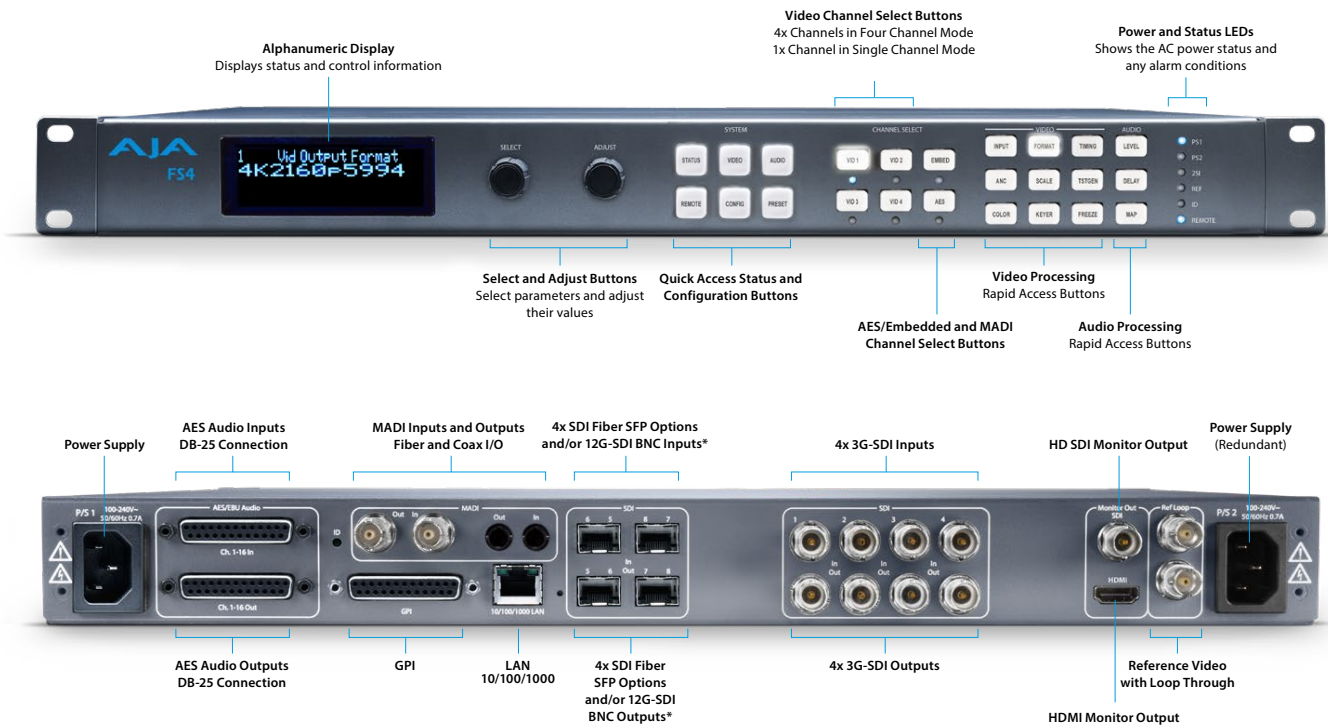


FS4

4-Channel 2K/HD/SD or 1-Channel 4K/UltraHD Frame Synchronizer & UP/Down/Cross-Converter



*Optional

The Ultimate 4K Toolbox

4-Channel 2K/HD/SD or 1-Channel 4K/UltraHD frame synchronizer and up, down, cross-converter

Bulletproof reliability. Incredible conversion power.

FS4 is your real world answer for conversions of to and from multiple resolutions, built to AJA's high quality and reliability standards. 4K/UltraHD delivery, processing and synchronization is fast becoming the next standard, and FS4 gets you there with a wealth of digital video connectivity including Quad 1.5G, Dual 3G, Quad 3G over 3G-SDI and 12G/6G over optional 12G-SDI BNC and 12G-SDI LC Fiber SFP modules.

In single channel mode, FS4 will upscale your HD or SD materials to 4K/UltraHD and back, with a huge array of audio channels over Fiber, 3G-SDI, AES, and MADI for an incredible 272 x 208 matrix of audio possibilities.

Welcome to four channel mode.

In four channel mode, FS4 provides incredibly powerful multi-channel conversion with up to four channels of simultaneous processing for 2K/HD and SD signals. New thinking requires a new layout, and FS4's front panel has been redesigned to simplify and speed your access to the product's wealth of features. The panel has also been designed to provide straightforward operation in single channel or four channel mode. In four channel mode, all four VIDx buttons under Channel Select are lit up. In single channel mode, only VID1 is lit and VID2-4 are off. Multi-channel density in a 1RU chassis - space, energy and power preserved.

