



Installation Guide

020-002115-01

Hedra Standard, Pro-KVM & Pro-Video

CHRISTIE

NOTICES

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The product has been tested and 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 product is operated in a commercial environment. The product 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 the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAN ICES-3 (A) / NMB-3 (A)

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ENVIRONMENTAL



The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol  means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products.

If printing this document, consider printing only the pages you need and select the double-sided option.

Please help us to conserve the environment we live in!

NOTATION

Learn the hazard and information symbols used in the product documentation.



Danger! If not avoided, the following could result in death or serious injury.



Warning! If not avoided, the following could result in death or serious injury.



Caution! If not avoided, the following could result in minor or moderate injury.



Notice. If not avoided, the following could result in property damage.



Information messages provide additional information, emphasize or provide a useful tip.

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Introduction

Important safety information

Read this document carefully before installing or operating the Hedra.

For installation, setup, and user information, see the product documentation available from the Christie Digital Systems USA Inc. website at www.christiedigital.com. Read all instructions before using or servicing this product.

Fire and Shock Hazard



To prevent fire or shock hazards, do not expose this product to rain or moisture.

Do not alter the power plug, overload the power outlet, or use it with extension cords.

Only Christie qualified technicians are authorized to service the product.

Electrical Hazard



Risk of electric shock.

Do not remove the product enclosure.

Only Christie qualified technicians are authorized to service the product.

Important safeguards

Pay attention to identified safeguards and instructions.

General safety precautions



Warning! If not avoided, the following could result in death or serious injury.

- SHOCK HAZARD! Disconnect the product from AC before moving, servicing, cleaning, removing components, or opening any enclosure.
- A minimum of two people or appropriately rated lift equipment is required to safely lift, install, or move the product.
- Motors and fans may start without warning.

Power precautions



Warning! If not avoided, the following could result in death or serious injury.

- FIRE AND SHOCK HAZARD! Do not operate the system unless certified power connections, providing the recommended voltage, are used.



Caution! If not avoided, the following could result in minor or moderate injury.

- **SHOCK HAZARD!** Only use the AC power cord provided with the product or recommended by Christie.
- **TRIP OR FIRE HAZARD!** Position all cables where they cannot contact hot surfaces, be pulled, be tripped over, or damaged by persons walking on or objects rolling over the cables.
- **FIRE HAZARD!** Do not use a power cord, harness, or cable that appears damaged.
- **FIRE OR SHOCK HAZARD!** Do not overload power outlets and extension cords.
- **SHOCK HAZARD!** The AC power cord must be inserted into an outlet with grounding.
- **SHOCK HAZARD!** Do not attempt operation if the AC supply is not within the specified voltage and power range, as specified on the license label.

Technical support

- North and South America: +1-800-221-8025 or *Support.Americas@christiedigital.com*
- Europe, Middle East, and Africa: +44 (0) 1189 778111 or *Support.EMEA@christiedigital.com*
- Australia: +61 (0)7 3624 4888 or *tech-Australia@christiedigital.com*
- China: +86 10 6561 0240 or *tech-supportChina@christiedigital.com*
- India: +91 (80) 6708 9999 or *tech-India@christiedigital.com*
- Japan: 81-3-3599-7481
- Singapore: +65 6877-8737 or *tech-Singapore@christiedigital.com*
- South Korea: +82 2 702 1601 or *tech-Korea@christiedigital.com*
- Christie Professional Services: +1-800-550-3061 or *NOC@christiedigital.com*

The Hedra series

You can display the video signals of multiple sources simultaneously on the monitors connected to the Hedra.

Place the monitors according to your requirements and arrange the video signals on the monitors simultaneously required. You can scale and frame each video signal individually and/or define the section to be displayed. It is also possible to adjust the arrangement of the video signals during operation.

Available variants

The Hedra is available in three different variants:

- Hedra Standard
- Hedra Pro-KVM
- Hedra Pro-Video

Hedra Standard and Hedra Pro-KVM product variants support presentation plus control of connected computers using the keyboard and mouse connections. The Hedra Pro-Video product variant is used only for presenting connected computers.

Operating Hedra using legacy mode, you can equip the Hedra Standard variant with up to five output monitors with the aspect ratios 16:9 and 16:10. Using Hedra Pro variants, you can equip up to six output monitors with the aspect ratios 16:9 and 16:10.

The following resolutions are generally supporting using legacy mode:

- 3840×2160 (16:9, 8.3 MP)
- 2560×1600 (16:10, 4.1 MP)
- 2560×1440 (16:9, 3.7 MP)
- 1920×1200 (16:10, 2.3 MP)
- 1920×1080 (16:9, 2.1 MP)

Further resolutions are possible using the dynamic mode.



- Using legacy mode, verify that the maximum pixel grid of all monitors complies with the supported pixel grid (factory setting) listed in the technical data.
- Examine the entry **Configuration > Display Arrangement** in the web application to identify the license information and a list of displays in use.

The Hedra product variants differ in the number of video inputs, the number of operable computers and the number of monitors in dynamic mode:

Variant	Video inputs	Operable computers	Connectable monitors in dynamic mode	Connectable monitors in legacy mode
Standard	9	7	2	5

Pro-KVM	18	14	4	6
Pro-Video	27	None	4	6

The Hedra standard

Installation details concerning the Hedra standard are identified in this chapter.

Power requirements

Power details concerning Hedra standard can be found here.

Description	Details
Input Voltage	100-240 V~, 47-63 Hz, 5.00-2.5A Maximum power draw: 500 watts

Scope of delivery

- 1 × Hedra Standard
- 1 × installation manual
- 2 × power cable (NEMA 5-15)



You can download the Hedra User manual (P/N: 020-002116-XX) on the Christie website at www.christiedigital.com.

Preparation

Prepare considering the following topics when installing Hedra.

Choosing a location

When choosing the location of the device, ensure the permitted ambient temperature (see Technical data on page 37) in the direct vicinity is observed and it is not influenced by other devices.

The air inlets and outlets must not be blocked. Allow at least 10 cm (3.9 inches) of clearance behind and in front of the device to enable strong air circulation.



The Hedra continuously monitors the internal temperature during operation. Take steps to reduce the ambient temperature immediately if the message temperature of the FPGA is now at 80°C or temperature of the board is now at 75°C is displayed.

Planning the video bandwidth

There are limits to the source input bandwidth supported by Hedra standard. If the data rate of the incoming video signals exceeds the available bandwidth, an overrun message will be displayed. When this occurs, some output windows display no content.

The following bandwidth restrictions must be observed when planning and operating the device:

- **System:** The device can process simultaneous video signals with a maximum size of 2,000 MP/s.
- **Video cards:** Each video card (see page 37) can process simultaneous video signals with a maximum size of 1,200 MP/s.



The video performance of each video card is sufficient for processing up to nine HD video signals simultaneously.

Planning the maximum pixel area, number of output monitors and virtual outputs

The Hedra series supports two different output modes: dynamic mode and legacy mode.

Dynamic mode

In dynamic mode two monitors with any aspect ratio are supported, or two virtual outputs.

In this mode, for example, you can connect two output monitors with the following pixel areas:

- 5120×1440 (32:9, 7.4 MP)
- 3840×2160 (16:9, 8.3 MP)
- 2560×1600 (16:10, 4.1 MP)



The maximum available pixel area is 8192×8192.

Legacy mode

In legacy mode up to five output monitors with fixed aspect ratios of 16:9 and 16:10 are supported.

The variant Hedra Standard can manage a maximum pixel area of 16 MP in this mode.

For example, in this mode you can display in the following resolutions on the connected output monitors:

- 2 × 3840×2160 (16:9, 8.3 MP)
- 4 × 2560×1600 (16:10, 4.1 MP)
- 1 × 2560×1600 (16:10, 4.1 MP) and 4 × 1920× 1200 (16:10, 2.3 MP)



The maximum available pixel area is 8192×8192.

Connecting HDMI or DVI signals

The video card uses two different technical solutions for the video inputs:

- **HDMI:** Some of the video inputs (see table on page 11) use HDMI sockets and process HDMI signals.
- **DVI:** The other video inputs (see table on page 11) also use HDMI sockets, but process DVI signals.

NOTE: Although HDMI signals are supposed to be backward-compatible with DVI signals, this is not always the case.

For example, DVI signals from older graphics cards or onboard graphic GPUs can in some cases not be processed by the HDMI signal inputs.

Use the DVI signal inputs of the video cards if flickering occurs in the video display or if no signal messages are displayed.



- Although HDMI signals are supposed to be backward-compatible with DVI signals, this is not always the case.
- For example, DVI signals from older graphics cards or onboard graphic GPUs can in some cases not be processed by the HDMI signal inputs.
- Use the DVI signal inputs of the video cards if flickering occurs in the video display or if no signal messages are displayed.

