

Multiviewer KVM-Switch

Multiviewer | KVM Switch | Scaler | Video Converter

Installation and Operation Manual

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FEATURES

Thank you for choosing Multiviewer KVM-Switch. This product represents the latest state-of-the-art technology in keyboard-video-mouse (KVM) switching. The key advantage of the Multiviewer KVM-Switch over conventional KVM switches is that it allows you to simultaneously display and manage 4 computers on a single console. It combines key features of a high-end KVM switch and a digital multiviewer, scaling and converting videos at both inputs and output.

DISPLAY MODES

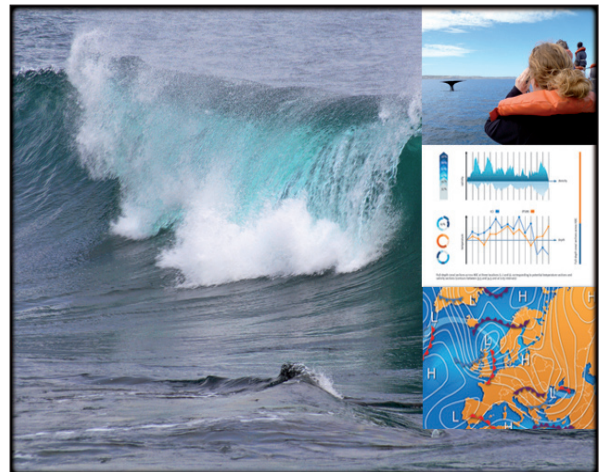
Quad mode ►

In this mode, the screen is split into four fields of equal size; each displaying the entire screen contents of one source.



◀ Fullscreen mode

In Fullscreen mode, one of the four sources is displayed in full screen size and maximum resolution.



PiP mode (Picture in Picture) ►

Using this feature, the full screen display of one of the four video sources is accompanied by one to three small images (thumbnails) of the other video sources which are displayed on the right hand side of the screen allowing simultaneous monitoring.



◀ Win mode

In Win mode each video source is displayed in its own separate, detached window. Each of these windows can be freely positioned and their height and width can be adjusted. Transparency can be set. Positioning is done using either the Hotmouse function, the front panel or the touch screen. Presets of the window positioning can be saved.

INTRODUCTION

FEATURES

DVI & VGA

Multiviewer KVM-Switch supports resolutions of up to 1920 x 1200 @ 60 Hz for both DVI and VGA. Any combination of VGA and DVI at all standard resolutions is possible at inputs and output. Analog video input is converted to digital. If an analog display is connected, Multiviewer KVM-Switch converts the digital signal to analog at the output. Internally, Multiviewer KVM-Switch processes video **purely digital** guaranteeing superior digital image quality.

USB & PS/2 for keyboard / mouse / touch screen / trackball

Use either PS/2 or USB ports on the computer to connect keyboard and mouse to Multiviewer KVM-Switch. It supports any combination. To connect the console, Multiviewer KVM-Switch features two USB ports for mouse, keyboard, touch screen or trackball connection.

Transparent USB 2.0

Multiviewer KVM-Switch features a transparent high speed USB 2.0 matrix: USB 2.0 devices (e.g. printer, external memory, memory stick, webcam, 3D mouse, finger printer) can be switched to computers connected.

Operation

There are six ways to operate Multiviewer KVM-Switch, switch channels, and select display modes:

1. Using the buttons on the front of the unit
2. Using configurable hotkeys
3. Using the unit's external configuration software on a remote computer
4. Via a serial port using the protocol DCP XML
5. Using mouse functions (Hotmouse)
6. Using a touch screen

The configuration of Multiviewer KVM-Switch is carried out by means of an On Screen Display (OSD) that can be opened and navigated either with keyboard commands, front panel buttons or remotely via ConfDev on an external PC.

The LEDs on the front panel indicate the unit's current status.

Use the serial (RS232) or USB port for remote control and firmware updates.

TECHNICAL SPECIFICATIONS

Casing:	Desktop or 19", black (RAL 9005)
Dimensions WxDxH:	43.6 x 23.4 x 4.4 cm
Weight:	2.9 kg
Operating controls:	Front panel: 4 channel selection buttons, 1 Fullscreen mode button, 1 Quad mode button, 1 PiP mode button, 1 Win mode button Rear panel: One Power On/Off switch
Indicators:	Four active channel indicator LEDs, 1 Fullscreen mode LED, 1 Quad mode LED, 1 PiP mode LED, 1 Win mode LED
Computer ports:	4 DVI-I (analog and digital), 4 PS/2, 4 USB
Console ports:	1 DVI-I, 2 USB for keyboard and mouse
USB 2.0 ports:	4 transparent high-speed USB 2.0
Audio:	3,5mm analog stereo jack, digital cinch connector, TOSLINK optical audio
Maximum distance:	Video (DVI / VGA) up to 20 meters; keyboard / mouse up to 5 meters
Input and output resolution:	up to 1920 x 1200 @ 60 (DVI and VGA) *
EDID adjustments:	EDID at each input port customizable
Supported keyboard layouts:	German, English, French, Italian, Spanish, Japanese
OSD languages:	German, English, Spanish
Power supply:	Internal AC adapter, 100 to 240V 50/60 Hz
Power consumption:	40 watts
Operating temperature:	5 to 45°C
Storage temperature:	-10 to 60 °C
Rel. humidity:	5 to 65% non-condensing

*(at WUXGA: reduced blanking only - WUXGA_r)

INTRODUCTION

SAFETY GUIDELINES

WARNING:

To avoid risk of electric shock do not open the device or remove any part of the casing. Please contact our technical support if the device requires servicing.

Please read this manual carefully before putting the device into operation.

Observe all warnings and instructions on the device and in the operation manual. Keep this user manual for future reference.

Power supply:

Only connect the device to a grounded power supply.

Installation:

Ensure that the device is disconnected from the mains before performing any installation work. Unplug the device or disconnect the power supply.

Cables:

Only use the cables supplied with the device.
Damage resulting from the use of third-party cables is not covered by warranty.
Beware of tripping hazards when laying cables.

Location:

Electronic devices should never be placed on the ground between the cables.
Never obstruct any vents the device may have.
Ensure adequate ventilation.

Maintenance:

This device is maintenance-free.
Never open the casing.
No settings can be made inside the device.

HARDWARE

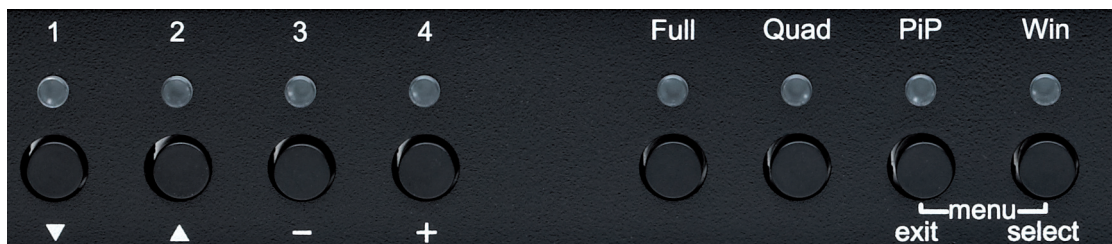
FRONT PANEL

The Multiviewer KVM-Switch front panel has eight status indicators (LEDs) and eight buttons.

Buttons 1 to 4 switch between channels, LEDs 1 to 4 indicate the status of the individual channels. **Full**, **Quad**, **PiP** and **Win** buttons LEDs are used to switch and indicate display modes and other functions, e.g. opening the OSD menu.



LED indicators



- LEDs 1 to 4:
 - When these LEDs light up **green**, the corresponding channel (computer port) has been selected and is available for keyboard and mouse access. When a LED flashes green, there is no signal at the video input of the selected channel.
 - An LED lights up **yellow** when there is a signal at the video input, but another channel has been selected.
 - When the LED is **dark**, there is no signal at the video input and another channel has been selected.
 - The LEDs light up **blue** when Win Mode preset window configuration is being selected.
- LED **Full**: This LED lights up **green** when the unit is in Fullscreen mode.
- LED **Quad**: This LED lights up **green** when the unit is in Quad mode.
- LED **PiP**: This LED lights up **green** when the unit is in PiP mode.
- LED **Win**: This LED lights up **green** when the unit is in Win mode.

Note:

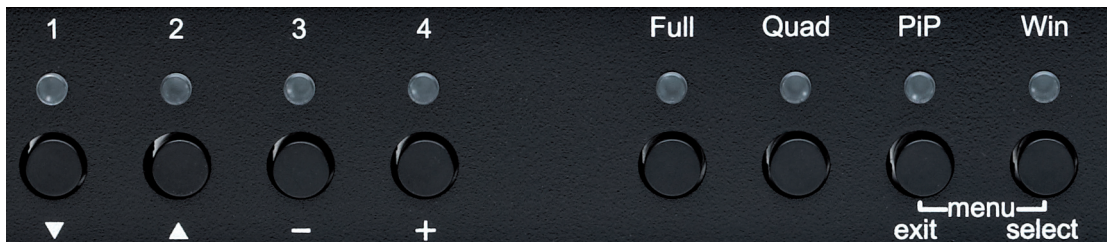
While the OSD menu is open, the active computer can still be operated by mouse or touch screen.

INTRODUCTION

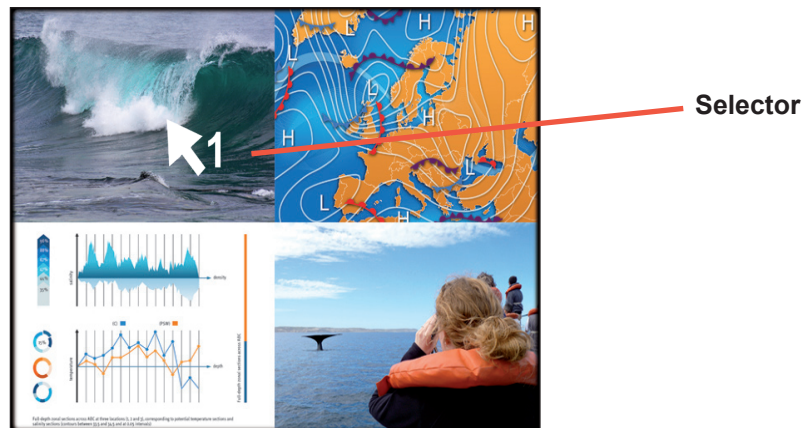
HARDWARE

FRONT PANEL (continued)

Buttons



- Buttons **1 to 4**: These buttons activate the corresponding channel (computer port).
- **Full** button: Press to switch to Fullscreen mode.
- **Quad** button: Press to switch to Quad mode.
- **PiP** button: Press to switch to picture in picture mode (PiP).
- **Win** button: Press to switch to Win mode.



You can also select the active channel using hotkey and the arrow keys.
The selection window closes once the channel selection timeout period has expired.
The channel selection timeout is configured in the OSD under **SYSTEM ► QUAD MODE**.
Use the “Time out of channel selection:” menu item to define how long the selector is to be displayed.

HARDWARE

FRONT PANEL - Additional button functions

Setting output resolution to safe output modes

To set output resolution to 640 x 480 pixel @ 60 Hz simultaneously:

Press and hold buttons **1** and **2** for 2 seconds.

Use of this feature is recommended when you cannot use the OSD (on screen display dark or illegible) because the output resolution setting is not supported by the monitor. After setting the correct output resolution (640x480@60), you can choose a resolution the connected monitor supports in the OSD.

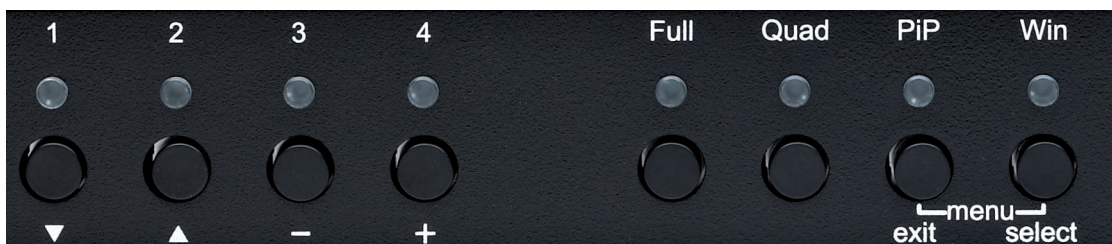
Alternatively, hold buttons 1 and 2 again to cycle through the following video modes: VGA 640x480@60, SVGA 800x600@60, XGA 1024x768@60, UXGA 1600x1200@60, and the preferred video resolution found in the monitor EDID.

LEDs 1 to 4 and FULL indicate the selected mode in blue.



Hardware Reset

Press and hold buttons **3** and **4** simultaneously for 5 seconds in order to reset the unit completely (video + mouse + keyboard)



INTRODUCTION

HARDWARE

FRONT PANEL - Additional button functions

Calling up OSD

Press and hold **PiP** and **Win** buttons simultaneously for 2 seconds to open the OSD menu.



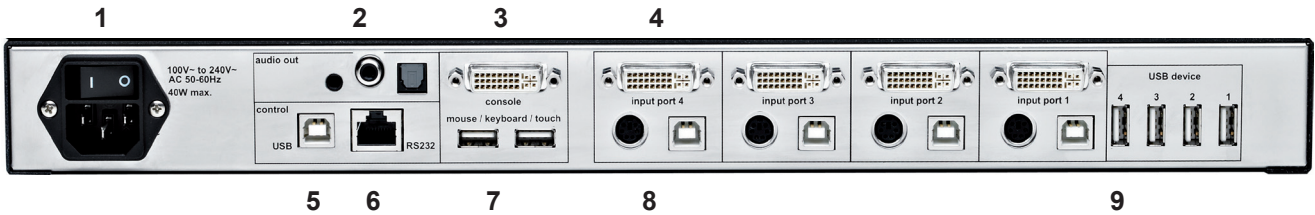
Note:

While the OSD menu is open, the active computer can still be operated by mouse or touch screen.

HARDWARE

REAR PANEL

The rear panel of Multiviewer KVM-Switch features three audio ports, four input source/computer ports, the console port (KVM), the USB control port, the serial RS232 control port, four transparent high-speed USB 2.0 device ports, the power connection.



1	Power
2	Audio ports
3	Monitor / DVI-I output
4	Four DVI-I inputs
5	USB control port
6	RS232 / RJ45 control port
7	USB for keyboard, mouse, touch or trackball (console)
8	USB or PS2 keyboard and mouse (computer)
9	Four transparent high-speed USB 2.0 ports

1. Power

Plug for enclosed power cable.

2. Audio ports

Connect external speakers or headphones to the 3,5mm analog stereo jack or digital cinch connector. The TOSLINK optical audio connection enables digital audio output.

3. Monitor / DVI-I output

Analog or digital displays connect to this port.

4. DVI-I inputs

Analog or digital video signal of your up to four sources connect to these four DVI-I ports.

5. USB control port

External USB control devices connect to this port to operate Multiviewer KVM-Switch remotely. Execute firmware updates or manage the device using ConfDev by means of the control ports.

REAR PANEL (continued)

6. RS 232 / RJ45 control port

Connect external serial control devices to this RJ-45 port to operate Multiviewer KVM-Switch remotely, e.g. connect to this port to access the OSD menu from a computer using the ConfDev device configuration tool (see page 67).

The serial RS 232 port is also used for firmware updates (see page 93).

7. USB for keyboard, mouse, touch or trackball (console)

Two USB ports allow connecting keyboard, mouse, touch screen or trackball.

Using a USB-Hub, you can connect **multiple** keyboards and mice. They will work in share mode with an inactivity timeout of 3 seconds.

8. USB or PS2 keyboard and mouse (computer)

Each computer can be connected with PS/2 or USB-B for keyboard and mouse.

9. Four transparent high-speed USB 2.0 ports

USB devices (printer, memory stick, finger printer, 3D mouse) are connected to the four transparent USB ports. This transparent USB 2.0 matrix switches USB 2.0 peripherals to computers connected to Multiviewer KVM-Switch.

INSTALLATION

To reduce the need for long cables, Multiviewer KVM-Switch is best placed as close as possible to its video sources. By default, Multiviewer KVM-Switch is delivered as desktop version. Using the rack mount kit supplied, it may also be mounted in a 19" rack.

Keyboard, monitor, mouse (console) and USB devices are connected to Multiviewer KVM-Switch using the corresponding cables (DVI, USB or PS/2). KVM extenders will allow you to work remotely via CAT5, fiber optic or Ethernet connection.



CONNECTING THE UNIT TO POWER

Plug the power cable into the power plug located on the rear panel of Multiviewer KVM-Switch, but do not turn the power on

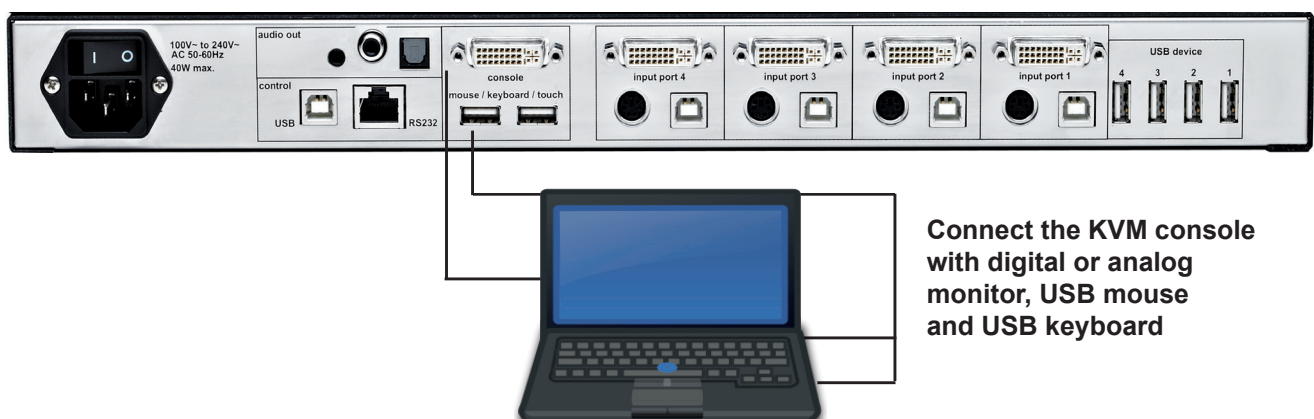
CONNECTING CONSOLE (MONITOR, KEYBOARD, MOUSE, TOUCH SCREEN, TRACKBALL)

Connect your monitor to the monitor port of Multiviewer KVM-Switch via VGA-DVI cable (analog) or DVI cable (digital) up to 20 meters. For greater distances use a DVI or VGA extender.

Connect your USB mouse and keyboard to the USB-A ports on the console up to 5 meters. For greater distances use a KVM or USB extender.

PS/2 mouse and keyboard can be connected to Multiviewer KVM-Switch using a PS/2-USB adaptor.

Connect your touch screen to the DVI-I port and the USB-A port (for calibration see page 44)



Note:

Maximum cable length for video (DVI / VGA) is up to 20 meters. Maximum cable length for USB / PS2 keyboard and mouse is up to 5 meters. For greater distances Multiviewer KVM-Switch supports most KVM extenders, video (DVI / VGA) extenders, and USB extenders.

INSTALLATION

INSTALLATION

CONNECTING VIDEO SOURCES / COMPUTERS

Switch off the computer and disconnect the keyboard, monitor and mouse.

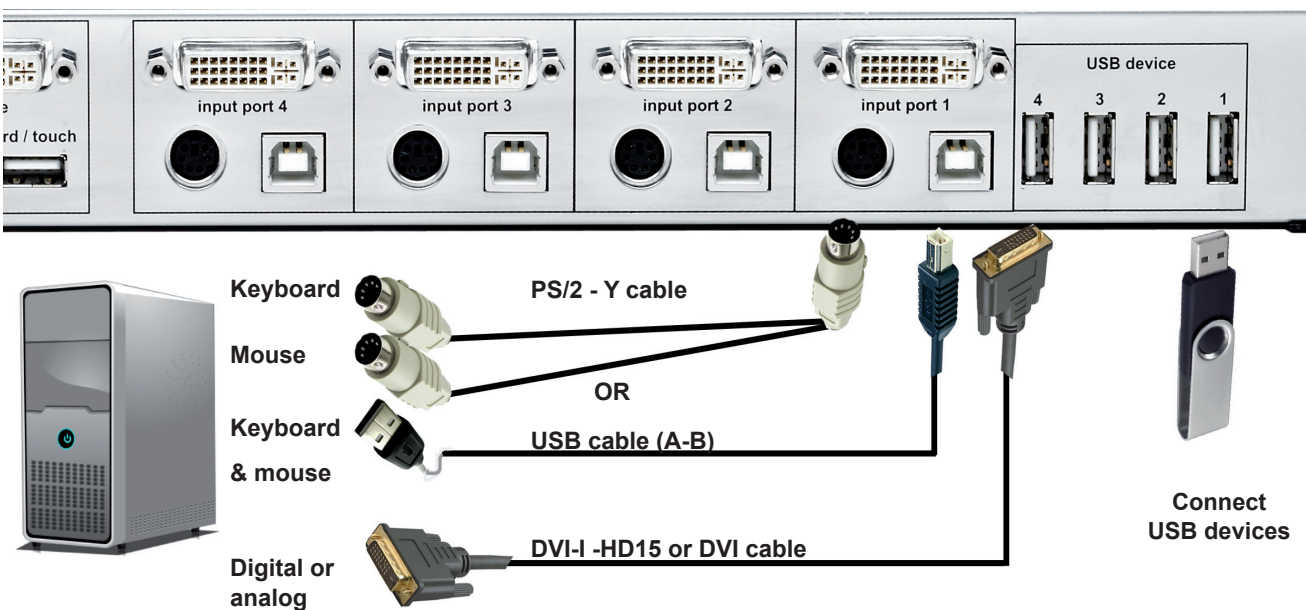
Connect keyboard and mouse ports of Multiviewer KVM-Switch to the computer ports either with a single USB cable or via the PS/2 interface (use the Y cable) up to 5 meters. For greater distances use a KVM or USB extender.

To connect an analog video / computer source (VGA) to Multiviewer KVM-Switch, use a VGA-DVI cable. Digital video sources are connected via a DVI cable up to 20 meters. For greater distances use a DVI or VGA extender.

CONNECTING USB DEVICES

Connect a USB device to one of the four transparent USB ports to switch it to computers connected to Multiviewer KVM-Switch.

Multiviewer KVM-Switch supports transparent USB devices such as printer, external memory, 3D mouse, and finger printer.



POWERING UP THE SYSTEM

Switch on Multiviewer KVM-Switch with the power switch on the rear panel. All front panel LEDs light up briefly indicating that Multiviewer KVM-Switch is ready for operation. Multiviewer KVM-Switch is now in Quad mode (default).

Power up all connected computers. Multiviewer KVM-Switch recognizes all input video sources automatically and displays them on your monitor screen.

To select another display mode, use the relevant keyboard commands (see page 65f) or buttons on the front panel (page 6).

INSTALLATION

CONNECTING AUDIO

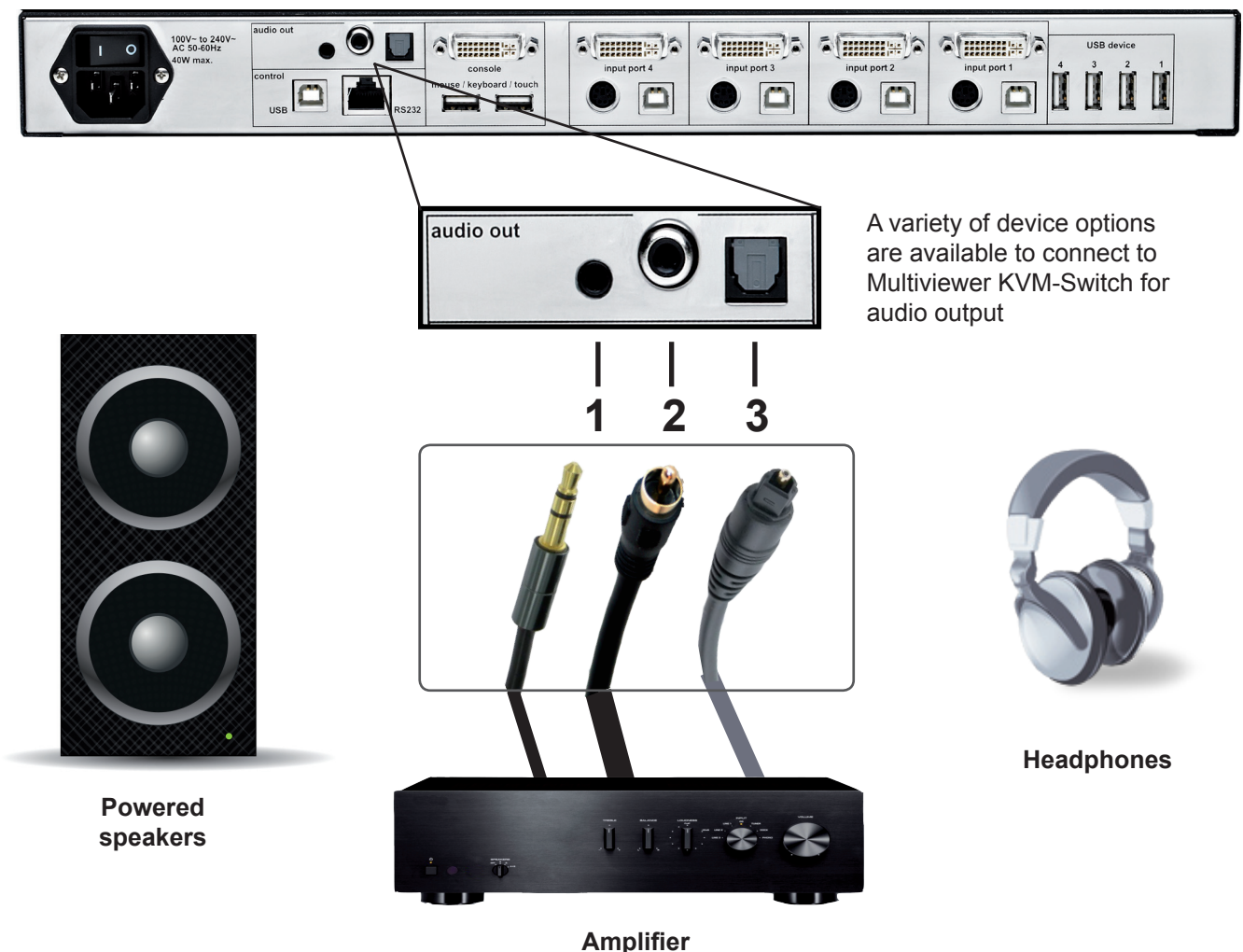
The Multiviewer KVM-Switch can be connected to external, powered speakers or audio devices in order for sound coming from the four connected sources to be played back.

Three different connection options are made available (see graphic):

- 1) 3,5mm analog stereo jack
- 2) Digital cinch connector
- 3) TOSLINK optical audio jack

After the speakers have been physically connected to the Multiviewer KVM-Switch

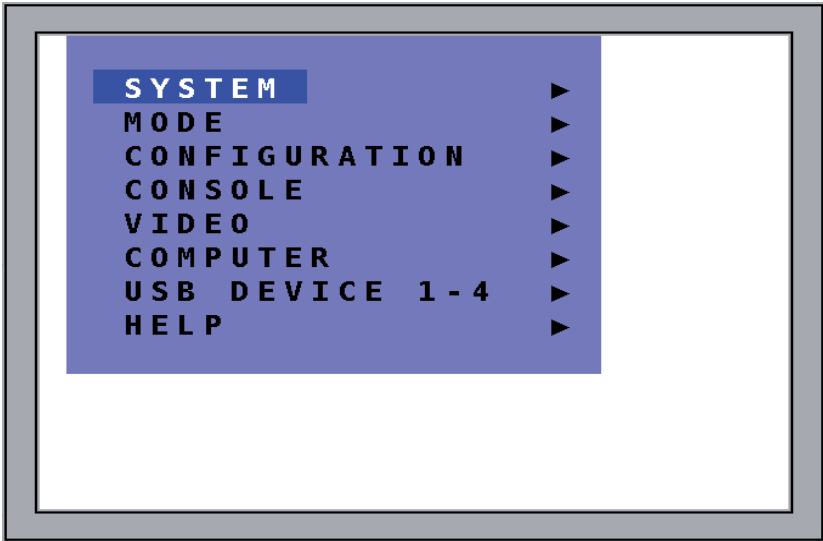
- Open the OSD and navigate to COMPUTER > AUDIO
- Enable audio output
- Select the audio source and adjust the volume.



Note: Powered speakers or headphones can also be connected directly to Multiviewer KVM-Switch, eliminating the need for an amplifier.

ON SCREEN DISPLAY

OSD - OVERVIEW



SYSTEM	HDCP HOTKEY HOTMOUSE QUAD MODE WIN MODE OSD POSITION OSD LANGUAGE SECURITY DISABLE CHANNEL CONTROL	HDCP status Multiple Hotkey / Double Click Hotkey Hotmouse Recognition, Hotmouse Timeout Channel Selection Timeout Appearance settings for windows Position of OSD window German / English / Spanish Set security level Deactivate unused channels Device control via DCP-XML protocol (RS232)
MODE	CURRENT START	Set the current channel and mode Set the channel and mode in which the device should boot
CONFIGURATION	BACKUP RECALL FACTORY RESET	Save configuration settings Restore last saved configuration Reset to factory default settings
CONSOLE	VIDEO OUTPUT KEYBOARD TOUCH SCREEN FADE MULTI MONITOR BACKGROUND EDID	Video resolution and frequency Keyboard layout Calibration / Mouse key emulation / Enlarge on touch Indicate use of smooth transitions Assign mouse/keyboard to video Select background type Display of EDID monitor data
VIDEO	INPUT STATUS DVI / VGA ROTATION CROPPING BRIGHTNESS CONTRAST HORIZ POSITION VERT POSITION SCREEN WIDTH PHASE FORMAT	Display computers' video input resolutions Choose input signal: DVI/VGA - DVI - VGA Rotate the screen display at different degrees Crop the display of video sources Set brightness of analog input signal Set contrast of analog input signal Horizontal screen position Vertical screen position Set screen width of analog input signal Adjust phase of analog input signal Fit input format to screen

OSD - OVERVIEW (continued)

COMPUTER	CHANNEL MAPPING	Assign an input port to a channel
	AUDIO	Enable audio output / Audio source selection / Volume
	NAME 1-4	Assign computer names
	KEYBOARD	Display type of keyboard (PC1, PC2, PC3 or USB)
	MOUSE	Display type of mouse (PS/2, PS/2 Wheel or USB) Set USB mouse positioning (absolute / relative)
	RESET PS/2 EDID / DDC	Reset PS/2 mouse and keyboard Program input EDID
USB DEVICE 1-4	USB PORT STATUS	Shows USB 2.0 matrix status and allows USB ports to be assigned to a device
HELP	ABOUT	Firmware / hardware version, serial number, etc
	HOTKEY	List of keyboard commands
	CONTACT	Contact information


ON SCREEN DISPLAY

OSD - MAIN MENU WINDOW

There are three ways to open the OSD main menu (figure):

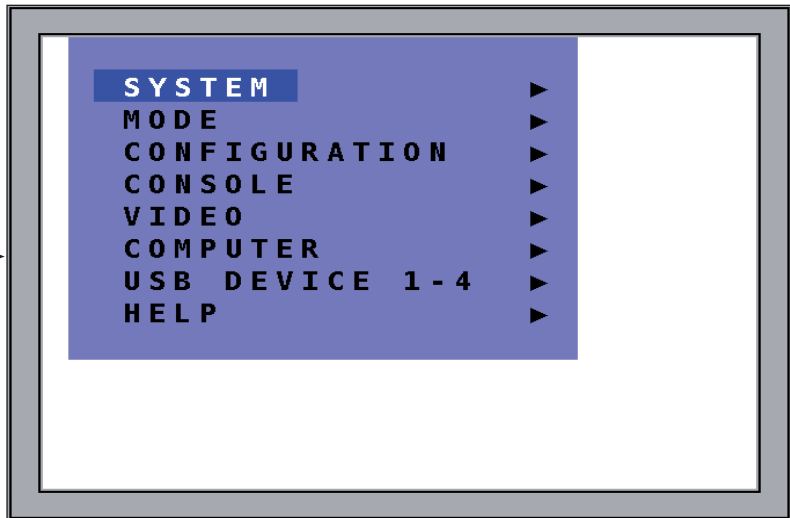
- use keyboard command „hotkey“ + „O“
- simultaneously press front panel buttons „PiP“ + „Win“ for longer than one second
- remotely open the OSD via ConfDev program on an external PC with serial or USB connection

1 Call the OSD by pressing buttons „PiP“ + „Win“ simultaneously for longer than one second



On Screen Display (OSD)
The OSD pops up in the center of the screen (on top of the video image).

2 Press Hotkey + O on your computer keyboard



3 Use a serial or USB connection from a PC to Multiviewer KVM-Switch to remotely open the OSD using ConfDev.



OSD - NAVIGATION

To navigate the On Screen Display (OSD) either use the buttons on the front panel or your keyboard.

Navigation with keyboard

To navigate from one field to the next in the OSD menu use the UP and DOWN arrow keys or TAB/SHIFT-TAB keys. Use the LEFT and RIGHT arrow or + (PLUS) and – (MINUS) keys to change the value in the current field. Press ENTER to select a menu item.

Press ESC to return to the previous window (higher menu level) or exit the OSD. Changes in parameters are saved automatically.

Navigation using the buttons on the front panel



Corresponding keys on console keyboard

Navigation using the buttons on the front panel is analogous to using the console keyboard. Buttons **1** and **2** correspond to the UP and DOWN arrow keys and buttons **3** and **4** to the LEFT and RIGHT arrow keys or +/- keys. Confirm your entry by pressing the **Win / select** button.

Press the **PiP / exit** button to return to the previous page (higher menu level) or exit the OSD. Changed settings are saved automatically.

Note:

Hotkey commands are possible while the OSD window is open.