FS4

4-Channel 2K/HD/SD or 1-Channel 4K/UltraHD Frame Synchronizer & UP/Down/Cross-Converter

Tech Specs

Modes of Operation

- Four Independent 2K, HD, or SD Video Processors
- One 4K, UltraHD, 2K, HD, or SD Video Processor

Video Formats

- (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (4K) 4096 x 2160PsF 23.98, 24, 25, 29.97, 30
- (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (UltraHD) 3840 x 2160PsF 23.98, 24, 25, 29.97, 30
- (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
- (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
- (HD) 1920 x 1080i 50, 59.94, 60
- (HD) 1280 x 720p 50, 59.94, 60
- (SD) 625i 50
- (SD) 525i 59.94
- YCbCr, 4:2:2, 10-bit

Video Input Digital

- 4x 3G-SDI inputs, 4x BNC
- 4x 3G-SDI inputs, 4x Fiber or HD-BNC (optional SFP modules)
 - SFP coax module, 12G/6G-SDI, dual HD-BNC
 - SFP fiber module, 12G/6G-SDI, Single Mode, dual LC or single LC, SMPTE-297
 - SFP fiber modules, 3G-SDI, Single Mode, dual LC, single LC, or single SC, SMPTE-297
 - SFP fiber modules, 3G-SDI, Multi-Mode, dual LC or single LC, SMPTE-297
- 12G/6G/3G/HD/SD, SMPTE-259/292/424/2081/2082
 - Single Link 12G/6G-SDI (with optional SFP module)
 - Quad Link 3G-SDI Level A or B-DL (4x 3G), SMPTE-425-5
 - Dual Link 3G-SDI Level B-DS (2x 3G), SMPTE-425-3
 - Single Link 3G-SDI Level A, B-DL, or B-DS, SMPTE 425
 - Quad Link HD-SDI (4x 1.5G)
 - Dual Link HD-SDI (2x 1.5G), SMPTE-372
 - Single Link HD/SD
- Quadrant (Square Division) or 2SI (Two Sample Interleave) 4K/UltraHD input pixel mapping
- 8x 1 selector feeds video processor(s)

Video Output Digital

- 4X 3G-SDI outputs, 4x BNC
- 4x 3G-SDI outputs, 4x fiber or HD-BNC (optional SFP modules)
 - SFP coax module, 12G/6G-SDI, dual HD-BNC
 - SFP fiber module, 12G/6G-SDI, Single Mode, dual LC or single LC, SMPTE-297
 - SFP fiber modules, 3G-SDI, Single Mode, dual LC, single LC, or single SC, SMPTE-297
 - SFP fiber modules, 3G-SDI, Multi-Mode, dual LC or single LC, SMPTE-297
- 12G/6G/3G/HD/SD, SMPTE-259/292/424/2081/2082
 - Single Link 12G/6G-SDI (with optional SFP module)
 - Quad Link 3G-SDI Level A or B-DL (4x 3G), SMPTE-425-5
 - Dual Link 3G-SDI Level B-DS (2x 3G), SMPTE-425-3
 - Single Link 3G-SDI Level A, B-DL, or B-DS, SMPTE 425
 - Quad Link HD-SDI (4x 1.5G)
 - Dual Link HD-SDI (2x 1.5G), SMPTE-372
 - Single Link HD/SD
- Quadrant (Square Division) or 2SI (Two Sample Interleave) 4K/UltraHD output pixel mapping

Monitor Output Digital

- 1x BNC, 1x 3G-SDI output
 - 3G-SDI/HD/SD, SMPTE-259/292/424, 10-bits
 - 4K/UltraHD automatically down-converted to 2K/HD
- 1x HDMI, 1x HD output
 - 2K/HD/SD, HDMI v1.4a
 - 4K/UltraHD automatically down-converted to 2K/HD
- Crop control on HDMI output

Video Processing

- Motion adaptive deinterlacer
- Proc amp controls
- Color corrector
- Legalizer
- Frame rate conversion/film cadence removal/insertion (3:2, 1:2, 2:1, 2:3)
- Adjustable delay 0-6 frames with H and V timing controls in lines and pixels
- Closed Captioning conversion (CEA-608/CEA-708)
- AFD input detection, down-convert control, and output pass through or overwrite
- Freeze (manual or on input signal loss) to black or last good frame
- Matte generator for background fill
- Video test generator
- Nominal video delay HD/SD, 2 frames (LFR), 4 frames (HFR)