Support of any frame rates

The HDMI connections support any frame rate within the maximum pixel rate.

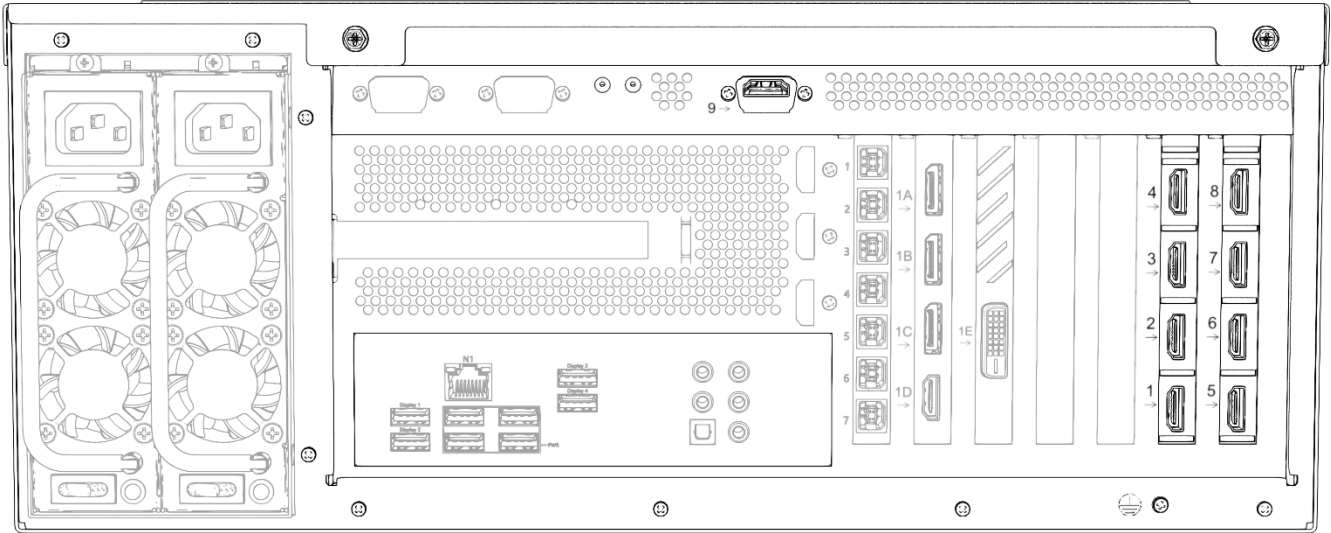
The frame rate of an input should, be as close as possible to the frame rate of the output monitor. If not, frames are left out or inserted as needed. The output is not entirely synchronous.

Installation

Use the following details as reference when making connections to Hedra standard.

Connecting video inputs

Connections for the Hedra standard can be seen below.



The video inputs are labelled with numbers from 1 to 9.

Connect the video sources to the various HDMI connections and observe the technical requirements of the HDMI sockets:

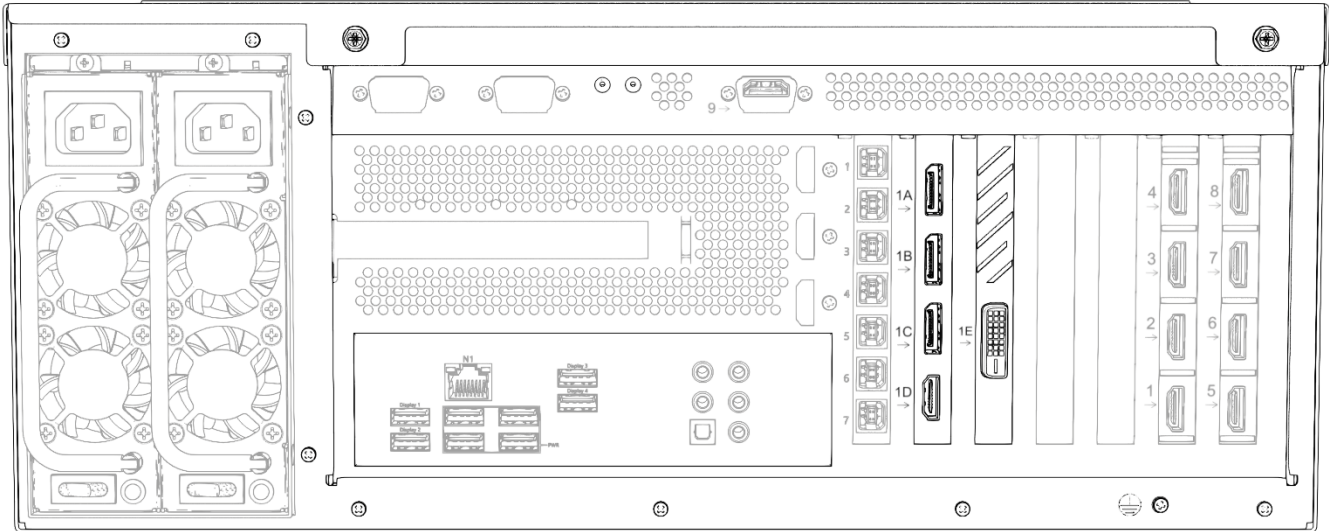
Input	Signal type (internal)	Maximum pixel rates
1	HDMI	550 MP/s
2,3,4	HDMI	300 MP/s
5,6,7,8	DVI	165 MP/s
9	HDMI	165 MP/s



Input 1 can process UHD video signals with 60 Hz and inputs 2, 3, and 4 can process UHD video signals with 30 Hz. All other inputs support signals at HD resolution up to 60 Hz.

Connecting monitors

Use the following data when making connections to monitors.



Connect the monitors to the five available video outputs:

Output	Connection
1A	DisplayPort
1B	DisplayPort
1C	DisplayPort
1D	HDMI
1E	DVI-DL

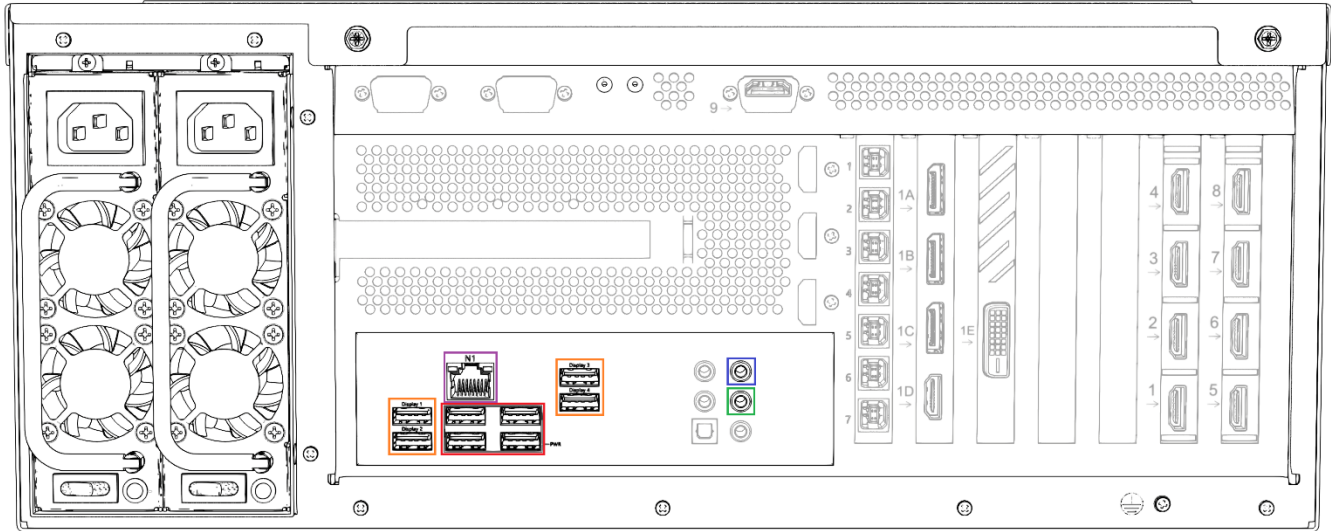
As a factory setting, all video inputs are displayed at output 1A. In order to initial start-up, it is necessary to use a monitor with a resolution of 3840 x 2160 pixels on output 1A.



- Display errors may occur at other resolutions during initial start-up. In this case, use the Hedra web application to select the required resolution under **Configuration > Display Arrangement** (see Checking or changing the general configuration).
- When connecting the monitors, observe the restrictions mentioned in the Technical data with regard to the number of monitors and the supported pixel grid (see page 36).
- If the monitor you want to use does not support the available connection types, use one or more optionally available converters where applicable.

Connecting other interfaces

Use the following details as reference when making control and audio connections to Hedra standard.



Establishing network connection (purple marking)

N1: Connect this interface to the local network.

