



NEXT GENERATION MEDIA SERVER

PIXERA **mini**
PIXERA **one**
PIXERA **two**

MANUAL

Table of Contents

Important Information.....	5
Identifying the product and other information.....	5
Abbreviations and naming used in this manual	5
General information about this instruction manual	5
Safety information.....	6
Installation on site.....	7
Initial installation.....	9
Operation, maintenance, modifications, cleaning and disassembly.....	10
Instructions for disposal.....	13
Specifications	14
Ambient temperature	14
Relative humidity	14
Airflow considerations	14
Scope of delivery	14
Warranty	14
Environmental specifications – operating.....	15
Environmental specifications – storage	15
Power supply.....	15
Heat dissipation.....	15
Physical.....	16
Dimensions.....	17
Front views	19
Front view PXm	19
Front view PX1.....	19
Front view PX2.....	19
Description front views	19
Rear views.....	20
Rear view PXm.....	20
Rear view PX1, PX2.....	21
Options PXm	22
NVMe option: NVMe 1TB.....	22
NVMe option: NVMe 2TB.....	22
Options PX1, PX2	23
Performance upgrade	23
NVMe-SSD Onboard upgrade.....	24
SSD options.....	25
Video Outputs	26
Video Outputs for PX2 OCTO.....	26
Video Outputs PX2 RT	27
Output option: GUI Output	28
Output option: Framelock and Genlock.....	29
NVMe-SSD option: 2TB.....	30
NVMe-SSD option: 4TB.....	30
NVMe-SSD option: 6TB.....	30
NVMe-SSD option: 4TB or 8TB	31
NVMe-SSD option: 6TB or 12TB	31
NVMe-SSD RAID0 option: 8TB or 16TB	32
NVMe-SSD RAID0 option: 12TB or 24TB	32

Live input option: HDMI1.4-I2	33
Live input option: HDMI2.0-I2	34
Live input option: 3GSDI-I1, 3GSDI-I2, 3GSDI-I4.....	35
Live input option: 3GSDI-C4, 3GSDI-C8	37
Live input option: FLEX-C4, FLEX-C8	39
Audio output option: HDSPe AIO	40
Audio output option: HDSPe AO4S	41
Audio output option: HDSPe MADI	42
Audio output option: HDSPe RayDAT	43
Audio output option: HDSPe AES	44
Mechanical installation	45
Mounting the Vesa Mount on PXm	46
Mounting the Dual Rackadapter on PXm	47
Mounting the Rail Kit on PX1	49
Mounting the Rail Kit on PX2	51
Starting up the media server	55
Software	56
Media Server Operating System.....	56
Standard User Names and Passwords.....	56
Preinstalled Programs	57
Startmenu.....	58
PIXERA Hub.....	59
EDID Management	64
Genlock and Framelock Setup.....	66
Mosaic Setup.....	67
CLI programs to change screen resolution, setup mosaic and set sync	69
Resetting the Operating System.....	70
Making Updates	70
Servicing.....	71
Removing the PX2 back panel for servicing purposes.....	71
Replacing the power supply	72
Replacing the SSDs	73
AV Stumpfl contact	74
Imprint.....	74
Declaration of Conformity	75

Important Information

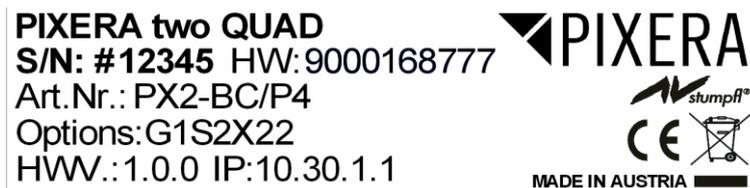
Identifying the product and other information

This instruction manual relates to media server and media player systems from AV Stumpfl GmbH.

The model designation and serial number are located on the media server's serial number tag.

For PXm and PX1, the serial number tag is located on the bottom of the unit.

For PX2, the serial number tag is located on the sides in the recess on the back.



Abbreviations and naming used in this manual

Abbreviations:

PIXERA mini: PXm

PIXERA one: PX1

PIXERA two: PX2 (if not explicitly mentioned otherwise, this also applies to models PX2 OCTO and PX2RT)

PIXERA two RT: PX2RT

The term "media server" is used in this manual for both media servers (PX1, PX2) and media players (PXm).

General information about this instruction manual

With this instruction manual, users of AV Stumpfl GmbH media servers are provided the necessary information for the safe use of their systems.

The safety instructions resulting from the legally prescribed risk analysis and assessment are an essential part of these instructions.

- **IMPORTANT!** Please read these instructions carefully before using your system! Store this instruction manual in a safe place for later reference.
- **IMPORTANT!** Due to the high number of possible configurations, it is not possible to provide specific instructions for all the individual components in this manual.

For specific questions and further support, please contact us at:

AV Stumpfl GmbH, Tel: +43 (7249) 42811, support@avstumpfl.com

Subject to change without notice. All information is provided without guarantee and liability.

Safety information

The safety information in this instruction manual can be broken down into the following categories:

- **WARNING** is used for hazards that could result in death or serious injuries
- **CAUTION** is used for hazards that could result in minor injuries.
- **IMPORTANT** is used for all other cases where the potential for material damage exists or specific actions are recommended.

Target group/qualifications

The use of media server systems requires specialist AV and IT knowledge. For this reason, the use of media server systems should be limited to qualified personnel. Media server system owners and operators must ensure this via organizational measures.

The qualified personnel responsible for installation and maintenance must also be able to prevent any remaining risks in terms of health and safety with their understanding of the existing dangers.

Warning about electrical hazards

Electrical hazards can arise across a media server system's entire life cycle. These can arise not only from the media server system, but the electrical installation on site as well.

- **WARNING!** Dangerous situations can arise from the careless handling of the server system or faulty electrical installation.

These can result in severe injury or death!

- Extreme care should be used when working on the media server system.
- Always consult the responsible specialists when working with dangerous voltages.

Intended use

The media server systems are meant exclusively for use in rooms with normal operating conditions (temperature, humidity, radiation) such as air-conditioned server rooms, offices and other rooms with similar conditions.

Warning about foreseeable misuse

- **WARNING!** Dangerous situations can arise from using the server systems in unsuitable environments.

These can result in severe injury or death!

- Only use the media server systems in professional AV and IT environments!
- The use of the media server systems in special environments, such as medical facilities, potentially explosive environments or areas with unusually high EMC requirements, is not permitted!

- **WARNING!** Dangerous situations can arise from unauthorized modifications.

These can result in severe injury or death!

- Do not attempt to modify the existing protections!

Installation on site

Checking for transport damages

Check the packaging and the media server system for possible damage that could have arisen during transport. If you find damage, please report it immediately to your vendor or AV Stumpfl GmbH.

- **IMPORTANT!** Add-on cards can sometimes become partially detached from their slots during transport.

In this case please report it immediately to your vendor or AV Stumpfl GmbH.

Danger from condensation

- **WARNING!** A difference in temperature of 15°C between the room's temperature and the media servers can result in the formation of condensation. This can lead to short circuits and other damage. These can lead to the risk of electrocution. Electrocution can result in severe injury or death!
 - Please ensure that the server system is not subject to quick changes in temperature!
 - Give the system time to acclimate to its environment.
 - Do not operate the server system if condensation has formed!

Danger from incorrect posture and overexertion

- **WARNING!** Due to the weight and dimensions of the server system, physical danger can arise during set up and installation.
 - Avoid incorrect posture and overexertion (e.g. from lifting heavy objects)!

Danger from tipping

- **WARNING!** The server system can tip over from improper transport or installation. This is particularly true for rack systems that have a high center of gravity due to their construction. This can result in severe injury or death!
 - Transport the system with the necessary care!
 - Ensure secure installation on a flat and level surface.
 - Rack systems must be anchored to a suitable firm surface!
 - When installing devices into the rack, start at the lowest slot and work upwards. Install the heaviest devices at the bottom of the rack!
 - Only remove one device at a time from a rack!

Installation on site

AV Stumpfl GmbH recommends installing the server in an air-conditioned server room. Select a site that is:

- Clean, dry and free of particles in the air (except for normal dust).
- Not near sources that cause vibrations or shaking.
- Protected from strong electro-magnetic fields that arise from electrical devices.
- Provides access to a properly grounded wall socket.
- Able to be equipped with surge protection, particularly in areas subject to thunderstorms.
- Provides sufficient space for access to the power cables, as these are the primary way to disconnect the server from the power supply.
- Provides sufficient space to ensure air circulation (for cooling).

Danger from noise

- **WARNING!** Some server systems emit noise. Generally, this noise is produced by the system fans. In certain situations, this can lead to hearing damage. Communication near such server systems can also be impaired.
 - Use care when selecting an installation site for such servers!
 - There must be no permanent impairment!

Initial installation

Notes for rack system installations

Install a line disconnect for the entire rack system.

This line disconnect must be easily accessible and have a label that states that it controls the power supply to the entire unit and not just the servers.

Danger from improper voltage supply

- **WARNING!** Dangerous situations can arise from improper voltages. These can lead to the risk of electrocution.

Electrocution can result in severe injury or death!

- Only operate the server system using the voltage specified in this manual!

The server system can be operated in combination with an uninterruptible power supply (UPS). In this case, please follow the instruction manual for the UPS system!

Danger from improper grounding

- **WARNING!** Dangerous situations can arise from improper grounding. These can lead to the risk of electrocution.

Electrocution can result in severe injury or death!

- Please ensure that the server system and/or the rack itself and all incorporated devices are properly grounded!
- For such work, always consult the responsible specialists.

Proper grounding is also very important for protection against EMC interference.

Danger from fire

- **WARNING!** Dangerous situations can arise from improper electrical installations. These can lead to the risk of fire.

Fires can result in severe injury or death!

- Please ensure that electrical installations are properly performed!
- Always consult the responsible specialists for such work.

Operation, maintenance, modifications, cleaning and disassembly

Electrical hazards

Incidents arising from electrical hazards can occur during operation, maintenance, when making modifications, cleaning or disassembling the server.

Turn off all connected peripheral devices before opening the media server system.

NOTE: Opening the media server system will void its warranty!

- **WARNING!** Dangerous situations can arise if the server system is not turned off before opening the system.

These can result in severe injury or death!

- Ensure that the media server system is disconnected from the power source before opening the media server system!
- Turn off the media server system via the power switch and unplug all power cables from the outlet!
- Ensure that the media server system will not be plugged in unexpectedly by another person or that the system will unexpectedly restart after an interruption in the power supply.

Additional comments on the subject:

- The power button will NOT disconnect the system from the source of power. The server system must be completely disconnected from the source of power.
- To do this, all power cables must be removed from the electrical outlet.
- A system may be equipped with multiple power cables. In such cases, ensure that all power cables have been unplugged.
- Do not make any modifications to the power cable and do not use any cables except those with the correct specifications. Each power supply in the system must be connected to the power source via its own cable.
- Power supplies do not have any parts that can be serviced by the user.
- Never open a power supply. Power supplies contain dangerous voltages, currents and energy sources. Send the device back for any necessary maintenance work.
- The server system can unexpectedly restart after an interruption in the supply of power.

One exception is components that can explicitly be plugged in (hot-plug) or swapped (hot-swap) during operation. Please note the following safety instructions for hot-plug power supplies.

Electrical hazards related to hot-plug power supplies

Electrical accidents can occur when exchanging hot-plug power supplies.

- **WARNING!** Dangerous situations can arise from the careless handling of hot-plug power supplies. These can result in severe injury or death!
 - Unplug all power cables of a hot-plug power supply before swapping it out!

Avoiding data loss

- **IMPORTANT!** Remember to back-up your data before performing any maintenance or any other similar work inside your media server system.
Check to ensure that your data restoration system works properly.

Disassembly and assembly of the housing

Should you need to remove the media server system's housing for maintenance work or any similar work inside the system, make sure to store all screws and fastenings in a safe place.

NOTE: Opening the media server system will void ins warranty!

Once you have completed your work on the media server system, reassemble the housing using the original screws and fasteners.

- **IMPORTANT!** Operating the system without its case can lead to damage for the system components. Reattach the case as follows:
 1. First, ensure that you have not left any tools or other parts in the system!
 2. Check whether all cables, add-on cards and other components are correctly configured and attached.
 3. Re-mount the panels onto the product's frame!

Danger from sharp corners and edges

- **CAUTION!** Despite careful selection of the components, sharp corners and edges can occur on the sheet metal housing. Plastic parts can also break during assembly or disassembly and leave sharp corners and edges.
Injuries can be the result.
- Work with care and avoid sharp corners and edges.
- Wear protective gloves especially when working on the housing and when installing rack systems!

Danger of pinching

- **CAUTION!** Moving parts, such as hard drive bays and caps, can pinch fingers. Injuries can result!
 - Work carefully and pay attention to places where pinches can occur.
 - Wear protective gloves when working on server housing!

Danger from hot components

- **WARNING!** During operation, the processor and heat sink can get very hot. Burns can result.
 - Do not open the system until it has cooled completely!
 - Be careful when removing or installing hot-plug components to avoid contact with hot elements!

Danger from moving parts

- **WARNING!** Server systems contain moving parts, such as rotating fan blades.
Contact with such components can cause injury.
 - Never touch rotating fan blades or other moving parts!
 - Always operate the server system with the fan cover closed (if present)!
 - Long hair can be caught in the fan. If necessary, use a hair net.

Danger from batteries

- **WARNING!** A danger of explosion and corrosion can arise from improper battery replacements. Hazardous substances can be leaked. Improper use can result in serious injury.
 - Only use the battery types recommended by the manufacturer!
 - Never try to charge or open a battery!

Preventing damage caused by a lack of ESD measures

- **IMPORTANT!** Electrostatic discharge can damage hard drives, circuit boards and other components. Perform all work at an ESD workstation!

If such a work space is not available, you can achieve a degree of protection against electrostatic discharge by wearing an anti-static wristband. You can use these to keep you grounded by attaching the clip to any unpainted metal part of your computer case.

Always handle circuit boards with utmost caution. They are extremely sensitive to electrostatic discharge. Hold circuit boards by the edges.

After removing the circuit board from its protective case or the server, place it right side up on a grounded, fully-discharged surface. We recommend the use of a conductive foam pad and not the board's protective case.

Never drag the board across a surface.

Use gloves when working with sensitive components.

Preventing damage due to improper cooling and a lack of air flow

- **IMPORTANT!** Make sure that the ventilation slots are not covered.

Route all cables carefully to avoid disturbances in the air flow and avoid cooling problems.

To ensure proper cooling and air flow, only operate the system with its case fully assembled.

Preventing damage caused by unsuitable cleaning agents

- **IMPORTANT!** Only use suitable cleaning agents. A microfiber cloth is suitable for external cleaning.

Compressed air may be used to clean the inside of the server system. Please ensure that the air is applied gently and from a sufficient distance, as the components can otherwise be damaged.

Vacuum cleaners are not suitable for cleaning the inside of the media server system.

Instructions for disposal

The media server system and batteries must be properly disposed of as electrical waste at the end of their use. The disposal of electrical and electronic equipment is regulated by law. Please observe all local regulations. Disposal via household waste or ordinary industrial waste is not permitted.



Many of the materials are reusable. By following this notice, you make an important contribution to protecting the environment.

Specifications

To ensure proper operation, make sure that the following operating conditions are met for the media server.

- **IMPORTANT!** When you receive your media server, place it in the environment where you will install it. Leave the server in its shipping crate at its final destination for 12 hours and do not connect it to the power supply! This resting period prevents thermal shock and condensation.

Ambient temperature

An ambient temperature range of 21°C to 23°C is optimal for server reliability. This temperature range allows the recommended relative humidity level to be maintained quite easily. The maximum admissible temperature range is between 10°C and 30°C. Please bear in mind that high temperatures have a negative effect on the components' life cycle.

Relative humidity

Ambient relative humidity levels between 45% and 50% are the most suitable for data processing operations.

- Prevent corrosion
- Provide an operating time buffer in the event of environmental control system failure.
- Help avoid failures caused by the intermittent interference from static discharges that occur when relative humidity is too low.

The maximum admissible relative humidity range is between 20% and 80% (noncondensing).

Airflow considerations

- Ensure unobstructed airflow through the chassis.
- Ensure that air enters at the front of the server housing.
- Ensure that air exits at the openings designated for this purpose:
PXm: back and right side. PX1: back and top, PX2: back.
- Ensure that ventilation openings, such as cabinet doors, for both the inlet and exhaust of the server provide a minimum open area equal to the server's open areas.
- Take care to prevent recirculation of exhaust air within a rack or cabinet.
- Manage cables to minimize interfering with the server exhaust vent.

Scope of delivery

PXm: Power Supply Unit, Power Cable, 4x mDP to DP Adapter, Manual

PX1: 19" Rail Kit, Power Cable, DP to DVI-D(SL) Adapter, Manual

PX2: 19" Rail Kit, 2x Power Cable, DP to DVI-D(SL) Adapter, Manual

PX2 OCTO: 19" Rail Kit, 2x Power Cable, 2x DP to DVI-D(SL) Adapter, Manual

PX2 RT: 19" Rail Kit, 2x Power Cable, DP to DVI-D(SL) Adapter, DP to HDMI Adapter, Manual

Warranty

We offer 2 years warranty on PIXERA media servers.

An additional warranty of total 3, 4 or 5 years is available on request.

- **IMPORTANT!** Please note that opening or modifying the media server voids its warranty.

