


DV-Bridge CAM

Guide to Installation and Operation

M780-9900-100

*DV to SDI
Decoder*

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DV-Bridge CAM

Safety Compliance Information

Safety Compliance

This equipment complies with:

- CSA C22.2 No. 60950-1-03 / Safety of Information Technology Equipment, Including Electrical Business Equipment.
- UL 60950-1 (1st Edition) / Safety of Information Technology Equipment, Including Electrical Business Equipment.
- IEC 60950-1 (1st Edition) / Safety of Information Technology Equipment, Including Electrical Business Equipment.

CAUTION

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel. Servicing should be done in a static-free environment.

Electromagnetic Compatibility

- This equipment has been tested for verification of compliance with FCC Part 15, Subpart B, class A requirements for Digital Devices.
- This equipment complies with the requirements of:
EN 55022 Class A, Electromagnetic Emissions,
EN 61000-3-2 & -3-3, Disturbance in Supply Systems
EN 61000-4-2, -3, -4, -5, -6, -8 & -11 Electromagnetic Immunity

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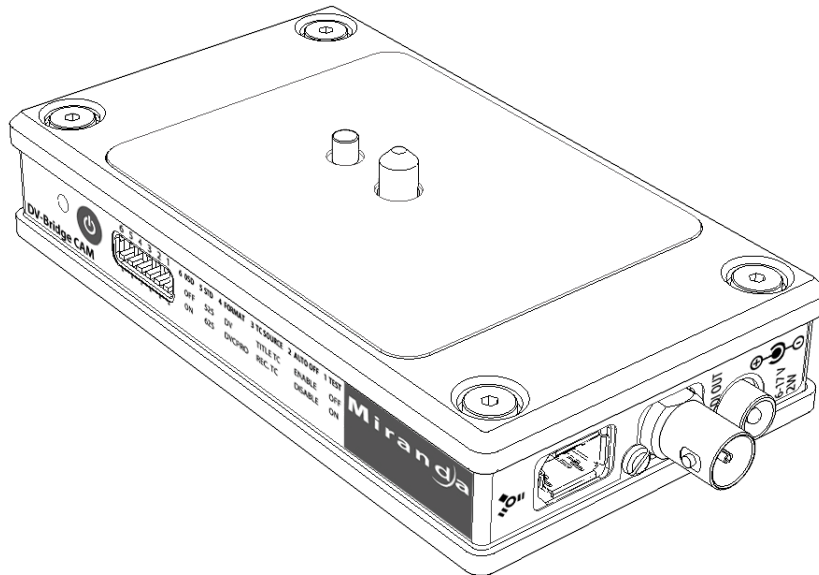
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1 DV-Bridge CAM – DV to SDI Decoder

1.1 Introduction

The DV-Bridge CAM is a lightweight and high-quality DV-to-SDI converter for low-cost newsgathering with DV cameras. This compact interface can be mounted securely under a handheld DV camera, or sandwiched between a tripod and a camera, and enables operators to use DV cameras as if they were SDI cameras.

The DV-Bridge CAM can be powered by the camera battery, and it outputs SDI with embedded audio and time code to enable the effective integration of DV cameras in an SDI facility. The interface is also ideal for creating very affordable auxiliary SDI cameras for mobile trucks. Alternatively it can be used with an editing workstation for DV to SDI playback.



1.2 Features

- Decodes 25Mbps DV stream to digital video
- Supports DV, DVCAM and DVCPRO formats
- Support of 32, 44.1 and 48 kHz DV audio sample rates
- SDI output features embedded Audio and Time Code (DVITC)
- Switchable time code burn-in (OSD)
- Digital Audio outputs locked at 48KHz. (Embedded)
- 4-pin and 6-pin IEEE-1394 ports
- Convenient stand-alone package mounted between the camera and the tripod