Connecting mouse, keyboard and USB stick (orange marking)

Display 1 to 4: You can connect a keyboard, a mouse *or* a USB stick at each of the four USB interfaces.



- To connect a keyboard, mouse and USB stick simultaneously, connect these devices to a USB hub. Connect the USB hub to a display interface.
- In the area **Configuration > Display Settings** of the Hedra web application, you can assign one of the four USB ports to a display.

PWR connections (red marking)

PWR: These USB interfaces exclusively enable a power supply. They do not provide any USB data functionality.

Audio connections

In the web application, you can use certain audio connections for special purposes:

Purpose	Audio
Streaming	Analogue line-in interface (blue)
Virtual Channel	Analogue line-out interface (green)

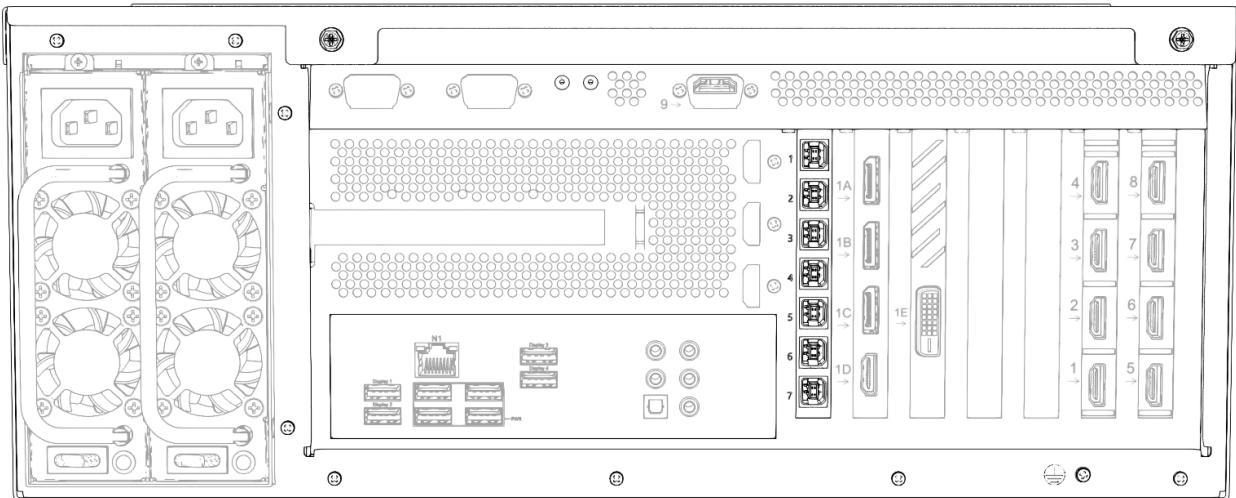
Other



The other audio connections have no function.

Establishing USB connections with the computers

Use the following details as reference when making USB computer connections to Hedra.



The Hedra Standard is equipped with 7 USB type-B connections for sending keyboard and mouse signals to the USB interface of a computer.

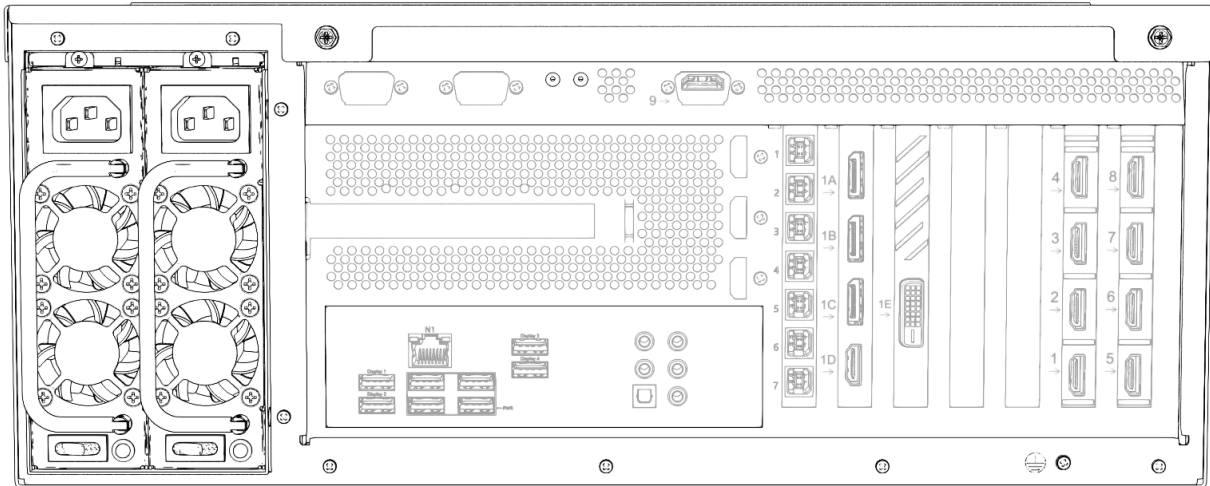
Socket 1 to 7: Connect each interface to a computer that you want to assign the keyboard or mouse signal to.



NOTE: In the area **Administration > Channel > Keyboard & Mouse** of the web application, assign a channel to one of the available USB connections.

Connecting the power supply

Use the following details as reference when making power connections to Hedra.



Power 1/Power 2: Insert one power cable included in scope of delivery into each of the two power supplies.



The power supply can be turned on and off at any time as long as logging mode is deactivated.

The Hedra Pro-KVM

Installation details concerning the Hedra Pro-KVM are identified in this chapter.

Power requirements

Power details concerning Hedra Pro-KVM can be found here.

Description	Details
Input Voltage	90-264 V~, 47-63 Hz, 6.00-3.00A Maximum power draw: 500 watts

Scope of delivery

- 1 × Hedra Pro-KVM
- 1 × installation manual
- 2 × power cable (NEMA 5-15)



You can download the Hedra User manual (P/N: 020-002116-XX) on the Christie website at www.christiedigital.com.

Preparation

Prepare considering the following topics when installing Hedra.

Choosing a location

When choosing the location of the device, ensure that the permitted ambient temperature (see Technical data on page 39) in the direct vicinity is observed and that it is not influenced by other devices.

The air inlets and outlets must not be blocked. Allow at least 10 cm of clearance behind and in front of the device to enable strong air circulation.



The Hedra continuously monitors the internal temperature during operation. Take steps to reduce the ambient temperature immediately if the message temperature of the FPGA is now at 80°C or temperature of the board is now at 75°C is displayed.

Planning the video bandwidth

There are limits to the source input bandwidth supported by Hedra Pro-Video. If the data rate of the incoming video signals exceeds the available bandwidth, an overrun message will be displayed. When this occurs, some output windows display no content.

The following bandwidth restrictions must be observed when planning and operating the device:

- **System:** The device can process simultaneous video signals with a maximum size of 4,000 MP/s.
- **Video cards:** Each video card (see page 40) can process simultaneous video signals with a maximum size of 1,200 MP/s.



The video performance of each video card is sufficient for processing up to nine HD video signals simultaneously.

Planning the maximum pixel area, number of output monitors and virtual outputs

The Hedra series supports two different output modes: dynamic mode and legacy mode.

Dynamic mode

In dynamic mode four monitors with any aspect ratio are supported, or four virtual outputs.

In this mode, for example, you can connect four output monitors with the following pixel areas:

- 5120×2880 (16:9, 14.7 MP)
- 5120×1440 (32:9, 7.4 MP)
- 3840×2160 (16:9, 8.3 MP)
- 2560×1600 (16:10, 4.1 MP)



The maximum available pixel area is 16384×16384.

Legacy mode

In legacy mode up to six output monitors with fixed aspect ratios of 16:9 and 16:10 are supported.

The variant Hedra Pro-KVM can manage a maximum pixel area of 32 MP in this mode.

For example, in this mode you can display in the following resolutions on the connected output monitors:

- 4 × 3840×2160 (16:9, 8.3 MP)
- 6 × 2560×1600 (16:10, 4.1 MP)

- 3 × 3840×2160 (16:9, 8.3 MP) and 1 × 2560×1600 (16:10, 4.1 MP) and 2 × 1920× 1200 (16:10, 2.3 MP)



The maximum available pixel area is 16384×16384.

Connecting HDMI or DVI signals

The video cards use two different technical solutions for the video inputs:

- **HDMI:** Some of the video inputs (see tables on page 18) use HDMI sockets and process HDMI signals.
- **DVI:** The other video inputs (see tables on page 18) also use HDMI sockets, but process DVI signals.



- Although HDMI signals are supposed to be backward-compatible with DVI signals, this is not always the case.
- For example, DVI signals from older graphics cards or onboard graphic GPUs can in some cases not be processed by the HDMI signal inputs.
- Use the DVI signal inputs of the video cards if flickering occurs in the video display or if no signal messages are displayed.

