FOR.A ®

**INNOVATIONS IN VIDEO
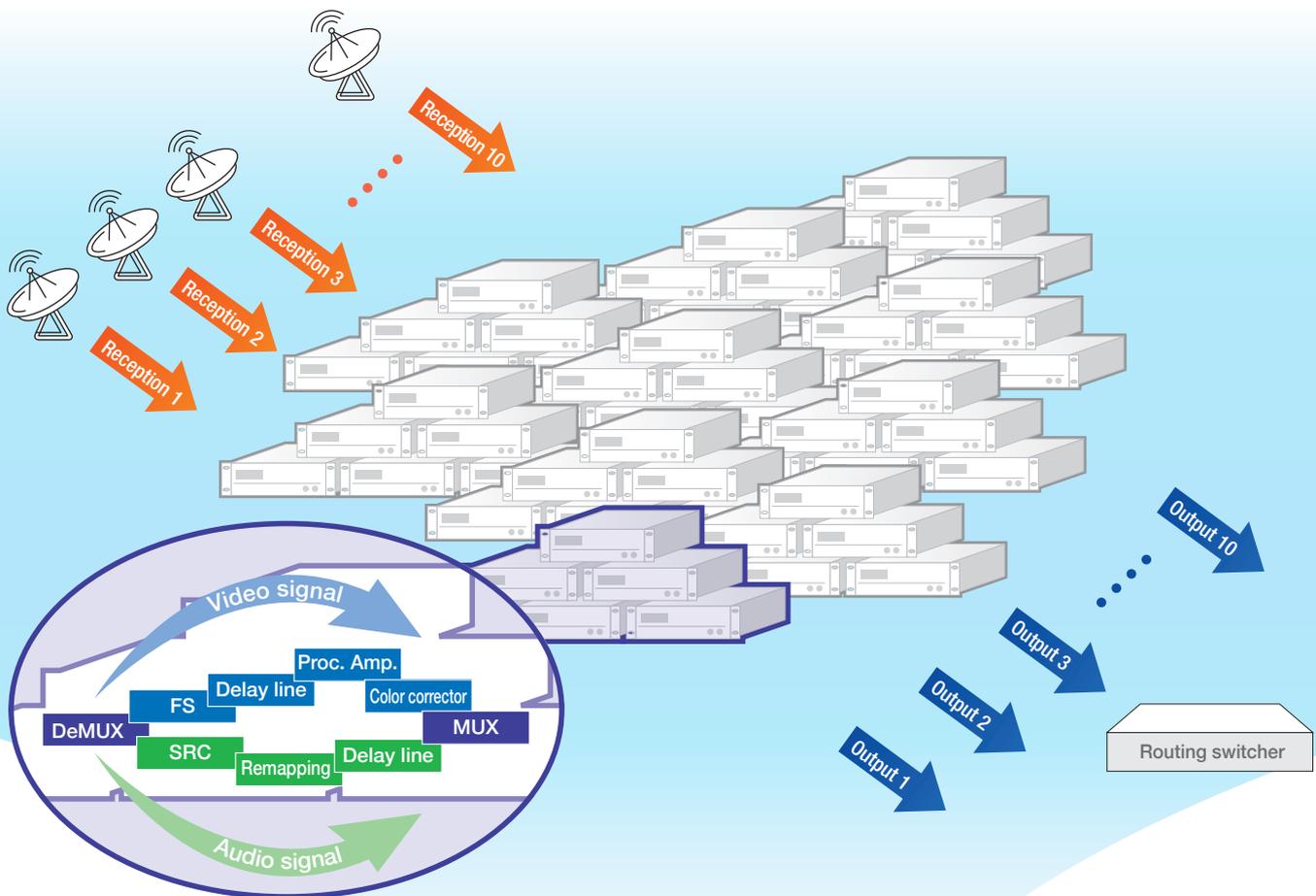and AUDIO TECHNOLOGY**

Multi-channel Signal Processor
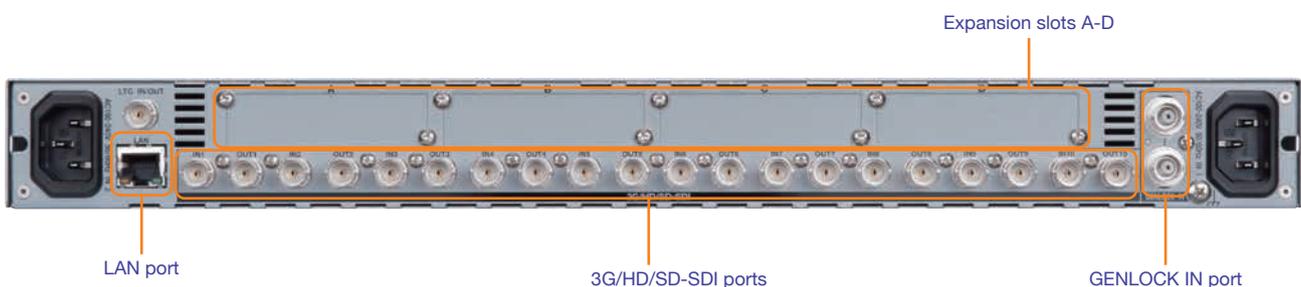# FA-1010

THE Processor

Up to 10 inputs/18 outputs in a sleek, 1U form factor. A multi-function, multi-format, 4K ready frame synchronizer.

The FA-1010 offers up to 10 outputs and 18 outputs for convenient, centralized multi-channel video routing. In addition, this all-in-one frame synchronizer offers many essential video production tools. Inputs and output standards include, 3G/HD/SD-SDI in a variety of frame rates and 4K compatibility. We have included all the typical features of a frame synchronizer as well as a FOR-A's 'industry standard' color correction on every input. For audio signal processing, it offers delay adjustment, remapping functions and a sampling rate converter on over 160 channels of audio. A single unit can provide the functionality that used to require a full rack of equipment. The perfect solution for almost any professional video environment plus: reduced cost, space, heat and electrical consumption.

Comprehensive & More Compact

A full rack of signal processing in a 1U box.

Expansion slots A-D

LAN port

3G/HD/SD-SDI ports

GENLOCK IN port

Full-Featured

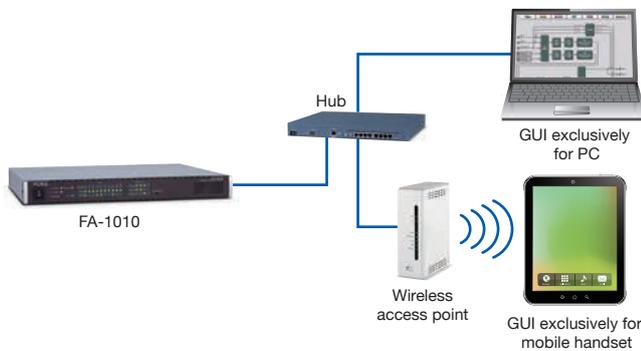## 10 3G/HD/SD-SDI inputs and outputs standard, expandable to 18 outputs