1.3 Functional Block diagram

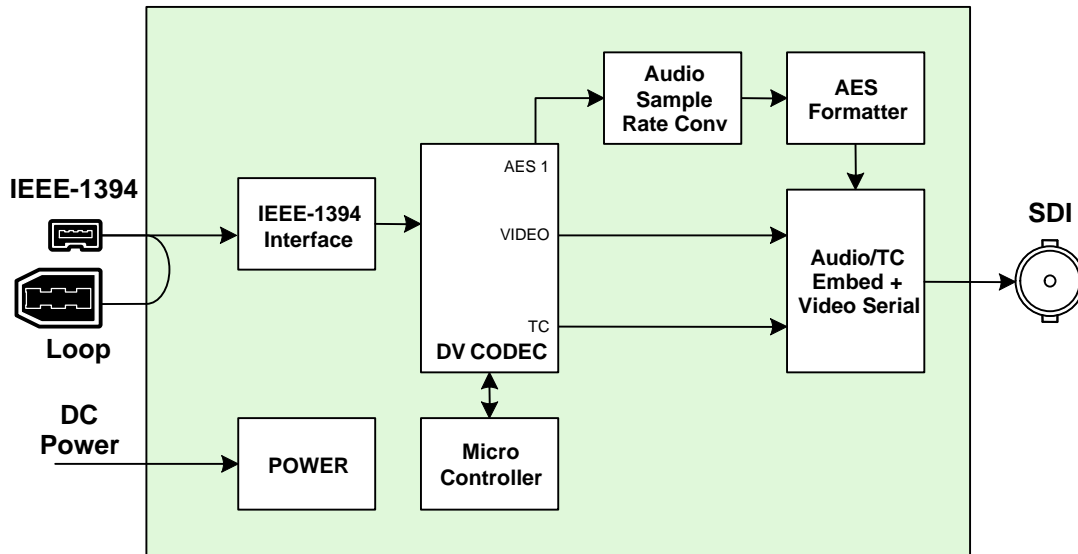
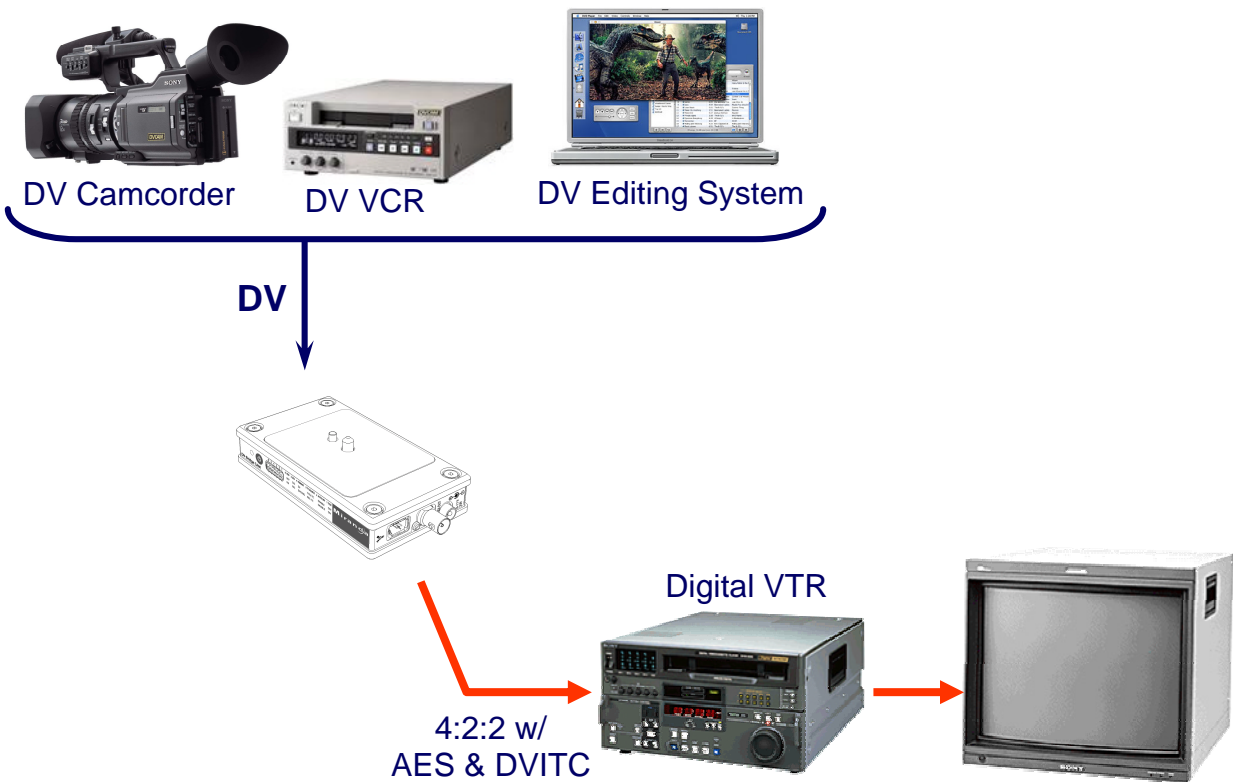