ON SCREEN DISPLAY

OSD - SYSTEM - HDCP

HDCP STATUS

Use the arrow keys to navigate in the SYSTEM menu to the entry HDCP and press ENTER/SELECT to open the HDCP window.

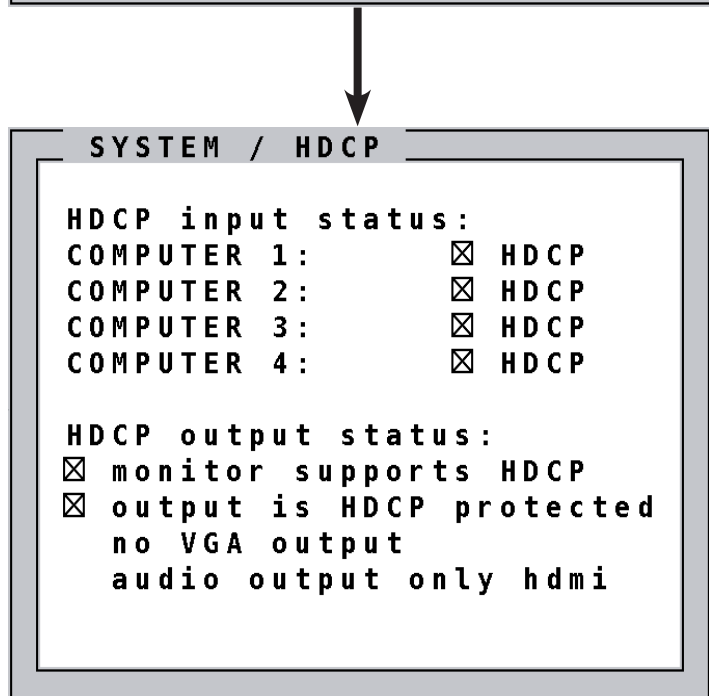
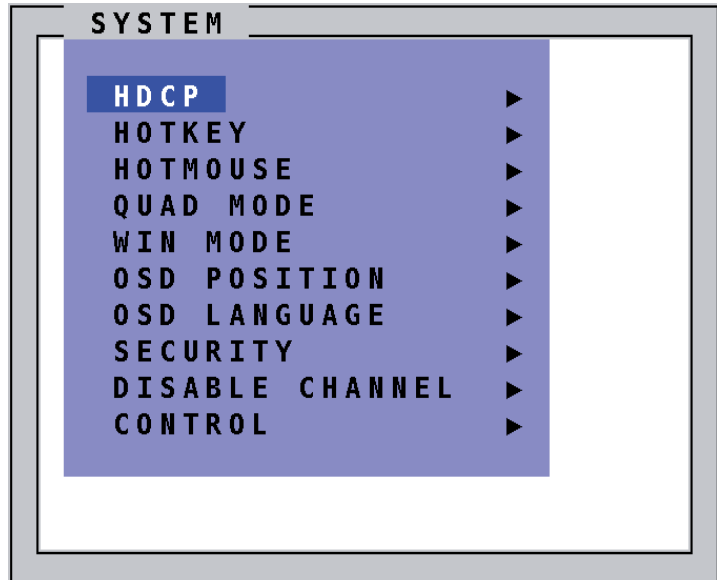
The SYSTEM / HDCP window displays the status of HDCP input and output encoding. HDCP (High-bandwidth Digital Content Protection) is an encoding system used to secure and transmit audio and video.

In the upper part of the window, the HDCP status of the four input signals is displayed. When a checkbox is marked, the source is transmitting an HDMI signal with HDCP encoding.

Multiviewer KVM-Switch displays this signal only when HDCP encoding is capable of being activated on the output device as well.

The lower portion of the window displays the HDCP status of the output. The first line shows whether the monitor connected supports HDCP.

When checked, the next line indicates whether the signal proceeding from Multiviewer KVM-Switch is protected by HDCP. If the output signal is HDCP encoded, Multiviewer KVM-Switch puts out neither analog video signal nor any separate audio signal.



OSD - SYSTEM - HOTKEY

HOTKEY

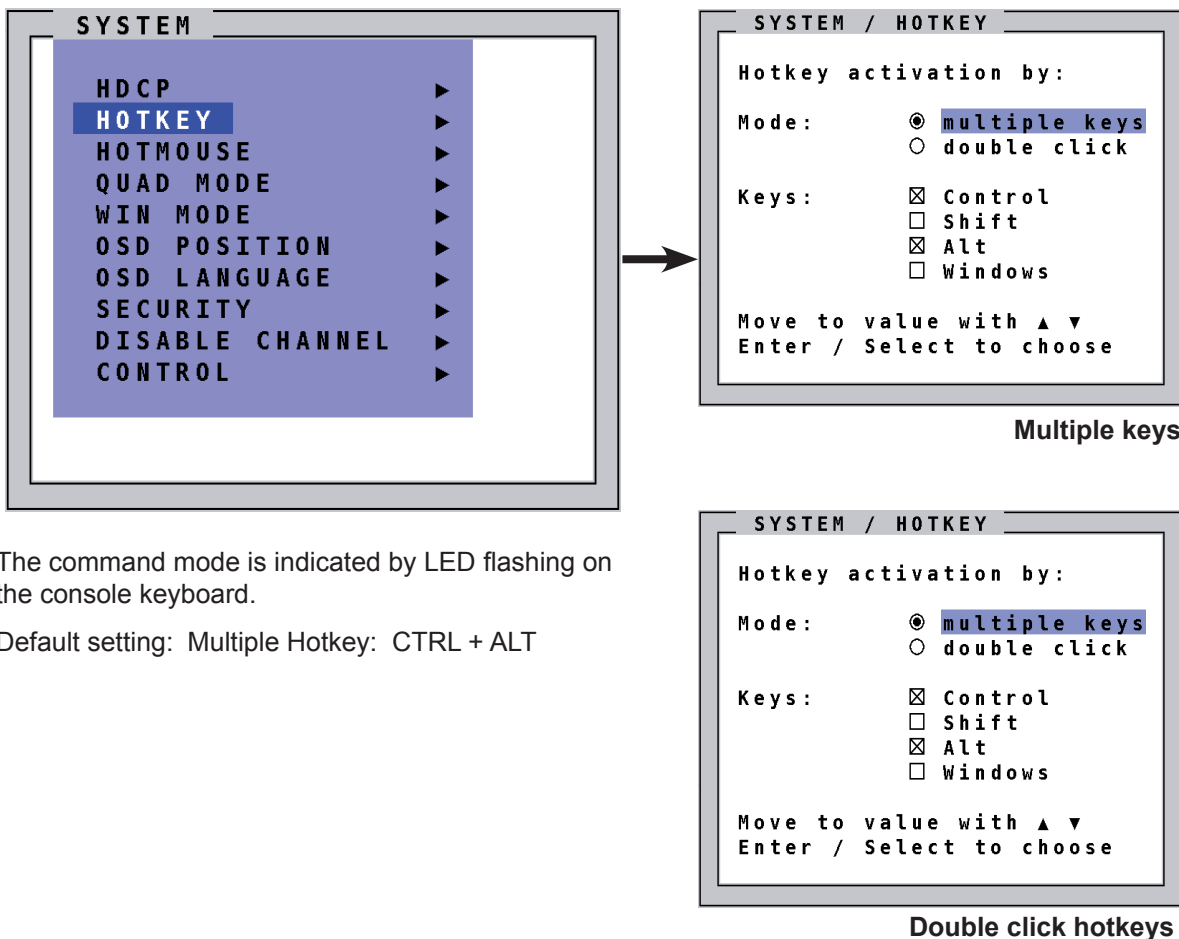
Navigate with the arrow keys in the SYSTEM menu to the entry HOTKEY and press the ENTER/SELECT key to open the HOTKEY window.

Two different hotkey modes are available:

- For multiple hotkey commands you can define one to four keys which are pressed simultaneously to enter the command mode. Selectable keys are: STRG, SHIFT, ALT and WINDOWS.

- For double click hotkey commands you can choose one key, which is double clicked to enter the command mode. Selectable keys are: STRG, SHIFT, ALT and SCROLL.

To change the hotkey mode or select another hotkey, navigate with the TAB or ARROW UP/DOWN keys to the respective field and use the ARROW LEFT/RIGHT or the +/- keys to change the setting.



The command mode is indicated by LED flashing on the console keyboard.

Default setting: Multiple Hotkey: CTRL + ALT

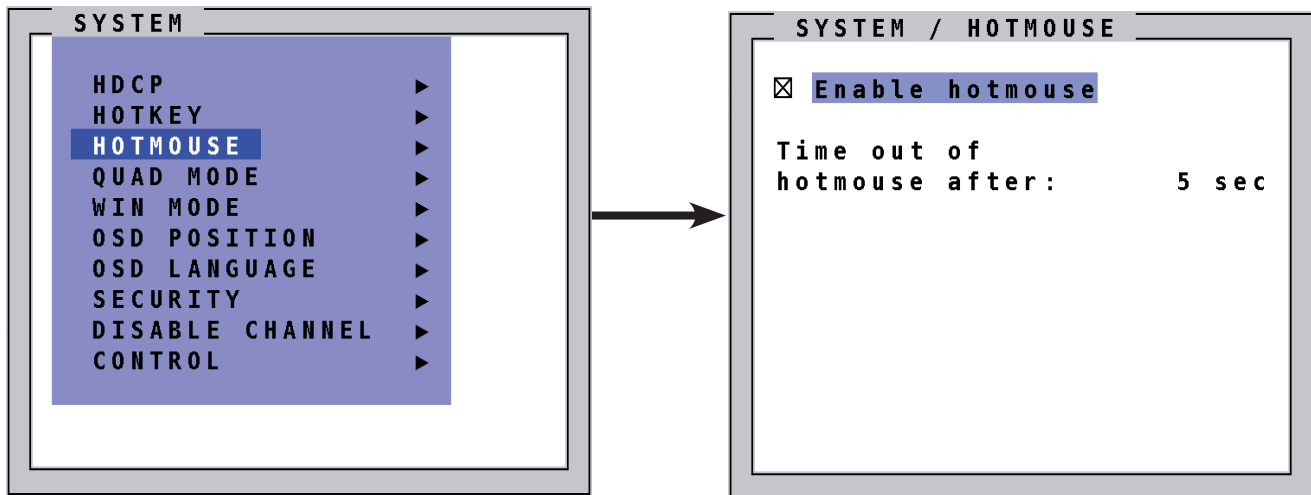
Note:
For a list of hotkeys to operate Multiviewer KVM-Switch see Annex page Keyboard Commands.

ON SCREEN DISPLAY

OSD - SYSTEM - HOTMOUSE

HOTMOUSE FUNCTION

Navigate with the arrow keys in the SYSTEM menu to the entry HOTMOUSE and press ENTER/SELECT to open the HOTMOUSE window.



Hotmouse is an exclusive function that comes with Multiviewer KVM-Switch. It works with your standard mouse or trackball.

To activate Hotmouse operation:

- Navigate to "Enable Hotmouse"
- Change the setting to "Yes".

There are two modes of Hotmouse operation: **Hotmouse Cursor** and **Hotmouse Menu**.

While **Hotmouse Cursor** supports only a limited set of operations, **Hotmouse Menu** allows execution of all switch operations and display mode settings.

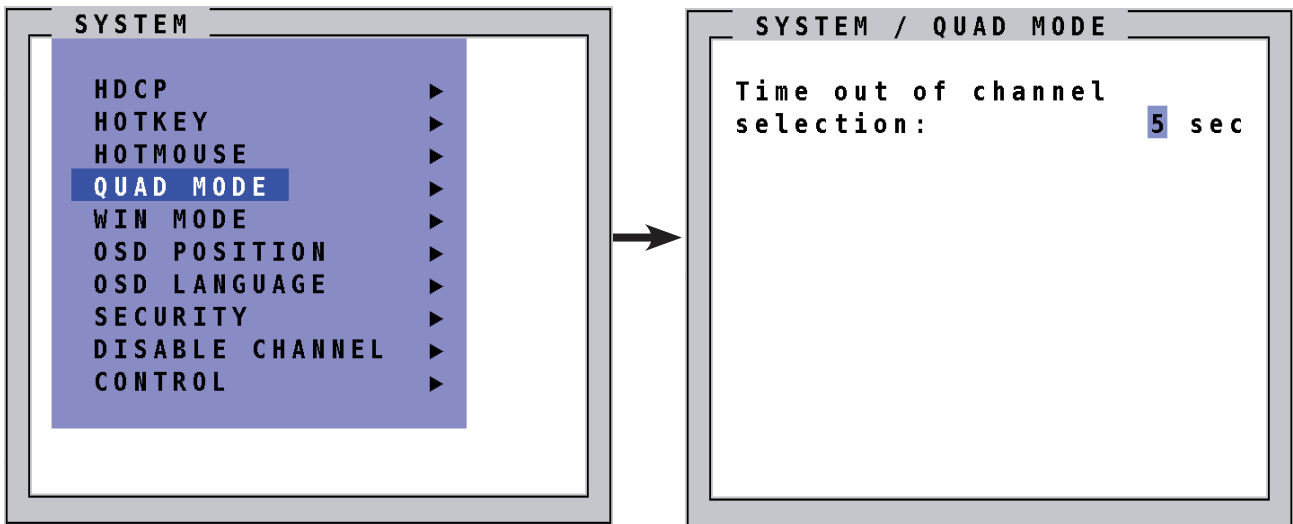
While the Hotmouse function is activated, the active computer can still be operated by keyboard.

For a detailed description of Hotmouse, Hotmouse functionalities, and Hotmouse Menu please see chapter HOTMOUSE.

OSD - SYSTEM - QUAD MODE

QUAD MODE

Use arrow keys to navigate in the SYSTEM menu to the entry QUAD MODE and press ENTER/SELECT to open the QUAD MODE window.



Channel selection timeout defines the period (1 to 30 seconds) after which the selector will close automatically. Default setting is 5 seconds.



To open the active channel in Quad mode

Press **hotkey 'Q'**

The yellow border indicates the active channel (mouse and keyboard enabled). Alternatively, press front button „Quad”.

To switch the selector from an active channel to another

Press **hotkey + arrow key**

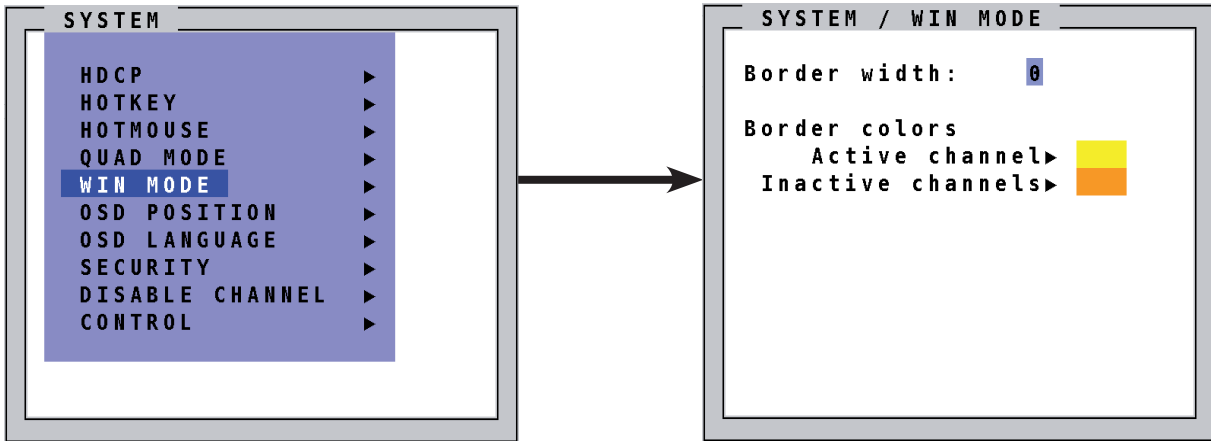
After the selector timeout has expired, the selector closes.

ON SCREEN DISPLAY

OSD - SYSTEM - WIN MODE

WIN MODE

Navigate with the arrow keys in the SYSTEM menu to the entry WIN MODE and press ENTER/SELECT to open the Win mode window.



Border width: Set the width of the borders, which are drawn around the signals in Win mode. When the border width is zero, no borders are shown.

Border colors:

- Active channel: Press enter /select to open the SELECT COLOR menu and set the color for the active channel.
- Inactive channels: Press enter /select to open the SELECT COLOR menu and set the color for the inactive channels.



Selector

In Win mode, use **hotkey '1-4'** to select a channel or window. (Alternatively, the hotmouse function or front panel buttons 1-4 can be used to select a channel or window as well.) When a channel has been selected, a colored border will appear around the window of the active channel. The selector will also be visible. Alternatively, press front button „Win” and select a preset.

After the expiration of the selector timeout, the selector closes.

Pop Up Buttons

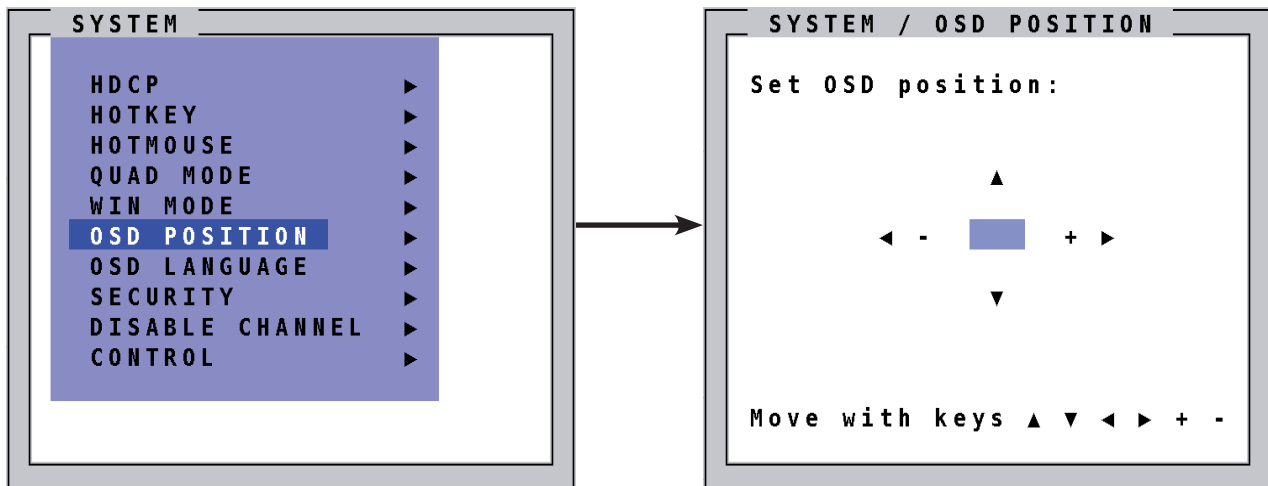
Move the hotmouse cursor to the top right corner of the signal window, and the following buttons will appear:

- O** = Open OSD hotmouse context menu
- S** = Swap signal windows. After this is selected, the other window is clicked.
- R** = Toggle aspect ratio locking for current window

OSD - SYSTEM - OSD POSITION / OSD LANGUAGE

OSD POSITION

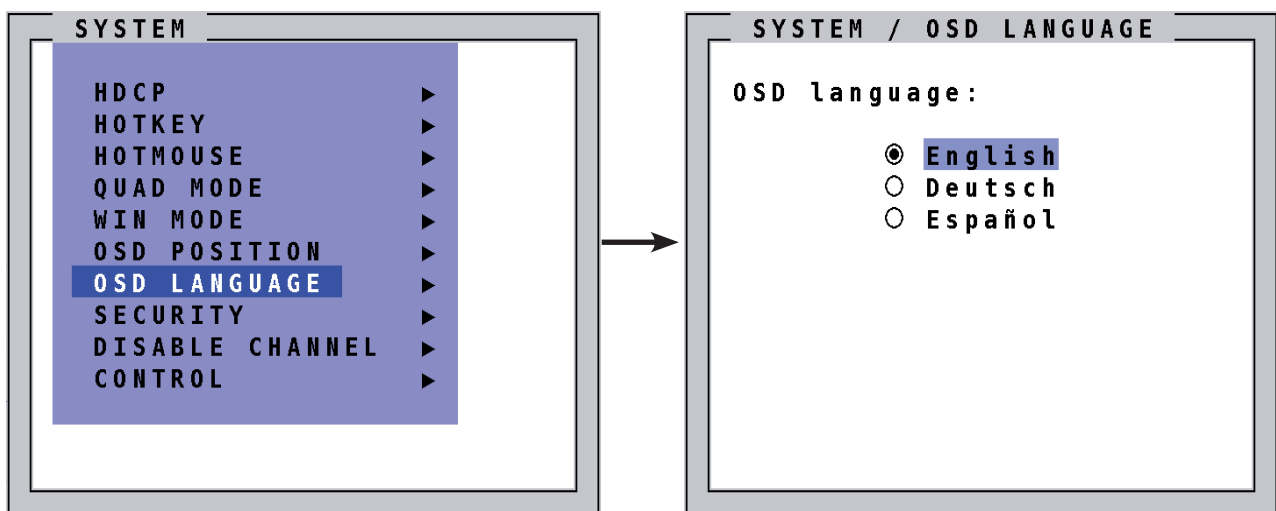
Navigate with the arrow keys in the SYSTEM menu to the entry OSD POSITION and press ENTER/SELECT to open the OSD POSITION window.



Use this function to move the OSD window to any position on the screen.

OSD LANGUAGE

Navigate with the arrow keys in the SYSTEM menu to the entry OSD LANGUAGE and press ENTER/SELECT to open the OSD LANGUAGE window.



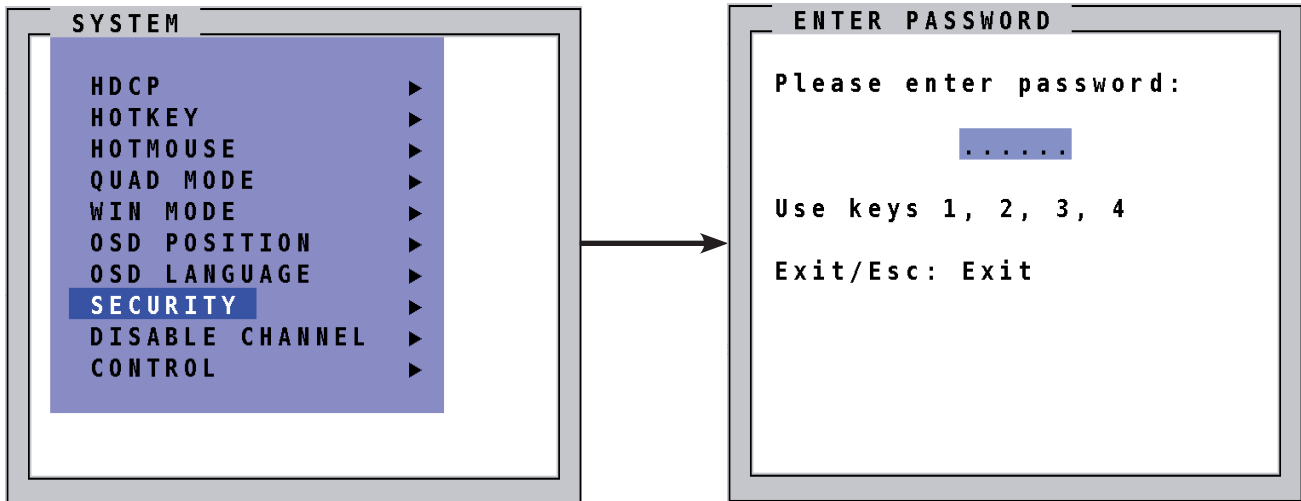
Set OSD LANGUAGE to either English (default), Deutsch (German) or Español (Spanish).

ON SCREEN DISPLAY

OSD - SYSTEM - SECURITY

SECURITY LEVELS

Navigate with the arrow keys in the SYSTEM menu to the entry SECURITY and press ENTER/SELECT to open the SECURITY window.

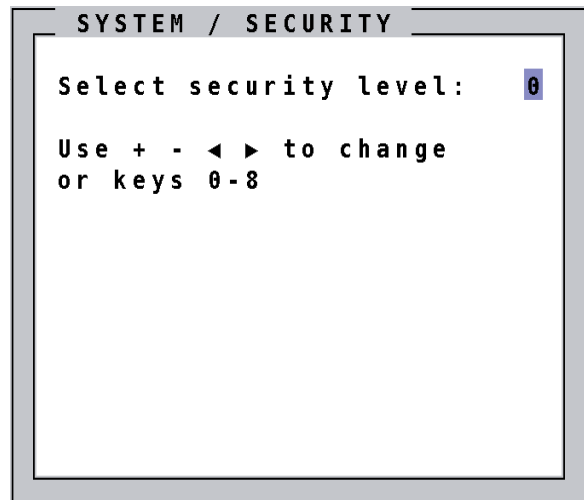


The SECURITY feature allows you to reduce the functional range of Multiviewer KVM-Switch. Eight security levels are available for this purpose.

By default, all functions are enabled (security level 0). To change the security level, you must first enter a predefined password. This six-digit password is enclosed separately with the deliverables of Multiviewer KVM-Switch and should only be accessible to authorized persons (administrators etc.).

After entering the password on the keyboard or front panel (password is not displayed in password field), the SECURITY window opens.

Enter the desired security level (0 to 8) under "Select security level".



Note:

Before changing the security level, please set the configuration you wish to work with to the higher security level, under MODE > START. This configuration will be maintained when Multiviewer KVM-Switch is reset, in case of power failure, or when power is turned off and on again.

OSD - SYSTEM - SECURITY

SECURITY LEVEL 0

This is the default setting of Multiviewer KVM-Switch. All settings are allowed and all functions are enabled.

SECURITY LEVEL 8

Security level 8 allows you to work only on one channel (computer) in a predefined display mode (Quad, Fullscreen or PiP mode). No settings can be changed, apart from the SECURITY menu item, where you can change the security level.

SYSTEM SECURITY

SECURITY LEVEL 7

As security level 7, but you can open OSD windows that only show display modes and device settings.

SYSTEM HDCP
 CONSOLE VIDEO OUTPUT/EDID
 VIDEO INPUT STATUS
 COMPUTER NAME 1-4/ KEYBOARD / MOUSE / EDID/DDC
 HELP HOTKEY / ABOUT / CONTACT

SECURITY LEVEL 6

As security level 6, with the following additional operations:

SYSTEM CONTROL
 CONSOLE FADE

- Setting of active channel using front panel buttons, Hotkeys or Hotmouse
- Selecting channel with PiP button in Quad mode
- Changing the directly selectable PiP channel in PiP mode single direct

SECURITY LEVEL 5

As security level 5, with the following additional operations:

- Setting of display mode (Quad / Fullscreen / PiP) using front panel buttons, Hotkeys or Hotmouse.

SYSTEM TEST PATTERN
 CONSOLE BACKGROUND

ON SCREEN DISPLAY

OSD - SYSTEM - SECURITY

SECURITY LEVEL 4

As security level 4, with the following additional settings in the OSD:

SYSTEM	OSD POSITION / WIN MODE
MODE	PIP / START
CONFIGURATION	RECALL
COMPUTER	AUDIO
VIDEO	FORMAT

- Modify display mode settings in Hotmouse Menu
- Changing both channels in Dual mode
- Changing the fixed PiP channel in PiP mode single fixed

SECURITY LEVEL 3

As security level 3, with the following additional settings in the OSD:

SYSTEM	OSD LANGUAGE
VIDEO	BRIGHTNESS / CONTRAST / HORIZ POSITION / VERT POSITION
	SCREEN WIDTH / PHASE
USB DEVICE 1-4	

SECURITY LEVEL 2

As security level 2, with the following additional settings in the OSD:

SYSTEM	HOTKEY / HOTMOUSE / QUAD MODE
CONSOLE	KEYBOARD / Touch screen

SECURITY LEVEL 1

As security level 1, with the following additional settings in the OSD:

SYSTEM	DISABLE CHANNEL
CONSOLE	MULTIMONITOR / VIDEO OUTPUT
VIDEO	DVI/VGA / ROTATION / CROPPING
COMPUTER	CHANNEL MAPPING / MOUSE / RESET PS/2

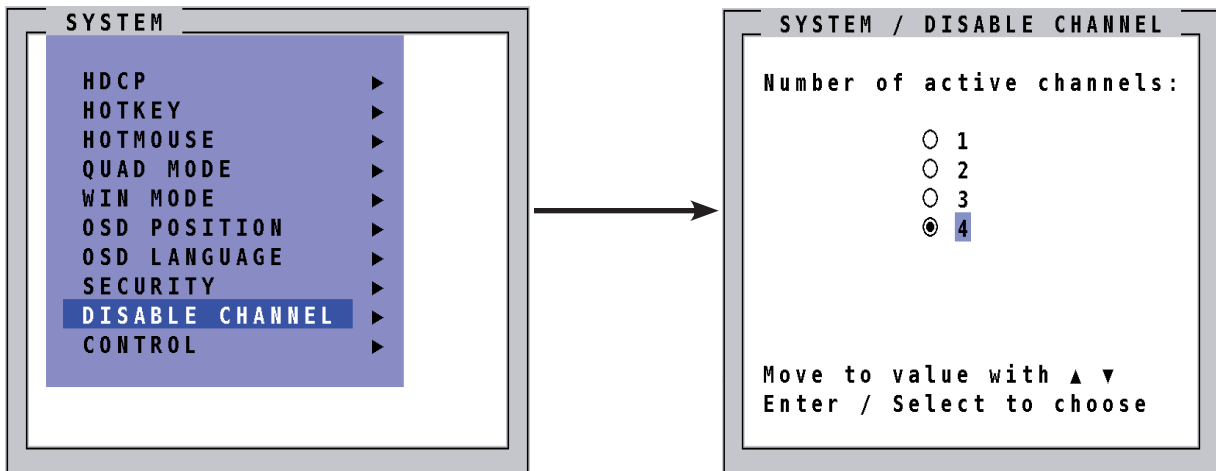
- Switch video output to VGA (using hotkey 'V' or front panel buttons 1+2)

OSD - SYSTEM - DISABLE CHANNEL

DISABLE CHANNEL

Navigate with the arrow keys in the SYSTEM menu to the entry DISABLE CHANNEL

Press ENTER/SELECT to open the DISABLE CHANNEL window.



If two or three computers or video sources are connected to Multiviewer KVM-Switch, use the DISABLE CHANNEL feature to ensure that for the unused channels:

- a) message "no signal input x" is not shown in Quad mode
- b) PiP images are not displayed on screen
- c) these channels are not selectable in Fullscreen mode

For example, if you have connected three computers (channel 1 to 3) to Multiviewer KVM-Switch, use the arrow keys to navigate to the number 3 and confirm by pressing ENTER/SELECT.

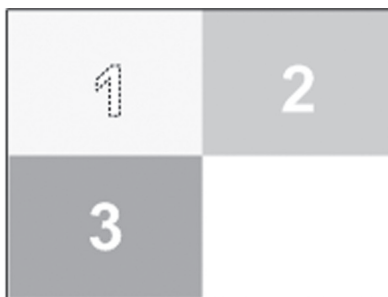
Note:
To use the "DISABLE CHANNEL" feature, computers/video sources must be connected to Multiviewer KVM-Switch in ascending order from channel 1 to 4.

Example in Quad mode:

All four channels enabled



Three channels enabled



Two channels enabled



mid-height

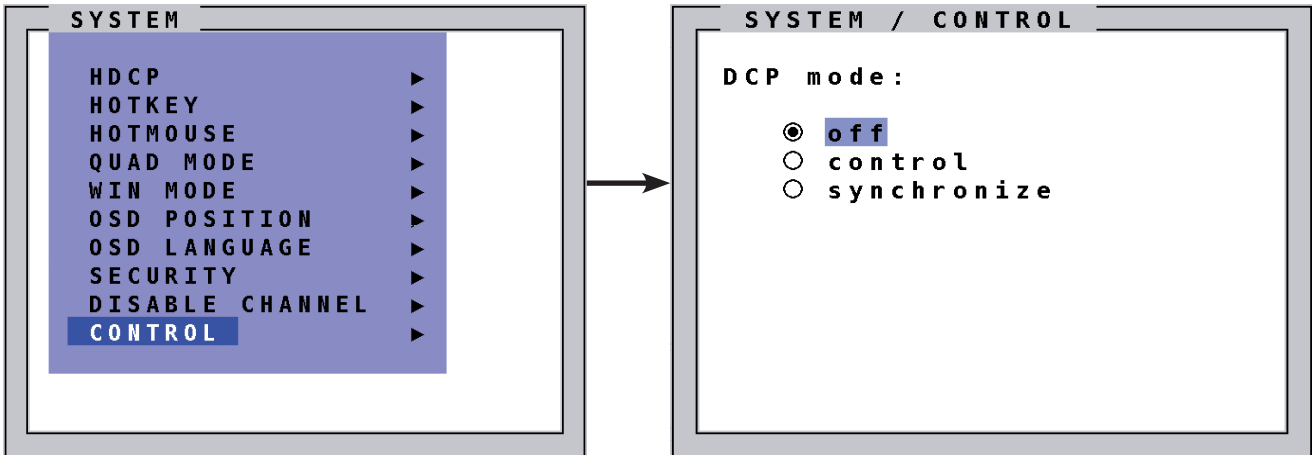
ON SCREEN DISPLAY

OSD - SYSTEM - CONTROL

CONTROL

Navigate with the arrow keys in the SYSTEM menu to the entry CONTROL

Press ENTER/SELECT to open the CONTROL window.



The device can be controlled via DCP (Device Control Protocol), an XML-based protocol (see Annex).

There are two DCP modes:

DCP control, which allows external control of the display mode.

DCP synchronize, which keeps several Multiviewer KVM-Switch devices in the same display mode.

Default setting is “off”, which prevents any external CONTROL.

Use a serial or USB cable to connect a control unit to the RS 232 port (RJ 45) on the Multiviewer KVM-Switch rear panel. To synchronize several devices, special Y cables are required.