Environmental specifications – operating

Temperature (altitude less than 1000m, no direct sunlight)	10°C to 30°C
Maximum Temperature Gradation	10°C per hour
Temperature De-Rating (altitude more than 1000m)	Reduce max. temp. by 1°C per 300m
Maximum Altitude	3000m
Relative Humidity (noncondensing)	20%RH to 80%RH
Maximum Humidity Gradation	10%RH per hour

Environmental specifications – storage

Temperature (no direct sunlight)	-30°C to 55°C
Maximum Temperature Gradation	20°C per hour
Relative Humidity (noncondensing)	5%RH to 95%RH
Maximum Humidity Gradation	10%RH per hour

Power supply

	PXm	PX1	PX2	PX2RT
Power Supply	100-240VAC, 50-60Hz			
Power Consumption Peak	150W	500W	800W	800W
Power Consumption Average with High Load * (Standard Config)	120W	350W	450W	600W
Redundant Power Supply Hot-Plug	Not available	Not available	Yes	Yes

	PXm	PX1	PX2	PX2RT
Power Consumption Average with High Load * X27 Config	Not available	+35W	+35W	Not available
Power Consumption Average with High Load * X37 Config	Not available	+70W	+70W	Standard Config
Power Consumption Average with High Load * X51 Config	Not available	Not available	+200W	+130W
Power Consumption Average with High Load * X65 Config	Not available	Not available	+250W	+180W

* Power Consumption Average with High Load = Tested with very high CPU, GPU and SSD/NVMe workload

Heat dissipation

	PXm	PX1	PX2	PX2RT
Heat Dissipation Peak	520BTU/h	1710BTU/h	2730BTU/h	2730BTU/h
Heat Dissipation Average with High Load * (Standard Config)	410BTU/h	1200BTU/h	1540BTU/h	2050BTU/h

	PXm	PX1	PX2	PX2RT
Heat Dissipation Average with High Load * X27 Config	Not available	+120BTU/h	+120BTU/h	Not available
Heat Dissipation Average with High Load * X37 Config	Not available	+240BTU/h	+240BTU/h	Standard Config
Heat Dissipation Average with High Load * X51 Config	Not available	Not available	+680BTU/h	+680BTU/h
Heat Dissipation Average with High Load * X65 Config	Not available	Not available	+850BTU/h	+850BTU/h

* Heat Dissipation Average with High Load = Tested with very high CPU, GPU and SSD/NVMe workload

Physical

	PXm	PX1	PX2
Case Dimension (WxDxH)	215 x 230 x 44,4mm	447 x 441 x 44,4mm	445 x 468 x 88,9mm
Max. Product Dimension (WxDxH)*	215 x 230 x 44,4mm	484 x 489 x 44,4mm	484 x 493 x 88,9mm
Power Supply Dimension (WxDxH)*	63 x 190 x 41mm	-	-
Product Weight	2,5kg	8,3kg	13,1kg
Power Supply Weight	0,6kg	-	-
Shipping Dimension	500 x 310 x 110mm	660 x 580 x 160mm	790 x 560 x 220mm
Shipping Weight	4,5kg	11,75kg	21,15kg

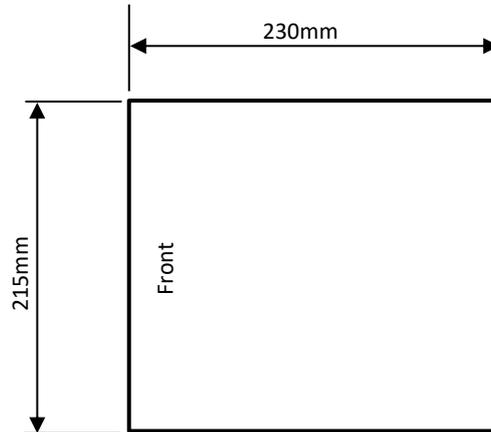
PX1 with rails fit into a rack with a depth between 675mm and 850 mm.

PX2 with rails fit into a rack with a depth between 675mm and 920mm.

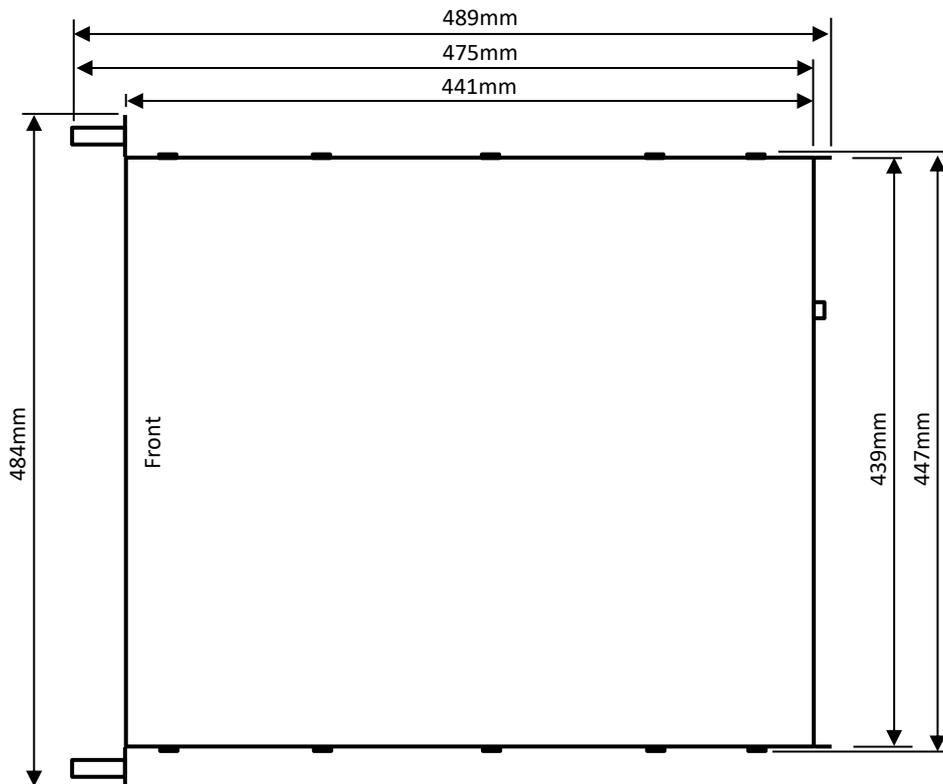
Dimensions

IMPORTANT! Please note that due to the production process there may be deviations in the dimensions. For exact dimensions please use the measures of the actual device.

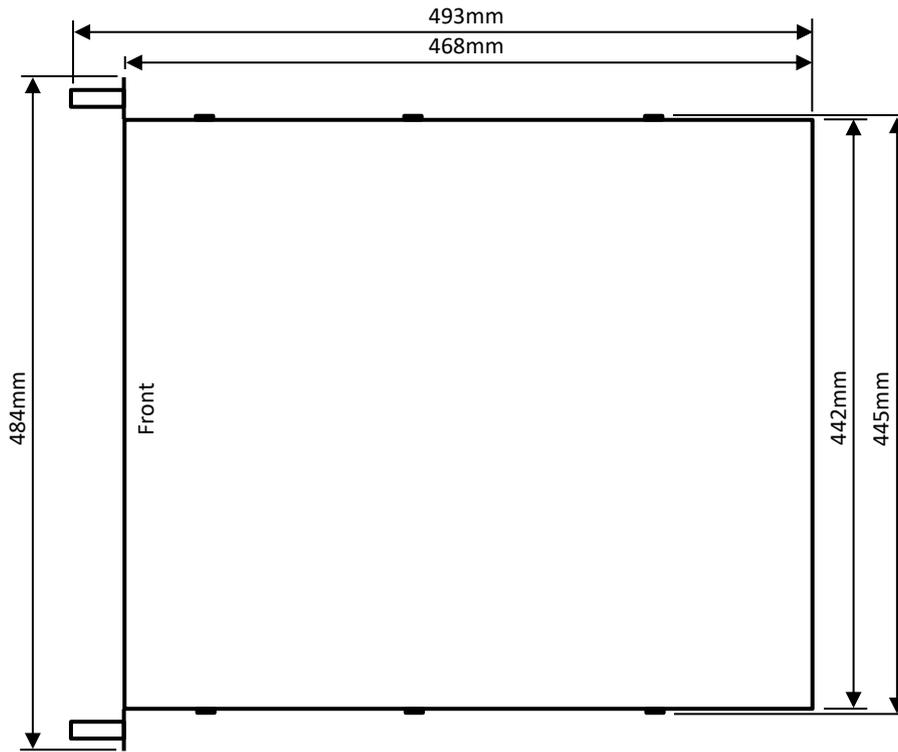
Dimensions PXm



Dimensions PX1

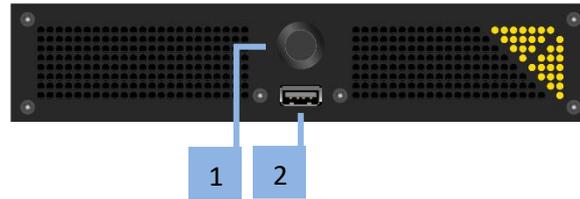


Dimensions PX2



Front views

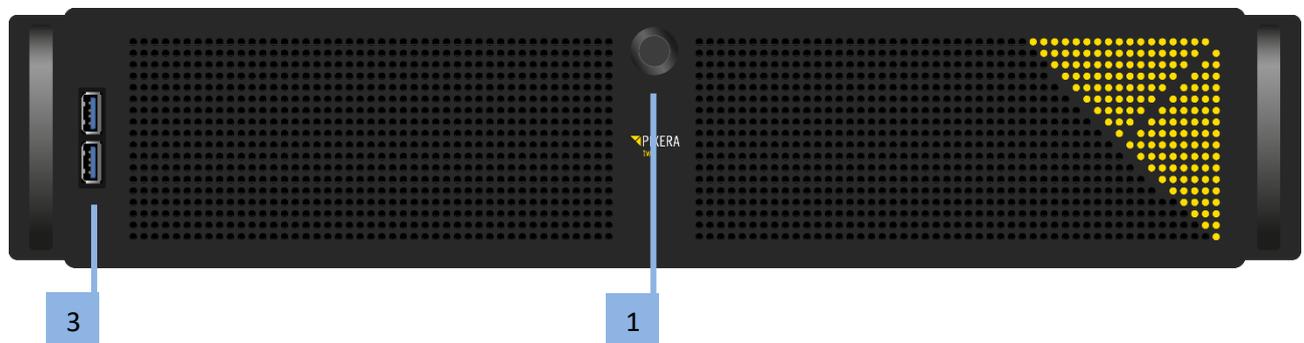
Front view PXm



Front view PX1



Front view PX2

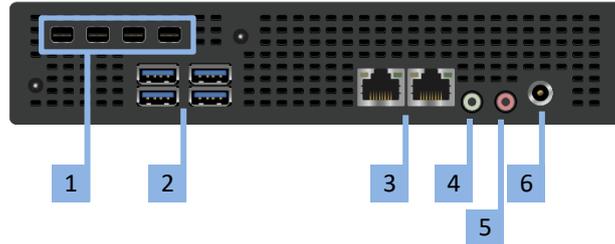


Description front views

1. Power button
2. USB2.0 port
3. 2x USB3.0 port

Rear views

Rear view PXm

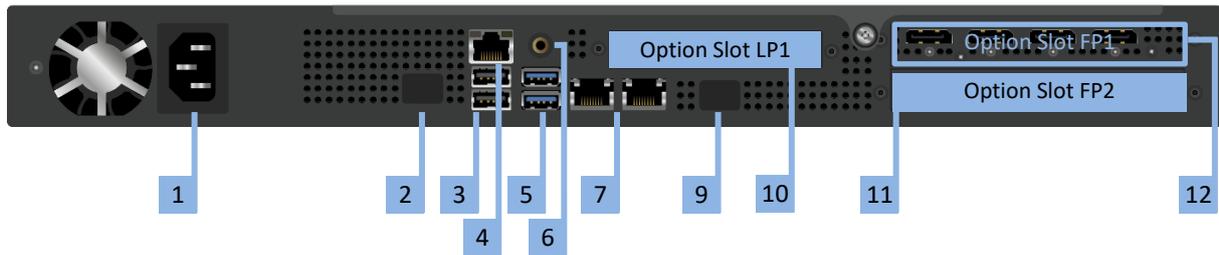


Description rear views PXm

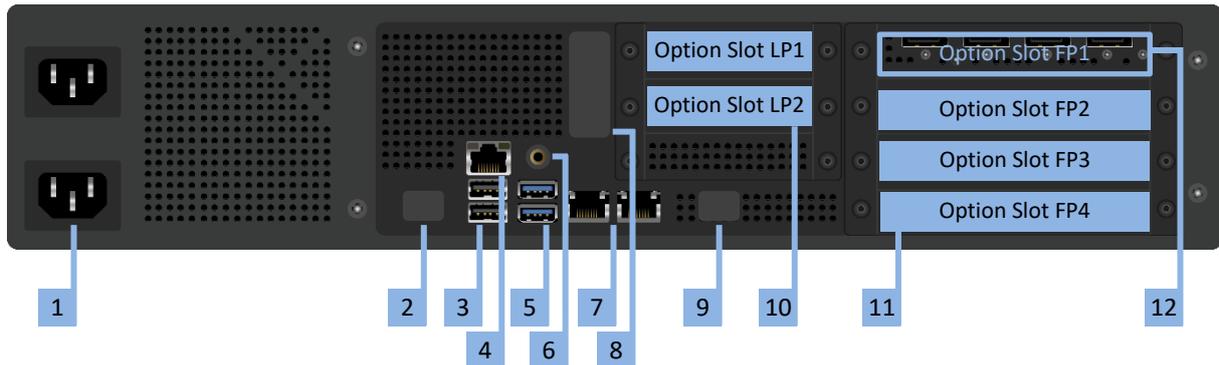
1. 4x Video Output:
Video output standard: mDP1.4
Video output resolution (max.): 4x 1920x1080 @60Hz or 1x 4096x2160 @60Hz
EDID management: Yes
Output D: left, Output A: right
2. 4x USB3.0
3. 2x 1Gbps LAN: 10Mbps, 100Mbps and 1Gbps speeds are supported
Left Port = LAN1: The fixed IP address of this LAN socket can be found on the serial number label.
Right Port = LAN2: The IP address of this socket is 1 higher than LAN1. For example, if LAN1 has the address 10.30.1.1. then LAN2 has the address 10.30.1.2.
Please note that these are the IP addresses of the delivery state of the media server. All IP addresses can of course be changed individually. Please see the network settings of the operating system for the currently set IP address.
4. Stereo Audio Output
5. Mic Input
6. Power Supply Input.
Input voltage range: 19VDC/7,9A – 24VDC/6,25A
Power: 150W
Polarity: tip = + / shield = GND
IMPORTANT! Using an input voltage and polarity other than that specified may damage the product!

Rear view PX1, PX2

Rear view PX1



Rear view PX2



Description rear views PX1, PX2

1. Socket for mains connection: In case of PX2 there are two connectors, as PX2 is equipped with redundant power supplies. Both connections must be made.
2. Not used (Do not connect!)
3. 2x USB2.0
4. IPMI LAN: The IP address of the IPMI LAN port is similar to the IP address of LAN1 (see [6] below), but instead of 10.31.x.x. the address is 10.41.x.x. For example, if LAN1 has the address 10.31.2.3, the IPMI LAN port has the address 10.41.2.3.
5. 2x USB3.0
6. Stereo Audio Output
7. 2x 10Gbps LAN: 1Gbps and 10Gbps speeds are supported, 10Mbps and 100Mbps speeds are not supported!
Left port = LAN1: The fixed IP address of this LAN socket can be found on the serial number label.
Right port = LAN2: This LAN port is set to DHCP. If a unique fixed IP address is required, please use 10.32.x.y, where x and y are identical with the last two digits of the IP address of LAN1. For example, if LAN1 has the IP address 10.31.2.3, the IP address 10.32.2.3 can be used for LAN2. Please note that these are the IP addresses of the delivery state of the media server. All IP addresses can of course be changed individually.
8. Rear panel illumination (only available in systems shipped after Q2/2019)
9. Not used (Do not connect! For servicing purposes only!)
10. Option Slots LPx
11. Option Slots FPx
12. Always located in Option Slot FP1:
4x Video Output DP1.4. See details under "Options" – "Video Outputs".

Options PXm

NVMe option: NVMe 1TB

NVMe storage for high data rate applications.

- Option Code: M1T0

The NVMe 1TB is installed internally. There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter can either be D:, E: or F:, depending on the configuration of the system.

The maximum constant physical read rate of this drive is 1,6GB/s. (Peak values can be higher.)

NVMe option: NVMe 2TB

NVMe storage for high data rate applications.

- Option Code: M2T0

The NVMe 1TB is installed internally. There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter can either be D:, E: or F:, depending on the configuration of the system.

The maximum constant physical read rate of this drive is 1,6GB/s. (Peak values can be higher.)

Options PX1, PX2

Performance upgrade

The Performance Options consist of a faster CPU and more RAM. More RAM also uses more RAM channels and thus increases data throughput.

- Option Code: X27, X37, X51, X65

Option Slot PX1: no slot needed

Option Slot PX2: no slot needed

Standard Configuration:

Standard Configuration for	PX1, PX2	PX2 OCTO	PX2RT
Option Name	Xeon 17, 24GB RAM	Xeon 27, 32GB RAM	Xeon 37, 48GB RAM
Code	X17	X27	X37
Server Grade Hardware Components	Yes	Yes	Yes
CPU Type	Intel Xeon SP Gen2	Intel Xeon SP Gen2	Intel Xeon SP Gen2
CPU Performance Index	17	27	37
CPU # of Cores / # of Threads	8/16	12/24	16/32
CPU Min/Max Frequency	2,1/3,2GHz	2,4/3,5GHz	2,3/3,9GHz
RAM	24GB	32GB	48GB
RAM Channels used (max. 6)	3	4	6
ECC RAM	Yes	Yes	Yes

Performance Upgrades available:

Available for	PX1, PX2	PX1, PX2	PX2	PX2
Option Name	Xeon 27, 32GB RAM	Xeon 37, 48GB RAM	Xeon 51, 96GB RAM	Xeon 65, 192GB RAM
Code	X27	X37	X54	X65
Server Grade Hardware Components	Yes	Yes	Yes	Yes
CPU Type	Intel Xeon SP Gen2	Intel Xeon SP Gen2	Intel Xeon W	Intel Xeon W
CPU Performance Index	27	37	51	65
CPU # of Cores / # of Threads	12/24	16/32	16/32	24/48
CPU Min/Max Frequency	2,4/3,5GHz	2,3/3,9GHz	3,2/4,4GHz	2,7/4,4GHz
RAM	32GB	48GB	96GB	192GB
RAM Channels used (max. 6)	4	6	6	6
ECC RAM	Yes	Yes	Yes	Yes

NVMe-SSD Onboard upgrade

Optional NVMe storage upgrade for data.

- Option Code: E1T0, E2T0

Option Slot PX1: no slot needed

Option Slot PX2: no slot needed

Using the onboard NVMe's, no option slot will be occupied. There are no connectors or operating controls available.

The maximum constant physical read rate of this drive is 1,6GB/s. (Peak values can be higher.)

