

D10AD 10-bit Analog to SDI Converter

User Manual



AJA
AJA VIDEO SYSTEMS INC

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Contacting Support

To contact AJA Video for sales or support, use any of the following methods:

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Fax: +1.530.274.9442

Web: <http://www.aja.com>

Support Email: support@aja.com

Sales Email: sales@aja.com

When calling for support, have all information on the product (serial number etc.) at hand prior to calling.

Limited Warranty

AJA Video warrants that this product will be free from defects in materials and workmanship for a period of five years from the date of purchase. If a product proves to be defective during this warranty period, AJA Video, at its option, will either repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify AJA Video of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by AJA Video, with shipping charges prepaid. AJA Video shall pay for the return of the product to the Customer if the shipment is to a location within the country in which the AJA Video service center is located. Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to any other locations.

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Introduction

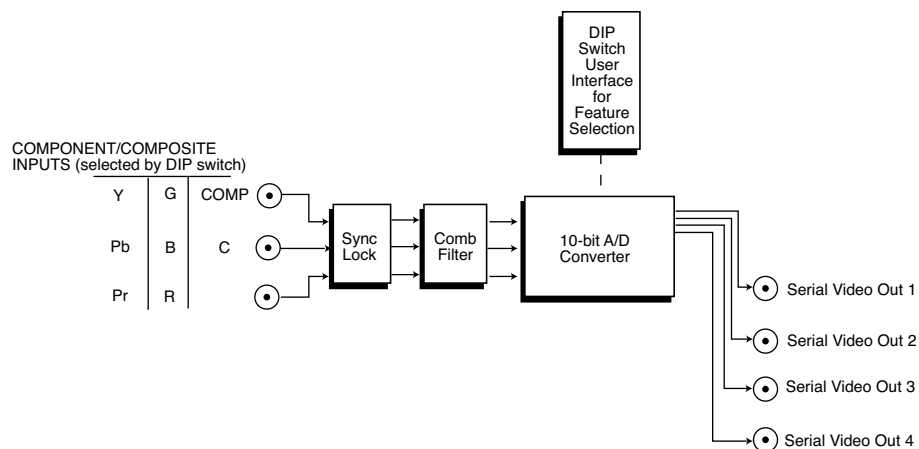
The D10AD provides excellent quality 10-bit conversion of component or composite analog video to SDI—with EDH. The D10AD accepts YPbPr (SMPTE, EBU-N10), Betacam, or RGB component inputs and NTSC/PAL or YC (S-Video) composite inputs. When using composite sources, the D10AD offers a 4-Line Adaptive Comb Filter for high quality decoding. The comb filter can be switched to 2-line or notch modes for minimum delay requirements. NTSC/PAL configuration is automatic. Video format, AGC, H/V blanking, and pedestal are all user configurable via dipswitches.

Note: The D10AD requires a Time Base Correct source. Operation is not recommended from VTRs, laser disks, etc., without Time Base Correction (TBC).

Features

- Excellent-Quality 10-bit Universal A/D Conversion
- Component, Composite or Y/C Analog Input
- 4-Line Adaptive Comb Filter
- Full 10-bit Data path, 2x Oversampling
- YPbPr, Betacam, or RGB Component Formats
- Composite NTSC or PAL
- AGC mode
- 4 SDI outputs with EDH
- Color Bar Generator
- External DIP switch user interface for configuration

Block Diagram



D10AD 10-bit Analog Component and Composite to SDI Converter, Block Diagram

I/O Connections

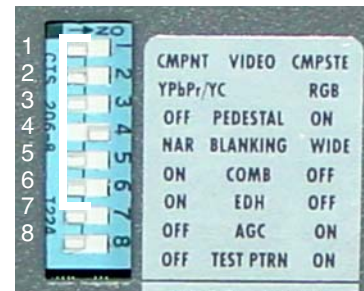


D10AD, Side View

User Controls

The user interface for the D10AD is an 8-switch DIP accessible through a cut-out in the bottom of the unit. Use the DIP switches to configure outputs, pedestal, blanking, and enable or disable comb filter, EDH, AGC, and test pattern.

Switches 1 and 2 select composite or component input and the type of component input. Switches 3 through 8 set configuration features. The exact function of each DIP switch and what it controls is described on the following pages.



DIP Switches
OFF ↔ ON

Note: Changing input format (SW1, SW2, or SW3) causes a reset to occur that takes about 10 seconds to complete.

Switch 1—Selects Component or Composite input from the Composite/Component BNCs

ON	OFF
Selects Composite input.	Selects Component input.

Switch 2—Configure Type of Component input from the Composite/Component BNCs

ON	OFF
RGB Input (If SW1 is OFF) or Composite Input (If SW 1 is ON).	YPbPr Input (If SW1 is OFF) or Y/C (S-VIDEO) (If SW1 is ON).

Switch 3—Configure Pedestal For Output BNCs (disabled in PAL)

Switch 3 Settings for
Standard Version of
D10AD

ON	OFF
<p>If set for COMPOSITE Input: Pedestal is removed on inputs with 7.5 IRE Pedestal</p> <p>If set for COMPONENT Y/Pb/Pr Input: Sets BETACAM levels</p>	<p>If set for COMPOSITE Input For inputs without Pedestal</p> <p>If set for COMPONENT Y/Pb/Pr: Sets SMPTE/EBU-N10 levels</p>

Switch 3 Settings for
BETAJ Version of
D10AD

<p>If set for COMPOSITE Input: Pedestal is removed on inputs with 7.5 IRE Pedestal</p> <p>If set for COMPONENT Y/Pb/Pr Input: Sets Japan BETACAM levels</p>	<p>If set for COMPOSITE Input For inputs without Pedestal</p> <p>If set for COMPONENT Y/Pb/Pr: Sets SMPTE/EBU-N10 levels</p>
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Switch 4—Configure Blanking—Not Currently Implemented

The convertor defaults to narrow blanking.

Switch 5—Turn Comb Filter ON or OFF

ON	OFF
Notch Filter on (Comb Filter off)	Comb Filter on (Notch Filter off)

Switch 6—Configure EDH Insertion

ON	OFF
EDH not inserted	EDH inserted

Switch 7—Configure Automatic Gain Control (AGC)

ON	OFF
Automatic Gain ON	Automatic Gain Off (Unity Gain)

Switch 8—Turn Test Pattern Output ON/OFF

ON	OFF
Internal color bars are output	Disables test pattern output (normal video operation)

Installation

Typically, D10AD installation consists of the following:

1. disconnect +5VDC from the convertor
2. configure the DIP switch for the desired equipment configuration and video formats
3. connect video equipment to the convertor BNCs
4. apply +5VDC power to the converter (AJA power supply model DWP)

Specifications

Item	Specification
Serial Outputs	SDI (SMPTE 259M) w/EDH All outputs are separately buffered 4 x BNC
Frequency Response	Y +/-0.15db to 5.5 Mhz C +/-0.15db to 2.5 Mhz
2T K factor	Less than .5% K Factor (2T)
Differential Gain	< 1%
Differential Phase	< 1 degree
A/D Converters	10 bits, 2X oversampling
User Controls	Selectable By External Dip Switch: Input Video Format Pedestal Present/Not Present Narrow/Wide Blanking AGC On/Off EDH On/Off Test Pattern
Power (AJA power supply model DWP)	5v DC regulated, 4 watt
Size	147 x 79 x 25 mm (5.8" x 3.1" x 1")