Support of any frame rates

The HDMI connections support any frame rate within the maximum pixel rate.

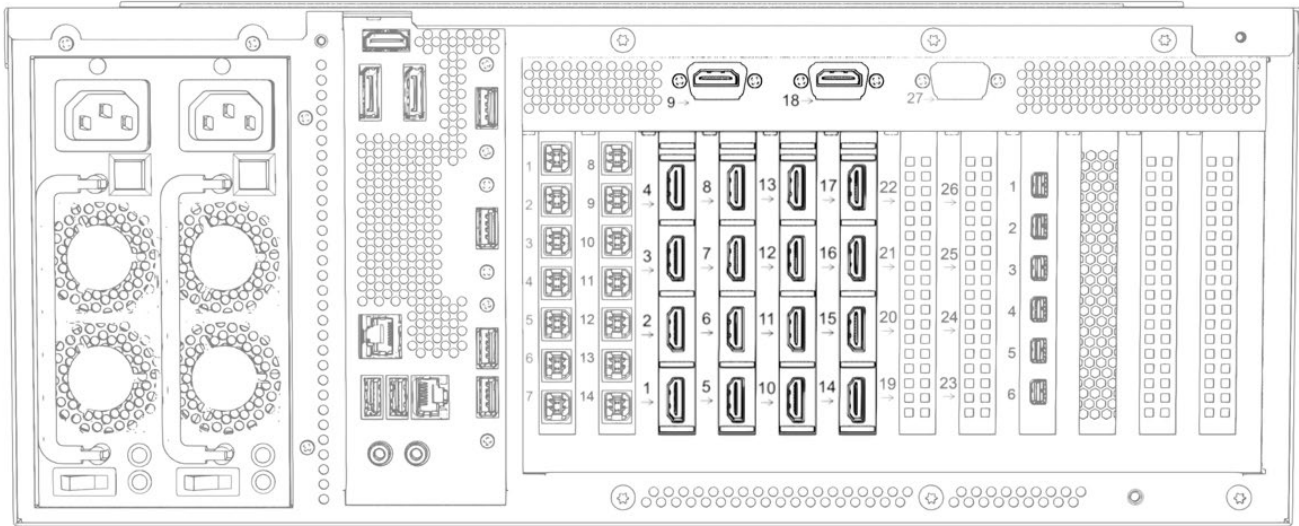
The frame rate of an input should, however, be as close as possible to the frame rate of the output monitor. If this is not the case, frames are left out or inserted as needed. The output is then not entirely synchronous.

Installation

Use the following details as reference when making connections to Hedra Pro-KVM.

Connecting video inputs

Video input connections for the Hedra standard can be seen below.



The video inputs are labelled with numbers from 1 to 18.

Connect the video sources to the various HDMI connections and observe the technical requirements of the HDMI sockets of the total of two video cards:

Input	Signal type (internal)	Maximum pixel rates
1	HDMI	550 MP/s
2,3,4	HDMI	300 MP/s
5,6,7,8	DVI	165 MP/s
9	HDMI	165 MP/s

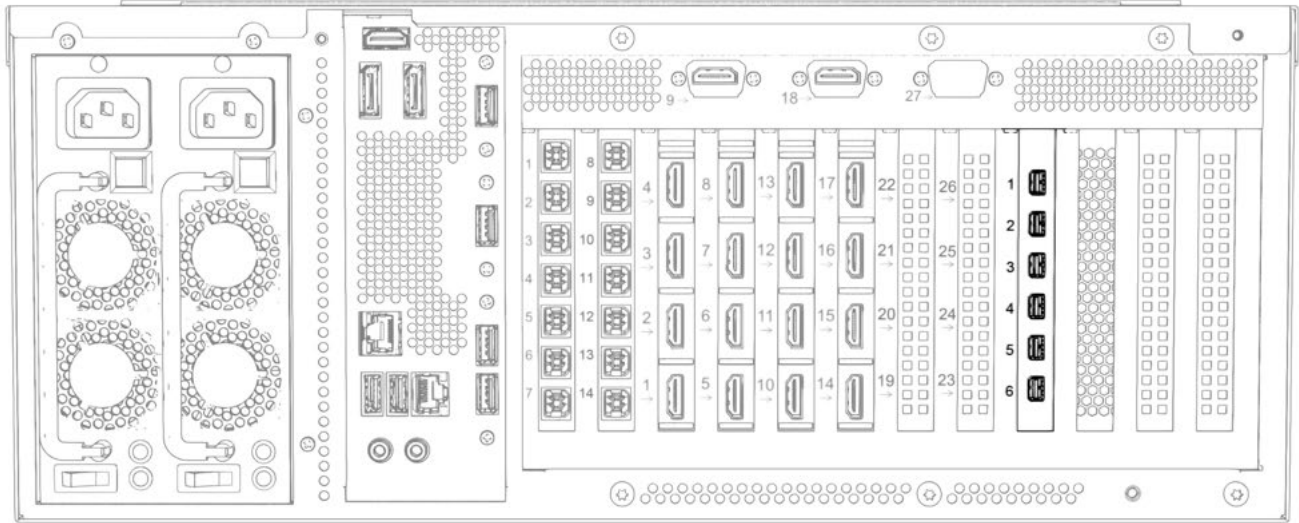
Input	Signal type (internal)	Maximum pixel rates
10	HDMI	550 MP/s
11,12,13	HDMI	300 MP/s
14,15,16,17	DVI	165 MP/s
18	HDMI	165 MP/s



Input 1 and 10 can process UHD video signals with 60 Hz and inputs 2, 3, 4, 11, 12 and 13 can process UHD video signals with 30 Hz. All other inputs support signals up to HD resolution at 60 Hz.

Connecting monitors

Use the following details as reference when making connections to monitors.



Connect the monitors to the six available video outputs:

Output	Connection
1,2,3,4,5,6	Mini DisplayPort

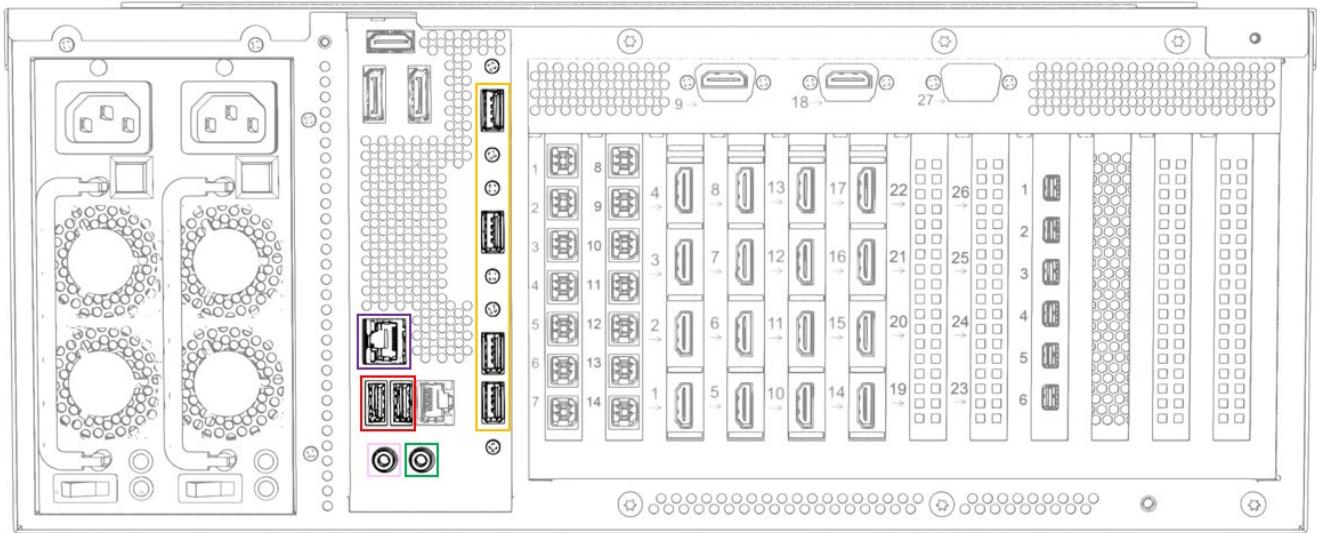
As a factory setting, all video inputs are displayed at output 1. In order to initial start-up, it is necessary to use a monitor with a resolution of 3840 x 2160 pixels on output 1.



- Display errors may occur at other resolutions during initial start-up. In this case, use the Hedra web application to select the required resolution under **Configuration > Display Arrangement** (see Checking or changing the general configuration).
- When connecting the monitors, observe the restrictions mentioned in the Technical data with regard to the number of monitors and the supported pixel grid (see page 39).
- If the monitor you want to use does not support the available connection types, use one or more optionally available converters where applicable.