Available for	Standard for PX1, PX2	PX1, PX2	
Onboard NVMe Capacity (Net)	500GB	1TB	2TB
Onboard NVMe Max. Constant Read Rate	1,6GB/s	1,6GB/s	1,6GB/s

SSD options

Please note that on PX1 and PX2 the Operating System is stored on a separate SSD (PX1: 240GB, PX2: 256GB), so the capacity of the data SSD is fully available.

Option Slot PX1: no slot needed

Option Slot PX2: no slot needed

Single SSD:

Optional SSD for data. Installed internally in PX1 and in the primary data SSD slot in PX2.

- Code D480, D960, D1T9, D3T8, D7T8

Available for	PX1, PX2				
SSD Capacity (Net)	480GB	960GB	1,92TB	3,84TB	7,68TB
SSD Max. Constant Read Rate	500MB/s	500MB/s	500MB/s	500MB/s	500MB/s

Dual SSD in RAID0:

Optional 2x SSDs in RAID0 for data. Installed in primary and secondary data SSD slot.

- Code D960R0, D1T9R0, D3T8R0, D7T8R0, D15TR0

Available for	PX2				
SSD Capacity (Net)	960GB	1,92TB	3,84TB	7,68TB	15TB
SSD Max. Constant Read Rate	1GB/s	1GB/s	1GB/s	1GB/s	1GB/s

Dual SSD in RAID1:

Optional 2x SSDs in RAID1 for data. Installed in primary and secondary data SSD slot.

- Code D480R1, D960R1, D1T9R1, D3T8R1, D7T8R1

Available for	PX2				
SSD Capacity (Net)	480GB	960GB	1,92TB	3,84TB	7,68TB
SSD Max. Constant Read Rate	500MB/s	500MB/s	500MB/s	500MB/s	500MB/s

Please note, that the above options cannot be combined.

Video Outputs

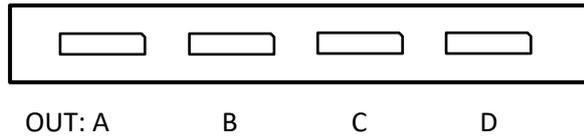
Video Outputs are always supplied with the Server.

In case of PX2 Option Slot FP1 is used.

- Option Code: P4

Option Slot PX1: FP1 (standard, cannot be changed)

Option Slot PX2: FP1 (standard, cannot be changed)



Port description

OUT A, ..., OUT D: Video Output A, ..., Video Output D

- Video output standard: DP1.4
- Video output resolution (max.): 4096x2160 @60Hz
- EDID management: Yes

IMPORTANT! Please note that due to space reasons DisplayPort cables need to be used where the plug does not exceed a maximum thickness of approx. 14mm!

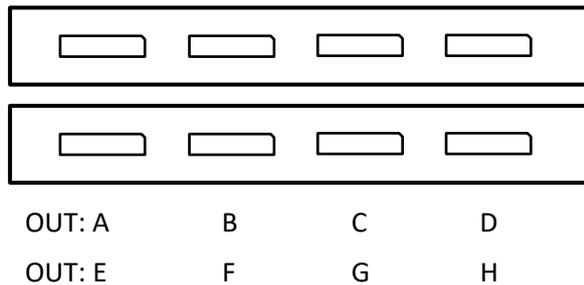
Video Outputs for PX2 OCTO

In case of PX2 OCTO Option Slots FP1 and FP2 are used.

- Option Code: P8

Option Slot PX1: Option not available

Option Slot PX2: FP1, FP2 (standard, cannot be changed)



Port description

OUT A, ..., OUT H: Video Output A, ..., Video Output H

- Video output standard: DP1.4
- Video output resolution (max.): 4096x2160 @60Hz
- EDID management: Yes

IMPORTANT! Please note that due to space reasons DisplayPort cables need to be used where the plug does not exceed a maximum thickness of approx. 14mm!

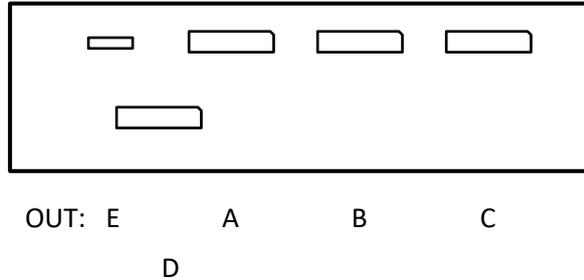
Video Outputs PX2 RT

In case of PX2RT Option Slots FP1 and FP2 are used.

- Option Code: R6 (R8 option available)

Option Slot PX1: Option not available

Option Slot PX2: FP1, FP2 (standard, cannot be changed)



Port description

OUT A, ..., OUT D: Video Output A, ..., Video Output D

- Video output standard: DP1.4
- Video output resolution (max.): 4096x2160 @60Hz
- EDID management: Yes

OUT E: Video Output E

- USB-C, Adapter needed for HDMI or DP

IMPORTANT! Only four outputs can be used simultaneously.

IMPORTANT! Please note that due to space reasons DisplayPort cables need to be used where the plug does not exceed a maximum thickness of approx. 14mm!

Output option: GUI Output

Dual channel GUI output.

- Option Code: G1

Option Slot PX1: LP1

Option Slot PX2: LP1



GUI: 2 1

Port description

GUI 1, 2: GUI Output 1, 2

- GUI Output Standard: mDP1.4
- Max GUI Output Resolution: 4096x2160 @60Hz
- Please note that the Nvidia control panel displays four outputs. For performance reasons, only the first two of these four outputs are accessible.

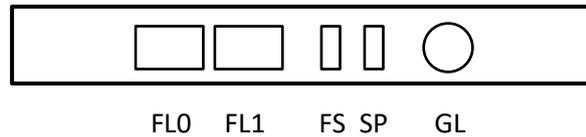
Output option: Framelock and Genlock

Framelock and genlock input and outputs.

- Option Code: S2

Option Slot PX1: FP2

Option Slot PX2: FP4



Port description

FLO, FL1: Framelock 0/1 Input/Output

IMPORTANT! Do not connect to LAN! This will damage the sync card and the LAN equipment!

- LED yellow: Port is an output, but no signal is present
- LED green: Port is an input, but no signal detected
- LED yellow flashing: Port is an output and sending a signal, the frequency of the blinking is the refresh rate of the signal
- LED green flashing: Port is an input and receiving a signal, the frequency of the blinking is the refresh rate of the signal

FS: Framelock Sync Status LEDs

Shows the synchronization status of the connected video output card. The topmost LED is dedicated to video output card 1 (installed in all servers) and the second LED to video output card 2 (if installed).

- LED off: Video output card not connected. This indicates a technical problem – please contact us.
- LED yellow: Video output card not synchronized.
- LED green: Video output card synchronized.
- LED yellow flashing: Video output card synchronized, but within 5% of the threshold of losing sync.
- LED green flashing: Video output card is synchronizing.

SP: Stereo Phase Status LEDs

Shows the active stereo status of the connected video output card. The topmost LED is dedicated to video output card 1 (installed in all servers) and the second LED to video output card 2 (if installed).

- LED off: Stereo not active.
- LED green: Stereo locked.
- LED green flashing: Stereo in process of locking.

GL: Genlock Input/Output

NVMe-SSD option: 2TB

NVMe storage for high data rate applications.

- Option Code: N2T0

Option Slot PX1: LP1

Option Slot PX2: FP3

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is 4,5GB/s. (Peak values can be higher.)

NVMe-SSD option: 4TB

NVMe storage for high data rate applications.

- Option Code: N4TOR0

Option Slot PX1: not available

Option Slot PX2: FP2 + FP3

Two option slots will be occupied.

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is 7GB/s. (Peak values can be higher.)

NVMe-SSD option: 6TB

NVMe storage for high data rate applications.

- Option Code: N6T0

Option Slot PX1: not available

Option Slot PX2: not available

Option Slot PX2 RT: FP3

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is 10GB/s.

NVMe-SSD option: 4TB or 8TB

NVMe storage for high data rate applications.

- Option Code: E4T0, E8T0

Option Slot PX1: FP2, LP1

Option Slot PX2: FP2, FP3, LP1, LP2

Option Slot PX2 OCTO, PX2 RT: FP3, LP1, LP2

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is:

- In all PX1 slots 4,8GB/s. (Peak values can be higher.)
- In PX2 FP slots 4,8GB/s. (Peak values can be higher.)
- In PX2 LP slots 3,1GB/s.

NVMe-SSD option: 6TB or 12TB

NVMe storage for high data rate applications.

- Option Code: E6T0, E12T

Option Slot PX1: FP2

Option Slot PX2: FP2, FP3

Option Slot PX2 OCTO, PX2 RT: FP3

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is:

- In PX1 FP slot 6,2GB/s. (Peak values can be higher.)
- In PX2 FP slots 6,2GB/s. (Peak values can be higher.)
- In PX2 RT FP slot 7,2GB/s. (Peak values can be higher.)

NVMe-SSD RAID0 option: 8TB or 16TB

NVMe storage for high data rate applications.

- Option Code: E8TOR0, E16TR0

Option Slot PX1: FP2+LP1

Option Slot PX2: FP2+FP3, LP1+LP2

Option Slot PX2 OCTO, PX2 RT: LP1+LP2

Two option slots will be occupied.

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is:

- In PX1 slots 9,6GB/s.
- In PX2 FP slots 9,6GB/s.
- In PX2 LP slots 6,2GB/s.

NVMe-SSD RAID0 option: 12TB or 24TB

NVMe storage for high data rate applications.

- Option Code: E12TR0, E24TR0

Option Slot PX1: not available

Option Slot PX2: FP2+FP3

Option Slot PX2 OCTO, PX2 RT: not available

Two option slots will be occupied.

There are no connectors or operating controls available.

In the operating system you will see an additional drive. The drive letter may vary depending on the system configuration.

The maximum constant physical read rate of this drive is:

- In PX2 FP slots 10GB/s.

Live input option: HDMI1.4-I2

Dual channel HDMI 1.4b input (297MHz TMDS clock).

- Option Code: IH1

Option Slot PX1: LP1

Option Slot PX2: LP2



HDMI-IN 2 HDMI-IN 1

Option Slot PX2: FP2, FP3



HDMI-IN 1 HDMI-IN 2

Port description

HDMI-IN 1, HDMI-IN 2: HDMI Input 1, HDMI Input 2

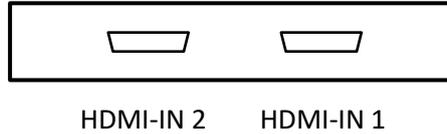
- Video display resolutions: up to 4096x2160@24Hz or 3840x2160@25/30Hz or 1080p@120Hz
- Support of some UHD 60Hz formats (4096x2160 or 3840x2160@60Hz in 4:2:0 8-bit) on a single port (HDMI 2.0 format)
- Graphic display resolution up to 1600x1200@60Hz

Live input option: HDMI2.0-I2

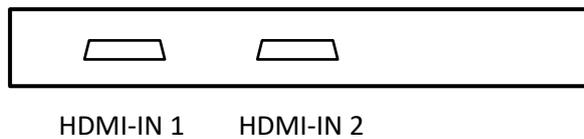
Dual channel HDMI 2.0b input.

- Option Code: IH2

Option Slot PX1: LP1



Option Slot PX2: FP2, FP3



Port description

HDMI-IN 1, HDMI-IN 2: HDMI Input 1, HDMI Input 2

- Video formats: PAL, NTSC, 720p, 1080i, 1080p, 2160p (4K-DCI or UHDTV)
- Graphic formats: VGA, SVGA, XGA, WXGA, WXGA+, UXGA, WUXGA, WSXGA
- RGB 4:4:4, YUV 4:4:4, YUV 4:2:2, YUV 4:2:0
- 8-bit, 10-bit, 12-bit, 16-bit
- Frame rates from 23.98Hz to 120Hz depending on formats

Live input option: 3GSDI-I1, 3GSDI-I2, 3GSDI-I4

Single/dual/quad channel 3G-SDI input.

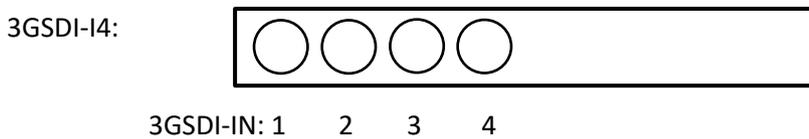
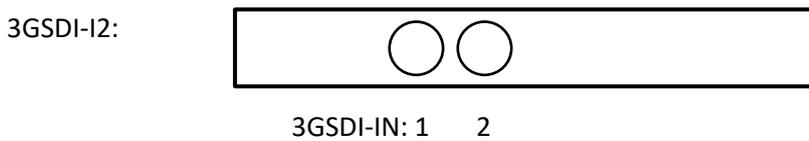
- Option Code: IS1, IS2, IS4

Option Slot PX1: LP1

Option Slot PX2: LP2



Option Slot PX2: FP2, FP3



Port description

3GSDI-IN 1, ..., 3GSDI-IN 4: 3G-SDI input 1, ..., 3G-SDI input 4

- Video Interfaces and Formats:
 - HD_292_1: S296M_720p_50Hz, S296M_720p_60Hz, S274M_1080p_24Hz, S274M_1080p_25Hz, S274M_1080i_50Hz, S274M_1080i_60Hz
 - HD_DUAL_372: S274M_1080p_50Hz, S274M_1080p_60Hz
 - 3G_A_425_1: S274M_1080p_50Hz, S274M_1080p_60Hz
 - 4XHD_QUADRANT: 3840x2160p_24Hz, 3840x2160p_25Hz, 3840x2160p_30Hz
 - 4X3G_A_QUADRANT: 3840x2160p_50Hz, 3840x2160p_60Hz
 - 3G_B_DL_425_1: S274M_1080p_50Hz, S274M_1080p_60Hz
 - 4X3G_B_DL_QUADRANT: 3840x2160p_50Hz, 3840x2160p_60Hz
 - 2X3G_B_DS_425_3: 3840x2160p_24Hz, 3840x2160p_25Hz, 3840x2160p_30Hz
 - 4X3G_A_425_5: 3840x2160p_50Hz, 3840x2160p_60Hz
 - 4X3G_B_DL_425_5: 3840x2160p_50Hz, 3840x2160p_60Hz

Live input option: 3GSDI-C4, 3GSDI-C8

Quad/octo channel 3G-SDI configurable input and output.

- Option Code: CS4, CS8

Option Slot PX1: LP1

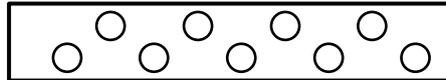
3GSDI-C4:



GL

3GSDI-IN:	4	3	2	1
3GSDI-OUT:	1	2	3	4

3GSDI-C8:



GL

3GSDI-IN:	4	8	3	7	2	6	1	5
3GSDI-OUT:	5	1	6	2	7	3	8	4

Option Slot PX2: FP2, FP3

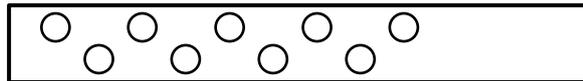
3GSDI-C4:



GL

3GSDI-IN:	1	2	3	4
3GSDI-OUT:	4	3	2	1

3GSDI-C8:



GL

3GSDI-IN:	5	1	6	2	7	3	8	4
3GSDI-OUT:	4	8	3	7	2	6	1	5

Port description

IMPORTANT! As this option does not have BNC connectors for space reasons, DIN-BNC adapters are required for operation with BNC cables.

GL: Genlock input

- Blackburst or tri-level sync reference input

3GSDI-IN 1, ..., 3GSDI-IN 8: 3G-SDI input 1, ..., 3G-SDI input 8

- Video Interfaces and Formats:
 - HD_292_1: S296M_720p_50Hz, S296M_720p_60Hz, S274M_1080p_24Hz, S274M_1080p_25Hz, S274M_1080i_50Hz, S274M_1080i_60Hz
 - HD_DUAL_372: S274M_1080p_50Hz, S274M_1080p_60Hz
 - 3G_A_425_1: S274M_1080p_50Hz, S274M_1080p_60Hz
 - 4XHD_QUADRANT: 3840x2160p_24Hz, 3840x2160p_25Hz, 3840x2160p_30Hz
 - 4X3G_A_QUADRANT: 3840x2160p_50Hz, 3840x2160p_60Hz
 - 3G_B_DL_425_1: S274M_1080p_50Hz, S274M_1080p_60Hz
 - 4X3G_B_DL_QUADRANT: 3840x2160p_50Hz, 3840x2160p_60Hz
 - 2X3G_B_DS_425_3: 3840x2160p_24Hz, 3840x2160p_25Hz, 3840x2160p_30Hz
 - 4X3G_A_425_5: 3840x2160p_50Hz, 3840x2160p_60Hz
 - 4X3G_B_DL_425_5: 3840x2160p_50Hz, 3840x2160p_60Hz

3GSDI-OUT 1, ..., 3GSDI-OUT 8: 3G-SDI output 1, ..., 3G-SDI output 8

- Please note that the outputs are numbered in the reverse order of the inputs.

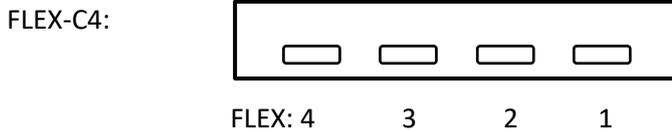
Live input option: FLEX-C4, FLEX-C8

Quad interface for FLEX modules.

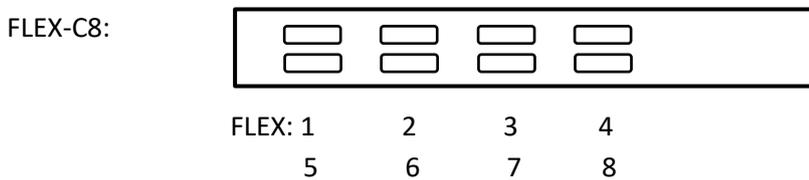
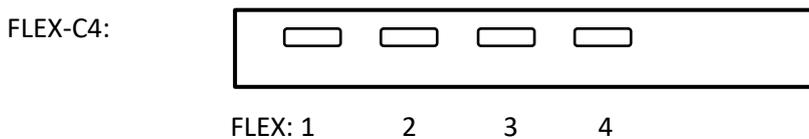
- Option Code: F4, F8

Option Slot PX1: LP1 (4 channels available simultaneously in this slot!)

Option Slot PX2: LP2 (2 channels available simultaneously in this slot!)



Option Slot PX2: FP2, FP3 (4 channels available simultaneously in this slot!)