Settings for the connection are: Transfer rate 57600 baud, 8 data bits, no parity, 1 stop bit, no flow control

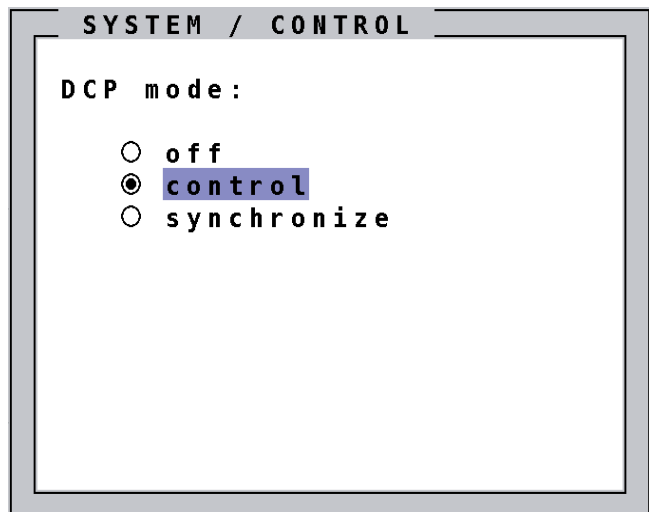
The two control modes operate as follows:

DCP control

This mode allows direct control of a single Multiviewer KVM-Switch by means of a control device, e.g. a computer.

The control device can query and change the mode of Multiviewer KVM-Switch.

Multiviewer KVM-Switch responds to each DCP message sent by the control device with a DCP reply. This reply includes the values of all settings queried or set by means of the last message. If the message sent by the control unit contains errors, the Multiviewer KVM-Switch will reply by sending an error message.



OSD - SYSTEM - CONTROL

Example of DCP control

A Multiviewer KVM-Switch is controlled via DCP-XML by a computer connected by serial cable or USB.



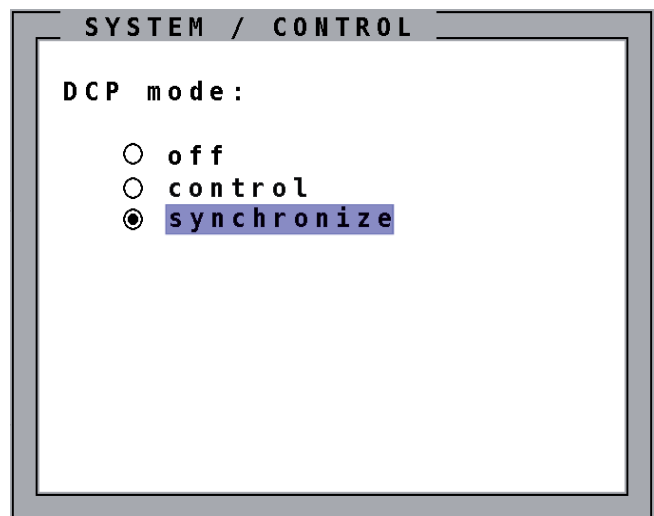
For an introduction to the DEVICE CONTROL PROTOCOL please Annex.

DCP synchronize

Use this mode to keep several Multiviewer KVM-Switch devices in the same mode.

Every change in settings initiated in the first Multiviewer KVM-Switch by hotkeys, hotmouse, front panel buttons or a controlling devices synchronizes the modes of all connected devices via DCP messages.

Use special Y-cables for the synchronization.



Important:

Each time you restart a Multiviewer KVM-Switch set to **synchronize**, it will send all its settings to the next connected device. This process also takes place after activating **synchronize** in the OSD menu.

When starting a chain of devices, always start by **first** switching on the device **at the end of the chain**. When the device has completed its startup phase and sent its DCP messages, switch on the next device in the chain.

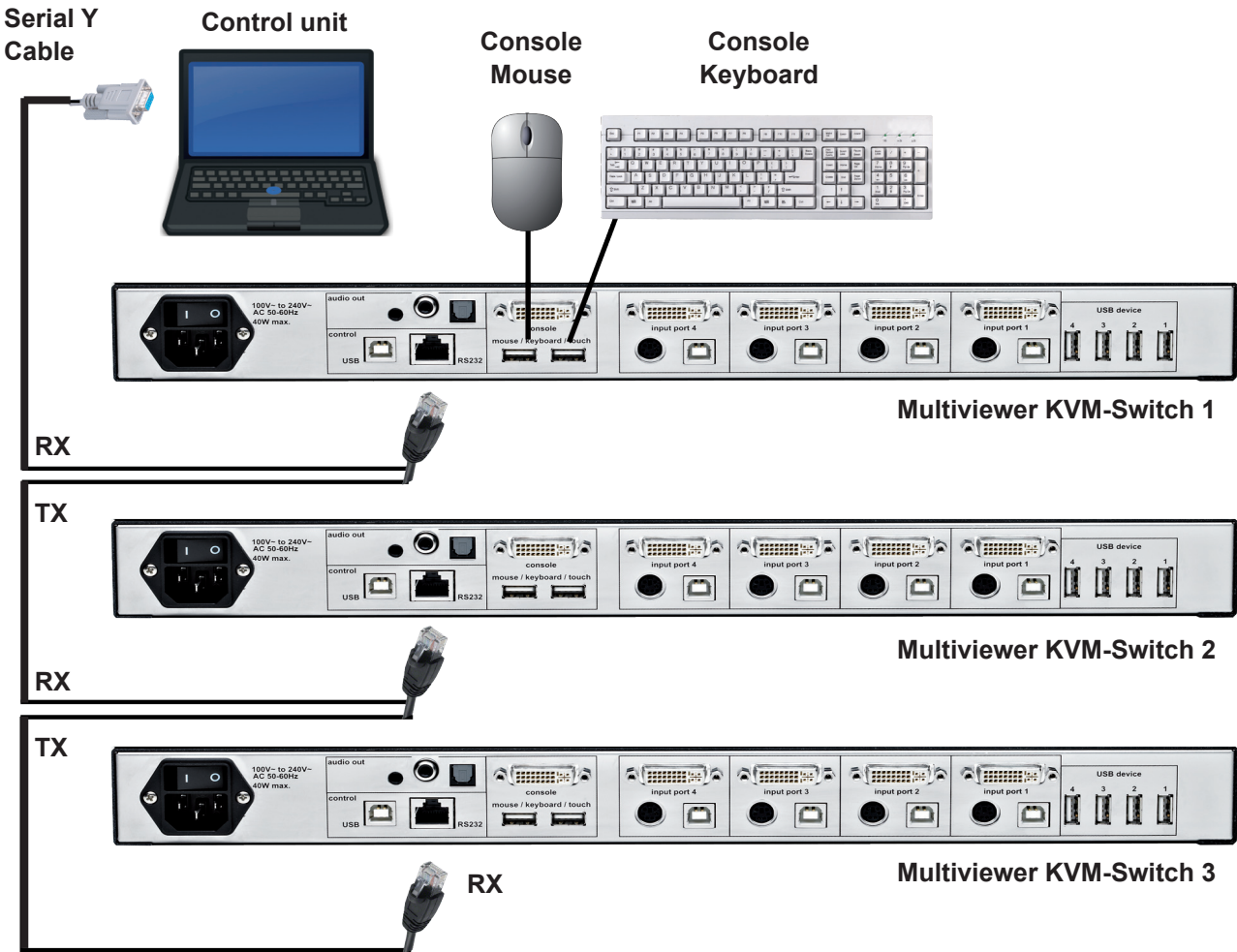
Finally, switch on the first device in the chain, which synchronizes the settings of all other devices in the chain with its own settings as it starts up.

ON SCREEN DISPLAY

OSD - SYSTEM - CONTROL

Example of DCP synchronization

Multiviewer KVM-Switch 2 and 3 are synchronized with Multiviewer KVM-Switch 1.



To synchronize, Multiviewer KVM-Switch 1 sends every change in settings as a DCP message via the serial Y to the RX input of Multiviewer KVM-Switch 2.

Multiviewer KVM-Switch 2 adopts the settings and sends a DCP message via TX output over the Y cable to the RX input of Multiviewer KVM-Switch 3.

The synchronization chain can have any length.

Do not connect the last device in the chain to the first device (i.e. do not create a loop).

OSD - SYSTEM - CONTROL**SECURITY LEVELS**

The security level settings in the OSD menu previously described also apply to control via DCP messages. Queries are possible up to security level 7.

The table below shows the maximum security levels for simple element settings. These settings may be changed via DCP up to the specified protection level.

Maximum security level for:

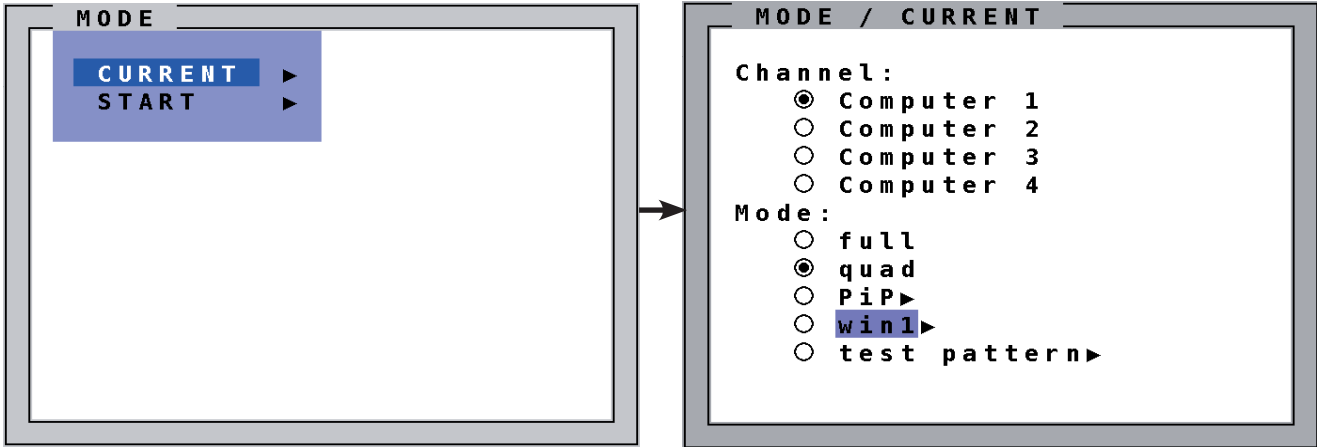
CONSOLE CHANNEL	6
VIDEO CHANNEL	6
VIDEO LAYOUT	5
PIP LAYOUT	4
PIP HEIGHT	4
PIP OFFSET	4
PIP ZOOM	4
PIP CHANNEL	4
DUAL CHANNELS (L/R)	6
PIP SCAN TIME	4

ON SCREEN DISPLAY

OSD - MODE - CURRENT/START

CURRENT

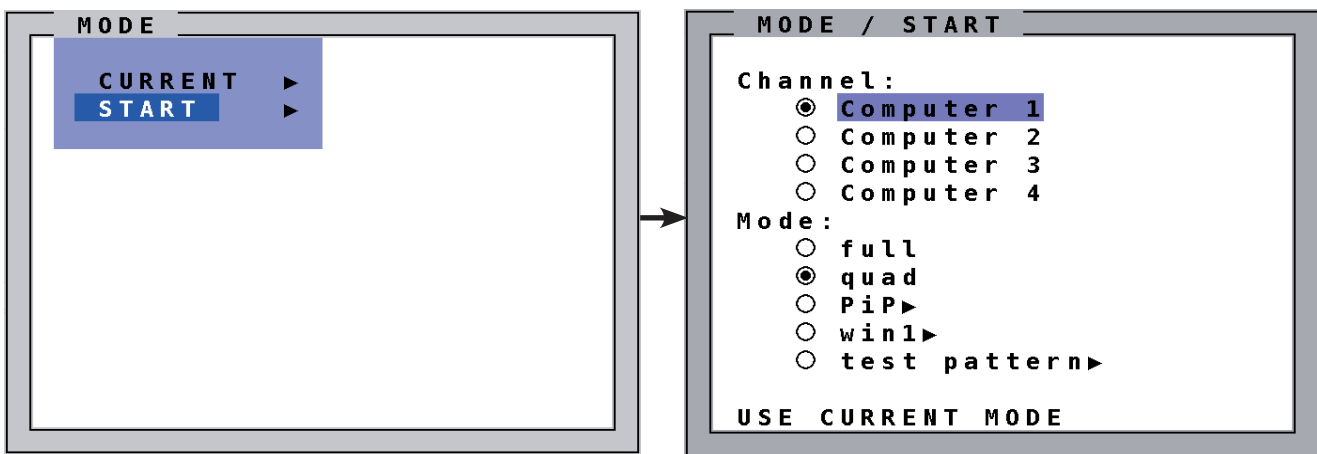
Defines the current mode in which the device should run.



Choose from Fullscreen, Quad Mode, PiP, Win Mode or Test Pattern.

START

Sets the mode in which the device should boot.



This feature allows you to define the start configuration, i.e. the display mode (Fullscreen, Quad, PiP, Win or Test Pattern), active channel, and PiP settings which Multiviewer KVM-Switch uses after a reset or when the system is powered up.

When the START menu is called up, the current start configuration is displayed. To modify your start configuration, change parameters in the channel, mode, and PiP fields. Press ESC to save the new parameters and exit the START menu.

Choose "Use current mode" to adopt the current settings as start mode. Use arrow keys to navigate to "Use current mode" and confirm by pressing ENTER.

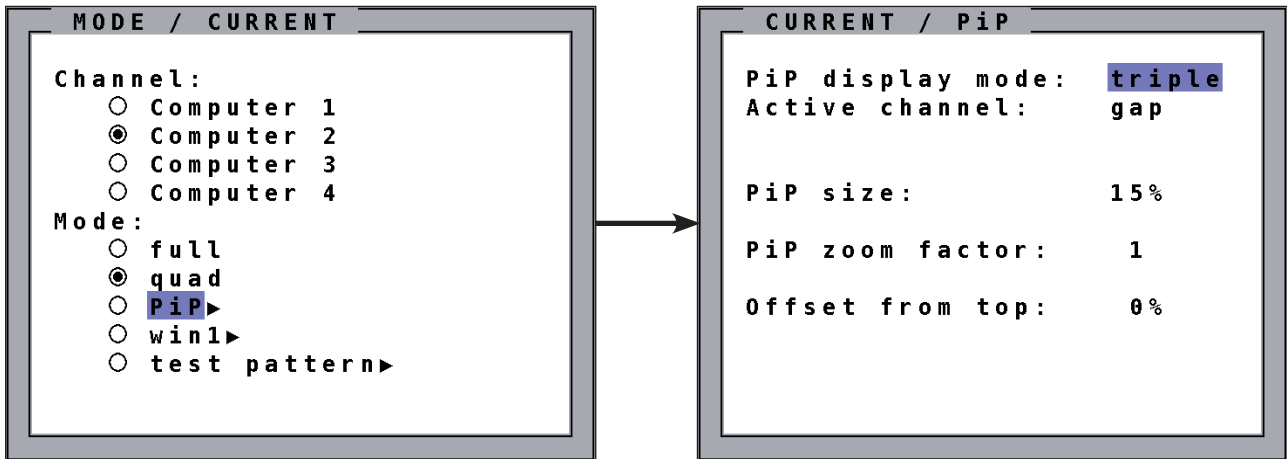
The factory default start mode is Quad-mode with active channel 1.

See OSD - MODE - CURRENT/START - PiP for details on setting PiP mode to boot. See OSD - MODE - CURRENT/START - WIN for details on setting Win mode to boot. See OSD - MODE - CURRENT/START - TEST PATTERN for details on setting a test pattern to boot.

OSD - MODE - CURRENT/START - PiP

PiP

Use this section to define the current mode in which the device should run.



In the PiP window you can configure PiP size, position, and display mode.

PiP Display Mode

Select the option TRIPLE to show 3 additional screens in PiP Mode. Select SINGLE to display only one other screen. If SINGLE is selected. Use the option PiP CHANNEL to define which channel should appear in the single window.

See the section Display Modes for details.

PiP size

Adjust the size of PiP images to your requirements. 12 (single mode) or 9 (triple mode) different sizes are available:

Single: 3 % - 5 % - 7 % - 10 % - 15 % - 20 % - 25 % - 28 % - 33 % - 38 % - 44 % - 50 %

Triple: 3 % - 5 % - 7 % - 10 % - 15 % - 20 % - 25 % - 28 % - 33 %

50 % equals the size of one quad screen (one quarter of a full size screen).

ON SCREEN DISPLAY

OSD - MODE - CURRENT/START - PiP (continued)

PIP zoom factor

Use this option to zoom the center of the PiP images by a factor of 2.

Offset from top

Use this option to change the position of PiP images. PiP images can be moved vertically to any position on the screen's right hand margin.

Note:

All settings also possible via Hotmouse Menu, see page 73.

OSD - MODE - CURRENT/START - PiP

PIP Display Modes

Multiviewer KVM-Switch offers the following PiP modes:

PIP display mode **triple**: All other video sources are displayed (three PiP images)

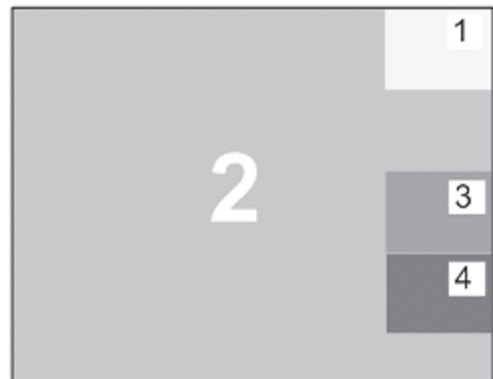
```

MODE / PiP
PiP display mode: triple
Active channel: gap

PiP size: 25%
PiP zoom factor: 1
Offset from top: 0%
    
```

Triple gap:

PiP images are displayed with a gap in place of the active channel.



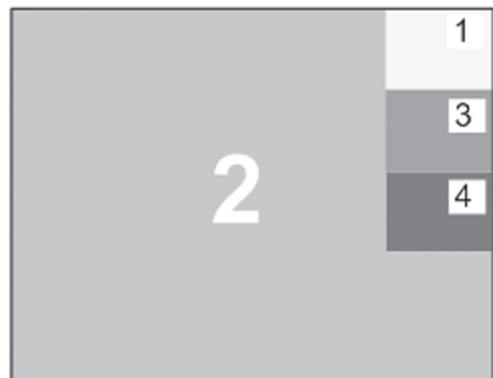
```

MODE / PiP
PiP display mode: triple
Active channel: no gap

PiP size: 25%
PiP zoom factor: 1
Offset from top: 0%
    
```

Triple no gap:

PiP images are displayed without a gap.



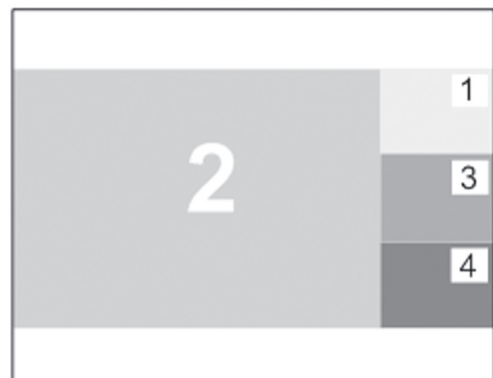
```

MODE / PiP
PiP display mode: triple
Active channel: tile

PiP size: -
PiP zoom factor: 1
Offset from top: -
    
```

Triple tile:

The size of the main image and the PiP images is optimized so that the main image and the PiP images are shown as large as possible without overlapping.

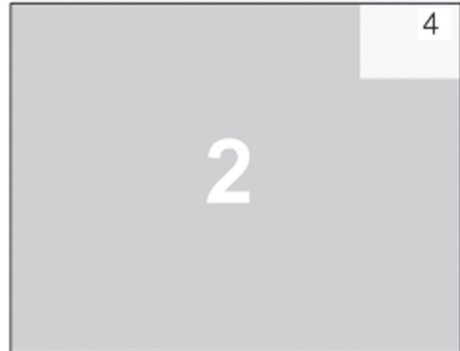


OSD - MODE - CURRENT/START - PiP

PIP Display Modes (continued)

PIP display mode **single**:

One PiP image is displayed. You can choose between different display modes:



```

MODE / PiP
PiP display mode:  single
Channel selection:  fixed
PiP channel:      4

PiP size:         15%
PiP zoom factor:  1
Offset from top:  0%
    
```

Single fixed:

One channel is selected to be displayed as permanent PiP image. Only the active channel (full image) can be switched. Press front panel buttons 1, 2, 3, or 4 to switch the full image.

```

MODE / PiP
PiP display mode:  single
Channel selection:  direct
PiP channel:      4

PiP size:         15%
PiP zoom factor:  1
Offset from top:  0%
    
```

Single direct:

One channel is selected to be displayed as permanent full image (active channel).

Only the PiP can be switched. Press front panel buttons 1, 2, 3, or 4 to switch the full image.

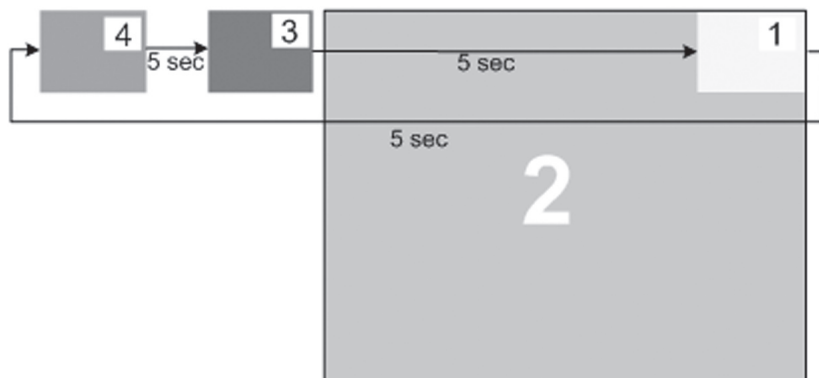
```

MODE / PiP
PiP display mode:  single
Channel selection:  scan
Scan time:        5 sec

PiP size:         15%
PiP zoom factor:  1
Offset from top:  0%
    
```

Single scan:

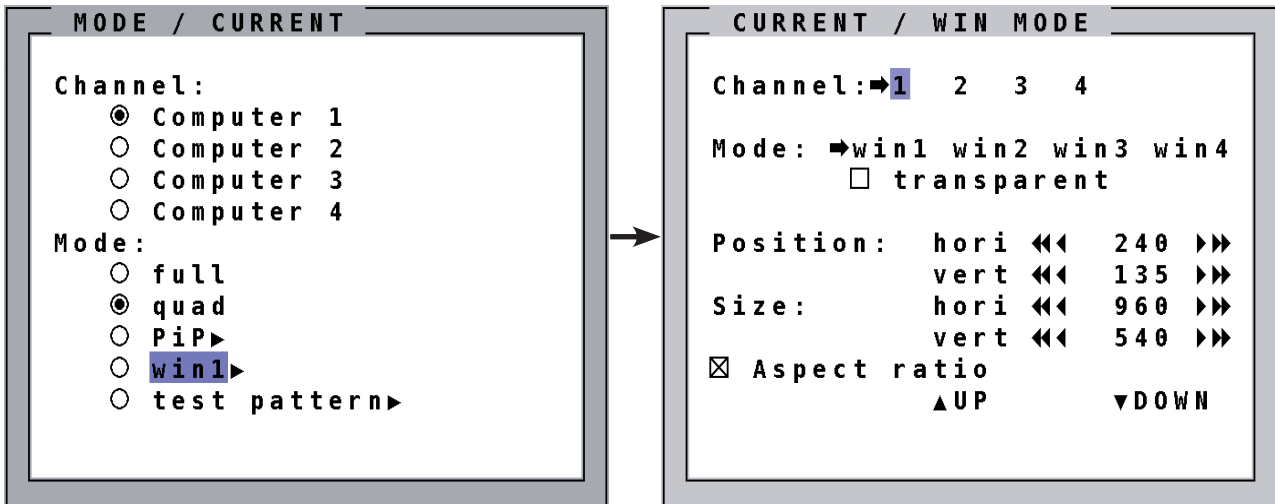
Within a PiP image, the three other video sources are displayed one after the other; the delay can be set to between one and nine seconds.



OSD - MODE - CURRENT/START - WIN**WIN MODE**

Navigate with the arrow keys in the MODE menu to the entry WIN

Press ENTER/SELECT to open the WIN MODE window.



Select the channel, window mode, position and window size in the window WIN MODE.

The arrows can be used to select the horizontal or vertical position or size of the windows.

Activate the checkbox ASPECT RATIO to retain the aspect of the video source.

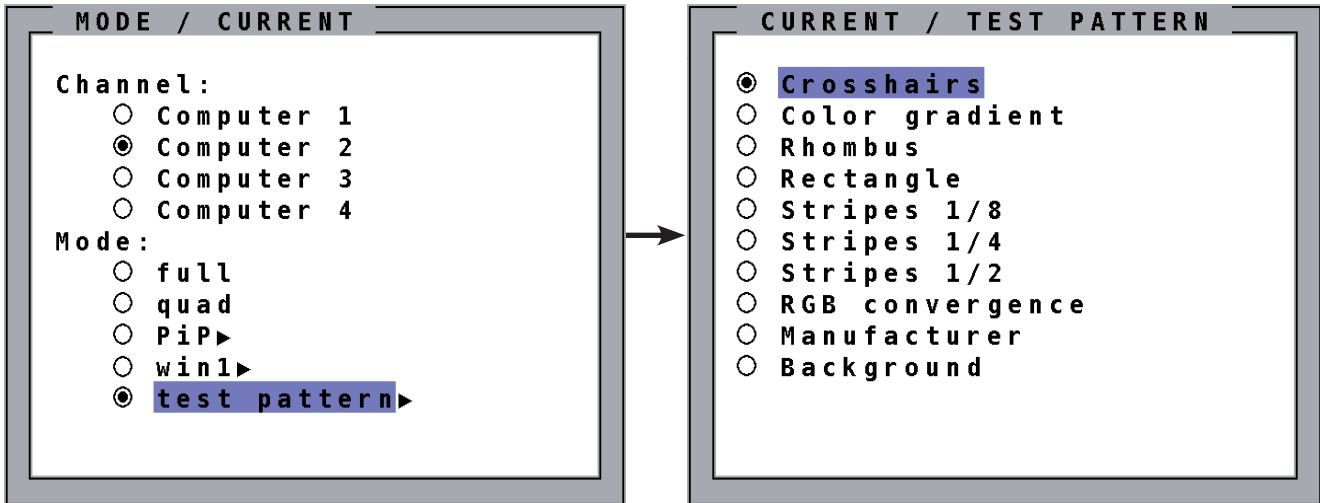
ON SCREEN DISPLAY

OSD - MODE - CURRENT/START - TEST PATTERN

TEST PATTERN

Navigate with the arrow keys in the MODE menu to the entry TEST PATTERN

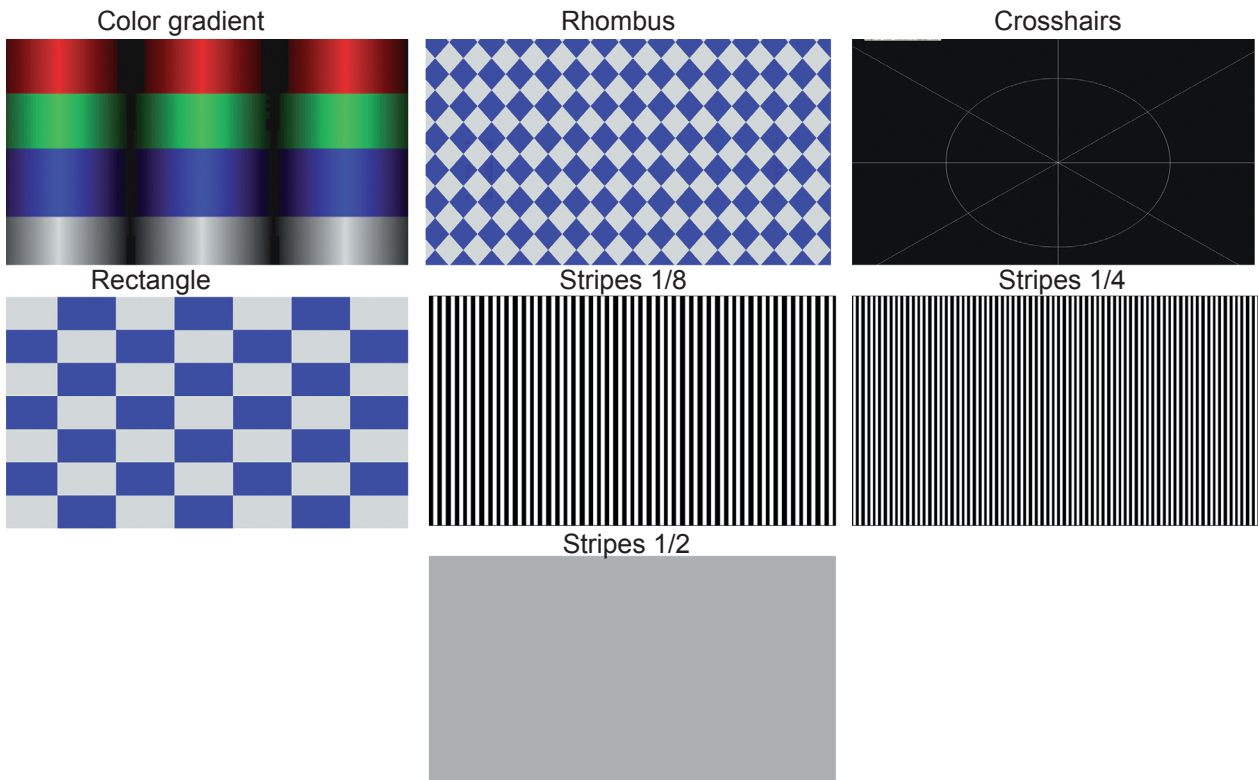
Press ENTER/SELECT to open the TEST PATTERN window.



Use the Test Pattern feature to check monitor quality (pixel errors, contrast, changes etc) or the functionality of the video output of the Multiviewer KVM-Switch.

It is recommended to use all available test patterns for the test procedure.

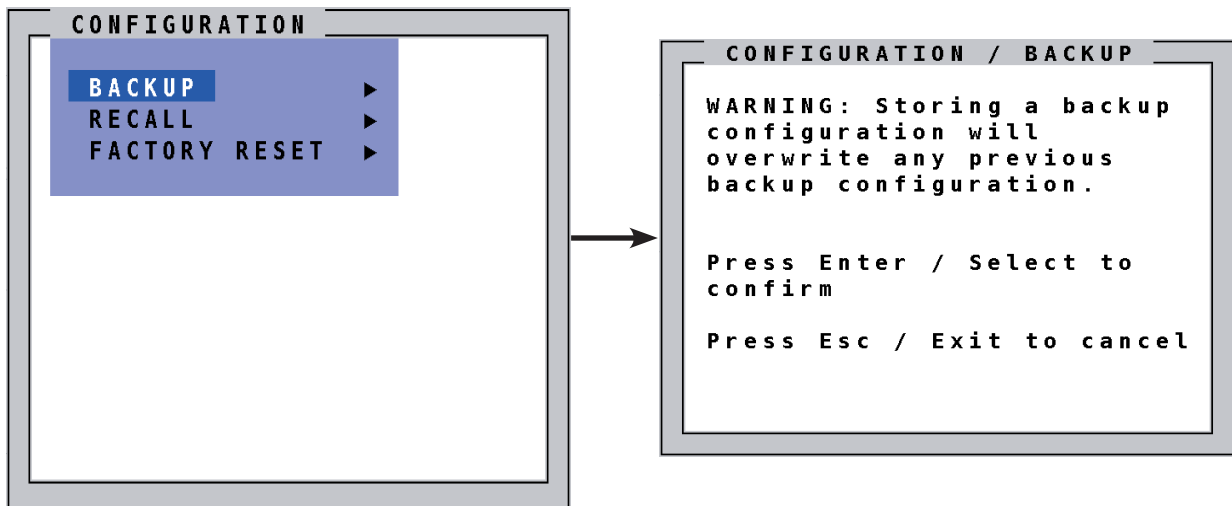
To exit TEST PATTERN mode, use the OSD, the front panel buttons (Full, Quad, PiP or Win) or hotkey commands accordingly.



OSD - CONFIGURATION - BACKUP / RECALL**BACKUP**

Navigate with the arrow keys in the CONFIGURATION menu to the entry BACKUP

Press ENTER/SELECT to open the BACKUP window.



This function saves the current device settings, including the start mode set in MODE START. Additionally, EDID data from the 4 inputs is also saved.

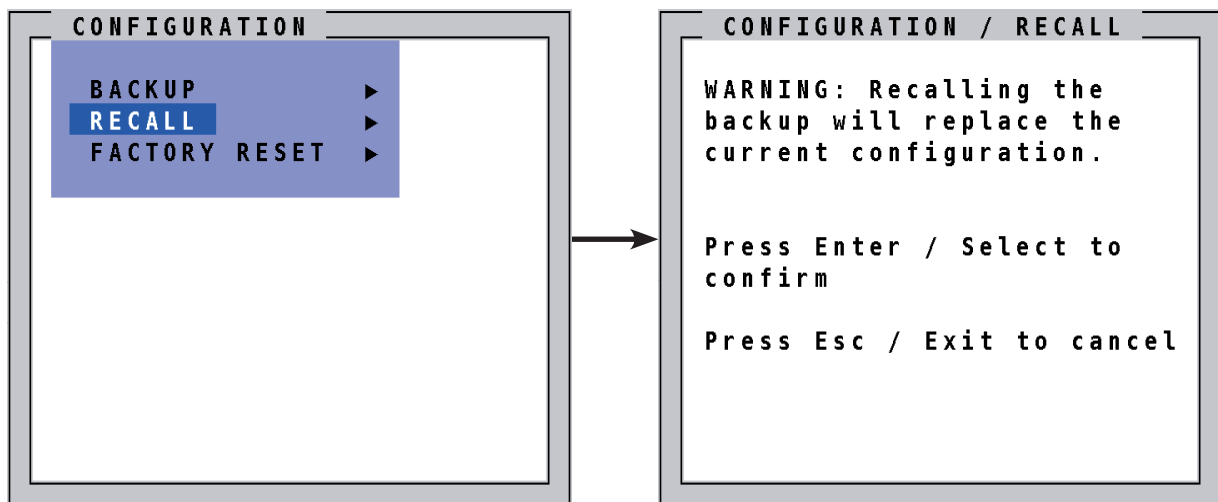
For details on creating an external backup to a file, see the section „Device Configuration Program“.

