Draco MultiView 4K60

KVM Switch
Series MV42

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Software version: 2.0.3.0

Introduction

This manual contains important safety instructions as well as instructions for setting up the product and operating it. Please read the general safety instructions (see chapter 2, page 11) and additional notice in the respective chapters. Read carefully through the User Manual before you switch on the product.

Product Identification

The model and serial number of your products are indicated on the bottom of our products. Always refer to this information when you need to contact your dealer or the support of IHSE GmbH (see chapter 18, page 222).

Trademarks and Trade Names

All trademark and trade names mentioned in this document are acknowledged to be the property of their respective owners.

Validity of this Manual

This manual applies to all products of the series named on the cover page. Differences between the various models are clearly described. Please note the change log for this manual in chapter 22, page 234.

The manufacturer reserves the right to change specifications, functions or circuitry of the series described here without notice. Information in this manual can be changed, expanded, or deleted without notice. You can find the current version of the manual in the download area of our website.

Copyright

Available Documentation

Name	Format	Description	Provision
User Manual	PDF	Provides an overview of the product together with technical data and safety instructions. Contains all instructions required to operate the product to a basic level.	Download from website
Quick Setup	Print	Provides a quick installation guide and safety instructions	Contained in the scope of delivery

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Table of Contents

1 Important Information

1.1 Firmware and Software

The information in this manual refers to the latest firmware available at the date of manual release. Please refer to the change log (see chapter 22, page 234) for user manual updates.

The meaning of the symbols used for warnings and helpful information in this manual is described below:

⚠ WARNING
WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION
CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE
NOTICE identifies information, if not observed, endangers the Functionality of your device or the security of your data.

This symbol indicates instructions for procedures recommended by the manufacturer for an effective utilization of the device potential.

This symbol indicates information about special features on the device or when using device and Function variants.

1.2 Terms and Spellings

Uniform terms and spellings are used in this manual for better readability or easier assignment.

The following terms are used for products and system descriptions:

Term	Description
Draco MV	Draco MultiView 4K60
Web UI	Draco MV Web User Interface (see chapter 5, page 48)
Management software	Tera Tool, software to configure, monitor and operate the device
Source	Computer, graphics card (USB, video, audio, data)
Sink	Console (monitor, keyboard, mouse; optionally also video, audio, data sources)
Main output	Output OUT1/OUT1.1
Main monitor	Monitor connected to output OUT1/OUT1.1
Window	Window on the monitor to stream the video signal of an associated input (referred to as “window” below).
Main window	Window with to stream the video signal of the focused input displayed on the main monitor, in the foreground or in the background depending on the selected display mode.
Window arrangement	Depending on the selected display mode, the windows are arranged on one monitor, on two monitors and with some display modes also via levels on one monitor.

The following text format and spellings are used for keyboard commands:

Keyboard command	Description
key	Key on the keyboard.
key + key	Press keys simultaneously.
key, key	Press keys successively.
2x key	Press key quickly, twice in a row (like a mouse double-click).
Number/number on the keyboard	Numeric key at the top end of the alphanumeric keyboard usually used for described operations.
Number on the numerical pad	Numeric key on the numerical pad. If the use of the numerical keypad is required, it is explicitly described.

The following text format is used for, e.g., descriptions of editing files or updating firmware:

Keyboard command	Description
`Config.txt`	For instance, file name
`#CFG`	For instance, file content

The following text format and spellings are used for software descriptions:

Spelling	Description
Bold print	Description of terms that are used in the device firmware or the Web UI
Bold print > Bold print	• OSD: selection of a menu item in the working area, e.g., **Configuration > System** • Web UI: selection of a menu item in the working area, the menu bar, or the toolbar, e.g., **Extras > Options**

Keyboard command	Description
Left mouse button	Primary mouse button* (default in most operating systems)
Right mouse button	Secondary mouse button*
* Unless you have customized your mouse settings in the used operating system.	
Descriptions containing "click...", "mouse click" or "double-click" each means a click with the primary (left) mouse button. If the right mouse button has to be used, this is explicitly declared in the description.	

1.3 Intended Use

The Draco MV is used to stream video/audio signals and switch the USB HID control of up to four sources at one console with only one mouse and keyboard as well as with one monitor (single-head variant) or two monitors. The dual-head variant offers the possibility to connect up to four monitors.

In addition, integrated image processing allows the combination of all four inputs into a single video image with intuitive keyboard and mouse control and real-time image processing. Several pre-programmed picture-in-picture operational modes are included, and additional four free layout options are provided per user profile.

To use an external switching solution via dry-contact, the Draco MV offers a GPIO interface to switch the USB HID control and to indicate the switching status (see accessories list in chapter 4.4, page 37).

Alternatively, there is an API interface available over TCP/IP.

NOTICE

Interferences when the immunity limit values are exceeded

If the limit values listed in EN55024 are exceeded, reliable and fault-free functioning of the devices cannot be guaranteed.

NOTICE

Radio interference in a domestic environment

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

➡ Follow the safety and installation instructions given in this manual.

➡ Use connection cables according to the specifications for the length and type given in this manual.

1.4 Labels

Labels with information about the device are located on the bottom of the chassis. The labels of the Draco MV look like this example:

Manufacturer

Chassis type

Part number

Serial number

Country of origin

Marking for conformity with EU directives

Marking for EU Directive 2012/19/EU (WEEE) with registration number.

1.5 Certificates/Directives

1.5.1 North American Regulatory Compliance

This equipment has been found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Shielded cables must be used with this equipment to maintain compliance with radio frequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances.

All power supplies are certified to the relevant major international safety standards.

1.5.2 WEEE

The device label carries a symbol (crossed-out dustbin) for marking electrical and electronic equipment. The manufacturer complies with the EU Directive 2012/19/EU on the prevention of waste electrical and electronic equipment (WEEE). The manufacturer is a WEEE registered company (registration number DE39900275).

Equipment Dispose/Take-back

- The symbol of a crossed-out dustbin displayed on electrical and electronic equipment indicates that product and the supplied electronic accessories (e.g., power supply units, cables) must not be disposed of with household or commercial waste at the end of its service life.
- By disposing of the product irresponsibly you may enable unauthorized persons to use it in contravention of the regulations, exposing themselves and third parties to the risk of severe injury and rendering the environment liable to contamination.
- The manufacturer takes back old devices and guarantees adequate waste disposal. Please contact the manufacturer's technical support to register the return for a device to be disposed.
- It is the customer's own responsibility to delete personal data on the equipment to be disposed of.

1.5.3 EU Declaration of Conformity

Please find the EU Declaration of Conformity for the device under:
www.ihse.com/eu-declaration-of-conformity

A copy of the original, product-specific EU Declaration of Conformity can be provided upon request. For contact details, see page 2 of this manual.

2 Safety Instructions

To ensure reliable and safe long-term operation of your device, please note the following guidelines:

- ➡ Read this user manual carefully.
- ➡ Only use the device according to this user manual. Failure to follow the instructions described can result in personal injury, damage to the device, or endanger the security of your data.
- ➡ Take any required ESD precautions.

⚠ WARNING

Risk of electric shock due to freely accessible power connections when the chassis is open

Risk of bruising, abrasion or shearing of fingertips due to rotating fan when the chassis is open

If the chassis is opened while power is supplied to the device, electric shock may occur if the internal wiring is touched. If a running fan is touched while the case is open, bruises, abrasions or shearing of fingertips may occur.

There are no necessary maintenance procedures that require opening the chassis.

- ➡ Do NOT remove the cover of the chassis.
- ➡ Do NOT install the device in environments where children are likely to be present.

⚠ CAUTION

Risk of burns due to tremendously heated chassis surface after a long period of operation

When the chassis is fully equipped, the surface of the chassis can become very warm after a long period of operation. If the chassis surface is touched after a long period of operation, this can cause skin burns.

- ➡ Protective gloves must be worn to transport a fully equipped chassis after a long period of operation.
- ➡ Ensure that there is sufficient distance from the operator, e.g., for mounting under a table.
- ➡ Do NOT install the device in environments where children are likely to be present.

Installation Location

While operating the device and the power supply units can get warm. Damage to the device can occur in a damp environment.

- ➡ Use the device only in dry, indoor environments.
- ➡ Use the device only in a room with adequate ventilation.
- ➡ For rack-mount installations, at least 0.5 RU (rack unit) is required above the device for ventilation.
- ➡ Do not place the power supply units directly on top of the device.
- ➡ Existing ventilation openings on the device must always be free.
- ➡ If installing the device under the table, place the device at a sufficient distance from the operator.
- ➡ Place all power sockets including the sockets for the supplied external power supply units easily accessible and directly next to each other.

Connection

- ➡ Check the device and the power supply units for visible damage before connecting it.
- ➡ Only connect the device if the device and the ports are not damaged.
- ➡ Only use power supply units originally supplied with the product or manufacturer-approved replacements.
- ➡ Only use power supply units without any visible damage at the chassis or the cable.
- ➡ Connect all power supply units to grounded outlets.
- ➡ Ensure that the ground connection is maintained from the outlet socket through to the power supply unit's AC power input.
- ➡ Only connect the device to KVM devices using the interconnecting cable - not to other devices, particularly not to telecommunications or network devices.

Disconnect the Device from the Circuit

NOTICE
The cable plugs on the device side can contain a lock. In the event of a necessary quick and complete disconnection from external electric circuits: ➡ Remove all corresponding cable plugs from the socket, ➡ Or set the power switch of the power outlets (if available) to the “Off” position.

3 Consignes de Sécurité

Pour garantir un fonctionnement fiable et sûr de votre périphérique à long terme, veuillez respecter les directives suivantes :

- Lisez attentivement ce manuel d'utilisation.
- N'utilisez le périphérique que conformément à ce manuel d'utilisation. Le non-respect des instructions décrites peut endommager le périphérique ou mettre en danger la sécurité de vos données
- Prenez toutes les précautions nécessaires contre les décharges électrostatiques.

⚠ AVERTISSEMENT

Risque de choc électrique dues de l'accès libre aux connexions électriques lorsque le châssis est ouvert
Risque de contusion, d'abrasion ou de cisaillement des bouts des doigts dues de la rotation du ventilateur lorsque le châssis est ouvert

Si le châssis est ouvert alors que le périphérique est sous tension, un choc électrique peut se produire si le câblage interne est touché.

Si vous touchez un ventilateur en marche alors que le châssis est ouvert, vous risquez de vous blesser, de vous abraser ou de vous cisailler le bout des doigts.

Aucune procédure d'entretien nécessaire ne requiert l'ouverture du châssis.

- Ne retirez PAS le couvercle du châssis.
- N'installez PAS le périphérique dans des environnements où des enfants sont susceptibles d'être présents.

⚠ ATTENTION

Risque de brûlures dues à la surface du châssis très chaude après une longue période d'utilisation

Lorsque le châssis est entièrement équipé, la surface du châssis peut devenir très chaude après une longue période de fonctionnement.

Si la surface du châssis est touchée après une longue période d'utilisation, cela peut provoquer des brûlures de la peau.

- Des gants de protection doivent être portés pour transporter un châssis entièrement équipé après une longue période d'opération.
- Veillez à ce que la distance avec l'opérateur soit suffisante, par exemple pour un montage sous une table.
- N'installez PAS le périphérique dans des environnements où des enfants sont susceptibles d'être présents.

Emplacement de l'installation

Pendant le fonctionnement, le périphérique et les unités d'alimentation peuvent chauffer. Le périphérique peut être endommagé dans un environnement humide.

- N'utilisez le périphérique que dans un environnement sec et intérieur.
- N'utilisez le périphérique dans un lieu correctement ventilée.
- Pour les installations en rack, au moins 0,5 RU (unité de rack) est nécessaire au-dessus du périphérique pour la ventilation.
- Ne placez jamais les unités d'alimentation sur le dessus du périphérique.
- Les ouvertures de ventilation existantes sur le périphérique doivent toujours être libres.
- Si vous installez le périphérique sous la table, placez le périphérique à une distance suffisante de l'opérateur.
- Placez toutes les prises de courant, y compris les prises de courant pour les unités d'alimentation externes fournis, de manière facilement accessible et directement les unes à côté des autres.

Connexion

- ➡ Avant de connecter le périphérique et les unités d'alimentation, vérifiez qu'ils ne présentent pas de dommages visibles.
- ➡ Seulement connectez le périphérique et les unités d'alimentation que si le périphérique et les ports ne sont pas endommagés.
- ➡ Utilisez uniquement les unités d'alimentation fournis à l'origine avec le produit ou des pièces de rechange approuvées par le fabricant.
- ➡ N'utilisez que des unités d'alimentation sans dommages visibles au niveau du châssis ou du câble.
- ➡ Connectez tous les unités d'alimentation à des prises de terre.
- ➡ Raccordez tous les unités d'alimentation à des prises de courant mises à la terre.
- ➡ Veillez à ce que la connexion à la terre soit maintenue depuis la prise de courant jusqu'à l'entrée d'alimentation CA du les unités d'alimentation.
- ➡ Ne connectez le périphérique qu'à des périphériques KVM à l'aide du câble d'interconnexion - pas à d'autres périphériques, en particulier pas à des périphériques de télécommunications ou de réseau.

Déconnecter le périphérique du circuit

NOTICE
Les fiches de câble du côté du périphérique peuvent contenir un verrou. En cas de nécessité d'une déconnexion rapide et complète des circuits électriques externes : ➡ Retirez toutes les fiches de câble correspondantes de la prise. Ou mettez l'interrupteur des prises de courant (si elles existent) sur la position « Off ».

4 Description

4.1 System Overview

4.1.1 Draco MV System

A Draco MV system consists of a Draco MV, up to four sources and a console with up to four monitors with only one mouse and keyboard. The sources are directly connected to the Draco MV via provided USB and video cables. Monitors, keyboard, mouse, and optional audio devices are also connected directly to the Draco MV.

The Draco MV manages the switching commands and the arrangement of video streams internally.

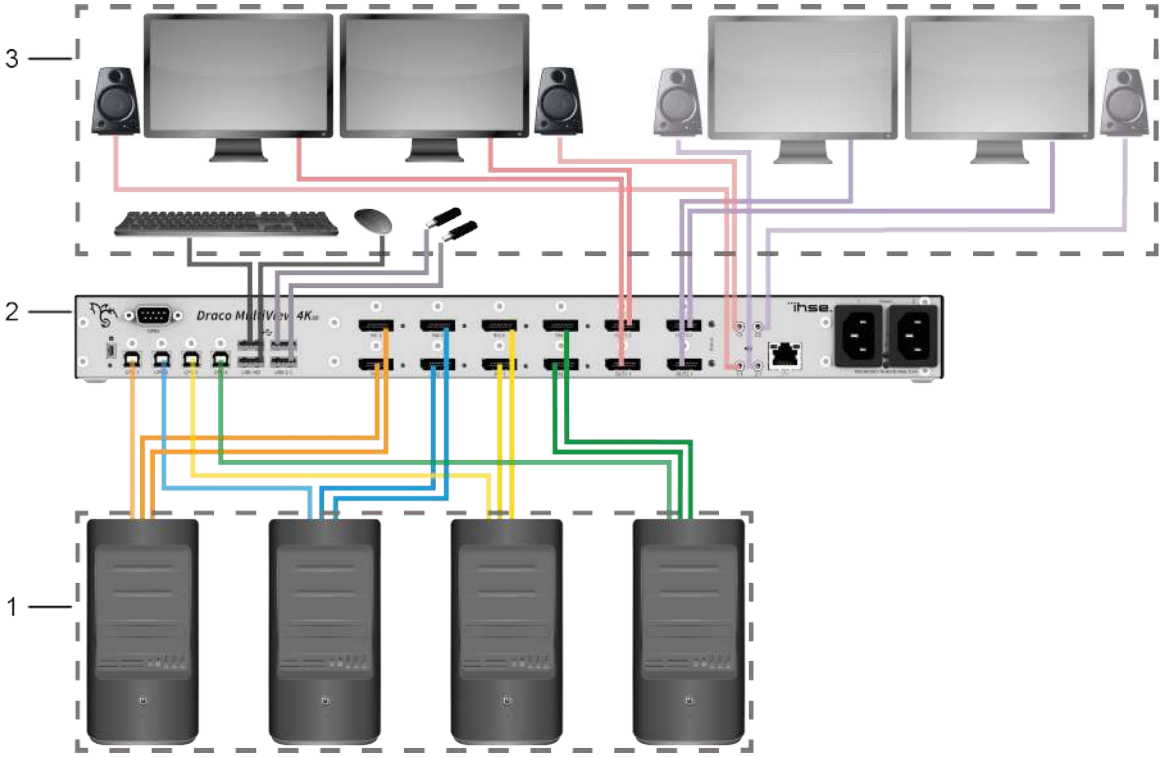


Fig. 1 System overview (example = dual head installation)

1 Sources (computer, graphics card)
2 Draco Multiview $4K_{60}$
3 Sink (monitors, keyboard, mouse with optional audio devices and USB devices)

4.1.2 Draco MV System with External Control

The Draco MV system can be controlled by external devices.

- An external switching solution via dry contact, using the GPIO interface.
- An external control via TCP/IP, using a Cat X network cable via API interface.

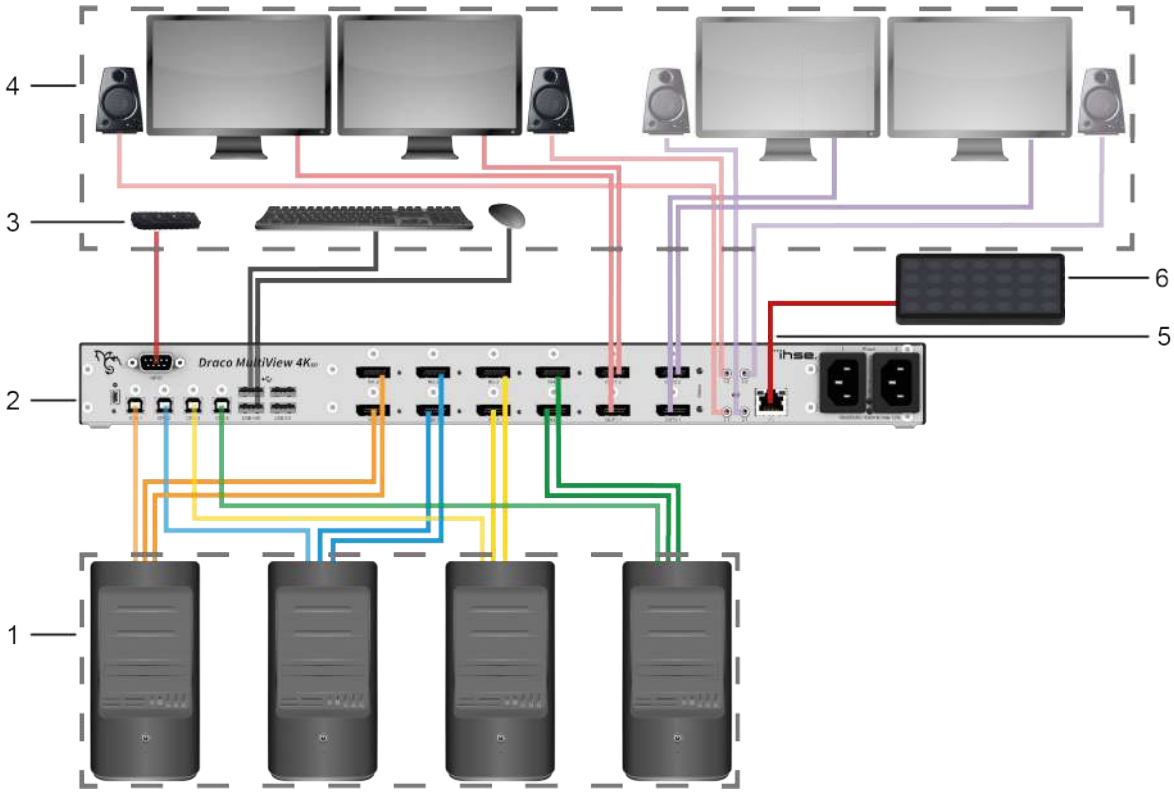


Fig. 2 System overview (example = dual head installation with external controls)

1 Sources (computer, graphics card)
2 Draco Multiview $4K_{60}$
3 External switching solution with GPIO interface (optional)
4 Sink (monitors, keyboard, mouse with optional audio devices and USB devices)
5 Network connection cable (Cat X)
6 External control, TCP/IP (optional)

4.1.3 Signal Routing/Assignment of the USB HID, Video and Audio Signals

The signal assignment of video, audio, USB HID, and USB 2.0 signals are shown in color in the following figure. In the Draco MV system, output 1 on the primary video/audio board is the main output for the main monitor.

The terms “main output” and “main monitor” are used in this manual, also the term “main window”. In some display modes the main window is relevant, which will be displayed only on the main monitor, in the foreground or in the background. All terms are important to understand main functions and switching methods of the Draco MV.

Example

The following figure shows the signal routing/assignment with an exemplary dual-head installation with four monitors and audio devices.

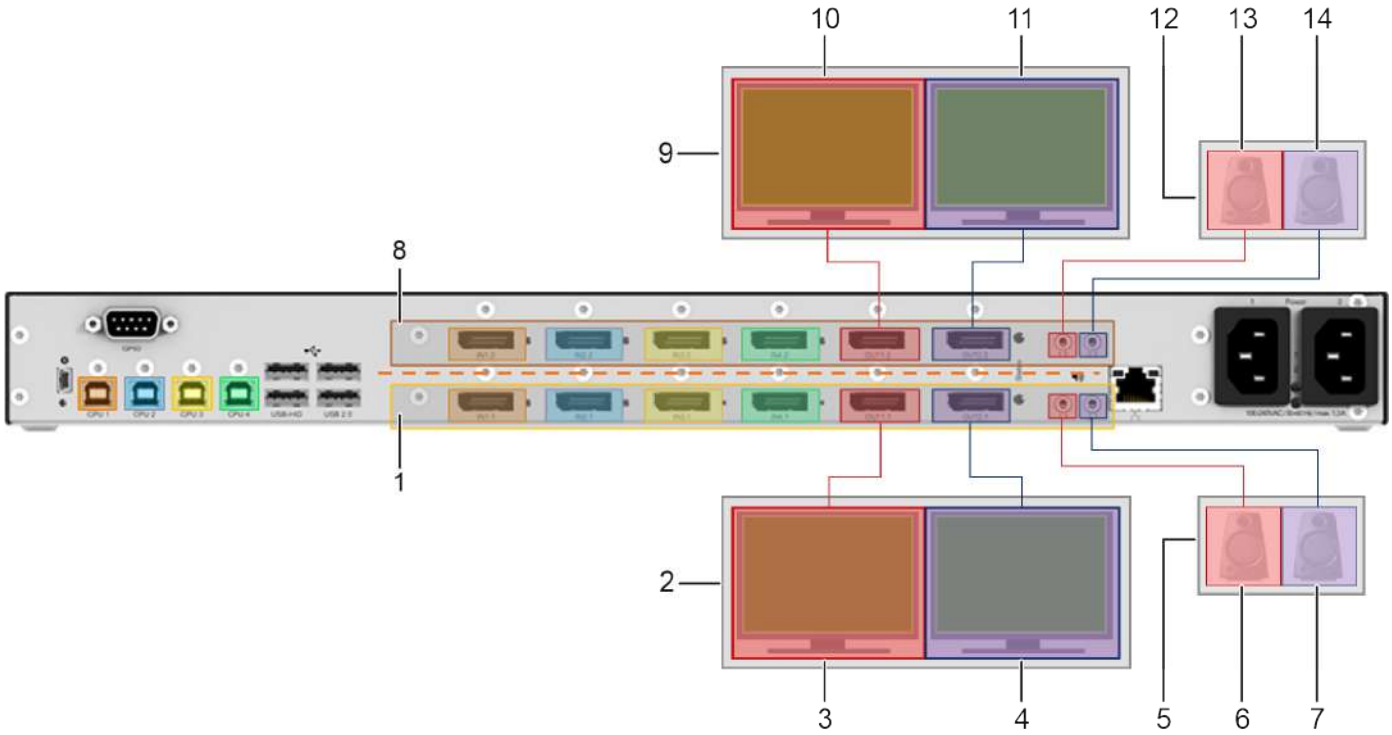


Fig. 3 Signal assignment of video, audio, USB HID and USB 2.0 signals

1 Primary video/audio board
2 Video output of the primary video/audio board
3 Main monitor - OUT1.1 (main output) - primary video/audio board
4 Monitor 2 - OUT2.1 - primary video/audio board
5 Audio output of the primary video/audio board
6 Audio 1 - OUT1.1 - primary video/audio board
7 Audio 2 - OUT2.1 - primary video/audio board
8 Secondary video/audio board
9 Video output of the secondary video/audio board
10 Monitor 1 - OUT1.2 - secondary video/audio board
11 Monitor 2 - OUT2.2 - secondary video/audio board
12 Audio output - secondary video/audio board
13 Audio 1 - OUT1.2 - secondary video/audio board
14 Audio 2 - OUT2.2 - secondary video/audio board

With single-head devices, the video outputs are named OUT1/OUT2 and the audio outputs are named 1/2.

The inputs and outputs of the primary video/audio board belong together. The same applies to the secondary video/audio board. The boards themselves are not linked to each other.
The primary and secondary boards switch completely independently, but as such synchronously. Asynchronous switching is possible with activated Async Switch function (see chapter 7.2.1, page 72 or chapter 8.2.1, page 102).
It is not possible to route an input from the primary board to an output of the secondary board and vice versa. Therefore, always connect single-head sources and the main monitor on the primary video/audio board.

4.1.4 Streaming of Video Signals

The Draco MV streams video signals in windows on a monitor. For the display modes True PiP Mode and Custom Mode, the window arrangement is managed via window levels. E.g., level 1 for the window in the foreground, level 4 for the window in the background.

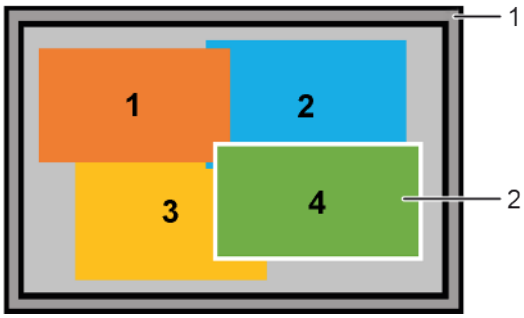


Fig. 4 ***Custom Mode*** *- Example for a windows arrangement on a monitor to stream four video signals*

1 Monitor

2 Window to stream the video signal of an associated input (referred to as “window” below)

The Source Name option shows the associated customizable input name of a window. We recommend activating this option especially for the display modes PiP (1+3) and for custom layouts.
To highlight the window with current USB HID control, the Active Source Frame option can be enabled except for the mirrored Fullscreen Mode (see chapter 7.2.5, page 82 or chapter 8.2.7, page 116).

Window Assignment

In the default delivery state with default display mode Fullscreen Mode, the inputs are assigned as follows:

	Window 1	Window 2	Window 3	Window 4	Level
Input 1	X	-	-	-	Not relevant
Input 2	-	X	-	-	Not relevant
Input 3	-	-	X	-	Not relevant
Input 4	-	-	-	X	Not relevant

Window Assignment

In the Custom Mode example of Fig. 4, window 4 is currently on level 1 in the foreground.

	Window 1	Window 2	Window 3	Window 4	Level
Input 1	X	-	-	-	2
Input 2	-	X	-	-	3
Input 3	-	-	X	-	4
Input 4	-	-	-	X	1

Window Assignment

Video streams of inputs can be individually assigned to windows (see chapter 7.4.1, page 86 or chapter 8.3.1, page 119). In this example, input 3 has been assigned to window 2 and 3.

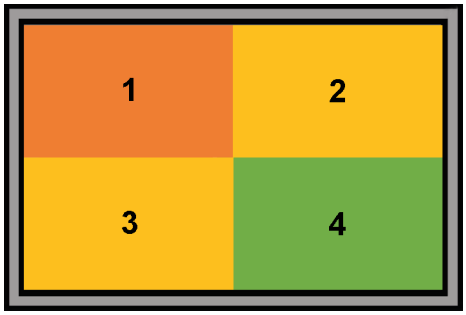


Fig. 5 ***Quad Mode*** *- Example for an individual assignment of inputs*

	Window 1	Window 2	Window 3	Window 4	Level
Input 1	X	-	-	-	Not relevant
Input 2	-	-	-	-	Not relevant
Input 3	-	X	X	-	Not relevant
Input 4	-	-	-	X	Not relevant

4.1.5 Switching Methods

We use four terms to describe switching/display methods with different results.

Focusing on an Input

- Via OSD, keyboard command, Web UI, API telegram, external switching solution, mouse (Multi-Screen Control).
- Available for single head devices and for the primary board of dual head devices.

Focusing on two Inputs

- Via OSD, keyboard command, Web UI, API telegram.
- Available for single head devices and for the primary board of dual head devices.

This is a term combination relevant only in individual Fullscreen Mode. Means focusing on one input and selecting another input to maximize the windows of both inputs on the monitors.

Selecting an Input

- Via OSD, Web UI and API telegram.
- To stream the video signal of a selected input without switching USB HID control.
- Available for single head devices and for the secondary board of dual head devices with enabled asynchronous switching mode.

Switching the USB HID control

- Via keyboard command.

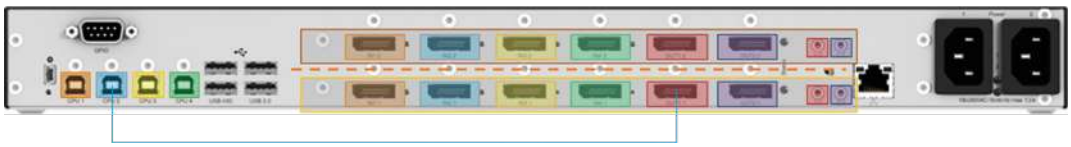
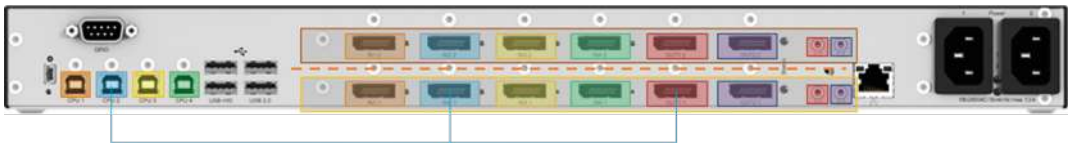
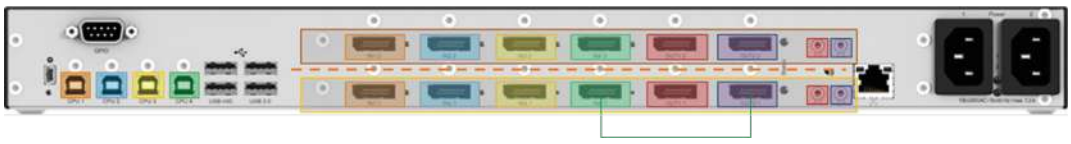
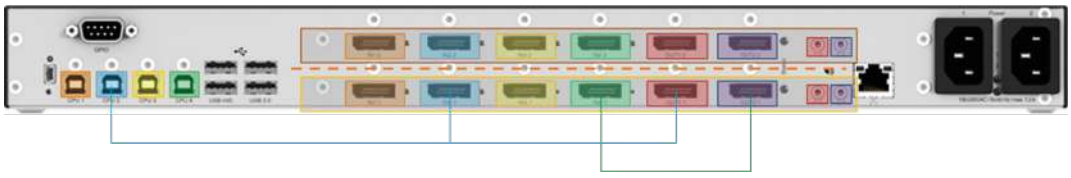
When using USB HID control, depending on the selected display mode, it is possible to stream the video signal of an input to a focused window (in the foreground or on the main window) and have the current USB HID control on another window (controlled window) at the same time.

Differences between Switching Methods

System part/interface	Focusing on an input	Selecting an input	Switching USB HID control to an input
Internal window arrangement	Depending on the current display mode, the internal window arrangement changes.		No reaction.
Video outputs	All assigned video outputs get the information of the changed window arrangement.		No reaction.
Audio outputs	Audio outputs output the audio of the input with USB HID control.	No reaction.	Audio outputs output the audio of the input with USB HID control.
USB HID	USB HID control is switched to the input.	No reaction.	USB HID control is switched to the input.
Mouse	The mouse can be used in the window with USB HID control.	No reaction.	The mouse can be used in the window with USB HID control.
Source Frame	With activated Active Source Frame option, a frame is shown around the window with USB HID control.	No reaction.	With activated Active Source Frame option, a frame is shown around the window with USB HID control.
USB 2.0	Unblocked USB 2.0 ports are routed to the window with USB HID control.	No reaction.	Unblocked USB 2.0 ports are routed to the window with USB HID control.

The differences for asynchronous switching are described in the respective chapters (see chapter 12 ff (OSD) and 14 ff (Web UI)).

Function Schemes for Switching Methods

Switching Methods	Function Schemes
Switching USB HID control to an input	
Focusing on an input	
Selecting an input	
Focusing on two inputs	

4.1.6 Transmitted Signals

Output	Function	
Video	The video signals of all sources are simultaneously transmitted to the Draco MV and streamed in the windows on the monitor(s) depending on the selected display mode. The monitors of the secondary video/audio board can have a different resolution than the monitors of the primary board. If connecting monitors with different resolutions to one video/audio board, both outputs output the same resolution, whereby the output signal depends on the preferred timing of the EDID.	
Audio	The audio signals of all sources are simultaneously transmitted to the Draco MV. It is possible to plug one analog audio device and one digital device in the two audio outputs of one video/audio board to at the same time. The audio output must be configured in the operating system of the respective computer in each case. There are the following possibilities for the audio output:	
	Audio signal of the currently active source	The audio signal from the input with current USB HID control is output redundantly via video output 1 and 2, and simultaneously via the analog-digital audio outputs.
	Merged audio signals of all sources	The Mixed Audio option is available for the output of, e.g., warning signals originating from sources without USB HID control. The merged audio signals are output via video output 1 and 2, and connected analog audio devices (see chapter 7.2.1, page 72 or chapter 8.2.1, page 102).
USB HID	Keyboard and mouse commands are only available for the source with current USB HID control. Mouse and keyboard are only usable in the window of the source with current USB HID control.	
USB 2.0	USB 2.0 signals are passed through to the source with the current USB HID control.	

With activated/deactivated Audio Mixing, the following audio signals are outputted:

	Disabled Audio Mixing		Enabled Audio Mixing	
	Focused input/input with USB HID control	Unfocused input/input without USB HID control	Focused input/input with USB HID control	Unfocused input/input without USB HID control
Video output 1, via monitor	Up to 7.1-Channel audio*	No audio output	2-Channel audio, amalgamated	
Video output 2, via monitor	Up to 7.1-Channel audio*	No audio output	2-Channel audio, amalgamated	
Audio output 1, with analog audio device	2-Channel audio	No audio output	2-Channel audio, amalgamated	
Audio output 2, with analog audio device	2-Channel audio	No audio output	2-Channel audio, amalgamated	
Audio output 1, with digital audio device	7.1-Channel audio	No audio output	7.1-Channel audio	No audio output
Audio output 2, with digital audio device	7.1-Channel audio	No audio output	7.1-Channel audio	No audio output

* Depending on the monitor EDID.

4.2 Display Modes, Display Options and Switching Methods

All figures in this chapter are examples in a single-head installation with a second monitor at the secondary output without audio mixing.

For an easier understanding, in the figures shown in this chapter, the associated window of the input with USB HID control is illustrated with a colored frame (enabled Active Source Frame option, see chapter 7.2.5, page 82 or chapter 8.2.7, page 116) except for the mirrored Fullscreen display mode that comes without this option.

The settings and explanations of the Multi-Screen Control (referred to as “MSC” below), and the Hot Mouse function are described in the configuration chapters (OSD: see from chapter 7.2.1, page 72, Web UI: see from chapter 8.2.1, page 102).
The switching possibilities and changes of the display modes are described in the operation chapters (see from chapter 12, page 155).

4.2.1 Display Mode Fullscreen

Assignment of Inputs to Outputs

In Fullscreen display mode (referred to as “Fullscreen Mode” below), the window is displayed in full screen and the Draco MV appears like a normal desktop switch for up to four sources. The USB HID control is possible across both outputs.

One selected input (mirrored)

With one selected input, the video signal of the selected input is streamed in the main window of the main monitor. Monitor 2 shows a mirrored image of the main monitor.

Two selected inputs (individual)

With two selected inputs, the video signal of the selected input 1 is streamed in the main window of the main monitor. The video signal of the selected input 2 is streamed in the window of the monitor 2.

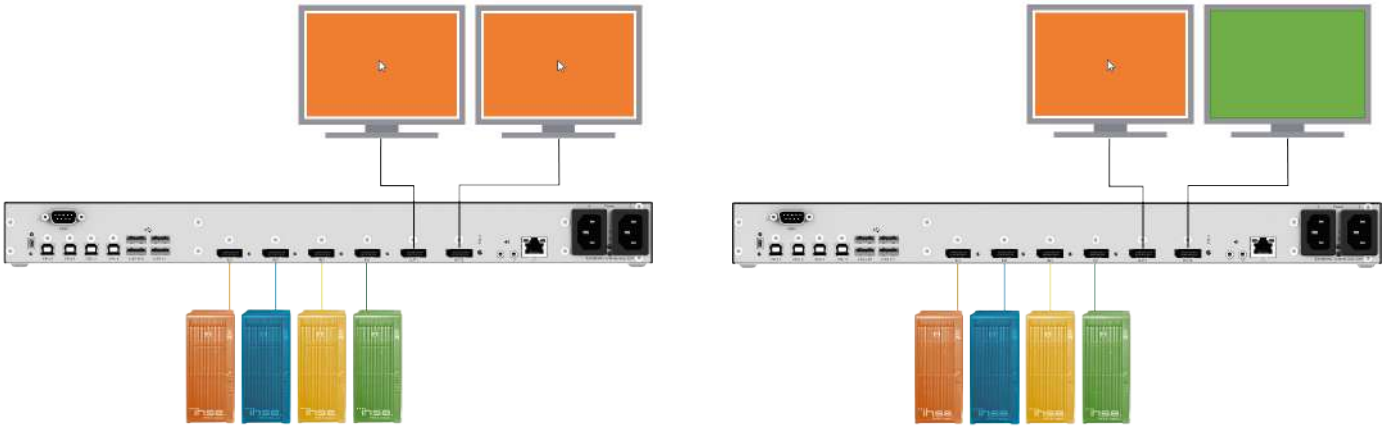


Fig. 6 ***Fullscreen Mode*** *- Window arrangement*

If you want to stream the video signals of a dual-head computer in Fullscreen Mode with a single-head device, we recommend disabling the MSC (see chapter 7.2.1, page 72 or chapter 8.2.1, page 102).

Switching of the USB HID Control

When switching the USB HID control to another input in Fullscreen Mode with two selected inputs the internal window arrangement remains with focused window.

For instance, when switching the USB HID control from input 1 to input 4, the mouse can be used within the associated window.

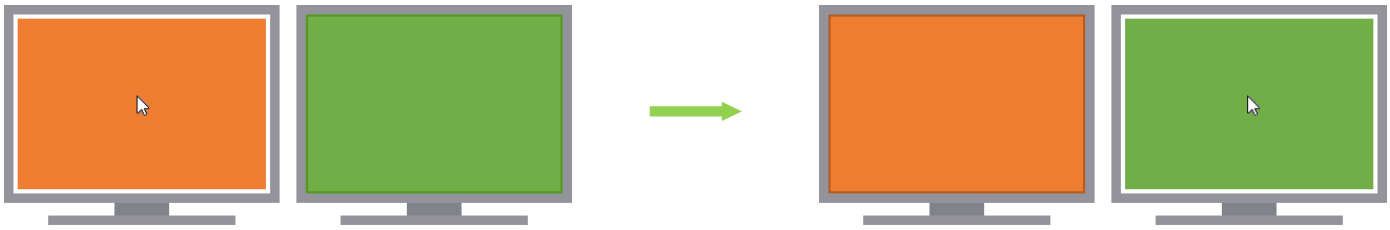


Fig. 7 ***Fullscreen Mode (individual)*** *- Example after switching the USB HID control*

To switch the USB HID control to another input, there are the following possibilities:

- Switching USB HID control via enabled MSC by using the mouse pointer (see chapter 11.5, page 149)

Focusing on another Input

When focusing on another input in Fullscreen Mode with two selected inputs, the window arrangement changes. For instance, when focusing from input 1 to input 4, the main window streams the video signal of the selected input. Monitor 2 shows a mirrored image of the main monitor. The USB HID control is switched to the selected input and the mouse can be used in the associated window.

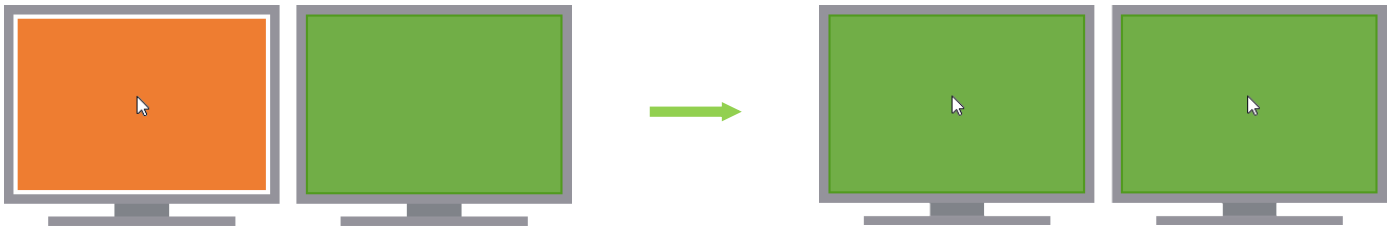


Fig. 8 ***Fullscreen Mode individual to mirrored*** *- Example after focusing on another input*

To keep the display mode and focus on another input, there are the following possibilities:

- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via Web UI (see chapter 14.1.1, page 166 and chapter 14.2.1, page 171, and also chapter 14.3.1, page 176)
- Focusing on another input via API telegram (see Draco MV API user manual)

Focusing on two other Inputs

When focusing on two other inputs in Fullscreen Mode, the window arrangement changes. For instance, when selecting two different inputs, in the window arrangement, the inputs are assigned to the main output (focused input) and to the output 2. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

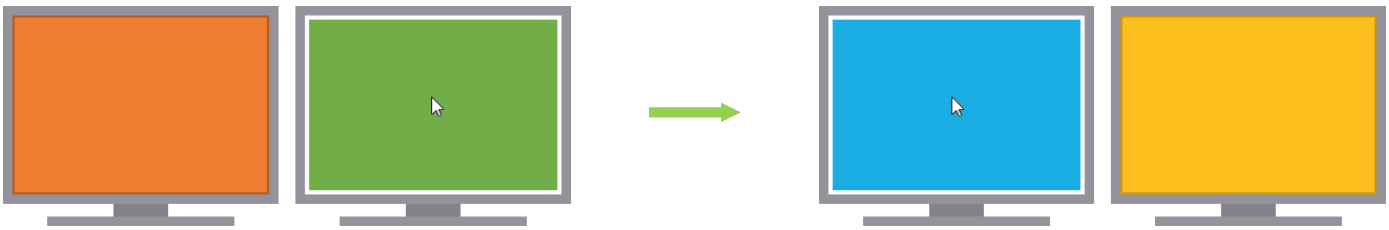


Fig. 9 ***Fullscreen Mode individual to individual****- Example after focusing on two other inputs*

To keep the display mode and select two inputs, there are the following possibilities:

- Focusing on two inputs via keyboard command (see chapter 11.3, page 142)
- Focusing on two inputs via OSD (see chapter 12.1, page 155)
- Focusing on two inputs via Web UI (see chapter 14.1.2, page 169 and chapter 14.2.2, page 174)
- Focusing on two inputs via API telegram (see Draco MV API user manual)

4.2.2 Display Mode Quad (2x2)

Assignment of Inputs to Outputs

In Quad (2x2) display mode (referred to as “Quad Mode” below), the main monitor displays up to four windows of the same size for simultaneously streaming of up to four video signals on the display of the main monitor (Multiview 4:1). Monitor 2 shows a mirrored image of the main monitor.

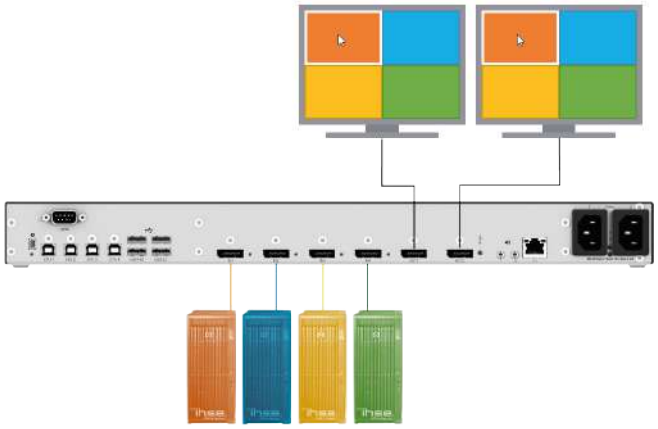


Fig. 10 ***Quad Mode*** *- Window arrangement*

Switching of the USB HID Control or Focusing on another Input

In Quad Mode, the window arrangement remains after switching the USB HID control to another input or after focusing on another input. For instance, when switching the USB HID control from input 1 to input 4, the mouse can be used within the associated window.

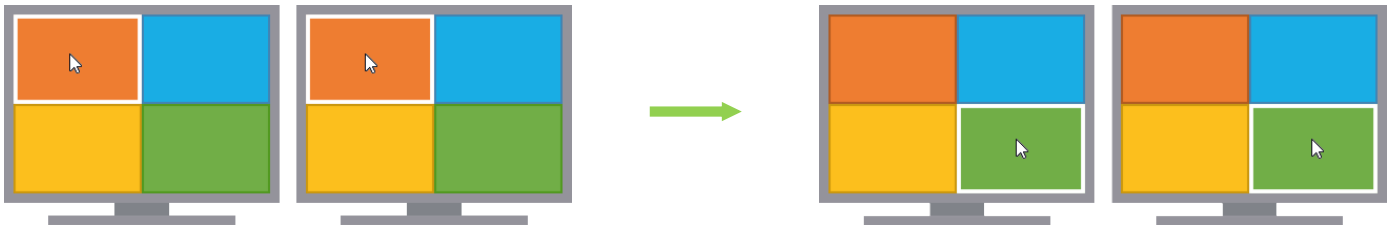


Fig. 11 ***Quad Mode*** *- Example after switching the USB HID control or focusing on another input*

To switch the USB HID control to another input or focus on another input, there are the following possibilities:

- Switching USB HID control via keyboard command (see chapter 11.1, page 142)
- Switching USB HID control via enabled MSC by using the mouse pointer (see chapter 11.5, page 149)
- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via Web UI (see chapter 14.1.1, page 166 and chapter 14.2.1, page 171, and also chapter 14.3.1, page 176)
- Focusing on another input via API telegram (see Draco MV API user manual)

4.2.3 Display Mode Preview

Assignment of Inputs to Outputs

In Preview display mode (referred to as “Preview Mode” below), the main monitor always displays the main window with the streamed video of the focused input in full screen. Monitor 2 provides a preview and displays four windows of the same size for simultaneous streaming of up to four video signals in the following order:
top left/input 1 - top right/input 2 - bottom left/input 3 - bottom right/input 4

The preview window of the focused input, shown on the main monitor, is displayed in black by default.

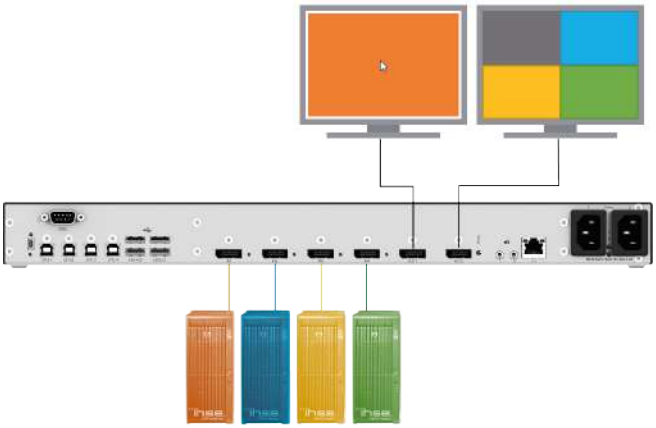


Fig. 12 ***Preview Mode*** *- Window arrangement*

Switching of the USB HID Control

In Preview Mode, the window arrangement remains after switching the USB HID control to another input. For instance, when switching the USB HID control from input 1 to input 2, the mouse can be used within the associated window.

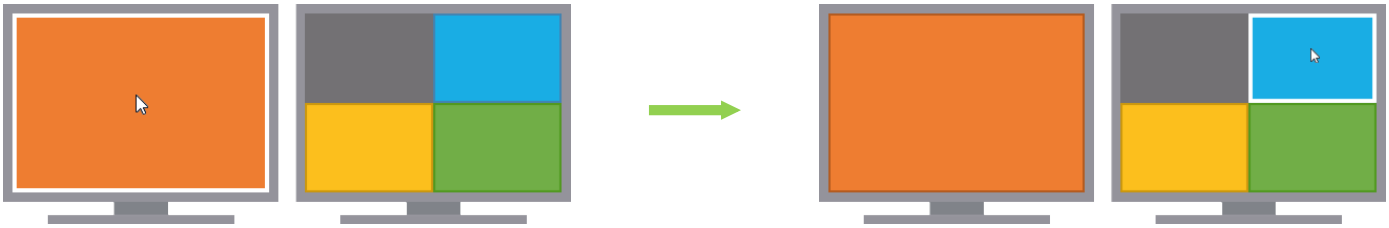


Fig. 13 ***Preview Mode*** *- Example after switching the USB HID control*

To switch the USB HID control to another input, there are the following possibilities:

- Switching USB HID control via keyboard command (see chapter 11.1, page 142)
- Switching USB HID control via enabled MSC by using the mouse pointer (see chapter 11.5, page 149)

Focusing on another Input

In Preview Mode, when focusing on another input, the window arrangement changes. The window associated to the focused input is maximized on the main monitor and the USB HID control switches to the associated source. The order of the preview windows remains and the preview window of the selected input, focused on the main monitor, is displayed in black.

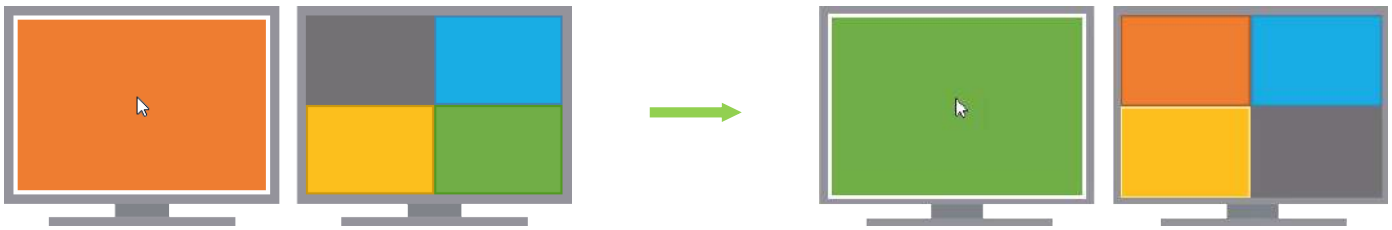


Fig. 14 ***Preview Mode*** *- Example after focusing on another input*

To keep the display mode and focus on another input, there are the following possibilities:

- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via enabled MSC and Hot Mouse function by using the mouse pointer, see chapter 10.2, page 137
- Focusing on another input via Web UI (see chapter 14.1.1, page 166 and chapter 14.2.1, page 171, and also chapter 14.3.1, page 176)
- Focusing on another input via API telegram (see Draco MV API user manual)

4.2.4 Display Mode PiP (1+3) (Picture-in-Picture)

Assignment of Inputs to Outputs

In PiP (1+3) display mode (referred to as “PiP Mode” below), the main monitor displays up to four windows for simultaneously streaming of up to four video signals with one scaled and fitted main window and three smaller windows. The smaller windows are displayed one below the other in numerically ascending order. Monitor 2 shows a mirrored image of the main monitor.

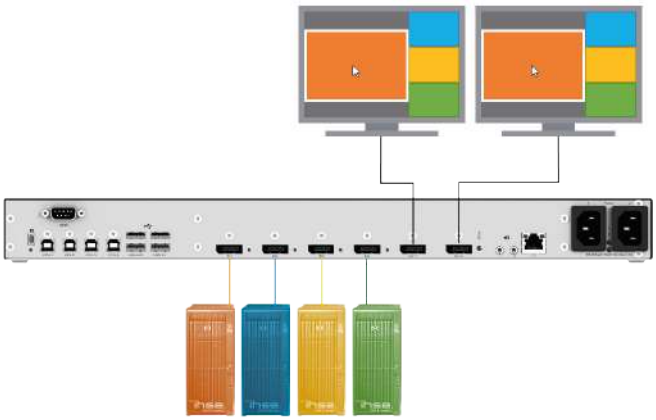


*Fig. 15 **PiP Mode** - Window arrangement*

Switching of the USB HID Control

In PiP Mode, the window arrangement remains after switching the USB HID control to another input. For instance, when switching the USB HID control from input 1 to input 3, the mouse can be used within the associated window.

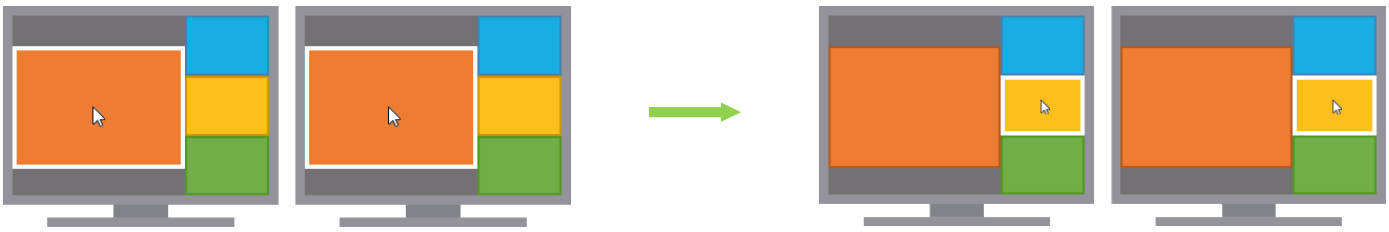


*Fig. 16 **PiP Mode** - Example after switching the USB HID control*

To switch the USB HID control to another input, there are the following possibilities:

- Switching USB HID control via keyboard command (see chapter 11.1, page 142)
- Switching USB HID control via enabled MSC by using the mouse pointer (see chapter 11.5, page 149)

Focusing on another Input

In PiP Mode, when focusing on another input, the window arrangement changes. The video signal of the focused input is streamed on the main window. The USB HID control switches to the associated source and the mouse can be used within the main window. The order of the smaller windows on the right changes accordingly. Monitor 2 shows a mirrored image of the main monitor.

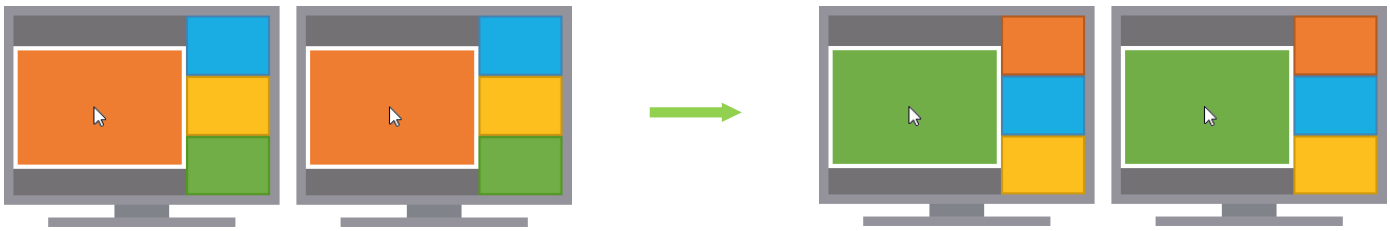


Fig. 17 ***PiP Mode*** *- Example after focusing on another input*

To keep the display mode and focus on another input, there are the following possibilities:

- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via enabled MSC and Hot Mouse function by using the mouse pointer, see chapter 10.2, page 137
- Focusing on another input via Web UI (see from chapter 14.1.1, page 166)
- Focusing on another input via API telegram (see Draco MV API user manual)

4.2.5 Display Mode True PiP (1+3) (Picture-in-Picture)

Assignment of Inputs to Outputs

In True PiP (1+3) display mode (referred to as “True PiP Mode” below), the main monitor displays up to four windows for simultaneously streaming of up to four video signals with one scaled and fitted main window and three smaller windows. The smaller windows are displayed one below the other in numerically ascending order. Monitor 2 shows a mirrored image of the main monitor.

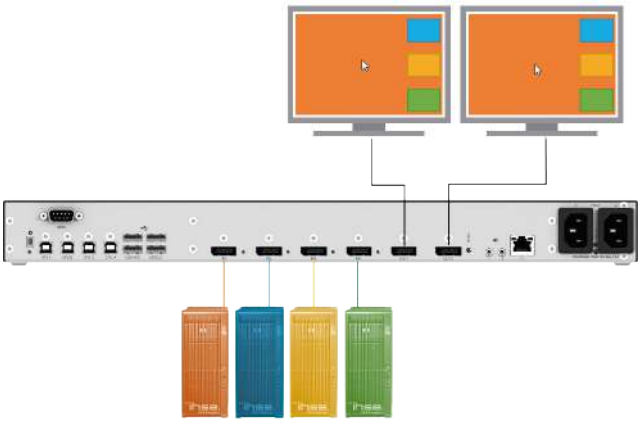


Fig. 18 ***True PiP Mode*** *- Window arrangement*

Switching of the USB HID Control

In True PiP Mode, the window arrangement remains after switching the USB HID control to another input. For instance, when switching the USB HID control from input 1 to input 2, the mouse can be used within the associated window.

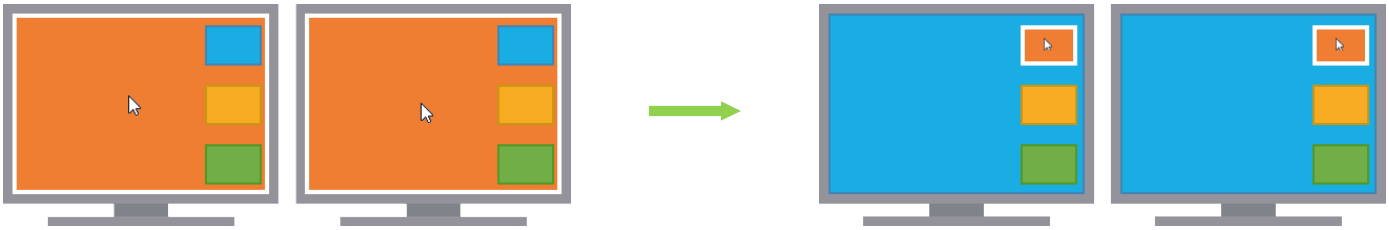


Fig. 19 ***True PiP Mode*** *- Example after switching the USB HID control*

To switch the USB HID control to another input, use the following possibility:

- Switching USB HID control via keyboard command (see chapter 11.1, page 142)

Focusing on another Input

In True PiP Mode, when focusing on another input, the window arrangement changes. The video signal of the selected input is streamed on the main window and the order of the smaller windows on the right changes accordingly. Monitor 2 shows a mirrored image of the main monitor. The USB HID control is switched to the selected input and the mouse can be used within the main window.

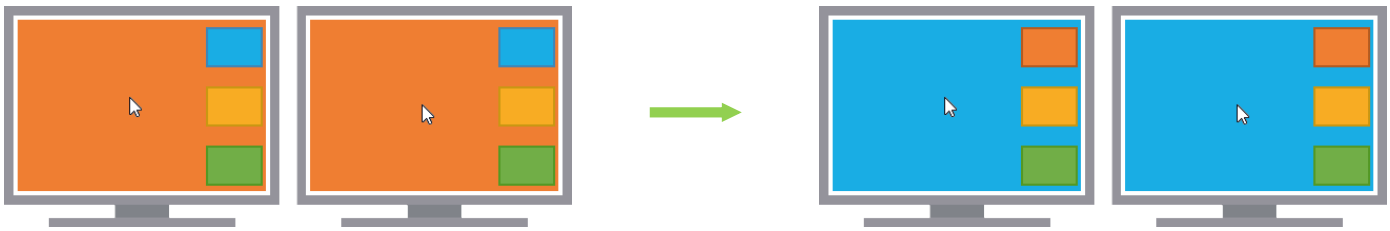


Fig. 20 ***True PiP Mode*** *- Example after focusing on another input*

To keep the display mode and focus on another input, there are the following possibilities:

- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via enabled MSC and Hot Mouse function by using the mouse pointer, see chapter 10.2, page 137
- Focusing on another input via Web UI (see from chapter 14.1.1, page 166)
- Focusing on another input via API telegram (see Draco MV API user manual)

4.2.6 Display Mode PbP (2+2) (Picture-by-Picture)

Assignment of Inputs to Outputs

The PbP (2+2) display mode (referred to as “PbP Mode” below) displays up to four windows of the same size for simultaneously streaming of up to four video signals on two monitors, each with two windows side-by-side per display (OUT1.x: stream 1 and 2, OUT2.x: stream 3 and 4).

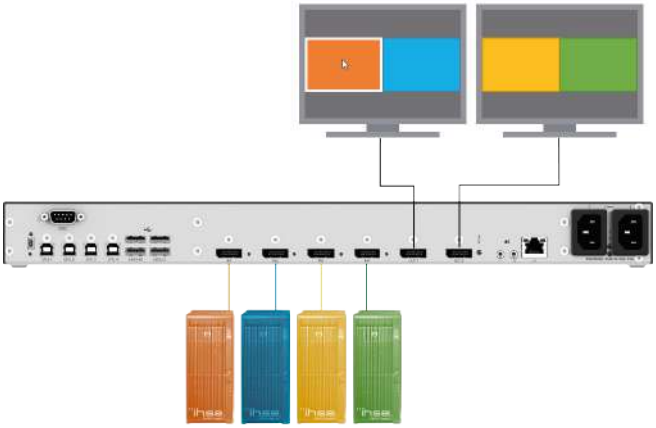


*Fig. 21 **PbP Mode** - Window arrangement*

Switching of the USB HID Control or Focusing on another Input

In PbP Mode, the window arrangement remains after switching the USB HID control to another input or after focusing on another input. For instance, when switching the USB HID control from input 1 to input 4, the mouse can be used within the associated window.

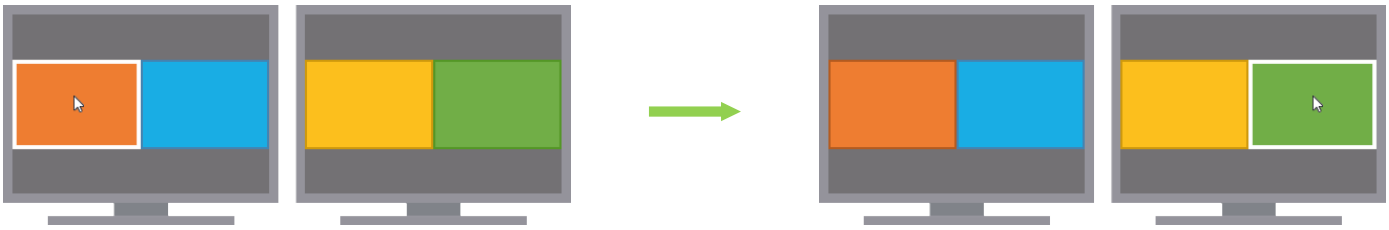


*Fig. 22 **PbP Mode** - Example after switching the USB HID control or focusing on another input*

To switch the USB HID control to another input or focus on another input, there are the following possibilities:

- Switching USB HID control via keyboard command (see chapter 11.1, page 142)
- Switching USB HID control via enabled MSC by using the mouse pointer (see chapter 11.5, page 149)
- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via Web UI (see from chapter 14.1.1, page 166)
- Focusing on another input via API telegram (see Draco MV API user manual)

4.2.7 Display Mode Custom Mode

Assignment of Inputs to Outputs

In Custom Mode, four different layouts (referred to as “Custom Layouts”) can be created and saved with individual names. In Custom Mode, the main monitor displays four windows for simultaneously streaming of up to four video signals. The windows can be freely positioned and resized. The streams can be cropped. A resize of a cropped stream will therefore result in a zooming. Monitor 2 shows a mirrored image of the main monitor.

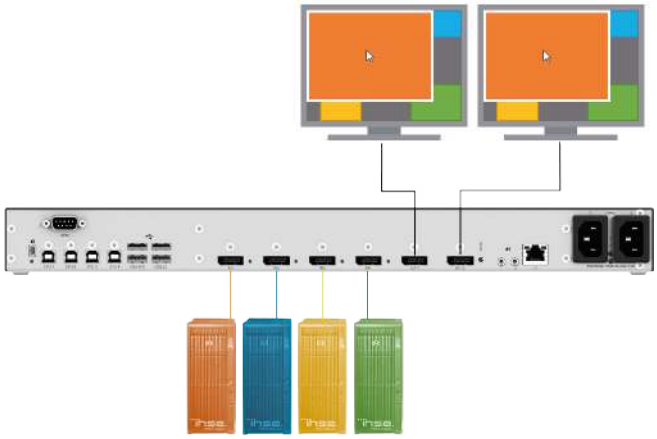


Fig. 23 ***Custom Mode*** *- Window arrangement*

Switching of the USB HID Control Keeping the Windows Arrangement

In a Custom Mode, the window arrangement remains or changes after switching the USB HID control to another input depending on the switching method. When switching the USB HID control, e.g., from input 3 to input 4, the mouse can be used within the associated window.

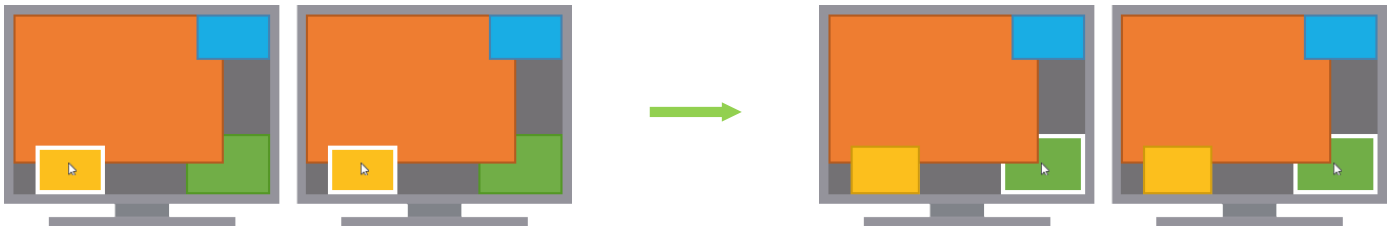


Fig. 24 ***Custom Layout*** *- Example of switching the USB HID control keeping the window arrangement*

To switch the USB HID control keeping the window arrangement, there is the following possibility:

- Switching USB HID control via keyboard command (see chapter 11.1, page 142)

Focusing on another Input

In Custom Mode, when focusing on another input, the window arrangement changes. The video signal of the focused input is streamed in the foreground on the main window. The USB HID control switches to the associated source and the mouse can be used within the main window. Monitor 2 shows a mirrored image of the main monitor.

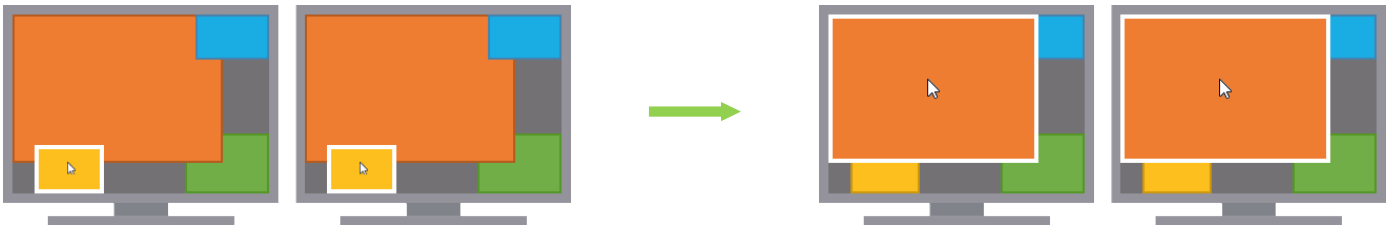


Fig. 25 ***Custom Layout*** *- Example of focusing on another input*

To keep the display mode and focus on another input, there are the following possibilities:

- Switching via keyboard command see chapter 11, page 142
- Switching via enabled MSC by using the mouse pointer, see chapter 11.4, page 147
- Focusing on another input via keyboard command (see chapter 11.2, page 143)
- Focusing on another input via external switching solution (see chapter 12, page 155)
- Focusing on another input via OSD (see chapter 12.1, page 155)
- Focusing on another input via enabled MSC and Hot Mouse function by using the mouse pointer, see chapter 10.2, page 137
- Focusing on another input via Web UI (see from chapter 14.1.1, page 166)
- Focusing on another input via API telegram (see Draco MV API user manual)

4.3 Product Types

Part No.	Description	
MV42-DPSH	Input	4x DP 1.2 with 4K60, 4x USB Type B
	Output	2x DP 1.2 with 4K60, 4x USB Type A (each 2x USB HID/USB 2.0). 2x audio (3.5 mm, optical digital/analog)
	Input/Output	1x DB9 Male with 8x GPIO
MV42-DPDH	Input	8x DP 1.2 with 4K60, 4x USB Type B
	Output	4x DP 1.2 with 4K60, 4x USB Type A (each 2x USB HID/USB 2.0). 4x audio (3.5 mm, optical digital/analog)
	Input/Output	1x DB9 Male with 8x GPIO
MV42-H2SH	Input	4x HDMI 2.0 with 4K60, 4x USB Type B
	Output	2x HDMI 2.0 with 4K60, 4x USB Type A (each 2x USB HID/USB 2.0). 2x audio (3.5 mm, optical digital/analog)
	Input/Output	1x DB9 Male with 8x GPIO
MV42-H2DH	Input	8x HDMI2.0 with 4K60, 4x USB Type B
	Output	4x HDMI 2.0 with 4K60, 4x USB Type A (each 2x USB HID/USB 2.0). 4x audio (3.5 mm, optical digital/analog)
	Input/Output	1x DB9 Male with 8x GPIO

4.4 Accessories for the Chassis

Part No.	Description
474-6RMK	19"/1U rack mount kit for 6-slot chassis
PC-TYP-E/C13-020	Power cord IEC Schuko 90° Type-E/C13 2.0 m lockable
PC-TYP-B/C13-020	Power cord IEC US Type-B/C13 2.0 m lockable

4.5 Accessories for the Interfaces

Part. No.	Description	Interface
VC-DP2DP-020	DisplayPort cable 2 m male/male	Video
VC-HD2HDSL-018-MM	HDMI cable 1.8 m male/male with 1x SupraLock	Video
455-CK	Duplex audio cable 2 m (3.5 mm)	Audio
455-CR	Cinch cable 2.5 m	Audio
455-CT	TOSLINK cable 2.0 m	Audio
247-U1	USB cable Type A-B, 1.8 m	USB/USB HID
247-U2	USB cable Type A-B, 3.0 m	USB/USB HID
436-USB20	USB extension cable Type A-A, 3.0 m	USB/USB HID
476-CTRL4-GPIO	Remote Control for Draco vario GPIO module with 4 push buttons/LEDs (cable length approx. 3.0 m)	GPIO

4.6 Scope of Delivery

The scope of delivery may vary depending on country of delivery and customer specification.

Product type	Scope of delivery
MV42-DPSH	• Draco MultiView 4K60 • 2x IEC country-specific power cord C13, 2.0 m, lockable • 4x DisplayPort cable 2.0 m male/male • 4x USB cable Type A-B, 1.8 m • Quick Setup
MV42-DPDH	• Draco MultiView 4K60 • 2x IEC country-specific power cord C13, 2.0 m, lockable • 8x DisplayPort cable 2.0 m male/male • 4x USB cable Type A-B, 1.8 m • Quick Setup
MV42-H2SH	• Draco MultiView 4K60 • 2x IEC country-specific power cord C13, 2.0 m, lockable • 4x HDMI cable 1.8 m male/male with 1x SupraLock • 4x USB cable Type A-B, 1.8 m • Quick Setup
MV42-H2DH	• Draco MultiView 4K60 • 2x IEC country-specific power cord C13, 2.0 m, lockable • 8x HDMI cable 1.8 m male/male with 1x SupraLock • 4x USB cable Type A-B, 1.8 m • Quick Setup

If anything is missing, please contact your distributor.

4.7 Device Views

The following views of the Draco MultiView 4K$_{60}$ illustrate the currently available variants.

