Universal System Frame
USF-Series

USF-105AS/105S
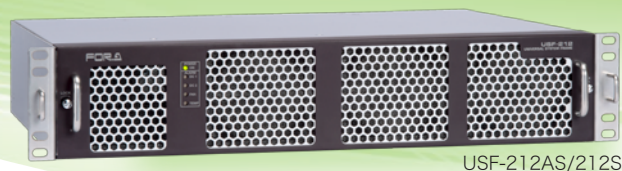

USF-212AS/212S

Universal modular frame designed for compact, economical system building. Build an optimal system for your environment from a full array of modules.

▍ Available frames
  1U size. Holds 5 modules.
   - USF-105AS (Supports 12G-SDI modules)
   - USF-105S
  2U size. Holds 12 modules.
   - USF-212AS (Supports 12G-SDI modules)
   - USF-212S

▍ Hot-swappable, front-accessible power unit and module bays

▍ New design combining SDI and Ethernet

▍ Two genlock inputs (Black burst (BB) or tri-level sync) (USF-212AS/212S)

▍ Built-in Gigabit Ethernet hub for GUI-based module configuration

▍ Frame operational monitoring (cooling fan and power) and module life-and-death monitoring using SNMP

Available modules

Below is the maximum number of modules mounted on each flame. For details, please contact FOR-A office.

| Module \ Flame	USF-212AS	USF-105AS	USF-212S	USF-105S
USF-10IP	6	—	—	—
USF-10IPSDI6-FS	6	—	—	—
USF-10IPSDI12-FS	3	—	—	—
USF-106TICO-12G	6	2	—	—
USF-1043FS	12	5	12	5
USF-105FS-12G	12	4	—	—
USF-106UDC-12G	6	2	—	—
USF-1044UDC	6	2	6	2
USF-106DC-12G	6	2	—	—
USF-111DDA-12G	6	2	—	—
USF-105DDA-12G	12	5	—	—
USF-1053DDA	12	5	12	5
USF-1043VM	12	5	12	5
USF-1100VEA	6	2	6	2
USF-1040VEA	12	5	12	5
USF-105DADA	12	5	12	5
USF-108ADA	12	5	12	5
USF-204ADAC	12	5	12	5
USF-402AADC	12	5	12	5
USF-101MDX4-12G	6	2	—	—
USF-101MDX8-12G	6	2	—	—
USF-1013MUX	12	5	12	5
USF-1013DEMUX	12	5	12	5

Available modules

USF-10IP
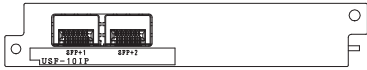
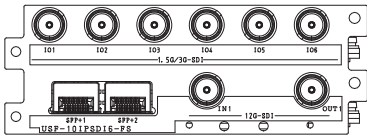## Dual 10 GbE (SFP+) ports

■ Converts to other encapsulation modes
■ Encapsulation modes: SMPTE 2022-5/6/7, SMPTE 2110, NMI

* Encapsulation modes and video codecs: planned for future support
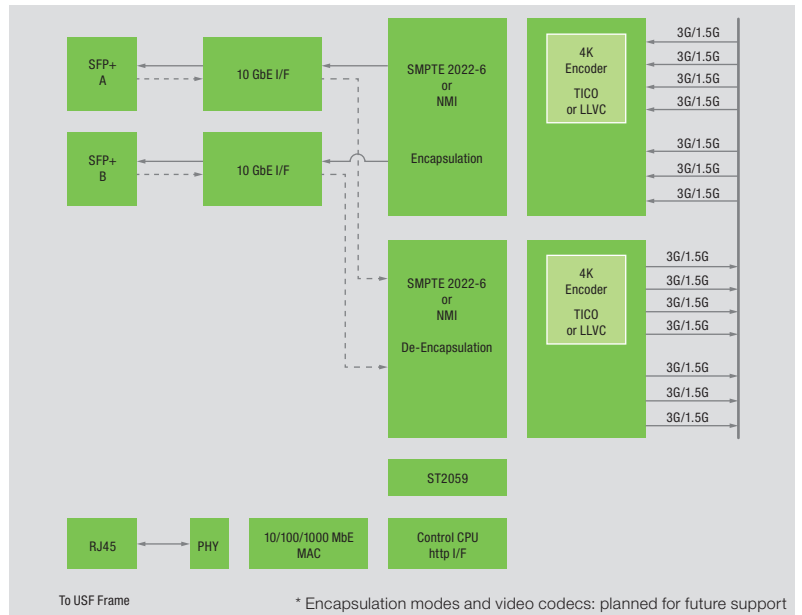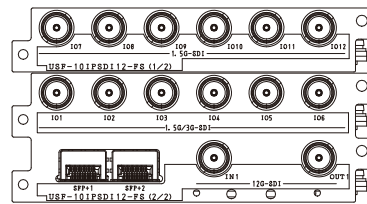

USF-10IPSDI6-FS

Frame/line synchronizer with dual 10 GbE (SFP+), 1-input/1-output 12G-SDI, and 6-input/6-output 3G/1.5G-SDI

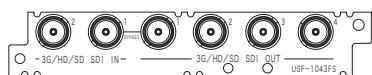■ 2SI/SQD and Level A/B conversion
■ SMPTE 2022-5/6/7, (uncompressed): Simultaneous conversion of up to 6 inputs or 6 outputs (6 streams)

USF-10IPSDI12-FS

Frame/line synchronizer with dual 10 GbE (SFP+), 1-input/1-output 12G-SDI, and 12-input/12-output 3G/1.5G-SDI

■ 2SI/SQD and Level A/B conversion
■ SMPTE2022-5/6/7, (uncompressed): Simultaneous conversion of up to 6 inputs and 6 outputs (12 streams)