RECALL

CONFIGURATION menu to the entry RECALL

Press ENTER/SELECT to open the RECALL window.

Use this feature to replace the current settings with the last configuration saved using the BACKUP command.

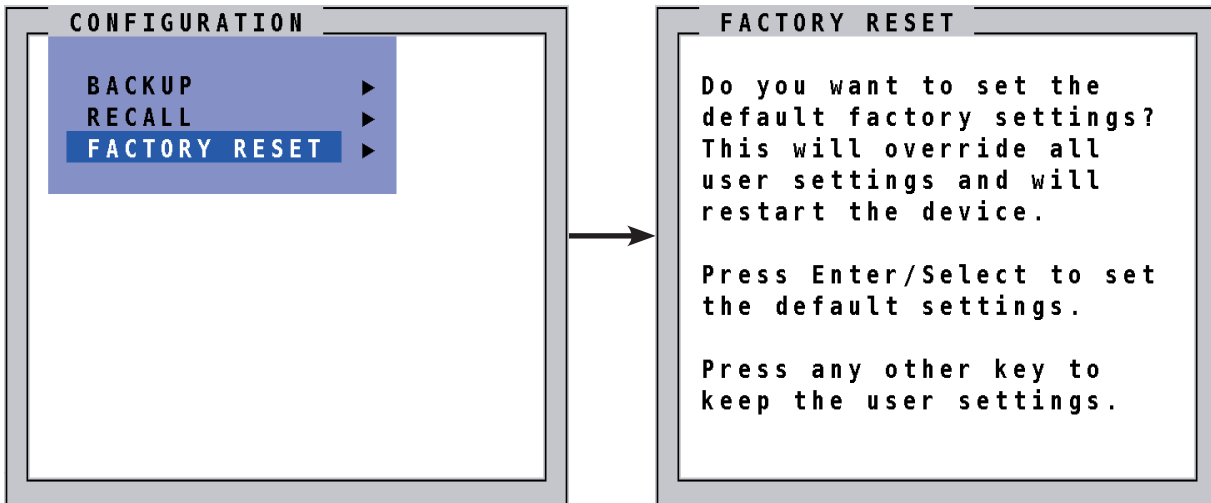


ON SCREEN DISPLAY

OSD - CONFIGURATION - FACTORY RESET

FACTORY RESET

Navigate with the arrow keys in the CONFIGURATION menu to the Factory Reset
Press ENTER/SELECT to open the DEFAULTS window.



Use this function to reset the current settings of Multiviewer KVM-Switch to the factory default configuration. All four input EDIDs are also reseted to their default values.

If necessary, save your current settings before using the DEFAULTS command. Execution of this command results in a complete reset and reboot of Multiviewer KVM-Switch with factory defaults.

FACTORY DEFAULTS:

SYSTEM

- HOTKEY = Multiple Hotkey / Hotkey = Ctrl + Alt
- HOTMOUSE = ON / Hotmouse timeout = 5 sec.
- QUAD MODE = Channel selection timeout = 5 sec.
- WIN MODE = Border width = 0 sec.
Active channel= 255,255,0
Active channel= 255,136,0
- OSD POSITION = centered
- OSD LANGUAGE = English
- SECURITY = None (security level = 0)
- DISABLE CHANNEL = All four channels are active
- CONTROL = Off

MODE

- CURRENT = Active channel = 1, quad
- START = Active channel = 1, quad
- > PIP Size = 15 % Zoom factor = 1
Display mode = triple Active channel = gap;
Offset from top = 0 %
- >WIN = Channel: 1, Mode:win1, Position settings depend on the source, Aspect ratio: enabled

OSD - CONFIGURATION - FACTORY RESET

FACTORY DEFAULTS (continued):

CONSOLE	VIDEO OUTPUT	= auto
	KEYBOARD	= English
	TOUCH SCREEN	= Mouse emulate right click /
	FADE	= Off
	MULTI MONITOR	= Monitor 1 --> Channel 1; Monitor 2 --> Channel2; Monitor 3 --> Channel 3; Monitor 4 --> Channel4;
	BACKGROUND	= Color / 0,0,0
VIDEO	DVI/VGA	= DVI / VGA (all channels)
	ROTATION	= 0
	CROPPING	= no cropping
	BRIGHTNESS	= +0 (all channels)
	CONTRAST	= 56 % (all channels)
	HORIZ POSITION	= auto (all channels)
	VERT POSITION	= auto (all channels)
	SCREEN WIDTH	= +0 (screen-width correction of all channels)
	PHASE	= +0 (all channels)
FORMAT	Fit to screen = No (all channels)	
COMPUTER	CHANNEL MAPPING	= Positioning = relative (all channels)
	AUDIO	= Enable audio output / Select active channel / Switch channel on audio activity = off
	NAME 1-4	= Computer 1-4 respectively
	KEYBOARD	= USB
	MOUSE	= positioning realtive
	RESET PS/2"	= Channel 1 selected
EDID / DDC	1600x1200@60, 1920x1200@60, digital	
USB DEVICE 1-4		= Off / manual switching w. warning / name: Device 1 (-4)

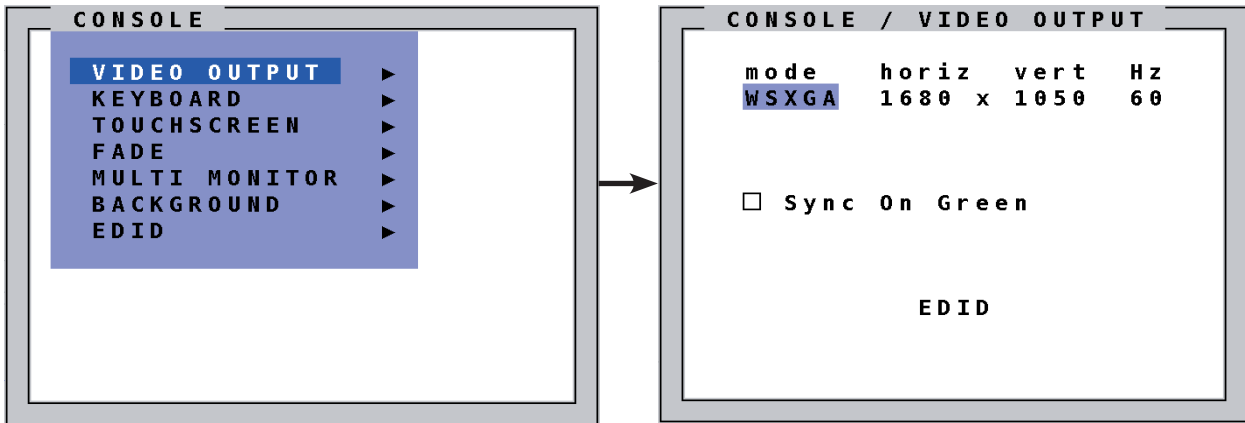
ON SCREEN DISPLAY

OSD - CONSOLE - VIDEO OUTPUT

VIDEO OUTPUT

Navigate with the arrow keys in the CONSOLE menu to the entry VIDEO OUTPUT

Press ENTER/SELECT to open the VIDEO OUTPUT window.



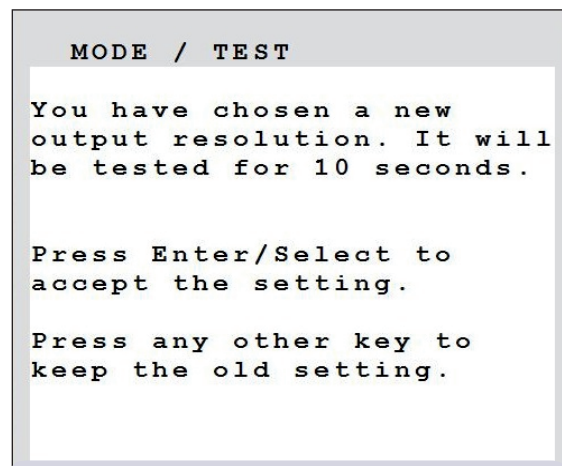
Use the VIDEO OUTPUT menu to choose an output resolution supported by your monitor.

Press ENTER/SELECT to enter the selection menu.

Use arrow keys to select the desired line in the list shown on the right and press ENTER/SELECT for the new video format.

The new output mode is visible for 10 seconds.

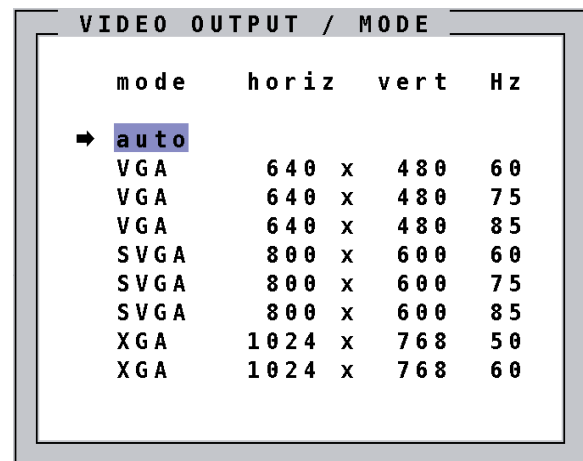
Within this time you can either accept the new setting by pressing ENTER/SELECT or return to your original setting by pressing ESC/EXIT.



When the output mode is set to 'auto', Multiviewer KVM-Switch chooses a resolution by reading the connected monitor's EDID data. Choose the EDID menu item to check whether the connected monitor provides this data.

If the monitor does not offer this data, Multiviewer KVM-Switch sets VGA mode (640x480@60Hz) as default and activates Sync on Green.

Sync on Green can be deactivated on Multiviewer KVM-Switch.

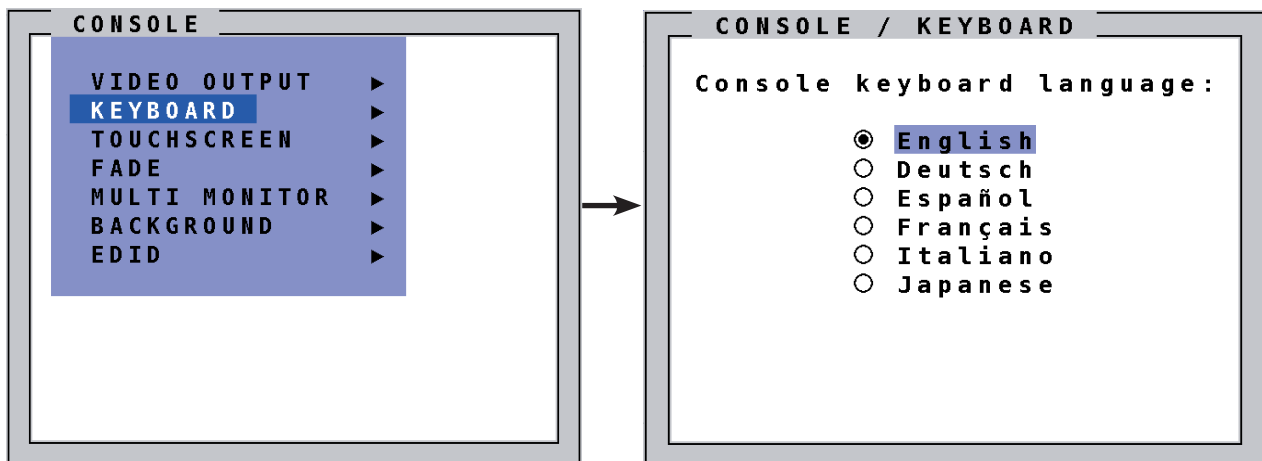


OSD - CONSOLE - KEYBOARD**KEYBOARD**

Navigate with the arrow keys in the CONSOLE menu to the entry KEYBOARD

Press ENTER/SELECT to open the KEYBOARD window.

Set the keyboard layout to the desired language, English, Deutsch (German), Español (Spanish), Français (French), Italiano (Italian) or Japanese.



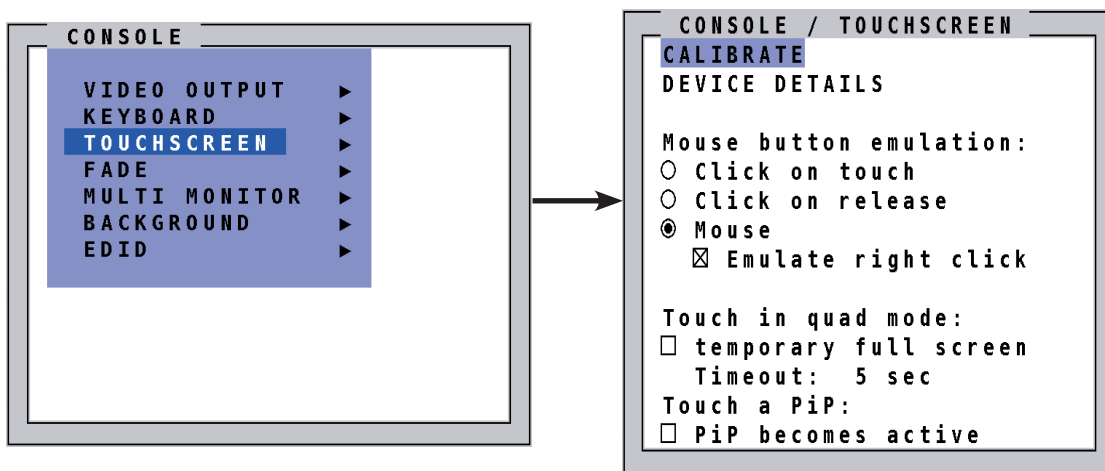
OSD - CONSOLE - TOUCH SCREEN

TOUCH SCREEN

Multiviewer KVM-Switch enables the user to use a touch screen to control and switch between four computers as well as change display modes.

Multiviewer KVM-Switch supports a great number of USB touch screens with commonly integrated touch controllers. For a list of supported touch screens, please see Annex on page 97.

To control Multiviewer KVM-Switch using a touch screen, connect the touch screen to Multiviewer KVM-Switch by connecting the VGA or DVI cable from the Multiviewer KVM-Switch monitor port to the input of the touch screen. Connect the USB port of the touch screen to the Multiviewer KVM-Switch console USB port. Please see page 8ff for a description of the Multiviewer KVM-Switch ports.



Calibration

After connecting a touch screen to Multiviewer KVM-Switch for the first time, calibrate the touch screen.

Open CONSOLE ► TOUCH SCREEN menu, choose CALIBRATE, and press ENTER/SELECT.

Four markers will be displayed in the corners of the touch screen.

The diagram shows the first marker in the top left corner of the screen.

Touching the center of the markers as accurately as possible yields best calibration results.

Then repeat for the other three markers to complete calibration.

Device Details

Select this option to display touch screen information such as the manufacturer ID and product ID.



OSD - CONSOLE - TOUCH SCREEN

Mouse button emulation

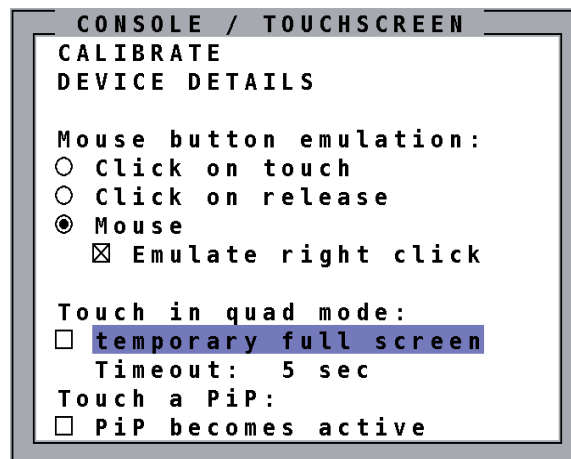
Multiviewer KVM-Switch offers three modes of interpreting the user input as mouse clicks.

1. Mouse: When touching the touch screen, the mouse button is pressed.
When the finger is released from the touch screen, the mouse button is released.
This mode can be used for drag and drop operations.
2. Click on touch: When touching the touch screen, a mouse click is generated at the position of the touch.
3. Click on release: When the finger is released from the touch screen, a mouse click is generated at the last position of the finger.

By default, „mouse“ is set as mode. You could use your finger on the touch screen similarly to using your mouse. “Click on touch” and “click on release” are suited for kiosk applications or environments where touch screens are used instead of keyboards and mice, such as in medical industries for hygienic reasons, in industrial production and automation for operation with gloves, or in vehicles and aircraft where robust components are required.

Touch in quad mode:

Check this box to switch a quadrant from Quad mode temporarily to full screen when touching the quadrant. This activates keyboard and mouse of that quadrant and allows operating the computer in full screen. The other sources are not visible during this time. After a timeout of 5 seconds without keyboard/mouse activity, Multiviewer KVM-Switch automatically switches back to Quad mode. The timeout can be set to values between 1 and 10 seconds.



Touch a PiP:

Check this box to activate keyboard and mouse on a computer shown as PiP. When touching a PiP, keyboard and mouse become active in this PiP. This activated channel now remains a little PiP and does not switch to full image. In this PiP you can operate the computer with keyboard and mouse.

When unchecked (by default), a PiP is switched to full image as soon as it is touched. The full image gets exchanged with the other sources remaining visible as PiPs.

OSD - CONSOLE - TOUCH SCREEN

Right mouse button

Press and hold your finger on the touch screen to emulate the right mouse button. This only works in „mouse” emulation mode, not in “click on touch” or “click on release”. By default „Emulate right click” is set in order to perform a right mouse click. Some touch controller models do not support right mouse click. Using touch screens with such controllers requires unchecking the box „Emulate right click”.

Hotmouse and Hotmouse Menu

To open the Hotmouse Menu, tap the screen twice, and leave your finger pressed on the touch screen after the second tap (tap – hold, like a double click without lifting the finger on the second click), until the Hotmouse Menu opens.

By clicking outside the Hotmouse Menu, you can open the Hotmouse Cursor to enlarge and reposition PiPs (only in PiP mode), resize and move windows in Win mode, and switch channels (see description of the Hotmouse function).

After you are finished using the Hotmouse Cursor, the Hotmouse Menu will reopen.

Mouse position

Absolute mouse position

Multiviewer KVM-Switch works best together with touch screens when using absolute mouse positioning mode with the connected computers. To enable absolute mouse positioning mode, use the menu COMPUTER ► MOUSE in the OSD.

This mode works when a computer is connected via USB, and with most modern operating systems.

Relative mouse position

When using relative mouse positioning, please check the configuration of the computers connected to ensure that mouse acceleration is switched off and mouse scaling is set to 1:1.

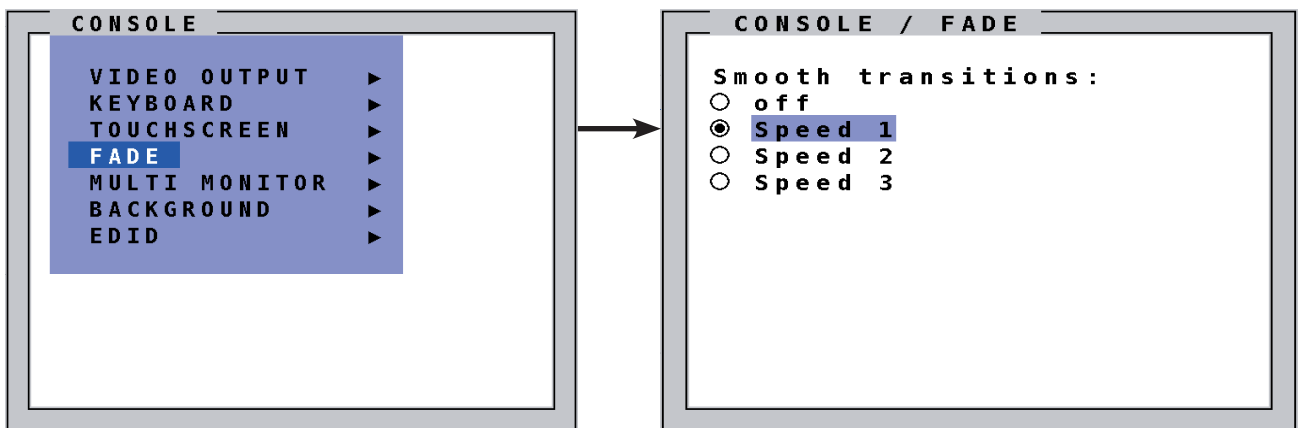
Resetting the mouse position: When using relative positioning mode, the actual position of the mouse cursor and the position of your finger on the touch screen may not match in certain cases when a computer switches resolution or changes the mouse position (e.g. when the system is configured to place the mouse pointer over the 'OK' button of a window). In these cases, to reset the mouse position, either switch to a different channel, and back again, or tap the touch screen three times, and leave your finger pressed on the touch screen after the third tap (tap – tap – hold), until the mouse cursor moves to the top left corner of the screen.

OSD - CONSOLE - FADE**FADE**

Use arrow keys to navigate in the CONSOLE menu to the entry FADE and press ENTER/SELECT to open the FADE window.

Fade Through Black is an elegant visual effect for presentations: When switching channels or display modes, the previous image fades to black, and the next image is faded in smoothly.

To enable fade through black, select the transition speed under "Smooth transitions". The "Speed" setting controls the speed of the transition, with 1 being the slowest, and 3 the fastest transition.

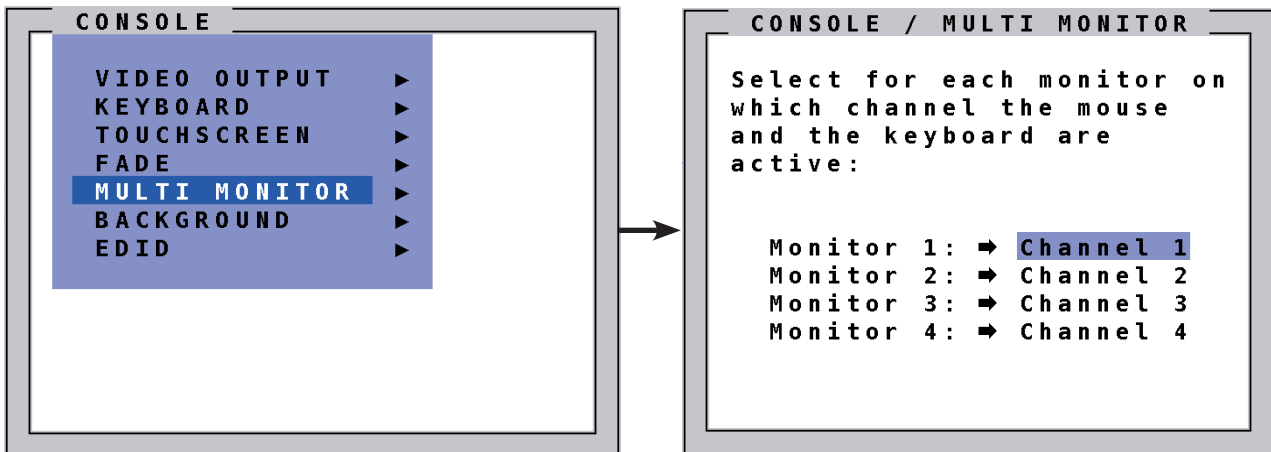


ON SCREEN DISPLAY

OSD - CONSOLE - MULTI MONITOR

MULTI MONITOR

Use arrow keys to navigate in the CONSOLE menu to the entry MULTI MONITOR and press ENTER/SELECT to open the MULTI MONITOR window.



Multi Monitor is used if computers with multiple video output are connected to Multiviewer KVM-Switch but only one keyboard and mouse to operate the computer. If you use graphics cards with multiple video outputs, you must assign the computer's mouse and keyboard to the corresponding video output (channels 1-4).

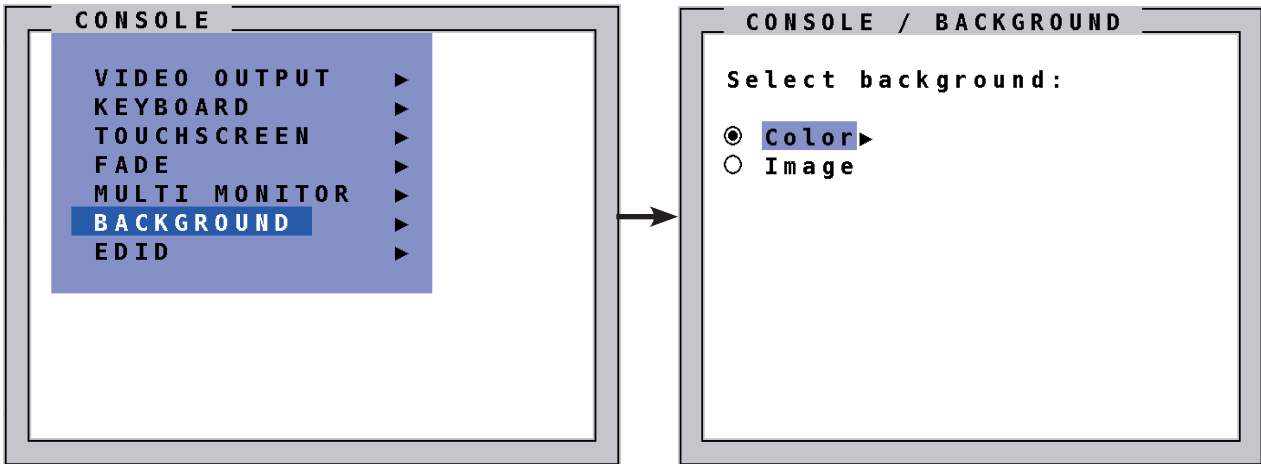
Example:

If a computer with quad-head graphics card is connected to Multiviewer KVM-Switch, and keyboard and mouse are connected to channel 1, you must assign console „channel 1” to all video channels („Monitor 1 - 4”).

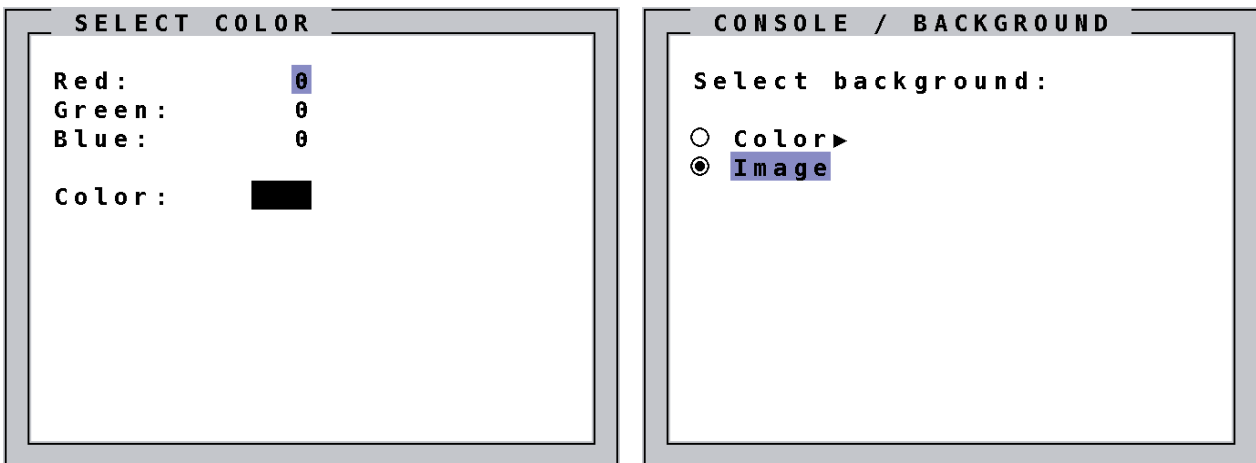
OSD - CONSOLE - BACKGROUND

BACKGROUND

Use arrow keys to navigate in the CONSOLE menu to the entry BACKGROUND and press ENTER/SELECT to open the BACKGROUND window.



Use the window BACKGROUND to select either a solid color or an image for the background area of the screen on which windows are displayed. Note: The background is shown only in Win mode. Default color for the other modes is black.



Use BACKGROUND > COLOR to set the color of the background. Enter the desired color in 24 bit color red, green and blue values. A preview of the color will appear in the field COLOR.

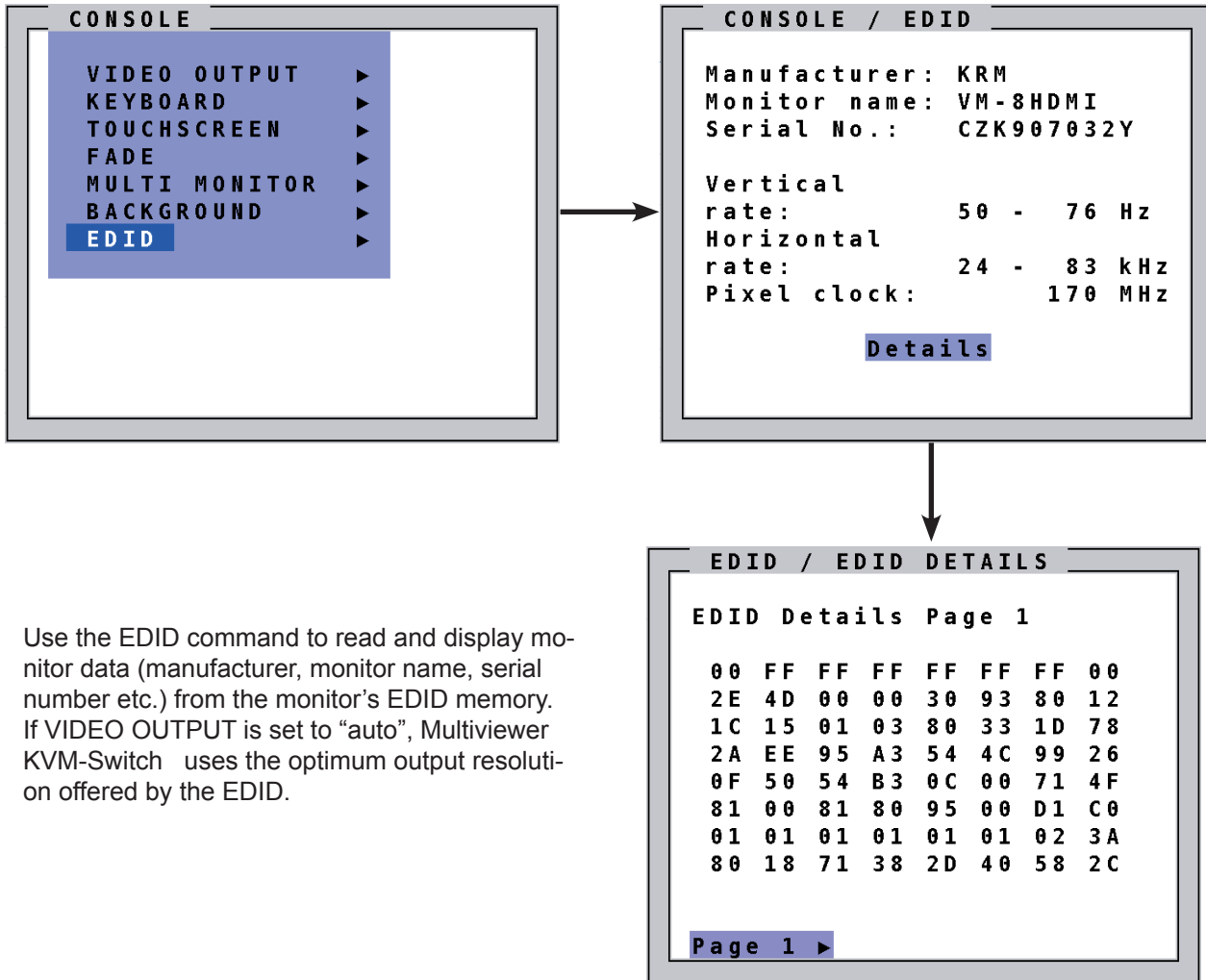
After selecting BACKGROUND > IMAGE, the background area of the screen will be filled with the image that has been previously selected in the utility ConfDev under *DEVICE > LOAD BACKGROUND IMAGE*. If no image has been loaded, this option will not appear.

ON SCREEN DISPLAY

OSD - CONSOLE - EDID

EDID (display of monitor data)

Use arrow keys to navigate in the CONSOLE menu to the entry EDID and press ENTER/SELECT to open the EDID window.



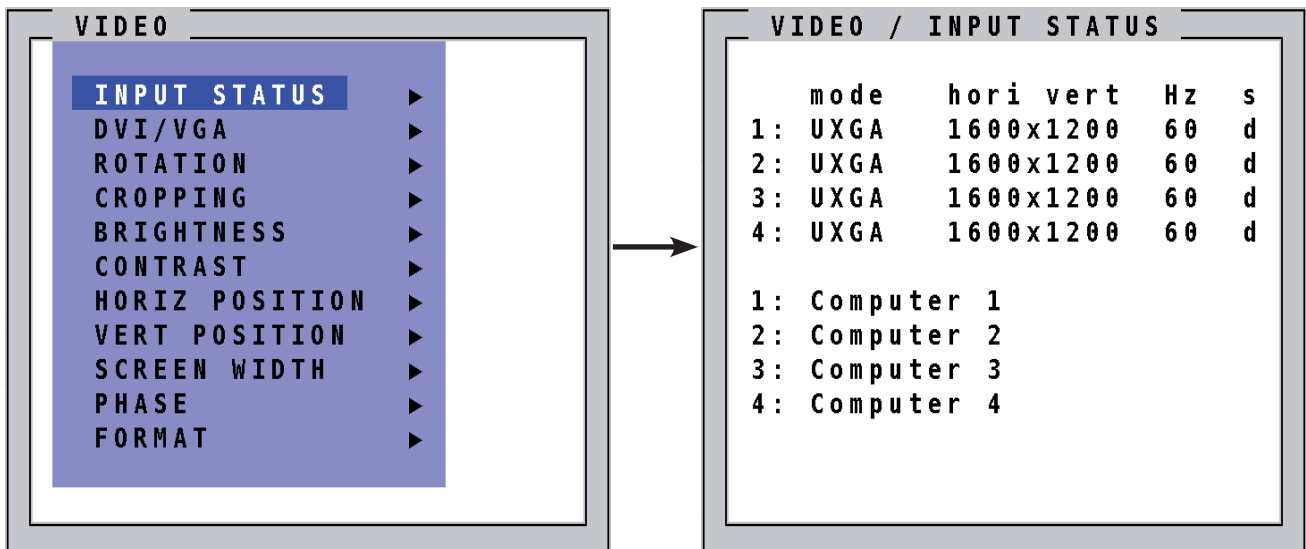
Use the EDID command to read and display monitor data (manufacturer, monitor name, serial number etc.) from the monitor's EDID memory. If VIDEO OUTPUT is set to "auto", Multiviewer KVM-Switch uses the optimum output resolution offered by the EDID.

