User Manual
IPAV Pro Series

IPAV Pro

User Manual

4K IP Streaming Extender

Model
IPAV1100-TX & IPAV2100-RX
IPAV1000-TX & IPAV2000-RX
IPAV1102-TX
IPAV1200-TX

Designed in Germany

V1.1

Preface

Read this user manual carefully before using this product. Pictures shown in this manual are for reference only. Different model layouts and specifications are subject to the physical product.

This manual is for operation instructions only, not for any maintenance usage.

In the constant effort to improve our product, we reserve the right to make changes in functions or parameters without prior notice or obligation.

Trademarks

Product model and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written consent.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

FC

REACH | 1907/2006/EU

ROHS | 2011/65/EU

PureLink hereby declares that this products **PureTools IPAV1100-TX & IPAV2100-RX**, **IPAV1000-TX&IPAV2000-RX, IPAV1102-TX, IPAV1200-TX** complies with Directives 1907/2006/EU und 2011/65/EU.

EMC / LVD (Electro Magnetic Compatibility / Low Voltage Directive)

PureLink GmbH hereby declares that this products **PureTools IPAV1100-TX & IPAV2100-RX, IPAV1000-TX&IPAV2000-RX, IPAV1102-TX, IPAV1200-TX** complies with Directives 2014/30/EU and 2014/35/EU. The full text of the EU Declaration of Conformity is available at the following Internet address:

IPAV1100-TX: http://www.purelink.de/ce/4251364715994_CE.pdf

IPAV2100-RX: http://www.purelink.de/ce/4251364715987_CE.pdf

IPAV1000-TX: http://www.purelink.de/ce/4251364718148_CE.pdf

IPAV2000-RX: http://www.purelink.de/ce/4251364718179_CE.pdf

IPAV1102-TX: http://www.purelink.de/ce/4251364720066_CE.pdf

IPAV1200-TX: http://www.purelink.de/ce/4251364720073_CE.pdf

SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Do not put any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheat.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Table of Contents

1. Product Introduction

The IPAV Pro series consists of a network-based AV transmitters and receivers supporting HDMI and DisplayPort inputs up to 4K, 4:4:4 and incl. HDR. It is designed for HDMI/DP transmission over IP networks, able to integrate external audio as well as control signals at distances of up to 100m using a Cat cable or over 300m over Multi Mode fiber. It can be controlled by one PC with installed control software (IPAV Pro Control Center) and one 10GbE Switch to control a variety of functions.

The IPAV Pro series provides one of the most advanced IP streaming solutions on the market utilizing BlueRiver™ NT+ technology, which synergizes various IP/AV standards to work together as one. Fully compatible with all other SDVoE products on the market making the Pro Series versatile and cross compatible.

The IPAV Pro series features uncompressed video transmission with zero latency from transmitter to receiver, seamless switching, video wall functionality, 1G Ethernet integration, RS232 control, audio embedding & de-embedding, audio down-mixing, and much more. The control software merges all functions into a single windows application.

The rugged IPAV Pro housing is custom made to fit the demanding requirements of rental and staging markets, making this a tough but highly versatile product to suit multiple professional applications.

1.1 About 10G Networks

Unlike traditional AV extension technology, such as HDBaseT, where transmitters and receivers are connected point to point or joined together using custom matrix switches, the IPAV Pro transmitter and receiver units are based on the inter compatible BlueRiver™ NT+ technology and connected using standard, off the shelf 10G Layer 2/3 network switches.

This architecture makes use of data packages that can be easily and independently routed to the desired unit. A variety of transmission modes are possible this way, from one transmitter to one receiver (point to point) or one transmitter to many receivers (point to multipoint) or many transmitters to many receivers (multipoint to multipoint) as well as software controllable video wall integration.

An added benefit of packet data transmission is that each signal type (video, audio, RS232, etc.) is routed independently and not necessarily to the same destination. For example, the HDMI video from a particular transmitter is routed to 4 receivers, while the audio goes to all receivers in the setup.

This unlimitedly scalable and independent signal routing enables multiple, scalable applications, including signal extension, splitting, switching, matrixing, and video wall functionality.

1.2 Features

- BlueRiver™ NT+ technology, featuring the NT1000 chipset inside the transmitter and NT2000 chip with powerful scaling capabilities included in the receiver.
- Streams uncompressed A/V signals with zero latency incl. control signals, with the flexibility of transmitting them together or to separate network destinations.
- Supports HDMI 2.0 and video resolutions up to 4K @60Hz, 4:4:4, 8bit.
- High bandwidth of up to 18Gbps, supporting HDR10 and Dolby Vision.
- Automatic detection and switching of HDMI and DisplayPort inputs.
- Transmits and receives RS232 to/from any unit in the same system by using Unicast / Broadcast IPV4 protocols or local API server control.
- Full HDCP version support, including v2.2.

- Allows a video source to be stretched across multiple displays (max. 5x5 video wall).
- Seamless switching between different transmitters with selectable output resolutions up to 4K incl. receiver-sided scaling ability to fit the display format.
- HDMI audio as well as external balanced audio inputs can be routed as an independent stream to desired receiver devices for balanced audio de-embedding or down-mixing.
- The BlueRiver NT+ chipset is fully compliant with the SDVoE™ standard, offering zero-latency AV over IP with true 4K @60Hz and powerful precessing features.

1.3 Package List

Note: Please contact your distributor immediately if any damage or defect in the components is found.

Model	Package List
IPAV1100-TX	1x IPAV1100-TX Transmitter 1x Power Cord - User Manual
IPAV2100-RX	1x IPAV2100-RX Receiver 1x Power Cord - User Manual

Model	Package List
IPAV1000-TX	● 1x IPAV1000-TX Transmitter ● 2x Mounting Ears with 6 Screws ● 4x Plastic Cushions ● 1x 3-pin Terminal Block ● 2x 5-pin Terminal Blocks ● 1x Power Adaptor (12V DC 2A) ● 1x User Manual
IPAV2000-RX	● 1x IPAV2000-RX Receiver ● 2x Mounting Ears with 6 Screws ● 4x Plastic Cushions ● 1x 3-pin Terminal Block ● 2x 5-pin Terminal Blocks ● 1x Power Adaptor (12V DC 2A) ● 1x User Manual
IPAV1102-TX	● 1x IPAV1102-TX Transmitter ● 2x Mounting Ears with 6 Screws ● 1x Power Cord ● 1x User Manual
IPAV1200-TX	● IPAV1200-TX Transmitter ● 1x 3-pin Terminal Block ● 1x 5-pin Terminal Block ● 1x User Manual

2. Specification

2.1 IPAV1100-TX

IPAV1100-TX	
Video Input	(1) HDMI, (1) DP
Video Input Connector	(1) Type-A Female HDMI, (1) DisplayPort
HDMI Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
DP Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio Input	(1) Balanced stereo
Audio Input Connector	(1) 5pin mini XLR
Control	(1) CAT (10G), (1) FIBER (10G), (1) RS232, (1) ETHERNET (1G)
Control Connector	(2) RJ45, (1) LC, (1) RJ11(6P4C)
General	
External Power Supply	220~240V AC, 50/60Hz
Power Consumption	19W (Max)
Operation Temperature	-10℃ ~ +60℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Dimension (W*H*D)	290mm x 44mm x 240mm
Net Weight	2.88KG

2.2 IPAV2100-RX

IPAV2100-RX	
Video Output	(1) HDMI
Video Output Connector	(1) Type-A Female HDMI
HDMI Output Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio Output	(1) Balanced stereo
Audio Output Connector	(1) 5pin mini XLR
Control	(1) CAT (10G), (1) FIBER (10G), (1) RS232, (1) ETHERNET (1G)
Control Connector	(2) RJ45, (1) LC, (1) RJ11 (6P4C)
General	
External Power Supply	220~240V AC, 50/60Hz
Power Consumption	21W (Max)
Operation Temperature	-10℃ ~ +60℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Dimension (W*H*D)	290mm x 44mm x 240mm
Net Weight	2.86KG

2.3 IPAV1000-TX

IPAV1000-TX	
Video Input	(1) HDMI, (1) DP
Video Input Connector	(1) Type-A female HDMI, (1) DisplayPort
HDMI Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
DP Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio Input	(1) Balanced Stereo
Audio Input Connector	(1) 5-pin terminal block
Control	(1) 10G LAN, (1) SFP+, (1) IR IN, (1) IR OUT, (1) RS232, (1) ETHERNET
Control Connector	(2) RJ45, (1) LC, (1) 5-pin terminal blocks, (1) 3-pin terminal blocks
General	
External Power Supply	Input: AC 100~240V, 50/60Hz, Output: 12V DC 2A
Power Consumption	19W (Max)
Operation Temperature	-10℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Dimension (W*H*D)	224.0mm x 49.2mm x 110.0mm
Net Weight	1.16KG

2.4 IPAV2000-RX

IPAV2000-RX	
Video Output	(1) HDMI
Video Output Connector	(1) Type-A female HDMI
HDMI Output Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio Output	(1) Balanced Stereo
Audio Output Connector	(1) 5-pin terminal block
Control	(1) 10G LAN, (1) SFP+, (1) IR IN, (1) IR OUT, (1) RS232, (1) ETHERNET
Control Connector	(2) RJ45, (1) LC, (1) 5-pin terminal blocks, (1) 3-pin terminal blocks
General	
External Power Supply	Input: AC 100~240V, 50/60Hz, Output: 12V DC 2A
Power Consumption	21W (Max)
Operation Temperature	-10℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Dimension (W*H*D)	224.0mm x 49.2mm x 110.0mm
Net Weight	1.19KG

2.5 IPAV1102-TX

IPAV1102-TX (Integrated 2 IPAV1100-TX Transmitter Mainboards)	
Video Input	(2) HDMI, (2) DP
Video Input Connector	(2) Type-A Female HDMI, (2) DisplayPort
HDMI Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
DP Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio Input	(2) Balanced stereo
Audio Input Connector	(2) 5pin mini XLR
Control	(2) CAT (10G), (2) FIBER (10G), (2) RS232, (2) ETHERNET (1G)
Control Connector	(4) RJ45, (2) LC, (2) RJ11(6P4C)
General	
External Power Supply	220~240V AC, 50/60Hz
Power Consumption	38W (Max)
Operation Temperature	-10℃ ~ +60℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Dimension (W*H*D)	436.4mm x 44mm x 280mm
Net Weight	3KG

2.6 IPAV1200-TX

IPAV1200-TX (OpenGear 4K IP Streaming Card)	
Video Input	(1) HDMI
Video Input Connector	(1) Type-A female HDMI
HDMI Input Resolution	Up to 4Kx2K@60Hz 4:4:4 8bit
Audio Input	(1) AUDIO
Audio Input Connector	(1) 5pin mini XLR
Control	(1) CAT (10G), (1) FIBER (10G), (1) RS232, (1) IR IN, (1) OUT
Control Connector	(2) RJ45, (1) LC, (1) 3-pin terminal block, (1) 5-pin terminal block
General	
External Power Supply	Powered by OG3-FR Series Frame (Sold separately).
Power Consumption	19W (Max)
Operation Temperature	-10℃ ~ +55℃
Storage Temperature	-25℃ ~ +70℃
Relative Humility	10%-90%
Dimension (W*H*D)	Front Module: 324m x 77mm x 26mm Rear Module: 85mm x 33 mm x 30mm
Net Weight	Front Module: 290g, Rear Module: 25g

3. Panel Description

3.1 IPAV1100-TX

3.1.1 Back and Side Panel

①   **HDMI IN:** Type-A female HDMI port for HDMI video source device.

②   **DP IN:** DisplayPort input port for DP video source device.

③   **CAT (10G):** RJ45 port to connect directly to the RX or a network switch using Cat6a / Cat7.

④   **FIBER (10G):** LC port to connect directly to the RX or a fiber network switch using an optical LC cable.

⑤   **RS232:** RJ11 (6P4C) port for RS232 control. Supports point to point unicast and one to all broadcast configurations.

⑥   **AUDIO IN:** A miniXLR (5pin) port to connect a balanced audio source.

⑦   **ETHERNET (1G):** RJ45 port to connect control devices (such as PC) for system control via software and Ethernet pass-through. The PC can also be indirectly connected to the network switch.

⑧   **220~240V AC IN:** Rugged D-Type Neutrik powerCON TRUE1 connector for AC input.

⑨   **Signal LEDs:**

     POWER LED: The LED illuminates red when power is applied.

     LINK LED: The LED indicates if Ethernet packets are transmitted.

       ✓   LED off: Packets are not transmitted.
       ✓   LED blinking: Packets are transmitted.
       ✓   LED on: packets are not transmitted but link is present.

     HDMI LED: The LED illuminates green when the HDMI video source is selected.

     DP LED: The LED illuminates green when the DP video source is selected.

3.1.2 Front and Side Panel
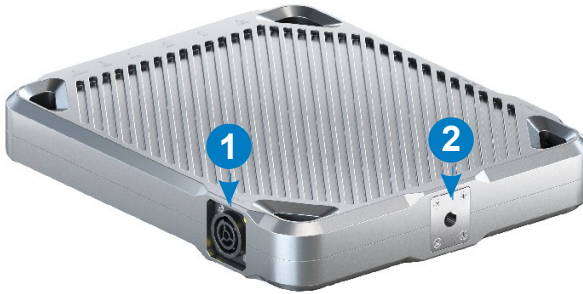
① **220–240V AC OUT:** Rugged D-Type Neutrik powerCON TRUE1 connector for redundant AC output to cascade multiple units.

② **Mounting hole for truss clamp (second one on the bottom side)**

3.2 IPAV2100-RX

3.2.1 Back and Side Panel
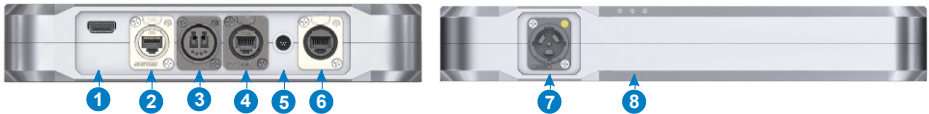
① **HDMI OUT:** Type-A female HDMI port for HDMI display device.

