

Blue Pill Inside / Reactor Getting Started

March 2022

Congratulations on heading into the future of media production control with SKAARHOJ! This document goes through the initial set up and basic configuration of SKAARHOJs new and exciting technology, Blue Pill / Reactor for use with default configurations. Enjoy. For a more detailed and advanced set up please see the Blue Pill/ Reactor Manual.



Contents

| | |
|---|-----------|
| Blue Pill Inside / Reactor | 1 |
| Getting Started | 1 |
| Contents | 2 |
| Connectivity | 3 |
| Networking | 3 |
| Network Recommendations | 3 |
| Network Layout | 3 |
| Accessing Blue Pill | 4 |
| DHCP or Static IP | 4 |
| Wi-Fi Access Point | 4 |
| Link from SKAARHOJ Firmware Updater | 5 |
| SKAARHOJ Firmware Updater and Micro USB | 6 |
| Select Mapping | 6 |
| Adding Devices | 7 |
| Auto Discover | 7 |
| Manually Added | 8 |
| Device Details | 8 |
| Populate Constant Sets | 9 |
| Contact Support | 11 |
| WEEE Information | 12 |

Connectivity

Networking

Unlike UniSketch where a change of configuration and included device cores needed an online exchange with the SKAARHOJ server, on Blue Pill everything is stored and enabled locally in Reactor. Only software updates or installations of non-existing device cores and applications need communication with the SKAARHOJ server over the internet. All changes in configurations can be done via the local network.

Network Recommendations

- SKAARHOJ Blue Pill controllers have a 1 GBit network interface
- 5W-30W PoE (+)
- PoE Standard: IEEE 802.3af/t

Remember a SKAARHOJ controller and client must be on the same subnet (192.168.10.* or one defined for the local network used by the controller). With multiple SKAARHOJ units connected to the same network they need to have different IP addresses!

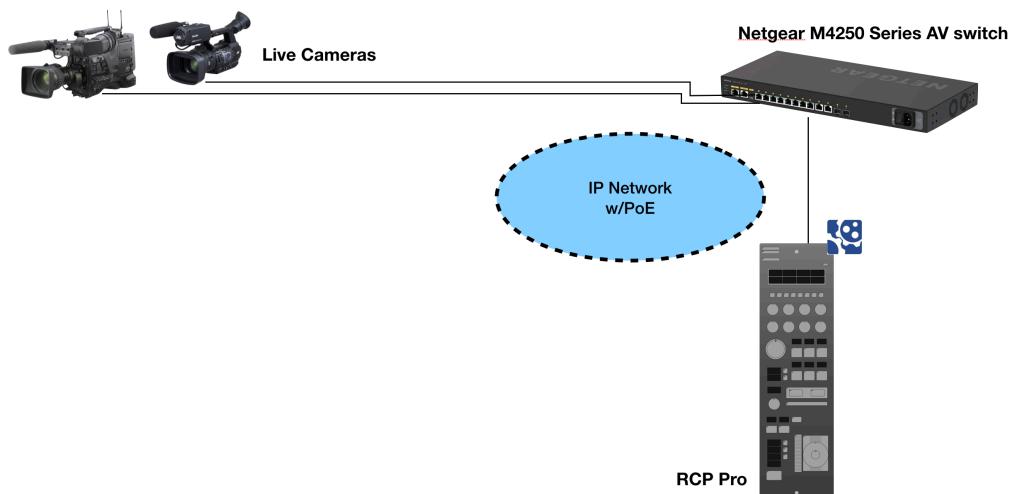
Power over Ethernet (PoE) Specifications

We use the PoE industry standard 5W-30W PoE (+) IEEE802.3af7t. To power our controllers using PoE it is important the switch supports this standard. Please notice some manufactures such as Ubiquity have their own non-standard 24V type of PoE which is incompatible with our controllers. Especially pay attention to the standard when using a PoE injector.

Network Layout

We recommend connecting SKAARHOJ Blue Pill controllers via professional PoE network switches, such as NetGears M4250-series which are at the same time designed for AV network traffic such as NDI video.

A RCP Pro and cameras configuration could look like this:



Please note, we are not networking experts and are not able to assist in network set up.