EDID (Extended Display Identification Data) is a VESA standard data format that contains basic information about a monitor and its capabilities. This information is stored in the monitor by the manufacturer and can be read by Multiviewer KVM-Switch or graphics card via a monitor cable's Display Data Channel (DCC) interface.

Note:
EDID information can be copied to the four inputs and are then available for the connected sources. See COMPUTER > EDID/DDC.

OSD - VIDEO - INPUT STATUS**INPUT STATUS (Display Video Formats)**

Use arrow keys to navigate in the VIDEO menu to the entry INPUT STATUS and press ENTER/SELECT to open the INPUT STATUS window.



Resolutions at the four video inputs are shown under INPUT STATUS. Resolution recognition at the four video inputs is automatic. Some analog input resolutions may not correctly be detected.

See Annex for a list of video formats supported by Multiviewer KVM-Switch.

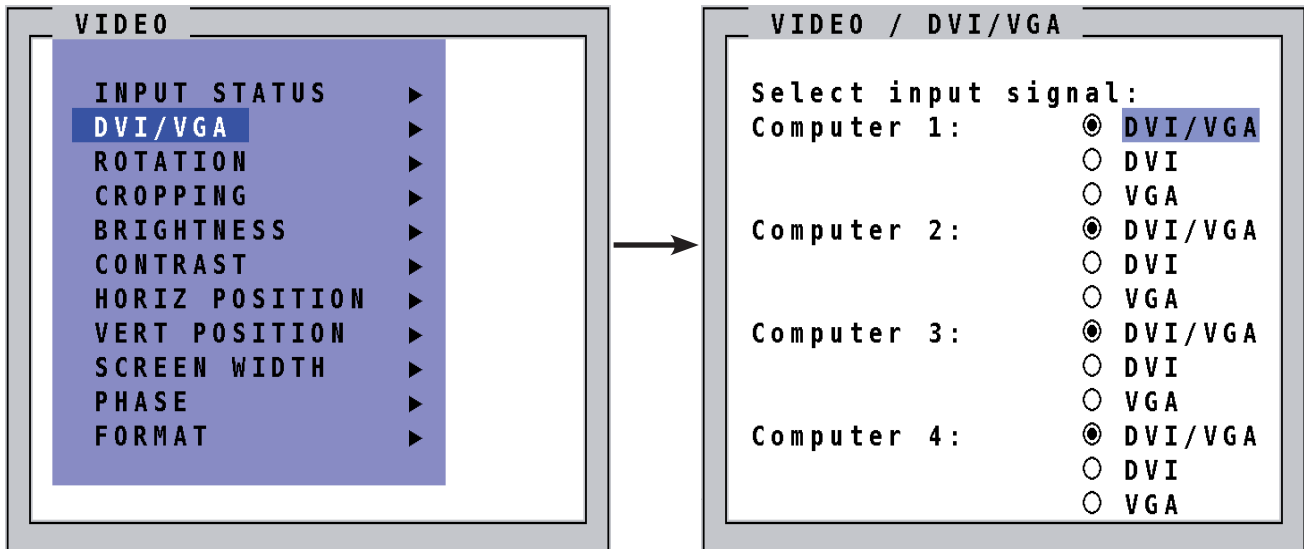
S Signal
a = analog
d = digital
g = sync on green
c = composite sync

ON SCREEN DISPLAY

OSD - VIDEO - DVI/VGA

DVI/VGA

Use arrow keys to navigate in the VIDEO menu to the entry DVI/VGA and press ENTER/SELECT to open the DVI/VGA window.



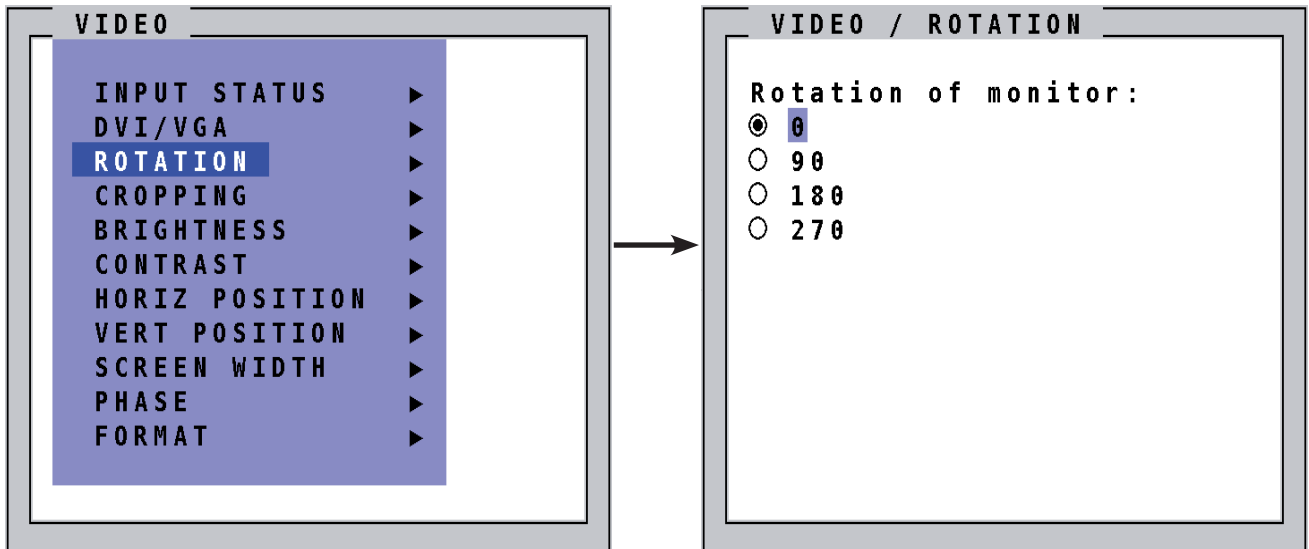
Go to "Select input signal" and define which video signal (VGA or DVI) is to be displayed.
If the setting „DVI/VGA” is selected, Multiviewer KVM-Switch will first check the digital input.
If there is no signal at this input, the analog signal input will be checked.

This function can be used to connect e.g. 8 sources (4x VGA + 4x DVI) via Y-cables to Multiviewer KVM-Switch.

OSD - VIDEO - ROTATION

ROTATION

Use arrow keys to navigate in the VIDEO menu to the entry ROTATION and press ENTER/SELECT to open the ROTATION window.

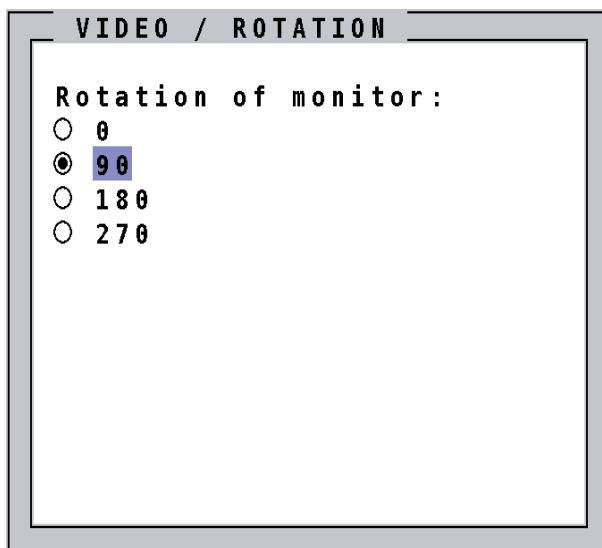


Select the degrees to which you would like to rotate your display. Choose from 0, 90, 180 and 270. Once the rotation degrees have been selected, all of the channel are rotated to the same degree.

Note:
Once the degrees have been chosen, it may take a few seconds for the display to rotate.

Rotation limitation at 90° and 270°: If the channels overlap, the monitor display should have a total of lines no higher than 2028. If the aspect ratio is not locked in Win mode, size reduction and enlargement cannot both be used simultaneously for each channel. There may be further restrictions not known at the time print.

Example with 90 degree setting:

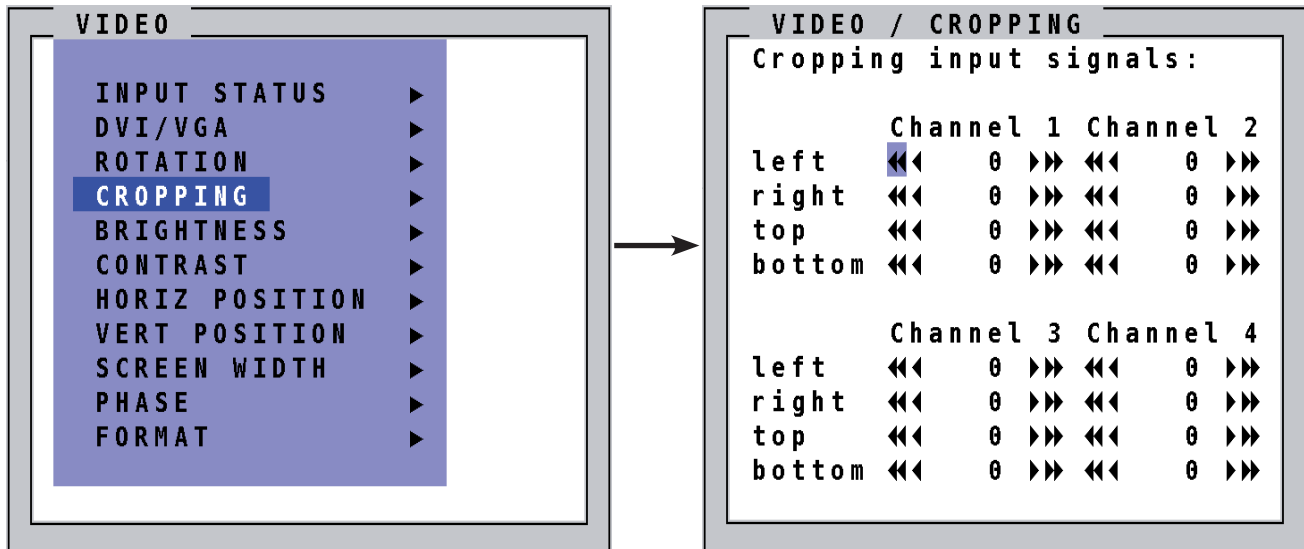


ON SCREEN DISPLAY

OSD - VIDEO - CROPPING

CROPPING

Use arrow keys to navigate in the VIDEO menu to the entry CROPPING and press ENTER/SELECT to open the CROPPING window.



In the window VIDEO/CROPPING, enter a value from 0-999 for the left, right, top and bottom side of the channel to be cropped.

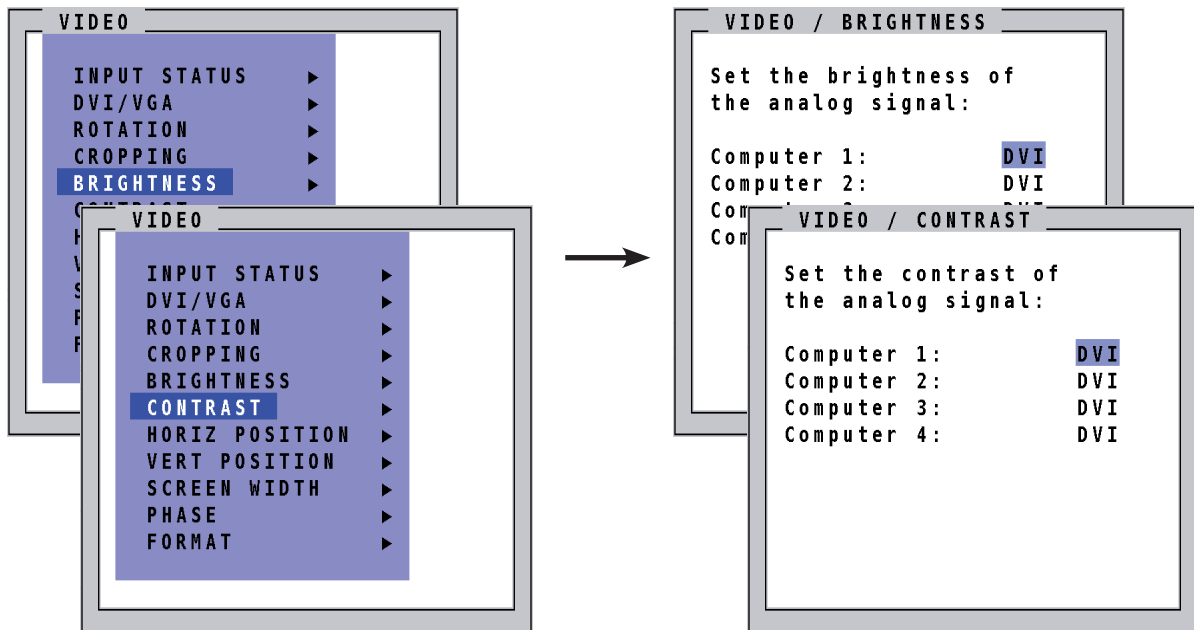
Use the arrows to increase or decrease the value either in single digits or in increments of 30. Alternatively, the right and left arrows of the keyboard may be used to adjust these values.

Note:
The smallest possible size of each area is 10% of the input signal.

OSD - VIDEO - BRIGHTNESS / CONTRAST

BRIGHTNESS – CONTRAST (with analog input only)

Use arrow keys to navigate in the VIDEO menu to the entry BRIGHTNESS or CONTRAST and press ENTER/SELECT to open the BRIGHTNESS or CONTRAST window.



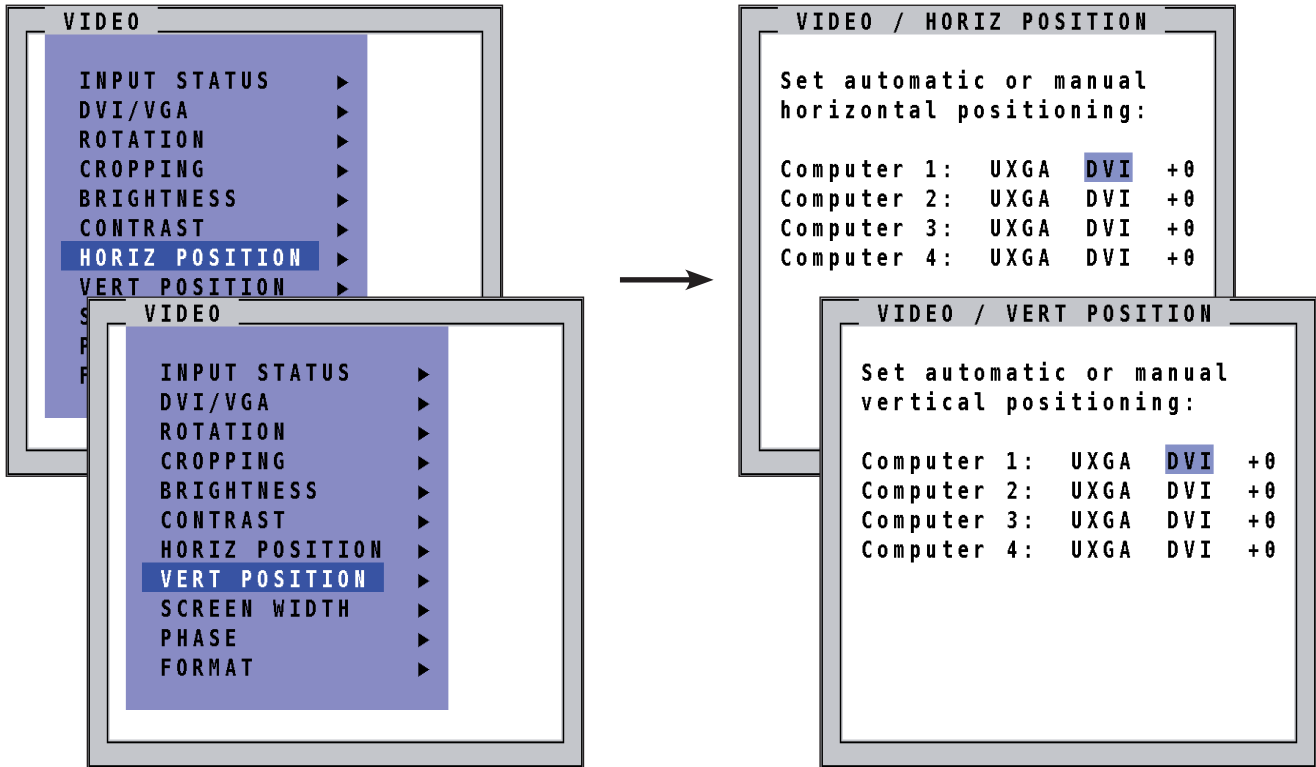
Use this feature to adjust the brightness or contrast of analog video input signals.

ON SCREEN DISPLAY

OSD - VIDEO - HORIZONTAL & VERTICAL POSITION

HORIZ / VERT POSITION (horizontal / vertical position of computer screen) (with analog input only)

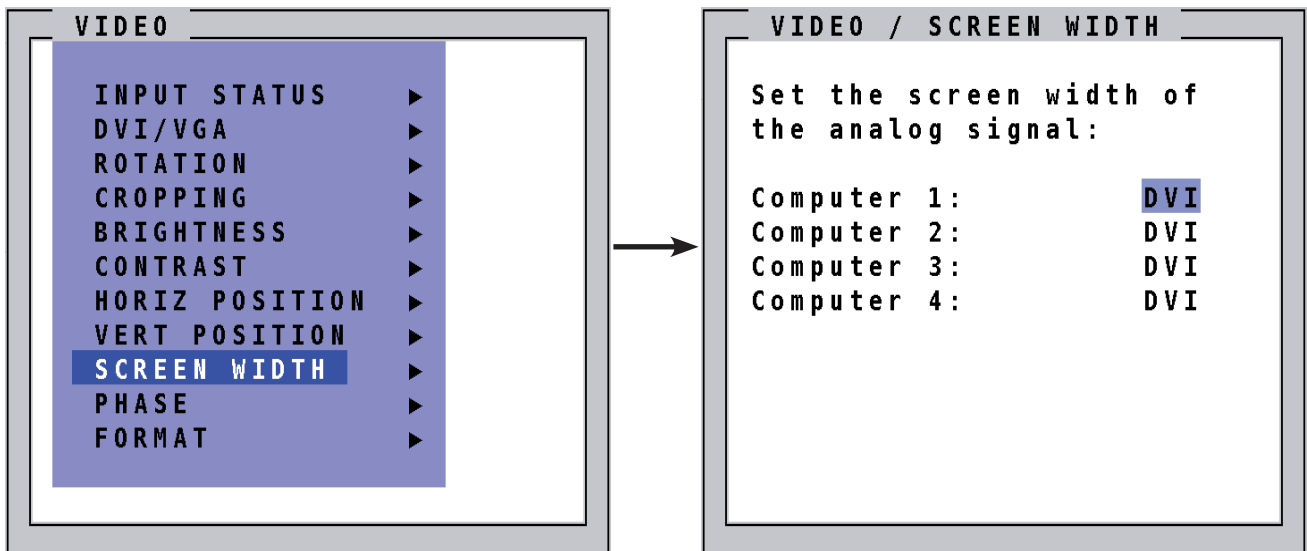
Use arrow keys to navigate in the VIDEO menu to the entry HORIZ POSITION or VERT POSITION and press ENTER/SELECT to open the HORIZ POSITION or VERT POSITION window.



In case of incorrect horizontal position of a computer screen, use this feature to adjust the computer screen manually. Use the arrow keys to navigate to the AUTO/MAN field and set MAN for manual. Use the "+" or "-" keys in the value field to adjust the vertical position between -20 and +20, and the horizontal position between -63 and +63.

OSD - VIDEO - SCREEN WIDTH / PHASE**SCREEN WIDTH (with analog input only)**

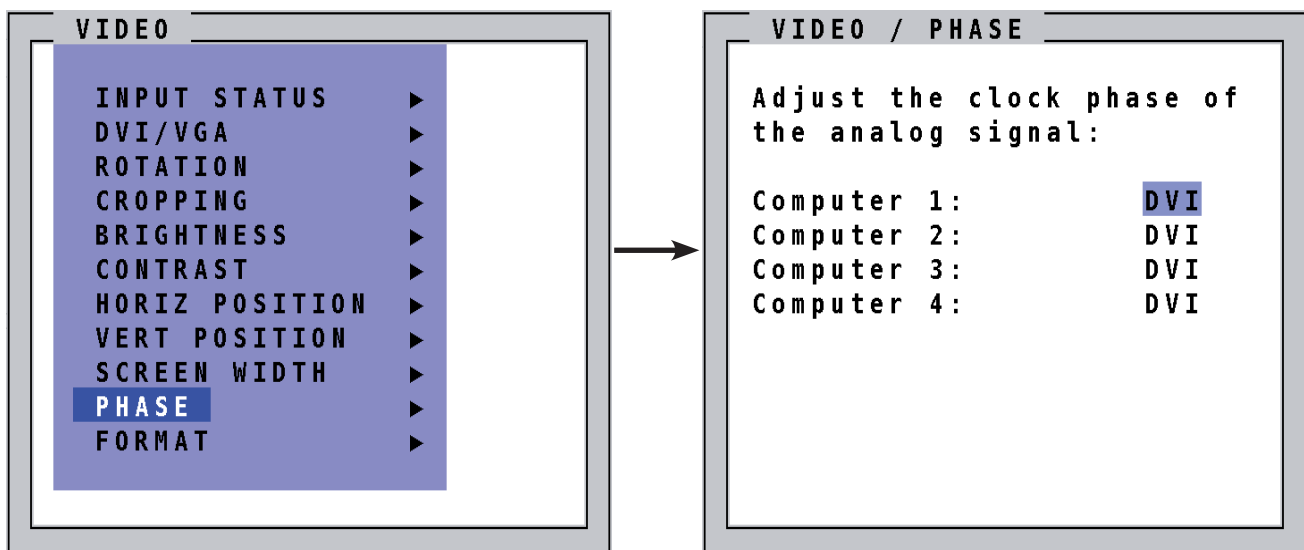
Use arrow keys to navigate in the VIDEO menu to the entry SCREEN WIDTH and press ENTER/SELECT to open the SCREEN WIDTH window.



Normally, screen width (number of horizontal pixels) is defined by the VESA standard. If the screen appears blurred, change this setting to improve screen quality.

PHASE (with analog input only)

Use arrow keys to navigate in VIDEO menu to the PHASE line and press ENTER/SELECT to open the PHASE window.



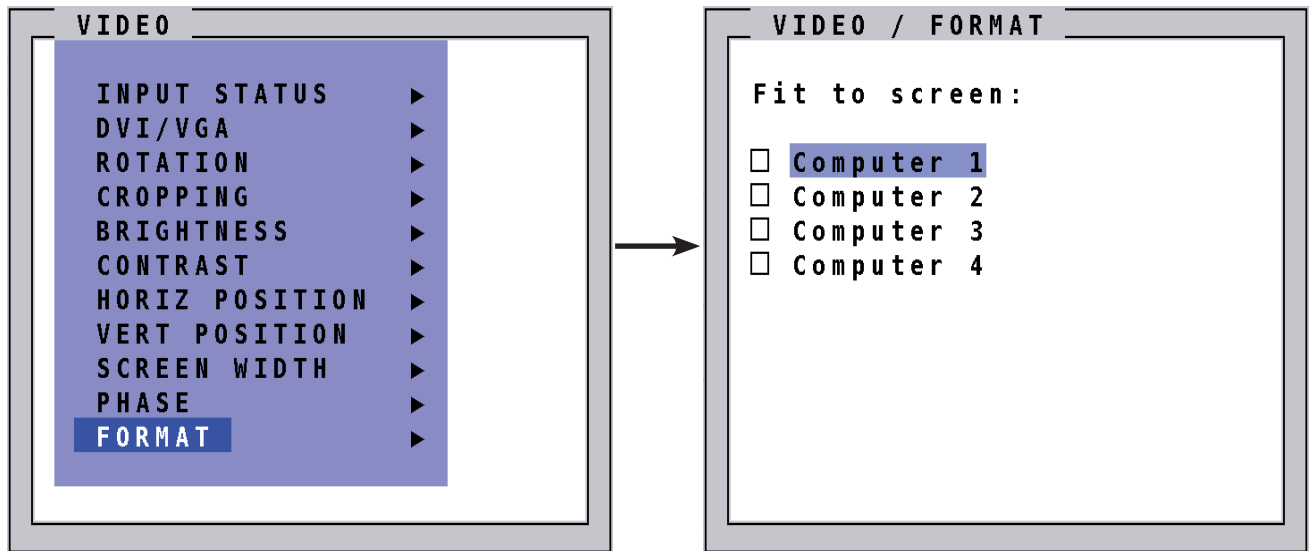
Incorrect phase (sampling time of pixel color value) may result in blurring, bad contrast, or poor legibility. Use this setting to adjust phase.

ON SCREEN DISPLAY

OSD - VIDEO - FORMAT

FORMAT

Use arrow keys to navigate in the VIDEO menu to the entry FORMAT and press ENTER/SELECT to open the FORMAT window.



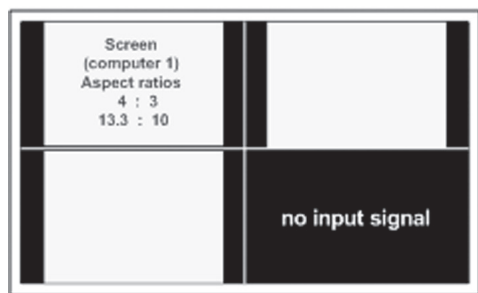
When using a wide-screen monitor (aspect ratio 16:10) in Quad mode, a video input with a different aspect ratio is normally displayed with black borders to the left and right. If „fit to screen” is enabled, the image is resized to fill the entire quadrant in Quad mode.

By default, „fit to screen” is disabled to display each source in its native aspect ratio in display modes (Quad, PiP, Full) of Multiviewer KVM-Switch.

Wide screen monitor – aspect ratio 16:10

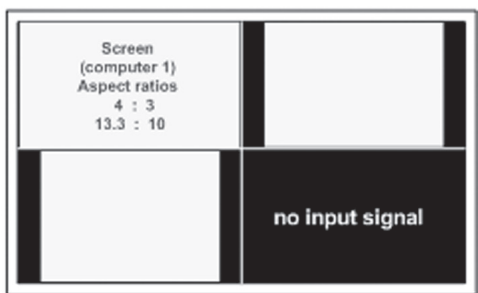


Fullscreen mode



Quad mode

Fit to screen
computer 1: Yes
Screen is horizontally
stretched



Quad mode

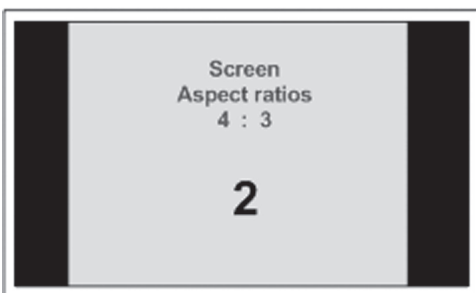
OSD - VIDEO - FORMAT

FORMAT (continued)

PiP mode for wide-screen monitors

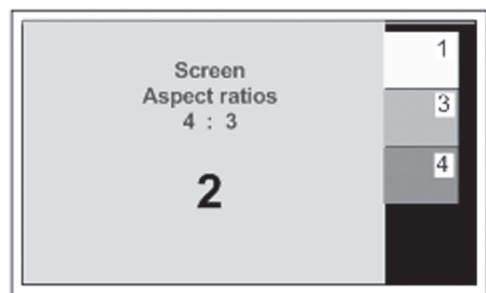
If you use a wide-screen monitor (for example with an aspect ratio of 16:10) and the active channel does not have a wide-screen aspect ratio (e.g. 4:3), PiPs are placed aside the full image of the active channel in the black bar on the right side. The full image of the active channel is displayed left-aligned on the screen resulting in a black bar on the right side. Provided appropriate PiP size (20%) is set, PiP images are thus placed entirely outside the full screen channel. No screen content is overlapped. All content of all sources is visible.

Wide screen monitor – aspect ratio 16:10



Fullscreen mode

Fullscreen ist positioned on the left-hand side in PiP mode



PiP mode



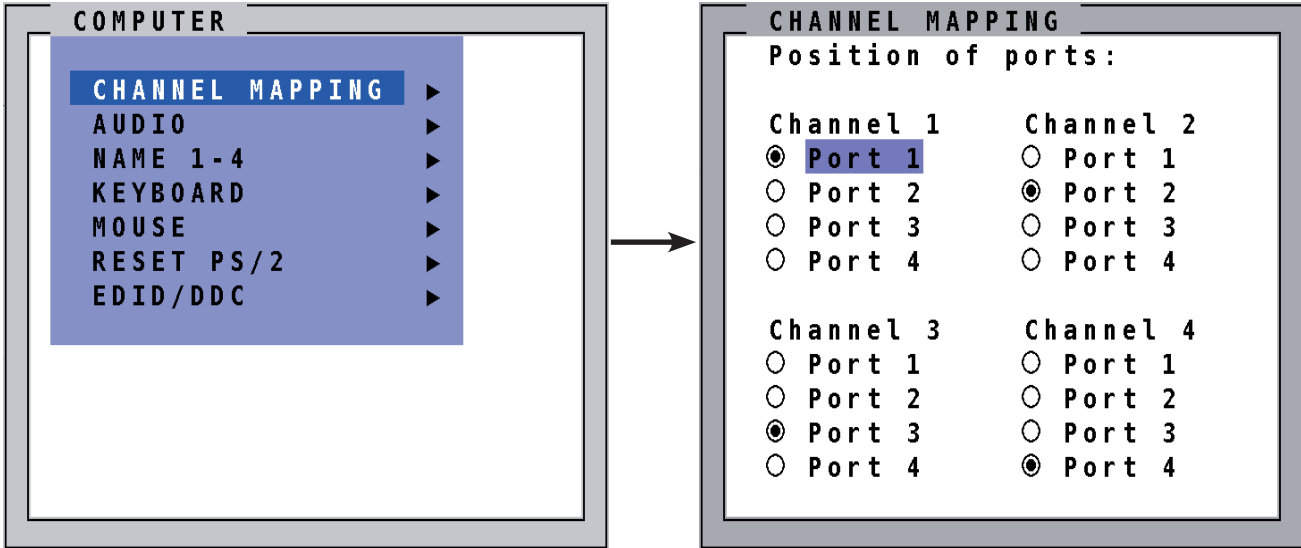
Quad mode

ON SCREEN DISPLAY

OSD - COMPUTER - CHANNEL MAPPING

CHANNEL MAPPING

Use arrow keys to navigate in the COMPUTER menu to the entry CHANNEL MAPPING and press ENTER/SELECT to open the CHANNEL MAPPING window.



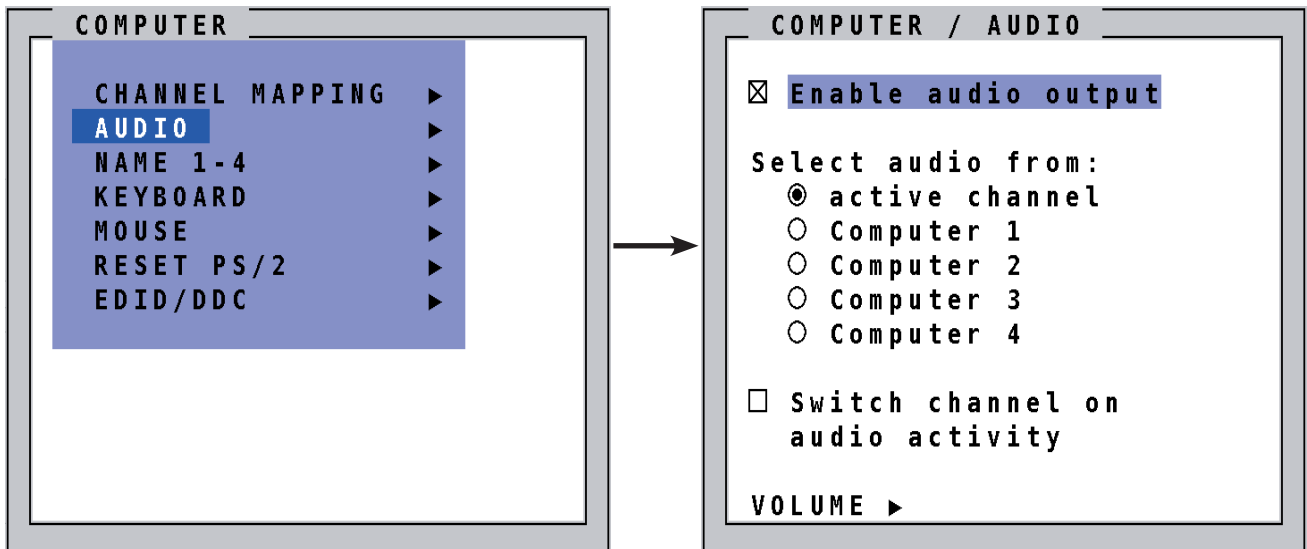
In the CHANNEL MAPPING menu, assignment between physical input ports and logical channels can be changed. This can be useful, for instance, if computer needs to be shown on another position on the quad screen without having to swap the connectors at the inputs.