② **CAT (10G):** RJ45 input to connect directly to the TX or network switch using a Cat6a / Cat7 cable.

③ **FIBER (10G):** LC port to connect directly to the TX or a fiber network switch using an optical LC cable.

④ **RS232:** RJ11 (6P4C) port for RS232 control. Supports point to point unicast and one to all broadcast configurations.

⑤ **AUDIO OUT:** MiniXLR (5pin) port to connect balanced audio playback device.

⑥ **ETHERNET (1G):** RJ45 port to connect control devices (such as PC) for system control via software and Ethernet pass-through. The PC can also be indirectly connected to the network switch.

⑦ **220~240V AC IN:** Rugged D-Type Neutrik powerCON TRUE1 connector for AC input

⑧ **Signal LEDs:**

POWER LED: The LED illuminates red when power is applied.

LINK LED: The LED indicates if Ethernet packets are transmitted.

- LED off: Packets are not transmitted.
- LED blinking: Packets are transmitted.
- LED on: packets are not transmitted but link is present.

HDMI LED: The LED illuminates green when there is HDMI video output.

3.2.2 Front and Side Panel

① **220-240V AC OUT:** Rugged D-Type Neutrik powerCON TRUE1 connector for redundant AC output to cascade multiple units.

② **Mounting hole for truss clamp (second one on the bottom side).**
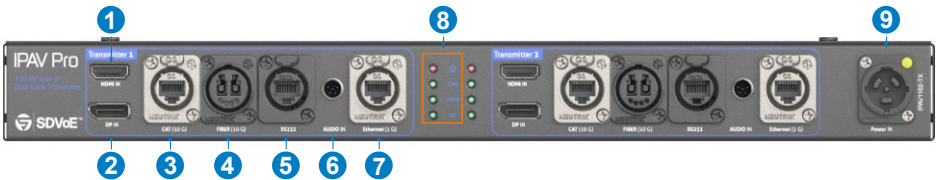
3.3 IPAV1000-TX

3.3.1 Front Panel

① **POWER LED:** The LED illuminates red when power is applied.

② **LINK LED:** The LED indicates if Ethernet packets are transmitted.

- LED off: Packets are not transmitted.

- LED blinking: Packets are transmitted.

- LED on: Packets are not transmitted but link is present

③ **HDMI LED:** The LED illuminates green when the HDMI video source is selected.

④ **DP LED:** The LED illuminates green when the DP video source is selected.

3.3.2 Rear Panel
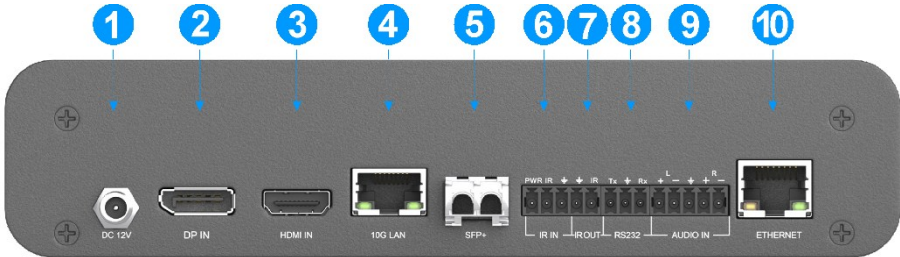
① **DC 12V:** DC port for AC power adapter connection.

② **DP IN:** DisplayPort input port to connect DP video source device.

③ **HDMI IN:** Type-A female HDMI port to connect HDMI video source device.

④ **10G LAN:** RJ45 port to connect directly to the RX or a network switch using a CATx cable.

⑤ **SFP+:** SFP+ port comes unequipped. Single-mode and Multi-mode duplex LC fiber modules available (IPAV-SFP10G-MM and IPAV-SFP10G-SM).

⑥ **IR IN:** 3-pin terminal block to connect an IR receiver for IR routing control.

⑦ **IR OUT:** 2-pin terminal block to connect an IR emitter for IR routing control.

⑧ **RS232:** 3-pin terminal block for RS232 routing control. Supports point to point unicast and point to multipoint broadcast configuration.

⑨ **AUDIO IN:** 5-pin terminal block to connect an audio source.

⑩ **ETHERNET:** RJ45 port to connect control devices (such as PC) for system control via software and Ethernet pass-through. The PC can also be indirectly connected to the network switch.
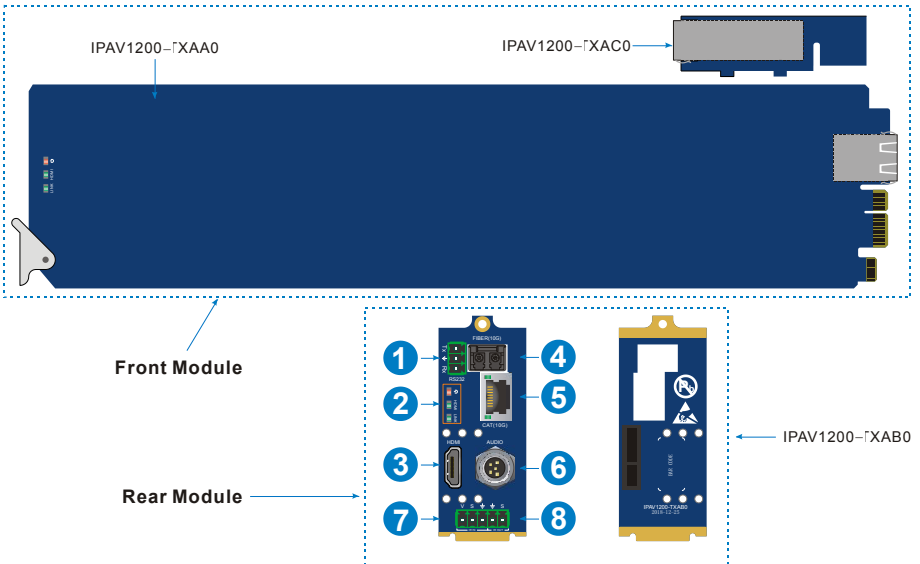
3.4 IPAV2000-RX

3.4.1 Front Panel

① **POWER LED:** The LED illuminates red when power is applied.

② **LINK LED:** The LED indicates if Ethernet packets are transmitted.

- LED off: Packets are not transmitted.

- LED blinking: Packets are transmitted.

- LED on: Packets are not transmitted but link is present

③ **HDMI LED:** The LED illuminates green when there is HDMI video output.

3.4.2 Rear Panel

① ② ③ ④ ⑤⑥⑦ ⑧ ⑨
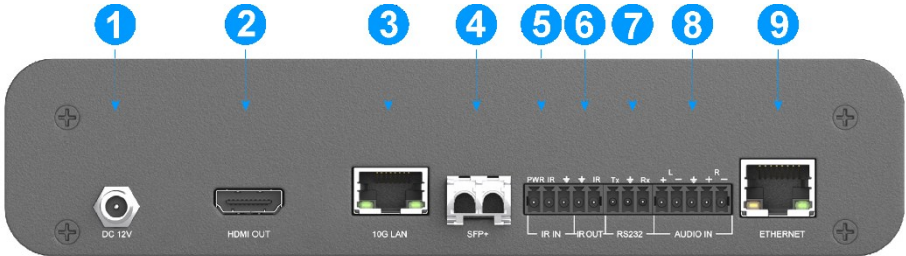
① **DC 12V:** DC port for AC power adapter connection.

② **HDMI OUT:** RJ45 port to connect directly to the TX or a network switch using a CATx cable.

③ **10G LAN:** RJ45 port to connect RX or Network Switch with CATx cable.

④ **SFP+:** SFP+ port comes unequipped. Single-mode and Multi-mode duplex LC fiber modules available (IPAV-SFP10G-MM and IPAV-SFP10G-SM).

⑤ **IR IN:** 3-pin terminal block to connect an IR receiver for IR routing control.

⑥ **IR OUT:** 2-pin terminal block to connect an IR emitter for IR routing control.

⑦ **RS232:** 3-pin terminal block for RS232 routing control. Supports point to point unicast and point to multipoint broadcast configuration.

⑧ **AUDIO OUT:** 5-pin terminal block to connect audio output device.

⑨ **ETHERNET:** RJ45 port to connect control devices (such as PC) for system control via software and Ethernet pass-through. The PC can also be indirectly connected to the network switch.

3.5 IPAV1102-TX

The IPAV1102-TX transmitter is integrated by two IPAV1100-TX. Here take one of transmitters as an example to describe its interfaces.

① **HDMI IN:** Type-A female HDMI port for HDMI video source device.

② **DP IN:** DisplayPort input port for DP video source device.

③ **CAT (10G):** RJ45 port to connect directly to the RX or a network switch using Cat6a / Cat7.

④ **FIBER (10G):** LC port to connect directly to the RX or a fiber network switch using an optical LC cable.

⑤ **RS232:** RJ11 (6P4C) port for RS232 control. Supports point to point unicast and one to all broadcast configurations.

⑥ **AUDIO IN:** A miniXLR (5pin) port to connect a balanced audio source.

⑦ **ETHERNET (1G):** RJ45 port to connect control devices (such as PC) for system control via software and Ethernet pass-through. The PC can also be indirectly connected to the network switch.

⑧ **Signal LEDs:**

POWER LED: The LED illuminates red when power is applied.
LINK LED: The LED indicates if Ethernet packets are transmitted.
- ✓ LED off: Packets are not transmitted.
- ✓ LED blinking: Packets are transmitted.
- ✓ LED on: packets are not transmitted but link is present.

HDMI LED: The LED illuminates green when the HDMI video source is selected.
DP LED: The LED illuminates green when the DP video source is selected.

⑨ **220~240V AC IN:** Power connector for AC input.

3.6 IPAV1200-TX

The IPAV1200-TX is a 4K IP Streaming Card designed for operation with OG3 or OGX OpenGear chassis' (sold separately). The card is for use where high density I/O is required or in mission critical 24/7 applications.

① **RS232:** 3-pin terminal block for RS232 routing control. Supports point to point unicast and point to multipoint broadcast configuration.

② **Signal LEDs:**

POWER LED: The LED illuminates red when power is applied.

LINK LED: The LED indicates if Ethernet packets are transmitted.

- ✓ LED off: Packets are not transmitted.
- ✓ LED blinking: Packets are transmitted.
- ✓ LED on: packets are not transmitted but link is present.

HDMI LED: The LED illuminates green when the HDMI video source is selected.

③ **HDMI IN:** Type-A female HDMI port for HDMI video source device.

④ **FIBER (10G):** SFP+ port comes unequipped. Single-mode and Multi-mode duplex LC fiber modules available (IPAV-SFP10G-MM and IPAV-SFP10G-SM)

⑤ **CAT (10G):** RJ45 port to connect directly to the RX or a network switch using Cat6a / Cat7.

⑥ **AUDIO:** A miniXLR (5pin) port to connect a balanced audio source.

⑦ **IR IN:** 3-pin terminal block to connect an IR receiver for IR routing control.

⑧ **IR OUT:** 2-pin terminal block to connect an IR emitter for IR routing control.

Installing an OpenGear 4K IP Streaming Card:

The IPAV1200-TX OpenGear 4K IP Streaming Card should be installed into OG3 or OGX series frame. It has Front Module and Rear Module. The Rear Module should be installed first, and then install the Front Module.
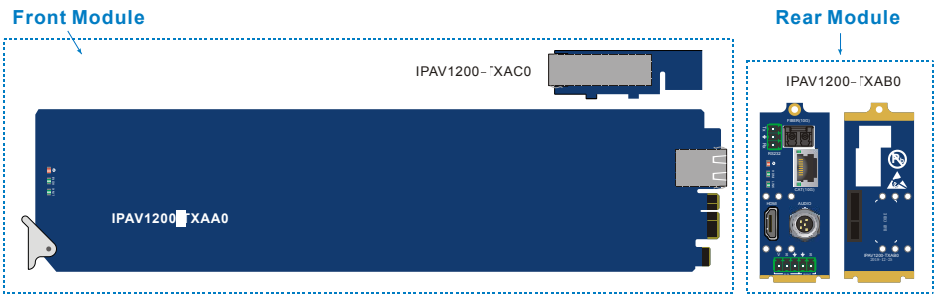
To install a Rear Module in an OG3-FR series frame:

1) Power down the OG3 or OGX series frame.

2) Ensure that the frame is properly installed.

3) Locate the card frame slot on the rear of the frame you wish to install the OpenGear card in.

4) Seat the bottom of the Rear Module in the seating slot at the base of the frame back plane. Refer to the user manual of OG3 or OGX series frame for details.

5) Align the top screw of the Rear Module with the screw hole on the top edge of the frame back plane.

Screw Hole

Module Seating Slots
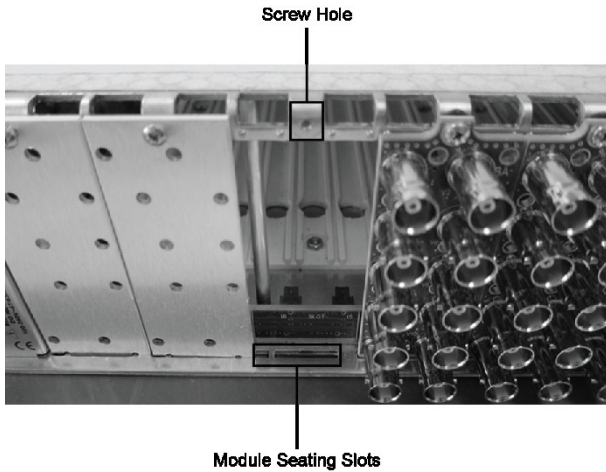
6) Ensure the module aligns with the desired card slot before tightening the screws.

7) Using a screwdriver and the supplied screw, fasten the Rear Module to the frame back plane. Do not over tighten.

8) Ensure proper frame cooling and ventilation by having all rear frame slots covered with Rear Modules or blank metal plates.

To install a Front Module in an OG3-FR series frame:

The slot number is dependent on the slot combinations you installed the Rear Module in. This allows adequate spacing to avoid damaging the card, the cards installed in the neighboring slots, or both.