* Encapsulation modes and video codecs: planned for future support
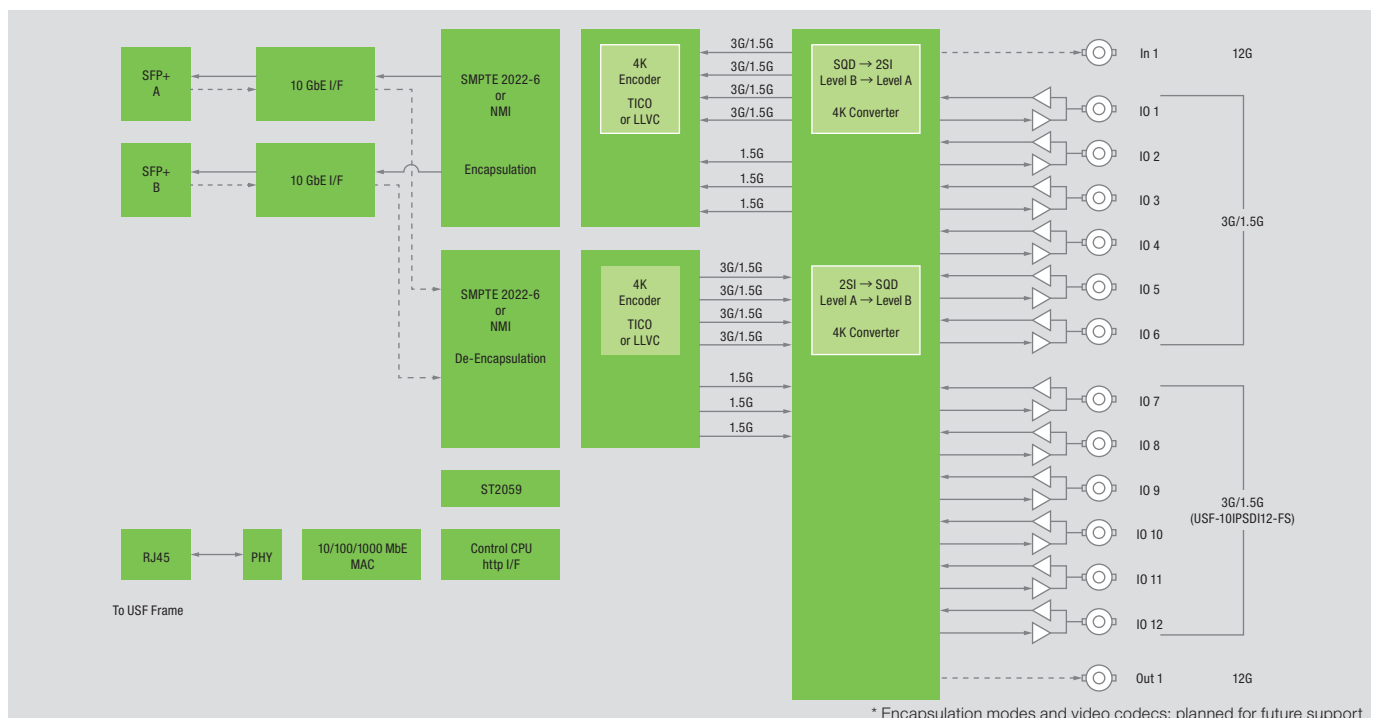
## Available modules

USF-106TICO-12G

4K/TICO encoder/decoder

- TICO codec support enables video compression and expansion with high image quality and low latency. 4K video transfer over 3G-SDI
- One 12G-SDI input, 2 outputs
- 4K 2SI/SQD, Level A/B support
- Downconversion from 4K to HD (1080i/1080p)
- Upconversion available as an option
- HDR/WCG-compatible color processing
- Audio processing enables automatic/semi-automatic audio delay setting
- Frame synchronization
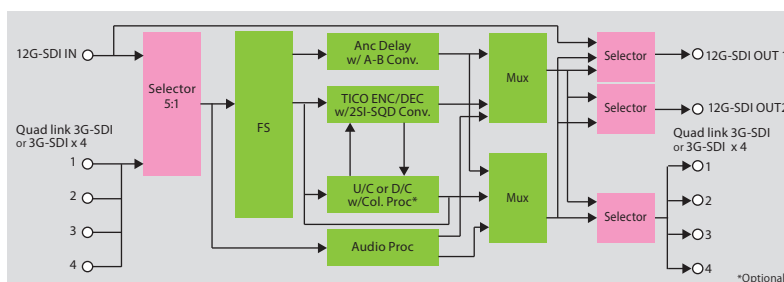
USF-105FS-12G
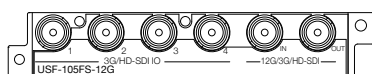
12G-SDI frame synchronizer

- Supports 3840 x 2160 single link 12G-SDI
- Supports 3840 x 2160 quad link (2SI, Level A) 3G-SDI (input and output are switched from a menu)
- 12G-SDI and quad link 3G-SDI (2SI, Level A) conversion
- FS mode: Adjusts phases and syncs asynchronous SDI signals to genlock signals
- Automatic muting for detected audio errors
- 16-channel audio sample rate converter (SRC)
- Audio delay adjustment for each channel (up to 1,000 ms), and audio channel remapping
- Audio downmixing for linear PCM
- H/V ancillary data pass-through (synchronous input only)
- Proc amp, video clip, video delay, and freeze
- 16-channel embedded audio support (asynchronous audio support for 3G/HD-SDI)
- SNMP monitoring
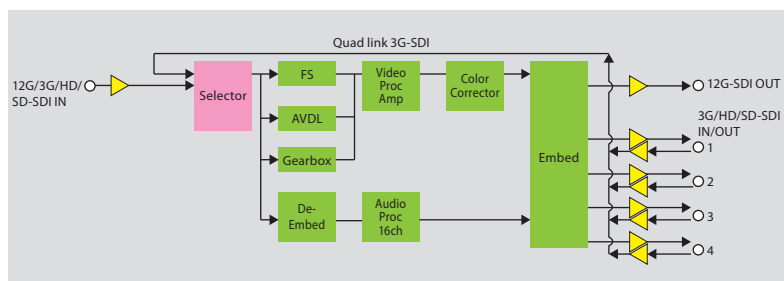
USF-1043FS
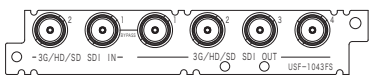