Use arrow and "+/-" keys to navigate to the physical port that you would like to connect to the channel mentioned on the upper line. Press enter / select to change the connection.

OSD - COMPUTER - AUDIO

AUDIO

Use arrow keys to navigate in the COMPUTER menu to the entry AUDIO and press ENTER/SELECT to open the AUDIO window.



“Enable audio output”: To enable or disable the audio output, activate or deactivate the check box “Enable audio output”.

Selecting audio source: Select the audio source from the list. To ensure that the audio source is the computer being currently operated, select “active channel” from the list. For a fixed audio source select one of the computers from the list.

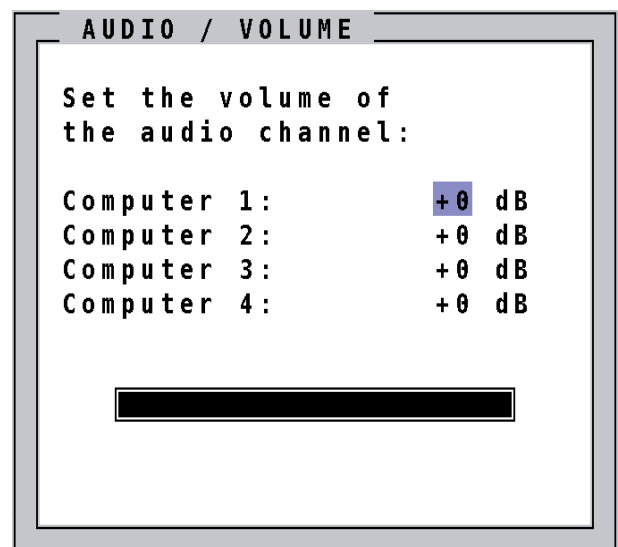
Switch channel on audio activity: With this setting enabled, Multiviewer KVM-Switch automatically switches to a channel on which an audio signal is detected.

Volume

To adapt the volume of the audio sources navigate to VOLUME and press enter/select.

Use this window to adjust the volume for the audio sources in 2 db steps.

Change the volume of each channel with + and -



Note:

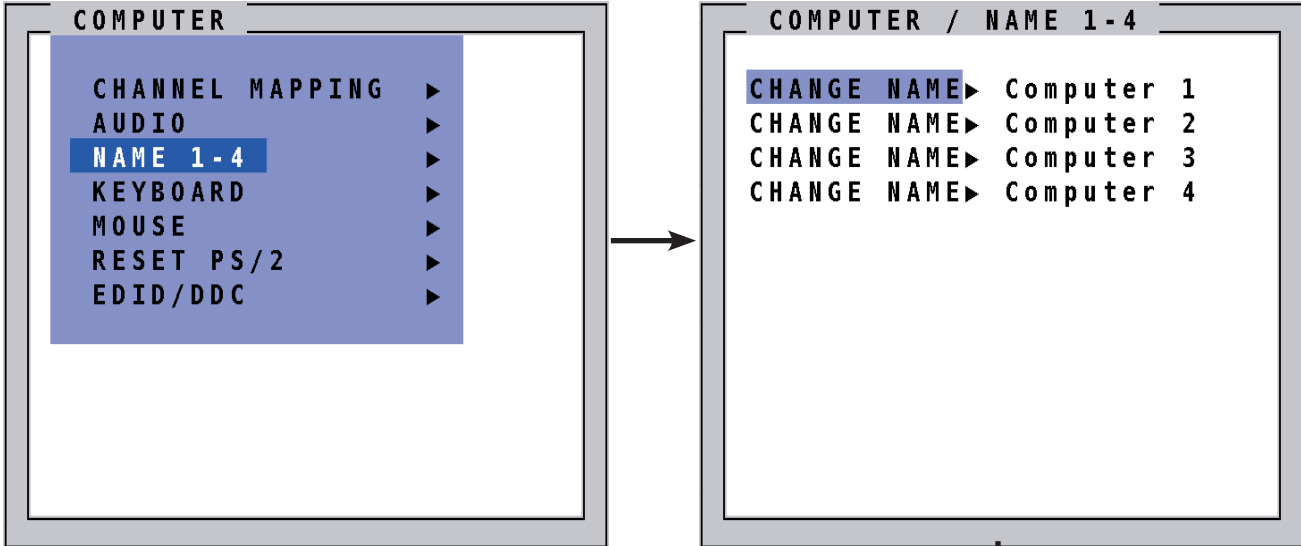
This window can also be opened with the hotkeys HK + -/+.

ON SCREEN DISPLAY

OSD - COMPUTER - NAME 1-4

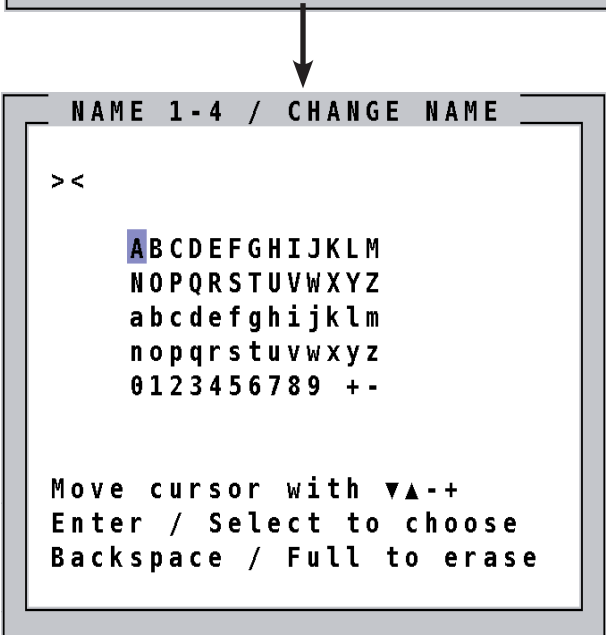
NAME 1-4

Use arrow keys to navigate in the COMPUTER menu to the entry NAME 1-4 and press ENTER/SELECT to open the NAME 1-4 window.



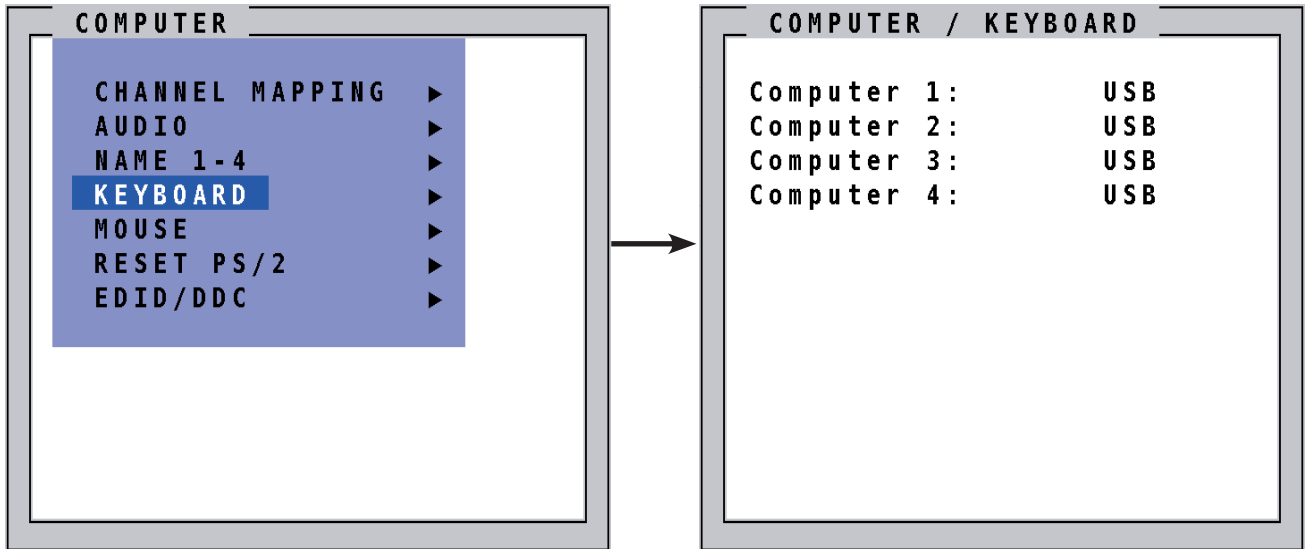
Use the section NAME to assign a name to each of the four windows displayed when HOTMOUSE is in use.

Move the cursor in the edit window using arrows on your keyboard. Press ENTER/SELECT to choose a letter. Press BACKSPACE/FULL to erase.



OSD - COMPUTER - KEYBOARD**KEYBOARD**

Use arrow keys to navigate in the COMPUTER menu to the entry KEYBOARD and press ENTER/SELECT to open the KEYBOARD window.



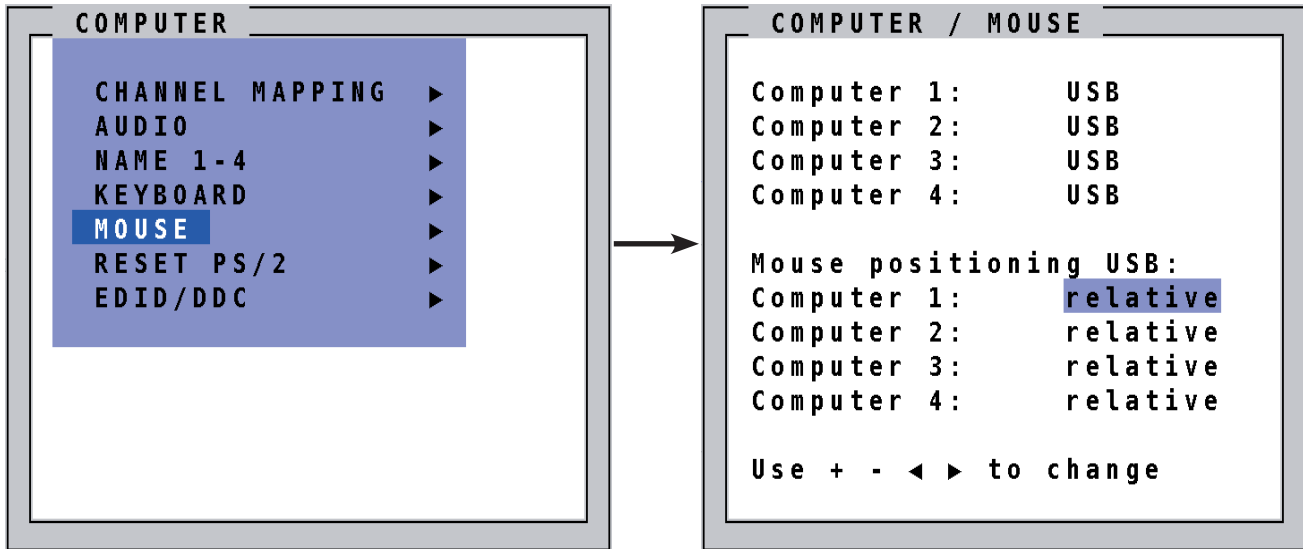
Use this display feature to identify which keyboard type (USB, PC1, PC2 or PC3) has been recognized at which computer port.

ON SCREEN DISPLAY

OSD - COMPUTER - MOUSE

MOUSE

Use arrow keys to navigate in COMPUTER menu to the MOUSE line and press ENTER/SELECT to open the MOUSE window.



The upper half of the MOUSE window shows which mouse type (USB, PS/2 or PS/2 wheel) has been recognized at which computer port.

USB – mouse positioning

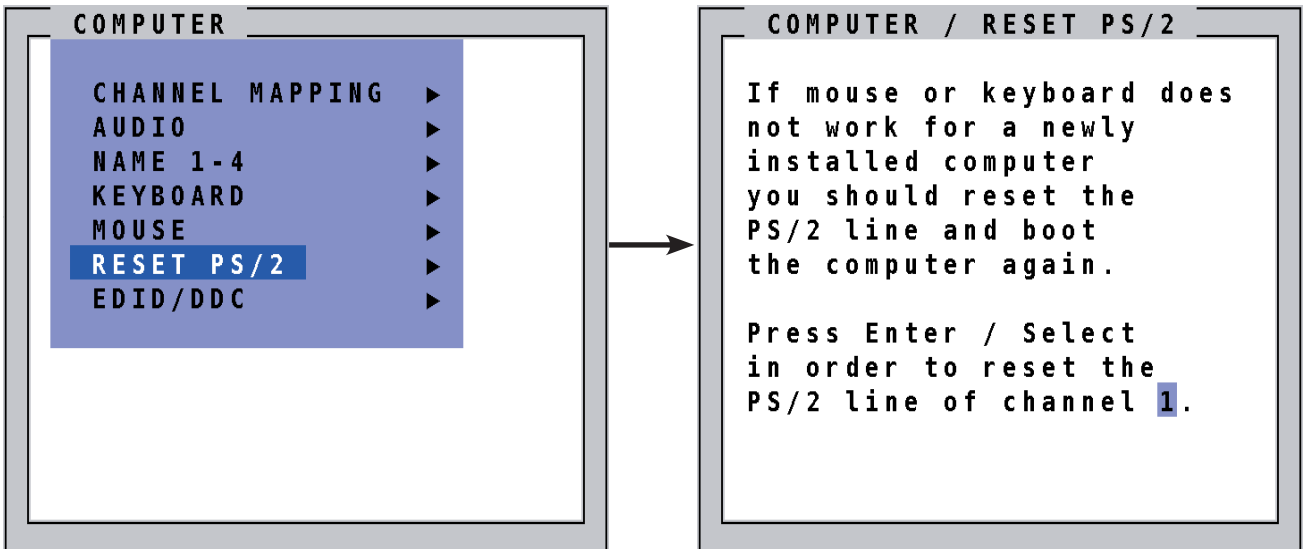
For USB ports, you may specify absolute or relative mouse positioning.

Choose absolute mouse positioning if a device is connected to the console that supports absolute coordinates, such as graphic trays, screen pads or KVM extenders.

OSD - COMPUTER - RESET PS/2 / EDID/DDC

RESET PS/2

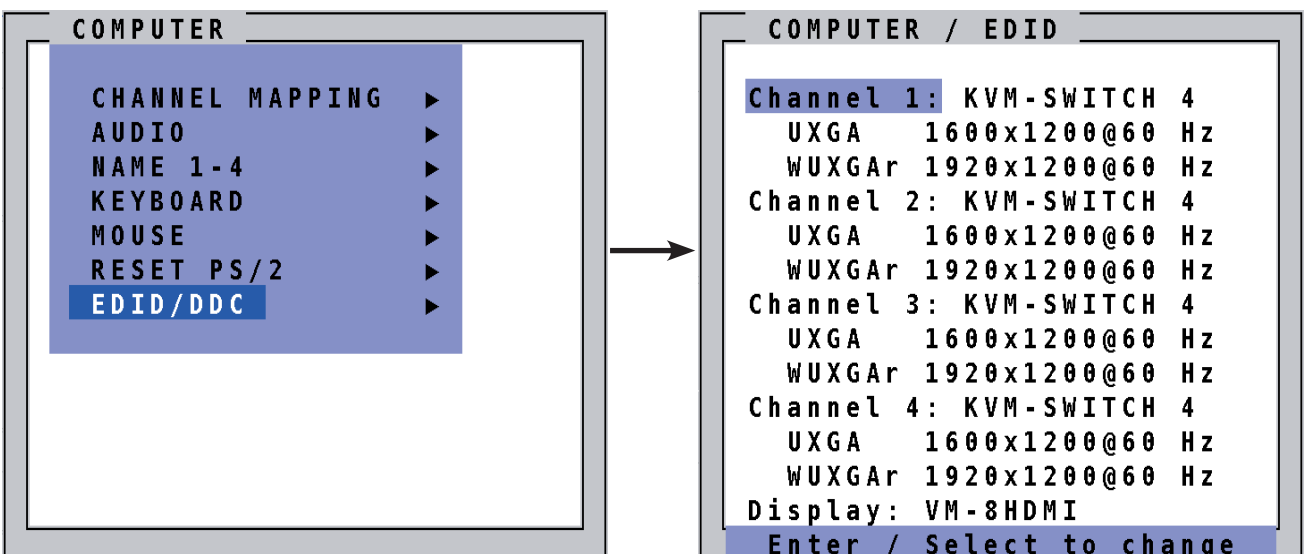
Use arrow keys to navigate in the COMPUTER menu to the entry RESET PS/2 and press ENTER/SELECT to open the RESET PS/2 window.



Use arrow keys ◀▶ or “+” and “-” keys to select the channel (1 to 4) you wish to reset and confirm by pressing ENTER/SELECT.

EDID/DDC

This window presents an overview of the status of the input EDIDs and the display EDID and allows editing of these.



ON SCREEN DISPLAY

OSD - COMPUTER - EDID/DDC (continued)

EDID/DDC (continued)

Use arrow keys to select the channel EDID information.

Press ENTER/SELECT to open the window with detailed settings for this EDID.

```
COMPUTER / EDID
Channel 1: KVM-SWITCH 4
  UXGA 1600x1200@60 Hz
  WUXGAr 1920x1200@60 Hz
Channel 2: KVM-SWITCH 4
  UXGA 1600x1200@60 Hz
  WUXGAr 1920x1200@60 Hz
Channel 3: KVM-SWITCH 4
  UXGA 1600x1200@60 Hz
  WUXGAr 1920x1200@60 Hz
Channel 4: KVM-SWITCH 4
  UXGA 1600x1200@60 Hz
  WUXGAr 1920x1200@60 Hz
Display: VM-8HDMI
Enter / Select to change
```

```
EDID / EDID/DDC
Channel 1:
Choose two video modes:
  UXGA 1600x1200@60 Hz
  WUXGAr 1920x1200@60 Hz
Signal:   digital
          analog
WRITE
WRITE TO ALL INPUTS
SAME AS DISPLAY EDID
```

Select a video mode for the channel using the arrow keys. Press ENTER/SELECT to confirm selection.

```
EDID/DDC / MODE
mode  horiz  vert  Hz
XGA   1024 x  768  60
SXGA+ 1400 x 1050 50
SXGA+ 1400 x 1050 60
UXGA  1600 x 1200 50
→ UXGA 1600 x 1200 60
UXGAr 1600 x 1200 50
UXGAr 1600 x 1200 60
WXGA  1280 x  768  60
WXGA  1360 x  768  60
Press Enter/Select or ▲ ▼
```

OSD - COMPUTER - EDID/DDC (continued)**EDID/DDC (continued)**



Two freely selectable video modes can be programmed in the input EDID visible to the connected computer at the input port.



It is recommended to program the preferred video modes for the connected signal source.



Multiviewer KVM-Switch also uses these entries to distinguish between confusable analog input video signals. The following groups of analog input signals are difficult to distinguish automatically:



WUXGA 1920x1200 60 Hz
 UXGA 1600x1200 60Hz
 UXGA 1600x1200 60Hz with reduced blanking
 WUXGA 1920x1200 50 Hz
 UXGA 1600x1200 50Hz
 UXGA 1600x1200 50Hz with reduced blanking
 SXGA+ 1400x1050 60Hz
 WSXGA 1680x1050 60Hz
 XGA 1024x768 60Hz
 WXGA 1280x768 60Hz
 WXGA 1360x768 60Hz

If you experience problems with the automatic input detection of an analog input signal in these groups you can overwrite the automatic detection by programming the expected video signal into the input EDID.

Use arrow keys   to navigate to the first video mode entry and press ENTER/SELECT to open the window with a list of selectable video modes.

In this window use arrow keys   to select the desired line in the list shown on the right and press ENTER/SELECT for the video format.

Use arrow keys   to navigate to the second video mode entry and press ENTER/SELECT to open the window with a list of selectable video modes.

Use arrow keys   to navigate to "Signal" and press ENTER/SELECT to switch between analog or digital. This setting specifies whether the EDID should identify the Multiviewer KVM-Switch as an analog or digital device. Usually it is safe to leave this setting at "digital".

Use arrow keys   to navigate to the following write options:

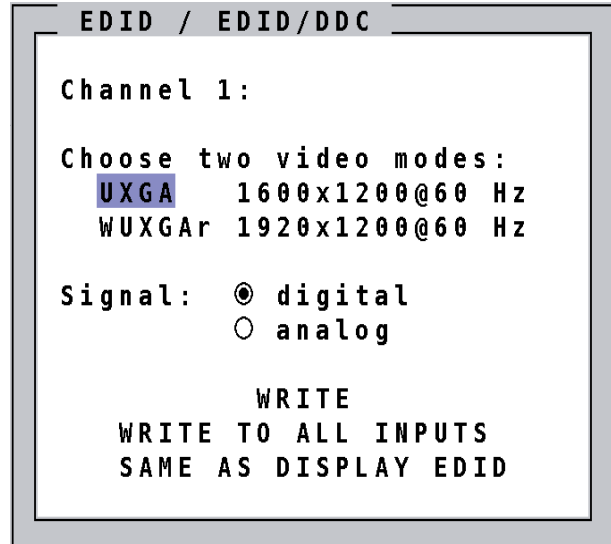
WRITE save the changes in the current input EDID.

WRITE TO ALL INPUTS save the changes to all four input EDIDs.

Alternatively, the EDID data of the connected display can be used. To do this, navigate to SAME AS DISPLAY EDID and press ENTER/SELECT

SAME AS DISPLAY EDID write the contents of the display EDID to the current input EDID.

Press ENTER/SELECT to start the selected write option and wait until "successful" is displayed in the bottom status line. At this point, the EDID data can be written to one or all of the four channels.

**Note:**

If the EDID data of the connected video source is used, the switch behaves as if the display is connected directly to the source.

ON SCREEN DISPLAY

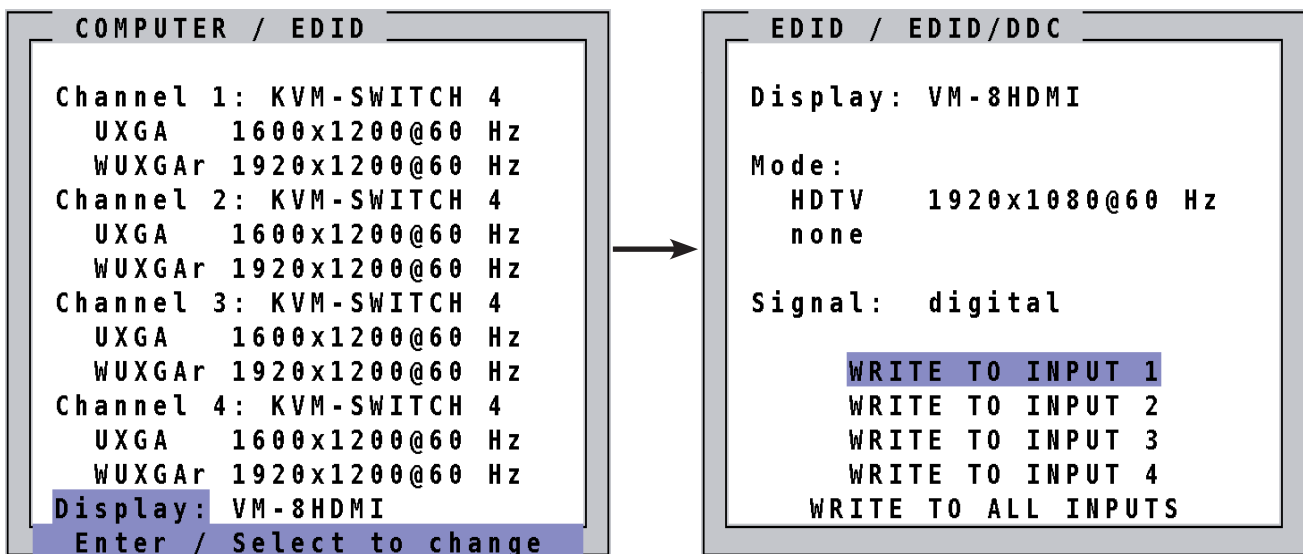
OSD - COMPUTER - EDID/DDC

EDID/DDC (continued)

Note:

Please keep in mind that this setting will overwrite the automatic analog input mode detection. If you connect a different video source, or change the video mode from the PC, you may need to change this setting again to get correct results. For the detection of digital input signals this setting has no effect.

Alternatively, the display EDID data can be copied to the inputs:



An overview of the contents of the display EDID is seen above.

It has the following write options:

WRITE TO INPUT 1	write the monitor EDID to input 1
WRITE TO INPUT 2	write the monitor EDID to input 2
WRITE TO INPUT 3	write the monitor EDID to input 3
WRITE TO INPUT 4	write the monitor EDID to input 4
WRITE TO ALL INPUTS	write the monitor EDID to all inputs

Note:

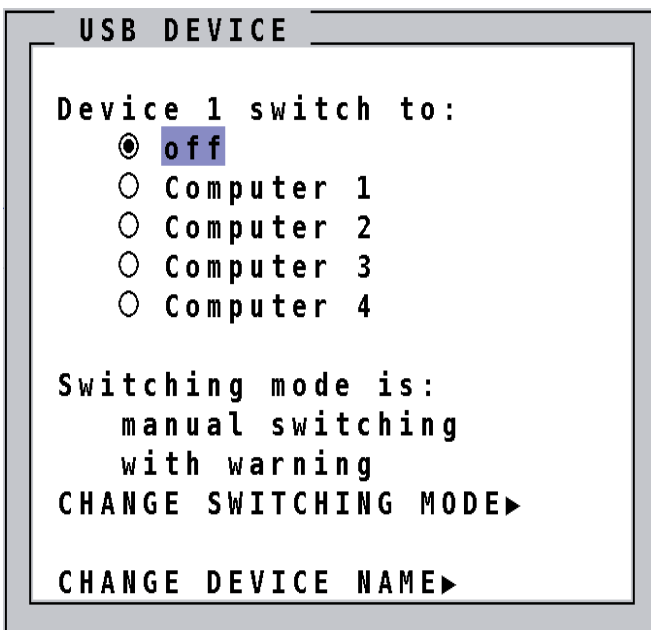
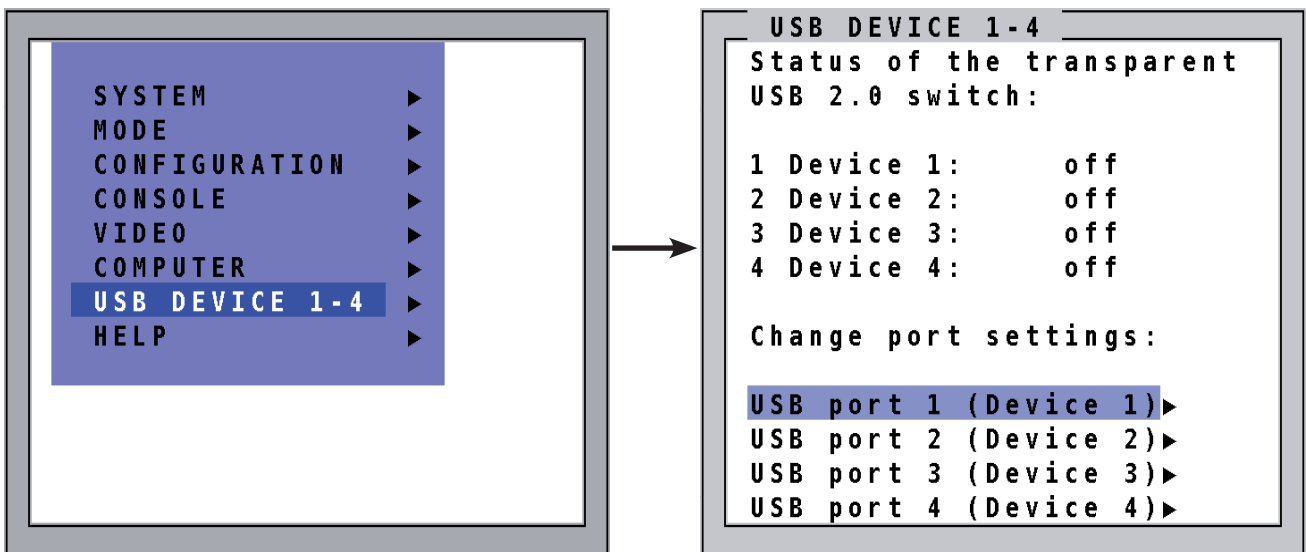
The content of the input EDIDS can be reset to default by the OSD function CONFIGURATION / FACTORY RESET.

OSD - USB DEVICE 1-4

USB Device 1-4

Multiviewer KVM-Switch supports and switches transparent USB 2.0 devices such as printer, camera, 3D mouse, finger printer, and external memory. (Example: Connect a memory stick to copy data from one computer to the stick, and from the stick to another computer connected to Multiviewer KVM-Switch: Data can be copied between computers without being networked.)

Use arrow keys to navigate in the OSD menu to the entry USB DEVICE 1-4 and press ENTER/SELECT to open the window.



Status display of the transparent USB 2.0 switch. Connections from USB port to computer are shown.

OFF: Port is not switched to a computer. A USB device may be connected, but it is not switched to a computer.

Computer (1-4): Port is switched to one of the computers.

To change port and switch settings use arrow keys to select one of the four USB ports and open its submenu by pressing ENTER/SELECT.

Device 1 switch to: Off by default. To manually switch this USB port to one of the four computers, use arrow keys to select one of the four computers and press ENTER/SELECT.

OSD - USB DEVICE 1-4 - SWITCHING MODE

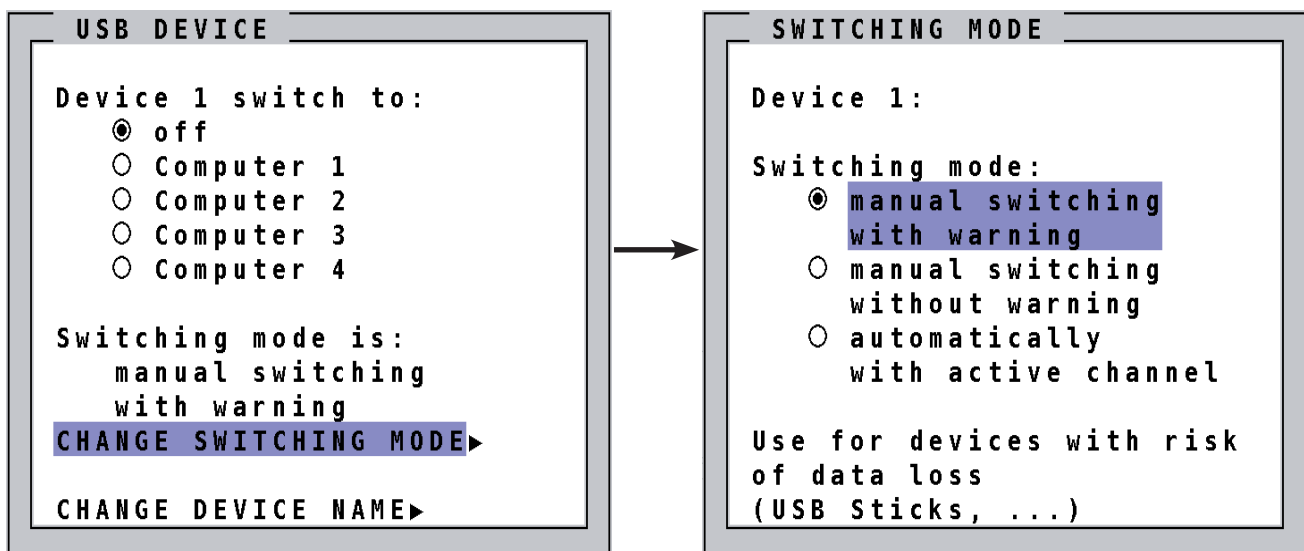
USB Device 1-4 (continued)

The following options can be selected for the USB port: Manual switching, change switching mode, change USB device name.

Switching mode:

By default, switching mode is „manual switching with warning”.

To change the switching mode use the arrow keys to navigate to „CHANGE SWITCHING MODE” and press ENTER/SELECT.



Use arrow keys to chose one of the following modes to change the switching mode:

- 1. Manual switching with warning:** This mode allows switching the USB port manually by selecting one of the computers connected. But before the switch is executed the following warning message is displayed: „In order to prevent data loss, stop the USB device before switching!” To switch, press ENTER/SELECT. This switching mode is recommended for USB devices with risk of data loss (e.g. USB stick, printer, external memory)
- 2. Manual switching without warning:** This mode allows switching the USB port manually by selecting one of the computers connected. The switching is executed immediately. This switching mode is recommended for USB devices without risk of data loss.
- 3. Automatically with active channel:** In this mode, the USB device/port is always switched automatically with the active channel. When switching channel/computer this USB device/port will automatically be switched to the activated channel/computer.

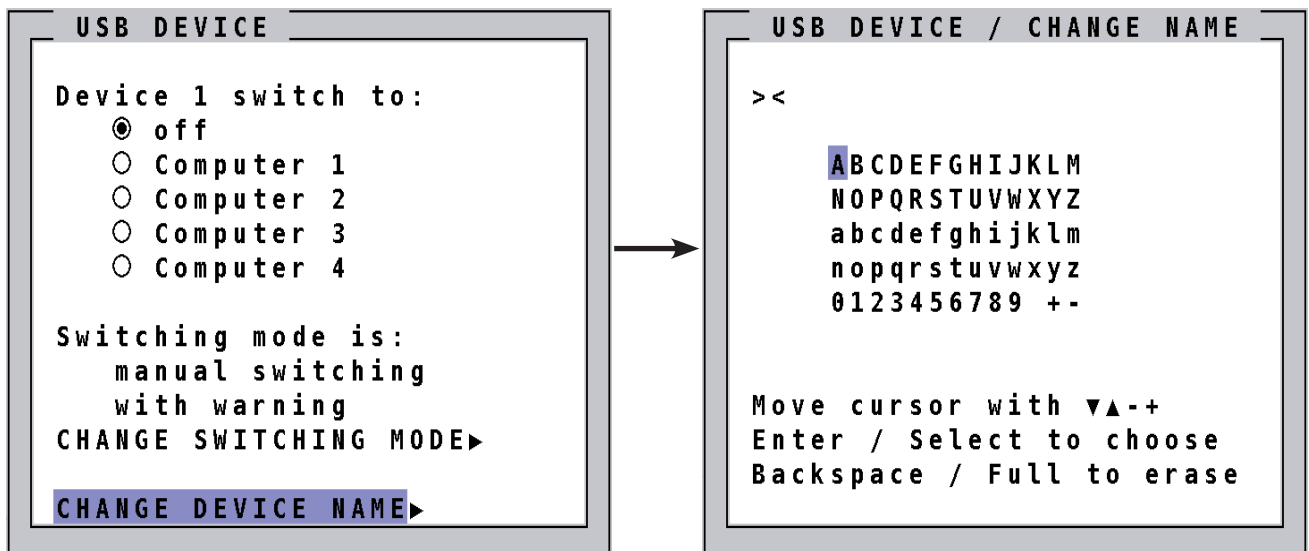
Note:

After power on, all USB devices are disconnected from computers except devices with switching mode “automatically with active channel”.