Port description

FLEX 1, ..., FLEX 8: FLEX module connector 1, ..., FLEX module connector 8

IMPORTANT! Do not connect to any USB-C device! This will damage the FLEX card and the USB-C device!

- Available FLEX modules (not included):
 - FLEX Module DP1.2-I1: 1x DisplayPort 1.2 input (up to 4K60)
 - FLEX Module HDMI2.0-I1: 1x HDMI 2.0 input (up to 4K60)
 - FLEX Module 3GSDI-I4: 4x 3G-SDI inputs (up to 4x 1080p60 or 1x 4K60)
- Please use only the supplied cables.

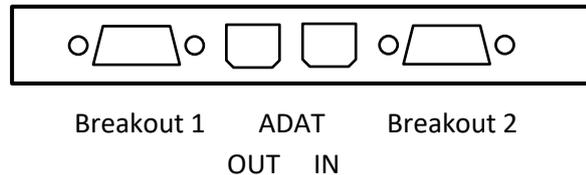
Audio output option: HDSPe AIO

RME HDSPe AIO sound interface.

- Option Code: A1

Option Slot PX1: FP2

Option Slot PX2: FP2, FP3



Port description

Breakout 1: Breakout cable for Analog input/output and MIDI input/output

- The 15-pin analog breakout cable has four RCA connectors (stereo analog I/O), a 1/4" TRS jack (headphones), and two 5-pin DIN connectors (MIDI I/O).
- Using the optional balanced analog XLR breakout cable, the card offers balanced Line inputs and outputs via female and male XLR connectors.

Breakout 2: Breakout cable for SPDIF input/output and AES input/output

- The 9-pin digital breakout cable has two RCA connectors as coaxial SPDIF input/output (the red phono socket is the output), and an XLR AES/EBU input and output.

ADAT IN, ADAT OUT: Optical ADAT input and output

IMPORTANT! Due to the limited space at PX1 it can be possible that special cables for some connectors have to be used!

(More details see RME manual: http://www.rme-audio.de/download/hdspeaio_e.pdf)

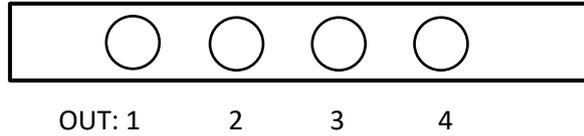
Audio output option: HDSPe AO4S

RME HDSPe AO4S 4 channel balanced output

- Option Code: A2

Option Slot PX1: not available

Option Slot PX2: FP3



Port description

OUT 1, ... OUT 4: Audio out 1, ..., Audio out 4

- The short circuit protected, low impedance and balanced line outputs are accessible through stereo 6,35mm TRS jacks.

(More details see RME manual: http://www.rme-audio.de/download/ao4s192_e.pdf)

Audio output option: HDSPe MADI

RME HDSPe MADI sound interface

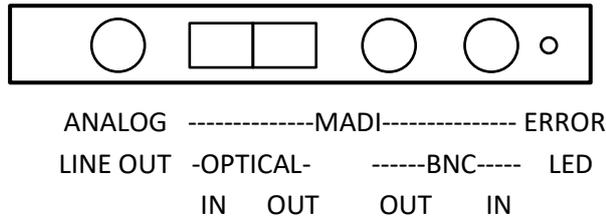
- Option Code: A3

Option Slot PX1: FP2 (Only main card can be installed! WORD CLOCK, MIDI are therefore not available!)

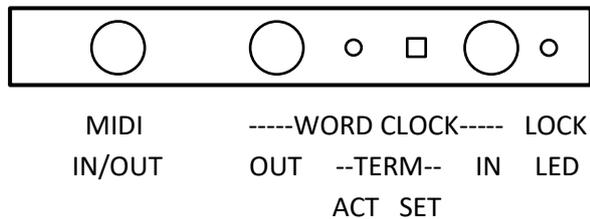
Option Slot PX2: FP2 and FP3

[!] Both slots are required for full functionality! (Note: If neither WORD CLOCK nor MIDI is required, it is not necessary to have the expansion card installed.)

Main Card:



Expansion Card:



Port description

ANALOG LINE OUT

- Stereo monitor output (Phones)

MADI OPTICAL/BNC IN/OUT

- Identical signals are available at both the optical and the coaxial output.

ERROR LED

- MADI error LED

MIDI IN/OUT

- The included breakout cable is connected to the 9-pin Mini-DIN connector and provides two MIDI inputs and outputs via four 5-pin DIN connectors.

WORD CLOCK IN/OUT

- Word clock input and output

WORD CLOCK TERM SET/ACT

- Between the BNC sockets, 75 Ohm word clock termination can be activated and verified by a yellow LED.

LOCK LED

- A green LED displays the word clock input's LOCK state.

(More details see RME manual: http://www.rme-audio.de/download/hdspemadi_e.pdf)

Audio output option: HDSPe RayDAT

RME HDSPe RayDAT sound interface

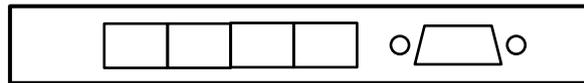
Option Code: A4

Option Slot PX1: FP2 (Only main card can be installed! MIDI, ADAT3, ADAT4 are therefore not available!)

Option Slot PX2: FP2 and FP3

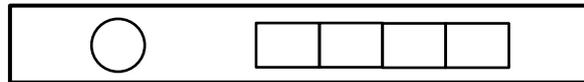
[!] Both slots are required for full functionality! (Note: If neither MIDI nor ADAT3 and ADAT4 are required, it is not necessary to have the expansion card installed.)

Main Card:



--ADAT1-- --ADAT2-- Breakout 2
OUT IN OUT IN

Expansion Card:



MIDI --ADAT3-- --ADAT4--
IN/OUT OUT IN OUT IN

Port description

ADAT1 IN/OUT, ..., ADAT4 IN/OUT

- 4 channels optical ADAT input and output

Breakout 2: Breakout cable for SPDIF input/output and AES input/output

- The 9-pin digital breakout cable has two RCA connectors as coaxial SPDIF input/output (the red phono socket is the output), and an XLR AES/EBU input and output.

MIDI IN/OUT

- The included breakout cable is connected to the 9-pin Mini-DIN connector and provides two MIDI inputs and outputs via four 5-pin DIN connectors.

IMPORTANT! Due to the limited space at PX1 it can be possible that special cables for some connectors have to be used!

(More details see RME manual: http://www.rme-audio.de/download/raydat_e.pdf)

Audio output option: HDSPe AES

RME HDSPe AES sound interface

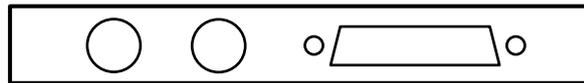
Option Code: A5

Option Slot PX1: FP2 (Only main card can be installed! AES/EBU 5-8, MIDI are therefore not available!)

Option Slot PX2: FP2 and FP3

[!] Both slots are required for full functionality! (Note: If neither AES/EBU 5-8 nor MIDI is required, it is not necessary to have the expansion card installed.)

Main Card:



WORD CLOCK
OUT IN

AES/EBU 1-4
OUT/IN

Expansion Card:



AES/EBU 5-8
OUT/IN

MIDI
IN/OUT

Port description

AES/EBU 4-8, AES/EBU 5-8 IN/OUT

- 2x 4 channel AES/EBU input and output.
- Note: Breakout and connection cables with this pinout are standard widely available.

WORD CLOCK IN/OUT

- Word clock input and output

MIDI IN/OUT

- The included breakout cable is connected to the 9-pin Mini-DIN connector and provides two MIDI inputs and outputs via four 5-pin DIN connectors.

IMPORTANT! Due to the limited space at PX1 it can be possible that special cables for some connectors have to be used!

(More details see RME manual: http://www.rme-audio.de/download/hdspeaes_e.pdf)

Mechanical installation

This section provides information on installing the media servers.

There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using.

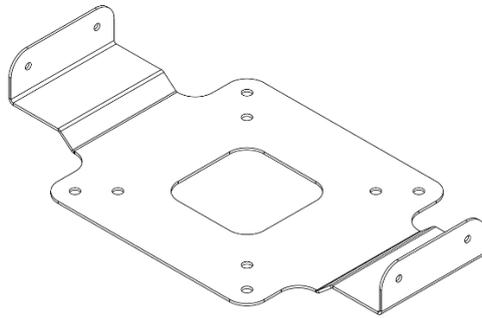
- **CAUTION!** Never mount the media server solely on the 19" mounting bracket attached to the server. This will break the 19" mounting bracket and damage the server, the rack and may cause injury.
 - Always use 19" rails (if supplied with the unit)
 - Or ensure that the media server rests on an appropriate base plate.
- **CAUTION!** Do not pick up the server with the front handles. They are designed to pull the chassis from a rack only. This may damage the server and may cause injury.

Precautions

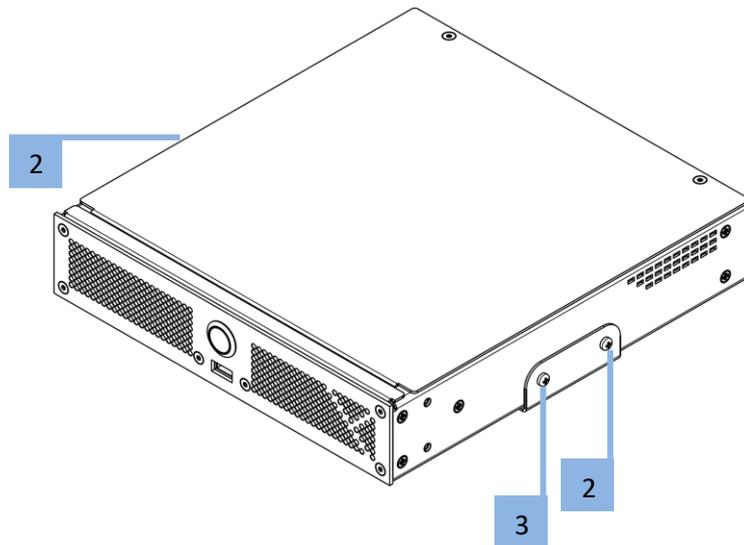
- Ensure that the leveling jacks on the underside of the rack are fully extended to the floor, with the entire weight of the rack resting on them.
- For single rack mounting, stabilizers must be attached to the rack.
- For multiple racking systems, the racks must be coupled together.
- Always make sure that the rack is stable before pulling a component out of the rack.
- You may only extend one component at a time - the simultaneous extension of two or more components can cause the rack to become unstable.
- The units must be installed in a rack in such a way that no dangerous condition arises due to uneven mechanical loading.
- Install the heaviest server components on the bottom of the rack first, and then work your way up.
- Use an uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and keep your system up and running in the event of a power failure.

Mounting the Vesa Mount on PXm

The VESA Mount supports 75x75mm and 100x100mm VESA.



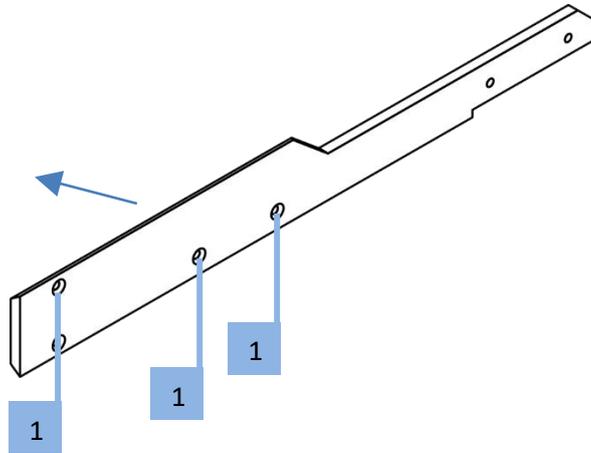
1. Attach VESA mount to rear of screen with the tabs at the top and bottom.



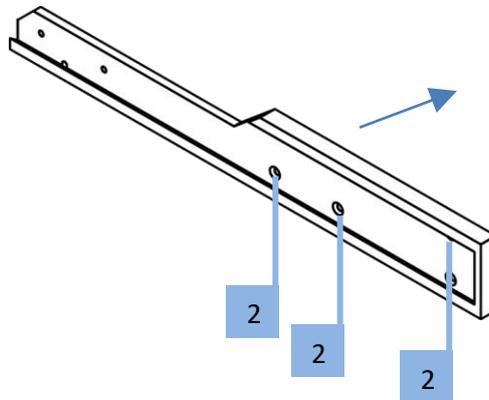
2. Use M3 Screws to attach the PXm to the VESA mount, there are two holes either side for a total of four screws.

Mounting the Dual Rackadapter on PXm

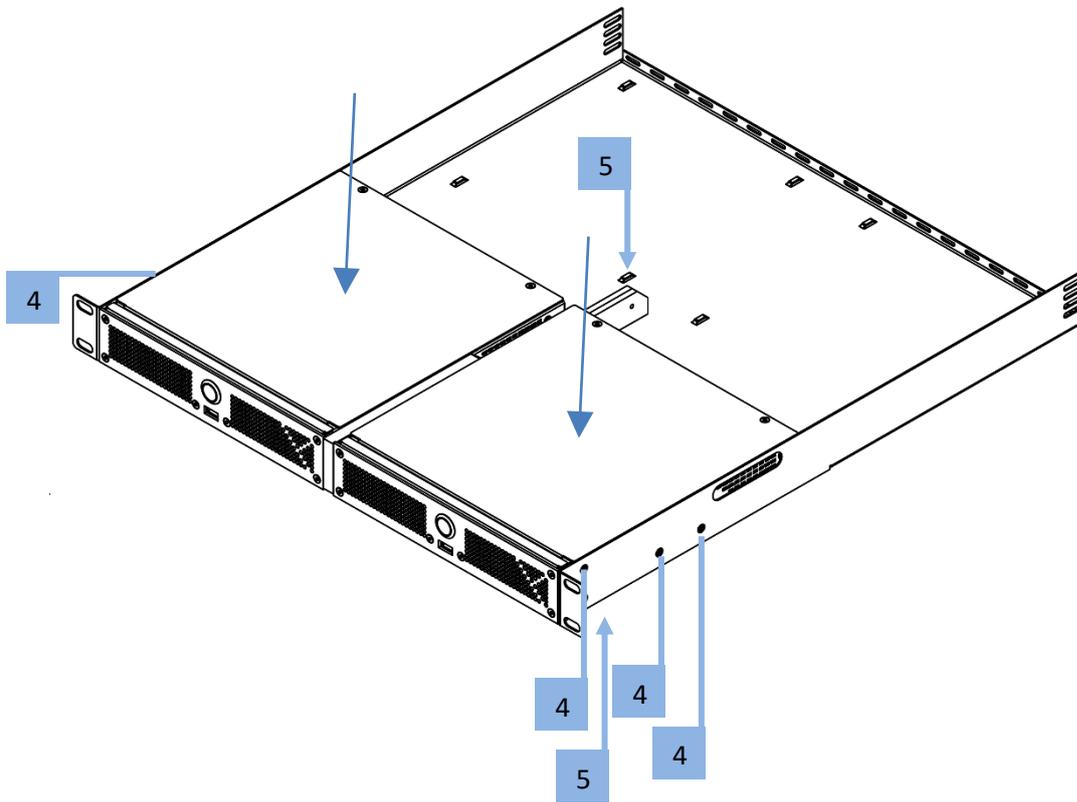
The PXm Dual Rackadapter is designed to hold two PIXERA mini units as well as their external power supplies.



1. Attach the male centre section to the inside face (right) of the unit to be mounted on the left-hand side (looking at the rack from the front), using four countersunk M3 screws.



2. Attach the female centre section to the inside face (left) of the unit to be mounted on the right-hand side (looking at the rack from the front), using four countersunk M3 screws.
3. Slide the two mating halves together and secure with two M3 screw at the rear of the centre sections to lock them together.



4. Place the two joined units inside the outer rack chassis and use four M3 countersunk screws to secure each unit to the side.
5. Secure the rear of the centre section to the shelf using a countersunk M3 screw.

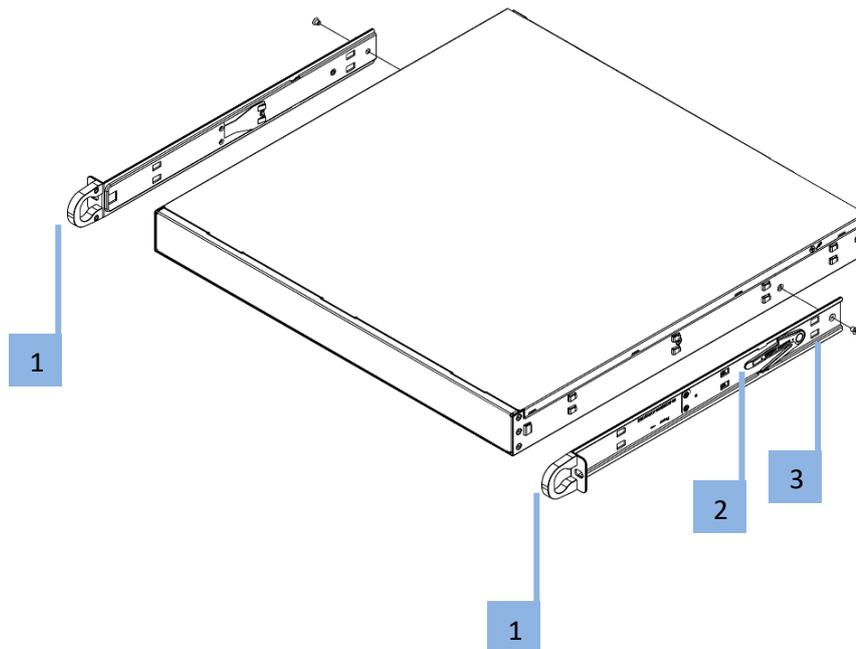
Mounting the Rail Kit on PX1

The package contains two rack rail assemblies in the rack mounting kit.

Each assembly consists of two parts: an inner fixed chassis rail attached directly to the server chassis and an outer fixed chassis rail attached directly to the rack itself.

Note: These rails fit into a rack with a depth between 675mm and 850 mm.

