Device: Panasonic AU-EVA1

Introduction

The Device Core "Panasonic EVA1" is used for controlling the AU-EVA1 camera. The goal of this manual is to help configuring a SKAARHOJ interface to control features available in the Device Core at this present time.

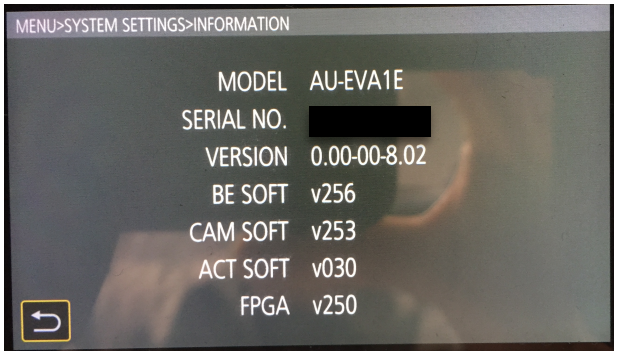
Number of Cameras possible to Control

At the time being only a single camera can be controlled from the AU-EVA1 Device Core. We are working on enabling multi camera support from a single Device Core. No set timeframe yet.

Setting up Camera

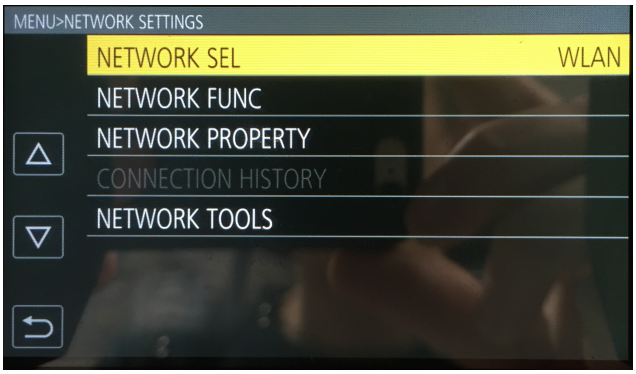
In order to control the camera a USB/Ethernet adapter must be utilized from the USB2.0 HOST port on the camera. All communication between a SKAARHOJ interface and the camera is done via IP. The implementation have been done on version 0.00-00-8.02.

Panasonic recommends to use Plugable USB 3.0 Gigabit Eathernet Adapter or UGREEN USB3.0 to RJ45 Ethernet Adapter 20256

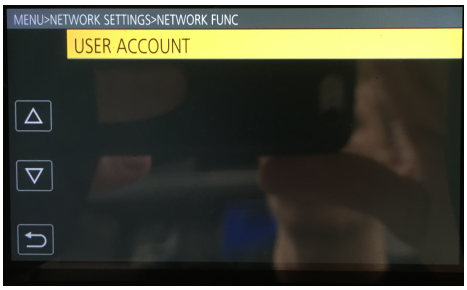


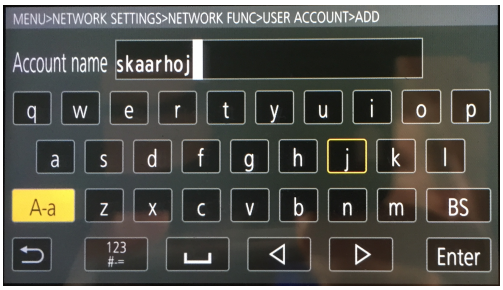
A number of actions are required for a SKAARHOJ controller to communicate with the camera. Please follow these procedures in the MENU –> NETWORK SETTINGS. The aim of the procedures is to set a **static IP address** on the camera which the SKAARHOJ controller can connect to *and* to create a **user account** for authentication. You can use a different IP address as long as the Panasonic Device Core on the SKAARHOJ controller reflects this.

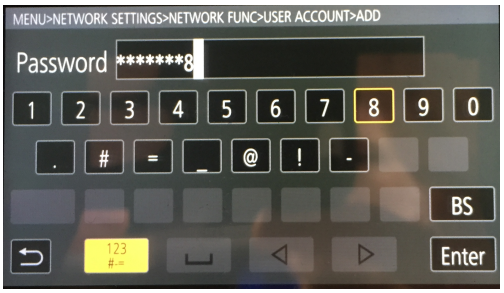
- NETWORK SEL: **WLAN**



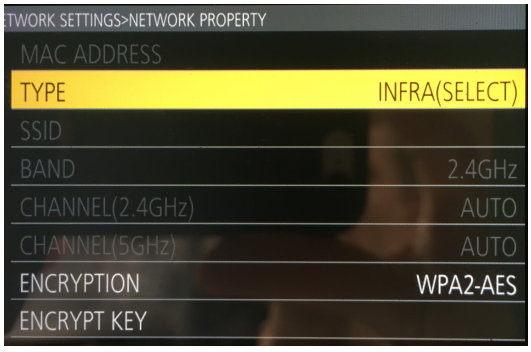
- NETWORK FUNC - add a account
  - Account name: **skaarhoj**
  - Account password: **12345678**

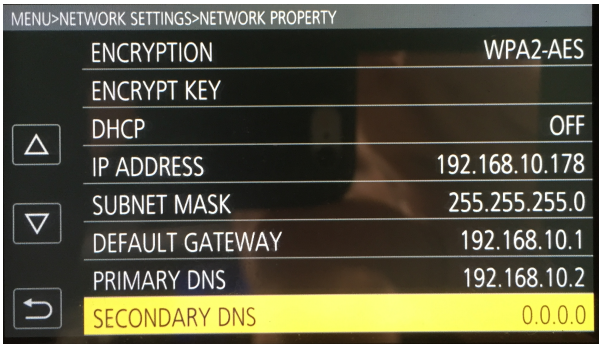






- NETWORK PROPERTY - set static IP
  - TYPE: **INFRA(SELECT)**
  - DHCP: **OFF**
  - IP ADDRESS: **192.168.10.178**
  - SUBNET MASK: **255.255.255.0**
  - DEFAULT GATEWAY: **192.168.10.1**
  - PRIMANRY DNS: **192.168.10.2**