1) Locate the rear module you installed.

2) Open the frame door as follows:

- Gently pull the side door tabs towards the center of the door, releasing the door from the frame.

- Using both hands, pull the door towards you. The door extender arms prevent the door from falling.

3) Hold the Front Module by the edges and carefully align the Front Module edges with the rails inside the frame. The slots are numbered starting from the left-most slot when facing the fame front.

4) Fully insert the Front Module into the frame until the Front Module is properly seated in the Rear Module.

5) Close the frame door as follows:

- Slide the door into the frame.

- Pull and release the door tabs to ensure the frame door is securely locked to the frame.

Note: Please refer to the OpenGear Website for more information.

3.7 RS232 Pin Definition

Find the pin definition of the RJ11 (6P4C) RS232 port below.
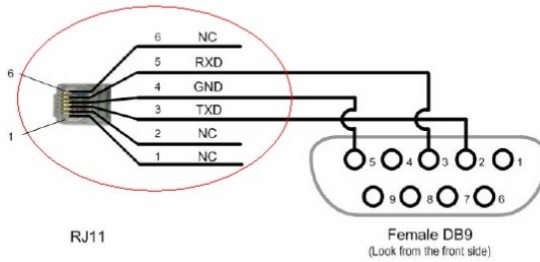
3.8 XLR Pin Definition

Find the pin definition of the MiniXLR audio port below.
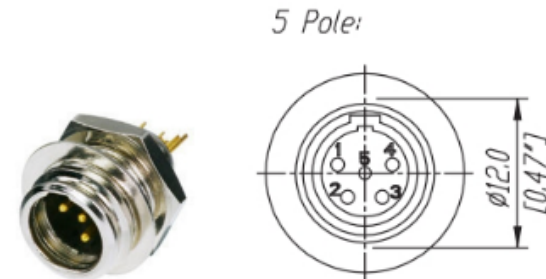
Pin out	
Pin 1	Signal Common
Pin 2	data 1-
Pin 3	data 1+
Pin 4	data 2-
Pin 5	data 2+

4. System Connection

4.1 Usage Precaution

- Make sure all components and accessories are included before installation.
- The system should be installed in a clean environment with proper temperature and humidity.
- All of the power switches, plugs, sockets, and power cords should be insulated and safe.
- All devices should be connected before being powered on.

4.2 System Connection

There are five types of possible applications:

Extender (Point-to-Point)

In a point-to-point configuration, there is no need for a switch. Distribute full, uncompressed data up to 4K@60Hz 4:4:4 resolution as well as 1G Ethernet, audio and control signals over a single copper or fiber cable.

Splitter (One-to-Many)

With only one IPAV transmitter and one 10G Ethernet Switch, any A/V signal can be flawlessly and instantly distributed to a near limitless number of receivers and screens, any number of times.

Matrix Switcher (Many-to-One, Many-to-Many)

The combination of switching and splitting enables a completely scalable matrix system. Independently route video, audio and RS232 control signal from any source to any endpoint. The IPAV Pro allows for on-the-fly upgrading and a virtually unlimited number of I/O ports.

Video Wall

Create and manage video walls in setups up to 5x5 screens. The IPAV product line features full bezel correction and instant seamless switching of full bandwidth source material as well as further innovative features for video wall management.

4.3 System Diagram

The following diagram illustrates typical input and output connections that can be utilized with the IPAV Pro:

Here take IPAV1100-TX and IPAV2100-RX as an example:
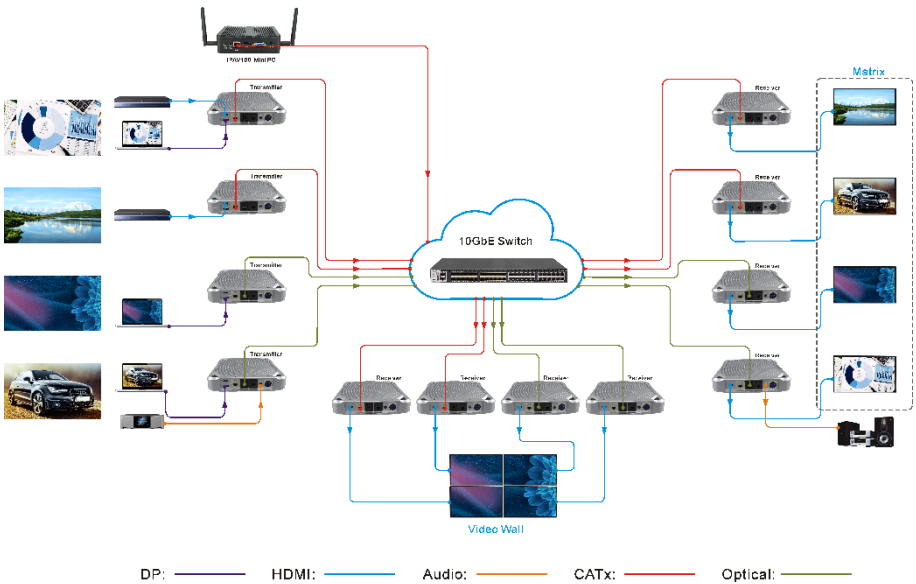
4.4 Switch Selection

Any Layer 2/3 10Gb Ethernet switch can be used, provided it is capable of IGMP Snooping (V2), IGMP Querier (V2), IGMP Fast Leave and it should drop unknown Multicast packets. Provided these settings are available and active, the switch should work without problems with the IPAV Pro series.

5. Operation of IPAV Pro Control Center

5.1 General Information

The "IPAV Pro Control Center" is a control software used to configure and control signal extension, routing and switching between IPAV TX and IPAV RX units.

The IPAV Pro Control Center does not directly communicate with or control the IPAV TX & IPAV RX devices. Instead, it communicates using a separate process, functioning as a proxy between the IPAV Pro Control Center clients and IPAV Pro end points (TX/RX) on the network.

The IPAV Pro Control Center can be used on any Windows PC using Microsoft .Net framework 4.0 or later.

The PC running the IPAV Pro Control Center can be connected to the ETHERNET port of any device or to any RJ45 port of the 10GbE switch except the management/console port (which is not part of the actual network).

Before proceeding, make sure all IPAV Pro units are powered on. Ensure that the IP addresses of PC and all IPAV Pro units are on the same local area network (LAN).

Start the application by double clicking on **"IPAV Pro Control Center.exe"** file. If you receive a pop-up asking for network access confirmation, make sure that both private and public networks are allowed.
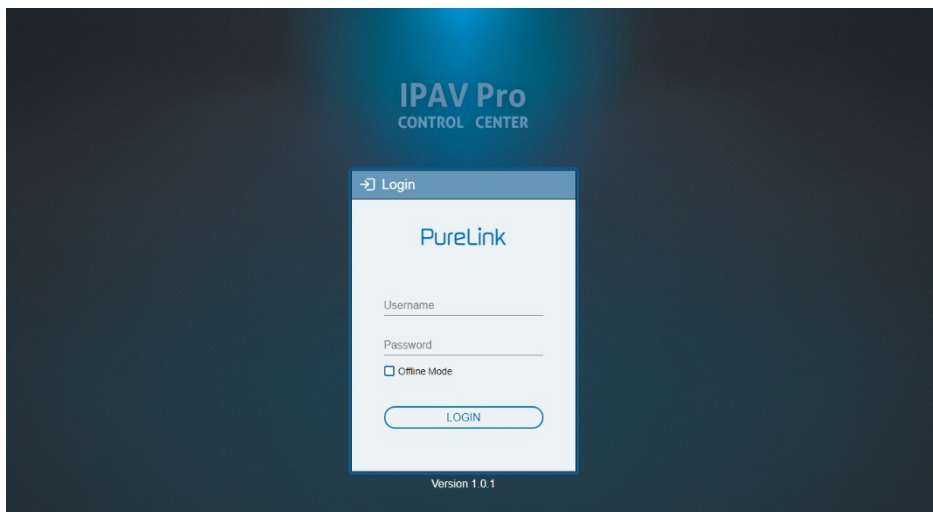
Username: admin

Password: admin

Please type in your username and password, then click **LOGIN**.

Note: Offline Mode can be used for testing purposes.

Upon launch, the IPAV Pro Control Center's main interface will appear as shown in the picture below:
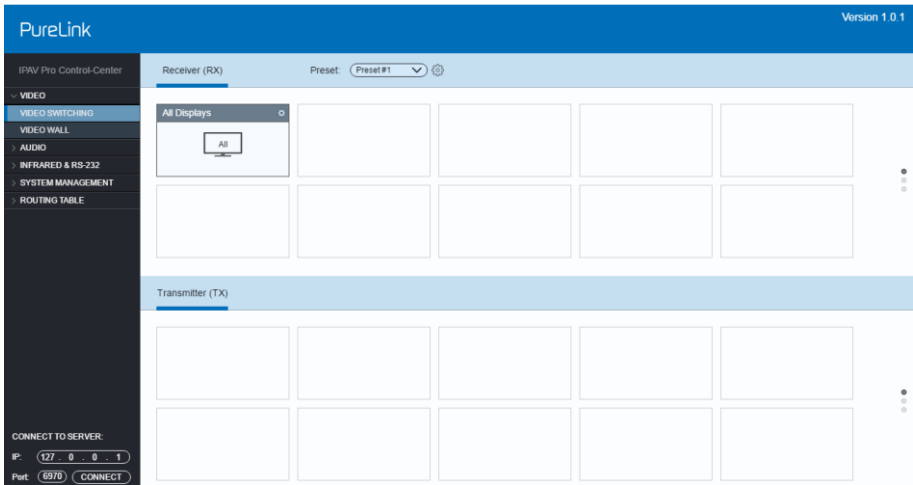
5.2 Device Configuration

Before starting the IPAV Pro Control Center application, make sure the PC running it is connected either directly to the network switch or to the Gigabit Ethernet port on one of the devices (TX or RX). Now launch the application. Upon launch, the IPAV Pro Control Center main window will open up in the "Video Switching" tab. It will discover all the TX and RX devices on the network and display them inside the application.

All connected devices on the network will appear as a gray tiles within the application window.

Each tile will identify the "Hostname" of the device. The default device "Hostname" is the MAC address. Note that the "Hostname" can be updated at any time. The "IP Address" of the device is also indicated within the tile.

If a source device is connected to the video port of the TX, a picture illustrating a source device will appear within the respective tile along with information about the video feed. Similarly, if a display device is connected to the RX, an illustration of a display will appear within the corresponding RX tile. If no device is visible within the tile, it means that the IPAV Pro extender is connected and detected but no source (or display) device is connected to it.
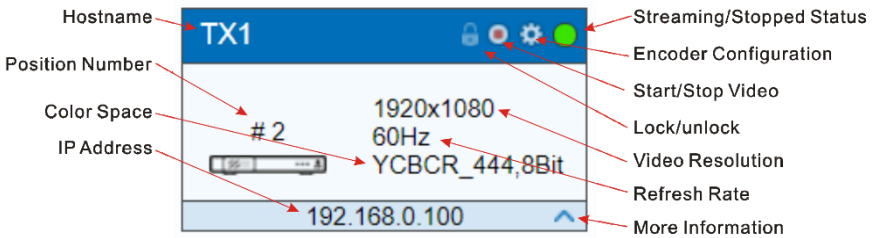
TX device tile info
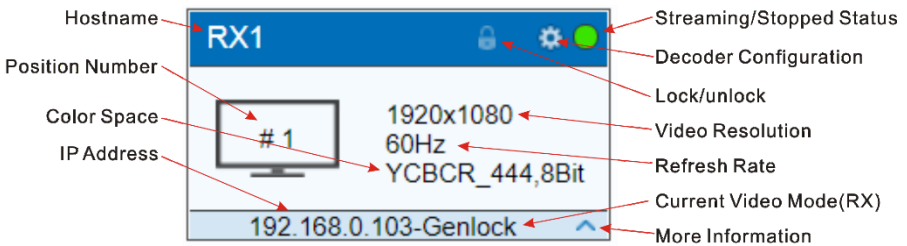
RX device tile info

Click the ^ icon to gather more information about the device. Take the source device TX1 as an example:
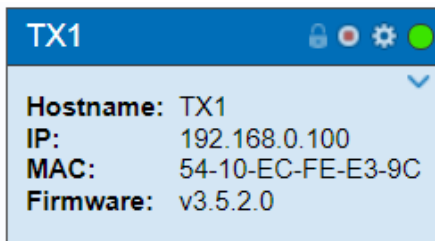
5.3 Start IPAV Pro Control Center

First, connect to the Control Server by entering the IP address of the device running the NT Control Server and click **CONNECT**.

Note:

- *If the Control Server is running on the same machine, as the client, use the IP address 127.0.0.1, which is the IPV4 loop-back address for "localhost".*

- *Do not modify the default port number of 6970. The Control Server currently only listens to port 6970.*
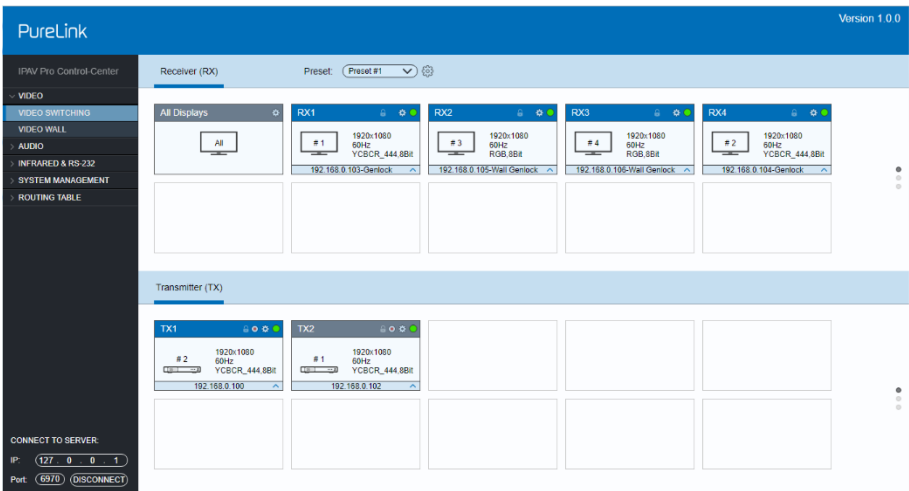
After connecting to the Control Server, the IPAV Pro Control Center will show discovered devices as tiles. There are few things to take note of:

- The application features many different tabs to control the HDMI routing, as well as routing of other signals such as analog audio, RS232 control, etc. The default current tab should be "Video Switching", meaning that the video source displayed by an RX device (Receiver).