Connecting other interfaces

Use the following details as reference when making control and audio connections to Hedra standard.



Establishing network connection (purple marking)

N1: Connect this interface to the local network.

NOTE: The other network interface has no function.

Connecting mouse, keyboard and USB stick (orange marking)

Display 1 to 4: You can connect a keyboard, a mouse *or* a USB stick at each of the four USB interfaces.

ADVICE: To connect a keyboard, mouse and USB stick *simultaneously*, connect these devices to a USB hub. Connect the USB hub to a display interface.

NOTE: In the area **Configuration > Display Settings** of the web application, you can assign one of the four USB ports to a display.

PWR connections (red marking)

PWR: These USB interfaces exclusively enable a power supply. They do not provide any USB data functionality.

Audio connections

In the web application, you can use certain audio connections for special purposes:

Purpose	Audio
Streaming	Analogue line-in interface (pink)
Virtual Channel	Analogue line-out interface (green)

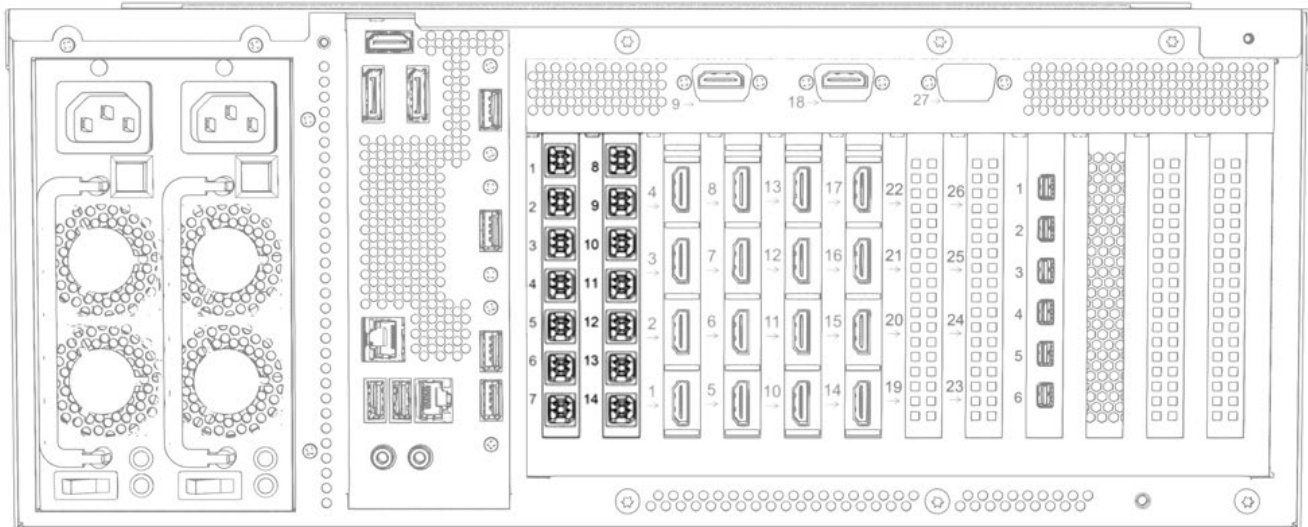
Other



The other video connections have no function.

Establishing USB connections with the computers

Use the following details as reference when making USB computer connections to Hedra.



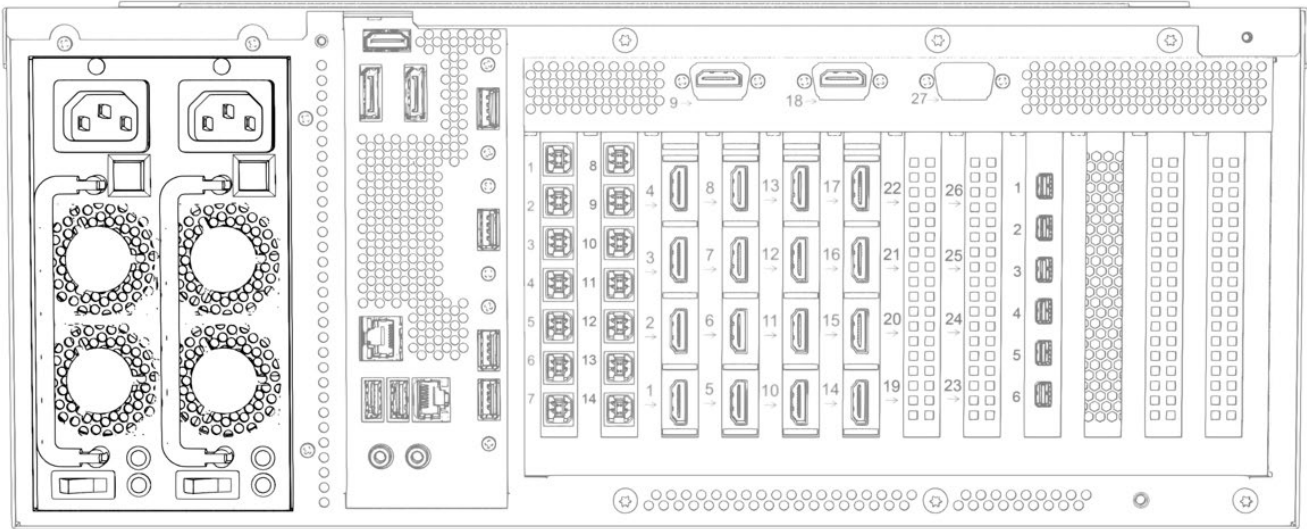
The Hedra Pro-KVM is equipped with **14** USB type-B connections for sending keyboard and mouse signals to the USB interface of a computer.

Socket 1 to 14: Connect each interface to a computer that you want to assign the keyboard or mouse signal to.

NOTE: In the area **Administration > Channel > Keyboard & Mouse** of the web application, assign a channel to one of the available USB connections.

Connecting the power supply

Use the following details as reference when making power connections to Hedra.



Power 1/Power 2: Insert one power cable included in scope of delivery into each of the two power supply units.



The power supply can be turned on and off at any time as long as logging mode is deactivated.

The Hedra Pro-Video

Installation details concerning the Hedra Pro-Video are identified here.

Power requirements

Power details concerning Hedra Pro-Video can be found here.

Description	Details
Input Voltage	90-264 V~, 47-63 Hz, 6.00-3.00A Maximum power draw: 500 watts

Scope of delivery

- 1 × Hedra Pro-Video
- 1 × installation manual
- 2 × power cable (NEMA 5-15)



You can download the Hedra User manual (P/N: 020-002116-XX) on the Christie website at www.christiedigital.com.

Preparation

Prepare considering the following topics when installing Hedra.

Choosing a location

When choosing the location of the device, ensure that the permitted ambient temperature (see Technical data on page 42) in the direct vicinity is observed and that it is not influenced by other devices.

The air inlets and outlets must not be blocked. Allow at least 10 cm of clearance behind and in front of the device to enable strong air circulation.



The Hedra continuously monitors the internal temperature during operation. Take steps to reduce the ambient temperature immediately if the message temperature of the FPGA is now at 80°C or temperature of the board is now at 75°C is displayed.

Planning the video bandwidth

There are limits to the source input bandwidth supported by Hedra Pro-Video. If the data rate of the incoming

video signals exceeds the available bandwidth, an overrun message will be displayed. When this occurs, some output windows display no content.

The following bandwidth restrictions must be observed when planning and operating the device:

- **System:** The device can process simultaneous video signals with a maximum size of 4,000 MP/s.
- **Video cards:** Each video card (see page 43) can process simultaneous video signals with a maximum size of 1,200 MP/s.



The video performance of each video card is sufficient for processing up to nine HD video signals simultaneously.

Planning the maximum pixel area, number of output monitors and virtual outputs

The Hedra series supports two different output modes: dynamic mode and legacy mode.

Dynamic mode

In dynamic mode four monitors with any aspect ratio are supported, or four virtual outputs.

In this mode, for example, you can connect four output monitors with the following pixel areas:

- 5120×2880 (16:9, 14.7 MP)
- 5120×1440 (32:9, 7.4 MP)
- 3840×2160 (16:9, 8.3 MP)
- 2560×1600 (16:10, 4.1 MP)



The maximum available pixel area is 16384×16384.

Legacy mode

In legacy mode up to six output monitors with fixed aspect ratios of 16:9 and 16:10 are supported.

The variant Hedra Pro-Video can manage a maximum pixel area of 32 MP in this mode.

For example, in this mode you can display in the following resolutions on the connected output monitors:

- 4 × 3840×2160 (16:9, 8.3 MP)
- 6 × 2560×1600 (16:10, 4.1 MP)
- 3 × 3840×2160 (16:9, 8.3 MP) and 1 × 2560×1600 (16:10, 4.1 MP) and 2 × 1920× 1200 (16:10, 2.3 MP)



The maximum available pixel area is 16384×16384.