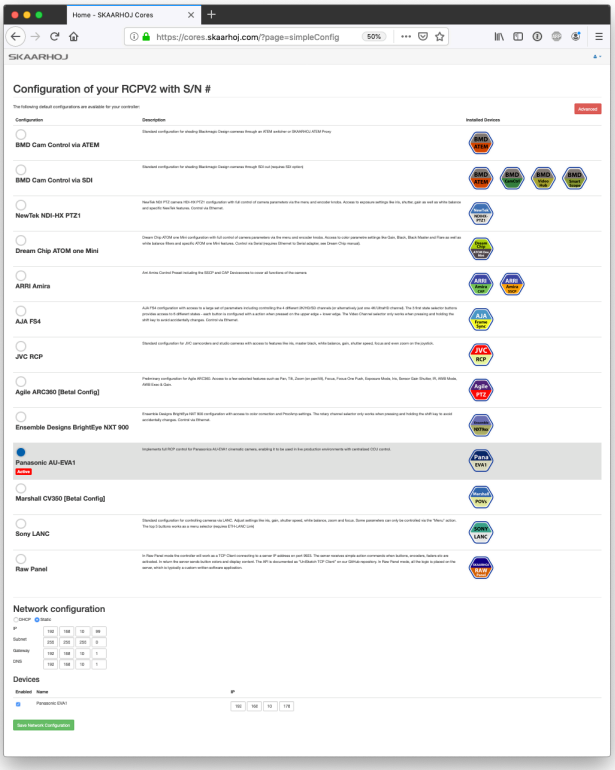




Setting up a RCPv2 controller using the default configuration “Panasonic AU-EVA1”

Please follow these instructions if you have a RCPv2 and want to use it with the Panasonic AU-EVA1 camera.

If you RCPv2 have been shipped preconfigured with the “Panasonic AU-EVA1” configuration please go to section “**Confirm Connection”**

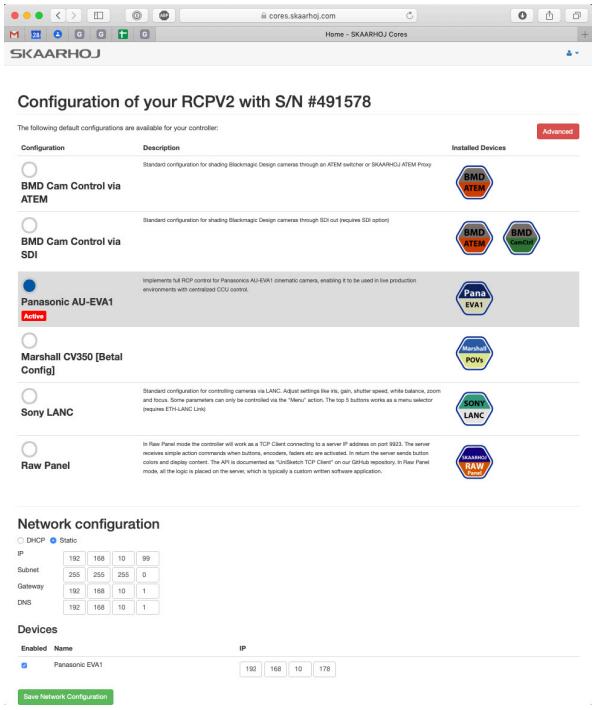


If you have a RCPv2 and want to use the default configuration “Panasonic AU-EVA1” please follow these steps

- Download and install the Firmware Updater Application (https://www.skaarhoj.com/support/firmware-updater/)
- Connect the RCPv2 with the USB programming cable (if you are on Windows and have multiple com ports available please see the section “Port selection on Windows” in the Installation and Operation Manual (https://www.skaarhoj.com/support/manuals/)
- Press “Online Configuration” in the Firmware Application

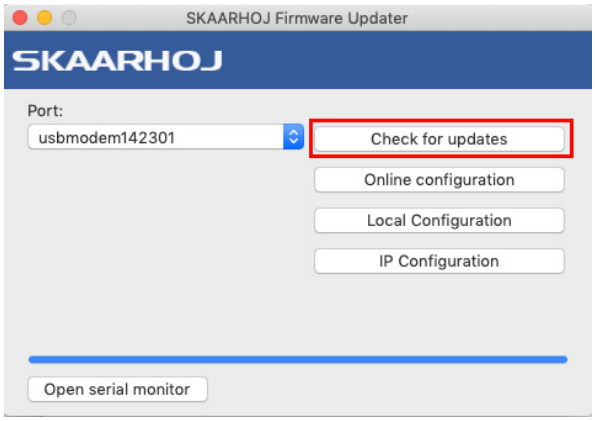
Direct Selection of Default Config

If no custom configurations have been made on the RCPv2 you will be presented with this interface



Select the "Panasonic AU-EVA1" config and then go to the Firmware Application and press "Check for updates". This will generate a firmware file on our server and download it to the controller.

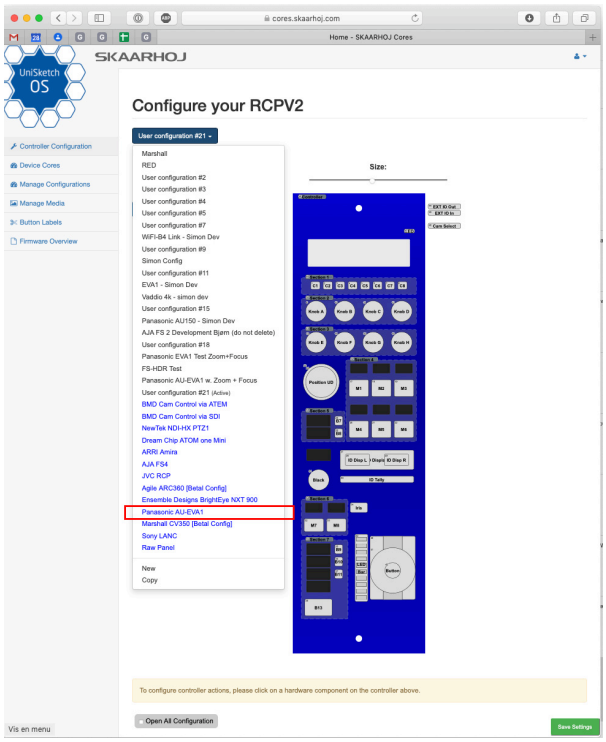
If you want to use different IP addresses then alter "Network configuration" and press "Save Network Configuration" and *then press "Check for updates" in the Firmware Application*



Notice on Windows the Port dropdown will display "COM" ports. Please see section "Port selection on Windows" in Installation and Operation manual https://www.skaarhoj.com/support/manuals/

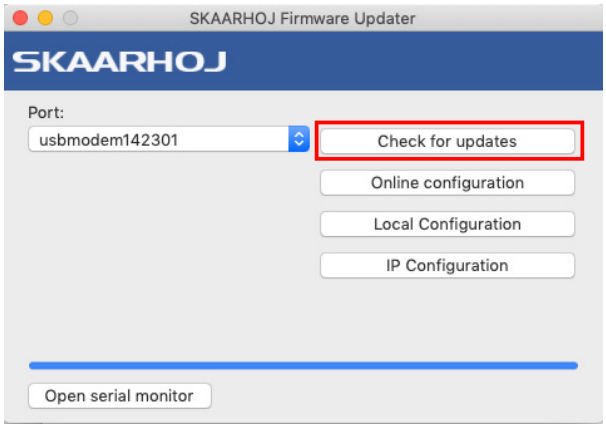
Selection of Default Config

If custom configurations have been made on the RCPv2 you will be presented with this interface



Select the "Panasonic AU-EVA1" config in the drop down list. This will load the configuration on the configuration page. Then go to the Firmware Application and press "Check for updates".