This 10 input frame synchronizer also offers a 10 by 10 audio/video clean switch router on synchronized or un-synchronized inputs. The built-in clean switch function enables advanced audio processing for quiet audio transitions. An I/O bypass function has also been provided in case power is cut.

Digital Audio I/O

For embedded audio, there are 16 channels per 3G/HD-SDI synchronous/asynchronous input, and there are 16 channels per synchronous input in SD-SDI. That means support for up to 160 channels over the 10 inputs. Audio processing includes, delay adjustment, level adjustment, down-mixing and remapping. By adding optional digital or analog cards, the unit provides D-A or A-D conversion with embed and de-embed capability. Users needn't worry about ancillary data being erased such as closed captions and time code due to signal processing.

GUI/Web Control

The frame synchronizer comes with dedicated GUI software for direct IP control from a PC. In addition, it offers web-based control from almost any browser. The web browser offers the ability to control from a PC, tablet or smart phone.

Hub

GUI exclusively for PC

FA-1010

Wireless access point

GUI exclusively for mobile handset

Color Corrector

The FA-1010 provides 10 channels of FOR-A's legendary real-time color correction. Color controls include Proc Amp and White/Black/Gamma in R/G/B. White/Black/Gamma controls can be done in 3 modes: Balance, Differential and Sepia.