Figure 1.1 Functional block diagram of the DV-Bridge CAM

1.4 Application Example

The following figure shows a typical set-up for using the DV-Bridge CAM.



2 Installation

2.1 Mounting the DV-Bridge CAM

The DV-Bridge CAM is configured to be mounted between the camera and the tripod in a production scenario. It may also be operated in a freestanding “tabletop” setup when used in a dubbing or post-production situation.

2.2 Connections

Connectors for signal and power to the DV-Bridge CAM are located on the sides that are exposed when the device is mounted between the camera and its tripod. (see figure 2.1)

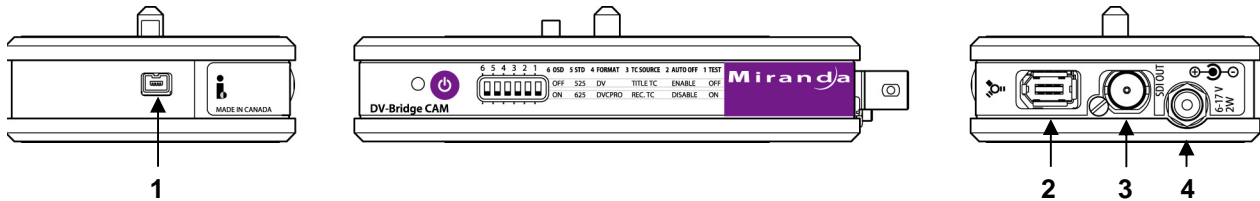


Figure 2.1 Edge views showing connectors and controls

The four connectors are as follows:

1. IEEE-1394a [4-pin]
2. IEEE-1394a [6-pin]
These two IEEE-1394a / iLink / Firewire connectors are multi-purpose. If DV Video is input to one, the other acts as an active loop-through. If the DV-Bridge CAM's internal test generator is turned ON, both act as DV video outputs.
3. SDI video out [BNC]
4. Power IN [jack]

Power for the DV-Bridge CAM may be drawn from any convenient source. Its internal power supply can operate over a wide range of input voltages (from 6 to 17VDC).

- A lockable jack connector is supplied with the DV-Bridge CAM so the user can construct an appropriate power cable.

3 Operation

3.1 User Interface

Operating controls for the DV-Bridge CAM are located on one of the sides exposed when the device is mounted between the camera and its tripod. (see figure 3.1).

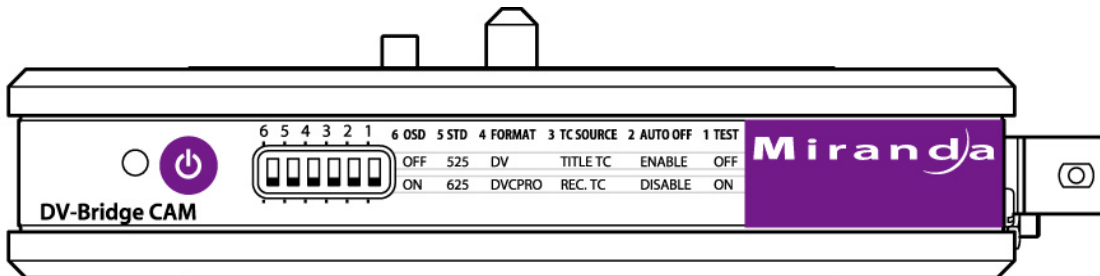


Figure 3.1 Edge view showing controls

3.2 Operating Controls

The operating controls consist of a POWER ON/OFF pushbutton and associated status LED, and six DIP switches.

