



# Bi-Directional SDI to DV Converter

## DAC-5

### User's 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.

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## Introduction

DAC-5 is designed to convert SDI video and AES/EBU audio to and from compressed DV audio/video. It encodes SDI, AES/EBU digital Audio to the DV format and sends the DV stream on the IEEE-1394 interface and it decodes the DV stream arriving on the IEEE-1394 interface and converts it to SDI and AES/EBU Digital Audio output.

Features Video/Audio output of component YUV, Y/C, composite video and unbalanced stereo audio for monitoring.

## What's in the Package

Item	Description	Q'ty
1	DAC-5 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	1.2m Y/C Cable s-plug to s-plug	1
5	Stereo Audio RCA 2R to 2R	1
6	IEEE 1394 6Pin to 4Pin + 2 Core 1.8m	1
7	IEEE 1394 6Pin to 6Pin Cable 1.8M	1
8	AC cord	1
9	Switching Adaptor 12V / 2.0A	1
10	User's Guide	1

## Features

- Bi-directional DV to SDI/AES-3id converter
- SDI video compliant with SMPTE 259M standard at 270Mbps Data transfer rate
- Encodes 4:2:2 SDI video and AES-3id audio to DV stream
- Decodes DV stream to 4:2:2 (SDI) video and AES-3id digital audio
- Dual IEEE-1394 6-pin FireWire (iLink) I/O ports. Available in DV25 NTSC 4:1:1/ PAL 4:2:0 format
- AES-3id audio input and output for interconnection with professional audio equipments
- Convenient NTSC/PAL Component YUV, Y/C, composite Video and analog audio outputs for monitoring and backup recording
- Selectable PAL/NTSC video system
- Locked or Unlocked DV audio and 12-bit/16bit audio encode mode selectable
- Fully compatible with existing Operating System software of Windows 98, ME, XP, 2000 and MAC OS and hardware for DV/i.Link processing

## **Installation**

### **Connection:**

#### ***1 DV In/Out***

Connect a DV source to one of the DV connectors at the rear of the DAC-5 for input and output. Source must comply with IEEE-1394 (i.Link) standard. Two 6-pin DV connectors effectively provide active loop-through when the unit is turned on.

#### ***2 SDI In/Out***

Connect an SDI signal to the SDI input BNC connector (left-hand side) labeled SDI. The DAC-5 accepts 4:2:2 serial digital video signals in either 525 or 625 line formats. The input signal must conform to the SMPTE 259M standard. Connect destination equipment to the SDI output BNC connector (right-hand side). The DVITC timecode in the output signal respects the same standard as the one in the input signal.

#### ***3 AES In/Out***

Connect an unbalanced AES signal to the AES input BNC connector labeled AES. DAC-5 supports 48 kHz digital audio sample rates. This signal must comply with the AES-3id-1995 (SMPTE 276M) standard. Connect destination equipment to the AES output BNC connector.