Powerful Frame Synchronizer

FOR-A's frame synchronizers are designed for superior performance when processing video with poor quality signals. Synchronizer modes can be selected among from Frame, Line, and AVDL. Adjustment range in AVDL mode is 5 H in HD and 1 H in SD. Additionally, in every mode both H and V* ancillary data can be passed through.

*If input/output formats differ, there are limitations on the packets that can be passed.

Other Features
• Video/audio delay
• Monitoring and control from a Web browser (partial)
• SNMP monitoring
• Redundant power supply

Options

FA-10RU
Remote Control Unit
Remote with LED menu display for full control of multiple units.

FA-10DCCRU
Remote Control Unit for Color Correction
A dedicated remote panel for intuitive color correction.

FA-AUX30
AUX Extension Panel
Offers one-touch assignment and activation of common functions and perfect for routing operations.
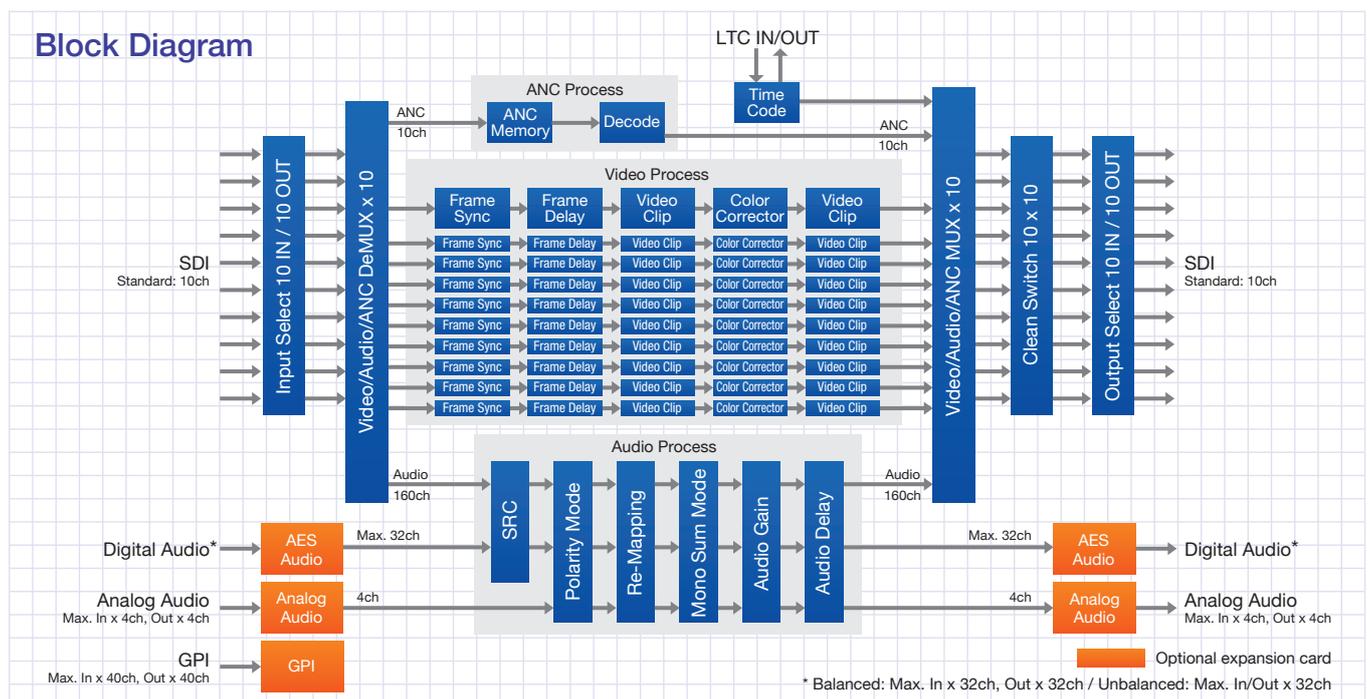
FA-10PS
Redundant power supply

Expansion Cards

4 slots in the rear panel can be used to expand inputs and outputs.