- The top area of the user interface is labeled "Receivers". All RX devices detected on the network will appear here.

- The bottom area of the user interface is labeled "Transmitters". All TX devices detected on the network will appear here.

5.4 Video Routing Tab

The "Video Routing" tab is used to manage signal routing between TX and RX devices. There are different video modes available:

Genlock Mode

This mode simulates a cable connection. When Genlock is selected, the output is a byte-by-byte replication of what was received from the source.

The primary benefit is a very low (zero-frame) latency between source and displays. The display is genlocked to the source as if it is directly connected.

In cases of the input video having a too large bandwidth to fit into a 10G network link (e. g. 4K @60Hz, 4:4:4) the video is slightly compressed to bring the stream down below the 10G limitation of the network.

Fast Switch Mode

Fast source switching, seamless to the human eye with about 1-2 frames transmission delay as well as output scaling of resolution and frame rate.

Genlock Scaling Mode

This mode combines the low latency and source locking benefits of the Genlock Mode with the output resolution (not frame rate) scaler found in the Fast Switch Mode.

Video Wall Mode

A single source signal can be stretched across multiple displays, incl. respective display resolution scaling and UI based bezel correction.
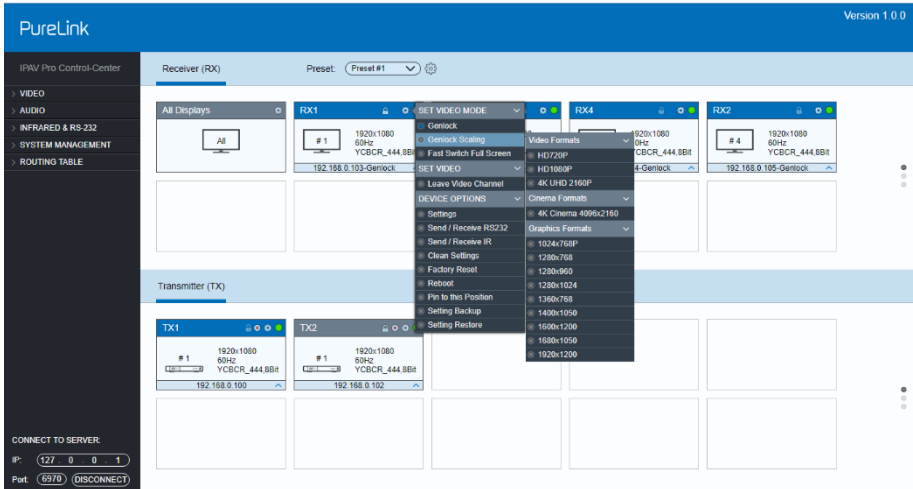
All RX devices are listed in the top half of the "Receiver (RX)" section. Similarly, all TX devices are listed in the bottom half, in the "Transmitter (TX)" section.

5.4.1 Video Switching

This is an example of joining TX and RX devices in "Genlock Mode":

1) Verify that the RX tile is displaying that the device is currently in "Genlock Mode". If Genlock is not the currently active mode, apply the setting as described:

   a) Right mouse click the gear icon on the respective Receiver (RX) tile.

   b) In the appearing menu, select "Genlock" as Video Mode.

2) Joining the RX to TX.

   a) In the Transmitter (TX) section, select a TX by clicking on its associated active tile using the left mouse button.

   b) Hold down the left mouse button and drag the TX tile over the RX tile it is to be joined with. Then release the mouse button to drop the TX tile onto the RX tile.

   c) TX and RX are now joined.

The video source connected to the Transmitter (TX) now appears on the display connected to the respective Receiver (RX).

If the video is not being displayed, please verify the following:

- Ensure that the network switch has been properly configured.
- Confirm that the display can support the input source resolution.
- Verify that the HDMI cable being used is of good quality. This is particularly important for high-bandwidths of up to 18Gbps with 4K@60Hz resolution, requiring a "HDMI Premium High Speed" cable.

To assign a different input source to a Receiver (RX), repeat the steps mentioned above, dragging a different TX over an RX to associate the receiver itself to the new source device.

Note: For "Fast Switch Mode" and "Genlock Scaling", please refer to "Genlock Mode".

5.4.2 Sending a Single Source to any RX Device

To send the same source signal input to all receivers at the same time, simply drag and drop the TX unit that the desired source is connected to onto the blue tile in the Receiver (RX) section, labeled "All Displays".

Comment: To verify, which RX and TX are joined together, left-click on the Receiver (RX) or Transmitter (TX) tile you want to see the connection status for. All the joined tiles will be highlighted in blue.

5.4.3 Stopping/Starting Video

To stop video being transmitted from a Transmitter (TX), right click the gear icon of the respective Transmitter (TX) and select "Stop Video".

To start or restart a video transmission, right click the gear icon of the respective Transmitter (TX) and select "Start Video".

5.4.4 Disconnecting Source from RX

To disconnect a Receiver (RX) from a Transmitter (TX) source, right click the gear icon of the respective RX tile and select "Leave Video Channel".

5.4.5 Preset Management

To rename a preset, delete a stored preset or save the current video switching setting, recall a saved preset by selecting **preset #1~9** and click the gear icon to select the desired option: Rename, Clear Preset, Save Preset, Recall Preset.
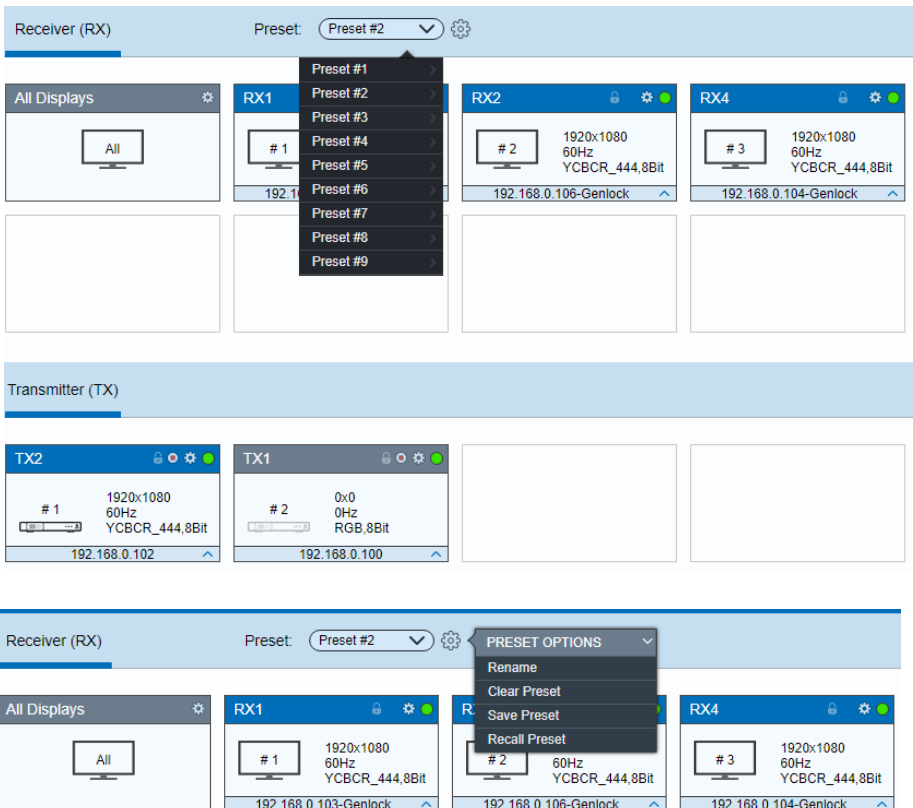
5.5 Video Wall Routing Tab

The tab "Video Wall" allows for a single source signal (TX) to be assigned to multiple Receiver (RX) units and displayed across multiple screens, appearing as a single video wall. The figure below illustrates the "Video Wall" routing tab inside the IPAV Pro Control Center software. The top portion is reserved for configuring and setting up the video wall, while the bottom half lists all available TX (Transmitter) and RX (Receiver) units.

The video wall size can be adjusted by changing the number of rows and columns. The values for "bezel correction" represent the absolute amount of pixels. The default value is set to 16 pixels. Increase this value to adjust for thicker bezels while a value of zero would indicate no bezel correction at all is to be applied.

Note: The source signal must be progressive scan.
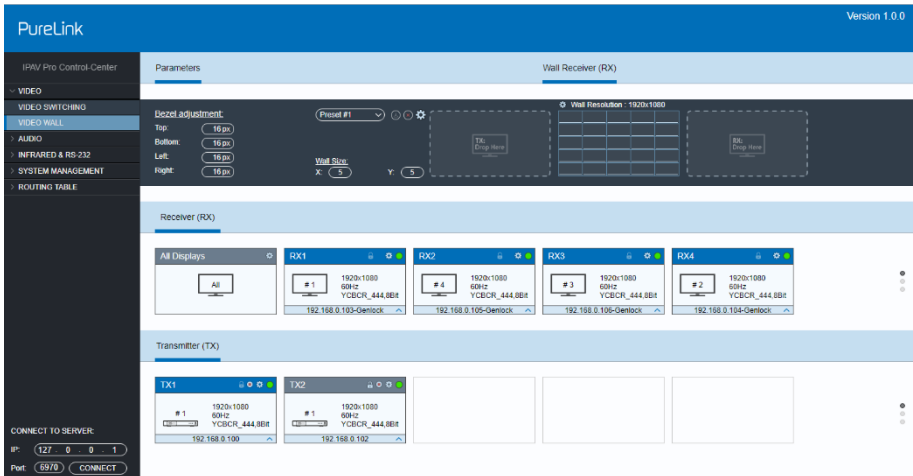
5.5.1 Configuring a Video Wall

1) Set the Video Wall size

   a) Enter the number of rows and columns for the video wall (max. 5x5) in the section "Parameters"

2) Drag and drop Receiver (RX) units individually onto the video wall receiver tile.

   a) Left click on a tile in the "Video Wall" section to select it.

   b) Drag and drop the desired Receiver (RX) devices onto the tile labeled "RX: Drop Here".

3) Next, drag the desired Transmitter (TX) source tile and drop it onto the tile labeled "TX: Drop Here".

4) The source will now be visible across the whole Video Wall matrix, according to your configuration.

5) Adjust the bezel correction values (top-right-bottom-left), to fit the bezel thickness of the connected displays.

Comment: To apply new bezel values, it may be necessary to allocate the Transmitter (TX) again to the video wall.

5.5.2 Preset Management

To save the current video wall settings or recall the previously stored setting, select **Preset #1~9** and click the save icon to save or recall a preset.
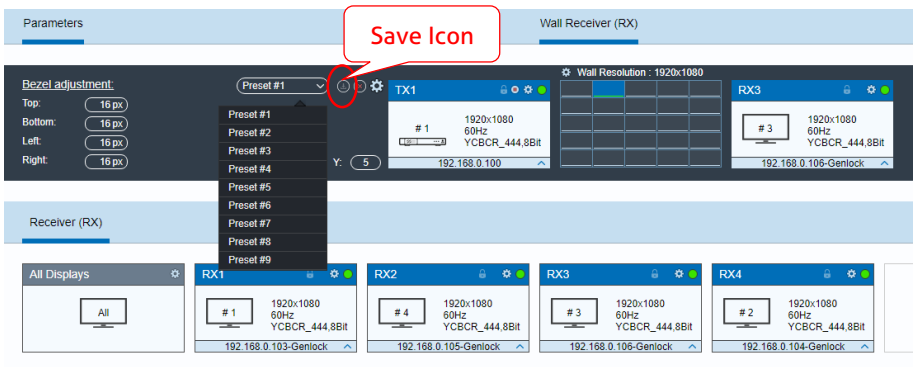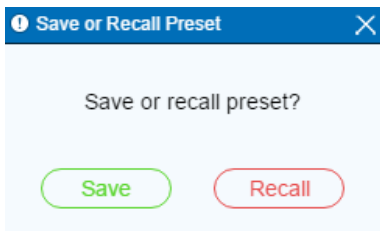
To delete a preset, select one and the click the delete icon to delete it.
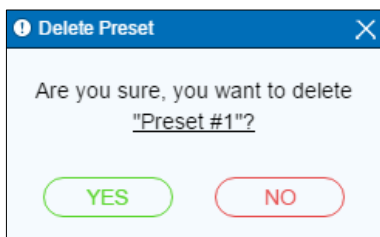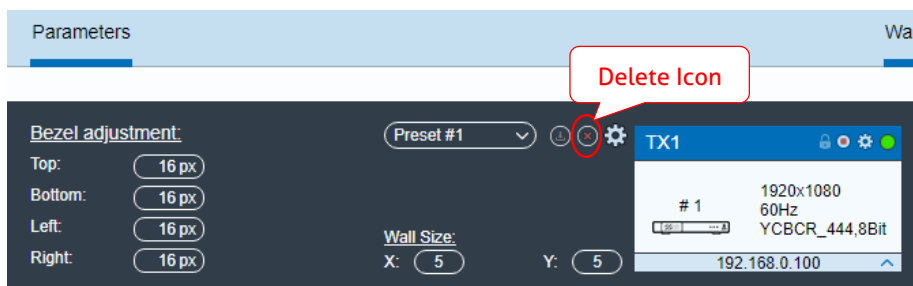
To rename the desired preset, select it and click the gear icon, then type the new name in the textbox and click "Y" to save.
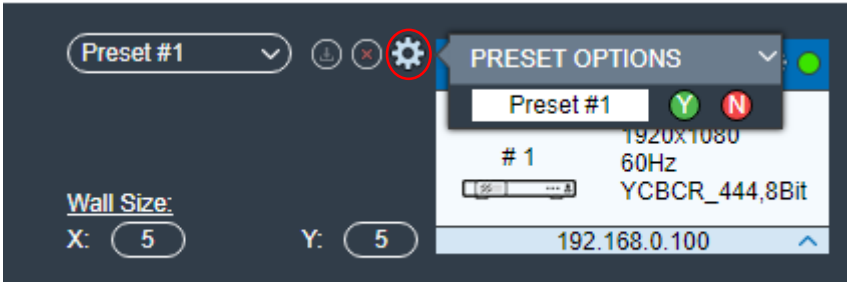
When changing the preset, a pop-up asks you to re-save the preset.
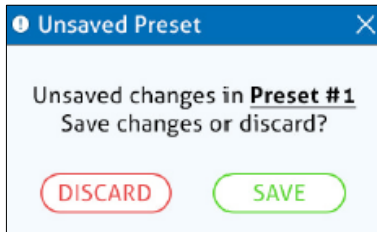
5.5.3 Removing RX from Video Wall

To remove a Receiver (RX) from the Video Wall, click the gear icon on the receiver tile that is to be removed and select the option "Remove from Wall".
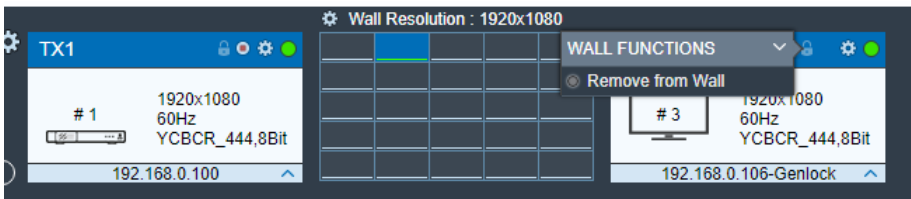
5.5.4 Changing Output Resolution for Video Wall Receivers

To control the receiver's output resolutions, click the gear icon on the video wall selection.