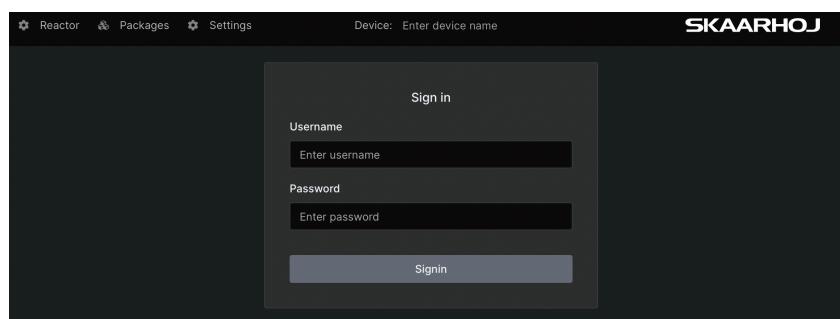
Accessing Blue Pill

DHCP or Static IP

The Blue Pill's user interface is accessed via the device's IP Address and any web browser. The IP address can be found on the display after it is plugged into a network connection with PoE or a network connection and a power supply (5V Micro USB).



Entering the IP address into the address bar of a search engine will bring up a prompt for username and password. The default is username: **admin** password: **skaarhoj**



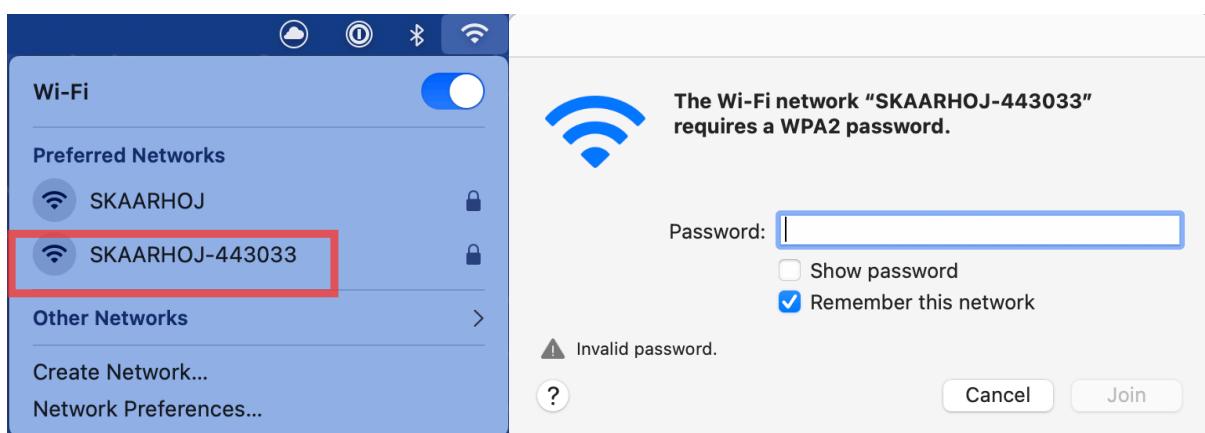
Wi-Fi Access Point

If the Blue Pill is not displaying an IP address, the web interface is accessible by enabling the internal Wi-Fi access point.

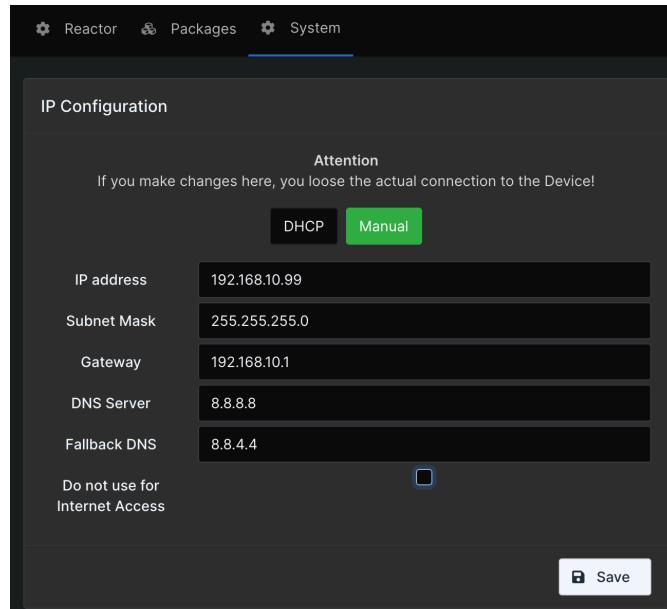
To enable the Wi-Fi access point, gently press and hold the config button on the side of the Blue Pill for about 3 seconds (Found next to the Ethernet jack. Use a flat screw driver, a paper clip or similar). When released, it will enable the internal Access Point and the LED will light up purple. It will show up in the Wi-Fi networks list as SKAARHOJ-XXXXXX (Blue Pill's serial number).

