-based networks (OSI layer model 3)
- 1 Gbit bandwidth per port, reducible
- HDIP level 1-3
- Secure and trouble-free operation through pairing and encryption with AES-128 (not manipulable)
- Transmission length unlimited, max. 100 m (CAT) or up to 10,000 m (optical fibers) between two active components
- Support of Quality of Service with configuration option by the user
- User-configurable network ports of the respective communication channels
- Additional independent management interfaces (front)

### Security of ControlCenter-IP and KVM-over-IP™ extenders

- Secure and uninterrupted operation through pairing and encryption with AES-128-CTR (Security standards according to BSI-TR 02102 & NIST SP 800-38)
- Encryption cannot be disabled
- UID locking (manually): Security feature that prevents you from unintentionally connecting new IP devices to the ControlCenter-IP



## Whether intuitive operation or changing scenarios – the ControlCenter-IP provides a lot of control room features

### CrossDisplay-Switching

With the innovative CrossDisplay-Switching as part of the TS-function (digital matrix system), users can use the mouse to easily switch between channels. The mouse acts as if on a „virtual desk-top“ 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.

#### Your advantages:

- Easy switching by using the mouse, in addition to switching between channels using hotkeys or the OSD
- Intuitive operation and more efficiency at the workstation
- Computers with multi head graphics can be included

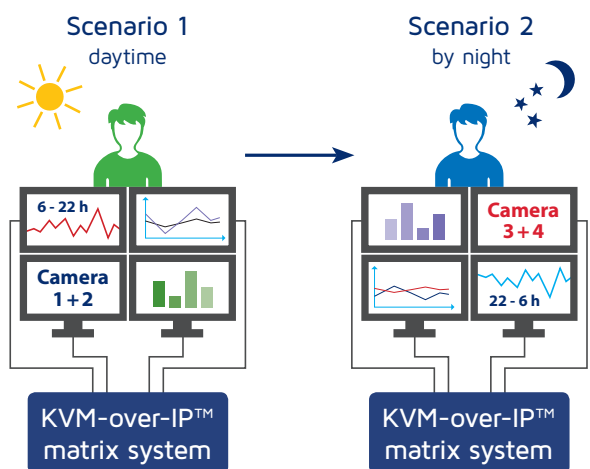


### Scenario switching

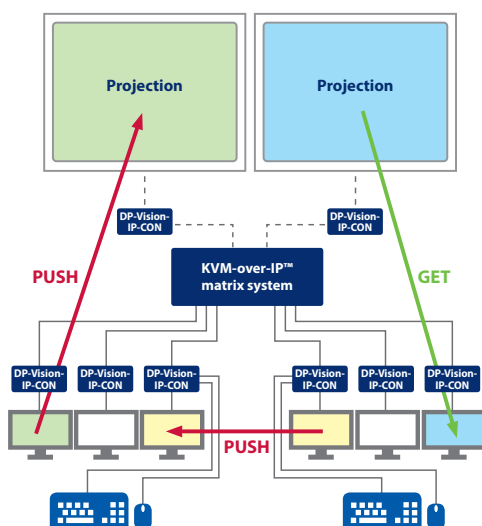
Scenario switching lets you store the switching condition of one or multiple workplaces or even of the entire system. The selected switching states are saved in a script in the matrix system and can be accessed and executed via the OSD of workplaces assigned with the required rights.

#### Your advantages:

- Individual settings
- Fast switching of several workplaces
- More intuitive operating concepts
- Usability of all commands of the text-based control
- Comprehensive control options



*Example for day/night scenarios: One single command switches all computers required at the console from day to night shift.*



### Push-Get function

Push-Get function optimises collaboration in the control room and allows the user to „push“ (Push) the image on his monitor to the display of another workstation or a large-screen projection or to „get“ it from there (Get).

This solution also improves the communication, flexibility and speed within the team, since employees can now perform tasks together.

## From professionals to professionals:

Trust in our professional solutions - from planning through to aftersales support.

**Main office** 

**Guntermann & Drunck GmbH**  
Systementwicklung  
Obere Leimbach 9  
D-57074 Siegen

Phone +49 (0) 271/23872-0  
Fax +49 (0) 271/23872-120

[sales@gdsys.de](mailto:sales@gdsys.de)  
[www.gdsys.de](http://www.gdsys.de)

**US office** 

**G&D North America Inc.**  
4001 W. Alameda Avenue  
Suite 100, Burbank, CA 91505

Phone +1-818-748-3383

[sales@gd-northamerica.com](mailto:sales@gd-northamerica.com)  
[www.gd-northamerica.com](http://www.gd-northamerica.com)



Follow us on:

