Device: Panasonic PTZ

Compatibility

With our Panasonic PTZ Device Core we currently have comprehensive support for the:

- AW-UE150
- AW-HE130
- AW-HE120
- AW-UE100
- AW-UE70/AW-UN70
- AW-HE50
- AW-HE42
- AW-HE40
- AK-UB300

The complete lineup are not supported as the protocol varies for each model. We have integrated with the models we have had a high demand for and/or have had a chance to integrate with. For cameras *not* on the above list just basic pan, tilt, zoom and preset functionality are integrated as the protocol remains the same for these features across all models.

Description of the Panasonic PTZ Device Core from
https://www.skaarhoj.com/support/device-cores/

Note about AWB Exec

Notice when an auto white balance is executed the controller will momentarily loose connection to the camera, as the camera stops responding during this process.

Note about Panasonic AW-HN130

We have not tested the AW-HN130 but many have reported that we are able to control the camera similar to the AW-HE130. However, AW-HN130 firmware v.2.38 has been known to cause the controller to freeze. We do not recommend running your camera with that firmware version at this time.

Note about Panasonic UE100s + UE150s

Since our Panasonic device core is able to connect to a large variety of models from a single device core, it has gotten very large. For this reason after v2.5.6, it is no longer possible to control 8x cameras from a single device core but only 7x. If there is no need to control the UE100, then rolling back to v2.5.6 will allow for a connection to 8x cameras from a single core. Additionally after v2.5.6, it is no longer possible to connect to more than 3x UE150s at any one time. Unfortunately the effect that this has had causes the controller to freeze up. Please check the Installation and Operations Manual for instructions on rolling back to an earlier firmware.

The size of the core also makes it important to limit the number of other connected devices as this can overwhelm the processor board and memory. The best way to determine where the limit is, is to build up the configuration slowly one device core at a time. We are working on a solution, though we are no sure if that will be within the UniSketch platform or only on Reactor/Blue Pill.

Device Configurations

Device configuration options exist:

- Index 0: **Connect Timeout in ms**

- Index 1: **Reply Timeout in ms**

- Index 2: **IPs for Camera Groups**

- Index 3: **Time between each parameter query request PER camera in ms**

Connect + Reply Timeout

Default Connect Timeout = 100 ms. Timeout for the camera to accept the TCP connection.

Default Reply Timeout = 200 ms. When connection have been accepted, the reply timeout is the time the controller waits for a reply.

In general increasing timeouts will decrease responsive but increase connection stability. The default values have been chosen based on tests at our facility but is not necessarily suitable for all cases.

Camera Groups

Index 2 have the following structure:
        D0:2="[xxx.xxx.xxx.xxx, yyy.yyy.yyy.yyy, ...],[zzz.zzz.zzz.zzz]"

This enables camera groups. Notice the outer quotes ", if there's an error in this device core option it will fallback to the regular configured IP address. The format is such that each group is an array separated by a comma ,. Inside each group it's also just simple ip addresses separated by a comma ,. There's not any limit to the IPs per group but the system won't handle anything more than 8 per group. There's no limit to the number of groups besides the maximum 13 in the frontend. See example 3 for use case.

Parameter query requests

Default time between *each* parameter query request *per* camera = 1500 ms. To begin with a controller will query all parameters for all cameras connected to a controller. Thereafter a controller will only query parameters updates from the camera on a 1.5 s interval between query requests per camera.   This parameter is set to 1.5 seconds to improve connection stability when either:

• Two (or more) SKAARHOJ controllers are connected to the same camera

• A SKAARHOJ controller *and* a Panasonic controller is connected to the same camera

• A SKAARHOJ controller and the web interface is used to control the same camera

This means if a parameter is changed on SKAARHOJ controller #1 it will not be instantly reflected on SKAARHOJ controller #2, or the Panasonic controller, or the web interface. It also means if a change is made on the Panasonic controller or the web interface it will not be instantly reflected on the SKAARHOJ controller. The parameter query time have been implemented to support cases where one operator is in charge of PTZ control (controller #1) while another operator is in charge shading control (controller #2).

The time can be lowered if you have less complex setups and want faster responds on the connected units. See example 4 for use case.

Example 1:

Setting "Reply Timeout" to 250 ms could look like this device configuration code: "D0:1=250" where the general form would be "Dx:y=z" where "x" is the number of the device core as installed on the controller (starting with zero for the first device core), "y" the index number and "z" the value for that index.
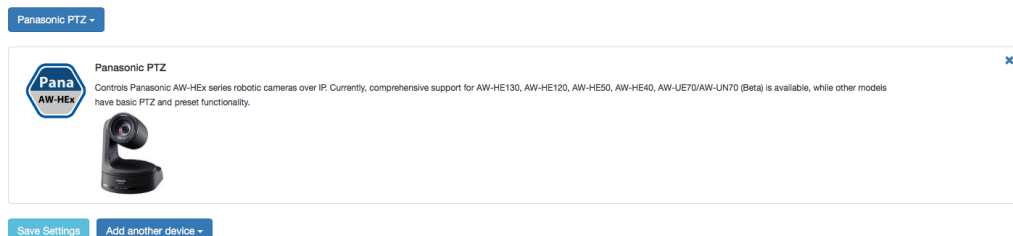
To confirm that a device configuration is in fact detected by the controller, please check it out on the serial monitor where it will be mentioned:
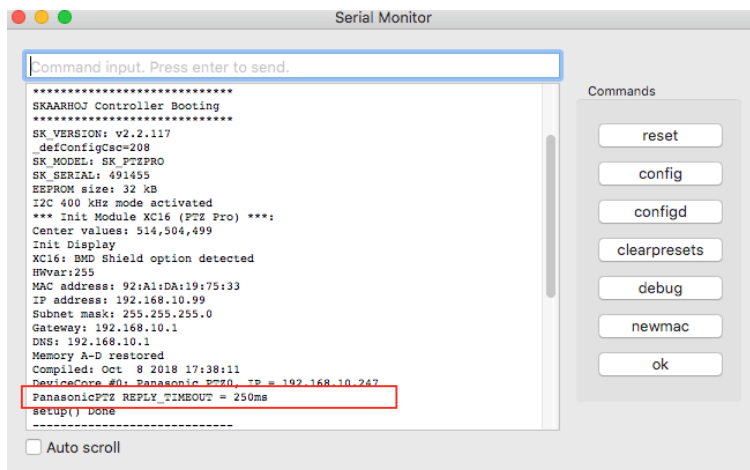
Example: If the Panasonic PTZ device core is the first like below:

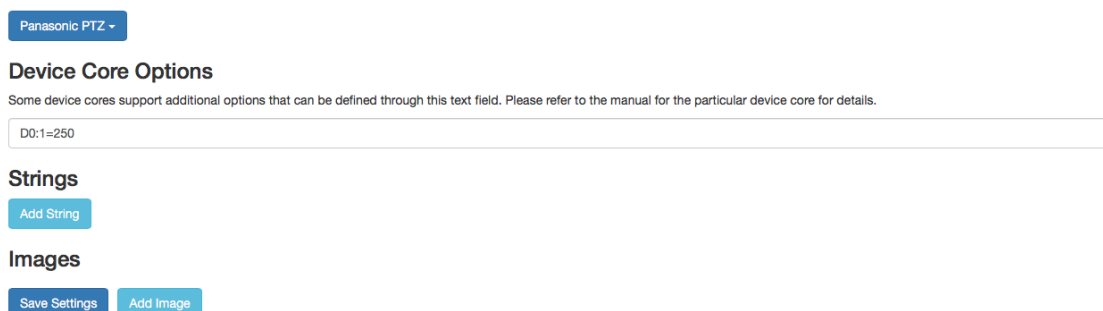Then setting the "Connect Timeout" would be set by this configuration under "Manage Media" on your configuration page for your controller on <u>cores.skaarhoj.com</u>

Example 2:

Setting "Connect Timeout" to 200 ms and "Reply Timeout" to 250 ms could look like this device configuration code