The default password is: **skaarhoj**

The web interface is then accessed at the IP address: **192.168.4.1**



After accessing the Blue Pill it is best to navigate to the System Menu/System page to set a static IP address. Once saved, the new IP address will appear on the Blue Pill's display, it may be necessary to reboot or power cycle the device afterwards.



Link from SKAARHOJ Firmware Updater

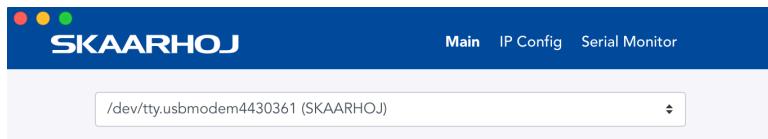
If the SKAARHOJ Firmware Updater open on a computer running on the same subnet as the Blue Pill, the Blue Pill should appear below the main controller access buttons of the updater. Clicking on Configure next to the panel's information will open the web interface directly. The Blue Pill does not need to be connected to the computer via USB.

The screenshot shows the SKAARHOJ Firmware Updater interface. The top navigation bar includes 'Main', 'IP Config', and 'Serial Monitor'. Below the navigation is a 'Select Device' dropdown and several buttons: 'Update Configuration/Firmware' (green), 'Online Configuration' (grey), 'Local Configuration' (blue), and 'Manuals and Support' (blue). A table lists three devices:

| Device | Serial | Ipv4Address | Features | Actions |
|-------------|--------|----------------|----------------------|----------------------------|
| SK_BLUEPILL | 443033 | 192.168.11.110 | skaarOS, IBeam Cores | <button>Configure</button> |
| SK_RCPV2 | 432680 | 192.168.11.195 | Unisketch, rawpanel | |
| SK_XC7SV3 | 432731 | 192.168.11.32 | Unisketch, rawpanel | |

SKAARHOJ Firmware Updater and Micro USB

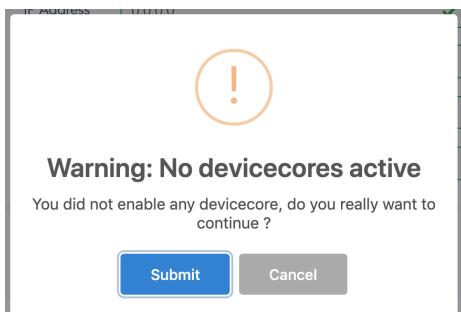
If a network connection to the Blue Pill in not available, the IP address can be set using a Micro USB cable. In this case the Blue Pill will appear in the "Select Device" dropdown and the "IP Config" tab in the Firmware Updater can be used to set the IP address (same procedure from UniSketch):



In this case it was identified as "/dev/tty.usbmodem4430361" (on MacOS) and pressing IP Config will open the IP set up page:



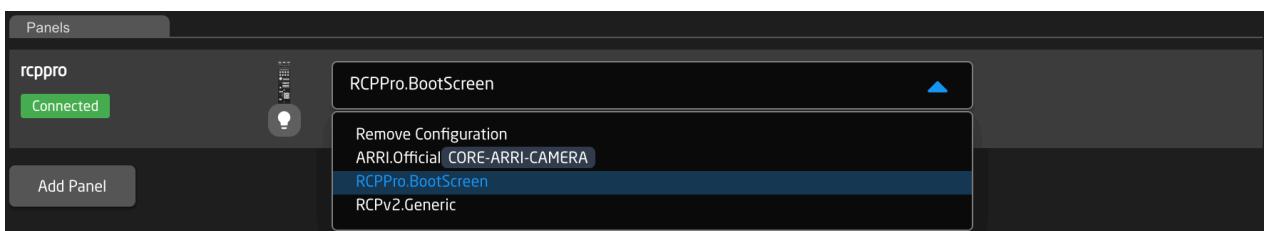
If/When the warning below appears, press "Submit" and reboot the Blue Pill:



Select Mapping

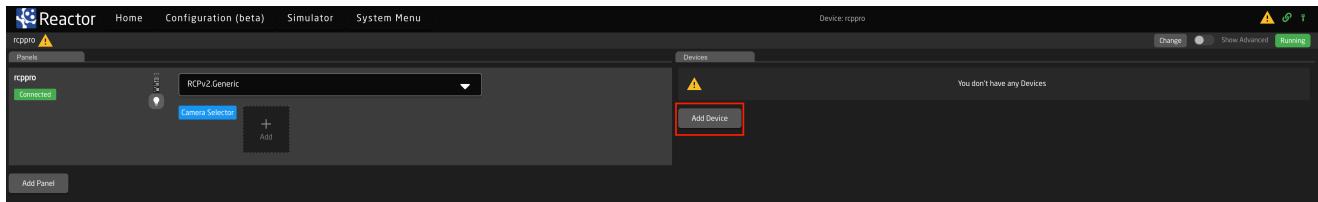
The controller's layout is determined by the Mapping. In most cases, the Generic mapping is all that is needed, though for some combinations of panel and device, there are specific mappings.

The mapping is chosen in the drop down next to the panel.



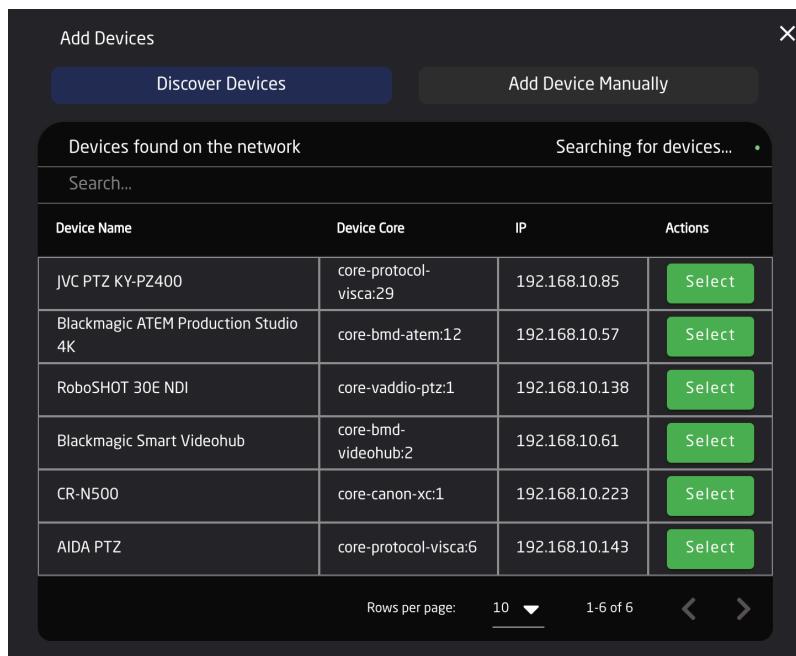
Adding Devices

There are two main ways a device can be added to a new Blue Pill, Auto Discover and Manually.



Auto Discover

Searching on the network for devices will find many types by a combination of mDNS look-ups and other methods. However, not all devices can be discovered easily, but with those that can, it's a simple click of a button to add it to the Blue Pill device collection. Following an Auto Discover some device details may still be needed to establish connectivity. See Device Details section for set up.



| Device Name | Device Core | IP | Actions |
|--------------------------------------|------------------------|----------------|-------------------------|
| JVC PTZ KY-PZ400 | core-protocol-visca:29 | 192.168.10.85 | <button>Select</button> |
| Blackmagic ATEM Production Studio 4K | core-bmd-atem:12 | 192.168.10.57 | <button>Select</button> |
| RoboSHOT 30E NDI | core-vaddio-ptz:1 | 192.168.10.138 | <button>Select</button> |
| Blackmagic Smart Videohub | core-bmd-videohub:2 | 192.168.10.61 | <button>Select</button> |
| CR-N500 | core-canon-xc:1 | 192.168.10.223 | <button>Select</button> |
| AIDA PTZ | core-protocol-visca:6 | 192.168.10.143 | <button>Select</button> |

Rows per page: 10 ▾ 1-6 of 6 < >

Pressing SHIFT + the green Select button will allow for multiple device selection.

Manually Added

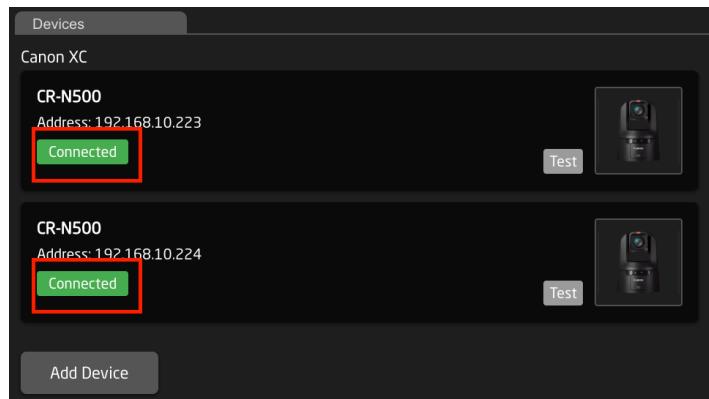
If a device must be added manually, it's easy to look it up in the list of supported models. Following a manual choice of device, the user will have to enter the IP address and other possible device detail information. See the Device Details section for set up.

| Add Devices | | | |
|-------------------------------------|-------------|-------------------------------------|---------------------|
| Discover Device | | | Add Device Manually |
| Manual add devices | | | |
| Search... | | | |
| Device Name | Device Core | Description | Actions |
| Generic Model | aja-kumo | default model of the implementation | Select |
| KUMO 16x4 | aja-kumo | AJA KUMO 16 input, 16 output router | Select |
| KUMO 16x16 | aja-kumo | AJA KUMO 16 input, 16 output router | Select |
| KUMO 32x2 | aja-kumo | AJA KUMO 32 input, 32 output router | Select |
| KUMO 64x4 | aja-kumo | AJA KUMO 64 input, 64 output router | Select |
| Generic Model | arri-camera | default model of the implementation | Select |
| Arri Amira | arri-camera | Arri Amira camera | Select |
| Arri Alexa Mini | arri-camera | Arri Alexa Mini camera | Select |
| ATEM 1M/E Production Studio 4K | bmd-atem | ATEM 1M/E Production Studio 4K | Select |
| ATEM Television Studio HD | bmd-atem | ATEM Television Studio HD | Select |
| ATEM Television Studio Pro HD | bmd-atem | ATEM Television Studio Pro HD | Select |
| ATEM Production Studio | bmd-atem | ATEM Production Studio | Select |
| ATEM Mini Pro | bmd-atem | ATEM Mini Pro | Select |
| ATEM Television Studio (1. edition) | bmd-atem | ATEM Television Studio (1. edition) | Select |
| ATEM Constellation 4K | bmd-atem | ATEM Constellation 4K | Select |
| ATEM 2M/E Production Studio 4K | bmd-atem | ATEM 2M/E Production Studio 4K | Select |
| Generic Model | bmd-atem | default model of the implementation | Select |
| ATEM Mini Pro Iso | bmd-atem | ATEM Mini Pro Iso | Select |
| ATEM Television Studio Pro 4K | bmd-atem | ATEM Television Studio Pro 4K | Select |