Format Conversion

- Convert any supported input format to any supported output format, within the same frame rate family. These three families are:
 - 59.94, 29.97, 23.98
 - 50, 25
 - 60, 30, 24

Scaling

- Supported in 2K/HD/SD formats
 - Zoom in and out
 - Reposition
 - Region of Interest (ROI)

Up-Conversion

- Hardware 10-bit
- Zoom 14:9: results in a 4:3 image zoomed slightly to fill a 14:9 image with black side bars
- Zoom Letterbox: results in image zoomed to fill fullscreen
- Zoom Wide: results in a combination of zoom and horizontal stretch to fill a 16:9 screen; this setting will introduce a small aspect ratio change

FS4

4-Channel 2K/HD/SD or 1-Channel 4K/UltraHD Frame Synchronizer & UP/Down/Cross-Converter

Tech Specs *(Continued)*

Down-Conversion

- Hardware 10-bit
- Anamorphic: fullscreen
- Letterbox: image is reduced with black top and bottom added to image area with the aspect ratio preserved
- Crop: image is cropped to fit video output format

Aspect Ratio Conversion for SD to SD

- Letterbox: Transforms SD anamorphic material to a letterboxed image
- H Crop: Produces a horizontally stretched effect on the image; transforms anamorphic SD to full frame
- SD Pillarbox: Produces an image in the center of the screen with black borders on the left and right sides and an anamorphized image in the center
- V Crop: Transforms SD letterbox material to an anamorphic image

Audio Input Digital

- 48 kHz sample rate
- 8x SDI embedded inputs (16-Channels each)
 - 128-Channels, 24-bit (20-bit SD), SMPTE-272/299
- 8x balanced AES inputs (16-Channels), 1x DB-25
 - 16-Channels, 24-bit, AES-3
- 2x MAD I inputs, 1 BNC, 1x ST Fiber
 - 128-Channels, 24-bit, AES-10

Audio Output Digital

- 48 kHz sample rate
- 1x SDI embedded output per Video Processor (16-Channels each)
 - 16-Channels (in single Video Processor mode), 24-bit (20-bit SD), SMPTE-272/299
 - 64-Channels (in four Video Processor mode), 24-bit (20-bit SD), SMPTE-272/299
- 8x balanced AES outputs (16-Channels), 1x DB-25
 - 16-Channels, 24-bit, AES-3
- 2x MAD I outputs, 1 BNC, 1x ST Fiber
 - 128-Channels, 24-bit, AES-10

Audio Processing

- 277 x 208 mono audio matrix, route 1 to 1, 1 to many
 - Inputs: 128 embedded, 16 AES, 128 MAD I, 2 stereo mixdowns, 3 tone generator
 - Outputs (Four Channel mode): 16 AES, 128 MAD I, 64 embedded
 - Outputs (Single Channel mode): 16 AES, 128 MAD I, 16 embedded
- Input adjustment controls for each channel
 - Gain +18 to -18 dB in 0.5 dB steps
 - Phase invert
- Input adjustment controls for each channel pair
 - Delay -16ms to +1sec in 20.8 us steps
- Two independent 5.1 or 7.1 to stereo mixdown processors with gain adjust
- High quality Sample Rate Conversion supported on all audio inputs
- SRC bypass for non-PCM audio (e.g. Dolby E, AC-3, etc)
- Audio tone generator (mute, 400 Hz, 1 kHz)

Reference Input

- External, 2x BNC
 - Looping, nonterminating
 - Blackburst or tri-level sync

Genlock

- Lock to External Reference
- Lock to SDI input 1 thru 8
- Free run based on Temperature Compensated Crystal Oscillator

Network Interface

- 1x RJ-45, 10/100/1000 Ethernet
- Embedded web server for remote control
- SNMP

User Interface

- Display
- Keypad with status LEDs
- Two rotary/push knobs
- Comprehensive alarm indicators

Presets

- Four Channel and Single Channel mode each support 40 Presets

GPI

- 1x 25-pin D-Connector
 - Four optically isolated GPI inputs
 - Four optically isolated GPO outputs

Size (w x d x h)

- 17.5" x 16.0" x 1.75" (1RU) (444.5 x 406.4 x 44.45 mm)

Weight

- 7.9 lb (3.2 kg)

Power

- 100-240 VAC 50/60 Hz (Dual, redundant power supplies), 55W typical; 70W max.

Environment

- Safe Operating Temperature: 0 to 40 C (32 to 104 F)
- Safe Storage Temperature (Power OFF): -40 to 60 C (-40 to 140 F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)