

## Device: AJA Ki Pro Ultra



### Introduction

The AJA Ki Pro Ultra is a file based 4K/UltraHD/2K/HD video recorder and player that supports edit ready Apple ProRes or Avid DNxHR files in a range of video formats and frame rates up to 4K, and Avid DNxHD MXF files at HD resolutions. The AJA Ki Pro can be remotely controlled by a SKAARHOJ control panel. The complete feature set is not implemented but a few practical actions can be found. This document gives you an overview of possible control parameters.

The implementation have been done on a AJA Ki Pro Ultra with Software Version 3.1.1.3.

Please notice the Device Core will *not* work if User Authentication have been set.

User Authentication

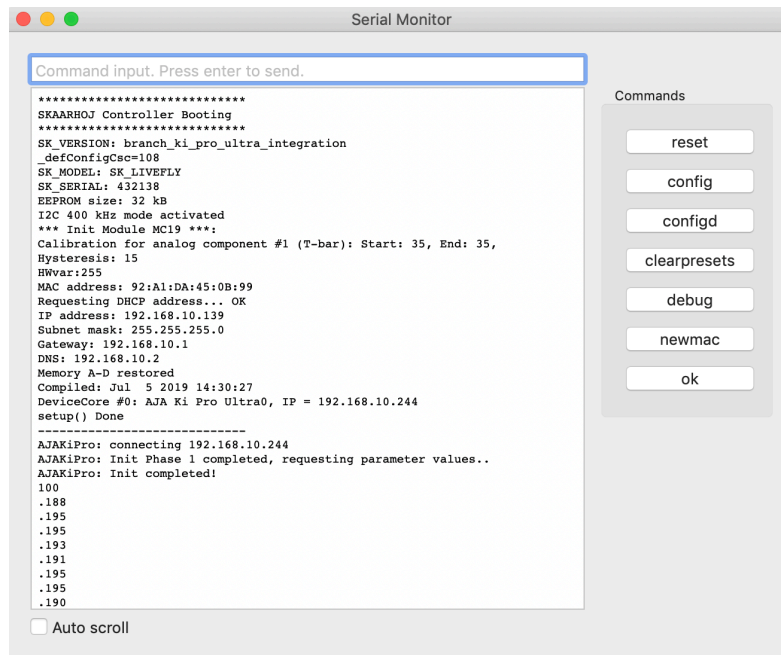
Disabled

### Device Core Details

For the actions "Shuttle" + "Replay Speed" our integration is limited to what the AJA Ki Pro Ultra + the protocol allows. This means that when using "Shuttle" + "Replay Speed" one will **not** experience a "smooth" behaviour on the AJA Ki Pro as seen on traditional replay systems. The behaviour is similar to when operating the front panel on the AJA Ki Pro for fast forward/reverse. There is a delay from when the button is pressed to an actual change in playback speed. First the clip pauses for a brief moment and *then* it initiates fast forward/reverse playback. The operation from the SKAARHOJ panel will be the same as this.

## Connection

When a SKAARHOJ device have successfully connected to the AJA Ki Pro Ultra the serial monitor will report:



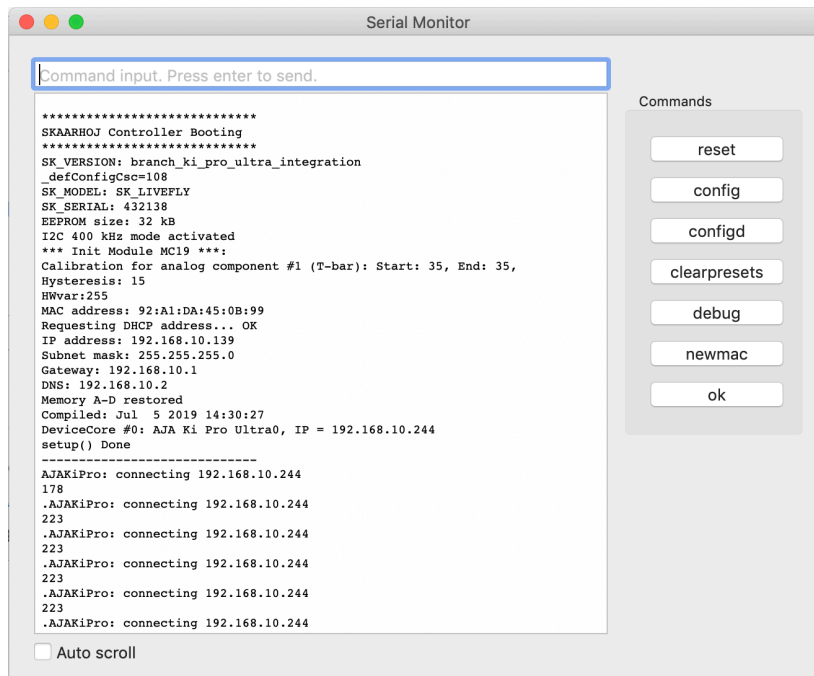
The Serial Monitor window displays the following output:

```

*****
SKAARHOJ Controller Booting
*****
SK_VERSION: branch_ki_pro_ultra_integration
defConfigCec=108
SK_MODEL: SK_LIVEFLY
SK_SERIAL: 432138
EEPROM size: 32 kB
I2C 400 kHz mode activated
*** Init Module MC19 ***:
Calibration for analog component #1 (T-bar): Start: 35, End: 35,
Hysteresis: 15
HWvar:255
MAC address: 92:A1:DA:45:0B:99
Requesting DHCP address... OK
IP address: 192.168.10.139
Subnet mask: 255.255.255.0
Gateway: 192.168.10.1
DNS: 192.168.10.2
Memory A-D restored
Compiled: Jul  5 2019 14:30:27
DeviceCore #0: AJA Ki Pro Ultra0, IP = 192.168.10.244
setup() Done
-----
AJAKiPro: connecting 192.168.10.244
AJAKiPro: Init Phase 1 completed, requesting parameter values..
AJAKiPro: Init completed!
100
.188
.195
.195
.193
.191
.195
.195
.190
  
```

On the right side, the Commands panel includes buttons for: reset, config, configd, clearpresets, debug, newmac, and ok.

If the SKAARHOJ device are unable to locate the AJA Ki Pro Ultra on the network the serial monitor will report:



The Serial Monitor window displays the following output:

```

*****
SKAARHOJ Controller Booting
*****
SK_VERSION: branch_ki_pro_ultra_integration
defConfigCec=108
SK_MODEL: SK_LIVEFLY
SK_SERIAL: 432138
EEPROM size: 32 kB
I2C 400 kHz mode activated
*** Init Module MC19 ***:
Calibration for analog component #1 (T-bar): Start: 35, End: 35,
Hysteresis: 15
HWvar:255
MAC address: 92:A1:DA:45:0B:99
Requesting DHCP address... OK
IP address: 192.168.10.139
Subnet mask: 255.255.255.0
Gateway: 192.168.10.1
DNS: 192.168.10.2
Memory A-D restored
Compiled: Jul  5 2019 14:30:27
DeviceCore #0: AJA Ki Pro Ultra0, IP = 192.168.10.244
setup() Done
-----
AJAKiPro: connecting 192.168.10.244
178
.AJAKiPro: connecting 192.168.10.244
223
.AJAKiPro: connecting 192.168.10.244
223
.AJAKiPro: connecting 192.168.10.244
223
.AJAKiPro: connecting 192.168.10.244
223
.AJAKiPro: connecting 192.168.10.244
  
```

On the right side, the Commands panel includes buttons for: reset, config, configd, clearpresets, debug, newmac, and ok.

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



- AJA KiPro Ultra Plus: Play
- AJA KiPro Ultra Plus: Stop
- AJA KiPro Ultra Plus: Record
- AJA KiPro Ultra Plus: Next Clip
- AJA KiPro Ultra Plus: Previous Clip
- AJA KiPro Ultra Plus: Fast Forward
- AJA KiPro Ultra Plus: Fast Reverse
- AJA KiPro Ultra Plus: Jog
- AJA KiPro Ultra Plus: Clip Select
- AJA KiPro Ultra Plus: Shuttle
- AJA KiPro Ultra Plus: Replay Speed
- AJA KiPro Ultra Plus: Time Code

This is a table of actions for AJA Ki Pro Ultra Device Core

<p><b>Play</b></p> <p><b>Normal</b> <span>INS CP</span></p> <p>AJA KiPro Ultra Plus: Play <span>✓</span></p> <p>+ <span>Toggle</span> <span>Hold Down</span></p>	<p>Starts playback on the Ki Pro</p> <p><i>Binary triggers:</i> Activates playback. If Toggle is selected, playback is stopped if it is already running. If Hold Down is selected, playback will stop again when the trigger is released.</p> <p><i>Pulse inputs:</i> Will turn on/off playback</p> <p><i>Analog inputs:</i> Not implemented</p> <p><i>Binary outputs:</i> Not implemented</p> <p><i>Button colors:</i> Green when playing</p> <p><i>Displays:</i> When stopped: KiProUltra/Play/Filename When playing: KiProUltra/Playing/Filename</p>
<p><b>Stop</b></p> <p><b>Normal</b> <span>INS CP</span></p> <p>AJA KiPro Ultra Plus: Stop</p> <p>+ <span>INS CP</span></p>	<p>Stops the Ki Pro.</p> <p><i>Binary triggers:</i> Stop the Ki Pro</p> <p><i>Pulse inputs:</i> Will stop Ki Pro</p> <p><i>Analog inputs:</i> Not implemented</p> <p><i>Binary outputs:</i> Not Implemented</p> <p><i>Button colors:</i> Highlighted when stopped, otherwise dim</p> <p><i>Displays:</i> Shows "Stopped" if Ki Pro is stopped, otherwise "Stop".</p>
<p><b>Record</b></p> <p><b>Normal</b> <span>INS CP</span></p> <p>AJA KiPro Ultra Plus: Record <span>✓</span></p> <p>+ <span>Toggle</span> <span>Hold Down</span></p>	<p>Starts Recording on the Ki Pro</p> <p><i>Binary triggers:</i> Activates Recording. If Toggle is selected, Recording is stopped if it is already running. If Hold Down is selected, Record will stop again when the trigger is released.</p> <p><i>Pulse inputs:</i> Will start/stop recording</p> <p><i>Analog inputs:</i> Not implemented</p> <p><i>Binary outputs:</i> Not implemented</p> <p><i>Button colors:</i> Red when recording, otherwise dim</p> <p><i>Displays:</i> Shows "Recording" if the Ki Pro is recording, otherwise "Record"</p>
<p><b>Next Clip</b></p> <p><b>Normal</b> <span>INS CP</span></p> <p>AJA KiPro Ultra Plus: Next Clip</p> <p>+ <span>INS CP</span></p>	<p>Goes to next clip</p> <p><i>Binary triggers:</i> Select next clip</p> <p><i>Pulse inputs:</i> Select next/prev clip</p> <p><i>Analog inputs:</i> Not implemented</p> <p><i>Binary outputs:</i> Not implemented</p> <p><i>Button colors:</i> Highlighted when next clip activated. Otherwise dimmed</p> <p><i>Displays:</i> Shows "KiProUltra/Next Clip"</p>

## Previous Clip

Normal

INS CP

AJA KiPro Ultra Plus: Previous

+

Goes to previous clip

*Binary triggers:* Select previous clip

*Pulse inputs:* Select next/prev clip

*Analog inputs:* Not implemented

*Binary outputs:* Not implemented

*Button colors:* Highlighted when previous clip activated. Otherwise dimmed

*Displays:* Shows "KiProUltra/Prev Clip"

Play through the clip at 2x, 4x, 8x and 16x speed

## Fast Forward

Normal

INS CP

AJA KiPro Ultra Plus: Fast Forw

+

*Binary triggers:* Starts playback at 2x speed. When pressed again 4x speed. When pressed again 8x speed. When pressed again 16x speed

*Pulse inputs:* Not implemented

*Analog inputs:* Not implemented

*Binary outputs:* Not implemented

*Button colors:* Highlighted when Fast Forward in process otherwise dimmed

*Displays:* Shows "KiProUltra/Fast FW/x"

Reverse through the clip at 1x ,2x, 4x, 8x and 16x speed

## Fast Reverse

Normal

INS CP

AJA KiPro Ultra Plus: Fast Reve

+

*Binary triggers:* Starts reverse at 1x speed. When pressed again 2x speed. When pressed again 4x speed. When pressed again 8x speed. When pressed again 16x speed

*Pulse inputs:* Not implemented

*Analog inputs:* Not implemented

*Binary outputs:* Not implemented

*Button colors:* Highlighted when Fast Reverse in process otherwise dimmed

*Displays:* Shows "KiProUltra/Fast RW/x"

Jog through video frame by frame

## Jog

Normal

INS CP

AJA KiPro Ultra Plus: Jog

+

Forward  
Reverse

*Binary triggers:* Moves forward/backwards frame by frame. When pres and hold continuously jog (Forward/Reverse must be set)

*Pulse inputs:* Moves forward/backwards frame by frame (select blank option)

*Analog inputs:* Not implemented

*Binary outputs:* Not implemented

*Button colors:* Highlighted when a frame is skipped. Otherwise dimmed

*Displays:* Shows "KiProUltra/JOG/Forward-Reverse"

Select clip

## Clip Selection

Normal

INS CP

AJA KiPro Ultra Plus: Clip Selec

+

*Binary triggers:* Not implemented

*Pulse inputs:* Scroll through next/previous clip

*Analog inputs:* Not implemented

*Binary outputs:* Not implemented

*Button colors:* Not implemented

*Displays:* Shows "KiProUltra/Clip/Filename"

## Shuttle

**Normal** INS CP

AJA KiPro Ultra Plus: Shuttle ✓ x1

+ x2  
x4  
x8  
x16

#5 5

Activates shuttle with the maximum value defined from the drop down selection. If "x16" is selected the maximum shuttle speed is x16

*Binary triggers:* Not implemented

*Pulse inputs:* Not implemented

*Analog inputs:* Not implemented

*Speed inputs:* Activate shuttle

*Binary outputs:* Not implemented

*Button colors:* Not implemented

*Displays:* Shows "KiProUltra/Shuttle/Speed"

Sets the Replay Speed

## Replay Speed

**Normal** INS CP

AJA KiPro Ultra Plus: Replay Sp▼

+

*Binary triggers:* Not implemented

*Pulse inputs:* Not implemented

*Analog inputs:* Sets playback speed between 0% and 100%

*Binary outputs:* Not implemented

*Button colors:* Not implemented

*Displays:* Not implemented

Sole purpose to display the Time Code

## Time Code

**Normal** INS CP

AJA KiPro Ultra Plus: Time Cod▼

+

*Binary triggers:* Not implemented

*Pulse inputs:* Not implemented

*Analog inputs:* Not implemented

*Binary outputs:* Not implemented

*Button colors:* Not implemented

*Displays:* Shows "KiProUltra/Timecode/values"