OSD - USB DEVICE 1-4 - CHANGE NAME**USB Device 1-4 (continued)****Change device name:**

In the „USB DEVICE. / USB DEVICE” menu chose „Change device name” and press ENTER/SELECT to change the name of the connected USB device.

Use the keyboard to rename the USB device or use the front panel buttons (as described in the OSD). Exit the menu. The new name will automatically be saved and displayed in the other menus.

**Note:**

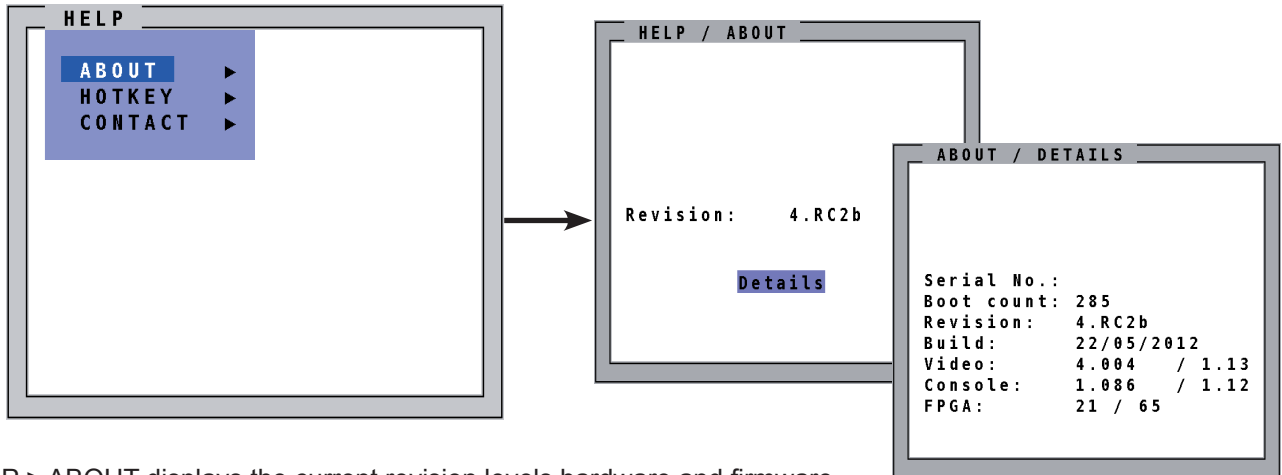
Use hotkey + „u” (by default: hotkey = Ctrl + Alt) to quickly access the USB DEVICE 1-4 menu. This allows quick access to this menu when switching manually.

To directly open the switching menu of e.g. USB device/port 1 use hotkey + „F1” (by default: hotkey = Ctrl + Alt).

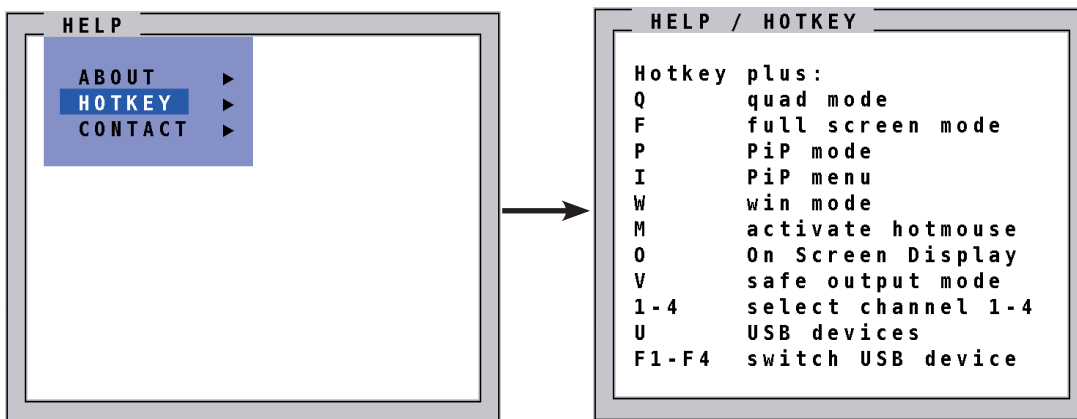
ON SCREEN DISPLAY

OSD - HELP - HOTKEY / ABOUT / CONTACT

Use arrow keys to navigate in the HELP menu to the desired line and press ENTER/SELECT to open the corresponding window.



HELP > ABOUT displays the current revision levels hardware and firmware.



HELP > HOTKEY provides a guide to hotkey shortcuts.

HOTMOUSE - ACTIVATING HOTMOUSE CURSOR

Hotmouse

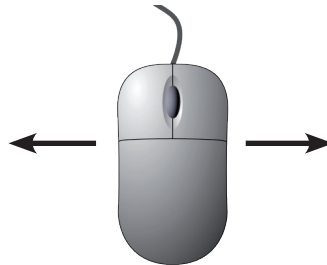
Hotmouse is an exclusive function offered by Multiviewer KVM-Switch. It works with your standard mouse or trackball and touch screens. Similar to using hotkeys on your keyboard, Hotmouse is a quick and comfortable way to operate

Multiviewer KVM-Switch simply with your standard mouse, trackball, or touch screen. No software or additional hardware is required.

When activated, your mouse cursor becomes hotmouse cursor - a numbered arrow - that allows performing all hotmouse functions.

Activating the hotmouse cursor

To activate **hotmouse cursor** move your mouse on the console four times in a rapid horizontal shaking motion or with hotkey + M.



The hotmouse cursor can also be activated via touch screen: tap the screen twice, and leave your finger pressed on the touch screen after the second tap (tap – hold, like a double click without lifting the finger on the second click), until the hotmouse menu opens. Now click outside the hotmouse menu to open the hotmouse cursor.

Close the hotmouse by double clicking or with hotkey + M.

The hotmouse cursor changes its look depending on its position on the screen (arrows in vertical or horizontal direction, and number of channel).



Housemouse
cursor



Vertical positioning of
PiP images / Resize in
Win mode



Resize
window or PiP



Move
window

Use the hotmouse cursor to perform the following functions:

- in Fullscreen mode:** - Switch to another fullscreen channel
- in Quad mode:** - Select another active channel (keyboard, mouse)
- in PiP mode:**
 - Modify position and size of PiP images
 - Change active channel
- in Win mode:**
 - Select mode for resize, channel select, and select options (hotmouse menu)
 - Modify position and size of Windows
 - Change active channel

HOTMOUSE

HOTMOUSE CURSOR IN FULLSCREEN MODE / QUAD MODE

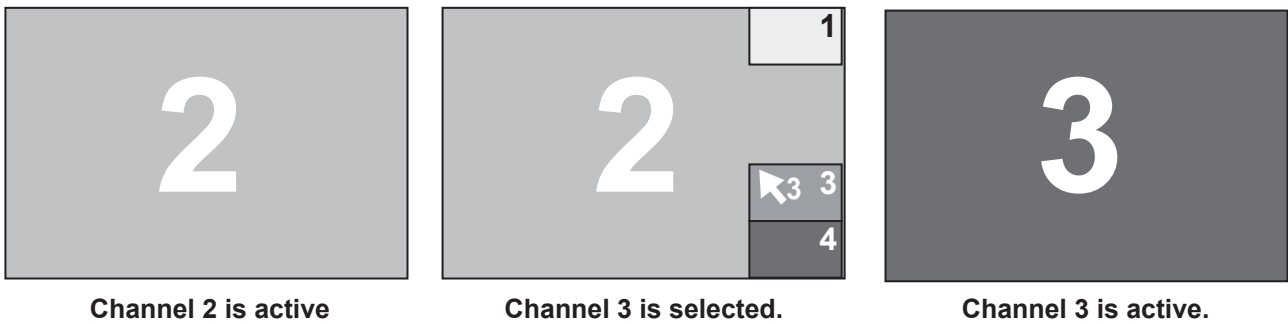
Hotmouse Cursor in fullscreen mode

When you activate the hotmouse cursor in Fullscreen mode, PiP images of the other channels are temporarily displayed to allow you to switch to another channel.

Switching to another fullscreen channel

Activate hotmouse cursor. Move the hotmouse cursor over the PiP image of the channel that you wish to activate and click the **left** mouse button.

Example: Switch from channel 2 to channel 3



Hotmouse cursor in Quad mode

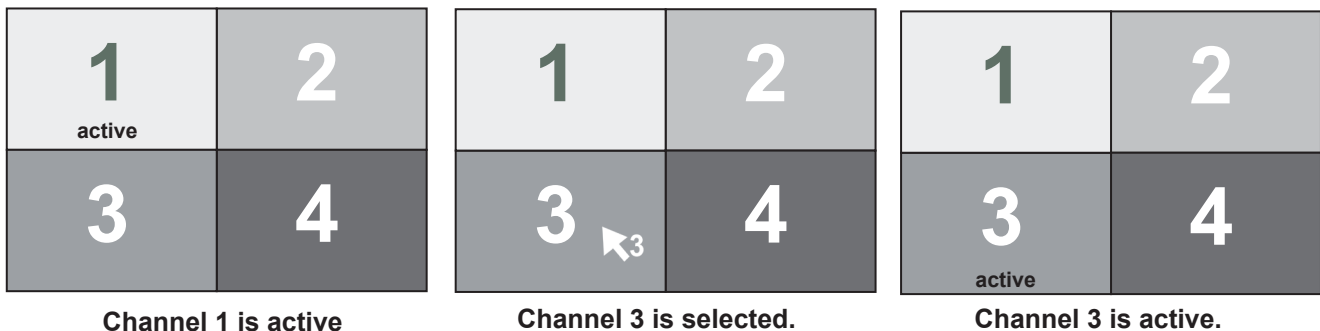
Switching active channel (mouse, keyboard)

Activate Hotmouse Cursor. To change the active channel (switching mouse and keyboard), position the Hotmouse Cursor in the respective channel field (1 to 4) and press the left mouse button.

Note:

When you move into another channel field, the channel number in the Hotmouse Cursor changes.

Example: Switch active channel from 1 to 3



HOTMOUSE CURSOR IN PIP MODE

Hotmouse Cursor IN PIP MODE

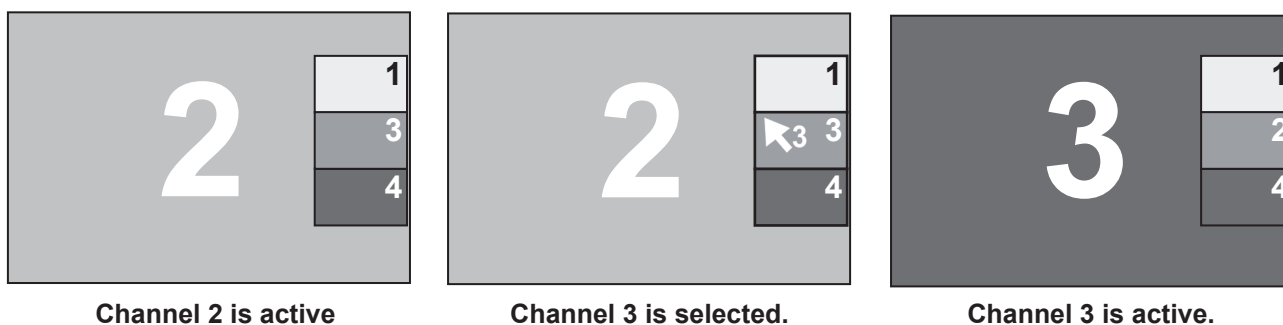
Change active channel

Enable Hotmouse Cursor. Move the Hotmouse Cursor to the PiP-image of the channel you wish to activate and press the left mouse button.

Note:

When the Hotmouse Cursor moves over a PiP-image, its appearance changes (arrows, channel number).

Example: Switch from channel 2 to channel 3



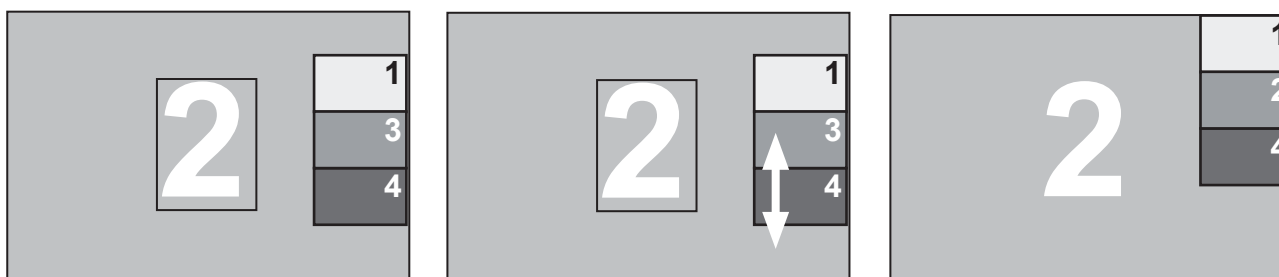
Vertical positioning of PiP images

Activate Hotmouse Cursor. Move the Hotmouse Cursor to the PiP-image area, hold down the left mouse button and drag the PiPs to the desired vertical position.

Note:

As soon as the Hotmouse Cursor moves over a PiP image, its appearance changes (arrows pointing in vertically).

Example: Move PiP images upward



HOTMOUSE CURSOR IN PIP MODE

Hotmouse Cursor in PIP MODE (continued)

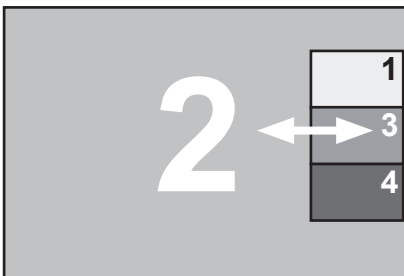
Modify size of PiP images

Activate Hotmouse Cursor and move to the left edge of the PiP image area until horizontal arrows appear in the Hotmouse Cursor. Hold down the left mouse button and drag the Hotmouse Cursor to the left to increase PiP image size, or to the right to reduce PiP image size.

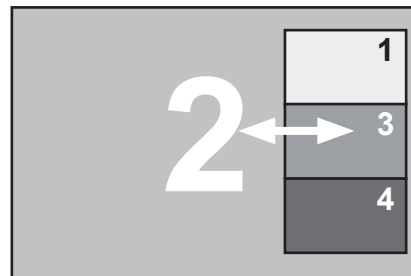
Note:

As soon as the Hotmouse Cursor moves to the left edge of the PiP image area, its appearance changes (horizontal arrows, channel number).

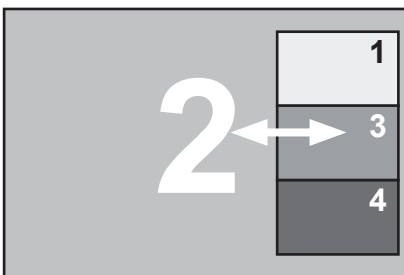
Scaling PiP images up



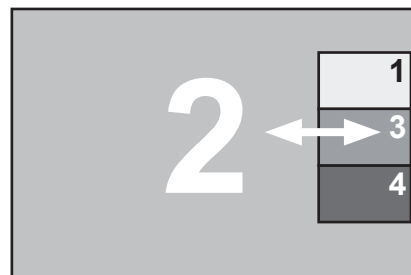
Hold left mouse button



Scaling PiP images down



Hold left mouse button



HOTMOUSE CURSOR IN WIN MODE

Hotmouse Cursor in Win MODE

Change active channel

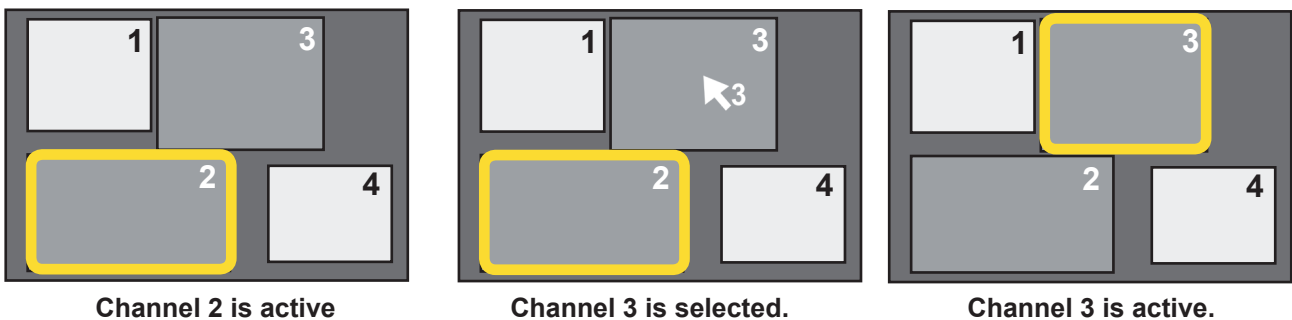
Enable Hotmouse Cursor. Move the Hotmouse Cursor to the window of the channel you wish to activate and press the left mouse button.

Note:

When the Hotmouse Cursor moves over a window, its appearance changes (arrows, channel number).

To close the Hotmouse Cursor, left double click or use hotkey + M in Win mode.

Example: Switch from channel 2 to channel 3



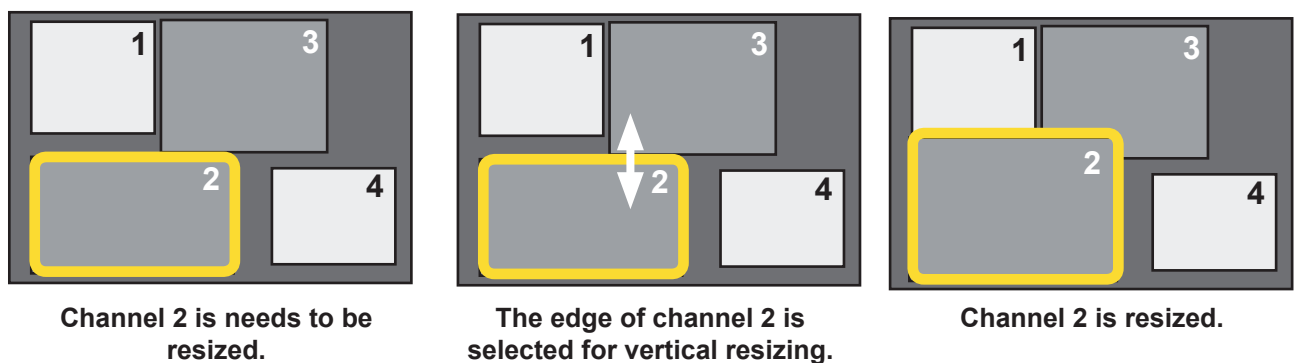
Resizing of windows

Activate Hotmouse Cursor. Move the Hotmouse Cursor to the window area, hold down the left mouse button and drag the window to the desired size.

Note:

As soon as the Hotmouse Cursor moves over a window, its appearance changes (arrows pointing vertically or horizontally).

Example: Resizing windows



HOTMOUSE CURSOR IN WIN MODE

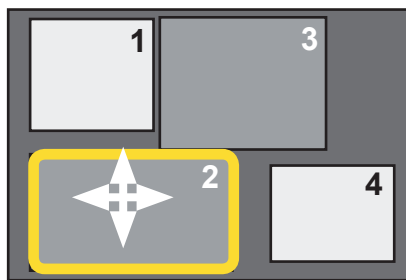
Hotmouse Cursor in Win MODE (continued)

Repositioning windows

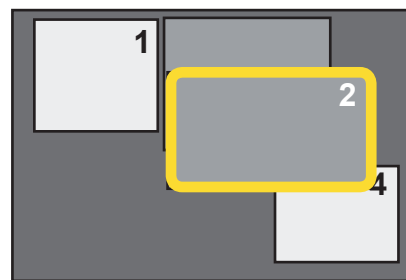
Enable Hotmouse Cursor. Move the Hotmouse Cursor to the window that you wish to move and press the left mouse button.

Note:
When the Hotmouse Cursor moves over a window, its appearance changes (arrows pointing up, down, left and right.).

Example: Repositioning the windows



Channel 2 is active and the hotmouse is activated



Channel 2 is moved to a new location on the screen..

Move the hotmouse cursor to the top right corner of the signal window, and the following buttons will appear:

- O** = Open OSD hotmouse context menu
- S** = Swap signal windows. After this is selected, the other window is clicked.
- R** = Toggle aspect ratio locking for current window

HOTMOUSE MENU - ACTIVATING / OPERATING

Hotmouse Menu - ACTIVATING

Activate Hotmouse Cursor and press the right mouse button to open the Hotmouse Menu. The Hotmouse Menu can also be opened via touch screen: tap the screen twice, and leave your finger pressed on the touch screen after the second tap (tap – hold, like a double click without lifting the finger on the second click), until the Hotmouse Menu opens.

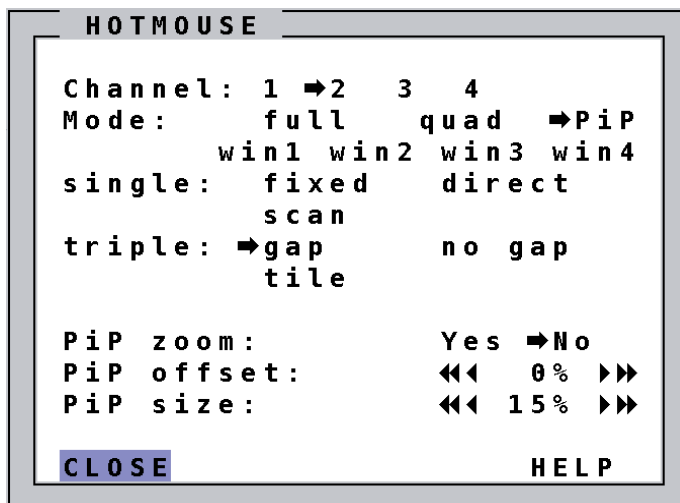
By clicking outside the Hotmouse Menu, you can open the Hotmouse Cursor to enlarge and reposition PiPs (only in PiP mode), switch channels and modify Win Mode.

After you are finished using the Hotmouse Cursor, the Hotmouse Menu will reopen. Menu appearance varies depending on display mode (Full / Quad / PiP / Win). This menu allows you to carry out switching operations and change display mode settings.

Hotmouse Menu - OPERATING

The Hotmouse Menu allows you to carry out switching operations and to enter PiP settings by mouse click (left mouse button).

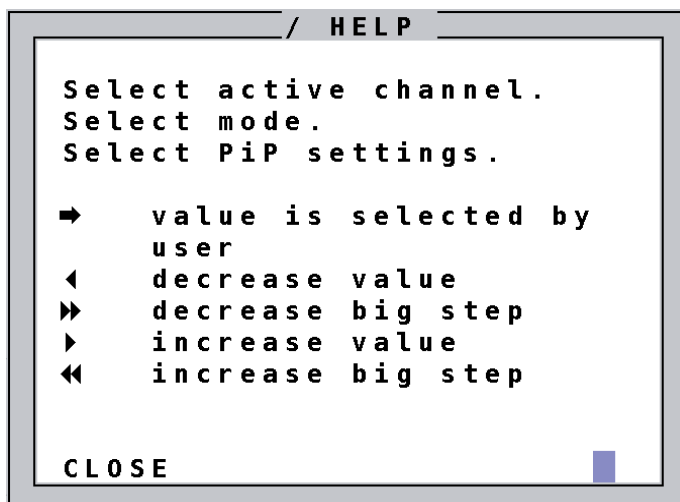
Click Help on the Hotmouse Menu for information on the individual symbols.



Hotmouse Menu in PiP-mode

Click with the left mouse button on the arrow symbols to either increase or decrease the values in question. Clicking on the outer arrow symbols sets the minimum or maximum value.

After having completed the settings, click on CLOSE to close the Hotmouse Menu window and exit the Hotmouse Function.



Click on HELP to open the HOTMOUSE HELP window.

HOTMOUSE

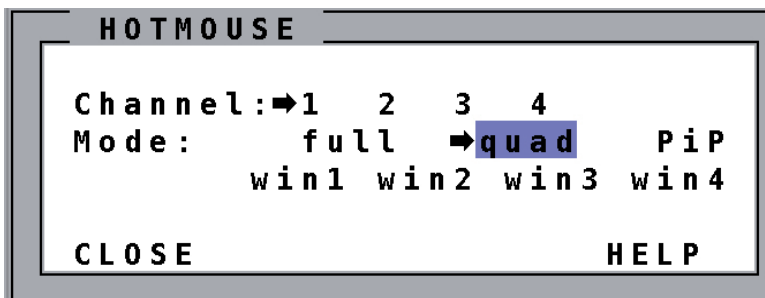
Hotmouse Menu - MODES

Hotmouse Menu - MODES

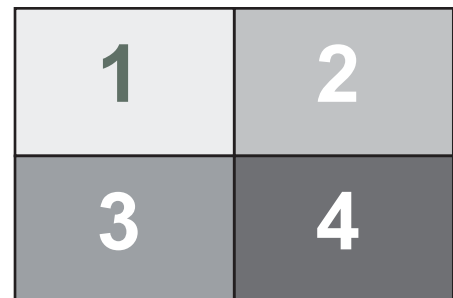
The individual modes can be set as follows:

Hotmouse Menu - QUAD MODE

Use the mouse to navigate to a channel in the Hotmouse Menu and click the left mouse button to activate it. You can also switch to a different mode with the left mouse button.



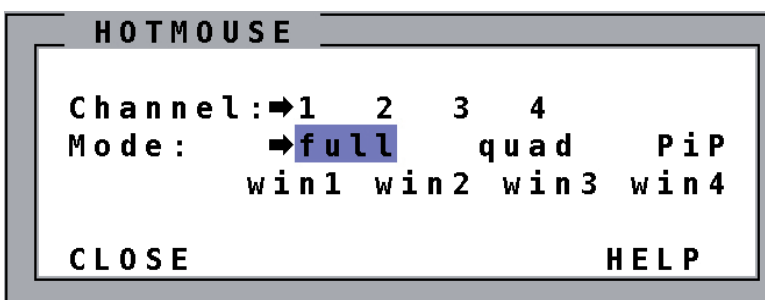
Hotmouse Menu in Quad mode



Quad mode

Hotmouse Menu - FULLSCREEN MODE

Use the mouse to navigate to a channel in the Hotmouse Menu and click the left mouse button to activate it. You can also switch to a different mode with the left mouse button.



Hotmouse Menu in Fullscreen mode



Fullscreen mode

Hotmouse Menu - MODES

Hotmouse Menu – MODES (continued)

Hotmouse Menu – PIP MODE

Use the mouse to navigate to a channel in the Hotmouse Menu and click the left mouse button to activate it. Change position and size of PiP images, and PiP zoom. Change PiP mode (triple / triple gap / single fixed / single direct / single scan) and scan time.

```

HOTMOUSE
Channel: 1 →2 3 4
Mode:    full  quad →PiP
        win1 win2 win3 win4

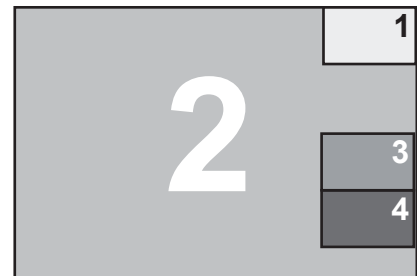
single:  fixed  direct
        scan

triple: →gap  no gap
        tile

PiP zoom:      Yes →No
PiP offset:    ◀◀ 0% ▶▶
PiP size:      ◀ 15% ▶
CLOSE          HELP

```

Triple gap: PiP images are displayed with a gap in place of the active channel.



```

HOTMOUSE
Channel: 1 →2 3 4
Mode:    full  quad →PiP
        win1 win2 win3 win4

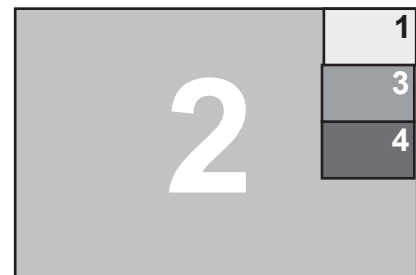
single:  fixed  direct
        scan

triple:  gap  →no gap
        tile

PiP zoom:      Yes →No
PiP offset:    ◀◀ 0% ▶▶
PiP size:      ◀ 15% ▶
CLOSE          HELP

```

Triple no gap: PiP images are displayed without a gap.



```

HOTMOUSE
Channel: 1 →2 3 4
Mode:    full  quad →PiP
        win1 win2 win3 win4

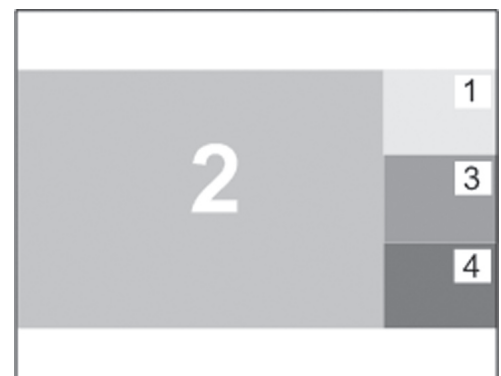
single:  fixed  direct
        scan

triple:  gap  no gap
        →tile

PiP zoom:      Yes →No
PiP offset:    ◀◀ 0% ▶▶
PiP size:      ◀ 15% ▶
CLOSE          HELP

```

Triple tile: The size of the main image and the PiP images is optimized so that the main image and the PiP images are shown as large as possible without overlapping.



Hotmouse Menu - MODES

Hotmouse Menu – PIP MODE (continued)

```

HOTMOUSE
Channel: 1 →2  3  4
Mode:    full  quad →PiP
         win1 win2 win3 win4

single: →fixed  direct

HOTMOUSE
Channel: 1 →2  3  4
Mode:    full  quad →PiP
         win1 win2 win3 win4

single:  fixed →direct
         scan
triple:  gap    no gap
         tile

PiP zoom:      Yes →No
PiP offset:    <<< 0% >>>
PiP size:      < 15% >
CLOSE          HELP
    
```

Single fixed: One selected PiP image is permanently displayed.

Single direct: Press the front panel buttons 1, 2, 3, or 4 to directly select the PiP channel you want.

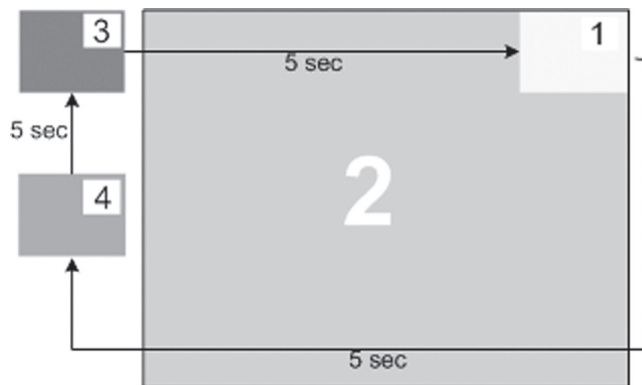


```

HOTMOUSE
Channel: 1 →2  3  4
Mode:    full  quad →PiP
         win1 win2 win3 win4

single:  fixed  direct
         →scan
triple:  gap    no gap
         tile

PiP zoom:      Yes →No
PiP offset:    <<< 0% >>>
PiP size:      < 15% >
CLOSE          HELP
    
```



Single scan: Cycles through the PiP images at a set interval.

Hotmouse Menu – Win Mode

Use the section „Mode,, in the hotmouse menu in WIN mode to save the position of your channel windows. Four different configuration sets can be saved under win1, win2, win3 or win4.

1. Enter Win Mode
2. Position and/or resize your channel windows as desired.
3. Activate the hotmouse menu.
4. Select one of the win slots
5. Click „Save,, at the bottom of the hotmouse menu

```

HOTMOUSE
Channel: →1  2  3  4
Mode:    full  quad  PiP
         →win1 win2 win3 win4
          transparent

Position:  hori <<< 240 >>>
           vert <<< 135 >>>
Size:      hori <<< 960 >>>
           vert <<< 540 >>>
 Aspect ratio
           ▲UP          ▼DOWN

CLOSE      SAVE      HELP
    
```

SERVICE INFORMATION**MAINTENANCE AND REPAIR**

Multiviewer KVM-Switch does not contain any user-serviceable parts. Please report any malfunction or deviation from the functionality described in this manual during operation to our Technical Support Department.

If we cannot solve your problem by phone and find that the fault is due to the unit, we will repair your unit free of charge during our warranty period. Please pack the device carefully, if possible in its original packaging, and return it

TECHNICAL SUPPORT

If you cannot identify the cause of a problem, please contact Technical Support.

FCC DECLARATION**FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

KEYBOARD COMMANDS

Multiviewer KVM-Switch supports two types of hotkey: „multiple keys” and „double click”.

By default, Multiviewer KVM-Switch is set to „multiple keys”.

Use the OSD menu to choose the hotkey type and keys (see page 19).





Multiple keys: Press multiple keys plus command key.

COMMAND = Hotkey  and  together



The following hotkeys are available for selection:



By Default: **HOTKEY**  =  + 

Further examples:  =  +  + 

 =  + 

 = 

Double click key: Double click one key (=hotkey) and immediately press the command key within 2 seconds.