Connecting HDMI or DVI signals

The video cards use two different technical solutions for the video inputs:

- **HDMI:** Some of the video inputs (see tables on page 27) use HDMI sockets and process HDMI signals.
- **DVI:** The other video inputs (see tables on page 27) also use HDMI sockets, but process DVI signals.



- Although HDMI signals are supposed to be backward-compatible with DVI signals, this is not always the case.
- For example, DVI signals from older graphics cards or onboard graphic GPUs can in some cases not be processed by the HDMI signal inputs.
- Use the DVI signal inputs of the video cards if flickering occurs in the video display or if no signal messages are displayed.

Support of any frame rates

The HDMI connections support any frame rate within the maximum pixel rate.

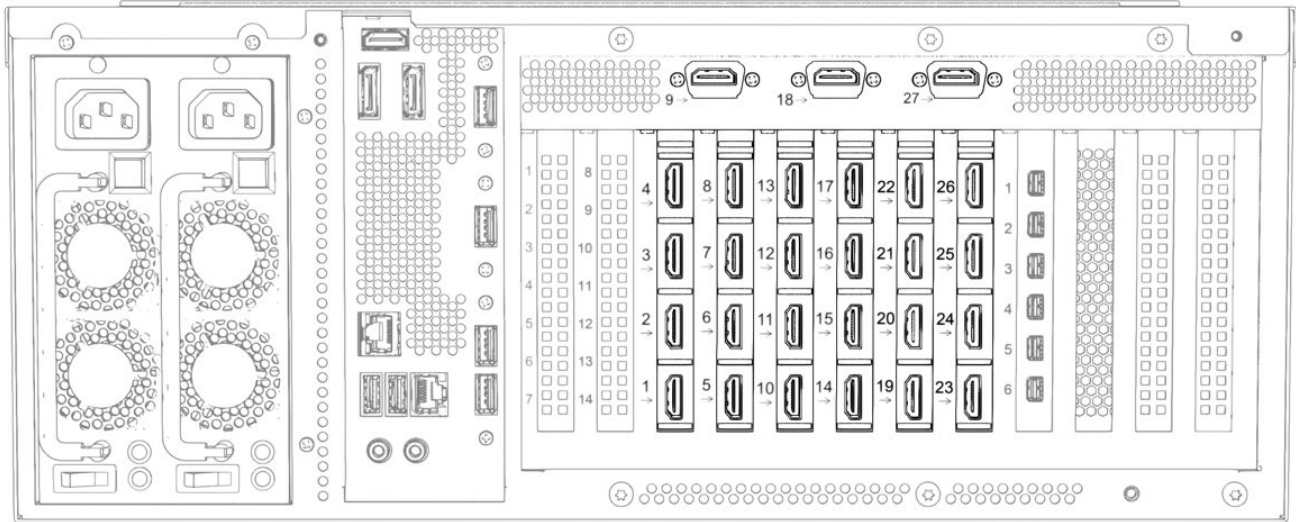
The frame rate of an input should, however, be as close as possible to the frame rate of the output monitor. If this is not the case, frames are left out or inserted as needed. The output is then not entirely synchronous.

Installation

Use the following details as reference when making connections to Hedra Pro-Video.

Connecting video inputs

Connections for the Hedra Pro-Video can be seen below.



- The video inputs are labelled with numbers from 1 to 27.

Connect the video sources to the various HDMI connections and observe the technical requirements of the HDMI sockets of the total of two video cards:

Input	Signal type (internal)	Maximum pixel rates
1	HDMI	550 MP/s
2,3,4	HDMI	300 MP/s
5,6,7,8	DVI	165 MP/s
9	HDMI	165 MP/s

Input	Signal type (internal)	Maximum pixel rates
10	HDMI	550 MP/s
11,12,13	HDMI	300 MP/s
14,15,16,17	DVI	165 MP/s
18	HDMI	165 MP/s

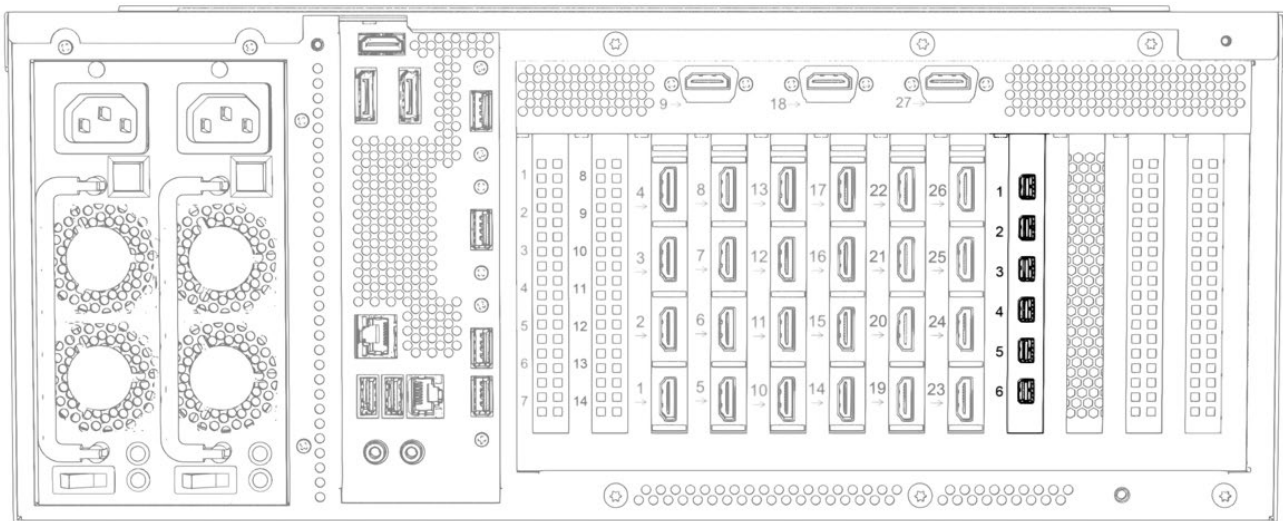
Input	Signal type (internal)	Maximum pixel rates
19,20,21,22,27	HDMI	165 MP/s
23,24,25,26	DVI	165 MP/s



Input 1 and 10 can process UHD video signals with 60Hz and inputs 2, 3, 4, 11, 12 and 13 can process UHD video signals with 30 Hz. All other inputs support signals up to HD resolution at 60Hz.

Connecting monitors

Use the following details as reference when making connections to monitors.



Connect the monitors to the six available video outputs:

Output	Connection
1,2,3,4,5,6	Mini DisplayPort

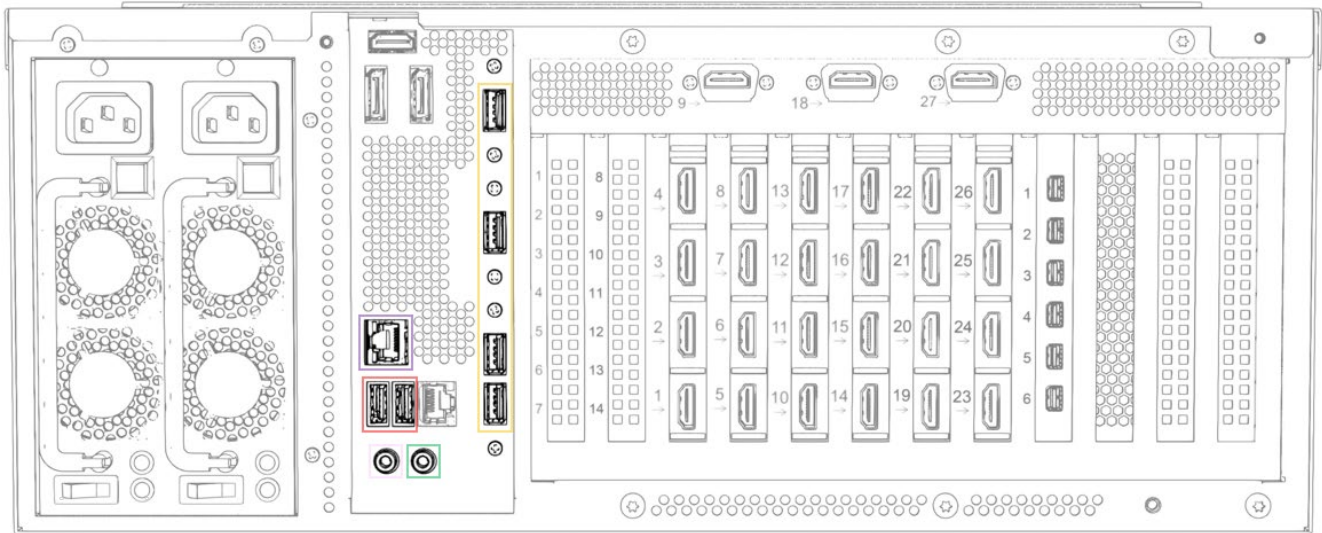
As a factory setting, all video inputs are displayed at output 1. In order to initial start-up, it is necessary to use a monitor with a resolution of 3840x2160 pixels on output 1.



