FOR-A®

PRODUCT GUIDE BOOK

2018 – 2019

FOR-A World of Possibilities

File Based

Baseband

4K ULTRA HD

12G

3G

1.5G

SDI

2SI/

HD

W

H

Studios

Stadiums

Production

Baseband, file-based, and graphics technologies, and emerging IP broadcast specifications. Flexible FOR-A systems and solutions balance and combine these four elements well, drawing on the strengths of each to create synergy.

Graphics

IP

IP

IP to IP

IP to SDI

SDI to IP

IP to FILE

FILE to IP

SQD

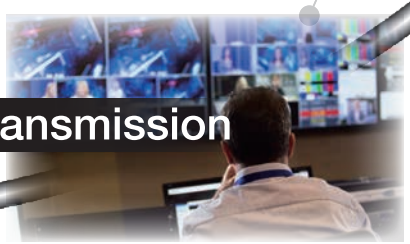
DR

CG

FR

8K SUPER Hi-Vision SHV

Archiving

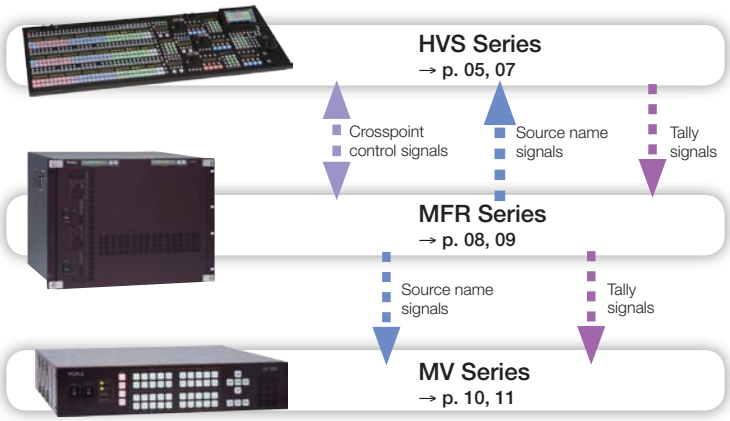


Transmission

In baseband technologies, many FOR-A products are indispensable in video production, offering key advantages such as 12G-SDI connectivity. To support applications in emerging IP technologies, FOR-A products offer versatile conversion between baseband and file-based formats. Tapping into the possibilities in HDR, WCG, HFR and more, FOR-A technical development continues to push the boundaries in video production.

Link Source Names and Tally Signals

- Offers integrated management of source name signals from MFR routing switchers, which automatically send names to HVS switchers and MV multi viewers.
- HVS tally signals are automatically sent to MFR routing switchers and MV multi viewers for coordinated display.
- Crosspoint control from both HVS switchers and MFR routing switchers.



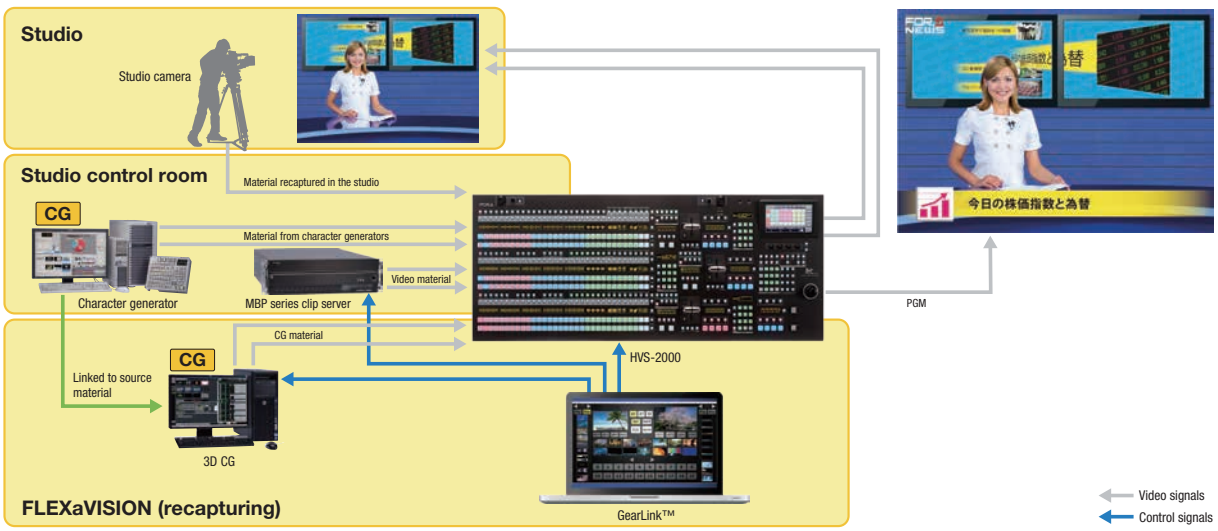
Integrated Control Software

GearLink™

Provides centralized visual control of video switchers and other peripherals. Buttons and screen layouts can be customized for a bird's-eye view of workflows and convenient system control.

Video Wall Control Software

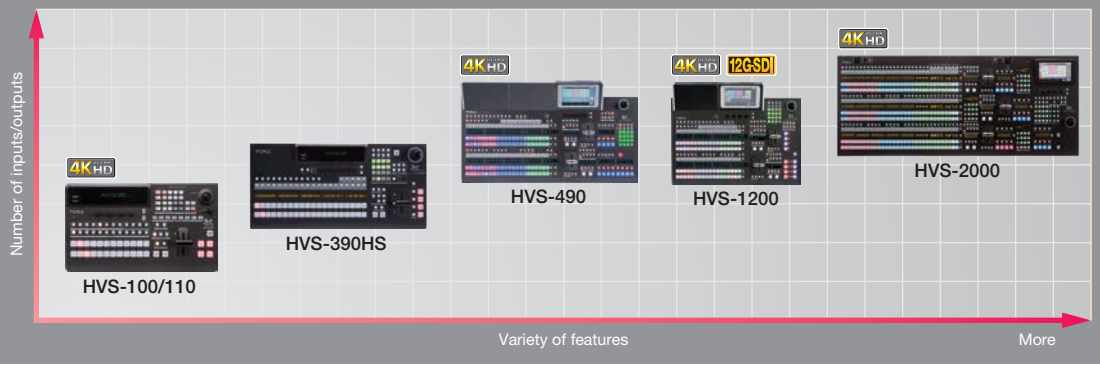
FLEXaVISION™ <Preliminary>



Ideal for controlling video walls in broadcast studios and large screens at arenas, stadiums and other event venues. Combines background video across two studio monitors, enabling it to change dynamically as part of the set.

Video Switcher Lineup

4K HD : 4K support 12G-SDI : 12G-SDI support



Comparison table

		HVS-100	HVS-110	HVS-390HS	HVS-490	HVS-1200	HVS-2000
Number of M/E		1M/E	1M/E	1 or 2M/E	2M/E	4K : 1M/E HD : 2M/E	2M/E*1
Number of MELite		No	No	No	2 (4)	4K : 1 HD : 4	6
Video inputs	Number of inputs (max.)	8 (14)	12	16 (24)	16 (40)	4K: 10 HD: 40	24 (48)
	12G-SDI	No	No	No	No	Yes	No
	6G-SDI	No	No	No	No	Yes	No
	3G-SDI	Optional	Optional	No	Yes	Yes	Optional
	4K UHD support	Optional	Optional	No	Optional	Yes	Optional
	HD-SDI	Yes	Yes	Yes	Yes	Yes	Yes
	SD-SDI	Yes	Yes	Yes	Optional	No	Yes
	Analog	Optional	No	Optional	Optional	No	Optional
	HDMI	Optional	No	No	Optional	No	Optional
	DVI	No	No	Optional	No	No	No
	VGA	Optional	No	Optional	Optional	No	Optional
Video outputs	Number of outputs (max.)	4 + 1 HDMI (12 + 1 HDMI)*2	8 + 1 HDMI	8 + 1 HDMI (12 + 1 HDMI)*3	8 + 1 HDMI (20 + 2 HDMI)*2	8 + 2 HDMI	16 + 2 HDMI (20 + 2 HDMI)*2
	12G-SDI	No	No	No	No	Yes	No
	3G-SDI	Optional	Optional	No	Yes	Yes	Optional
	4K UHD support	Optional	Optional	No	Optional	Yes (2SI only)	Optional
	HD-SDI	Yes	Yes	Yes	Yes	Yes	Yes
	SD-SDI	Yes	Yes	Yes	Optional	No	Yes
	Analog	Optional	No	Optional	Optional	No	Optional
	HDMI	Yes (1 output, optional expansion card available)	Yes (1 output)	Yes (1 output)	Yes (1 output, optional expansion card available)	Yes (2 outputs)	Yes (2 outputs, optional expansion card available)
	DVI	No	No	Optional	No	No	No
	VGA	Optional	No	Optional	Optional	No	Optional
Reference input	Black burst or Tri-level Sync	Yes	Yes	Yes	Yes	Yes	Yes
Reference output	Black burst or Tri-level Sync	Yes	Yes	Yes	Yes	Yes	Yes
Features	Frame synchronizer	Yes	8	Yes	Yes	Yes	Yes
	Resizing (max.)	4 (8)	4	4 (12)	4 (12)	0	0 (12)
	Process amplifier	Yes	Yes	Yes	Yes	Yes	Yes
	Color corrector	No	No	Yes	Yes	Yes	Yes
	Keyer	2	2	4 for 1M/E model 8 for 2M/E model	4 per M/E	4K : 2 HD : 4 per M/E	8 for 2M/E model 12 for 3M/E model
	DSK	2	2	2 for 1M/E model 4 for 2M/E model (using keyer)	4	4K : 1 HD : 4	4 for 2M/E model 8 for 3M/E model*4
	Keyer, exclusive DVE for DSK	Yes	Yes	Yes	Yes	Yes	Yes
	P-in-P*5	Yes	Yes	Yes	Yes	Yes	Yes
	Flying key (max.)*6	4	4	8	12	4K : 3 HD : 12	12 (16)
	Transition DVE (max.)	1	1	2 (for each M/E)	6 (for each M/E)	4K : 2 (4) HD : 6 (for each M/E)	8 for 2M/E model 12 for 3M/E model
	Still store (max.)*7	2 (16)	2 (10)	4 (20)	4 (44)	4K : 1 (11) HD : 4 (44)	4 (52) (6 (54))*8
	Clip store (max.)	2	2	4	4	4K : 1 HD : 4	4 (6)*8
	Multi viewer (max.)	1	1	2	3	2	2 (4)
	AUX assignable keyer	Yes	Yes	Yes	Yes	Yes	Yes
	AUX transition	Yes	Yes	Yes	Yes	Yes	Yes
	Event memory	Yes	Yes	Yes	Yes	Yes	Yes
	Sequence	No	No	Yes	Yes	Yes	Yes
	Macro	Yes	Yes	Yes	Yes	Yes	Yes
	GUI control	Yes	Yes	Yes	Yes	Yes	Yes
	Safety area maker	Yes	Yes	Yes	Yes	Yes	Yes
	Built-in color bar	Yes	Yes	Yes	Yes	Yes	Yes
	Built-in matte	Yes	Yes	Yes	Yes	Yes	Yes
	Chroma keyer	Yes	Yes	Yes	Yes	Yes	Yes
Interfaces	ARCNET	Optional	Optional	Yes	No	No	Yes
	Ethernet	Yes	Yes	Yes	Yes	Yes	Yes
	GPI	Yes	Yes	Yes	Yes	Yes	Yes
	SERIAL	2	2	6	2	2	6
Other features	Redundant power supply	Optional	Optional	Optional	Optional	Optional	Optional

*1 Expandable to 3 M/E *2 Expandable 4 outputs with down converter *3 Expandable 2 outputs with down converter *4 4 channels are exclusively provided for M/E 3 *5 P-in-P display is possible using all keyers and DSKs.
*6 Expandable by installing optional cards *7 When using Input Still *8 Expandable 2 outputs by installing an option

12G/6G/3G/HD/SD Video Switcher

HVS-6000 “HANABI” 4K 12G-SDI HDR WCG <Preliminary>

New full-featured 4K 3 M/E switcher that builds on the solid performance and usability of the HANABI series. Multiplying HVS-2000 capabilities and convenience, this model brings 12G-SDI compatibility to all inputs and outputs. Also anticipates future needs in an era of video over IP. Easily expandable, including IP interfaces.

* Available in Japan and South Korea. For other areas, please contact us.

3G/HD/SD Video Switcher

HVS-2000 “HANABI” 4K

Offering 3 traditional M/Es and 4 MELite™ M/Es, this mid-sized switcher is more powerful than switchers many times its cost. With its unique architecture and control capabilities, it offers 7 M/E capability and is perfect for an array of applications.

- 24 in/18 out standard (including 2 HDMI outputs). Up to 48 in/18 out or 40 in/22 out (optional)
- Up/Down stream transition effects
- Adds the pure power of 6 real M/E’s standard capability for multiple independent on-stage monitor display control – each with mixes, wipes, keys and DVE including preview control.
- 6 or 7 M/E capability: 2 or 3 M/E (optional) + Unique 4 MELite™ with FLEXaKEY™ architecture
- 6 I/O expansion slots: HVS-100 series optional cards can be installed.
- Supports 3D DVE.
- 8 x 2.5D DVE plus 4 x 3D DVE (optional)
- 4 multi viewers (standard: 2, up to 64 windows)
- Supports 4K processing in SQD and 2SI (optional).
- Touch panel display (optional)

12G/6G/3G/HD Video Switcher

HVS-1200 “HANABI” 4K 12G-SDI HDR <Preliminary>

Acclaimed HANABI usability in a compact switcher.
Portable switcher ready for 12G-SDI.

- 12G/6G/3G/HD-SDI supported
- 4K: 1 M/E + 1 MELite, HD: 2 M/E + 4 MELite
- 4K 2SI
- 4K: 10 in/10 out, HD: 40 in/10 out (includes 2 HDMI outputs)
- Still and clip processing
- Two keyers per M/E for 4K (four for HD), one FLEXaKEY (four for HD)
- Two 2.5D DVEs for 4K or 16 for HD, expandable up to four for 4K
- Frame synchronizer for all inputs, which support still capture
- Two multi viewers

3G/HD/SD Video Switcher

HVS-490 “HANABI” 4K

The HVS-490 offers 4K and 3G capabilities. Exclusive MELite™ technology extends the switcher’s 2 M/Es to offer 6 M/E performance.*

* Using an optional HVS-49IO card. In 4K mode, 1 M/E + 1 MELite is available.

- 16 in/9 out standard (including 1 HDMI out). Up to 40 in/18 out, 36 in/20 out, or 32 in/22 out (optional)
- 4K (UHD, SQD/2SI, optional) and 3G-SDI Level-A (in/out), Level-B (in) support
- 4 or 6 M/E performance; 2 M/E + 2 MELite™ as standard, expandable up to 2 M/E + 4 MELite™
- HD/SD-SDI: 16 channels of 2.5D DVE as standard, expandable up to 32 channels (optional)
- 3G-SDI: 8 channels of 2.5D DVE as standard, expandable up to 16 channels (optional)
- 3 built-in multi viewers with tally and title display
- AES 4 in/4 out with Mux/Demux function card available (optional)
- Built-in Web server enables control from a PC or tablet device.

HD/SD 1 M/E-2 M/E Video Switcher

HVS-390HS “HANABI”

- 16 in/9 out standard (including 1 HDMI out). Up to 24 in/13 out(optional)
- 4 up-scalers available (expandable with optional input card)
- Dual 4/10/16-split multi viewer
- 4 keyers per M/E each with 2.5D DVE and defocus (1 M/E: 4, 2 M/E: 8)
- 2 channels of free-assignable 3D DVE for transitions

3G/HD/SD Portable Video Switcher

HVS-100/110 “HANABI” 4K ULTRA HD

- HVS-100: Separated Main Unit/Control Panel Type. 8 in/5 out standard (including 1 HDMI out). Up to 14 in/7 out or 12 in/9 out (optional)
- HVS-110: Integrated Main Unit/Control Panel Type. 12 in/9 out standard (including 1 HDMI out)
- Built-in multi viewer with tally and title display
- 4K (UHD, SQD) and 3G-SDI Level-A (in/out), Level-B (in) support

Thunderbolt™ 2 Expansion Card

HVS-100TB2 <Preliminary>

Thunderbolt™ 2 I/O expansion card for HVS-100/HVS-490*/HVS-2000* switchers enables single-cable transfer of four channels of HD video to a computer. Achieves simple virtual settings using only a laptop PC.

* Planned for future support

Thunderbolt™ 2 interface available on BRAINSTORM/ClassX graphic systems and ODYSSEY video server

Advanced Virtual Set Solution

InfinitySet Lite [BRAINSTORM]

BRAINSTORM

Advanced virtual set solution designed for use with HVS-100TB2. Camera positions and actions are controlled from a video switcher through a Thunderbolt™2 cable or network cable.

3D Graphic Generator

LiveBoard Suite [ClassX] 4K ULTRA HD

ClassX

ClassX offers a complete solution with pixel-perfect, real-time 2D and 3D motion graphics and titling, SportsGraphics, SocialServer, MOS newsroom interface, clip playing automation, picture-in-picture and multi-functional scripting facility. Class X’s 2D/3D character generation and live motion graphics and playout software can be controlled from a video switcher with HVS-100TB2.

* FOR-A is the exclusive dealer of the ClassX premium graphics suite of 2D/3D character generation and live motion graphics and playout software in the U.S, Europe and Middle-East.

Multi Channel Video Server

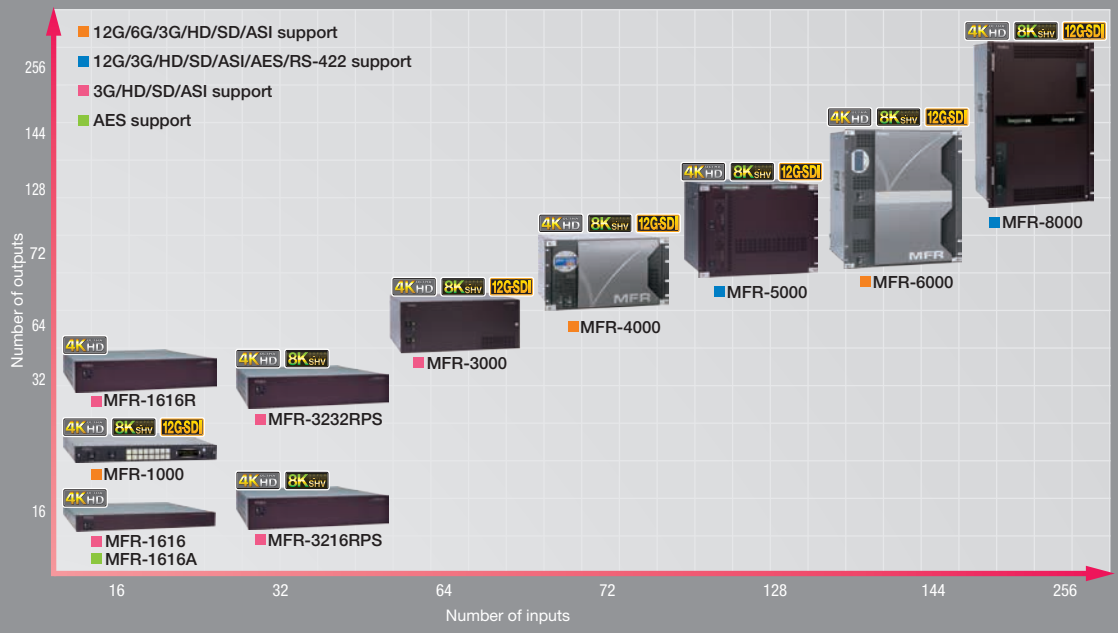
Insight [ODYSSEY] 4K ULTRA HD

ODYSSEY Development

Versatile four-channel playout system designed for studio and OB van environments. Includes a wide range of supported wrappers and codecs, making Insight an excellent tool for media contribution and general video playout tasks. Functions such as video cue and play based on bus tally and “Auto Take” following end of clip are controlled from a video switcher through a Thunderbolt™2 cable or network cable.

Routing Switcher Lineup

4K HD : 4K support　8K SHV : 8K support　12G-SDI : 12G-SDI support



Comparison table

		MFR-1616A	MFR-1616/ MFR-1616R	MFR-1000*1	MFR-3216RPS	MFR-3232RPS	MFR-3000	MFR-4000	MFR-5000	MFR-6000	MFR-8000
Input x output		16 x 16 (stereo-pair)	16 x 16	From 8 x 8 up to 16 x 16 (expandable by 8 channels)	32 x 16	32 x 32	From 8 x 8 up to 64 x 64 (expandable by 8 channels)	From 9 x 9 up to 72 x 72 (expandable by 9 channels)	From 16 x 16 up to 128 x 128 (expandable by 16 channels)	From 9 x 9 up to 144 x 144 (expandable by 9 channels)	From 16 x 16 up to 256 x 256 (expandable by 16 channels)
Video inputs	12G-SDI	No	No	Yes	No	No	Optional	Optional	Optional	Optional	Optional
	6G-SDI	No	No	Yes	No	No	No	Optional	No	Optional	No
	3G/HD/SD-SDI	No	Yes	Yes	Yes	Yes	Optional	Optional	Optional	Optional	Optional
	DVB-ASI	No	Yes	Yes	Yes	Yes	Optional	Optional	Optional	Optional	Optional
Cable equalization	12G-SDI (L5.5CUHD)	No	No	100 m	No	No	100 m	100 m	100 m	100 m	100 m
	3G-SDI (5C-FB)	No	70 m	100 m	70 m	70 m	100 m	100 m	100 m	100 m	100 m
	HD-SDI (5C-FB)	No	100 m	100 m	100 m	100 m	100 m	100 m	100 m	100 m	100 m
	SD-SDI (5C-2V)	No	200 m	200 m	200 m	200 m	200 m	200 m	200 m	200 m	200 m
Video outputs	12G-SDI	No	No	Yes	No	No	Optional	Optional	Optional	Optional	Optional
	6G-SDI	No	No	Yes	No	No	No	Optional	No	Optional	No
	3G/HD/SD-SDI	No	Yes	Yes	Yes	Yes	Optional	Optional	Optional	Optional	Optional
	DVB-ASI	No	Yes	Yes	Yes	Yes	Optional	Optional	Optional	Optional	Optional
Audio input	AES/EBU	Yes	No	No	No	No	Optional	Optional*1	Optional	Optional*1	Optional
	Analog	No	No	No	No	No	Optional	Optional*1	Optional	Optional*1	Optional
Audio output	AES / EBU	Yes	No	No	No	No	Optional	Optional*1	Optional	Optional*1	Optional
	Analog	No	No	No	No	No	Optional	Optional*1	Optional	Optional*1	Optional
Serial control signal		No	No	No	No	No	No	No	Optional	No	Optional
Reference input	Black burst or Tri-level Sync	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interfaces	MFR-LAN (max.)	1	1 (2*2*3)	1	1 (2*2)	1 (2*2)	1 (2*2)	1 (2*2)	1 (2*2)	1 (2*2)	1 (2*2)
	PC-LAN (max.)	1	1	1	1	1	1	1 (2*2)	1 (2*2)	1 (2*2)	1 (2*2)
	SERIAL	1	1	0	1	1	1	1	1	1	1
	ALARM	1	1	1 (GPI)	1	1	1	1	1	1	1
Features	Salvo	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Take	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Link	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Level	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Chop	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Monitor output	No	No	No	No	No	No	No	Yes	No	Yes
	Error proofing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Matrix partition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other features	Front control panel	No	No	Yes	No	No	Optional	No	No	No	No
	GUI control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	SNMP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Redundant power supply	No	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional
	Redundant CPU	No	Optional*3	No	Optional	Optional	Optional	Optional	Optional	Optional	Optional
EIA RU		1	1 (2*3)	1	2	2	4	6	8	13	16

*1 Planned for future support　*2 With redundant CPU installed　*3 MFR-1616R only

Routing Switcher

MFR-8000 4K HD 8K SHV 12G-SDI

Configures a matrix of up to 256 x 256, and allows 16 inputs/16 outputs for 8K signals or 64 inputs/64 outputs for 4K UHD signals in a 16RU frame.

Routing Switcher

MFR-5000 4K HD 8K SHV 12G-SDI

Configures a matrix of up to 128 x 128 in an 8RU frame.

12G-SDI Routing Switcher

MFR-1000 4K HD 8K SHV 12G-SDI <Preliminary>

Configures a matrix of up to 16 x 16. 12G-SDI compatibility across all inputs and outputs.

Routing Switcher

MFR-3232RPS 4K HD 8K SHV
MFR-3216RPS 4K HD 8K SHV
MFR-1616/1616R 4K HD

12G-SDI Routing Switcher

MFR-6000 NEW 4K HD 8K SHV 12G-SDI

Configures a matrix of up to 144 x 144. 12G-SDI compatibility across all inputs and outputs. I/O expandable in 9-channel increments.

12G-SDI Routing Switcher

MFR-4000 4K HD 8K SHV 12G-SDI

Configures a matrix of up to 72 x 72. 12G-SDI support enables single-cable transfer of 4K video without complex cabling and fewer channels. Take advantage of the space saved by reducing cables.

Routing Switcher

MFR-3000 4K HD 8K SHV 12G-SDI

With optional MFR-30FP front control panel

MFR-16MV

Configures a matrix of up to 64 x 64, with up to 4 inputs/4 outputs used for 8K signals or 16 inputs/16 outputs for 4K UHD signals. MFR-16MV split-screen option allows input/output source verification, even with no additional MV unit.

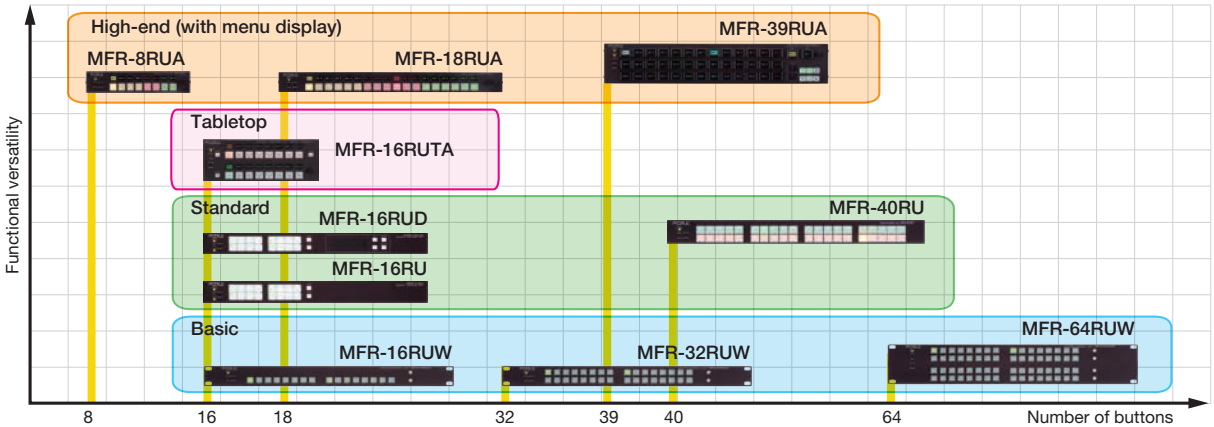
Audio Routing Switcher

MFR-1616A

Remote Control Panels for MFR Series

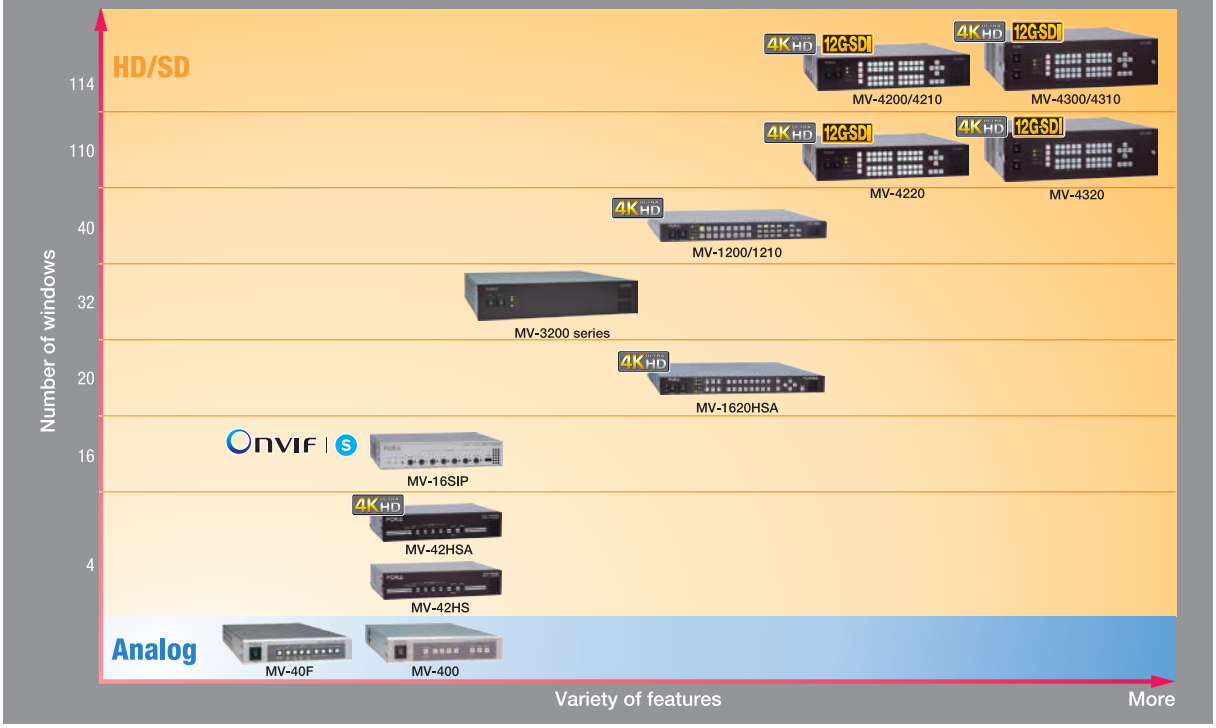
MFR-RU Series

Product Lineup



Multi Viewer Lineup

ONVIF | S : ONVIF® Profile S compliant 4K HD : 4K support 12G-SDI : 12G-SDI support



ONVIF is a trademark of Onvif.Inc.

Comparison table

		12G-SDI models				HD/SD models					Analog models		ONVIF-compatible models
		MV-4320	MV-4220	MV-4300/4310	MV-4200/4210	MV-3200 series	MV-1200/1210	MV-1620HSA	MV-42HSA	MV-42HS	MV-400	MV-40F	MV-16SIP
Rack unit size		3U	2U	3U	2U	2U	1U	1U	1/2U	1/2U	1/2U	1/2U	1/2U
Max. number of windows		110	110	114	114	32	40	20	4	4	4	4	16
Screen layout		Free layout	Free layout	Free layout	Free layout	Free layout	Free layout	Free layout	1/2/4	1/2/4	2/4	2/3/4/P-in-P	1/4/9/16
Video inputs	Number of inputs (max.)	68	68	68	68	32	16*1	16	4	4	4	4	64*3
	12G-SDI	Yes	Yes	Optional	Optional	No	No	No	No	No	No	No	No
	3G-SDI	Yes	Yes	Yes	Yes	Optional	Optional/Yes	Yes	Yes	No	No	No	No
	HD/SD-SDI	Yes	Yes	Yes	Yes	Optional	Optional/Yes	Yes	Yes	Yes	No	No	No
	Analog	Optional	Optional	Yes	Yes	Optional	Optional/Yes	Yes	Optional	Optional	Yes	Yes	Optional
	PC	Optional*2	Optional*2	Optional*2	Optional*2	Optional	Yes/ Optional*2	No	No	No	No	No	No
	IP (ONVIF)	No	No	No	No	No	No	No	No	No	No	No	Yes
Video outputs	Number of outputs (max.)	8	8	8	8	4	6	2	1	1	1	1	1
	HDMI	Yes*2	Yes*2	Yes*2 / –	Yes*2 / –	No	Yes*2 / Optional	Yes	No	No	No	No	Yes
	12G-SDI	Yes	Yes	No	No	No	No	No	No	No	No	No	No
	3G-SDI	Yes	Yes	Yes	Yes	Optional	Optional/Yes	Yes	No	No	No	No	Optional
	HD-SDI	Yes	Yes	Yes	Yes	Optional	Optional/Yes	Yes	Yes	Yes	No	No	Optional
	Analog	No	No	No	No	No	No	No	No	No	Yes	Yes	Optional
	PC (digital)	Yes*2	Yes*2	Yes*2 / –	Yes*2 / –	Yes	Yes*2 / Optional	Yes	Yes	Yes	No	No	Yes
	PC (analog)	No	No	No	No	Yes	No	No	No	No	Yes	No	No
	3840 x 2160	Yes	Yes	Yes	Yes	No	Optional	No	No	No	No	No	No
	1920 x 1080	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
	1280 x 1024	No	No	No	No	Yes	No	No	No	No	Yes	No	No
Audio	Analog input	Optional	Optional	Optional	Optional	Optional	No	Optional	No	No	No	No	No
	Analog output	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Optional
Other features	Video streaming	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No
	Window rotation (90°/180°/270°)	No	No	No	No	Optional	No	Optional	No	No	No	No	No
	Audio level display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
	Window title display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Clock display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Optional	Optional	No	Yes	Yes
	Count up/down timer, remaining time counter	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
	Sequence	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Layout editor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
	Remote control software	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No
	Remote control unit	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	No

*1 When mixed SDI/HDMI signals are used *2 HDCP support *3 Input via one Ethernet port

12G/3G/HD/SD/Analog/HDMI/DVI/RGBHV Mixed High Resolution Multi Viewer (Up to 114 Windows, 8-monitor Outputs)

MV-4000 Series 4K HD 12G-SDI

MV-4200 series

Up to 68 inputs and 8-monitor/114-window output in a 2RU enclosure. Add up to 3 optional cards.

MV-4200

Displays up to 114 windows. Includes 4 outputs each for 3G-SDI and HDMI. Add up to 10 inputs for 12G-SDI.*

MV-4210

Displays up to 114 windows. Includes 8 outputs for 3G-SDI. Add up to 10 inputs for 12G-SDI.*

MV-4220

Displays up to 110 windows. Choose from 2 inputs + 2 outputs for 12G-SDI or 8 inputs + 4 outputs for 3G/HD-SDI + 4 outputs for HDMI. Add up to 12 inputs for 12G-SDI.*

MV-4300 series

Up to 68 inputs and 8-monitor output in a 3U enclosure. Add up to 3 optional input cards and 1 interface expansion card. Hot-swappable power supply also accepted.*

MV-4300

Displays up to 114 windows. Includes 4 outputs each for 3G-SDI and HDMI. Add up to 15 inputs for 12G-SDI.*

MV-4310

Displays up to 114 windows. Includes 8 outputs for 3G-SDI. Add up to 15 inputs for 12G-SDI.*

MV-4320

Displays up to 110 windows. Choose from 2 inputs + 2 outputs for 12G-SDI or 8 inputs + 4 outputs for 3G/HD-SDI + 4 outputs for HDMI. Add up to 17 inputs for 12G-SDI.*

* Optional

3G/HD/SD/Analog/HDMI/DVI Mixed High Resolution Multi Viewer (Up to 16 Inputs, 6-monitor Outputs)

MV-1200/1210 4K HD

Compact 1RU multi viewer for monitoring, featuring up to 16 inputs and 6 outputs. Build a versatile, flexible 4K UHD editing environment.

3G/HD/SD/Analog Mixed High Resolution Multi Viewer (Up to 20 Windows, Dual-monitor Outputs)

MV-1620HSA 4K HD

Compact 1RU multi viewer that accepts up to 16 channels of mixed 3G/HD/SD-SDI and analog composite signals for monitoring on up to 2 screens. Supports dual-monitor output and displays up to 20 windows.

Multi Viewer for IP Security Cameras

MV-16SIP NEW ONVIF S

Network multi viewer for split-screen HDMI display of ONVIF® Profile S compliant IP security camera feeds. Detects up to 64 network cameras and can connect to and display 16 feeds at once. Also supports mixed display with analog cameras (optional).

3G/HD/SD/Analog/PC Mixed High Resolution Multi Viewer (Up to 32 Windows, 4-monitor Outputs)

MV-3200 Series

2RU multi viewer that accepts up to 32 channels of mixed HD/SD-SDI, analog composite and DVI signals for monitoring on up to 4 screens by installing optional I/O cards.

4K Monitoring Downconverter

MV-42HSA 4K HD

A 4-channel multi viewer that is perfect for use as a down converter to display 4K UHD footage on an HD or PC monitor.

HD/SD/Mixed High Resolution Multi Viewer (Quad-Split)

MV-42HS

High Resolution Multi Viewer (Quad-Split)

MV-400

Multi Viewer (Quad-Split, P-in-P)

MV-40F

Frame Synchronizer Lineup

4K HD : 4K support　12G-SDI : 12G-SDI support
HDR : HDR support　WCG : WCG support

10-channel input/output — FA-1010

- 3G/HD/SD-SDI
- input x 10/output x 10
- Max. 192 audio channels
- frame synchronizer x 10
- color corrector x 10
- 10 x 10 clean switch
- 4K UHD capability

5-channel input/output — FA-505

- 3G/HD/SD-SDI
- input x 5/output x 10
- Max. 112 audio channels
- frame synchronizer x 5
- color corrector x 5
- up/down/cross converter x 5
- 5 x 5 clean switch
- 4K UHD capability

2-channel input/output — FA-9600

- 12G/6G/3G/HD/SD-SDI
- input x 2/output x 4
- Max. 64 audio channels
- frame synchronizer x 2
- color corrector x 2
- up/down/cross converter
- 4K UHD capability

2-channel input/output — FA-9520

- 3G/HD/SD-SDI
- input x 2/output x 4
- Max. 44 audio channels
- frame synchronizer x 2
- color corrector x 2
- up/down/cross converter x 2
- automatic video optimizer
- logo generator

1-channel input/output — FA-9500

- 3G/HD/SD-SDI
- input x 2/output x 4
- Max. 28 audio channels
- frame synchronizer
- color corrector
- up/down/cross converter x 2
- automatic video optimizer
- logo generator

Comparison table

		FA-1010	FA-505	FA-9600	FA-9520	FA-9500
Video inputs	Number of SDI	10	5	2	2	2
	12G-SDI	No	No	Yes	No	No
	6G-SDI	No	No	Yes	No	No
	3G-SDI (Level-A)	Yes	Yes	Yes	Yes	Yes
	3G-SDI (Level-B)	Yes	Yes	Yes	No	No
	HD-SDI (1.5 G), SD-SDI	Yes	Yes	Yes	Yes	Yes
	Number of analog composite	No	No	No	1	1
	Number of analog component	No	No	No	Optional 1 channel/slot (available for up to 2 slots)	Optional 1 channel/slot (available for up to 1 slot)
Video outputs	Number of SDI	10 (w/o distribution)	10 (5 ch distributed in 2 ea.)	4 (2 ch distributed in 2 ea.)	4 (2 ch distributed in 2 ea.)	4 (2 ch distributed in 2 ea.)
	12G-SDI	No	No	Yes	No	No
	6G-SDI	No	No	Yes	No	No
	3G-SDI (Level-A), HD-SDI (1.5 G), SD-SDI	Yes	Yes	Yes	Yes	Yes
	3G-SDI (Level-B)	Yes	Yes	Yes	No	No
	Number of analog composite	No	No	No	2 (1 ch distributed in 2 ea.)	2 (1 ch distributed in 2 ea.)
	Number of analog component	No	No	No	Optional 1 channel/slot (available for up to 2 slots)	Optional 1 channel/slot (available for up to 1 slot)
Video functions	Process amplifier, color corrector	10 ch	5 ch	2 ch	2 ch	1 ch
	Sync mode (Frame, Line, AVDL)	10 ch	5 ch	2 ch	2 ch	1 ch
	Sync mode (Input lock)	No	No	1 ch	1 ch (FA-9500 mode only)	1 ch
	Up/down/cross/aspect converter	No	5 ch	Optional 1 ch (4K/HD simultaneous mode) 2 ch (Dual HD mode)	2 ch	1 ch (up to 2 optional ch)
	3G-SDI Level-A/B conversion	10 ch	5 ch	2 ch (Optional)	No	No
	Video delay	10 ch	5 ch	2 ch (Optional)	2 ch	1 ch
	SDI I/O relay bypass	Yes	Yes	Yes (1 ch)	Yes	Yes
	4K mode	2 ch	1 ch	1 ch (Optional)	No	No
	Changeover	No	No	No	Optional	Optional
	Logo generator	No	No	No	Optional	Optional
	Automatic video optimizer	No	No	No	Optional	Optional
	ANC data demultiplexer	10 ch	5 ch	2 ch	2 ch	1 ch
	ANC data multiplexer	10 ch	5 ch	2 ch	2 ch	2 ch
	Aspect ratio converter (S2016-3 AFD, RP186 VI, BT1119 WSS)	No	Passing/deletion/conversion of data packets available	Passing/deletion/conversion of data packets available*1	Passing/deletion/conversion of data packets available	Passing/deletion/conversion of data packets available*2
	Closed caption (CEA608, CEA708)	No	Passing/deletion/SD-HD conversion of data packets available	Passing/deletion/SD-HD conversion of data packets available*1	Passing/deletion/SD-HD conversion of data packets available	Passing/deletion/SD-HD conversion of data packets available
	Time code inserter/generator	Yes	Yes	Yes	No	No

12G/6G/3G/HD/SD Dual Channel Multi-Purpose Signal Processor

FA-9600 4K HD 12G-SDI HDR WCG

Each of the two 3G/HD/SD-SDI inputs incorporates a frame synchronizer, and because the signal processor features 12G-SDI terminals, optional software opens the door to 4K UHD production. Adding an optional expansion card provides four more channels of quad link 3G-SDI input or output. Video payload ID, HDR, and conversion between the color spaces used for HD (ITU-R BT.709) and UHD (ITU-R BT.2020) applications are supported. Switch between 4K/HD simultaneous mode or dual HD mode as needed.

3G/HD/SD Multi-Channel Signal Processor

FA-1010 “THE Processor” 4K HD

A 10-input, 10-output signal processor that supports 3G/HD/SD-SDI, offering extreme connectivity and multi-channel routing between sources, plus effective video and audio signal processing for line, relay, reporting, production, editing, and delivery applications. Color corrector comes standard.

3G/HD/SD Multi-Channel Signal Processor

FA-505 “THE Processor” 4K HD HDR WCG

The FA-505 provides up/down/cross conversion capability on each input as standard and allows 1080i to 720p/720p to 1080i conversion. Video payload ID, HDR, and conversion between the color spaces used for HD (ITU-R BT.709) and UHD (ITU-R BT.2020) applications are supported.

3G/HD/SD Dual Channel Multi-Purpose Signal Processor

FA-9520 “THE Processor”

Dual channel version of the FA-9500 processor that supports 3G/HD/SD-SDI and analog composite I/O.

3G/HD/SD Multi-Purpose Signal Processor

FA-9500 “THE Processor”

Multi-purpose signal processor that supports 3G/HD/SD-SDI and analog composite I/O.

		FA-1010	FA-505	FA-9600	FA-9520	FA-9500
Audio input	Max. number of inputs	192 ch	112 ch	40 ch*3*4	44 ch	28 ch*5
	SDI-embedded	160 ch (16 ch x 10)	80 ch (16 ch x 5)	32 ch (16 ch x 2)	32 ch (16 ch x 2)	16 ch
	AES / EBU (balanced)	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	No	No	No
	AES/EBU (unbalanced)*6	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	8 ch (stereo x 4)	8 ch (stereo x 4)	8 ch (stereo x 4)
	Analog	Optional 4 channel/slot (available for up to 1 slot)	Optional 4 channel/slot (available for up to 1 slot)	No	4 ch	4 ch
Audio output	Max. number of outputs	192 ch	112 ch	40 ch*3*4	44 ch	28 ch*5
	SDI-embedded	160 ch (16 ch x 10)	80 ch (16 ch x 5)	32 ch (16 ch x 2)	32 ch (16 ch x 2)	16 ch
	AES / EBU (balanced)	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	No	No	No
	AES/EBU (unbalanced)*6	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	Optional 8 ch (stereo x 4)/slot (available for up to 4 slot)	8 ch (stereo x 4)	8 ch (stereo x 4)	8 ch (stereo x 4)
	Analog	Optional 4 channel/slot (available for up to 1 slot)	Optional 4 channel/slot (available for up to 1 slot)	No	4 ch	4 ch
Audio features	Audio-embedding	160 ch (16 ch/array)	80 ch (16 ch/array)	32 ch (16 ch/array)	32 ch (16 ch/array)	16 ch (16 ch/array)
	AES/EBU processing	Optional max. 32 ch (stereo x 16)*7	Optional max. 32 ch (stereo x 16)*7	8 ch (stereo x 4)	8 ch (stereo x 4)	8 ch (stereo x 4)
	Analog audio processing	Optional 4 ch	Optional 4 ch	No	4 ch	4 ch
	Loudness controller	No	No	No	Optional	Optional
Other features	Windows GUI control	Yes	Yes	Yes	No	No
	Web GUI control	Yes*8	Yes*8	Yes*8	Yes	Yes
	GPI control	Optional 10 ch inputs + 10 ch outputs/slot (available for up to 4 slots)	Optional 10 ch inputs + 10 ch outputs/slot (available for up to 4 slots)	Optional 10 ch inputs + 10 ch outputs/slot (available for up to 2 slots)	7 ch inputs/outputs (input/output switchable)	7 ch inputs/outputs (input/output switchable)
	SNMP (V2C)	Yes	Yes	Yes*1	Yes	Yes
	Redundant power supply	Optional	Optional	Optional	Optional	Optional
	FA-10RU support	Yes	Yes	Yes	No	No
	FA-95RU support	No	No	No	Yes	Yes
	FA-10DCCRU support	Yes	Yes	Yes*1	Yes	Yes

*1 To be supported *2 FA-95SCV is required. *3 With optional expansion (to be supported) *4 Up to 32 ch processed internally *5 Up to 16 ch processed internally *6 Input/output switchable
*7 Max. 24 ch (stereo x 12) used for analog audio. *8 Limited number of functions available on Web GUI.

Universal System Frame

USF Series

USF-105S

USF-212AS/212S/212

	USF-105S	USF-212AS	USF-212S	USF-212
SNMP support	Yes	Yes	Yes	Yes
Ethernet HUB	Yes	Yes	Yes	No
SFP+	No	Yes	No	No

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

- Available frames
  - USF-105S: 1U size. Holds 5 modules.
  - USF-212AS*1/212S/212*2: 2U size. Holds 12 modules.
- 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/212)
- Built-in Gigabit Ethernet hub for GUI-based module configuration (USF-105S/212AS/212S)

*1 Only USF-212AS able to hold USF-10IP/10IPSDI6-FS/10IPSDI12-FS and 12G-SDI modules. Planned for future release.
*2 USF-212 only able to hold distributor modules

Module list

Module \ Frame	USF-212AS	USF-212S/USF-105S	USF-212
USF-10IP / USF-101MDX4-12G / USF-106DC-12G	○	—	—
USF-10IPSDI6-FS / USF-101MDX8-12G / USF-106UDC-12G			
USF-10IPSDI12-FS / USF-105DDA-12G / USF-111DDA-12G			
USF-1013DEMUX / USF-1013MUX / USF-1043FS	○	○	—
USF-105DADA / USF-402AADC / USF-1053DDA	○	○	○
USF-108ADA*3 / USF-1040VEA*4 / USF-1100VEA*4			

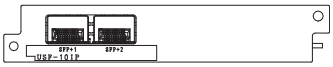
*3 When USF-108ADA is mounted on a frame other than USF-212, USF-ADAIF is required.
*4 When USF-1040VEA or USF-1100VEA is mounted on a frame other than USF-212, USF-VEAIF is required.

Available modules

USF-10IP

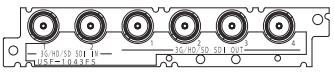
4K HD

Dual 10 GbE (SFP+) port. Converts to other encapsulation modes.



USF-1043FS

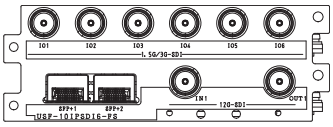
3G/HD/SD-SDI frame synchronizer



USF-10IPSDI6-FS

4K HD 12G-SDI

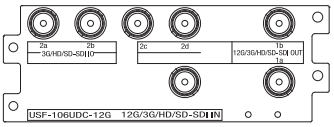
Frame/line synchronizer with dual 10 GbE (SFP+) ports, 1-input/1-output 12G-SDI, and 6-input/output 3G/1.5G-SDI



USF-106UDC-12G

NEW 4K HD 12G-SDI HDR WCG

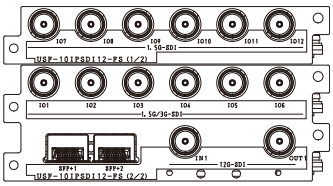
12G-SDI 4K up/down converter



USF-10IPSDI12-FS

4K HD 12G-SDI

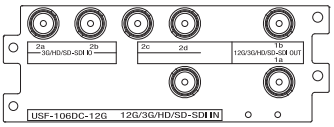
Frame/line synchronizer with dual 10 GbE (SFP+) ports, 1-input/1-output 12G-SDI, and 12-input/output 3G/1.5G-SDI



USF-106DC-12G

NEW 4K HD 12G-SDI HDR WCG

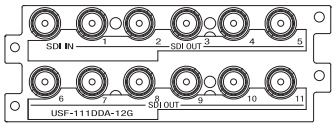
12G-SDI 4K down converter



USF-111DDA-12G

NEW 4K HD 12G-SDI

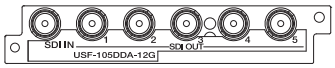
12G-SDI 11-output digital video distributor



USF-105DDA-12G

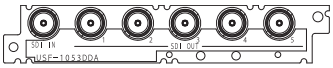
NEW 4K HD 12G-SDI

12G-SDI 5-output digital video distributor



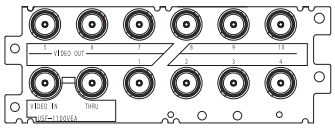
USF-1053DDA

5-output multi-bit rate digital video distributor



USF-1100VEA

10-output analog video distributor



USF-1040VEA

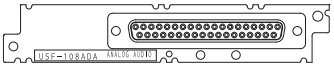
4-output analog video distributor

USF-105DADA

5-output unbalanced digital audio distributor

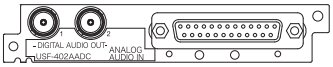
USF-108ADA

8-output analog audio distributor



USF-402AADC

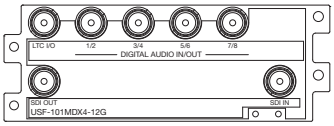
Analog-to-digital audio converter



USF-101MDX4-12G

4K HD 12G-SDI <Preliminary>

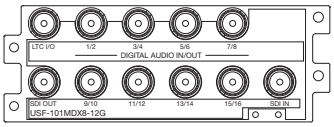
12G-SDI 4K audio multiplexer/demultiplexer with 4 channels of AES I/O



USF-101MDX8-12G

4K HD 12G-SDI <Preliminary>

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



USF-1013MUX

3G/HD/SD-SDI digital audio multiplexer

USF-1013DEMUX

3G/HD/SD-SDI digital audio demultiplexer

HDR/SDR BT.2020/709 Conversion HDR WCG

The FA-9600* and FA-505 convert between log curves/dynamic ranges (HLG/PQ/SDR) and gamuts (BT.2020, BT.709, and others). In dynamic ranges, the converters are also compatible with S-Log3, Canon Log2, and other camera log curves. Useful both in input (conversion to unified specifications before switcher or editing input) and output, as for HDR/SDR simulcasts.

* FA-9600 supports BT.2100. (optional)

SDR⇄HDR conversion

- Converts between HDR and SDR
- Register log curves from a computer

SDR | FA-9600/FA-505 | Converted to HDR, for display on an HDR monitor

Wide color gamut conversion

- BT.2020/709 conversion

ITU-R BT.709 | FA-9600/FA-505 | ITU-R BT.2020

Super Resolution 4K Upconverter

URC-4000 4K HD WCG

Provides powerful, real-time up-conversion of HD video into 4K UHD. Supports ITU-R BT.709 and ITU-R BT.2020 color conversion.

HD/SD Frame Rate Converter

FRC-30/UFM-30FRC

FRC-30

Modular-type UFM-30FRC Frame Rate Converter

Compact frame rate converter. Based on the UFM-30FRC and capable of both motion compensation and linear conversion, the FRC-30 offers up/down/cross conversion as standard and achieves outstanding levels of conversion, regardless of video content.

12G/3G/HD Frame Rate Converter

FRC-9000 4K HD /
FRC-9100 4K HD 12G-SDI <Preliminary>

Provides high quality frame rate conversion.
Ideal for converting the frame rate prior to transmitting at international sporting events.

- 3G/HD multi-format support
  - FRC-9000: 3G/HD/SD-SDI
  - FRC-9100: 12G/3G/HD/SD-SDI
- 4K SQD/2SI support (optional)
- Upgradeable to dual channel conversion in 3G/HD-SDI. (optional)
- 3G/HD to 4K up conversion, and 4K to 3G/HD down conversion
- Conversion with motion compensation processing
- Interlace-to-Progressive conversion
- Able to store up to 4 Dolby E encoder/decoder modules. (optional)

Motion Compensated Converter

MCC-4K

4K HD 12G-SDI WCG HDR

InSync technology

High quality and low cost frame rate converter with motion compensation

- UHD (12G-SDI/6G-SDI/quad link 3G-SDI)/ HD (3G-SDI/HD-SDI) multi format support
- 2SI/SQD, Level-A/B
- SFP Support (Fiber or IP etc.)
- Frame rates: 23.98/24/25/29.97/30/50/59.94/60
- Colorimetry conversion: ITU-R BT.709/2020
- HDR conversion: PQ, HLG, S-Log3, SDR

12G-SDI/Quad Link 3G-SDI Converter

MFC-2GB 4K ULTRA HD 12G-SDI

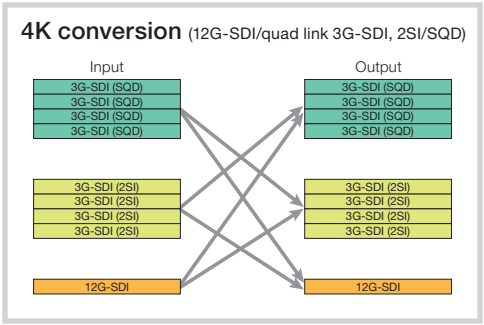
12G-SDI/quad link 3G-SDI conversion over two Gearbox channels, and 2SI/SQD conversion

- 12G-SDI 9 inputs and 2 outputs
- Automatic Variable Delay Line (AVDL)
- Choose from 1H or 1-frame delay*
- Line Lock feature syncs source signals*
- Ancillary data pass-through*
- Front menu display for maintenance
- Supports RS-422

* Available for signals in the same division method

Gearbox Functionality

Converts video signals between 12G-SDI and quad link 3G-SDI, and between 2SI and SQD. Enables ongoing use of older equipment when building a 12G-SDI system.



HD/SD Advanced Color Corrector

DCC-7000

DCC-70RU Portable remote control unit

DCC-70DRU Tabletop control unit

High-performance HD/SD-SDI color corrector for precise, real-time color correction using 12 color parameters.
In addition to offering black level adjustment and versatile processing, the unit incorporates a frame synchronizer.

- 12-axis color correction in real time
- Conventional RGB correction
- Built-in vectorscope for detailed color adjustment
- Split before/after display for comparison
- Clip Level functions for keeping color information within the optimal range
- Two HD/SD-SDI inputs and one analog composite input
- Event memory for storing color correction settings (instant recall of 100 events)

HD/SD Video Stabilizer

IVS-710HS

Digital video stabilizer that provides real-time correction focused on unwanted camera motion while maintaining camera pan and tilt movement. Supports HD/SD-SDI input and output.

- HD-SDI and SD-SDI formats: 1080i, 720p, 525/60, and 625/50
- Automatic camera pan/tilt detection. Corrects only unwanted motion.
- Correction for both live and recorded video
- Sub-pixel precision
- Straightforward design: Simply supplies video signals, no special connection required.
- External control via Ethernet and serial interfaces

Video Stabilizer & Automatic Video Optimizer

IVS-200

Besides vertical and horizontal camera shake, the IVS-200 is able to correct rotation camera shake, and comes with FOR-A's Auto Video Optimizer (AVO) function that automatically adjusts video levels.

- Compact, simple and DC operation
- Analog composite I/O
- Processes unsteady images in real time.
- Corrects video shake in two dimensions, including vertical, horizontal, diagonal and rotational.
- Corrects for shaking in video sources: VTR tapes, DVD discs, live feeds, etc.
- Correction area masking function
- Automatic video optimizer
- Time and title display
- Simple "Plug-and-Play" design

Sensor-less Virtual Studio System

VRCAM-NX 4K HD

Powered by BRAINSTORM

Adds On-Air graphics support to the solo virtual studio capabilities of VRCAM, which can be used without a camera operator. Featuring an intuitive interface and full set of templates, the VRCAM-NX system offers many advantages in program production.

Virtual system solution

- Use the MBP-2244WS-4K for enhanced image quality in virtual camera zooming. Maintains HD output while applying 4K camera signals.
- Up to four virtual cameras with 16 positions per camera.
- Set key frames to move cameras along straight or curved lines.
- Software chroma keying compatible with 4K input. Efficient system building, with no need for an external keyer.

On-Air graphics system solution

- A fully virtual studio that also supports On-Air graphics

Solution for both virtual and On-Air graphics systems

- Both On-Air and queued playout from a single playout device
- Easy playout in SmartDirect RCG: Simply click a button for sequential playout.
- Includes SmartDirect RCG template functionality.
- Sensor-equipped camera support: Can be used as two of the four cameras.
- One-touch operation: Save camera switching, subtitles, captions, scene transitions, and other scheduled actions sequentially in a playlist to enable production simply by performing takes during the program.

Advanced Virtual System

InfinitySet 4K HD

BRAINSTORM

Real-time 3D graphics system designed as a versatile solution for a range of equipment, from inexpensive sensor-less setups to advanced studios linked by sensors. Provides a new environment for next-generation cross-media broadcasting.

- Accepts multiple video sources, including live camera feeds.
- Recreates 3D information from each source to synthesize realistic graphics.
- Creates 3D versions of two-dimensional subjects in real time camera feeds.
- Adds natural shadows to 3D objects.
- Camera DOF can be set as desired by selecting defocused elements.
- A novel approach to natural VR, incorporating both an array of tracking data (freely combinable) and convenient, flexible sensor-less subject tracking
- Real-time camera tracking, applying tracking data in recorded video with the virtual set

Marker-less Sensor

MTS-100

oncept

Graphics follow PTZ operations without a hardware sensor

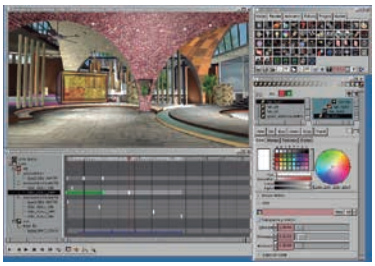
Innovative fully marker-less AR system.

- Detects positional information of reference points via image recognition.
- Supports all existing camera and lens types.
- Real time compositing of CGs into live broadcasting, aerial shooting, special effects shooting and live camera footage
- Multi-Target tracking: Registers and tracks multiple targets simultaneously.
- Stable tracking
- Low delay: 2 frames of maximum delay

HD/SD Virtual Studio/On-Air Graphics System

digiStorm 4K ULTRA HD

Powered by BRAINSTORM



Brainstorm eStudio GUI

On-Air graphics solution that opens a world of “broadcast graphics” and allows immediate form to be conceived through the powers of creative imagination. digiStorm was jointly developed, combining the technological resources of FOR-A and Brainstorm Multimedia’s well-established virtual studio software program eStudio.

Virtual CG-Set Library

eLibrary Virtual Set Pack

A collection of CG resources for Brainstorm eStudio that includes 10 practical virtual CG sets in one package.

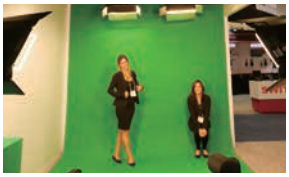
Virtual CG-Set Library

eLibrary On-Air Graphics Contents Pack

A collection of On-Air graphics resources for Brainstorm eStudio that includes more than 60 CG objects, such as item panels and video walls, in one package.

Advanced 3D Chroma Keyer

ACK-3000



Realistic chroma key compositing with two types of 3D shadows: under feet + whole body.

- Color correction that matches composited images to the background
- Adjusts up to three light sources (position, direction, diffusion), shadows of up to three object shadows (position, direction, size) and masks.
- Adds defocus effect to subject.
- Creates more natural-looking scenes by adjusting background light source settings. Applies lighting to people or other objects, as well as shadow and color adjustment, for seamless compositing. Volume light supported.

12G/3G/HD Keyer

DSK-4800 <Preliminary>

Digital super keyer for the 4K (UHD) 12G-SDI era.

- 2160/59.94p, 50p, or 1080i/p
- Input: Line x2 and Fill/Key x4, expandable to 4 and 8
- Output: Line x2 and Aux x2, expandable to 4 and 4
- Frame sync for all Fill/Key inputs
- Supports multi-unit cascading
- Can load stills/clips from a computer
- Browser-based control and configuration

3G/HD Keyer/Chroma Keyer

DSK-400

A 4K UHD keyer with 12 inputs and 8 outputs for 3G-SDI. Add DSK-400CK for 4K chroma keying. Controllable via front panel, DSK-400 web GUI, HVS-100OU connected to HVS-100, or HVS-100 web GUI.

Virtual Processor/Chroma Keyer

VRP-100

Virtual processor with multi-format (3G/HD) support. Superior chroma keying backed by innovation. Detailed compositing that outshines traditional chroma keying. FOR-A technology makes it possible. Now with multi viewer output.

Video Platform

MBP-2244WS/ 2244WS-4K

Virtual studio processing platform that provides hardware acceleration for real-time computer graphics. For 4K UHD needs, choose the MBP-2244WS-4K.

Video Platform/Chroma Key Option

MBP-1244/12CK

MBP-1244 with 12CK

Video platform for virtual/On-Air graphics systems

CG Player

MBP-200TB2

Single-cable transfer for a wide range of graphics applications: On-Air graphics, video marking, clip server playout and more. No workstation or dedicated graphics station required—just connect a notebook, camera, or other piece of video equipment.

- Compact, portable, 1RU half-rack form factor
- Format support: 1080/59.94i, 1080/50i, 720/59.94p, and 720/50p; 2 HD-SDI inputs and 5 outputs
- Serial port (RS-422), GPIO ports (5 inputs, 5 outputs)

HD/SD Video Typewriter

VTW-350HS

Lightweight, extremely portable HD/SD character generator that's perfect for live applications. With software that provides a rich array of text/graphic functions, more than 260 transitions, template control, general-purpose file interface and more, the VTW-350HS offers all the tools required for advanced production needs at an affordable price.

- 1RU compact design and vibration-resistant case make it perfect for mobile and flight pack applications.
- More than 260 transition functions come standard, including roll, crawl, fade in, fade out, slide and wipe.
- Video input has both key and fill for capture of video with or without a key signal.
- Video output provides both program and preview output, each with its own key and fill.

4K/HD Telestrator

FVW-700/FVW-700-4K

Annotate or draw on video using a touch-screen computer monitor or wirelessly connected tablet as operators check the point of insertion. Freeing operators from having to work at consoles, the system enables a variety of scenarios.

- Edges of lines operators draw can be recognized as outlines of a larger shape and joined, using a more advanced edge-rendering algorithm.
- Improved automatic freehand formation with noise reduction (algorithm) allows smooth objects to be shaped, and sharp angles to be achieved.
- Draw objects that will only cover images of a specified color in the video. For example, specify green to avoid covering players with the objects operators draw.
- Control the telestrator wirelessly from tablets running a dedicated app.
- Workstation model with 4K capability
- Optional multi viewer integration: Load presets on a multi viewer, change input sources, switch between full-screen and multi-window, and create a multi-source environment (optional).
- Mosaic conversion for all drawing tools – including freehand, polygon and others. Create free-form mosaics. Implemented with hardware processing for real-time operations, regardless of the area involved.

HD/SD Logo/Title Generator

LTG-50HS

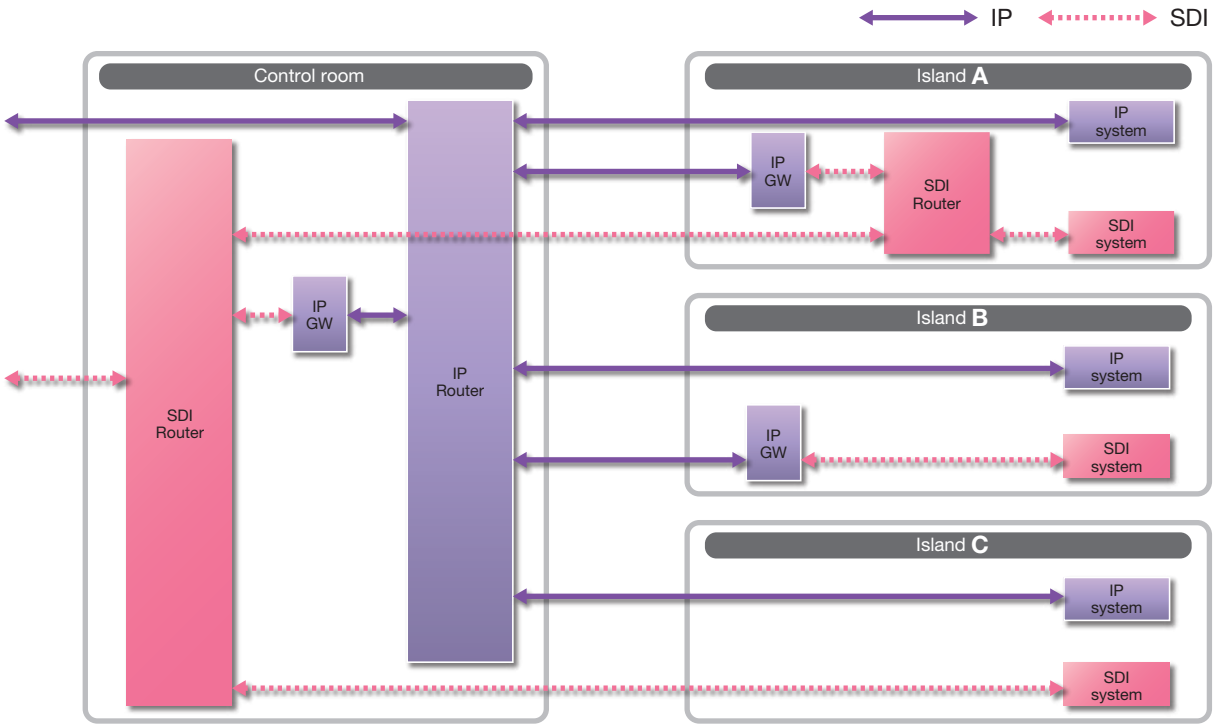
HD/SD title generator that is capable of superimposing camera titles, date and time, logos, and graphics on input video signals.

- Text: Up to 40 characters x 10 lines per page, up to 256 pages
- Bitmap character display function enables logos and graphics to be displayed at any selected location
- Standard configuration features Ethernet and RS-232C interfaces that allow for easy PC display settings and character registration.
- Includes software for easy typing and setting on PC as well as weekly page control scheduling.
- Crawl display: Can be set for any selected line (max. 256 characters/line*).

* Max. 2 lines (Line 1: 256 characters, Line 2: 128 characters).

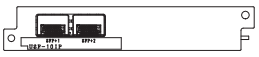
Baseband and IP Hybrid System

The broadcast industry has been gradually moving from traditional SDI systems to IP-based systems, and this trend has driven demand in system building for hybrid IP/SDI environments. IP gateways from FOR-A allow flexible system expansion, with broad IP format support, IP format conversion and IP/12G-SDI conversion. By incorporating IP formats, you can share and consolidate studio resources such as character generators, video servers or signal processors. Enjoy greater efficiency by allocating required equipment for a control room or individual lines. Free control of networked equipment also enables system building with remote production in mind.



10 GbE IP Converter

USF-10IP



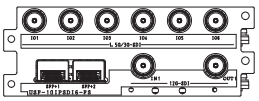
Dual 10 GbE (SFP+) ports

- Converts to other encapsulation modes
- Encapsulation modes: SMPTE 2022-6, SMPTE 2110, NMI

USF-10IP Web GUI

10 GbE IP Converter

USF-10IPSDI6-FS

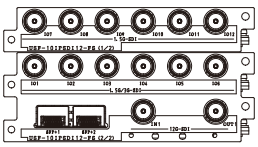


Frame/line synchronizer with dual 10 GbE (SFP+), 1-input/1-output 12G-SDI, and 6-input/output 3G/1.5G-SDI

- 2SI/SQD and Level-A/B conversion
- SMPTE 2022-6 (uncompressed): Simultaneous conversion of up to 6 inputs or 6 outputs (6 streams)
- Encapsulation modes: SMPTE 2022-6, SMPTE 2110, NMI

10 GbE IP Converter

USF-10IPSDI12-FS

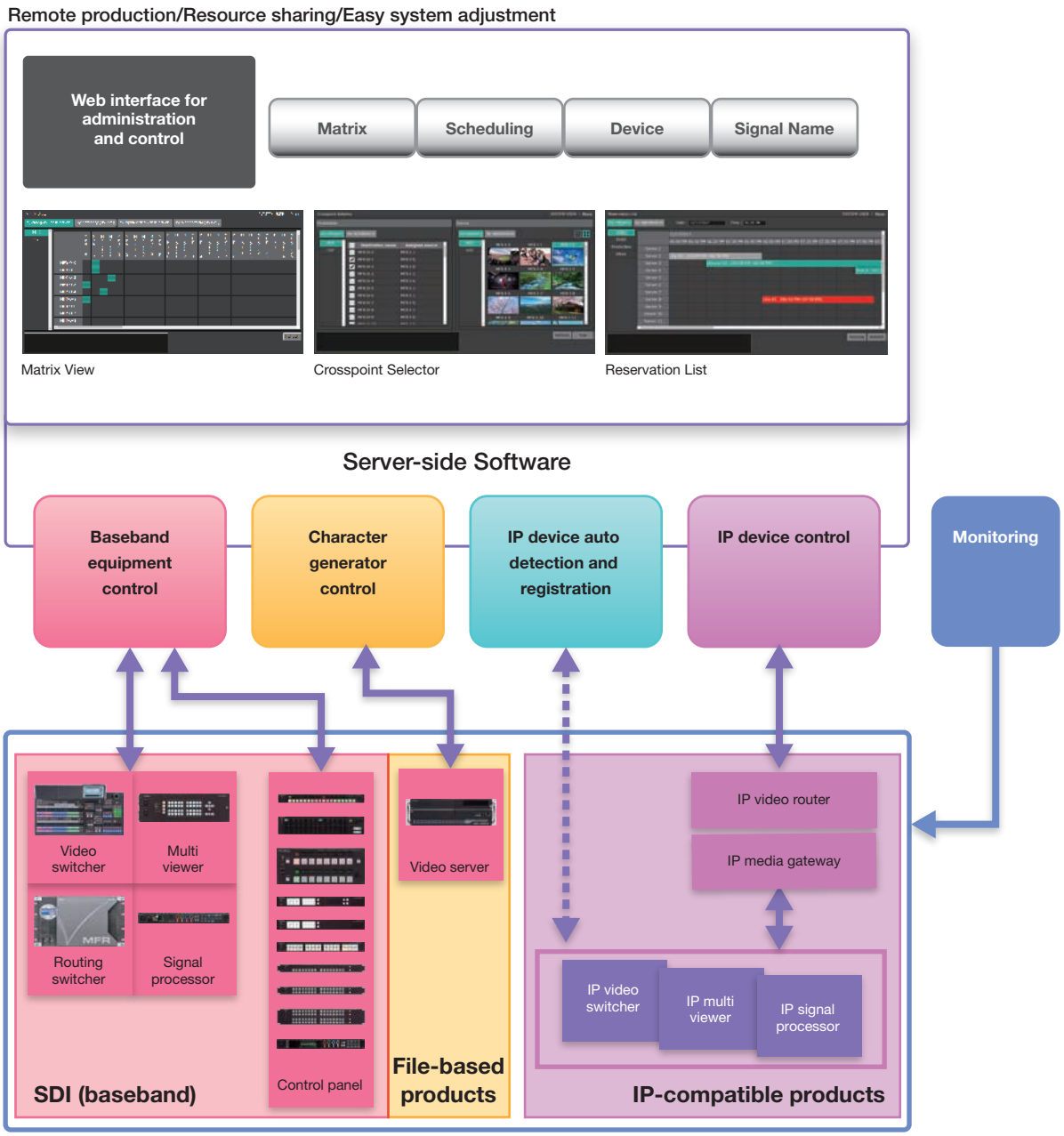


Frame/line synchronizer with dual 10 GbE (SFP+), 1-input/1-output 12G-SDI, and 12-input/output 3G/1.5G-SDI

- 2SI/SQD and Level-A/B conversion
- SMPTE 2022-6 (uncompressed): Simultaneous conversion of up to 6 inputs and 6 outputs (12 streams)
- Encapsulation modes: SMPTE 2022-6, SMPTE 2110, NMI

Integrated Baseband/IP Control and Monitoring System <Preliminary>

As a software solution for centralized control and monitoring of diverse video equipment, FOR-A integrated baseband/IP control and monitoring systems are used in mixed environments with SDI (baseband) video and IP video devices. The system enables process control, focused on control of video signal routing. Users can make global adjustments and schedule control as needed. With the system, routing switchers are managed in virtual groups. It offers seamless operation, with no need to distinguish between baseband and IP, and enables flexible system building as you gradually bring SDI systems into the IP era. The system anticipates future needs, including cloud-based operation, with an architecture that easily adapts to products of FOR-A or other manufacturers. It's also easy to control: Web interface can be accessed from multiple computers. For solid, nonstop operation, the system supports redundant server configurations and is hot-swappable. It offers easy maintenance to simplify routine operation, and enables monitoring systems to be linked to control systems, allowing users to monitor a variety of video equipment centrally.



LTO Server

LTS-80 NEW 4K ULTRA HD

LTFS-based media archiving server that supports LTO-8/LTO-7 tapes. Reading and writing of files on LTO tape is possible via FTP from Windows® or macOS computers. Ensures high-capacity archiving and backup in the 4K era.

- Stores up to 12 TB of uncompressed video and audio media on LTO-8 tapes.
- High-speed file I/O via built-in Gigabit Ethernet. 10 GbE optional (RJ-45 or SFP+)
- Fast data backup from external storage (via USB 3.0, or from NAS)
- Copy to up to two destinations at once (LTO+USB 3.0 or LTO+NAS).
- Verify function to ensure successful copying.
- Can write while maintaining folder structures compatible with the LTR series, or folder structures of the destination (via USB 3.0, or to NAS).
- Auto-generation of proxy video during archiving (optional)
- Multiple codecs supported (optional)

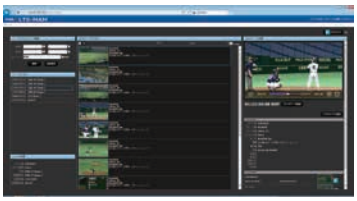
LTO Server

LTS-70 4K ULTRA HD

- LTFS-based media archiving server. Supports LTO-7/LTO-6/LTO-5 tapes.
- Store up to 6 TB of uncompressed video and audio media on LTO-7 tapes
- Multiple codecs supported (optional):
  - MPEG-2 HD 18/25/35 (LTS-SX)
  - MPEG-2 HD422 50 (LTS-SX)
  - AVC-Intra 50/100 (LTS-PAD)
  - DVCPRO HD 100 (LTS-PAD)
  - Avid DNxHD® 145/220/220x (LTS-DNxHD)
  - Apple ProRes 422/422 HQ (LTS-PRS)
  - AVCHD (LTS-AVCHD)
  - XAVC™ (LTS-XAVC)

LTO Server Media Asset Management Software

LTS-MAM

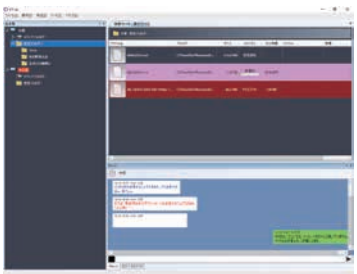


Combine LTS-MAM media asset management software with an LTS-80/70 LTO server to create an archive system. LTS-MAM enables content to be searched and proxy video to be previewed – whether or not a tape is mounted. Partial retrieve and batch retrieve functions* are available. LTS-MAM software supports linkage functions* with TS3100 and TS3200 LTO auto-loaders made by IBM.

* Optional software required.

4K/HD File Transfer System

IFT-40 NEW 4K ULTRA HD



Efficient, high-speed 4K/HD file transfer system. Save significant time by extracting only required segments of video files (optional). Ideal for transferring time-sensitive news files. Conveniently allows both senders and recipients to specify the scope of transfer.

- Allows scenes to be easily found on screen via thumbnail at 1-second intervals.
- Streamlines transfers by extracting required segments (optional).
  - Senders can extract required segments before sending.
  - Recipients can specify segments for senders to extract before sending.
  - 4K XAVC Intra and XDCAM HD422 supported.

LTO Video Archiving Recorder

LTR-200HS7

Multi-format LTO-7 archiving recorder that comes with 8 TB of internal backup storage, allowing the LTR-200HS7 to support a broad array of video codecs, thus accommodating many archiving needs. Useful in both archiving and exchanging recorded material or programs. Highlights of this full-featured LTFS-based recorder unit include HD/SD-SDI*1 input/output, broadcast-quality codecs, and MXF (OP-1a) wrapping and unwrapping. LTO tape MXF or MOV files also have the ability to be used with NLE systems.

- Converts SDI signals to MXF files*2 and records to LTO tape.
- Archives material from connected VTRs.
- Plays and provides SDI output for MXF files on LTO tape; can also export as MXF files.
- Partial Retrieval: Extracts needed video file segments on LTO tape as separate files.
- Optional LTR-NAS plug-in enables external NAS output of generated MXF files as material is recorded. After checking or editing on the external NAS, archive the files to a LTO tape.

- Supported codecs:
  - MPEG-2 HD 18/25/35
  - MPEG-2 HD422 50
  - AVC-Intra 50/100
  - DVCPRO HD 100
  - Avid DNxHD® 145/220/220x
  - Apple ProRes 422/422 HQ (LTR-PRS)
  - DVCPRO25/50 (LTR-PD-SD)

*1 SD-SDI is optional.
*2 MOV files when using Apple ProRes (with optional LTR-PRS)

LTO Remote Software

LTR Browser

Remote control software that allows PC access (Windows®) of LTO tape mounted in LTR and LTS* series recorders.

- Shows file lists and their metadata stored on the LTO tape.
- File archiving/retrieval with metadata
- Plays proxy video from files on the LTO tape.
- Metadata modification
- Sends partial retrieval commands while viewing proxy video.

* Requires codec support options when used with the LTS series.

LTR/LTS Copy Controller

LTS-I-CP

Installed on a computer connected via Ethernet to two LTR/LTS units, enables LTO tape files to be copied from either unit. Supports differential copying, with copy results exported in CSV format. Windows only supported.

12G-SDI/IP Multi-Channel Video Server

MBP-1000VS Series

NEW 4K HD 12G-SDI IP

Multi-channel video server that supports 12G-SDI or Video over IP interface. Able to add LTO*1 tapes for simultaneous backup*2 during 4K recording or extended recording.*3

<Lineup>
- MBP-1000VS-P Series: Supports MPEG2 (HD), MPEG2 (HD422).
- MBP-1000VS-12G Series: Supports 4K, 12G-SDI.
- MBP-1000VS-IP Series: Supports 4K, 10 Gbps Video over IP.

<Common features>
- 2160/59.94p*1 or 1080/59.94i
- 4K UHD: XAVC Intra Class 480*1, 300*1; HD: XAVC Intra Class 100 (all MXF formats)
- Choose from four SSD capacities: 1.2 TB*4, 2.4 TB, 4.8 TB, or 9.6 TB
- External LTO/SSD backup: Transfers recorded MXFs to an optional external LTO tape drive or SSD cartridge.
- Control interfaces: Adds an optional serial port or GPI port.

*1 4K models only *2 One channel only *3 Up to 18.7 hours of continuous recording to LTO-7 (XAVC Class 300) *4 1.2 TB available only in MBP-1000VS-P series.

4K/HD Ingest Recorder

MXR-400 NEW 4K HD

XAVC-compatible ingest recorder equipped with SDI I/O and the AVC/H.264 4:2:2 10-bit codec.

- Dual-channel HD-SDI I/O or single-channel 4K I/O (4K UHD 59.94p/50p via quad link 3G-SDI)
- Saves recorded files to internal SSD, external NAS or USB drive. Hardware codec ensures stable, high quality encoding/decoding.
- Codec
  - 4K: H.264 High422 Intra 600Mbps
    (XAVC QFHD Intra Class 300 CBG/VBR compliant)
    H.264 10-bit High422 Long GOP*
    (XAVC QFHD Long422 200Mbps compliant)
  - HD: H.264 High422 Intra 100Mbps
    (XAVC HD Intra Class 100 compliant)

* Optional

Clip Server

MBP-200SX/202SX

Model	MBP-200SX	MBP-200SX-S1	MBP-202SX	MBP-202SX-S1
Number of inputs	1	1	2	2
Number of outputs	1	1	2	2
SSD	480 GB (480 GB x 1)	960 GB (480 GB x 2, RAID-0)	480 GB (240 GB x 2, RAID-0)	960 GB (480 GB x 2, RAID-0)

* MBP-200SX: Single-channel only available.

Simultaneous dual-channel recording (encoding) and playback (decoding) using hardware codec*.

- Converts between HD-SDI signals and MXF files (compatible with Sony XDCAM) using built-in hardware codecs.
- Direct playout from external XDCAM drive via USB 3.0
- Controls two channels at once using control software (installed)
- Supports embedded audio and ancillary time codes.

Multi-Channel Ingest Software

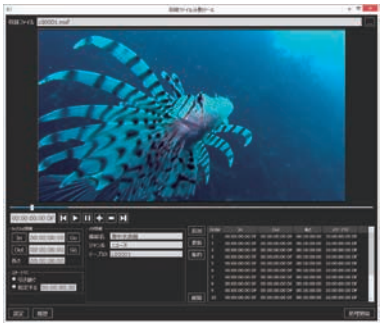
MCI-500

Ingest software compatible with MXF files used by the MBP-1000VS Series/ MBP-200SX.

- Consists of server and GUI software, allowing GUI-based control from computers connected to MBP units in a local network.
- Enables standalone line recording by MBP units, using scheduled recording and an MFR control option.
- Editing while recording (in NLE software)
- VTR control/recording, real-time recording, and playback as MXF files are recorded
- Simultaneous playback of H.264/MP4 or compatible H.264 TS proxy files

Software for Splitting MXF Files

VST-200



Import an ingested MXF file from a videotape with a variety of material and split it into individual programs or types of material. Supports splitting workflows: Detects in/out candidate lists automatically, and imports external information.

Contact FOR-A for additional details on systems that streamline file conversion and LTO storage of large videotape libraries.

MXR File Player

IMP-200

Software-based file player that easily integrates into video production workflows and provides a convenient preview of MXF files. Plays files as they are recorded, with time codes viewed and In/Out points set.

HD Variable Frame Rate Camera

VFC-7000A “Flash EYE”

VFC-7000A: Lens is optional.

Compact, lightweight and configured as an all-in-one self-contained unit, the VFC-7000A is an easy to operate variable frame rate camera that is capable of high-speed HD recordings.

- High-speed 700 fps (1280 x 720 pixels) recordings
- 24 to 700 fps (1280 x 720 pixels) variable frame rates
- High-sensitivity CMOS color sensor
- Lens mount: F mount (PL mount option available.)
- Electronic high-speed shutter: Up to 1/200,000 sec for recording fast subjects without blur
- Recording time: 9.8 sec standard (700 fps), expandable to 29.4 sec (700 fps/ optional)
- 2 HD-SDI output: Simultaneous live and recorded video output.
- Genlock capability (BB/Tri-level Sync)
- Operation unit with fader bar allows smooth and intuitive operation.

FLOVEL Products

High-Sensitivity HD Camera

FZ-B1

Lens and accessories are optional.

- 2/3” HbCMOS ultra high sensitive HD digital camera
- Power efficient non-cooling type camera
- HD-SDI output 1080i (59.94 Hz or 50.00 Hz)/720p (59.94 Hz or 50.00 Hz)
- Genlock connector (BB/Tri-level Sync)
- IR cut or through glass switching for multi-wavelength applications and color/ monochrome selection
- Self-contained, compact one piece design for easy system installation
- Minimum illuminations 0.005 Lx for color motion shooting

High-Sensitivity HD Camera

FZ-B3

Lens and accessories are optional.

- Ultra-high sensitive 3 HbCMOS prism type HDTV camera
- Supreme color fidelity and enhanced sensitivity
- Rotation filter mechanism installed (ND filter built-in)
- Power efficient non-cooling type camera
- 2/3” bayonet mount
- Genlock connector (BB/Tri-level Sync)
- HD-SDI output 1080i (59.94 Hz or 50.00 Hz)/720p (59.94 Hz or 50.00 Hz)
- Minimum illuminations 0.003 Lx for color motion shooting

Applications include:

- Helicopter and spacecraft visual systems
- Celestial imaging, aurora and underwater observation
- Coast guard, border control and oil rig observation
- Nuclear plant and power plant observation
- Police activity

AF/Image Clarifying Unit

Mimic-AFC/HD NEW

Uniquely versatile unit combining autofocus control and image clarification. A stand-alone unit that can be added to existing systems.

- Autofocus with high-precision image contrast enhancement
- Camera feeds look clearer even on foggy or rainy days.
- Can also clarify recorded material.

4K Variable Frame Rate Camera

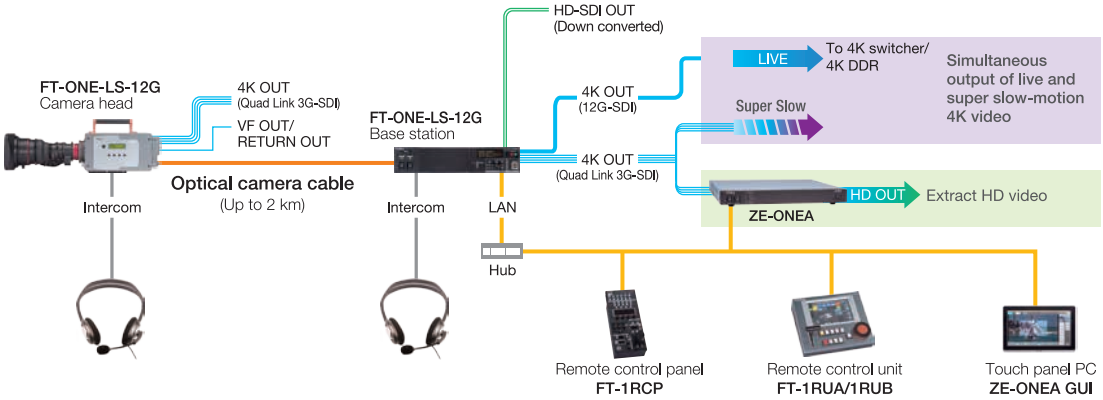
FT-ONE-LS/FT-ONE-LS-12G 4K 12G-SDI <Preliminary>

Camera lenses are sold separately.

FT-ONE-LS base station

Adding compactness and portability to the revolutionary FT-ONE 4K UHD high speed camera, the FT-ONE-LS/FT-ONE-LS-12G cameras separate the camera head from the body to offer exceptional mobility and enable unprecedented shooting positions and angles for live sports and other events. With a 2/3-inch lens, the cameras are able to shoot up to 500 frames per second (fps) and offer improved performance under low light conditions. Flicker correction is provided as optional for shooting indoor live sporting events. The FT-ONE-LS-12G supports 12G-SDI output. Connecting to a dedicated video server, the unit offers long-duration 4K recording at 8x or 10x speed.

System configuration



Full 4K Variable Frame Rate Camera

FT-ONE/FT-ONE-OPT 4K

FT-ONE: Lens and accessories are optional.

FT-ONE-OPT (back)

The world's first* high-speed camera designed for super-slow-motion acquisition at 4K resolution and up to 900 frames per second (fps). The FT-ONE incorporates the groundbreaking FT1-CMOS global shutter CMOS color sensor to provide superior resolution and sensitivity. RAW material is recorded at high speeds to the internal RAM memory, which holds nearly 10 seconds of 4K content shot at 900 fps. For convenience, material can then be transferred to optional internal SSD cartridges.

- The high-speed global shutter system counteracts rolling shutter artifacts that might otherwise occur with fast motion. Capture instantaneous subject movement in crisp detail at 4K resolution.
- Simultaneous 4K recording/playback
- Two down converted HD-SDI outputs allow users to monitor the signal on preview monitor and a viewfinder with on-screen information display.
- RAW material can be transferred to optional SSD cartridges, each of which can hold 84 seconds of material. The camera accommodates two cartridges. Switch the hot-swappable cartridges as needed in production.
- 12-axis color correction: When using video output, color correction along 12-axis surpass trichromatic correction.

* According to internal research as of May 2012

Remote Control Unit

FT-1RUA/1RUB

FT-1RUB

Remote Control Panel

FT-1RCP

DPX Converter

FT-1READ 4K HD

Converts 12-bit RAW data on the FT-ONE SSD cartridge to a common file format (DPX, BMP, Open EXR, DNG and FT-ONE CINEMA) for editing or color grading purposes.

Cartridge Docking Station

FT-1CDS

SSD Cartridge

FT-ONE2T/1TL

FT-ONE2T

4K Extraction System

ZE-ONEA NEW 4K HD

Frame and extract specified HD scenes of any size and/or position from 4K UHD sources (quad link 3G-SDI (Level-A/B) input) using an intuitive touch-screen interface.* Up to two areas can be extracted using a single computer. The ZE-ONEA can also track specified objects automatically in real time for extraction. To simulate zoom, dynamic zooming effects at key points and in various sizes can be specified. Use of an FT-ONE high-speed 4K camera also allows simulated zoom, crop and camera motion with slow-motion instant replays. Enjoy unprecedented creative freedom in replays of live sports coverage and other applications.

* Control software for Windows® 7/8/8.1/10 computers is provided to enable touch and mouse operation.

Flicker Corrector

FC-ONE

Suppresses flicker from high-speed cameras and certain types of lighting conditions. No complex set-up required, just plug and play.

- 1 input/output standard, expandable to 2 inputs/outputs (optional)
- Supports 3G/HD-SDI input and output. (1080/59.94p, 1080/59.94i, 720/59.94p, 720/50p)
- Corrects distracting video flicker, common with sports stadiums and arena lighting sources.
- Maintains image brightness and detail, unlike traditional global shutter solutions.
- Perfect for live or recorded material
- Correction process does not affect timing or vertical blanking intervals.
- Compact 1RU enclosure
- Network-controllable using software GUI
- Supports 3G/HD-SDI input and output. (1080p, 1080i, 720p)
- Other standard features:
  - Process amplifier
  - Color corrector
  - Video clip

Real-Time Flash Corrector

RFC-ONE

Automatic real-time detection and correction of flash—perfect for breaking news coverage and other situations that leave no time for editing

- Maintains a clear, natural appearance by reducing flash brightness.
- Fully automated, from flash detection to correction.
- For corrected video output, simply connect the cables.
- Compact 1RU enclosure

8K Linear Matrix Color Converter

LMCC-8000A

LMCC-8000 is a joint development product with NHK, Japan.

Converts color gamut and dynamic range of dual green or full resolution 8K signals.

- ITU-R BT.2100-compliant
- Registers conversion matrices (up to 8) to convert between ITU-R BT.709 and ITU-R BT.2020 gamuts.
- Registers EOTF/OETF transfer functions (up to 8) to convert between SDR and HDR dynamic ranges.
- Supports 8K-DG (3G-SDI x 8) and 8K-FR (3G-SDI x 16) signals.

UHDTV Signal Converter

SCV-8000

SCV-8000 is a joint development product with NHK, Japan.

Offers bidirectional 8K (Dual Green SHV) HD-SDI (x 16) - 3G-SDI (x 8) and bidirectional 4K UHD Level-A/B, SQD/2SI signal conversion. Supports embedded audio, time code and other ancillary data.

8K/4K/HD Test Signal Generator

ESG-8000

ESG-8000 is a joint development product with NHK, Japan.

Offers compatibility with YCbCr 4:2:2 10-bit Super Hi-Vision Full Resolution signals and produces DG-SHV (Super Hi-Vision Dual Green) signals.

4K/HD Test Signal Generator

ESG-4200

Creates 4K signals (UHD 3840 x 2160p, Full 4K 4096 x 2160p). 4K video signals that are output at 60p/59.94p/50p can be distributed from 12G-SDI lines to 4 outputs and Video over IP interface to 2 outputs. 2 lines of 3G/HD-SDI outputs are also supported and controlled independently (optional).

4K/HD Test Signal Generator

ESG-4100

Generates 4K signals (UHD 3840 x 2160p, Full 4K 4096 x 2160p). Simultaneously distributes 4K video output at 60p/59.94p/50p to 8 outputs in 12G-SDI and 2 outputs in quad link 3G-SDI. Embeds 16-channel audio into 12G/3G-SDI or 3G/HD-SDI output. Equipped with two outputs for MADI signals. When using SG-2 option the two lines are independently configurable.

4K/HD Test Signal Generator

ESG-4000

Generates 4K signals (UHD 3840 x 2160p, Full 4K 4096 x 2160p) and distributes each of 2 lines (4K video) from quad link 3G-SDI to 2 outputs, or 2 HD-SDI lines (HD video) to 3 outputs. Embeds 32-channel audio in 3G-SDI or 16-channel audio in HD-SDI output. Equipped with 2 outputs for MADI signals.

IP Changeover Switcher (2 inputs)

IPS-6200 4K HD IP

Standalone ASI/TS over IP changeover unit in a 1U enclosure. Monitors TS-level IP signals in redundant input and instantly switches ports if errors occur, enabling seamless output without disruption.

TS Changeover Switcher (2 inputs)

TSS-6200

Seamless switcher that constantly monitors TS signals on a redundant circuit and automatically switches output to the normal line when an error occurs, without disrupting output.

3G/HD/SD/ASI/DVB-ASI Routing Switcher

ERS-44HSA NEW

Cost effective, compact routing switcher

- Four multi-bit rate inputs and outputs
- Supports 3G/HD/SD-SDI and DVB-ASI.
- Auto cable equalization and SDI reclocking
- Front panel router settings or remote settings via serial commands or SNMP or GPIO
- Router monitoring with SNMP or serial commands
- Monitors power, I/O carriers, and reference input to send traps in case of errors
- Communication interface can be configured via telnet.

Delay Adjustment Unit

EDA-1000/2000 NEW 4K HD

EDA-2000

Delay unit for 3G/HD/SD-SDI audio/video. 4-input unit that also supports 4K. Audio and video delay can be set separately. Set a delay up to 40 sec. (expandable to 80 sec.) for an HD-SDI input. Choose from the compact EDA-1000 (1RU half-size) or the EDA-2000 (1RU), with a redundant power supply.

Time Lag Checker

EDD-5400 4K HD 12G-SDI <Preliminary>

12G/3G/HD-SDI measuring instrument that determines video and audio delay times, delay differences between audio channels, and between video and audio using test time code signals.

VANC Modem

EVM-2600/2650

EVM-2650

An HD/SD-SDI ancillary data transmitter that transmits up to 4 lines of RS-232C serial data through the VANC space of HD/SD-SDI streams.

- HD/SD-SDI ancillary data transmitter
- TX (transmitter)/RX (receiver) switching
- Packet auto-detection
- Functional packet path verification
- 4 lines maximum of input/output serial port support
- Supports high-speed baud rates by packetizing single circuits into multiple blocks.
- SDI input bypass

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