COMMAND = Hotkey  and  in sequence

As double click hotkey you can choose one of the following keys:



Examples: **HOTKEY**  =  

 =  









Note:

In command mode (hotkey is activated) LED flashing on the keyboard.
In double click hotkey mode, pressing an invalid key leaves the command mode.









While OSD is open hotkey = 

KEYBOARD COMMANDS

Selecting display mode









	+		Quad mode
	+		Fullscreen mode
	+		PiP mode
	+		Win mode

Selecting active channel in Fullscreen / Quad / PiP / Win mode

	+		Computer 1
	+		Computer 2
	+		Computer 3
	+		Computer 4

You can also use hotkey and the arrow keys to switch the active channel. In Quad and Win mode, you can select the channel on the right using the 1, 2, 3, or 4 keys on the numeric keypad. Switch the active channel with hotkey and the arrow keys. In PiP mode, the active channel automatically is displayed as full image.

Open USB device switch menu

	+		Open USB device/port 1 switch menu
	+		Open USB device/port 2 switch menu
	+		Open USB device/port 3 switch menu
	+		Open USB device/port 4 switch menu

KEYBOARD COMMANDS

Other commands

HK + O	Open OSD
HK + U	Directly open OSD USB Device 1-4
HK + V	Safe output mode
HK + I	Directly open OSD PiP menu (In the background display mode switches to PiP as long as menu is open)
HK + M	Open/Close the Hotmouse
HK + +/-	Adjust volume menu

Hotkeys for Win mode

HK + S	Save current win mode to eeprom.
HK + R	Restore current win mode from eeprom and loose all changes.
HK + T	Toggle transparent status of current win mode.
HK + Z	Undo up to ten previous actions.
HK + Y	Redo up to ten previous actions
HK + W + 1,2,3,4	Select Win mode

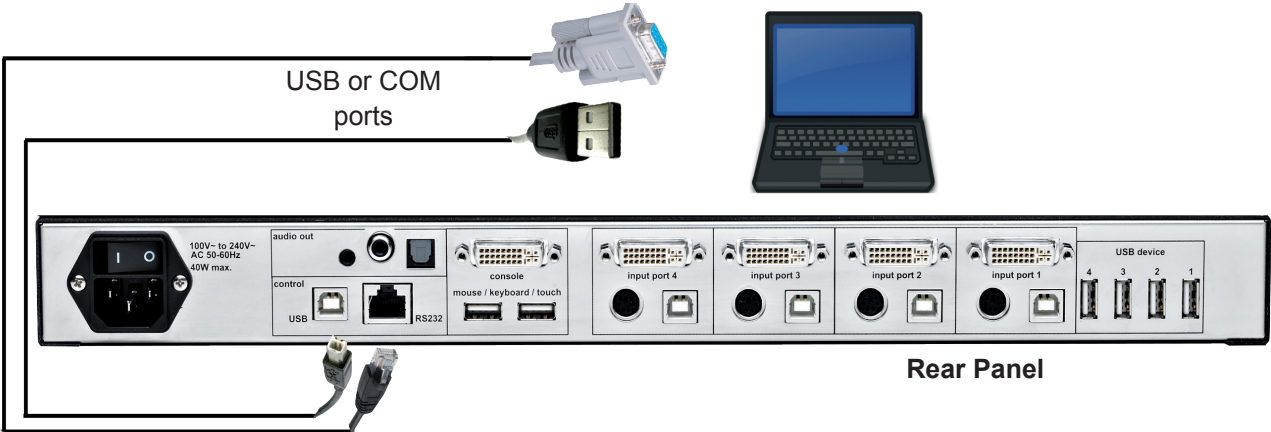
DEVICE CONFIGURATION PROGRAM

Installation of Device Configuration Program (CONFDEV)

The Device Configuration Program allows you to remotely operate the OSD of Multiviewer KVM-Switch on an external Windows computer via serial connection.

To install the device configuration software CONFDEV, you need

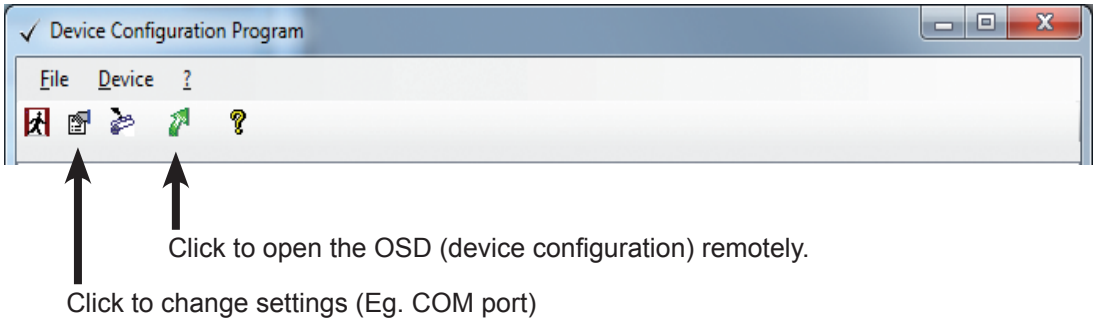
- A Windows computer with a free USB or RS 232 COM-port
- Your Multiviewer KVM-Switch
- The installation CD containing the **confdevEn.exe** program
- The enclosed „serial cable” (RJ45-DB9 adaptor + RJ45 CAT5 cable)



Use the serial cable to connect the COM port of the Windows computer with the serial port of your Multiviewer KVM-Switch.


Insert the installation CD into the CD-ROM drive and start the **confdevEn.exe** program.

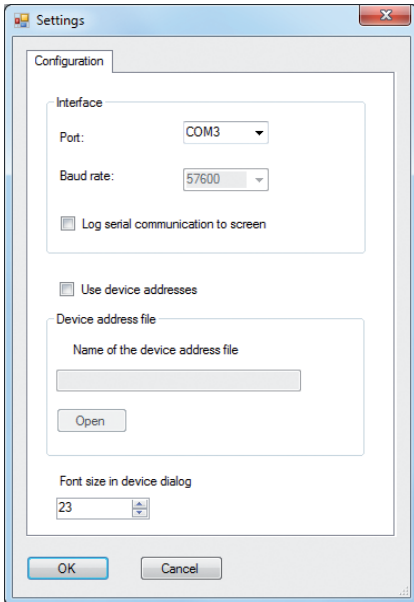
The Device Configuration Program (CONFDEV) window opens:




DEVICE CONFIGURATION PROGRAM

Settings

Click the „device configuration” button  to open the SETTINGS window. It allows you to set the font size for the OSD window, log parameters, and the COM port Multiviewer KVM-Switch is connected to.



Remote OSD operation

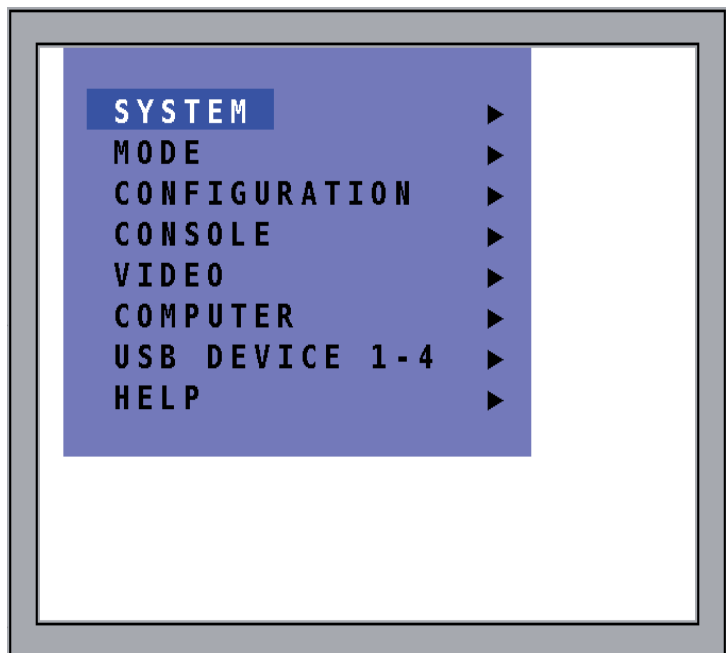
Click the green arrow  to open the On Screen Display (OSD) of Multiviewer KVM-Switch remotely on your external Windows computer.

Now, the main OSD menu is open and ready for navigation.

Navigation

Use arrow keys on the keyboard of your remote Windows computer to navigate to the desired line in the OSD menu and confirm by pressing ENTER.

Use the ESC key to return to the previous menu.



DEVICE CONFIGURATION PROGRAM - UPLOADING A BACKGROUND IMAGE

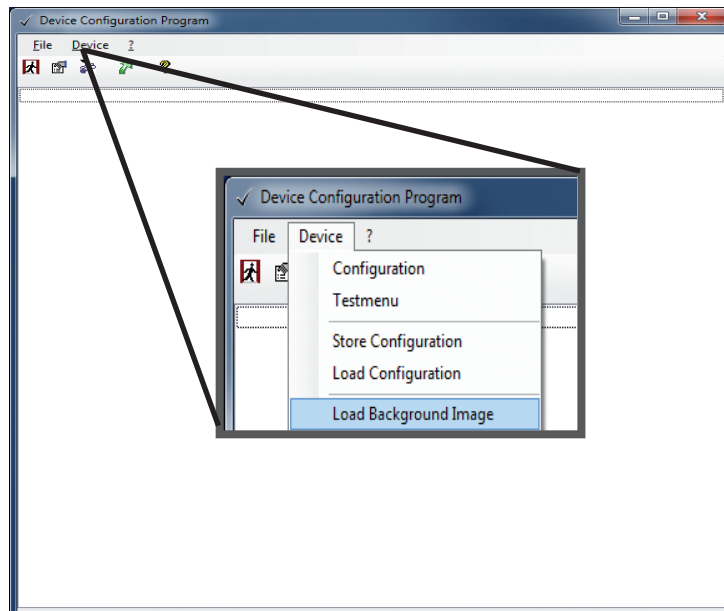
UPLOADING A BACKGROUND IMAGE

A background image can be uploaded to the Multiviewer KVM-Switch and will be displayed behind windows when in Win Mode. To upload an image to the Multiviewer KVM-Switch, use the ConfDev menu DEVICE > LOAD BACKGROUND IMAGE.

IMPORTANT: Only 256 color bitmaps are supported for background images. The file used should have a maximum size of 2 MB. The maximum resolution will be that of the monitor connected.

If an image of another format needs to be used, it must first be converted into a bitmap. There are free tools available like Gimp or Paint.NET to do this conversion. MS paint available in Windows also supports this conversion. Due to the limited color count in the bitmap format, the quality of the image may be reduced.

For downloading a compression algorithm is used. If the image cannot be compressed well, the download can take up to 30 minutes.



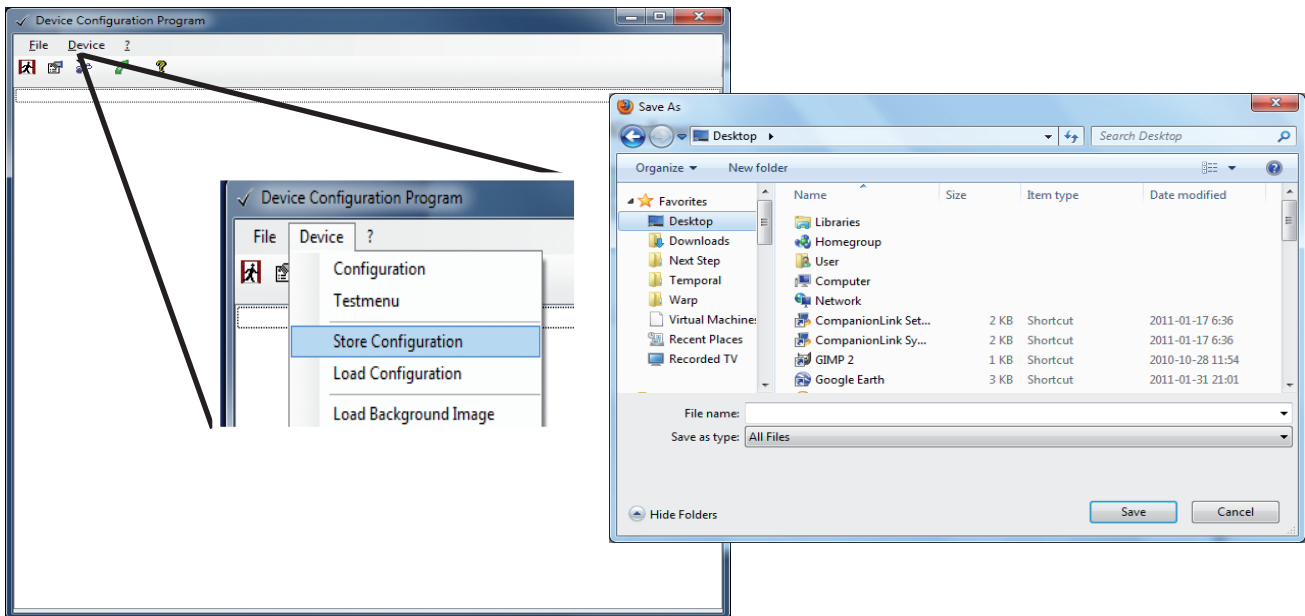
A 256 color bitmap is uploaded from the user PC to Multiviewer KVM-Switch using the ConfDev utility.



DEVICE CONFIGURATION PROGRAM - STORING AND LOADING A CONFIGURATION

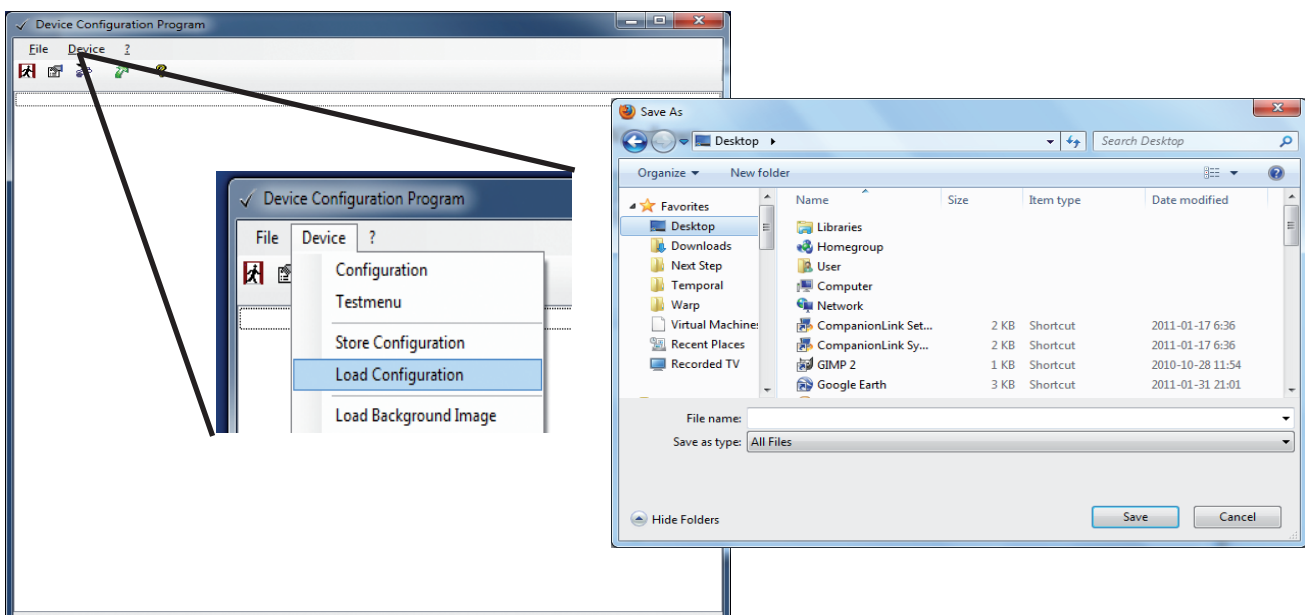
STORING A CONFIGURATION

ConfDev can also be used to store device configurations to a file on your PC. Open the ConfDev menu **DEVICE > STORE CONFIGURATION**. The Save As dialog will appear and you can save the configuration to the desired location.



LOADING A CONFIGURATION

ConfDev can be used to load device configurations from a file on your PC. Open the ConfDev menu **DEVICE > LOAD CONFIGURATION**. The Open dialog will appear from which you can select the configuration file to be loaded.



FIRMWARE UPDATE

Update firmware of Multiviewer KVM-Switch

To execute a firmware update, you need:

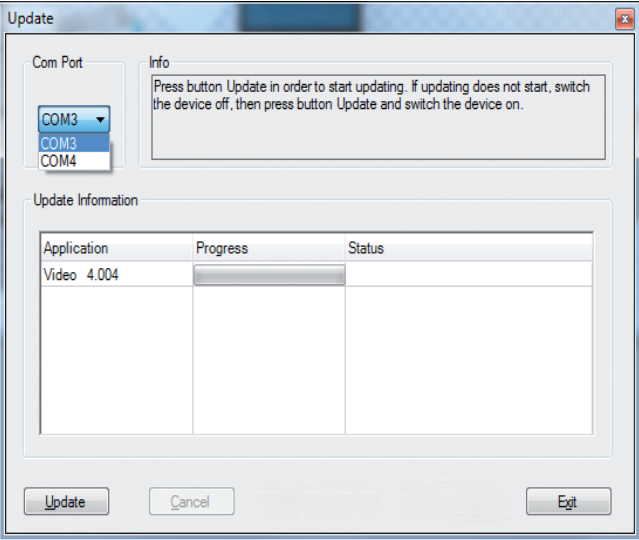
- a computer with serial or USB port
- the enclosed „serial cable” (RJ45-DB9 adaptor + RJ45 CAT5 cable) or a USB cable (USB-A/USB-B)
- the current executable firmware file

1a. Use the serial cable to connect the COM port of your computer to the RS232 port on Multiviewer KVM-Switch.

OR

1b. Use the USB cable to connect the USB port of your computer to the USB port on Multiviewer KVM-Switch.

Note:
The virtual com port USB driver can be downloaded from the Future Technology Devices International Ltd. website at www.ftdichip.com/Drivers/VCP.htm



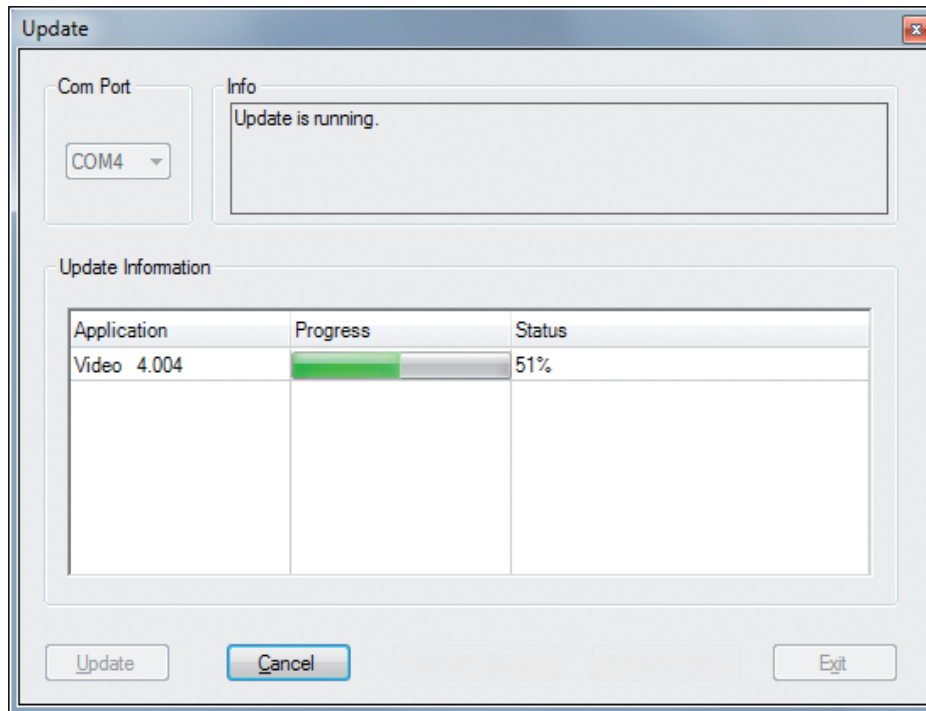
2. Start the executable firmware file.
3. Set the desired COM port
4. Press „Update”.

LEDs 1-4 on the front panel of Multiviewer KVM-Switch flash (blue) during the update.

FIRMWARE UPDATE (CONTINUED)

Update firmware of Multiviewer KVM-Switch (continued)

Additionally, the upgrade process is indicated by an OSD window on your remote computer.

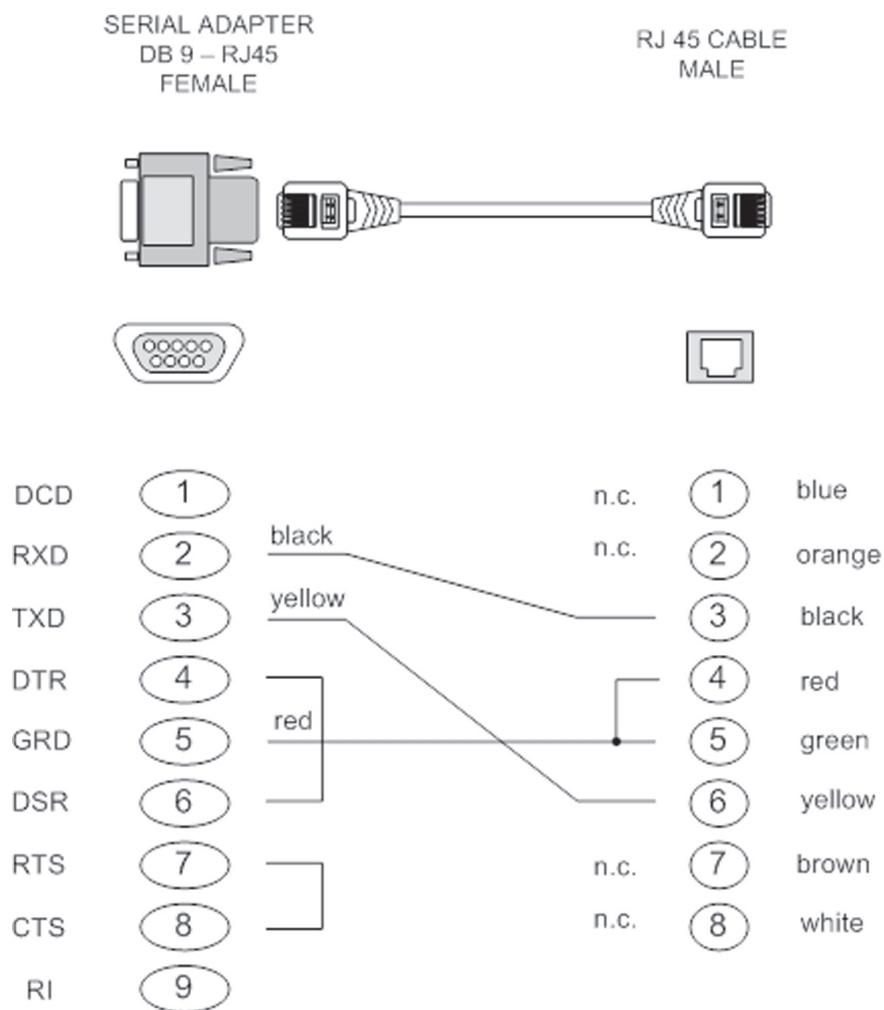


After successful update, Multiviewer KVM-Switch restarts without changing configuration.

SERIAL CABLE

For serial remote control, Multiviewer KVM-Switch requires a special adaptor to connect a CAT5 cable to the serial RJ45 port at the rear panel of Multiviewer KVM-Switch. This adaptor is connected to your external serial control device (e.g. computer). To the adaptor any CAT5 cable can be connected. The CAT5 cable again is connected to the RJ45 port of Multiviewer KVM-Switch. The adaptor (plus a standard CAT5 cable (in green)) always is delivered with Multiviewer KVM-Switch.

Serial cable = adaptor + standard CAT5 cable



DCP-XML REMOTE CONTROL

DCP-XML permits remote control of Multiviewer KVM-Switch by a computer or other devices using the RS-232 serial port of Multiviewer KVM-Switch. To connect to this port, use the „serial cable” (RJ45-DB9 adaptor + standard RJ45 CAT5 cable).

DCP is an XML-based protocol. (Device Control Protocol). Using DCP, all important settings of Multiviewer KVM-Switch can be queried and changed.

A general description of XML can be found at <http://www.w3.org/XML>

The XML scheme for DCP can be found on the enclosed CD, under the name „dcp.xsd”.

For a detailed description on how to use DCP-XML with Multiviewer KVM-Switch please see the „DCP-XML Manual” on CD supplied with Multiviewer KVM-Switch.

DCP Modes

DCP has two modes of operation:

1. Control

This mode is intended for direct control of a Multiviewer KVM-Switch, for example using a computer.

2. Synchronize

This mode is used to synchronize multiple, linked devices.

In Synchronize mode, Multiviewer KVM-Switch sends all settings changes as DCP messages. Thus, a chain of linked Multiviewer KVM-Switch can be controlled synchronously.

SUPPORTED TOUCH SCREEN CONTROLLER

Multiviewer KVM-Switch supports **USB touch screens** having built in one of the following controllers:

Tyco ELO Touch System:

- **AccuTouch** Five-Wire Resistive Touch Technology

includes models 1215L, 1229L, 1515L, 1522L, 1528L Medical, 1529L, 1537L, 1715L, 1729L, 1739L, 1915L, 1928L, 1928L Medical, 1939L, 2020L

- **IntelliTouch** Surface Wave Touch Technology

elo 2701 Controller Series (IntelliTouch, SecureTouch)

- **CarrollTouch** Infrared Touch Technology

(not supported: Acoustic Pulse Recognition (APR))

TSharc:

TSharc Octopus Controller

widely used, including in touch screens manufactured by 3M, Microtouch, TrollTouch, The Bergquist Company

XanQ:

USB-R5W-HT580-R by **XanQ** Technology Corporation

3M MicroTouch:

- **MicroTouch™ EX II** (new release delivered since 2009 with support of HID)

- **MicroTouch™ DST**, only restrict: (first calibrate it at computer, then same procedure but while connected at Multiviewer KVM-Switch; only left mouse key support, right mouse key has no function). E.g. integrated at display NEC Multeos 32" und 40" LCD with touch option.

ET&T Technology:

ETouch IR™ infra red touch screen, aluminium frame, 26" up to 65"

eGalaxy eMPIA Technology Inc. (EETI):

S5000UEGG; 4/5-Wire Resistive Touch Technology; USB;

Note:

If your USB touch screen does not feature one of the controllers listed above or does not work with a digitizer touch screen interface, please contact technical support to determine compatibility.

Note:

New multitouch screen systems are compatible with the newly defined digitizer touch screen interface. Generally these can be used.

SUPPORTED VIDEO INPUT

VIDEO INPUT (Display Video Formats)

Mode	Resolution	Sync polarity H/V	Refresh rate		Set in EDID	VESA / CEA Standard
			analog Hz	digital* Hz		
CGA	640x350	+/-	85	85		DMT
CGA	640x400	-/+	85	85		DMT
EGA	720x400	+/+	70	70	x	CVT
EGA	720x400	-/+	85	85		DMT
VGA	640x480	-/-	60	22 - 60	x	DMT
VGA	640x480	-/-	72	72	x	DMT
VGA	640x480	-/-	75	75	x	DMT
VGA	640x480	-/-	85	85	x	DMT
SVGA	800x600	+/+	56	22 - 56	x	DMT
SVGA	800x600	+/+	60	60	x	DMT
SVGA	800x600	+/+	72	72	x	DMT
SVGA	800x600	+/+	75	75	x	DMT
SVGA	800x600	+/+	85	85 - 180	x	DMT
XGA	1024x768	-/+	50	22- 50		CVT
XGA	1024x768	-/-	60	60	x	DMT
XGA	1024x768	-/-	70	70	x	DMT
XGA	1024x768	+/+	75	75	x	DMT
XGA	1024x768	+/+	85	85	x	DMT
XGA/B	1152x864	+/+	75	75	x	DMT
SUN	1152x900	+/+	66	66		CVT
HDTVp	1280x720	+/+	50	22 - 50		CEA-861-E
HDTVp	1280x720	+/+	60	60		CEA-861-E
WXGA	1280x768	-/+	60	60		DMT
UWXGA	1280x960	+/+	60	60		DMT
UWXGA	1280x960	+/+	85	85		DMT
SXGA	1280x1024	g	50	50		CVT
SXGA	1280x1024	+/+	60	60	x	DMT
SXGA	1280x1024	g	72	72		CVT
SXGA	1280x1024	+/+	75	75	x	DMT
SXGA	1280x1024	+/+	85	85	x	DMT
WXGA	1360x768	+/+	60	22 - 60		DMT
SXGA+	1400x1050	-/+	50	22 - 50		CVT
SXGA+	1400x1050	-/+	60	60		DMT
SGI	1600x1024	+/+	60	60		CVT
UXGA	1600x1200	+/+	50	50		CVT
UXGA	1600x1200	+/+	60	60	x	DMT
UXGAr	1600x1200	+/+	50	50		CVT
UXGAr	1600x1200	+/+	60	60		CVT
WSXGA	1680x1050	-/+	60	60		DMT
HDTVp	1920x1080	+/+	---	22 - 24		CEA-861-E
HDTVp	1920x1080	+/+	50	50		CEA-861-E
HDTVp	1920x1080	+/+	60	60	x	CEA-861-E
WUXGAr	1920x1200	+/+	50	22 - 50		CVT
WUXGAr	1920x1200	+/+	60	60	x	DMT

Note:

* digital: **all** video formats up to 162 MHz pixel clock following DMT, CVT or GTF standard timings are supported. Within this range **ANY** digital resolution is supported.
Analog input may not be detected correctly. See page 47 EDID/DDC.

SUPPORTED VIDEO OUTPUT

VIDEO OUTPUT (Display Video Formats)

The table lists all video formats supported by Multiviewer KVM-Switch at the output port.

Mode	Horizontal	Vertical	Hz
VGA	640	480	60
VGA	640	480	75
VGA	640	480	85
SVGA	800	600	60
SVGA	800	600	75
SVGA	800	600	85
XGA	1024	768	50
XGA	1024	768	60
XGA	1024	768	70
XGA	1024	768	75
XGA	1024	768	85
SXGA	1280	1024	50
SXGA	1280	1024	60
SXGA	1280	1024	75
SXGA+	1400	1050	50
SXGA+	1400	1050	60
UXGA	1600	1200	50
UXGA	1600	1200	60
UXGAr	1600	1200	50
UXGAr	1600	1200	60
XGA/B	1152	864	75
UWXGA	1280	960	60
UWXGA	1280	960	85
SUN	1152	900	66
WXGA	1280	768	60
WXGA	1366	768	60
WSXGA	1680	1050	60
WUXGAr	1920	1200	40
WUXGAr	1920	1200	50
WUXGAr	1920	1200	60
HDTVp	1280	720	50
HDTVp	1920	1080	24
HDTVp	1920	1080	50
HDTVp	1920	1080	60

Note:

When set to auto (by default) Multiviewer KVM-Switch reads the EDID of the monitor connected and automatically supports its resolution.

CASCADING

CASCADING multiple Multiviewer KVM-Switch units - more than 4 video sources on a single display

Multiviewer KVM-Switch can be cascaded in order to display more than 4 video sources simultaneously on a single display.

In this master-slave-system, any Multiviewer KVM-Switch can be used as master or slave. It is the same hardware. One Multiviewer KVM-Switch is used as master unit. The console that has a keyboard, mouse and display or touchscreen is connected to the output of the master unit. A slave Multiviewer KVM-Switch can be connected to each input of the master unit. In this way, each quadrant on the display can be split in four more quadrants.

Example: In a setup with one master and four slave Multiviewer KVM-Switch a total of 16 video sources can be displayed simultaneously on a single console.

All display modes:

Display modes (Fullscreen, Quad, PiP, Win) of slaves and master can individually be set, combined, and switched, e.g. the master unit could be set to Quad mode, while the first slave is set to PiP, the second slave to Fullscreen, the third slave to Quad and the fourth slave to Win mode. Any combination is possible.

Keyboard and mouse operation:

Keyboard and mouse can be activated on any of the up to 16 computers connected to operate these.

Hotkeys for switching:

Use hotkeys to quickly activate any of the e.g. 16 channels or to switch the display mode of any of the Multiviewer KVM-Switch units in the master-slave-system.

Different levels (master or slave) require different types of hotkeys.

For example, keep the hotkey default setting **HK1** = **Ctrl** + **Alt** for all slave Multiviewer KVM-Switch.

Just change the hotkey setting for the master Multiviewer KVM-Switch to e.g. **HK2** = **Ctrl** + **Win**

See page 65 on how to change hotkeys.

Example:

In a cascaded Multiviewer KVM-Switch setup with one master, 4 slaves, and 16 computers connected you can activate keyboard and mouse of computer 16 by pressing the following hotkey combination:

HK2 + 4 (to activate the channel 4 on the master level), **then HK1 + 4** (to activate the channel 4 on the slave Multiviewer KVM-Switch connected to port 4 of the master)

Example:

To change a display mode of e.g. the slave Multiviewer KVM-Switch connected to port 4 of the master Multiviewer KVM-Switch press the following hotkey combination:

HK2 + 4 (to activate the channel 4 on the master level), **then HK1 + P** to switch from default Quad mode to PiP mode in this quadrant. The result is a screen split in four equal quadrants. All quadrants are split again in four equal quadrants (Quad mode), just the quadrant in the lower right corner (channel 4) is showing its four sources in PiP mode.

Note:

Use a programmable keyboard for comfortable switching of cascaded Multiviewer KVM-Switch. Behind a single key you can program a combination of hotkeys. By pressing a single key you can activate keyboard and mouse of one of e.g. 16 computers connected or the switch display mode of the master or any of the four slave Multiviewer KVM-Switch.