3G/HD/SD-SDI frame synchronizer

- Splits a 3G/HD/SD-SDI source selected from two inputs, for distributed output to four ports
- FS mode: Adjusts phases and syncs asynchronous SDI signals to genlock signals
- Automatic muting for detected audio errors
- 16-channel audio sample rate converter (SRC)
- Audio delay adjustment for each channel (up to 1,000 ms), and audio channel remapping
- Audio downmixing for linear PCM
- Seamless switching of audio and video inputs
- H/V ancillary data pass-through (synchronous input only)
- Proc amp, video clip, video delay, and freeze
- 16-channel embedded audio support (asynchronous audio support for 3G/HD-SDI)
- SNMP monitoring
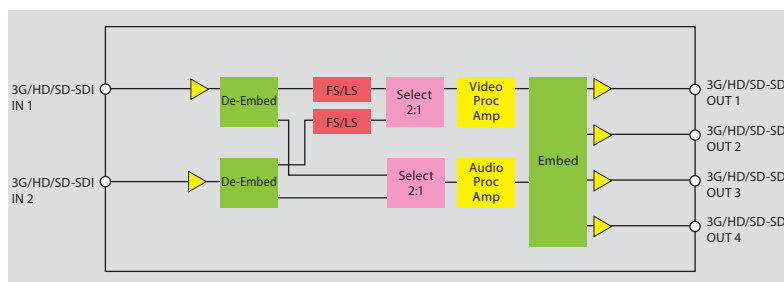
Available modules

USF-106UDC-12G
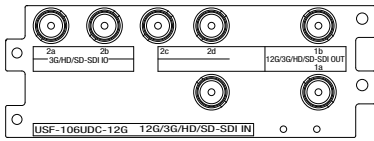
### 12G-SDI 4K/HD up/down converter

- Supports 3840 x 2160 single link 12G-SDI
- Supports 3840 x 2160 quad link (2SI/SQD) 3G-SDI(input and output are switched from a menu)
- 3G-SDI Level A/B conversion
- Dynamic range conversion
- Converts between ITU-R BT.2020/709
- 16-channel embedded audio support
- Sync modes: Frame, Line, AVDL
- Browser-based control via dedicated software GUI
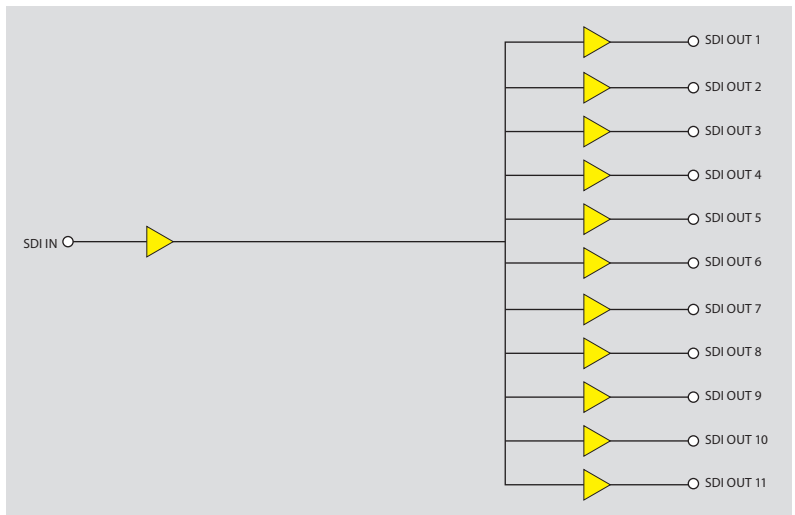- SNMP monitoring

*3G/HD/SD-SDI IO 2a to 2d ports cannot input and output signals simultaneously.
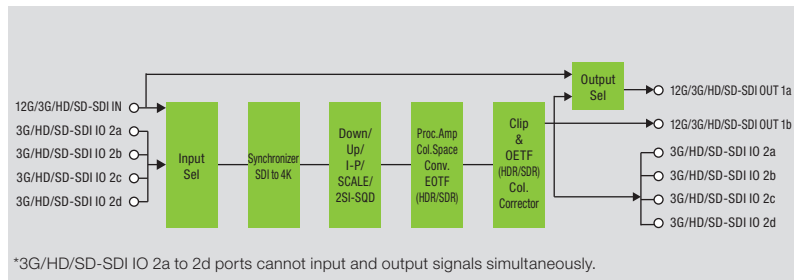
USF-105UC-12G
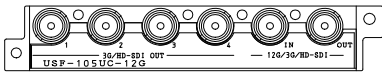
12G-SDI 4K up converter