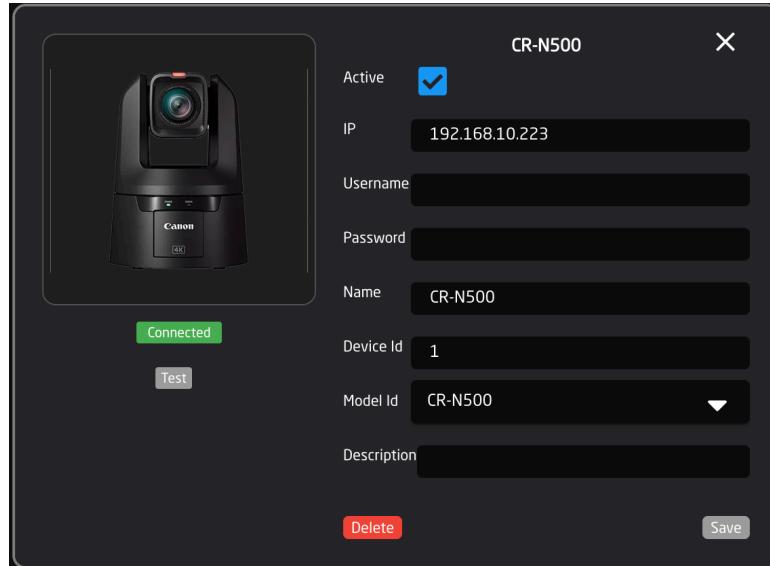
Pressing SHIFT + the green Add Device button will allow for multiple device selection.

Device Details

Devices have their status displayed clearly in the overviews on the Home screen.



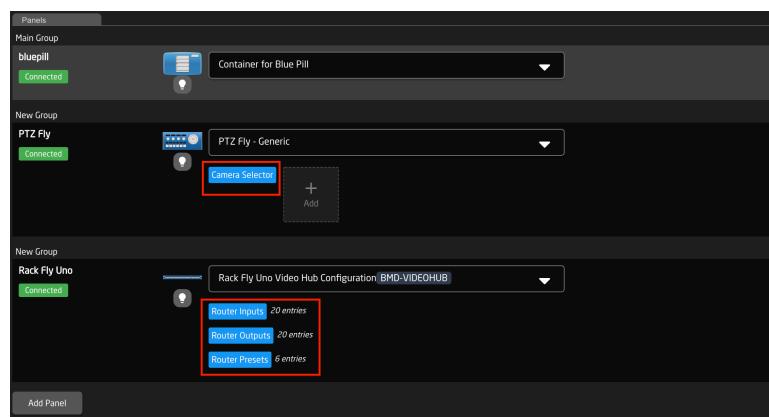
Clicking on a device name in the Devices section will open up the details. Here the name, ID number, Active status, and IP address of the device can be changed. By default the controller name will be the same as the model name, the ID will be auto generated in order, and the status will be active. A controller's status needs to be active for use. When applicable to the device, the option for connecting is a specific Username and Password will also be available. Without setting a specific username and password, in most cases the core will try to connect to the device's default username and password.



Populate Constant Sets

The final step is to fill in any constant sets. The constant sets are available based on the chosen configuration and should contain entries such as specific cameras for a PTZ controller, or the inputs for a video switcher etc. They are most common when working with PTZ cameras and routing panels, though may be available for additional device configurations.

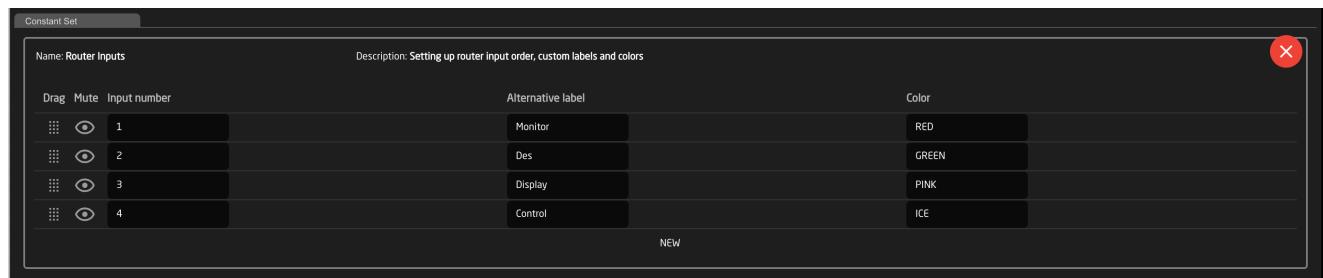
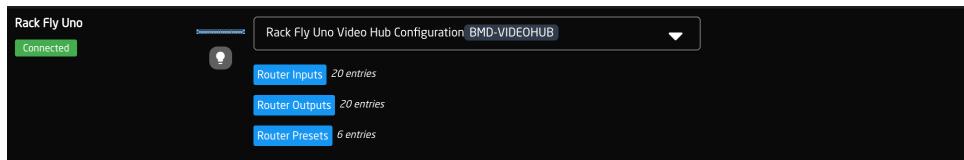
The setup tables will auto save and quickly appear on displays and enable the function.



An example of a setup table would be a camera selector and can be seen below. These can be different depending on the selected configuration. From here the order on the camera selector row of the panel will be set as well as the desired name on the displays.

| Column | Description |
|---|--|
| Drag | Allows for quick rearranging of camera order. Right clicking on drag will allow for deleting the row. |
| Mute | Allows for removing access to a specific camera or to leave a blank spot on the panel |
| Binding | Allows for the selecting of a specific connected camera |
| Camera Name | Customizable name to appear on the displays. Character limit is determined by size of display and can vary. |
| Device Number | Ties the camera selector to the specific device. This is found in the Devices section. Each device will have a unique device number per device core. This box should auto-populate when a camera is selected in binding |
| Use Device Configuration | Selects the protocol based configuration associated with camera. Needed protocol can be seen in the Devices section, each device is grouped into their native protocols. Double check the correct configuration is selected. Improper selection will effect camera control. |
| Configuration for Iris/Master Black Channel | Selects the needed protocol for Iris/Master Black control. For cameras without a variable lens this will follow the same protocol as the device. For cameras with a variable lens, select the protocol for the attached lens. |
| Tally Index | Tally Index number is set in advanced configuration tool. See Blue Pill/Reactor Manual for more information. This column does not need to be filled out for standard operation. |
| FrameLink Window | Sets the FrameLink Window value associated with the FrameLink device core for use with FrameLink compatible devices. See Blue Pill/Reactor Manual for more information. This column does not need to be filled out for standard operation. |

An example of a router inputs selector can be seen below. These can be different depending on the selected configuration and device. From here the order on the inputs/outputs row of the panel will be set as well as the desired name on the displays and button color.



| Column | Description |
|--------------------------------|---|
| Drag | Allows for quick rearranging of camera order. Right clicking on drag will allow for deleting the row. |
| Mute | Allows for removing access to a specific input/output or to leave a blank spot on the panel |
| Output Number/ Input Number | Ties the selector to the specific input/output. This is found is determined by the individual router. |
| Alternative Label | Customizable name to appear on the displays. Character limit is determined by size of display and can vary. |
| Color | Sets the button feedback color. Color options are: OFF, WHITE, WARM, RED, ROSE, PINK, PURPLE, AMBER, YELLOW, DARKBLUE, BLUE, ICE, CYAN, SPRING, GREEN, MINT. The format for color selection is all large letters with no spaces between words. |

Contact Support

It is always possible to contact us for support questions - write an email to support@skaarhoj.com and we will do our best to accommodate the request.

In order for us to provide the best support please state:

- Which SKAARHOJ unit it is about
- The serial number of the device (small silver label with 6 digits)
- The nature of the problem
- Which hardware device(s) are to be controlled and their firmware version
- If the device's web interface has been successfully accessed
- The connected computer's operating system



WEEE Information



Figure 1

For private households: Information on Disposal for Users of WEEE

This symbol (figure 1) on the product(s) and / or accompanying documents means that used electrical and electronic equipment (WEEE) should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

Alternatively, in some countries, it may be possible to return the products to the local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact the local authority for further details of the nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislations.

For professional users in the European Union

To discard electrical and electronic equipment (EEE), please contact the local dealer or supplier for further information.

For disposal in countries outside of the European Union

This symbol is only valid in the European Union (EU). To discard this product please contact local authorities or dealers and ask for the correct method of disposal.