This will generate a firmware file on our server and download it to the controller.

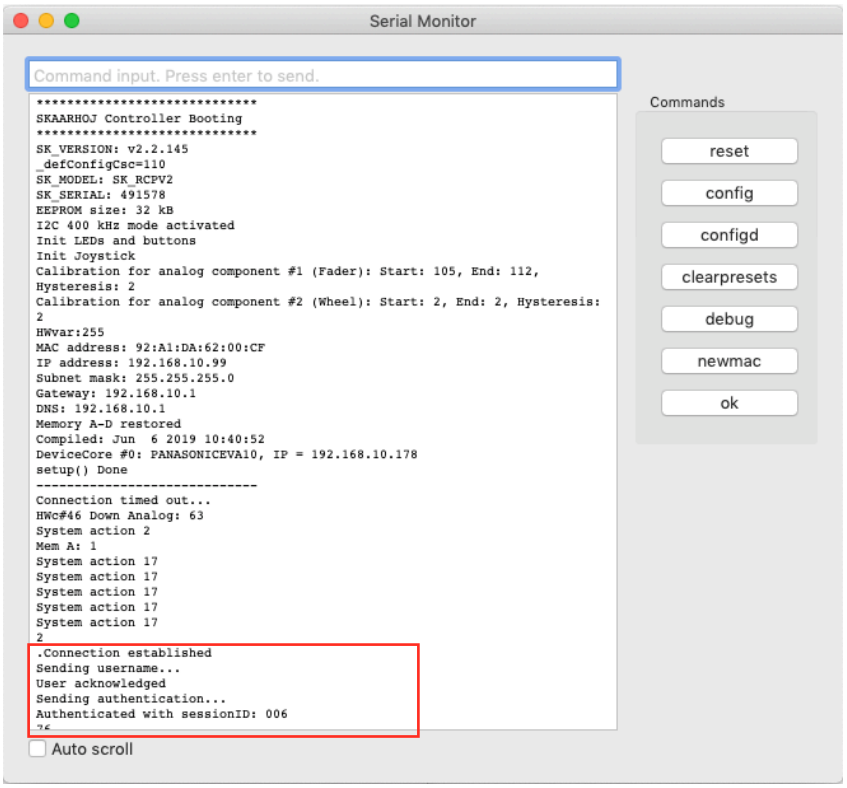


Notice on Windows the Port dropdown will display "COM" ports. Please see section "Port selection on Windows" in Installation and Operation manual https://www.skaarhoj.com/support/manuals/

Confirm Connection

If the RCPv2 have come preconfigured with the Panasonic Configuration or you have just successfully downloaded the Firmware to the RCPv2, then it is ready to control the camera *provided* you have followed the steps in the "Setting up Camera" section. It is important that the IP address you have set on the camera matches the IP address of the Panasonic EVA1 Device Core.

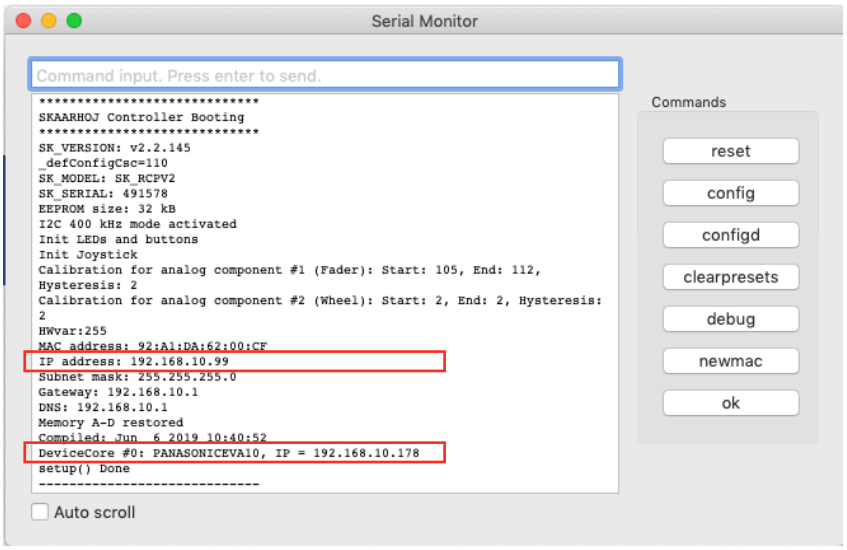
Connection to the camera can be confirmed from the Serial Monitor with the commands as shown below.




```
******************************
SKAARHOJ Controller Booting
******************************
SK_VERSION: v2.2.145
_defConfigCsc=110
SK_MODEL: SK_RCPV2
SK_SERIAL: 491578
EEPROM size: 32 kB
I2C 400 kHz mode activated
Init LEDs and buttons
Init Joystick
Calibration for analog component #1 (Fader): Start: 105, End: 112,
Hysteresis: 2
Calibration for analog component #2 (Wheel): Start: 2, End: 2, Hysteresis:
2
HWvar:255
MAC address: 92:A1:DA:62:00:CF
IP address: 192.168.10.99
Subnet mask: 255.255.255.0
Gateway: 192.168.10.1
DNS: 192.168.10.1
Memory A-D restored
Compiled: Jun  6 2019 10:40:52
DeviceCore #0: PANASONICEVA10, IP = 192.168.10.178
setup() Done
------------------------------
Connection timed out...
HWc#46 Down Analog: 63
System action 2
Mem A: 1
System action 17
System action 17
System action 17
System action 17
System action 17
2
.Connection established
Sending username...
User acknowledged
Sending authentication...
Authenticated with sessionID: 006
```

Check IP Addresses on SKAARHOJ Controller

If you have issues connecting to the camera it is recommend to confirm that IP settings are correct. A way to confirm IP settings on the SKAARHOJ controller is using the Serial Monitor in the Firmware Application and check IP settings in the boot up process.




```
******************************
SKAARHOJ Controller Booting
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SK_VERSION: v2.2.145
_defConfigCsc=110
SK_MODEL: SK_RCPV2
SK_SERIAL: 491578
EEPROM size: 32 kB
I2C 400 kHz mode activated
Init LEDs and buttons
Init Joystick
Calibration for analog component #1 (Fader): Start: 105, End: 112,
Hysteresis: 2
Calibration for analog component #2 (Wheel): Start: 2, End: 2, Hysteresis:
2
HWvar:255
MAC address: 92:A1:DA:62:00:CF
IP address: 192.168.10.99
Subnet mask: 255.255.255.0
Gateway: 192.168.10.1
DNS: 192.168.10.1
Memory A-D restored
Compiled: Jun  6 2019 10:40:52
DeviceCore #0: PANASONICEVA10, IP = 192.168.10.178
setup() Done
------------------------------
```
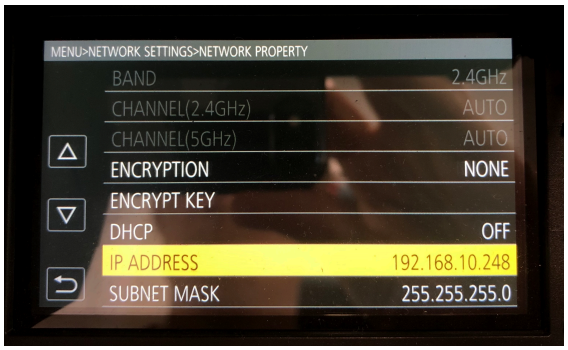
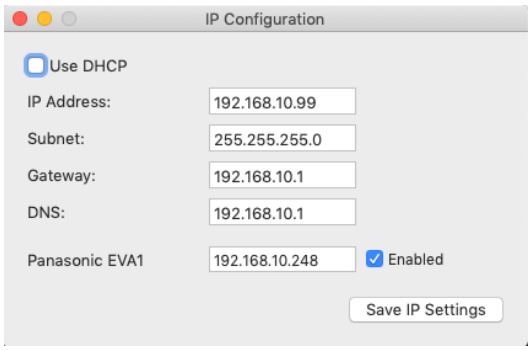
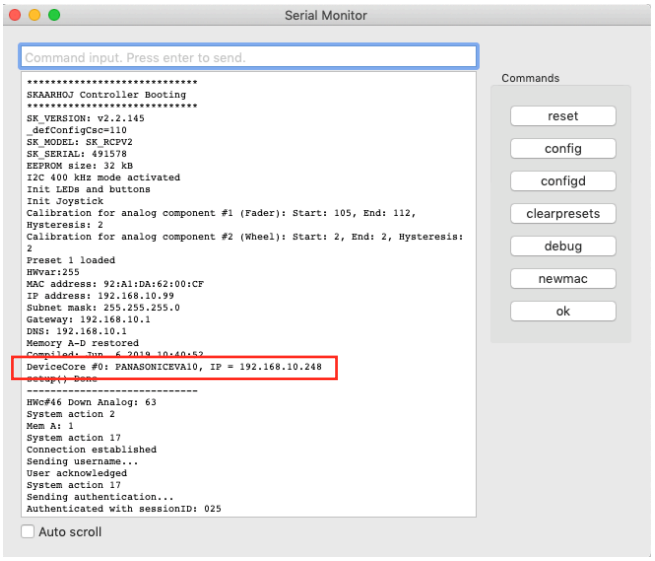

Using different IP address on Panasonic AU-EVA1 camera

You can set a different IP address on the camera *as long* as the Device Core IP address is updated as well. You can use the "IP Configuration" option in the Firmware Application to change the Device Core IP address.

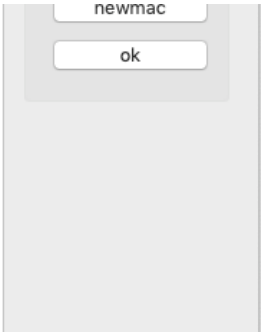




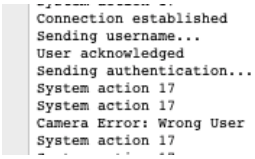


Debugging Connection between SKAARHOJ Controller and Camera

If IP settings are correct but the Account name is not correct the Serial Monitor will report "Camera Error: Wrong user"



If the Account name is correct but the password is not the Serial Monitor will report "Camera Error: Wrong User" after reporting that the user is acknowledged.



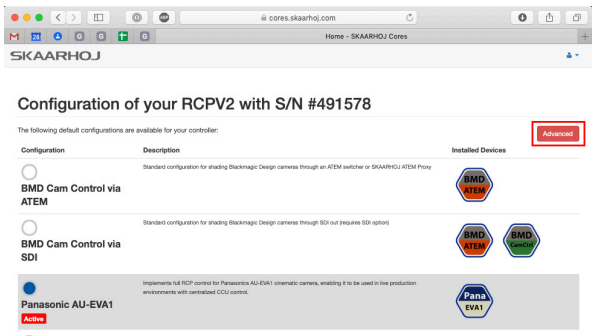
Alternative way of Downloading and Installing the Firmware on a RCPv2

If you have issues using the Firmware Application to generate and installing the Firmware on your RCPv2 please follow these steps

- Press “Online Configuration” in the Firmware Application

Direct Selection of Default Config

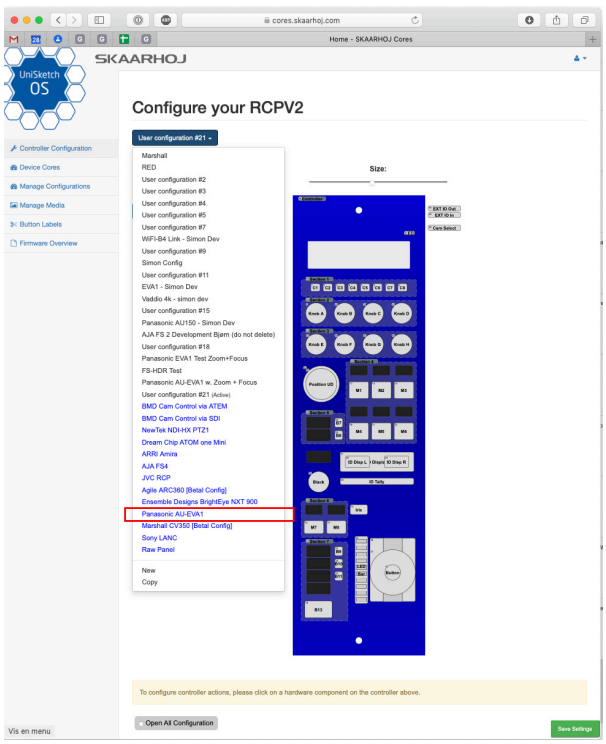
If no custom configurations have been made on the RCPv2 you will be presented with this interface



