

FS

The power to convert.



Because it matters.

AJA®
VIDEO SYSTEMS

The power to convert.

With support of all broadcast video formats, the FS family make matching up disparate video and audio systems simple, with comprehensive analog and digital I/O, up/down/cross conversion and frame synchronization.

AJA's FS family brings the full power of our hardware conversion expertise within compact 1RU rack units that offer unrivalled flexibility.

Delivering AJA's industry standard up/down/cross converter technology for the highest quality images, FS units are ideal for high-density applications such as mobile trucks and packed machine rooms, able to replace multiple hardware units in a single rack slot. The widest range of conversion possibilities makes them perfect for converting disparate sources to a common format, or handling whatever formats the production environment might throw at them.

Easy to use and fully networkable via built in 10/100/1000MB Ethernet ports, FS1 and FS2 are easily integrated into a facility and can be rapidly configured by any computer on the network via a standard web browser. FS units also accept automation control from external GPI commands.

Supporting virtually any input, FS1 features a flexible I/O and can simultaneously work with SD and HD video - as well as converting between both. FS2 adds the ability to process two independent streams of 3G/HD/SD 10-bit broadcast-quality video and two independent groups of 16-channel AES audio, opening a new world of conversion possibilities.

Built to the exacting standards of all AJA hardware, FS frame synchronizers are backed by our world-class support network, 5-year international warranty and advanced exchange service.



FS1



FS2

Family features

Digital and analog I/O flexibility

FS frame synchronizers are loaded with comprehensive I/O that lets them handle the widest range of analog and digital signals - and convert between them.

Perfect for use in broadcast and post production environments, FS units feature Dual HD/SD-SDI inputs and outputs, comprehensive multi-channel audio connections and I/O for analog video equipment, including HD and SD component.

FS2 also features HDMI I/O with support for 3D output, and a Fiber connectivity option.



AJA hardware conversion technology

AJA's powerful hardware conversion technology ensures the highest image quality for your productions. Key conversion features include:

- 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 down-converted SDI output
- Closed Caption conversion (CEA-608/CEA-708 standards)
- AFD conversion or pass-through (user selectable)



Remote configuration and control

FS units are network ready and support SNMP monitoring and web-based remote control. Units can be connected to any Ethernet network via the built-in 10/100/1000MB Ethernet port, allowing control and configuration of multiple FS units from any web browser on a connected computer. Configurations can be saved and applied to multiple units, ensuring consistency and quick configuration in large installs.

To integrate smoothly with the existing automation of a facility, both FS1 and FS2 can also receive external GPI commands to trigger a variety of functions, from freezing an input source to switching between saved presets.



FS1

Universal Frame Synchronizer/Converter.

FS1 is a powerful and flexible frame synchronizer and high quality converter that helps you work with mismatched signal types to establish a consistent format for post production or broadcast.



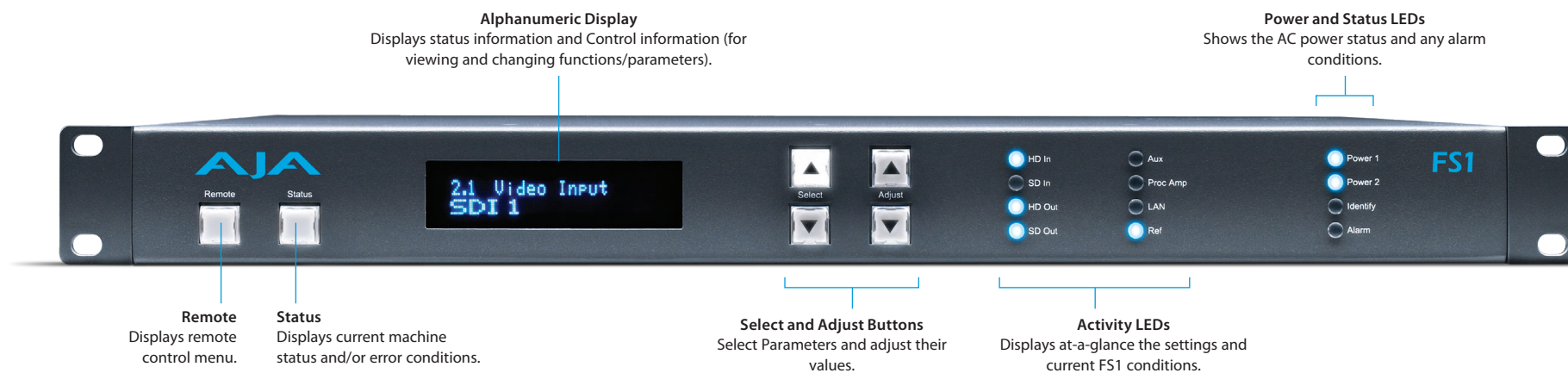
Featuring a flexible input, output, and control architecture, the FS1 Universal HD/SD Audio/Video Frame Synchronizer and Converter can simultaneously work with both HD and SD video all in full 10-bit broadcast quality video and 24-bit audio.