POWER BUTTON

The power button is located on the side panel adjacent to the DIP switches. The LED beside the button indicates the power status as follows:

- OFF: The DV-Bridge CAM is turned OFF
- RED: no DV video input signal, or errors detected in DV video input signal
- YELLOW: DV video input is unstable; DV-Bridge CAM is unlocked
- GREEN: DV video input is stable; DV-Bridge CAM is locked.
- Flash YELLOW: Internal test signal generator is ON

DIP SWITCHES

The 6 DIP switches are located on the side panel adjacent to the power button. The function of these switches is as follows:

1. Test [OFF / ON]
Turns ON and OFF the internal test signal generator.

The test signal generator sends a signal consisting of video color bars with embedded audio to the SDI output and also to both DV (IEEE-1394a) connectors. The audio on the left channel is pulsed on-and-off to assist in identifying channels for cable/connection purposes (on the SDI output only), and the color bars have a white central window superimposed that flashes in synchronism with the audio pulses. This test signal is designed to assist in system configuration and continuity checking. The DV-Bridge CAM's Power Status LED will flash yellow when the Test switch is set to ON.

Note that the camera connected to the DV-Bridge CAM's DV input should be set to "VTR" mode so that it will not be attempting to send a signal to its output, but instead will accept the signal originating in the DV-Bridge CAM.

2. Auto OFF [ENABLE / DISABLE]

Enables and disables the AUTO OFF mode.

Auto OFF is a power-saving mode. When enabled, the DV-Bridge CAM will shut down automatically if no signal is detected at its input for 30 seconds.

3. TC SOURCE [TITLE TC / REC. TC]

Selects the source of time code to be embedded in the SDI output and the OSD (see 6 below).

- TITLE TC is the continuous time code that identifies position within a program,
- REC TC is the source time code, usually time-of-day, that is recorded along with the program material.

4. FORMAT [DV / DVCPRO]

Selects the decoding to be performed on the input compressed video.

- DV is appropriate for DV and DVCAM formats,
- DVCPRO is appropriate for the DVCPRO format

5. STD [525 / 625]

Select the video format used in the production/editing environment.

6. OSD [OFF / ON]

Turn the On-Screen Display (OSD) of Time Code on and off.

When the OSD switch is set to ON, the Time Code (as selected by the TC SOURCE switch – see 3 above) is burned into the SDI output video. The TC is displayed in a semi-transparent window over the bottom center of the video frame.

4 Specifications

DV INPUT

SD SIGNAL (2)	25 Mbps on IEEE-1394a (DV / DVCAM / DVCPRO)
SUPPORTED OS	Windows XP, Mac OS
CONNECTOR	IEEE-1394 6-pin and 4-pin

UNCOMPRESSED DIGITAL OUTPUT

VIDEO SIGNAL	SDI SMPTE 259M-C (270 Mbps)
EMBEDDED AUDIO :	Synchronous 20 bit / 48 KHz SMPTE 272M-A
DVITC SIGNAL	SMPTE 12M & 266M
RETURN LOSS:	> 15dB up to 270MHz
CONNECTOR	75 Ω BNC

PROCESSING PERFORMANCE

COMPRESSION	DV / DVCAM / DVCPRO formats at 25 Mbps as per DV Blue Book
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OTHER

POWER INPUT RANGE	6-17 VDC
POWER	<2W over the entire voltage range

Note: power efficiency is better at 6V than at 17V