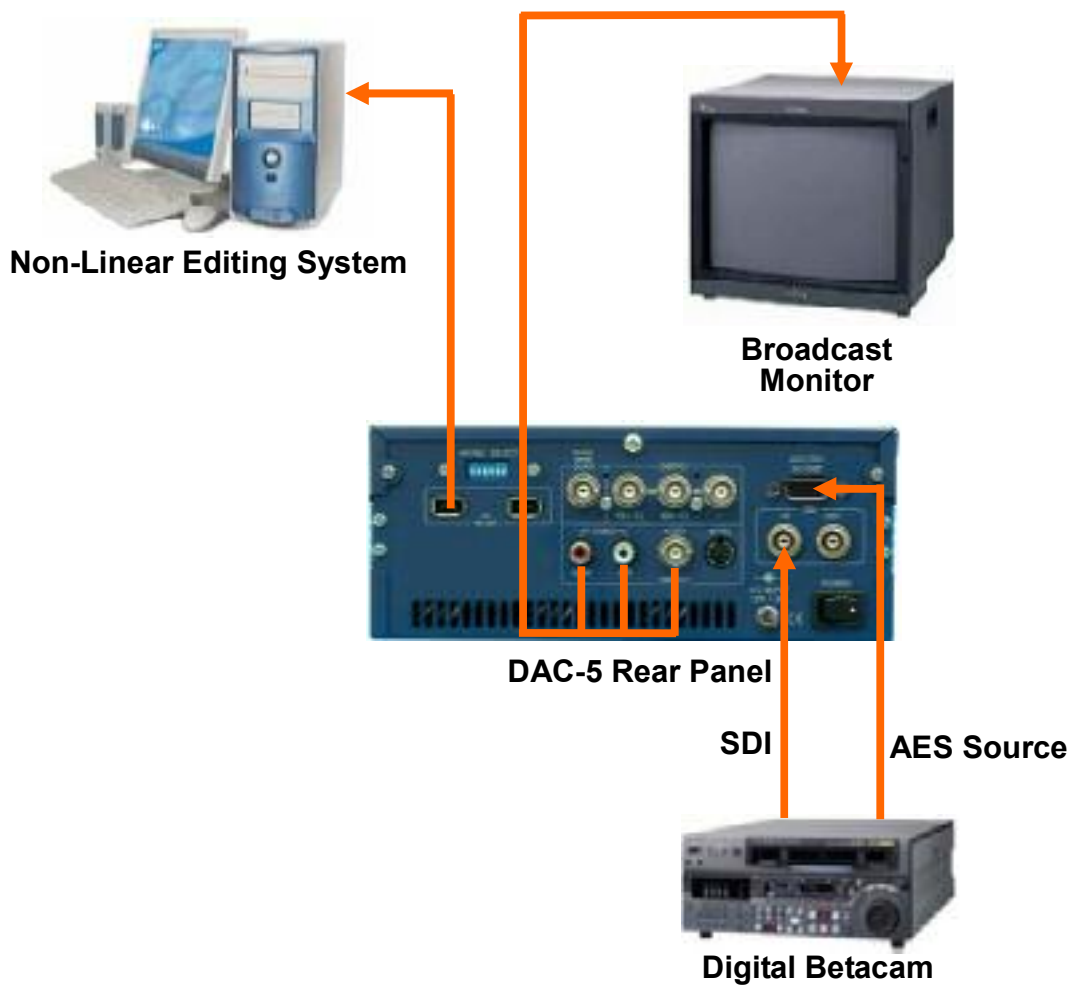
#### ***4 Monitoring Output***

Connect analog destination equipment to the connectors at the rear of the DAC-5. Use the BNC labeled Composite or the mini-Din labeled S-Video for video output; use the two RCA labeled R and L for audio output.

## Application Examples

The following figures show typical set-ups for using the DAC-5.

Figure 1. Editing with a DV NLE System and a DV Cam Studio Editing VTR



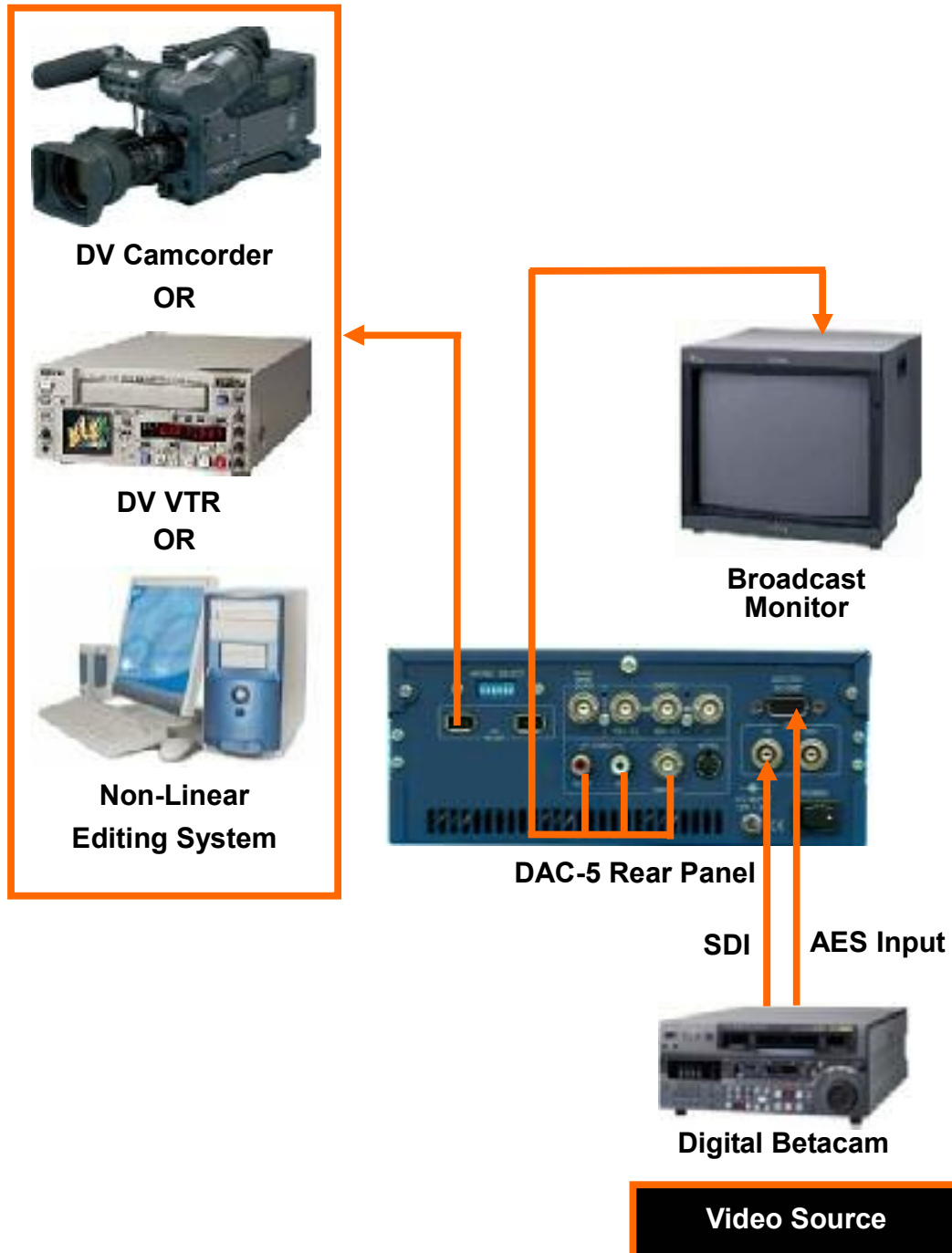
The following figures show typical set-ups for using the DAC-5.

Figure 2. Transferring from DV to SDI+AES



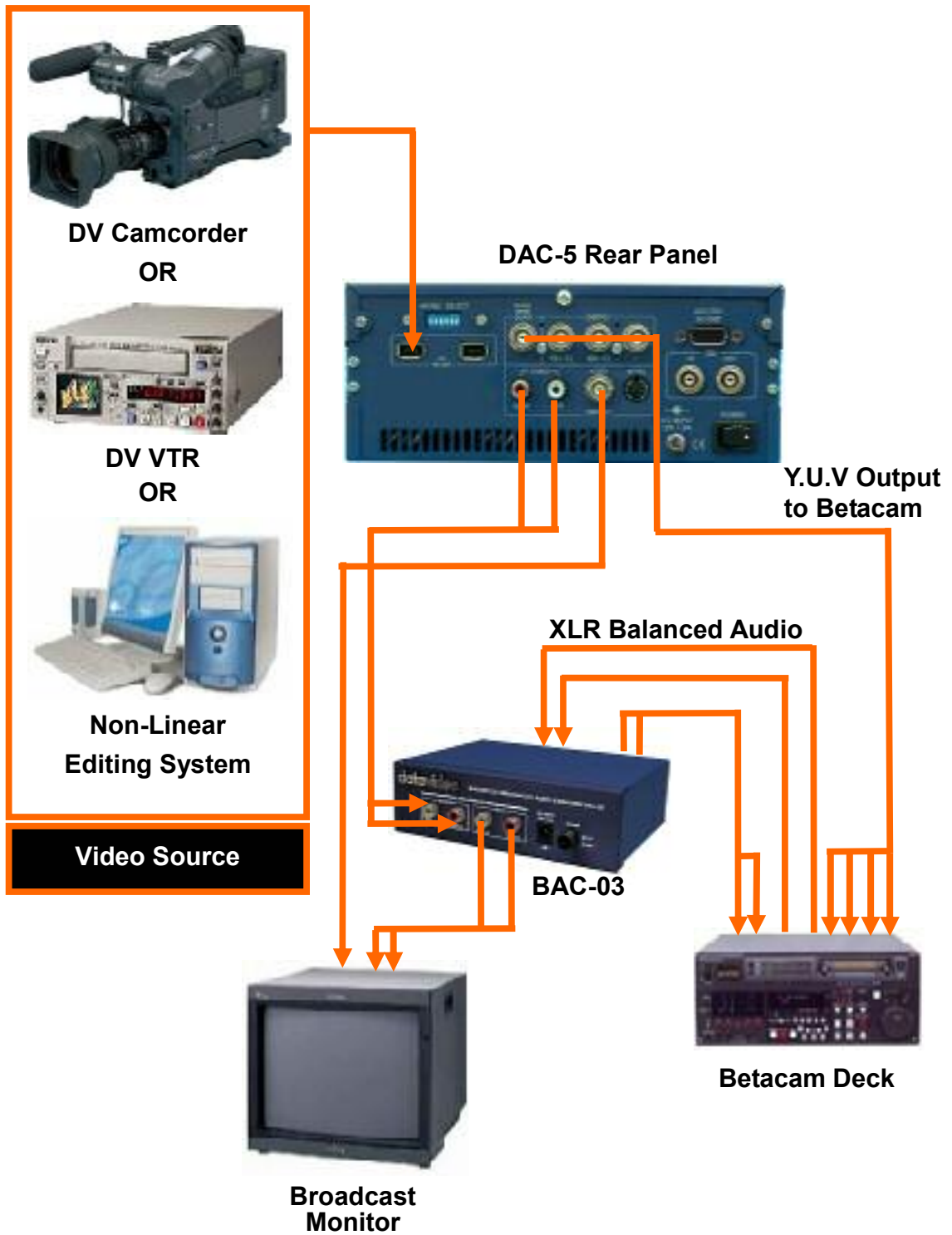
The following figures show typical set-ups for using the DAC-5.

Figure 3. Transferring from SDI+AES to DV



The following figures show typical set-ups for using the DAC-5.

Figure 4. Transferring from DV to Betacam Deck



## Operation: Front Panel



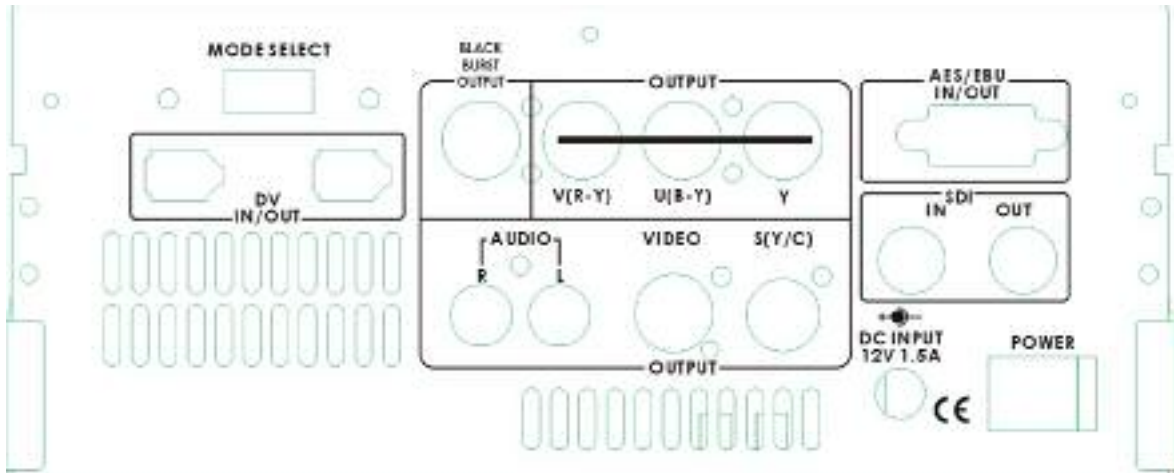
Select Video Input source SDI or DV Input



Select 16 Bit or 12 Bit DV Audio Encode

Select the DV audio encoding frequency.

# Operation: Rear Panel



Dip Switches for Mode setting:

\*. **Note1** : Mode DIP switch (**Reboot the DAC-5 if you change a DIP Switch**)

- **S1.** PAL or NTSC (PAL-ON, NTSC-OFF)
- **S2.** PAL: Select DV-25 PAL 4:2:0  
NTSC: 7.5 IRE / 0 IRE (0 IRE-ON, 7.5 IRE-OFF)

<b>S1</b>	ON	PAL	<b>S2</b>	ON	DV25 4:2:0
			<b>S2</b>	OFF	Reserved
	OFF	NTSC	<b>S2</b>	ON	0 IRE
			<b>S2</b>	OFF	7.5 IRE

\*. **Note:** NTSC 0 IRE is most often used in Japan. 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 NTSC and PAL video system**

<b>S5</b>	ON	<b>S4</b>	ON	MAC OS
			OFF	Windows 2000 and Windows 98
	OFF	<b>S4</b>	ON	Windows XP and Windows ME (Factory default)
			OFF	Camera Mode

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



**Dual IEEE-1394 6-pin FireWire (iLink) I/O ports:**

Available in DV25 NTSC 4:1:1 or PAL 4:2:0 format

**Please Note:** As long as DAC-5 is connected to a PC thru one of the IEEE1394 port, PC will disable the loop thru function and work only peer to peer in between DAC-5 & PC.



**Analog Video Out for Monitoring**

Monitor your video in composite, Component or S-Video.



**Analog:** Component Video Y, U, V with Black Burst output



**Analog Audio Out for Monitoring:**

There are two channels unbalanced Audio output (RCA connectors Left and Right).



**SDI Digital Video Input and Output**

4:2:2 Video SMPTE 259 M-C standard at 270 Mbps



### **AES/EBU Digital Audio Input and output**

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



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

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

# Specifications

## Selectable Video Standards

NTSC/PAL

## DV Input/Output

Two 6-PIN IEEE1394 Fire Wire Ports  
Support NTSC 4:1:1, DV25 PAL 4:2:0

## SDI Input/Output

Two BNC Connectors  
Support 4:2:2 Video SMPTE 259 M-C  
standard at 270 Mbps  
Cables length up to 250 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

## 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

## Computers

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, 1.5 Amp

## 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, 2.0 A Switching Adaptor (1)  
User's Guide (1)

## Troubleshooting

- 1- When using some camcorder models as a DV source, the DV signal may be lost if you try to unplug the iLink cable from the DAC-5 during the transmission. To recover from this situation, turn the camcorder off and then on again.
- 2- Turn-on the DAC-5 before launching any editing software
- 3- Macintosh users will have some problems if they try to toggle the video format (525 to 625 or 625 to 525) in the same session; they will not be able to correctly process the video sequences in the new format. The DAC-5 must be powered on and in the right video format (even if no input signal is connected to the unit) before attempting to start the computer and launch the editing software.