The legends of the figures contain the following information:
Port designation, interface type, connected device

4.7.1 Overview Draco MultiView 4K$_{60}$

Fig. 26 Front side - Device overview

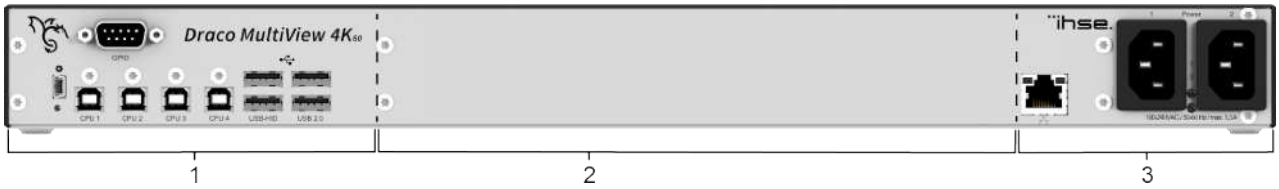


Fig. 27 Interface side - Device overview

1 Ports for USB, service, and external switching solution via dry contact

2 Different variants with video/audio inputs and outputs (details see below chapters)

3 Ports for network and power supply voltage

4.7.2 Ports for CPUs, USB Devices, Service and External Switching Solution

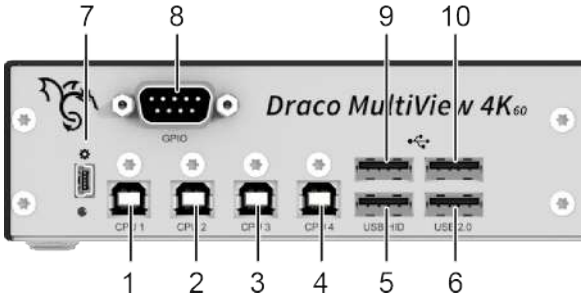


Fig. 28 Interface side - Ports for CPUs, USB devices, service, and external switching solution

1 CPU1, USB Type B, source 1
2 CPU2, USB Type B, source 2
3 CPU3, USB Type B, source 3
4 CPU4, USB Type B, source 4
5 USB HID, USB Type A, USB HID device 1
6 USB 2.0, USB Type A, USB 2.0 device 1
7 ⚙, Mini-USB, service interface
8 GPIO, D-SUB 9 male socket, interface for an external switching solution via dry contact
9 USB HID, USB Type A, USB HID device 2
10 USB 2.0, USB Type A, USB 2.0 device 2

4.7.3 Ports for Video/Audio, DisplayPort 1.2, Single Head

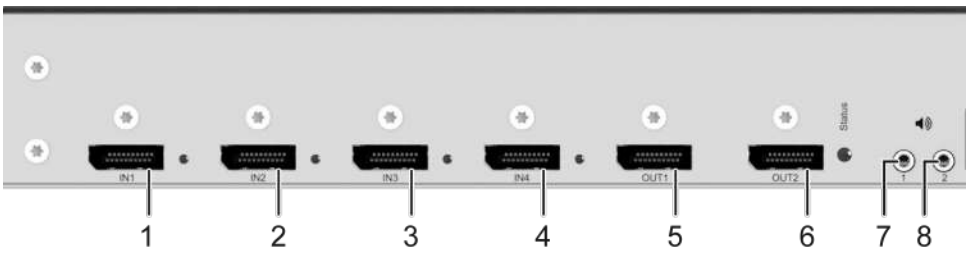


Fig. 29 Interface side - Ports for DisplayPort 1.2, Single Head

1 IN1, DP 1.2, input source 1
2 IN2, DP 1.2, input source 2
3 IN3, DP 1.2, input source 3
4 IN4, DP 1.2, input source 4
5 OUT1, DP 1.2, main output to main monitor
6 OUT2, DP 1.2, output 2 to monitor 2
7 1, Analog-digital audio output 1, audio device 1
8 2, Analog-digital audio output 2, audio device 2

4.7.4 Ports for Video/Audio, DisplayPort 1.2, Dual Head

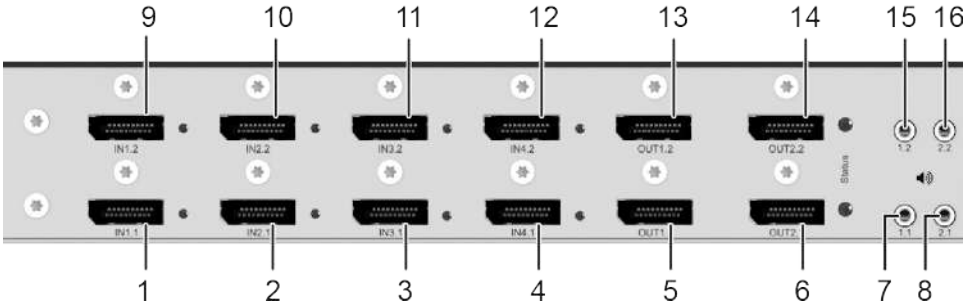


Fig. 30 Interface side - Ports for DisplayPort 1.2, dual head

1 IN1.1, DP 1.2, input 1 from source 1
2 IN2.1, DP 1.2, input 1 from source 2
3 IN3.1, DP 1.2, input 1 from source 3
4 IN4.1, DP 1.2, input 1 from source 4
5 OUT1.1, DP 1.2, main output to main monitor 1
6 OUT2.1, DP 1.2, output 2 to monitor 2
7 1.1, Analog-digital audio output 1, audio device 1
8 2.1, Analog-digital audio output 2, audio device 2
9 IN1.2, DP 1.2, input 2 from source 1
10 IN2.2, DP 1.2, input 2 from source 2
11 IN3.2, DP 1.2, input 2 from source 3
12 IN4.2, DP 1.2, input 2 from source 4
13 OUT1.2, DP 1.2, output 1 to monitor 1
14 OUT2.2, DP 1.2, output 2 to monitor 2
15 1.2, Analog-digital audio output 1, audio device 1
16 2.2, Analog-digital audio output 2, audio device 2

4.7.5 Ports for Video/Audio, HDMI 2.0, Single Head

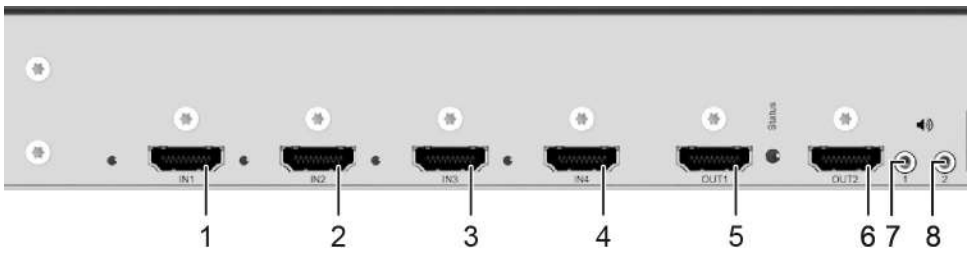


Fig. 31 Interface side - Ports for HDMI 2.0, Single Head

1 IN1, HDMI 2.0, input source 1
2 IN2, HDMI 2.0, input source 2
3 IN3, HDMI 2.0, input source 3
4 IN4, HDMI 2.0, input source 4
5 OUT1, HDMI 2.0, main output to main monitor
6 OUT2, HDMI 2.0, output 2 to monitor 2
7 1, Analog-digital audio output 1, audio device 1
8 2, Analog-digital audio output 2, audio device 2

4.7.6 Ports for Video/Audio, HDMI 2.0, Dual Head

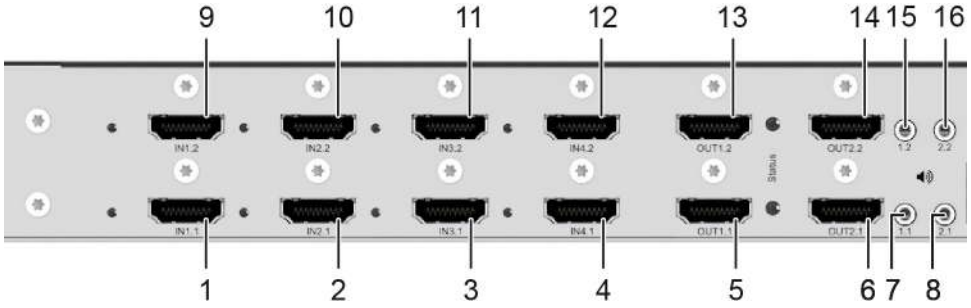


Fig. 32 Interface side - Ports for HDMI 2.0, dual head

1 IN1.1, HDMI 2.0, input 1 from source 1
2 IN2.1, HDMI 2.0, input 1 from source 2
3 IN3.1, HDMI 2.0, input 1 from source 3
4 IN4.1, HDMI 2.0, input 1 from source 4
5 OUT1.1, HDMI 2.0, output to main monitor
6 OUT2.1, HDMI 2.0, output 2 to monitor 2
7 1.1, Analog-digital audio output 1, audio device 1
8 2.2, Analog-digital audio output 2, audio device 2
9 IN1.2, HDMI 2.0, input 2 from source 1
10 IN2.2, HDMI 2.0, input 2 from source 2
11 IN3.2, HDMI 2.0, input 2 from source 3
12 IN4.2, HDMI 2.0, input 2 from source 4
13 OUT1.2, HDMI 2.0, output to monitor 1
14 OUT2.2, HDMI 2.0, output 2 to monitor 2
15 1.2, Analog-digital audio output 1, audio device 1
16 2.2, Analog-digital audio output 2, audio device 2

4.7.7 Ports for Network and Power Supply Voltage

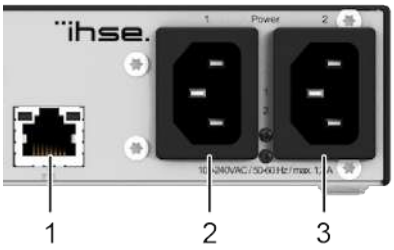


Fig. 33 Interface side - Ports for network and power supply voltage

1 , RJ45, network interface
2 1, IEC, power supply voltage 1
3 2, IEC, power supply voltage 1, redundancy

4.8 Device Status Indication

4.8.1 USB HID Control

Fig. 34 Interface side - Status LED for switching

1 LED for the USB HID control

Status LED for the Switching Status of the USB HID Control

Pos.	LED	Status	Description
1	Green	1x flashing	USB HID control switched to USB input CPU1.
		2x flashing	USB HID control switched to USB input CPU2.
		3x flashing	USB HID control switched to USB input CPU3.
		4x flashing	USB HID control switched to USB input CPU4.

4.8.2 USB HID Control and Status, DisplayPort 1.2, Single Head

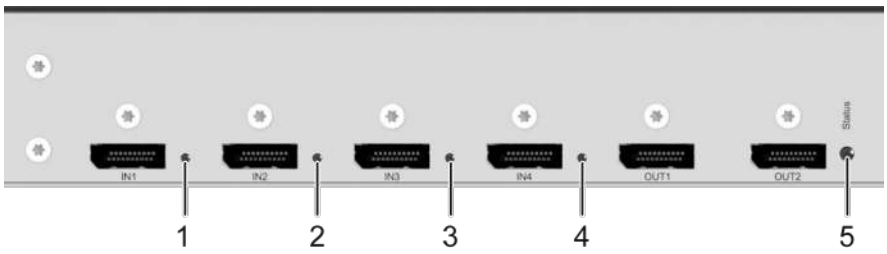


Fig. 35 Interface side - DisplayPort 1.2, single head - Status LEDs for USB HID control

1 LED, USB HID control for input CPU1
2 LED, USB HID control for input CPU2
3 LED, USB HID control for input CPU3
4 LED, USB HID control for input CPU4
5 LED, system status of the video/audio board

Status LEDs for USB HID Control and System Status

Pos.	LED	Status	Description
1-4	**USB HID control**	Off	No USB HID control of the associated input available.
		Green	The USB HID control is switched to the associated input.
5	**System**	Off	The system is off, no power supply voltage available.
		Light blue*	The system starts up.
		Flashing green	The system is ready.
		Red*	The system shuts down.
		Flashing red	The system is off, power supply voltage available.

* During the transition to the next state, the LED goes off briefly (system boot to system ready and system shutdown/system off).

4.8.3 USB HID Control and Status, DisplayPort 1.2, Dual Head Ports

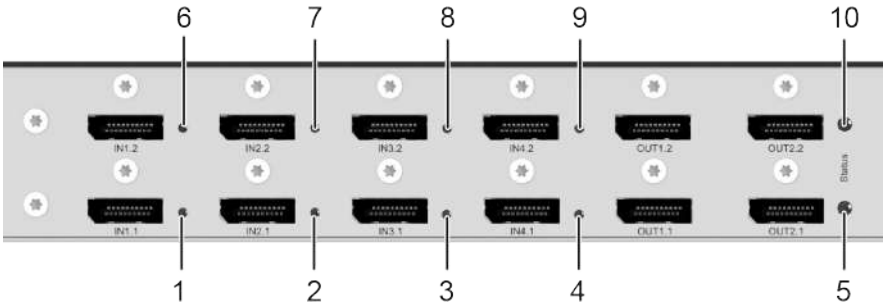


Fig. 36 Interface side - DisplayPort 1.2, dual head - Status LEDs for USB HID control

1 LED, USB HID control for input CPU1
2 LED, USB HID control for input CPU2
3 LED, USB HID control for input CPU3
4 LED, USB HID control for input CPU4
5 LED, system status of the primary video/audio board
6 LED, USB HID control for input CPU1
7 LED, USB HID control for input CPU2
8 LED, USB HID control for input CPU3
9 LED, USB HID control for input CPU4
10 LED, system status of the secondary video/audio board

Status LEDs for USB HID Control and System Status

Pos.	LED	Status	Description
1-4, 6-9	**USB HID control**	Off	No USB HID control of the associated input available.
		Green	The USB HID control is switched to the associated input.
5, 10	**System**	Off	The system is off, no power supply voltage available.
		Light blue*	The system starts up.
		Flashing green	The system is ready.
		Red*	The system shuts down.
		Flashing red	The system is off, power supply voltage available.

* During the transition to the next state, the LED goes off briefly (system boot to system ready and system shutdown/system off).

4.8.4 USB HID Control and Status, HDMI 2.0, Single Head Ports

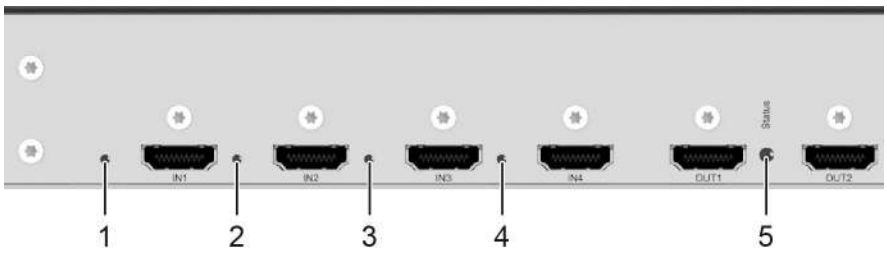


Fig. 37 Interface side - HDMI 2.0, single head - Status LEDs for USB HID control

1 LED, USB HID control for input CPU1
2 LED, USB HID control for input CPU2
3 LED, USB HID control for input CPU3
4 LED, LED, USB HID control for input CPU4
5 Status LED, system status of the video/audio board

Status LEDs for USB HID Control and System Status

Pos.	LED	Status	Description
1-4	**USB HID control**	Off	No USB HID control of the associated input available.
		Green	The USB HID control is switched to the associated input.
5	**System**	Off	The system is off, no power supply voltage available.
		Light blue*	The system starts up.
		Flashing green	The system is ready.
		Red*	The system shuts down.
		Flashing red	The system is off, power supply voltage available.

* During the transition to the next state, the LED goes off briefly (system boot to system ready and system shutdown/system off).

4.8.5 USB HID Control and Status, HDMI 2.0, Dual Head Ports

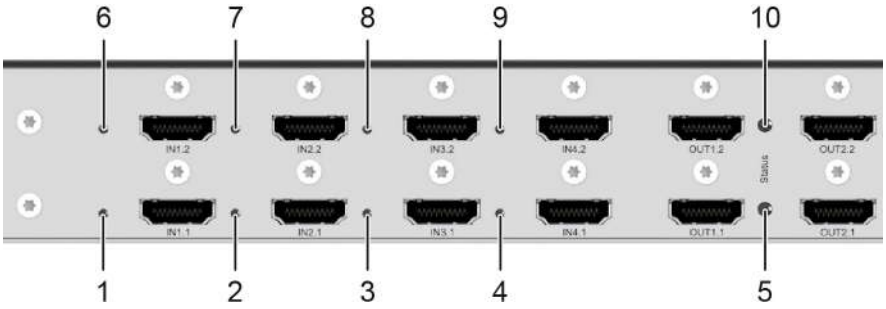


Fig. 38 Interface side - HDMI 2.0, dual head - Status LEDs for USB HID control

1 LED, USB HID control for input CPU1
2 LED, USB HID control for input CPU2
3 LED, USB HID control for input CPU3
4 LED, USB HID control for input CPU4
5 LED, system status of the primary video/audio board
6 LED, USB HID control for input CPU1
7 LED, USB HID control for input CPU2
8 LED, USB HID control for input CPU3
9 LED, USB HID control for input CPU4
10 LED, system status of the secondary video/audio board

Status LEDs for USB HID Control and System Status

Pos.	LED	Status	Description
1-4, 6-9	**USB HID control**	Off	No USB HID control of the associated input available.
		Green	The USB HID control is switched to the associated input.
5, 10	**System**	Off	The system is off, no power supply voltage available.
		Light blue*	The system starts up.
		Flashing green	The system is ready.
		Red*	The system shuts down.
		Flashing red	The system is off, power supply voltage available.

* During the transition to the next state, the LED goes off briefly (system boot to system ready and system shutdown/system off).

4.8.6 Network Connection and Power Supply Voltage

Fig. 39 Interface and front side - Status LEDs of the network and power supply voltage ports

1 LED 1 for network connection
2 LED 2 for network connection
3 LED for power supply voltage 1
4 LED for power supply voltage 2
5 LED for power supply voltage 1
6 LED for power supply voltage 2

Status LEDs for Network Connection

The following table shows the states/colors of the network LED (Pos. 1) and activity LED (Pos. 2) for the respective situation.

Pos. 1	Pos. 2	Description
Off	Off	No network connection available.
Green	Off	Network connection available, no data traffic available.
Green	Orange	Network connection available, data traffic active.

Status LEDs for Power Supply Voltage

The following tables show the related LED states/colors for the left power connector (upper LED Pos. 3) and right power connector (lower LED Pos. 4) for the respective situation.

Pos.	LED	Description
3, 5	Green	Redundant power supply voltage available.
4, 6	Green	
3, 5	Green	No redundant power supply voltage available.
4, 6	Red	
3, 5	Red	No redundant power supply voltage available.
4, 6	Green	
3, 5	Off	No power supply voltage available.
4, 6	Off	

5 Access Options

You have the following options to configure and operate the Draco MV:

Access and operation option	Description
Command mode	The command mode allows several functions to be controlled by keyboard commands during normal use.
OSD	The OSD (On-Screen-Display) allows to configure the basic settings of the Draco MV operating system, to query several states, and to control several functions by keyboard commands during normal use.
Draco MV Web User Interface	The Draco MV can be configured via Web User Interface (Web UI) as of FW01.08. Extended settings are configurable. • Advanced configuration • Firmware update • Local backup option • Documentation
Management software	The management software (Tera Tool) is available as a single executable program file (desktop and app version) that does not require an installation. The management software can be downloaded from the link https://www.ihse.com/software. The management software can be used to configure special settings for extended monitoring options as, e.g., SNMP or Syslog, to query the monitoring status, or to find the Draco MV using the Device Finder with unknown IP address. For more information about the management software, please refer to the Draco tera manual.
API telegram	The Draco MV API is used to control the Draco MV externally by network (TCP/IP) connection. The Draco MV API has been successfully implemented with various common media control systems. The Draco MV API provides the full scope of switching functionality. It does not support the configuration of a Draco MV system.
Mini-USB interface	The Draco MV can be parametrized or updated via Mini-USB interface.

5.1 Command Mode

To start the command mode, use a keyboard sequence (Hot Key) at the keyboard plugged in the Draco MV.

NOTICE
While in command mode, ➡ the **Caps Lock** and **Scroll Lock** LEDs on the keyboard are flashing, ➡ the USB HID devices are not operable, mouse and keyboard functions are deactivated, ➡ only selected keyboard commands are available.

If there is no keyboard command entered within 10 seconds after activating the command mode, it will be deactivated automatically.

The following keyboard commands are used to enter, and to exit the command mode, and to change the Hot Key.

Function	Keyboard command
Start the command mode	2x Left Shift (Hot Key, factory setting)
Exit the command mode	Esc and also Left Shift + Esc, if necessary
Change the Hot Key	current Hot Key, c, new Hot Key Code, Enter

NOTICE
If installing the Draco MV with additional KVM devices (e.g., KVM matrix switch, KVM extender, or U-Switch), please note the existing Hot Keys of the KVM devices. For instance, the Hot Key 2x Left Shift opens the OSD of the Draco tera matrices. Different Hot Keys for the individual KVM devices must be defined, e.g., 2x Right Shift for the Draco MV.

Hot Key Code

The Hot Key to start the command mode can be changed. The following table lists the Hot Key codes for the available Hot Keys.

Hot Key Code	Hot Key
0	Freely selectable, except Esc, Del, Backspace and Enter
2	2x Scroll
3	2x Left Shift (default)
4	2x Left Ctrl
5	2x Left Alt
6	2x Right Shift
7	2x Right Ctrl
8	2x Right Alt

Change the current Hot Key via Hot Key Code (exemplary)

To change the current Hot Key to, e.g., 2x Left Alt, enter Hot Key, c, 5, Enter.

Set a freely selectable Hot Key (exemplary)

To set a freely selectable Hot Key (e.g., 2x Space), enter Hot Key, c, 0, Space, Enter.

Keyboard commands are fixed to the position of the keys on the keyboard. Keyboard mapping tables may vary for country-specific layouts.

➡ Note the key position of a freely defined Hot Key when changing the keyboard layout, e.g., from QWERTZ to AZERTY. E.g., if defining 2x a as Hot Key on a German or US keyboard layout, the French keyboard layout (AZERTY) requires then 2x q as Hot Key to be pressed instead

Reset the Hot Key

To set a Hot Key back to default settings, press Right Shift + Del within 5 s after switching on the CON Unit or plugging in a keyboard.

The Hot Key is set back to Left Shift.

5.2 Control Options via OSD

NOTICE

Function restriction when connected to the wrong inputs/outputs

If only one monitor is connected to output 2 of the primary video board, or monitors are connected only to outputs of the secondary video board of dual-head systems, the OSD cannot be opened.

The OSD only opens on a monitor connected to the main output.

➡ Always connect single-head sources and the main monitor on the primary video board.

➡ Always observe the assignment of the inputs to the outputs, see overview in chapter 4.1, page 17.

5.2.1 Keyboard Control

The OSD can be operated via keyboard and mouse. The following keyboard commands are used to open and to exit the OSD:

Keyboard command	Function
Hot Key, o	Opens the OSD.
Esc	Exits the OSD in the main menu or go back one step in the menu structure.
Left Shift + Esc	Exits the OSD within the menus.
Left Ctrl + Esc	
F10	Opens a login dialog for the administrator for accessing the configuration menu. Logs the administrator out of the configuration menu.

NOTICE

If the OSD is closed with one of the keyboard commands mentioned above, possible changes are not saved. For information on saving changes, see configuration descriptions from chapter 7.6, from page 100.

Entering the OSD and the Main Menu

To open the main menu, proceed as follows:

1. Press the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press o to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the monitor showing the **Switch** menu.
3. Press Esc to open the main menu.

Leaving the OSD

➡ Press Esc in the main menu or press Left Shift + Esc anywhere within the OSD.

The OSD is closed without saving any changes and the currently active CPU connection will be displayed.

5.2.2 Keyboard Commands

The following keyboard keys are available for the navigation and configuration within the menus:

Keyboard key	Function
Left Arrow	Input field: cursor left
	In menus: next input field
Right Arrow	Input field: cursor right
	In menus: previous input field
Up Arrow	In input fields: line up (with wrap around)
	In menus: line up (without wrap around)
Down Arrow	In input fields: line down (with wrap around)
	In menus: line down (without wrap around)
Page Up	Previous page in menus with more than one page
Page Down	Next page in menus with more than one page
Tab	In menus with input fields: next input field
Left Shift + Tab	In menus with input fields: previous input field
+	Next option in selection fields
-	Previous option in selection fields
Spacebar	Switching in selection fields between two conditions, e. g. between **ON**/**OFF** or **Y** (Yes)/**N** (No)
Enter	In menus with input fields: save data
	In menus: select menu item
	With buttons: confirm selected button
Esc	In menus with input fields: cancel data input without saving
	In menus with selection fields: go back to the superior menu

Set a Fast Key for a direct Opening of the OSD

Next to the Hot Key for starting the command mode, a Fast Key can be exclusively set for opening the OSD directly. How often the shortcut key has to be pressed depends on the specified key: 1x for function keys or print key, 2x for all other keys.

To select a Fast Key from the Hot Key Code table (see page 49), enter:

Hot Key, f, Hot Key Code, Enter

To define a freely selectable Fast Key (e.g., 2x Space), enter Hot Key, f, 0, Space, Enter.

Delete the Fast Key

To delete the Fast Key, enter Hot Key, f, 0, Del, Enter.

5.2.3 Menu Structure

The general layout of the OSD is structured into three areas:

- Upper status area (topmost two text lines)
- Working area (here shown with the main menu)
- Lower status area (lowest two text lines)

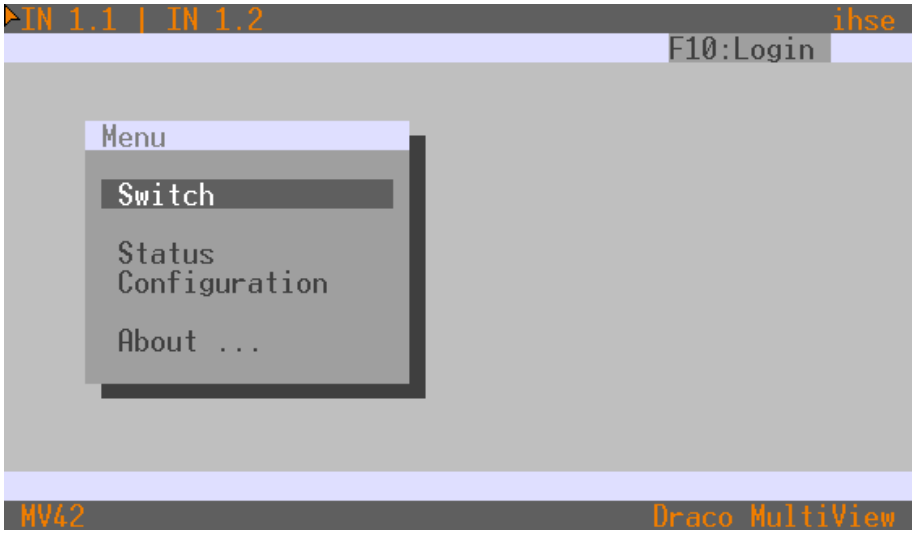


*Fig. 40 OSD menu **Landing page***

The following functions are available in most of the menus:

Button	Function
Cancel	Reject changes
Okay	Confirm changes (temporary storage of the active configuration in the volatile memory of the Draco MV).

NOTICE

Possible loss of configuration changes

By clicking **Okay**, changes are overtaken to the active configuration and saved in the volatile memory of the Draco MV. In the event of a sudden power failure, these changes are lost.

➡ To save changes permanently save the configuration changes into the active configuration (**Save**, see chapter 7.6, page 100) or perform a restart (**Restart MV**, see chapter 12.4.1, page 164).

5.3 Control Options via Web UI

The browser may display a "This site is not secure" warning message until you have installed valid certificates. Click to accept the warnings and go to the site. See chapter 15.7, page 204 for help installing certificates that prevent these warnings.

5.3.1 Menu Structure

The menu structure of the Web UI is subdivided into several sections. Clicking on a symbol in the toolbar opens the task area with the working area of the first task.

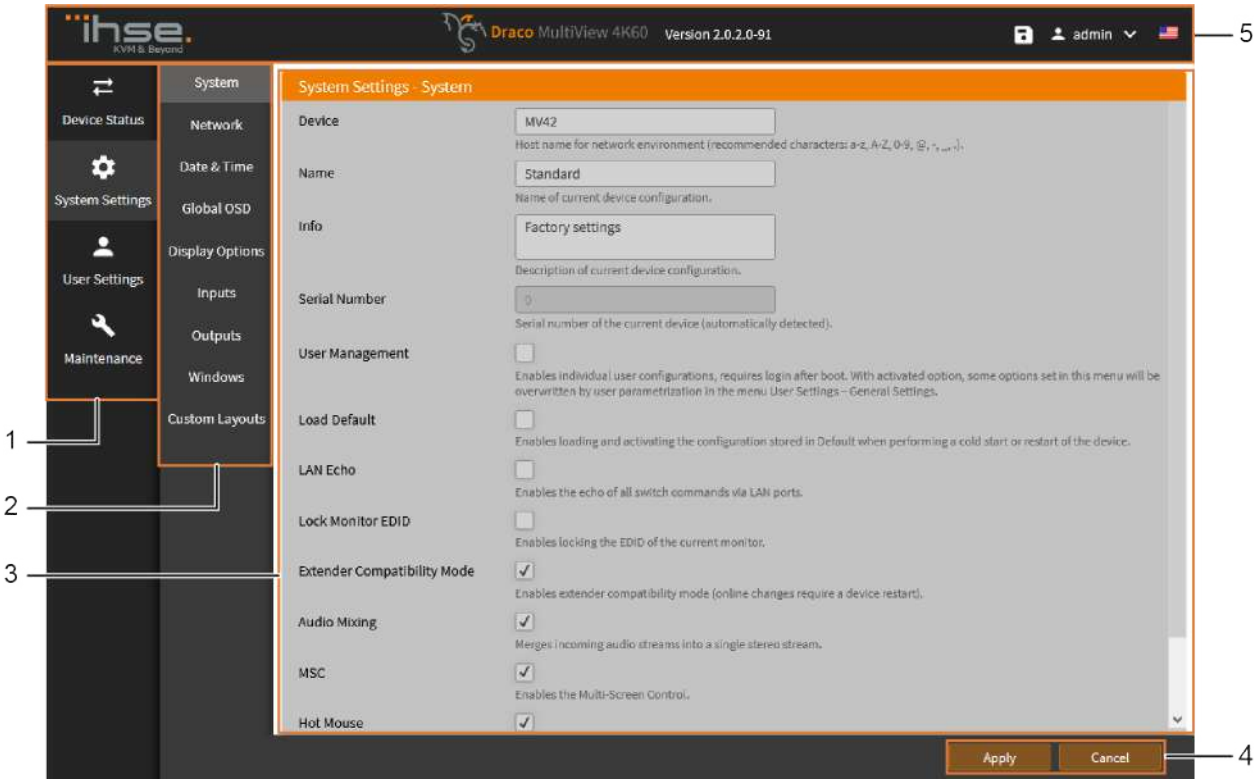


*Fig. 41 Web UI **Menu structure***

1 Toolbar
2 Task area sometimes with subtasks
3 Working area
4 Buttons
5 Status bar (shows version, language, user options and Remote Save option)

Status Bar

*Fig. 42 Web UI **Status bar***

1 Manufacturer
2 Product name
3 Web UI version
4 User options (change password, logout)
5 Remote Save (save changes on the device)

Online Help

After calling up a function from the toolbar, task area or subtasks, a menu opens in the working area of the Web UI, sometimes with several sections. An online help is available for these menus, which can be called up by pressing F1 on the keyboard. An internet connection and a browser are required for opening the online help (PDF file).

Working areas

The following control elements are included in the working areas:

Designation	Element	Description
Checkbox	☐	Function is not active, disabled by default or by mouse click.
	☑	Function is active, enabled by default or by mouse click.
Slider	0 30	Slider to disable or to enable a function with certain values.
Drop-down menu	----	A selection list is opened by mouse click on the arrow.

The following actions are available in most of the working areas:

Button	Action
Apply	Confirm changes (temporary storage of the active configuration in the volatile memory of the Draco MV).
Cancel	Reject changes.

NOTICE

Possible loss of changes

By clicking **Apply**, changes are applied to the active configuration and saved in the volatile memory of the Draco MV. In the event of a sudden power failure, these changes are lost.

➡ To save changes permanently save the configuration changes into the active configuration (**Save**, see chapter 7.6, page 100) or perform a restart (**Restart MV**, see chapter 12.4.1, page 164).

5.3.2 Mouse Control

The following mouse commands are selectable for menu functions:

Mouse command	Function
Left mouse button	Select menu, select function, open drop-down menus, enter input field, activate/deactivate option checkboxes, etc.
Right mouse button	Open context specific selection menus

5.3.3 Keyboard Control

Selected fields, checkboxes, sliders, or drop-down menus are highlighted as helpful orientation.

The following keyboard keys are available for the navigation and configuration within the menus:

Keyboard key	Function
Left Arrow	Move cursor/slider to the left.
Right Arrow	Move cursor/slider to the right.
Up Arrow	Move up in drop-down, highlights the current selection in the list.
Down Arrow	Move down in drop-down, highlights the current selection in the list.
Page Up	Scroll up in working areas that do not fit one page.
Page Down	Scroll down in working areas that do not fit one page.
Tab	In working areas: select next element (input field, checkbox, slider, drop-down menu.
Left Shift + Tab	In working areas: select previous element (input field, slider, checkbox, drop-down menu.
Enter	Select drop-down menu item.
Esc	Leave working area of a task/subtask.
Space	Enable/Disable option (checkbox) and confirms highlighted drop-down menu selection

5.3.4 Reload Options

The information shown in the Web UI is dynamically actualized except the event log that can be manually reloaded in the menu. If manually reloading the browser, a re-login is required.

5.3.5 Context Function

The Web UI offers several context functions that support user-friendly and efficient operation. The context functions are described in the respective chapters.

Context function	Action	Results
Execute context function	Click with the right mouse button on a field.	A context menu opens and displays functions available for the corresponding filed (if existing).
	Click with the left mouse button on the desired function.	The desired function is executed.

5.3.6 Filter Function

Tables in the Web UI offer a filter function that supports a fast and smooth search. The filter entry field is located above the header.

Filter function	Action	Results
Activate the filter	Select a task from the **Task** drop-down menu. Click with the left mouse button in the **Message** entry. Write the word or part of a word to be filtered. Click **Filter**.	➡ The filter results are shown immediately.
Delete the filter.	Delete the text in the filter entry field or click  .	➡ The table shows the complete content.

5.3.7 Device Status

Several information and operation options are offered in this menu:

➡ Click **Device Status** in the toolbar to display the **Device Status** overview.

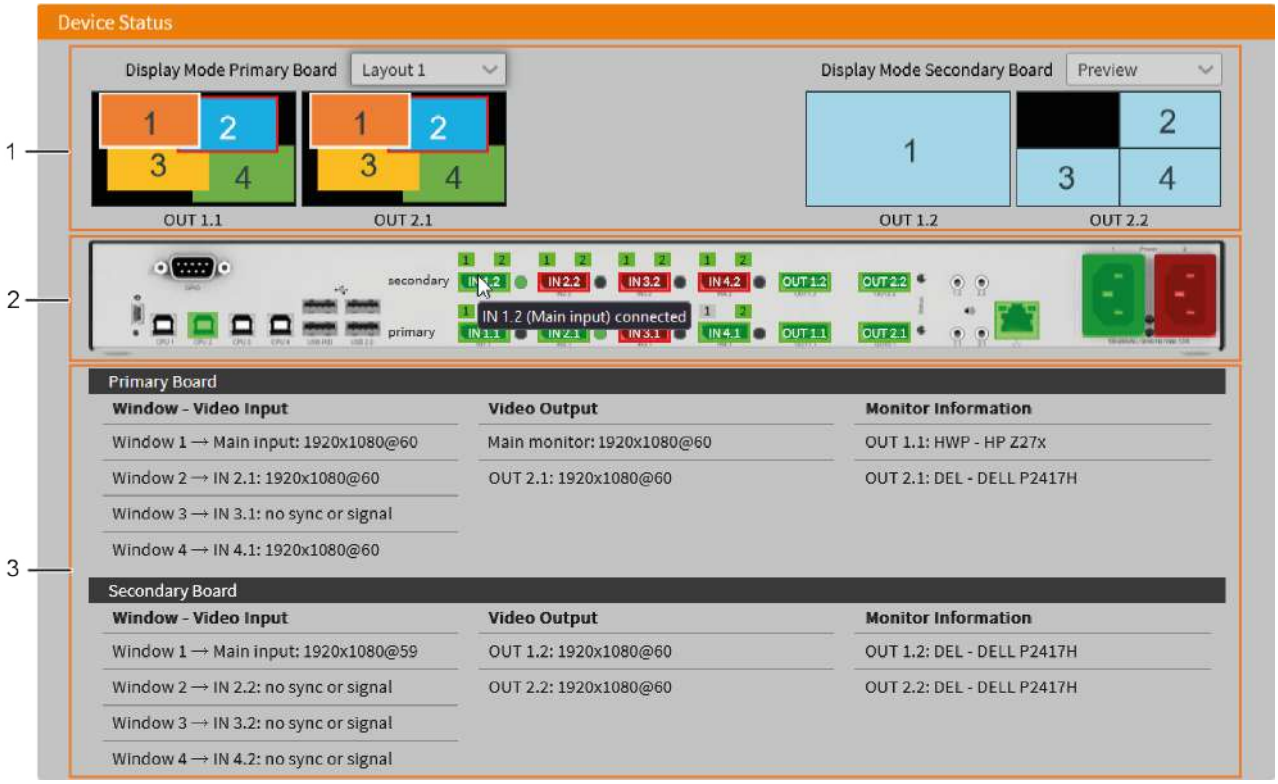


*Fig. 43 Web UI **Device Status***

1 Display mode section
2 Device view
3 Video, Window and Monitor Information

Operation Options

The following operation options are available in this menu:

- Changing the display mode
- Focusing on an input
- Selecting a second input for the Fullscreen Mode

5.3.7.1 Display Mode Section

- Current display mode
- Focused input
- Current USB HID control

Window Representation

In the Device Status, with Display Modes that arranges more than one window on the main monitor, the window with focused input is displayed in light gray.

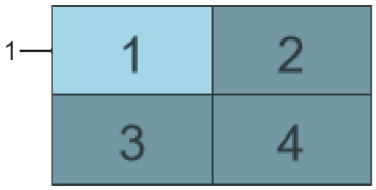


*Fig. 44 Web UI **Device Status - Window Representation***

Custom Layout Window Representation

In the Device Status, the window in the foreground of the window arrangement, set under Custom Layouts is highlighted with a white frame (1). The window with the red frame and the white number shows the current input focus.

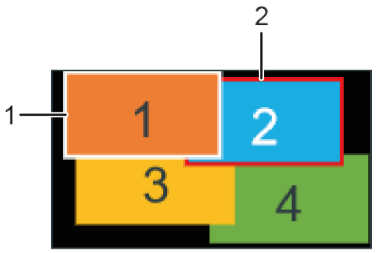


*Fig. 45 Web UI **Device Status - Custom Layout Window Representation***

5.3.7.2 Device View Section

- Colored ports with/without connection (video input and output, network, and power supply voltage, see examples in chapter 5.3.7.4, page 60)
- Colored source ports, showing the current USB HID control
- Colored LEDs, showing the current input focus
- Colored numbers above the ports, showing the visibility of the signals on the assigned outputs
- Tooltips for interfaces, displayed when moving the mouse over:
  - Source designations
  - Video inputs and outputs with labelled port designations, Custom Name, and status (connected/disconnected)
  - Power supply voltage with name and status
  - Network port (Host Name, Subnet Mask, Gateway, Mac Address, Status (connected/disconnected), API Service (enabled/disabled))

Port Colors

The following table shows the ports with/without connection:

Port color	Description
	No source is connected, or the connected source is switched off.
	A source is connected, and the source is switched on.
	No monitor is connected, or the connected monitor is switched off.
	A monitor is connected, and the monitor is switched on.
	No network connection available.
	A network connection is available.
	No power supply voltage available.
	A power supply voltage is available.

5.3.7.3 Video, Window and Monitor Information Section

Video Input: Window -> assigned input with Custom Name -> without signal or with resolution of the signal

Video Output: Output with Custom Name -> resolution of the connected monitor

Monitor Information: Output with Custom Name -> assigned EDID.

5.3.7.4 Indication Examples of Input/Output Routing and the current USB HID Control

In the overview, the input with the current USB HID control is highlighted in green (see USB port and LED of the video/audio input). The numbers 1 and 2 above a video/audio input are highlighted in green according to their routing to the outputs.

The following figure shows the input/output routing as used in synchronized Fullscreen Mode with focus on input 4.

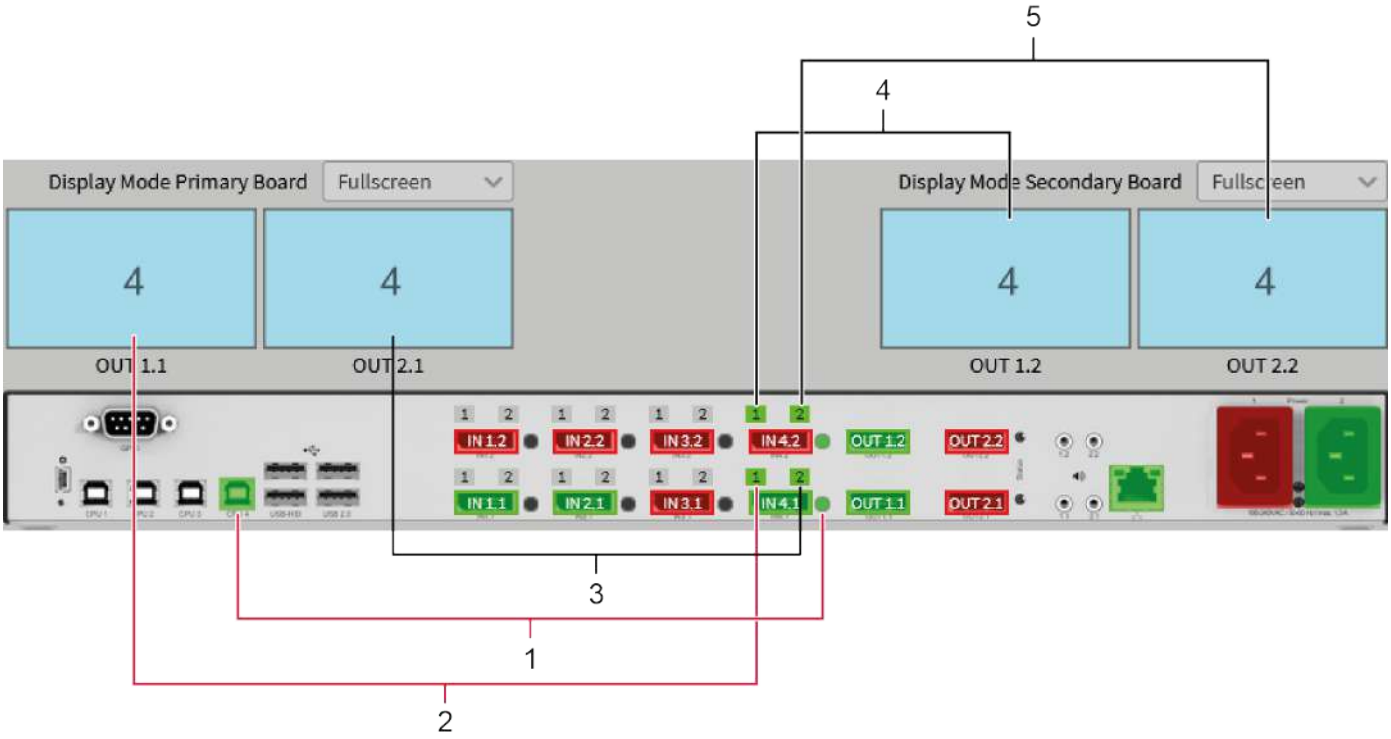


Fig. 46 ***Device Status*** *- Example with synchronized Fullscreen Mode*

1 Indication of the current USB HID control
2 Indication of the primary board routing to the main output
3 Indication of the primary board routing to the secondary output
4 Indication of the secondary board routing to the primary output
5 Indication of the secondary board routing to the secondary output

The following figure shows the input/output routing with activated Async Switch function (see chapter 7.2.1, page 72 and chapter 8.2.1, page 102).

Individual Fullscreen Mode is selected for the primary board, with focus on input 4 and video signal from input 2 on the second monitor.

Preview Mode is selected for the secondary board, displaying the video signal from input 3 in the main window.

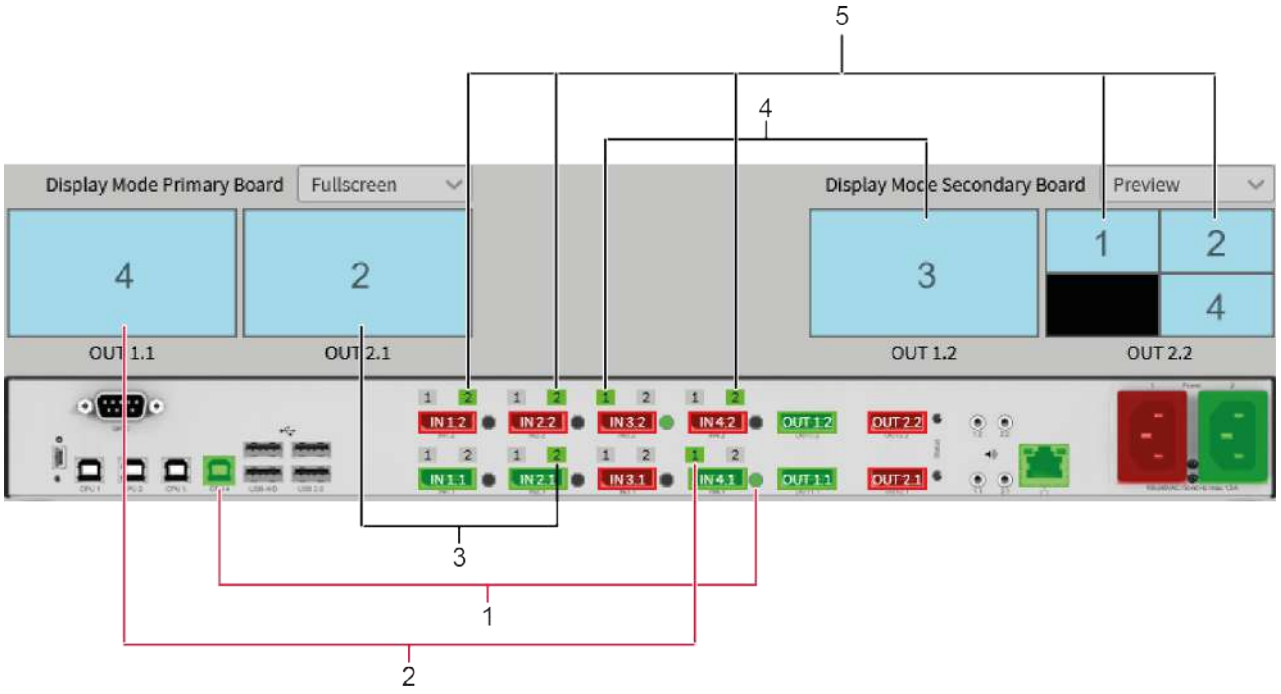


Fig. 47 ***Device Status with Async Mode*** *- Example with individual Fullscreen and Preview Mode*

1 Indication of the current USB HID control
2 Indication of the primary board routing to the main output
3 Indication of the primary board routing to the secondary output
4 Indication of the secondary board routing to the primary output
5 Indication of the secondary board routing to the secondary output

6 Installation and Setup

First-time users are recommended to set up the system in a test environment that is limited to a single room. This makes it easier to identify and solve any cabling problems, and experiment with your system more conveniently.

6.1 Setting up the Draco MV

6.1.1 Connecting the Draco MV to the Sink and the Sources

NOTICE

Function restriction when connected to the wrong inputs/outputs

The inputs and outputs of the primary video/audio board belong together. The same applies to the secondary video/audio board. The boards themselves are not linked to each other.

The primary and secondary boards switch completely independently. It is not possible to route an input from the primary board to an output of the secondary board and vice versa.

If only one monitor is connected to output 2 of the primary video board, or monitors are connected only to outputs of the secondary video board of dual-head systems, several functions will not work.

The OSD only opens on a monitor connected to the main output. The layouts of the Custom Mode can only be configured on a monitor connected to main output. And for some display modes, the main monitor is required.

➡ Always connect single-head sources on the primary video board.

➡ Connect a monitor to the main output (OUT1.x) of the primary video/audio board.

➡ Always observe the assignment of the inputs to the outputs, see overview in chapter 4.1, page 17

NOTICE

Scaled video resolution when using different monitor resolutions

The video output adjusts to the resolution of the monitor with the lower preferred timing.

Please verify that interconnect cables, interfaces, and handling of the devices comply with the requirements (see chapter 15.2, page 180). To achieve the best possible performance and results with the Draco MV system, we recommend using the supplied cables. If you need a replacement, please use the spare parts specified for this device, which can be found in the accessories list (see chapter 4.4, page 37).

When the device is started for the first time or restarted, the USB HID control is initialized and activated on the source connected to the first input. With the first switching of the USB HID control to another input, the mouse initialization process for the connected source is started. After initialization, the mouse is available for the corresponding source and is displayed in the associated window.

To power up the system, the following sequence is recommended:

➡ Monitor - Draco MV - source.

Connecting the Console to the Draco MV

ℹ The MSC function cannot be guaranteed when using wireless keyboards and mice. We recommend using wired keyboards and mice to guarantee the proper function of the MSC.

1. Connect a monitor to the video output 1 (main output) of the primary video board of the Draco MV.
2. Optional: connect an additional monitor to the video output 2 of the primary video board of the Draco MV or, for dual-head systems, to the second video board of the Draco MV, output 1 first.
3. Connect the USB HID devices (e.g., keyboard and mouse) to the USB HID ports of the Draco MV.
4. Optional: connect the audio outputs of the Draco MV with suitable speakers or an audio amplifier.
5. Establish the power supply voltage to the Draco MV.

Connecting the Sources to the Draco MV

ℹ For optimal functionality of switching the USB HID control, focusing on inputs, streaming of associated video signals and the best display of all display modes, we recommend connecting in ascending order without leaving any inputs between empty.
➡ For instance, when connecting three sources, connect the sources to inputs 1 to 3
➡ Note the window arrangement of the display modes (see from chapter 4.2 ff, page 24).

1. Connect up to four sources to the Draco MV with the supplied cables.
2. Connect the video cables of up to four sources to the video inputs of the Draco MV.
3. Establish the power supply voltage to the sources.
4. Start the system.

Setting up the GPIO Module (optional)

The GPIO module can be hot plugged.

6.1.2 Setting the Initial Configuration in the OSD

To configure the initial settings in the OSD, proceed as follows:

1. Press the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press o to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the display showing the **Switch** menu.
3. Press Esc to open the main menu.
4. Select **Configuration** in the main menu.
5. Login with administrator rights (see chapter 7, page 64).
6. Configure initially as requested (see from chapter 7.1, from page 71).

ℹ After the configuration of the system, it is recommended to save the configuration by selecting **Configuration > Save** (see chapter 7.6, page 100) and to restart the Draco MV by selecting **Restart Draco MV** (see chapter 12.4.1, page 164).

✅ Optional: Establish a LAN connection between the Draco MV and the computer using a browser to set an extended configuration (from chapter 6.2, page 64). The default IP address is 192.168.100.95 and DHCP is deactivated.

6.2 Installation Examples

This section illustrates typical installations of Draco MV system setups and installations with optional external controls.

The cables of each source are connected to the associated inputs (see assignment overview in chapter 4.1, page 17). One monitor has to be connected to the main output OUT1.x of the primary video/audio board.

6.2.1 Single Head Installation

A single-head installation consists of a Draco MV, up to four sources and one console (maximum 2 monitors, 1 keyboard, 1 mouse, 2 audio output devices). The Draco MV is directly connected to the sources and the console via connection cables.

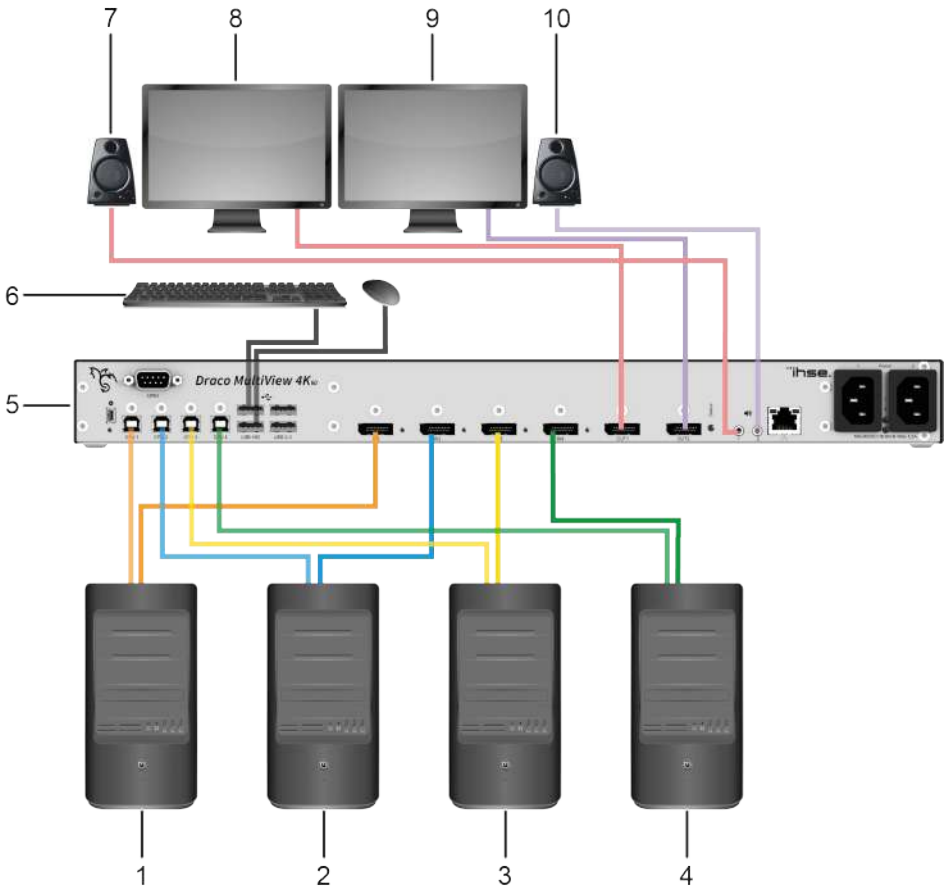


Fig. 48 System overview (example = single head installation with second monitor)

1 Source 1
2 Source 2
3 Source 3
4 Source 4
5 Draco Multiview 4K60
6 USB HID devices (e.g., keyboard, mouse)
7 Audio device 1 (e.g., speaker), primary video/audio board
8 Main monitor, primary video/audio board
9 Monitor 2, primary video/audio board
10 Audio device 2 (e.g., speaker) (redundancy), primary video/audio board

6.2.2 Dual Head Installation

A dual-head installation with consists of a Draco MV, one or more dual-head sources and one console (maximum 4 monitors, 1 keyboard, 1 mouse, 4 audio output devices (e.g., speaker)). The Draco MV is directly connected to the sources and the console via connecting cables.

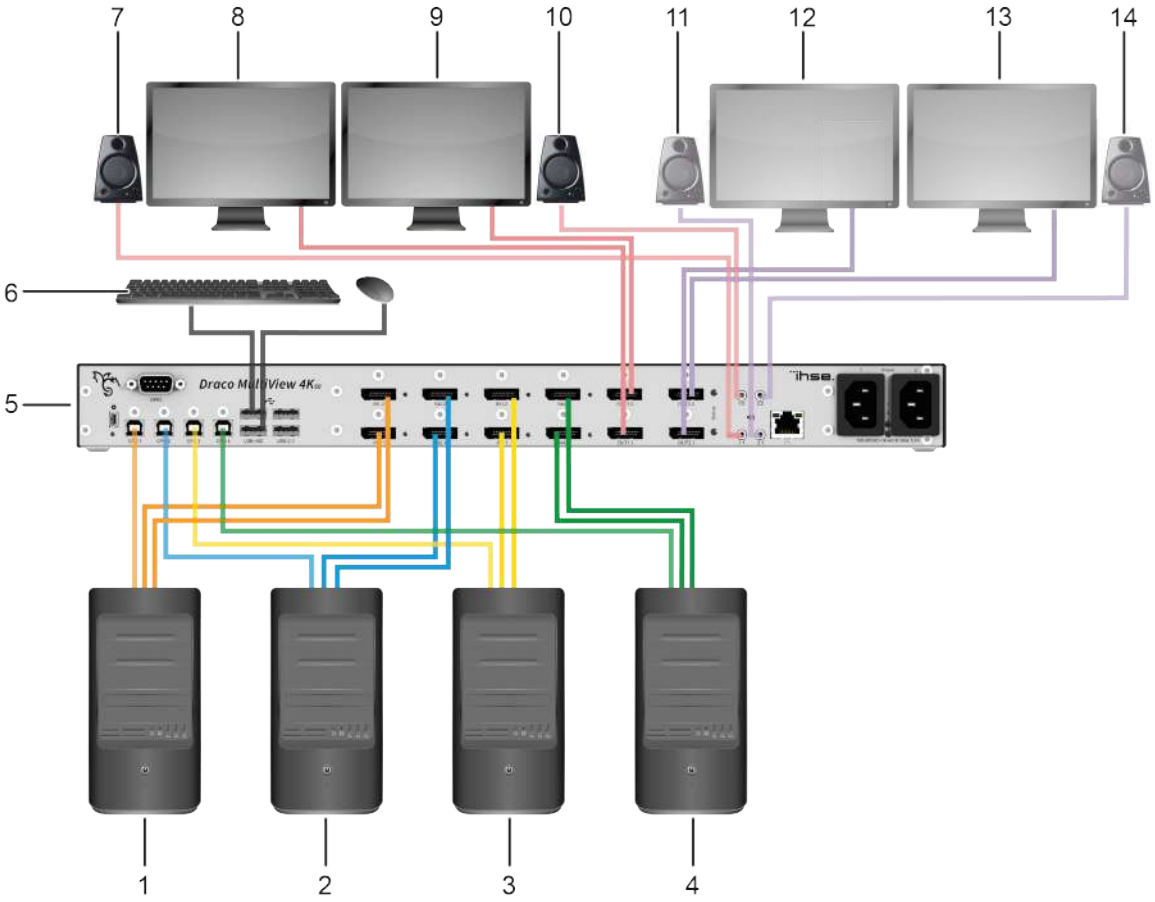


Fig. 49 System overview (example = dual head installation with second monitor per video board)

1 Source 1
2 Source 2
3 Source 3
4 Source 4
5 Draco Multiview 4K60
6 USB HID devices (e.g., keyboard, mouse)
7 Audio device 1 (e.g., speaker), primary video/audio board
8 Main monitor, primary video/audio board
9 Monitor 1, secondary video/audio board
10 Audio device 1 (e.g., speaker), secondary video/audio board,
11 Audio device 2 (e.g., speaker), primary video/audio board, redundancy
12 Monitor 2, primary video/audio board
13 Monitor 2, secondary video/audio board
14 Audio device 2 (e.g., speaker), redundancy, secondary video/audio board

6.2.3 Single Head Installation with optional External Control

A single-head installation consists of a Draco MV, up to four sources and one console (maximum 2 monitors, 1 keyboard, 1 mouse, 2 audio output devices). The Draco MV is directly connected to the sources and the console via connection cables. The Draco MV system can be switched with an optional external switching solution via dry contact or via external control.

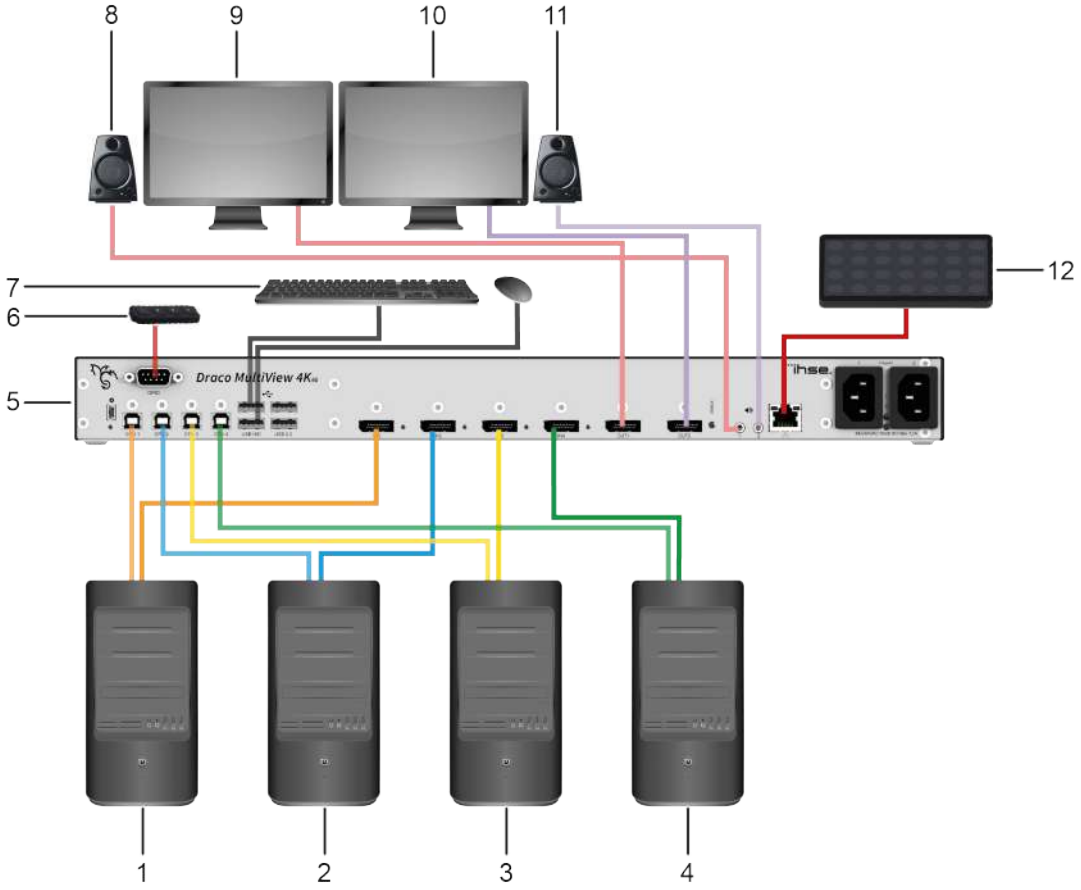


Fig. 50 System overview (example = single head installation with external controls)

1 Source 1
2 Source 2
3 Source 3
4 Source 4
5 Draco Multiview 4K60
6 External switching solution (optional)
7 USB HID devices (e.g., keyboard, mouse)
8 Primary video/audio board, audio device 1 (e.g., speaker)
9 Primary video/audio board, main monitor
10 Primary video/audio board, monitor 2
11 Primary video/audio board, audio device 2 (e.g., speaker), redundancy
12 External control (optional)

6.2.4 Dual Head Installation with optional External Control

A dual-head installation consists of a Draco MV, up to four dual-head sources and one console (maximum 4 monitors, 1 keyboard, 1 mouse, 4 audio output devices (e.g., speaker)). The Draco MV is directly connected to the sources and the console via connecting cables. The Draco MV system can be switched with an optional external switching solution via dry contact or via external control.

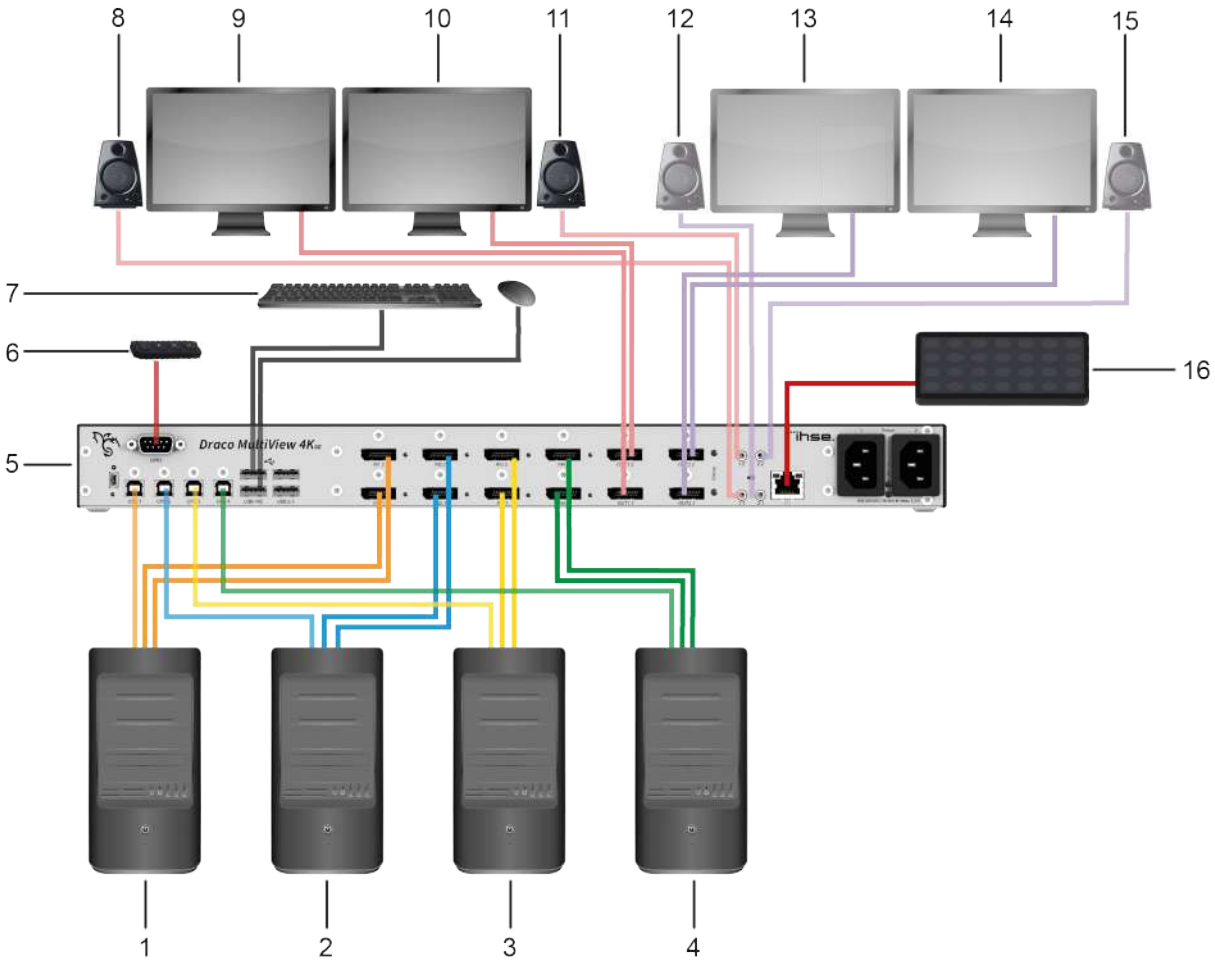


Fig. 51 System overview (example = dual head installation with external controls)

1 Source 1
2 Source 2
3 Source 3
4 Source 4
5 Draco Multiview $4K_{60}$
6 External switching solution (optional)
7 USB HID devices (e.g., keyboard, mouse)
8 Audio device 1 (e.g., speaker), primary video/audio board
9 Main monitor, primary video/audio board
10 Monitor 1, secondary video/audio board
11 Audio device 1 (e.g., speaker), secondary video/audio board,
12 Audio device 2 (e.g., speaker), primary video/audio board, redundancy
13 Monitor 2, primary video/audio board
14 Monitor 2, secondary video/audio board
15 Secondary video/audio board, audio device 2 (e.g., speaker), redundancy
16 External control (optional)

6.3 Connecting to the Draco MV via Web UI

6.3.1 Requirements for the Web UI

	Platforms	Supported browsers
Draco MV Web UI	• Linux • MacOS • Microsoft Windows • HTML and JavaScript	• Microsoft Edge • Firefox • Google Chrome • Apple Safari

6.3.2 Setting up Network and Firewall Releases

Releasing Network Ports

The following ports are used by the Draco MV depending on the configuration and must be released at the security gateway if necessary. The ports must only be released if you want to use the respective function.

Function	Port
DNS	53
SNTP	123/UDP
SNMP	161/162, both UDP
Syslog	514/UDP
API	7055/TCP (7065 for SSL)
Broadcast	7056/UDP (7066 for SSL)

6.3.3 Connecting to the Draco MV via TCP/IP

1. Ensure the Draco MV and the computer are connected to the LAN via network cable.
2. Open a browser.
3. Enter the IP address of the Draco MV (default 192.168.100.95).
   A login dialog appears.

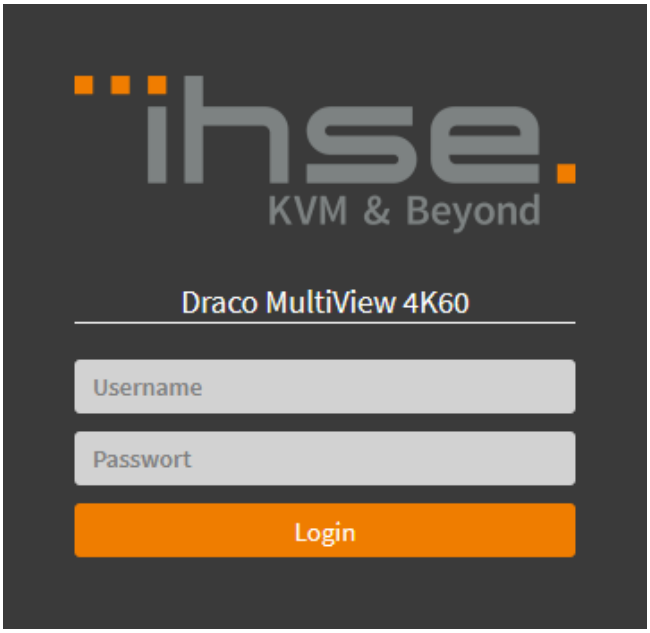


*Fig. 52 Web UI **Landing page in offline mode***

4. Enter the username and the password (default: admin/admin).
   The Web UI is loaded.

If the IP address of a specific Draco MV is unknown and should be accessed via IP, please use the **Device Finder** of the management software to find all Draco MV that are in the same subnet. For more information, please refer to the Draco tera user manual.

7 Configuration via OSD

NOTICE

Possible loss of configuration changes

By clicking **Okay**, changes are applied to the active configuration and saved in the volatile memory of the Draco MV. In the event of a sudden power failure, these changes are lost.

➡ To save changes permanently save the configuration changes into the active configuration (**Save**, see chapter 7.6, page 100) or perform a restart (**Restart MV**, see chapter 12.4.1, page 164).

NOTICE

A change in system-relevant parameters (e.g., change of the IP address) is immediately displayed in the OSD. To initialize system-relevant configuration changes on the Draco MV, the Draco MV must be restarted. The restart of the Draco MV take several minutes, and the Draco MV is not available during the restart.

All configuration settings can only be configured with administrator rights. A login is required to enter the **Configuration** menu. The following login data is saved in the factory settings:

Field	Entry
User	admin
Password	admin

To open the configuration menu, proceed as follows:

1. Press the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press `o` to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the display showing the **Switch** menu.
3. Press `Esc` to open the main menu.

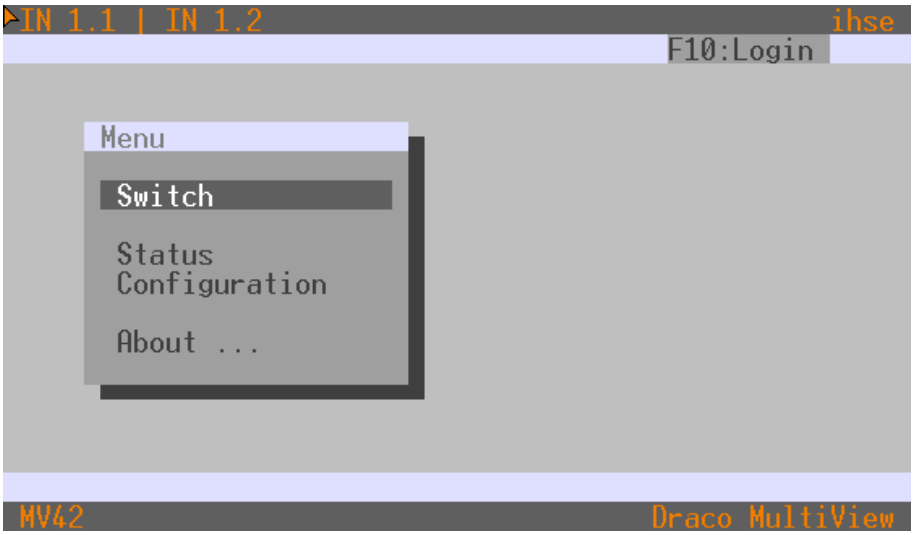


*Fig. 53 OSD Menu **Main Menu - Login***

. The login dialog can be opened by pressing `F10` or by selecting **Configuration** in the menu.

4. Press `F10` or select **Configuration** in the main menu.

   The login mask appears.

5. Enter the login data of the administrator.

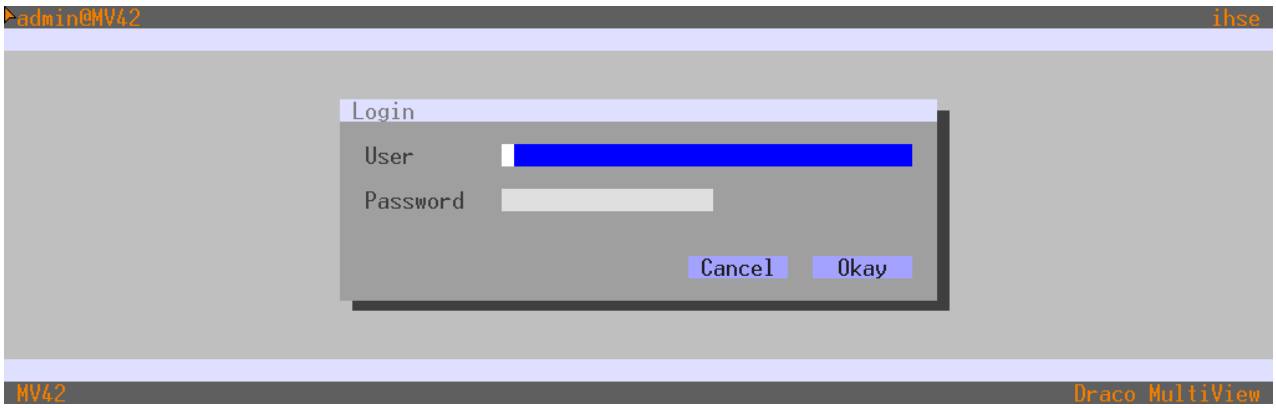


*Fig. 54 OSD Menu **Configuration - Login***

6. After logging-in by pressing F10, select **Configuration** in the main menu.

NOTICE
For security reasons, please change the administrator password as soon as possible (see chapter 7.3, page 84).

When leaving the configuration menu, the administrator is logged out automatically.

7.1 Overview Configuration Menu

Various options for system setting are available in the configuration menu. In addition, the following functions can be called up here: save and shut down, restart, or reset to factory settings.