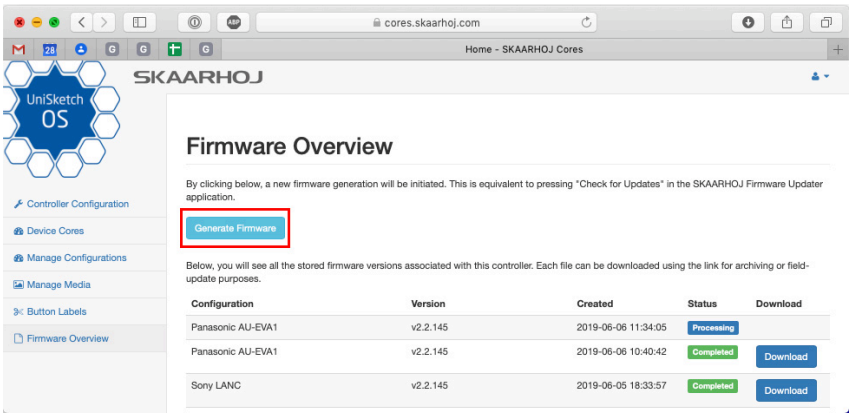
Select the “Panasonic AU-EVA1” config and press “Advanced”

Selection of Default Config

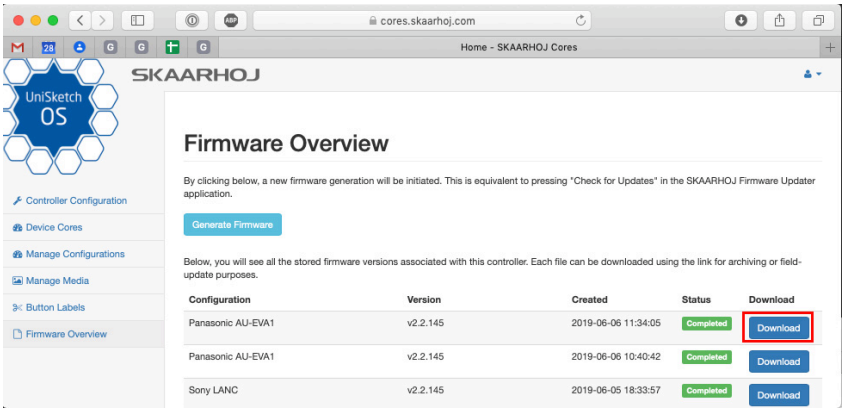
If custom configurations have been made on the RCPv2 you will be presented with this interface



Select the “Panasonic AU-EVA1” config in the drop down list.

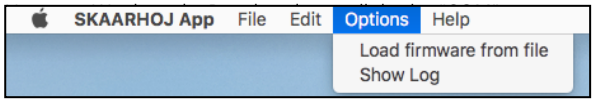


Press the “Firmware Overview” tab and press “Generate Firmware”

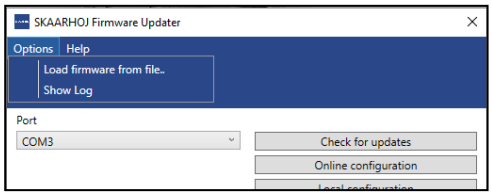


After the firmware have been generated press "Download"

Open the Firmware Updater Application and use the "Load Firmware from file" in the option tab



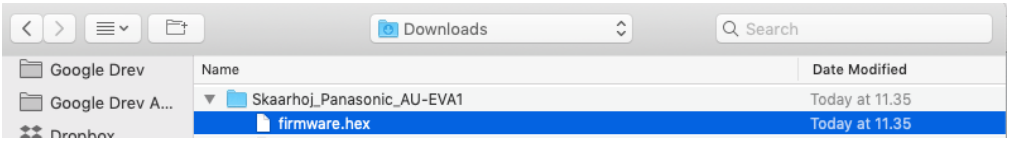
On Mac

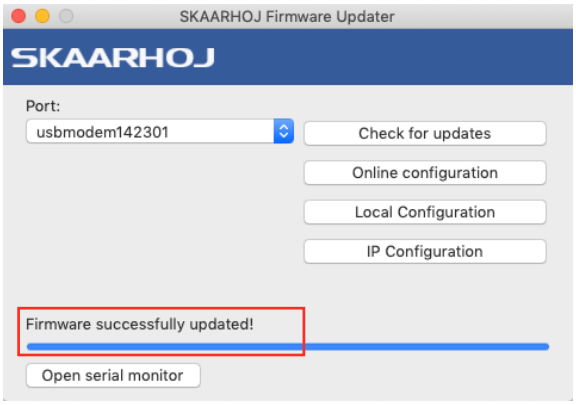


On PC.

Important to select proper COM port. See "Port selection on Windows" in Installation and Operation manual https://www.skaarhoj.com/support/manuals/ "

Select the ".hex" firmware file. Naming might be different dependent on browser but it should be a **.hex** file to be selected.



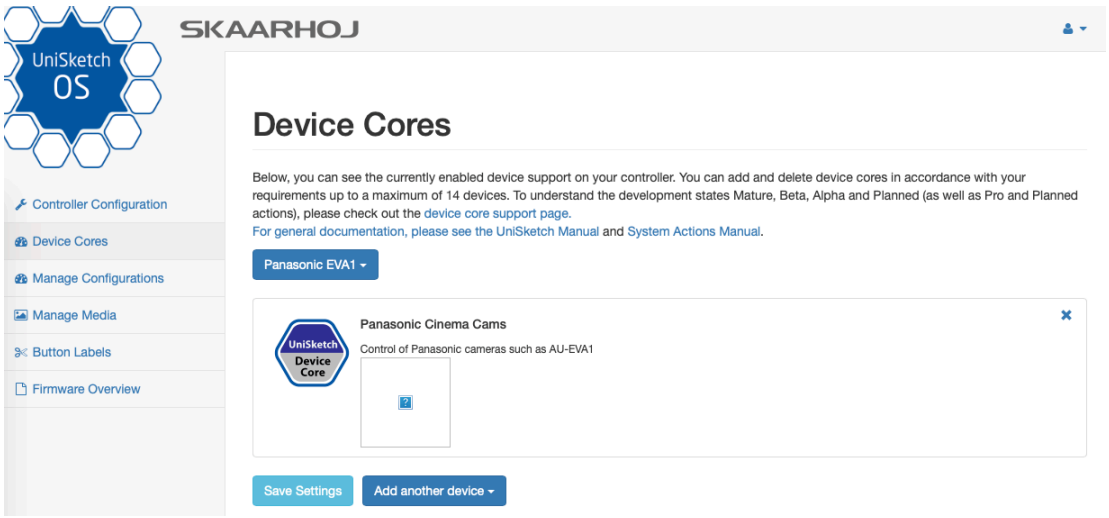


When done the Firmware Updater application reports "Firmware successfully updated"