Supporting virtually any input or output, analog or digital, HD or SD, 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, FS1 supports 8-channel AES, balanced analog, or 16-channel embedded audio with full flexibility and audio processing controls. You can choose from any of the 4 groups of embedded audio for 8-channel output on the AES or analog audio.

FS1 also 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.

Front and rear panels



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.

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).



Audio Connections

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

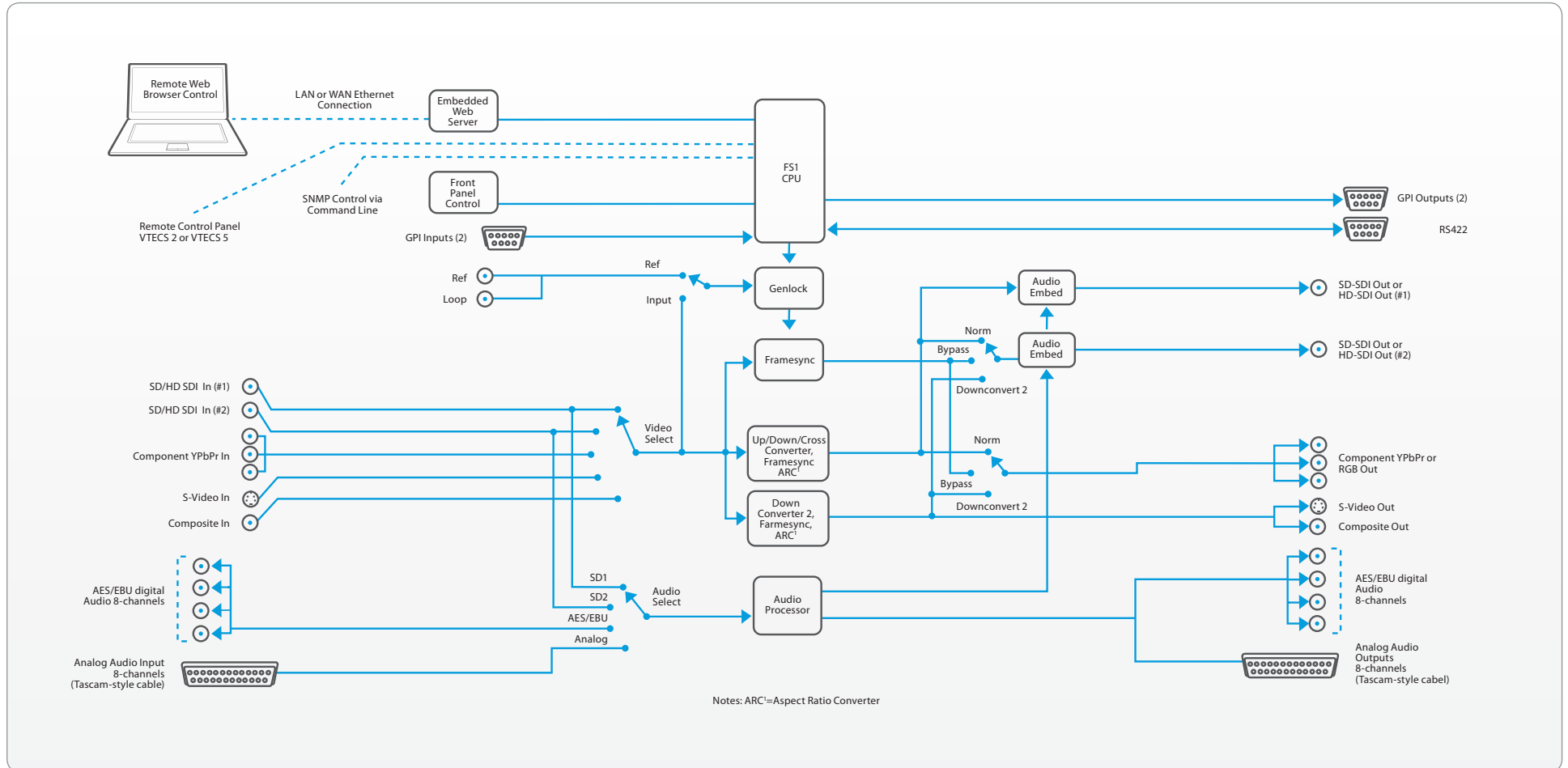
LAN and GPI Connections

- 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)

Architecture



A world of conversion possibilities.

With dual-channel conversion and frame synchronizing in a slim 1RU space, FS2 can do the work of two separate devices or combine both processors together for maximum flexibility.



Offering huge flexibility and the power to adapt to meet the needs of rapidly changing environments, FS2 offers unprecedented conversion and frame synchronization power in a single 1RU space.

Capable of simultaneously working with two independent streams of 3G/HD/SD 10-bit broadcast-quality video and two independent groups of 16-channel AES audio, each FS2 video channel supports virtually any input or output: analog component or composite, 3G/HD/SD-SDI, Dual Link (1.485 Gb), Fiber and HDMI I/O. A Fiber I/O option allows fiber cable runs of up to 10 kilometers to be connected directly to the FS2 without the need for separate fiber to SDI conversion.

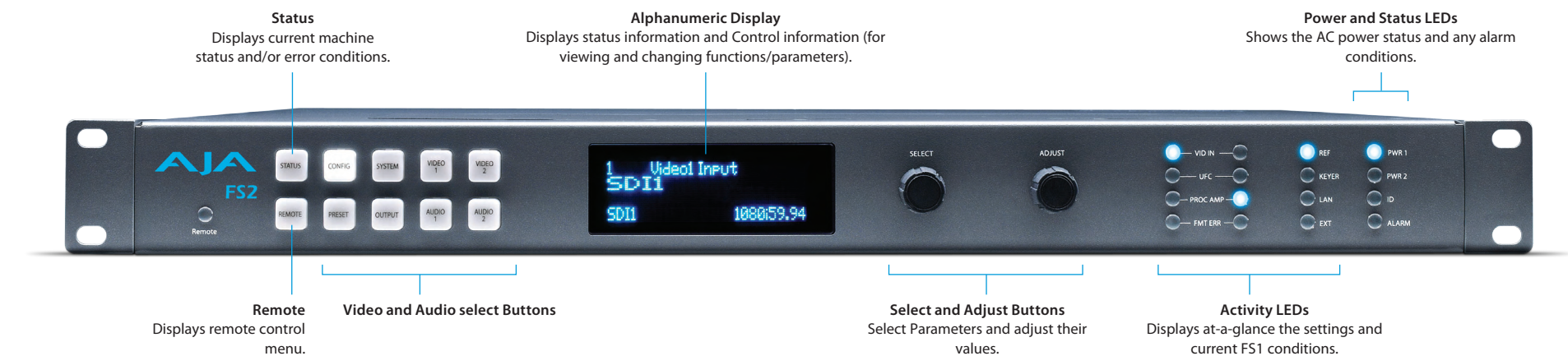
FS2 can be used as two separate Frame Synchronizers/Format Converters, or the two channels can be linked with the internal FS2 keyer to do the work of three or more devices - for example HD sidebar keying where both the video and background graphics are upconverted and combined.

FS2 can up or down convert between SD, HD, and 3G HD (1080p50/60), and cross convert between HD formats including 3G HD. Additionally, FS2 has full input and output signal routing, allowing any I/O port to be assigned to either processing channel.

For audio, FS2 has two audio processors, each supporting 16-channel AES/EBU digital audio, 16-channel embedded audio, and 8-channel balanced analog audio with a variety of controls for maximum flexibility. The output of each processor can be embedded in its respective video processor output (SDI, Fiber, or HDMI), or sent to the AES or balanced outputs. For 3G and Dual Link inputs, the audio processors can have access to all 32 channels. A built-in Dolby decoding option adds the ability to handle encoded Dolby audio as part of the signal path without the need for specialized equipment.