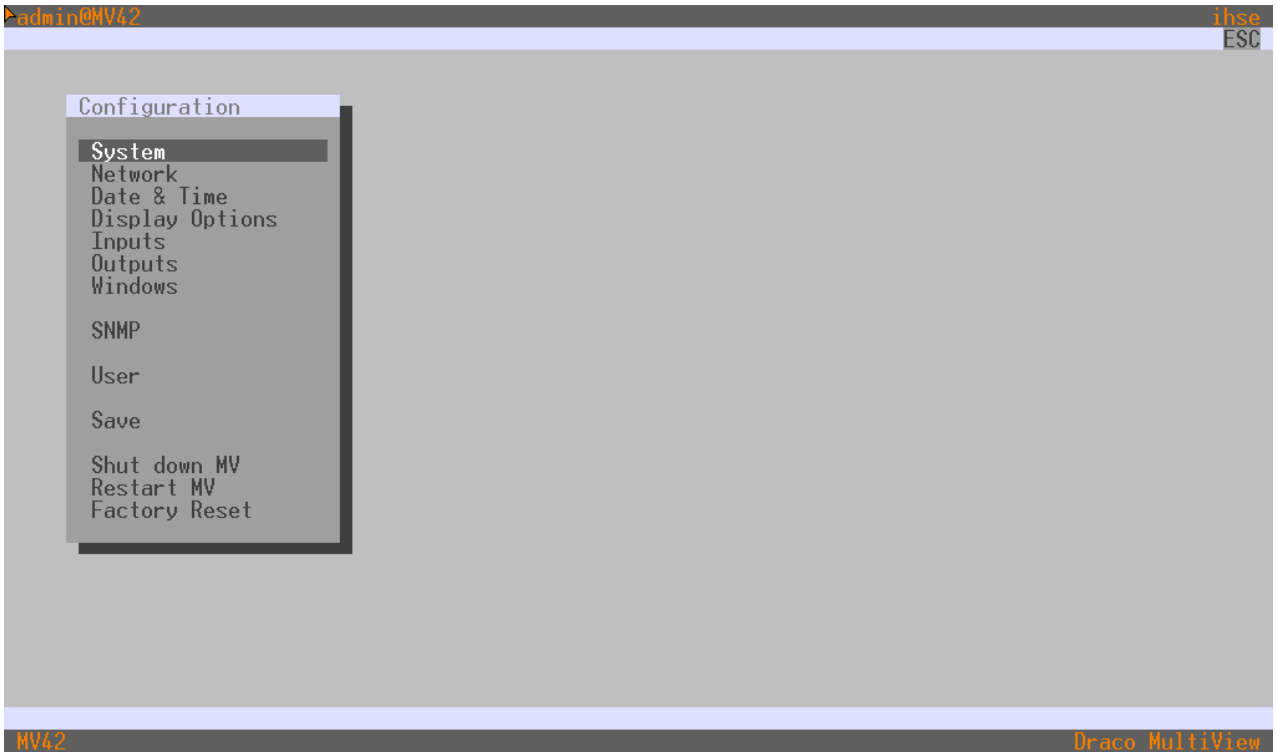


*Fig. 55 OSD Menu **Configuration***

7.2 System Settings

7.2.1 Setting System Configuration

The parameters for the system configuration are set in this menu:

*Fig. 56 OSD Menu **Configuration - System** (example with dual-head device)*

The following parameters can be configured:

System

Field	Entry	Description
Device	Text	Enter the device name of the Draco MV (default: MV42).
Name	Text	Enter the name of the configuration that is used to save the current settings (default: Standard).
Info	Text	Enter additional text to describe the configuration if required (default: Factory settings).
User Management	Y	Activates the possibility to set individual user configuration in the menu **User Settings - General Settings**. Individual user parametrization can overwrite some options set in this global menu.
	N	Starts the Draco MV after a switch-on or a restart by default with the display mode and input focus for the primary and secondary board selected in this menu.

Field	Entry	Description
Load Default	Y	Starts the Draco MV after a restart or a switch-on with the configuration stored as Default.
	N	Starts the Draco MV after a restart or a switch-on with the last saved configuration (default).
LAN Echo	Y	Sends all switching commands performed in the Draco MV as an echo via LAN connection. **Note:** This function should be enabled when using a media controller via LAN connection.
	N	Function not active (default).
Lock Monitor EDID	Y	Locks the current monitor EDID in the configuration. After switching on, restarting, or reconnecting during operation, the locked EDID will be used from the source instead of the native EDID of a future connected monitor.
	N	After switching on, restarting, or reconnecting during operation, the video signal is displayed with the resolution of the preset default EDID (see chapter 7.4.1, page 86).
Audio Mixing*	Y	Merges incoming audio streams into a single stereo stream. Depending on the device type, up to 8 audio streams (7.1) can be merged into a 2-channel stereo stream.
	N	Function not active (default).
MSC*	Y	Enables the Multi-Screen Control function. Absolute mouse coordinates are used for the MSC automatic mode with/without restriction (see chapter 10, page 137). Moving the mouse pointer over the edge of one window into another window switches the USB HID control seamlessly to the associated input. For dual-head installations, MSC is recommended to be only activated if using the Hot Mouse function in Preview Mode, PiP Mode, True PiP, and Custom Mode. The behavior of the mouse movement in dual-head systems has to be noticed (see chapter 10, page 137).
	N	Function not active (default), relative mouse coordinates are used. If disabling MSC, the Hot Mouse function will also be disabled, because MSC is required for the Hot Mouse function.
Hot Mouse*	Y	Enables the Hot Mouse function for inputs of the primary board (MSC function is required and will also be enabled). The Hot Mouse function is necessary to focus on another input with current display modes Preview Mode, PiP Mode, True PiP Mode, and Custom Mode. Moving the mouse pointer over the edge of one window into another window, turns the Hot Mouse Mode on. A transparent overlay, and an overlay mouse pointer (OSD mouse) appear. The OSD mouse can be used to focus on another input by clicking in the associated window. The behavior of the mouse movement in dual-head systems has to be noticed (see chapter 10.1, page 137).
	N	Function not active (default).

Field	Entry	Description
Async Switch*	Activated	Allows different output of the input signals separately to the primary and secondary board. E.g., if the inputs of the secondary board are to be used for video viewing only. Allows different display modes of the primary and secondary board. **Note:** USB HID control switching is managed by the primary board. Depending on the output management, the mouse could not be visible in windows assigned to inputs of the secondary board.
	Deactivated	Focusing on inputs with USB HID control is synchronized for both boards.
Display Mode 1*	List	Starts the Draco MV after a switch-on or a restart by default with the selected display mode for the primary board.
Input Focus 1*	List	Starts the Draco MV after a switch-on or a restart by default with the selected input focus for the primary board.
Display Mode 2*	List	Dual head devices only: Starts the Draco MV after a switch-on or a restart with the selected default display mode for the secondary board.
Input Focus 2*	List	Dual head devices only: Starts the Draco MV after a switch-on or a restart by default with the selected display mode for the secondary board.

* Can be overwritten if the **User Management** option in this menu is activated.

Global OSD Settings

Field	Entry	Description
OSD Timeout [sec]	0 to 999	Specify the time of inactivity after which the OSD will be closed automatically (0 = deactivated). At 0 seconds, the OSD is not automatically closed.
Horizontal Mouse Speed*	1 to 9	Adjust the horizontal mouse speed with 1 = fast, 9 = slow (default: 4).
Vertical Mouse Speed*	1 to 9	Adjust the vertical mouse speed with 1 = fast, 9 = slow (default: 5).
Double Click Time [ms]*	100 to 800	Adjust the time slot for a double-click (default: 200).
Keyboard Layout*	Region	Set the OSD keyboard layout according to the keyboard used (default: German (DE)).
Hot Key*	Keyboard command	Start the command mode via keyboard sequence.
Fast Key*	Keyboard command	Open the OSD directly (default: 00). How often the shortcut key has to be pressed depends on the specified key: 1x for function keys or print key, 2x for all other keys.

* Can be overwritten if the **User Management** option in this menu is activated.

To set parameters for the system configuration, proceed as follows:

1. Select **Configuration > System** in the main menu.
2. Change the desired settings.
3. Click **Okay** to confirm the changes.

7.2.2 Setting Network Configuration

NOTICE

To initialize system-relevant configuration changes on the Draco MV, the Draco MV must be restarted. The restart of the Draco MV might take several minutes, and the Draco MV is not available during the restart.

NOTICE

If the syslog function is activated, the logging will be started after restarting the Draco MV.

The parameters for the network configuration are set in this menu.

*Fig. 57 OSD Menu **Configuration - Network***

The following parameters can be configured:

Network Interface

Field	Entry	Description
DHCP	Y	The network settings are automatically supplied by a DHCP server. **Note:** If DHCP is activated and there is no physical network connection available, the boot times might increase.
	N	Function not active (default).
IP Address	Byte	Enter the IP address if DHCP is not active (default: 192.168.100.95).

Field	Entry	Description
Subnet Mask	Byte	Enter the subnet mask in the form “255.255.255.0” if DHCP is not active (default: 255.255.255.0).
Gateway	Byte	Enter the gateway address in the form “192.168.1.1” if DHCP is not active.
Multicast	Byte	Enter the multicast address if using within a multicast group (default: broadcast 255.255.255.255).

Network Services

Field	Entry	Description
API Service	Y	Activate the LAN interface at the Draco MV for access via Web UI (API service port 7055/7056) (default).
	N	Function not active.
SSL/TLS Support	Activated	Activates SSL/TLS encryption for API, Web UI API, Web UI and Draco MV communication.
	N	Function not active (default).
Maintenance Service	Y	Enable the maintenance service for advanced diagnostic.
	N	Function not active (default).
Syslog #1/#2	Y	Activate the Syslog server for status requests.
	N	Function not active (default).
Syslog Server #1/#2	Byte	Enter the IP address of the Syslog servers in the form “192.168.1.1” and of the Syslog port (default: 514).

Log Levels

Field	Entry	Description
Trace	DEB	Activate debug messages in trace (default: N). **Note:** The debug messages are exclusively for Draco MV diagnostics. Use this function only for concrete debug cases as it is not intended for normal operation.
	INF	Activate information messages in trace (default: N).
	NOT	Activate notification messages in trace (default: Y).
	WAR	Activate warning messages in trace (default: Y).
	ERR	Activate error messages in trace (default: Y).

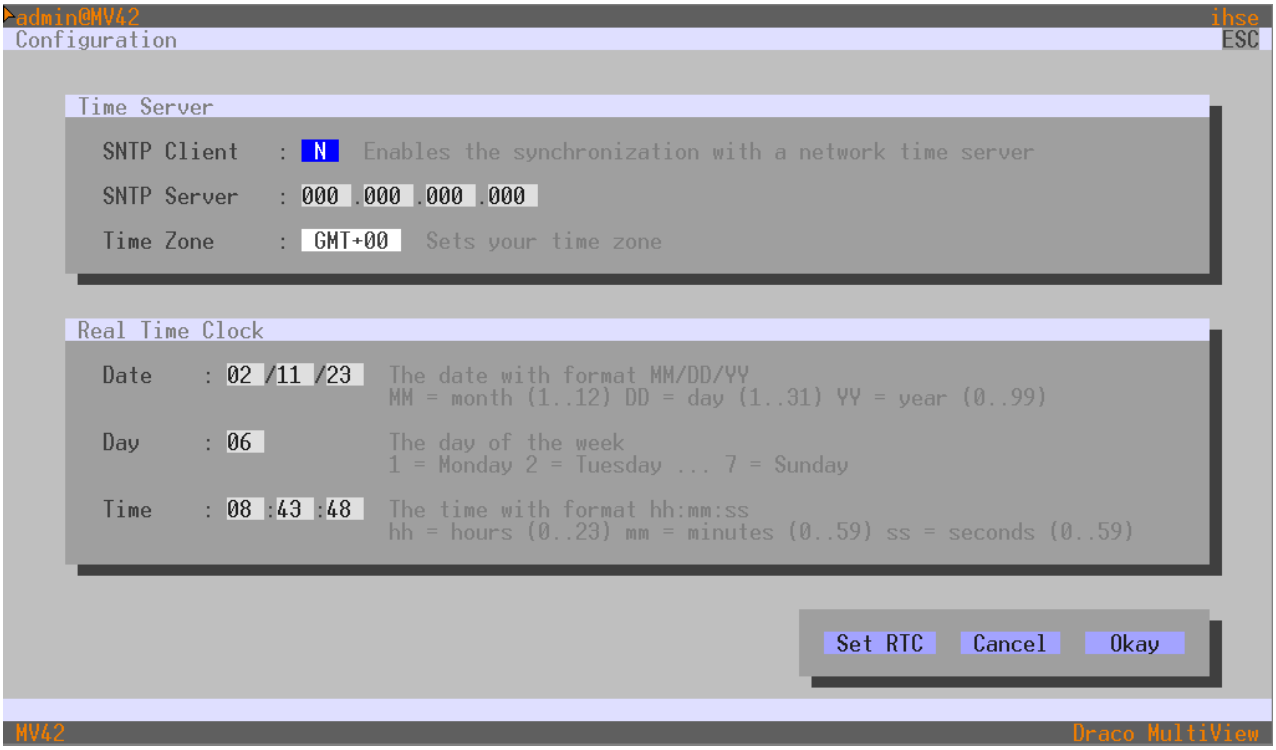
Field	Entry	Description
Syslog #1/#2	DEB	Activate debug messages in Syslog (default: N) **Note:** The debug messages are exclusively for Draco MV diagnostics. Use this function only for concrete debug cases as it is not intended for normal operation.
	INF	Activate information messages in Syslog (default: N).
	NOT	Activate notification messages in Syslog (default: Y).
	WAR	Activate warning messages in Syslog (default: Y).
	ERR	Activate error messages in Syslog (default: Y).

To set parameters for the network configuration, proceed as follows:

1. Select **Configuration > Network** in the main menu.
2. Change the desired settings.
3. Click **Okay** to confirm the changes.

7.2.3 Setting Date and Time

The parameters for the system configuration are set in this menu, based on Simple Network Time Protocol (SNTP):



n

*Fig. 58 OSD Menu **Configuration - Date+Time***

The following parameters can be configured:

Time Server

Field	Entry	Description
SNTP Client	Y	Enable the network time server synchronization.
	N	Function not active (default).
SNTP Server	Byte	Enter the SNTP server IP address (default: 000.000.000.000).
Time Zone	Region	Set your specific time zone (default: GMT + 00).

Real Time Clock

Field *		Entry	Description
Date*	**MM**	1 to 12	Enter the month.
	DD	1 to 31	Enter the day.
	YY	1 to 99	Enter the year.
Day		1 to 7	Enter the day of the week.
Time	**hh**	0 to 23	Enter the hour.
	mm	0 to 59	Enter the minute.
	dd	0 to 59	Enter the second.

* Date format according to the English notation.

Configuring the Time Server

To configure a time server, proceed as follows:

1. Select **Configuration > Date+Time** in the main menu.
2. Set the SNTP Client option to Y (Yes).
3. Enter the IP address of your SNTP server into the **SNTP Server** field.
4. Select your time zone in the **Time Zone** field.
5. Click **Okay** to confirm your settings.
6. Restart the Draco MV.

   The system time will now be provided by the SNTP server.

Configuring the Real Time Clock without Time Server

To set the real time clock without using SNTP, proceed as follows:

1. Select **Configuration > Date+Time** in the main menu.
2. Set the current date in the **Date** field.
3. Set the current Day in the **Day** field.
4. Set the current time in the **Time** field.
5. Click **RTC** to confirm your settings.

   The real time clock is now provided.

7.2.4 Setting SNMP Function

The SNMP function allows all function-critical and safety-critical elements of the Draco MV to be monitored and queried. This function complies with the RFC 1157 conformal standard.

NOTICE

When using SNMP monitoring, for reasons of access security, the use of a dedicated network according to the IT-Grundschutz-Kompendium (IT Baseline Protection) is recommended. The read only community for the MIB file is **kvm**.

NOTICE

For an activation of the SNMP agent function or the SNMP server function, a restart of the Draco MV is necessary. Two SNMP servers can be used at the same time.

The settings for the SNMP monitoring are set in this menu:

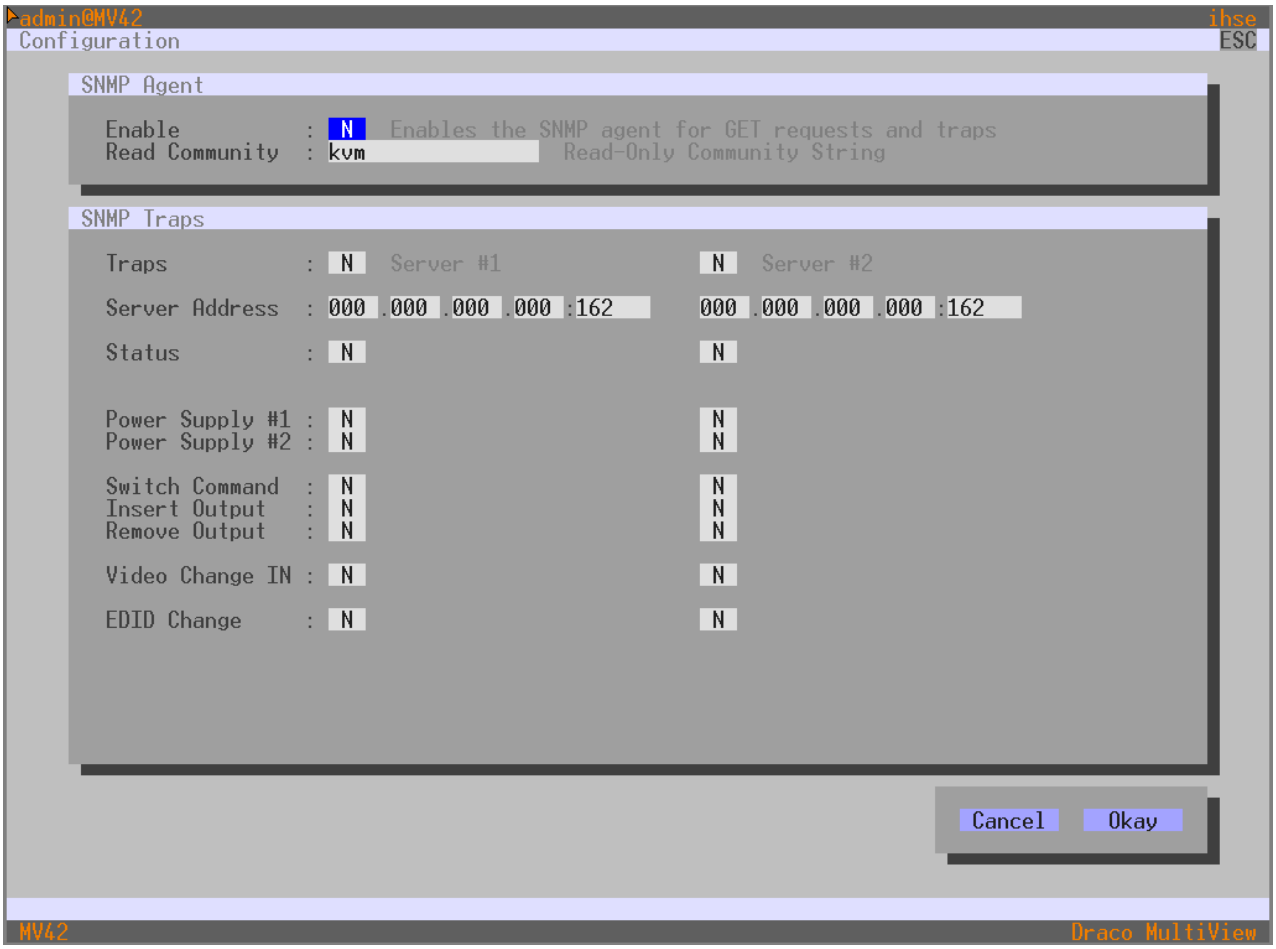


*Fig. 59 OSD Menu **Configuration - SNMP***

The following parameters can be configured:

SNMP Agent

Traps	Description
Enable	Permission for an active query of the SNMP agent for traps is granted. This activation is a prerequisite for using the SNMP server.
Read Community	Access for Read-only community (default: kvm).

SNMP Trap

The SNMP agent must be activated to activate the SNMP traps.

Traps	Description
Enable Traps	Sending of trap messages from the SNMP agent to the SNMP server.
Server Address	IP address of the SNMP server in the form “192.168.1.1” and of the SNMP port (default: 162).
Status	Notification about the Draco MV status.
Power Supply #1	Notification about the status of power supply unit #1.
Power Supply #2	Notification about the status of power supply unit #2.
Switch Command	Notification about a performed switching operation at the Draco MV.
Insert Output	• Notification about a newly connected console to the Draco MV. • Notification about a switched-on console.
Remove Output	• Notification about a removed console from the Draco MV. • Notification about a switched-off console.
Video Change IN	Notification about a change of resolution or change of frequency.
EDID Change	Notification about a change in EDID information at the inputs.

Activating the SNMP Agent

To activate the SNMP agent, proceed as follows:

1. Select **Configuration > SNMP** in the main menu.
2. Set the **Enable** option to **Y** (Yes) within **SNMP Agent**.
   By activating this option, the permission for an active query of the SNMP agent is granted.

Activate SNMP Traps

To activate SNMP traps, proceed as follows:

1. Set the **Enable Traps** option to **Y** (Yes) within **SNMP Server**.
   This function allows an active transmission of trap messages from the SNMP agent to the SNMP server.
2. Set the IP address of the SNMP server within **Server Address**.
3. Set the requested traps to **Y** (Yes) to enable them.

7.2.5 Setting Display Options

The parameters for global display options, e.g., OSD transparency or source information are set in this menu. All parameters can be overwritten if **User Management** option is activated (see chapter 7.2.1, page 72).

*Fig. 60 OSD Menu **Configuration - Display Options** (example with dual-head device)*

The following parameters can be configured:

OSD Transparency

Field	Entry	Description
Enable	Y	The OSD is shown transparently over the video signals.
	N	Video signals are visible only around the OSD.
Intensity [%]	0 to 100	Intensity of the transparency.

Source Names

Field	Entry	Description
Enable	Y	The source names are displayed at the top left of the respective window. Option for all display modes except for the mirrored Fullscreen Mode.
	N	Function not active (default).
Timeout [sec]	0 to 30	Time range (default: 10 seconds) in which the source names are shown if an input is switched, the USB HID control is switched, the display mode is changed, and after exiting an opened OSD. At 0 seconds, the source names are shown permanently.
Color	List	Color for source names.

Active Source Frame

Field	Entry	Description
Enable	Y	A frame is displayed around the active source, except for the Fullscreen Mode. Option for all display modes except for the mirrored Fullscreen Mode.
	N	Function not active (default).
Timeout [sec]	0 to 30	Time range (default: 10 seconds) in which the active source frame is shown if an input is focused, or the USB HID control is switched. At 0 seconds, the source names are shown permanently.
Color	List	Frame color for active source.

The frame is displayed for the current session. After a restart, the frame must be reactivated if necessary.

OSD Cursor

Field	Entry	Description
Color	List	Color for the OSD cursor.

Fix Frames

Field	Entry	Description
Fix Frame #1…#8*	Y	Displays a fixed frame around the selected source, except for the Fullscreen Mode. Option for all display modes except for the mirrored Fullscreen Mode.
	Color	Frame color for fixed source.
	N	Function not active (default).

* Single Head: Fix frames #1…#4
* Dual head: Fix frames #1…#8

7.3 User Settings

User Access and User Rights

Basic user settings and permissions for up to 16 users are set in this menu. By default, two users (admin/snmp) are set with unchangeable usernames.

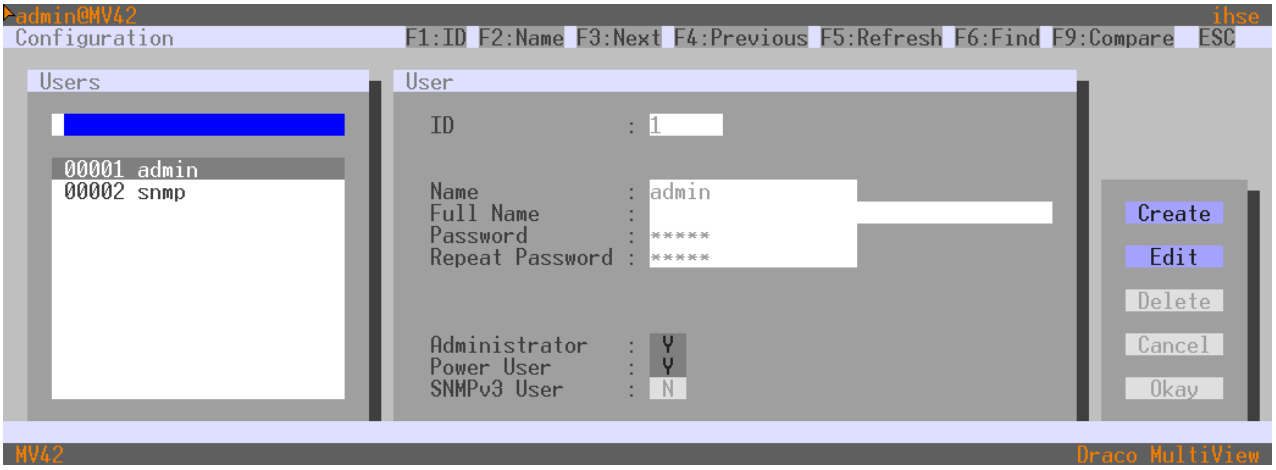


*Fig. 61 OSD Menu **Configuration - User Data***

With enabled User Management (see chapter 7.2.1, page 72), individual user settings can be managed via Web UI.

Administrator

The administrator (username: admin) has the permission to configure the system. The following parameters can be configured for the administrator:

Field	Entry	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of up to 16 characters).
Repeat Password	Text	Repeat user password (case sensitive).

SNMPv3 user

The SNMPv3 user (username: snmp) has the permission to enable encrypted SNMPv3. The following parameters can be configured for the SNMPv3 user:

Field	Entry	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters).
Repeat Password	Text	Repeat user password (case sensitive).
SNMPv3 User	Y	Permission to use SNMPv3 (encrypted).
	N	Use of SNMPv3 is not permitted.

Power User

The administrator (username: admin) has the permission to configure the system. The following parameters can be configured for the administrator:

Field	Entry	Description
Name	Text	Power username (case sensitive, input of up to 16 characters).
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of up to 16 characters).
Repeat Password	Text	Repeat user password (case sensitive).
Power User	Y	Permission for power user rights.
	N	Function not active.

User

The administrator (username: admin) has the permission to configure the system. The following parameters can be configured for the administrator:

Field	Entry	Description
Name	Text	Username (case sensitive, input of up to 16 characters).
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of up to 16 characters).
Repeat Password	Text	Repeat user password (case sensitive).

SOTICE

Failed SNMP logging

If the login data of the SNMPv3 user differs between the Draco MV and the SNMP server, no SNMP loggings are transmitted.

➡ Ensure the login data (username and password) in both settings are identical (see section on page 75).

Editing User Settings

To edit settings of an existent user, proceed as follows:

1. Select **Configuration > User Data** in the main menu.
2. Select a user in the **User List**.
3. Click **Edit** to activate the edit mode.
4. Change the desired settings.
5. Click **Okay** to confirm the changes.

7.4 Setting Video Inputs and Video Outputs

7.4.1 Setting Video Inputs Parameters

The parameters for the video inputs are set in this menu:

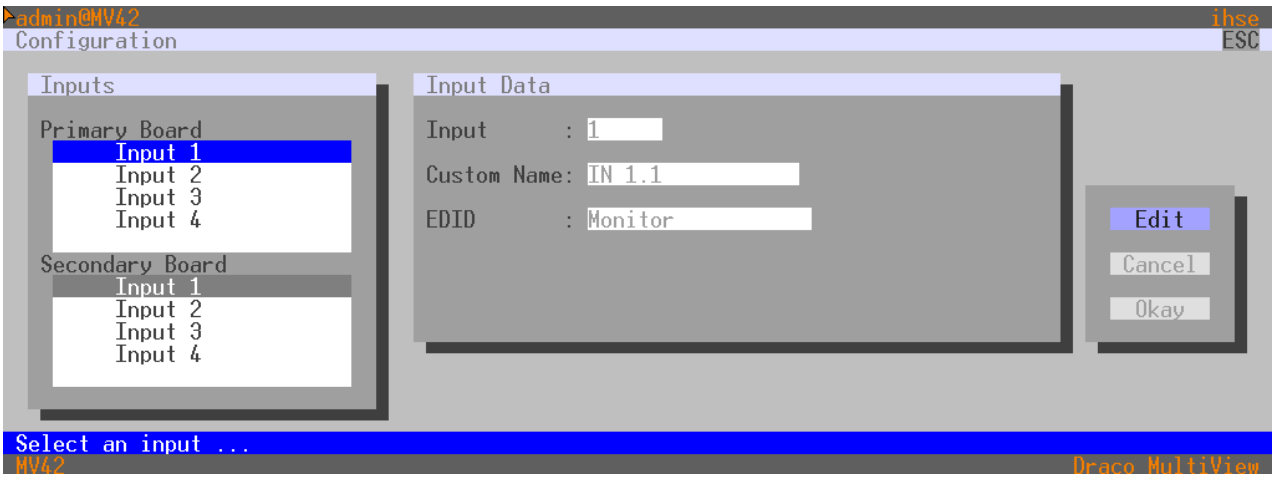


*Fig. 62 OSD Menu **Configuration - Inputs** (example with dual-head device)*

The following parameters can be configured:

Field	Entry	Description		
Input	Numerical	Ident number of the input port (unchangeable, see chapter 4.7 ff, page 39 ff)		
Custom Name	Text	Optional: individual name for video inputs (case sensitive, up to 32 characters)		
EDID	List	MONITOR	When the Draco MV is restarted or a monitor is plugged in during operation, the monitor's EDID is read out and transmitted to the CPU inputs. The video signal is always displayed with the native resolution of the currently connected monitor.	
		1080p60	1920 x 1080 @ 60 Hz	Instead of the current EDID, a customized EDID will be transmitted to the sources.
		1440p60	2560 x 1440 @ 60 Hz	
		4K30	3840 x 2160 @ 30 Hz	
		4K60	3840 x 2160 @ 60 Hz	
		Custom	Via Web UI uploaded EDIDs are available in this list.	

With an activated **Lock Monitor EDID** option (see chapter 7.2.1, page 72), the following EDID will be used from the source instead of the native EDID of a connected monitor.

- ➡ If **MONITOR** is chosen as default EDID, the locked EDID will be used.
- ➡ If a customized EDID (**1080p60**, **1440p60**, **4K30**, or **4K60**) is chosen as default EDID, the customized EDID will be used.

If there is no video signal input, a notification is displayed: NO SYNC OR SIGNAL.

To configure the settings for a video input, proceed as follows:

1. Select **Configuration > Input Control** in the main menu.
2. Select the video input to be configured in the list **Input Devices**.
3. Click **Edit** to activate the edit mode.
4. Change the **Custom Name** if desired.
5. Select the default **EDID** for the selected video input.
6. Click **Okay** to confirm the changes.

7.4.2 Setting Video Outputs Parameters

The parameters for the video outputs are set in this menu:

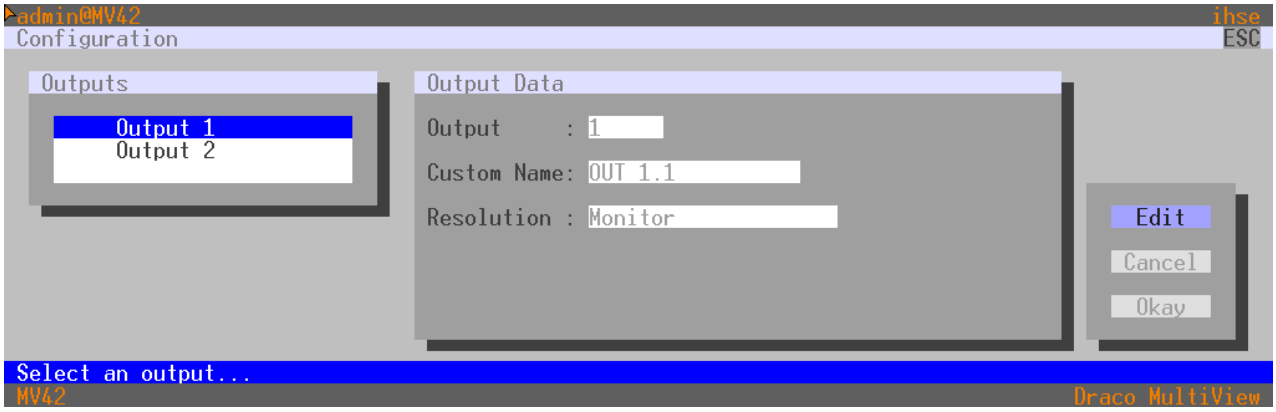


*Fig. 63 OSD Menu **Configuration - Outputs** (example with dual-head device)*

The following parameters can be configured:

Field	Entry	Description		
Output	Numerical	Ident number of the input port (unchangeable, see chapter 4.7 ff, page 39 ff)		
Custom Name	Text	Optional: individual name for video inputs (case sensitive, up to 32 characters)		
Resolution	List	Resolution for video output independent from the monitor EDID. The video output adjusts both outputs to the lower set resolution.		
		MONITOR	Instead of the default EDID set at the video input, the video signal is displayed with the native resolution of the currently connected monitor.	
		1080p60	1920 x 1080 @ 60 Hz	Instead of the default EDID set at the video input, the video signal will be scaled up or down at the video output.
		1440p60	2560 x 1440 @ 60 Hz	
		4K30	3840 x 2160 @ 30 Hz	
		4K60	3840 x 2160 @ 60 Hz	

If the default EDID of the video input is set different from the resolution of the video output, the video signal is scaled up or down to the resolution set at the video output.
For instance, the default EDID of the video input is set to **1080p** (see chapter 7.2.1 page 72) and the resolution of the video output is set to **4K60**. If a 4K60 monitor is connected to the output, the video signal is scaled to 4K60.

To configure the name of a video output, proceed as follows:

1. Select **Configuration > Output Control** in the main menu.
2. Select the video output to be configured in the list **Output Devices** list.
3. Click **Edit** to activate the edit mode.
4. Change the **Custom Name** if desired.
5. Select the **Resolution** for the selected video output.
6. Click **Okay** to confirm the changes.

7.4.3 Setting Windows Parameters

The parameters for the video outputs are set in this menu:

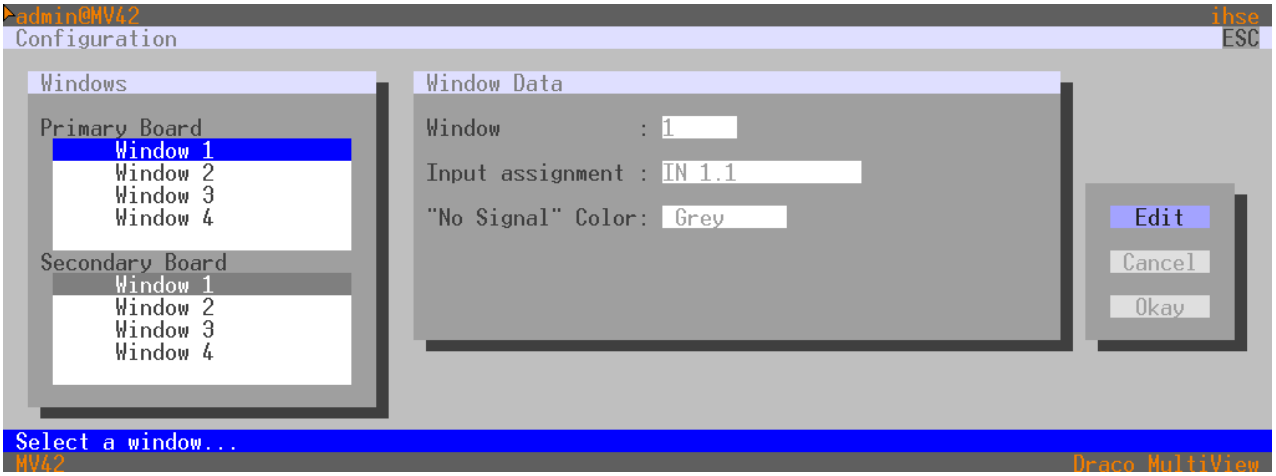


*Fig. 64 OSD Menu **Configuration - Windows** (example with dual-head device)*

The following settings can be configured:

Field	Entry	Description
Window	Numerical	Ident number of the window (see table in chapter 7.5.6, page 93).
Input Assignment	List	The video signal of the assigned input is streamed into the window.
"No Signal" Color	List	Background color if there is no video signal.

To configure windows settings, proceed as follows:

1. Select **Configuration > Windows** in the main menu.
2. Select the window to be configured in the **Windows** list.
3. Click **Edit** to activate the edit mode.
4. Select an input in the **Input Assignment** list to stream its video signal in the selected window.
5. Select the color in the **“No Signal” Color** list for the background if there is no video signal available.
6. Click **Okay** to confirm the changes.

7.5 Configuring Custom Layouts

The configuration of Custom Layouts uses the overlay of the OSD. Only users with administrator rights or power user rights with activated User management are permitted to change individual layouts. Therefore, an OSD login is required.

NOTICE

Possible loss of layout changes

Layout changes are temporarily available. When restarting the Draco MV, layout changes are saved to the respective layout. In the event of a sudden power failure, layout changes are lost, and the layout is reset to the latest saved state.

➡ To save layout changes permanently, see chapter 7.5.10, page 97.

If the default EDID of the video input is set different from the resolution of the video output, the video signal is scaled up or down to the resolution set at the video output.
For instance, the default EDID of the video input is set to 1080p (see chapter 7.4.1 page 86) and the Resolution of the video output is set to 4K60. If a 4K60 monitor is connected to the output, the video signal is scaled to 4K60.

In Custom Mode, the edit mode only works on the main monitor. When connecting only one monitor to the second output of the primary video/audio board or to the secondary video/audio board, no layouts can be created or adjusted in Custom Mode.
➡ Connect a monitor to the main output (OUT1.x) of the primary video/audio board.

An activated edit mode is required for changing, saving, or resetting layouts.

Note the switching conditions when creating and arranging a layout in Custom Mode (see chapter 11.4, page 147).

7.5.1 Displaying the Custom Mode initially

When displaying the Custom Mode for the first time, the windows are displayed with the factory settings. By default, the windows are displayed in Quad Mode in Full HD resolution. The USB HID control remains on the current input.

Depending on the monitor resolution, the video signals may be displayed differently from the following figure. To adjust the window with the video signals to the current monitor resolution:
➡ reset the layouts by pressing Ctrl + r (see chapter 7.5.11, page 98).
If connecting a monitor with another resolution, the created and saved layout may not be usable for the new monitor resolution. Probably the layouts have to be newly created.

Example

E.g., when switching from the Preview Mode with USB HID control switched to input 2, the Custom Mode initially starts in Quad Mode with USB HID switched to input 2. The following figure shows the initial start in Custom Mode with a Full HD monitor.

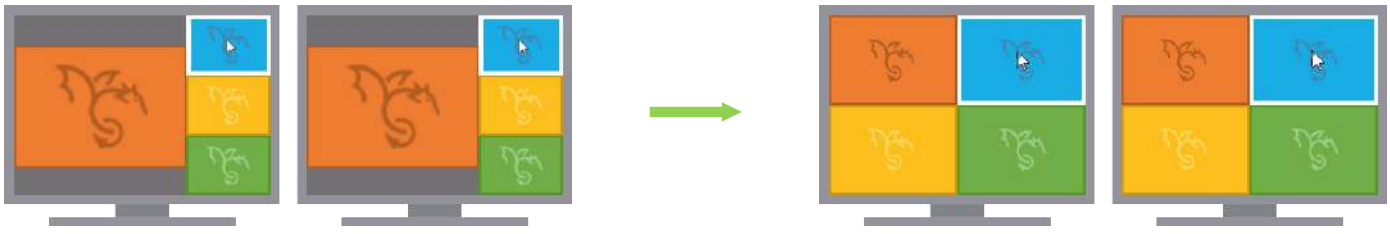


*Fig. 65 **Custom Mode** - Example after switching the display mode to the Custom Mode the first time*

7.5.2 Activating and Deactivating the Edit Mode

Editing a Custom Layout is restricted to administrator and power user rights. Therefore, a login to the OSD is required.

To activate the edit mode in Custom Mode, proceed as follows:

➡ Press Hot Key, F8.

The OSD mouse (here in orange) is activated and located in the upper left corner, and the transparency of the display changes. On the upper left of the display, a hint for the help text display is shown. Source frames or source names are not displayed in the edit mode.

*Fig. 66 **Custom Mode** - Example after activating the edit mode*

To exit the edit mode in Custom Mode, proceed as follows:

➡ Press Ctrl + Esc.

Changes of layouts remain without saving. In the event of a sudden power failure, layout changes are lost, and the layouts are reset to the latest saved state.

When exiting the edit mode, the focus will be on the window that had received the last left mouse click

7.5.3 Opening the Help Text in the Edit Mode

➡ Press h to show the help text for the edit mode with all options in the edit mode.

```
Press H to show the help text for the edit mode.
Left click: Exiting the edit mode, the input of the window will be focused that got the last left mouse click.
Move      : Hold down the LEFT mouse button within a window & move the window to the preferred position.
Scale     : Hold down the LEFT mouse button at an edge of a window & move it to scale the window with aspect ratio.
            Hold down the RIGHT mouse button at an edge of a window & move it to scale the window freely.
Crop      : Double-click the LEFT mouse button on a window to display the window in full screen.
            Hold down the RIGHT mouse button & drag to draw a rectangle around a desired area.
            Press ENTER to crop or BACKSPACE to remove the drawn rectangle.
            Double-click the LEFT mouse button on the window with the cropped area to fit the cropped area into the original layout.
Reset     : Click the LEFT & RIGHT mouse buttons together inside the window to reset to the last saved state.
            With mouse in the customized window, press BACKSPACE to reset the cropped area in the customized window to full screen.
CTRL+O    : Open one of the four stored layouts.
CTRL+[1-4]: Enter CTRL and 1, 2 ,3 or 4 to open the layout 1, 2, 3 or 4 directly.
CTRL+R    : Reset one or all layouts to the default layout(s).
CTRL+S    : Save the layout.
[1-4]     : Enter 1, 2, 3 or 4 to toggle the associated window between background and foreground.
ESC       : Exit the edit mode, discard, or save changes.
CTRL+ESC  : Exit the edit mode, current changes remain, but will not be saved.
```

*Fig. 67 **Custom Mode** - Help text in the edit mode with adjustment options*

7.5.4 Cropping an Area of a Window

To crop an area of a window, proceed as follows:

1. Double-click the left mouse button on a window to display the window in full screen.

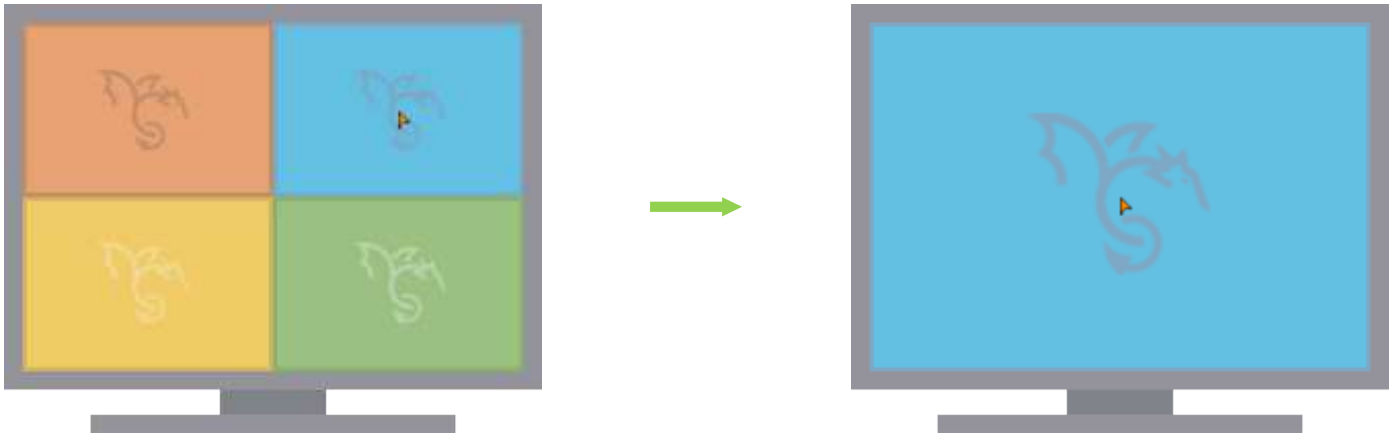


Fig. 68 ***Edit mode in Custom Mode*** *- Example of displaying a window in full screen*

2. Click and hold down the right mouse button and drag to draw a rectangle around the desired area.
3. Press Enter to crop the rectangle area.
   The cropped area is displayed in full screen.
4. Double-click the left mouse button on the window with the cropped area.
   The cropped area is fit back into the window of the original layout.

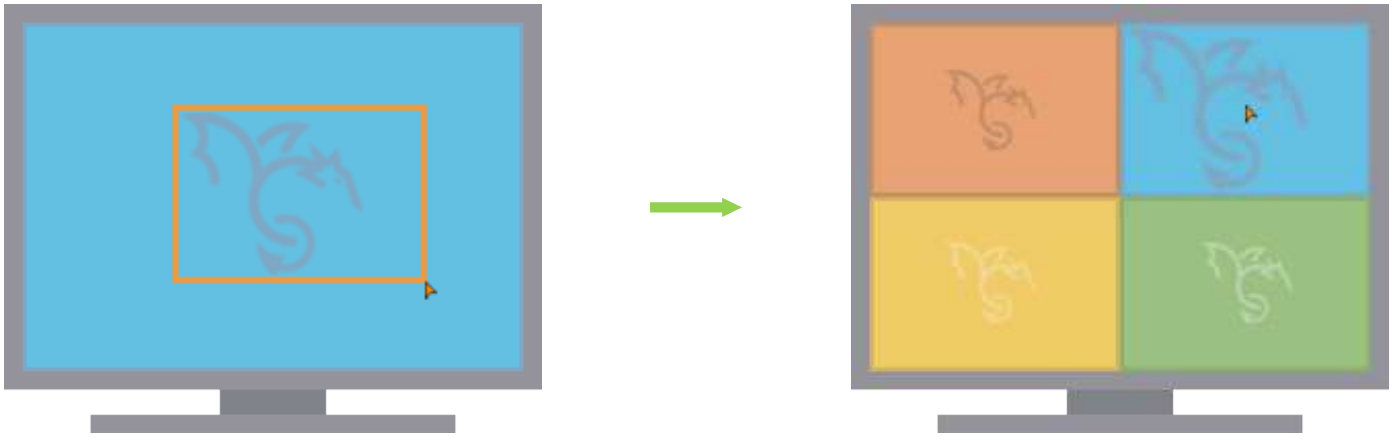


Fig. 69 ***Edit mode in Custom Mode*** *- Example of drawing a rectangle around an area to be cropped*

7.5.5 Scaling a Window in a Custom Layout

To scale a window in a layout, proceed as follows:

1. Scaling with aspect ratio (16:9):
   Click with the left mouse button close to an edge of a window, hold down the left mouse button, and move to mouse to resize the window.

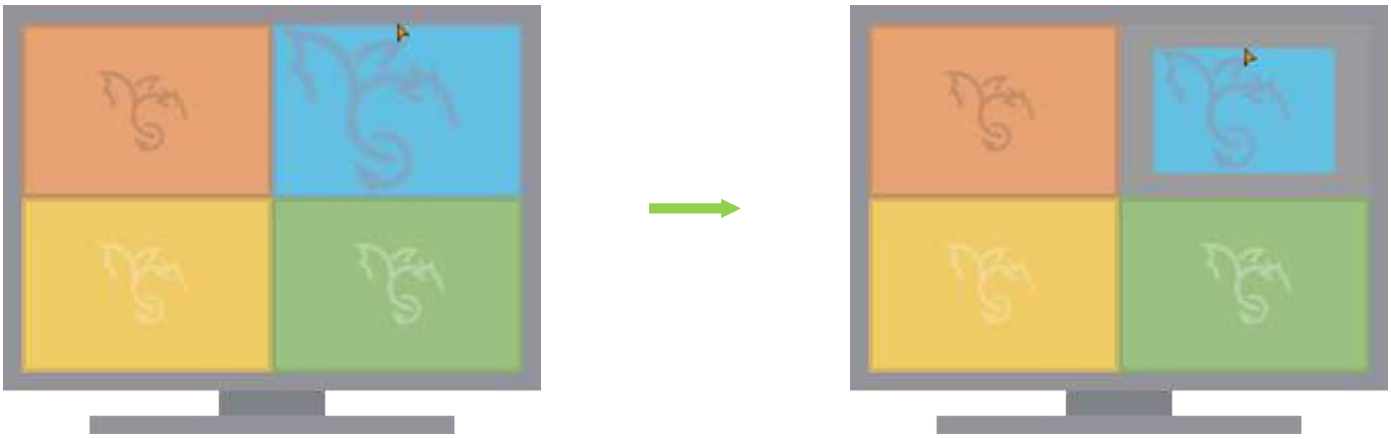


Fig. 70 ***Edit mode in Custom Mode*** *- Example for scaling a cropped window in a layout with aspect ratio*

2. Scaling without aspect ratio:
   Click with the right mouse button close to an edge of a window, hold down the right mouse button, and move the mouse to resize the window.

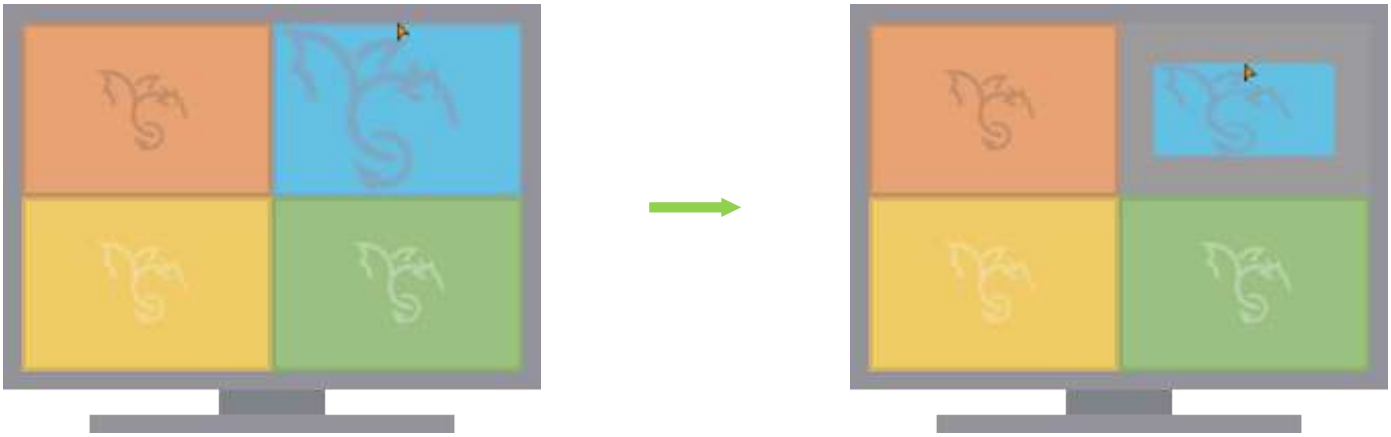


Fig. 71 ***Edit mode in Custom Mode*** *- Example for scaling a cropped window in a layout without aspect ratio*

7.5.6 Moving a Window in a Custom Layout

To move a window in a layout, proceed as follows:

➡ Click with the left mouse button into a window, hold down the left mouse button, and move the window to the preferred position.

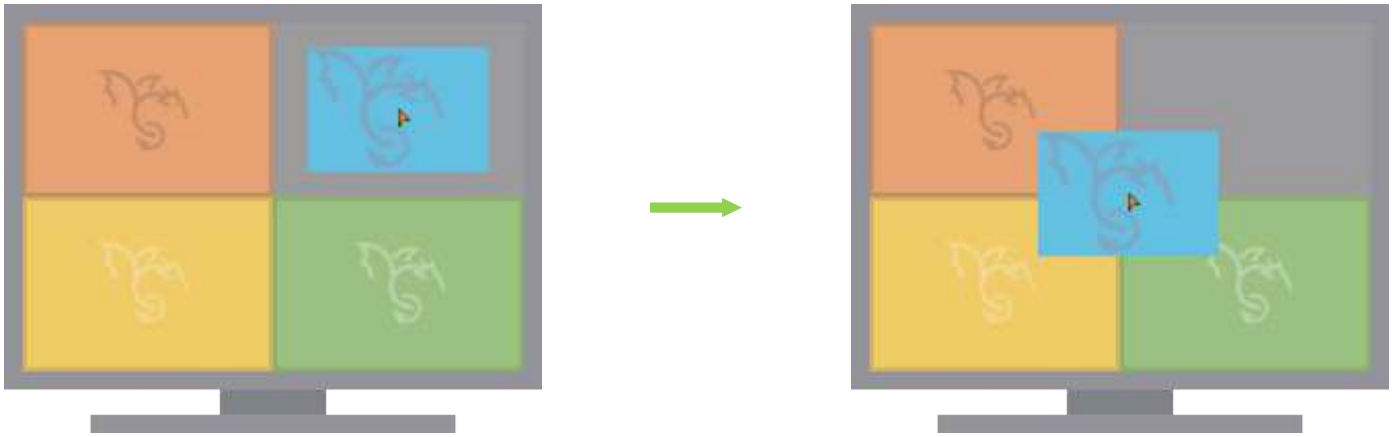


Fig. 72 ***Edit mode in Custom Mode*** *- Example of moving a scaled window in a layout*

The windows of input 1 to input 4 are internally arranged in levels.

	Input 1	Input 2	Input 3	Input 4
Window	Window 1	Window 2	Window 3	Window 4
Number on the keyboard	1	2	3	4

When a window is hiding another window, editing the hidden window is only possible by toggling the respective window level between foreground or background (see chapter 7.5.7, page 94).

7.5.7 Toggling a Window Level in the Foreground or Background

If you organize a Custom Layout to display a video signal in full screen and some cropped areas, and you click in the full screen, the cropped areas will be hidden by the full screen.

To edit a hidden window, you can toggle the window level of an input between foreground and background by using the respective numbers on the keyboard. Using the numerical pad will not work.

Example

The following figures show a created Custom Layout with the associated window of input 2 in full screen and windows of the inputs 1, 3 and 4 from top to bottom on the right. When focusing on the input associated to the full screen window the other inputs will be hidden by the full screen.

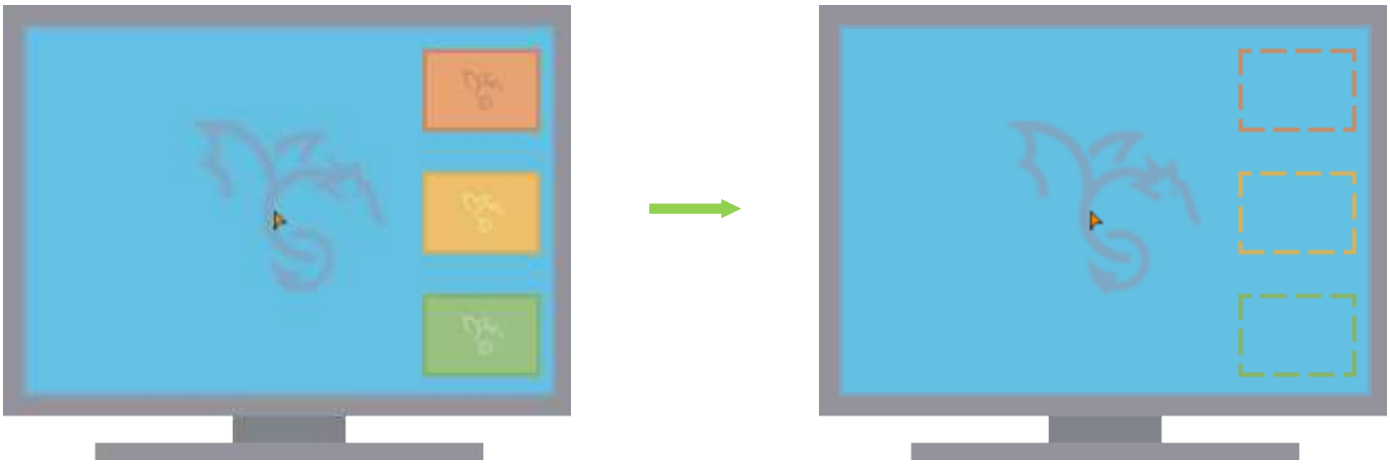


Fig. 73 ***Edit mode in Custom Mode*** *- Example of moving a scaled window*

➡ For instance, to toggle the window of input 3 in the foreground, press 3 on the keyboard.

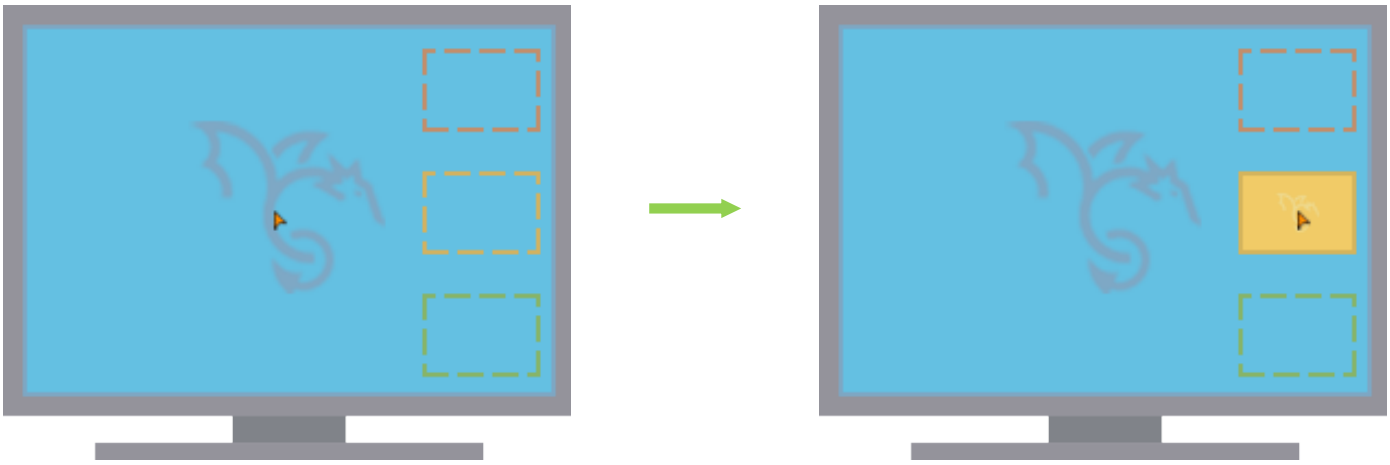


Fig. 74 ***Edit mode in Custom Mode*** *- Example of moving a scaled window*

7.5.8 Resetting a changed Window in a Custom Layout

To reset a window in a layout, proceed as follows:

Possibility 1

➡ Move the OSD mouse into the customized window and press Backspace.

The cropped area is reset, and the video signal is displayed in full screen in the customized window.

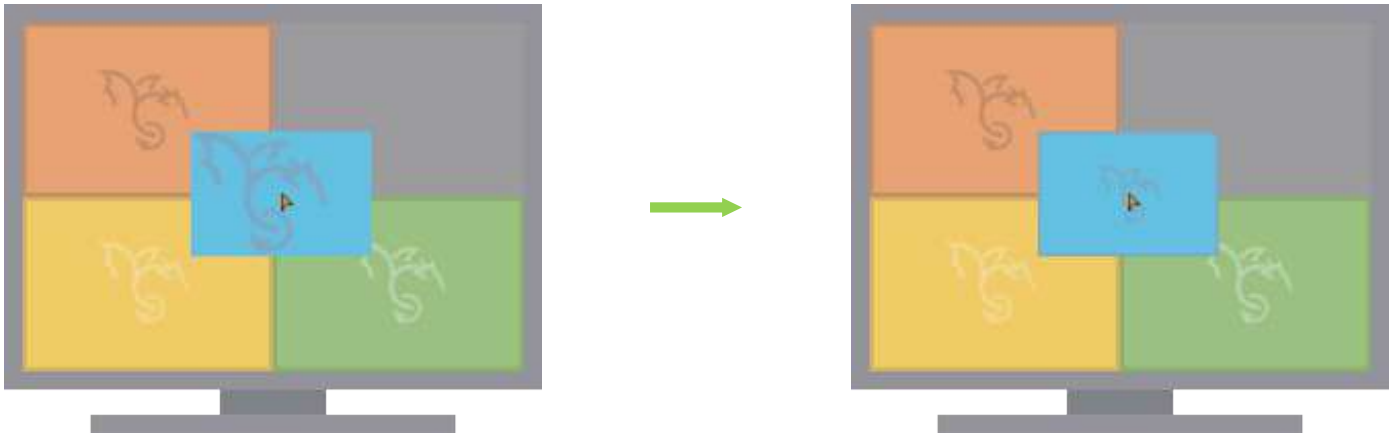


Fig. 75 ***Edit mode in Custom Mode*** *- Example after resetting a cropped area back to full screen*

Resetting via Backspace resets always the window in which the OSD mouse is located.

Possibility 2

➡ Click the left and right mouse buttons simultaneously inside the window.

The window is reset to its last saved state, or if it has not been changed, to the factory settings with the current resolution.

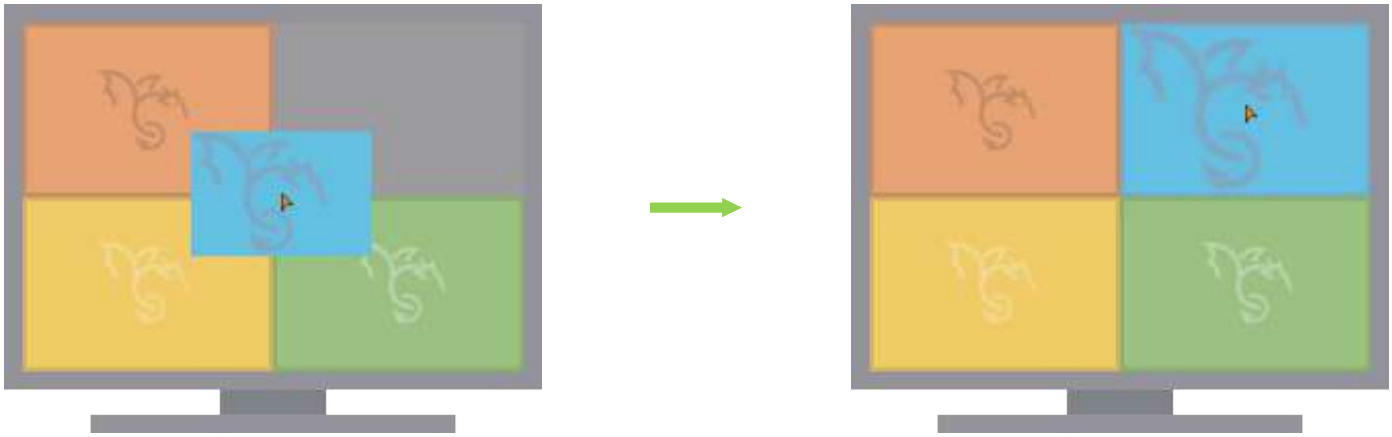


Fig. 76 ***Edit mode in Custom Mode*** *- Example after resetting a cropped area back to factory settings*

Possibility 3

➡ Open another layout without saving the unsaved changes of the current layout (see chapter 7.5.9, page 95).

7.5.9 Opening a Custom Layout

When opening another layout without saving the unsaved changes of the current layout, all changes are lost. This can be used to reset changes of the current layout.
There is no notification about probably unsaved layout modifications

With activated edit mode, there are the following possibilities to open a layout.

Possibility 1

1. Press Ctrl + o.

   A dialog appears.

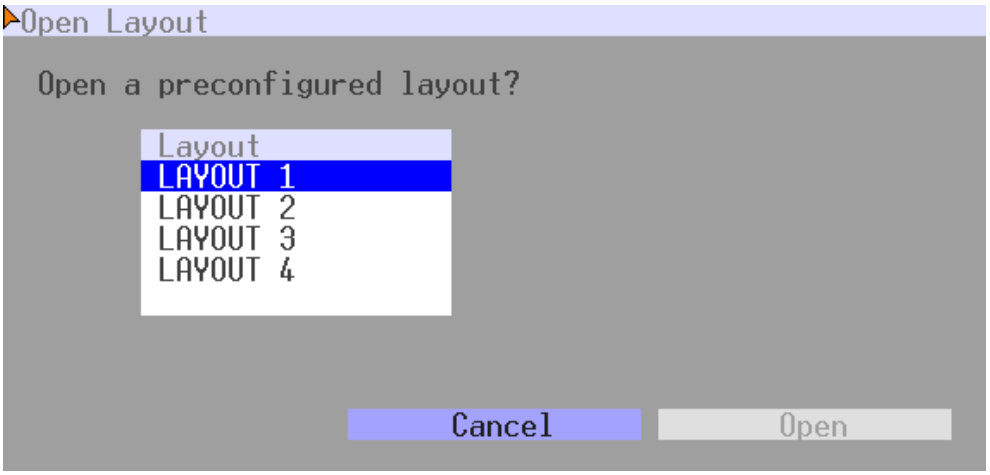


*Fig. 77 OSD Menu **Custom Mode - Edit Mode - Open Layout***

2. Select one of the custom layouts [Layout 1…4].
3. Click **Open** or press Enter.

   The layout is saved, and the dialog is closed.

Possibility 2

➡ Enter a keyboard command with the number of the layout to open the layout directly. For instance, to open the **Layout 3**, press Ctrl + 3.

	Layout 1	Layout 2	Layout 3	Layout 4
Keyboard command	Ctrl + 1	Ctrl + 2	Ctrl + 3	Ctrl + 4

7.5.10 Saving a Custom Layout

To save a layout, proceed as follows:

1. Press Ctrl + s.

   A dialog appears

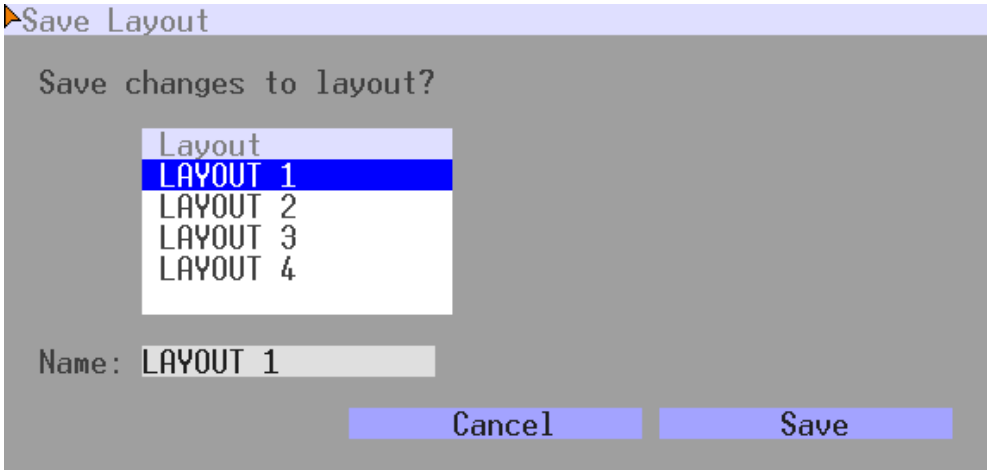


*Fig. 78 OSD Menu **Custom Mode - Edit Mode - Save Custom Layout***

2. Select a storage slot to save the layout.
3. Option: enter a name for the layout (input of up to 16 characters).
4. Click **Save** or press Enter.

   The layout is saved, and the dialog is closed.

7.5.11 Resetting a Layout

With activated edit mode, a single custom layout or all custom layouts can be reset.

Possibility 1

1. Press Ctrl + r.

   A dialog appears.

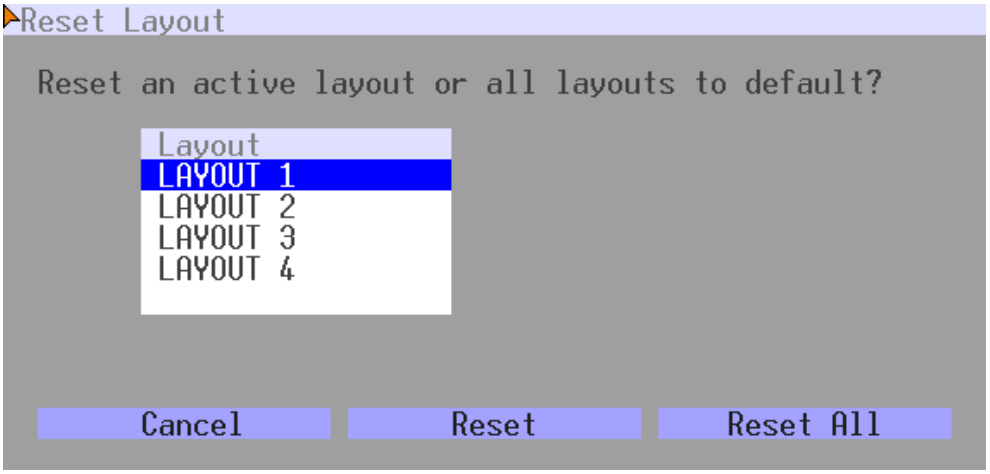


*Fig. 79 OSD Menu **Custom Mode - Edit Mode - Save Layout***

2. To reset one specific layout:
   2.1. Select a specific layout (Layout 1...4).
   2.2. Click **Reset**.

   The selected layout is reset to the factory settings and the video signal is displayed in the current resolution.
3. To reset all layouts, click **Reset All**.

   All layouts are reset to the factory settings and the video signals are displayed in the current resolution.

Possibility 2

Opening another layout discards a layout without saving changes. This can be used to reset changes of the current layout (see chapter 7.5.9, page 95).

Possibility 3

Exiting the edit mode of the Custom Mode and clicking **Discard Changes** discards all unsaved changes. This can be used to reset changes of a layout (see chapter 7.5.12, page 99).

7.5.12 Exiting the Edit Mode of Custom Mode

To exit the edit mode of the Custom Mode, proceed as follows:

1. Press Esc.

   A dialog appears, showing the information that unsaved changes will be lost without saving.

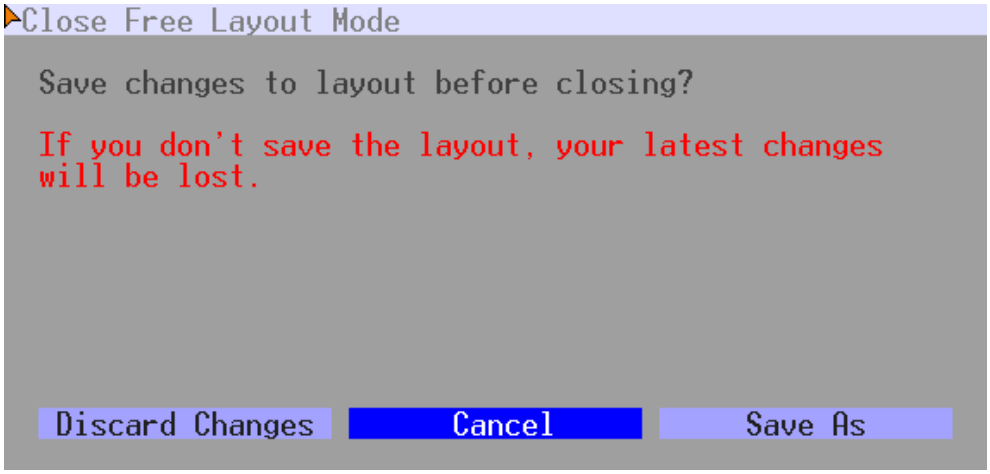


*Fig. 80 OSD Menu **Custom Mode - Edit Mode - Close Edit Mode***

2. Click **Discard changes** to exit the edit mode without saving the latest changes.

   The edit mode is exited without changing, and the dialog is closed.

3. Option: click **Save As** if you want to save the latest changes.

   The **Save Layout** dialog is opened (see chapter 7.5.10, page 97).

7.6 Saving a Configuration

NOTICE

By default, the last configuration that has been saved in the permanent Draco MV memory will be restored after a restart of the Draco MV.

First starting the Draco MV, the factory configuration will be copied into the current configuration. You have the following possibilities to save configuration changes to the Draco MV:

- Saving the current configuration permanently in the Draco MV memory (**Save**, see chapter 7.6, page 100).
- Restart the Draco MV (**Restart**, see chapter 12.4.1, page 164).
- Shut down the Draco MV (**Shut down**, see chapter 12.4.2, page 164).

To save the current configuration permanently in the Draco MV storage, proceed as follows:

➡ Select **Configuration > Save** in the main menu.

The current configuration of the Draco MV is permanently saved to the Draco MV memory.