D0:0=200,1=250
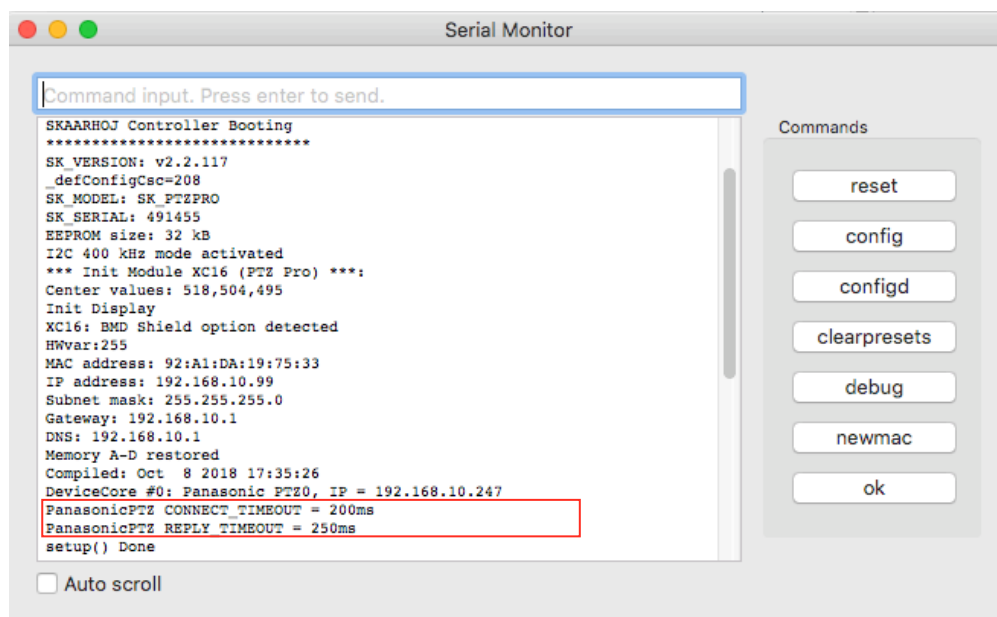
Example 3:

Setting "Groups IPs" could look like this device configuration code

> D0:2="[192.168.10.100, 192.168.10.101, 192.168.10.102, 192.168.10.103, 192.168.10.104, 192.168.10.105, 192.168.10.106, 192.168.10.107],[192.168.10.109, 192.168.10.110, 192.168.10.111, 192.168.10.112, 192.168.10.113, 192.168.10.114, 192.168.10.115, 192.168.10.116]"

Where
> Group 1 have IPs 192.168.10.100 to 192.168.10.107
> Group 2 have IPs 192.168.10.109 to 192.168.10.116

To confirm that a device configuration is in fact detected by the controller, please check it out on the serial monitor where it will be mentioned:

```
                                          Serial Monitor

 Command input. Press enter to send.                                          Commands

  Center values: 511,488,483
 Preset 1 loaded                                                                 reset
 HWvar:255
 MAC address: 92:A1:DA:C6:A9:EF                                                  config
 IP address: 192.168.10.253
 Subnet mask: 255.255.255.0                                                      configd
 Gateway: 192.168.10.1
 DNS: 192.168.10.1
 Memory A-D restored                                                          clearpresets
 Compiled: Oct 11 2019 15:07:06
 D0[2] = "[192.168.10.100, 192.168.10.101, 192.168.10.102, 192.168.10.103, 192.168.10.104, 192.168.10.105, 192.168.10.106, 192.168.10.107],    debug
 [192.168.10.109, 192.168.10.110, 192.168.10.111, 192.168.10.112, 192.168.10.113, 192.168.10.114, 192.168.10.115, 192.168.10.116]"
 DeviceCore #0: Panasonic PTZ0, IP = 192.168.10.248                            newmac
 Loaded 2 IP goups with 16 IPs total
  - Group: 1: 192.168.10.100, 192.168.10.101, 192.168.10.102, 192.168.10.103, 192.168.10.104, 192.168.10.105, 192.168.10.106, 192.168.10.107,    ok
  - Group: 2: 192.168.10.109, 192.168.10.110, 192.168.10.111, 192.168.10.112, 192.168.10.113, 192.168.10.114, 192.168.10.115, 192.168.10.116,
 Camera groups activated
 setup() Done
 ----------------------------
 System action 16
 System action 17
 Attempting connection to 'Unknown' at 192 168 10 100
 Auto scroll
```
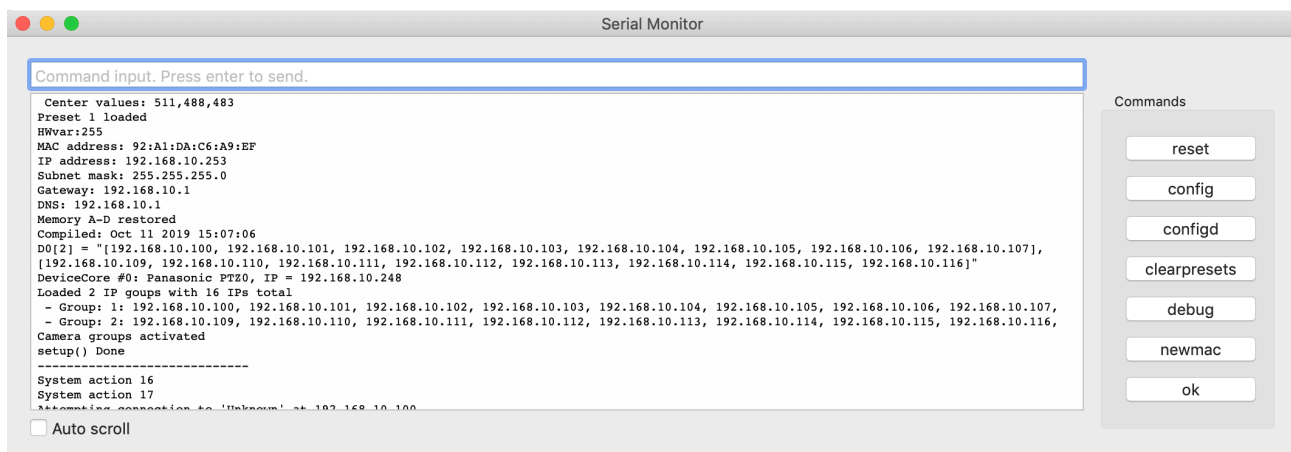
Example 4:

Setting "parameter query request PER camera" to 1000 ms could look like this device configuration code
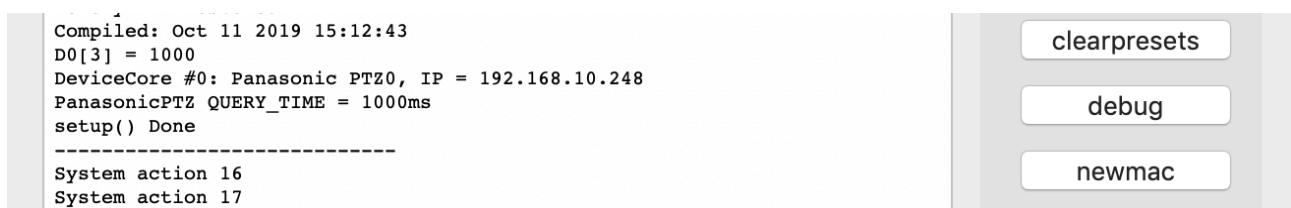
> D0:3=1000

To confirm that a device configuration is in fact detected by the controller, please check it out on the serial monitor where it will be mentioned:

```
 Compiled: Oct 11 2019 15:12:43                          clearpresets
 D0[3] = 1000
 DeviceCore #0: Panasonic PTZ0, IP = 192.168.10.248          debug
 PanasonicPTZ QUERY_TIME = 1000ms
 setup() Done                                              newmac
 ----------------------------
 System action 16
 System action 17
```

An excerpt of the list of Panasonic PTZ related actions.

Notice some actions are camera dependent. Please check the camera manual/protocol if specific actions are supported for your type of camera

Panasonic PTZ: Pan

Panasonic PTZ: Tilt

Panasonic PTZ: Pan/Tilt

Panasonic PTZ: Zoom

Panasonic PTZ: Zoom (Binary)

Panasonic PTZ: Auto Focus

Panasonic PTZ: Focus

Panasonic PTZ: Creep Focus (AK-UB300)

Panasonic PTZ: Focus One Push

Panasonic PTZ: Auto Iris

Panasonic PTZ: Iris

Panasonic PTZ: Sensor Gain

Panasonic PTZ: Shutter

Panasonic PTZ: Synchro-Scan

Panasonic PTZ: Auto Shutter Limit

Panasonic PTZ: Shutter Mode

Panasonic PTZ: Shutter SW (Ak-UB300)

Panasonic PTZ: Scene File

Panasonic PTZ: AWB Mode

Panasonic PTZ: AWB Exec

Panasonic PTZ: ABB Exec

Panasonic PTZ: Master Pedestal

Panasonic PTZ: WB R/B Gain

Panasonic PTZ: Pedestal R/G/B

Panasonic PTZ: Pedestal Offset (AW-UE150)

Panasonic PTZ: Detail

Panasonic PTZ: Advanced Detail

Panasonic PTZ: Contrast Level

Panasonic PTZ: Color Temperature

Panasonic PTZ: ND Filter

Panasonic PTZ: Chroma Level

Panasonic PTZ: Chroma Phase (AW-UE150)

Panasonic PTZ: DRS

Panasonic PTZ: Knee Mode

Panasonic PTZ: Auto Knee Response

Panasonic PTZ: Knee Point

Panasonic PTZ: Knee Slope

Panasonic PTZ: Preset

Panasonic PTZ: Preset Speed

Panasonic PTZ: Set Tally

Panasonic PTZ: Audio Control

Panasonic PTZ: Audio Volume

Panasonic PTZ: Output Format

Panasonic PTZ: Zoom Pan/Tilt Speed Adjust

Panasonic PTZ: Invert PTZ Control

Panasonic PTZ: Install Position

Panasonic PTZ: UHD Crop - Mode (AW-UE150)