The FS2 supports closed captioning and the conversion of closed captioning between SD and HD formats - including full conversion between CEA-608 and CEA-708 caption standards.

Front and rear panels



Fully Redundant AC Power

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.

Digital Video Connections: Fiber, SDI, and HDMI

- 2x 3G/HD/SD SDI Inputs and Outputs with embedded audio
- 2x Fiber 3G/HD/SD SDI Inputs and Outputs with embedded audio (optional)
- 1 HDMI Input and 1 HDMI Output, with 3D output support

Reference

- Passive Reference Loop – Color Black or Tri-Level Sync



Audio Connections

- 8-channel balanced, 25 pin D
- 16-channel AES/EBU, 25 pin D
- 16-channel HD/SD-SDI embedded
- Audio A/D, D/A: 24 Bits, 48KHz
- Audio Levels: +12dBu, +15dBu, +18dBu, +24dBu, (Full Scale Digital)
- Optional Dolby® E Encoding
- Optional Dolby® E Decoding

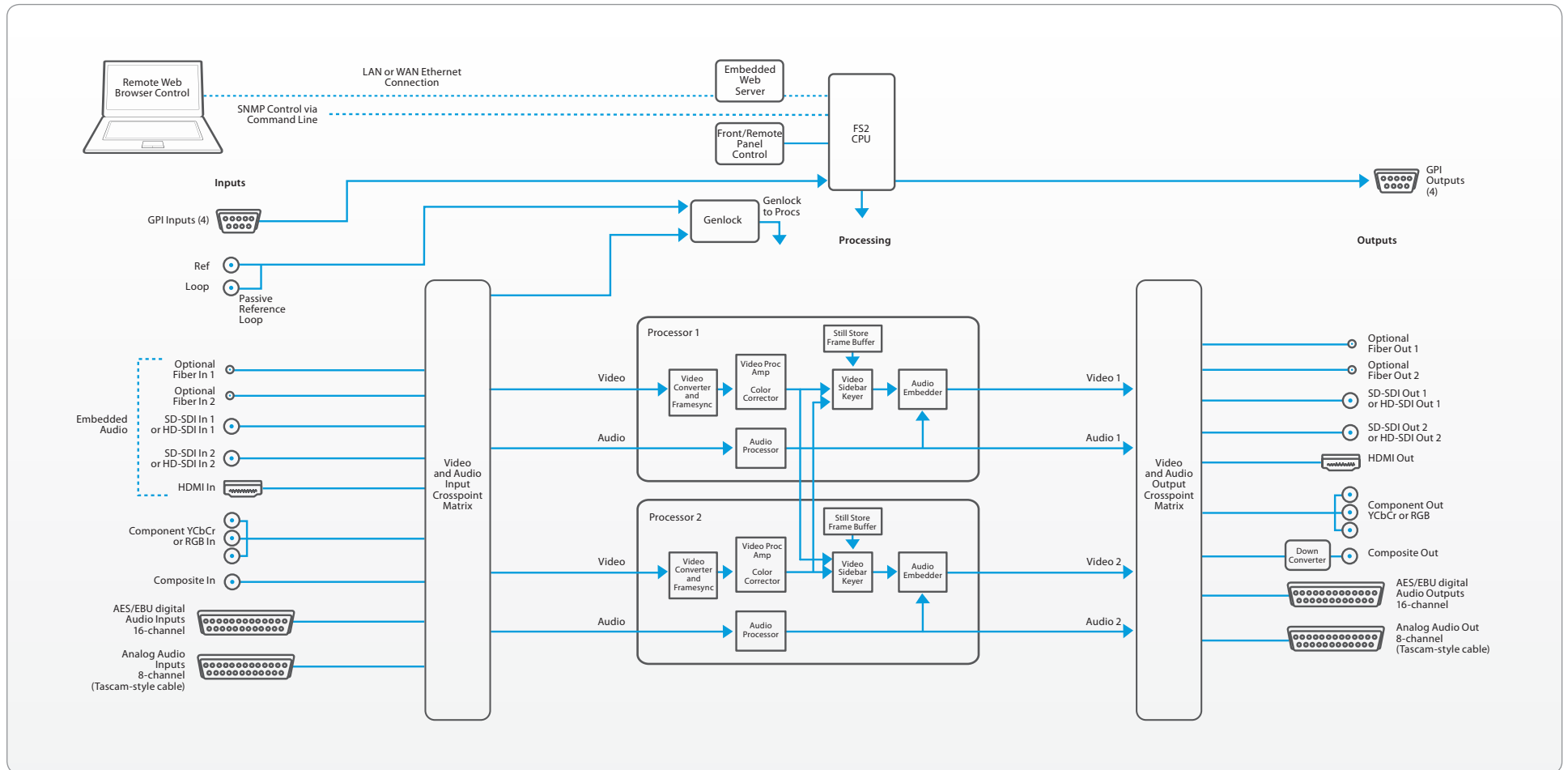
LAN and Control Connections

- 4x GPI inputs/outputs, TTL, isolated.
- RJ45 10/100/1000 LAN connector-offers DHCP, SNMP and embedded Web Server Remote Control
- RS-422 (future)

Analog Video Connections

- Component Analog Video Inputs and Outputs, YPbPr/RGB (RGB output only)
- Composite Analog Video Inputs and Outputs

Architecture



Case study

TL Mobile Goes the Distance with AJA FS2

Nicholas Appleton is the VP of Operations/Engineer for TL Mobile Television, based in Springfield, MO. In his own words, he describes how FS2 has become an invaluable part of his workflow.

"TL Mobile Television is a Springfield, MO-based mobile truck operator working with a broad range of clientele including ESPN and Fox. Our 53-foot HD Digital Expando is almost always on the road covering sporting events in the mid-and southwest.

As VP of Operations/Engineer for TL Mobile, it's often my job to make sure that everything is running as smoothly as possible. We provide all of the equipment that a crew would need to broadcast a sporting or entertainment event along with two or three on-site engineers. We've been using AJA products at TL Mobile as long as we've been in business, since 1997. We use AJA equipment primarily for conversion purposes, and have had many different Mini-Converters from AJA over the years.

We were recently introduced to the AJA FS2 dual channel universal frame synchronizer/format converter by our local distributor. We already have several AJA FS1s on our truck, and with the FS2, we're getting the added benefit of dual channel features in a 1RU design. Without AJA converters we wouldn't have the flexibility to adjust to the constant changing demands of a live production environment.

"We love that the AJA FS2 packs so much functionality into a single rack unit...All at a price point that's lower than the competition with the reliability and support that goes hand in hand with all of AJA's products."

One of our favorite things about the FS2 is that we can IP into them so they're all listed in our truck computer and we don't have to go to each device individually to change settings. It's really convenient to just be able to log in and see all of our devices right there—this holds true for our FS2s and our FS1 units as well. We added the FS2s a few months ago and they've been working hard on the truck primarily on projects for ESPN sports.



Nicholas Appleton - VP of Operations/Engineer for TL Mobile Television

FS2 also provides a lot of power in one box—as an example, everything from cameras to switchers to tape machines to the graphics package all needs to work together seamlessly for live broadcast. In a live production environment it is hard to mix different flavors of HD, so FS2 is ideal for a simple cross-conversion solution when your final output needs to be another signal. Often our network clients want 720p for replays or other uses, but we might be working on a broadcast package where the live output to uplink needs to be 1080i because that is the standard for that network or show. We can use FS2 to do the conversion and send it to the uplink, or vice versa, to cross convert to another flavor of HD.

We also love that the AJA FS2 packs so much functionality into a single rack unit. Dual channel 10-bit up, down and cross convert between so many different SD and HD formats along with analog to digital and digital to analog audio/video conversion. All of that at a price point that's lower than the competition with the reliability and support that goes hand in hand with all of AJA's products.

We first started using AJA gear in 1997 when we needed their converters to help us get from analog to digital and digital to analog back when our switcher was digital but other components in the truck were analog. Some of those original components even still live on the truck today. We continue to use AJA gear today—they helped us make the full transition over to HD and we anticipate that they'll continue to meet our future needs with products that provide best-in-class support for the latest broadcast formats."

Incredible 5-year warranty

AJA Video warrants that Converter 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 and KONA desktop video products, Ki Pro family of recorders, miniature standalone 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

AJA Video Systems Inc.

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