- Display errors may occur at other resolutions during initial start-up. In this case, use the Hedra web application to select the required resolution under **Configuration > Display Arrangement** (see Checking or changing the general configuration).
- When connecting the monitors, observe the restrictions mentioned in the Technical data with regard to the number of monitors and the supported pixel grid (see page 42).
- If the monitor you want to use does not support the available connection types, use one or more optionally available converters where applicable.

Connecting other interfaces

Use the following details as reference when making control and audio connections to Hedra standard.



Establishing network connection (purple marking)

N1: Connect this interface to the local network.

NOTE: The other network interface has no function.

Connecting mouse, keyboard and USB stick (orange marking)

Display 1 to 4: You can connect a keyboard, a mouse *or* a USB stick at each of the four USB interfaces.

ADVICE: To connect a keyboard, mouse and USB stick *simultaneously*, connect these devices to a USB hub. Connect the USB hub to a display interface.

PWR connections (red marking)

PWR: These USB interfaces exclusively enable a power supply. They do not provide any USB data functionality.

Audio connections

In the web application, you can use certain audio connections for special purposes:

Purpose	Audio
Streaming	Analogue line-in interface (pink)
Virtual Channel	Analogue line-out interface (green)

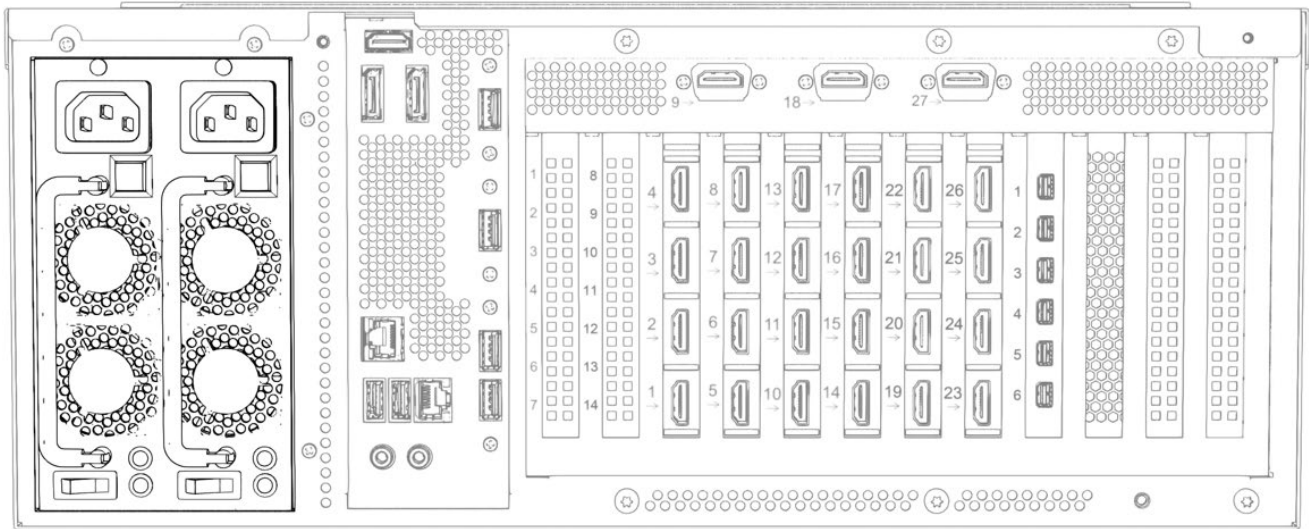
Other



The other video connections have no function.

Connecting the power supply

Use the following details as reference when making power connections to Hedra.



Power 1/Power 2: Insert one power cable included in scope of delivery into each of the two power supply units.



The power supply can be turned on and off at any time as long as logging mode is deactivated.

Getting started

Instructions for getting started out of the box are presented here.

Establish the power supply

Power on the Hedra by turning on the power button of at least one power supply unit (**Power 1/Power 2**).

Initial configuration of the network settings

Configure the network settings to access the web application of the device.

By default, the following settings are preset:

- **DHCP activated**
 - The assigned IP address is not displayed anywhere.
Contact your network administrator to obtain the IP address assigned by the DHCP server.
 - For commissioning, access via the fallback IP address 169.254.213.44 is recommended.
Through Automatic Private IP Addressing, this address should be reachable without configuration.
- Secure browsing (**HTTPS**) **enabled**
 - A self-signed certificate is stored for this purpose in the factory default state.
- User-login for the browser is **enabled**
 - The default login is:
 - User: service
 - Password: service
 - After the first login you will be prompted to change the password.

How to configure the network settings of the device

1. Use a category 5 (or better) twisted pair cable to connect the network interface of any computer to the device's N1 interface.
2. Open a browser and enter 169.254.213.44. Through Automatic Private IP Addressing, this address should be reachable without configuration.
NOTE: If the IP address cannot be reached after all, check the IP address of the computer and, if necessary, set it to 169.254.213.1, Netmask 255.255.255.0.
3. The web application opens with a login screen.
4. The credentials for the first login are:
 Username: service
 Password: service
5. Select **Network Settings** under the **Configuration** tab.
6. Make the required settings here:

Use DHCP:	<ul style="list-style-type: none"> • not selected: the static IP address is being used. A static IP address is assigned • selected: obtains the IP address from a DHCP server.
Static IP-Address:	Enter the interface IP address (only if USE DHCP inactive).
Netmask:	Enter the network netmask (only if USE DHCP inactive).
Gateway:	Enter the IP address of the gateway (only if USE DHCP inactive).
DNS Server:	Enter the IP address of the DNS server (only if USE DHCP inactive).

7. Select **Save**.
8. Select **Reboot now**.

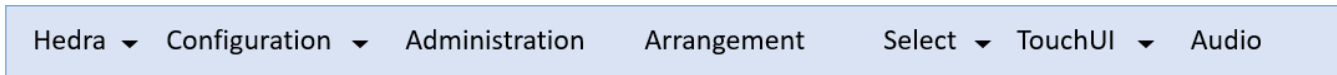
Commissioning

As a factory setting, all video inputs are displayed at the monitor connected to output 1 within initial start-up.



Checking or changing the general configuration

Using the tabs of the web application, you can set up and manage the device.



The User Manual is continuously updated and published on the Christie website at www.christiedigital.com.

Follow the instructions in the separate *User Manual* to successively configure these settings:

1. On the tab **Configuration**, select the option **Display Arrangement**.
Here, you can decide to use legacy mode or dynamic mode.

In addition, you can configure the number, the resolution and the behavior (expanded desktop) of the monitors.

NOTE: Device restarts after changes are applied.
2. On the tab **Configuration**, select the option **Display Settings** and follow the instructions.
3. On the tab **Configuration**, select the option **Network Settings** if you want to change the network settings.
4. Select the tab **Administration** to configure the video channels.
5. Check and configure the other parameters of the device.

Status displays

Front panel

The LEDs on the front of the device show the operating status.

Position	Status	Meaning
Left (☹)	Green	The device is supplied with power.
	Off	The device is turned off.
Right (⚠)	Yellow	Proper operation of the two power supply units.
	Red	Malfunction of a power supply unit. The light will appear red when only one power supply is turned on.



Replace one of the redundant power supply units with a new power supply unit with the article number 003-007505-XX (Hedra Standard) and 003-007506-XX (Hedra Pro variants) as soon as the right LED lights up in red or the message power supply failed appears.

Back panel

The LEDs on the network interface **N1** show the status of the network connection.

Position	Status	Meaning
Left	Orange	1000 Mbit/s data rate
	Green	100 Mbit/s data rate
	Off	10 Mbit/s data rate
Right	Blinking	Data is sent or received.
	Off	No data is sent or received.

Web application

The device monitors several parameters and reports warnings and errors for values exceeding their range.

These warnings and errors are displayed in the messages tab of the web application in the upper right corner. Warnings (blue) and errors (red) are visually indicated by different colors.

NOTE: Further information on this topic are identified in a separate manual for operating the device. This manual is continuously updated and published on the Christie website at www.christiedigital.com.

