datavideo®

Multi-Format Digital Video Converter

DAC-30

Quick Reference Guide

http://www.datavideo-tek.com

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Warnings and Precautions

1. Read all of these warnings and save them for later reference.
2. Follow all warnings and instructions marked on this unit.
3. Unplug this unit from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this unit in or near water.
5. Do not place this unit on an unstable cart, stand, or table. The unit may fall, causing serious damage.
6. Slots and openings on the cabinet top, back, and bottom are provided for ventilation. To ensure safe and reliable operation of this unit, and to protect it from overheating, do not block or cover these openings. Do not place this unit on a bed, sofa, rug, or similar surface, as the ventilation openings on the bottom of the cabinet will be blocked. This unit should never be placed near or over a heat register or radiator. This unit should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should only be operated from the type of power source indicated on the marking label of the AC adapter. If you are not sure of the type of power available, consult your Datavideo dealer or your local power company.
8. Do not allow anything to rest on the power cord. Do not locate this unit where the power cord will be walked on, rolled over, or otherwise stressed.
9. If an extension cord must be used with this unit, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord's rating.
10. Make sure that the total amperes of all the units that are plugged into a single wall outlet do not exceed 15 amperes.
11. Never push objects of any kind into this unit through the cabinet ventilation slots, as they may touch dangerous voltage points or short out parts that could result in risk of fire or electric shock. Never spill liquid of any kind onto or into this unit.
12. Except as specifically explained elsewhere in this manual, do not attempt to service this product yourself. Opening or removing covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks, and will void your warranty. Refer all service issues to qualified service personnel.
13. Unplug this product from the wall outlet and refer to qualified service personnel under the following conditions:
    a. When the power cord is damaged or frayed;
    b. When liquid has spilled into the unit;
    c. When the product has been exposed to rain or water;
    d. When the product does not operate normally under normal operating conditions. Adjust only those controls that are covered by the operating instructions in this manual; improper adjustment of other controls may result in damage to the unit and may often require extensive work by a qualified technician to restore the unit to normal operation;
    e. When the product has been dropped or the cabinet has been damaged;
    f. When the product exhibits a distinct change in performance, indicating a need for service.

Warranty and Tech support

Datavideo warrants that the equipment it manufactures shall be free from defects in material and workmanship for a period of 12 months from the date of product purchased. If equipment fails due to such defects, Datavideo will, at its option, repair or provide a replacement for the defective part or product. Equipment that fails after the warranty period, has been operated or installed in a manner other than that specified by Datavideo, or has been subjected to abuse or modification, will be repaired for time and material charges at the Buyer's expense. All out-of-warranty repairs are warranted for a period of ninety days (90) from the date of shipment from the factory.

Datavideo maintains six offices worldwide to support this and other products.

Datavideo Technologies Co., LTD.

10F, No. 176, Jian-Yi Rd.,

Chung Ho City, Taipei Hsien 235, Taiwan

Tel: +886-2-8227-2888 www.datavideo.com.tw

Datavideo Corporation USA

12300-U East Washington Blvd.

Whittier CA 90606 USA

Tel: +1-562- 696-2324 www.datavideo.us

Datavideo Technologies Europe BV

Californiedreef 26

3565 BL Utrecht, the Netherlands

Tel: +31-30 261 9656 www.datavideo.info

Datavideo Technologies China Co.

2F-D, No 2, Lane 777, West Guang-zhong Rd

Zhabei District, Shang-Hai, China

Tel: +86-21 5603-6599 www.datavideo.cn

Datavideo UK Limited

Unit 2 Waterside Business Park

Hadfield, Glossop, Derbyshire SK13 1BE, UK

Tel: +44-1457 851000 www.datavideo.info

Datavideo Technologies (S) PTE Ltd.

100 Lor 23, Geylang Rd, #01-03 D'Centennial, Building

Singapore 388398

Tel: +65-6749-6866 www.datavideo.sg

Introduction

DAC-30 is a professional quality bi-directional SDI/DV video converter designed for use with broadcast studio equipment. The unit provides SDI and AES/EBU Audio I/O allow bi-directional conversion of DV-to-SDI. Features component Y, U, V (or Y, B-Y, R-Y) Y/C, Composite video and two channels balanced/unbalanced audio for bi-directional Analog-to-SDI, Analog-to-DV and Analog-to-Analog conversion, all outputs work simultaneously for flexible application.

Front panel controls allow audio level control and VU metering of audio levels. Balanced audio signals are also converted to unbalanced signals for standard amplifier monitoring. Build-in RS-422A interface for controlling VCRs via the DV connection from an NLE system, such as AVID, Adobe or Final Cut Pro…

The DAC-30 is housed in a half wide 3U cabinet. DAC-30 is an ideal SDI in/out solution for any DV interface in a studio environment.

What's in the Package

Item	Description	Q'ty
1	DAC-30 unit	1
2	1.2M BNC to BNC	4
3	30 cm Cable adaptor D-Sub 15 Pin to BNC-Male x 2	1
4	2 m D-Sub 9-Pin to 9-Pin RS-422 cable	1
5	1.2m Y/C Cable s-plug to s-plug	1
6	Stereo Audio RCA 2R to 2R	1
7	IEEE 1394 6Pin to 4Pin Cable 1.8m	1
8	IEEE 1394 6Pin to 6Pin Cable 1.8M	1
9	AC cord	1
10	Switching Adaptor 12V / 4.2A	1
11	User's Guide	1

Features

- Multi-format video converter for SDI, DV, YUV, Y/C and Composite video.
- SDI video compliant with SMPTE 259M standard at 270Mbps Data transfer rate.
- Encodes 4:2:2 SDI video and AES-3id audio to DV25 stream.
- Decodes from DV25 stream to 4:2:2 (SDI) video and AES-3id digital audio.
- Three IEEE-1394 6-pin FireWire (iLink) I/O ports with 12V bus power. Available in DV25 NTSC 4:1:1/ PAL 4:2:0 format.
- AES-3id digital audio input and output for interconnection with professional digital audio equipments.
- Component YUV, Y/C, composite Video analog video inputs and outputs.
- Selectable NTSC/PAL video system.
- Features Video color processor control of Brightness, Color, Contrast, and Tint (NTSC Only), (DV input only available for Color and Brightness adjustment.)
- Locked or Unlocked DV audio.
- Selectable audio sampling rate: 32 KHz (12-bit) or 48 KHz (16-bit) for both balanced and unbalanced audio input.
- Two channels Balanced (XLR) and unbalanced (RCA) Analog audio input and output.
- Analog audio input level calibration and audio output level meter on front panel.
- RS-422 Sony control protocol and time code encoding for DV data stream.
- Fully compatible with existing NLE and Operating System software of Windows 98, XP, 2000 and MAC OS.

Functions: Front Panel

Select a Video input source:

Select Video Input source from component YUV video

Select Video Input source from S-video (Y/C)

Select Video Input source from Composite video

Select Video Input source from DV

Select Video Input source from SDI

Select 3D NOISE REDUCTION FILTER Function

Select 3D Y / C SEPARATION Function

Select an Audio input source:

Red LED is Select DV Audio encode rate 16-bit, 48KHz
Green LED is Select DV Audio encode rate 12-bit, 32KHz

Red LED is Select audio input source ANALOG Mode
Green LED is Select audio input source DIGITAL Mode

Video Color correction
Push on the button to select the adjust item of color, contrast, brightness or Tint (NTSC only)
Turn the button clockwise to increase the value.
Note: Press on the knob and hold for three seconds to reset all adjustments back to default (unity) setting

Two channels Input Audio level calibration

Power switch

Additional DV port on front panel

Two channels Audio level meter

Functions: Rear Panel

RS-422A Sony protocol VTR Control interface

- 9-pin serial port (AV/C-RS422 command convert function)
- Converts DV device control signals to RS-422, to control an external VTR.

AES/EBU Digital Audio Input and output

Two channels AES/EBU Ch1/Ch2 In and Out thru a D–Sub 15 pin to BNC cable adaptor. Please refer to below the cable adaptor.

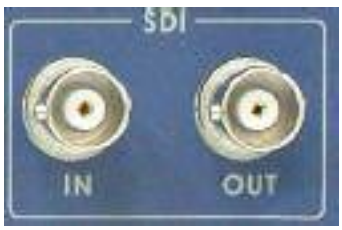
AES/EBU terminals to support operation with a professional audio mixer.

AES-3id unbalanced Audio Cable adaptor ch1 / ch2 In and Out

AES-3id cable adaptor, connecting D-Sub 15 Pin to unbalanced 75 Ohm AES-3id BNC connectors

Pin assignment

Pin 1	Reserved
Pin 2	Reserved
Pin 3	BNC in (signal)
Pin 4	Reserved
Pin 5	Reserved
Pin 6	Ground
Pin 7	Ground
Pin 8	BNC in ground
Pin 9	BNC out ground
Pin 10	Ground
Pin 11	Reserved
Pin 12	Reserved
Pin 13	BNC out (signal)
Pin 14	Reserved
Pin 15	Reserved



SDI Digital Video Input and Output

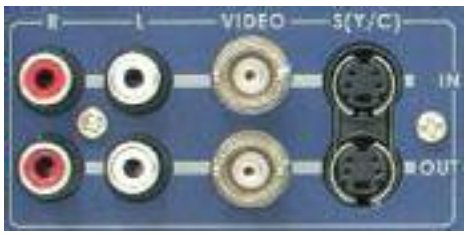
4:2:2 SDI Video data supports SMPTE 259 M-C standard at 270 Mbps SDI transfers professional level video signals and can connect to long distance transmission systems.

4-Pin XLR 12Volt Power locked connector

Connecting 12VDC 2.5A input from an external DC adaptor.

Component Video Y, U, V with Black Burst output terminal for video monitoring

Component Y.U.V. video input terminal



Composite Video Input and Output
S-Video (Y/C) 4-Pin mini Din Input and output
Two channels Unbalanced L/R Audio input and Output

Dual IEEE-1394 6-pin FireWire (iLink) I/O ports loop thru
Available in DV25 NTSC 4:1:1 or PAL 4:2:0 format
Please Note: *As long as any DV port from DAC-30 is connected to a PC thru the IEEE1394 port, PC will disable the loop thru function and work only peer to peer in between DAC-30 & PC.*

Balanced Audio Input
Supports two channels XLR Balanced Audio Input

Balanced Audio Output
Supports two channels XLR Balanced Audio output

Dip Switch setting for Mode select:

Set the DIP Switches to select an operation mode.

*. Note: ***Reboot the DAC-30 if you have changed a DIP Switch)***

- **S1. For selecting a NTSC or PAL video system.** (PAL-ON, NTSC-OFF)
- **S2. For selecting DV-25 4:2:0 for PAL video and the video setup level for NTSC.**

S1	ON	PAL	**S2**	ON	DV25 4:2:0
				OFF	Reserved
	OFF	NTSC	**S2**	ON	0 IRE
				OFF	7.5 IRE

***. *Note*: NTSC 0 IRE is most often used in Japan. NTSC 7.5 IRE is used elsewhere.**

- **S3. DV Locked/Unlocked Audio Mode**
  S3 -- OFF: Locked Audio
  S3 – ON: Unlocked Audio (factory default)

- **S4 & S5 for selecting an operation mode for different OS.**

S5	ON	**S4**	ON	MAC OS
			OFF	Windows 2000 and Windows 98
	OFF	**S4**	ON	Windows XP and Windows ME (Factory default)
			OFF	Camera Mode

- **S6**. Factory setting (OFF), please do not change.

Application Examples

The following figures show typical set-ups for using the DAC-30.

Figure 1. Editing with a DV NLE System from Digital Betacam thru SDI interface.

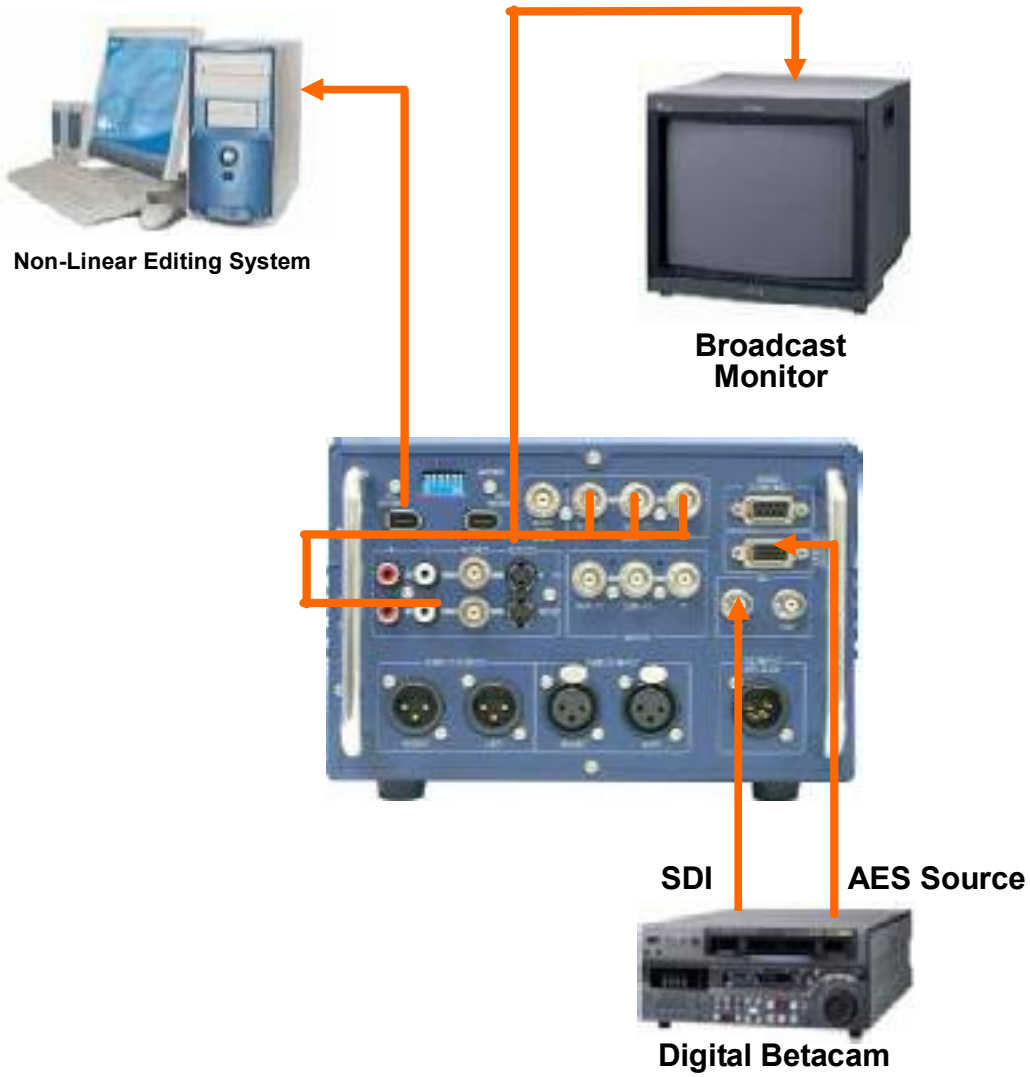


Figure 2. Transferring a DV source to SDI and AES output

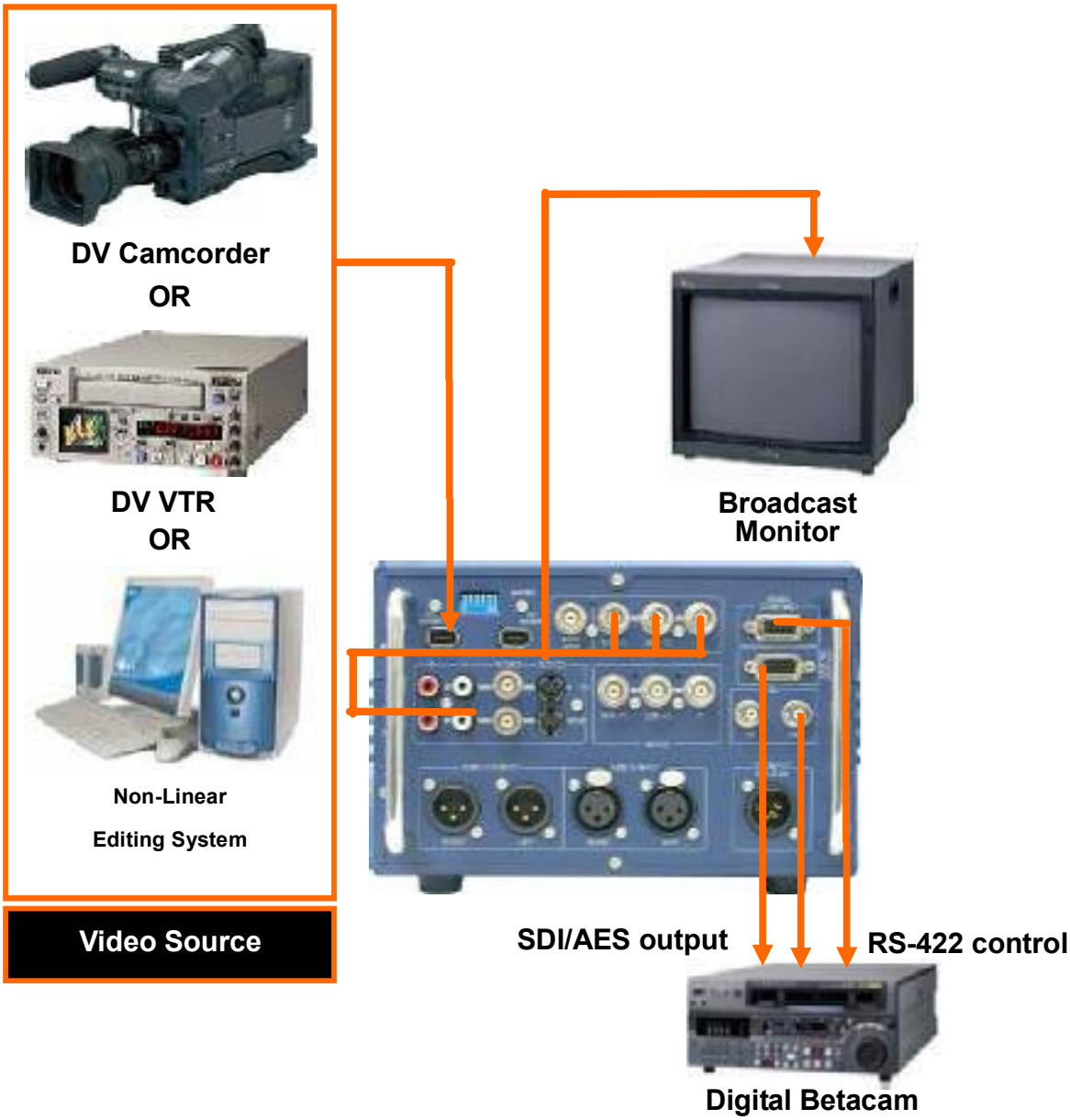


Figure 3. Transferring from DV to Betacam Deck with RS-422 control

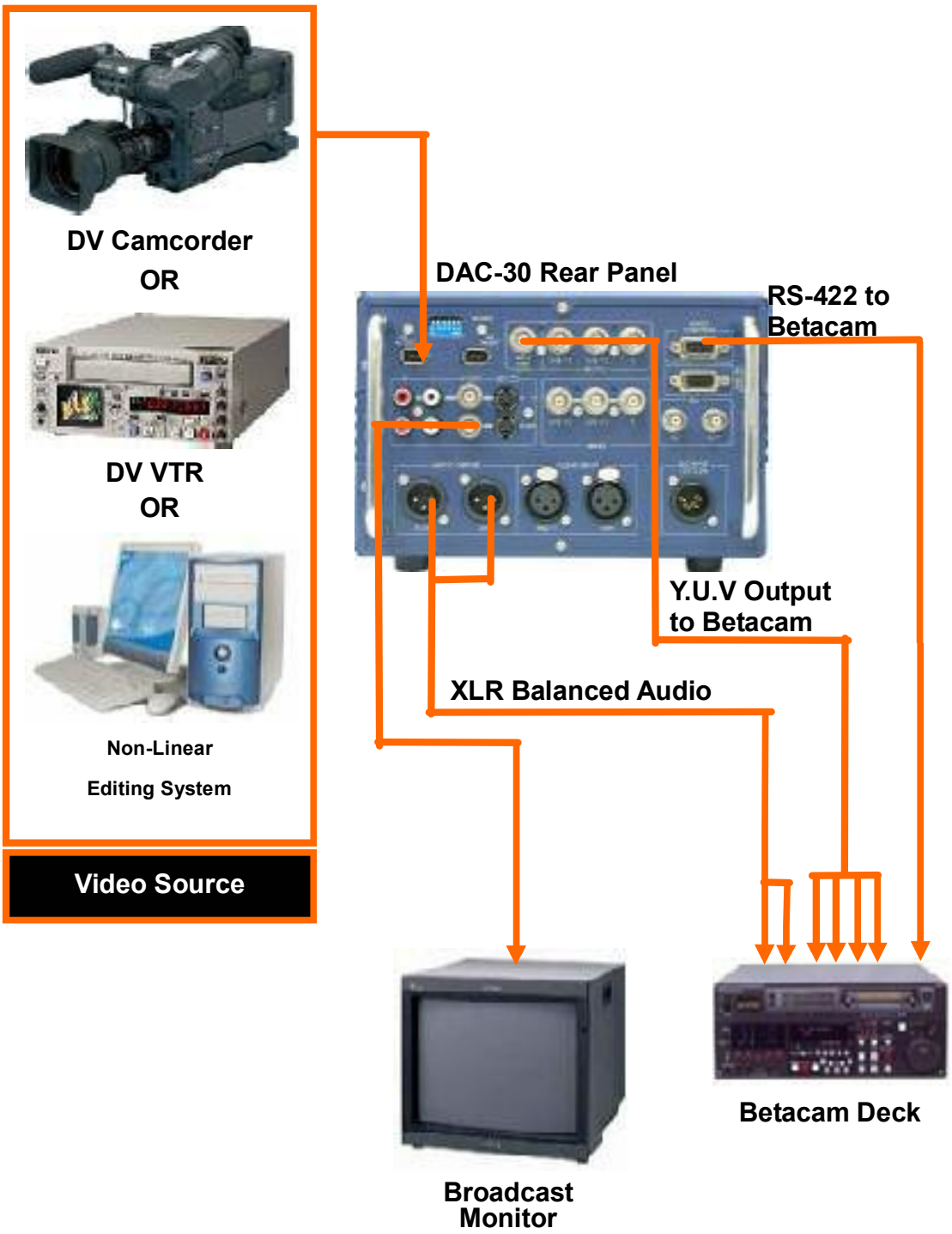
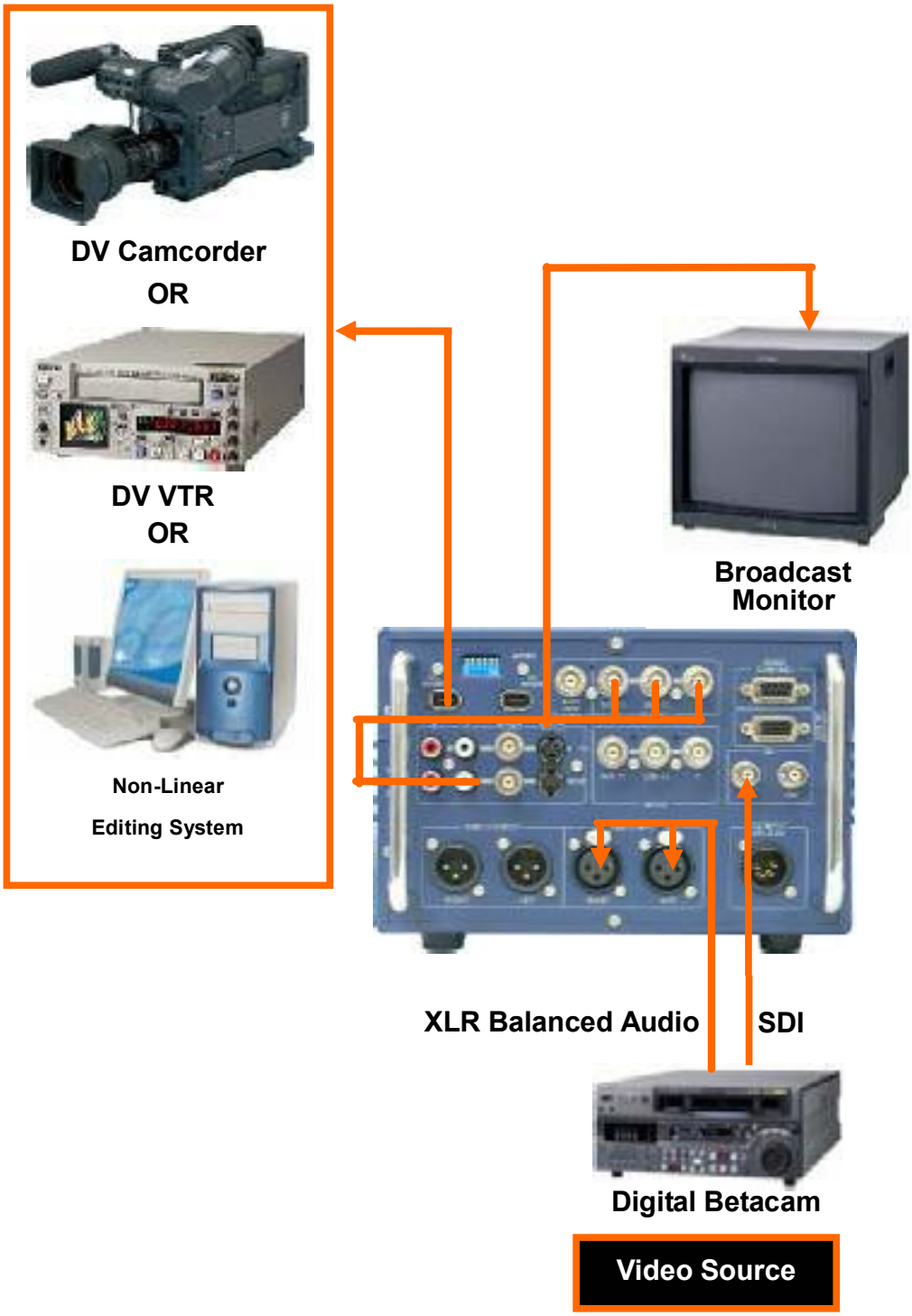


Figure 4. Transferring from SDI + XLR Balanced Audio to DV output to NLE



Specifications

Selectable Video Standards
NTSC/PAL

DV Input/Output
Three 6-PIN IEEE1394 Fire Wire Ports with DC12V Bus Power supported
Supports DV25 NTSC 4:1:1, PAL 4:2:0

SDI Input/Output
Two BNC Connectors
Support 4:2:2 Video SMPTE 259M standard at 270 Mbps
Cables length up to 200 meter
Return Loss > 15 dB

Digital Audio Input/Output
Two Channels AES-3id (SMPTE 276M) BNC connectors
Impedance: 75 ohm, unbalanced
Level: 1.0Vp-p
Sample rate: 48KHz

DV Locked / Unlocked Audio
2-Channel Locked / Unlocked Option

Analog Video out
NTSC (525/60) SMPTE 170M
PAL (625/50) ITU-R BT.470-6
Composite, S-Video Y/C and Component
Return Loss >20dB Upto 5 MHz

Black Burst Out
BNC 75 ohm

Device Control
D-SUB 9-pin (female) RS-422A interface supports IEEE1394 AV/C commands to RS422A commands conversion

Audio Monitoring
Stereo unbalanced line out
Level: 6 Vp-p
Bandwidth: 20HZ ~ 20KHZ
S/N Ratio: >60 dB, THD: <0.3%

Conversion Delay
DV to SDI mode: 1.5 frames
SDI to DV mode: 1.5 frames

Supports OS
Windows 98, ME, XP, 2000 and MAC OS

Dimensions / Weight
8” x 9.8” x 5.2”
203 mm x 249 mm x 132 mm
Weight 6 lbs / 2.8kg

Power Input
DC 12V, 4.2Amp

Accessories (Included)
1.2 m BNC to BNC (4)
30 cm D-Sub 15 Pin to 2 x BNC-Male (1)
1.2m Y/C Cable S-plug to S-plug (1)
1.5m RCA 2R to 2R (1)
1.8m 6-4 Pin Cable (1)
1.8m 6-6 Pin Cable (1)
AC Cord (1)
12V, 4.2 A Switching Adaptor (1)
Product Manual (1)

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