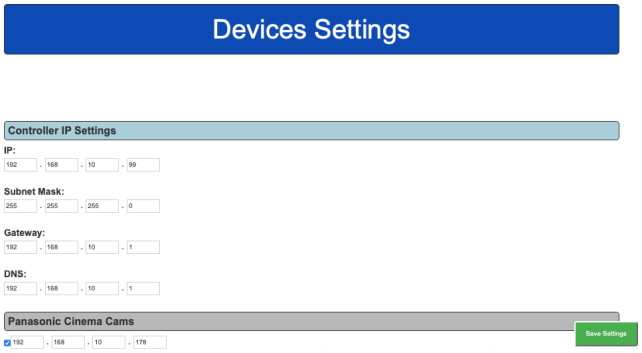
Setting up Controller

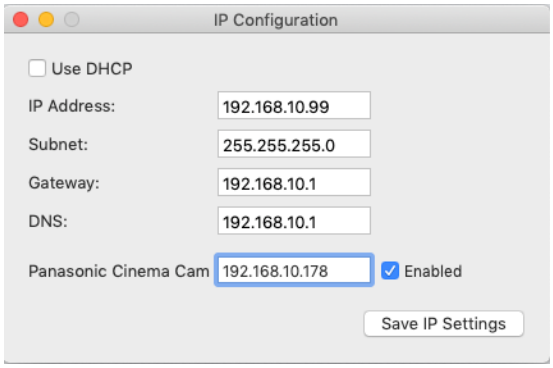
This section is only relevant if you are building a configuration from scratch.

The Device Core "Panasonic AU-EVA1" must be added to your controller

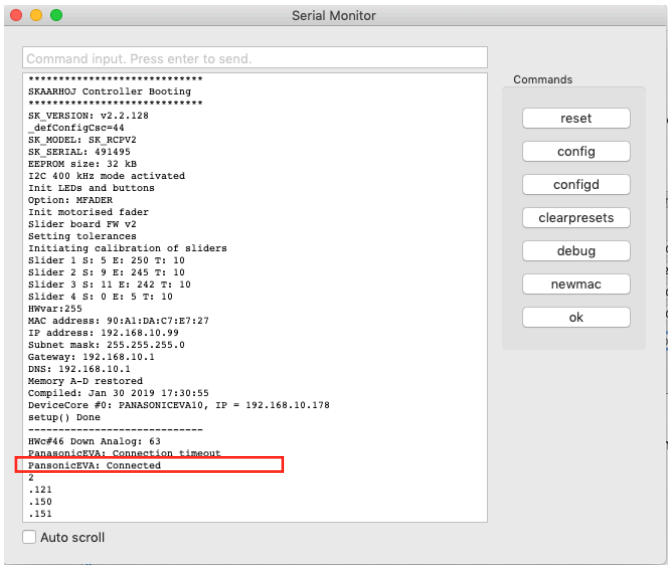


The Device Core *must* have the IP address matching, the one set on the camera it self (see "Setting up Camera" section).





Connection to the camera can be confirmed from the Serial Monitor with the command: *PansonicEVA: Connected*



This is a overview of the actions implemented in the Device Core

At this present time only a default shipping config with the EVA1 camera for the RCPv2 exist. We recommend only to control *one* camera per SKAARHOJ controller.

Zoom + Focus

The Zoom + Focus control have been implemented on the base of a CANON CN-E 18-80MM T4.4LIS KAS S

Please notice if a Zoom in/out adjustment have been initiated on a SKAARHOJ controller and one try to zoom directly on the lens when this is in "servo AUTO mode" the SKAARHOJ controller will overrule adjustments being done on the lens directly.

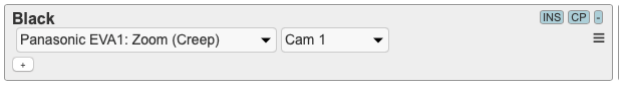
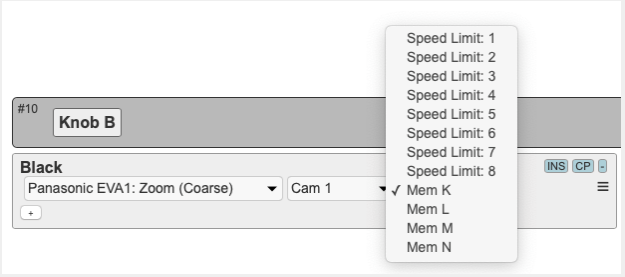
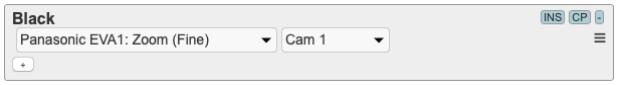
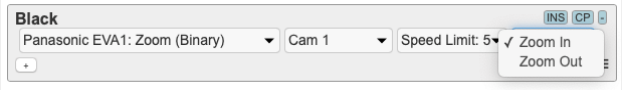
Focus must be set to "AF" on the lens itself if focus adjustments should be done from the SKAARHOJ panel.

If a Focus near/far adjustments have been initiated on a SKAARHOJ controller (while AF is set) the SKAARHOJ controller will overrule adjustments being done on the lens directly.

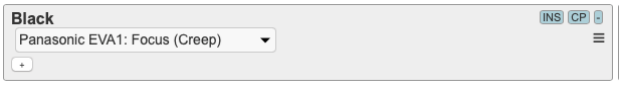
Iris

Iris must be set to "A" mode on the lens itself if iris adjustments should be done from the SKAARHOJ panel.

This is a table of actions for some of the actions in the Panasonic EVA1 Device Core.

