

*Continuous Innovation*

FOR-A PRODUCTS  
G U I D E B O O K  
2015 – 2016

## FOR-A for a 4K Future 03

### High Speed Cameras

4K Variable Frame Rate Camera	
<b>FT-ONE-S</b> <small>NEW</small> <b>4K HD</b>	04
Full 4K Variable Frame Rate Camera	
<b>FT-ONE/FT-ONE-OPT</b> <b>4K HD</b>	05
4K Extraction System	
<b>ZE-ONE</b> <b>4K HD</b>	05

### Video Switchers

<b>Video Switcher Lineup</b>	06
3G/HD/SD Video Switcher	
<b>HVS-2000 "HANABI"</b> <small>NEW</small> <b>4K HD</b>	07
HD/SD 1 M/E-2 M/E Video Switcher	
<b>HVS-390HS "HANABI"</b>	08
3G/HD/SD Portable Video Switcher	
<b>HVS-100/110 "HANABI"</b> <b>4K HD</b>	09

### Routing Switchers

<b>Routing Switcher Lineup</b>	10
3G/HD/SD/ASI/AES/RS-422 Routing Switcher	
<b>MFR-8000</b> <b>4K HD</b> <b>8K SHV</b>	11
3G/HD/SD/ASI/AES/RS-422 Routing Switcher	
<b>MFR-5000</b> <b>4K HD</b> <b>8K SHV</b>	11
3G/HD/SD/ASI Routing Switcher	
<b>MFR-3000</b> <small>NEW</small> <b>4K HD</b> <b>8K SHV</b>	11
3G/HD/SD/ASI Routing Switcher	
<b>MFR-3232/3232RPS</b> <b>4K HD</b> <b>8K SHV</b>	11
<b>MFR-3216/3216RPS</b> <b>4K HD</b> <b>8K SHV</b>	11
<b>MFR-1616/1616R</b> <b>4K HD</b>	11
Audio Routing Switcher	
<b>MFR-1616A</b>	11
Remote Control Panels for MFR Series	
<b>MFR-RU Series</b>	11

### Multi Viewers

<b>Multi Viewer Lineup</b>	12
3G/HD/SD/Analog/HDMI/DVI/RGBHV Mixed High Resolution Multi Viewer (Up to 114 Windows, 8-monitor Outputs)	
<b>MV-4200</b> <b>4K HD</b>	13
3G/HD/SD/Analog Mixed High Resolution Multi Viewer (Up to 20 Windows, Dual-monitor Outputs)	
<b>MV-1620HSA</b> <b>4K HD</b>	13
3G/HD/SD/Analog/PC Mixed High Resolution Multi Viewer (Up to 32 Windows, 4-monitor Outputs)	
<b>MV-3200 Series</b>	13
4K (QFHD) Monitoring Downconverter	
<b>MV-42HSA</b> <b>4K HD</b>	13
HD/SD/Mixed High Resolution Multi Viewer (Quad-Split)	
<b>MV-42HS</b>	13
HD/SD/Analog Mixed High Resolution Multi Viewer (Quad-Split)	
<b>MV-410HS</b>	13
PC/Video Mixed High Resolution Multi Viewer (Quad-Split)	
<b>MV-410RGB</b>	13
High Resolution Multi Viewer (Quad-Split)	
<b>MV-400</b>	13
Multi Viewer (Quad-Split, P-in-P)	
<b>MV-40F</b>	13

## Character Generators

HD/SD Video Typewriter	
<b>VTW-350HS</b>	14
HD/SD Video Writer	
<b>FVW-500HS</b>	14
HD/SD Logo/Title Generator	
<b>LTG-50HS</b>	14

## FOR-A System Integration

Integrated Control Software	
<b>GearLink™</b> <small>NEW</small>	15
<b>Systems Linking Source Names and Tally Signals</b>	15

## Filebased Products

LTO Video Archiving Recorder	
<b>LTR-100HS6</b>	16
<b>LTR-120HS6</b>	16
<b>LTR-200HS6</b> <small>NEW</small>	16
LTO Remote Software	
<b>LTR Browser</b>	16
LTR-100HS6 Continuous Recording Option	
<b>LTR-10CR</b>	16
LTO Server	
<b>LTS-60</b> <b>4K HD</b>	17
LTO Server Media Asset Management Software	
<b>LTS-MAM</b> <b>4K HD</b>	17
Clip Server	
<b>MBP-200SX</b> <small>NEW</small>	18
Simultaneous Record and Playback Server	
<b>MBP-200PA-DS</b> <small>NEW</small>	18
Multi-Channel Video Server	
<b>MBP-500VS</b>	18

## Processors

Universal System Frame	
<b>USF-212/212S/212SX</b> <small>NEW</small>	19
3G/HD/SD-SDI Frame/Line Synchronizer	
<b>USF-1043FS-R</b>	19
4-output 3G/HD/SD-SDI Digital Color Corrector	
<b>USF-1043DCC-R</b>	19
5-output Multi-bit Rate Digital Video Distributor	
<b>USF-1053DDA</b>	19
4-output Analog Video Distributor	
<b>USF-1040VEA</b>	19
10-output Analog Video Distributor	
<b>USF-1100VEA</b>	19
3G/HD/SD-SDI Digital Audio Multiplexer	
<b>USF-1013MUX-R</b>	19
3G/HD/SD-SDI Digital Audio Demultiplexer	
<b>USF-1013DEMUX-R</b>	19
8-output Analog Audio Distributor	
<b>USF-108ADA</b>	19
<b>Frame Synchronizer Lineup</b>	20
Multi-Channel Signal Processor	
<b>FA-1010</b> <b>4K HD</b>	21
Multi-Channel Signal Processor	
<b>FA-505</b> <b>4K HD</b>	21
3G/HD/SD Dual Channel Multi Purpose Signal Processor	
<b>FA-9520</b>	21
3G/HD/SD Multi Purpose Signal Processor	
<b>FA-9500</b>	21

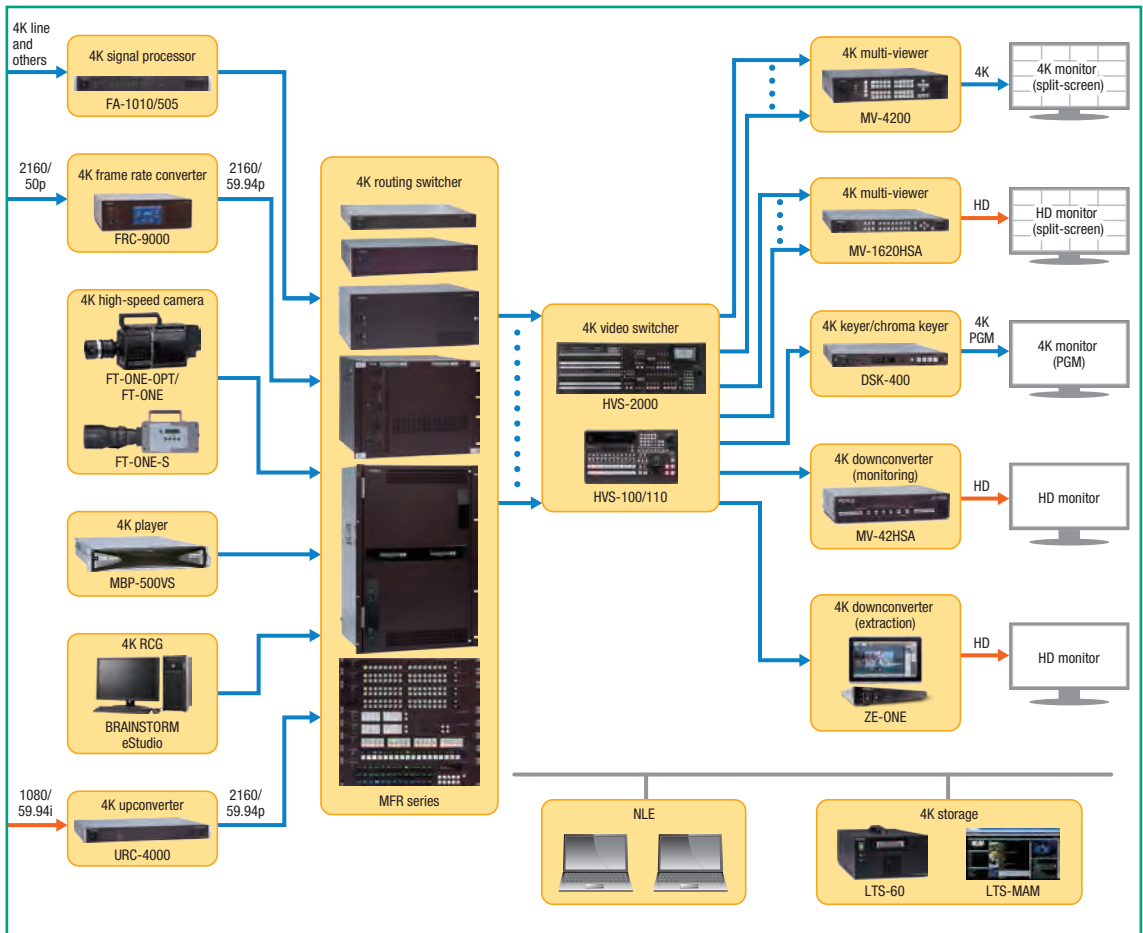
4K/HD/SD Frame Rate Converter	
<b>FRC-9000</b> <small>NEW</small> <b>4K HD</b>	22
HD/SD Frame Rate Converter	
<b>FRC-30/UFM-30FRC</b>	22
Super Resolution 4K Upconverter	
<b>URC-4000</b> <b>4K HD</b>	23
File-base Video Format Converter	
<b>FRC Export Plug-in</b>	23
HD/SD Advanced Color Corrector	
<b>DCC-7000</b>	24
HD/SD Video Stabilizer	
<b>IVS-710HS</b>	24
Video Stabilizer & Automatic Video Optimizer	
<b>IVS-200</b>	24

## Virtual Studio / RCG Products

Real Time CG System	
<b>SmartDirect RCG</b>	25
<b>Augmented Reality (AR) System</b> <small>NEW</small>	25
Advanced Virtual System	
<b>Infinity Set</b> <small>NEW</small>	26
Sensor-less Virtual Studio System	
<b>VRCAM2</b>	26
HD/SD Virtual Studio/RCG System	
<b>digiStorm</b>	27
Virtual Studio/RCG Software	
<b>Brainstorm eStudio</b>	27
Virtual Studio Software	
<b>Brainstorm Easyset 3D</b>	27
Virtual CG-Set Library	
<b>eLibrary: Virtual Set Pack</b>	27
Virtual CG-Set Library	
<b>eLibrary: RCG Contents Pack</b>	27
Virtual Processor/Chroma Keyer	
<b>VRP-100</b> <small>NEW</small>	28
4K/3G/HD Keyer/Chroma Keyer	
<b>DSK-400</b> <small>NEW</small> <b>4K HD</b>	28
HD/SD Chroma Keyer	
<b>MBP-100CK</b>	28
<b>Special Cameras</b>	
High-sensitivity HD Camera	
<b>FZ-B1</b>	29
High-sensitivity HD Camera	
<b>FZ-B3</b> <small>NEW</small>	29
<b>FOR-A YEM ELETEX Products</b>	
8K/4K/HD Test Signal Generator	
<b>ESG-8000</b> <small>NEW</small> <b>4K HD</b> <b>8K SHV</b>	30
SDI Changeover Switcher (2 inputs)	
<b>UFM-80SDICS</b> <b>4K HD</b>	30
TS Changeover Switcher (2 inputs)	
<b>UFM-80TSCS</b>	30
UFM Frame (12/6 modules)	
<b>UF-112/106B</b>	30
IP Changeover Switcher (2 x 1)	
<b>IPS-6200</b> <small>NEW</small>	31
VANC modem	
<b>EVM-2600/2650</b> <small>NEW</small>	31
Time Lag Checker	
<b>EDD-5200/6200P</b>	31
TS Changeover Switcher (2 inputs)	
<b>TSS-6200</b>	31

# FOR-A for a 4K Future

FOR-A's versatile 4K solutions meet 4K broadcast and production needs today.



## Lineup for 4K production workflow

4K Variable Frame Rate Camera  
**FT-ONE-S/ FT-ONE/ FT-ONE-OPT**  
 → p. 04, 05



4K Extraction System  
**ZE-ONE**  
 → p. 05



3G/HD/SD Video Switcher  
**HVS-2000**  
 → p. 07



Portable Video Switcher  
**HVS-100/110**  
 → p. 09



Routing Switcher  
**MFR Series**  
 → p. 10, 11



Multi Viewer  
**MV-4200**  
 → p. 13



Multi Viewer  
**MV-1620HSA**  
 → p. 13



4K Monitoring Down Converter  
**MV-42HSA**  
 → p. 13



LTO Server  
**LTS-60**  
 → p. 16



Multi-Channel Video Server  
**MBP-500VS**  
 → p. 18



Multi-Channel Signal Processor  
**FA-1010/505**  
 → p. 21



4K/HD/SD Frame Rate Converter  
**FRC-9000**  
 → p. 22



4K Upconverter  
**URC-4000**  
 → p. 23



4K/3G/HD Keyer  
**DSK-400**  
 → p. 28



4K Variable Frame Rate Camera

# FT-ONE-S

**NEW**

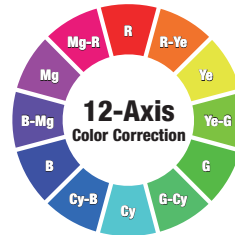
**4K** ULTRA HD

Provisional

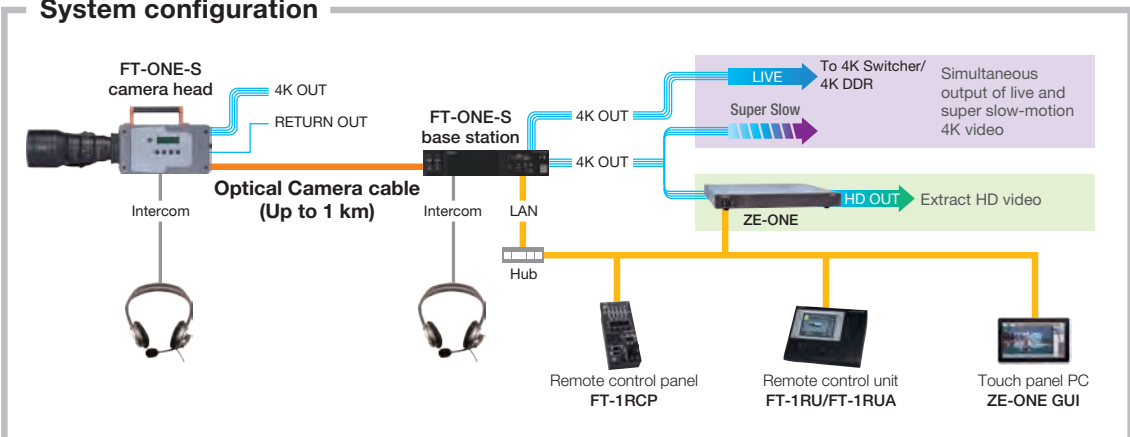


Our new high speed camera adds compact size and portability to the revolutionary FT-ONE 4K high speed camera. Separating the camera head from the body offers exceptional mobility, enabling unprecedented shooting positions or angles for live sports or other events. Expand your creative horizons by combining super slow-motion 4K shooting—a highlight of FT-ONE cameras—with the superior mobility of this model.

- At about 180 x 197 x 290 mm. and 5.5 kg, the camera head is smaller and lighter than that of the original FT-ONE, yet it remains full-featured. The camera operator is linked optically and via an intercom system. Such a maneuverable camera head can be used where larger cameras cannot, as part of a system that expands creative possibilities
- Camera operators have room to roam when covering live events, thanks to the 1 km range of the optical connection between the camera head and base station
- By adding mobility to the fast 4K workflow introduced by the FT-ONE, the FT-ONE-S can capture exciting moments better than ever
- The camera's enhanced resistance to dust and water\* lets camera operators focus on shooting. An advantage at swimming or marine sports events. Engage viewers by capturing competitors at closer range  
\* Within the scope of normal camera head usage only. Does not apply to the lens
- Super 35 mm sensor captures live events with a shallower depth of field found in TV dramas or movies. Content is immersive and beyond the reach of ordinary HD cameras with 2/3-inch image sensors. Even familiar scenes look more exciting
- In video output, color correction along 12-axis surpassing trichromatic correction



## System configuration





Full 4K Variable Frame Rate Camera

# FT-ONE/ FT-ONE-OPT



FT-ONE: Lens and accessories are optional.



FT-ONE-OPT

- Advanced FT1-CMOS sensor
- Super-slow motion in 4K at 900 fps
- 11-stop dynamic range
- 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 downconverted HD-SDI outputs allow you to monitor the signal on a preview monitor and a viewfinder with an on-screen information display
- RAW material is recorded at high speed to internal RAM. Shoot in 4K resolution for up to 9.4 seconds at 900 fps
- 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
- Storage partitioning: Internal memory can be used as a single space or partitioned into 2 to 16 spaces for simultaneous recording or playback
- 12-axis color correction: When using video output, color correction along 12-axis surpassing trichromatic correction
- Genlock input

\* According to internal research as of May 2012.



Award winning: Government Video magazine "2013 Government Video Salute Award"/ Motion Picture and Television Engineering Society of Japan "MPTE Award 2013"/ BIRTV 2013 China "BIRTV 2013 Award"/ "Technology Development Award 2012"/ TV Technology Europe "STAR Award 2012"/ TVB Europe "Best of IBC 2012"

The world's first\* high-speed camera designed for super-slow-motion acquisition at 4K resolution up to 900 frames per second (fps). The FT-ONE incorporates the groundbreaking FT1-CMOS, a global shutter CMOS color sensor. The FT-ONE CMOS was developed by FOR-A to provide superior resolution and sensitivity. RAW material is recorded at high speed 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.

4K Extraction System

# ZE-ONE



Received the TVB Europe "Best of IBC 2013" award




Frame and extract specified HD scenes at any size and positions from 4K sources using an intuitive touch-screen interface.\* To simulate zoom, dynamic zooming effects at key points and in various sizes can be specified. Simulated zoom, crop and camera motion with slow-motion instant replays are possible using the FT-ONE high-speed 4K camera. Enjoy unprecedented creative freedom in replays of live sports coverage and other applications.

\* Control software for Windows 7 or Windows 8 computers is provided to enable touch and mouse operation.


# Video Switcher Lineup

Number of input/output


More



HVS-100/110



HVS-390HS



HVS-2000

More

Variety of features

Comparison table

	HVS-100	HVS-110	HVS-390HS	HVS-2000	
Number of M/E	1M/E	1M/E	1 or 2M/E	2M/E	
Number of M/ELite	No	No	No	6	
Video inputs	Number of inputs (max.)	8 (14)	12	24 (48)	
	3G-SDI (4K support)	Optional	Optional	No	
	HD-SDI	Yes	Yes	Yes	
	SD-SDI	Yes	Yes	Yes	
	Analog	Optional	No	Optional	
	HDMI	Optional	No	No	
	DVI	No	No	Optional	
Video outputs	Number of outputs (max.)	4 (12)	8	16 (20)	
	3G-SDI (4K support)	Optional	Optional	No	
	HD-SDI	Yes	Yes	Yes	
	SD-SDI	Yes	Yes	Yes	
	Analog	Optional	No	Optional	
	HDMI	Yes (1 output, optional expansion card available)	Yes (1 output, optional expansion card not available)	Yes (1 output, optional expansion card not available)	Yes (2 output, optional expansion card available)
	DVI	No	No	Optional	
Reference input	Black burst or Tri-level Sync	Yes	Yes	Yes	
	Black burst or Tri-level Sync	Yes	Yes	Yes	
	Features	Frame synchronizer	Yes	8	Yes
		Resizing (max.)	4 (8)	4 (8)	4 (12)
		Process amplifier	Yes	Yes	Yes
		Color corrector	No	No	Yes
Keyer		2	2	4 for 1M/E model 8 for 2M/E model	
DSK		2	2	2 for 1M/E model 8 for 2M/E model (using keyer)	
Keyer, exclusive DVE for DSK	Yes	Yes	Yes		
P-in-P	Yes*	Yes*	Yes*		
Flying key	4	4	8		
Transition DVE (max.)	1	1	2		
Still store (max.)	2 (16 using input still)	2 (10 using input still)	4 (20 using input still)		
Clip store	2	2	4		
Multi viewer (max.)	1	1	2		
AUX assignable keyer	Yes	Yes	Yes		
AUX transition	Yes	Yes	Yes		
Event memory	Yes	Yes	Yes		
Sequence	No	No	Yes		
Macro	Yes	Yes	Yes		
GUI control	Yes	Yes	Yes		
Safety area maker	Yes	Yes	Yes		
Built-in color bar	Yes	Yes	Yes		
Built-in matte	Yes	Yes	Yes		
Chroma keyer	Yes	Yes	Yes		
Interfaces	ARCNET	Optional	Optional		
	Ethernet	Yes	Yes		
	GPI	Yes	Yes		
	SERIAL	2	2		
Other features	Redundant power supply	Optional	Optional		

\* With all keyers and DSKs employed for P-in-P

3G/HD/SD Video Switcher

**HVS-2000 “HANABI”****NEW****4K<sup>ULTRA</sup>HD**

1M/E Control Panel: HVS-3910U



2M/E Control Panel: HVS-392ROU



2M/E Control Panel: HVS-392OU



2M/E Control Panel: HVS-392WOU



HVS-2000 Main Unit

The new HVS-2000 is a game changer in today's video production switcher market. Offering 2 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 is perfect for an array of applications.

- Up stream transition effects
- Down stream transition effects
- Add the pure power of 6 real M/E's for multiple independent on stage monitor display control...each with mixes, wipes, keys, DVE including preview control.

Our new HANABI switcher offers users high quality, intuitive operation and amazing flexibility.

- 6 M/E capability: 2 M/E + UNIQUE 4 MELite™ with FLEXaKEY™ architecture
- 24 in/18 out standard (including 2 HDMI). Up to 48 in/18 out or 40 in/22 out (optional)
- 6 I/O expansion slots: HVS-100 series optional cards can be installed
- PGM, PVW and 2 CLEAN outputs per M/E
- Multi format: HD/SD/HDMI/Analog/VGA (optional)
- 3G/4K Ready (S/W optional)
- 4 x Keyers per M/E, and 4 x FLEXaKEYs™ (assignable to M/E or AUX). Up to 6 keyers to M/E1, up to 8 keyers to M/E2, and up to 4 keyers to AUX are assignable
- 8 x 2.5D DVE plus 4 x 3D DVE (3D DVE is optional)
- 18 Auxiliary buses (2 HDMI, 12 SDI, 8 AUX transition, 6 MELite™ function)
- Control panel with RGB color buttons and 7-inch touch panel GUI
- 4 Multi viewers (standard: 2, up to 64 windows)
- All inputs have FS with Still image store and capture
- 4 Still/Clip media player. Image store is 4 channel, with access to pool of 900 frames/30 seconds of on line clip playback
- All M/E's keys have chroma keys
- Easy operation with Midas Touch™: ONStage™ mode for stage and multiscreen application
- Color corrector input, output, and application to paths (optional)

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

# HVS-390HS “HANABI”



HVS-392OU 2 M/E Control Panel



HVS-391OU  
1 M/E  
Control Panel



HVS-392WOU  
2 M/E  
Control Panel



HVS-390HS  
Main Unit

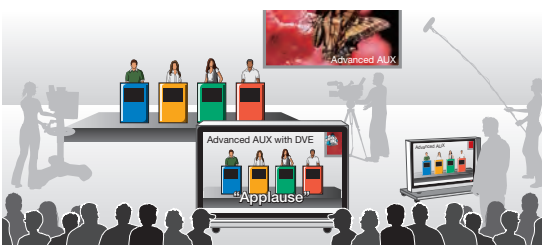
The HVS-390HS video switcher comes in either 1 M/E or 2 M/E configurations. This is an easy to use and powerful switcher that retains the highly acclaimed functionality of the HVS-300 series.

- HD/SD-SDI 16-input/8-output and 1 HDMI output standard, max. 24-input/13-output
- Frame synchronizer and Proc. Amp. on each input
- 4 up-scalers available (expandable with optional input card)
- Variety of I/O options such as SDI, DVI, VGA, analog component and analog composite
- 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
- 4 still stores and internal clip drive
- Various 2D and 3D transitions
- Sequence function and event memory
- Video wall capability
- Various options
  - Color correction function
  - Macro function
  - Safety area display
  - Built-in color bar display
  - Equipped with many useful functions, including a built-in matte function

## Control Panels

- |                                       |
|---------------------------------------|
| 1 M/E model: – HVS-391OU: 20 buttons  |
| 2 M/E model: – HVS-392WOU: 28 buttons |
| – HVS-392OU: 20 buttons               |
| – HVS-392ROU: rack-size, 12 buttons   |

## Introducing “Advanced AUX” operation!



Now With the HVS-390HS production switcher, FOR-A has taken its Mix Effects (M/E) technology to the next level and upgraded the AUX bus system to perform with powerful M/E functionality.\*

On each AUX output, dissolve or wipe transitions can be applied to the background image with independently superimposed keys and DVE.

\* Use of an optional expansion unit (HVS-30HSDO) allows the AUX system to expand to eight outputs for performance equivalent to eight video mixers.

### ■ At live events

Supports multiple outputs for production and on stage video displays with enhanced transitions and keying.

### ■ At broadcast stations

Supports main production feed and secondary feeds to on-set monitors.

### ■ At houses of worship

Provides multiple outputs for production needs and advanced switching for multiple live screen displays.



3G/HD/SD Portable Video Switcher

**HVS-100/110 “HANABI”**

The HVS-100 and HVS-110, portable video switchers, boast exceptional cost performance. The two units inherit and improve upon the diverse functions and features of the popular HVS-300HS, including mixed HD/SD input, frame synchronizing, re-sizing engine\*<sup>1</sup>, 2.5D wipe effects, DVE, keyer with chroma key\*<sup>2</sup>, and DSK. The HVS-100 and HVS-110 also have a built-in Web server that lets you change settings from a PC or tablet device. A clip memory feature has been newly added to the still store to support elaborate performances such as through the use of CG wipes, while the multi viewer meets a diverse range of monitoring needs. Two models are available: one with separated main unit and control panel and one with compact, integrated design.



HVS-1000U Control Panel  
HVS-100 Main Unit



HVS-110

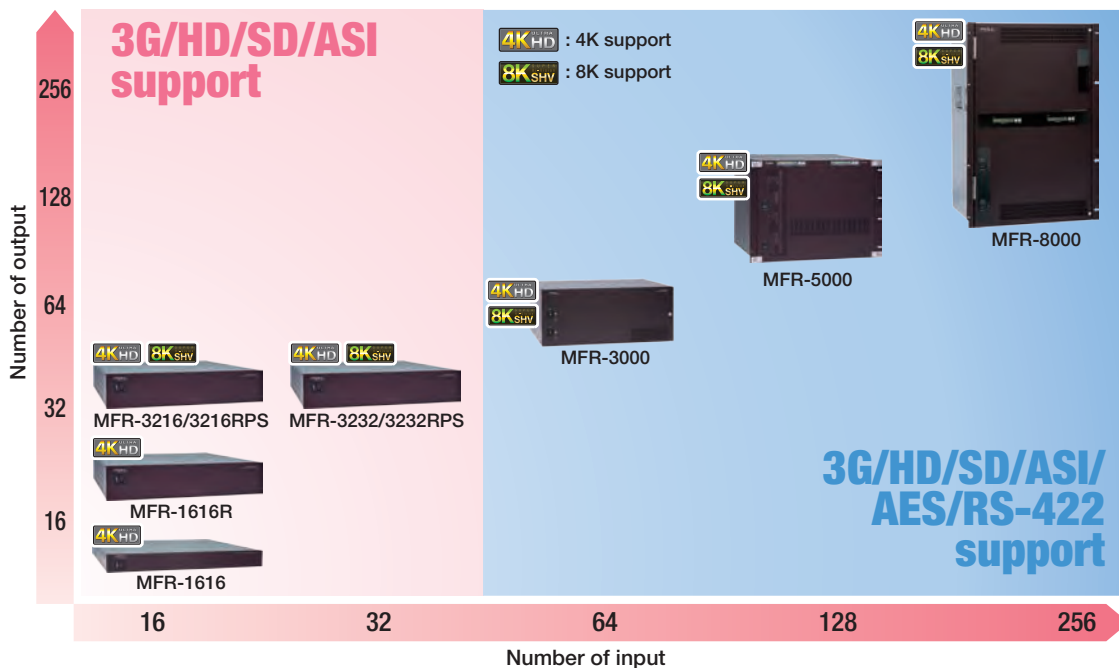
- 2U compact main unit (HVS-100)
- Compact and integrated all-in-one unit (HVS-110)
- HD/SD-SDI 8 inputs/4 (+1 HDMI) outputs standard, max. 14 inputs/8 (+1 HDMI) outputs (HVS-100)
- HD/SD-SDI 12 inputs/8 (+1 HDMI) outputs (HVS-110)
- Frame synchronizer, re-size engine\*<sup>1</sup>, and Proc. Amp. on inputs
- Variety of I/O options such as HD/SD-SDI, HDMI, VGA, and HD/SD analog component and analog composite
- 8 AUX buses with MIX transition
- Built-in multi viewer, supporting 2/4/5/7/9/10/11/16-split view with tally and title display
- Up-stream keyer (with chroma key\*<sup>2</sup>) and DSK
- Various 2.5D DVE transitions and over 100 wipe patterns
- 2 channels of still stores with 227 frames of internal video memory
- Event memory, user buttons, and macro function
- Operate with control/remote control panel or GUI software via Ethernet
- Redundant power supply
- Various options
  - 3G-SDI support
  - 4K format support

\*1 Applied for 4 inputs

\*2 Also assignable to DSK



# Routing Switcher Lineup



Comparison table

		MFR-1616	MFR-1616R	MFR-3216/3216RPS	MFR-3232/3232RPS	MFR-3000	MFR-5000	MFR-8000
Inputs x outputs		16 x 16	16 x 16	32 x 16	32 x 32	From 8 x 8 up to 64 x 64 (expandable by 8 channels)	From 16 x 16 up to 128 x 128 (expandable by 16 channels)	From 16 x 16 up to 256 x 256 (expandable by 16 channels)
Video inputs	3G/HD/SD-SDI	Yes	Yes	Yes	Yes	Optional	Optional	Optional
	DVB-ASI	Yes	Yes	Yes	Yes	Optional	Optional	Optional
Cable equalization	3G-SDI	70 m	70 m	70 m	70 m	100 m	100 m	100 m
	HD-SDI	100 m	100 m	100 m	100 m	100 m	100 m	100 m
	SD-SDI	200 m	200 m	200 m	200 m	200 m	200 m	200 m
Video outputs	3G/HD/SD-SDI	Yes	Yes	Yes	Yes	Optional	Optional	Optional
	DVB-ASI	Yes	Yes	Yes	Yes	Optional	Optional	Optional
Audio inputs	AES/EBU	No	No	No	No	Optional*1	Optional	Optional
	Analog audio	No	No	No	No	Optional*1	Optional	Optional
Audio outputs	AES/EBU	No	No	No	No	Optional*1	Optional	Optional
	Analog audio	No	No	No	No	Optional*1	Optional	Optional
Serial control signal		No	No	No	No	No	Optional	Optional
Reference input	Black burst or Tri-level Sync	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interfaces	MFR-LAN (max.)	1	1 (2*)	1 (2*)	1 (2*)	1 (2*)	1 (2*)	1 (2*)
	PC-LAN (max.)	1	1	1	1	1	1 (2*)	1 (2*)
	Serial	1	1	1	1	1	1	1
	Alarm	1	1	1	1	1	1	1
Features	Salvo	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Take	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Link	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Level	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Chop	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Monitor output	No	No	No	No	No	Yes	Yes
	Accidental operation-proof	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Matrix partition	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other features	Front control panel	No	No	No	No	Optional	No	No
	GUI control	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	SNMP	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Redundant power supply	No	Optional	Optional	Optional	Optional	Optional	Optional
	Redundant CPU	No	Optional	Optional	Optional	Optional	Optional	Optional
Dimensions	430 (W) x 44 (H) x 300 (D) mm EIA 1 RU	430 (W) x 88 (H) x 300 (D) mm EIA 2 RU	430 (W) x 88 (H) x 300 (D) mm EIA 2 RU	430 (W) x 88 (H) x 300 (D) mm EIA 2 RU	482 (W) x 177 (H) x 350 (D) mm EIA 4 RU	480 (W) x 354 (H) x 402.7 (D) mm EIA 8 RU	480 (W) x 698.5 (H) x 402.7 (D) mm EIA 16 RU	
Weight	5 kg	6 kg	6 kg	6 kg	18 kg (with all options installed)	50 kg (with all options installed)	70 kg (with all options installed)	

\*1 to be supported in the future  
\*2 with a redundant CPU installed

3G/HD/SD/ASI/AES/RS-422 Routing Switcher

**MFR-8000** 4K HD 8K SHV



A multi-format routing switcher that supports 3G/HD/SD-SDI signals, as well as ASI, AES and RS-422. Its switching capability can be expanded to a maximum of 256 inputs/256 outputs, and allows 16 inputs/16 outputs for 8K signals or 64 inputs/64 outputs for 4K signals in a 16U frame. Featuring extensive flexibility and high-level redundancy, this routing switcher fits perfectly into large systems.

3G/HD/SD/ASI/AES/RS-422 Routing Switcher

**MFR-5000** 4K HD 8K SHV



A multi-format routing switcher that supports 3G/HD/SD-SDI signals, as well as ASI, AES and RS-422. Its switching capability can be expanded to a maximum of 128 inputs/128 outputs in an 8U frame. Featuring extensive flexibility and high-level redundancy, this routing switcher ensures reliable operation and can be used in medium-size or larger systems.

3G/HD/SD/ASI Routing Switcher

**MFR-3000** NEW 4K HD 8K SHV



A multi-format routing switcher that supports 3G/HD/SD-SDI signals. It can configure up to 64 inputs/64 outputs and allows 4 inputs/4 outputs for 8K signals or 16 inputs/16 outputs for 4K signals. In addition to broadcast studios, this routing switcher can provide optimal solutions for hospital surgical rooms, corporate meeting rooms, and research centers.

3G/HD/SD/ASI Routing Switcher

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



Multi-format routing switchers that support 3G/HD/SD-SDI and ASI signals. Each model offers a different number of inputs/outputs in a compact cabinet size. These routing switchers provide extensive flexibility for functioning at the core of systems, such as tally connections with video switchers and multi viewers, or automatic source name tracking (see p. 15). They are ideal routing switchers for constructing small or medium-size systems.

Audio Routing Switcher

**MFR-1616A**

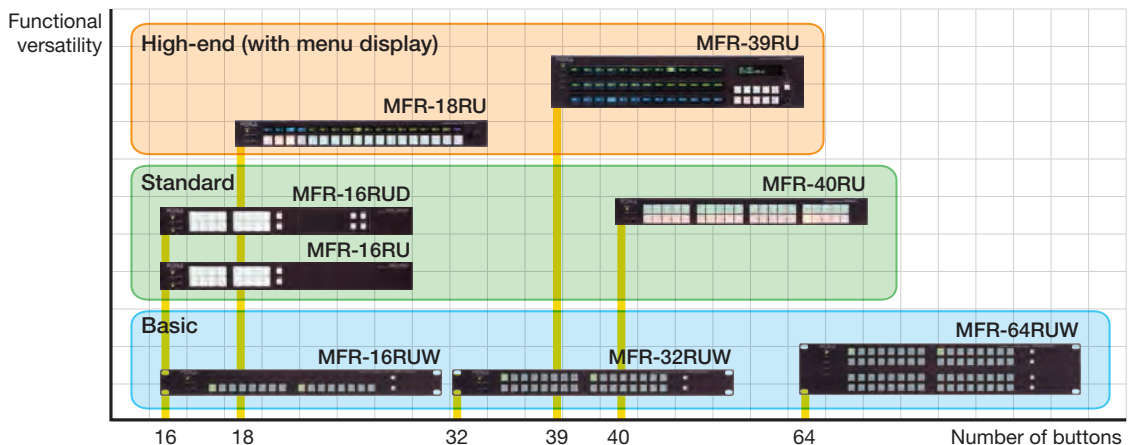


AES-compatible 16 stereo-pair (32-channel) audio routing switcher. Enables audio routing linked to MFR series video routing switchers.

Remote Control Panels for MFR Series

**MFR-RU Series**

**Product lineup**



# Multi Viewer Lineup

**HD/SD** **4K HD** : 4K support

**114**

**32**

**20**

**4**

**Analog**

MV-4200

MV-3200 series

MV-1620HSA

MV-42HSA

MV-42HS

MV-410HS

MV-40F

MV-400

MV-410RGB

**More**

Variety of features

## Comparison table

		HD/SD model					Analog model			
		MV-4200	MV-3200	MV-1620HSA	MV-410HS	MV-42HSA	MV-42HS	MV-410RGB	MV-400	MV-40F
Rack unit size		2U	2U	1U	1U	1/2U	1/2U	1U	1/2U	1/2U
Number of windows (max.)		102 (114)	32	20	4	4	4	4	4	4
Screen layout		Free layout	Free layout	Free layout	Free layout	2/4	2/4	Free layout	2/4	2/3/4/P-in-P
Video inputs	Number of inputs (max.)	68	32	16	4	4	4	4	4	4
	3G-SDI	Yes	Optional	Yes	No	Yes	No	No	No	No
	HD/SD-SDI	Yes	Optional	Yes	Yes	Yes	Yes	No	No	No
	Analog	Yes	Optional	Yes	Yes	Optional	Optional	Yes	Yes	Yes
	PC	Optional	Optional	No	No	No	No	Yes	No	No
Video outputs	Number of outputs (max.)	8	4	2	1	1	1	1	1	1
	HDMI	Yes	No	Yes	No	No	No	No	No	No
	3G-SDI	Yes	Optional	Yes	No	No	No	No	No	No
	HD/SD-SDI	Yes	Optional	Yes	No	Yes	Yes	No	No	No
	Analog	No	No	No	No	No	No	No	Yes	Yes
	PC (digital)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
	PC (analog)	No	Yes	No	Yes	No	No	Yes	Yes	No
Audio	1920 x 1080 resolution	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
	1280 x 1024 resolution	No	Yes	No	Yes	No	No	Yes	Yes	No
	Analog input	Optional	Optional	Optional	No	No	No	No	No	No
	Analog output	Yes	Yes	Yes	No	No	No	No	No	No
Other features	Video streaming	Yes	Yes	Yes	Yes	No	No	No	Yes	No
	Window rotating (90°/180°/360°)	No	Optional	Optional	No	No	No	No	No	No
	Audio level display	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
	Window title display	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Clock display	Yes	Yes	Yes	Yes	Optional	Yes	Yes	No	Yes
	Sequence	Yes	No	Yes	No	Yes	Yes	No	Yes	Yes
	Count up/down timer, remaining time counter	Yes	Yes	Yes	No	No	No	No	No	No
	Layout editor	Yes	Yes	Yes	Yes	No	No	Yes	No	No
	Remote control software	Yes	Yes	Yes	No	No	No	No	Yes	No

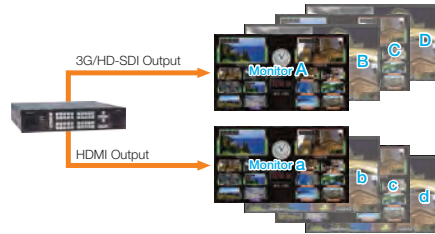
3G/HD/SD/Analog/HDMI/DVI/RGBHV Mixed High Resolution Multi Viewer (Up to 114 Windows, 8-monitor Outputs)

# MV-4200 **4K<sup>ULTRA</sup>HD**



A 2U multi viewer that accepts up to 68 channels of mixed 3G/HD/SD-SDI, analog composite, HDMI, DVI, and RGBHV signals for monitoring on 8 screens. Fully-featured, this viewer offers a customizable window layout, audio level meters, and AFD-compatible cropping.

View up to 8 monitors in different layouts\*



\*When using optional software (MV-4200D0). Standard configuration: 4-screen layout. (Same layout on monitors A-a, B-b, C-c, and D-d.)

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

# MV-1620HSA **4K<sup>ULTRA</sup>HD**



This compact 1U multi viewer accepts up to 16 channels of mixed 3G/HD/SD-SDI and analog composite signals for monitoring on 1-2 screens. It supports dual monitor output and displays up to 20 windows.

Using a single unit



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

## MV-3200 Series



This 2U multi viewer 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 (QFHD) Monitoring Downconverter

## MV-42HSA **4K<sup>ULTRA</sup>HD**



A 4-channel multi viewer that accepts 3G/HD/SD-SDI and analog composite signals. Supporting 4-input split-screen of 3G-SDI, the viewer is perfect for use as a down-converter to display 4K footage on an HD or PC monitor.

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

## MV-42HS



A 4-channel multi viewer that resizes and displays up to 4 channels of HD/SD-SDI on a single screen.

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

## MV-410HS



A 4-channel multi viewer supporting mixed HD/SD-SDI and analog composite signal input.

PC/Video Mixed High Resolution Multi Viewer (Quad-Split)

## MV-410RGB



4-channel multi viewer accepts mixed input of DVI and analog composite signals.

High Resolution Multi Viewer (Quad-Split)

## MV-400



A 4-channel multi viewer that accepts analog composite signals for PC monitoring.

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

## MV-40F



Featuring 5 split screens and three types of picture-in-picture screens.

HD/SD Video Typewriter

## VTW-350HS



- 1U size compact design, excellent for live applications. The vibration-resistant case makes 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

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

HD/SD Video Writer

## FVW-500HS



The FVW-500HS is a video writer system that enables freehand drawing and positioning of objects and image files over video.

- Full-featured finger-based Teletrator
- Supports HD/SD-SDI Video
- Draw and point in real time over input video
- Straight line, free-hand, and pre-programmed graphic shape mode available
- Various types of lines, thicknesses, edge widths and colors
- Image file mapping and spotlight effect
- Movie file (sequentially-numbered files or AVI file) mapping and playback
- Move, Delete and Change Property functions for drawn objects
- Internal DSK ON/OFF function
- Dynamic and Intuitive operation by touch panel option
- Freely assignable custom buttons for various tools

HD/SD Logo/Title Generator

## LTG-50HS



The LTG-50HS is an HD/SD title generator capable of superimposing camera titles, date and time, logos, and graphics on input video signals.

- Text: Up to 40 characters × 10 lines per page, up to 256 pages
  - Bitmap character display function that enables logos and graphics to be displayed at any selected location
  - Standard configuration features an Ethernet interface as well as RS-232C for allowing easy display setting and display character registration from a PC
  - Includes software for easy typing and setting on PC as well as weekly scheduling of page control
  - Crawl display: Can be set for any selected line (max. 256 characters/line\*)
- \* Can be set to a max. 2 lines (256 characters for 1st line, 128 characters for 2nd line)



Integrated Control Software

**GearLink™**

**NEW**

Provisional

Software for centralized visual control of video switchers and other peripherals.

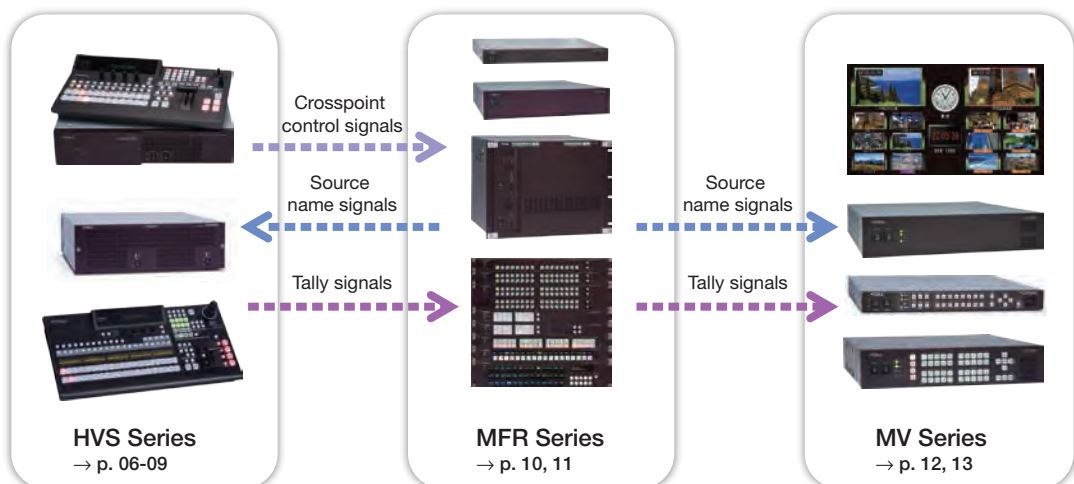
Customize buttons and the screen layout for a bird's-eye view of workflows and convenient system control.



- Video Switcher control: crosspoint changes, transitions, recall events, activate macros and change multiviewer output settings
- Clip Server control: Acquire MBP Series clip ID lists, view thumbnails, Cue, play and record
- VTR control: Cue, play and record
- Routing Switcher control: Switch crosspoints, switch crosspoint presets and receive signal names
- Multi viewer control: Load preset layouts and control timers
- Character Generator control: Load pages, play, cue in/out, and take in/out
- Customize button functions using JavaScript, and edit actions triggered by changes in status of connected device
- Capture and view external video using DirectShow video capture filter-compatible devices installed in or connected to the computer

## Systems Linking Source Names and Tally Signals

- Integrated management of source name signals from MFR routing switchers, which automatically send names to HVS switchers and MV viewers
- HVS tally signals are automatically sent to MV for coordinated display
- MFR crosspoints can be controlled from HVS



LTO Video Archiving Recorder

**LTR-100HS6** [MPEG-2 support]  
**LTR-120HS6** [AVC-Intra/DVCPRO support]  
**LTR-200HS6** [Multi-codec] **NEW**



The LTR series are standalone video archiving recorders fitted with an LTO-6 drive. These devices combine impressive recording capacity of up to 2.5 TB with the convenience of LTFS management. A perfect solution for extended recording as well as file conversion and archiving of video tape material.



LTR-100HS received the Broadcast Engineering "Pick Hit Award" at NAB in April 2010.

- Includes video codecs for recording to and playback from LTO-5 and LTO-6 cartridges in MXF file formats
- Ability to perform entire archiving workflow, from ingest, distribution, archiving and re-purposing, using only one unit
- Open-standards-based, highly versatile, excellent storage stability. Bridges baseband and file-based workflows  
 Common: MXF OP-1a, LTO, LTFS  
 LTR-100HS6 supports: MPEG2  
 LTR-120HS6 supports: AVC-Intra, DVCPRO  
 LTR-200HS6 supports: MPEG-2, AVC-Intra, DVCPRO, DNxHD
- Recording and playback is as easy as using a VTR
- Recording: External recorders can be controlled via RS-422 In operation, transferring material on tape to LTO is similar to dubbing. Proxy files can be generated at the same time. Can record up to 24 hours continuously
- Playback: Jog/Shuttle controls the cache size
- Gigabit Ethernet: FTP-based file input and output. Can be operated remotely. Use partial retrieve to extract required segments from LTO
- Compact 3U height: Half-rack width chassis

LTO Remote Software

**LTR Browser**



Remote control software used to access the LTO tape mounted in LTR and LTS series recorders from PC (Windows or OS X computers available).

- Shows a list of files and their metadata stored on the LTO tape
- File archiving/retrieval with metadata
- Play proxy video from files on the LTO tape
- Modification of metadata
- Sending partial retrieval command while viewing proxy video

LTR-100HS6 Continuous Recording Option

**LTR-10CR**



- More than 24 hours of continuous recording
- Hot-swappable, and can record over multiple tapes
- Extract up to 3 hours of required MXF file material from LTO tapes
- Ability to export MXF files to NAS during recording

LTO Server

**LTS-60****4K<sup>ULTRA</sup>HD**

The LTS-60 is an LTFs-based media archiving server that supports LTO-5/6 tapes. Reading and writing of files on LTO tape is possible via FTP from Windows or OS X computers. An ideal small-scale archiving and backup solution.

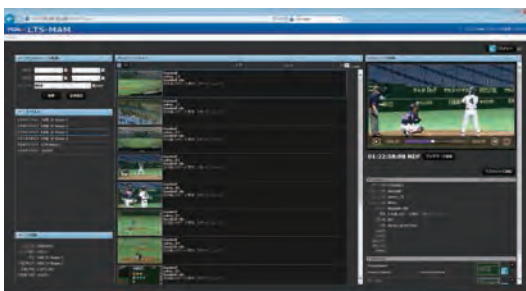
- FTP server installed with an LTO-6 drive
- Installed LTFs file system enables reading and writing of MXF and other media files from PC
- Data compatible with LTR Series
- Partial retrieval feature: Extracts only the specified range of MXF files recorded on the LTO tape
- Can be controlled from the LTS-MAM and LTR Browser (software sold separately)
- LTO dubbing feature: Supports creation of duplicate copies from original copy (optional) through the installation of an external LTO-6 drive
- Proxy video generation feature: Automatically generates low-resolution proxy files and thumbnails when archiving MXF files (optional)

LTO Server Media Asset Management Software

**LTS-MAM****4K<sup>ULTRA</sup>HD**

Combining the LTS-MAM media asset management software with the LTS-60 LTO server creates an archive system.

- LTS-MAM enables contents search and Proxy Video preview whether the tape is currently mounted or not
- A list of archived material files can be viewed with thumbnails and metadata by accessing LTS-MAM using a web browser via a network device
- Material files can be archived and retrieved between shared storage on a LAN and an LTO tape inserted into the LTS-60
- LTO tapes that have been recorded using the LTR Series are automatically registered to the LTS-MAM database simply by inserting them into the LTS-60
- Partial Retrieve and Batch Retrieve functions (optional software is required)
- LTS-MAM software supports linkage functions with TS3100 and TS3200 LTO auto-loaders made by IBM (optional software is required)



Clip Server

# MBP-200SX

**NEW**

Provisional



Simultaneous dual-channel recording (encoding) and playback (decoding), using four hardware codecs.

- Converts between HD-SDI signals and MXF files (compatible with Sony XDCAM), using built-in hardware codecs
- Ample 800 GB SSD storage holds about 24 hours of material
- Direct playout from external XDCAM drives
- Controls two channels at once, using a built-in webserver
- Supports embedded audio or ancillary time codes
- Compact 1U enclosure

Simultaneous Record and Playback Server

# MBP-200PA-DS

**NEW**



Compact (1U) server supporting 120 frame high speed cameras with simultaneous record and playback using SSD storage.

- Accepts 1080/119.88i input via 3G-SDI, and produces HD 1080/59.94i output
- Hardware codec conversion of source video to AVC-Intra 100 or AVC-Intra 50
- Playback of 2x video can be switched between slow motion and regular speed
- Equipped with two 400 GB SSD storages. Able to hold approx. 6 hours of material
- Supports control from external devices (RS-422)

Multi-Channel Video Server

# MBP-500VS



Independently control automatic playout or ingest for multiple channels. Incorporates a newly developed video card and SSD memory in a 2U enclosure. Provides flexible system design with configuration of the server's internal video card, hardware codec, and SSD memory.

- One SDI input and two outputs per channel. Available in three configurations, for 4, 6, or 8 channels. Assign playout or ingest on a per-channel basis<sup>\*1</sup>
- Features fast SSD storage. RAID configurations enable both high reliability and rapid access. Choose from 0.8, 2.4, or 4.8 TB models
- Compatible with two hardware codecs: MPEG-2 and AVC-Intra. Solid playout and ingest performance<sup>\*2</sup>
- Playback during encoding is possible
- Equipped with four Gigabit Ethernet ports for high-speed file transfer
- Full range of playout and ingest system applications. Bridges baseband output from cameras with file-based broadcast workflows
- Can display time codes or credits on a monitor in sync with the main playout line

\*1 For details on 8-channel availability, contact your FOR-A dealer.

\*2 For details on AVC-Intra codec availability, contact your FOR-A dealer.

Universal System Frame

# USF-212/212S/212SX

**NEW**

Provisional



Universal enclosures designed for compact (2U), economical system building. Holds up to 12 modules. Add USF-212PS for a redundant power supply.

- Ample 700 W power supply
- Hot-swappable, front-accessible power unit and module bays
- New combined video and IP design
- Two genlock inputs (BB or tri-level sync)
- Expandable gigabit Ethernet hub card for fast module-computer communication (optional)
- Expandable 3G-SDI crosspoint card to allow connections between different modules (optional)

	USF-212	USF-212S	USF-212SX
SNMP support	No	Yes	Yes
Ethernet hub card	No	Yes	Yes
SDI crosspoint card	No	No	Yes

## Available Modules

**USF-1043FS-R**  
3G/H/SD-SDI Frame/Line Synchronizer



**USF-1043DCC-R**  
4-output 3G/H/SD-SDI Digital Color Corrector



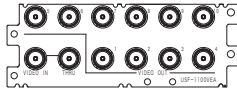
**USF-1053DDA**  
5-output Multi-bit Rate Digital Video Distributor



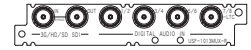
**USF-1040VEA**  
4-output Analog Video Distributor



**USF-1100VEA**  
10-output Analog Video Distributor



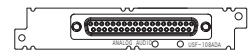
**USF-1013MUX-R**  
3G/H/SD-SDI Digital Audio Multiplexer



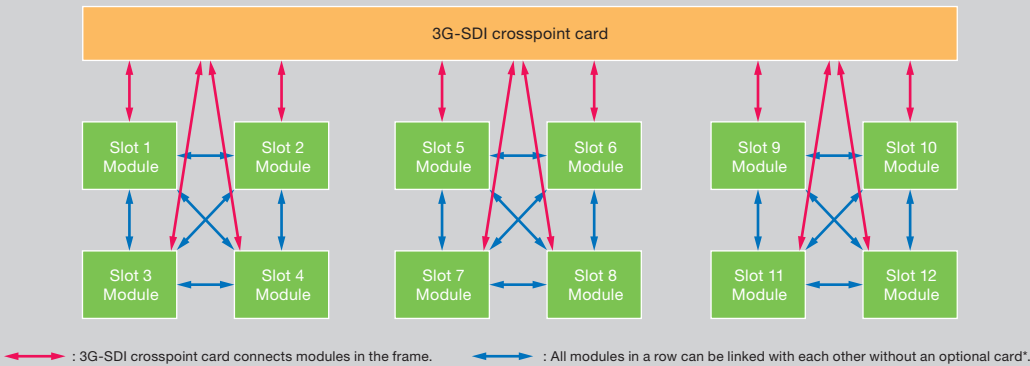
**USF-1013DEMUX-R**  
3G/H/SD-SDI Digital Audio Demultiplexer



**USF-108ADA**  
8-output Analog Audio Distributor



## Add features through optional 3G-SDI crosspoint card





# Frame Synchronizer Lineup

**4K HD** : 4K support

**10-channel inputs/outputs**

**FA-1010**

3G/HD/SD-SDI, input x10/  
output x10,  
Max. 192 audio channels,  
frame synchronizer x10,  
color corrector x10,  
10x10 clean switch,  
4K (QFHD) capability

**5-channel inputs/outputs**

**FA-505**

3G/HD/SD-SDI, input x5/  
output x5,  
Max. 112 audio channels,  
frame synchronizer x5,  
color corrector x5,  
up/down/cross converter x5,  
5x5 clean switch,  
4K (QFHD) capability

**2-channel inputs/outputs**

**FA-9520**

3G/HD/SD-SDI, input x2/  
output x2,  
Max. 32 audio channels,  
frame synchronizer x2,  
color corrector x2,  
up/down/cross converter x2,  
audio video optimizer,  
logo generator

**1-channel inputs/outputs**

**FA-9500**

3G/HD/SD-SDI, input x1/  
output x1,  
Max. 16 audio channels,  
frame synchronizer,  
color corrector,  
up/down/cross converter,  
audio video optimizer,  
logo generator

## Comparison table

		FA-1010	FA-505	FA-9520	FA-9500
Video inputs	Number of inputs	10	5	2	1
	3G-SDI (Level-A)	Yes	Yes	Yes	Yes
	3G-SDI (Level-B)	Yes	Yes	No	No
	HD (1.5G)-SDI	Yes	Yes	Yes	Yes
	SD-SDI	Yes	Yes	Yes	Yes
Video outputs	Number of outputs	10	5	2	1
	3G-SDI (Level-A)	Yes	Yes	Yes	Yes
	3G-SDI (Level-B)	Yes	Yes	No	No
	HD (1.5G)-SDI	Yes	Yes	Yes	Yes
	SD-SDI	Yes	Yes	Yes	Yes
	Analog component	No	No	Optional	Optional
Analog composite	No	No	Yes	Yes	
Audio inputs	Number of inputs (max.)	160 (192)	80 (112)	44	28
	Embedded audio	160 (16x10)	80 (16x5)	32 (16x2)	16
	AES/EBU (balanced)	Optional	Optional	No	No
	AES/EBU (unbalanced)	Optional	Optional	8 (stereo x4)*1	8 (stereo x4)*1
	Analog audio	Optional	Optional	4 (stereo x2)	4 (stereo x2)
Audio outputs	Number of outputs (max.)	160 (192)	80 (112)	44	28
	Embedded audio	160 (16x10)	80 (16x5)	32 (16x2)	16
	AES/EBU (balanced)	Optional	Optional	No	No
	AES/EBU (unbalanced)	Optional	Optional	8 (stereo x4)*2	8 (stereo x4)*2
	Analog audio	Optional	Optional	4 (stereo x2)	4 (stereo x2)
Video features	Frame synchronizer	Yes	Yes	Yes	Yes
	Proc Amp	Yes	Yes	Yes	Yes
	Color corrector	Yes	Yes	Yes	Yes
	Video clip	Yes	Yes	Yes	Yes

Multi-Channel Signal Processor

**FA-1010 “THE Processor”** 4K HD



This 10-input, 10-output signal processor supporting 3G/HD/SD-SDI offers 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 as well. When it comes to audio signal processing, the processor is highly versatile providing delay adjustment and remapping functions as well as a sampling rate converter.

Multi-Channel Signal Processor

**FA-505 “THE Processor”** 4K HD



This 5-input, 5-output signal processor supporting 3G/HD/SD-SDI is equipped with a variety of functionalities including frame synchronizer, color corrector. Inheriting the abundant features of the FA-1010, the FA-505 provides up/down/cross conversion capability on each input as standard and allows 1080i to 720p / 720p to 1080i conversion. The processor is a complete toolbox for any video production scenario and ideal for 4K applications.

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

**FA-9520 “THE Processor”**



A dual channel version of our industry-leading FA-9500 processor. It supports 3G/HD/SD-SDI and analog composite I/O. The processor is perfectly designed for a variety of applications that demand relatively small systems with extensive functionalities, including: master control, mobile video production, post production services, and live production.

3G/HD/SD Multi Purpose Signal Processor

**FA-9500 “THE Processor”**



This multipurpose signal processor supports 3G/HD/SD-SDI and analog composite I/O. In addition to a frame synchronizer, the processor provides up/down/cross/aspect converter, full color corrector and automatic video optimizer (AVO) as standard features. Analog component I/O, Dolby E encoder, and logo generator can be added as optional features.

		FA-1010	FA-505	FA-9520	FA-9500
Video features	Up/down/cross/aspect converter	No	Yes	Yes	Yes
	ANC data mux/demux	Yes	Yes	Yes	Yes
	Video delay	Yes	Yes	Yes	Yes
	Input-output bypass	Yes	Yes	Yes	Yes
	Change over	No	No	Optional	Optional
	Text signal	Yes	Yes	Yes	Yes
	Logo generator	No	No	Yes	Yes
	Auto video optimizer	No	No	Yes	Yes
Audio features	Timecode inserter/generator	Yes	Yes	No	No
	Audio de-embed (demux)	Yes	Yes	Yes	Yes
	Audio embed (mux)	Yes	Yes	Yes	Yes
	Audio gain	Yes	Yes	Yes	Yes
	Sampling rate convertor	Yes	Yes	Yes	Yes
	Audio delay	Yes	Yes	Yes	Yes
	Channel remap	Yes	Yes	Yes	Yes
	Down-mixing	Yes	Yes	Yes	Yes
	Polarity reversion	Yes	Yes	Yes	Yes
	Master mute	Yes	Yes	Yes	Yes
	Test signal	Yes	Yes	Yes	Yes
	Dolby E Enc/Dec	No	No	Optional	Optional
Other features	Loudness control	No	No	Optional	Optional
	GUI control	Yes	Yes	Yes	Yes
	Event memory	Yes	Yes	Yes	Yes
	SNMP	Yes	Yes	Yes	Yes
Redundant power supply		Optional	Optional	Optional	Optional

\*1 Shared with audio output

\*2 Shared with audio input

4K/HD/SD Frame Rate Converter

# FRC-9000

**NEW** **4K<sup>ULTRA</sup>HD** Provisional

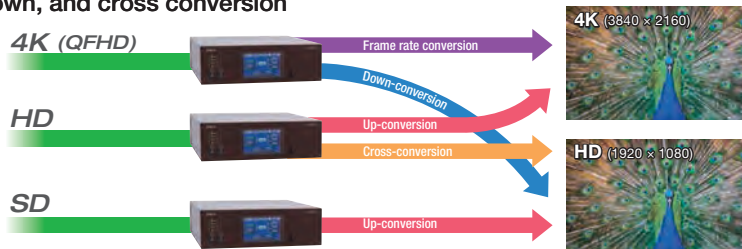


FRC-9000 (The photo is for illustrative purposes only)

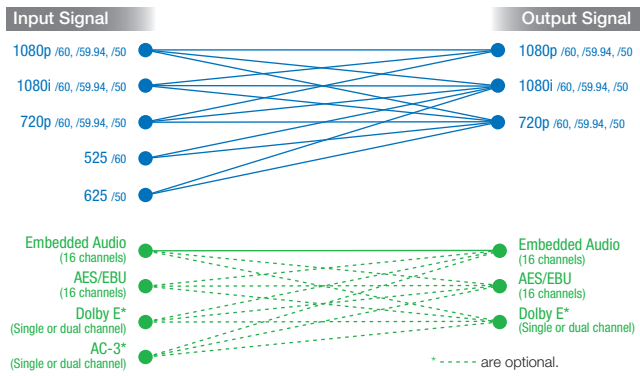
Better picture quality through more versatile conversion. More convenient—and now, 4K (QFHD)-compatible.

- 4K (QFHD, Quad-link 3G-SDI) support
- Up, down, and cross-conversion
- 3G/HD/SD multi-format support
- Conversion with Motion Compensation Processing
- Interlace-to-progressive conversion support
- Converts two channels of video (HD/SD) at once

### Up, down, and cross conversion



### Frame rate format mapping



HD/SD Frame Rate Converter

# FRC-30/UFM-30FRC



FRC-30



Modular-type UFM-30FRC Frame Rate Converter

The FRC-30 is a 1U high, half-U wide frame rate converter based on the UFM-30FRC. Capable of both motion compensation and linear conversion, the FRC-30 achieves outstanding levels of conversion regardless of video content. Last but not least, the FRC-30 further offers up/down/cross conversions as standard features.

- Motion compensation mode: Detects the motion vector amount of a moving object and generates the object's motion in frames
- Linear conversion mode: Base frame conversion on previous and next frames
- Supports 1080/59.94i, 1080/50i, 1080/23.98PsF, 720/59.94p, 720/50p, 525/60, 625/50 inputs, and frame rate conversions
- From SD up to HD, from HD down to SD, and from 1080i to 720p

Super Resolution 4K Upconverter

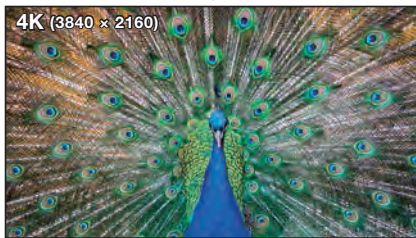
# URC-4000 **4K<sup>ULTRA</sup>HD**



Spatiotemporal frame interpolation



Multi-scale nonlinear enhancement



Simulated images. Not actual 4K or HD images.

The URC-4000 provides powerful up-conversion and turns HD video into 4K in real time. Original I/P and resolution conversion developed by FOR-A unleashes a new era in 4K conversion. Spatiotemporal frame interpolation is performed in which spatial and temporal changes in images are detected in high precision, on a pixel-by-pixel basis. Aliasing from conversion are reduced, and the resolution of still image areas is restored. Resolution is further improved through multi-scale nonlinear enhancement.

- Redundant power supply (optional)
- 3G-SDI Level-A and -B output
- Visual interface for Windows
- Supports SNMP (Simple Network Management Protocol)

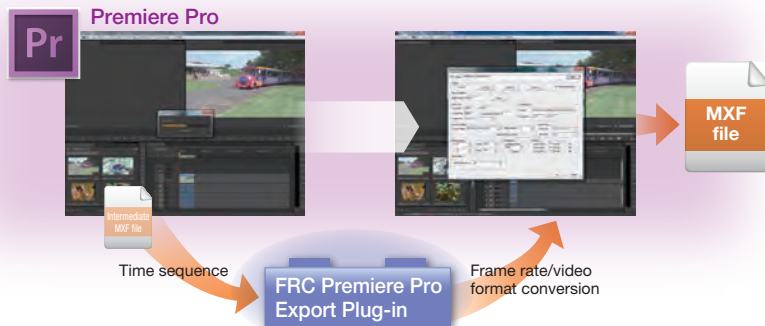
File-base Video Format Converter

# FRC Export Plug-in



High-quality video format converter/MXF exporter plug-in software for Adobe Premiere Pro CC/CS6 Windows.

- Frame rate converter
- Includes an upconversion, downconversion, and crossconversion (1080i↔720p)
- Two conversion modes: Vector motion compensation and linear conversion
- Includes industry leading scene cut detection
- Upconversion uses motion-adaptive interlace-to-progressive conversion



HD/SD Advanced Color Corrector

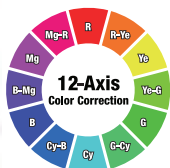
## DCC-7000



DCC-70RU Portable remote control unit



DCC-70DRU Tabletop control unit



High-performance HD/SD color corrector, for precise color correction in real time 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
- Includes conventional RGB correction mode
- 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



The IVS-710HS 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
- Auto detection of camera pan/tilt: Corrects only unwanted motion
- Correction for both live and recorded video
- Sub-pixel precision
- Straightforward design: Simply supply video signals, no special connection required
- Supports external control via Ethernet and serial interfaces

Video Stabilizer &amp; Automatic Video Optimizer

## IVS-200



While existing video stabilizers are able to correct vertical and horizontal shaking, the IVS-200 also corrects rotation. It also comes with an auto video optimizer (AVO), which automatically corrects video to appropriate levels.

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



Real Time CG System

# SmartDirect RCG

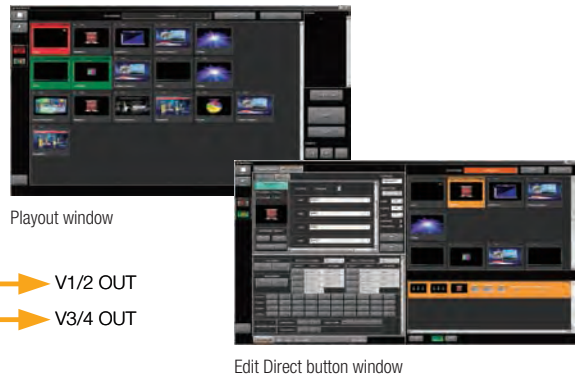
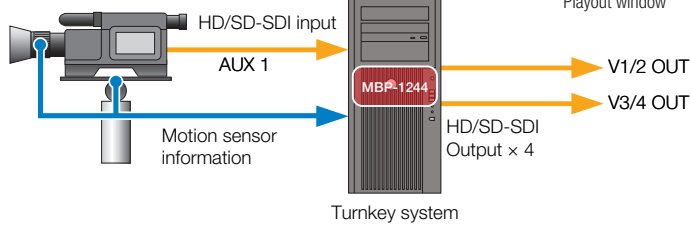
Powered by  
**BRAINSTORM**



FOR-A's SmartDirect RCG system is offered as a turnkey system integrating all elements including a video I/O board (MBP-1244), CG rendering engine, and control software. This means that customers can complete the required hardware introduction simply by mounting a PTZ (Pan, Tilt, Zoom) sensor onto a camera. An option is also available for using Qoncept's QUU marker-less sensor, which does not require a hardware sensor, in place of the PTZ sensor. The intuitive and simple user interface requires no special operational training and thereby minimizes the lead time from introduction to operation.

Conceptual drawing of SmartDirect RCG standalone operation

Camera with motion sensor



# Augmented Reality (AR) System NEW



Innovative fully markerless AR system.

- Detects positional information of reference points via image recognition
- Supports all existing camera and lens types
- Able to composite CGs into live broadcasting, aerial shooting, special effects shooting and live camera footage in real time
- Multi-Target tracking: Able to register and track multiple targets simultaneously
- Stable tracking
- Low delay: Less than 2 frame-delay

Graphics follow PTZ operations without a hardware sensor



Advanced Virtual System

**BRAINSTORM**

# Infinity Set

**NEW**



Real-time 3D graphics system designed as versatile solution for a range of equipment, from inexpensive sensorless 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 (which can be freely combined) and convenient, flexible sensorless subject tracking
- Real-time camera tracking, applying tracking data in recorded video with the virtual set

Sensor-less Virtual Studio System

# VRCAM2

Powered by  
**BRAINSTORM**



“VRCAM2” is FOR-A’s sensor-less virtual studio system designed for single person operation without the need for camera operators. The VRCAM2 has been upgraded to include: more camera positions, sensed cameras and a host of other useful features for program production.

- Up to four cameras can be added with 32 positions per camera
- Keyframe setting: Keyframe processes between virtual cameras allow non-linear movement as well as linear camera work
- Defocus control provides realistic images during close-ups
- Animated effects: A wide variety of animations (special effects) can be added for the subject
- One-touch operation: Camera switching, subtitles and captions, scene transitions, among other scheduled actions, can be saved sequentially onto a playlist, and scene takes alone during a live program enable programmed timeline effects
- Usage with a playlist enables the program timeline to be maintained while allowing composition changes and presentations that give a sense of actually being in the audience during live broadcasts
- Animated text can be displayed by simply selecting a template and entering the text

HD/SD Virtual Studio/RCG System

# digiStorm

Powered by  
**BRAINSTORM**

Brainstorm eStudio GUI

“digiStorm” is a state-of-the-art on-air graphics solution created by the joint development efforts of FOR-A and Brainstorm Multimedia. When the technological resources of hardware manufacturer and virtual studio integrator FOR-A and Brainstorm’s well-established virtual studio software program eStudio are fused together, the resulting synergistic effect opens up a world of “broadcast graphics.” Through this exciting on-air graphics solution, immediate form is instantly given to the powers of creative imagination.

Virtual Studio/RCG Software

## Brainstorm eStudio

- New effects: Shader, Trail, Bloom, etc.
- New user-friendly GUI
- High rendering performance with FOR-A’s MBP-1244 video platform

Virtual Studio Software

## Brainstorm Easyset 3D

- Superior user interface
- Video wall support
- 2D/3D text display
- Upgradable to higher model Brainstorm eStudio

Virtual CG-Set Library

## eLibrary: Virtual Set Pack



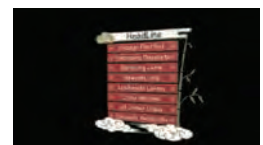
10 practical virtual CG sets in 1 package. CG resource collection for Brainstorm eStudio.

- Plenty of CG sets ready to use as soon as the virtual system is installed
- Save time and costs in CG sets creation when producing programming
- Purchase your choice of 10 CG set packages from a wide selection of more than 160 sets
- A wide range of available content includes studio CG sets (news and information programs, weather, etc.), stadium and facility content (baseball fields, stadiums, golf courses, etc.), seasonal scenery, cities of the world, cities of the future and space scenes
- Users who already work with Brainstorm-eStudio can modify their own sets

Virtual CG-Set Library

## eLibrary: RCG Contents Pack

An RCG resource collection for Brainstorm eStudio that includes more than 60 CG objects such as item panels and video walls in a package.



Virtual Processor/Chroma Keyer

# VRP-100

**NEW**

Provisional



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 multiviewer output.

- 1080i/1080p (Level-A) supported
- Equipped with input conversion function of 3G-SDI Level-B to Level-A
- 8 SDI inputs/4 outputs, expandable to 14/8; HDMI x 1
- Two lines for newly developed chroma keying
- Combine both lines for dual chroma keying
- DSK: Combine up to 5 layers (background + 4 DSKs)
- Adjust gain/offset for each bus with built-in Proc Amp
- Frame Synchronizer on all inputs with captured image display
- Adjust chroma phase
- Adjust camera input and delay (up to 10 frames)
- Freely assign video to any window in the multiviewer, with 2/4/5/7/9/10/11/16 splits
- Title and tally display (up to 8 characters) on the multiviewer
- Redundant power supply
- VRP-100RU: Remote control unit (optional)

4K/3G/HD Keyer/Chroma Keyer

# DSK-400

**NEW**



Provisional



DSK-400 is a 4K (QFHD) keyer that has 12 inputs and 8 outputs for 3G-SDI. Add DSK-400CK for 4K chroma keying. Controllable via DSK-400 GUI. Also, able to be controlled via HVS-1000U connected to HVS-100 or HVS-100 GUI control software.

- 1080p/1080i supported
- Equipped with input conversion function of 3G-SDI Level-B to Level-A
- BOX mask, KEY INVERT, GAIN, TRANSPARENCY function
- Supported inputs: LINE (3G/HD-SDI x 4), FILL/KEY (3G/HD-SDI x 4 in each)
  - 4K (QFHD) mode: LINE x 1, FILL/KEY x 1
  - HD (3G/1.5G) mode: LINE x 4, FILL/KEY x 4
- Supported outputs: PGM (SDI x 4), AUX (SDI x 4)
  - 4K (QFHD) mode: PGM x 1, AUX x 1
  - HD (3G/1.5G) mode: PGM x 4, AUX x 4
- Enables to put combined FILL/KEYs on LINE input. Equipped with FS on FILL/KEY input
- Equipped with INPUT STILL on FILL/KEY input. Available as still image source

HD/SD Chroma Keyer

# MBP-100CK



The MBP-100CK is a high performance chroma keyer based on FOR-A's unique algorithm.

- 4:4:4:4 Internal Processing
- HD/SD-SDI 3 inputs, 8 outputs
- High performance chroma keyer with FOR-A's unique algorithm
- Easy setup by Auto Chroma Key function
- Edge color replacement
- Filtering to eliminate flickering
- Adjustable camera delay (7 frames)
- 2 independent layering downstream keyers
- Still Store Function
- GUI Control Software
- MBP-RUA: Remote control unit (optional)



High-sensitivity HD Camera

**FZ-B1**

Lens and accessories are optional.

**FLOVEL®**

- 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 wave length applications and color /monochrome selection
- Self contained, small and compact one piece design for easy system installation
- Minimum illuminations 0.005 Lx for color motion shooting

High-sensitivity HD Camera

**FZ-B3****NEW**

Lens and accessories are optional.

**FLOVEL®**

- 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

**Example Applications**

- Helicopter or Spacecraft visual systems
- Celestial imaging, Aurora or Underwater observation
- Coast guard, border control, oil rig observations
- Nuclear plant, power plant observation
- Police activity



8K/4K/HD Test Signal Generator

# ESG-8000

**NEW**

**4K<sup>ULTRA</sup>HD**

**8K<sup>ULTRA</sup>SHV**



Test signal generator compatible with YCbCr 4:2:2 10-bit FS-SHV (Super Hi-Vision Full Resolution) signals. Also produces DG-SHV (Super Hi-Vision Dual Green) signals.

- Standard test patterns include color bars, ramp, steps, and other patterns. Up to 10 custom test patterns can be registered
- Choose from ITU-R BT.2020 or ITU-R BT.709 for 8K testing (except for custom test patterns)
- Audio test signals can be selected from standard test signals, such as a 1 kHz signal, or custom WAV (linear PCM) files
- For 8K video output in DG mode, choose from one line (1.5G-SDI: 16 channels) or two (3G-SDI: 8 channels). In FS mode, one line (3G-SDI: 16 channels) is provided. Audio is embedded in HD, 4K or 8K output. Also supports MADI signals
- Payload information can be multiplexed into output signals
- Control the unit via telnet, or monitor operation via SNMP

SDI Changeover Switcher (2 inputs)

# UFM-80SDICS

**4K<sup>ULTRA</sup>HD**



A modular-type SDI changeover switcher that can be mounted in a UFM frame. Seamless automatic switching of 3G/HD/SD-SDI signals increases duplex transmission reliability. Mounting multiple switchers into a single unit greatly reduces the installation space.

- Video/Audio error monitoring function
- Video delay adjustment (Up to 20 frames)
- Incorporated Frame Synchronizer (FS)
- Supports 8 ch audio
- Supports SNMP (Simple Network Management Protocol)
- SDI signal pass-through function
- Operates with GUI software control

TS Changeover Switcher (2 inputs)

# UFM-80TSCS



A modular-type TS changeover switcher that can be mounted in a UFM frame. Constantly monitors TS signals on a redundant circuit, and switches the output swiftly to the other line when an error occurs without disrupting output to achieve automatic seamless switching.

- Seamless switching between the outputs of the same encoder
- Manual switching and auto/manual assignment of each line
- Delay adjustment (Up to ±500 ms)
- Supports SNMP (Simple Network Management Protocol)
- Error detection
- Bypass-through function
- Error monitoring and control functions using GPI remote interface
- Operates with GUI software control

UFM Frame (12/6 modules)

# UF-112/106B



UF-112

- Capable of holding up to 12 (UF-112)/6 (UF-106B) modules (boards) according to the system
- Capable of holding UF-112PS (UF-112)/UF-106BPS (UF-106B) redundant power supply (optional)
- Permits hot swapping of power supply and modules. All front modules can be replaced through the front side
- Alarm detections and status indications are displayed on the front-side LED





IP Changeover Switcher (2 x 1)

# IPS-6200 **NEW**



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

- Seamless switching between outputs of the same encoder
- Auto and manual switching
- Delay adjustment function
- TS-level monitoring
- GUI-based remote control and monitoring
- TS or IP input for each channel, and TS or IP output available for all channels

VANC modem

# EVM-2600/2650 **NEW**



EVM-2650

Applications:

- Multiplexes data such as camera platform and lens sensor data in virtual systems into video signals, or demultiplexes data from the video signals
- In relay broadcasting, footage-related information can be multiplexed into video signals
- File transfer capability using a specialized application

- HD/SD-SDI ancillary data transmitter
- Transmission of maximum 4 lines of RS-232C serial data
- TX/RX switching
- Packet auto-detection
- Packet path functional 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

Time Lag Checker

# EDD-5200/6200P



EDD-5200



EDD-6200P

This equipment can measure video and audio delay times, the difference between audio channels, and between video and audio using test time code signals.

- 3G/HD/SD-SDI support
- Built-in high precision clock (synchronized by GPS)
- Long distance delay measurements
- The EDD-6200P (portable) operates on a battery as well and is suitable for use in outside broadcasting

TS Changeover Switcher (2 inputs)

# TSS-6200



Constantly monitors TS signals on a redundant circuit, and automatically switches output swiftly to the normal line when an error occurs without disrupting output for seamless switching.

- Delay adjustment function
- Bypass function
- Error detection
- External control functions
- Redundant power supply



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