- Supports 3G/HD-SDI input
- Supports 3840 x 2160 single link 12G-SDI and quad link (2SI/SQD) 3G-SDI outputs
- 3G-SDI Level A/B conversion
- Dynamic range conversion
- Converts between ITU-R BT.2020/709
- 16-channel embedded audio support
- Sync modes: Frame, Line, AVDL
- Browser-based control via dedicated software GUI
- SNMP monitoring
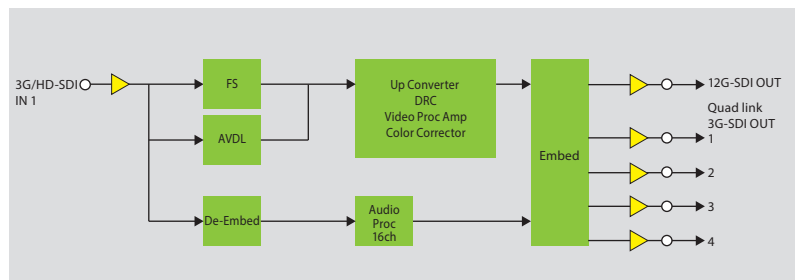
USF-106DC-12G
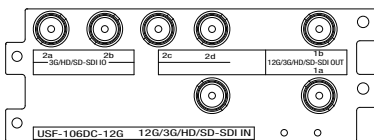
12G-SDI 4K to HD down converter

- Supports 3840 x 2160 single link 12G-SDI
- Supports 3840 x 2160 quad link (2SI/SQD) 3G-SDI (input and output are switched from a menu)
- Dynamic range conversion
- Converts between ITU-R BT.2020/709
- 16-channel embedded audio support
- Sync modes: Frame, Line, AVDL
- Browser-based control via dedicated software GUI
- SNMP monitoring

*3G/HD/SD-SDI IO 2a to 2d ports cannot input and output signals simultaneously.
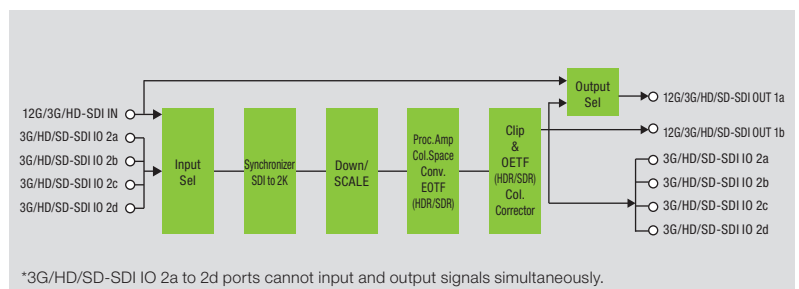
Available modules
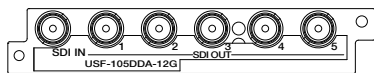
USF-111DDA-12G
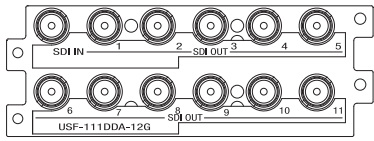
12G-SDI 11-output digital video distributor

■ Supports SDI 12 Gbps, 3 Gbps, 1.5 Gbps, or 270 Mbps signals
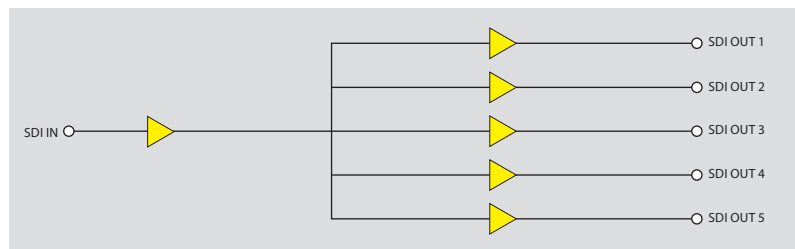■ DVB-ASI (270 Mbps) also supported
■ SNMP monitoring

USF-105DDA-12G

12G-SDI 5-output digital video distributor

■ Supports SDI 12 Gbps, 3 Gbps, 1.5 Gbps, or 270 Mbps signals
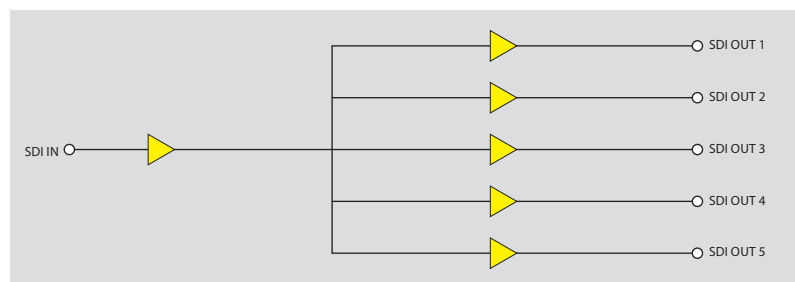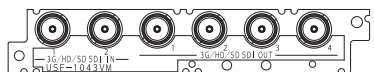■ DVB-ASI (270 Mbps) also supported
■ SNMP monitoring

USF-1053DDA

5-output 3G/1.5G/270 Mbps digital video distributor

■ 3G/HD/SD-SDI equalization and reclocking
■ Supports SDI 3.0 Gbps, 1.5 Gbps, or 270 Mbps signals
■ DVB-ASI (270 Mbps) also supported
■ SNMP monitoring

USF-1043VM

3G/HD/SD-SDI digital video distributor with signal monitor

■ Supports SDI 3 Gbps, 1.5 Gbps, or 270 Mbps signals
■ Can be configured for 1-input/4-output or 2-input/2-output systems
■ Switches seamlessly to the other line when errors of input signals are detected
■ SNMP monitoring
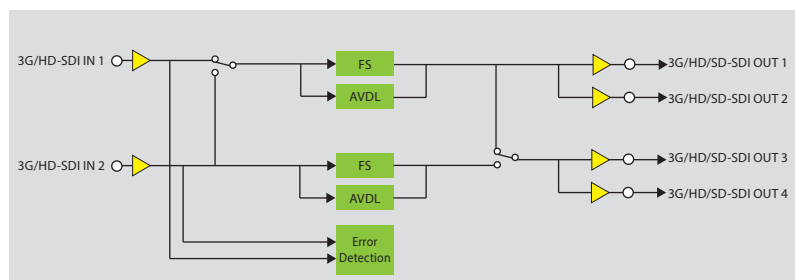
Available modules

USF-1100VEA
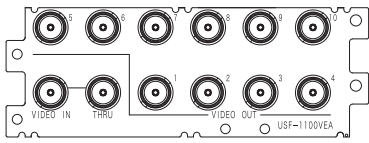
10-output analog video distributor

■ Cable equalization corrects frequency characteristics in analog video distribution
■ Ideal for BB or tri-level sync signal distribution
■ Pass-through input supported
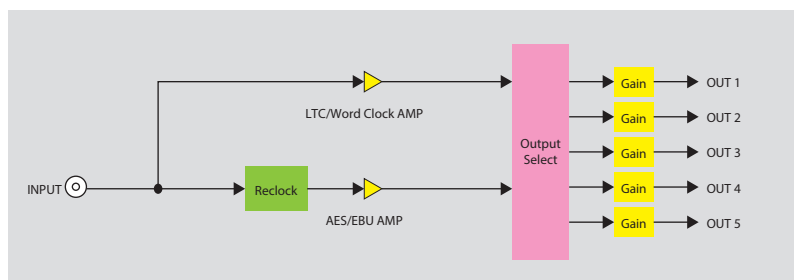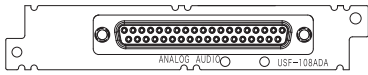■ Browser-based control and SNMP monitoring (optional)

ANALOG VIDEO IN — THRU OUT

Cable Equalization — Gain

VIDEO OUT 1
VIDEO OUT 2
VIDEO OUT 3
VIDEO OUT 4
VIDEO OUT 5
VIDEO OUT 6
VIDEO OUT 7
VIDEO OUT 8
VIDEO OUT 9
VIDEO OUT 10
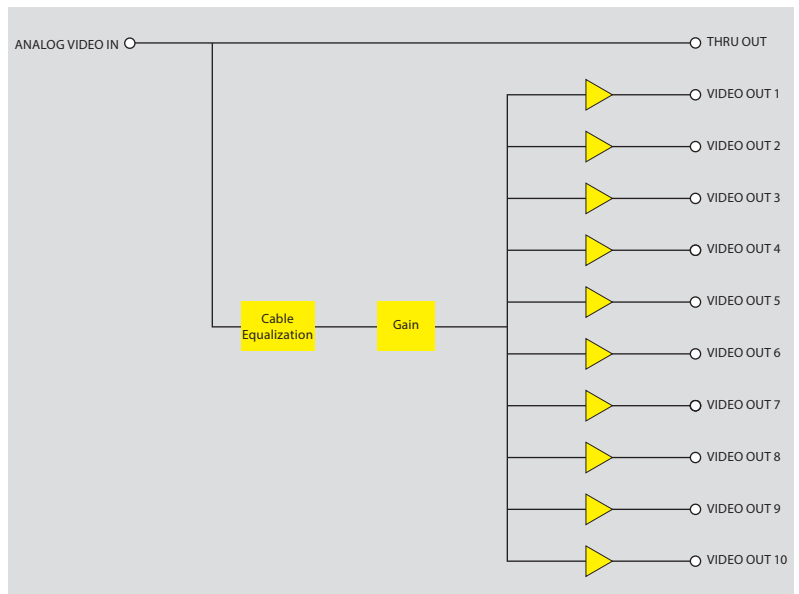
USF-1040VEA

4-output analog video distributor

■ Cable equalization corrects frequency characteristics in analog video distribution
■ Ideal for BB or tri-level sync signal distribution
■ Pass-through input supported
■ Browser-based control and SNMP monitoring (optional)

ANALOG VIDEO IN — THRU OUT

Cable Equalization — Gain

VIDEO OUT 1
VIDEO OUT 2
VIDEO OUT 3
VIDEO OUT 4
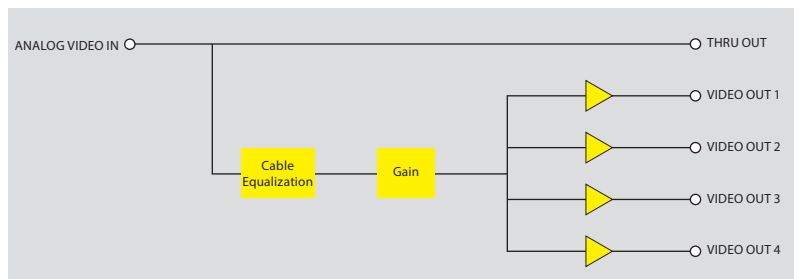
USF-105DADA

5-output unbalanced digital audio distributor

■ Expandable to 20 outputs, using four modules
■ LTC and word clock distribution also supported
■ SNMP monitoring

INPUT

LTC/Word Clock AMP

Reclock

AES/EBU AMP

Output Select

Gain — OUT 1
Gain — OUT 2
Gain — OUT 3
Gain — OUT 4
Gain — OUT 5

Available modules

USF-108ADA

8-output analog audio distributor
■ Can be configured for 1-input/8-output or two 1-input/4-output systems
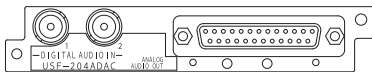■ Browser-based control and SNMP monitoring (optional)

