

VIDEO PRODUCTION

FOCUS
enhancements

Optimize production.

Developed by video professionals for video professionals, products by Focus Enhancements feature the technology and reliability you need to meet the rigorous demands of video production—day in and day out. Whether you're shooting, editing, or conducting a live broadcast, the family of Direct To Edit® recorders and mixers streamlines production and delivers superb quality.

When you purchase equipment from Focus Enhancements, you not only receive products that perform superbly every day, but you also receive unconditional service and support from a team of seasoned video professionals—energetic people who are dedicated to helping you get the most from your products.





“The Nürburgring is one of the world’s most grueling motor racing circuits. It’s tough enough for a racing car to survive a 24-hour endurance race, let alone video equipment operating in this demanding environment. The capacity of the FS-3 to withstand extreme shock and heat coupled with its ability to provide quick access to clips in edit-ready formats made it the only solution available that was capable of accomplishing this task.”

Oliver da Costa, Vital Media Solutions

The Direct To Edit Advantage

With the Focus family of video production products, you’ll go from acquisition to editing with unparalleled speed, efficiency, and reliability. Compatible with most HDV, DV, DVCPRO®, DV-CAM, DVCPRO 50, and DVCPRO HD® camcorders and editing software, Focus products feature Direct To Edit (DTE) video recording technology that converts the output from your camcorder or VTR to a nonlinear editing (NLE) format and records it on FireWire disk drives.

By combining DTE Technology® with advanced caching and redundant tape and disk recording, Focus DTE recorders ensure that you never miss an important shot or lose critical footage. And best of all, your footage is ready to edit instantly.

If you have analog footage that needs to be converted to digital, or vice versa, Focus Enhancements offers a DV-analog converter that makes the process fast and efficient.

“The Focus FS-2 Studio DTE Recorder has dramatically improved the quality and content of our finished presentations. Additionally, the versatility of including different recording or codec formats makes our department that much more versatile.”

Jack Mullins, Media Specialist, Midwestern University

Featured Broadcast Customers

Network Affiliate Stations	Other Stations	
NBC Network	KAID (PBS)	Kansai Television
KARE	KCMO (GOV)	LNK
KEZI	KCSG (PAX)	Mainichi Broadcasting System
KIDK	Vacation Channel	RMTV
KRCG	WCOT (IND)	RTL
KSBY	WPNB (IND)	Sky Italy
KTUL	International Stations	Thailand Land & House Department
WCAV	Asahi Broadcast Corp	Tokyo Broadcast System
WDIV	Dogen News Agency	TV Asahi
WMGT	GAORA CS Sports Channel	
WXVT	Hamburg 1	
WXYZ		

Featured Nonbroadcast Customers

Education		
Central Michigan	Tulsa	Moraine Valley Church
Florida State	USC	Religious Coalition Cable TV
Iowa State	Washington	Word of Life Fellowship
Midwestern University	Sports	Other
Minnesota	Clemson University Athletics	Boeing Autometric
Missouri	Jefferson Pilot Sports	Dallas Digital Studios
MIT	Kansas State Wildcat Football	Dream Video
Notre Dame	Vital Media Solutions	High Impact TV
Ohio State	USA Swimming	Rule Broadcast Systems
Oregon State	Worship	Seerveld Media
	Janet Rae Ministries	U.S. Department of Justice

Direct To Edit Recorders



FS-2E

Bring Direct To Edit Technology to your studio or production vehicle with the Focus FS-2E Studio DTE Recorder. Featuring a variety of analog and digital input, output, and control options, the FS-2E can be easily integrated into your production suite, replacing broadcast tape decks.

Key Features

- Component, composite, S-video, SDI (with embedded audio), DV, genlock, balanced audio, and AES/EBU digital audio I/O
- External timecode I/O
- Sony 9-pin RS-422 control
- Multiple disk drive options
- User-programmable playlist
- Network connection for FTP and web-based control
- Timecode offset



FS-3

The Focus FS-3 Camera-Mount DTE Recorder brings DTE disk recording performance to the field by mounting directly to full-size DV camcorders. It's ideal for electronic news gathering (ENG), electronic field production (EFP), videography, and other portable applications.

The FS-3 features removable FireWire drives, making it easy to swap out FS-HDD1 drives as needed. And if you require extended storage or playback, you can daisy chain up to four external FireWire drives.