Zoom (Creep) 	Initiates a Creep Zoom in/out with speeds between -8 to +8 *Binary triggers:* Will only reflect the speed of the Creep Zoom value (-8 to +8) *Pulse inputs:* Will cycle between -8 to +8. When -8 Creep Zoom out is at the highest speed. When +8 Creep Zoom in is at the highest speed. When 0 no zoom is initiated. *Displays:* "Creep Zm/Speed of zoom"
Zoom (Step) 	Zoom in/out with steps defined to a specific value. Used to quickly zoom to a desired range *Binary triggers:* Will only reflect the current zoom value in mm *Pulse inputs:* Will zoom in/out with the given speed value Speed Limit 1: Small steps Speed Limit 8: Large steps *Displays:* "Step Zm/Zoom range in mm"
Zoom (Fine) 	Zoom in/out with small steps to a specific value zoom range *Binary triggers:* Will only reflect the current zoom value in mm *Pulse inputs:* Will zoom in/out in small steps to set a specific zoom range. Only recommended to use for very small adjustments. Reacts slow if turned multiple times *Displays:* "Fine Zm/Zoom range in mm"
Zoom (Binary) 	Used to zoom in/out via buttons instead of a encoder *Binary triggers:* Zoom in/out as long as a button is pressed and held down. Speed of the zoom is determined with the speed limiter. *Pulse inputs:* Not implemented *Displays:* "Zoom/[Out,In]"

Focus (Creep)



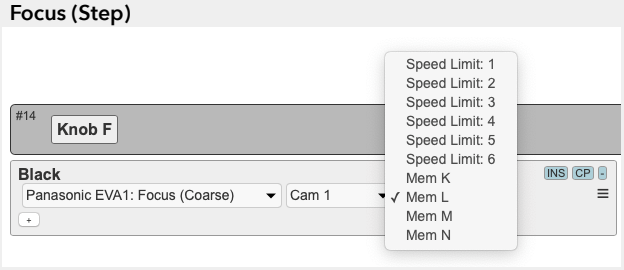
Initiates a Creep Focus far/nearer with speeds between -6 to +6

Binary triggers: Will only reflect the speed of the Creep Focus value (-6 to +6)

Pulse inputs: Will cycle between -6 to +6. When -6 Creep Focus near is at the highest speed. When +6 Creep Focus far is at the highest speed. When 0 no zoom is initiated.

Displays: "Creep Fcs/Speed of focus"

Focus (Step)



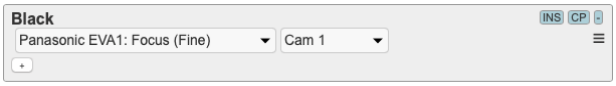
Focus far/near with steps defined to a specific value. Used to quickly focus to a desired range

Binary triggers: Will only reflect the current focus value in m

Pulse inputs: Will focus far/near with the given speed value
Speed Limit 1: Small steps
Speed Limit 6: Large steps

Displays: "Step Fcs/Focus range in m"

Focus (Fine)



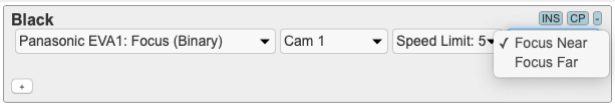
Focus far/near with small steps to a specific value focus range

Binary triggers: Will only reflect the current focus value in m

Pulse inputs: Will focus far/near in small steps to set a specific focus value. Only recommended to use for very small adjustments. Reacts slow if turned multiple times

Displays: "Fine Fcs/Focus range in m"

Focus (Binary)



Used to Focus far/near via buttons instead of a encoder

Binary triggers: Focus far/near as long as a button is pressed and held down. Speed of the focus is determined with the speed limiter.

Pulse inputs: Not implemented

Displays: "Focus/[Near,Far]"

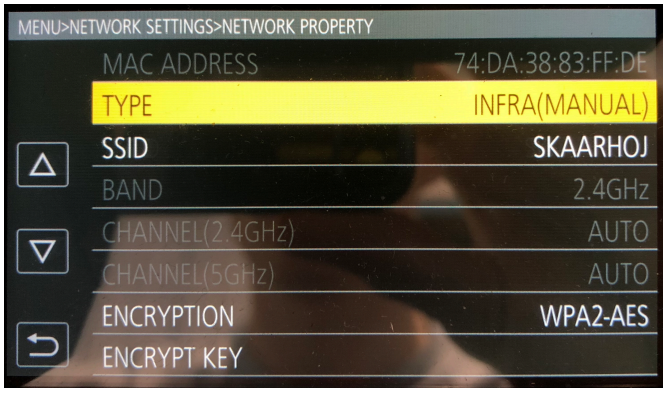
Wireless Control using the Panasonic AJ-WM50P Wireless Module

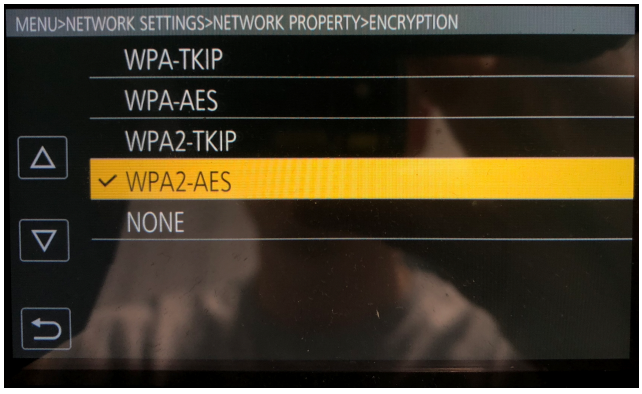
It should be noted that the supported case between a SKAARHOJ controller and the Panasonic AU-EVA1 camera is via a wired ethernet connection. This is to ensure a robust integration and to achieve a good user experience (stable connection, responsiveness etc). The Device Core have been optimised to work on a wired ethernet connection and this is the supported case.