• FA-10AES-BL	Digital Audio balanced I/O option
• FA-10AES-UBL	Digital Audio unbalanced I/O option
• FA-10AES-UBLC	Digital Audio unbalanced output expansion cable
• FA-10ANA-AUD	Analog Audio I/O option
• FA-10GPI	GPI 10 each input/output option

Block Diagram

LTC IN/OUT

ANC Process
ANC Memory — Decode

Time Code

ANC 10ch

ANC 10ch

SDI Standard: 10ch

Input Select 10 IN / 10 OUT

Video/Audio/ANC DeMUX x 10

Video Process
Frame Sync | Frame Delay | Video Clip | Color Corrector | Video Clip

Video/Audio/ANC MUX x 10

Clean Switch 10 x 10

Output Select 10 IN / 10 OUT

SDI Standard: 10ch

Audio 160ch

Audio Process
SRC | Polarity Mode | Re-Mapping | Mono Sum Mode | Audio Gain | Audio Delay

Audio 160ch

Digital Audio*

AES Audio

Max. 32ch

Max. 32ch

AES Audio

Digital Audio*

Analog Audio
Max. In x 4ch, Out x 4ch

Analog Audio

4ch

4ch

Analog Audio

Analog Audio
Max. In x 4ch, Out x 4ch

GPI
Max. In x 40ch, Out x 40ch

GPI

Optional expansion card

* Balanced: Max. In x 32ch, Out x 32ch / Unbalanced: Max. In/Out x 32ch
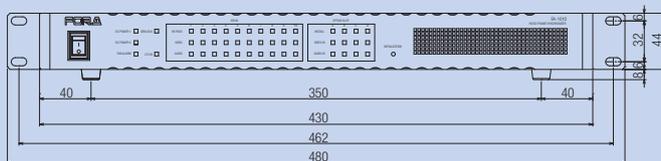
Specifications

Video Formats	3G-SDI: 1080/59.94p, 50p (Level-A/B)
	    2 x 1080/59.94i, 50i, 29.97p, 25p (Level-B)
	Dual link 3G-SDI: 2 x 1080/29.97p, 25p (Level-B) *1*2
	Quad link 3G-SDI: 1080/59.94p, 50p (Level-A/B) *2
	HD-SDI: 1080/59.94i, 50i, 23.98PsF, 24PsF,
	    720/59.94p, 50p
	SD-SDI: 525/60, 625/50
	*1 Video inputs unsynchronized with the reference are not supported.
	*2 Process Amp and Color Corrector cannot be used for 2SI signals and should be set to factory default settings for 2SI signals.

Video inputs	3G-SDI: 3 Gbps (Level-A/B), HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x10
Video outputs	3G-SDI: 3 Gbps (Level-A/B), HD-SDI: 1.5 Gbps or SD-SDI: 270 Mbps, 75Ω, BNC x10
Processing	4:2:2 Digital component
Quantization	3G/HD/SD-SDI: 10-bit
Genlock input	Black burst: NTSC 0.429 Vp-p/PAL 0.45 Vp-p or Tri-level sync: 0.6 Vp-p, 75Ω, BNC x1, loop-through (to be terminated with 75Ω terminator, if unused)
Sync modes	Frame Sync, Line Sync, AVDL, Line (minimum)

System phase control

Frame sync mode	H phase: -1/2 H to +1/2 H V phase: -1/2 frame to +1/2 frame Max. delay: 1 frame +1 H / Min. delay: 1 H
Line sync mode	H phase: -1/2 H to +1/2 H V phase: -1/2 frame to +1/2 frame Max. delay: 1 H +1/2 H / Min. delay: 1 H+2 H
AVDL mode	H phase: -1/2 H to +1/2 H V phase: -1/2 frame to +1/2 frame Max. HD delay: 5 H +1/2 H +1 H / Min. HD delay: 1/2 H Max. SD delay: 1 H +1/2 H +1 H / Min. SD delay: 1/2 H
Video delay	Maximum 8 frames (in Frame Sync mode)

Video processing functions

Proc. Amp.	Video level: 0.0% to 200.0% Chroma level: 0.0% to 200.0% Black level: -20.0% to 100.0% HUE: -179.8° to +180°
Video clip	YPbPr, RGB
Color correction	Balance, Differential, Sepia

Audio input

Embedded audio	3G/HD: 16 channels (Group 1 to 4), 48 kHz, 16/20/24-bit, synchronous/asynchronous, 3G Level-B: Embedded Link-A only
	SD: 16 channels (Group 1 to 4), 48 kHz, 16/20/24-bit, synchronous only

