Device: AJA FS4

Introduction

A number of parameters on the AJA FS4 frame synchronizer can be controlled from a SKAARHOJ control panel. The complete feature set is not implemented but a large variety of actions can be found. This document gives you an overview of possible control parameters.

The implementation have been done on a FS4 with Software Version 1.2.07.

Connection

Due to the amount of information on the FS4 a connection time is approximately 30 seconds. Connection status is shown in the serial monitor.

Connection

From the same panel it is possible to control the 4 different 2K/HD/SD channels and switch between these on the fly. Alternatively if the FS4 is in 4K/UltraHD mode just 1 channel is possible to control. When relevant the channel for Actions on the FS4 Device Core can be set to Mem A-D, Mem AA-BB or Video 0-4. In the default configurations you will often find this set to Mem A so the different channels can be controlled on the fly by changing the Memory Parameter A to values between 0 to 4 elsewhere on the panel. The mapping between the Memory A and channels are shown below.

Mem A = 0 = Video 0 (this is used in 4K/UltraHD mode)

Mem A = 1 = Video 1 = Channel Video 1

Mem A = 2 = Video 2 = Channel Video 2

Mem A = 3 = Video 3 = Channel Video 3
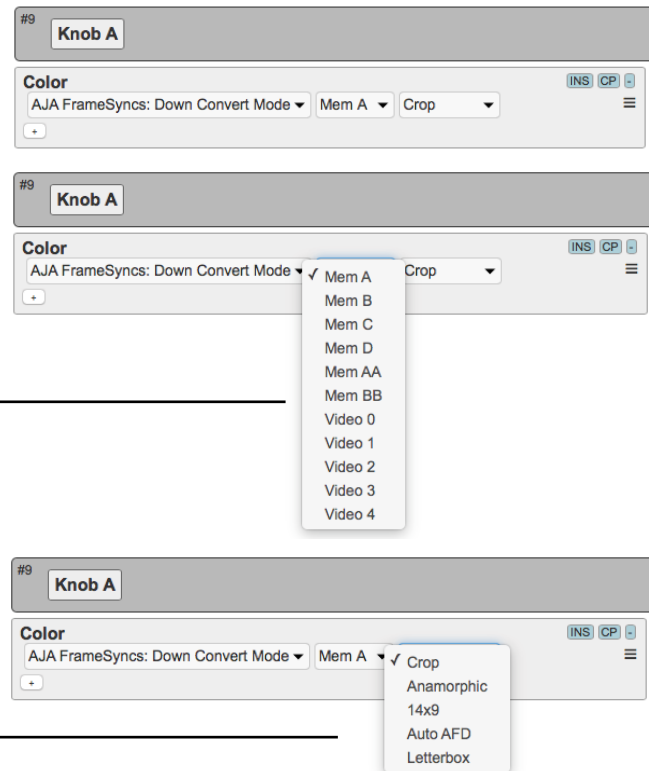
Mem A = 4 = Video 4 = Channel Video 4

A action is typically build up of two parameters:

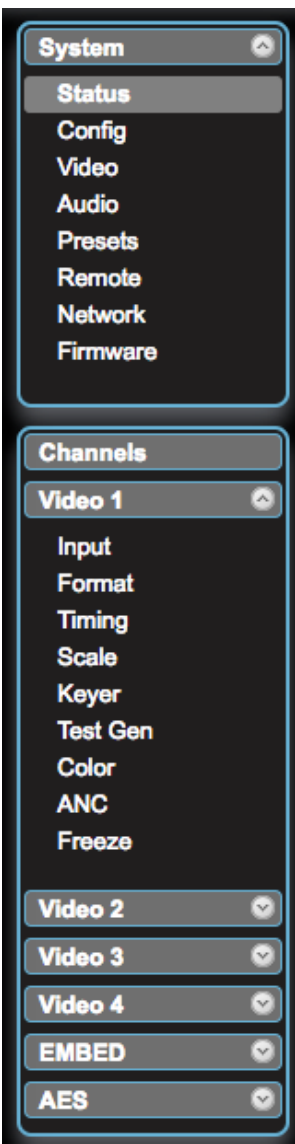- Selection of the Video Channel on the FS4

- Selection of a specific value if it exists

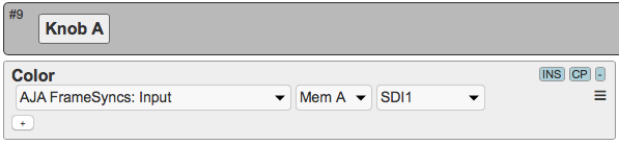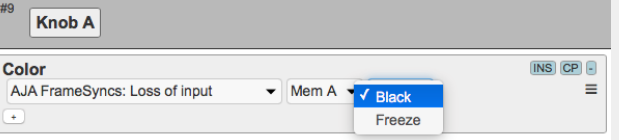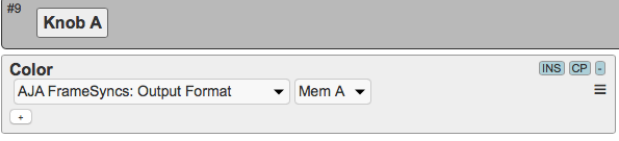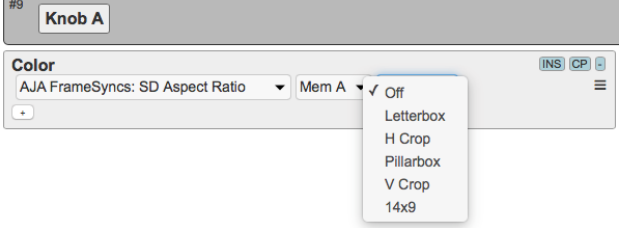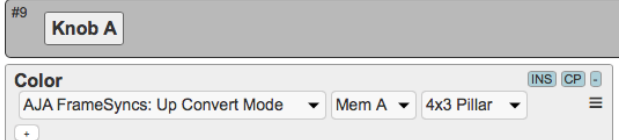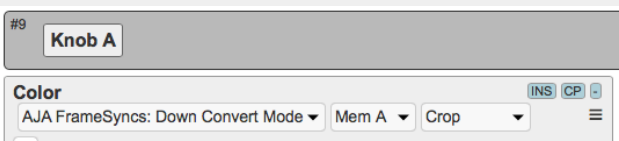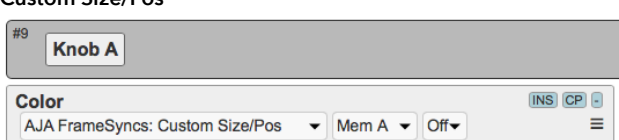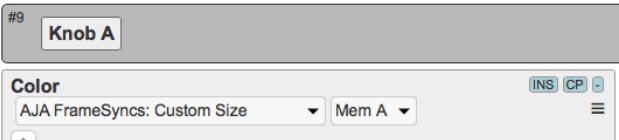This is a overview of the actions implemented in the Device Core

✓
AJA FrameSyncs: Input
AJA FrameSyncs: Loss of input
AJA FrameSyncs: Output Format
AJA FrameSyncs: SD Aspect Ratio
AJA FrameSyncs: Up Convert Mode
AJA FrameSyncs: Down Convert Mode
AJA FrameSyncs: Custom Size/Pos
AJA FrameSyncs: Custom Size
AJA FrameSyncs: Custom Aspect
AJA FrameSyncs: Custom Position
AJA FrameSyncs: Region of Interest
AJA FrameSyncs: ROI
AJA FrameSyncs: Test Pattern Gen
AJA FrameSyncs: Test Pattern Type
AJA FrameSyncs: ProcAmp Enable
AJA FrameSyncs: Color Corrector
AJA FrameSyncs: ProcAmp Settings
AJA FrameSyncs: Gain
AJA FrameSyncs: Black
AJA FrameSyncs: Gamma
AJA FrameSyncs: Video Legalizer
AJA FrameSyncs: Video Legalizer Settings
AJA FrameSyncs: Freeze Output
AJA FrameSyncs: Fan Speed
AJA FrameSyncs: Output Frame Rate
AJA FrameSyncs: Genlock Source
AJA FrameSyncs: Mon 2K Crop
AJA FrameSyncs: HDMI RGB Range
AJA FrameSyncs: Monitor Map
AJA FrameSyncs: Preset
AJA FrameSyncs: Audio Embed Map
AJA FrameSyncs: Audio Out

The Actions are divided by using the control categories from the Frame Sync.

AJA FrameSyncs Actions	Category
AJA FrameSyncs: Input	Channels - Input
AJA FrameSyncs: Loss of input	
AJA FrameSyncs: Output Format	Channels - Format
AJA FrameSyncs: SD Aspect Ratio	
AJA FrameSyncs: Up Convert Mode	
AJA FrameSyncs: Down Convert Mode	
AJA FrameSyncs: Custom Size/Pos	Channels - Scale
AJA FrameSyncs: Custom Size	
AJA FrameSyncs: Custom Aspect	
AJA FrameSyncs: Custom Position	
AJA FrameSyncs: Region of Interest	
AJA FrameSyncs: ROI	
AJA FrameSyncs: Test Pattern Gen	Channels - Test Gen
AJA FrameSyncs: Test Pattern Type	
AJA FrameSyncs: ProcAmp Enable	Channels - Color
AJA FrameSyncs: Color Corrector	
AJA FrameSyncs: ProcAmp Settings	
AJA FrameSyncs: Gain	
AJA FrameSyncs: Black	
AJA FrameSyncs: Gamma	
AJA FrameSyncs: Video Legalizer	
AJA FrameSyncs: Video Legalizer Settings	
AJA FrameSyncs: Freeze Output	Channels - Freeze
AJA FrameSyncs: Fan Speed	Status - Config
AJA FrameSyncs: Output Frame Rate	Status - Video
AJA FrameSyncs: Genlock Source	
AJA FrameSyncs: Mon 2K Crop	
AJA FrameSyncs: HDMI RGB Range	
AJA FrameSyncs: Monitor Map	
AJA FrameSyncs: Preset	Status - Presets
AJA FrameSyncs: Audio Embed Map	Channels - EMBED + AES
AJA FrameSyncs: Audio Out	

System
Status
Config
Video
Audio
Presets
Remote
Network
Firmware

Channels
Video 1
Input
Format
Timing
Scale
Keyer
Test Gen
Color
ANC
Freeze

Video 2
Video 3
Video 4
EMBED
AES

This is a table of actions for AJA FS4 Device Core

Input 	Routes input to the selected Channel *Binary triggers:* Sets the selected input to the selected channel. *Pulse inputs:* Will cycle through the Inputs for the selected channel. *Displays:* "Input/Input x"
Loss of input 	Selects option for Loss of input *Binary triggers:* Sets the selected mode for loss of input. *Pulse inputs:* Will cycle through options for loss of input *Displays:* "In Loss/mode"
Output Format 	Selects Output Format *Binary triggers:* Not implemented *Pulse inputs:* Will cycle through options for Output Format *Displays:* "Output/Format"
SD Aspect Ratio 	Selects SD Aspect Ratio *Binary triggers:* Sets the selected SD Aspect Ratio *Pulse inputs:* Will cycle through options for Aspect Ratio *Displays:* "SD Aspect/mode"
Up Convert Mode 	Selects Up Convert Mode *Binary triggers:* Sets the selected Up Convert Mode *Pulse inputs:* Will cycle through options for Convert Mode *Displays:* "Up Conv/mode"
Down Convert Mode 	Selects Down Convert Mode *Binary triggers:* Sets the selected Down Convert Mode *Pulse inputs:* Will cycle through options for Convert Mode *Displays:* "Dn Conv/mode"
Custom Size/Pos 	Turn off/on Custom Size/Position *Binary triggers:* Sets Custom Size/Postion to on/off *Pulse inputs:* Will cycle through on/off for Custom Size/Pos *Displays:* "Cust S/P/mode"
Custom Size 	Sets the Custom Size *Binary triggers:* Not implemented *Pulse inputs:* Will set the custom size *Displays:* "Cust Size/%"

Custom Aspect

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: Custom Aspect | Mem A | ☰
+

Sets the Custom Aspect

Binary triggers: Not implemented

Pulse inputs: Will set the custom aspect

Displays: "Cust Asp/%"

Custom Postion

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: Custom Position | Mem A | ✓ H | ☰
+ | V

Sets the Custom Position for either H or V

Binary triggers: Not implemented

Pulse inputs: Will set the custom position for H or V

Displays: "CustPos H/%" or "CustPos V/%"

Region of Interest

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: Region of Interest | Mem A | ✓ Off | ☰
+ | Setup
| On Square
| On Full

Sets the Region of Interest

Binary triggers: Sets Region of Interest. If Toggle is selected it will toggle between "Off" and the selected option.

Pulse inputs: Will cycle through options for Region of Interest

Displays: "ROI Mode/mode"

ROI

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: ROI | Mem A | ✓ Left | ☰
+ | Right
| Top
| Bottom
#10 | Knob B

Sets the ROI parameters

Binary triggers: Not implemented

Pulse inputs: Will cycle through the selected ROI parameter

Displays: "ROI Left/%", "ROI Right/%", "ROI Top/%", "ROI Bottom/%"

Test Pattern Gen

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: Test Pattern Gen | Mem A | Off | ☰
+

Controls the Test Pattern Generator

Binary triggers: Sets the generator to on or off

Pulse inputs: Will cycle through on/off

Displays: "Test Gen/mode"

Test Pattern Type

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: Test Pattern Type | Mem A | ✓ 75% Bars | ☰
+ | Black
| 100% Bars
#10 | Flat Field

Controls the Test Pattern Type

Binary triggers: Sets the type to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "Test Ptrn/mode"

ProcAmp Enable

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: ProcAmp Enable | Mem A | Off | ☰
+

Sets ProcAmp to on or off

Binary triggers: Sets ProcAmp to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "ProcAmp/mode"

Color Corrector

#9 | Knob A

Color | INS CP -
AJA FrameSyncs: Color Corrector | Mem A | Off | ☰
+

Sets Color Corrector to on or off

Binary triggers: Sets Color Corrector to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "ColorCorr/mode"

ProcAmp Settings

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: ProcAmp Settings ▼	Mem A ▼	✓ Gain	≡
+		Black	
		Hue	
#10	Knob B	Saturation	

Controls the 4 ProcAmp values

Binary triggers: Not implemented

Pulse inputs: Will cycle the selected ProcAmp parameter

Displays: "Gain/value" , "Black/value", "Hue/value", "Sat/value"

For "Gain" + "Black"
Analog inputs - Gain: Set the value between 0-1.5
Analog inputs - Black: Set the value between -20 - +20

Gain

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Gain ▼	Mem A ▼	✓ R	≡
+		G	
		B	

Controls the Color Corrector Gain RGB Values

Binary triggers: Not implemented

Pulse inputs: Will cycle the selected RGB Gain value

Displays: "Gain R/value" , "Gain G/value", "Gain B/value"

Black

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Black ▼	Mem A ▼	R▼	≡
+			

Controls the Color Corrector Black RGB Values

Binary triggers: Not implemented

Pulse inputs: Will cycle the selected RGB Black value

Displays: "Black R/value" , "Black G/value", "Black B/value"

Black

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Gamma ▼	Mem A ▼	✓ R	≡
+		G	
		B	

Controls the Color Corrector Gamma RGB Values

Binary triggers: Not implemented

Pulse inputs: Will cycle the selected RGB Gamma value

Displays: "Gamma R/value" , "Gamma G/value", "Gamma B/value"

Video Legalizer

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Video Legalizer ▼	Mem A ▼	Off ▼	≡
+			

Sets the Video Legalizer to on or off

Binary triggers: Sets the Video Legalizer to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "Legalizer/mode"

Video Legalizer Settings

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Video Legalizer Settin▼	Mem A ▼	✓ White	≡
+		Black	
		Chroma	
#10			

Controls the Video Legalizer Settings

Binary triggers: Not implemented

Pulse inputs: Will cycle through the selected values

Displays: "LegWhite/value", "LegBlack/value", "LegChroma/value"

Freeze Output

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Freeze Output ▼	Mem A ▼	Off▼	≡
+			

Controls the mode for Freeze Output

Binary triggers: Sets the Freeze Output to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "Freeze/mode"

Fan Speed

#9	Knob A			

Color			INS CP -
AJA FrameSyncs: Fan Speed ▼			≡
+			

Controls the Fan Speed

Binary triggers: Not implemented

Pulse inputs: Will cycle Fan Speeds

Displays: "Fan Speed/value"

Output Frame Rate

Controls the global Output Frame Rate

Binary triggers: Sets the Output Frame Rate to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "FrameRate/mode"

Genlock Source

Controls the global Genlock Source

Binary triggers: Sets the Genlock Source to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "GenLokSrc/mode"

Mon 2K Crop

Controls the Mon 2K Crop

Binary triggers: Sets the Mon 2K Crop to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "Mon2KCrop/mode"

HDMI RGB Range

Controls the HDMI RGB Range

Binary triggers: Sets the HDMI RGB Range to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "HDMIRGBRA/mode"

Monitor Map

Controls the mapping of the Monitor Output

Binary triggers: Sets the Monitor Map Routing to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "Mon Map/mode"

Presets

Controls the Presets on the FS. Select between 40 Presets and the Factory Default

Binary triggers: If "Recall/Set" - press and hold will perform a Preset Set
A single press will recall the preset
If "Set" a single press will save the preset
If "Recall" a single press will recall the preset

Pulse inputs: Not implemented

Displays:
If "Recall/Set" "Preset/no"
If "Set" "Set/no"
If "Recall "Recall/no"

Audio Embed Map

Controls the Audio Embedding Mapping

Binary triggers: Sets the Audio Embedding Mapping to the chosen mode

Pulse inputs: Will cycle through the modes

Displays: "Aud.Embed/mode"

Audio Out

Controls the Audio Out for AES, MADI BND or MADI Fiber

Binary triggers: Sets the Audio Rout to the chosen channel

Pulse inputs: Will cycle through the channels for the chosen mode

Displays: "Audio Out/channel"