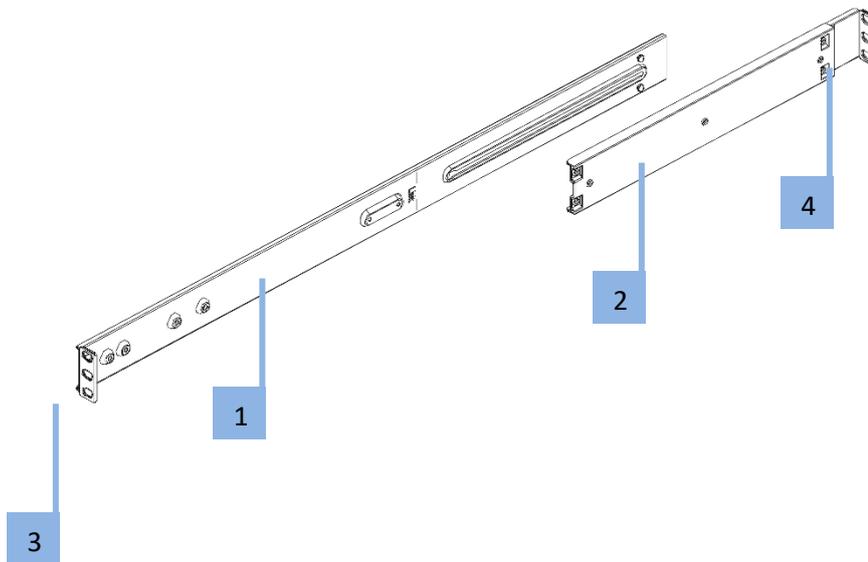
Inner Rack Rails



- Both chassis rails have a locking tab [2]. The tabs lock the server into place when installed and pushed fully into the rack. These tabs also lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when you pull it out for servicing.
- Replace both original inner rails [1] supplied with the server (black rails) with the inner rails from the rail kit (silver rails)
 - Remove the locking screw [3].
 - Push the black 19" rail [1] back until the hooks of the chassis disengage from the rails.
 - Place the new silver rail [1] on the side of the chassis and align the hooks of the chassis with the inner rail holes.
 - Slide the rail to the front of the chassis until it clicks into place.
 - Fix the rail again with the screw.

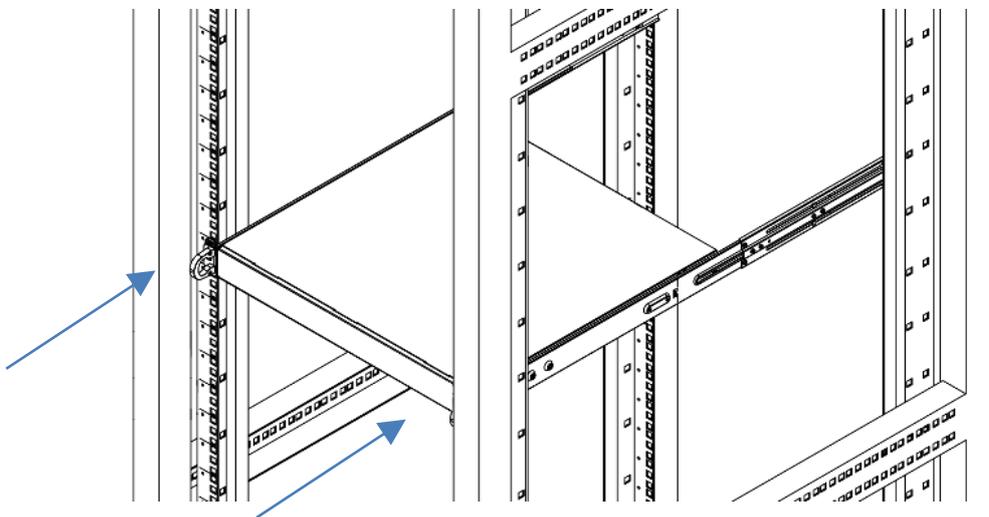
Outer Rack Rails

The outer rails are attached to the server rack and hold the server in place.



- Attach the short bracket [2] to the outside of the long bracket [1]. Align the pins of the rail with the slides. The ends of each bracket must be inclined in the same direction.
- Adjust both the short and long brackets to the correct distance so that the rail fits firmly into the rack.
- Attach the long bracket of the outer rail [3] to the front of the rack with two M5 screws and the short bracket [4] to the rear of the rack with three M5 screws.

Installing the Media Server into the Rack



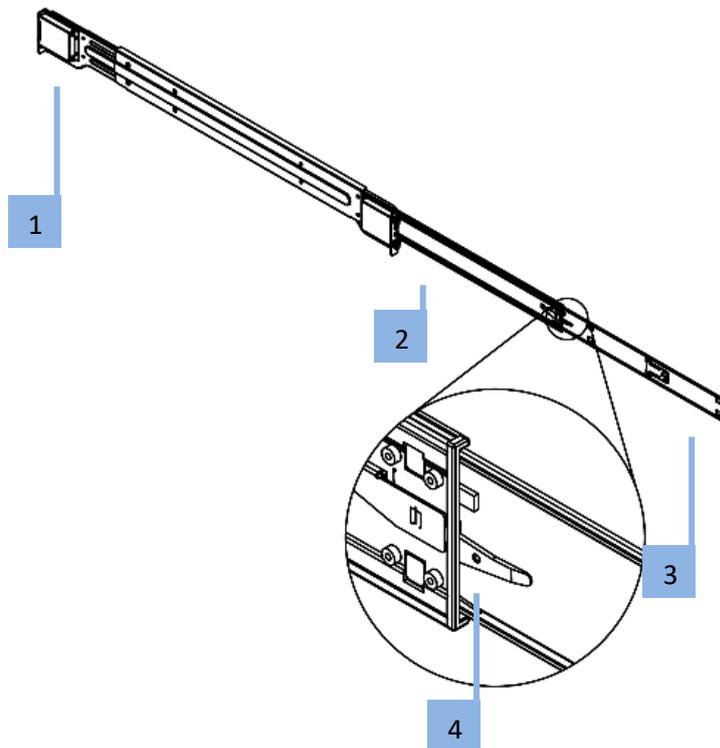
- Align the inner rails with the front of the outer rails.
- Slide the inner rails into the outer rails, keeping the pressure even on both sides (It may be necessary to depress the locking tabs when inserting). When the media server has been pushed completely into the rack, the locking tabs will "click" into the locked position.
- Insert and tighten the screws that hold the front of the server to the rack.

Mounting the Rail Kit on PX2

The package contains two rack rail assemblies in the rack mounting kit.

Each assembly consists of three sections: An inner chassis rail which secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right

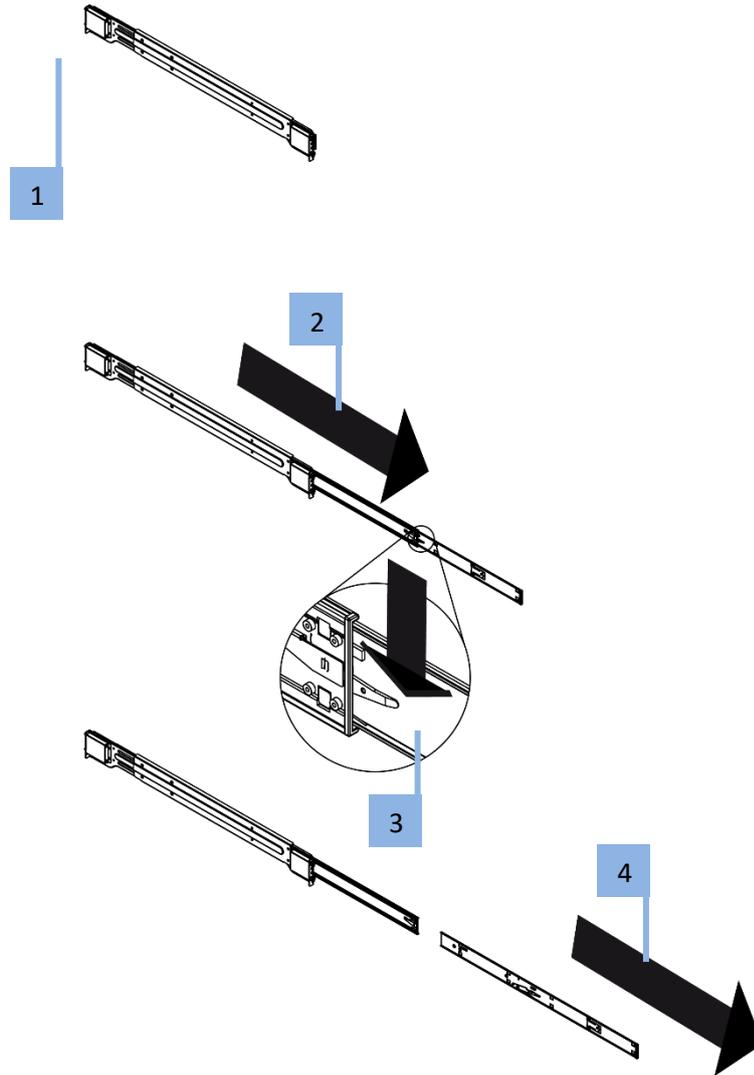
Note: These rails fit into a rack with a depth between 675mm and 920mm.



1. Outer rail
2. Middle rail
3. Inner rail
4. Locking Tab:

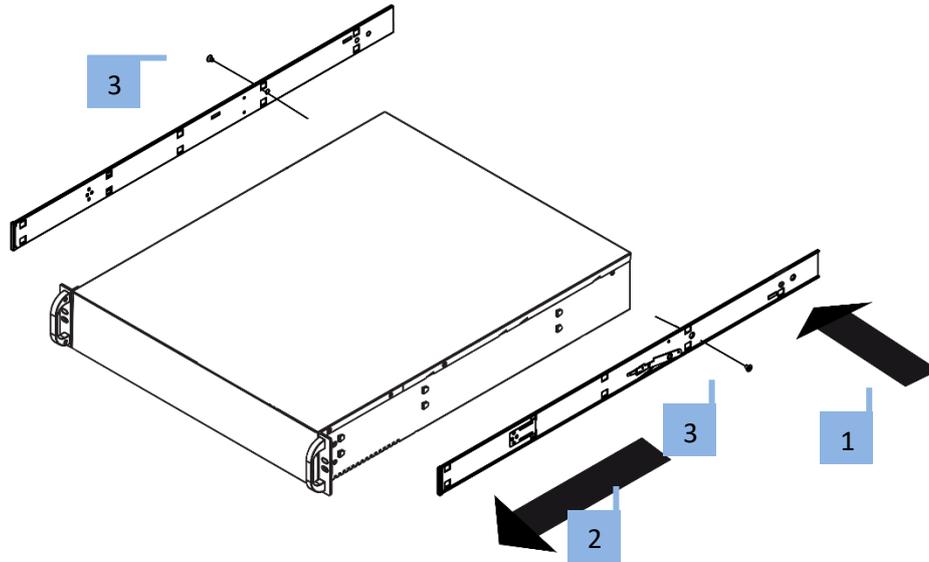
Each inner rail has a locking tab. This tab locks the chassis into place when installed and pushed fully into the rack. These tabs also lock the chassis when it is fully pulled out of the rack. This prevents the server from fully coming out of the rack when the chassis is pulled out.

Releasing the Inner Rack Rails



1. Identify the left and right outer rail assemblies as described previously.
2. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.
3. Press the locking tab down to release the inner rail.
4. Pull the inner rail all the way out.

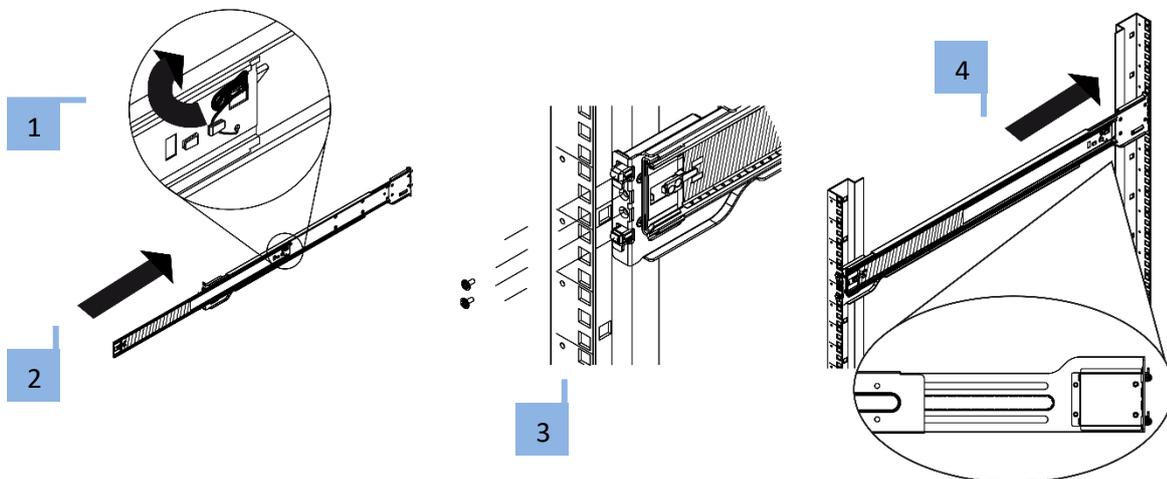
Installing the Inner Rails on the Chassis



Confirm that the left and right inner rails have been correctly identified.

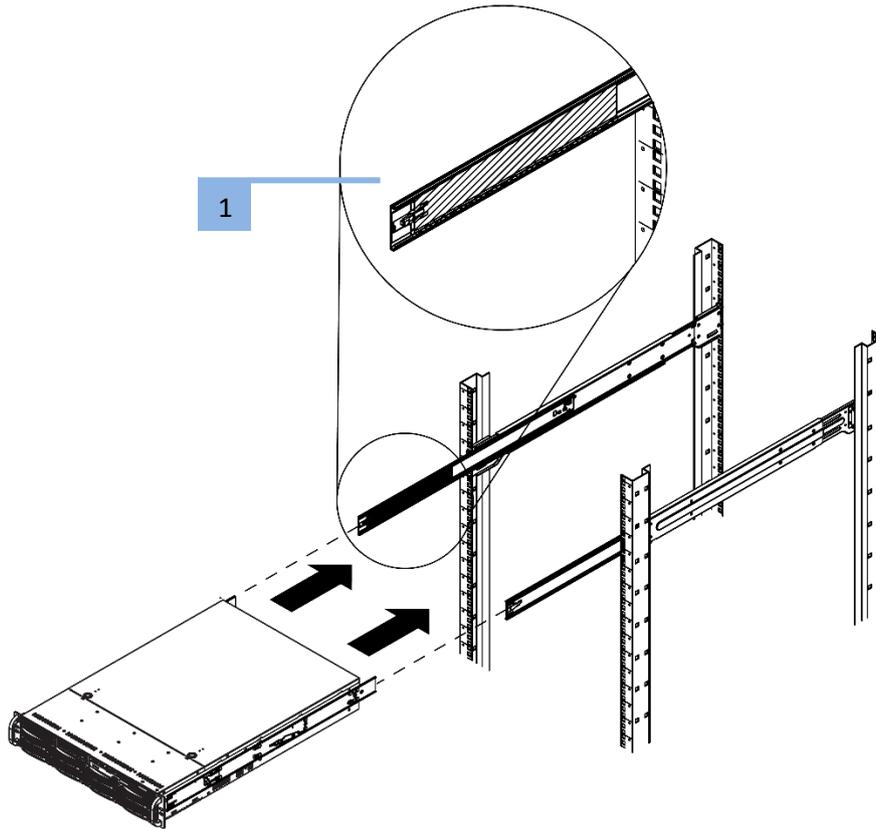
1. Place the inner rail against the side of the chassis and align the hooks on the side of the chassis with the holes in the inner rail.
2. Slide the inner rail forward to the front of the chassis until the rail snaps into the locked position that secures the inner rail to the chassis.
3. Attach the inner rail to the chassis with the screw.

Installing the Outer Rails on the Rack



1. Press the locking tab at the rear end of the middle rail upwards.
2. Push the middle rail back into the outer rail.
3. Hang the hooks on the front of the outer rail in the slots on the front of the rack. Additionally, fasten the outer rails to the rack with screws as shown above.
4. Pull out the back of the outer rail and adjust the length to the rack.
5. Hang the hooks of the rear part of the outer rail in the slots on the back of the rack. Additionally, fasten the rail to the rack with screws.

Installing the Chassis into the Rack



1. Extend the outer rails as shown above.
2. Align the inner rails of the chassis with the outer rails.
3. Slide the inner rails into the outer rails, keeping the pressure even on both sides. When the media server has been pushed completely into the rack, the locking tabs will "click" into the locked position.
4. Insert and tighten the screws that hold the front of the server to the rack.

Starting up the media server

Plug in all cables first!

Do not connect or disconnect any cables during operation. This can cause damage to the device.

In case of PIXERA mini, connect the power supply to the device first. Then connect the power supply unit to the mains. Use the reverse order when disconnecting.

Press the power switch to turn the device on and off. The power button does not disconnect the server from the mains voltage! To completely disconnect it from the mains voltage, unplug the power plug(s) from all power supply inputs.

Turn on the server when operating conditions are within its operating range (see specifications). If the unit is operated outside this operating environment, the server may be damaged.

Software

Media Server Operating System

- Systems shipped before 2020-01-01:
Windows 7 Embedded is used as the operating system.
(Please note that Windows 7 Embedded is not described in this document.)
- Systems shipped after 2020-01-01:
Windows 10 IoT is used as the operating system.

The operating system has been optimized by AV Stumpfl for media server applications. To save performance and to increase stability, some components, which will be available on a standard Windows operating system, are turned off or are missing.

For the same reason the Windows Update Service is not enabled in the operating system. Bringing in Microsoft updates into the OS can cause instability and a loss in performance. The system must remain in the condition in which it was delivered!

IMPORTANT! For security reasons, the media servers must be operated in a separate network, from which you have no access to other networks (e.g. operational company networks, etc.). AV Stumpfl GmbH cannot accept any liability for damage (e.g. virus attack, loss of data, etc.) resulting from disregard of this guideline.

IMPORTANT! The media server runs on an operating system optimized for performance and stability. Any changes to the system can have a negative effect on performance and stability. It is therefore not recommended to install any kind of software on the media server. This also includes the installation of virus scanners, drivers, updates, etc. If an installation or any other manipulation is nevertheless carried out, it is no longer possible to guarantee a faultless function. Any changes to the system will also void the warranty. Exceptions are installations that have been approved by AV Stumpfl.

Standard User Names and Passwords

Windows user account

The Windows user account used by all media servers has been set as the administrator account.