Audio input (optional)

FA-10AES-BL (AES/EBU)	Balanced, 0.2 Vp-p to 7 Vp-p, 110Ω, 25-pin D-sub (female) x1 (input/output), 4 pairs of stereo channels, 32/44.1/48 kHz, 16-bit to 24-bit
FA-10AES-UBL (AES/EBU)	Unbalanced, 1.0 Vp-p, 75Ω, BNC x4 (input/output), Max. 4 pairs of stereo channels, 32/44.1/48 kHz, 16-bit to 24-bit

FA-10ANA-AUD (Analog audio)

Line input	Balanced or unbalanced, 4 channels (2 pairs of stereo channels) 25-pin D-sub (female) x1 (shared with analog output), 600 Ω/high impedance, 48 kHz, 24-bit, input level: -10 dBu to +8 dBu
Mic input	Balanced or unbalanced, 2 channels (1 pair of stereo channel) (shared with the analog audio input CH1/CH2 connector), 600 Ω/high impedance, 48 kHz, 24-bit, input level: -55 dBu to -30 dBu

Audio output

Embedded audio	3G/HD: 16 channels (Group 1 to 4), 48 kHz, 16/20/24-bit, synchronous/asynchronous, 3G Level-B: Embedded Link-A only SD: 12 channels (Group 1 to 3), 48 kHz, 16/20/24-bit, synchronous only

Audio output (optional)

FA-10AES-BL (AES/EBU)	Balanced, 3.3 Vp-p, 110 Ω, 25-pin D-sub (female) x1, input/output, 4 pairs of stereo channels, 48 kHz, 16/20/24-bit
FA-10AES-UBL (AES/EBU)	Unbalanced, 1.0 Vp-p, 75 Ω, BNC x4 Max. 4 pairs of stereo channels, 48 kHz, 16/20/24-bit
FA-10AES-UBLC (AES/EBU)	Unbalanced, 1.0 Vp-p, 75 Ω, BNC x4, 4 pairs of stereo channels, 48 kHz, 16/20/24-bit FA-10AES-UBL is dedicated to input when FA-10AES-UBLC is equipped.
FA-10ANA-AUD (Analog audio)	Balanced or unbalanced, 4 channels (2 pairs of stereo channels) 25-pin D-sub (female) x1 (shared with analog audio input), 100 Ω or lower impedance, 48 kHz, 24-bit, output level: -10 dBu to +8 dBu
Audio delay	5 ms to 1000 ms (adjustable in 1 ms steps)
Audio processing	Sampling rate converter (SRC), Gain control, Down mix, Channel re-mapping, Channel mute
Interface	Ethernet (100BASE-TX/1000BASE-T): RJ-45 x1
Interface (optional)	FA-10GPI: 25-pin D-sub (female) x1
Temperature / humidity	0ºC to 40ºC / 30% to 90% (no condensation)
Power	100 VAC to 240 VAC ±10%, 50/60 Hz
Consumption	FA-1010: 80 VA (78 W) (at 100 VAC to 120 VAC), 86 VA (72 W) (at 220 VAC to 240 VAC) with FA-10PS: 80 VA (76 W) (at 100 VAC to 120 VAC), 103 VA (73 W) (at 220 VAC to 240 VAC)
Dimensions / weight	430 (W) x 400 (D) x 44 (H) mm, / 7.0 kg (without options)
Consumables	Power supply unit (to be replaced within 3 years), Cooling fan P-1439-2 (FAN 1-4) (to be replaced within 5 years)
Accessories	CD-ROM (Windows GUI, Operation Manuals), AC cord, Rack mount brackets
Options	FA-10RU: Remote control unit FA-10DCCRU: Remote control unit for color correction FA-AUX30: AUX extension panel (with a connection capability with the FA-10RU, FA-10GPI) FA-10AES-BL: Digital audio balanced I/O option FA-10AES-UBL: Digital audio unbalanced I/O option FA-10AES-UBLC: Digital audio unbalanced output expansion cable FA-10ANA-AUD: Analog Audio I/O option FA-10GPI: GPI 10 each input/output option FA-10PS: Redundant power supply unit

Dimensions

Unit: mm