Technical data

Hedra Standard

General features

Hedra Standard		
Video inputs	Quantity:	9
	Socket:	see paragraph Video card on page 12
	Signal:	see paragraph Video card on page 12
	Features:	see paragraph Video card on page 12
Video outputs	Interfaces:	3 × DisplayPort 1.2 (max 600 MP/s)
		1 × HDMI 2.0 (maximum 600 MP/s)
		1 × Dual-link DVI (maximum 330 MP/s)
Video processing	No. of monitors:	Dynamic mode: 2
		Legacy mode: Maximum 5
	Supported pixel grid (factory default):	Dynamic mode: Any within the maximum pixel grid
		Legacy mode: 16 MP
	Maximum pixel grid:	Dynamic mode:
		Legacy mode:
Resolutions:	Dynamic mode:	
	Legacy mode:	
Exemplary resolutions:	Dynamic mode:	
	Legacy mode:	

Video bandwidth	Per video card:	Maximum 1,200 MP/s
	Per system:	Maximum 2,000 MP/s
USB connections to hosts	Socket:	7 × USB-B
Other interfaces	Network:	1 × RJ45 socket (10/100/1000 MBit/s)
	USB:	4 × USB-A socket (Display 1...4)
Power supply	Type:	Internal power supply unit
	Quantity:	2
	Connection:	IEC plug (IEC-320 C14)
	Power consumption:	100 - 240 VAC/63 - 47 Hz/5.00 - 2.50A
Housing	Material:	Steel plate
	Dimensions (W×H×D):	483 × 177 × 450 mm
	Weight:	Approx. 20 kg
	IP protection class:	IP20
Operating environment	Temperature:	+5°C to +40°C
	Air humidity:	10 % to 80 %, non-condensing
Storage environment	Temperature:	-20°C to +70°C
	Air humidity:	10 % to 95 %, non-condensing

Features of the video card

VIDEO CARD		
Input 1:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 550 MP/s
Input 2, 3, 4:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 300 MP/s
Input 5, 6, 7, 8:	Socket:	HDMI socket
	Signal:	Single-link DVI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Input 9:	Socket:	HDMI socket

	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Video bandwidth:	Per video card:	Maximum 1,200 MP/s

Hedra Pro-KVM

General features

Hedra Pro-KVM		
Video inputs	Quantity:	18
	Socket:	see paragraph Video cards on page 20
	Signal:	see paragraph Video cards on page 20
	Features:	see paragraph Video cards on page 20
Video outputs	Interface:	6 × Mini DisplayPort 1.2 (max 600 MP/s)
Video processing	No. of monitors:	Dynamic mode: 4
		Legacy mode: Maximum 6
	Supported pixel grid (factory default):	Dynamic mode: Any within the maximum pixel grid
		Legacy mode: 32 MP
	Maximum pixel grid:	Dynamic mode: <ul style="list-style-type: none"> • Maximum 16384 pixels horizontally • Maximum 16384 pixels vertically
		Legacy mode: <ul style="list-style-type: none"> • Maximum 16384 pixels horizontally • Maximum 16384 pixels vertically
Resolutions:	Legacy mode: <ul style="list-style-type: none"> • 5120 × 2880 • 5120 × 2160 • 4096 × 2160 • 3840 × 2160 • 2560 × 1600 • 2560 × 1440 • 1920 × 1200 • 1920 × 1080 Further resolutions possible when using the dynamic mode.	
Exemplary resolutions:	Dynamic mode: <ul style="list-style-type: none"> • 5120 × 2880 • 5120 × 2160 • 5120 × 1440 • 4096 × 2160 • 3840 × 2160 • 3840 × 1600 • 3840 × 1440 • 3840 × 1080 • 3440 × 1440 • 2560 × 1600 • 2560 × 1440 • 2048 × 2048 • 1920 × 1200 • 1920 × 1080 Further VESA and CTA standardized resolutions within the scope of the video bandwidth/pixel rate and horizontal/vertical frequency possible.	
Video bandwidth	Per video card:	Maximum 1,200 MP/s
	Per system:	Up to 4,000 MP/s

USB connections to hosts	Socket:	14 × USB-B
Other interfaces	Network:	1 × RJ45 socket (10/100/1000 MBit/s)
	USB:	4 × USB-A socket (Display 1...4)
Power supply	Type:	Internal power supply unit
	Quantity:	2
	Connection:	IEC plug (IEC-320 C14)
	Power consumption:	90 - 263 VAC/63 - 47 Hz/6.00 – 3.00A
Housing	Material:	Steel plate
	Dimensions (W×H×D):	483 × 177 × 450 mm
	Weight:	Approx. 20 kg
	IP protection class:	IP20
Operating environment	Temperature:	+5°C to +40°C
	Air humidity:	10 % to 80 %, non-condensing
Storage environment	Temperature:	-20°C to +70°C
	Air humidity:	10 % to 95 %, non-condensing

Features of the video cards

VIDEO CARD #1		
Input 1:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 550 MP/s
Input 2, 3, 4:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 300 MP/s
Input 5, 6, 7, 8:	Socket:	HDMI socket
	Signal:	Single-link DVI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Input 9:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 2560 pixel

	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Video bandwidth:	Per video card:	Maximum 1,200 MP/s

VIDEO CARD #2

Input 10:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 550 MP/s
Input 11, 12, 13:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 300 MP/s
Input 14, 15, 16, 17:	Socket:	HDMI socket
	Signal:	Single-link DVI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Input 18:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Video bandwidth:	Per video card:	Maximum 1,200 MP/s

Hedra Pro-Video

General features

Hedra Pro-Video		
Video inputs	Quantity:	27
	Socket:	see paragraph Video cards on page 28
	Signal:	see paragraph Video cards on page 28
	Features:	see paragraph Video cards on page 29
Video outputs	Interfaces:	6 × Mini DisplayPort 1.2 (max 600 MP/s)
Video processing	No. of monitors:	Dynamic mode: 4
		Legacy mode: Maximum 6
	Supported pixel grid (factory default):	Dynamic mode: Any within the maximum pixel grid
		Legacy mode: 32 MP
	Maximum pixel grid:	Dynamic mode: <ul style="list-style-type: none"> • Maximum 16384 pixels horizontally • Maximum 16384 pixels vertically
		Legacy mode: <ul style="list-style-type: none"> • Maximum 16384 pixels horizontally • Maximum 16384 pixels vertically
Resolutions:	Legacy mode: <ul style="list-style-type: none"> • 5120 × 2880 • 5120 × 2160 • 4096 × 2160 • 3840 × 2160 • 2560 × 1600 • 2560 × 1440 • 1920 × 1200 • 1920 × 1080 Further resolutions possible when using the dynamic mode.	
Exemplary resolutions:	Dynamic mode: <ul style="list-style-type: none"> • 5120 × 2880 • 5120 × 2160 • 5120 × 1440 • 4096 × 2160 • 3840 × 2160 • 3840 × 1600 • 3840 × 1440 • 3840 × 1080 • 3440 × 1440 • 2560 × 1600 • 2560 × 1440 • 2048 × 2048 • 1920 × 1200 • 1920 × 1080 Further VESA and CTA standardized resolutions within the scope of the video bandwidth/pixel rate and horizontal/vertical frequency possible.	
Video bandwidth	Per video card:	Maximum 1,200 MP/s
	Per system:	Up to 4,000 MP/s
Other interfaces	Network:	1 × RJ45 socket (10/100/1000 MBit/s)

	USB:	4 × USB-A socket (Display 1...4) (Note: no function)
Power supply	Type:	Internal power supply unit
	Quantity:	2
	Connection:	IEC plug (IEC-320 C14)
	Power consumption:	90 - 264 VAC/63 - 47 Hz/6.00 – 3.00A
Housing	Material:	Steel plate
	Dimensions (W×H×D):	483 × 177 × 450 mm
	Weight:	Approx. 20 kg
	IP protection class:	IP20
Operating environment	Temperature:	+5°C to +40°C
	Air humidity:	10 % to 80 %, non-condensing
Storage environment	Temperature:	-20°C to +70°C
	Air humidity:	10 % to 95 %, non-condensing

Features of the video cards

VIDEO CARD #1		
Input 1:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 550 MP/s
Input 2, 3, 4:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 300 MP/s
Input 5, 6, 7, 8:	Socket:	HDMI socket
	Signal:	Single-link DVI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Input 9:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Video bandwidth:	Per video card:	Maximum 1,200 MP/s

VIDEO CARD #2

Input 10:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 550 MP/s
Input 11, 12, 13:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 4096 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 300 MP/s
Input 14, 15, 16, 17:	Socket:	HDMI socket
	Signal:	Single-link DVI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Input 18:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Video bandwidth:	Per video card:	Maximum 1,200 MP/s

VIDEO CARD #3

Input 19, 20, 21, 22, 27:	Socket:	HDMI socket
	Signal:	HDMI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Input 23, 24, 25, 26:	Socket:	HDMI socket
	Signal:	Single-link DVI
	H display:	Min. 320 pixel; maximum 2560 pixel
	V display:	Min. 200 lines; maximum 2560 lines
	Pixel rate:	Min. 16 MP/s; maximum 165 MP/s
Video bandwidth:	Per video card:	Maximum 1,200 MP/s