The credentials are as follows:

- Username: AVStumpfl
- Password: AVStumpfl

IMPORTANT! Please do not create or use any account other than this one. Do not change the password of this user account. Changing the user account or password may cause some features, such as network shares, to stop working properly.

IPMI User and Password

- Username: ADMIN
- Password: ADMIN

Preinstalled Programs

On PIXERA servers there are important tools pre-installed. These can be found in the Windows start menu.

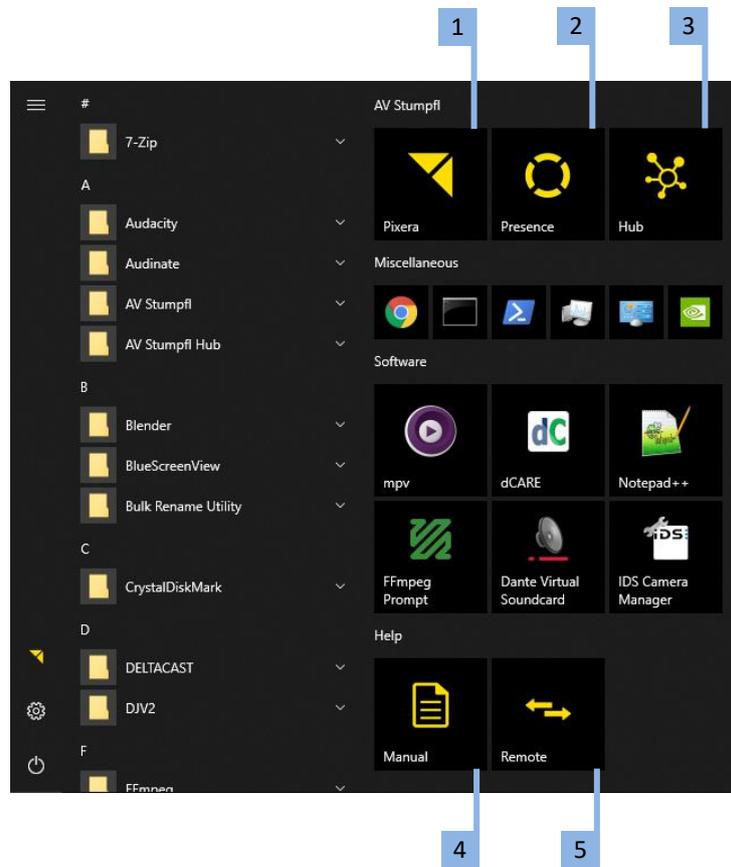
The following programs are pre-installed:

- PIXERA
- Wings RX
- NDI Tools
- Dante Virtual Soundcard
- Deltacast Tools
- Google Chrome (web browser)
- HWInfo (Hardware Analysis Tool)
- Notepad++ (text editor)
- ffmpeg (content transcoding)
- 7zip (archive program)
- mpv (media player)
- Filezilla (FTP Client)
- mediainfo (metadata viewer)
- audacity (Audio Editor)
- imagemagick (image conversion tool)
- graphicsmagick (image conversion tool)
- paint.net (image editing)
- vlc (media player)
- blender (3D editing tool)
- djv (media review software)
- prime95 (CPU stress test)
- furmark (GPU stress test)
- bulkrenameutility (advanced file renaming tool)
- iometer (drive benchmark tool)
- ultravnc (desktop sharing tool)
- sagethumbs (image converter)
- Mini Tool Partition Wizard (Hard Disk Partitioning Tool)
- Crystal Diskmark (Hard Disk Benchmark Tool)
- Quicktime (media player)
- Bluescreenview (Windows BSOD Analysis Tool)
- Sysinternals (Windows System Tools)
- Wireshark (Network Analysis Tool)

(Since we always try to install the best tools on the server, the list of actually installed tools may differ.)

Startmenu

On a PIXERA server you find all programs and tools located in the start menu.



1. Starts "PIXERA". The version to be started is set in the PIXERA hub.
2. Starts "Presence". The version to be started is set in the PIXERA hub.

The following AV Stumpfl tools will help you for easy handling:

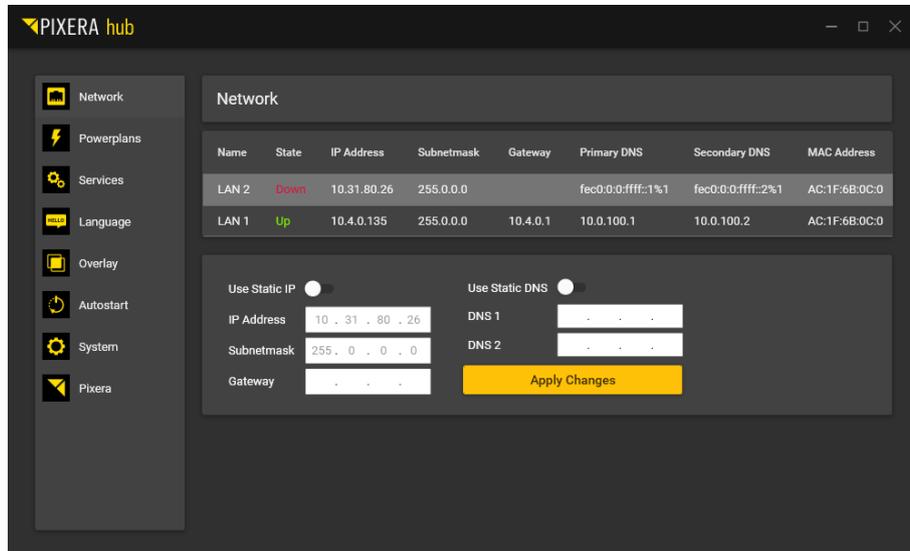
3. Starts the "PIXERA Hub". See description below.
4. Opens the PIXERA manual.
5. Starts the preinstalled "TeamViewer"

PIXERA Hub

The PIXERA Hub offers the possibility to set the following things:

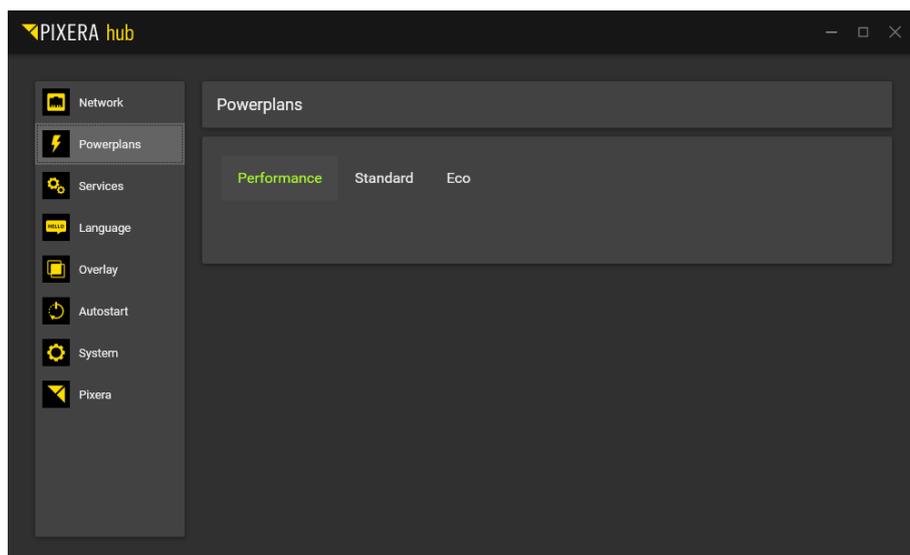
Network

Setup your Network connections (details to default IP address settings can be found in the "Rear View" section in this document).



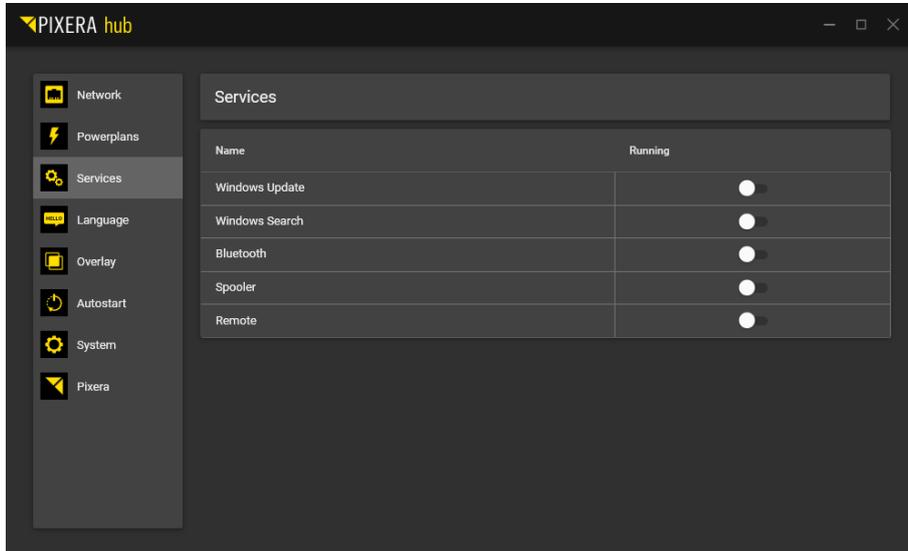
Power plans

Change power plans here (by default, a PIXERA server is set to the "Performance" power plan). The "Eco" power plan can be used in environments where the media server should be quiet and playback performance is not so important, such as training rooms or offices. Do not forget to switch back to "Performance" before the show.



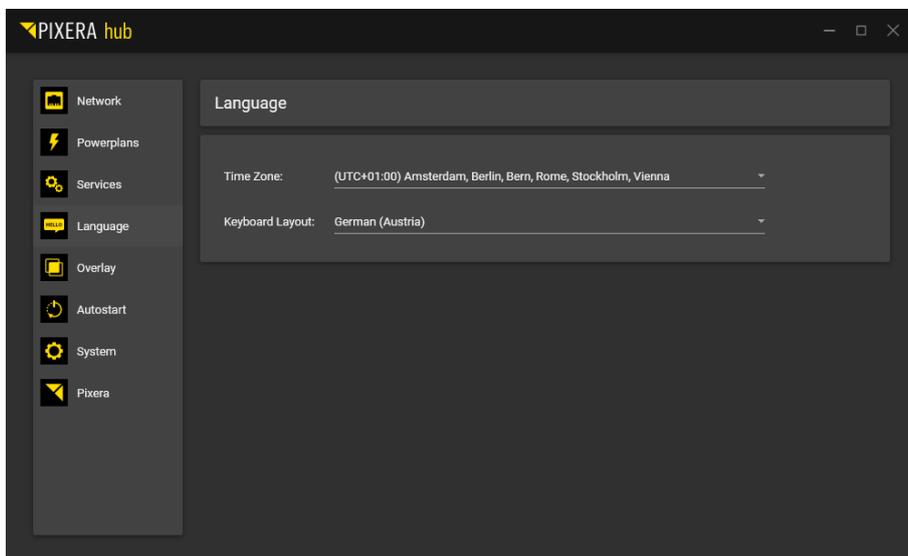
Services

By default, some services are deactivated on a PIXERA server. These services could be activated there if needed. It is not recommended to activate one of these services if you do not need them. The following services are deactivated by default: Windows Update, Windows Search, Bluetooth, Printer Spooler, Remote Desktop. Do not forget to deactivate services before the show.



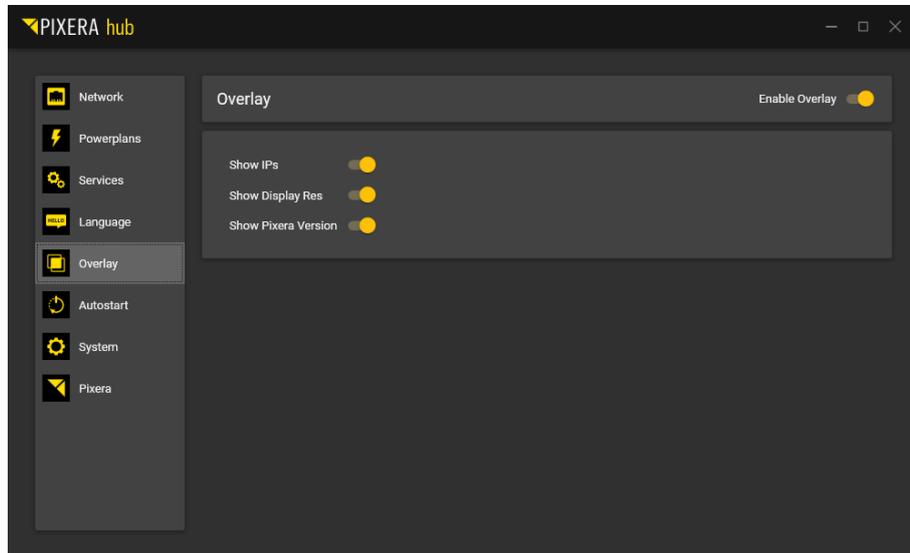
Language

The language settings give the possibility to setup the correct time zone and keyboard layout.



Overlay

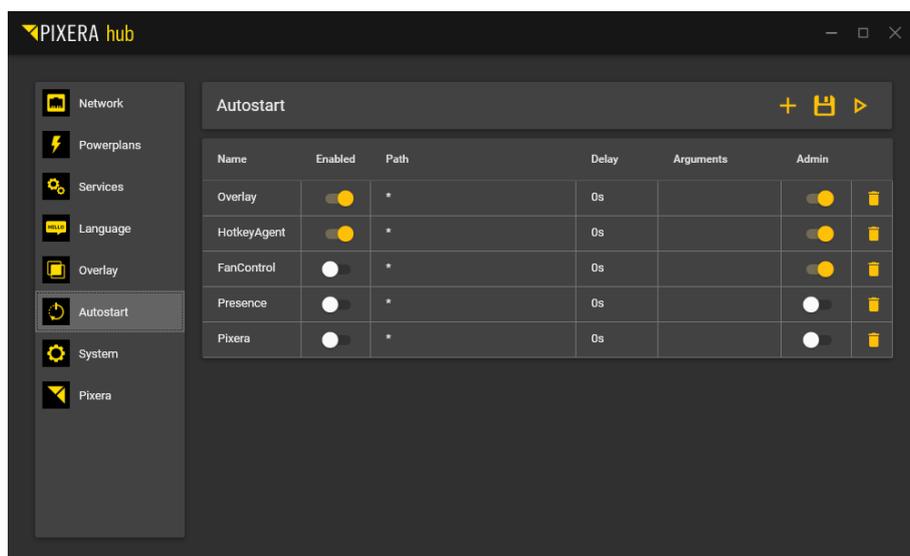
In the top right corner of the primary monitor, a desktop overlay is displayed that shows the most important information about your configuration. Information about the PIXERA license, network settings, screen resolutions and the standard PIXERA version is displayed. The overlay can be activated or deactivated in the Autostart Tab of the PIXERA Hub.



Autostart

At the Autostart tab you can define programs that should be started when the server is started. The following programs are pre-entered: Overlay, Hotkey Agent, Fan Control, Pixera and Presence. Whereby Overlay and the Hotkey Agent are activated by default (see details below).

If needed your application can be auto started as well. At the field Name you define the name of your application. For Path you enter the path of the application. In the Delay field you can set a start delay for your program. In the Arguments field you can define start parameters. If you activate the Admin button the program will be started with Administrator privileges.



System

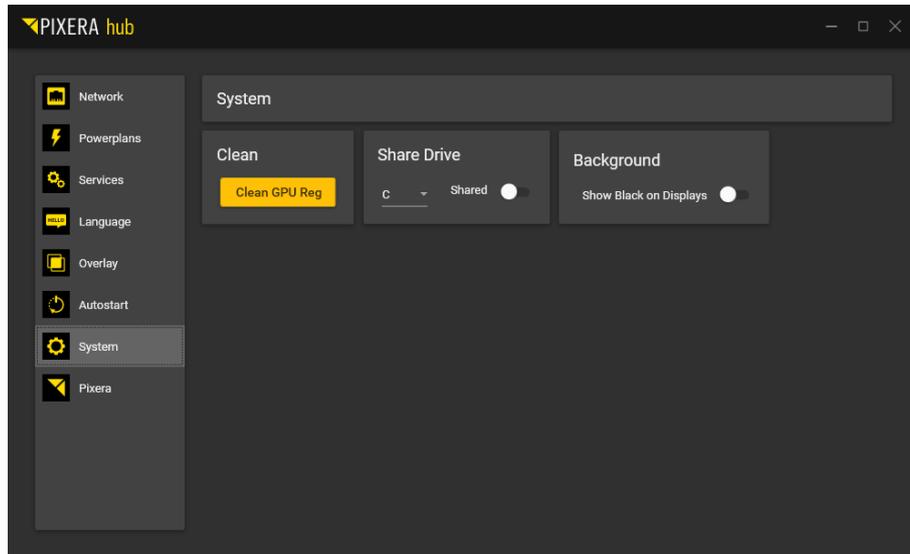
In the System tab you can clean the Windows Registry from wrong entries after a GPU change.

Furthermore, you can share an entire drive on the network. With the button "Shared" the drive is shared with following user data:

User: AVStumpfl

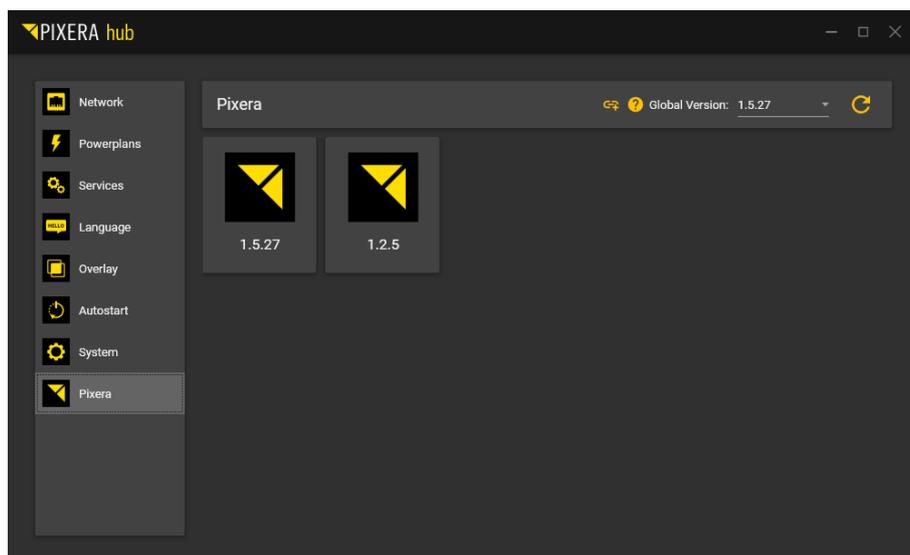
Password: AVStumpfl

With the button "Show Black on Displays" you can change the desktop background to black.