Key Features

- Mounts directly to full-size DV camcorders
- Shares camcorder battery
- Removable disk drives
- Controlled directly from camcorder

DR-DV5000

Made specifically for JVC full-size DV camcorders, the DR-DV5000 includes all of the features of the FS-3 plus cable-free connection and viewfinder-based status display.



FS-4 HD

Weighing about one pound, the Focus FS-4 HD Portable DTE Recorder brings Direct To Edit Technology to your DV or HDV handheld camcorder. Audio, video, timecode, and control information is passed between the FS-4 HD and your camcorder using a single FireWire cable. With an easy-to-use interface and a 40GB drive, the FS-4 HD is the perfect DTE companion for handheld shoots.

Key Features

- A 40GB drive for three hours of DV or HDV 1080i recording or four hours of HDV 720p 30 recording
- Removable, rechargeable Li-Ion standard-capacity battery (90 minutes)
- Lightweight, rugged, and portable enclosure
- Controlled from your camcorder
- Comprehensive backlit LCD display
- 6-second recording buffer



FS-4Pro HD

With all of the features of the FS-4 HD, plus multiple DTE recording formats and advanced features such as time lapse, retro disk recording, and scene marking, the Focus FS-4Pro HD Portable DTE Recorder provides the flexibility that video professionals demand.

Key Features

- Available in 60GB, 80GB, and 100GB configurations for 4.5, 6, or 7.5 hours of DV or HDV 1080i recording or 6, 8, or 10 hours of HDV 720p 30 recording
- Removable, rechargeable Li-Ion battery
60GB configuration: standard-capacity battery (90 minutes)
80GB and 100GB configuration: high-capacity battery (180 minutes)
- High capacity cradle 100GB models only
- Advanced DTE formats, including Pinnacle DV-AVI, Avid DV OMF, and QuickTime HDV
- Loop record capability
- 10-second recording buffer
- Lets you categorize clips while you shoot

Conversion Software

DV/SDI/Analog Converter



FS-100

Designed to work with the Panasonic AG-HVX200 P2 camera, the FS-100 Portable DTE Recorder features a 100GB drive for 100 minutes of DVCPRO HD recording. DVCPRO 50, DVCPRO, and DV can also be recorded.

DR-HD100

Designed specifically for the JVC GY-HD100 ProHD camcorder, the DR-HD100 comes standard with a 40GB drive for three hours of recording time (about four hours in HD 720p mode) and is available with an 80GB drive for six hours of recording time (about eight hours in HD 720p mode). You can also extend recording time by linking two JVC DR-HD100 units together.

FS-C

Designed for the Canon XL-H1 HDV camcorder, the FS-C Portable DTE Recorder comes with a 60GB or 100GB drive for 4.5 or 7.5 hours of recording time in HD 1080i or DV25 mode. A camera mount kit is also included.



DV Conversion Suite

Converting DV25 file formats is fast and easy with the Focus DV Conversion Suite. In addition to converting all major DV25 formats, the software provides aspect ratio and broadcast standard conversion from DV-PAL to DV-NTSC and vice versa.

Key Features

- Quick conversion between all major DV NLE file formats
- High-quality conversion with motion interpolation
- Scene change detection
- Optional adaptive deinterlacing
- Selectable field order for source and target
- Scale up, letter box, pan, and scan (NTSC to PAL)
- Scale down and crop (PAL to NTSC)
- Multiple time resampling modes

DV File Converter Pro

Specifically designed for video professionals who use Panasonic P2 cameras and decks, the Focus DV File Converter Pro converts P2 MXF files to or from the most popular DV-based video and NLE file formats.



MediaConverter MC-2E

With the MediaConverter MC-2E DV/SDI/Analog Converter, you can achieve professional, high-quality bidirectional DV/SDI-to-analog video conversion. Rackmount ready, the MediaConverter MC-2E can be easily added to your existing AV rack. The controls are located on the front panel for convenient access, and conversion settings are easy to read with the unit's backlit LCD display.

Key Features

- All inputs to all outputs (DV/CV/YC/UV/SDI)
- Supports VTR control via RS-422
- Genlock (adjustable)
- Unbalanced/balanced stereo audio plus AES/EBU and embedded audio in DV/SDI
- NTSC or PAL compatible
- Internal 10-bit processing

“Because we are constantly on the go, the FS-4 and the FS-4Pro help our team achieve our goals, meet deadlines, save time, and reduce production costs. The FS-4 family has also resolved issues with incompatibilities in a mixed-vendor environment. These exceptional products, of which we currently have five, are a lifesaver in both the field and the studio and keep us on the cutting edge.”

Timothy Allen Spurek
Videographer/Editor, KTUL TV, Tulsa, OK



Postproduction Products

Whether you're editing a program or conducting a live broadcast, the family of mixers from Focus Enhancements makes it easy to get your production on screen. Switch seamlessly between four video sources and blend digital and analog content with graphics and high-resolution titles on the fly. With postproduction products from Focus Enhancements, you'll enjoy immaculate audio and video quality combined with the unwavering reliability that your business demands.

Featured Customers

AT&T Broadband
CDN-TV (Raleigh, NC)
Chase Productions
Community Access TV
(Bismark, ND)
Hartland Institute

Michigan Air National Guard
NC Tech Center
NYU
Ohio University
Ole Miss Athletics
The Salvation Army

University of Wisconsin-
Madison
U.S. EPA
U.S. EPA Video

Digital Video Mixers



“We are impressed with the MX-4’s user-friendly interface, advanced features, and overall ease of use. With great enhancements to an already award-winning mixer line, we are confident that the MX-4 will become the go-to solution for live event video production.”

Julio Ancheta
Western Regional Sales Representative
VMI Inc.

MX-4

Packed with functionality, the MX-4 Digital Video Mixer is an eight-input, four-channel mixer that provides seamless switching between video sources, enhanced synchronized audio mixing, graphics storage, and Ethernet-based connectivity. With more than 700 transitions and the ability to import 50 background and foreground graphics to create beautiful four-layer effects, the MX-4 unleashes your creativity. In addition to its switcher, the MX-4 includes a frame synchronizer, TBC, and manual video adjustments.

Key Features

- 10-bit 4:2:2 video processing with superior input comb filter circuitry
- Single and multiple picture-in-picture and movable mosaic mask
- Four-source preview
- Input effects, including chroma key, picture flip, strobe, mosaic, and more

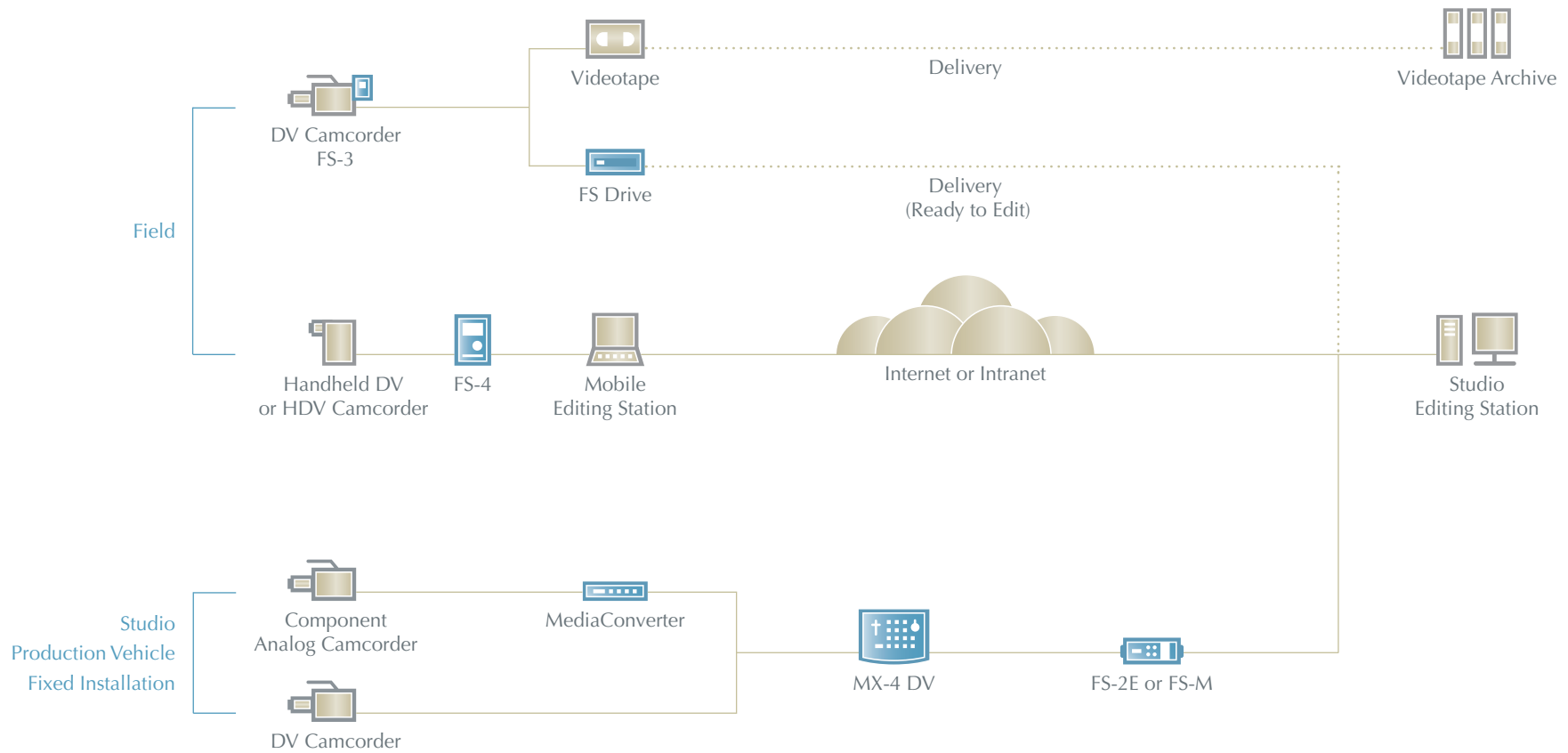
MX-4 DV

In addition to the functionality found in the MX-4, the MX-4 DV Digital Video Mixer features four digital inputs and one digital output.

Key Features

- 700 manual or automatic video transitions
- Eight gradients
- 4-channel or 2-channel DV digital audio support
- Dual-monitor mode (allows the preview screen to stay constant)
- User-defined menu for storing 30 of your favorite transitions
- Macro key storage with multiple configurations
- Dual-field time base correction
- Ethernet I/O for computer and network connectivity
- Color bar generator

Video Production Products in Action



Experience the difference.

Innovation, efficiency, and superior quality are the foundation on which Focus Enhancements builds its products. When you purchase video production solutions from Focus Enhancements, you not only receive reliable products that deliver superior performance every day, but you also receive expertise, service, and support from veteran video professionals.

With extensive experience in designing, configuring, and integrating video production solutions for leading companies around the world, the Focus team can help you select the right products for your business. If you have special requirements, solution consultation and custom configuration services are available. All products are backed by comprehensive warranties and optional support contracts that cover installation, training, 24/7 phone support, and priority parts replacement. You can rest assured that the knowledgeable and friendly professionals at Focus Enhancements will stand behind every purchase you make.



Direct To Edit Recorders, Digital Disk Recorder, and Converters

HARDWARE	FS-2E	FS-3	FS-4 HD, FS-4Pro HD, FS-100, DR-HD100, FS-C
	Studio DTE Recorder	Camera-Mount DTE Recorder	Portable DTE Recorder
Input/Output	DV video I/O** DV video pass thru* External HDD I/O* FireWire computer I/F* Component: Y, Pr, Pb (3 x BNC in, 3 x BNC out) Sync (1 x BNC in, 1 x BNC out) Monitor video out (1 x BNC) S-video: Y/C (1 x 4-pin mini-DIN in, 1 x 4-pin mini-DIN out) Serial Digital: SD-SDI (with embedded audio) Timecode (1 x BNC in, 1 x BNC out) Balanced audio (2 x XLR in, 2 x XLR out) Stereo audio monitor (1 x 1/4" TRS jack) Headphone output (1 x 1/4" TRS jack w/ level control) AES/EBU digital audio (1 x BNC in, 1 x BNC out) Reference video loop thru (2 x BNC) 10/100BASE-T Ethernet	DV video I/O** External HDD I/O* Slot internal HDD I/O*	DV video I/O** FireWire computer I/F* HDV (FS-4 HD, FS-4Pro HD, FS-C, DR-HD100) DVCPRO 50 and DVCPRO HD (FS-100)
Control	GPI and RS-232C (1 x 3.5mm minijack) RS-422 (1 x DB-9 serial)	GPI and RS-232C (1 x 3.5mm minijack)	GPI and RS-232C (1 x 3.5mm minijack)
Video Formats	25 Mbps, 8-bit 4:1:1 (NTSC-DV) or 4:2:0 (PAL-DV) video (user switchable)	25 Mbps, 8-bit 4:1:1 (NTSC-DV) or 4:2:0 (PAL-DV) video	25 Mbps, 8-bit 4:1:1 (NTSC-DV) or 4:2:0 (PAL-DV) video (model dependent) FS-4Pro HD, DR-HD100, FS-C: 25 Mbps 8-bit HD MPEG-2 transport stream (1080i 50 or 60); 19.7 Mbps 8-bit HD MPEG-2 transport stream (720p 24/25/30) FS-100: DVCPRO 50: 4:2:2, 8-bit, 3.3:1 compression, 50 Mbps; 480 60i (30p, 24p, 24pa); 576 50i (25P); DV/DVCPRO: 4:1:1, 8-bit, 5:1 compression, 25 Mbps (DV-PAL is 4:2:0) 480 60i (30p, 24p, 24pa); 576 50i (25p)
Embedded Audio	Digital: 2-channel 16-bit/4-channel 12-bit	Digital: 2-channel 16-bit/4-channel 12-bit	Digital: 2-channel 16-bit/4-channel 12-bit
Timecode	DV or SDI 2-channel 16 bit/48 kHz	SMPTE/DV embedded (drop or non-drop)	DV embedded (drop or non-drop)
DTE File Formats	RawDV (.dv) • AVI Type 1 • AVI Type 2 • Canopus AVI • Matrox AVI (.avi) • QuickTime (.mov) • Avid DV-OMF (.omf) • Pinnacle AVI • 24p QuickTime • 24p AVI Type 2	RawDV (.dv) • AVI Type 1 • AVI Type 2 • Canopus AVI • Matrox AVI (.avi) • QuickTime (.mov) • Avid DV-OMF (.omf) • Pinnacle AVI • 24p QuickTime • 24p AVI Type 2	RawDV • AVI Type 1 • AVI Type 2 • Matrox AVI • Canopus AVI • QuickTime (.mov) • AVI Type 2 24p • QuickTime 24p • Pinnacle AVI (FS-4Pro only) • Avid DV OMF (FS-4Pro only) • P2 MXF (FS-100 only)
Disk	120GB, IDE	FS-HDD-1 FireWire disk drive (Slot)	FS-4 HD: 40GB FS-4Pro HD: 60GB, 80GB, or 100GB FS-100: 100GB DR-HD100: 40GB, or 80GB FS-C: 60GB, or 100GB
Disk Speed	7200 RPM		5400 RPM; 8MB cache
External Disk Type	User-supplied IEEE-1394a FireWire	User-supplied IEEE-1394a FireWire	—
Disk Format	FAT32	FAT32	FAT32

Specifications are subject to change without notice.

Conversion Software

SOFTWARE	FireStore DV Standards Converter	FireStore DV File Converter
	Digital Video Format Converter	Digital Video Format Converter
Digital file formats	DV, DVCPRO25, Uncompressed RGB (24- and 32-bit), Uncompressed 8-bit YUV 4:2:2 (based on ITU-Rec. 601), QuickTime animation and AVI Huffiyuv codec supported	QuickTime (with or without separate audio track), QuickTime Reference Movie (import only, with or without separate audio track), AVI Type 1 and 2 (with or without OpenDML extension), Reference AVI Type 1 and 2, Canopus AVI Type 1 and 2, Matrox RT2500/DigiSuite AVI, Raw DV (.dv/.dif/.dvsd), SONY ES-3 DV files (.dv)
System requirements	Intel Pentium III 500-MHz or faster processor, Windows 98/ME/2000/XP, DirectX, 128MB of RAM	Intel Pentium III 500-MHz or faster processor, Windows 98/ME/2000/XP, DirectX, 128MB of RAM

HARDWARE	MediaConverter MC-2E
	DV/SDI/Analog Converter
Video input/output	DV/DV CAM on IEEE-1394 6-pin interface; SDI (with embedded audio) (270 Mb/s) SMPTE 259M/CCIR656-III, BNC; analog component signal: Y 1.0 Vpp, B-Y/ R-Y 0.7 Vpp, 75-ohm, SMPTE/EBU, BNC; S-video signal: Y 1.0 Vpp, C 0.43 Vpp, 75-ohm (4-pin mini-DIN); CVBS signal: 1.0 Vpp, 75-ohm, BNC; ref. video signal: blackburst 0.3 Vpp, 75-ohm, BNC
Audio input/output	Analog unbalanced stereo audio signal: line level -10 dBV, 47 kilo-ohms, RCA; analog balanced stereo audio signal: +4dbm, low impedance, XLR; digital stereo audio signal (AES/EBU): balanced, XLR

Mixers

HARDWARE	MX-4
	Digital Video Mixer
Video Inputs	4 x S-video (Y/C): Y=1 Vpp, C=0.30 Vpp, 75-ohm (4-pin mini-DIN connectors); 4 x composite: 1.0 Vpp, 75-ohm (RCA connectors)
Video Main Outputs	1.0 Vpp, 75-ohm (2 x RCA connectors) and 2 x S-video (MAIN): Y=1.0 Vpp, C=0.3 Vpp; 75-ohm, 4-pin mini-DIN connector
Video Preview Outputs	1.0 Vpp, 75-ohm (1 x RCA connector)
Audio Inputs	4 x 2 (left and right) RCA connectors, 50 kilo-ohms
Audio Outputs	1 kilo-ohm, RCA connectors (left and right)
GPI	Minijack
Connectivity	Ethernet I/O
Headphone	Stereo jack, 8-100 ohms, stereo signal
Video Performance	Meets long-haul video broadcast specs including CCIR-601 sampling and RS-170A Time base meets RS-170A standard Compatible with all NTSC video sources and tape formats (PAL version available)
Digital Conversion	13.5 MHz, 4:2:2, 10-bit quantization (Y/C); 10-bit quantization (composite)
S/N Ratio	Greater than 60 dB (Y/C); greater than 60 dB (composite)
Horizontal Resolution	480 TV lines
Gain	Unity
Analog Audio Performance	Frequency response: 20 Hz-20 kHz, ± 3 dB S/N ratio: 80 dB
Digital 2-Channel Audio	—
Digital 4-Channel Audio	—

MX-4 DV
Digital Video Mixer
4 x S-video (Y/C): Y=1.0 Vpp, C=0.30 Vpp, 75-ohm (4-pin mini-DIN connectors); 4 x composite: 1.0 Vpp, 75-ohm (RCA connectors); 4 x 6-pin 1394/FireWire (embedded audio supported)
2 x S-video (Y/C): Y=1.0 Vpp, C=0.30 Vpp, 75-ohm (4-pin mini-DIN connectors); 2 x composite: 1.0 Vpp, 75-ohm (RCA connectors); 1 x 6-pin 1394/FireWire (embedded audio supported)
1.0 Vpp, 75-ohm (1 x RCA connector)
4 x 2 (left and right) RCA connectors, 50 kilo-ohms
1 kilo-ohm, 2 x RCA connectors (left and right)
Minijack
Ethernet I/O, FireWire, i.LINK, audio and video
Stereo, 8-100 ohms, stereo signal
Digital DV-standard sampling: 13.5 MHz, 8-bit quantization
13.5 MHz, 4:2:2, 10-bit quantization (Y/C)
Greater than 60 dB (Y/C); greater than 60 dB (composite)
480 TV lines analog; 500 TV lines digital
Unity
Frequency response: 20 Hz–20 kHz, ± 3 dB S/N ratio: 80 dB
Sampling: 16 bit, 48 kHz Frequency response: 20 Hz–20 kHz S/N Ratio: 85 dB
Sampling: 12 bit, 32 kHz Frequency response: 20 Hz–14.5 kHz S/N Ratio: 80 dB

Video Production Products

Direct To Edit Recorders

FS-2E

FS-3

FS-4 HD

FS-4Pro HD

FS-100

DR-HD100

FS-C

DV Conversion Suite

DV File Converter Pro

DV/SDI/Analog Converter

MediaConverter MC-2E

Digital Video Mixers

MX-4

MX-4 DV

Compatibility

Compatibility

Video production solutions from Focus Enhancements provide seamless compatibility with most leading DV cameras and editing software packages.

Adobe Systems Incorporated

Apple Computer, Inc.

Avid Technology, Inc.

Canon, Inc.

Canopus Co., LTD.

Ikegami Electronics Co., LTD.

JVC Americas Corp.

Matrox Video Products Group

Panasonic Corporation

Pinnacle Systems, Inc.

Sony Corporation



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