When distributing 1 input to 8 outputs
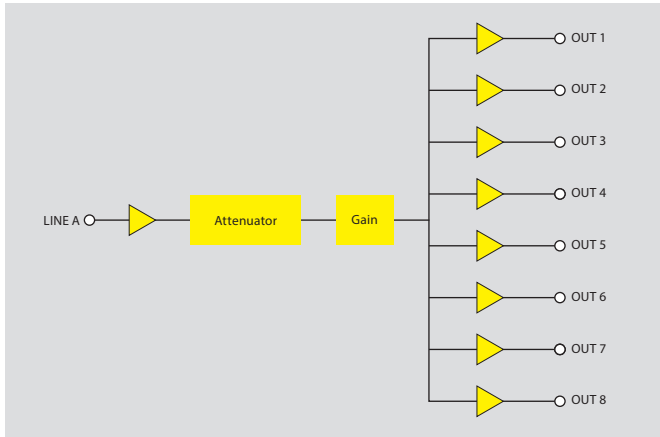
**When distributing 1 input to 4 outputs (2 inputs to 8 outputs in total)**
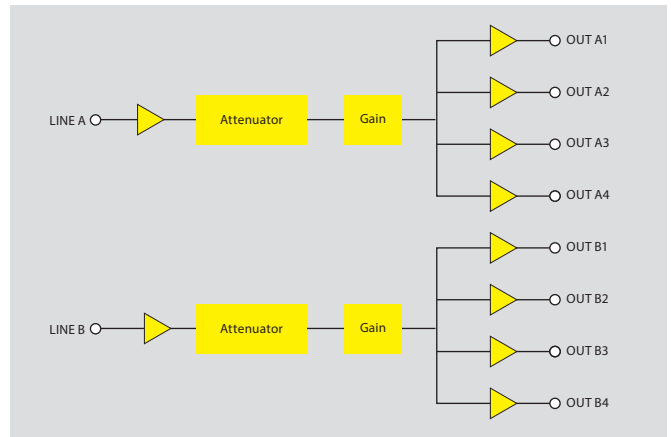
USF-204ADAC

Digital-to-analog audio converter with AES/EBU two-channel input*/output
■ Converts two channels of digital audio to four channels of analog audio
■ Adjustable digital audio input level (-20/-18 dBFS)
■ Adjustable audio output level (-10/0/4/8 dBu)
■ Adjustable audio silence period (1 to 10 sec)
■ Supports output synced with reference signals from the USF
■ SNMP monitoring