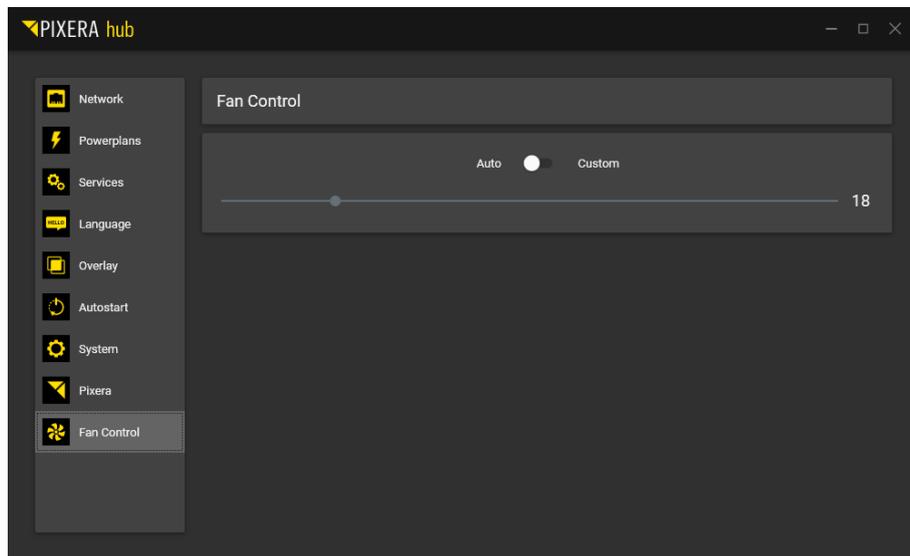
Pixera

In the Pixera tab you can see all installed PIXERA versions. In the field Global Version you can set the version and define the standard version of Pixera. This version will be started when you use the button in the start menu or the task bar. This version is also used when you open a project by double clicking it.



Fan Control

If your server offers a management environment (IPMI) (PX1, PXt2) the tab Fan Control in the PIXERA Hub will be displayed. Here you can be set to a value specified by the automatic fan control. Change this setting if your server gets too hot.



Hotkey Agent

The Hotkey Agent is activated by default in the Autostart tab. This program offers you key combinations that make the operation of your media server easier.

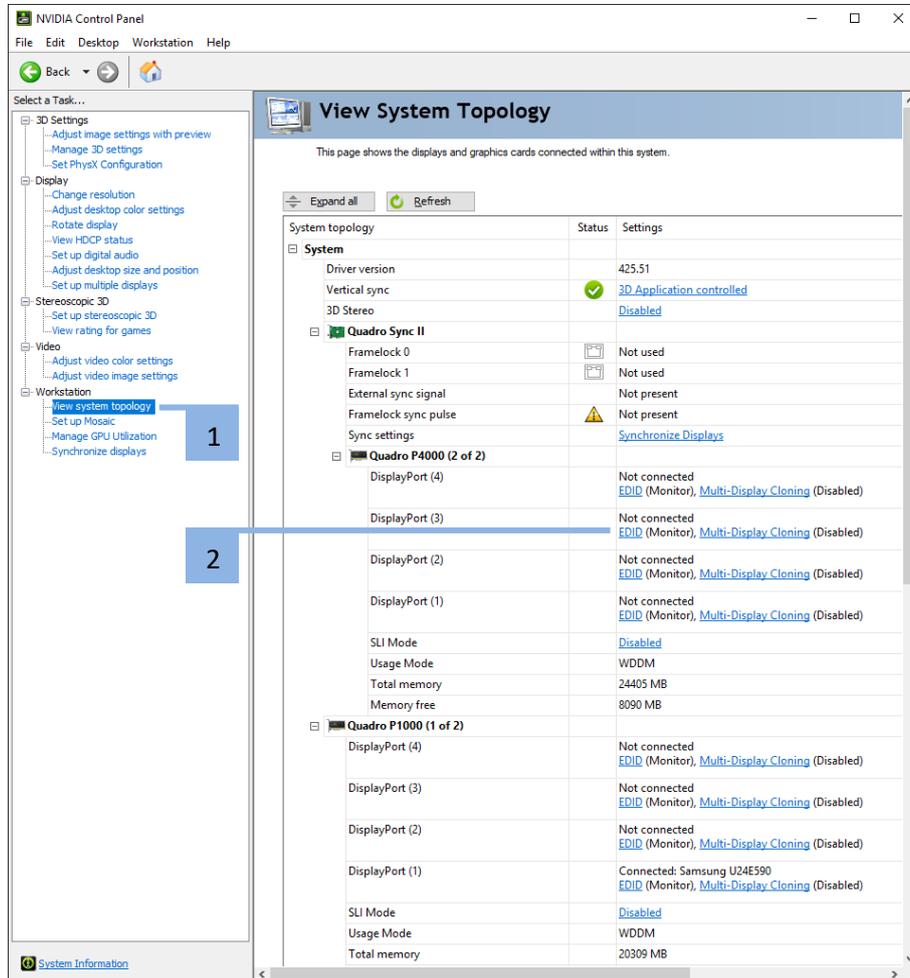
The following key combinations are activated:

- Windows key + O -> Centers the mouse on the primary monitor
- Windows key + P -> Switches the primary monitor to the next monitor. With this key combination you can easily select the desired primary display.
- Windows key + Shift + U -> Unloads all loaded EDID files. The primary monitor will display a message asking if you really want to unload all EDIDs. If you don't have a monitor connected you can blindly confirm this request by pressing the Enter key.
- Windows key + Shift + W -> All windows are centered around the mouse pointer.

EDID Management

The EDID management can be set in the Nvidia Control Panel. To open the Nvidia Control Panel, right-click on the desktop and select Nvidia Control Panel.

To open the EDID Settings open "View system topology" [1]. Then select "EDID" [2] at the corresponding graphics card port to export, load or unload EDIDs.



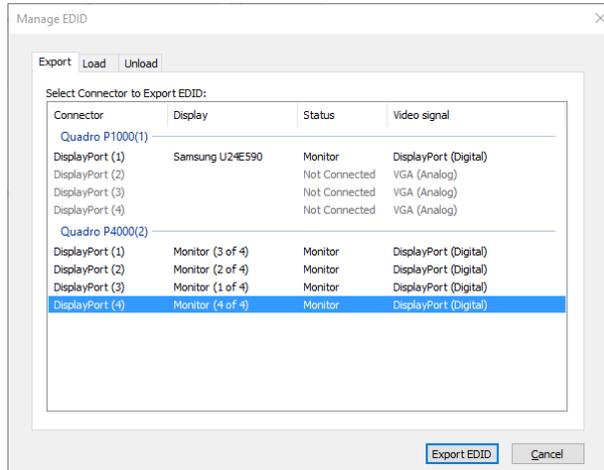
In the System Topology you can also see at a glance whether an EDID is loaded or not. If the word "Monitor" appears next to the menu item "EDID" [2], no EDID is loaded. If the word "File" appears, an EDID file is loaded.

A selection of the common display resolutions and refresh rates can be found as an EDID file in the following directory: C:\AVStumpf\EDIDs\. These EDIDs are VESA compliant and should work for most displays and projectors.

On a PIXERA Server we provide a Keyboard Shortcut to unload all EDIDs. By pressing Ctrl+Alt+U all loaded EDIDs will be unloaded. If you accidentally loaded a wrong EDID and your main screen is not visible anymore this shortcut safes your life.

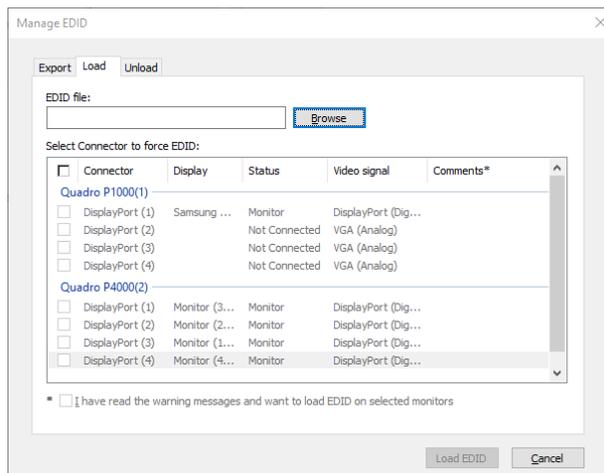
Export EDID to File

To export an EDID file, open the tab "Export", select the corresponding display and click on "Export EDID". The resulting file can then be loaded into any graphics card output.



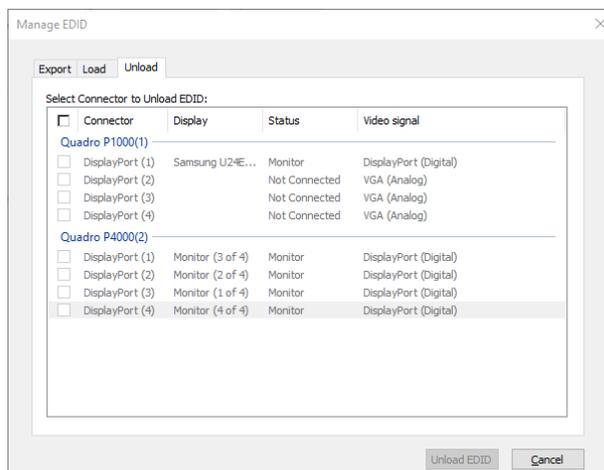
Load EDID from File

To load an EDID, the tab "Load EDID" must be opened, the corresponding EDID file must be selected and the graphic card outputs into which the corresponding EDID is to be loaded must be selected. Then the EDID can be loaded via "Load EDID".



Unload EDID

To unload an EDID file the tab "Unload EDID" must be opened, the graphic card outputs to be unloaded must be selected and clicked on "Unload EDID".



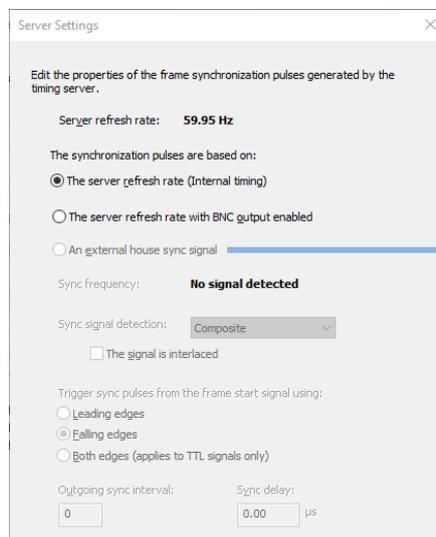
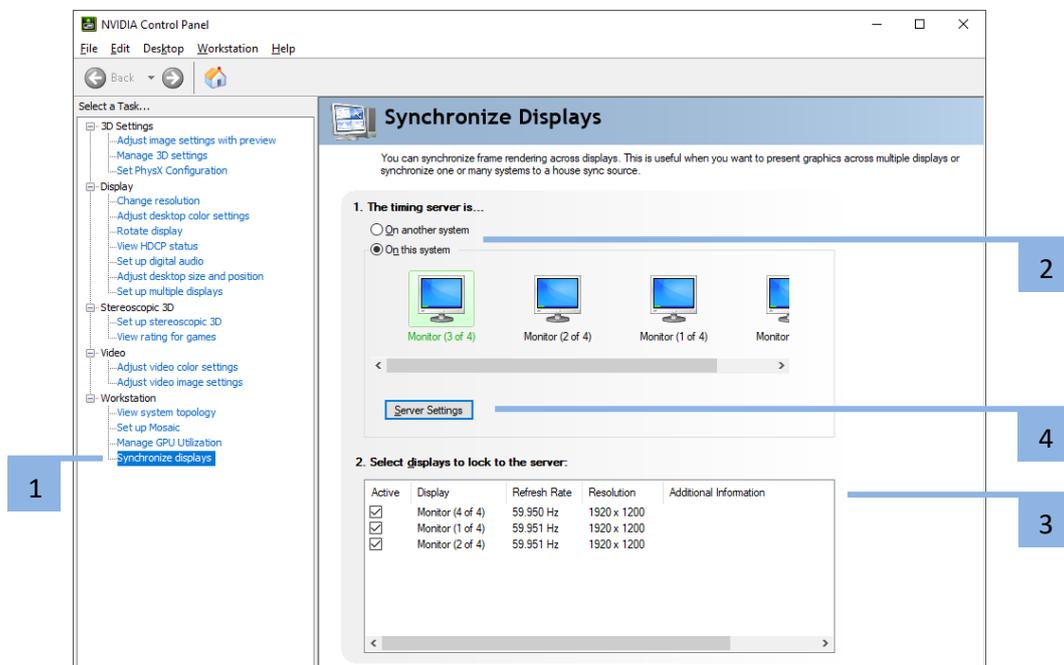
Genlock and Framelock Setup

To synchronize graphic card outputs, the Framelock and Genlock Option must be installed in the server. If installed, the menu item "Synchronize displays" is visible in the Nvidia Control Panel. To synchronize the displays the menu item "Synchronize displays" [1] must be selected. The system on which the time server is running can be selected here. Depending whether the server is the sync master or a sync client, either "On this system" or "On another system" must be selected [2]. Please make sure that the same resolutions and identical refresh rates only can be synchronized.

- In case of a sync client select "On another system" [2]. The sync boards of the servers must be connected with a CAT cable and the displays to be synchronized must be selected [3].
- In case of a sync master select "On this system" [2] The first display to be synchronized is selected and further displays can be added to the sync group [3]. The sync timing corresponds to the refresh rate of the first display.

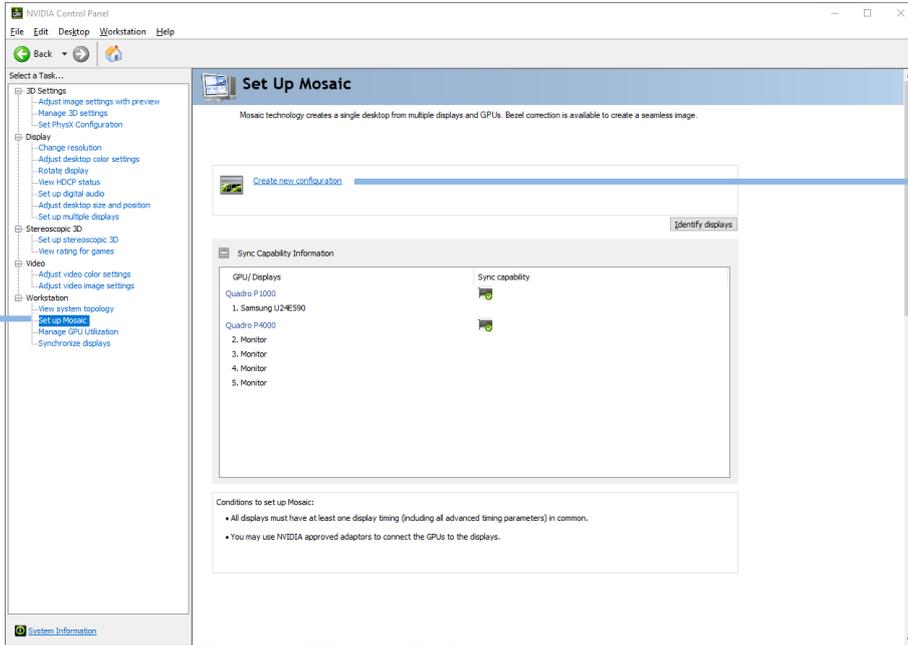
In case you synchronize to an external genlock signal select "Server Settings" [4] and choose "An external house sync signal" [5]. Adjust the following settings to fit your application.

These settings must be set on the master PC and on each client PC.



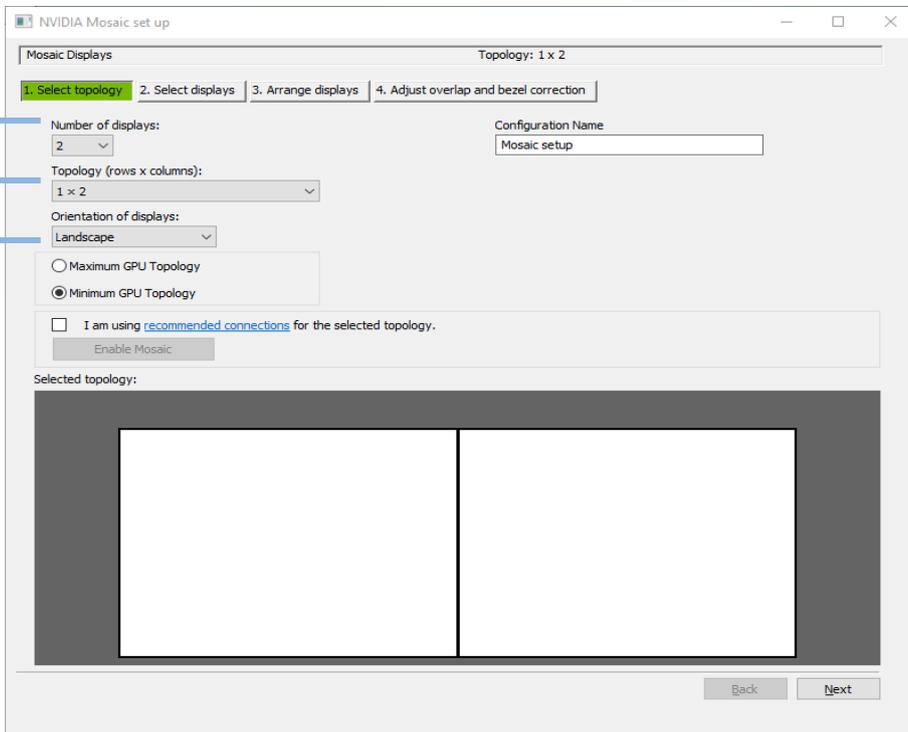
Mosaic Setup

Mosaic creates a single desktop from multiple displays and GPUs. To activate this mode, select the menu item "Set up Mosaic" [1]. Click on "Create new configuration" [2] to start the setup wizard.