Panasonic PTZ: UHD Crop - SDI Out Select

Panasonic PTZ: UHD Crop - IP Out

Panasonic PTZ: UHD Crop - Marker Select

Panasonic PTZ: UHD Crop - Output Select

Panasonic PTZ: UHD Crop - H Adjust

Panasonic PTZ: UHD Crop - V Adjust

Panasonic PTZ: OSD Menu

Panasonic PTZ: OSD Menu Navigation

Panasonic PTZ: OSD Menu Mix

Panasonic PTZ: Night Mode On/Off

Panasonic PTZ: Night Mode Selection

Panasonic PTZ: Night Mode Level

Panasonic PTZ: PTZ Cruise Control

Panasonic PTZ: PTZ Trace

Panasonic PTZ: Power

Panasonic PTZ: Speed Limit

Panasonic PTZ: Camera Select

Panasonic PTZ: Camera Group Select

Tally

In some cases it can be desirable to route tally to the PTZ cameras based on tally from a video switcher. This can to some degree be done from the hardware interface often called "Controller" on our panels. This interface is constantly evaluated. There is a limit to how many actions can be assigned onto this interface, but we are working on a way to expand this.

In the case of a PTZ Fly and ATEM Tally it would be done the following way:

- Add the ATEM Device Core and set IP Setting
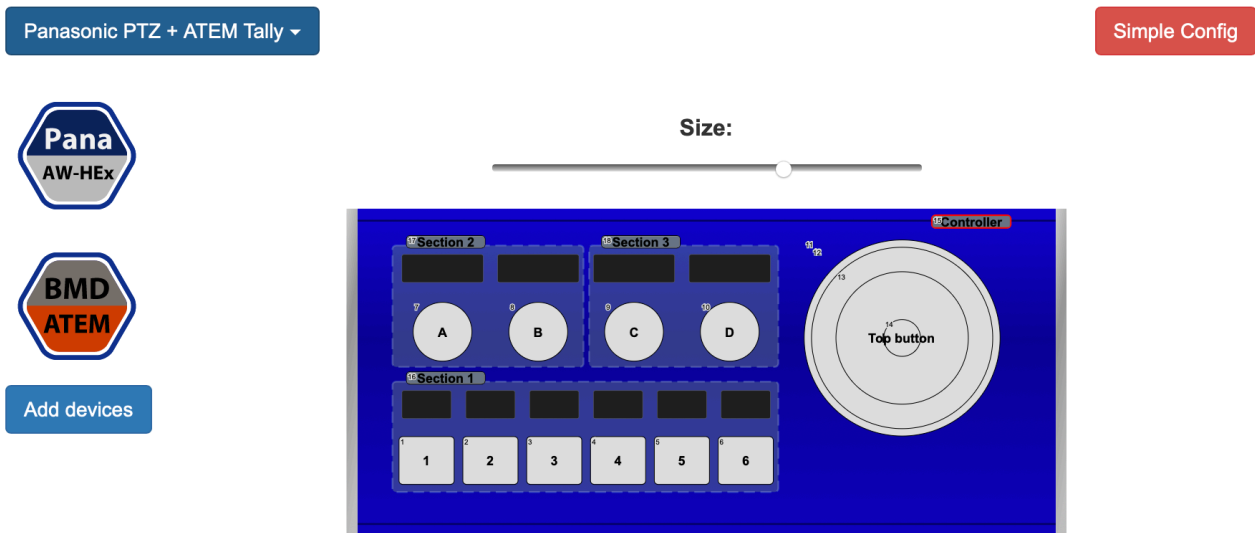
- On the Controller Interface add the below actions. This instructs the system to enable tally on Cam 1-4 based on ATEM Program 1-4 . The mapping can be differently.

AK-UB300 Notes

For the AK-UB300 integration the following actions have been implemented:

- Iris
- Auto iris
- AWB execute
- ABB execute
- Pedestal
- Pedestal R/B
- Shutter SW
- Shutter
- Shutter Mode
- Gain R/B
- Format
- ND Filter
- Scene

The following list has been implemented but not tested fully:

- Knee mode
- Auto Knee response
- Knee Point
- Knee slope
- Chroma level
- Contrast

The following list is NOT working:

- Zoom (Implemented, sends right commands, camera responds with OK but no change in zoom)
- Focus (Not implemented. Tested commands in browser, camera responds OK but no change in focus)
- Color temp