*Asynchronous input not supported. AES/EBU signals are required to synced with reference signals from the USF frame.
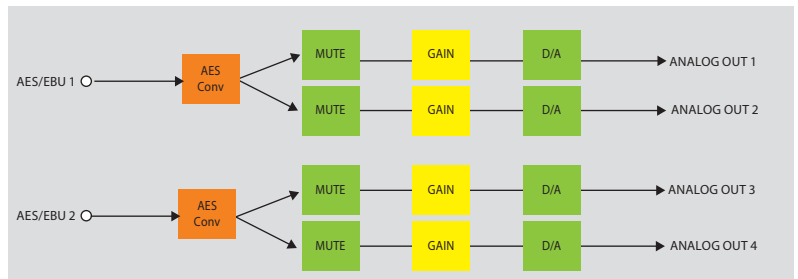
USF-402AADC
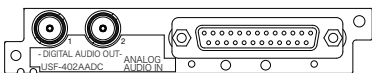
Analog-to-digital audio converter
■ Converts four channels of analog audio to two channels of digital audio
■ Adjustable input impedance (600Ω/high)
■ Adjustable input gain (±6 dB with front dial, ±20 dB via browser)
■ Adjustable analog audio input level (-10/0/4/8 dBu)
■ Adjustable digital audio reference level (-18/-20 dBFS)
■ Adjustable audio silence period (1 to 10 sec)
■ Supports output synced with reference signals from the USF
■ SNMP monitoring
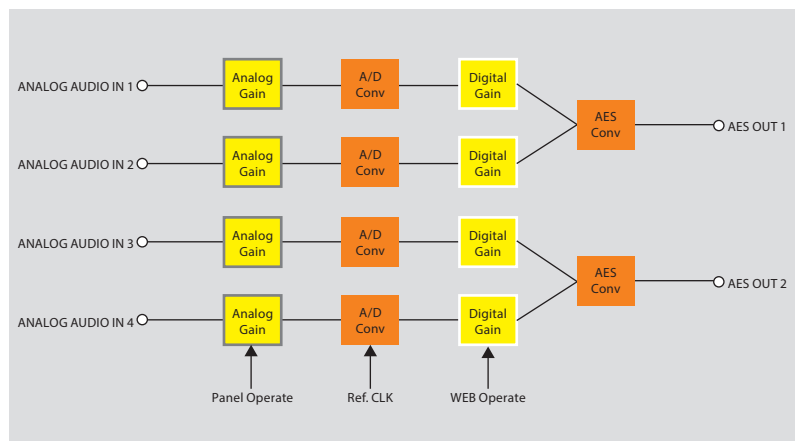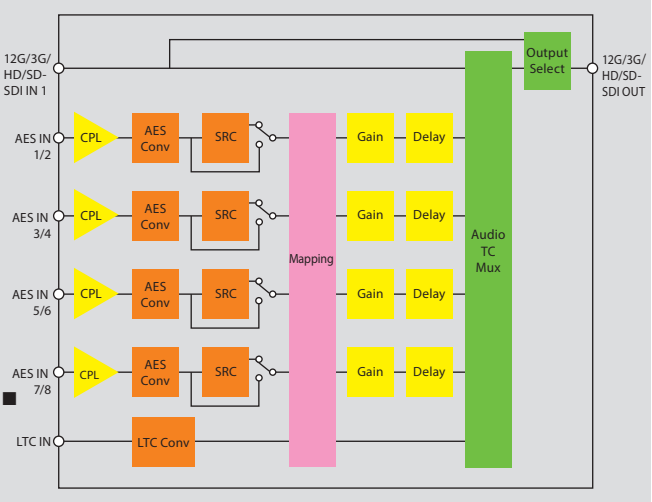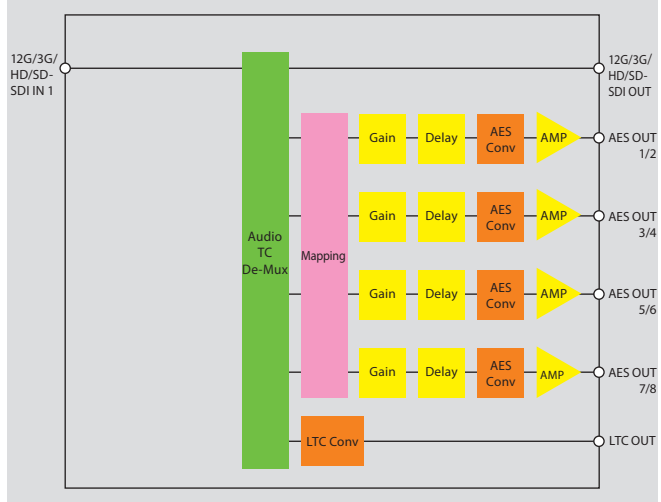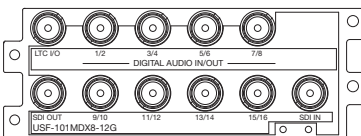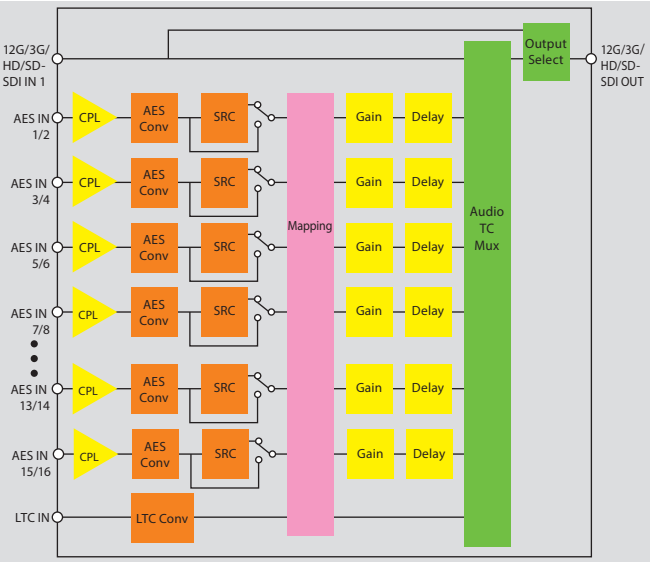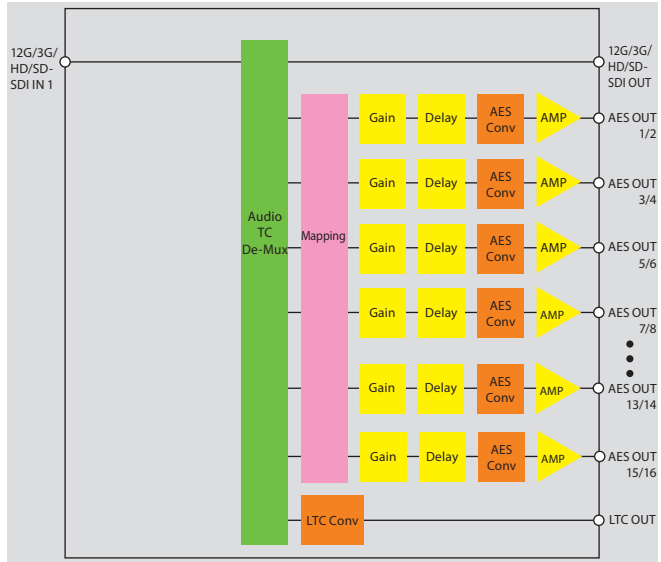
Available modules

USF-101MDX4-12G
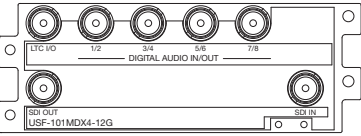
12G-SDI 4K audio multiplexer/demultiplexer with 8 channels of AES I/O

- Supports transfer rates from 270 Mbps to 12 Gbps
- Sync modes: Frame, Line, AVDL
- Sample rate converter (SRC) for MUX/DEMUX of asynchronous AES/EBU signals (switched from a menu)
- MUX: Mapping 8 channels (4 pairs) of AES/EBU signals in 16 channels (at 4K) and embedding onto SDI signals
- DEMUX: De-multiplexes 8 selected channels from 16 channels from SDI signals as AES/EBU audio output
- LTC port is used for input and output
- SNMP monitoring

MUX

DEMUX

USF-101MDX8-12G

12G-SDI 4K audio multiplexer/demultiplexer with 16 channels of AES I/O

- Supports transfer rates from 270 Mbps to 12 Gbps
- Sync modes: Frame, Line, AVDL
- Sample rate converter (SRC) for MUX/DEMUX of asynchronous AES/EBU signals (switched from a menu)
- MUX: Mapping 16 channels (8 pairs) of AES/EBU signals in 16 channels (at 4K) and embedding onto SDI signals
- DEMUX: De-multiplexes 8 selected channels from 16 channels from SDI signals as AES/EBU audio output
- LTC port is used for input and output
- SNMP monitoring