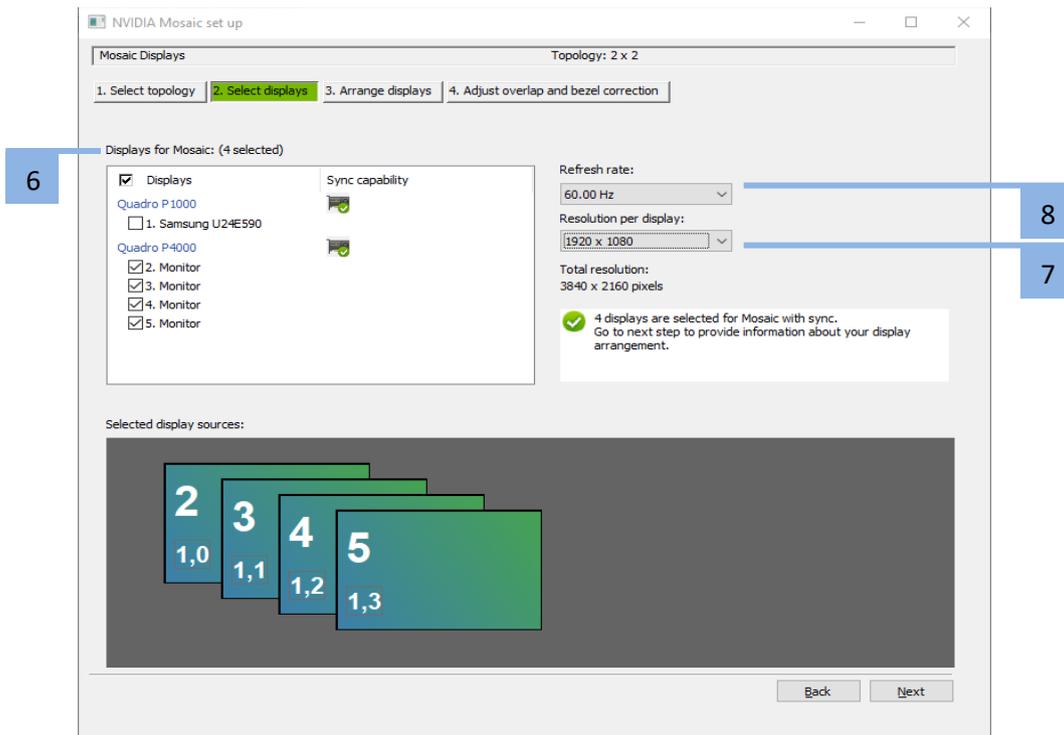
Select Topology

Define the number of displays [3], the number of rows and columns [4] and the orientation of the displays [5]. Click "Next".



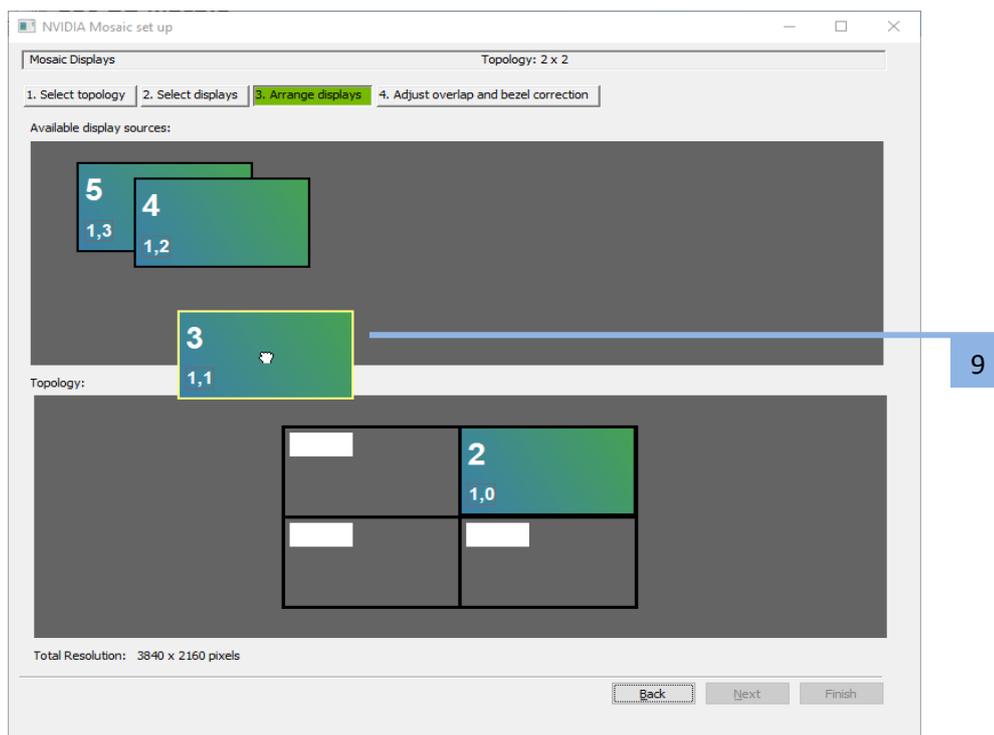
Select Displays

Select the displays to be used [6], the resolution [7] and the refresh rate [8] of each display. Click "Next".



Arrange Displays

The single displays must be arranged to the combined mosaic display. The corresponding numbers are shown on the real displays and should be arranged according to your setup. By simply dragging [9] the display areas can be placed. After placing all displays, click on "Apply" button, which will appear. This may take some time, please do not stop this process.



CLI programs to change screen resolution, setup mosaic and set sync

CLI programs are installed on a PIXERA server to change the screen resolutions, set up a mosaic or synchronize the outputs. These programs are installed on the system and can be used in the Power Shell or Command Prompt.

The following examples show how to do this:

ChangeScreenResolution.exe

Example:

```
ChangeScreenResolution.exe /w=3840 /h=2160 /f=60 /b=32 /d=0
```

/w Screen width in pixels
/h Screen height in pixels
/f Screen repetition rate in Hz
/b Colour depth
/d Target display

configureMosaic.exe

Example:

```
configureMosaic.exe set rows=1 cols=1 res=3840,2160,60 out=0,0 nextgrid rows=2 cols=4  
res=4096,2160,60 out=1,0 out=1,1 out=2,0 out=2,1 out=1,2 out=1,3 out=2,2 out=2,3
```

set row / cols Number of displays horizontal and vertical

(the first display in the example above is the GUI Monitor which is created as a single display).

res Resolution in pixels for each display in this group.

out Target display (0,0 means that it is the first output on the first card in the system).

nextgrid command to set up another Mosaic.

Sync.ps1

Example:

```
powershell.exe .\sync.ps1
```

With this script the sync can be activated or deactivated. It is toggled.

Resetting the Operating System

To do a factory reset just install the operating system using the provided image file. To do so just press F11 while it boots up and select your USB boot device and boot it in UEFI mode. The installation of the operating system will run completely automatically.

IMPORTANT! All your files stored on drive C will be deleted after this step. We recommend creating a backup of all files on drive C.

IMPORTANT! In order not to lose any data, we also recommend backing up the data from all other drives.

Making Updates

IMPORTANT! The media server runs on an operating system optimized for performance and stability. Any changes to the system can have a negative effect on performance and stability. It is therefore not recommended to install any kind of updates on the media server. If an installation or any other manipulation is nevertheless carried out, it is no longer possible to guarantee a faultless function. Any changes to the system will also void the warranty. Exceptions are installations that have been approved by AV Stumpfl.

Updating the Operating System

The Windows Update service is disabled to prevent an update from being performed during a show and to keep the operating system in a stable and tested state.

If you still need to install Windows Updates for security reasons, you must first enable the Windows Update service in the AV Stumpfl Settings Manager. Only then a Windows Update can be made.

IMPORTANT! The Windows Update service must be deactivated AV Stumpfl Settings Manager after the update process is complete to avoid interfering with subsequent playbacks.

IMPORTANT! Please note the above information regarding system instability and warranty loss!

Updating the preinstalled Tools

Many of the installed tools were installed using the Windows Package Management "Chocolatey". These programs can easily be updated with the following commands:

- Start either a Windows command line or the Windows Powershell as administrator.
- For example, to update Blender, the following command must be entered: "choco upgrade blender".
- To update all installed programs, you have to enter the following command: "choco upgrade all".
- While the update process you will be asked several times if you want to process the update. Confirm it with "Y".

IMPORTANT! Please note the above information regarding system instability and warranty loss!

Servicing

Removing the PX2 back panel for servicing purposes

The rear panel protects the redundant power supplies and the SSDs from damage and accidental removal. To replace the redundant power supplies and the SSDs during service, the back panel must be removed.

IMPORTANT! Servicing activities on the server may only be carried out in consultation with AV Stumpf GmbH. Unauthorized servicing activities will void the warranty.

IMPORTANT! Switch off the server and disconnect it from the power supply!

(Standard configuration shown, your system may be different)



1. Remove the 4 screws
2. Remove the back panel

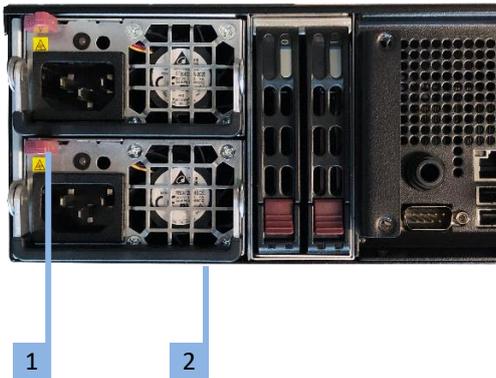
Now you have access to the power supply modules and the SSDs. Replacing the power supplies and the SSDs see the following points.

IMPORTANT! After completion of the servicing activities, the back side must be re-attached to the server! Operating the server without back panel will void the warranty.

Replacing the power supply

The PIXERA two media server has a redundant power supply. They automatically sense and operate at a 100V to 240V input voltage and are autoswitching. One power supply can be replaced without powering down the system.

A yellow lamp on the power supply unit illuminates when the unit is switched off. A green light indicates that the power is on.



1. Push the release tab on the back of the power supply.
2. Pull the power supply out using the handle provided.
3. Replace the failed power module with a new unit. The new power supply module must be identical with the replaced one. Power supply modules must be ordered at AV Stumpf.
4. Push the new power supply module into the power bay until you hear a click.
5. Plug the AC power cord back into the module.

IMPORTANT! Please be aware that removing these parts without proper ESD protection can be dangerous and can destroy the parts and the media server!

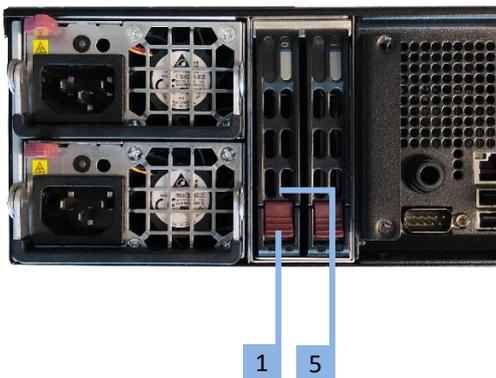
Replacing the SSDs

- Systems shipped before Q2/2019:
The operating system is stored on the left SSD.
The right SSD is the data SSD.
- Systems shipped after Q2/2019:
PX2 has an internal SSD for the operating system.
The left SSD is the primary data SSD.
The right SSD is optional and is the secondary data SSD.
- Systems shipped after 2020-02:
PX2 has an internal SSD for the operating system.
The left and the right SSD are optional.

IMPORTANT! The exchange of the SSDs may only be carried out in consultation with AV Stumpfl GmbH!
Unauthorized replacement of the SSDs will void the warranty.

IMPORTANT! Switch off the server and disconnect it from the power supply!

After exchanging the SSDs, all data is lost. No data is stored redundantly. If you have exchanged the OS-SSDs, you must request a corresponding image of the operating system from AV Stumpfl. If you have exchanged the data SSD, you must reinstall the data.



1. Press the red button to release the SSD.
2. Pull out the SSD carefully.
3. Replace the SSD in the carrier with exactly the same model.
4. Slide the SSD back in.
5. Lock the SSD again.

IMPORTANT! Please be aware that removing these parts without proper ESD protection can be dangerous and can destroy the parts and the media server!

AV Stumpfl contact

If you encounter any problems using our products, please contact our Support. If you have any questions or would like to make any suggestions, you can reach us on the phone from Monday to Thursday from 8.00 to 12.00 and from 13.00 to 16.30 and on Fridays from 8.00 to 12.00 (UTC+1).

Outside these hours we can offer fee-based emergency support:

Our emergency hotline is available every day between 8 am and 10 pm (UTC+1) at +43(7249)42811-900.

However, we would like to point out that we charge EUR 30,00 net for every 15-minutes. Please bear in mind that we may not be able to answer your call immediately. In order to ensure that we can return your call as soon as possible and offer best-possible support we are asking you to leave a message with your

- Company name
- Name
- Telephone number
- Dongle or customer number

on the answering machine and we will call you back.

Imprint

AV Stumpfl GmbH

Mitterweg 46

A-4702 Wallern

Tel.: +43 7249 42811

support@AVstumpfl.com

www.AVstumpfl.com

Declaration of Conformity



Manufacturer:

AV Stumpfl GmbH
Mitterweg 46, 4702 Wallern, Austria
Tel.: +43(7249)42811-0
AVStumpfl@AVStumpfl.com
www.AVStumpfl.com

Products:

- PIXERA one
- PIXERA two
- PIXERA mini

We hereby declare that the server described above complies with all relevant regulations. It meets the requirements of the following guidelines and standards.

Applied Guidelines:

- Low Voltage Directive 2014/35/EU
- Electromagnetic Compatibility Directive 2014/30/EU
- Restriction of Hazardous Substances Directive 2011/65/EU
- Energy Related Products Directive 2009/125/EC.

Applied harmonized Standards:

Low Voltage Directive:

- EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + AC:2011 + A2:2013
Information technology equipment - Safety - Part 1: General requirements

Electromagnetic Compatibility Directive:

- EN 55032:2016-02
Electromagnetic compatibility of multimedia devices and equipment - Emission requirements
- EN 55024:2010
Information technology equipment Immunity characteristics - Limits and methods of measurement

Restriction of Hazardous Substances Directive:

- EN 50581:2012
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Wallern, 2020-03-13

Tobias Stumpfl, CEO

Version History

Date	Document Version	Hardware Version	Changes
2018-09	-	V1.0.0	First hardware release version
2018-09-20	V10		First manual release version
2018-10-22	V11		Note added at port description at "Live Input Option: 3GSDI-C4, 3GSDI-C8": DIN-BNC adapters are required. Rear View - #2 - changed to "Not used".
2018-12-07	V12		Note added at "Rear View" – "10Gbps LAN": 10Mbps and 100Mbps speeds are not supported for LAN1 and LAN2.
2018-12-13		V1.0.1	Hardware update PX1, PX2: - Stereo Audio Output changed from 6,3mm to 3,5mm. Description and images at "Rear Views" updated.
2018-12-13	V13		Note added at "Options" – "Video Outputs": For space reasons DisplayPort cables need to be used where the plug does not exceed a maximum thickness of approx. 12mm! Note added at "Audio Output Option" – "HDSpe AIO", "HDSpe AES" and "HDSpe RayDAT": Due to the limited space at PX1 it can be possible that special cables for some connectors have to be used!
2019-01-07		V1.0.2	Hardware update PX2: - Rear panel modified to allow DP cables with a thickness of approx. 14 mm to be plugged in. - Recess added to the rear panel in the genlock input area to prevent BNC connectors from jamming.
2019-01-07	V14		Note changed at "Options" – "Video Outputs": Due to a mechanical change DisplayPort cables up to a maximum thickness of approx. 14mm can now be used.
2019-01-26	V14		"Audio Output Option - HDSpe MADI, RayDAT, AES": "Option Slot PX1" changed from "not possible" to "FP2 (Only main card can be installed! ...)" "Audio Output Option - HDSpe AES": Expansion Card had the wrong orientation -> rotated 180°. Important note added at "AV Stumpfl Media Server Operating System", that any installation of software, etc. is not permitted.
2019-02-11		V1.0.3	Hardware update PX2: - More powerful fan type used to ensure cooling even in very critical situations.
2019-04-10		V1.1.0	Hardware update PX1, PX2: - Internal mechanical support for graphic card - Hardware for illuminated front LED logo updated - Unused connectors backside covered (see rear view #2, #9) Hardware change PX2: - Illumination for back side added - OS-SSD moved from back slot to internal mounting
2019-04-10	V15		NVMe Options 1TB, 2TB, 4TB added RAW-NVMe Option 4TB added PIXERA mini added (specifications, front view, rear view, options, VESA mount, rack mount) "Starting up the media server" added Note added at "Replacing the SSDs", that after Q2/2019 PX2 has an internal data SSD. UI description and Backup Manager removed (no longer available on models shipped after Q2/2019) Live input option FLEX-C8 added Rear view PX2: point "Rear panel illumination" added
2019-05		V1.1.1	Hardware update PX2: - Different fan model used (similar parameters as before, changed due to delivery situation)
2019-05-22	V16		- DVI live input options removed (EOL) - HDMI1.4 live input option added - Position of the serial number tags added under "Identifying the product and other information" - Document renamed
2020-01-23	V17		- Default IP address range and default DHCP settings changed to new default values. - Manual updated to Windows 10. - Sections added: Windows User Account, Preinstalled Programs, Startmenu, PIXERA Hub, EDID Management, Genlock and Framelock Setup, Mosaic Setup, CLI programs to change screen resolution, setup mosaic and set sync, Resetting the Operating System, Making updates. - Login for IMPI added under "Standard User Names and Passwords" - Dimensions of 19" racks added under Specification – Physical. - Scope of delivery changed

2020-01-23		V1.2	- New hardware config upgrades and options 2020 added (CPU standard values, performance upgrades, onboard NVMe, NVMe options, RAW removed, SSD options)
2020-03-11	V18		PXM added to CE cert.
2020-09-25	V19		CPU X27 updated by Intel: CPU frequency, power consumption, heat dissipation changed Option Code N4T0 changed to N4TOR0 Hint for uncompressed playback license removed at N2T0 and N4TOR0 New NVMe-SSD options added: N6T0, E4T0, E6T0, E8T0, E12T, E8TOR0, E12TR0, E16TR0, E24TR0