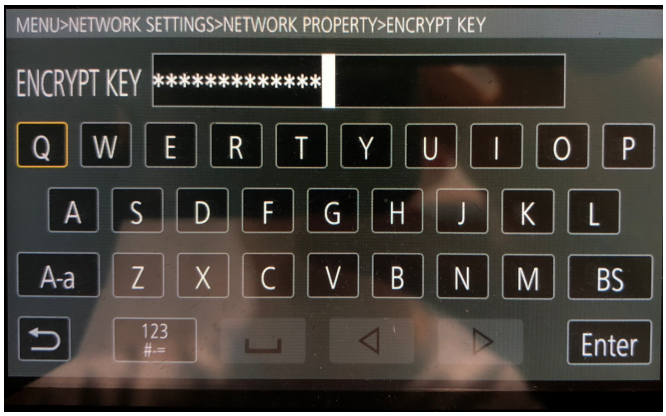
The AJ-WM50P wires module have been tested *briefly* in order to determine if wireless control of the Panasonic AU-EVA1 camera is possible from a SKAARHOJ Controller. It is possible but there are drawbacks. A couple of comments:

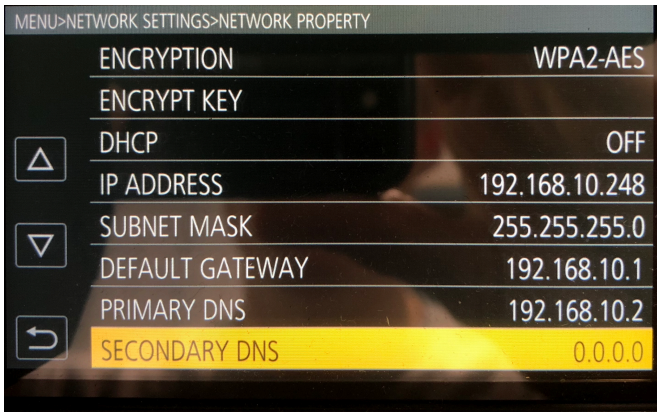
- In the tested setup idle connection to the camera seemed somewhat stable but connection would still be lost even no interaction was done on the SKAARHOJ controller (most likely a timeout issue)
- If SKAARHOJ controller was used to transmit a lot of data such as moving the joystick quickly for iris control, connection would be lost
- Changing iris quickly could resort in feedback to the SKAARHOJ controller being delayed
- Delay in changing parameters on the camera was observed
- If connection was lost it would quickly reconnect

The configuration used for testing are shown below.

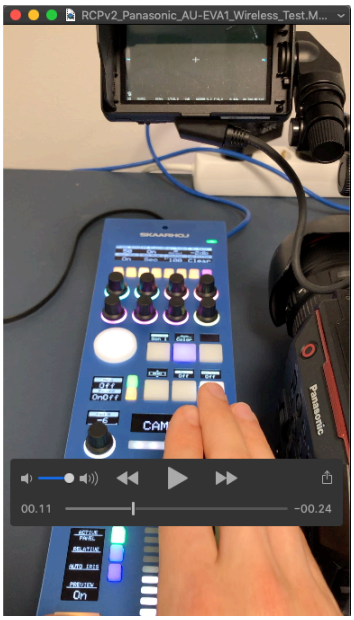








A video of the behaviour can be seen here: https://github.com/SKAARHOJ/Support/raw/master/Manuals/Videos/RCPv2_Panasonic_AU-EVA1_Wireless_Test.MOV



Panasonic have conducted a test themselves following the above method, and experienced a more stable behaviour.

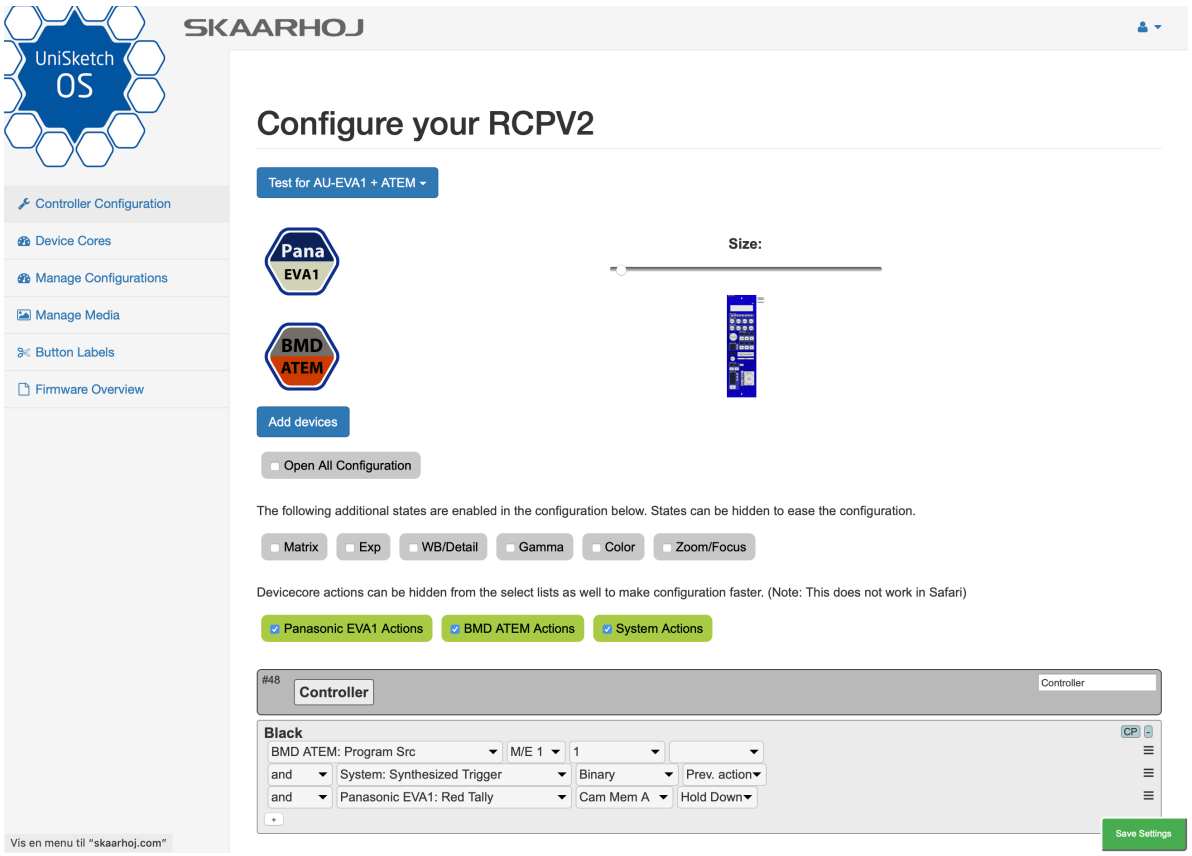
Tally

With the default configuration "Panasonic AU-EVA1" for the RCPv2 tally will be enabled on the camera from the DB9 connector (EXT I/O) directly on the RCPv2 panel.

Integrating Tally directly via IP from Video Switchers

It is possible to integrate tally directly from a Video Switcher we have a Device Core for. In the case of a ATEM Switcher the following steps needs to be taken to achieve Tally control on the camera:

- Add an ATEM Device Core to the configuration
- Add actions to the Hardware Component "Controller" like illustrated below (remember to set "Hold Down"



It is also recommend to enable Tally feedback on the "ID Tally" bar via the following action: