

CONVERT

# FS1

HD/SD Audio/Video Frame Synchronizer and Converter



Because it matters.

**AJA**<sup>®</sup>  
VIDEO SYSTEMS

# FS1

## HD/SD Audio/Video Frame Synchronizer and Converter

Featuring a flexible “anything in, anything out” architecture, the FS1 Universal HD/SD Audio/Video Frame Synchronizer and Converter can simultaneously work with both HD and SD video — all in full 10-bit broadcast quality video and 24-bit audio. The FS1 supports virtually any input or output, analog or digital, HD or SD. The FS1 can up- or down-convert between SD and HD, and provide simultaneous HD and SD outputs.

Up, Down, Cross-Conversion between HD formats are also supported, with simultaneous output of both formats. For audio, the FS1 supports 8-channel AES, balanced analog, or embedded audio with full flexibility and audio processing controls. The FS1 supports closed captioning and the conversion of closed captioning between SD and HD formats—including full conversion of CEA-608 captions to the CEA-708 standard. The FS1 is also network ready, supporting web-based and SNMP remote control.

**FS1 Administration**  
 IP Address: 90.0.5.167 | Serial Number: 2F0389 | Software Version: 2.0.3.24 | Connection Status: Connected

<b>Input Format:</b> 720p 59.94	<b>Output Format:</b> Follow INPUT
<b>Video In:</b> SDI 1	<b>NTSC Standard:</b> NTSC
<b>Audio In:</b> Embed SDI 1	<b>Frame Rate:</b> 59.94 / 23.98
<b>Component In Format:</b> SMPTE(YPbPr)	<b>Component Out Format:</b> SMPTE(YPbPr)
<b>Analog Audio Standard:</b> +24 dBu	<b>Embedded Audio Out:</b> On
<b>Freeze Output:</b> Off	<b>SDI 2 Output:</b> Normal
<b>Audio Follow Video:</b> On	<b>Component Output:</b> Normal

Alarms: Power Supply 1 Off

**FS1 Administration**  
 IP Address: 90.0.5.167 | Serial Number: 2F0389 | Software Version: 2.0.3.24 | Connection Status: Connected

<b>Upconvert Mode:</b> Full Screen	<b>Downconvert Mode:</b> Crop
<b>SD Aspect Ratio:</b> V Crop	<b>Downconvert AFD Default:</b> Hold Last
<b>AFD Out SDI1:</b> Auto	<b>AFD Out SDI2:</b> Auto

### Remote Web Interface





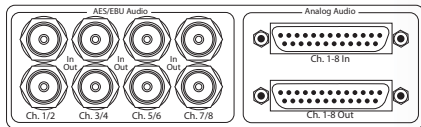
## Anything in...

- 525i / 720p / 1080i / 59.94Hz
- 1080 psf 23.98Hz
- 625i / 720p / 1080i / 50Hz
- 1080 psf 24Hz
- 1080i / 720p / 60Hz
- 8-channel AES Audio
- 8-channel Embedded Audio
- 8-channel Balanced Analog Audio



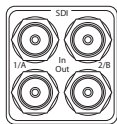
## ...Anything out

- 525i / 720p / 1080i / 59.94Hz
- 1080 psf 23.98Hz
- 625i / 720p / 1080i / 50Hz
- 1080 psf 24Hz
- 1080i / 720p / 60Hz
- 8-channel AES Audio
- 8-channel Embedded Audio
- 8-channel Balanced Analog Audio



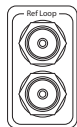
### Audio Connections

- 8-channel balanced, 25 pin D (Tascam pinout)
- 8-channel AES (BNC)
- 8-channel HD/SD-SDI embedded
- Audio A/D, D/A: 24 Bits, 48Khz
- Audio Levels: +12dBu, +15dBu, +18dBu, +24dBu, (Full Scale Digital)
- Channel mapping



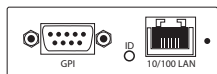
### HD/SD-SDI

- Dual HD/SD-SDI inputs and output, SMPTE 259/274/292/296



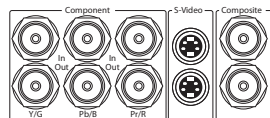
### Reference Video with Loop-Through

- Synchronize FS1 outputs to house reference video signal (blackburst or composite sync for SD, or Tri level for HD).



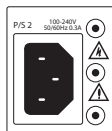
### LAN and GPI Connections

- 2x GPI inputs/outputs, TTL, isolated.
- RJ45 10/100 LAN connector—offers DHCP, SNMP and embedded Web Server Remote Control



### Analog Video

- HD component YPbPr/RGB (RGB is output only), SMPTE-274
- SD component/composite/YC (S-Video)
- Video A/D, D/A: 12 bits 2x oversampled (HD), 4x oversampled (SD)



### Fully Redundant AC Power Supplies

Two independent AC power supplies with independent power connectors. The power supplies autosense from 100 to 240VAC, 50/60Hz. Only one has to be connected for operation; connect both for redundancy. Alarm monitoring alerts locally and remotely if a power supply fails.

## Features

- SD/HD up/down conversion
- SD/SD aspect ratio conversion
- HD/HD cross conversion (720p/1080i)
- Up/down/cross conversion with both the input and converted formats on SD/HD SDI outputs (both synchronized)
- HD cross conversion with simultaneous downconverted SDI output
- Closed caption support for up, down and cross-conversion
- AFD support (Active Format Description)
- Dual HD/SD SDI inputs and outputs
- Component analog HD/SD input and output
- Composite/S-video input and output with TBC
- 8-channel AES and balanced analog audio inputs and outputs
- 8-channel embedded audio I/O
- Fully redundant power supplies standard
- 10/100 LAN with SNMP, and embedded web server for remote control
- Video Proc Amp
- Audio Channel Mapping
- Chassis styling optimized for machine room use with simple panel and remote web browser user interfaces
- Front panel alphanumeric and graphical display shows input/output settings and parameter viewing/editing choices
- LED status indicators for at-a-glance system monitoring
- Two GPI inputs and outputs, TTL, isolated
- Register Recall/Store
- Save/Restore to Computer
- Tone and Test Signal Generator
- Sidebar Keyer
- Remote Control Panel Support
- 5 year warranty

## Front panel control



**Remote**  
Displays remote control menu.

**Status**  
Displays current machine status and/or error conditions.



**Alphanumeric Display**  
Displays status information and Control information (for viewing and changing functions/parameters).



**Select and Adjust Buttons**  
Select Parameters and adjust their values.



**Activity LEDs**  
Displays at-a-glance the settings and current FS1 conditions.



**Power and Status LEDs**  
Shows the AC power status and any alarm conditions.)

## Specifications

Input	Possible Output Formats		
525i59.94	525i59.94	720p59.94	1080i59.94
720p59.94	525i59.94	720p59.94	1080i59.94
1080i59.94	525i59.94	720p59.94	1080i59.94
1080pSF23.98	1080pSF23.98	1080i59.94	525i59.94
625i50	625i50	1080i50	720p50
720p50	625i50	1080i50	720p50
1080i50	625i50	1080i50	720p50
1080pSF24	1080pSF24	1080i60	
1080i60	1080i60	720p60	
720p60	720p60	1080i60	

**Notes:**

- In the case of 1080pSF/23.98 input—and when 1080i59.94 (or 525) is selected as an output format, the FS1 automatically does 3:2 pulldown correct frame rate. Similarly, in the case of 1080pSF/24 input, FS1 automatically does 3:2 pulldown to get the correct frame rate.
- When passing 24 or 60 framerate video, output is high definition.

**Video Inputs and Outputs**

- Dual HD/SD-SDI, SMPTE 259/274/292/296
- HD component YPbPr/RGB (RGB is output only), SMPTE-274
- SD component/composite/YC (S-Video)

**Video A/D, D/A**

- 12-bit
- 2x oversampled (HD)
- 4x oversampled (SD)

**Audio Inputs and Outputs**

- 8-channel balanced, 25 pin D (Tascam pinout)
- 8-channel AES (BNC)
- 8-channel HD/SD-SDI Embedded

**Audio A/D, D/A**

- 24-Bit, 48Khz
- +12dBu, +15dBu, +18dBu, +24dBu, (Full Scale Digital)

**LAN**

- 10/100 auto config., auto cable crossover
- Embedded Webserver, HTTP v1.1, SNMP