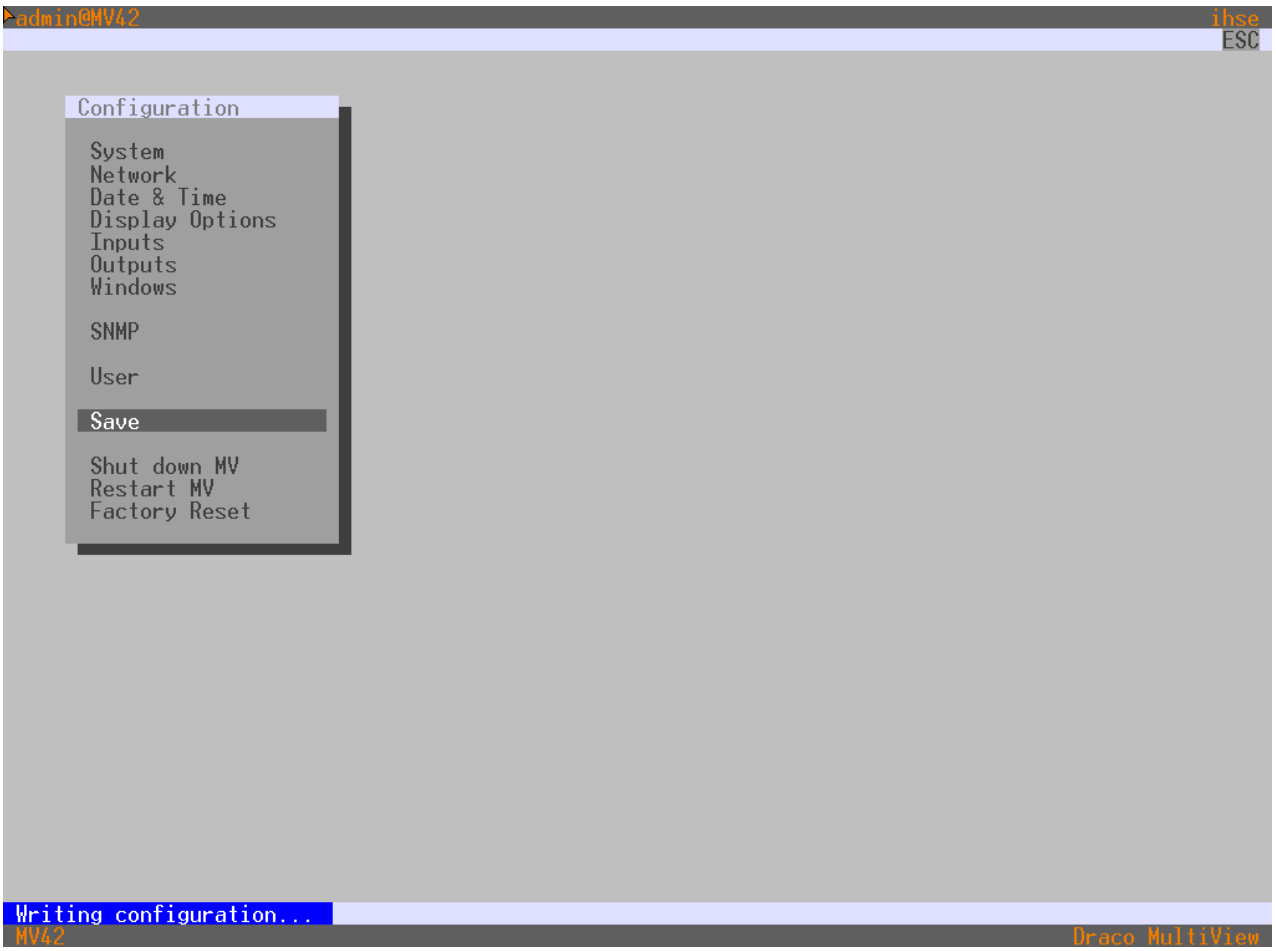


*Fig. 81 OSD Menu **Configuration - Save***

8 Configuration via Web UI

NOTICE

Possible loss of changes

By clicking **Apply**, changes are overtaken to the active configuration and saved in the volatile memory of the Draco MV. In the event of a sudden power failure, these changes are lost. To save changes permanently:

➡ Save the configuration changes into the active configuration (**Remote Save**, see chapter 15.5.1, page 196) or perform a restart (**Restart,** see chapter 15.5.2, page 197).

NOTICE

A change in system-relevant parameters (e.g., change in the IP address) is immediately displayed in the Web UI. To initialize system-relevant configuration changes on the Draco MV, the Draco MV must be restarted. The restart of the Draco MV might take several minutes, and the Draco MV is not available during the restart.

☑ Working areas with many setting options are presented in individual sections for better clarity.

8.1 Configuration Basics

Configurations and system settings can be edited via Web UI accessing the Draco MV via active LAN connection. Hereby, the following steps are necessary:

1. Open a browser and connect to the Draco MV via IP address.

   When connecting the first time, the manufacturer-specific configuration (Factory Setting) saved on the Draco MV is loaded into the Web UI.
2. Make any edits in the configuration and system settings.
3. Click **Apply** to confirm the changes.

   The changes are applied immediately as the current configuration running in the volatile memory of the Draco MV.
4. To save the changes permanently, save the configuration on the Draco MV or restart the Draco MV:

   4.1. Save configuration changes onto the Draco MV (**Remote Save**, see chapter 15.5.1, page 196).

   4.2. Restart the system depending on the settings made (**Restart,** see chapter 15.5.2, page 197).

☑ We strongly recommend saving a backup file after each configuration change. The backup file is required for the manufacturer's technical support in case of an issue.

➡ Click **Maintenance > Advanced Service > Save Status** to save the Draco MV status (see chapter 15.7, page 204).

8.2 System Settings

8.2.1 Setting System Configuration

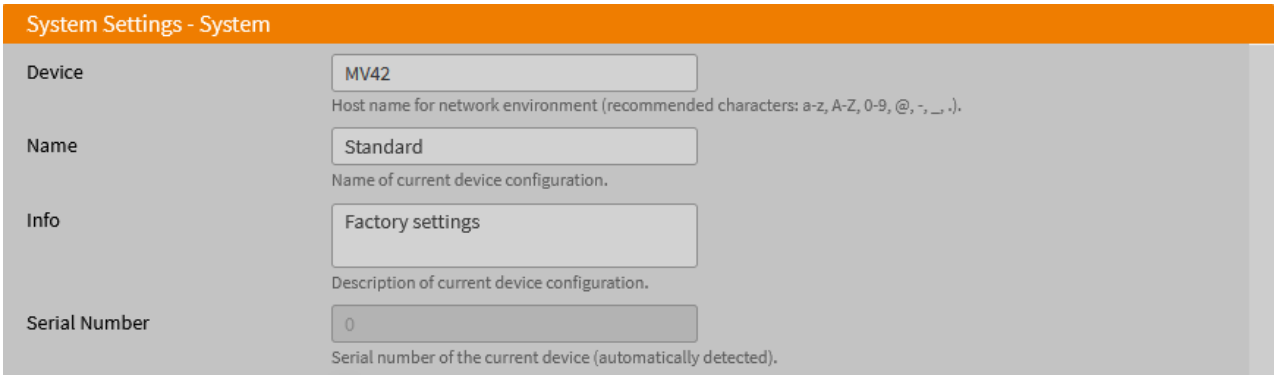


*Fig. 82 Web UI menu **System Settings - System (Working area 1)***

The following parameters can be configured:

System Settings

Field	Entry/Status	Description
Device	Text	Device name of the Draco MV (default: MV42).
Name	Text	Name of the configuration that is used to save the current settings (default: Standard).
Info	Text	Additional text to describe the configuration if required (default: Factory settings).
Serial Number	Numeric	Serial number of the current device (cannot be changed, is retrieved automatically).

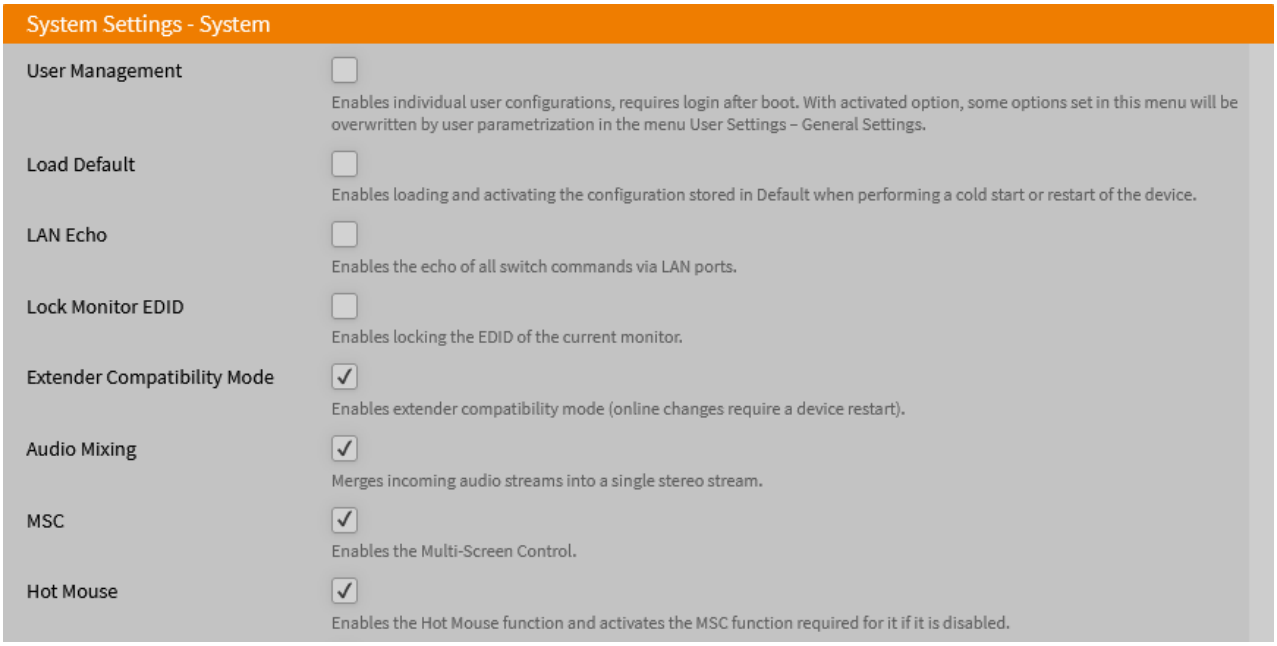


*Fig. 83 Web UI menu **System Settings - System (Working area 2)***

Field	Entry/Status	Description
User Management	Activated	Activates the possibility to set individual user configuration in the menu **User Settings - General Settings**. Individual user parametrization can overwrite some options set in this global menu. **Note:** When activating this option, the Web UI is closed, and a re-login is required.
	Deactivated	Starts the Draco MV after a switch-on or a restart by default with the display mode and input focus for the primary and secondary board selected in this menu.
Load Default	Activated	Starts the Draco MV after a restart or a switch-on with the configuration stored as Default.
	Deactivated	Starts the Draco MV after a restart or a switch-on with the last saved configuration (default).
LAN Echo	Activated	Sends all switching commands performed in the Draco MV as an echo via LAN connection. **Note:** This function should be enabled when using a media controller via LAN connection.
	Deactivated	Function not active (default).
Lock Monitor EDID	Activated	Locks the current monitor EDID in the configuration. After switching on, restarting, or reconnecting during operation, the locked EDID will be used from the source instead of the native EDID of a future connected monitor.
	Deactivated	After switching on, restarting, or reconnecting during operation, the video signal is displayed with the resolution of the preset default EDID (see chapter 8.3.1, page 119).
Extender Compatibility Mode	Activated	Enables extender compatibility mode. **Note:** Online changes require a restart.
	Deactivated	Function not active (default).
Audio Mixing*	Activated	Merges incoming audio streams into a single stereo stream. Depending on the device type, up to 8 audio streams (7.1) can be merged into a 2-channel stereo stream.
	Deactivated	Function not active (default).
MSC*	Activated	Enables the Multi-Screen Control function. Absolute mouse coordinates are used for the MSC automatic mode with/without restriction (see chapter 10, page 137). Moving the mouse pointer over the edge of one window into another window switches the USB HID control seamlessly to the associated input. For dual-head installations, MSC is recommended to be only activated if using the Hot Mouse function in Preview Mode, PiP Mode, True PiP, and Custom Mode. The behavior of the mouse movement in dual-head systems has to be noticed (see chapter 10, page 137).
	Deactivated	Function not active (default), relative mouse coordinates are used. If disabling MSC, the Hot Mouse function will also be disabled, because MSC is required for the Hot Mouse function.

Field	Entry/Status	Description
Hot Mouse*	Activated	Enables the Hot Mouse function for inputs of the primary board (MSC function is required and will also be enabled). The Hot Mouse function is necessary to focus on another input with current display modes Preview Mode, PiP Mode, True PiP Mode, and Custom Mode. Moving the mouse pointer over the edge of one window into another window, turns the Hot Mouse Mode on. A transparent overlay, and an overlay mouse pointer (OSD mouse) appear. The OSD mouse can be used to focus on another input by clicking in the associated window. The behavior of the mouse movement in dual-head systems has to be noticed (see chapter 10.1, page 137).
	Deactivated	Function not active (default).

* Can be overwritten if the **User Management** option in this menu is activated.

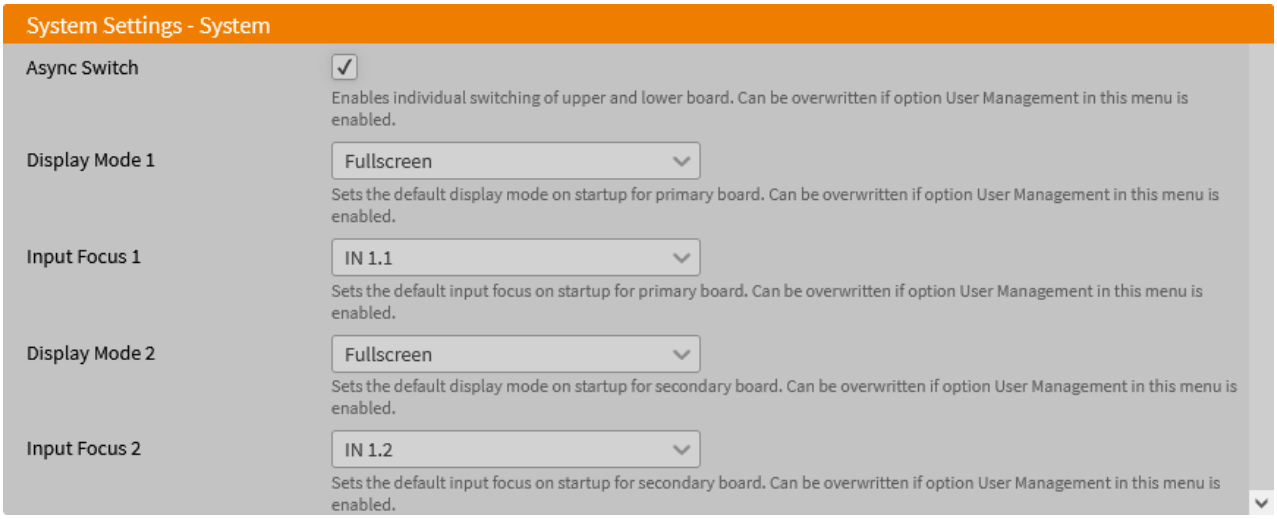


*Fig. 84 Web UI menu **System Settings - System (Working area 3)***

Field	Entry/Status	Description
Async Switch*	Activated	Allows different output of the input signals separately to the primary and secondary board. E.g., if the inputs of the secondary board are to be used for video viewing only. Allows different display modes of the primary and secondary board. **Note:** USB HID control switching is managed by the primary board. Depending on the output management, the mouse could not be visible in windows assigned to inputs of the secondary board.
	Deactivated	Focusing on inputs with USB HID control is synchronized for both boards.
Display Mode 1*	List	Starts the Draco MV after a switch-on or a restart by default with the selected display mode for the primary board.
Input Focus 1*	List	Starts the Draco MV after a switch-on or a restart by default with the selected input focus for the primary board.
Display Mode*	List	Dual head devices only: Starts the Draco MV after a switch-on or a restart with the selected default display mode for the secondary board.
Input Focus 2*	List	Dual head devices only: Starts the Draco MV after a switch-on or a restart by default with the selected display mode for the secondary board.

* Can be overwritten if the **User Management** option in this menu is activated.

To set parameters for the system configuration, proceed as follows:

1. Click **System Settings** in the toolbar.
   The working area for system settings is displayed.
2. Change the desired settings.
3. Click **Apply** to confirm the changes.

Audio Mixing Function

With activated/deactivated Audio Mixing, the following audio signals are outputted:

	Disabled Audio Mixing		Enabled Audio Mixing	
	Focused input/input with USB HID control	Unfocused input/input without USB HID control	Focused input/input with USB HID control	Unfocused input/input without USB HID control
Video output 1, via monitor	Up to 7.1-Channel audio*	No audio output	2-Channel audio, amalgamated	
Video output 2, via monitor	Up to 7.1-Channel audio*	No audio output	2-Channel audio, amalgamated	
Audio output 1, with analog audio device	2-Channel audio	No audio output	2-Channel audio, amalgamated	
Audio output 2, with analog audio device	2-Channel audio	No audio output	2-Channel audio, amalgamated	
Audio output 1, with digital audio device	7.1-Channel audio	No audio output	7.1-Channel audio	No audio output
Audio output 2, with digital audio device	7.1-Channel audio	No audio output	7.1-Channel audio	No audio output

* Depending on the monitor EDID.

8.2.2 Setting Network Configuration

The parameters for the network configuration are set in this menu.

NOTICE
A change of system-relevant parameters (e.g., change of the IP address) is immediately displayed in the Web UI. To initialize system-relevant configuration changes on the Draco MV, the Draco MV must be restarted. The restart of the Draco MV might take several minutes, and the Draco MV is not available during the restart.

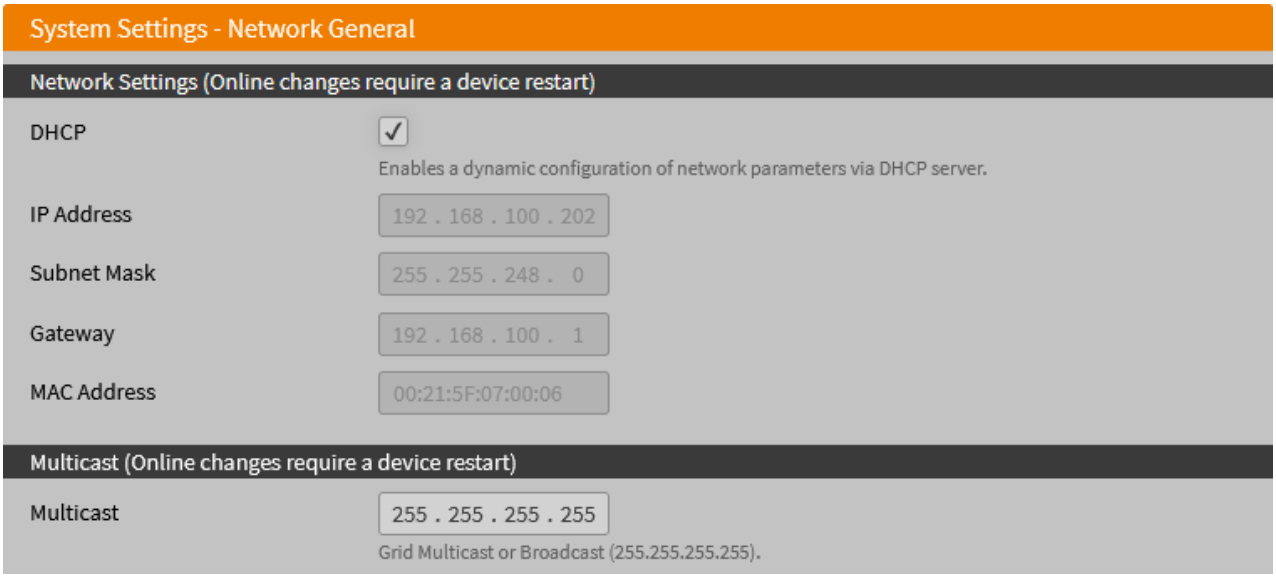


*Fig. 85 Web UI menu **System Settings - Network - General (Working area 1)***

The following parameters can be configured:

Network Settings

Field	Entry/Status	Description
DHCP	Activated	The network settings are automatically supplied by a DHCP server. **Note:** If DHCP is activated and there is no physical network connection available, the boot times might increase.
	Deactivated	Function not active (default).
IP Address	Byte	IP address if DHCP is not active (default: 192.168.100.95).
Subnet Mask	Byte	Subnet mask in the form “255.255.255.0” if DHCP is not active (default: 255.255.255.0).
Gateway	Byte	Gateway address in the form “192.168.1.1” if DHCP is not active.
MAC Address	Byte	Multicast address if using within a multicast group (default: broadcast 255.255.255.255).

Multicast

Field	Entry	Description
Multicast	Byte	Multicast address if using within a multicast group (default: broadcast 255.255.255.255).

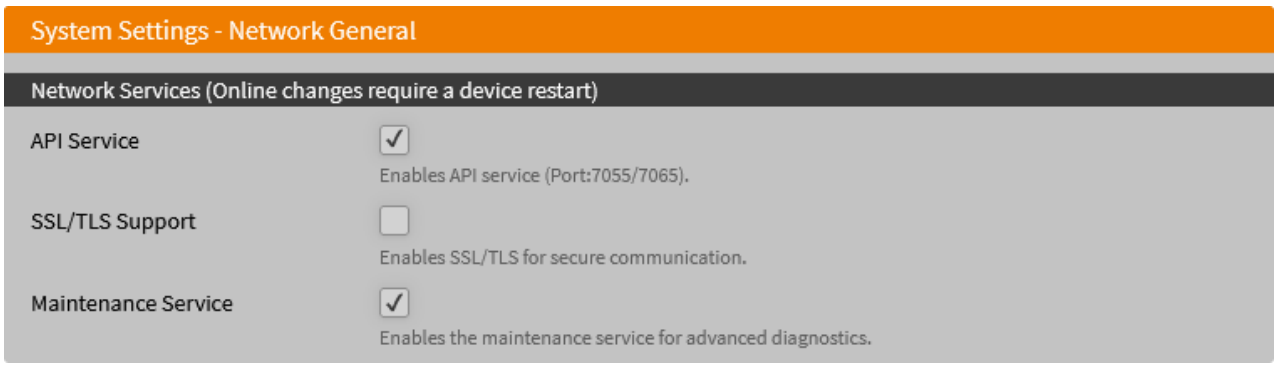


*Fig. 86 Web UI menu **System Settings - Network - General (Working area 2)***

Network Services

Field	Status	Description
API Service	Activated	Activates the LAN interface at the Draco MV for access via Web UI (API service port 7055/7056) (default).
	Deactivated	Function not active.
SSL/TLS Support	Activated	Activates SSL/TLS encryption for API, Web UI API, Web UI and Draco MV communication.
	Deactivated	Function not active (default).
Maintenance Service	Activated	Enables the maintenance service for advanced diagnostic.
	Deactivated	Function not active (default).

To set parameters for the network configuration, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Network** to display the **General** menu and the network subtasks.
   The working area of the selected task or subtask is displayed.
3. Change the desired settings.
4. Click **Apply** to confirm the changes.

8.2.3 Setting Syslog Function

The parameters for the syslog function are set in this menu:

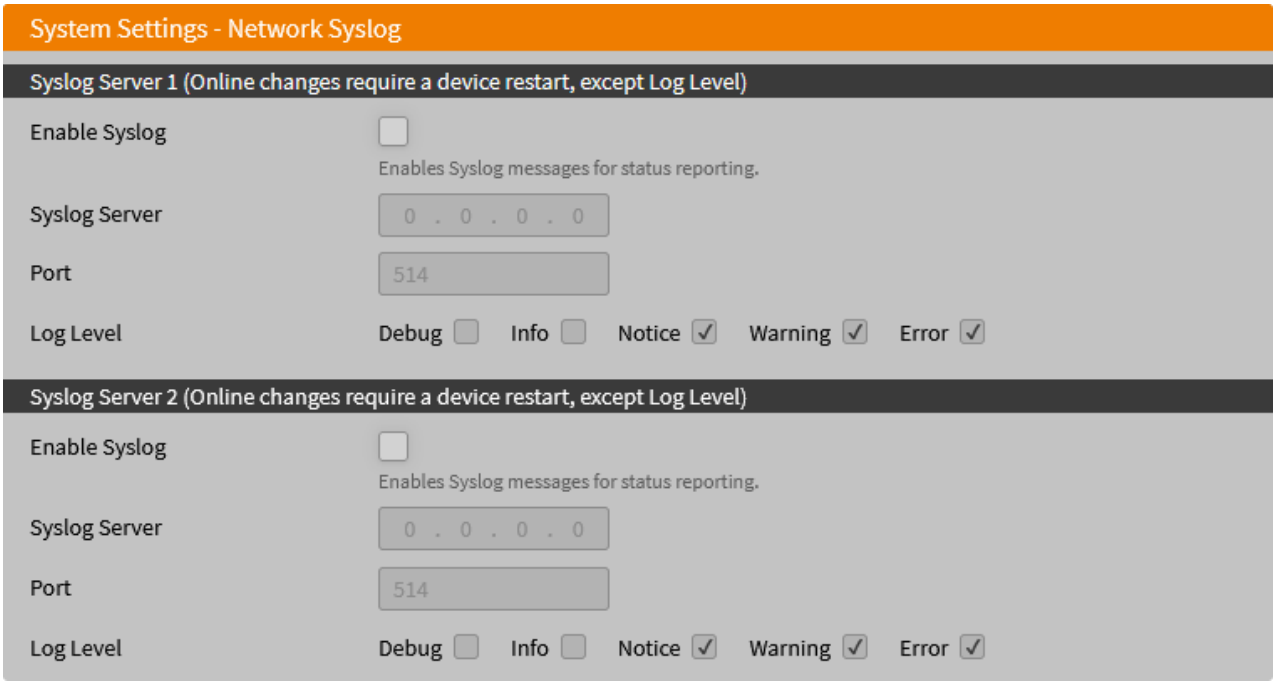


*Fig. 87 Web UI menu **System Settings - Network - Syslog***

The following parameters can be configured:

Field	Entry/Status	Description
Enable Syslog	Activated	Activates the Syslog server for status requests.
	Deactivated	Function not active (default).
Syslog Server	Byte	IP address of the Syslog servers in the form “192.168.1.1”.
Port	Byte	Syslog ports (default: 514).
Log Level	Debug	Activates debug messages in Syslog (default: N) **Note:** The debug messages are exclusively for Draco MV diagnostics. Use this function only for concrete debug cases as it is not intended for normal operation.
	Info	Activates information messages in Syslog (default: N).
	Notice	Activates notification messages in Syslog (default: Y).
	Warning	Activates warning messages in Syslog (default: Y).
	Error	Activates error messages in Syslog (default: Y).

To set parameters for the syslog function, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Network** in the task area to display the **Network** subtasks.
3. Click the **Syslog** subtask to display the **Syslog** working area.
4. Change the desired settings.
5. Click **Apply** to confirm the changes.

Further options, e.g., Syslog presets can be configured using the management software. For more information, please refer to the Draco tera user manual.

8.2.4 Setting SNMP Function

The SNMP function allows all function-critical and safety-critical elements of the Draco MV to be monitored and queried. This function complies with the RFC 1157 conformal standard. Two SNMP servers can be used at the same time.

NOTICE

When using SNMP monitoring, for reasons of access security, the use of a dedicated network according to the IT-Grundschutz-Kompendium (IT Baseline Protection) is recommended. The read-only community for the MIB file is **kvm**.

NOTICE

For an activation of the SNMP agent function or the SNMP server function, a restart of the Draco MV is necessary.

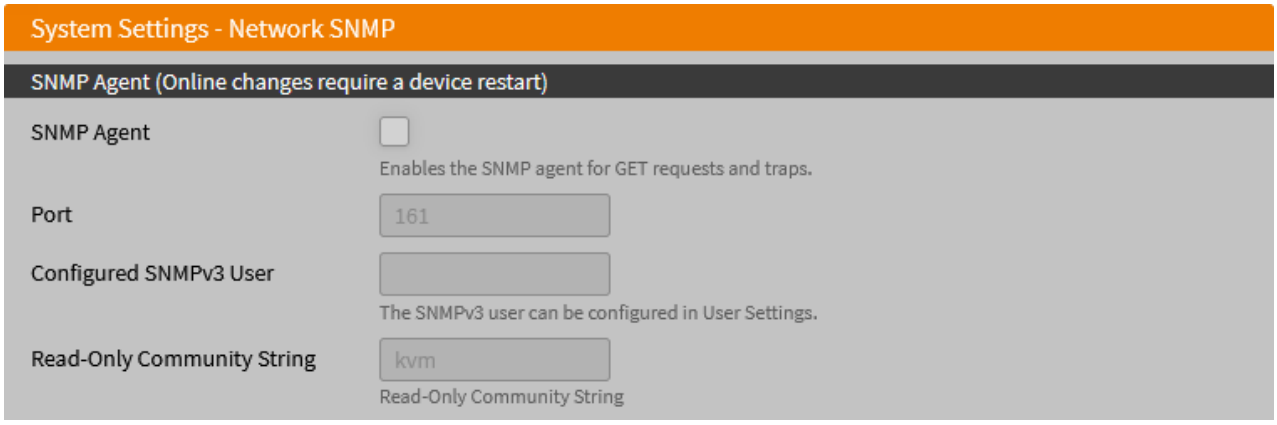


*Fig. 88 Web UI menu **System Settings - Network - SNMP (Working area 1)***

The following parameters can be configured:

SNMP Agent

Field	Entry/Status	Description
SNMP Agent	Activated	Permission for an active query of the SNMP agent for traps is granted. This activation is a prerequisite for using the SNMP server.
	Deactivated	Function not active (default).
Port	Numerical	The SNMP port is retrieved automatically (default: 161).
Configured SNMPv3 User	Alphabetical	Name of the SNMP user (default: snmp), set under User Settings (see chapter 8.5, page 127).
Read-Only Community String	Alphabetical	Access for Read-only Community (default: kvm).

Activating the SNMP Agent

To activate the SNMP agent, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Network** in the task area to display the **Network** subtasks.
3. Click the **SNMP** subtask to display the **SNMP** working area.
4. Tick the **SNMP Agent** checkbox within the **SNMP Agent** area.
   By activating this option, the permission for an active query of the SNMP agent is granted.
5. Click **Apply** to confirm the changes.

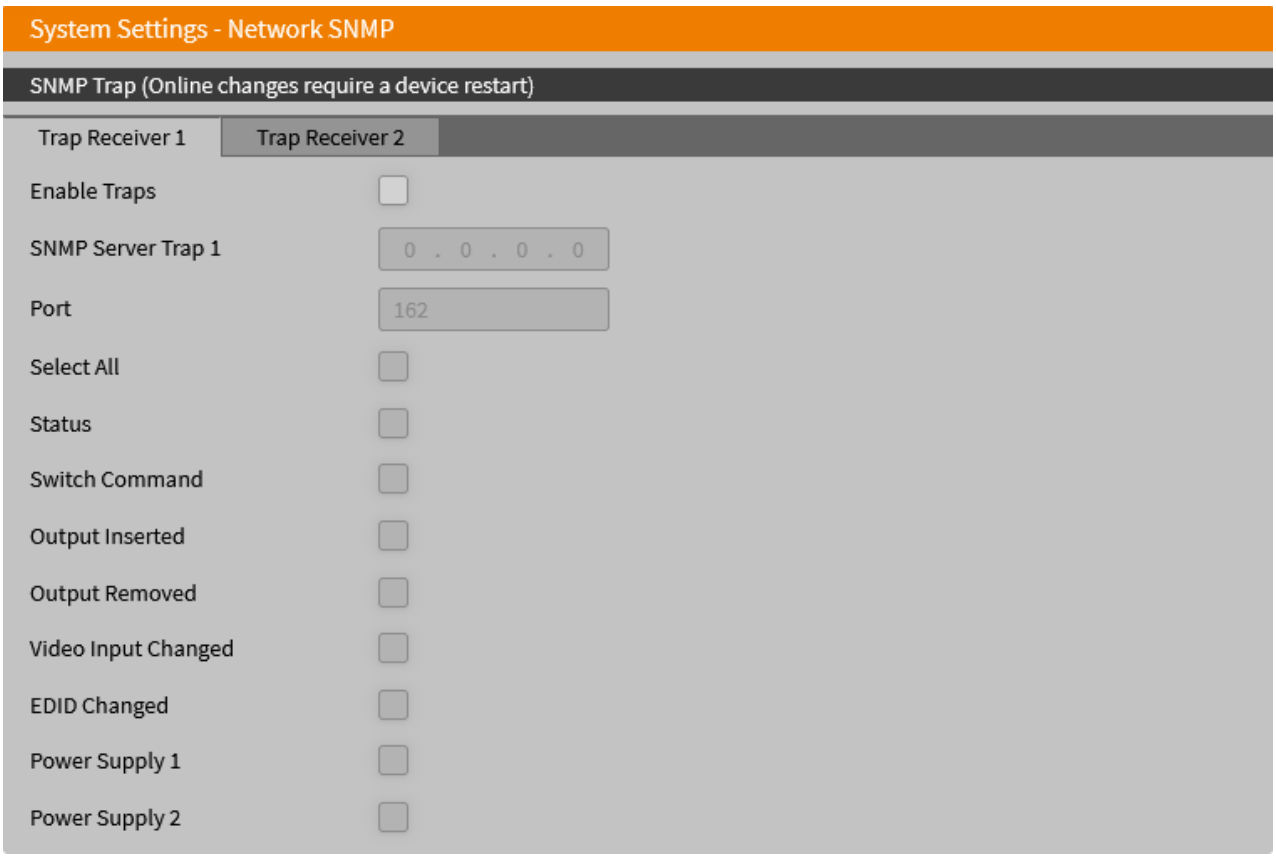


*Fig. 89 Web UI menu **System Settings - Network - SNMP (Working area 2)***

SNMP Trap

Traps	Description for activated traps
Enable Traps	Sends trap messages from the SNMP agent to the SNMP server.
SNMP Server	IP address of the SNMP server in the form “192.168.1.1”.
Port	SNMP port (default: 162).
Select All	Selection of all traps.
Status	Notification about the Draco MV status.
Switch Command	Notification about a performed switching operation at the Draco MV.
Output Inserted	• Notification about a console newly connected to the Draco MV. • Notification about a switched-on console.
Output Removed	• Notification about a console removed from the Draco MV. • Notification about a switched-off console.
Video Input Changed	Notification about a change of resolution or change of frequency.
EDID Change	Notification about a change in EDID information at the inputs.
Power Supply 1	Notification about the status of power supply unit #1.
Power Supply 2	Notification about the status of power supply unit #2.

Activating SNMP Traps

To activate active reporting of the SNMP traps, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Network** in the task area to display the **Network** subtasks.
3. Click the **SNMP** subtask to display the **SNMP** working area.

The **SNMP Agent** function must be activated to activate the SNMP traps.

4. Tick the **Enable Traps** checkbox within the **SNMP Trap** area.
5. Enter the IP address of the SNMP server under **SNMP Server**.
6. Tick the checkboxes of the desired traps to activate them.
7. Click **Apply** to confirm the changes.

SNMP presets and settings for an SNMPv3 User can be configured using the management software. For more information, please refer to the Draco tera user manual.

8.2.5 Setting Date and Time

The parameters for the system configuration are set in this menu, based on Simple Network Time Protocol (SNTP):

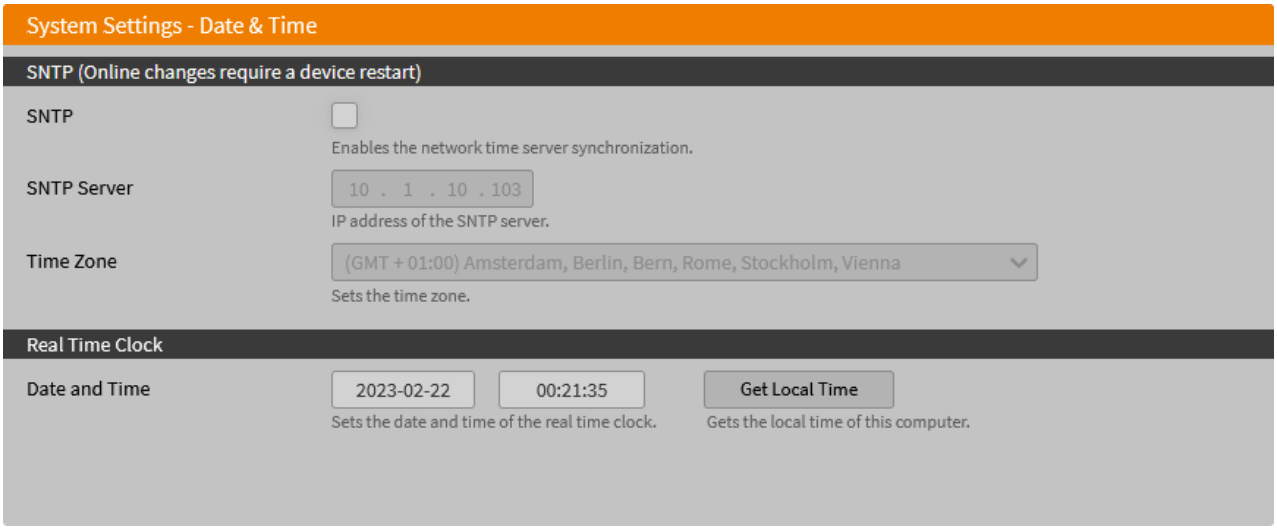


*Fig. 90 Web UI menu **System Settings - Date & Time***

The following parameters can be configured:

SNTP

Field	Entry/Status	Description
SNTP	Activated	Network time server synchronization.
	Deactivated	Function not active (default).
SNTP Server	Byte	SNTP server IP address (default: 000.000.000.000).
Time Zone	Region	Specific time zone (default: GMT + 00).

Real Time Clock

Field	Description
Date and Time	Date and time of the real time clock.
Get Local Time	Get local time of this computer.

* Date format according to the English notation.

Configuring the Time Server

To configure a time server, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Date & Time** in the task area to display the **Date & Time** working area.
3. Tick the **SNTP** checkbox to enable the SNTP option.
4. Enter the IP address of your SNTP server into the **SNTP Server** field.
5. Select your time zone in the **Time Zone** field.
6. Click **Apply** to confirm your settings.

   A query to restart the Draco MV appears.

7. Click **Yes** to restart the device.

   The current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be restarted. Restarting the device might take several minutes, and the device is not available during the restart.

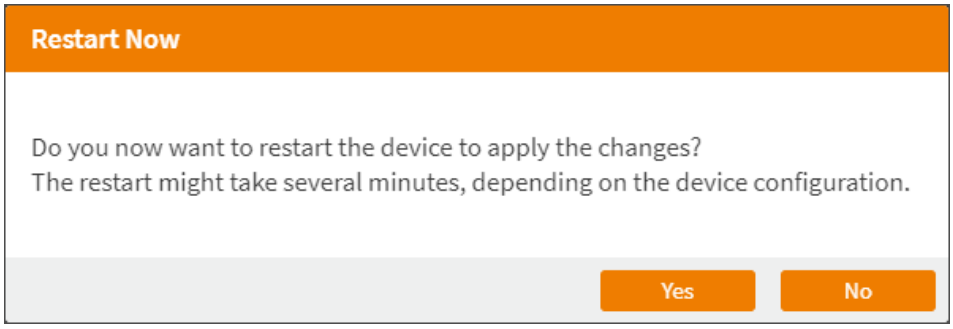


*Fig. 91 Web UI dialog **Maintenance - Firmware Update - Restart***

A message about the restart process appears.

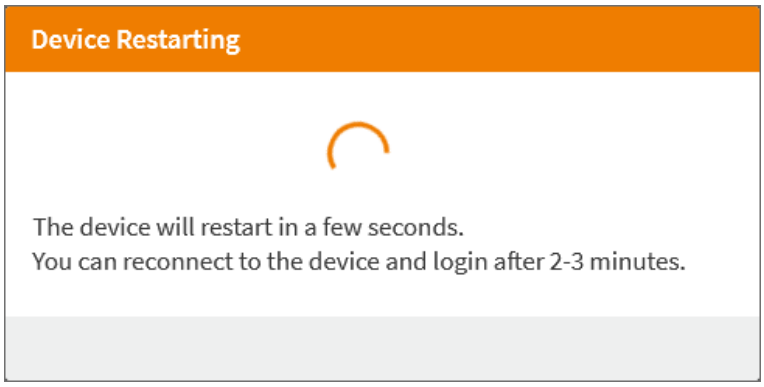


*Fig. 92 Web UI dialog **Maintenance - Advanced Service - Restart - Restart in progress***

A message to reload the page appears.

8. Click **Reload Page**.

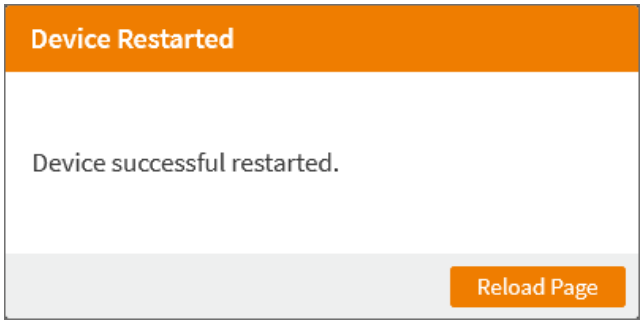


*Fig. 93 Web UI message **Maintenance - Advanced Service - Restart - Restart successful***

The **Login** page is displayed.

The system time is now provided by the SNTP server.

Configuring the Real Time Clock without Time Server

Depending on getting the local time of your computer or setting another time, the process and the messages differ.

To set the real time clock without using SNTP, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Date & Time** in the task area to display the **Date & Time** working area.
3. Setting another time than the local time:
   3.1. Set the current date in the **Date and Time** section.
   3.2. Set the current time in the **Date and Time** section.
   3.3. Click **Apply** to confirm the settings.
   A query to save and re-login appears
   3.4. Click **Yes** to save the changes.

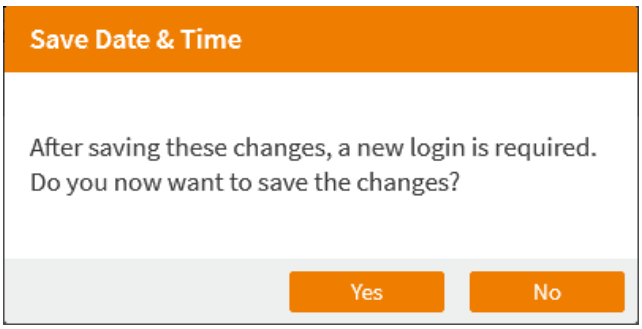


*Fig. 94 Web UI dialog **System Settings - Date & Time - Save changes***

A message appears showing the saving process, the page will be reloaded, and the **Login** page is displayed.

4. Setting the local time:
   4.1. Click **Get Local Time**, to receive the time from the currently used computer.
   4.2. Click **Apply** to confirm the settings.
   A query to save and re-login appears
   4.3. Click **Yes** to save the changes.

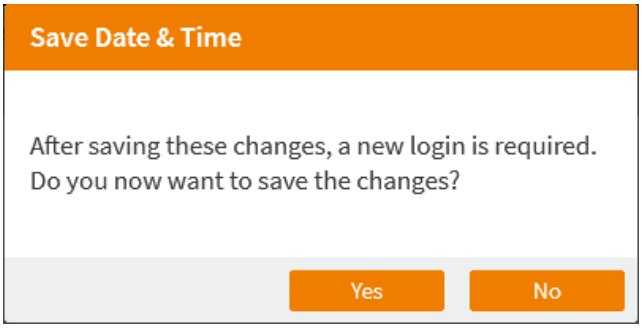


*Fig. 95 Web UI dialog **System Settings - Date & Time - Save changes***

A message appears showing the saving process, the page will be reloaded, and the **Login** page is displayed.

8.2.6 Setting Global OSD

The parameters for the system configuration are set in this menu, based on Simple Network Time Protocol (SNTP):

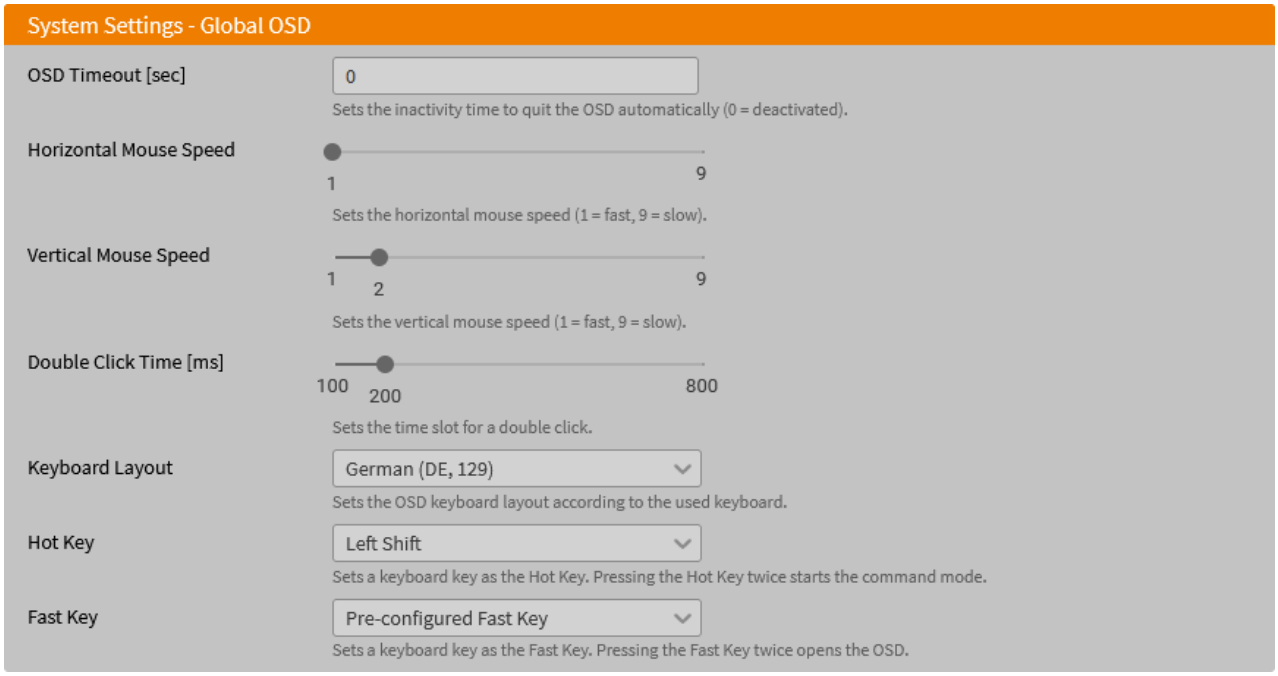


*Fig. 96 Web UI menu **System Settings - Global OSD***

Field	Entry	Description
OSD Timeout [sec]	0 to 999	Specify the time of inactivity after which the OSD will be closed automatically (0 = deactivated). At 0 seconds, the OSD is not automatically closed.
Horizontal Mouse Speed*	1 to 9	Adjust the horizontal mouse speed with 1 = fast, 9 = slow (default: 4).
Vertical Mouse Speed*	1 to 9	Adjust the vertical mouse speed with 1 = fast, 9 = slow (default: 5).
Double Click Time [ms] *	100 to 800	Adjust the time slot for a double-click (default: 200).
Keyboard Layout*	Region	Set the OSD keyboard layout according to the keyboard used (default: German (DE)).
Hot Key*	Keyboard command	Start the command mode via keyboard sequence.
Fast Key*	Keyboard command	Open the OSD directly (default: 00). How often the shortcut key has to be pressed depends on the specified key: 1x for function keys or print key, 2x for all other keys.

* Can be overwritten if the **User Management** option is activated (see chapter 8.2.1, page 102).

To configure the settings for the OSD, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Global OSD** in the task area to display the **Global OSD** working area.
3. Change the desired settings.
4. Click **Apply** to confirm the changes.

8.2.7 Setting Display Options

The parameters for OSD display options and for switched source information are set in this menu. All parameters can be overwritten under **User Settings** (chapter 8.5, page 127) if **User Management** option is activated (see chapter 8.2.1, page 102).

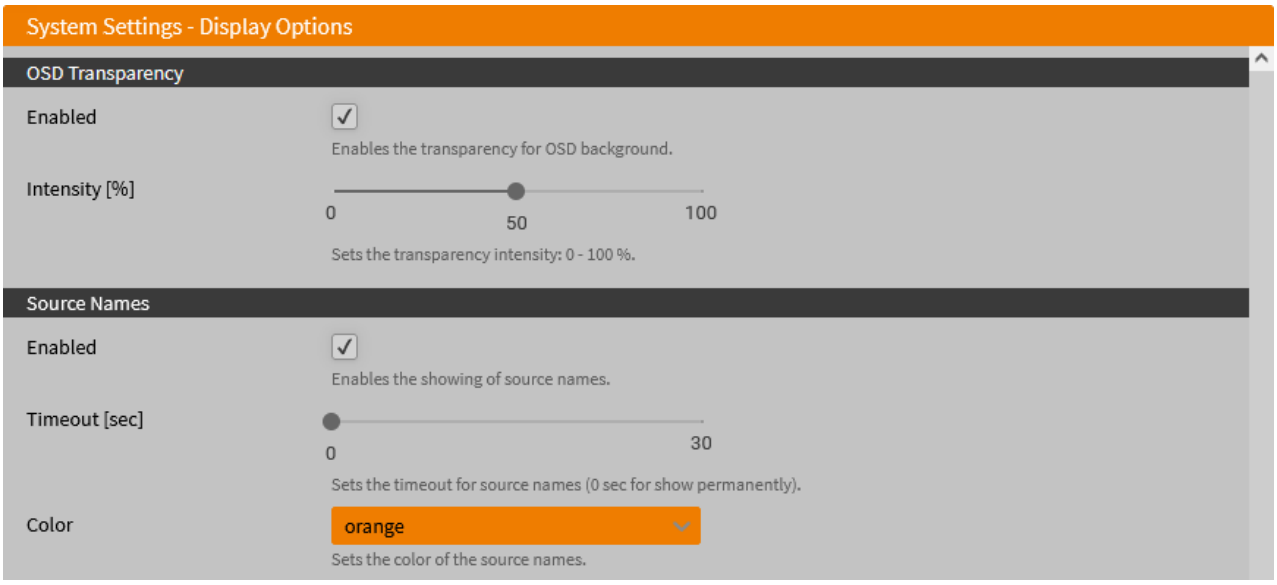


*Fig. 97 Web UI menu **System Settings - Display Options (Working area 1)***

The following parameters can be configured:

OSD Transparency

Field	Entry/Status	Description
Enabled	Activated	The OSD is shown transparently over the video signals.
	Deactivated	Video signals are visible only outside the OSD.
Intensity [%]	0 to 100	Intensity of the transparency.

Source Names

Field	Entry/Status	Description
Enabled	Activated	Source names are displayed at the top left of the respective window. Option for all display modes except for the mirrored Fullscreen Mode.
	Deactivated	Function not active (default).
Timeout [sec]	0 to 30	Time range (default: 10 seconds) in which the source names are shown if an input is switched, the USB HID control is switched, the display mode is changed, and after exiting an opened OSD. At 0 seconds, the source names are shown permanently.
Color	List	Color for source names.

Individual source names can be set (see chapter 8.3.1, page 119).

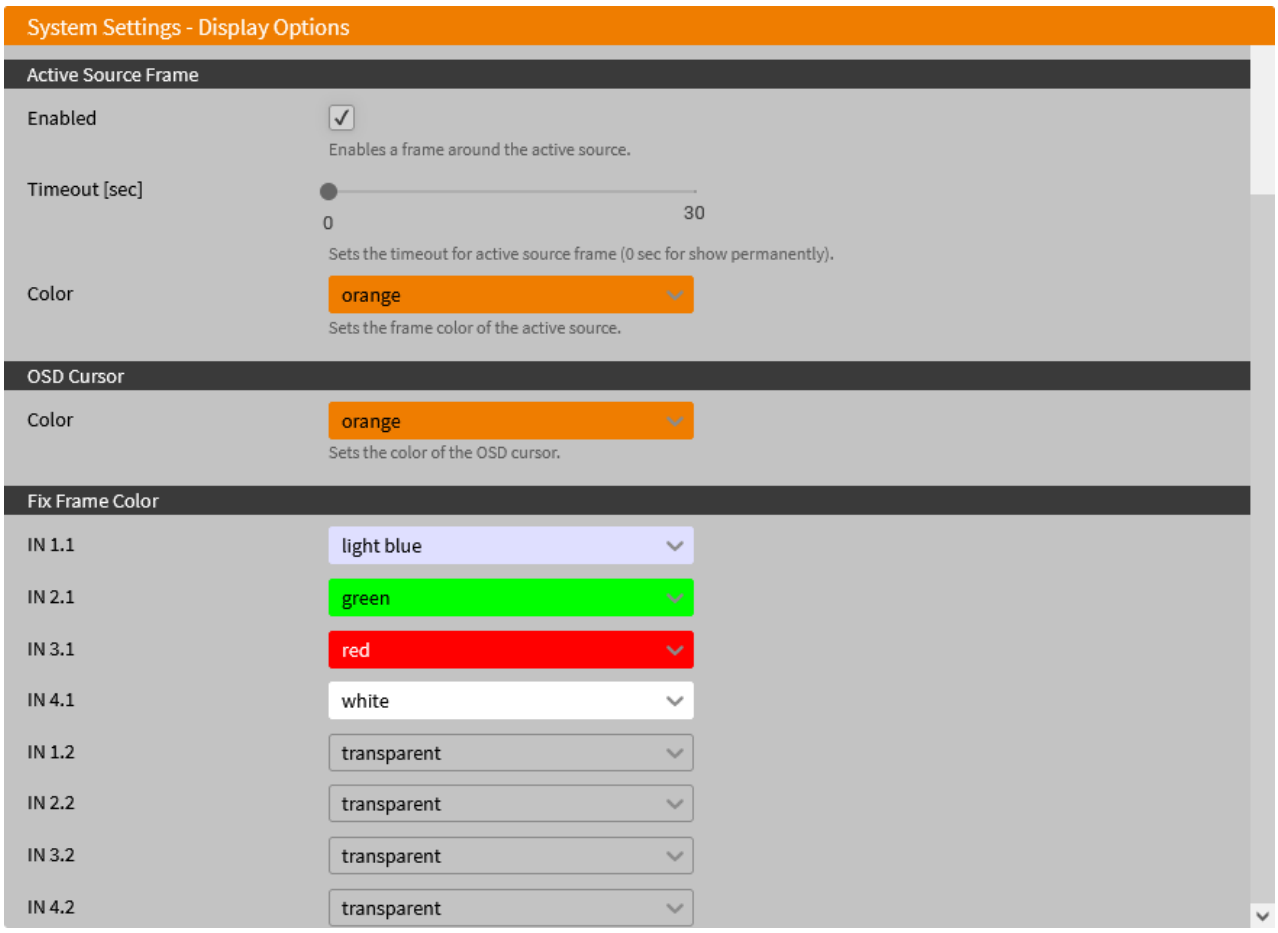


*Fig. 98 Web UI menu **System Settings - Display Options (Working area 2)***

Active Source Frame

Field	Entry/Status	Description
Enable	Activated	Shows a frame around the active source, except for the Fullscreen Mode. Option for all display modes except for the mirrored Fullscreen Mode.
	Deactivated	Function not active (default).
Timeout [sec]	0 to 30	Defines the time range (default: 10 seconds) in which the source frame around the active source is displayed. At 0 seconds, the source frame is shown permanently.
Color	List	Defines a color for the active source frame.

OSD Cursor

Field	Entry	Description
Color	List	Defines a color for the OSD cursor.

Fix Frame Color

Field	Entry/Status	Description
Color	List	Assigns colored frames to sources of both boards to indicate the respective video signal (default: transparent frame).

To configure the settings for the OSD, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Display Options** in the task area to display the **Display Options** working area.
3. Change the desired settings.
4. Click **Apply** to confirm the changes.

8.3 Setting Video Inputs and Video Outputs

8.3.1 Setting Video Inputs Parameters

The parameters for the video inputs are set in this menu:

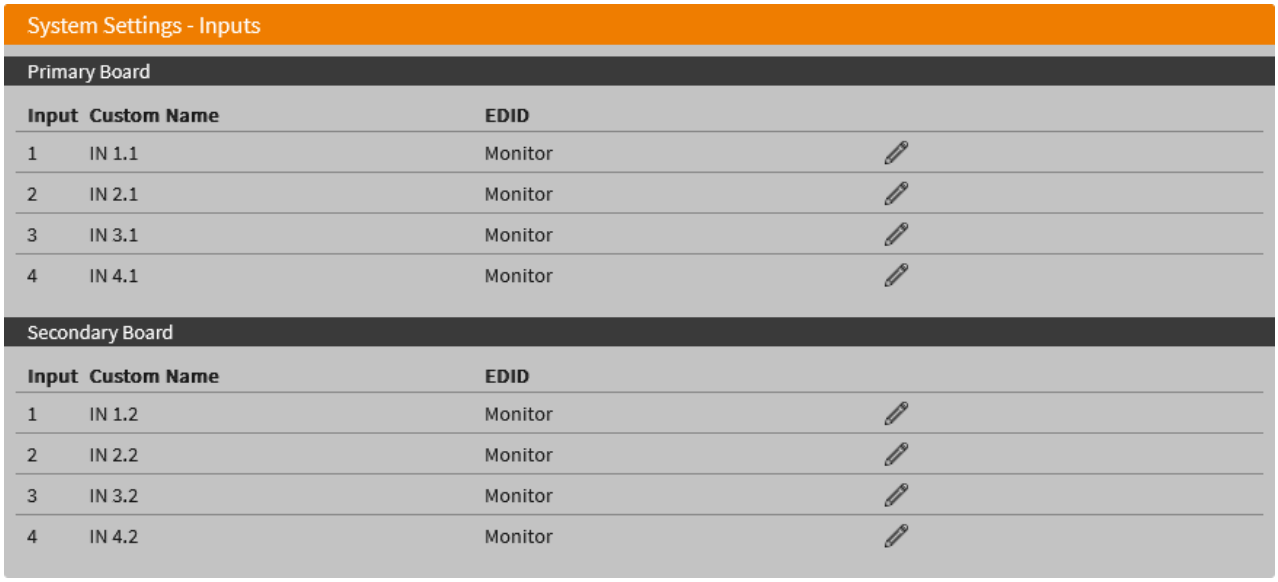


*Fig. 99 Web UI menu **System Settings - Input - Overview***

The following parameters can be configured:

Field	Entry	Description		
Input	Numerical	Ident number of the input port (unchangeable, see chapter 4.7 ff, page 39 ff)		
Custom Name	Text	Optional: individual name for video inputs (case sensitive, up to 32 characters)		
EDID	List	MONITOR	When the Draco MV is restarted or a monitor is plugged in during operation, the monitor's EDID is read out and transmitted to the CPU inputs. The video signal is always displayed with the native resolution of the currently connected monitor.	
		1080p60	1920 x 1080 @ 60 Hz	Instead of the current EDID, a customized EDID will be transmitted to the sources.
		1440p60	2560 x 1440 @ 60 Hz	
		4K30	3840 x 2160 @ 30 Hz	
		4K60	3840 x 2160 @ 60 Hz	

With an activated **Lock Monitor EDID** option (see chapter 8.2.1, page 102), the following EDID will be used from the source instead of the native EDID of a connected monitor.

➡ If **MONITOR** is chosen as default EDID, the locked EDID will be used.

➡ If a customized EDID (**1080p60**, **4K30**, or **4K60**) is chosen as default EDID, the customized EDID will be used.

If the default EDID of the video input is set different from the resolution of the video output, the video signal is scaled up or down to the resolution set at the video output.
For instance, the default EDID of the video input is set to 1080p and the resolution of the video output is set to 4K60. If a 4K60 monitor is connected to the output, the video signal is scaled to 4K60.

If there is no video signal input, a notification is displayed: NO SYNC OR SIGNAL.

Configuring Video Input Settings

To configure the settings for a video input, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Inputs** in the task area to display the **Inputs** overview.
3. Click  in the line of the video input to be configured.
   The working area of the **Inputs** menu is displayed.

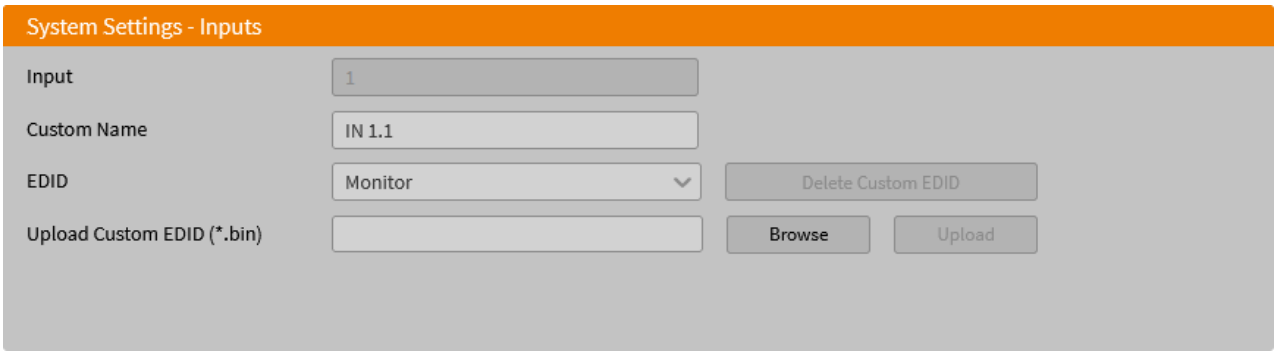


*Fig. 100 Web UI form **System Settings - Inputs - Working area***

4. Change the custom name in the **Custom Name** field if desired.
5. Upload a custom EDID (`.bin`), if required:
   5.1. Click **Browse** to go to the location of the saved EDID file, select the desired EDID file and click **Open**.
   The selected EDID is inserted in the **Upload Custom EDID (*.bin)** field.

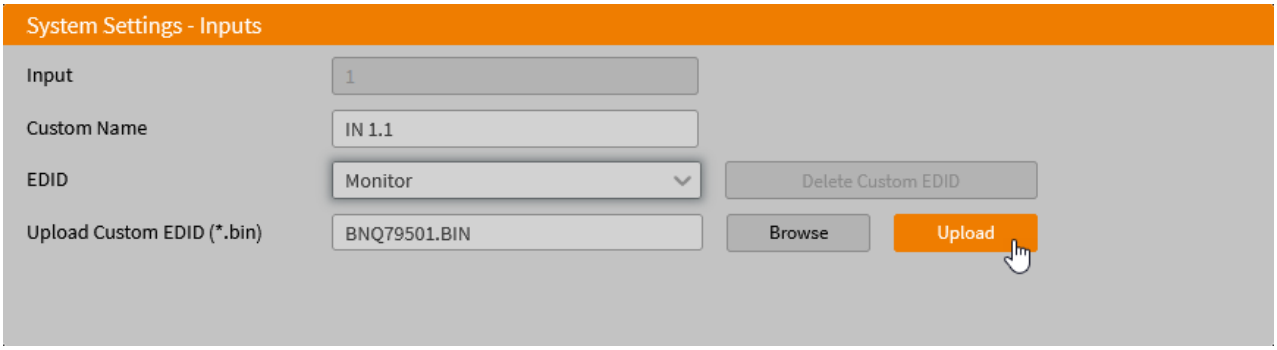


*Fig. 101 Web UI form **System Settings - Inputs - Working area - Upload an EDID***

   5.2. Click **Upload** to upload the EDID file.
   The uploaded EDID will appear in the **EDID** selection list (also in the OSD).

5.3. Select the uploaded EDID in the **EDID** list.

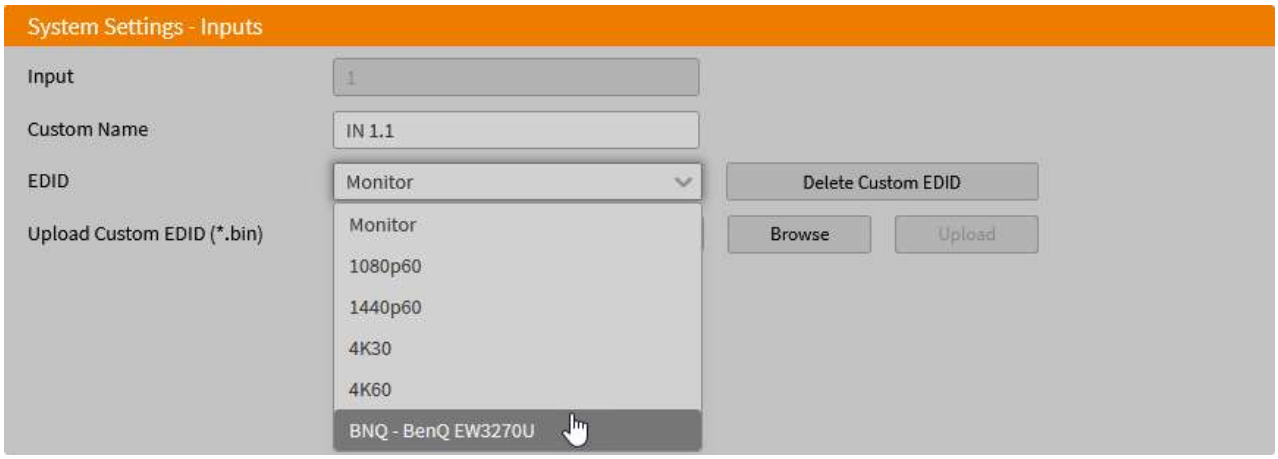


*Fig. 102 Web UI form **System Settings - Inputs - Working area - Select an EDID***

6. Click **Apply** to confirm the changes.

Deleting Custom EDID

To delete a custom EDID, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Input** in the task area to display the **Input** overview.
3. Click  in the line of the video input to be configured.
   The working area of the **Inputs** menu is displayed.

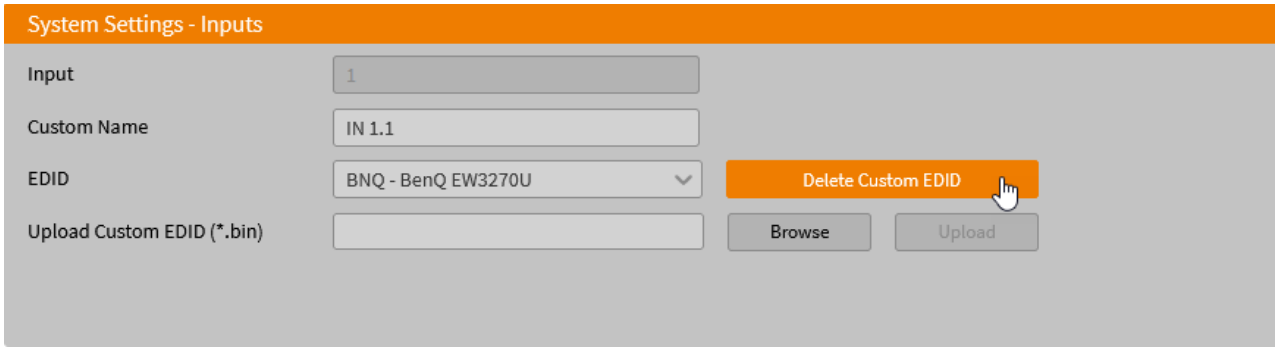


*Fig. 103 Web UI form **System Settings - Inputs - Working area - Delete an EDID***

4. Click **Delete Custom EDID** to delete a custom EDID in the **EDID** selection list.
5. The custom EDID is immediately deleted, confirmed via message.

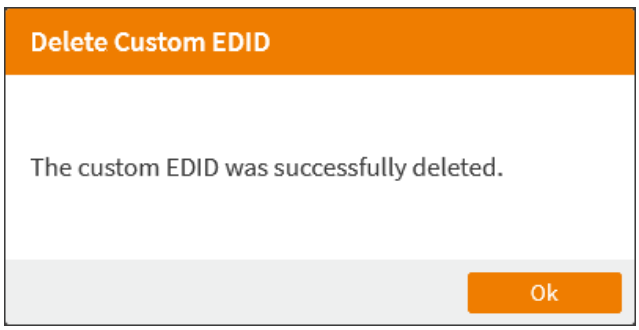


*Fig. 104 Web UI message **System Settings - Inputs - Working area - Deletion successful***

6. Click **Ok**.

8.3.2 Setting Video Outputs Parameters

The parameters for the video outputs are set in this menu:

*Fig. 105 Web UI menu **System Settings - Outputs - Overview***

The following parameters can be configured:

Field	Entry	Description		
Output	Numerical	Ident number of the input port (unchangeable, see chapter 4.7 ff, page 39 ff)		
Custom Name	Text	Optional: individual name for video inputs (case sensitive, up to 32 characters)		
Resolution	List	Resolution for video output independent from the monitor EDID. The video output adjusts both outputs to the lower set resolution.		
		MONITOR	Instead of the default EDID set at the video input, the video signal is displayed with the native resolution of the currently connected monitor.	
		1080p60	1920 x 1080 @ 60 Hz	Instead of the default EDID set at the video input, the video signal will be scaled up or down at the video output.
		1440p60	2560 x 1440 @ 60 Hz	
		4K30	3840 x 2160 @ 30 Hz	
		4K60	3840 x 2160 @ 60 Hz	

If the default EDID of the video input is set different from the resolution of the video output, the video signal is scaled up or down to the resolution set at the video output.
For instance, the default EDID of the video input is set to **1080p** (see chapter 8.3.1 page 119) and the resolution of the video output is set to **4K60**. If a 4K60 monitor is connected to the output, the video signal is scaled to 4K60.

To configure the settings for a video input, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Outputs** in the task area to display the **Outputs** overview.
3. Click  in the line of the video output to be configured.
   The working area of the **Outputs** menu is displayed.

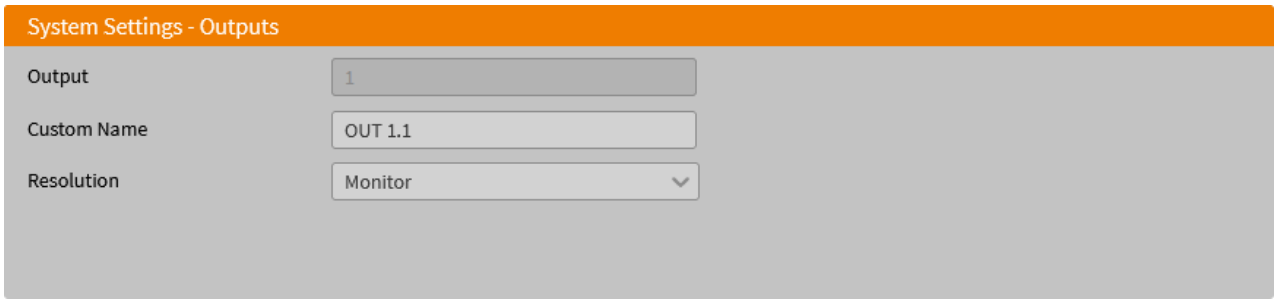


*Fig. 106 Web UI form **System Settings - Outputs - Working area***

4. Change the custom name under **Custom Name** if desired.
5. Select the resolution for the selected output in the **Resolution** list if required.
6. Click **Apply** to confirm the changes.

8.4 Setting Window Arrangement

8.4.1 Setting Window Parameters

The window settings are set in this menu:

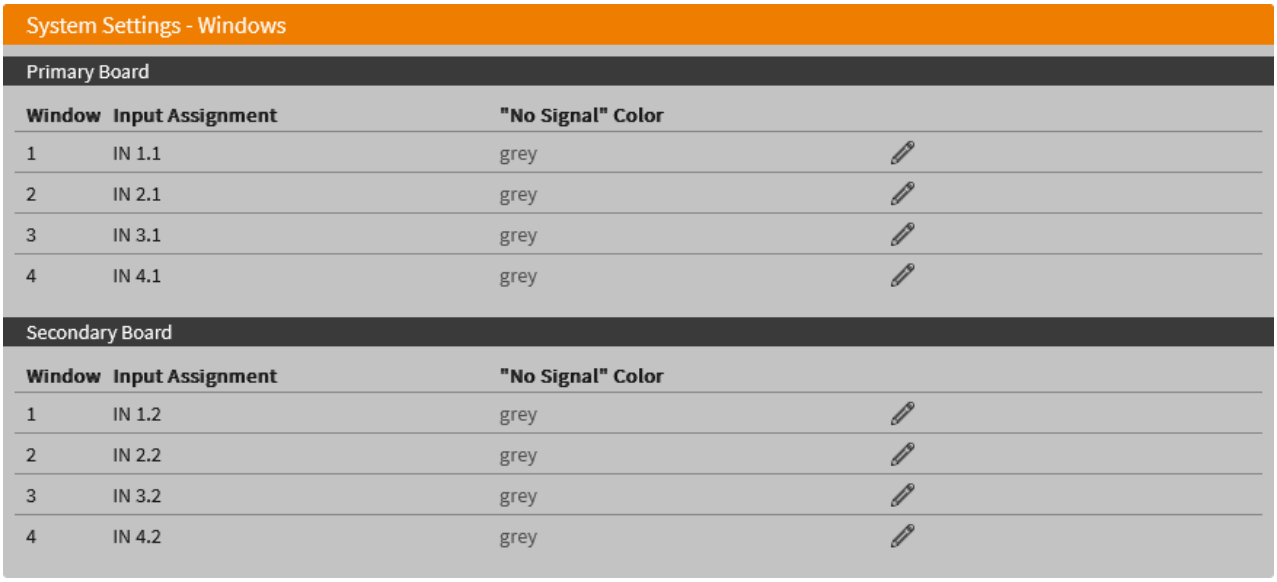


*Fig. 107 Web UI menu **System Settings - Inputs - Overview***

The following parameters can be configured:

Field	Entry	Description
Window	Numerical	Ident number of the input port (unchangeable, see chapter 4.7 ff, page 39 ff)
Input Assignment	List	Video signal of a selected input is streamed to the assigned window.
"No Signal" Color	List	Background color if there is no video signal

To configure windows settings, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Windows** in the task area to display the **Windows** overview.
3. Click  in the line of the video input to be configured.
   The working area of the **Windows** menu is displayed.

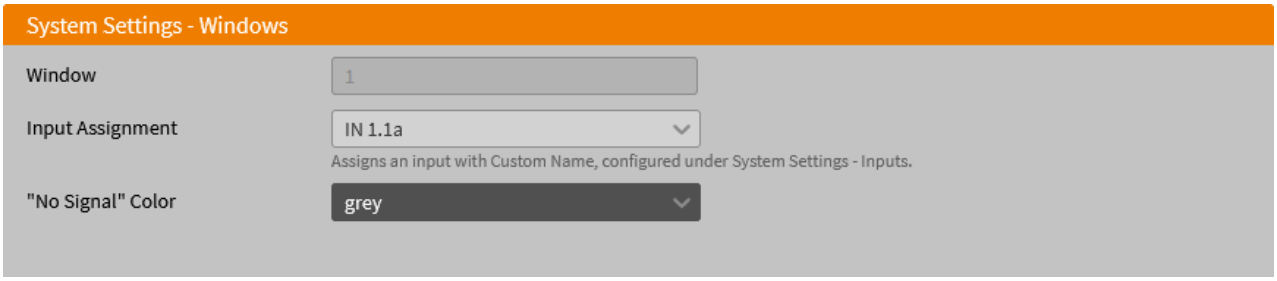


*Fig. 108 Web UI form **System Settings - Windows - Working area***

4. Select the input under **Input Assignment** to stream its video signal in the window of the selected ID, if required.
5. Click **Apply** to confirm the changes.

8.4.2 Setting Custom Layouts

Up to four custom layouts can be configured in this menu:

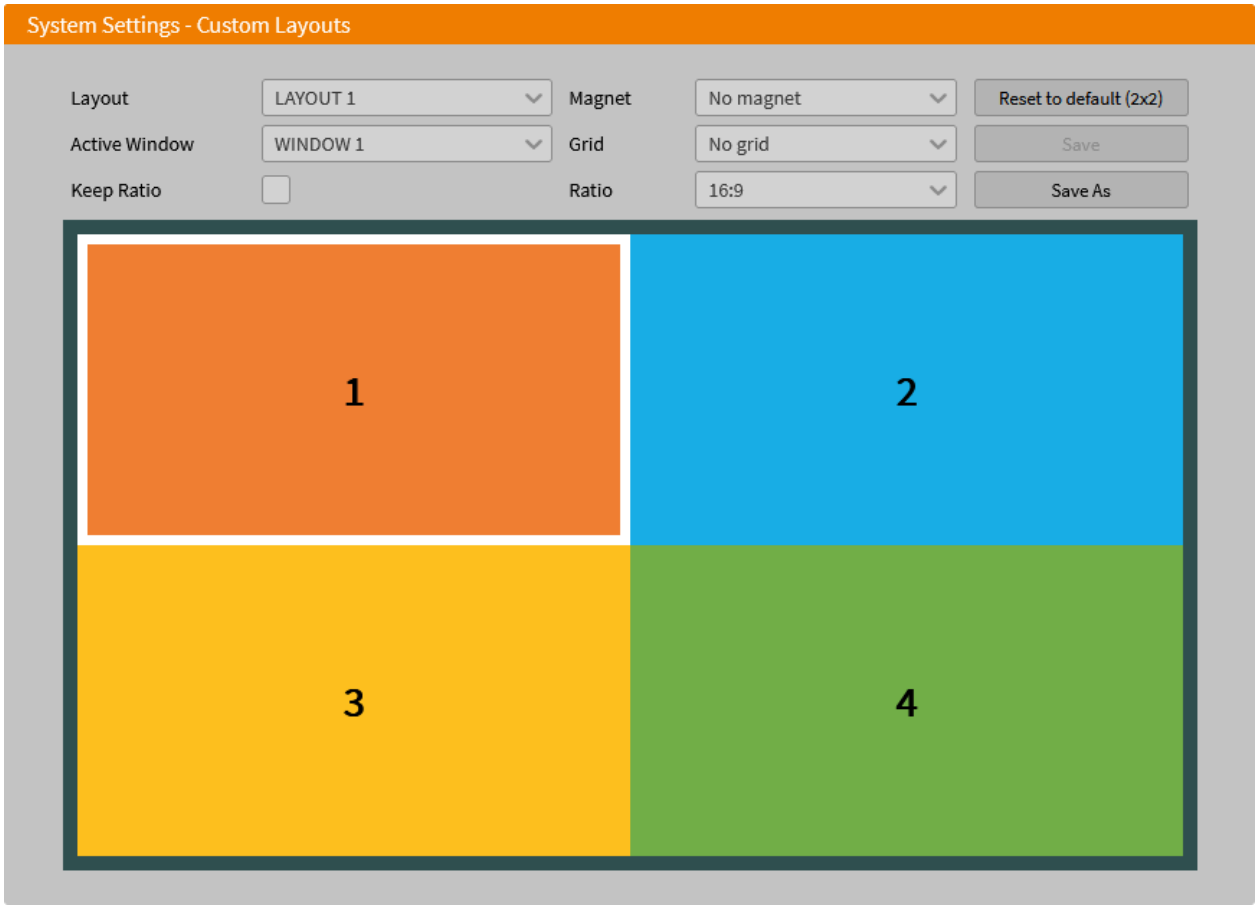


*Fig. 109 Web UI menu **System Settings - Custom Layouts - Working area - Initial layout***

The following options be used:

Field	Selection	Description	
Layout	List	Selects the layout to be defined (Layout 1 to 4).	
Active Window	List	Selects the active window to be set as default for the selected layout.	
Keep Ratio	Activated	Keeps the ratio of a freely sized window when resizing it.	
	Deactivated	The windows size can be freely selected via mouse (default) or be set via selected ratio.	
Magnet	List	No magnet	Windows are freely positionable.
		Horizontal	Windows are horizontally aligned to the nearest display border or to a grid line.
		Vertical	Windows are vertically aligned to the nearest display border or to a grid line.
		Both	Windows are horizontally and vertically aligned to the nearest display corner or to a grid corner.
		Component	Windows are aligned to the nearest window (max. 20 px distance).
Grid	List	No grid	No grid is shown.
		2x2	Shows a grid to align windows.
		3x3	
		4x4	

Field	Selection	Description	
Ratio	List	Free	The windows size can be freely selected.
		16:9	Changes the selected window to the selected ratio.
		16:10	
		21:9	
		4:3	
		5:4	
Reset to default (2x2)	Button	Resets the window arrangement to the initial layout 2x2.	

To configure and save the window arrangement for custom layouts, proceed as follows:

1. Click **System Settings** in the toolbar to display the tasks of the system settings.
2. Click **Custom Layouts** in the task area to display the **Custom Layouts** menu.
3. Select the layout to be defined in the **Layout** list.
4. Select alignment options if the windows are to be aligned to the display borders or grid lines (**Magnet** or **Grid**).
5. To keep or change the size of a window, use one of the following possibilities:
   5.1. Place the mouse to a border of the active window, click with the left mouse button and hold it down while moving the mouse to change the size.
   5.2. Tick the **Keep Ratio** checkbox to keep the size of the active window.
   Resizing the window works with the mouse in a corner of the window.
   5.3. Select the ratio of the active window in the **Select Ratio** list if required.
6. Click **Save** to save the configured layout to the selected layout.
7. Option: Click **Save As** to save the configured layout to another layout.

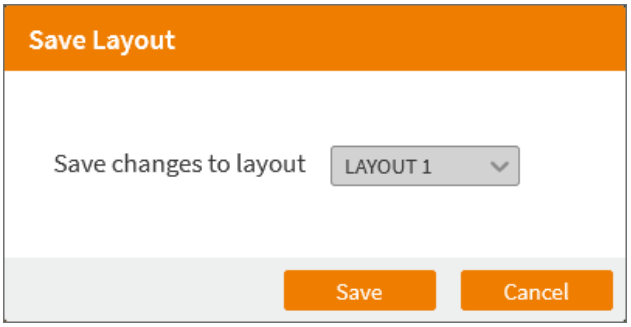


*Fig. 110 Web UI dialog **System Settings - Custom Layouts - Save As***

Examples of Customized Layouts

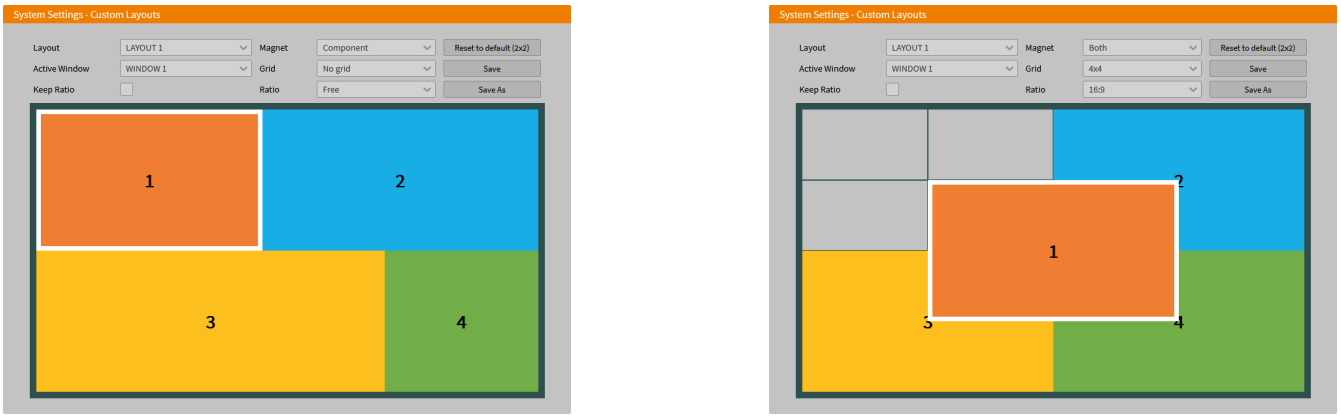


*Fig. 111 Web UI menu **System Settings - Custom Layouts** - Examples of custom layouts*

8.5 User Settings

Up to 16 different user profiles can be configured by the administrator. With activated User Management function (see chapter 8.2.1, page 102), the following settings can be configured only related to the user profile.

- 4 individual free layouts
- Default start layout with prefixed USB HID control
- Frame configuration of the individual windows (colors, behavior, global or per stream).

User Access and User Operation and Configuration Rights

	User	SNMP User	Power User	Admin
Device Status	• Changing Display Modes • Switching	• Changing Display Modes • Switching	• Changing Display Mode • Switching	• Querying a status • Changing Display Mode • Switching
System Settings	Not accessible	Not accessible	Not accessible	All rights
User Settings	• Changing password	Changing password1	• Changing password • Changing custom layout • Changing start layout (input focus/display mod)	All rights
Maintenance	Not accessible	Access via SNMP network connection	Not accessible	All rights

Individual settings and permissions are set in this menu. By default, two users (admin/snmp) are set with unchangeable usernames.

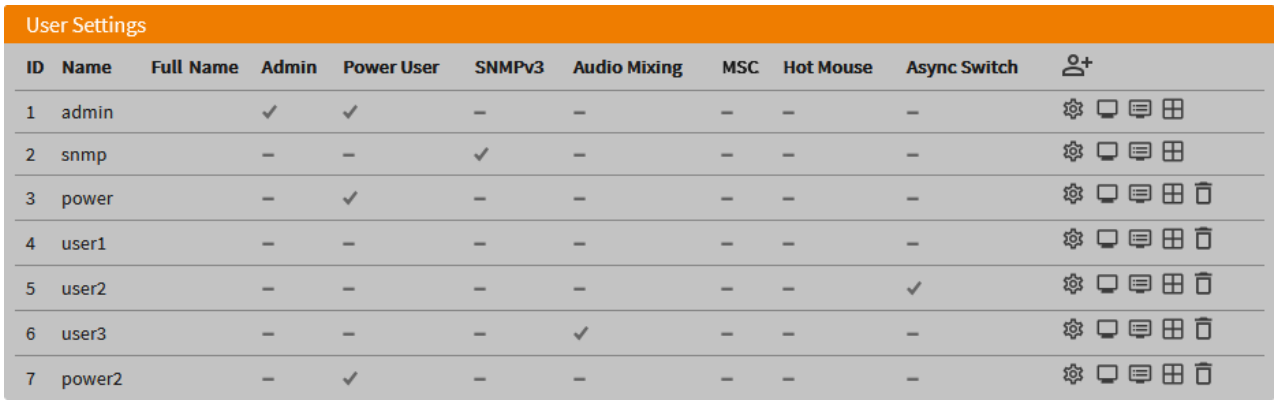


*Fig. 112 Web UI menu **User Settings***

The following functions are available by clicking on the respective button:

Button	Function
	Add User
	Edit general settings*
	Edit display options*
	Edit OSD*
	Edit custom layout*
	Delete user

* Extended user functions are always available to be configured by an administrator, but enabling of functions depends on activated User Management.

The following functions are available by adding a user or editing general settings:

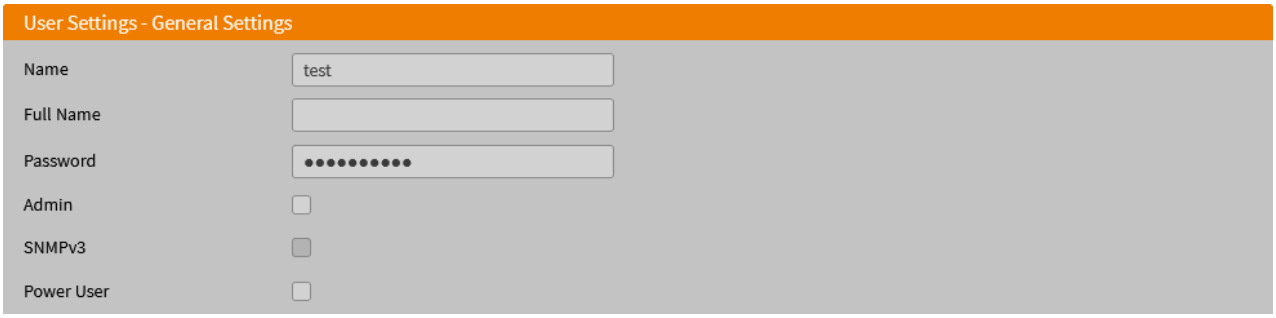


*Fig. 113 Web UI menu **User Settings - General Settings (Working area 1)***

Administrator

The administrator (username: admin) has the permission to configure the system. Access and configuration rights, see table on page 127. The following base parameters can be configured for the administrator:

Field	Entry	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters)
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters, including one uppercase, one lowercase, one digit and one special symbol).

SNMPv3 User

The SNMPv3 user (username: snmp) has the permission to enable encrypted SNMPv3. Access and configuration rights, see table on page 127. The following base parameters can be configured for the SNMPv3 user:

Field	Entry/Status	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters, including one uppercase, one lowercase, one digit and one special symbol).
SNMPv3 User	Activated	Permission to use SNMPv3 (encrypted).
	Deactivated	SNMP is enabled (default), SNMPv3 is not enabled.

Power User

Access and configuration rights, see table on page 127. The following base parameters can be configured for the SNMPv3 user:

Field	Entry/Status	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters, including one uppercase, one lowercase, one digit and one special symbol).
Power User	Y	Permission for power user rights.
	N	Function not active.

User

Access and configuration rights, see table on page 127. The following base parameters can be configured for the SNMPv3 user:

Field	Entry/Status	Description
Full Name	Text	Optional: personal username (case sensitive, up to 32 characters).
Password	Text	User password (case sensitive, input of minimum 8 characters up to 16 characters, including one uppercase, one lowercase, one digit and one special symbol).
SNMPv3 User	Activated	Permission to use SNMPv3 (encrypted).
	Deactivated	SNMP is enabled (default), SNMPv3 is not enabled.

NOTICE

Failed SNMP logging

If the login data of the SNMPv3 user are different between the Draco MV and the SNMP server, no SNMP loggings are transmitted.

➡ Ensure the login data (username and password) in both settings are identical (see also Draco tera user manual).

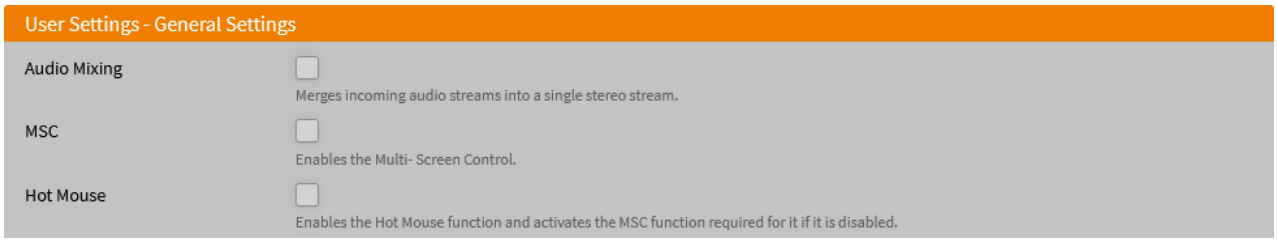


*Fig. 114 Web UI menu **User Settings - General Settings (Working area 2)***

With activated User Management option (see chapter 8.2.1, page 102), the following parameters can be configured individually for each user profile. **Note:** Without enabled User Management option, ticking these parameter options will have no effect.

Parameter	Entry/Status	Description
Audio Mixing	Activated	Merges incoming audio streams into a single stereo stream. Depending on the device type, up to 8 audio streams (7.1) can be merged into a 2-channel stereo stream.
	Deactivated	Function not active (default).
MSC*	Activated	Enables the Multi-Screen Control function. Absolute mouse coordinates are used for the MSC automatic mode with/without restriction (see chapter 10, page 137). Moving the mouse pointer over the edge of one window into another window switches the USB HID control seamlessly to the associated input. For dual-head installations, MSC is recommended to be only activated if using the Hot Mouse function in Preview Mode, PiP Mode, True PiP Mode, and Custom Mode. The behavior of the mouse movement in dual-head systems has to be noticed (see chapter 10, page 137).
	Deactivated	Function not active (default), relative mouse coordinates are used. If Hot Mouse is enabled, it will be disabled if disabling MSC.
Hot Mouse*	Activated	Enables the Hot Mouse function for inputs of the primary board (MSC function is required and will also be enabled). The Hot Mouse function is necessary to focus on another input with current display modes Preview Mode, PiP Mode, True PiP Mode, and Custom Mode. Moving the mouse pointer over the edge of one window into another window, turns the Hot Mouse Mode on. A transparent overlay, and an overlay mouse pointer (OSD mouse) appear. The OSD mouse can be used to focus on another input by clicking in the associated window. The behavior of the mouse movement in dual-head systems has to be noticed (see chapter 10.1, page 137).
	Deactivated	Function not active (default).

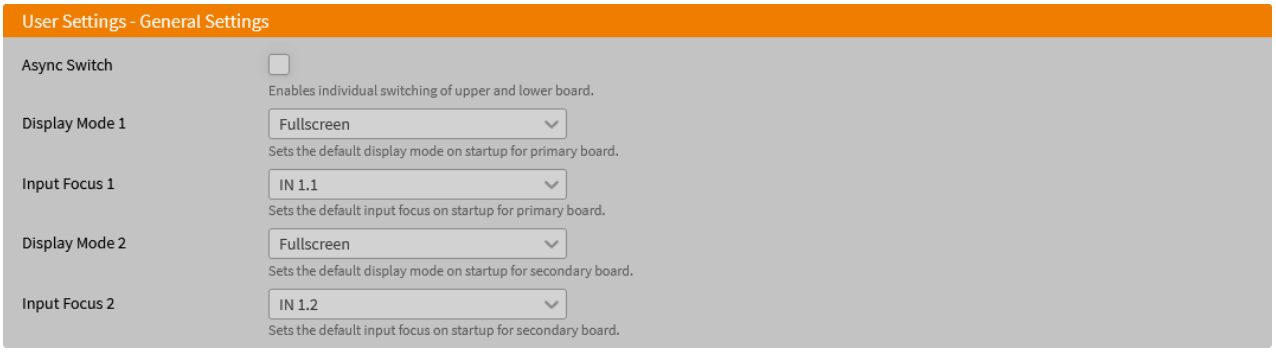


*Fig. 115 Web UI menu **User Settings - General Settings (Working area 3)***

With activated User Management option (see chapter 8.2.1, page 102), the following parameters can be configured individually for each user profile. **Note:** Without enabled User Management option, ticking these parameter options will have no effect.

Parameter	Entry/Status	Description
Async Switch	Activated	Allows different output of the input signals separately to the primary and secondary board. E.g., if the inputs of the secondary board are to be used for video viewing only. Allows different display modes of the primary and secondary board. **Note:** USB HID control switching is managed by the primary board. Depending on the output management, the mouse could not be visible in windows assigned to inputs of the secondary board.
	Deactivated	Focusing on inputs with USB HID control is synchronized for both boards.
Display Mode 1	List	Starts the Draco MV after a switch-on or a restart by default with the selected display mode for the primary board.
Input Focus 1	List	Starts the Draco MV after a switch-on or a restart by default with the selected input focus for the primary board.
Default Display Mode	List	Starts the Draco MV after a switch-on or a restart with the selected default display mode for the secondary board.
Input Focus 2	List	Starts the Draco MV after a switch-on or a restart by default with the selected display mode for the secondary board.

8.5.1 Adding Users

To add a user, proceed as follows:

1. Click **User Settings** in the task area.
2. Click in the upper right area of the **General Settings** menu.
3. Add a username in the **Name** field.
4. Activate the permitted functions for the user, if required.
5. Click **Apply** to confirm the changes.
   A message appears, remembering to assign a default password for the added user.

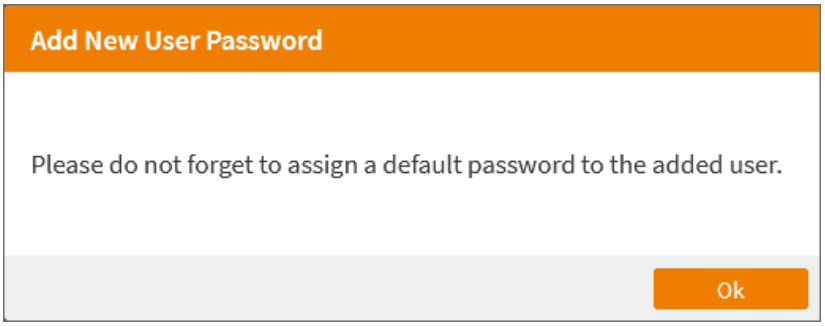


*Fig. 116 Web UI message **User Settings - General Settings - Add New User Password***

6. Click **Ok**.
   The **User Settings** menu is displayed.

8.5.2 Changing User Password.

1. Click **User Settings** in the task area.
2. Select a user in the **Users** list and click the settings symbol .
3. Click in the **Password** field.
   A dialog to enter a password appears.

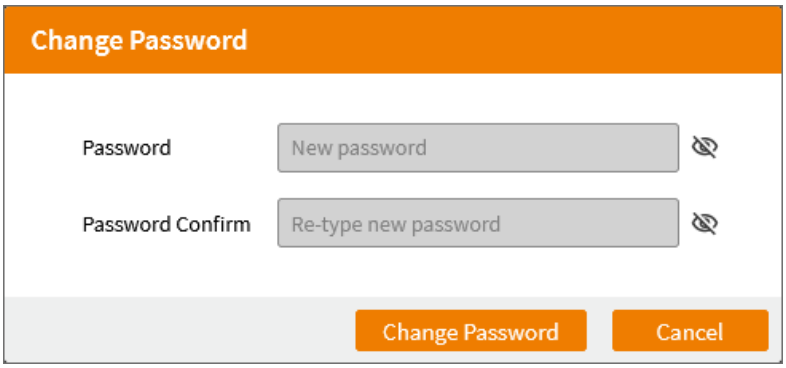


*Fig. 117 Web UI dialog **User Settings - General Settings - Change Password***

4. Enter a password with minimum 8 characters (up to 16 characters), including one uppercase, one lowercase, one digit and one special symbol.
5. Repeat the entered password.
6. Click **Change Password**.
7. Click User Settings in the task area to display the **User Settings** menu.
   The message **Password change successful** appears.

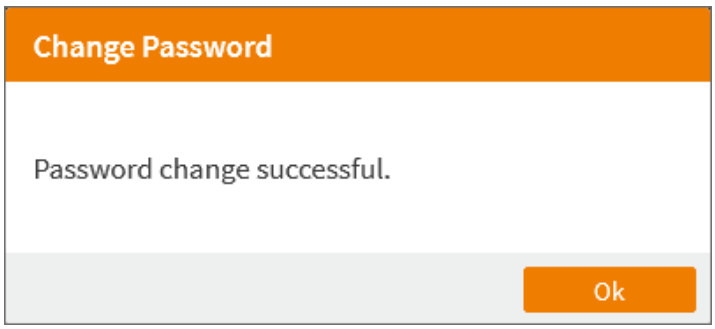


*Fig. 118 Web UI dialog **User Settings - General Settings - Change Password Successful***

8.5.3 Editing General User Settings

To edit settings of an existing user, proceed as follows:

1. Click **User Settings** in the task area.
2. Select a user in the **Users** list and click the settings symbol .
3. Change the desired settings.
4. Click **Apply** to confirm the changes.

8.5.4 Editing Extended User Settings

Extended user settings can be configured in this menu depending on enabled **User Management** option (see chapter 8.2.1, page 102). The menu descriptions are the same as under **System Settings**, see references.

Editing User Specific Display Options

To edit user specific display options, proceed as follows:

1. Click **User Settings** in the task area.
2. Select a user in the **User Settings** list and click the display options symbol .
3. Change the desired settings. See description of the **System Settings - Display Options** menu (chapter 8.2.7, page 116).
4. Click **Apply** to confirm the changes.

Editing User Specific OSD Settings

To edit user specific OSD settings, proceed as follows:

1. Click **User Settings** in the task area.
2. Select a user in the **User Settings** list and click the OSD symbol .
3. Change the desired settings. See description of the **System Settings - Global OSD** menu (chapter 8.2.7, page 116).

The OSD Timeout is set generally, not user specific.

4. Click **Apply** to confirm the changes.

Editing User specific Custom Layouts

To edit user specific custom layouts, proceed as follows:

1. Click **User Settings** in the task area.
2. Select a user in the **User Settings** list and click the custom layout symbol .
3. Change the desired settings. See description of the **System Settings - Custom Layouts** menu (chapter 8.4.2, page 125).
4. Click **Save** or **Save As** to save the custom layout changes.
5. Click **Close** to return to the **User Settings** menu.

8.5.5 Deleting a User

To delete a user, proceed as follows:

1. Click **User Settings** in the task area.
2. Select a user in the **User Settings** list and click the trash symbol .

   A dialog appears, asking if the user shall be deleted.

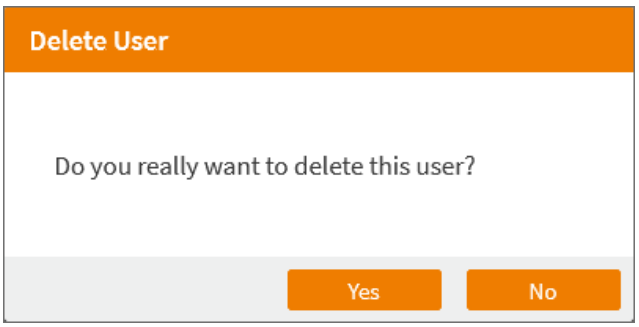


*Fig. 119 Web UI dialog **Change Password Successful***

3. Click **Yes** to delete the selected user.

9 Configuration of USB 2.0 Ports via Configuration File

The Draco MV contains a configuration file (`Config.txt`) to set specific parameters. The `Config.txt` is located on the flash drive of the Draco MV. The flash drive can be opened by a Mini-USB connection to a computer. The configuration file can be edited with all common text editors.

NOTICE

To ensure the functionality of the parameterization:

➡ The start command `#CFG` has to be written into the first line of the `Config.txt` file.

➡ The Draco MV needs to be restarted.

Firmware Requirements

The following firmware is required as a minimum:

Firmware	Version	Release date
HUSWMSD	B01.07	2020-11-27
HUSWITCH	F01.05	2020-12-16

Parameters

To activate or deactivate the routing of the USB 2.0 ports to the four USB-B ports, a parameter can be entered in the configuration file (`Config.txt`).

The following parameter settings are available:

Parameters	Functions
ENAUSB20=1111	Activate all ports (default)
ENAUSB20=1000	Activate the routing of port 1
ENAUSB20=1100	Activate the routing of port 1 and port 2
ENAUSB20=1010	Activate the routing of port 1 and port 3
ENAUSB20=1001	Activate the routing of port 1 and port 4
ENAUSB20=0100	Activate the routing of port 2
ENAUSB20=0110	Activate the routing of port 2 and port 3
ENAUSB20=0101	Activate the routing of port 2 and port 4
ENAUSB20=0010	Activate the routing of port 3
ENAUSB20=0011	Activate the routing of port 3 and port 4
ENAUSB20=0001	Activate the routing of port 4
ENAUSB20=0000	Deactivate the routing of all ports

NOTICE

For a successful setting of the USB 2.0 ports, the following sequence must be strictly observed.

Entering or Changing a Parameter in the Configuration File

To enter or change a parameter of the Draco MV, proceed as follows:

1. Connect the Draco MV to any source using a Mini-USB cable.
   The Draco MV opens a flash drive containing the `Config.txt` file.
2. Open the `Config.txt` file in a text editor.
3. Ensure that `#CFG` is written in the first line of the file.
4. Add a line break directly behind `#CFG`.
5. Add the desired parameter in capitals in the line below `#CFG`.
6. Save the `Config.txt` file.
7. Manually power off the Draco MV.
8. Power on the Draco MV.
   The Draco MV starts automatically with the respective setting for the USB 2.0 ports.

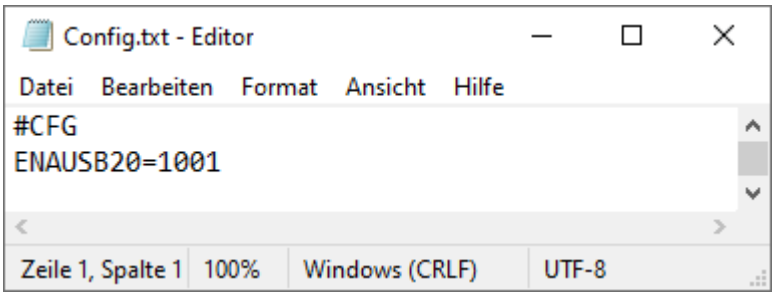


Fig. 120 Example - Config.txt with parameter to activate the routing of USB ports 1 and 4

10 Operation via Mouse

10.1 Mouse Movement in Dual Head/Multi-Head Systems

The window arrangement of the Draco MV in dual-head systems is based on the desktop arrangement set in the source's operating system. In dual-head or multi-head systems with activated MSC in automatic mode (default for MSC), the behavior of the mouse movement has to be regarded depending on the current display mode. To avoid unintentional switching via mouse in a dual-head system, we recommend deactivating MSC or restricting the automatic mode of MSC (see following page).

The descriptions in the following sections refer to the desktop arrangement set in the source operating system: Monitor1 - Monitor2.
➡ If this setting is different on the operating system level of the source(s), the behavior changes accordingly.

Mouse Movement with Horizontal Monitor Arrangement (Example in Quad Mode)

In a dual-head system with the desktop arrangement main monitor left (video 1) and the second monitor right (video 2), the window sequence when moving the mouse is as follows:

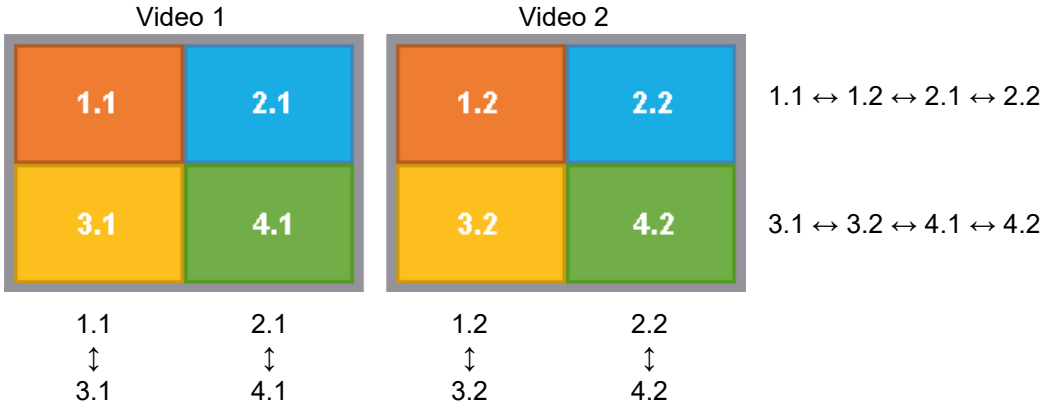


Fig. 121 Mouse movement with horizontal monitor arrangement

Mouse Movement with Vertical Monitor Arrangement (Example in Quad Mode)

In a dual-head system with the desktop arrangement main monitor left (video 1) and the second monitor at left (video 2), the window sequence when moving the mouse is as follows:

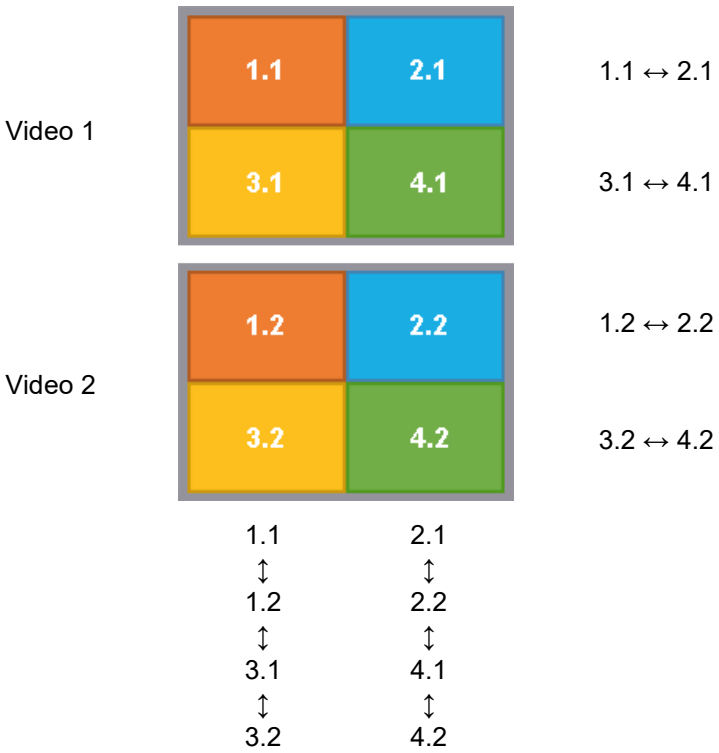


Fig. 122 Mouse movement with vertical monitor arrangement

Activating the restricted Automatic Mode

MSC with automatic mode and restricted automatic mode uses absolute mouse coordinates. Accordingly, settings in the operating system are not considered.

When restricting the automatic mode of MSC, the mouse is restricted to the windows associated to the input with the current USB HID control and cannot be moved over the edge of a window. The Hot Mouse function cannot be used.

To restrict the automatic mode of enabled MSC, proceed as follows:

➡ Enter Hot Key, x, m, Enter.

Mouse movements can be used within the windows associated to the input with the current USB HID control.

To enable the mouse to cross the edge of a window with enabled manual mode, press Left Shift while moving the mouse.

Deactivating the restricted Automatic Mode

To enable the automatic mode with activated MSC, proceed as follows:

➡ Enter Hot Key, x, a, Enter.

Mouse movements can be used within all windows of all associated input.

Keyboard commands are fixed to the position of the keys on the keyboard. Keyboard mapping tables may vary for country-specific layouts

➡ If using, e.g., a French keyboard layout (AZERTY) Hot Key, x, q, Enter must be pressed instead.

10.2 Focusing on one Input via Hot Mouse

To switch an input in Preview Mode, PiP Mode, True PiP, and Custom Mode via mouse, the MSC and the Hot Mouse function have to be enabled (see chapter 7.4.1, page 86 and chapter 8.2.1, page 102).

Switching the USB HID control with enabled Hot Mouse function offers the following possibilities:

- Focusing from a focused input to another input and displaying the video signal on the main window.
- Focusing from an unfocused input with USB HID control to another input and displaying the video signal on the main window

Switching from a focused Input to another Input

To focus from a focused input on another input, proceed as follows:

1. Move the mouse to another window (e.g., window 2).

   The Hot Mouse function with a transparency overlay and the OSD mouse pointer is activated.

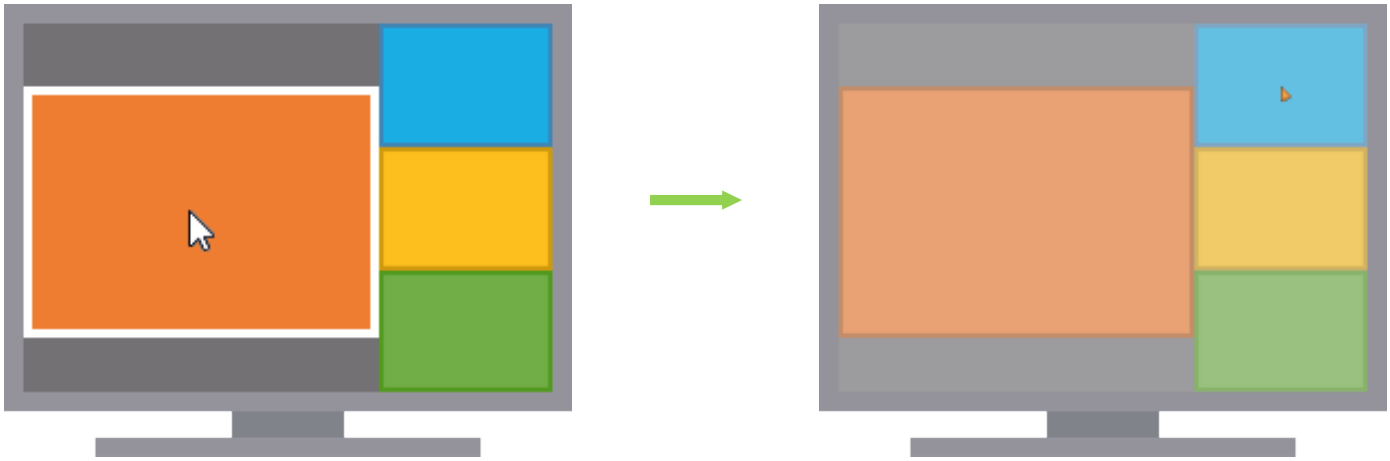


*Fig. 123 **PiP Mode** - Example of activating the Hot Mouse function*

2. Click into the window 2.

   The video signal of input 2 is streamed in the main window and the window order of the small windows is changed. The Hot Mouse function turns automatically off, and the USB HID control is switched to input 2.

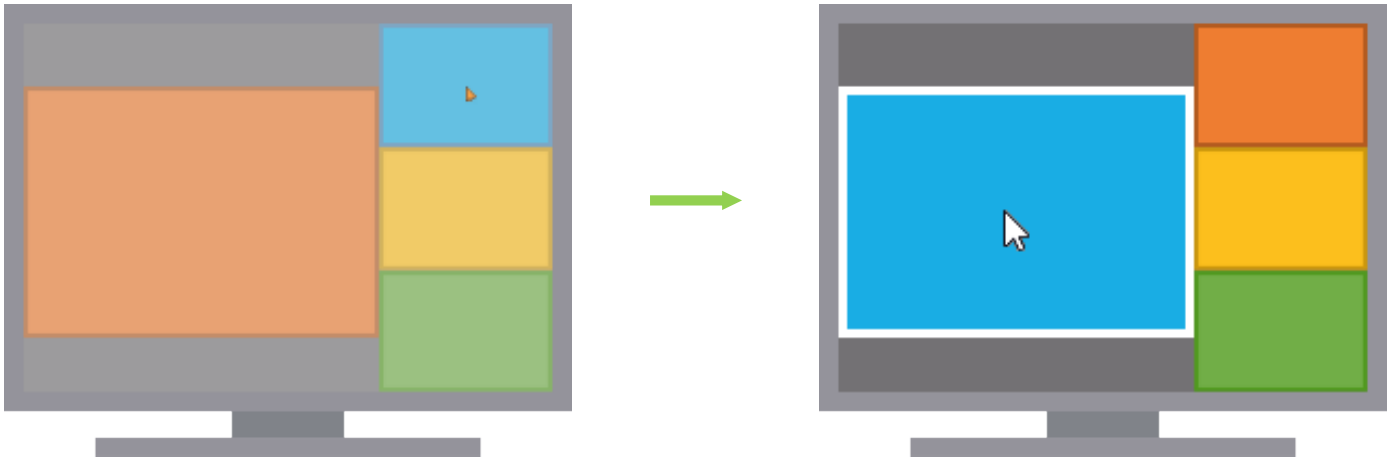


*Fig. 124 **PiP Mode** - Example of selecting another input and displaying it on the main window*

Switching from an unfocused Input with USB HID Control to another Input

For instance, in Preview Mode, when the USB HID control has been switched to one of the small windows via keyboard command, a special sequence has to be followed if the respective video signal of this input should be displayed on the main window by moving the mouse.

For instance, in the initial situation in Preview Mode, the main window shows the video signal of input 1 and the USB HID control is switched to input 3. Target: the video signal of input 3 should be displayed on the main window.

1. Move the mouse to another window (e.g., the window associated to input 2).

   The Hot Mouse function with a transparency overlay and the OSD mouse pointer is activated.

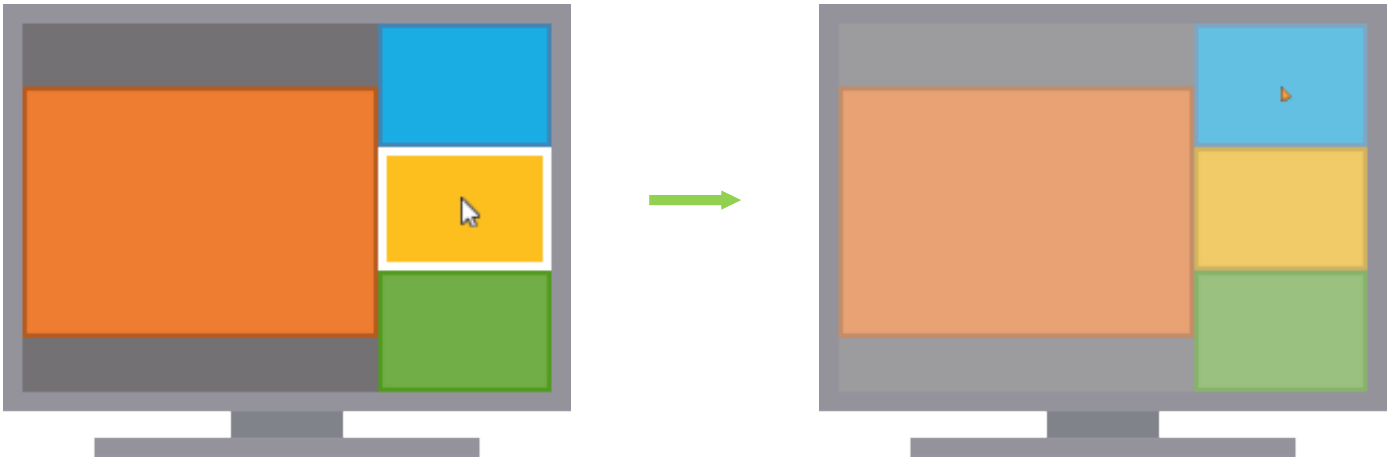


*Fig. 125 **PiP Mode** - Example of activating the Hot Mouse function by moving to another window*

2. Click with the OSD mouse into the window 2.

   The video signal of input 2 is shown in the main window and the window order of the small windows is changed. The Hot Mouse function turns automatically off, and the USB HID control is switched to input 2.

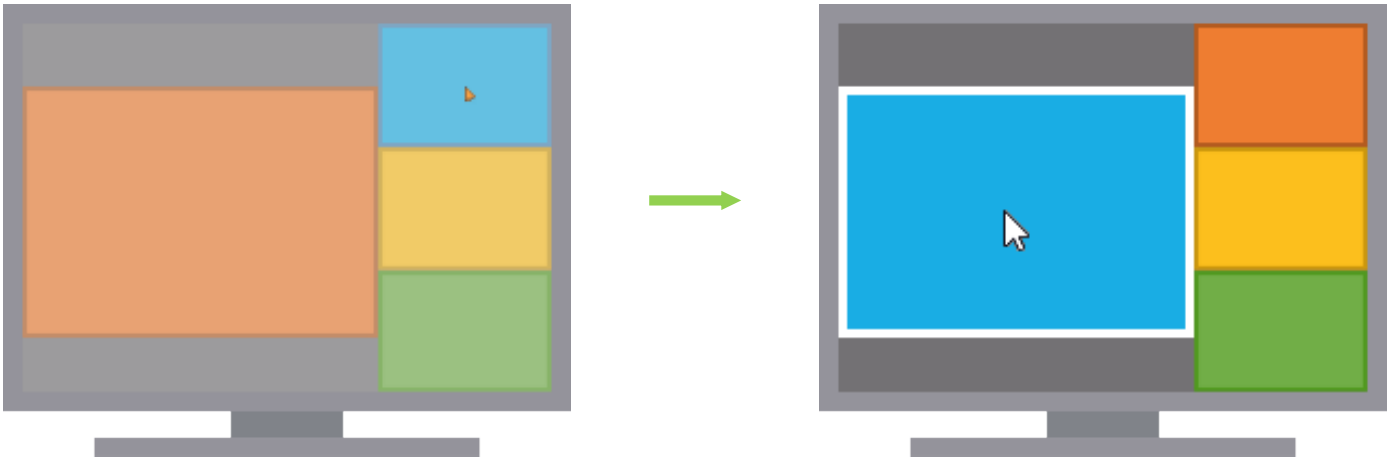


*Fig. 126 **PiP Mode** - Example of selecting another input and displaying it on the main window*

3. Move the OSD mouse back into window 3.

   The Hot Mouse function with a transparency overlay and the OSD mouse pointer is activated.

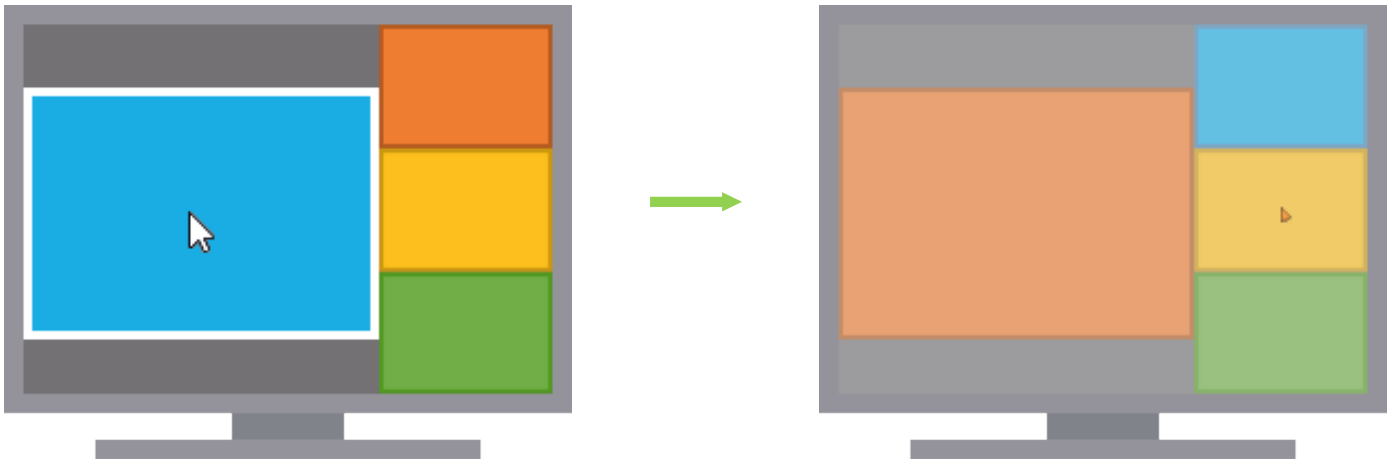


*Fig. 127 **PiP Mode** - Example of activating the Hot Mouse function*

4. Click with the OSD mouse into the window 3.

   The video signal of input 3 is shown in the main window and the window order of the small windows is changed. The Hot Mouse function turns automatically off, and the USB HID control is switched to input 3.

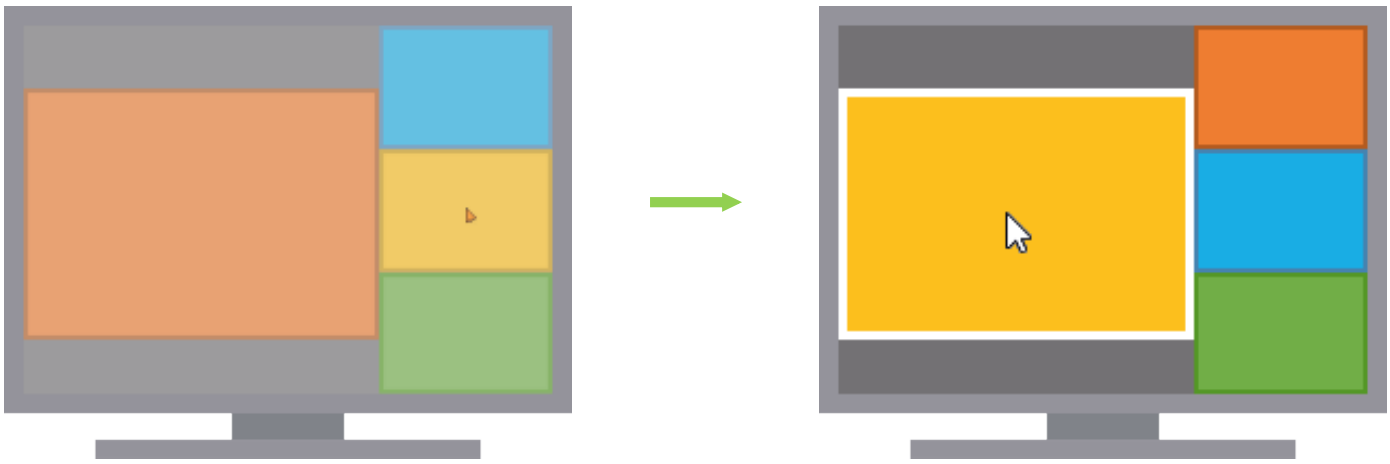


*Fig. 128 **PiP Mode** - Example of selecting another input and displaying it on the main window*

11 Operation via Keyboard

All keyboard command in this chapter address the primary board. These keyboard commands are useful with single-head devices and dual-head devices in synchronized switching mode. With activated Async Switch function the outputs of the secondary board receive no command.

11.1 Switching the USB HID Control via Keyboard Command

In any display mode, the USB HID control can be switched to another USB input using one of the following keyboard commands.

Keyboard command	Function
Hot Key, NUM1	Switches the USB HID control to USB input 1.
Hot Key, NUM2	Switches the USB HID control to USB input 2.
Hot Key, NUM3	Switches the USB HID control to USB input 3.
Hot Key, NUM4	Switches the USB HID control to USB input 4.

Example of Switching the USB HID Control in Preview Mode

For instance, in the initial situation in Preview Mode, the USB HID control is switched to USB input 1 and the main window streams the video signal from input 1.

To switch the USB HID control, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing.

2. On the numeric keypad, press the number of the USB input to which you want to switch the USB HID control (e.g., NUM2).

   The USB HID control is switched to the selected USB input and the mouse can be used in the associated window. With enabled Active Source Frame option, a colored frame highlights the window of the input with USB HID control.

   The command mode is closed, and the keyboard LEDs returned to their previous status.

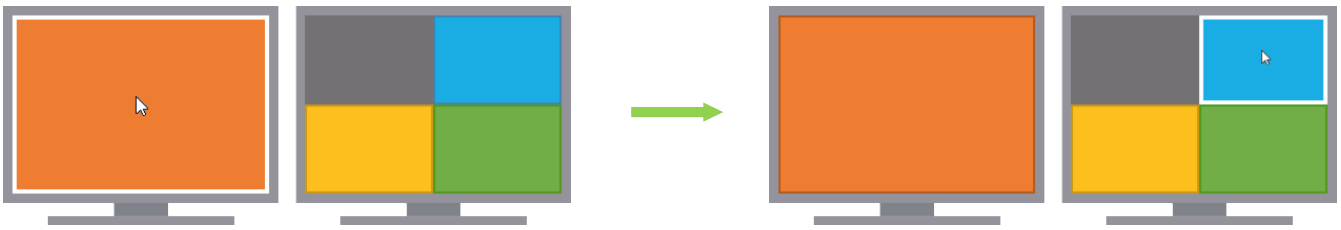


*Fig. 129 **Preview Mode** - Example after switching the USB HID control*

Example of Switching the USB HID Control in Fullscreen Mode

When switching the USB HID control in Fullscreen Mode using the numeric keypad the window arrangement is changed (corresponds to “focusing on another input”). The window of the selected input is displayed on the main window of the main monitor streaming the associated video signal. Monitor 2 shows a mirrored image of the main monitor. The USB HID control is switched to the associated source.

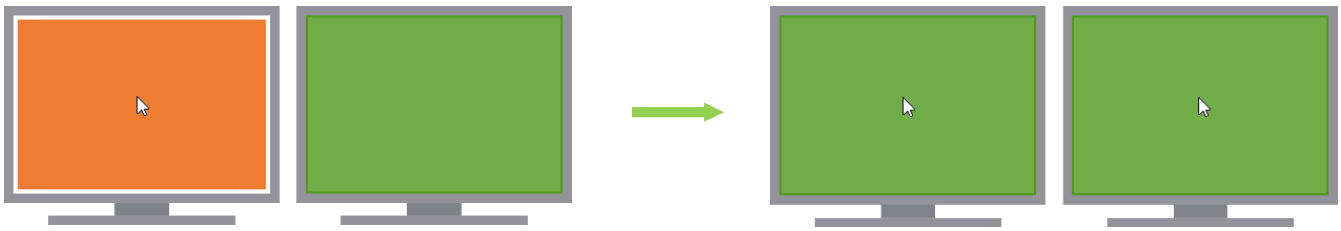


*Fig. 130 **Fullscreen Mode** - Example after switching the USB HID control*

11.2 Focusing on one Input via Keyboard Command

Depending on the current display mode, the window arrangement remains or changes when focusing on another input. The USB HID control is switched to the associated input. The focusing results are described in the respective sections.

To focus on another input, the following keyboard commands are available:

Keyboard command	Function
Hot Key, 1, Enter	Focuses on input 1 in any display mode.
Hot Key, 2, Enter	Focuses on input 2 in any display mode.
Hot Key, 3, Enter	Focuses on input 3 in any display mode.
Hot Key, 4, Enter	Focuses on input 4 in any display mode.

Example for Focusing on one Input in Fullscreen Mode

- The window associated to the focused input is maximized on the main monitor.
- Monitor 2 shows a mirrored image of the main monitor.
- The USB HID control is switched to the selected input.
- Both audio outputs output the audio signal of the input with USB HID control.

To focus on another input, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the number of the specific input (e.g., 4) to be switched and press Enter.

   The USB HID control switches to the associated source of the focused input 4 and the mouse can be used in the associated window. The window associated to the focused input is maximized on the main monitor and mirrored on the second monitor. The command mode is closed, and the keyboard LEDs returned to their previous status.

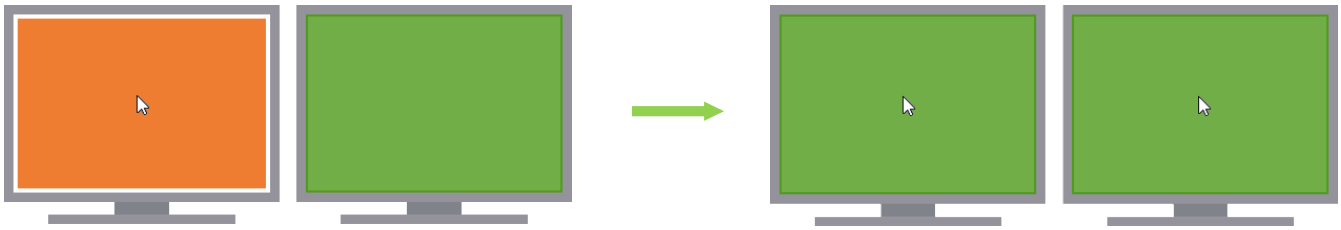


*Fig. 131 **Fullscreen Mode** - Focusing from two to one input*

☑ When using the numeric keypad for switching in Fullscreen Mode, a confirmation of the switching operation by pressing Enter is not necessary.

Example for Focusing on another Input in Preview Mode

In Preview Mode, the window with the video signal of the selected input will be maximized on the main monitor. The USB HID control is switched to the associated source of the focused input and the mouse can be used in the associated window.

For instance, in the initial situation in Preview Mode, the active window shows the video signal from input 1 and the USB HID control is switched to input 1.

To focus on another input with a function key, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the number of the specific input to be switched (e.g., 4) and press Enter.

   The video signal of the focused input is streamed in the maximized window on the main monitor and the small windows order remains.

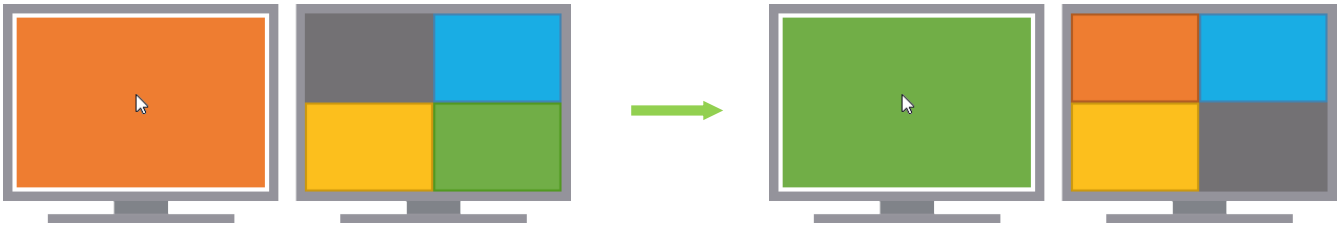


*Fig. 132 **Preview Mode** - Example after focusing on another input*

Example for Focusing on another Input in PiP Mode

In PiP Mode, the video signal of the focused input will be displayed on the main monitor/main window. The USB HID control is switched to the associated source of the focused input and the mouse can be used in the associated window.

For instance, in the initial situation in PiP Mode, the active window shows the video signal from input 1 and the USB HID control is switched to input 1.

To switch to another input with a function key, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the number of the specific input to be switched (e.g., 3) and press Enter.

   The video signal of the focused input is streamed in the main window and the small windows change in numeric order.

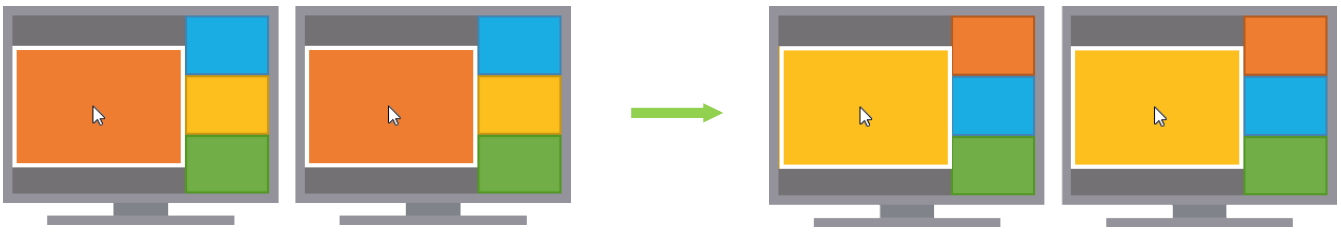


*Fig. 133 **PiP Mode** - Example after focusing on another input*

Example for Focusing on another Input in Custom Mode

In Custom Mode, the window with the video signal of the focused input will be displayed in the foreground. The USB HID control is switched to the associated source of the focused input and the mouse can be used in the associated window.

For instance, in the initial situation in Custom Mode, the active window shows the video signal from input 1 and the USB HID control is switched to input 1.

To switch to another input with a function key, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the number of the specific input to be switched (e.g., 3) and press Enter.

   The video signal of the focused input is streamed in the window displayed in the foreground.

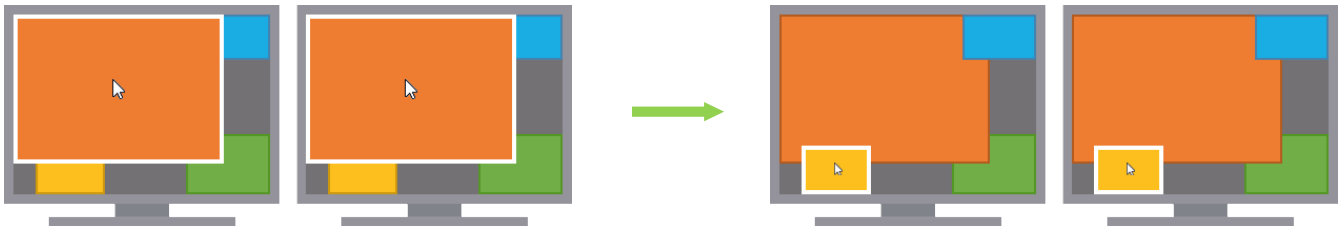


*Fig. 134 **Custom Mode** - Example after focusing on another input*

Example for Focusing on another Input in True PiP Mode

In True PiP Mode, the video signal of the focused input will be displayed on the main monitor/main window. The USB HID control is switched to the associated source of the focused input and the mouse can be used in the associated window.

For instance, in the initial situation in True PiP Mode, the active window shows the video signal from input 1 and the USB HID control is switched to input 1.

To switch to another input with a function key, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the number of the specific input to be focused (e.g., 2) and press Enter.

   The video signal of the focused input is streamed in the main window and the small windows change in numeric order.

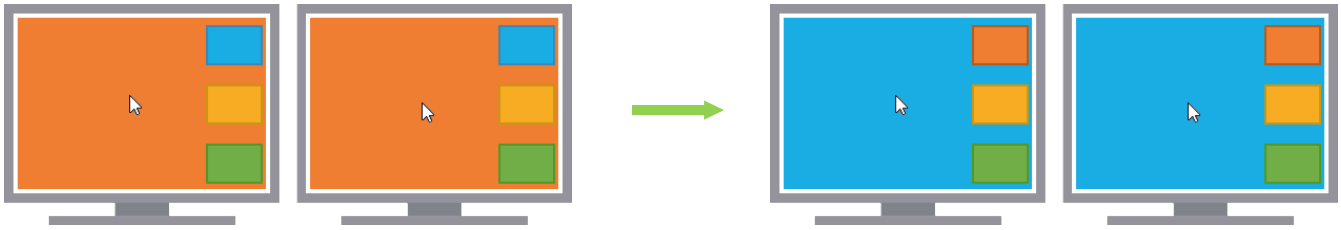


*Fig. 135 **True PiP Mode** - Example after focusing on another input*

11.3 Focusing on two Inputs via Keyboard Command in Fullscreen Mode

When selecting two inputs in Fullscreen Mode with one of the following keyboard commands using the general syntax:

- The video signal of the selected input 1 is streamed in the window on the main monitor.
- Monitor 2 displays the window with the streamed video signal of the selected input 2.
- The USB HID control is always switched to the input focused to the main output.
- Both audio outputs always output the audio signal of the input with USB HID control.

General Syntax

Hot Key, AB, Enter

A: Input [1..4] to output 1 ➔ IN1/IN1.1/IN1.2….IN4/IN4.1/IN4.2 to OUT1/OUT1.1/OUT1.2

B: Input [1..4] to output 2 ➔ IN1/IN1.1/IN1.2….IN4/IN4.1/IN4.2 to OUT2/OUT2.1/OUT2.2

Keyboard command	Main output/USB HID control	Second output
Hot Key, 11, Enter*	Focuses on input 1.	Displays the associated window of input 1.
Hot Key, 12, Enter	Focuses on input 1.	Displays the associated window of input 2.
Hot Key, 13, Enter	Focuses on input 1.	Displays the associated window of input 3.
Hot Key, 14, Enter	Focuses on input 1.	Displays the associated window of input 4.
Hot Key, 21, Enter	Focuses on input 2.	Displays the associated window of input 1.
Hot Key, 22, Enter**	Focuses on input 2.	Displays the associated window of input 2.
Hot Key, 23, Enter	Focuses on input 2.	Displays the associated window of input 3.
Hot Key, 24, Enter	Focuses on input 2.	Displays the associated window of input 4.
Hot Key, 31, Enter	Focuses on input 3.	Displays the associated window of input 1.
Hot Key, 32, Enter	Focuses on input 3.	Displays the associated window of input 2.
Hot Key, 33, Enter***	Focuses on input 3.	Displays the associated window of input 3.
Hot Key, 34, Enter	Focuses on input 3.	Displays the associated window of input 4.
Hot Key, 41, Enter	Focuses on input 4.	Displays the associated window of input 1.
Hot Key, 42, Enter	Focuses on input 4.	Displays the associated window of input 2.
Hot Key, 43, Enter	Focuses on input 4.	Displays the associated window of input 3.
Hot Key, 44, Enter****	Focuses on input 4.	Displays the associated window of input 4.

* Equivalent to Hot Key, 1, Enter

** Equivalent to Hot Key, 2, Enter

*** Equivalent to Hot Key, 3, Enter

**** Equivalent to Hot Key, 4, Enter

Example

To focus on two other inputs in Fullscreen Mode, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the number of the input whose video signal should be streamed on the main window and the number of the input whose video signal should be streamed on the second monitor, e.g., 23 and press Enter.

   The associated window of the input routed to the main output is maximized on the main monitor. The USB HID control is switched to the associated source of the focused input and the mouse can be used in the associated window. The associated window of the input routed to output 2 is maximized on monitor 2. The command mode is closed, and the keyboard LEDs returned to their previous status.

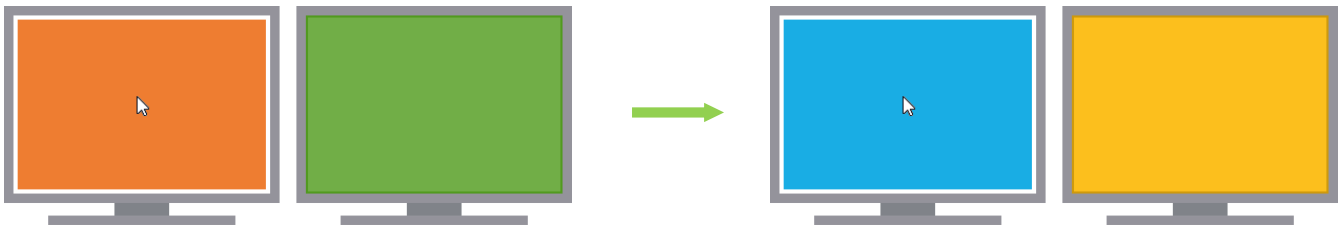


Fig. 136 ***Fullscreen Mode with two selected inputs*** *- Example for switching*

11.4 Changing the Display Mode via Function Keys

The display mode can be changed using a keyboard command as follows:

Keyboard command	Function
Hot Key, F1	Changes the display mode to Fullscreen Mode.
Hot Key, F2	Changes the display mode to Quad Mode.
Hot Key, F3	Changes the display mode to PiP Mode.
Hot Key, F4	Changes the display mode to Preview Mode.
Hot Key, F5	Changes the display mode to PbP Mode.
Hot Key, F6	Changes the display mode to PiP True Mode.
Hot Key, F9	Changes the display mode to Custom Mode, Layout 1.
Hot Key, F10	Changes the display mode to Custom Mode, Layout 2.
Hot Key, F11	Changes the display mode to Custom Mode, Layout 3.
Hot Key, F12	Changes the display mode to Custom Mode, Layout 4.

Example 1

For instance, in the initial situation in Preview Mode, the active window shows the video signal from input 1 and the USB HID control is switched to input 3.

To switch to the Quad Mode with a function key, e.g., to USB input 2, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press the corresponding function key F2.

   The window arrangement is changed to the Quad Mode by retaining the USB HID control on the current input.
   The command mode is closed, and the keyboard LEDs returned to their previous status.

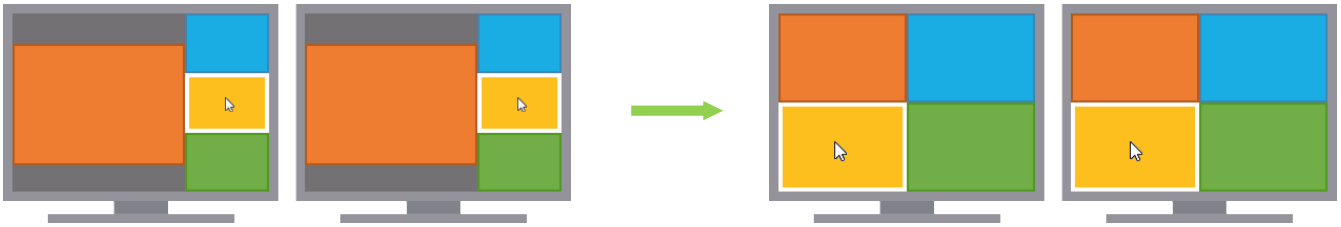


Fig. 137 Example - Changing the display mode from the Preview Mode to the Quad Mode

Example 2

In the initial situation in Preview Mode, the main window shows the video signal from input 1 and the USB HID control is switched to input 3.

For instance, to switch to the Custom Mode with a function key, proceed as follows:

1. Enter the Hot Key to start the command mode (see chapter 5.1, page 49).
2. Press one of the corresponding function keys F9…F12 to select one of the Custom Mode layouts.

   The window arrangement is changed to the Custom Mode by retaining the USB HID control on the current input.
   The associated window of the input with USB HID control is displayed in the foreground.
   The command mode is closed, and the keyboard LEDs returned to their previous status.

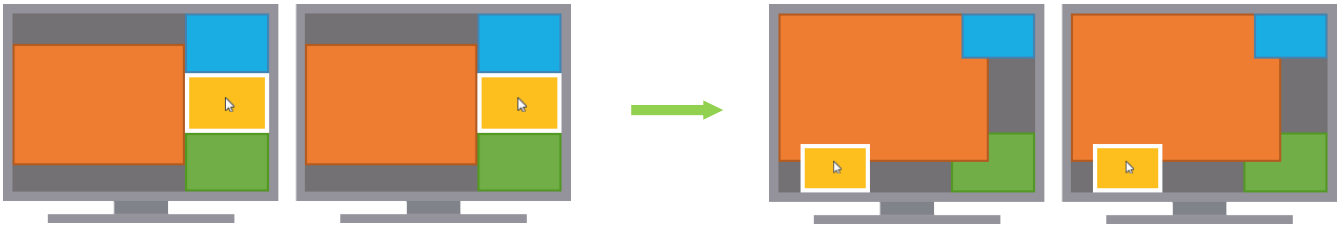


Fig. 138 Example - Changing the display mode from the Preview Mode to the Custom Mode

11.5 Switching the USB HID Control via Multi-Screen Control

NOTICE

Switchover error due to connection of single-head sources in a dual-head installation

If single-head sources are connected to two inputs using a dual-head cable, switching with the USB HID control the mouse may not work correctly.

➡ Deactivate the MSC function for single-head sources in dual-head installations.

The MSC function cannot be guaranteed when using wireless keyboards and mice.

Prerequisite

The MSC function has to be enabled (see chapter 7.2.1, page 72 or chapter 8.2.1, page 102).

Switching the USB HID Control via Mouse

➡ Move the mouse pointer over the edge of a window into another window to switch the USB HID control to another USB input.

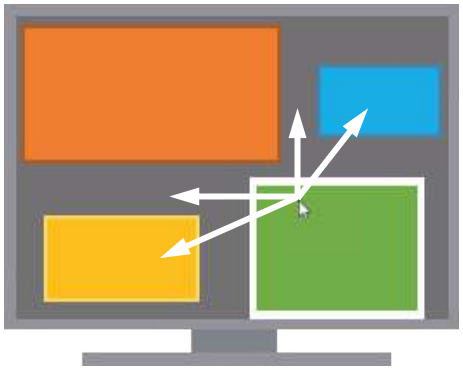
The USB HID control will be switched seamlessly allowing full control of the associated source.

MSC Switching Conditions in Free Mode

When switching via mouse in Free Mode, the target window has to be visible, not covered by another window. If a window in Custom Mode fully hides another window, switch the USB HID control via keyboard command to USB inputs with hidden windows.

Note: The mouse has to be moved out of the window on a level where the target window can be reached vertically or horizontally.

MSC switching not possible



MSC switching possible

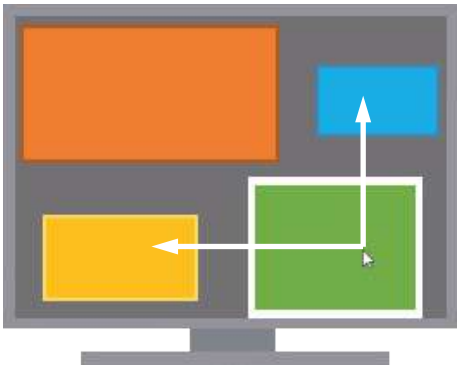


*Fig. 139 **Custom Mode** - Example - mouse movement levels in MSC switching*

For the Free Mode, we recommend arranging the windows so that they are easy to reach with the mouse.

11.6 Summary of Keyboard Commands

Keyboard commands are fixed to the position of the keys on the keyboard. Keyboard mapping tables may vary for country-specific layouts.
Note the key position of keys when changing the keyboard layout, e.g., from QWERTZ to AZERTY with, e.g., the French keyboard layout.

In the following you will find a summary of keyboard commands that can be used in conjunction with the Draco MV.

11.6.1 Command Mode and OSD

Hot Key

Keyboard command	Function
Hot Key, c, new Hot Key code, Enter	Changes the Hot Key according to the predefined Hot Key Code table.
Hot Key, c, 0, new Hot Key, Enter	Defines a freely selectable Hot Key.
Right Shift + Del within 5 s after plugging in a keyboard	Resets the Hot Key back to default settings.

Fast Key

Keyboard command	Function
Hot Key, f, Hot Key Code, Enter	Defines a Fast Key according to the predefined Hot Key Code table to open the OSD directly.
Hot Key, f, o, new Hot Key, Enter	Defines a freely selectable Fast Key to open the OSD directly.
Hot Key, f, 0, Del, Enter	Deletes the Fast Key.

Hot Key Code

Hot Key Code	Hot Key
0	Freely selectable, Esc, Del, and Enter
2	2x Scroll
3	2x Left Shift
4	2x Left Ctrl
5	2x Left Alt
6	2x Right Shift
7	2x Right Ctrl
8	2x Right Alt

Starting and Exiting the Command Mode

Keyboard command	Function
2x Left Shift (Hot Key, factory setting)	Starts the command mode
Esc	Exits the command mode

Opening and Exiting the OSD

Keyboard command	Function
Hot Key, o	Opens the OSD.
Fast Key	
Esc	Exits the OSD in the main menu or go back one step in the menu structure.
Left Shift + Esc	Exits the OSD within the menus.
Left Ctrl + Esc	

11.6.2 Switching USB HID Control, Focusing on an Input, and Changing Display Modes

All keyboard command in this chapter address the primary board. These keyboard commands are useful with single-head devices and dual-head devices in synchronized switching mode. With activated Async Switch function the outputs of the secondary board receive no command.

Restricting the Automatic Switching with activated MSC

Keyboard command	Function
Hot Key, x, m, Enter	With activated MSC, restrict the automatic switching. The mouse cannot be moved over the edge of a window and the Hot Mouse function cannot be used.
Hot Key, x, a, Enter	With restricted automatic switching of activated MSC, enable the automatic switching. The mouse can be moved over the edge of a window and the Hot Mouse function can be used if activated.

Switching the USB HID Control

Keyboard command	Function
Hot Key, NUM1	Switches the USB HID control to USB input 1.
Hot Key, NUM2	Switches the USB HID control to USB input 2.
Hot Key, NUM3	Switches the USB HID control to USB input 3.
Hot Key, NUM4	Switches the USB HID control to USB input 4.

Focusing on one Input in Fullscreen Mode

Keyboard command	Function
Hot Key, NUM1	Focuses on input 1 in Fullscreen Mode.
Hot Key, NUM2	Focuses on input 2 in Fullscreen Mode.
Hot Key, NUM3	Focuses on input 3 in Fullscreen Mode.
Hot Key, NUM4	Focuses on input 4 in Fullscreen Mode.

Focusing on one Input in any Display Mode

Keyboard command	Function
Hot Key, 1, Enter	Focuses on input 1 in any display mode.
Hot Key, 2, Enter	Focuses on input 2 in any display mode.
Hot Key, 3, Enter	Focuses on input 3 in any display mode.
Hot Key, 4, Enter	Focuses on input 4 in any display mode.

Focusing on two Inputs in Fullscreen Mode

Keyboard command	Main output/USB HID control	Second output
Hot Key, 11, Enter*	Focuses on input 1.	Displays the associated window of input 1.
Hot Key, 12, Enter	Focuses on input 1.	Displays the associated window of input 2.
Hot Key, 13, Enter	Focuses on input 1.	Displays the associated window of input 3.
Hot Key, 14, Enter	Focuses on input 1.	Displays the associated window of input 4.
Hot Key, 21, Enter	Focuses on input 2.	Displays the associated window of input 1.
Hot Key, 22, Enter**	Focuses on input 2.	Displays the associated window of input 2.
Hot Key, 23, Enter	Focuses on input 2.	Displays the associated window of input 3.
Hot Key, 24, Enter	Focuses on input 2.	Displays the associated window of input 4.
Hot Key, 31, Enter	Focuses on input 3.	Displays the associated window of input 1.
Hot Key, 32, Enter	Focuses on input 3.	Displays the associated window of input 2.
Hot Key, 33, Enter***	Focuses on input 3.	Displays the associated window of input 3.
Hot Key, 34, Enter	Focuses on input 3.	Displays the associated window of input 4.
Hot Key, 41, Enter	Focuses on input 4.	Displays the associated window of input 1.
Hot Key, 42, Enter	Focuses on input 4.	Displays the associated window of input 2.
Hot Key, 43, Enter	Focuses on input 4.	Displays the associated window of input 3.
Hot Key, 44, Enter****	Focuses on input 4.	Displays the associated window of input 4.

* Equivalent to Hot Key, 1, Enter
** Equivalent to Hot Key, 2, Enter
*** Equivalent to Hot Key, 3, Enter
**** Equivalent to Hot Key, 4, Enter

Changing the Display Mode

Keyboard command	Function
Hot Key, F1	Changes the display mode to Fullscreen Mode.
Hot Key, F2	Changes the display mode to Quad Mode.
Hot Key, F3	Changes the display mode to PiP Mode.
Hot Key, F4	Changes the display mode to Preview Mode.
Hot Key, F5	Changes the display mode to PbP Mode.
Hot Key, F6	Changes the display mode to True PiP Mode.
Hot Key, F9	Changes the display mode to Custom Mode, Layout 1.
Hot Key, F10	Changes the display mode to Custom Mode, Layout 2.
Hot Key, F11	Changes the display mode to Custom Mode, Layout 3.
Hot Key, F12	Changes the display mode to Custom Mode, Layout 4.

Managing the Free Mode

Keyboard command	Function
Hot Key, F8	Activates the edit mode of the Custom Mode.
Ctrl + Esc	Deactivates the edit mode of the Custom Mode.
H	With activated edit mode, displays the help text.
Ctrl + o	With activated edit mode, opens one of the four stored layouts.
Ctrl + r	With activated edit mode, resets on or all layouts to the default layout(s).
Ctrl + s	With activated edit mode, saves the layout.
ESC	With activated edit mode, exits the edit mode, discard, or save changes.
Ctrl + 1	With activated edit mode, opens the Custom Mode layout 1.
Ctrl + 2	With activated edit mode, opens the Custom Mode layout 2.
Ctrl + 3	With activated edit mode, opens the Custom Mode layout 3.
Ctrl + 4	With activated edit mode, opens the Custom Mode layout 4.
1	Toggles the window level of input 1 between foreground and background.
2	Toggles the window level of input 2 between foreground and background.
3	Toggles the window level of input 3 between foreground and background.
4	Toggles the window level of input 4 between foreground and background.

11.7 Overview of Keyboard Commands

11.7.1 Keyboard Commands for Configuration

Keyboard command	Function
Hot Key, c, new Hot Key code, Enter	Changes the Hot Key according to the predefined Hot Key Code table.
Hot Key, c, 0, new Hot Key, Enter	Defines a freely selectable Hot Key.
Right Shift + Del within 5 s after plugging in a keyboard	Resets the Hot Key back to default settings.
Hot Key, f, Hot Key Code, Enter	Defines a Fast Key according to the predefined Hot Key Code table to open the OSD directly.
Hot Key, f, o, new Hot Key, Enter	Defines a freely selectable Fast Key to open the OSD directly.
Hot Key, f, 0, Del, Enter	Deletes the Fast Key.
Hot Key, x, m, Enter	With activated MSC, restricts the automatic switching. The mouse cannot be moved over the edge of a window and the Hot Mouse function cannot be used.
Hot Key, x, a, Enter	With restricted automatic switching of activated MSC, enables the automatic switching. The mouse can be moved over the edge of a window and the Hot Mouse function can be used if activated.

11.7.2 Keyboard Commands for Operation

Keyboard command	Function
2x Left Shift	Starts the command mode (Hot Key, factory setting).
Esc	Exits the command mode.
Hot Key, o	Opens the OSD.
Fast Key	
Esc	Exits the OSD in the main menu or go back one step in the menu structure.
Left Shift + Esc	Exits the OSD within the menus.
Left Ctrl + Esc	
Hot Key, NUMA	In any display mode: switches the USB HID control to USB input [1..4]. In Fullscreen Mode with individual routing: focuses on input [1..4].
Hot Key, A, Enter	Focuses on input [1..4]
Hot Key, AB, Enter	In individual Fullscreen Mode: focuses on input [1..4] on the main monitor and display the associated window of input [1..4] on the second monitor.
Hot Key, F1	Changes the display mode to Fullscreen Mode.
Hot Key, F2	Changes the display mode to Quad Mode.
Hot Key, F3	Changes the display mode to PiP Mode.
Hot Key, F4	Changes the display mode to Preview Mode.
Hot Key, F5	Changes the display mode to PbP Mode.
Hot Key, F6	Changes the display mode to True PiP Mode.
Hot Key, F9	Changes the display mode to Custom Mode, Layout 1.
Hot Key, F10	Changes the display mode to Custom Mode, Layout 2.
Hot Key, F11	Changes the display mode to Custom Mode, Layout 3.
Hot Key, F12	Changes the display mode to Custom Mode, Layout 4.

12 Operation via OSD

The **Switch** menu of the OSD offers the following possibilities:

- Switching one input (focusing on one input)
- Switching up to two inputs (focusing on input 1 and displaying the video signal of the selected input 2)
- Switching up to four inputs of dual-head devices with asynchronous switching (focusing on input 1 and displaying the video signal of the selected input 2, 3 and 4)
- Changing the display mode, retaining the current USB HID control
- Changing the display mode and switching the current USB HID control with one or two inputs

The switching possibilities for a user (e.g., asynchronous switching with activated Async Switch function) can be set individually with activated User Management option (see chapter 7.2.1, page 72) and require a user login.

Restarting and shutting down the device are available via **Configuration** menu that is restricted to an administrator or power user and accessible via login.

12.1 Switching of Single Head Devices

12.1.1 Focusing on one Input

To focus on another input via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.
2. Select the input in the **OUT 1** list under **Source Selection** that has to be routed to the main output. This input will be focused.
3. Press Enter.

   The USB HID control switches to the associated source of the focused input 1 and the mouse can be used in the associated window. Depending on the current display mode, the internal window arrangement remains, or changes based on the focused input. The OSD is closed, and the keyboard LEDs returned to their previous status.

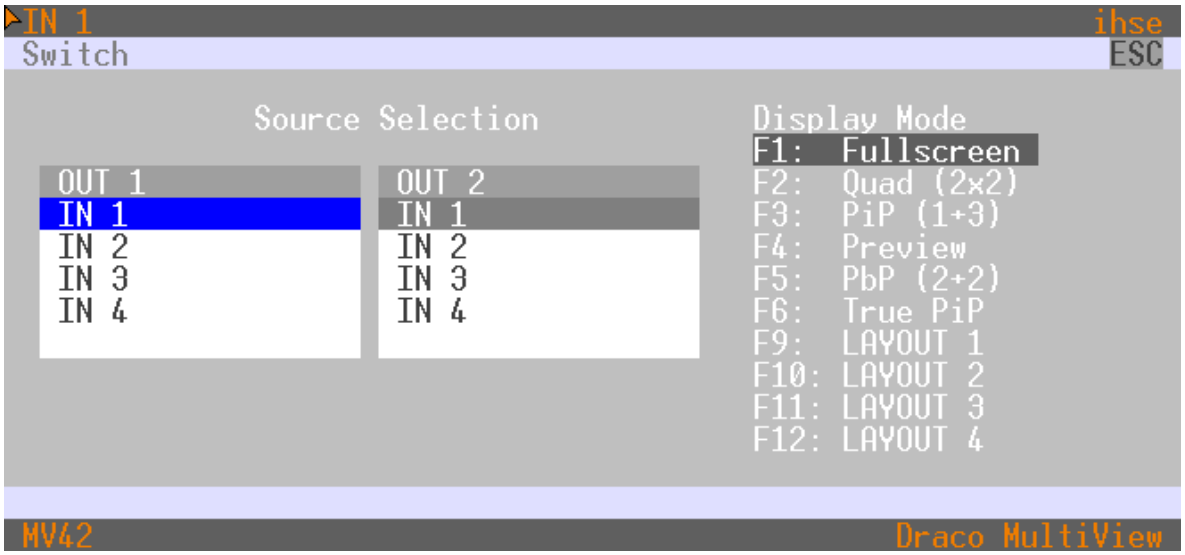


*Fig. 140 OSD Menu **Focus on one input (example with single-head device)***

12.1.2 Focusing on two Inputs

Focusing on two different inputs is only available for the Fullscreen Mode. If selecting two different inputs and activating another display mode than the Fullscreen Mode, the Draco MV is switched to the selected input 1.

To switch two inputs in individual Fullscreen Mode via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.
2. Select the input in the **OUT 1** list under **Source Selection** that has to be routed to the main output. This input will be focused.
3. Select the input in the **OUT 2** list under **Source Selection** that has to be routed to the second output.
4. Apply the selected inputs depending on the current display mode:
   4.1. With current Fullscreen Mode, press Enter.
   4.2. With another display mode than the Fullscreen Mode press F1 or click **Fullscreen** in the **Display Mode** list.

   The USB HID control switches to the associated source of the focused input 1 and the mouse can be used in the associated window. The window associated to the focused input 1 is maximized on the main monitor and the window associated to the selected input 2 is maximized on the second monitor. The OSD is closed, and the keyboard LEDs returned to their previous status.

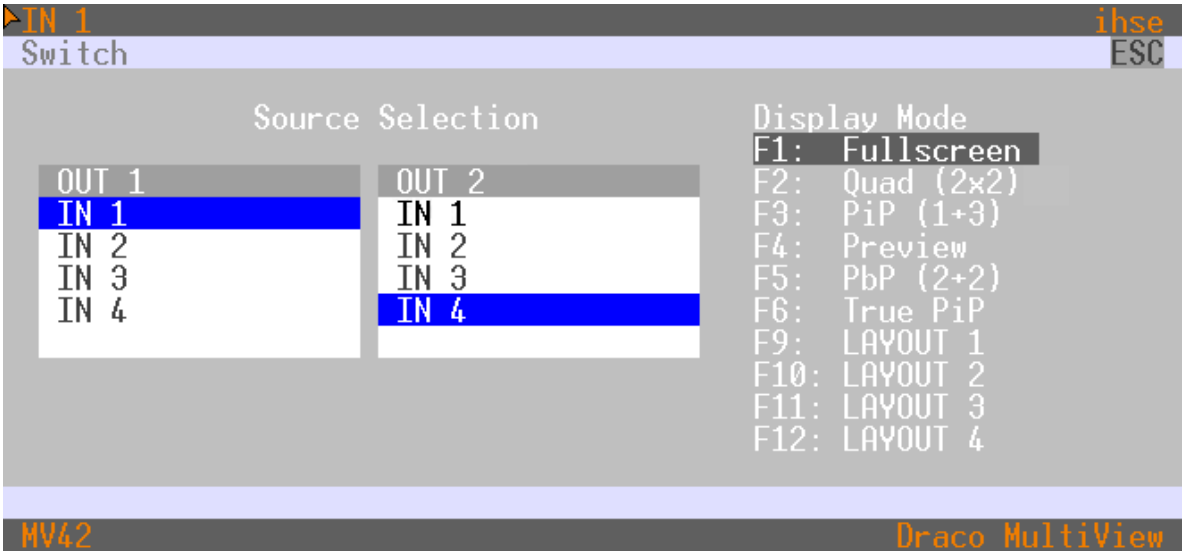


*Fig. 141 OSD Menu **Focus on one input (example with dual-head device)***

12.1.3 Changing the Display Mode

To change the display mode via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.

2. Click the desired display mode under **Display Mode** or press the respective function key (e.g., F4 displays the Preview Mode).

   The window arrangement is changed to the selected display mode by retaining the USB HID control on the current input. The OSD is closed, and the keyboard LEDs returned to their previous status.

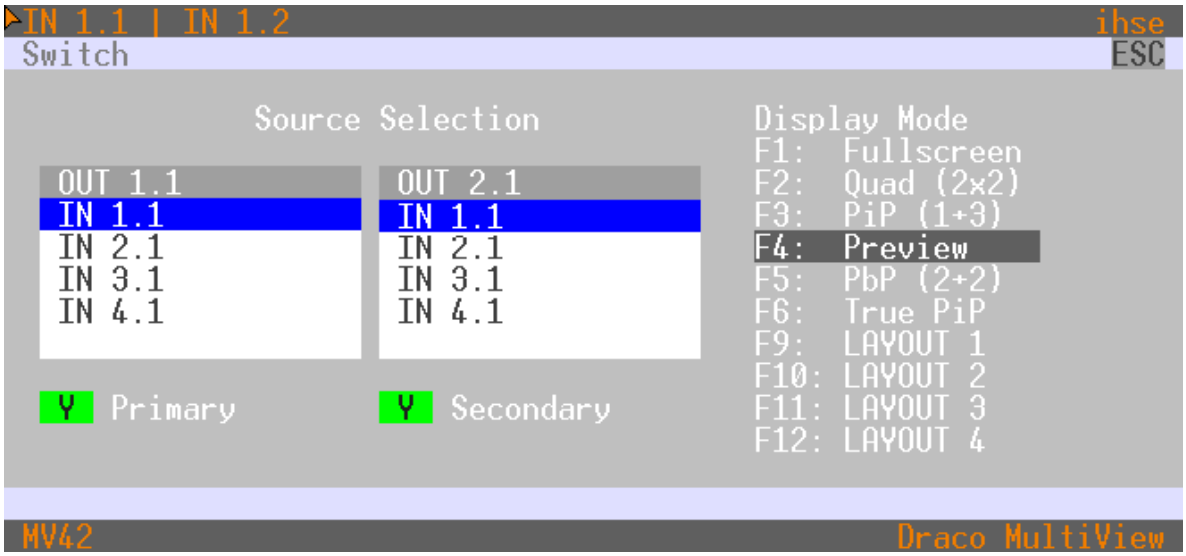


*Fig. 142 OSD Menu **Changing the display mode (example with single-head device)***

12.2 Synchronous Switching of Dual Head Devices

12.2.1 Focusing on one Input

To focus on another input via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.

2. Select the input in the **OUT 1.1** list under **Source Selection** that has to be routed to the main output. This input will be focused.

3. Press Enter.

   The USB HID control switches to the associated source of the focused input and the mouse can be used in the associated window. Depending on the current display mode, the internal window arrangement remains, or changes based on the focused input. The OSD is closed, and the keyboard LEDs returned to their previous status.

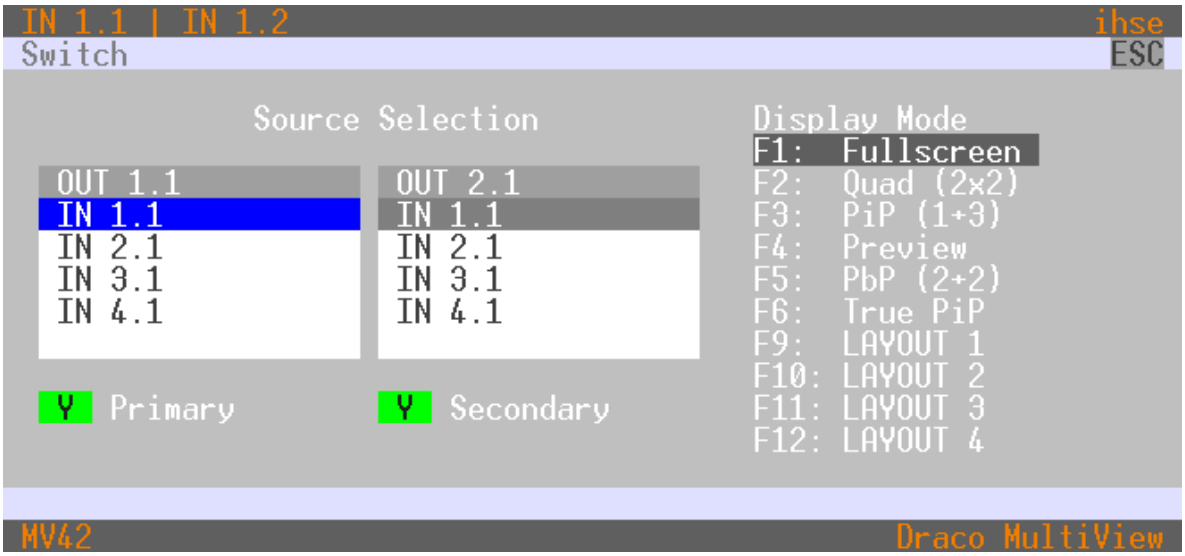


*Fig. 143 OSD Menu **Switch (example with dual-head device and synchronous switching)***

12.2.2 Focusing on two Inputs

Focusing on two different inputs is only available for the Fullscreen Mode. If selecting two different inputs and activating another display mode than the Fullscreen Mode, the Draco MV is switched to the selected input 1.

To switch two inputs in individual Fullscreen Mode via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.
2. Select the input in the **OUT 1.1** list under **Source Selection** that has to be routed to the main output. This input will be focused.
3. Select the input in the **OUT 2.1** list under **Source Selection** that has to be routed to the second output.
4. Apply the selected inputs depending on the current display mode:
   4.1. With current Fullscreen Mode, press Enter.
   4.2. With another display mode than the Fullscreen Mode press F1 or click **Fullscreen** in the **Display Mode** list.

   The USB HID control switches to the associated source of the focused input 1 and the mouse can be used in the associated window. The window associated to the focused input 1 is maximized on the main monitor and the window associated to the selected input 2 is maximized on the second monitor. The OSD is closed, and the keyboard LEDs returned to their previous status.

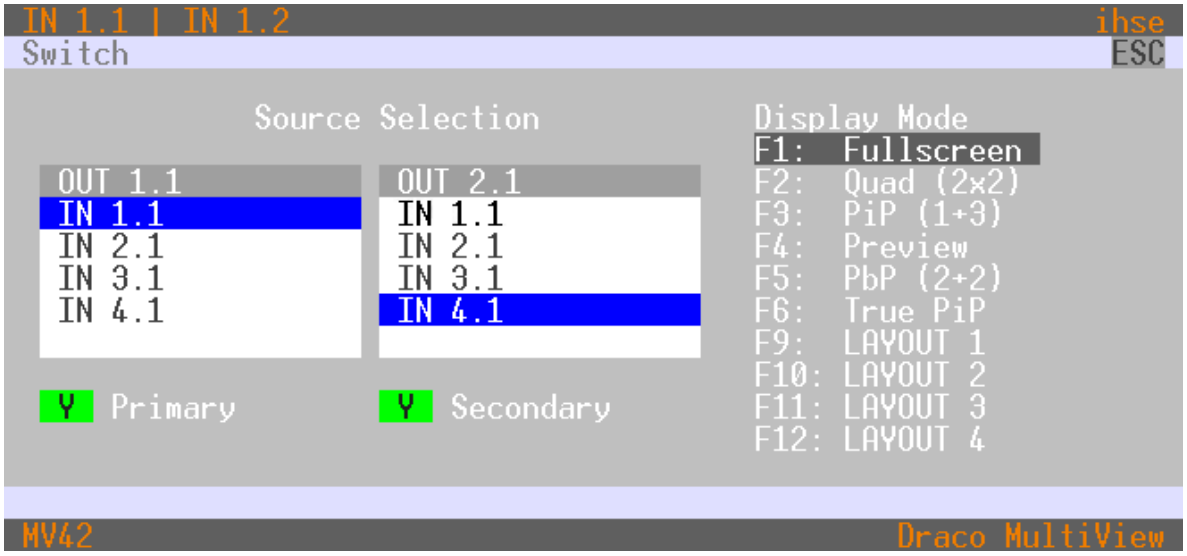


*Fig. 144 OSD Menu **Switch (example with dual-head device and synchronous switching)***

12.2.3 Changing the Display Mode

To change the display mode by retaining the current USB HID control via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.

2. Click the desired display mode under **Display Mode** or press the respective function key (e.g., F4 displays the Preview Mode).

   The window arrangement is changed to the selected display mode by retaining the USB HID control on the current input. The OSD is closed, and the keyboard LEDs returned to their previous status.

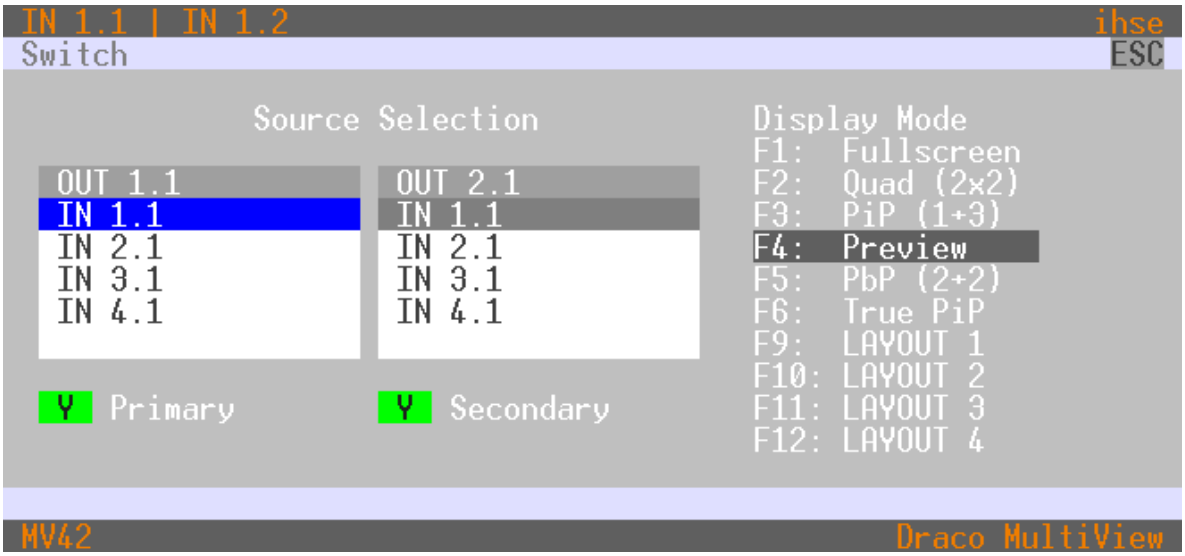


*Fig. 145 OSD Menu **Changing the display mode (example with single-head device and synchronous switching)***

☑ It is possible to change the display mode and to focus on another input at the same time.

12.3 Asynchronous Switching/Changing Display Mode of Dual Head Devices

12.3.1 Focusing on two Inputs with Asynchronous Switching

Focusing on two different inputs is only available for the Fullscreen Mode. If selecting two different inputs and activating another display mode than the Fullscreen Mode, the Draco MV is switched to the selected input 1.

To switch a dual-head device with activated Async Switch function and focus on two inputs in individual Fullscreen Mode via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.

2. To focus inputs of the primary board:
   2.1. Enter **Y** in the **Primary** field.
   2.2. Enter **N** in the **Secondary** field.
   2.3. Select the input in the **OUT 1.1** list under **Source Selection** that has to be routed to the main output. This input will be focused.
   2.4. Select the input in the **OUT 2.1** list under **Source Selection** that has to be routed to the second output.
3. Apply the selected inputs depending on the current display mode:
   3.1. With current Fullscreen Mode, press Enter.
   3.2. With another display mode than the Fullscreen Mode press F1 or click **Fullscreen** in the **Display Mode** list.

   The USB HID control switches to the associated source of the focused input 1 and the mouse can be used in the associated window. The window associated to the focused input 1 is maximized on the main monitor connected to the primary board and the window associated to the selected input 2 is maximized on the second monitor connected to the primary board. The OSD is closed, and the keyboard LEDs returned to their previous status.

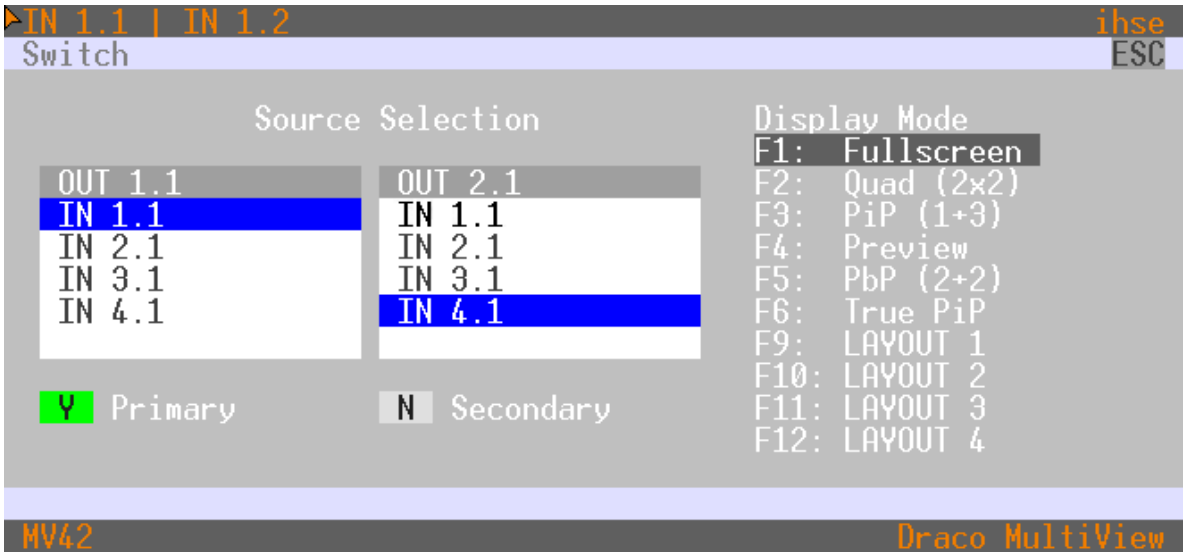


*Fig. 146 OSD Menu **Switch (example with dual-head device and asynchronous switching)***

4. To focus inputs of the secondary board:
   4.1. Enter **Y** in the **Secondary** field.
   4.2. Enter **N** in the **Primary** field.
   4.3. Select the input in the **OUT 1.1** list under **Source Selection** that has to be routed to the main output. This input will be focused.
   4.4. Select the input in the **OUT 2.1** list under **Source Selection** that has to be routed to the second output.
5. Apply the selected inputs depending on the current display mode:
   5.1. With current Fullscreen Mode, press Enter.
   5.2. With another display mode than the Fullscreen Mode press F1 or click **Fullscreen** in the **Display Mode** list.

   The window associated to the selected input 1 is maximized on the first monitor connected to the secondary board and the window associated to the selected input 2 is maximized on the second monitor connected to the secondary board. The OSD is closed, and the keyboard LEDs returned to their previous status.

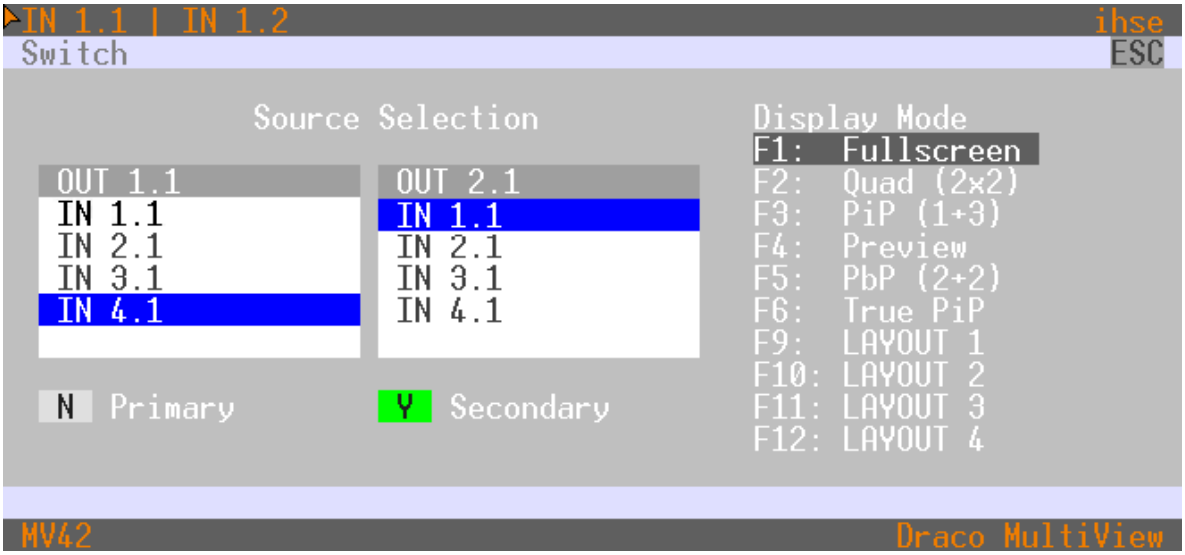


*Fig. 147 OSD Menu **Switch (example with dual-head device and asynchronous switching)***

12.3.2 Changing the Display Mode

To change the display mode by retaining the current USB HID control via OSD, proceed as follows:

1. Press Hot Key + o or the Fast Key to open the OSD.

   The Caps Lock and Scroll Lock LEDs on the keyboard are flashing, and the OSD is opened on the main monitor showing the **Switch** menu.

2. To change the display mode of the primary board:

   2.1. Enter **Y** in the **Primary** field.

   2.2. Click the desired display mode under **Display Mode** or press the respective function key (e.g., F4 displays the Preview Mode).

   The monitors connected to the primary board show the selected display mode by retaining the USB HID control on the current input. The OSD is closed, and the keyboard LEDs returned to their previous status.

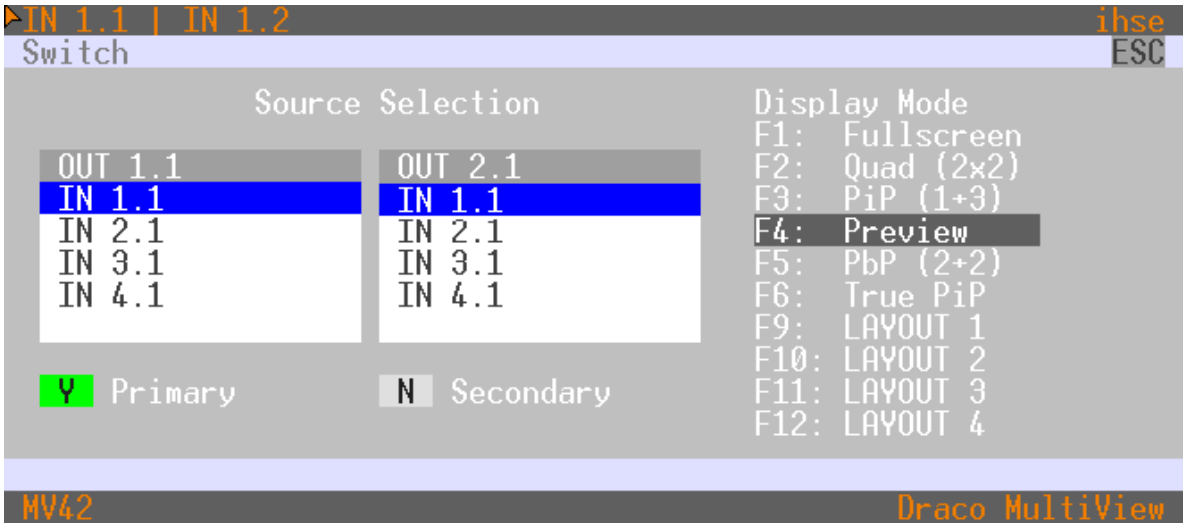


*Fig. 148 OSD Menu **Switch (example with dual-head device and asynchronous switching)***

3. To change the display mode of the secondary board:

   3.1. Enter **Y** in the **Secondary** field.

   3.2. Click the desired display mode under **Display Mode** or press the respective function key (e.g., F1 displays the Fullscreen Mode).

   The monitors connected to the secondary board show the selected display mode by retaining the USB HID control on the current input. The OSD is closed, and the keyboard LEDs returned to their previous status.

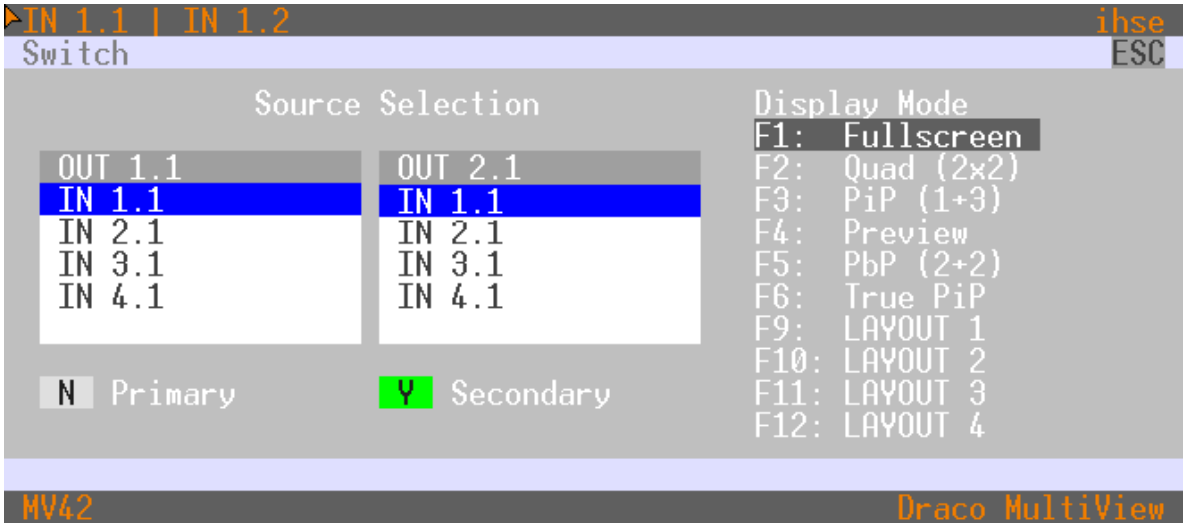


*Fig. 149 OSD Menu **Switch (example with dual-head device and asynchronous switching)***

12.4 Powering Down, Restarting, and Resetting via OSD

Restarting and shutting down the device are available via **Configuration** menu that is restricted to an administrator or power user and accessible via login.

12.4.1 Restarting the Draco MV

To perform a restart of the Draco MV, proceed as follows:

➡ Select **Configuration > Restart MV** in the main menu.

The current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be restarted with the current configuration.

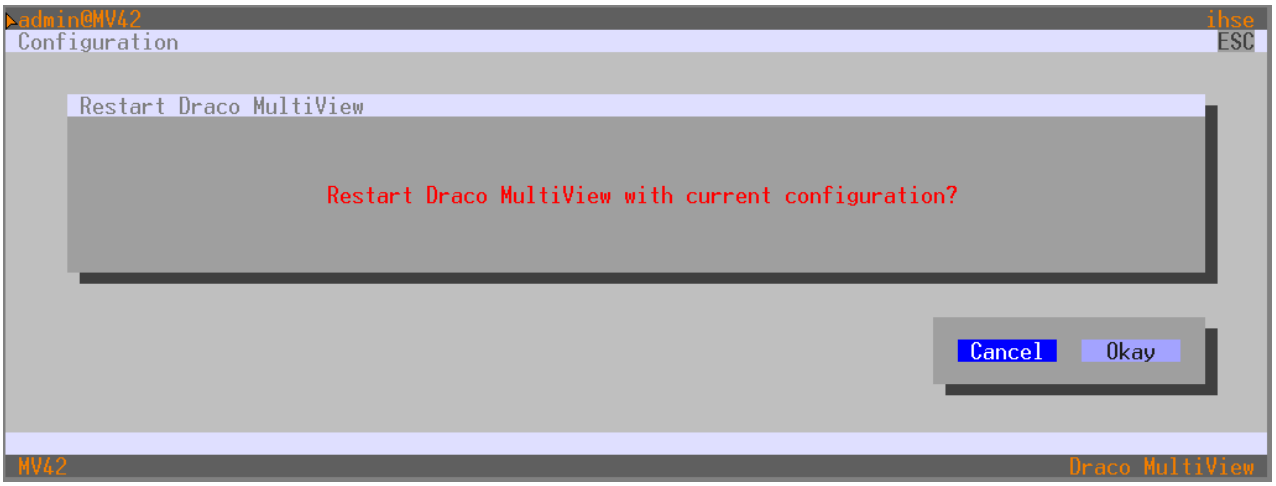


*Fig. 150 OSD Menu **Configuration - Restart MV***

12.4.2 Powering Down the Draco MV

To shut down the Draco MV, proceed as follows:

➡ Select **Configuration > Shut down MV** in the main menu.

The current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be shut down.

NOTICE
After shutting down, the Draco MV can be disconnected from the power supply voltage.

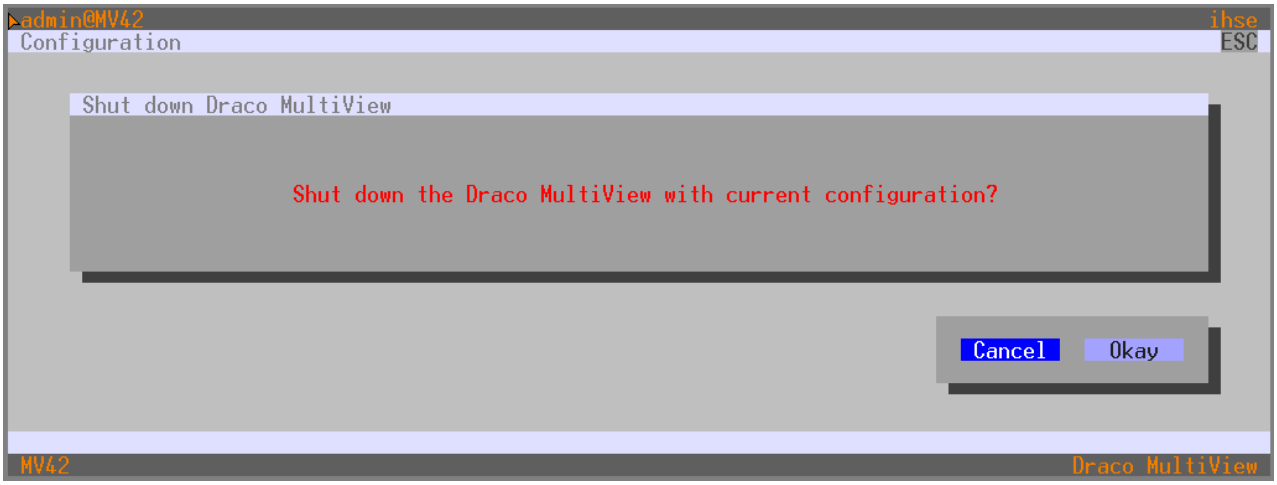


*Fig. 151 OSD Menu **Configuration - Shut down MV***

13 Operation via External Switching Solution

Focusing on one Input via External Switching Solution

Optionally, you can connect a 4-button external switching solution (dry contact) with a GPIO interface to focus on another input. See chapter 17.2.4, page 219 for the pin assignment.

By pressing a push button, the USB HID control is switched to the associated input, the video signal of the associated input is focused on the window arrangement and the mouse can be used within the associated window.

When focusing on another input via external switching solution in Fullscreen Mode with currently two selected inputs, the associated window of selected input will be focused on the main monitor and monitor 2 shows a mirrored image of the main monitor.

14 Operation via Web UI

There are several options to display the associated windows of focused or selected inputs on up to four monitors depending on the switching mode.

Focusing on one or two inputs can be executed in different ways with the left or right mouse button.

- Right mouse button: focusing on one input (in mirrored display modes)
- Drag and drop via left mouse button: focusing on one or two inputs (results in individual Fullscreen Mode)

14.1 Switching/Changing the Display Mode of Single Head Devices

14.1.1 Focusing on one Input

Focusing on another Input

To focus on another input via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 4) with the right mouse button.
3. Click **Switch Source** in the context menu to switch from the current to the selected input.

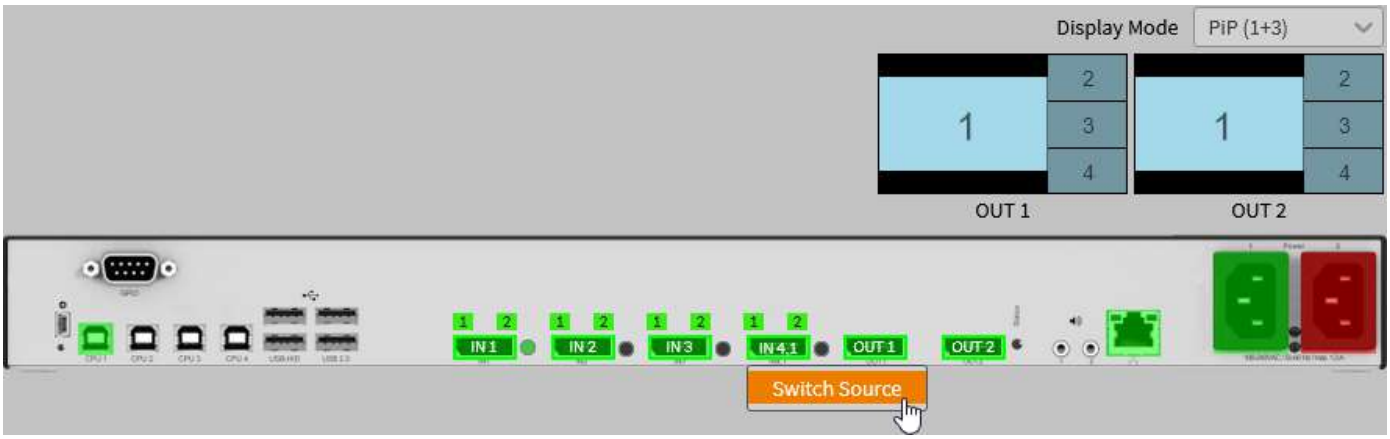


*Fig. 152 Web UI menu **Device Status - Focus on one input in PiP Mode, single-head (1)***

Both monitors maximize the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

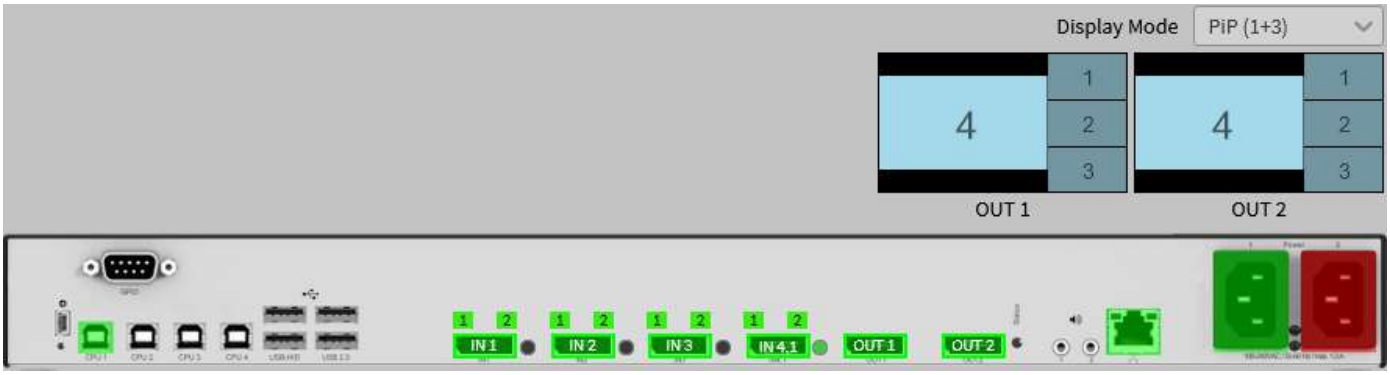


*Fig. 153 Web UI menu **Device Status - Focus on one input in PiP Mode, single-head (2)***

Focusing on another Input in mirrored Fullscreen Mode

To focus on another input via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 3) with the right mouse button.

   A context menu shows the switching option.
3. Click **Switch Source** in the context menu to switch from the current to the input to be focused.

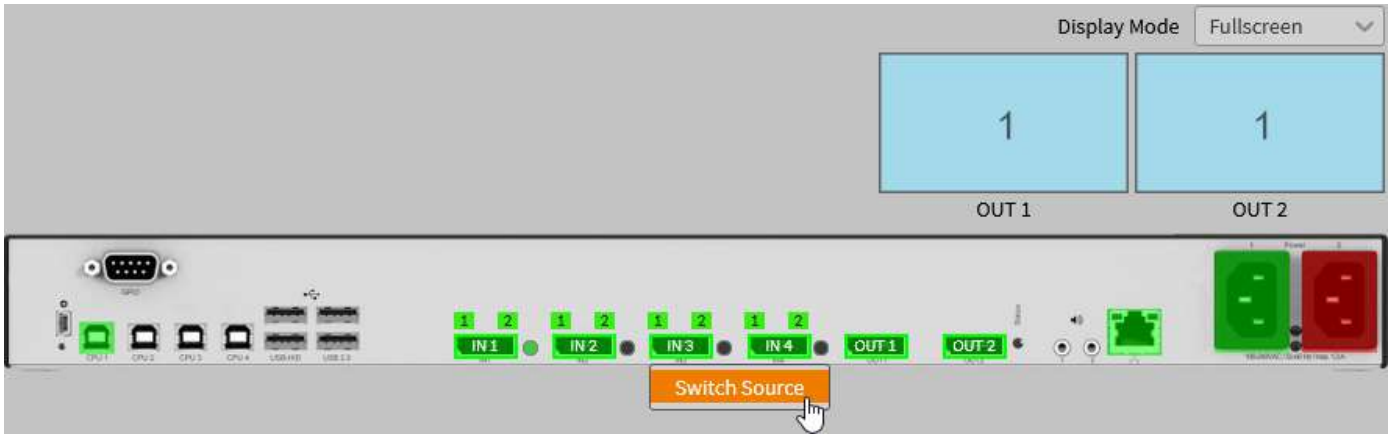


*Fig. 154 Web UI menu **Device Status - Focus on one input in mirrored Fullscreen Mode, single-head (1)***

Both monitors maximize the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated windows.

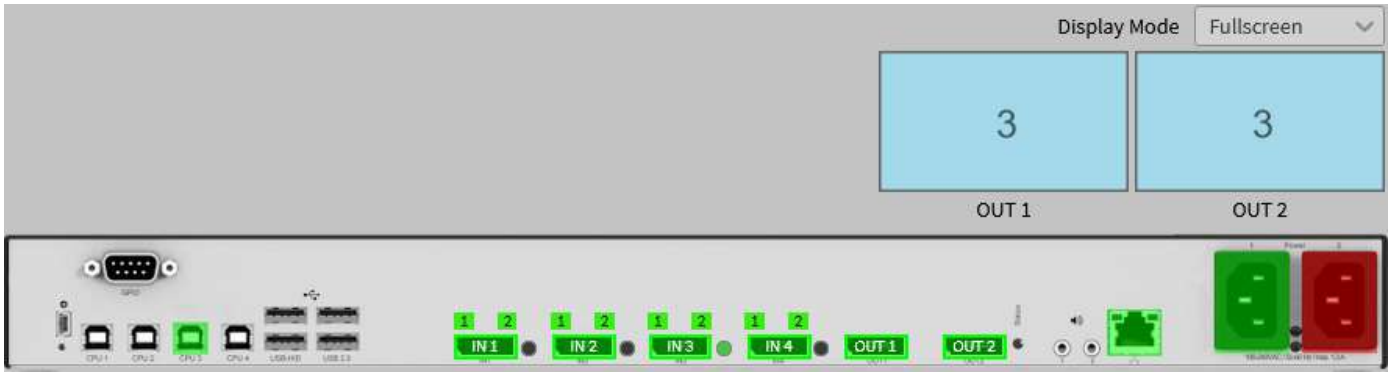


*Fig. 155 Web UI menu **Device Status - Focus on one input in mirrored Fullscreen Mode, single-head (2)***

Focusing on another Input from individual to mirrored Fullscreen Mode

To focus on another input from individual Fullscreen Mode (see chapter 14.1.2, page 169) to mirrored Fullscreen Mode via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 4) with the right mouse button.
3. Click **Switch Source** in the context menu to switch from the current to the selected input.

*Fig. 156 Web UI menu **Device Status - Focus on one input in individual Fullscreen Mode, single-head (1)***

Both monitors maximize the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

*Fig. 157 Web UI menu **Device Status - Focus on one input in individual Fullscreen Mode, single-head (2)***

14.1.2 Focusing on two Inputs

To focus on two inputs in individual Fullscreen Mode via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 1), hold down the mouse button and drag the mouse to the desired output (e.g., output OUT1).

   The available ports for switching are highlighted in blue.

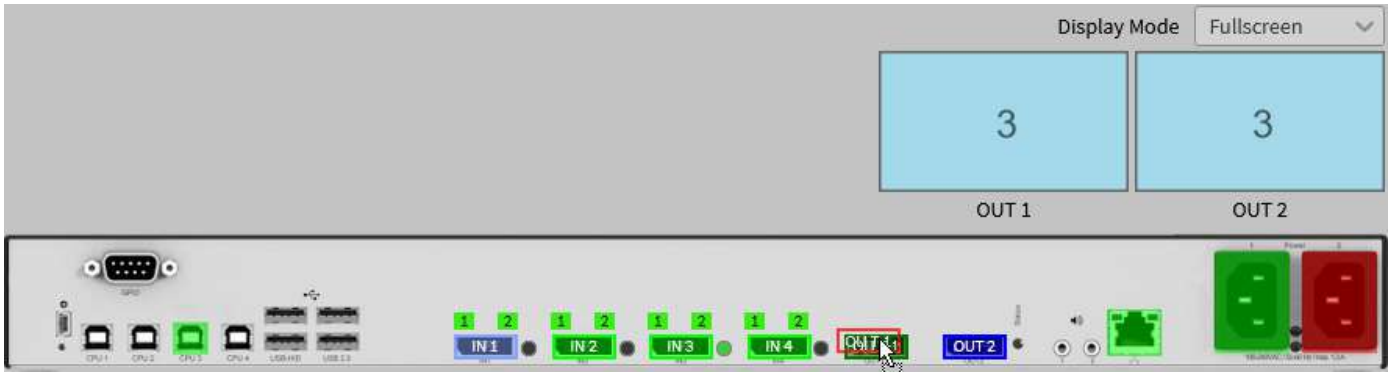


*Fig. 158 Web UI menu **Device Status - Focus on two inputs in individual Fullscreen Mode, single-head (1)***

3. Release the mouse button.

   A context menu shows the available display mode for this switching procedure.
4. Click **Fullscreen** in the context menu to focus the selected input.

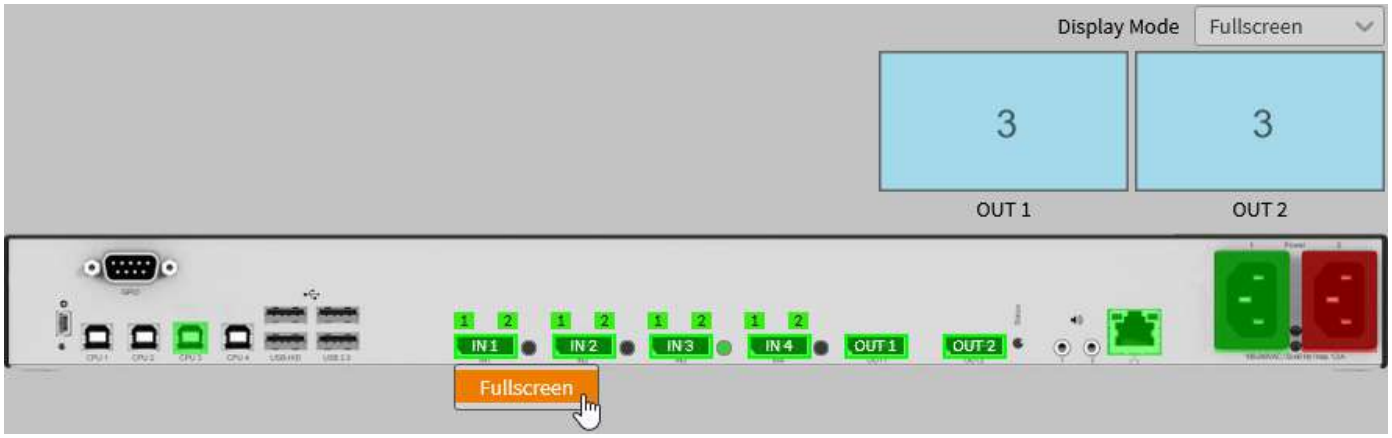


*Fig. 159 Web UI menu **Device Status - Focus on two inputs in individual Fullscreen Mode, single-head (2)***

The main monitor maximizes the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

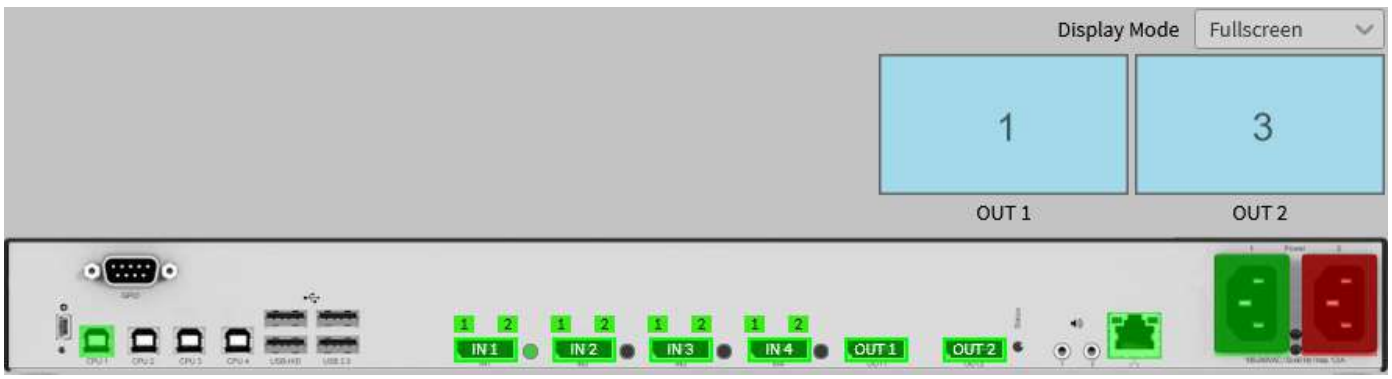


*Fig. 160 Web UI menu **Device Status - Focus on two inputs in individual Fullscreen Mode, single-head (3)***

5. To select a second input to be displayed on the second output, proceed as described in the steps before.

14.1.3 Changing the Display Mode

Switching from a display mode to another, the video signal of the input with current USB HID control is displayed in the foreground (in Custom Mode) or on the main window (in Fullscreen Mode, Preview Mode, and PiP Mode).

To change the display mode, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the down arrow of the **Display Mode** selection list in the working area.
3. Select the desired display mode.

*Fig. 161 Web UI menu **Device Status - Display mode change, single-head (1)***

The monitors shows the selected display mode retaining the current USB HID control.

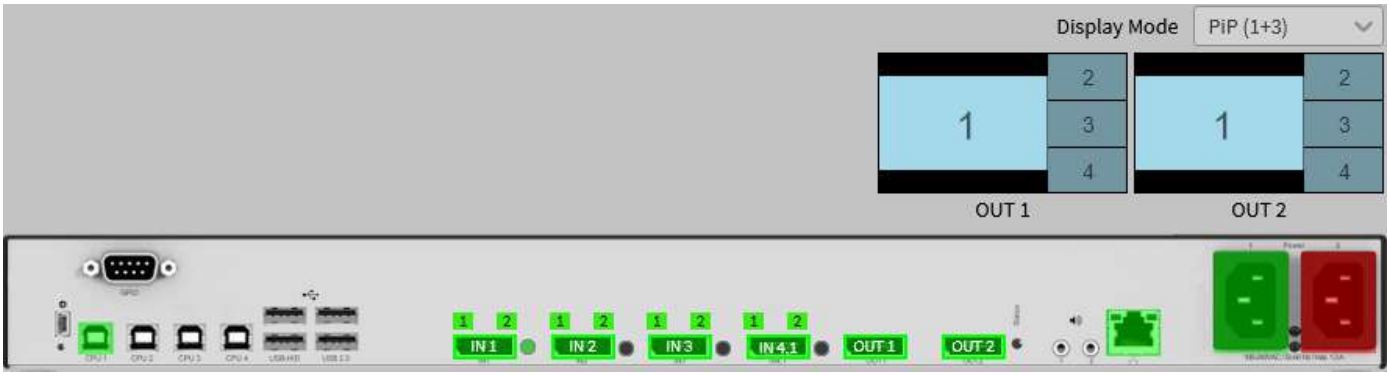


*Fig. 162 Web UI menu **Device Status - Display mode change, single-head (2)***

14.2 Synchronous Switching/Changing Display Mode of Dual Head Devices

14.2.1 Focusing on one Input

Focusing on another Input

To focus on another input to mirrored Fullscreen Mode with synchronous switching via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 4) with the right mouse button.
3. Click **Switch Source** in the context menu to switch from the current to the selected input.

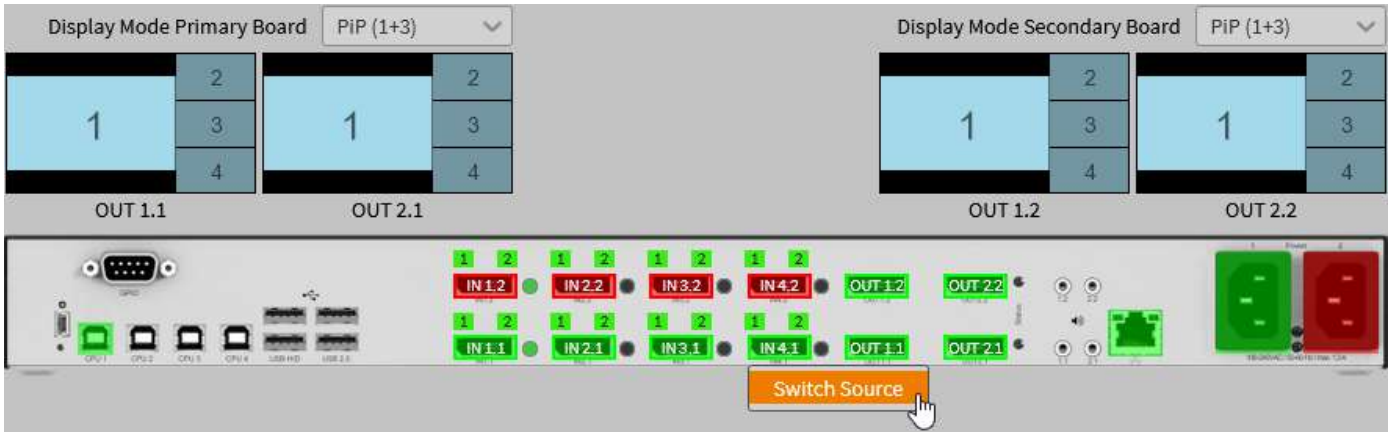


*Fig. 163 Web UI menu **Device Status - Synchronous focus on one input in PiP Mode (1)***

The video signal of the focused input is streamed on the main window and the order of the smaller windows on the right changes accordingly. The USB HID control is switched to the focused input and the mouse can be used within the main window.

*Fig. 164 Web UI menu **Device Status - Synchronous focus on one input in PiP Mode (2)***

Focusing on another Input in mirrored Fullscreen Mode

To focus on another input with synchronous switching via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 3) with the right mouse button.

   A context menu shows the switching option.
3. Click **Switch Source** in the context menu to switch from the current to the selected input.

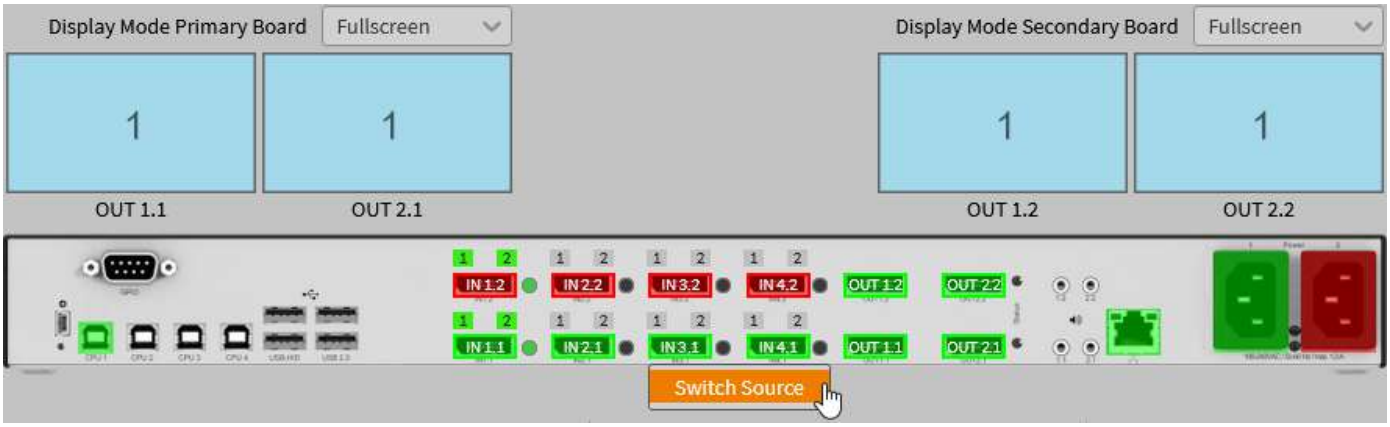


*Fig. 165 Web UI menu **Device Status - Synchronous focus on one input in mirrored Fullscreen Mode (1)***

Both monitors maximize the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

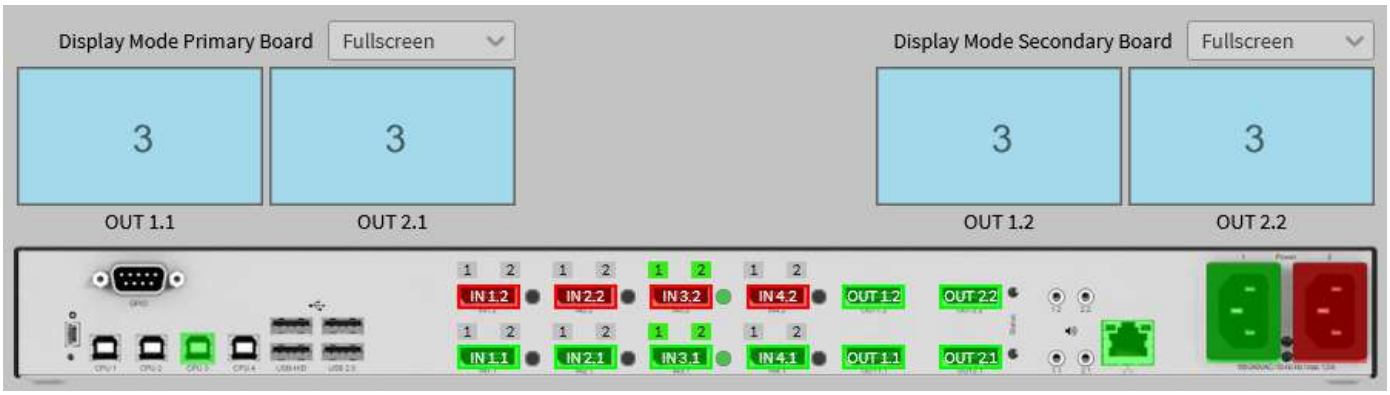


*Fig. 166 Web UI menu **Device Status - Synchronous focus on one input in mirrored Fullscreen Mode (2)***

Focusing on another Input from individual to mirrored Fullscreen Mode

When focusing on one input in individual Fullscreen Mode (see chapter 14.2.2, page 174), the device changes to the mirrored Fullscreen Mode.

To focus on one input with synchronous switching via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 4) with the right mouse button.
3. Click **Switch Source** in the context menu to switch from the current to the selected input.

*Fig. 167 Web UI menu **Device Status - Synchronous focus on one input to mirrored Fullscreen Mode (1)***

Both monitors maximize the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

*Fig. 168 Web UI menu **Device Status - Synchronous focus on one input to mirrored Fullscreen Mode (2)***

14.2.2 Focusing on two Inputs

To focus on another input in individual Fullscreen Mode with synchronous switching via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 1), hold down the mouse button and drag the mouse to the desired output (e.g., output OUT1.1).

   The available ports for switching are highlighted in blue.

*Fig. 169 Web UI menu **Device Status - Synchronous focus on two inputs in individual Fullscreen Mode (1)***

3. Release the mouse button.

   A context menu shows the available display mode for this switching procedure.
4. Click **Fullscreen** in the context menu to focus the selected input.

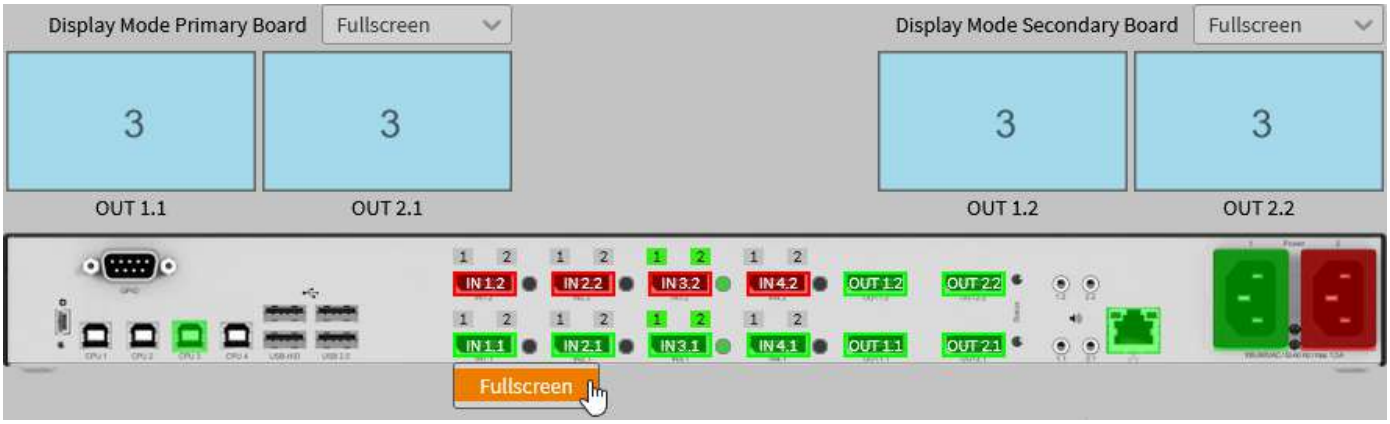


*Fig. 170 Web UI menu **Device Status - Synchronous focus on two inputs in individual Fullscreen Mode (1)***

The main monitors maximize the associated window of the focused input. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

*Fig. 171 Web UI menu **Device Status - Synchronous focus on two inputs in individual Fullscreen Mode (1)***

5. To select a second input to be displayed on the second output, proceed as described in the steps before.

14.2.3 Changing the Display Mode

To change the display mode, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the down arrow of the **Display Mode** selection list in the working area.
3. Select the desired display mode.

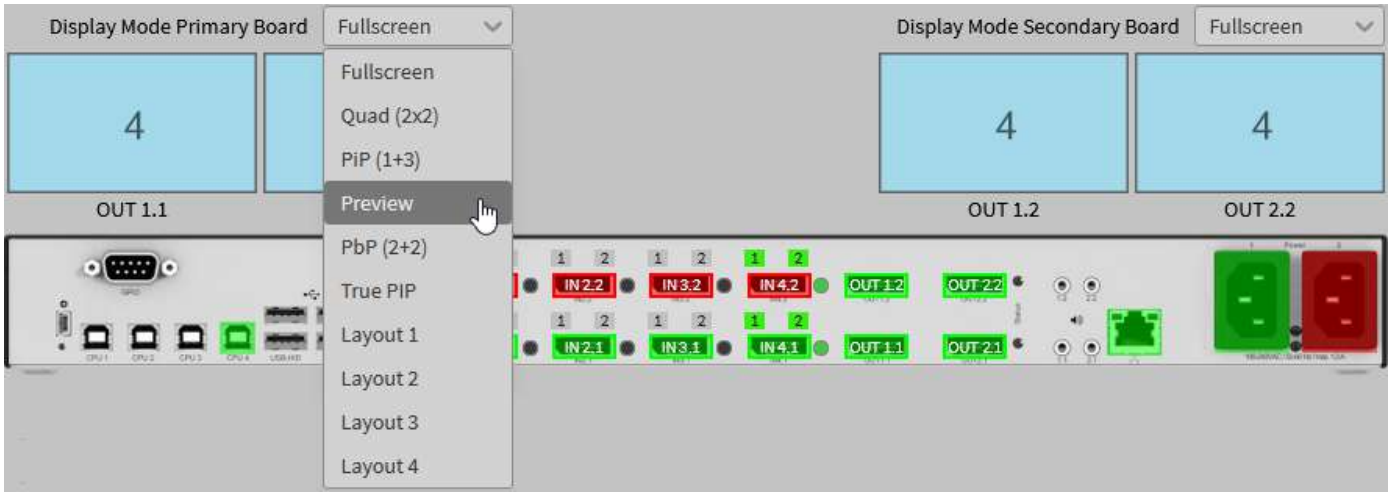


*Fig. 172 Web UI menu **Device Status - Display Mode, single-head (1)***

The monitors show the selected display mode retaining the current USB HID control.

*Fig. 173 Web UI menu **Device Status - Display mode change, single-head (2)***

14.3 Asynchronous Switching/Changing Display Mode of Dual Head Devices

14.3.1 Focusing on one Input

For instance, in the initial situation, the inputs of the primary board are displayed in Quad Mode, the inputs of the secondary board are displayed in the individual Fullscreen Mode.

To focus on another input with asynchronous switching via Web UI, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 2) with the right mouse button.
3. Click **Switch Source** in the context menu to switch from the current to the selected input.

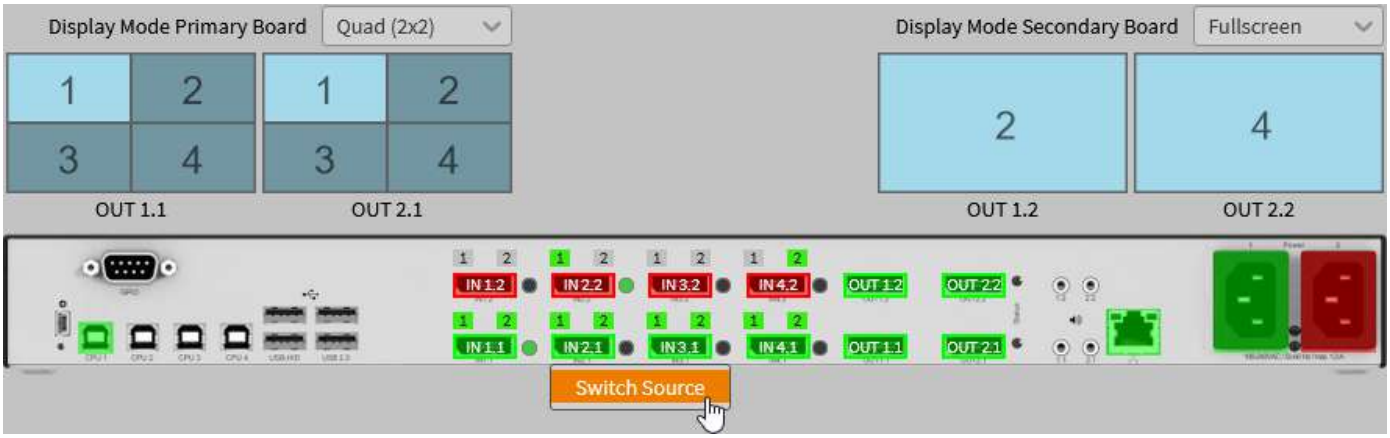


*Fig. 174 Web UI menu **Device Status - Asynchronous focus on another input in Quad Mode (1)***

The video signal of the selected input 2 is focused. The USB HID control is switched to the focused input and the mouse can be used within the associated window.

*Fig. 175 Web UI menu **Device Status - Asynchronous focus on another input in Quad Mode (2)***

14.3.2 Changing the Display Mode

To change the display mode, proceed as follows:

1. Click **Device Status** in the toolbar.
2. Click the down arrow of the **Display Mode** selection list in the working area.
3. Select the desired display mode.

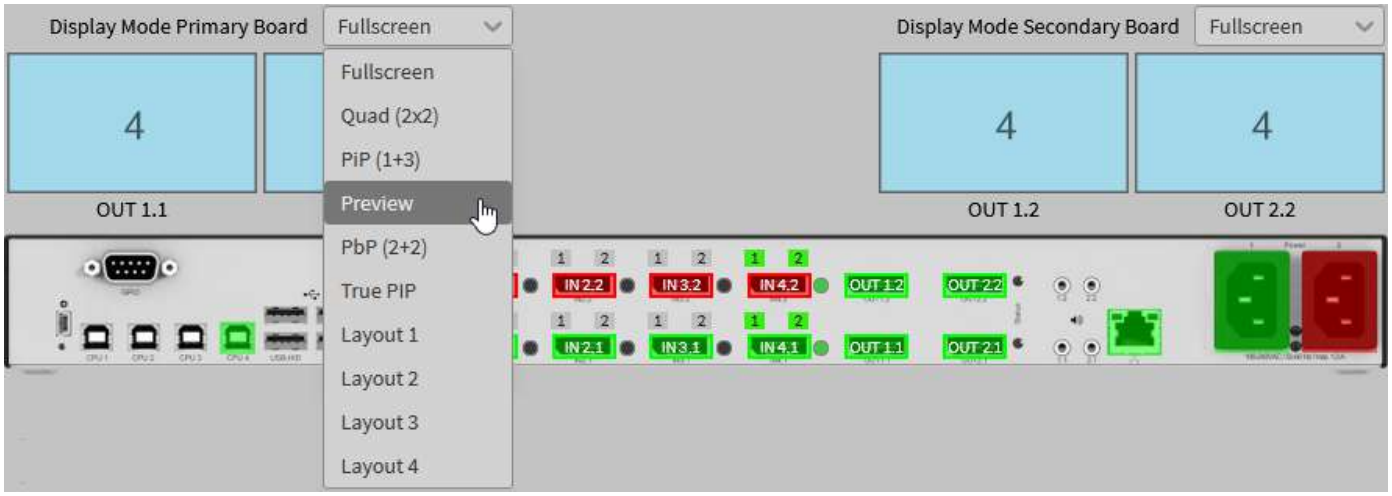


*Fig. 176 Web UI menu **Device Status -Asynchronous change to another display mode (1)***

The monitor(s) show(s) the selected display mode retaining the current USB HID control.