MUX

DEMUX

Available modules

USF-1013MUX

3G/HD/SD-SDI digital audio multiplexer

- Multiplexes 4 pairs (8 channels) of AES/EBU signals onto SDI signals
- 1 input and 1 output (3G/HD/SD-SDI)
- Gain adjustment for audio input/output
- Timecode (LTC) input (or AES IN 7/8 available)
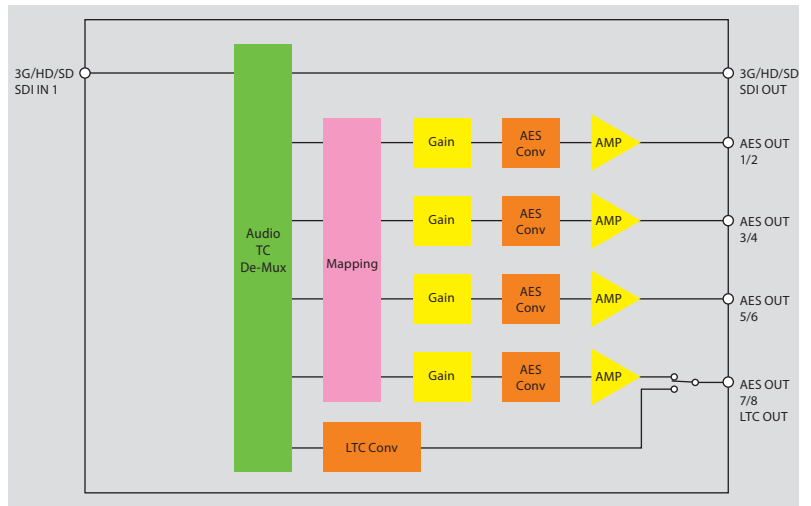- Sample rate converter for AES/EBU input
- SNMP monitoring
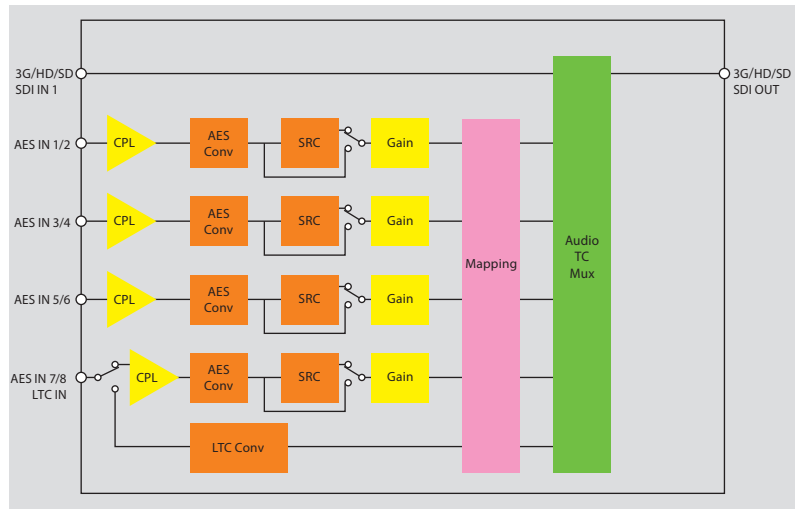
USF-1013DEMUX
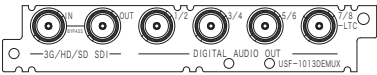
3G/HD/SD-SDI digital audio demultiplexer

- De-multiplexes audio from SDI signals into AES/EBU audio output
- 1 input and 1 output (3G/HD/SD-SDI)
- Gain adjustment for audio input/output
- Timecode (LTC) input (or AES IN 7/8 available)
- SNMP monitoring

Front view (when the front panel is removed)

Power unit 1 bay — Ethernet HUB — USF module bays

Power unit 2
(incl. cooling fan)
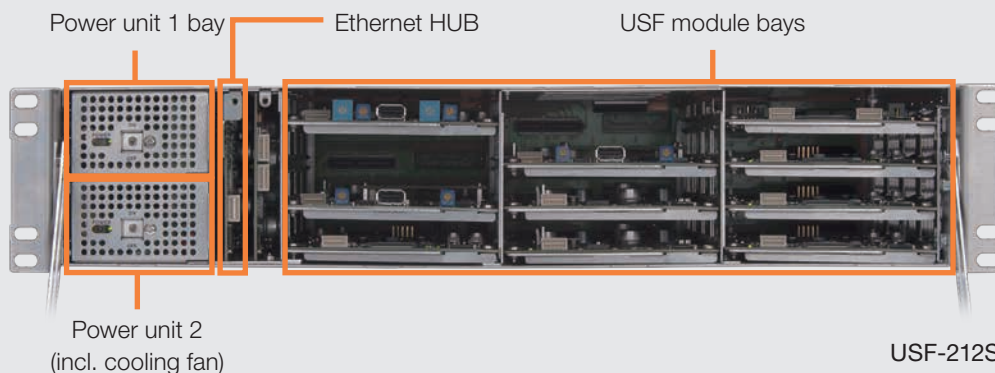
USF-212S

External view

Unit: mm

USF-212AS

Front

Side

88

480
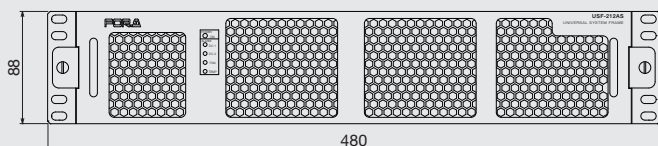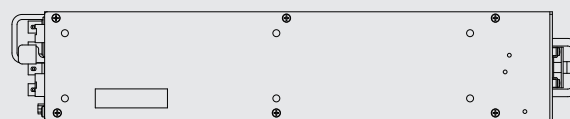
USF-105AS

Front

Side

44

480
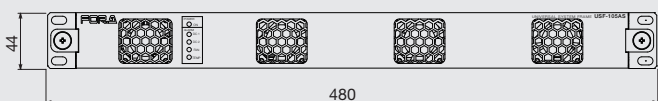
Rear view

USF-212AS

USF-105AS