**GPI**

- 2x GPI input, TTL, isolated
- 2x GPI output, TTL, isolated

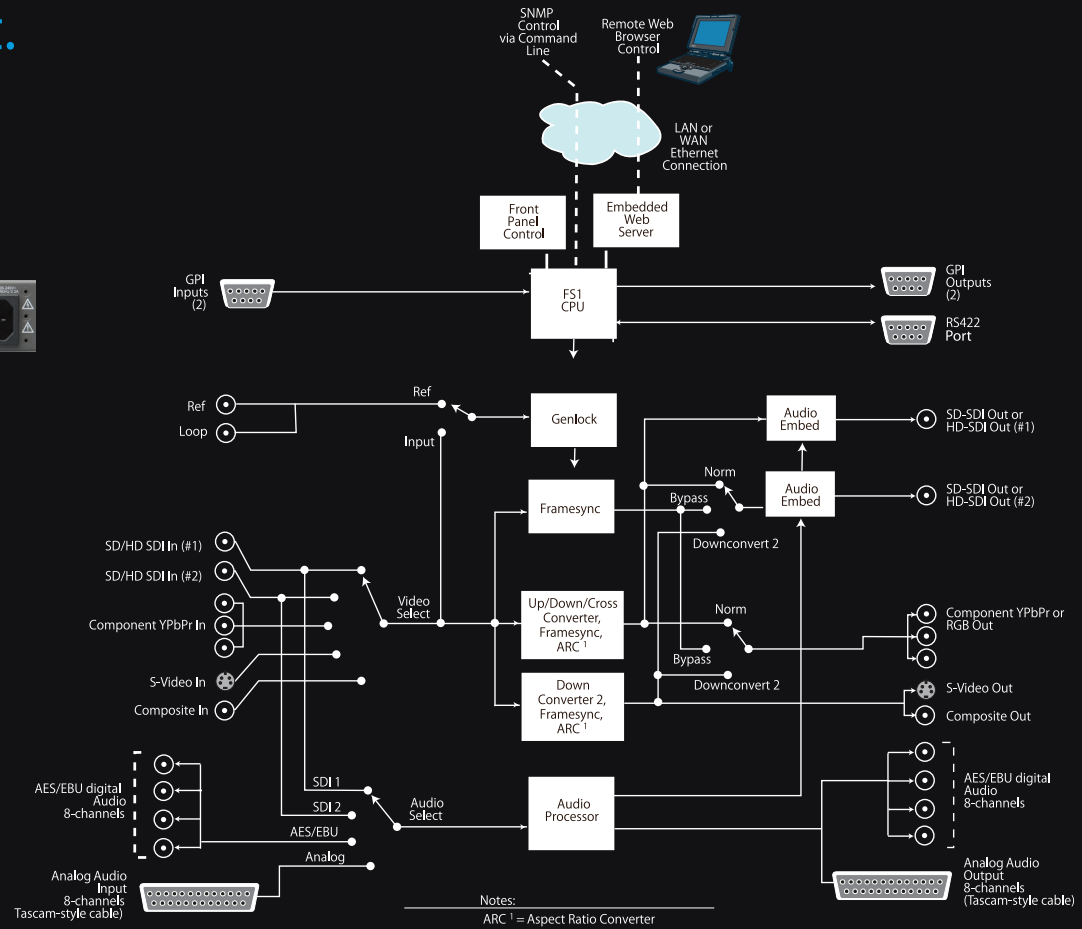
**Physical**

- 1 RU, 12 inches deep, fan-cooled

**Power**

- 100-240 VAC, 25 watts
- Fully Redundant, diode isolated

# Anything in, Anything out. FS1 Architecture



#### **Incredible 5 Year Warranty**

AJA Video warrants that FS1 products will be free from defects in materials and workmanship for a period of five years from the date of purchase.

#### **About AJA Video Systems, Inc.**

Since 1993, AJA Video has been a leading manufacturer of video interface and conversion solutions, bringing high-quality, cost-effective digital video products to the professional broadcast and post-production markets. AJA offers the Io, KONA and XENA desktop video products, miniature stand-alone converters, and a complete line of rack mount interface and conversion cards and frames. With a headquarters and design center located in Grass Valley, California, AJA Video offers its products through an extensive sales channel of dealers and systems integrators around the world. For further information, please see our website at [www.aja.com](http://www.aja.com)

**B e c a u s e   i t   m a t t e r s .**



**AJA Video Systems Inc.**  
Grass Valley, California 95945  
[www.aja.com](http://www.aja.com) • [sales@aja.com](mailto:sales@aja.com) • [support@aja.com](mailto:support@aja.com)