Select "Wall Monitors Resolutions" and choose the desired resolution from list of available resolutions.

The selected output resolution is applied to all receivers being part of the video wall.
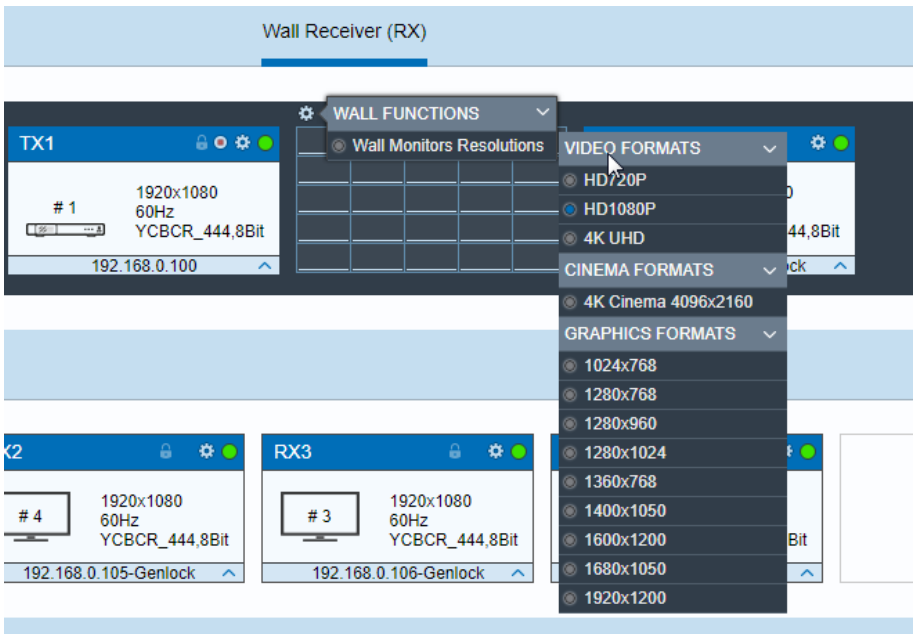
5.6 HDMI Audio Routing Tab

IPAV Pro routes HDMI audio separately from the video signal, e. g. for routing the audio to additional or different Receivers (RX).

Exception:

In "Genlock Mode", the HDMI audio follows the video when one or more Receivers (RX) are joined with one Transmitter (TX) from any of the video routing tabs ("Video Wall", etc.). Simply put: When an RX device is in "Genlock Mode", it receives both the HDMI video and the HDMI audio signals from a single source. The same also applies for all video switching modes, when no separate HDMI audio stream is enabled.

To route the HDMI audio signal, select the tab "HDMI AUDIO ROUTING".

All RX devices are listed in the top half of the Receiver (RX) section. Similarly, all TX devices are listed in the bottom half in the Transmitter (TX) section.

First, verify if appropriate TX and RX units are joined together to route their HDMI audio signal:

1) Verify, if the Receiver (RX) is currently joined to an appropriate Transmitter (TX).

   a) Click on the RX to highlight the TX it is joined to in blue.

   b) Selecting the respective TX will highlight all the receivers joined to the same TX.

2) If the respective Transmitter (TX) is currently not joined to the Receiver (RX), proceed to join them:

   a) In the Transmitter (TX) section, select a TX by left-clicking on its associated active tile.

   b) Drag and drop the TX tile over the RX tile to join them.

   c) TX and RX are now joined together.

   d) Repeat above steps, if additional receivers are to be joined to the same TX.

To control, if the HDMI audio is being delivered on the HDMI or the analog output port, complete the following steps:

1) Right click the gear icon on a Receiver (RX) tile and select "Settings" in the menu.

2) To route audio to the HDMI output, select the "HDMI Audio Output" tab and then choose one of the following options:

    a) Analog Audio: Select the stream from the analog audio input of the TX to embed it into the HDMI output signal.

    b) HDMI Audio (Stereo Downmix): Select the audio stream from the HDMI input of any TX to embed it into the HDMI output signal. If the HDMI audio stream is multichannel PCM audio, it will be downmixed to 2-channel PCM audio.

    c) HDMI Audio (All Available Channels): Select the audio stream from the HDMI input of any TX to embed it into the HDMI output signal. The multichannel HDMI audio will not be downmixed.

3) To send the audio to the analog output connector (mini XLR), select the "Analog Audio Output" tab and choose "HDMI Audio (Downmix)" from the pull-down menu.

4) Click "Save" to apply changes.

5) The sound device connected to the analog audio output of the RX will now play out the HDMI audio stream.

Tipp: If no audio is playing, confirm that the TX device is actually streaming. Also, verify the RX audio output settings are correct.

Note: *Downmixed 2-channel audio is not available for proprietary Dolby or DTS audio formats.*
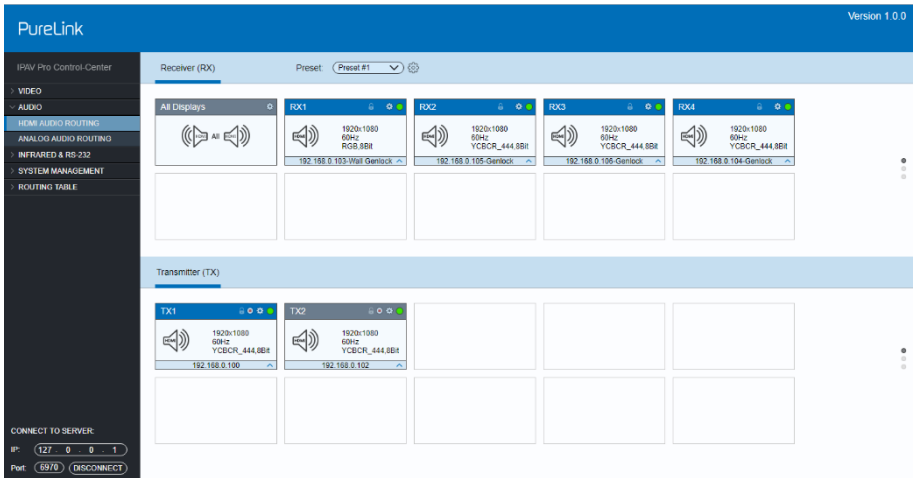
5.7 Analog Audio Routing Tab

The "Analog Audio" tab is used to setup and manage analog audio routing between TX and RX devices.

All the RX devices are listed in the top half of the Receiver (RX) section. Similarly, all the TX devices are listed in the bottom half in the Transmitter (TX) section.

First, verify if appropriate TX and RX devices are joined:

1) Verify, if the Receiver (RX) is currently joined with the desired Transmitter (TX).

   a) Click on the RX and the Transmitter (TX) it is joined to will be highlighted blue.

   b) Selecting the respective transmitter will highlight all the receivers joined to the same TX.

2) If the respective Transmitter (TX) is currently not joined to the Receiver (RX), join them together:

   a) In the Transmitter (TX) section, select a TX by left-clicking on its associated

active tile.

b) Drag and drop the TX tile over the RX tile it is to be joined with.

c) TX and RX are now joined together.

d) Repeat above steps if additional receivers are to be joined to the same TX.

To control where and how analog audio is transmitted, complete the following steps:

1) Connect a speaker or any type of analog audio receiver to the RX device.

2) Right click the gear icon on a Receiver (RX) and select "Settings" from the menu.

3) Choose, how the audio is being sent to the analog (mini XLR) output connector:

a) Click on the "Analog Audio Output" tab.

b) Choose the desired audio output option from the drop-down list:

- HDMI Audio (Downmix)
- Analog Audio

4) Click "Save" to apply changes.

5) The sound device connected to the RX will now play out the analog audio stream.

Tipp: If no audio is playing, confirm that the TX device is streaming. Also verify the RX audio output settings are correct.
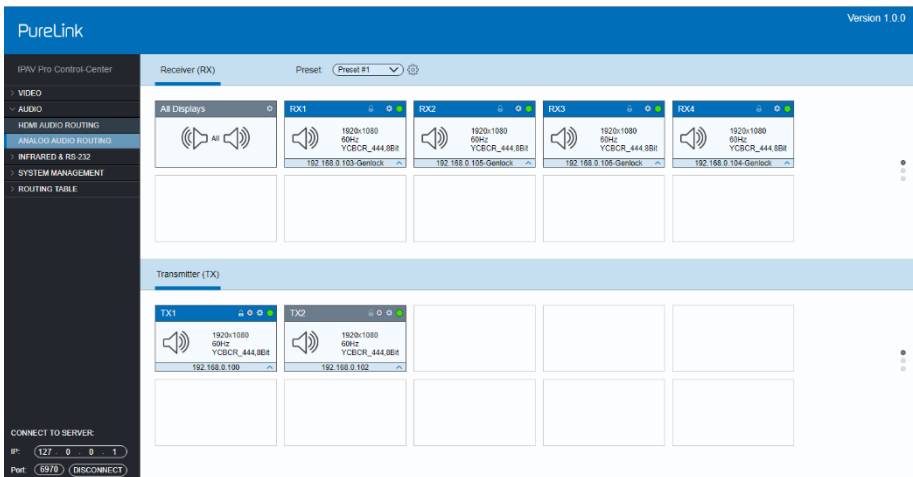
5.8 RS-232 Routing Tab

The "RS-232 Routing" tab is used to setup and manage RS-232 data distribution for devices.

There are two sections provided in the IPAV Pro Control Center interface, "Transmitters (TX)" and "Receivers (RX)". Each device discovered on the network is listed in both groups, because each can both send and receive RS-232 data.

1)   Select the "RS-232 Routing" tab in the IPAV Pro Control Center interface.

2)   Verify, which Transmitters and Receivers are joined together. Left-click on the device tile you want to see the connection status of. All joined together tiles will be highlighted blue.

3)   To pair devices, drag the tile representing the Transmitter (TX) and drop it over the desired Receiver (RX) to create one-way communication.

4)   To create a bi-directional RS-232 path between two devices, two separate pairings are required. Repeat the step above, but in reverse (drop TX on RX) to create the second pairing.
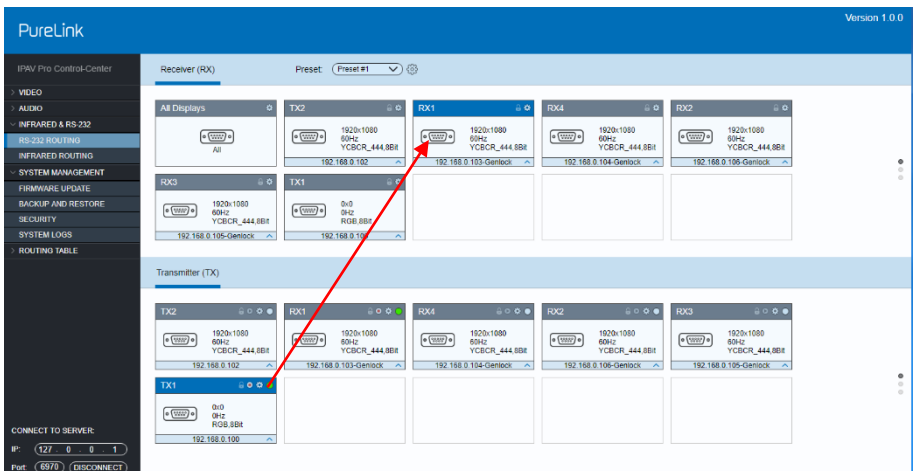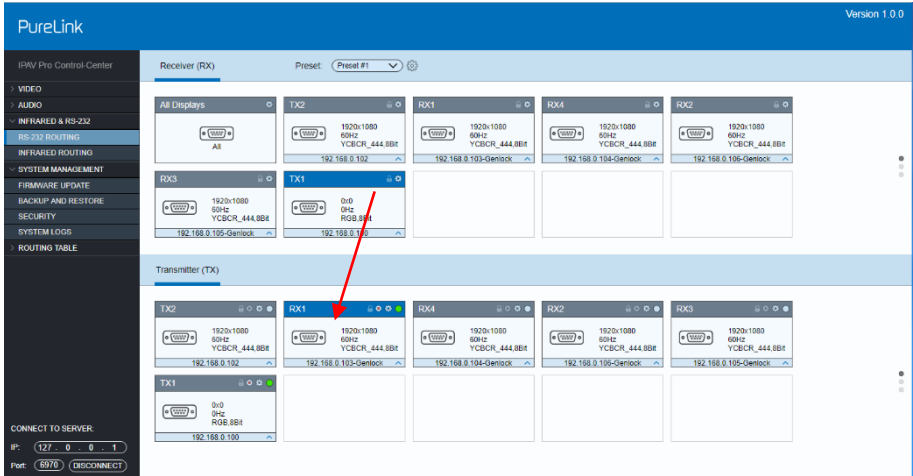
5.8.1 Assign Transmitter to all Receivers

To distribute RS-232 data from a single transmitter to all receivers, drag and drop the respective transmitter's tile onto the tile labeled "All Displays" in the "Receivers" section of the "RS-232 Routing" tab.

5.8.2 Sending RS-232 Data from IPAV Pro Control Center to a Device

1) Click gear icon of the respective transmitter or receiver tile.

2) Select "Send/Receive RS-232".

3) A dialog box opens.

4) Enter the RS-232 string you want to send.

5) Click the "Send" button to send out the string.

6) Paired devices will receive the RS-232 command.
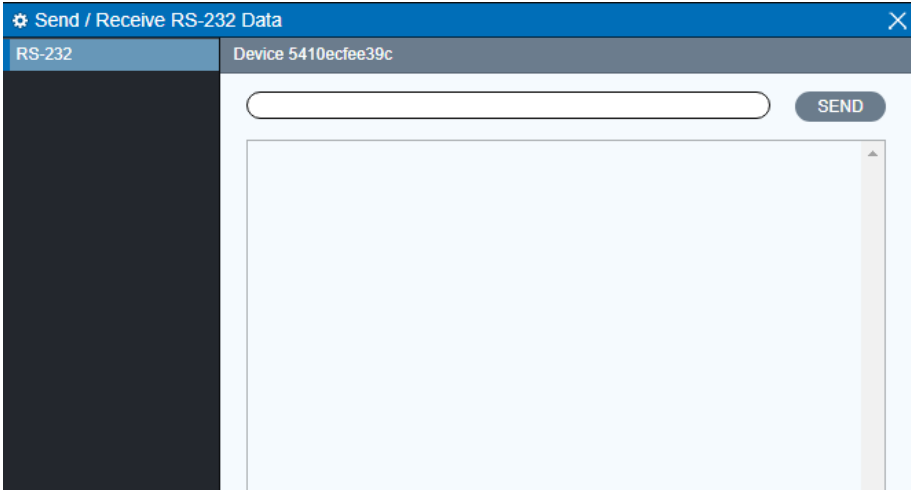
5.9 Infrared Routing Tab

The "Infrared Routing" tab is used to setup and manage IR data distribution for devices.

There are two sections provided in the IPAV Pro Control Center interface, "Transmitters (TX)" and "Receivers (RX)". Each device discovered on the network is listed in both groups, because each can both send and receive IR data.

1)   Select the "Infrared Routing" tab in the IPAV Pro Control Center interface.

2)   Verify, which Transmitters and Receivers are joined together. Left-click on the device tile you want to see the connection status of. All joined together tiles will be highlighted blue.

3)   To pair devices, drag the tile representing the Transmitter (TX) and drop it over the desired Receiver (RX) to create one-way communication.

4)   To create a bi-directional IR path between two devices, two separate pairings are required. Repeat the step above, but in reverse (drop TX on RX) to create the second pairing.

5.9.1 Assign Transmitter to all Receivers

To distribute RS-232 data from a single transmitter to all receivers, drag and drop the respective transmitter's tile onto the tile labeled "All Displays" in the "Receivers" section of the "RS-232 Routing" tab.

5.9.2 Sending IR Data from IPAV Pro Control Center to a Device

1) Click gear icon of the respective transmitter or receiver tile.

2) Select "Send/Receive IR".

3) A dialog box opens.

4) Enter the IR string you want to send.

5) Click the "Send" button to send out the string.

6) Paired devices will receive the IR command.
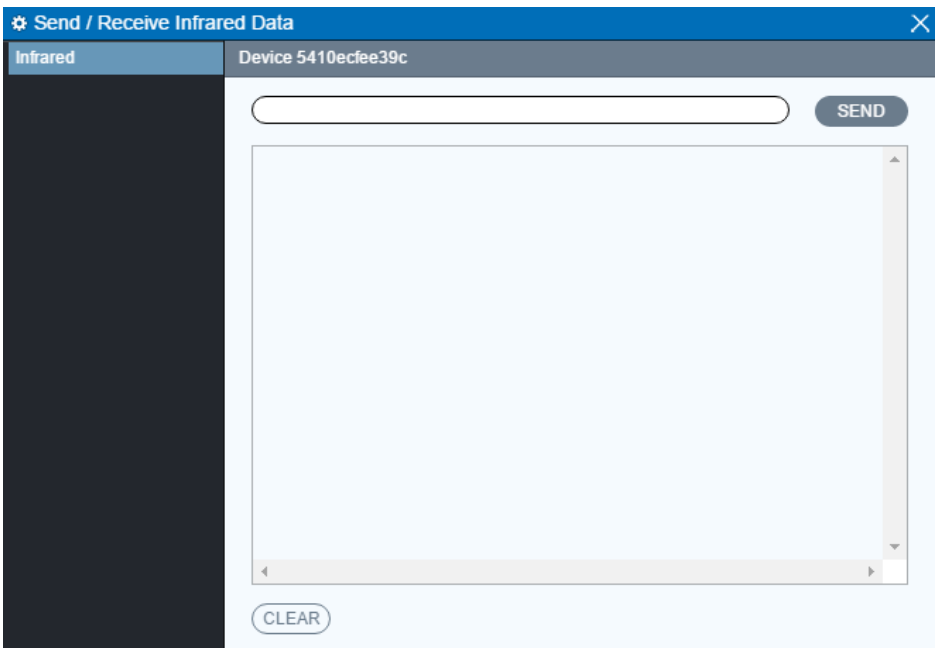
Infrared Limitations: One transmitter can either send IR data to a specific device (unicast) or broadcast to all devices active on the network (broadcast). Should be noted however, that a sender cannot send data simultaneously to a range of devices using multi-unicast

The data format used when sending IR data from control layer to a device is 'Pronto'. The link below points to a good description of Pronto format definition with examples.

http://www.remotecentral.com/features/irdisp1.htm

The pronto format is a series of hex numbers that describe everything that is needed to generate the required waveform. It includes the carrier frequency, the ON/OFF period along with data and error checksum. Large libraries of Pronto IR codes are publicly available and easy to find on the web. For example, the code below is a Pronto string to turn Sony BluRay player ON and OFF:

0000 0067 0000 0015 0060 0018 0030 0018 0018 0018 0030 0018 0018 0018 0030 0018 0018 0018 0018 0018 0018 0018 0030 0018 0018 0018 0030 0018 0030 0018 0018 0018 0030 0018 0018 0018 0018 0018 0018 0018 0030 0018 0030 0018 0030 01FE.

5.10 Global Command Options and Settings

To access a device's options, left-click the gear icon of any connected TX or RX

Note: Device options can be accessed from any detected device and from any of the interface tabs, "Video Switching", "HDMI Audio", etc.

5.10.1 Receiver (RX) Settings Options

Left-click the gear icon of any connected Receiver (RX), and click "Settings" to enter the setting tab.

The following section illustrates the Receiver (RX) device settings dialog box.

5.10.1.1. Analog Audio Output Settings

Use this tab to select the audio source to be sent to the analog audio output port.

There are two audio source options:

- HDMI Audio (Downmix): 2-channel downmix of the original HDMI audio from a TX.
- Analog Audio: Analog audio stream, directly coming from the analog input on a TX.
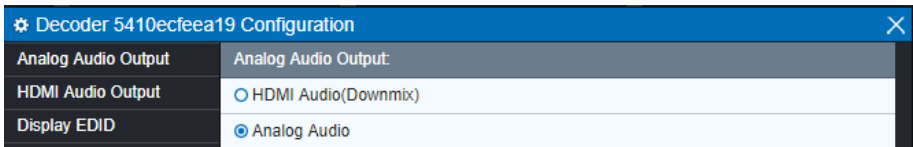
### 5.10.1.2. HDMI Audio Output Settings

Use this tab to control, which audio source is output via HDMI. There are four options.

- HDMI Audio (from HDMI, "Genlock Mode"): The original HDMI audio stream received with the video is used, if the RX device is in "Genlock Mode" or if the RX device does not receive a separate HDMI audio stream (in any video mode).
- Analog Audio: Select the analog audio stream of the TX to embed it into the HDMI output.
- HDMI Audio (Stereo Downmix): Select the HDMI audio stream of any TX as separate HDMI audio stream and embed it into the HDMI output signal. If the HDMI audio stream is a multichannel PCM format, it will be downmixed to 2-channel stereo audio at the output.
- HDMI Audio (All Available Channels): Select the HDMI audio stream of any TX as separate HDMI audio stream and embed it into the HDMI output signal. The multichannel HDMI audio will not be downmixed.
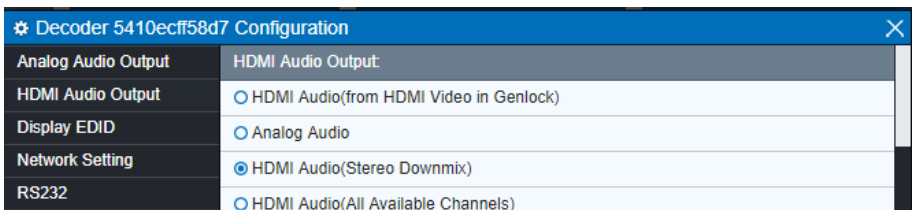
5.10.1.3. Display EDID

Use this tab to access and store the EDID coming from the display, connected to the RX unit. Use the "Save" button to save the EDID to a file. It is also possible to select and copy the EDID Hex values directly and paste them into an editor such as Notepad. When no display is connected, the EDID view is blank.
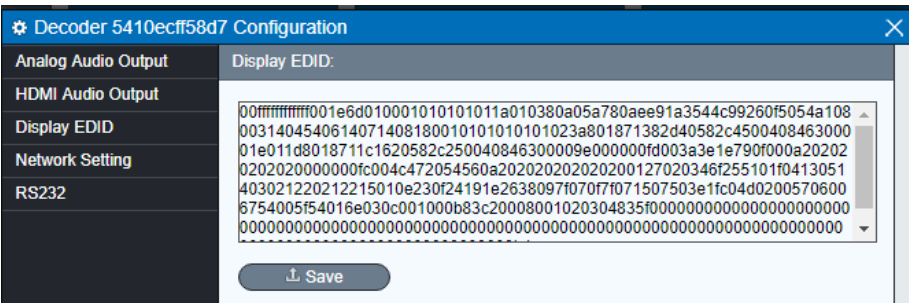
5.10.1.4. Network Setting

Use this tab to modify the device's host name and configure the IP address.

By default, the device's host name equals the device's MAC address.

The device's MAC address is also used as device host name by the IPAV Pro Control Center software. To rename a device, enter a name (e. g. "RX1") into the "Hostname" edit box. Press the "Save" button to save the new host name. The host name is persistent and kept until the device is forced back to factory defaults.

The IP address can be set to be either "DHCP" or "Manual".

- Select "DHCP" to receive the IP address from a DHCP server or to be auto-assigned with an IP from the 169.254.X.X range, in case there is no DHCP server on the network.

- Select "Manual" to set a static IP address (IPV4 address, subnet mask and gateway address).

Press "Save" to save the new IP address. The new IP mode settings are stored in non-volatile memory and kept, until the device is forced back to factory defaults.

Note: Special attention is required, when assigning a manual IP address. The address has to be both unique and reachable. Any mistake when entering the IP address, subnet mask or gateway address can render the device unreachable.
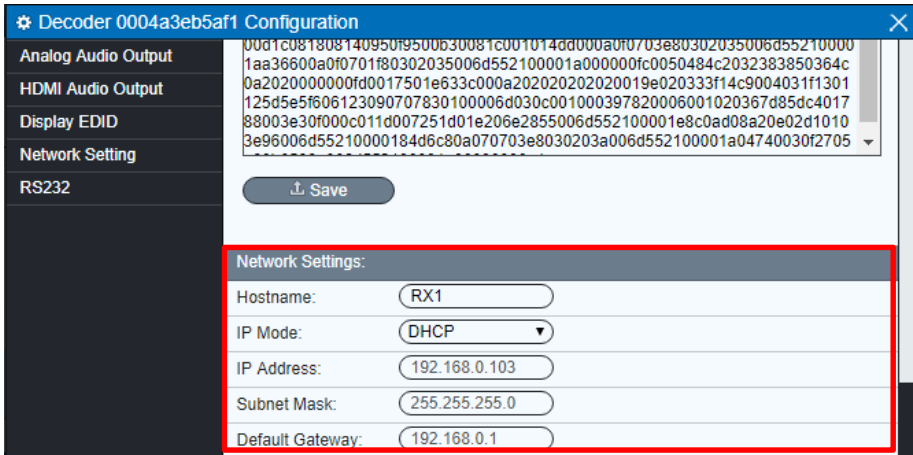
5.10.1.5. RS232

Use the RS232 tab to modify / edit the RS232 settings.

Select the desired port configuration (Baud Rate, Data Bit, Stop Bit and Parity). Click the "Save" button to save the updated RS232 configuration. New RS232 settings are kept until the device is forced to factory defaults.
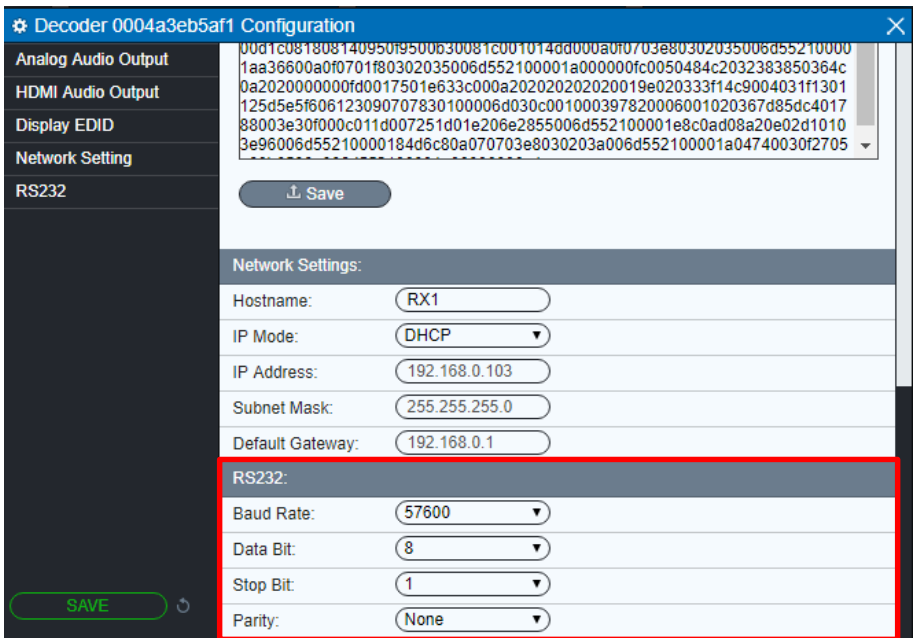
5.10.2 Transmitter (TX) Settings Options

Left-click the gear icon of any connected Transmitter (TX), and click "Settings" to enter the setting tab.

The following section illustrates the Transmitter (TX) device's settings dialog box.

5.10.2.1. Input

Use this to enable or disable HDCP support.

If HDCP support is disabled, streaming a video from an HDCP protected source to a screen will result in a black image displayed on screen.

It is also possible to only enable HDCP 1.4 by checking the "Disable HDCP 2.2" support.
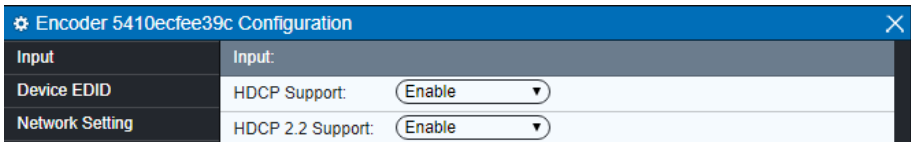
5.10.2.2. Device EDID

This tab is used to access and manipulate the EDID data of the source device connected to the TX.

Select the EDID data from the display and save it into a file or load EDID data directly from a file.
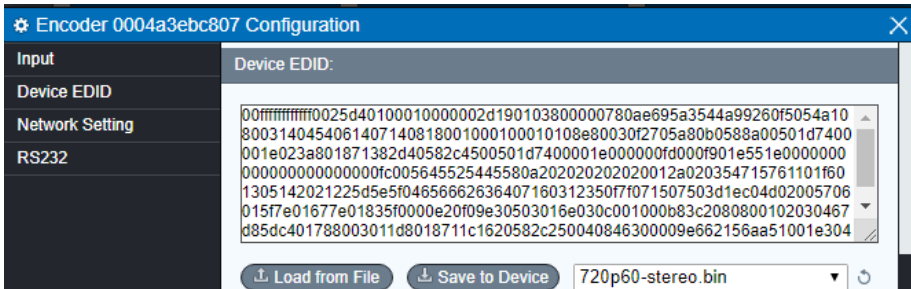
5.10.2.3. Network Setting

Use this tab to modify the device's host name and configure the device's IP address.

By default, the device's host name equals the device's MAC address.

The MAC address is also used as device host name by the IPAV Pro Control Center software. To rename a device, enter a name (e. g. "TX1") into the hostname edit box. Press the "Save" button to save the new host name. The host name is persistent and kept until the device is forced back to factory defaults.

The IP address can be set to either "DHCP" or "Manual":

- Select "DHCP" to receive the IP address from a DHCP server or to be auto-assigned an address within the 169.254.X.X range, in case there is no DHCP server on the network.

- Select "Manual" to set a static IP address (IPV4 address, subnet mask and gateway address).

Press "Save" to save the new IP address. New IP mode settings are stored in non-volatile memory and kept until the device is forced back to factory defaults.
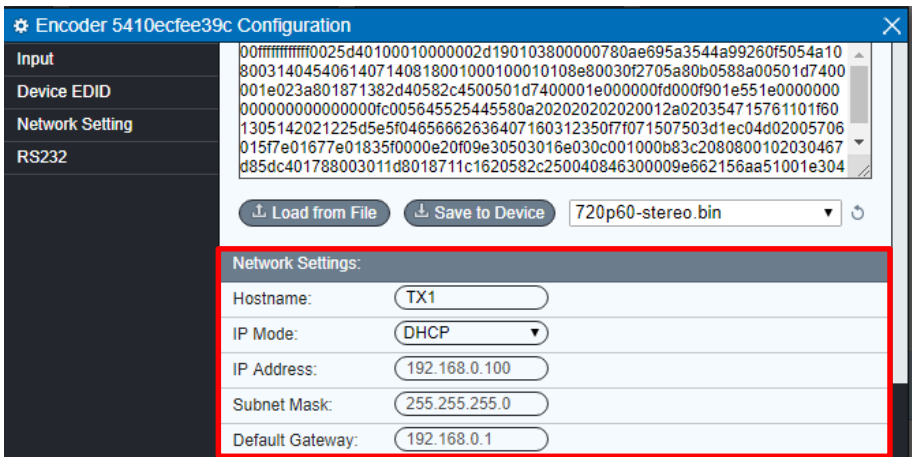
Note: Special attention is required, when assigning a manual IP address. The address has to be both unique and reachable. Any mistake when entering the IP address, subnet mask or gateway address can render the device unreachable.

5.10.2.4. RS232

Use the "RS232" tab to modify / edit the RS232 settings.

Select the desired port configuration (Baud Rate, Data Bit, Stop Bit and Parity). Click the "Save" button to save the updated RS232 configuration. New RS232 settings are kept until the device forced to factory defaults.
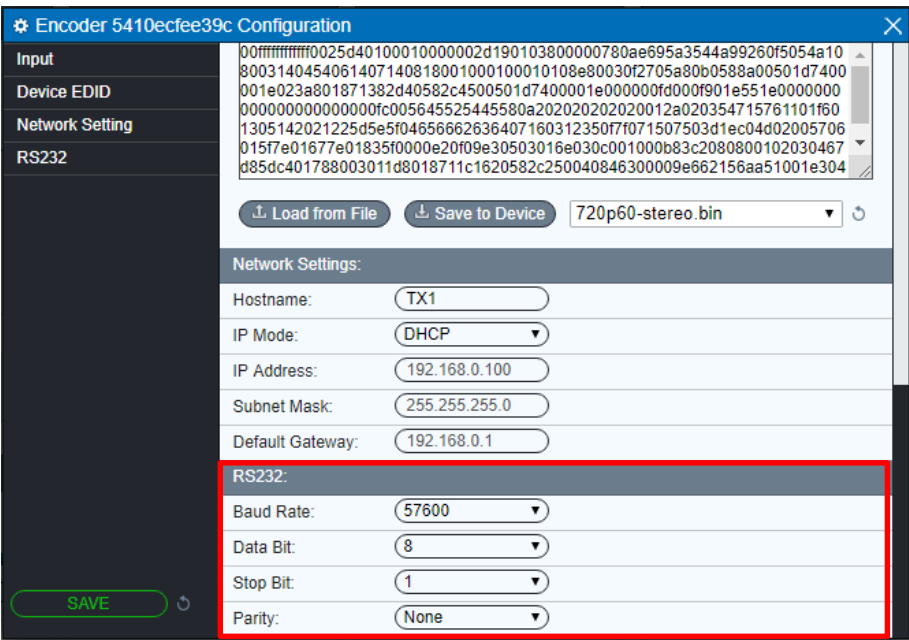
5.10.3 Clean Settings forTX and RX

Clean settings is a feature which allows the user to factory reset a particular setting back to default, without resetting other settings such device name etc.

Clean Settings for TX:

Left-click the gear icon of any connected Transmitter (TX), and click "Clean Settings" to enter the below tab. The settings including HDCP Setting, Network Setting and RS232, Select one or more settings and then click "YES" to clean.
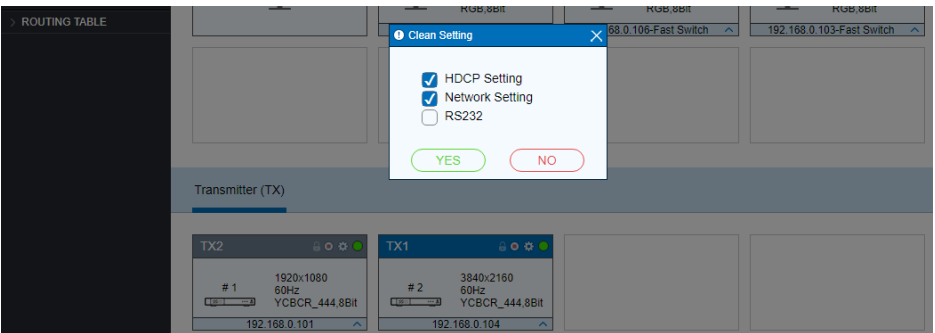
Clean Settings for RX:

Left-click the gear icon of any connected Receiver (RX), and click "Clean Settings" to enter the below tab. The settings including Analog Audio Output, HDMI Audio Output, Network Setting, RS232 and Set Video Genlock, Select one or more settings and then click "YES" to clean.
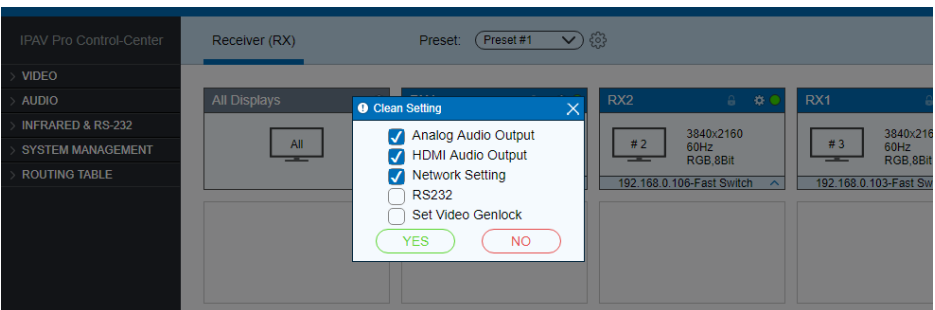
5.10.4 Factory Reset

Left-click the gear icon of any connected Transmitter (TX) or Receiver (RX), and click "Factory Reset" to reset the Transmitter (TX) or Receiver (RX).
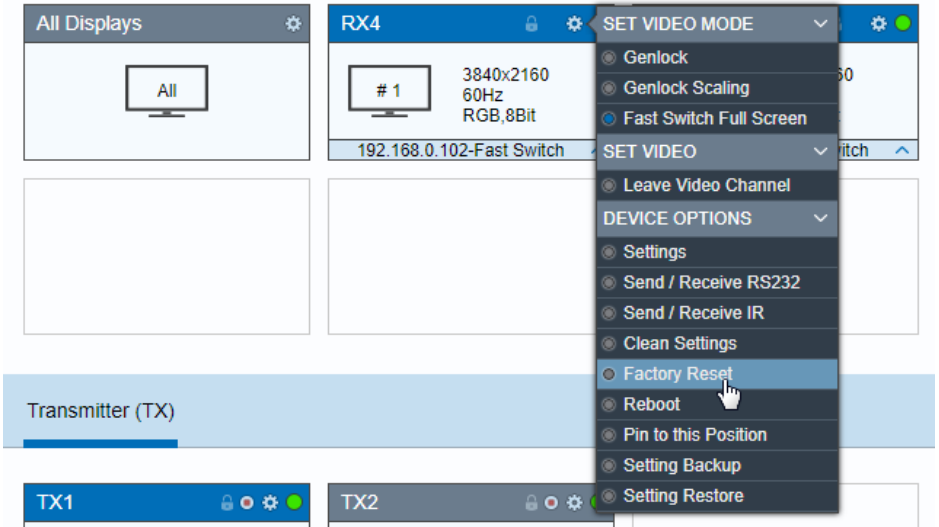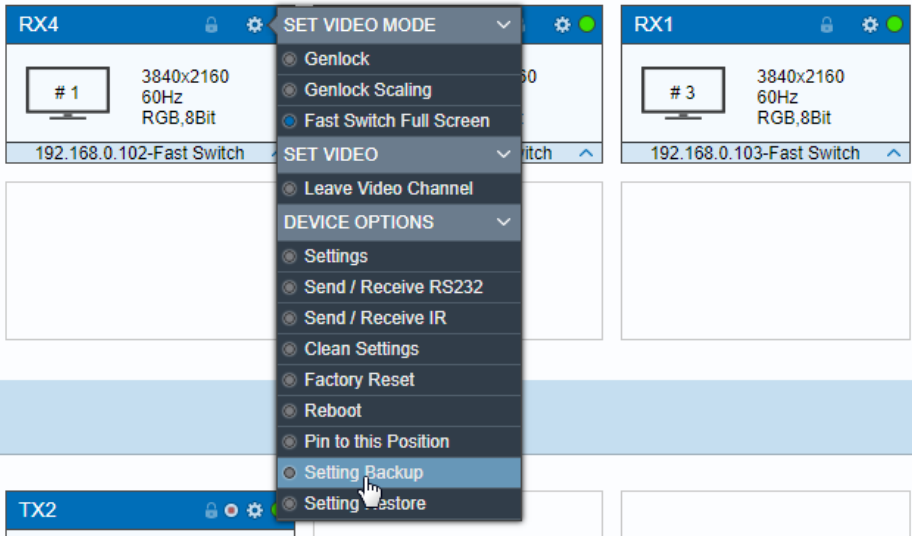

Click "YES" to reset the Transmitter (TX) or Receiver (RX).
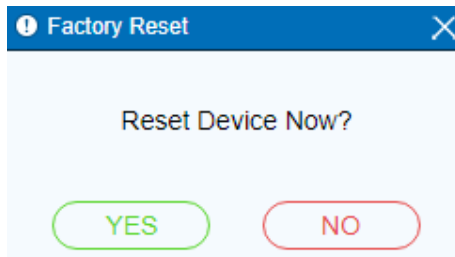
5.10.5 Backup Settings

Left-click the gear icon of any connected Transmitter (TX) or Receiver (RX), and click "Setting Backup", then type in the backup file name and select the destination path.

5.10.6 Restore Settings

Left-click the gear icon of any connected Transmitter (TX) or Receiver (RX), and click "Setting Restore", then click "Choose File" to selected a saved backup file, and then click "YES" to restore the previous settings.
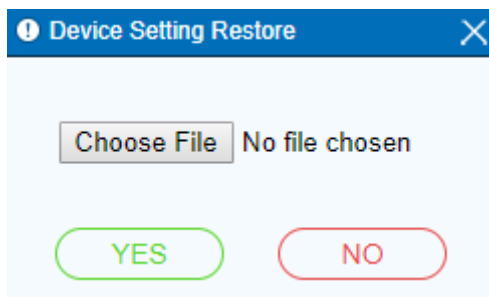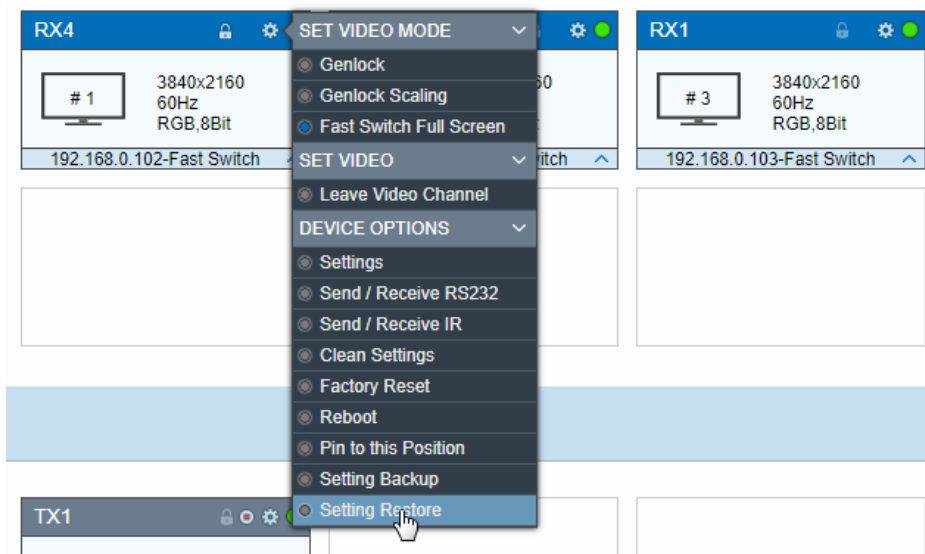
5.11 System Management Tab

5.11.1 Device Firmware Upgrade

Apply device firmware updates directly over the network. IPAV Pro has implemented a special update protocol to update an individual device or consecutively update all devices discovered on the local network with only a single command.

The first step is to place the respective update .zip file in a "\update" folder inside the directory, where the IPAV Pro Control Center software is installed. The IPAV Pro Control Center is then instructed to update devices from a selected file archive.

Example of update folder location:

C:\Program Files (x86)\IPAV Pro Control Center\update

Follow the step by step procedure below to update the firmware:

1) By default, the update folder is in the same directory as the IPAV Pro Control Center executable and named "\update". If the "\update" folder does not exist, it is necessary to create it.

2) Copy the new firmware update (*.zip file) into the "\update" folder.

3) The system automatically detects the devices compatible with the new firmware update archive and displays them as orange bars. Devices, not available on the network earlier will be shown as 'DISCONNECTED".

4) Begin the update process: To trigger the upgrade of an individual device, click the gear icon on the respective device's tile and select "Update Device".

5) The selected device(s) will immediately update their firmware. The respective tiles will show the progress of the update.

6) When the firmware update is complete, the devices will provide a message to automatically reboot all updated units.
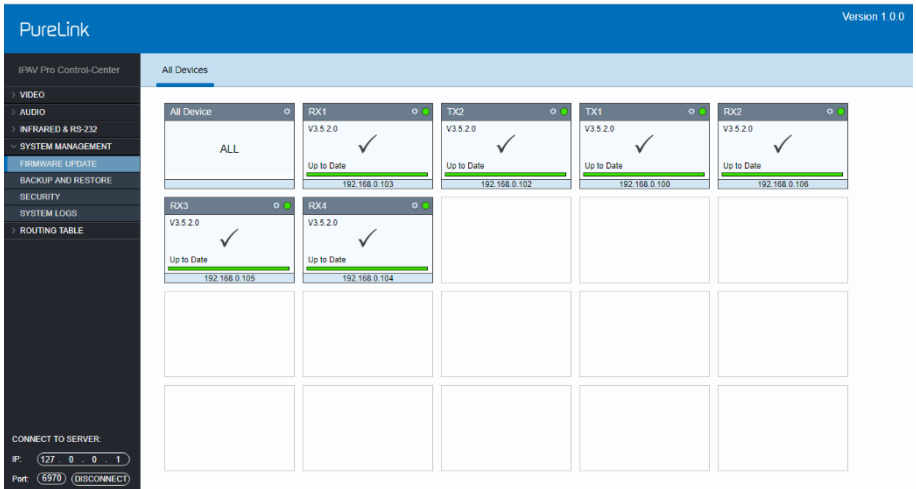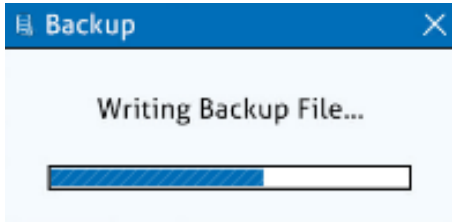
5.11.2 System Backup and Restore

5.11.2.1. System Backup

Follow the below steps to back up the current system firmware version:
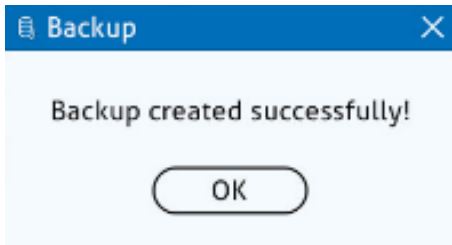
1) Select the "Backup and Restore" tab in the IPAV Pro Control Center interface.

2) Type in the backup file name and click "Browse" to select the destination path.

3) Click "Write Backup" to save the system configuration data into the specified file.

4) A pop-up box shows the backup program is in progress.

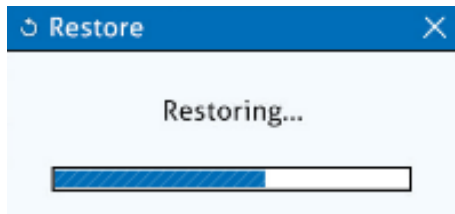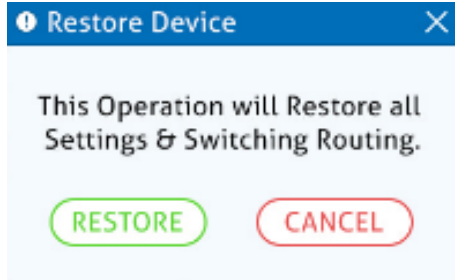5) Finally, the below pop-up box will show the system backup was successful.

5.11.2.2. System Restore

Follow the below steps to restore the previous system firmware version:

1) Select the "Backup and Restore" tab in the IPAV Pro Control Center interface.

2) Click "Browse" on the "Restore" tile to select the saved backup file and click "Restore Backup" to restore the selected system configuration.
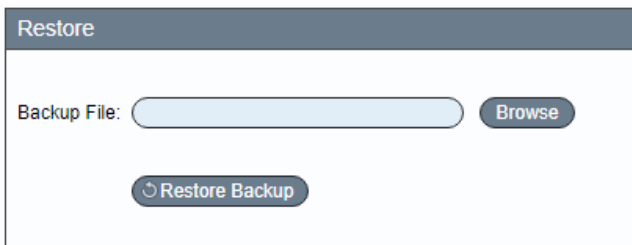
3) Click "Restore" on the below pop-up box.
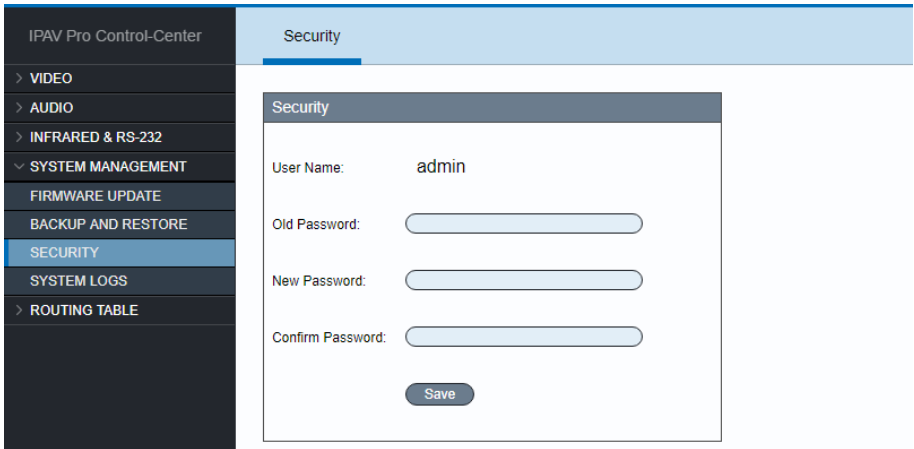

4) Finally, the below pop-up box will show the system restore was successful.
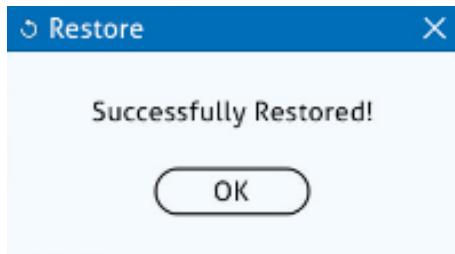
5.11.3 Security Settings

Select the "Security" tab in the IPAV Pro Control Center interface to enter the section for modifying the password.

5.11.4 System Logs

Select the "System Logs" tab in the IPAV Pro Control Center interface to enter the section for inquiring the system logs.
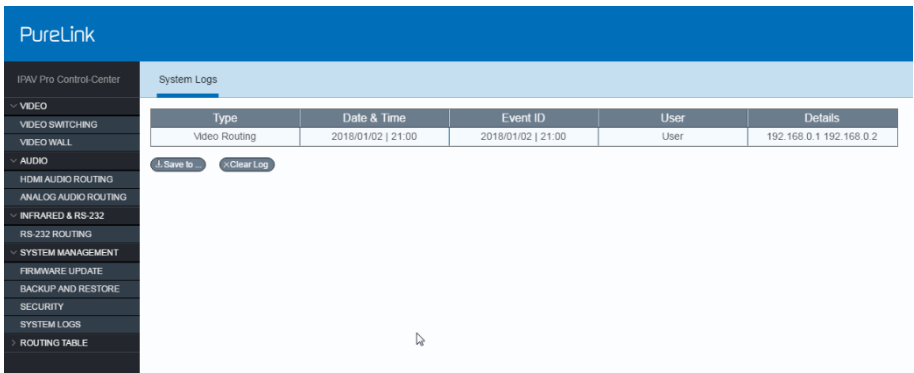
5.12 Routing Table Tab

The routing table allows to gather info about the video, HDMI audio, analog audio and RS232 routing status.

Video Routing Table:

HDMI Audio Routing Table:

Analog Audio Routing Table:

Transmitter (TX)	Receiver (RX)
TX1	RX1,RX3,RX2,RX4
TX2	NULL

RS232 Routing Table:

Transmitter (TX)	Receiver (RX)
RX1	TX1
RX3	NULL
RX2	ALL
RX4	TX1
TX1	RX4
TX2	NULL

6. Troubleshooting & Maintenance

1) If the IPAV Pro Control Center does not detect any Transmitters/Receivers, please make sure:

- Whether the IP address is configured correctly. Please ensure the IP of the connected control PC is set to the same network segment as the TX / RX.

- Whether there is an IP address conflict with another device in the same network. Please make sure, each device has a different IP address in the same LAN.

- Power supply is normal and as specified.

- The connection cables are of high-quality and the link has been established successfully.

2) If the IPAV Pro Control Center detects the connected TX / RX units correctly, please confirm whether the video source is selected correctly and that the connection cable functions as specified.

Note: If your problem still remains after following the troubleshooting steps above, please contact your local dealer or distributor for further assistance.

7. After-Sales Service

If problems occur while operating the product, please use the troubleshooting and maintenance information in this manual to deal with these problems. Any transport costs are borne by the user during the warranty period.

1) **Product Limited Warranty:** The product will be free from defects in materials and workmanship for **two years** (purchase invoice date shall prevail).
    A proof of purchase is the evidence that the unit is within the warranty period. A bill of sale or receipted invoice must be presented to obtain warranty service.

2) **What the warranty does not cover (servicing available for a fee):**
    - Warranty has expired
    - The factory applied serial number has been altered or removed from the product.
    - Damage, deterioration or malfunction caused by:
        - Normal wear and tear.
        - Use of accessories, supplies or parts, not meeting our specifications.
        - No bill of delivery or invoice as proof of warranty.
        - The product model displayed on the warranty card does not match the product model for repairing or it has been altered.
        - Damage caused by force majeure.
        - Servicing, not authorized by distributor.
        - Any other cause not related to a product defect.
    - Delivery, installation or labor charges for product installation and/or product setup.

3) **Technical Support:** For any questions or problem troubleshooting inquiries, contact your distributor or reseller. Please provide the respective product name and version, a detailed description of the failure situation as well as how the failure occurred.

Asking for Assistance

Technical Support:

Phone: +49 5971 800299 -0

Fax: +49 5971 800299 -99

Technical Support Hours:

8:30 AM to 5:00 PM Monday thru Thursday

8:30 AM to 4:00 PM Friday

Write to:

PureLink GmbH

Von-Liebig-Straße 10

D - 48432 Rheine

www.purelink.de

info@purelink.de