*Fig. 177 Web UI menu **Device Status -Asynchronous change to another display mode (2)***

14.3.3 Changing to the Fullscreen Mode by Switching an Input

1. Click **Device Status** in the toolbar.
2. Click the desired input (e.g., input 2), hold down the mouse button and drag the mouse to the desired output (e.g., output OUT1.1).

   The available ports for switching are highlighted in blue.

Fig. 178 Example - Focusing on another input and changing the display mode by dragging

3. Release the mouse button.

   A context menu shows the available display mode for this switching procedure.
4. Click **Fullscreen** in the context menu to focus on the selected input.

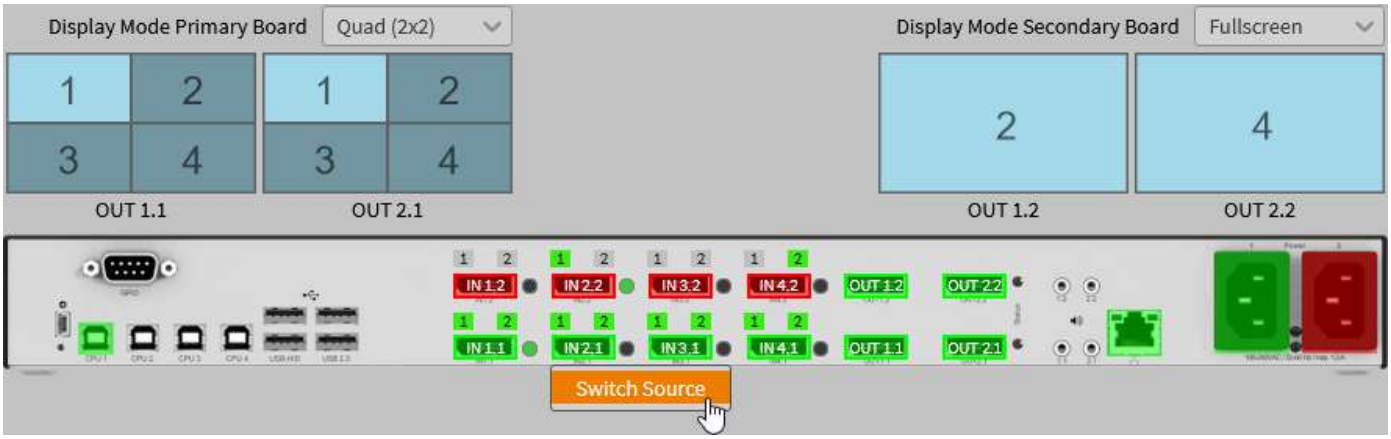


Fig. 179 Example - Changed display mode by focusing on another input by dragging

The video signal of the selected input 2 is focused on the main monitor and the display mode is changed to the Fullscreen Mode. Monitor 2 keeps the video signal of the selected input. The USB HID control remains at the input that is switched to the main output.

Fig. 180 Example - Changed display mode by focusing on another input by dragging

14.4 Using a USB 2.0 Device

When connecting a USB 2.0 device, e.g., a media control to the transparent USB 2.0 interfaces, the media control cannot interact with the Draco MV. The media control will just be routed through to the target computer.

To route the USB 2.0 device through to the desired target computer, proceed as follows:

1. Switch the USB HID control to the desired target computer.
2. Wait until the target operating system has initiated the USB 2.0 device.

Note the settings for routing through the USB 2.0 ports (see chapter 9, page 135).

15 Maintenance

NOTICE

Possible damage to the mechanical and electronic components

The chassis does not contain any components that require maintenance. If the chassis is nevertheless opened and damaged in the process, the manufacturer's warranty is voided.

➡ DO NOT open the device.

➡ In case of failure, contact the supplier or manufacturer.

15.1 Cleaning

NOTICE

Possible damage to the mechanical and electronic components

The Draco MV as well as the accessories can be damaged by cleaning with damp or aggressive cleaning agents. If the Draco MV and the accessories are nevertheless cleaned with damp or aggressive cleaning agents and damaged in the cleaning process, the manufacturer's warranty will be voided.

➡ Remove dust deposits from the device with a dry, antistatic cloth or dehumidified air spray.

15.2 Querying a Status via OSD

Several statuses can be queried for diagnosis via **Status** menu:

*Fig. 181 OSD Menu **Status***

15.2.1 Querying the Video Status

This menu displays the resolution and the EDID of the video outputs, the input-window assignment, and if a video signal is available or not available at the video inputs.

➡ Select **Status > Video** in the main menu to query the resolution of the video signals and the monitor information.

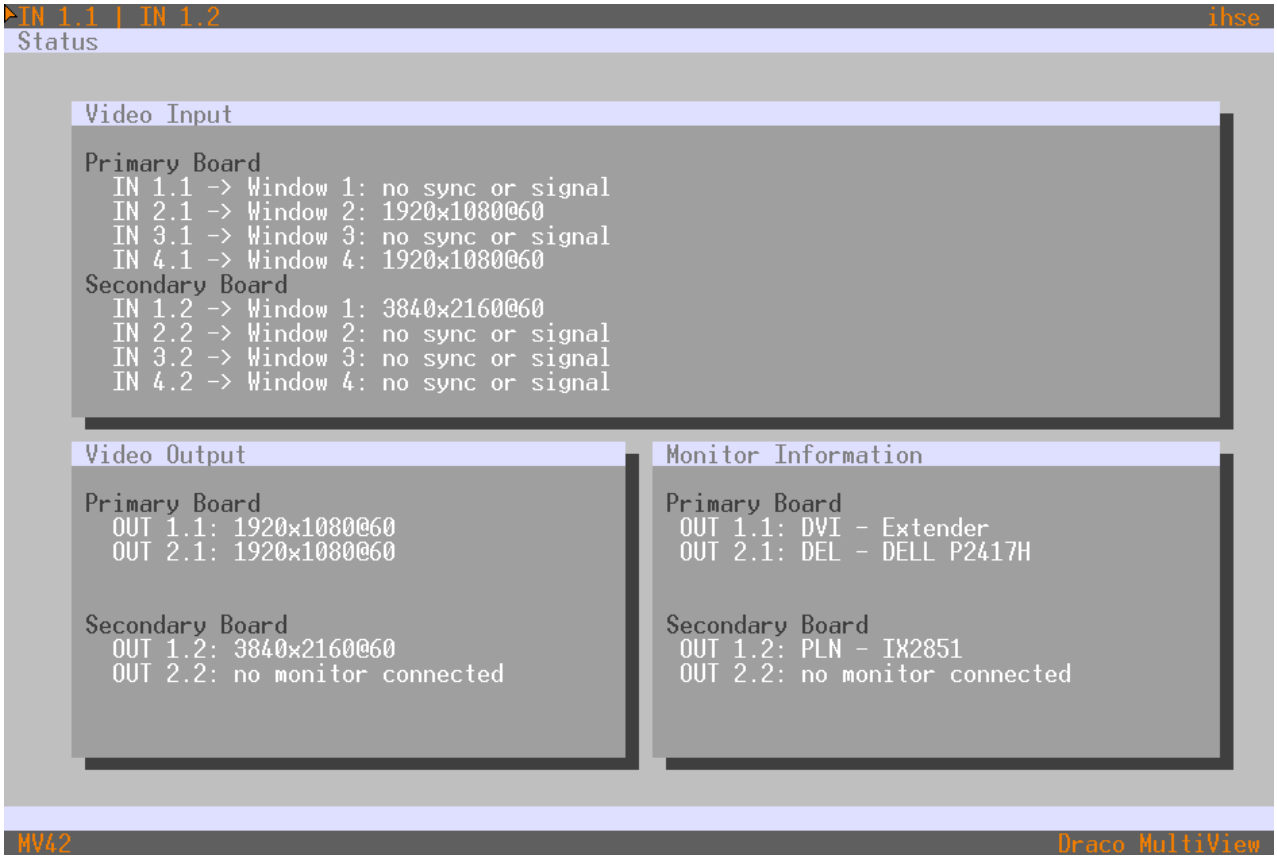


*Fig. 182 OSD Menu **Status - Video***

The sections contain the following information:

Video Input: Input (with Custom Name) -> assigned to Window -> without signal or with resolution of the signal

Video Output: Output with (Custom Name) -> resolution of the connected monitor

Monitor Information: Output with (Custom Name) -> assigned EDID.

15.2.2 Querying the Network Status

The current network configuration is displayed in this menu.

➡ Select **Status > Network** in the main menu to query the network configuration.

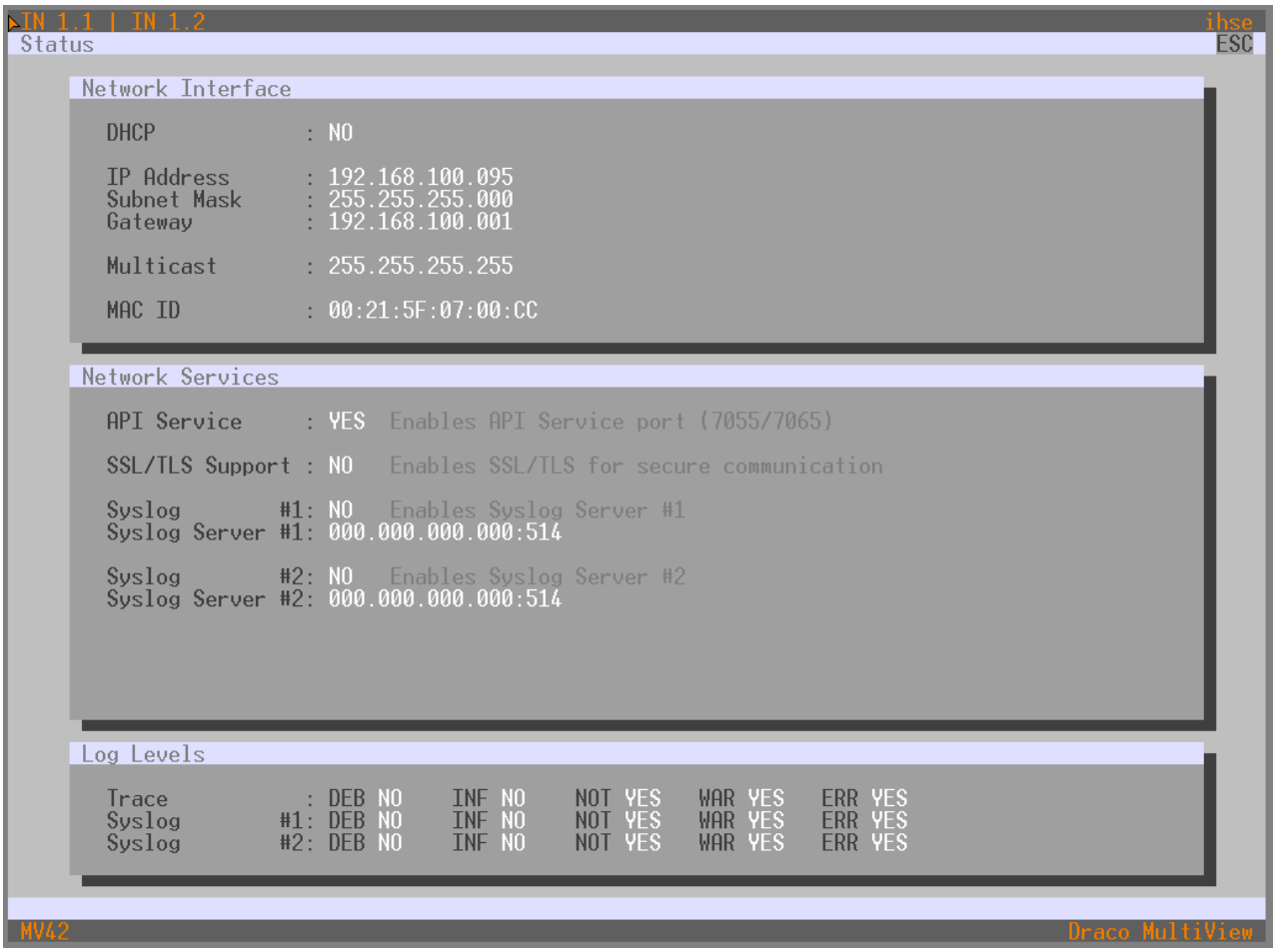


*Fig. 183 OSD Menu **Status - Network***
Fig. 184

For information about the parameters, please refer to chapter 7.2.2, page 75.

15.2.3 Querying the SNMP Status

The current SNMP status is displayed in this menu.

➡ Select **Status > SNMP** in the main menu to query the SNMP status.

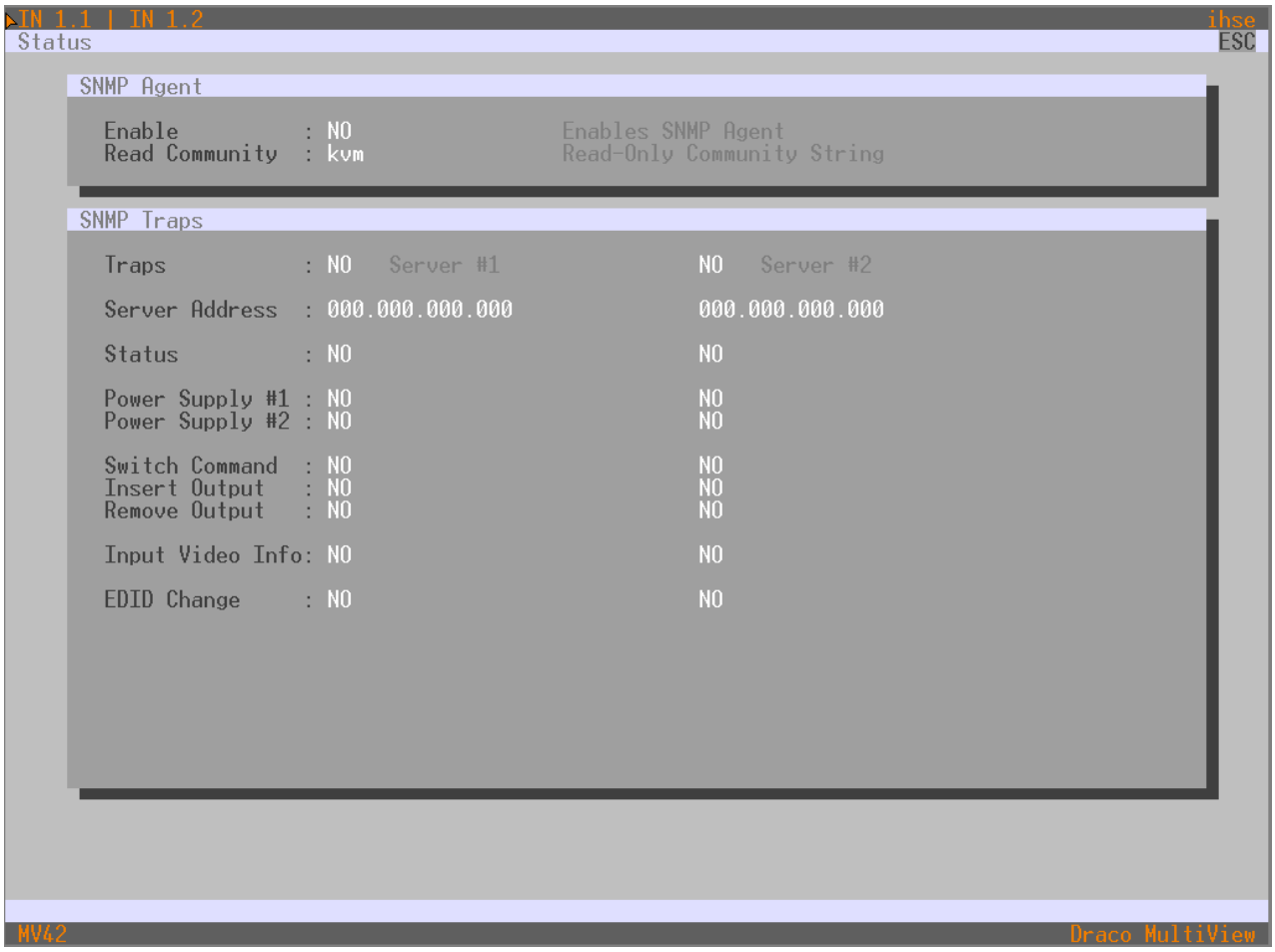


*Fig. 185 OSD Menu **Status - SNMP***

15.2.4 Querying the Firmware Status

The current firmware status is displayed in this menu.

➡ Select **Status > Firmware** in the main menu to query the firmware status.

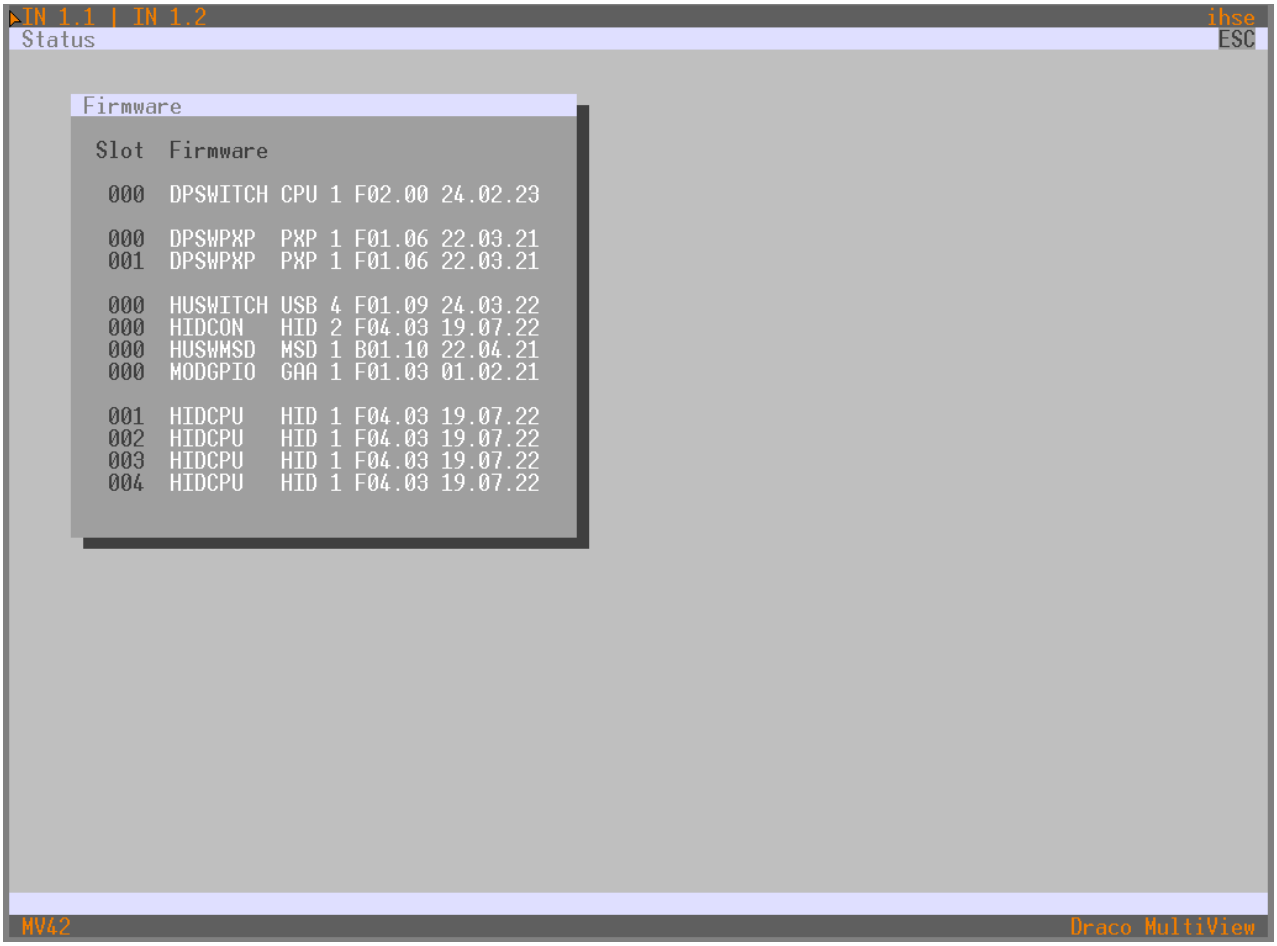


*Fig. 186 OSD Menu **Status - Firmware***

15.2.5 Querying the Trace Events

The trace function is used for diagnostic purposes. All recorded events for activities and switching operations are displayed in this menu.

The procedure for activating the SNMP agent or configuring an SNMP server is described in chapter 7.2.4, page 80.

➡ Select **Status > Trace** in the main menu to display the recorded events of the Draco MV.

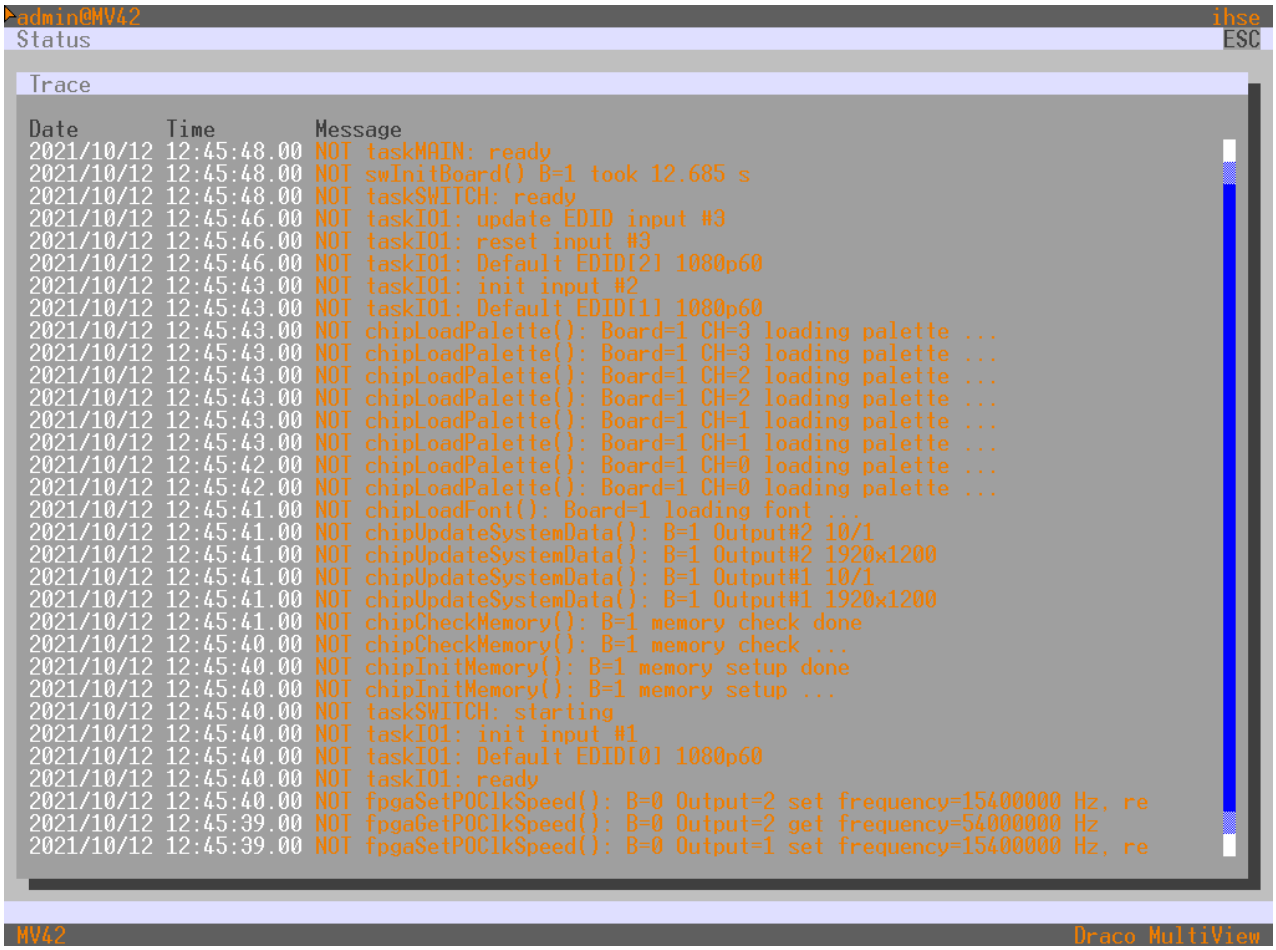


*Fig. 187 OSD Menu **Status - Trace***

The following information is shown in this menu:

Field	Description
Date	Date stamp
Time	Time stamp
Message	Detailed description of the event

15.2.6 Resetting the Draco MV to the Factory Settings

NOTICE
If you perform a (factory) reset, all current settings and all configurations stored in the Draco MV will be lost. This also applies to the network parameters (reset to default IP-address) and the admin password.

NOTICE
If a firmware update has been carried out since the delivery, the latest installed firmware version is retained.

To perform a reset of the Draco MV, proceed as follows:

1. Select **Configuration > Factory Reset** in the menu bar.

   A login window appears.
2. Enter the username and password of the administrator.
3. Click **Okay** to confirm the entries.

   The Draco MV is reset to factory settings and DHCP is deactivated.

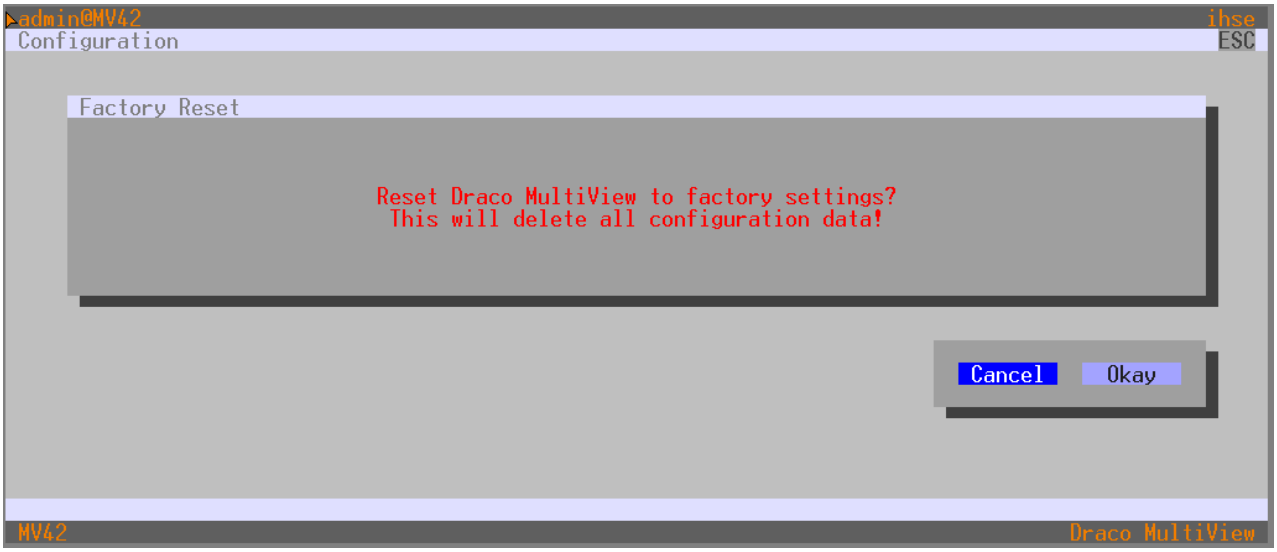


*Fig. 188 OSD Menu **Factory Reset***

15.3 Querying a Status, Managing TLS Certificate and Reset via Web UI

15.3.1 Querying the Video Status

This menu displays the input-window assignment, the resolution, and the EDID of the video outputs, and if a video signal is available or not available at the video inputs.

➡ Click **Device Status** in the toolbar to display the **Device Status** overview.

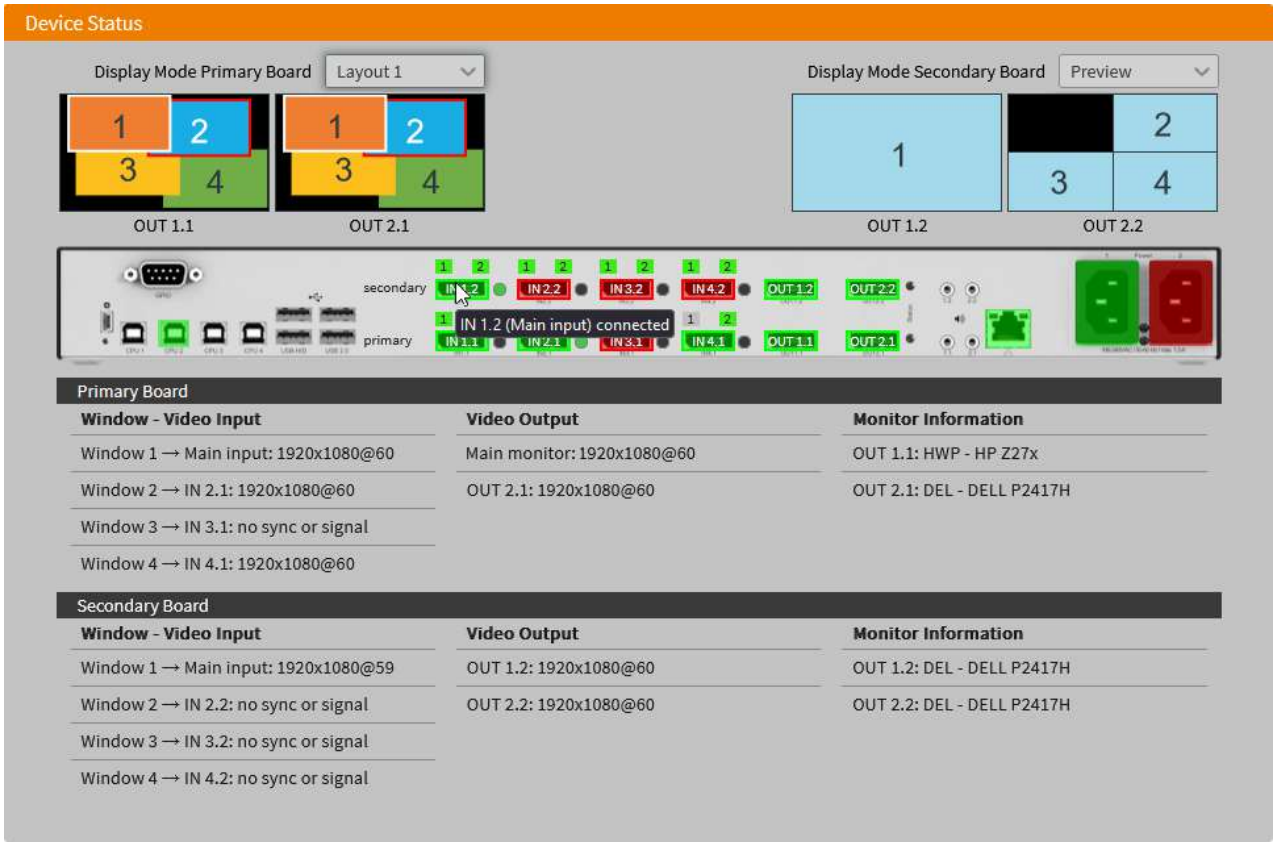


*Fig. 189 Web UI menu **Device Status***

The sections contain the following information:

Video Input: Window -> assigned input (with Custom Name) -> without signal or with resolution of the signal

Video Output: Output with Custom Name -> resolution of the connected monitor

Monitor Information: Output with Custom Name -> assigned EDID.

15.3.2 Querying the Network Status

The current network configuration is displayed in this menu.

1. Click **Maintenance** in the toolbar.
2. Click **Advanced Service** in the task area to display the **Advanced Service** options.

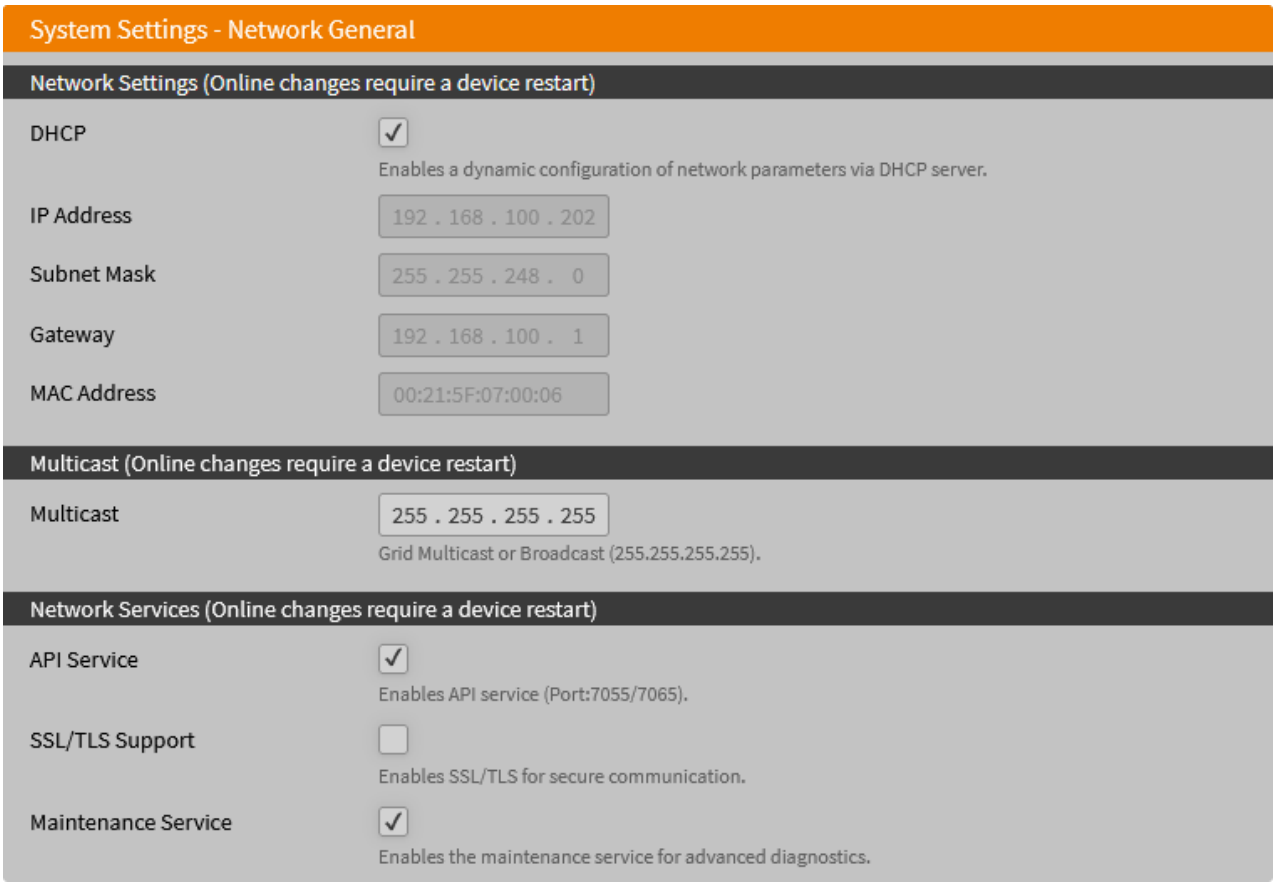


*Fig. 190 Web UI menu **System Settings - Network - General***

The parameters are described in chapter 8.2.2, page 106.

15.3.3 Querying the Firmware Status

The current firmware status is displayed in this menu.

1. Click **Maintenance** in the toolbar.
2. Click **Advanced Service** in the task area.
3. Click  under **Firmware** to query the current firmware status.

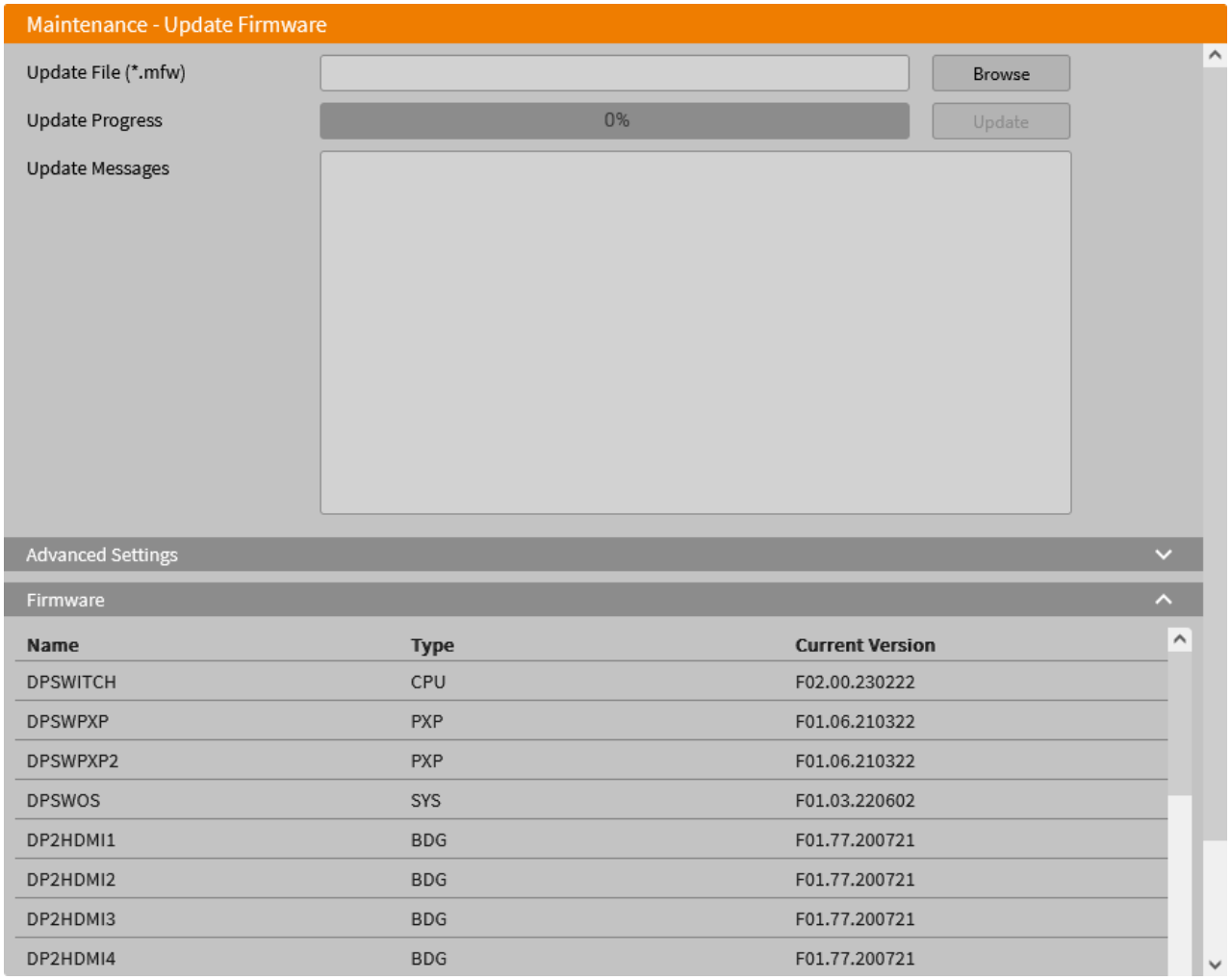
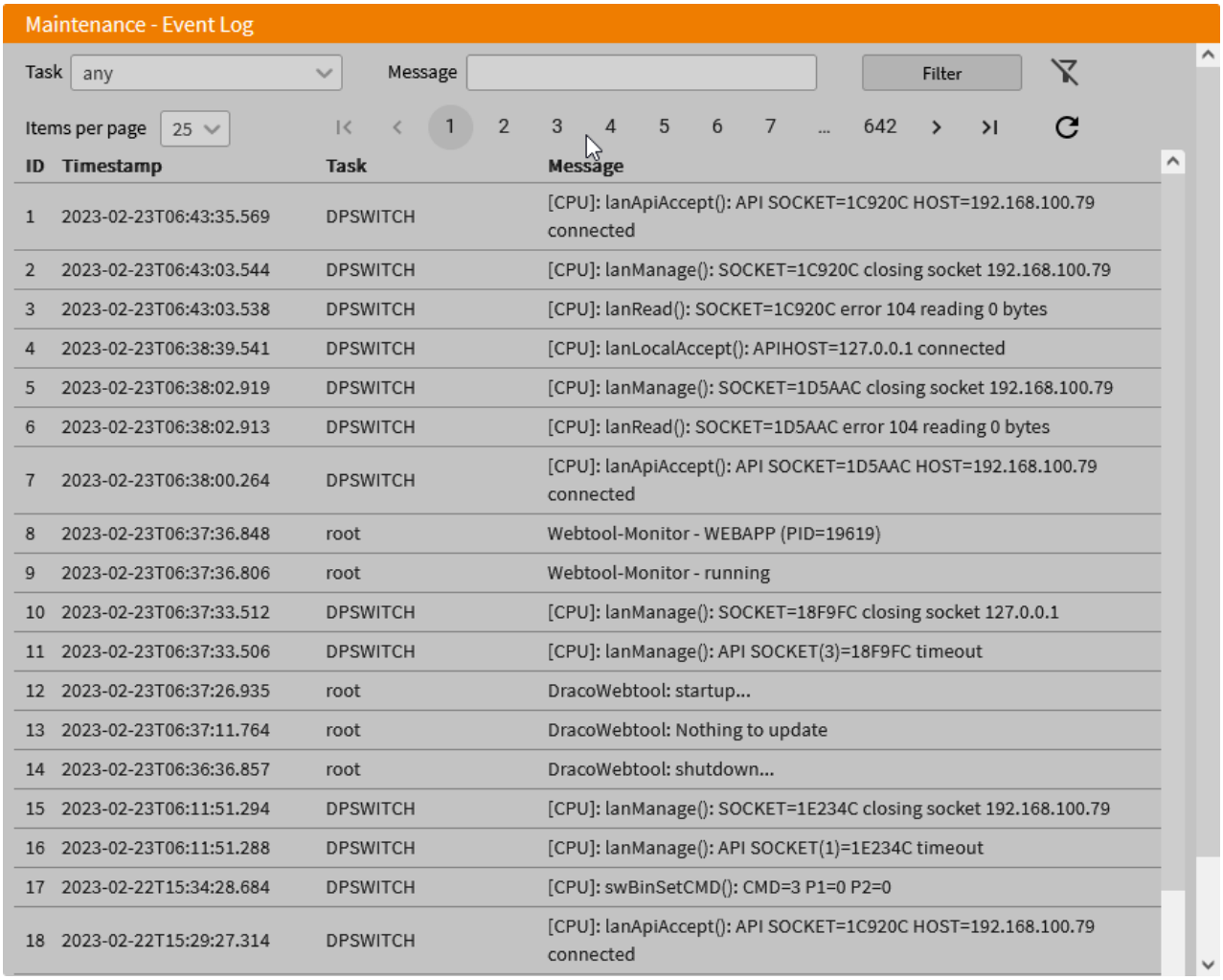


*Fig. 191 Web UI menu **Maintenance - Update Firmware - Firmware Status***

15.3.4 Querying the Event Log

All events are logged in this event log menu and can be filtered.



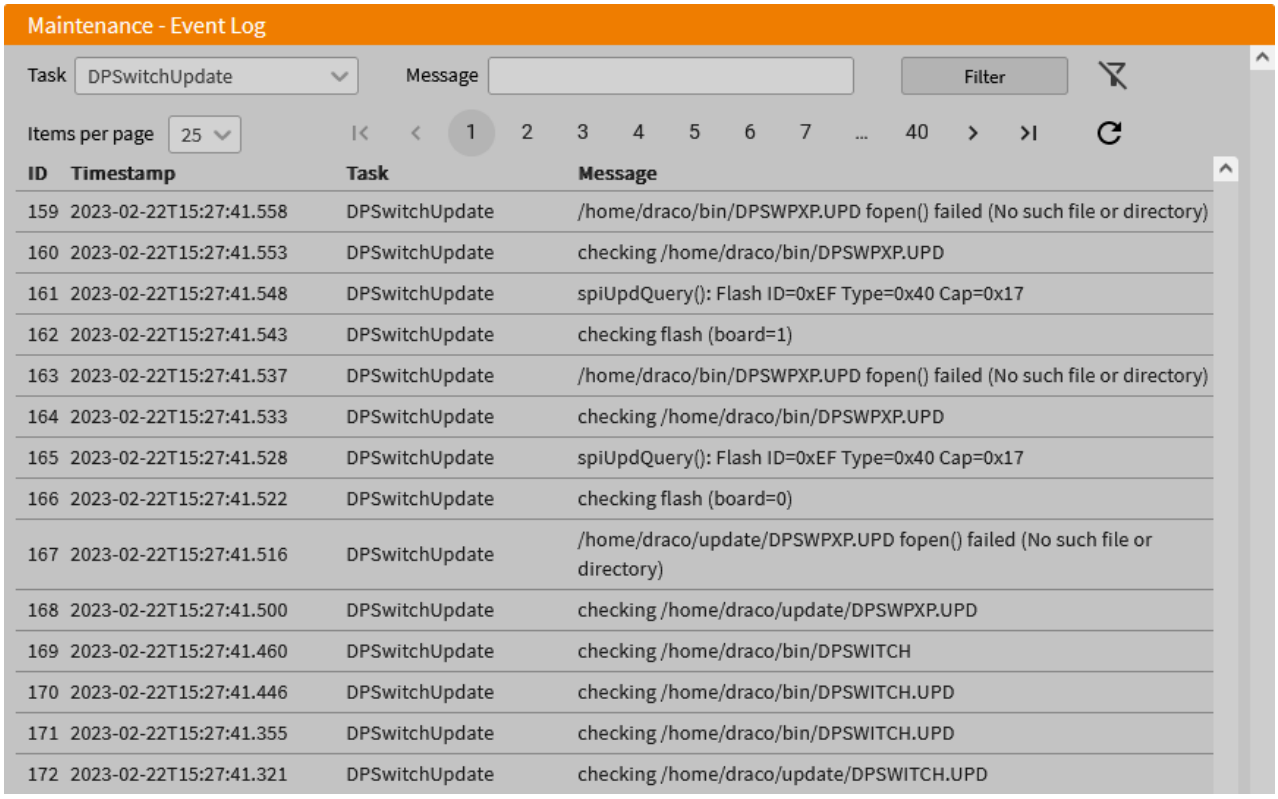
ID	Timestamp	Task	Message
1	2023-02-23T06:43:35.569	DPSWITCH	[CPU]: lanApiAccept(): API SOCKET=1C920C HOST=192.168.100.79 connected
2	2023-02-23T06:43:03.544	DPSWITCH	[CPU]: lanManage(): SOCKET=1C920C closing socket 192.168.100.79
3	2023-02-23T06:43:03.538	DPSWITCH	[CPU]: lanRead(): SOCKET=1C920C error 104 reading 0 bytes
4	2023-02-23T06:38:39.541	DPSWITCH	[CPU]: lanLocalAccept(): APIHOST=127.0.0.1 connected
5	2023-02-23T06:38:02.919	DPSWITCH	[CPU]: lanManage(): SOCKET=1D5AAC closing socket 192.168.100.79
6	2023-02-23T06:38:02.913	DPSWITCH	[CPU]: lanRead(): SOCKET=1D5AAC error 104 reading 0 bytes
7	2023-02-23T06:38:00.264	DPSWITCH	[CPU]: lanApiAccept(): API SOCKET=1D5AAC HOST=192.168.100.79 connected
8	2023-02-23T06:37:36.848	root	Webtool-Monitor - WEBAPP (PID=19619)
9	2023-02-23T06:37:36.806	root	Webtool-Monitor - running
10	2023-02-23T06:37:33.512	DPSWITCH	[CPU]: lanManage(): SOCKET=18F9FC closing socket 127.0.0.1
11	2023-02-23T06:37:33.506	DPSWITCH	[CPU]: lanManage(): API SOCKET(3)=18F9FC timeout
12	2023-02-23T06:37:26.935	root	DracoWebtool: startup...
13	2023-02-23T06:37:11.764	root	DracoWebtool: Nothing to update
14	2023-02-23T06:36:36.857	root	DracoWebtool: shutdown...
15	2023-02-23T06:11:51.294	DPSWITCH	[CPU]: lanManage(): SOCKET=1E234C closing socket 192.168.100.79
16	2023-02-23T06:11:51.288	DPSWITCH	[CPU]: lanManage(): API SOCKET(1)=1E234C timeout
17	2023-02-22T15:34:28.684	DPSWITCH	[CPU]: swBinSetCMD(): CMD=3 P1=0 P2=0
18	2023-02-22T15:29:27.314	DPSWITCH	[CPU]: lanApiAccept(): API SOCKET=1C920C HOST=192.168.100.79 connected

*Fig. 192 Web UI menu **Event Log***

➡ Click the reload button to get latest events.

To filter the event log, proceed as follows:

1. Select a task from the **Task** drop-down menu.
2. Click with the left mouse button in the **Message** entry.
3. Write the word or part of a word to be filtered.
4. Click **Filter**.
   The filter results are shown immediately.



ID	Timestamp	Task	Message
159	2023-02-22T15:27:41.558	DPSwitchUpdate	/home/draco/bin/DPSWPXP.UPD fopen() failed (No such file or directory)
160	2023-02-22T15:27:41.553	DPSwitchUpdate	checking /home/draco/bin/DPSWPXP.UPD
161	2023-02-22T15:27:41.548	DPSwitchUpdate	spiUpdQuery(): Flash ID=0xEF Type=0x40 Cap=0x17
162	2023-02-22T15:27:41.543	DPSwitchUpdate	checking flash (board=1)
163	2023-02-22T15:27:41.537	DPSwitchUpdate	/home/draco/bin/DPSWPXP.UPD fopen() failed (No such file or directory)
164	2023-02-22T15:27:41.533	DPSwitchUpdate	checking /home/draco/bin/DPSWPXP.UPD
165	2023-02-22T15:27:41.528	DPSwitchUpdate	spiUpdQuery(): Flash ID=0xEF Type=0x40 Cap=0x17
166	2023-02-22T15:27:41.522	DPSwitchUpdate	checking flash (board=0)
167	2023-02-22T15:27:41.516	DPSwitchUpdate	/home/draco/update/DPSWPXP.UPD fopen() failed (No such file or directory)
168	2023-02-22T15:27:41.500	DPSwitchUpdate	checking /home/draco/update/DPSWPXP.UPD
169	2023-02-22T15:27:41.460	DPSwitchUpdate	checking /home/draco/bin/DPSWITCH
170	2023-02-22T15:27:41.446	DPSwitchUpdate	checking /home/draco/bin/DPSWITCH.UPD
171	2023-02-22T15:27:41.355	DPSwitchUpdate	checking /home/draco/bin/DPSWITCH.UPD
172	2023-02-22T15:27:41.321	DPSwitchUpdate	checking /home/draco/update/DPSWITCH.UPD

*Fig. 193 Web UI menu **Filtered Event Log***

To delete the filter from the event log, proceed as follows:

➡ Delete the text in the filter entry field and click **Filter** or click .
The table shows the complete content.

15.3.5 Querying the Syslog and SNMP Monitoring

Extended functions for Syslog and SNMP monitoring are available using the management software. For more information, please refer to the Draco tera user manual.

15.4 Updating the Firmware

The firmware of the Draco MV can be updated in this menu, except for the HUSWMSD firmware type that has to be updated via Mini-USB service port if necessary.

NOTICE
To process successful firmware updates and avoid failures: ➡ Only use computers to update the Draco MV that are not integrated into the Draco MV setup. ➡ Ensure that the computer used for the update is not set into standby mode or sleep mode during the update. ➡ Save your configuration locally before starting the update. ➡ Proceed an update via direct LAN connection for reasons of network stability.

An update of the HUSWMSD firmware is usually not necessary. In rare cases, an update may only be necessary to expand the functionality for specific requirements. In this case, please contact the manufacturer's technical support in advance.

If required, the update files can be requested from the manufacturer's technical support

Preparation

If the syslog function has not been set yet, we recommend activating the syslog function (see chapter 8.2.3, page 108) before updating the firmware to log the update in case of update errors.

Update

To update the firmware of the Draco MV, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Update Firmware** in the task area.
3. Click **Browse** to select the required firmware file `*.mfw` for the update.

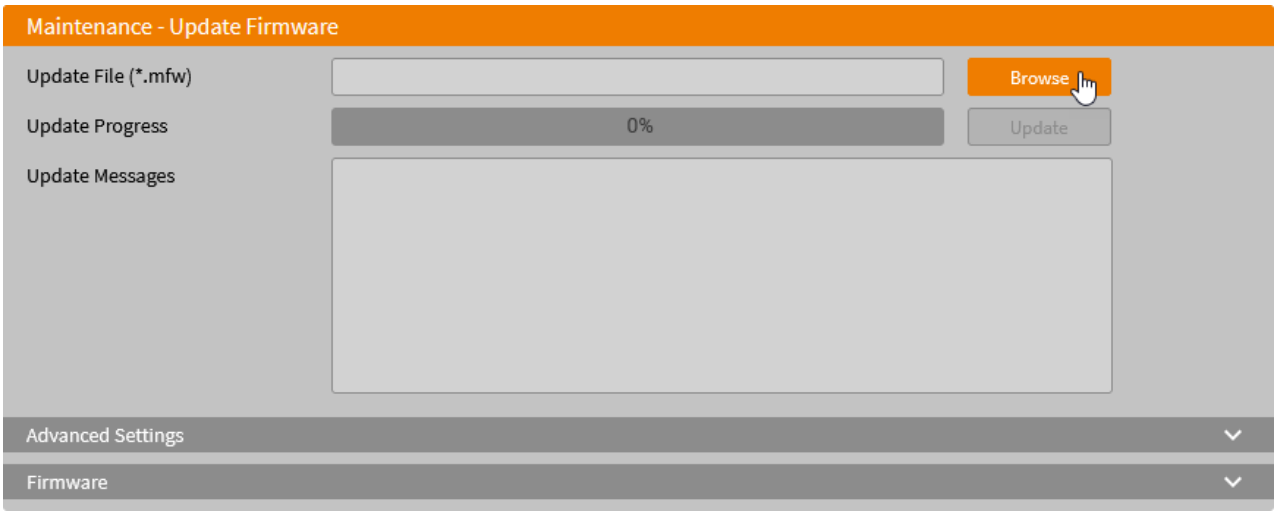


*Fig. 194 Web UI menu **Maintenance - Update Firmware - Browse***

4. In the following dialog, go to the location of the saved `.mfw` file, select the desired `.mfw` file and click **Open**.

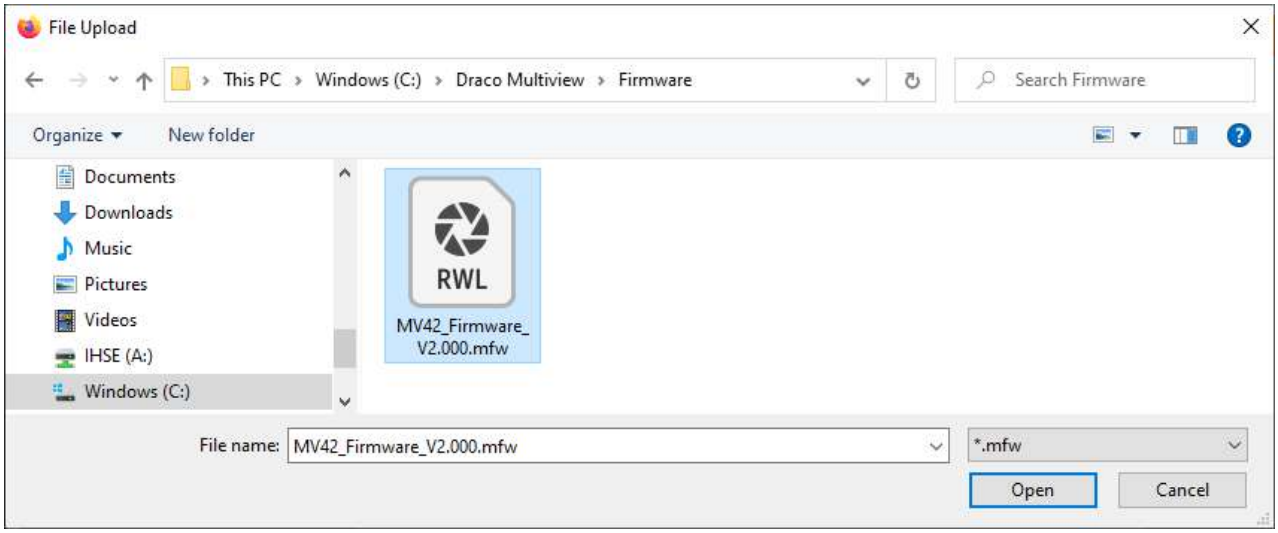


*Fig. 195 Web UI dialog **Maintenance - Update Firmware - Open firmware file***

5. Click **Update** to start the update.

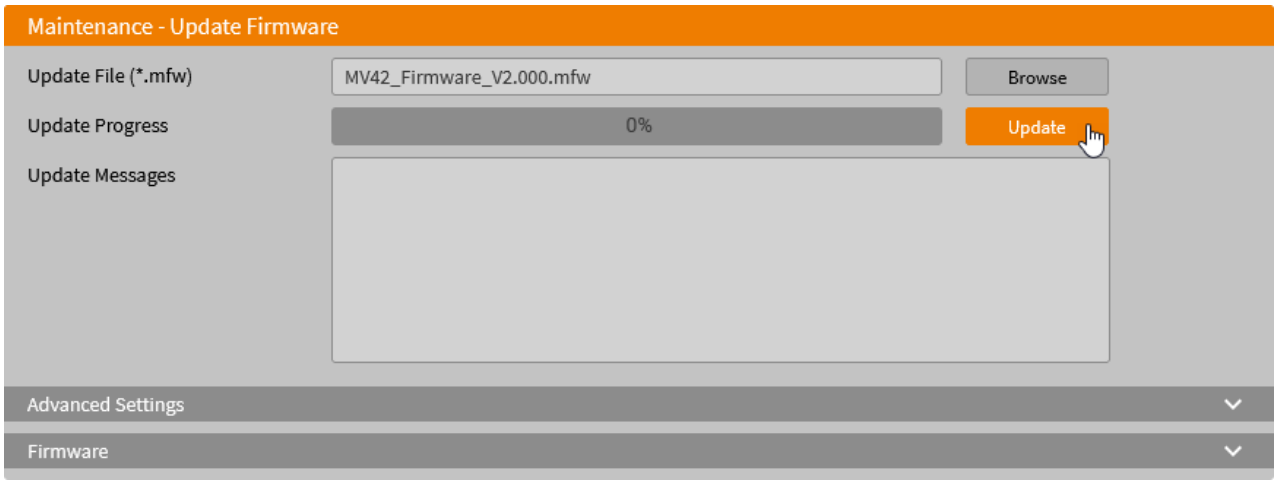


*Fig. 196 Web UI menu **Maintenance - Update Firmware - Update firmware***

A query to confirm the firmware update appears.

6. Click **Yes** to confirm the firmware update.

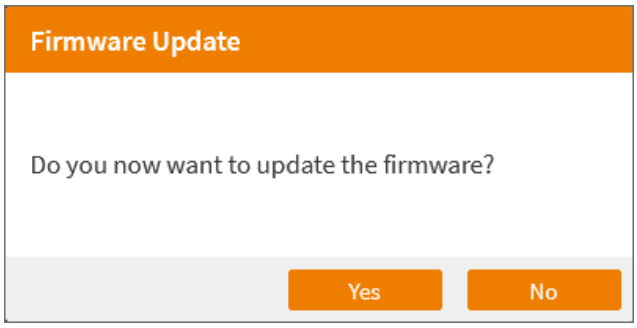


*Fig. 197 Web UI dialog **Maintenance - Firmware Update***

A query to save the status before updating the firmware appears.

7. Click **Save Device Status** to save the device status locally or click **Skip** if the status has been already saved.

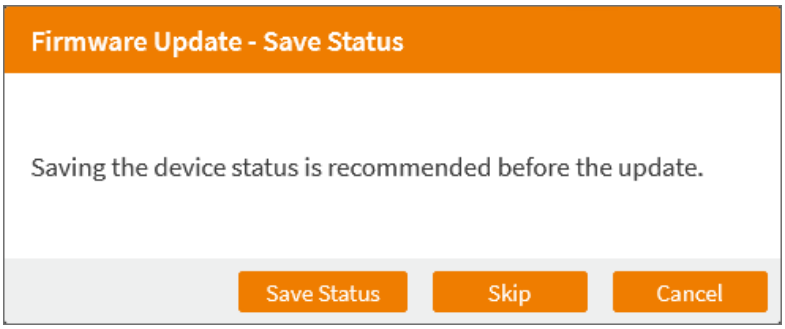
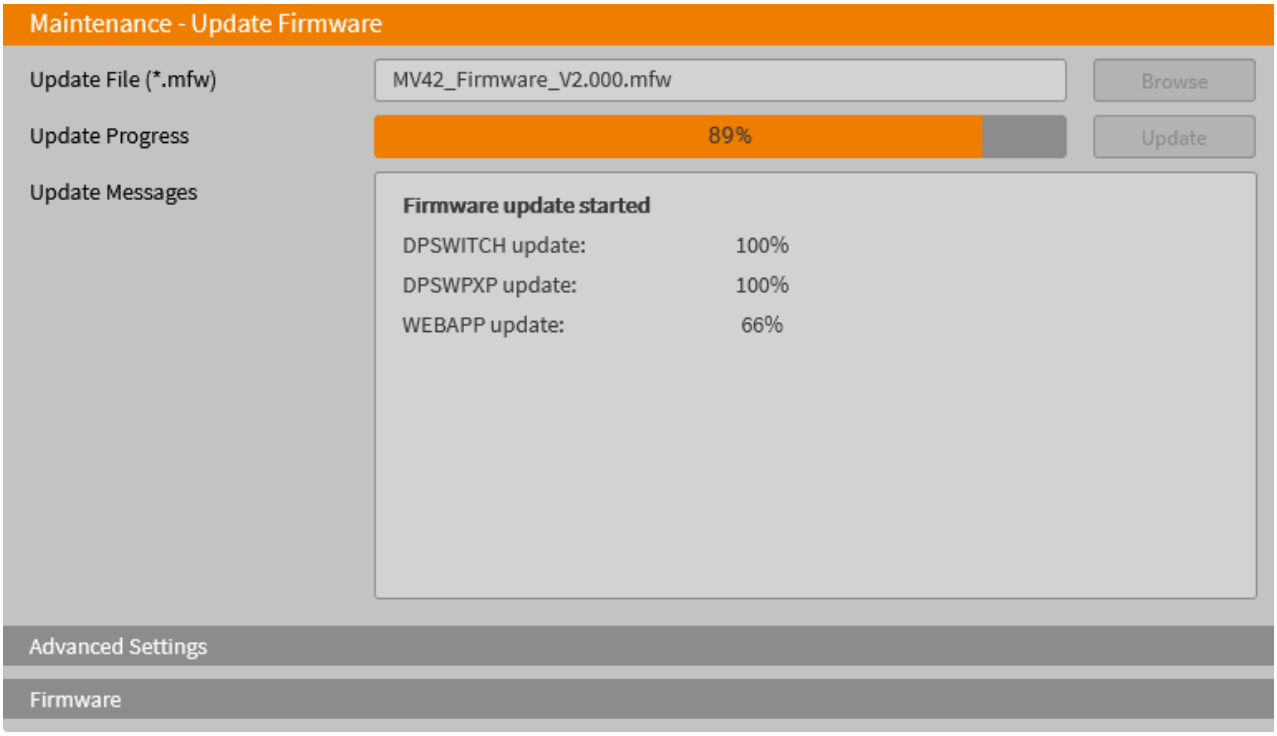


*Fig. 198 Web UI dialog **Maintenance - Firmware Update - Save Status***

8. The progress of the update is displayed in the working area.



After a successful update, a query to restart the device appears, if required.

9. Click **Yes** to restart the device.

The current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be restarted. Restarting the device might take several minutes, and the device is not available during the restart.

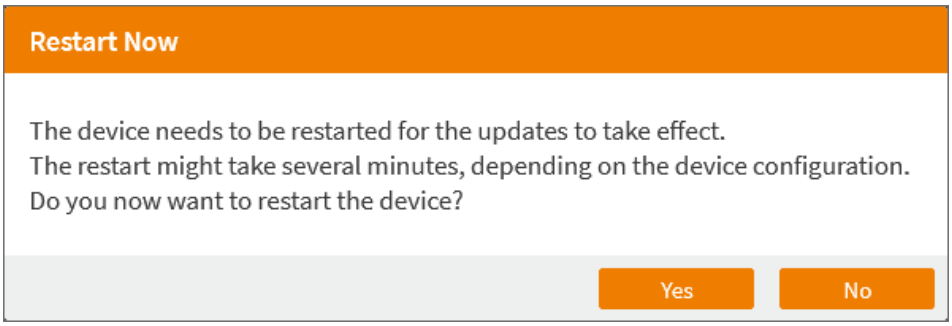


*Fig. 199 Web UI dialog **Maintenance - Firmware Update - Restart***

A message about the restart process appears.

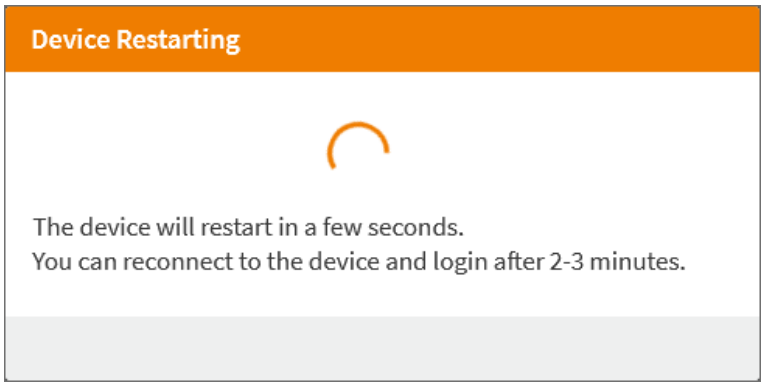


*Fig. 200 Web UI message **Maintenance - Advanced Service - Restart - Restart in progress***

A message to reload the page appears.

10. Click **Reload Page**.

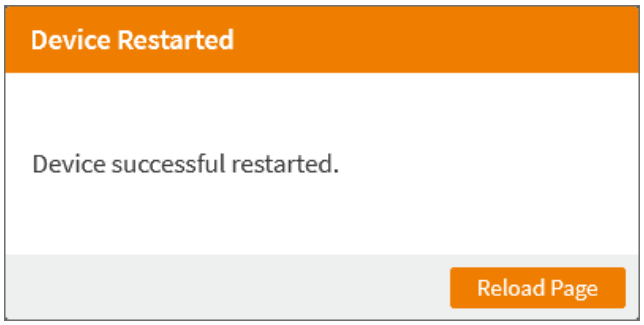


*Fig. 201 Web UI message **Maintenance - Advanced Service - Restart - Restart successful***

The **Login** page is displayed.

After the login, the updated firmware can be displayed in the **Firmware** section in the working area.

15.5 Advanced Service

NOTICE

By default, the last configuration that has been saved in the permanent Draco MV memory will be restored after a restart of the Draco MV.

First starting the Draco MV, the factory configuration will be copied into the current configuration. You have the following possibilities to save configuration changes to the Draco MV:

- Saving the current configuration permanently into the Draco MV memory (**Remote Save**, see chapter 15.5.1, page 196).
- Saving the configuration into a local memory (**Download**, see chapter 15.6.2, page 203) and restore the configuration (**Upload**, see chapter 15.5.2, page 197).
- Restart the Draco MV (**Restart**, see chapter 15.5.2, page 197).
- Shut down the Draco MV (**Shut down**, see chapter 15.5.3, page 199).

15.5.1 Saving the Current Configuration to the Draco MV

By default, the last configuration that has been saved in this way will be restored after a restart of the Draco MV.

To save the current configuration permanently in the Draco MV memory, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Advanced Service** in the task area to display the **Advanced Service** options.

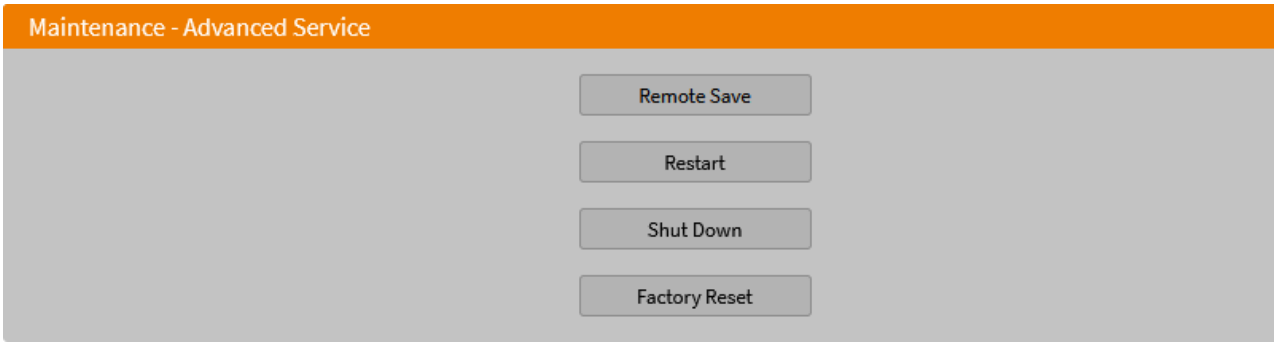


*Fig. 202 Web UI menu **Maintenance - Advanced Service***

3. Click **Remote Save**.
   A query to save the configuration appears.

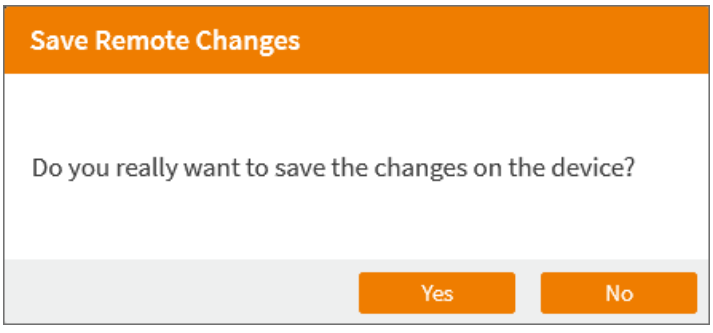


*Fig. 203 Web UI dialog **Maintenance - Advanced Service - Save Remote Changes***

4. Click **Yes** to confirm the saving.
   The previously active configuration is overwritten and saved in the permanent memory of the Draco MV.

15.5.2 Restarting the Draco MV

NOTICE
When restarting the Draco MV, the current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be restarted with the active configuration.

To perform a restart of the Draco MV, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Advanced Service** in the task area to display the **Advanced Service** options.
3. Click **Restart**.

*Fig. 204 Web UI menu **Maintenance - Advanced Service***

A query to restart the Draco MV.

4. Click **Yes** to restart the Draco MV.

   The current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be restarted. Restarting the device might take several minutes, and the device is not available during the restart.

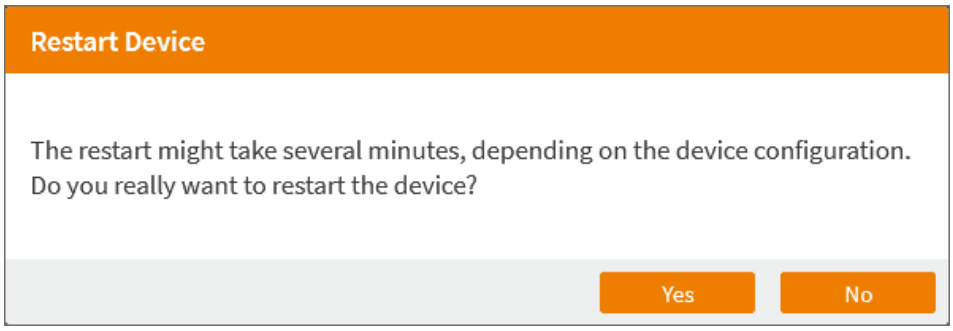


*Fig. 205 Web UI dialog **Maintenance - Advanced Service - Restart - Restart Device Message***

A message about the restart process appears.

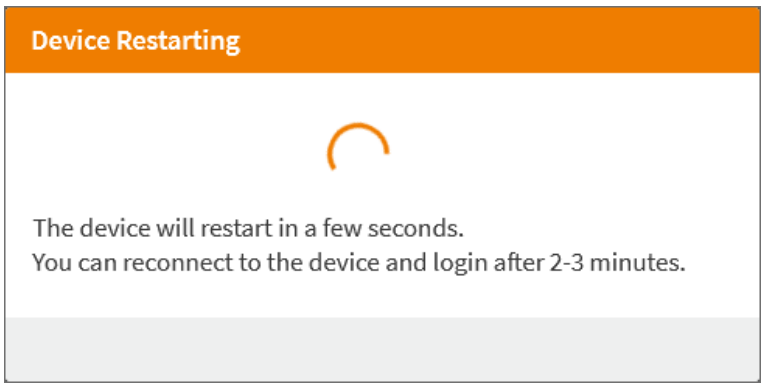


*Fig. 206 Web UI dialog **Maintenance - Advanced Service - Restart - Restart in progress***

A message to reload the page appears.

5. Click **Reload Page**.

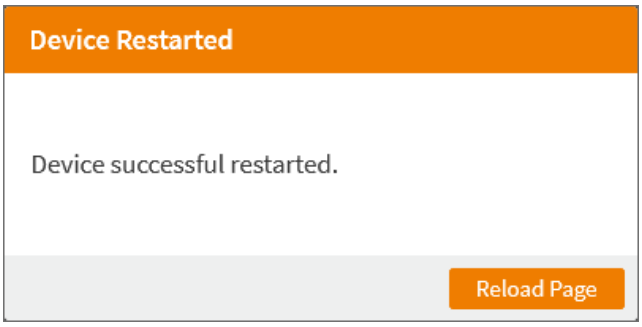


*Fig. 207 Web UI message **Maintenance - Advanced Service - Restart - Restart successful***

The **Login** page is displayed.

15.5.3 Powering Down the Draco MV

NOTICE
After shutting down, the Draco MV can be disconnected from the power supply voltage.

To shut down the Draco MV, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Advanced Service** in the task area to display the **Advanced Service** options.
3. Click **Shut Down**.

*Fig. 208 Web UI menu **Maintenance - Advanced Service***

A query to shut down the Draco MV appears.

4. Click **Yes** to start the shutdown.

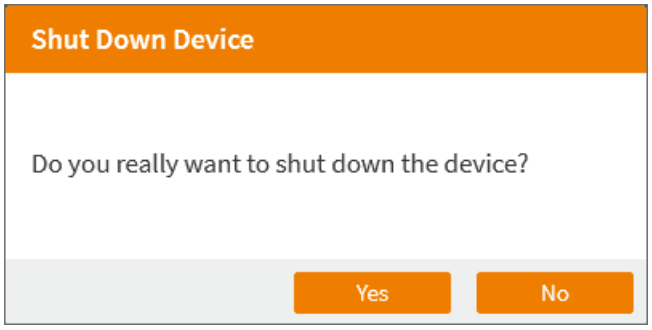


*Fig. 209 Web UI dialog **Maintenance - Advanced Service - Shut Down - Message***

The current configuration is saved in the permanent memory of the Draco MV and the Draco MV will be shut down. After shutting down, a notification appears to power off the Draco MV after 30 seconds.

5. Close the browser tab.

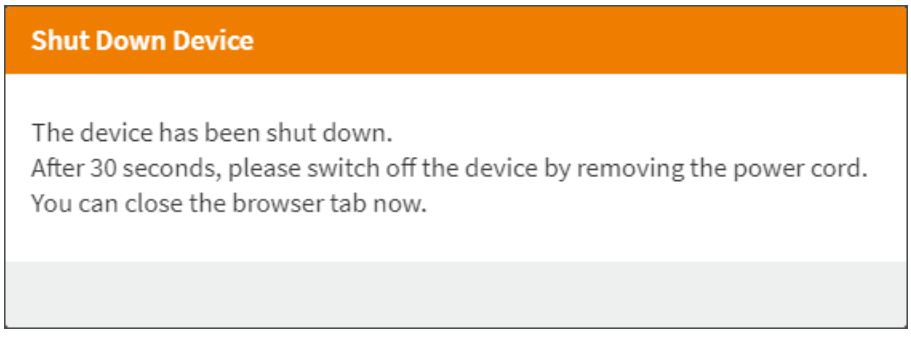


*Fig. 210 Web UI message **Maintenance - Advanced Service - Switch off device***

15.5.4 Resetting the Draco MV to the Factory Settings

NOTICE

If you perform a (factory) reset, all current settings and all configurations stored in the Draco MV will be lost. This also applies to the network parameters (reset to default IP-address) and the admin password.

NOTICE

If a firmware update has been carried out since the delivery, the latest installed firmware version is retained.

To perform a reset of the Draco MV, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Advanced Service** in the task area.
3. Click **Factory Reset** to reset the device to the factory settings.

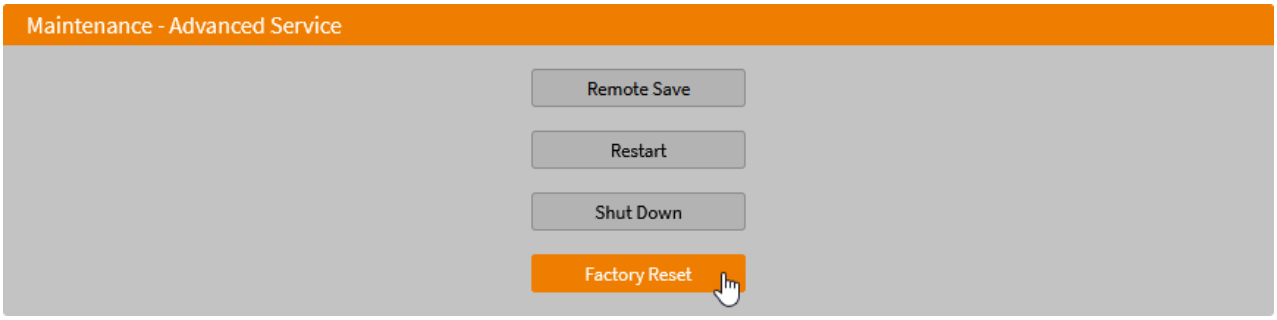


*Fig. 211 Web UI menu **Maintenance - Advanced Service - Factory Reset***

A query to reset the device appears.

4. Click **Yes** to reset the device.

   Resetting the device to the factory settings might take several minutes, and the device is not available during the factory reset.

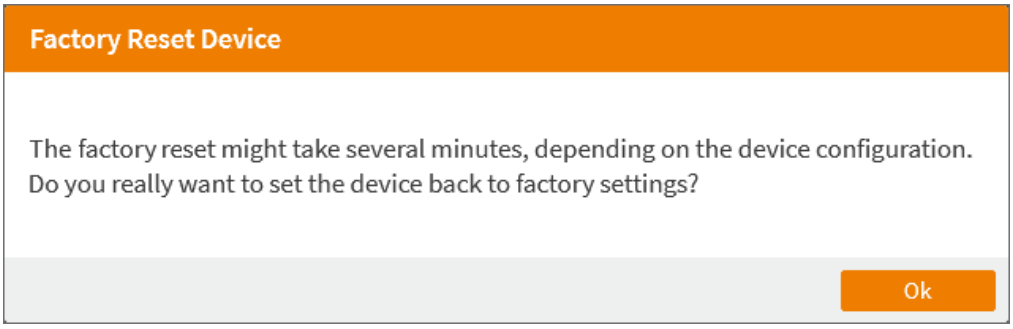


*Fig. 212 Web UI dialog **Maintenance - Advanced Service - Factory Reset***

The Draco MV is reset to factory settings, DHCP is deactivated, and the device is restarted.

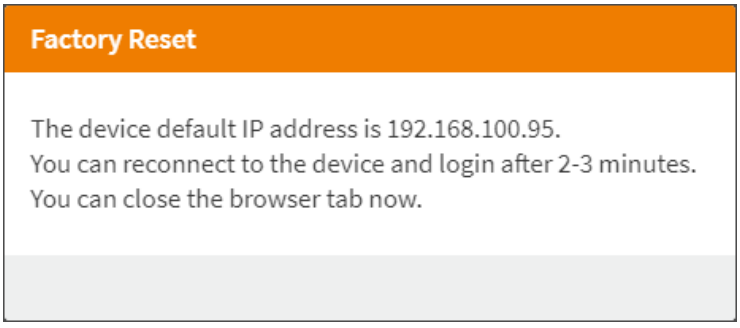


*Fig. 213 Web UI dialog **Maintenance - Advanced Service - Factory Reset - IP address***

5. Close the browser tab and re-login to the device after 2-3 minutes by entering the default IP address in the browser.

15.6 Saving and Restoring Configurations

15.6.1 Restoring locally saved Configuration

To restore the locally saved device settings to the Draco VM, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Backup/Restore** in the task area to display the **Backup/Restore** menu.
3. Click **Browse**.

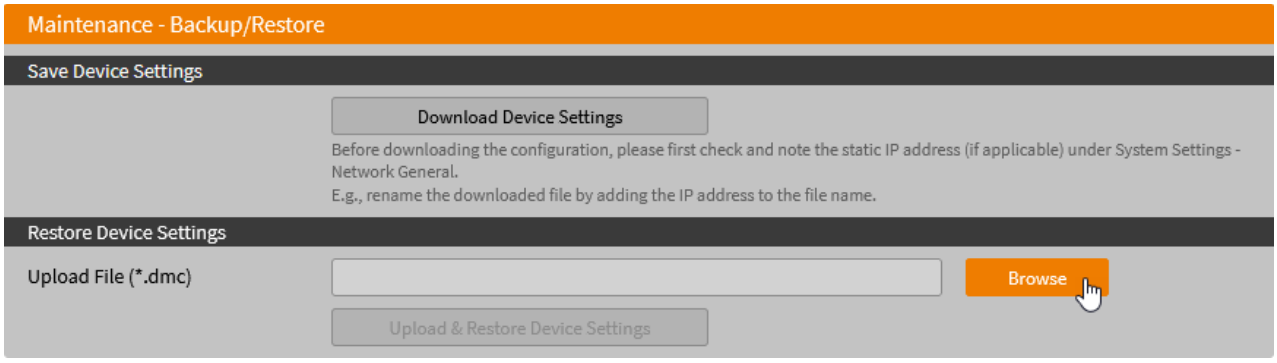


*Fig. 214 Web UI menu **Maintenance - Backup/Restore - Browse***

4. In the following dialog, go to the location of the saved `.dmc` file, select the desired `.dmc` file and click **Open**.

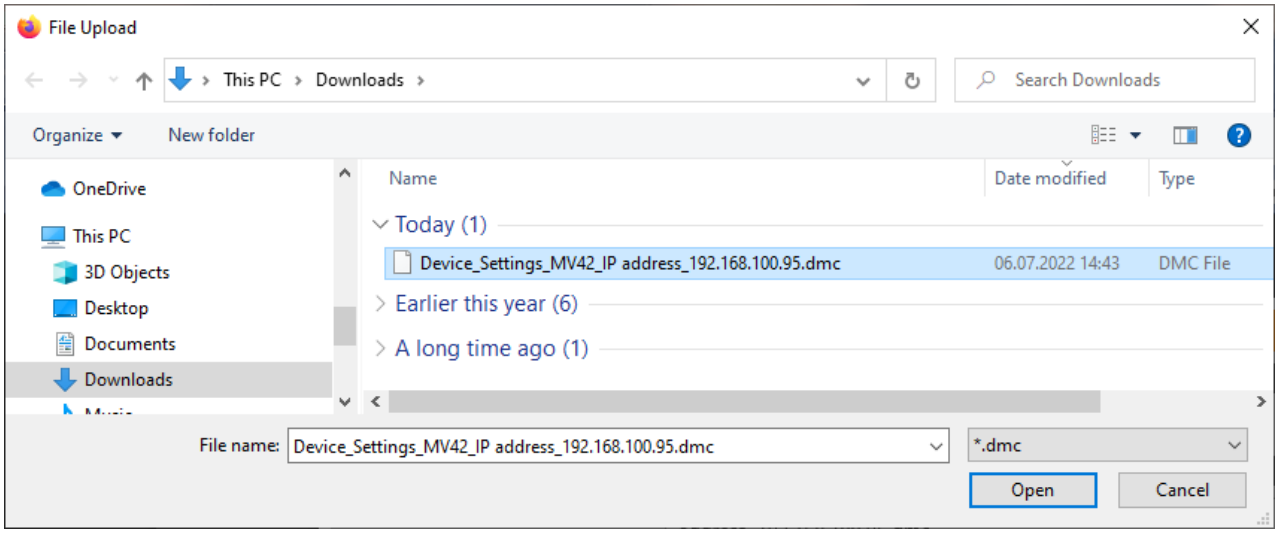


*Fig. 215 Web UI dialog **Maintenance - Backup/Restore - Open downloaded device settings***

5. Click **Upload & Restore Device Settings**.

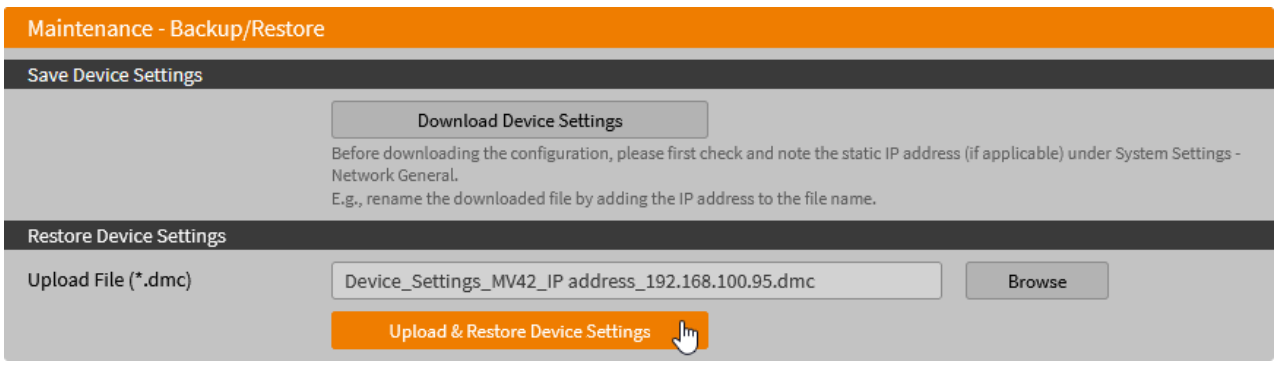


*Fig. 216 Web UI menu **Maintenance - Backup/Restore - Upload downloaded device settings***

A query to start the upload process appears.

6. Click **Yes** to start the upload process and to restore the device.

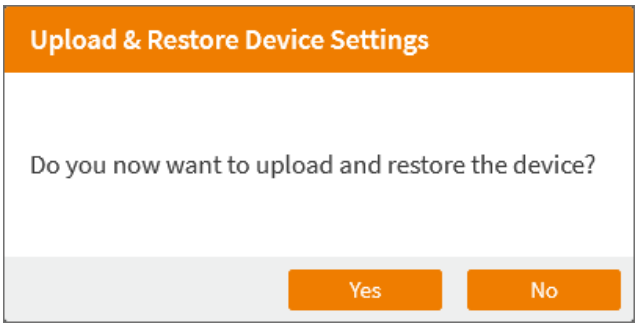


*Fig. 217 Web UI dialog **Maintenance - Backup/Restore - Upload Message***

The upload process has been started and a message appears.

7. Click **Ok** to start the restart process.

The device has been restarted with the uploaded configuration and a message appears.

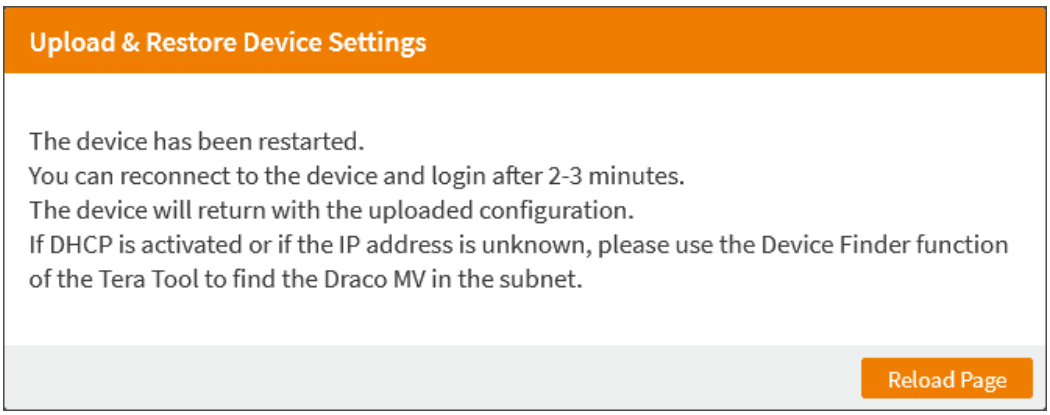


*Fig. 218 Web UI message **Maintenance - Backup/Restore - Upload Message***

8. Reload the page after 2-3 minutes to reconnect to the device.

The **Login** page is displayed.

If the IP address of the uploaded configuration is unknown or DHCP is activated, please use the **Device Finder** function of the management software to find the Draco MV in the subnet.

15.6.2 Downloading Configuration locally

Device settings can be saved as a file that can be stored independently from the Draco MV. Locally saved device settings files can be uploaded to the Draco MV (see chapter 15.5.2, page 197). The following device settings contained in the Draco MV configuration at the time of saving are saved to a file with the extension `.dmc`:

- System settings (system, network, date & time, display options, inputs, outputs, windows, custom layouts)
- User Settings (name, password, individual layouts)
- Status (display mode, switching status)

☑ Before downloading the configuration, please first check and note the static IP address (if applicable) under System Settings - Network General.
➡ E.g., rename the downloaded file by adding the IP address to the file name.

To save the device settings locally, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Backup/Restore** in the task area to display the **Backup/Restore** menu.
3. Click **Download Device Settings**.

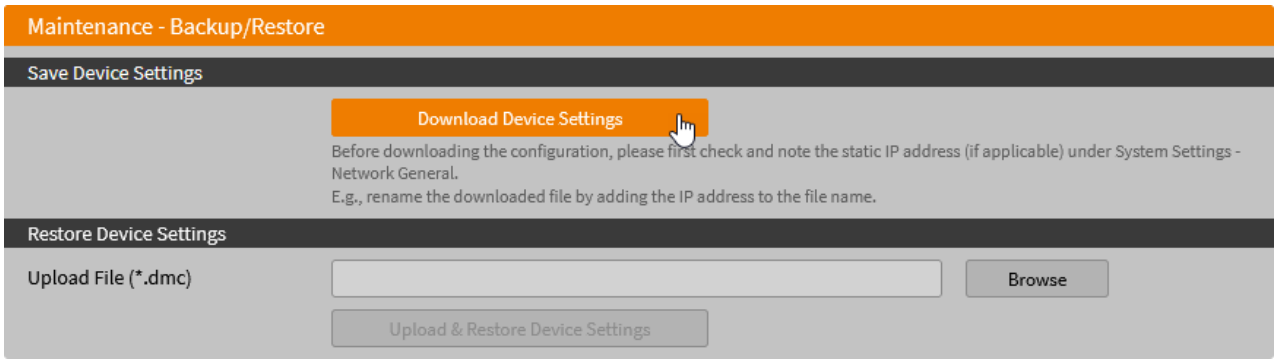


*Fig. 219 Web UI menu **Maintenance - Backup/Restore - Download Device Settings***

4. In the following dialog, click **Save File** and **OK**.

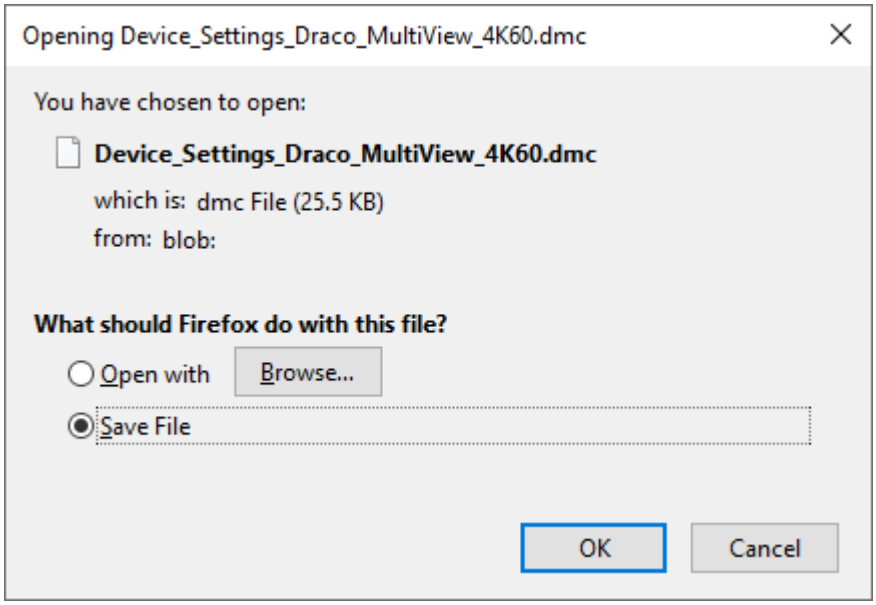


*Fig. 220 Web UI dialog **Maintenance - Backup/Restore - Save .zip file***

The `.dmc` file is stored in the default download folder of the browser.

15.7 Saving a Status

When a status is saved, the following information contained in the Draco MV configuration at the time of saving is saved to a `.zip` file:

- Status & updates (product type, current firmware, device status, log files)
- System settings (system, network, date & time, display options, inputs, outputs, windows, custom layouts)
- User Settings (name, password, individual layouts)
- Status (current display mode, connected ports, switching status)

To save a status, proceed as follows:

1. Click **Maintenance** in the toolbar.
2. Click **Save Status** in the task area to display the **Save Status** menu.
3. Tick the **Anonymize** checkbox to anonymize your personal data when saving the status file if necessary (not recommended for trouble shooting).
   If you want to use the status file as a backup, do not tick the **Anonymize** checkbox.
4. Click **Save Status** to read out the overall status of the Draco MV and store it locally (file extension **.zip**).

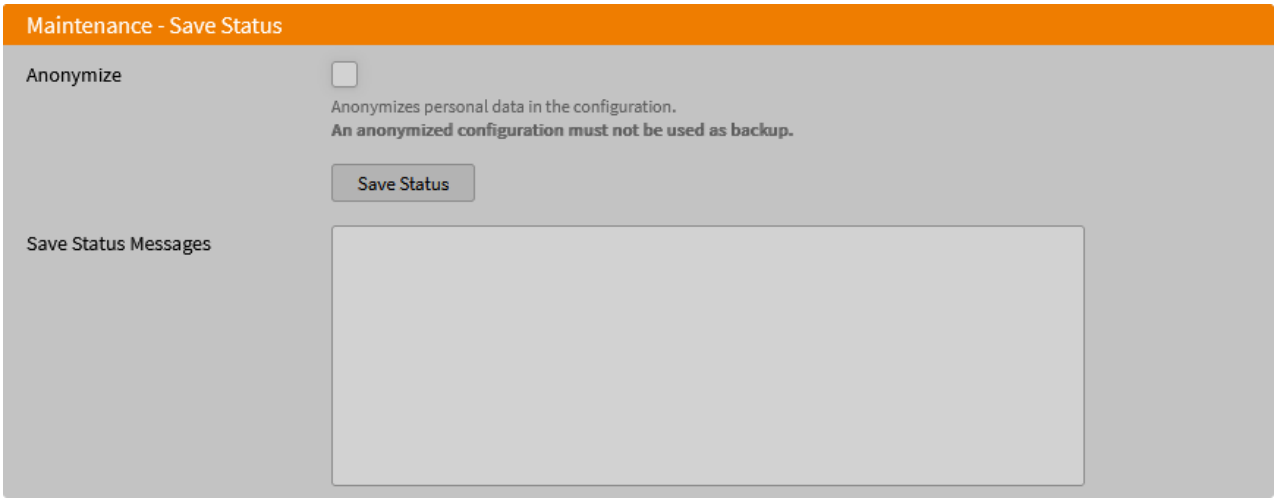


*Fig. 221 Web UI menu **Maintenance - Save Status***

5. Wait until all steps show green checkmarks and the **Saving status successful** message is displayed.

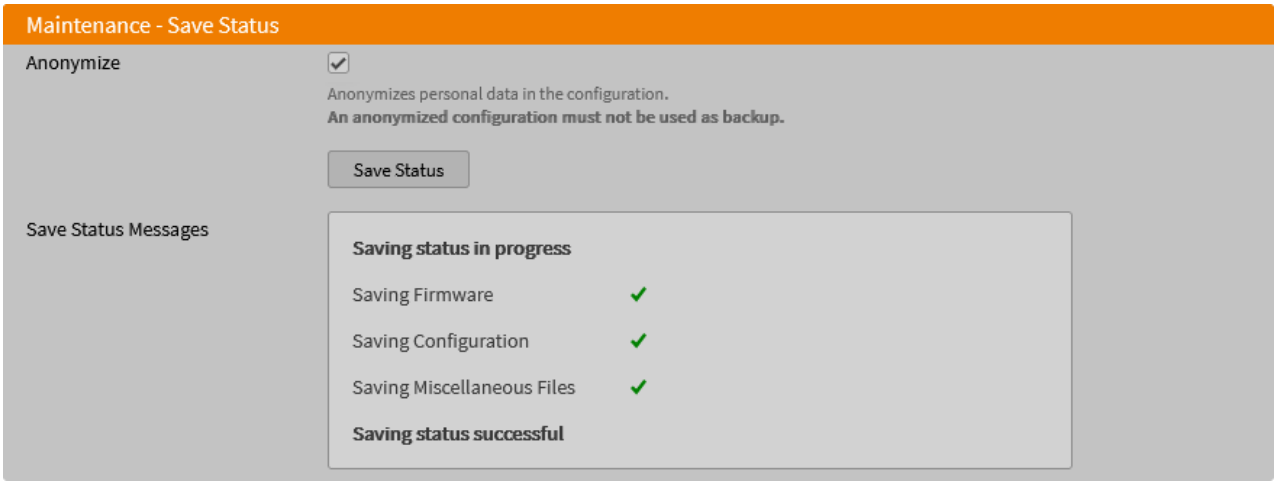


*Fig. 222 Web UI menu **Maintenance - Save Status - Saving successful***

After the read-out process has been successfully finished, a dialog appears.

6. In the following dialog, click **Save File** and **OK**.

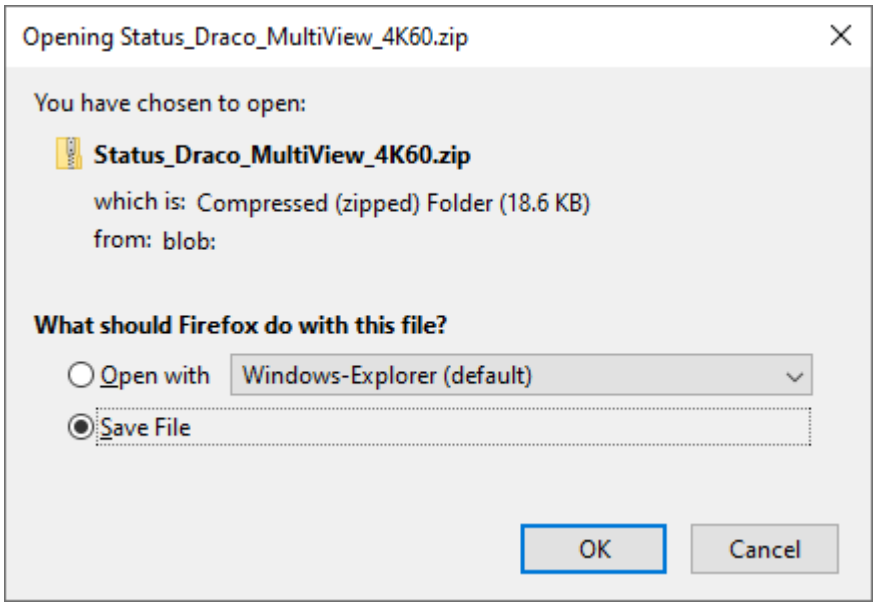


*Fig. 223 Web UI dialog **Save Status - Choose Directory***

The `.zip` file is stored in the default download folder of the browser.

15.8 Managing TLS Certificate

15.8.1 Uploading and Installing a TLS Certificate

The Draco MV uses TLSv1.2 for any encrypted network traffic between itself and a connected client. When establishing a connection, the Draco MV has to identify itself to a client using a cryptographic certificate. The Draco MV contains a default certificate that you should replace with your own.

When upgrading firmware, the active certificate is not replaced.

The upload and installation of certificates and deletion of installed certificates is done in this menu.

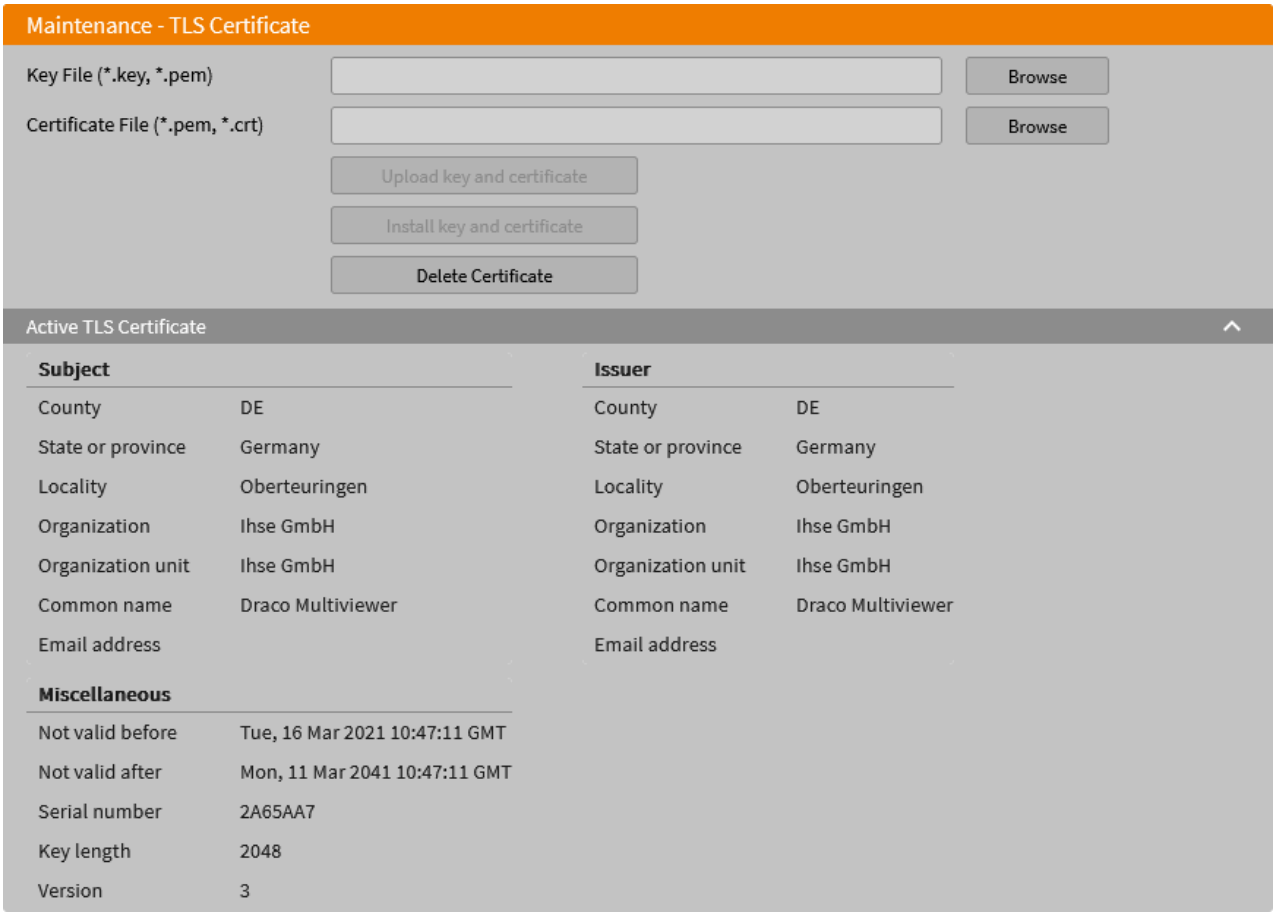


*Fig. 224 Web UI menu **Maintenance - TLS Certificate***

To upload and install a certificate, proceed as follows:

1. Click **Maintenance > TLS Certificate** in the toolbar.
   The active TLS certificate is displayed in the menu (see upper figure).
2. Click **Browse** in the first line to select the key file (*.key or *.pem).

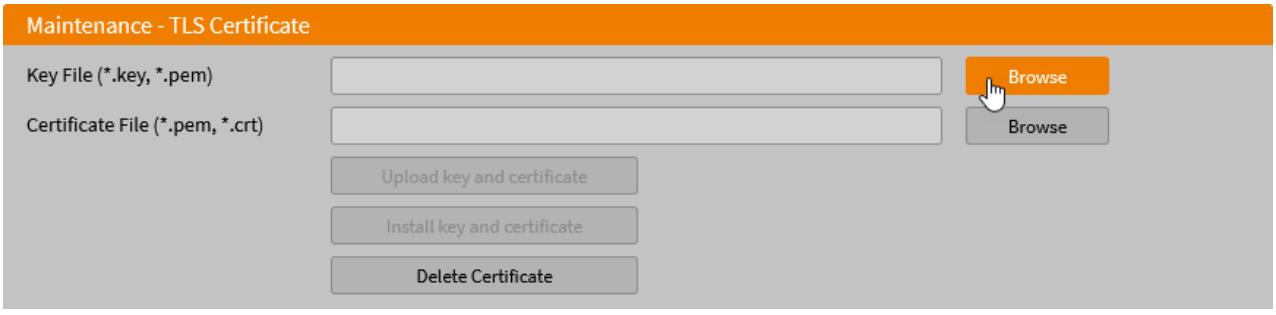


*Fig. 225 Web UI menu **Maintenance - TLS Certificate - Browse key file***

3. In the following dialog, go to the location of the saved key files, select the desired key file, and click **Open**.

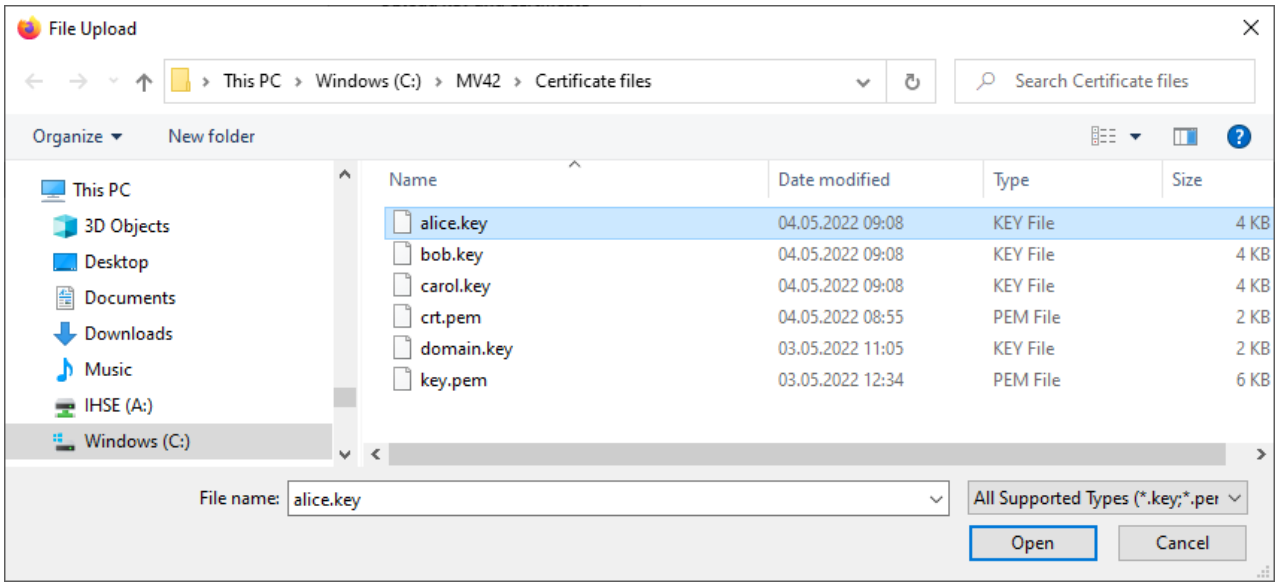


*Fig. 226 Web UI dialog **Maintenance - TLS Certificate - Browse - Select key file***

The selected key file is displayed in the **Certificate File** field.

4. Click **Browse** in the second line to select the certificate file (*.pem or *.crt).

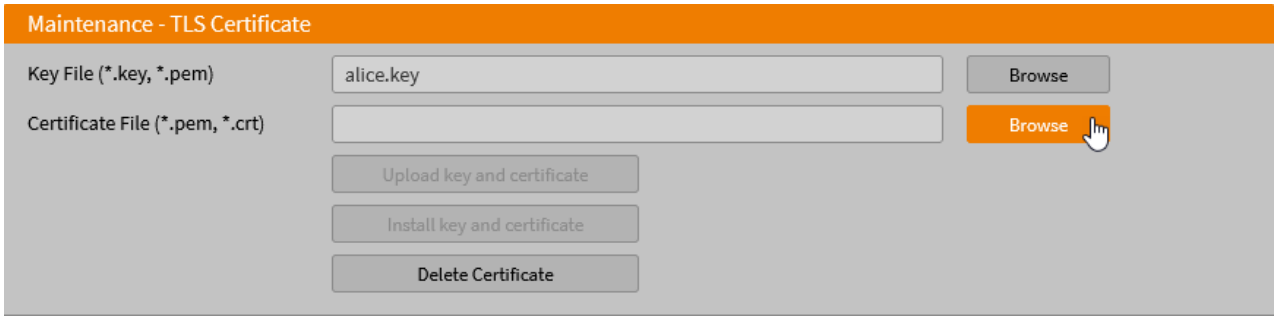


*Fig. 227 Web UI message **Maintenance - TLS Certificate - Browse certificate file***

5. In the following dialog, go to the location of the saved certificate files, select the desired certificate file, and click **Open**.

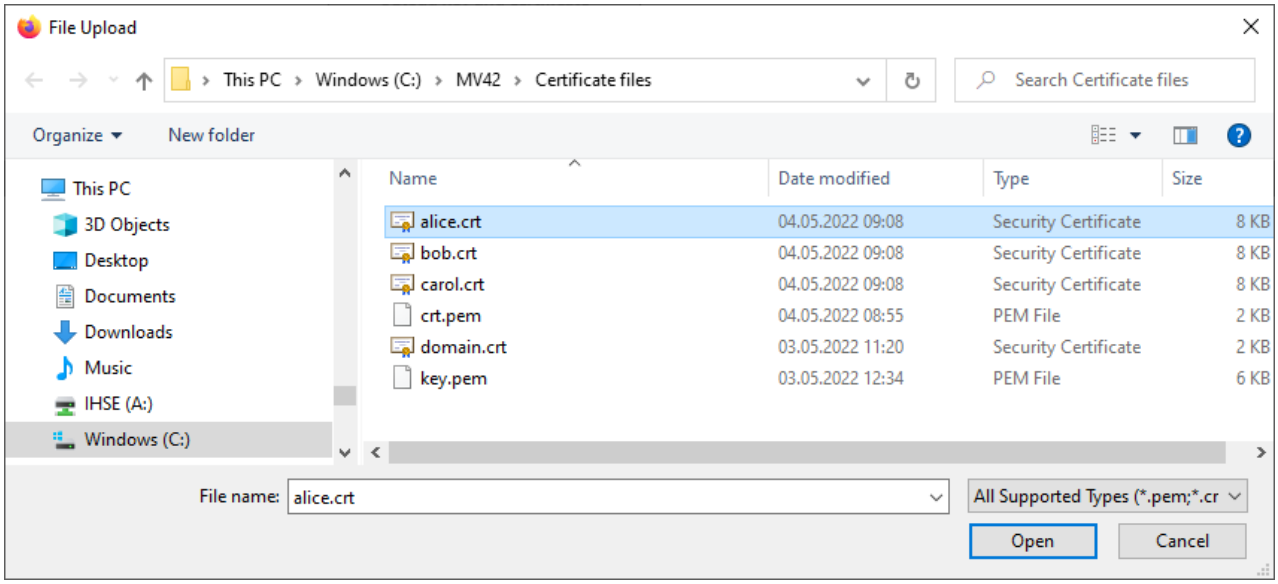


*Fig. 228 Web UI dialog **Maintenance - TLS Certificate - Browse - Select certificate file***

The selected certificate file is displayed in the **Certificate File** field.

6. Click **Update key and certificate** to start the update.

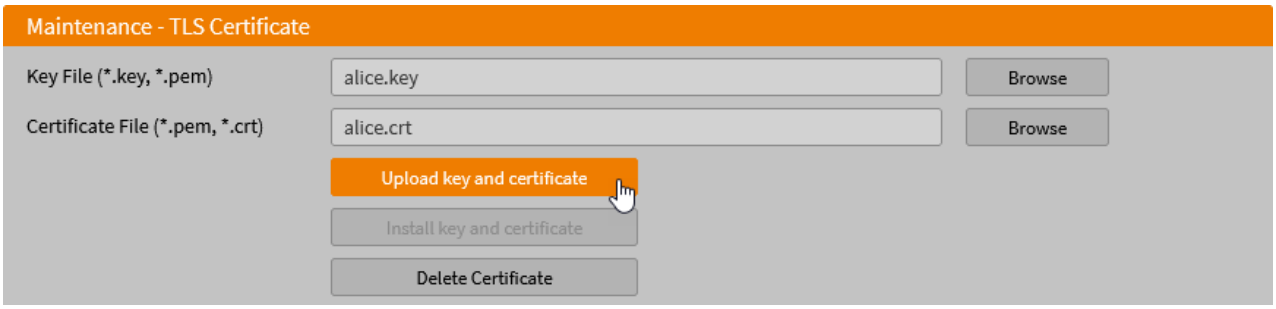


*Fig. 229 Web UI menu **Maintenance - TLS Certificate - Upload key and certificate***

A message appears and confirms the successful upload process.

7. Click **Ok**.

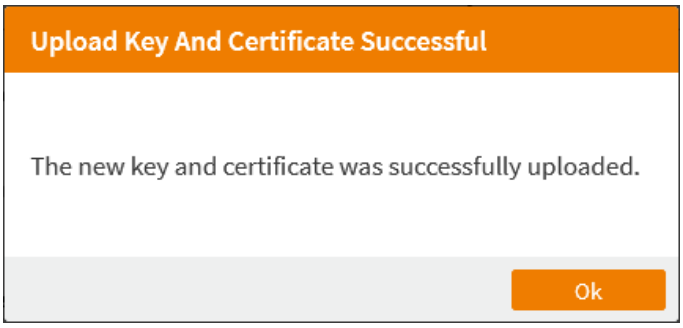


*Fig. 230 Web U message **Maintenance - TLS Certificate - Upload successful***

8. Click **Install key and certificate** to start the installation.

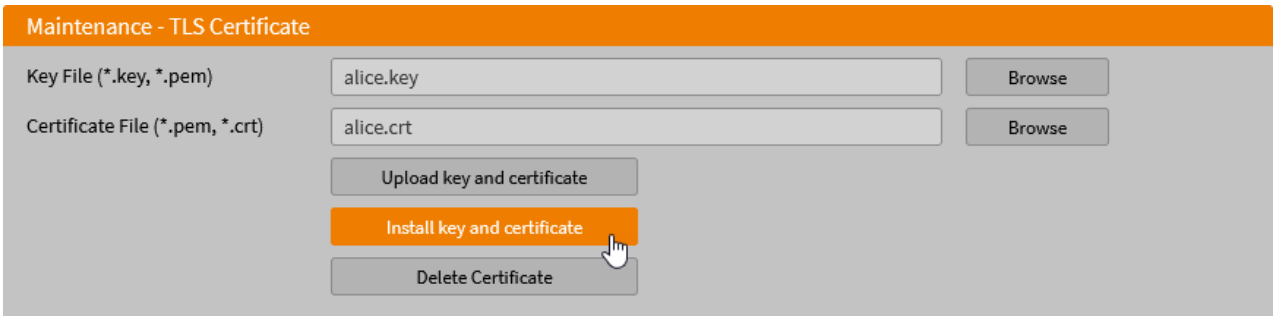


*Fig. 231 Web UI menu **Maintenance - TLS Certificate - Install key and certificate***

A dialog appears, informing about successful key and certificate installation. The current configuration is saved in the permanent memory of the Draco MV and the Draco MV needs to be restarted. Restarting the Draco MV might take several minutes, and the Draco MV is not available during the restart.

9. Click **Yes** to restart the Draco MV.

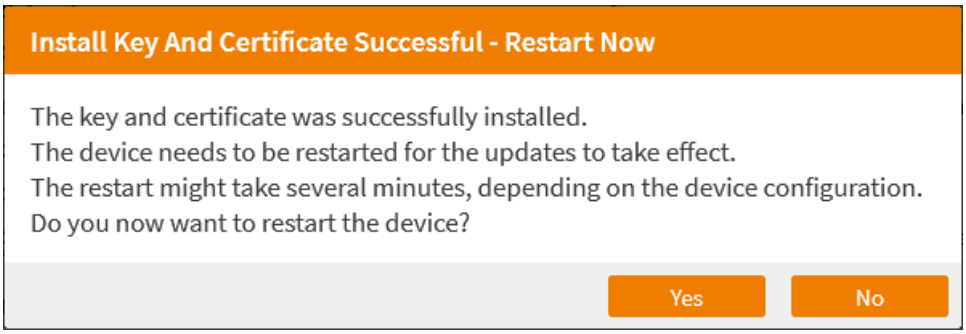


*Fig. 232 Web UI dialog **Maintenance - TLS Certificate - Install key and certificate***

A message informs about the restart process.

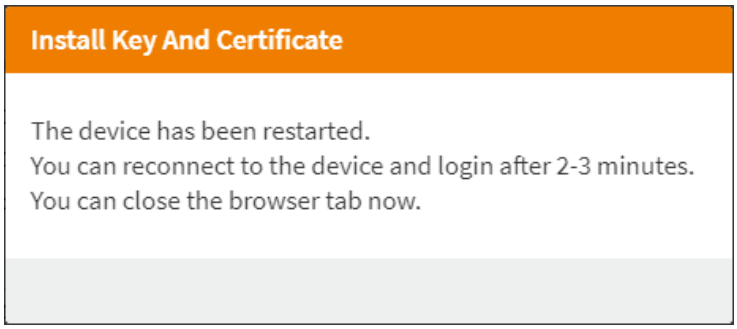


*Fig. 233 Web UI dialog **Maintenance - TLS Certificate - Install key and certificate - Restart in progress***

10. Close the browser tab and re-login to the device after 2-3 minutes.

    After the login, the installed certificate can be displayed in the **Maintenance > TLS Certificate** menu.

15.8.2 Deleting a TLS Certificate

To upload and install a certificate, proceed as follows:

1. Click **Maintenance > TLS Certificate** in the toolbar.

   The active TLS certificate is displayed in the menu.

2. Click **Delete Certificate** to delete the certificate.

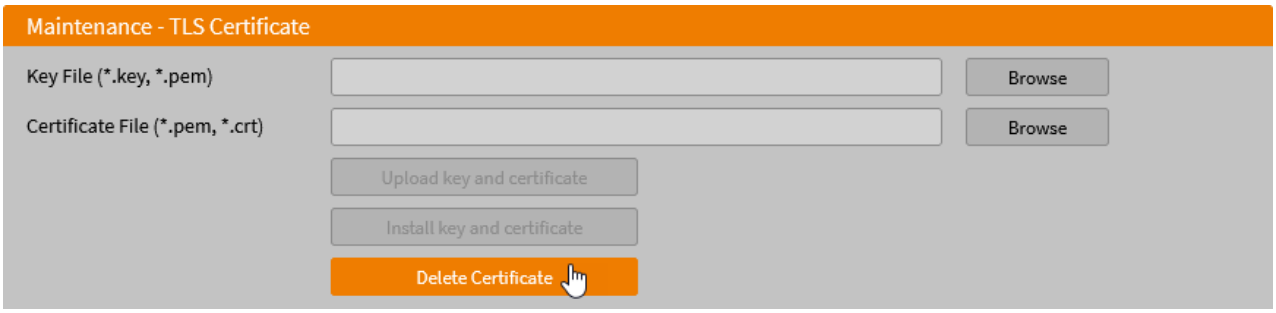


*Fig. 234 Web UI dialog **Maintenance - TLS Certificate - Delete certificate file***

A message appears, informing about successful deletion. The Draco MV needs to be restarted. Restarting the Draco MV might take several minutes, and the Draco MV is not available during the restart.

3. Click **Yes** to restart the Draco MV.

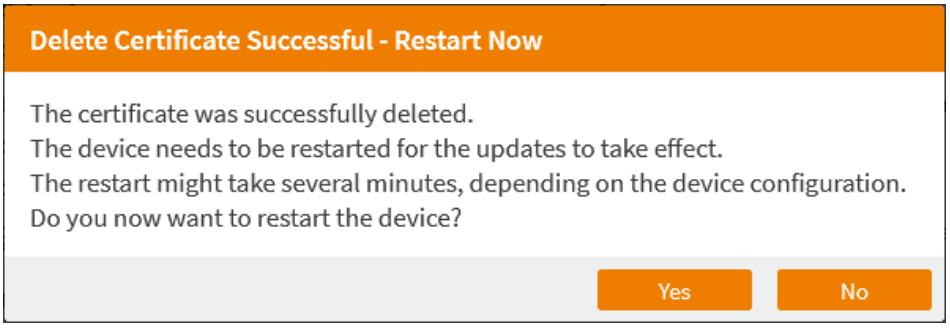


*Fig. 235 Web UI dialog **Maintenance - TLS Certificate - Install key and certificate - Restart***

4. A message informs about the restart process.

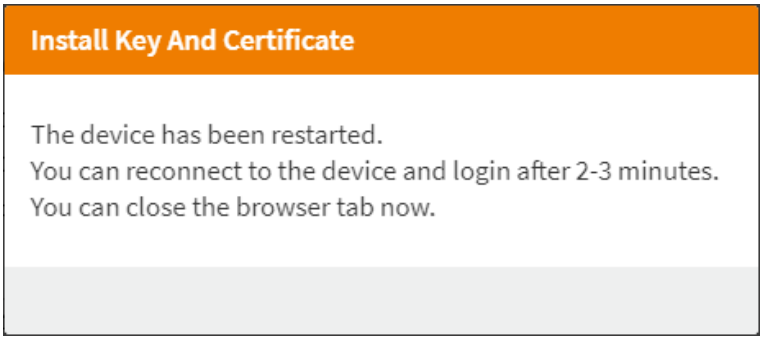


*Fig. 236 Web UI dialog **Maintenance - TLS Certificate - Install key and certificate - Restart in progress***

5. Close the browser tab and re-login to the device after 2-3 minutes.

   After the login, the default certificate can be displayed in the **Maintenance > TLS Certificate** menu.

15.9 Updating the Firmware of the USB/GPIO part via Mini-USB Service Port

The firmware of the USB/GPIO part of the Draco MV can be updated via Mini-USB service port. The HUSWMSD firmware update can only be performed via the mini-USB service port. The firmware type is part of the file name, e.g., for the MSD firmware `HUSWMSD.pfw` with the file extension .pfw.

Updating the firmware manually via copy & paste is usually not necessary. We recommend using the efficient update via Web UI and to manually copy & paste only if a single firmware file should be updated.
In rare cases, e.g., for the HUSWMSD firmware, an update may be necessary to expand the functionality of the Draco MV for specific requirements. In this case, please contact the technical support of the manufacturer in advance.

NOTICE

Possible failures when updating the firmware

In case the HUSWMSD firmware part requires an update, there may be dependencies between the new contents of the `HUSWMSD.pfw` firmware file and other firmware files. In this case, installing other firmware files before updating the `HUSWMSD.pfw` firmware could lead to failed updates.

To proceed successful firmware updates:

➡ Please check the release notes of the firmware package for dependencies between the extender firmware files.

➡ If you got information from the manufacturer's technical support that an update of the HUSWMSD firmware file is required, please follow the instructions in this chapter.

To avoid failed updates, proceed as follows:

➡ Update all required .pfw files one by one, file by file.

➡ First update the required HUSWMSD firmware.

➡ If necessary, then update all other .pfw files one by one, file by file.

➡ Wait between each copy process until the respective copy process has been completed.

➡ Perform a cold start of the Draco MV after the HUSWMSD update and the update of the other `.pfw` files

To perform a firmware update via Mini-USB service port, proceed as follows.

1. Connect the Draco MV via Mini-USB cable to your computer.
   The flash drive of the Draco MV opens.
2. Go to the firmware directory with the firmware files.
3. When instructed from the manufacturer's technical support to update the HUSWMSD firmware:
   3.1. Copy the `HUSWMSD.pfw` firmware file and paste it to the Draco MV flash drive.
   3.2. Wait until the copying process is complete.
   3.3. Manually power off the Draco MV.
   3.4. Power on the Draco MV.
   The Draco MV starts automatically with the new HUSWMSD firmware.

4. If you got instructions from the manufacturer’s technical support to update the HUSWITCH firmware:
   4.1. Copy the `HUSWITCH.pfw` firmware file and paste it to the Draco MV flash drive.
   4.2. Wait until the copying process is complete.
5. Afterwards update the other `.pfw` files changed if required, regarding the following steps:
   5.1. Copy additional firmware files one by one and paste it to the Draco MV flash drive.
   5.2. After copying each firmware file, wait until the copying process is complete.
6. Manually power off the Draco MV after copying all required firmware files.
7. Remove the Mini-USB cable from the Draco MV.
8. Power on the Draco MV.
   The Draco MV starts automatically with the new firmware.

A restart is not sufficient, a cold start is mandatory.

16 Troubleshooting

In the following chapters, support for issues with the Draco MV is provided. Please ensure before operating the Draco MV that the Draco MV is connected over a peer-to-peer connection.

If using the Draco MV with KVM extenders or a KVM matrix switch, please refer to the relevant manuals for assistance if there is an issue.

16.1 Network Issues

Diagnosis	Possible reason	Measure
Network settings are not assumed after editing.	Restart of the Draco MV not yet completed.	➡ Restart the Draco MV.

16.2 USB HID Port

Diagnosis	Possible reason	Measure
The Caps Lock and Scroll Lock LEDs on the keyboard are flashing.	Keyboard in command mode	➡ Press Ctrl + Esc key to leave the command mode.
USB device without function.	No USB HID device recognized	➡ Connect a USB HID device.
	USB HID device is not supported	➡ Check the compatibility. ➡ Contact your dealer if necessary.

16.3 Video Interference

Diagnosis	Possible reason	Measure
Incorrect video display.	Cable connection disturbed	➡ Check the integrity of the video cable. ➡ Reboot of the source.

16.4 Video Resolution

Diagnosis	Possible reason	Measure
A window shows a blurred video signal.	An EDID is locked in the configuration. The option **Lock Monitor EDID** is activated.	➡ Deactivate the option **Lock Monitor EDID** (see chapter 7.2.1, page 72 or chapter 8.2.1, page 102), then restart the system.
	Another default EDID is set.	➡ Change default EDID mode under the option **Default EDID** (see chapter 7.4.1, page 86 or chapter 8.3.1, page 119), then restart the system.

16.5 Blank Screen

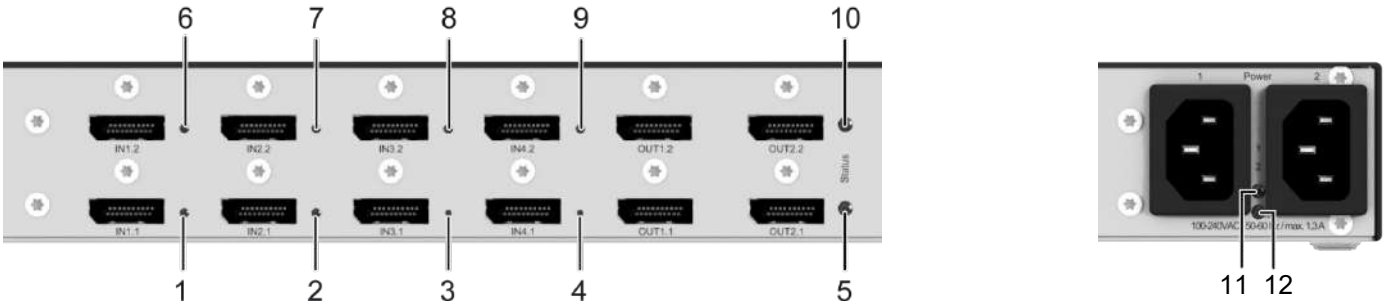


Fig. 237 Interface side - Status LEDs

Diagnosis	Possible reason	Measure
LED **11** and LED **12** are off.	Power supply voltage not available.	➡ Check the connection to the power network.
Monitors remain dark after switching operation.	Switching to a port without active source.	➡ Switch to a port with an active source. ➡ Switch the monitor off and on.
An LED of the switched video input is off (LEDs **1** to **4** or **6** to **9**).	Possible switching errors.	➡ Carry out switching again.
	Connection defective.	➡ Contact your dealer if necessary.

16.6 OSD

Diagnosis	Possible reason	Measure
Opening the OSD not possible.	Wrong Hot Key	➡ Reset Hot Key if necessary (see chapter 5.1, from page 49).
The OSD cannot be opened via Hot Key + o.	The monitor is connected to the wrong video output.	➡ Connect a monitor to the primary output on the lower video/audio board.

16.7 Edit Mode of the Free Mode

Diagnosis	Possible reason	Measure
In Free Mode, the edit mode cannot be activated.	The monitor is connected to the wrong video output.	➡ Connect a monitor to the primary output on the lower video/audio board.
A window is not visible and cannot be edited.	The window is covered by another window.	➡ Toggle the window to be edited in the foreground by pressing the number of the respective level (see chapter 7.5.7, page 94).

16.8 Hot Mouse

Diagnosis	Possible reason	Measure
The mouse cannot be used in the Hot Mouse mode.	The devices freezes in the command mode.	➡ Press STRG + Esc.

17 Technical Data

17.1 Interfaces

17.1.1 DisplayPort 1.2

Upstream/Downstream

The pins of the DisplayPort sockets are assigned differently.

Upstream: data is sent (e.g., source, graphics card, video output of a device)

Downstream: data is received (e.g., sink, monitor, video input of a device

Video

The video interface supports the DisplayPort 1.2 standard. All signals that comply with this standard can be transmitted.

Parameters	Values
Display resolution with frame rate	Up to 4096 px x 2160 px with up to 60 Hz
Color depth	8 bit (4:4:4)
Data rate	Max. 17.28 Gbit/s

Audio

Several audio formats can be transmitted through the interface.

Parameters	Values
Standards	7.1-Channel, Stereo Linear Pulse Code Modulation (LPCM)
Bit depth	16 to 24 bit
Sample rate	32 to 48 kHz

17.1.2 HDMI 2.0

Video

The video interface supports the HDMI 2.0 standard. All signals that comply with this standard can be transmitted.

Parameters	Values
Display resolution with frame rate	Up to 4096 px x 2160 px with up to 60 Hz
Color depth	8 bit (4:4:4)
Data rate	Max. 14.4 Gbit/s

Audio

Several audio formats can be transmitted through the interface.

Parameters	Values
Standards	7.1-Channel, Stereo Linear Pulse Code Modulation (LPCM)
Bit depth	16 to 24 bit
Sample rate	32 to 48 kHz

17.1.3 Mini-USB

The Mini-USB interface enables a customer specified communication he Draco MV. The firmware could also be updated using this interface.

17.1.4 USB HID

Our devices with USB HID interface support a maximum of two devices with USB HID protocol. Each USB HID port provides a maximum current of 100 mA.

Keyboard

Compatible with most USB keyboards. Certain keyboards with additional functions may require custom firmware to operate. Keyboards with an integral USB Hub (Mac keyboards e.g.) are also supported, however, a maximum of two devices are supported.

Mouse

Compatible with most 2-button, 3-button and scroll mice.

Other USB HID Devices

The proprietary USB emulation supports certain other USB HID devices, such as specific touch screens, graphic tablets, barcode scanners or special keyboards. However, support cannot be guaranteed for every USB HID device. In certain cases, such devices can be operated with special firmware.

Extension

If it is required to extend the USB HID signals on CPU or console side (e.g., mounting requirement), the signals can be extended either via a 3.0 m A-B cable (247-U2) or a 3.0 m USB A-A extension cable (436-USB20). The compatibility to other extension cables cannot be guaranteed.

Only two USB HID devices are supported concurrently, such as keyboard and mouse or keyboard and touch screen. A hub is allowed, but it does not increase the number of devices allowed.
To support other USB 'non-HID' devices, such as scanners, web cams or memory devices, use the USB 2.0 interfaces.

17.1.5 USB 2.0 (transparent)

The Draco MV with transparent USB 2.0 interface supports almost all types of USB 2.0 devices. USB 2.0 data transfer is supported with USB high speed (max. 480 Mbit/s).

Each USB 2.0 interface provides a maximum current of 500 mA (high power), however, with the MV42-DPDH a maximum current of 100 mA per USB 2.0 interface will be provided.

NOTICE
The following applies to the MV42-DPDH: ➡ When connecting two USB HID devices and two USB 2.0 devices, a maximum current of 400 mA will be provided.

The USB 2.0 interfaces are routed through to the target computer with the current USB HID control.

17.1.6 GPIO

An external switching solution (dry contact) with up to four buttons, each of which one associated LED can be connected to this interface. After pressing a button, the associated input is switched. The switching carried out is indicated on the associated LED. For instance, button 1 is assigned to the USB-B port for source 1. Max. 1.100 mA is supplied at the port for the power supply voltage (pin 3) that is protected by a fuse. Each other port is limited to a maximum current draw of 170 mA.

17.1.7 RJ45 (Network)

The Draco MV offers a 1000BASE-T interface to establish a network connection to a computer. All four wire pairs are used in both directions. The cabling is suitable for a full duplex operation.

17.1.8 3,5 mm Audio Interface (Optical Digital/Analog)

The Draco MV with optical-digital audio interface supports the unidirectional transmission of digital audio data. This is a combined interface that can output both digital and analog. The output can be either digital or analog at any moment.

Up to four sources can be connected to the Draco MV. The audio data of all sources will be transmitted to the Draco MV at the same time, but only the audio signal of the active source will be provided at the audio output. With activated Merge Audio Signals option, merged audio signals are output at the video outputs and via analog audio devices at the audio outputs.

Specifications Digital Audio

Parameter	Value
Compatibility	S/PDIF, EIAJ RC-5720B, JIS C 6560
Standards	7.1-Channel, Stereo Linear Pulse Code Modulation (LPCM)
Bit depth	24 bit
Sample rate	32 to 96 kHz
Connector	2x 3.5 mm Mini-Toslink (optical)

Specifications Analog Audio

Parameter	Value
Standards	Digitized virtually CD quality audio
Bit depth	24 bit
Sample rate	Up to 192 kHz
Signal level	Line-Level (5 Volt Pk-Pk maximum)
Connector	2x 3.5 mm stereo jack plug (audio output)

17.2 Connector Pinouts

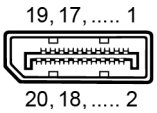
Upstream/Downstream

The pins of the DisplayPort sockets are assigned differently.

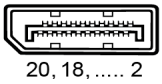
Upstream: data is sent (e.g., source, graphics card, video output of a device)

Downstream: data is received (e.g., sink, monitor, video input of a device

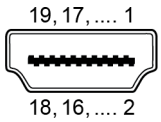
17.2.1 DisplayPort - Upstream

Connector	Pin	Signal	Pin	Signal
	1	ML_Lane 0 (p)	11	GND
	2	GND	12	ML_Lane 3 (n)
	3	ML_Lane 0 (n)	13	CONFIG1
	4	ML_Lane 1 (p)	14	CONFIG 2
	5	GND	15	AUX CH (p)
	6	ML_Lane 1 (n)	16	GND
	7	ML_Lane 2 (p)	17	AUX CH (n)
	8	GND	18	Hot Plug Detect
	9	ML_Lane 2 (n)	19	Power Out Return
	10	ML_Lane 3 (p)	20	Power out (+3.3 V/0.5 A)

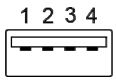
17.2.2 DisplayPort - Downstream

Connector	Pin	Signal	Pin	Signal
	1	ML_Lane 3 (n)	11	GND
	2	GND	12	ML-LANE 0 (p)
	3	ML_Lane 3 (p)	13	Config1/GND
	4	ML_Lane 2 (n)	14	Config2/GND
	5	GND	15	AUX CH (p)
	6	ML_Lane 2 (p)	16	GND
	7	ML_Lane 1 (n)	17	AUX CH (n)
	8	GND	18	Hot Plug Detect
	9	ML_Lane 1 (p)	19	Power Out Return
	10	ML_Lane 0 (n)	20	Not connected

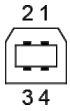
17.2.3 HDMI

Connector	Pin	Signal	Pin	Signal
	1	TMDS data 2+	11	TMDS clock GND
	2	TMDS data 2 GND	12	TMDS clock-
	3	TMDS data 2-	13	CEC
	4	TMDS data 1+	14	Not connected
	5	TMDS data 1 GND	15	DDC Input (SCL)
	6	TMDS data 1-	16	DDC Output (SDA)
	7	TMDS data 0+	17	DDC/CEC/HEC GND
	8	TMDS data 0 GND	18	+5 V (DC) high impedance
	9	TMDS data 0-	19	Hot Plug recognition
	10	TMDS clock+	-	-

17.2.4 USB, Type A

Connector	Pin	Signal	Color
	1	+5 V (DC)	Red
	2	D -	White
	3	D +	Green
	4	GND	Black

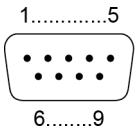
17.2.5 USB, Type B

Anschluss	Pin	Signal	Color
	1	+5 V (DC)	Red
	2	D -	White
	3	D +	Green
	4	GND	Black

17.2.6 Mini-USB, Type B

Connector	Pin	Signal	Color
	1	+5 V (DC)	Red
	2	Data -	White
	3	Data +	Green
	4	Not connected	-
	5	GND	Black

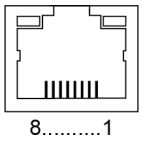
17.2.7 D-Sub 9 (GPIO)

Connector	Pin	Channel	Control
	1	1	OUT for LED 1, ground
	2	1	IN from push button 1
	3	-	+5 V (DC)
	4	2	OUT for LED 2, ground
	5	2	IN from push button 2
	6	3	OUT for LED 3, ground
	7	3	IN from push button 3
	8	4	OUT for LED 4, ground
	9	4	IN from push button 4

17.2.8 Mini-Toslink

Connector	Pin	Signal
	1	GND
	2	Audio OUT L
	3	Audio OUT R
	4	Audio OUT optical digital/analog

17.2.9 RJ45 (Network)

Connector	Pin	Signal	Pin	Signal
	1	D1+	5	Not connected
	2	D1-	6	D2-
	3	D2+	7	Not connected
	4	Not connected	8	Not connected

17.3 Current Draw, Power Supply Voltage and Power Consumption

Product type	Maximum current	Maximum voltage (AC)	Frequency	Power consumption
MV42-DPSH	700 mA	100 to 240 V	50/60 Hz	38 W
MV42-DPDH*	700 mA	100 to 240 V	50/60 Hz	50 W*
MV42-H2SH	700 mA	100 to 240 V	50/60 Hz	29 W
MV42-H2DH	700 mA	100 to 240 V	50/60 Hz	44 W

* With MV42-DPDH, the maximum current is 100 mA per USB device, a total of max. of 400 mA current consumption.

17.4 Environmental Conditions and Emissions

Parameter	Value
Operating temperature	5 to 45 °C (41 to 113 °F)
Storage temperature	-25 to 60 °C (-13 to 140 °F)
Relative humidity	Max. 80% non-condensing
Operating altitude	Max. 2.500 m (7,500 ft)
Heat dissipation	Corresponds to power consumption in Watt (W)

17.5 Dimensions

Product/ Packaging	Dimensions
MV42-DPSH	442 x 250 x 44 mm (17.4" x 9.8" x 1.7")
MV42-H2SH	
MV42-DPDH	
MV42-H2DH	
Shipping box	550 x 372 x 155 mm (21.7" x 14.6" x 6.1")

17.6 Weight

Product	Weight	Weight incl. shipping box
MV42-DPSH	3,9 kg (8.6 lb)	6,15 kg (13.6 lb)
MV42-H2SH	3,9 kg (8.6 lb)	6,15 kg (13.6 lb)
MV42-DPDH	4,8 kg (10.6 lb)	7,1 kg (15.7 lb)
MV42-H2DH	4,8 kg (10.6 lb)	7,1 kg (15.7 lb)

17.7 MTBF

The following table contains the mean time between failure (MTBF) in power-on hours (POH). The estimate is based on the FIT rates of the parts included. FIT rates are based on normalized environmental conditions of T = 60°C and activation energy (E_a) of 0.7 eV. Calculations are based on 90% confidence limit.

We estimate that inside the housing, temperature will be 15°C higher than the ambient temperature. Therefore, the MTBF calculation refers to an ambient temperature of 45°C. The humidity is limited to 60%.

Product	MTBF in POH
MV42-DPSH	67,232
MV42-DPDH	48,480
MV42-H2SH	72,283
MV42-H2DH	53,913

18 Technical Support

Prior to contacting support please ensure you have read this manual, and then installed and set-up your KVM extender as recommended.

18.1 Support Checklist

To efficiently handle your request, it is necessary that you complete a support request checklist (Download). Please ensure that you have the following information available before you call:

- Company, name, phone number and email
- Type and serial number of the device (see chapter 1.4, page 11)
- Date and number of sales receipt and name of dealer if necessary
- Issue date of the existing manual
- Nature, circumstances, and duration of the problem
- Components included in the system (such as graphic source/CPU, OS, graphic card, monitor, USB HID/USB 2.0 devices, interconnect cable) including manufacturer and model number
- Results from any testing you have done

18.2 Shipping Checklist

1. To return your device, you need an RMA number (Return-Material-Authorization). Therefore, please contact your dealer.
2. Package your devices carefully. Add all pieces which you received originally. Preferably use the original box.
3. Note your RMA number visibly on your shipment.

Devices that are sent in without an RMA number will not be accepted. The shipment will be sent back without being opened, postage unpaid.

19 Glossary

The following terms are commonly used in this manual or in video and KVM technology.

Term	Description
ACK	Since packet transfer is not reliable, a technique known as positive acknowledgment with retransmission is used to guarantee reliability of packet transfers.
API	An application programming interface (API) is a specification intended to be used as an interface by software components to communicate with each other. An API may include specifications for routines, data structures, object classes and variables.
Cat X	Any Cat 5e (Cat 6, Cat 7) cable
Console	Keyboard, video, and mouse
Controlled window	Window with current USB HID control.
Echo	The response of the Draco MV to an external command (optional).
EDID	Extended Display Identification Data (EDID) is a metadata format (128 Byte) for display devices to describe their capabilities to a video source (e.g., graphics card).
DDC	Display Data Channel (DDC) is a serial communication interface between monitor and source. DDC enables data exchange via monitor cable and an automatic installation and configuration of a monitor driver by the operating system.
DisplayPort	A VESA standardized interface for an all-digital transmission of audio and video data. It is differentiated between the DisplayPort standards 1.1 and 1.2. The signals have LVDS level.
Dual head	A system with two video connections.
HDMI	An interface for an all-digital transmission of audio and video data. It is differentiated between the HDMI standards 1.0 to 1.4a, also 2.0 to 2.0b or 2.1. The signals have TMDS level.
KVM	Keyboard, video, and mouse
LPCM	LPCM (Linear Pulse Code Modulation) is a pulse modulation method, also known as an uncompressed data format. The LPCM method is used for converting analog audio into digital audio with evenly large value ranges.
Main output	OUT1 (single-head device) and OUT1.1 (dual-head device).
Main monitor	Monitor connected to the main output. The OSD opens only on the main monitor connected to the main output.
Main window	The main window is relevant for some display modes: • Displayed on the main monitor connected (Fullscreen and Preview Mode). • Displayed in the foreground (Custom Mode) • Displayed in the background (True PiP Mode)
MSC	Control of USB HID of up to four sources at one sink with only one connected mouse or keyboard. The sink can consist of up to two monitors, or up to four monitors when operating dual-head sources.
MTBF	Mean Time Between Failure (MTBF) is measured in power-on hours.
Multi-Screen Control	Control of USB HID of up to four sources at one sink with only one connected mouse or keyboard. The sink can consist of up to two monitors, or up to four monitors when operating dual-head sources.
OSD	The On-Screen-Display is used to display information or to operate a device.
PCM	PCM (Pulse-Code-Modulation) is a pulse modulation method, also known as an uncompressed data format. The PCM method is used for converting analog audio into digital audio.
POH	Power-on hours corresponds to the average operating time

Term	Description
S/PDIF	Interface for electrical or optical transmission of digital stereo audio signals between different devices used in consumer electronics.
Selected input	Selected input for displaying the video signal in the associated window without USB HID control.
Single Head	A system with one video connection.
TCP/IP	The Internet protocol suite is the set of communication protocols used for the Internet and similar networks and generally the most popular protocol stack for wide area networks.
USB HID	USB HID devices (Human Interface Device) allow for data input. There is no need for a special driver during installation. When connecting, the message “New USB-HID device found” is reported. Typical USB HID devices include keyboards, mice, graphics tablets and touch windows. Storage, video, and audio devices are not USB HID devices.

20 Index

21 Table of Figures

22 Change Log

This table offers an overview of the most important changes available through firmware updates, such as new functions, changed configuration or operation.

Edition	Date	Firmware version	Software version	Chapter	New functions/changes
REV05.00	2023-03-22	F02.00_20 23-01-27	2.0.3.0	4.1.3, 4.1.4, 4.1.5, 4.2.5, 5.2.1, 5.3.1, 5.3.3, 5.3.4, 5.3.7 - 5.3.7.3, 6.3.1, 6.3.3, 7.2.1, 7.2.5, 7.3, 7.4 ff, 7.5, 7.5.2, 8 ff, 9, 10.2, 11, 11.2, 11.4, 11.6.2, 11.7.2, 12 ff, 14 ff, 15 ff	New/changed chapters because of technical improvement or new features
				1.4, 4.1.5,	New chapters
				1.2, 1.5.2, 4.2.7, 7.1, 7.2.2, 7.2.4, 7.5.6, 7.5.7	Chapter changed or extended
REV04.00	2021-11-11	01.08	1.8.0.0	3.2, 3.4, 4, 4.3 ff, 6.2.1, 6.2.2, 6.2.4, 6.2.5, 6.4.1, 6.4.2, 7.3.2, 7.3.3, 7.4.1, 7.4.2, 7.4.4, 7.4.6, 7.5.1, 7.5.2, 8 ff, 9 ff, 10 ff, 12.1, 12.2, 13.1, 13.2, 13.4, 14 ff, 15.4	New/changed chapters because of technical improvement or new features
				3.3, 13.4, 15.1, 16.7, 16.8	New chapters
				1.3, 1.4, 2, 3.1, 3.6, 3.7, 5, 6, 7.8.1, 11, 15.5, 17.1.1, 17.1.2	Chapter changed or extended
REV03.00	2020-07-17	01.05	1.5.0.0	-	See Release Notes of the firmware/software Additional display modes, source names, frame for current source, several small changes in the manual
REV02.00	2020-06-10	01.03	1.1.1.0	-	See Release Notes of the firmware/software
REV01.00	2020-05-29	01.03	1.1.0.0	-	Initial manual