

HD10A HDTV Analog to Serial Video Converter

User Manual



AJA
AJA VIDEO SYSTEMS INC

February 22, 2005 P/N 101633-00
For HD10A S/N 00796 and above
Manufactured after 11/2004

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by AJA Video can effect emission compliance and could void the user's authority to operate this equipment.

Contacting Support

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

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Telephone: +1.800.251.4224 or +1.530.274.2048

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.

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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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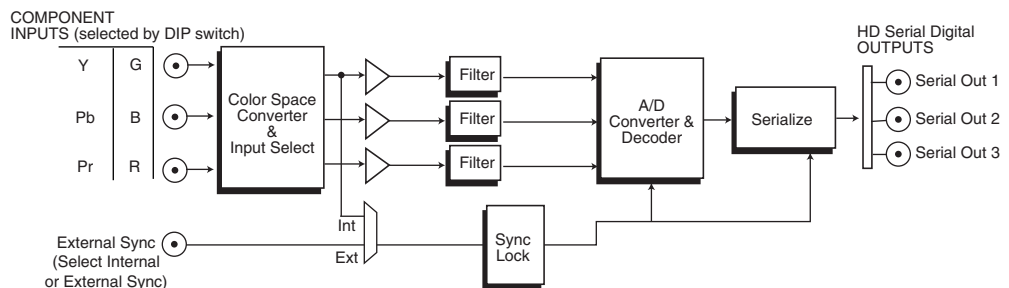
Introduction

The HD10A is a miniature, high-quality, 10-bit analog to digital converter for HDTV. A companion to the popular HD10C2 D/A converter, the HD10A can add an HD-SDI output to cameras, VTRs, or other analog-only high definition equipment. The HD10A accepts RGB or YPbPr analog HD and outputs three duplicate HD-SDI signals. It provides 1080/1035i, 1080p, and 720p with internal or external sync.

Features

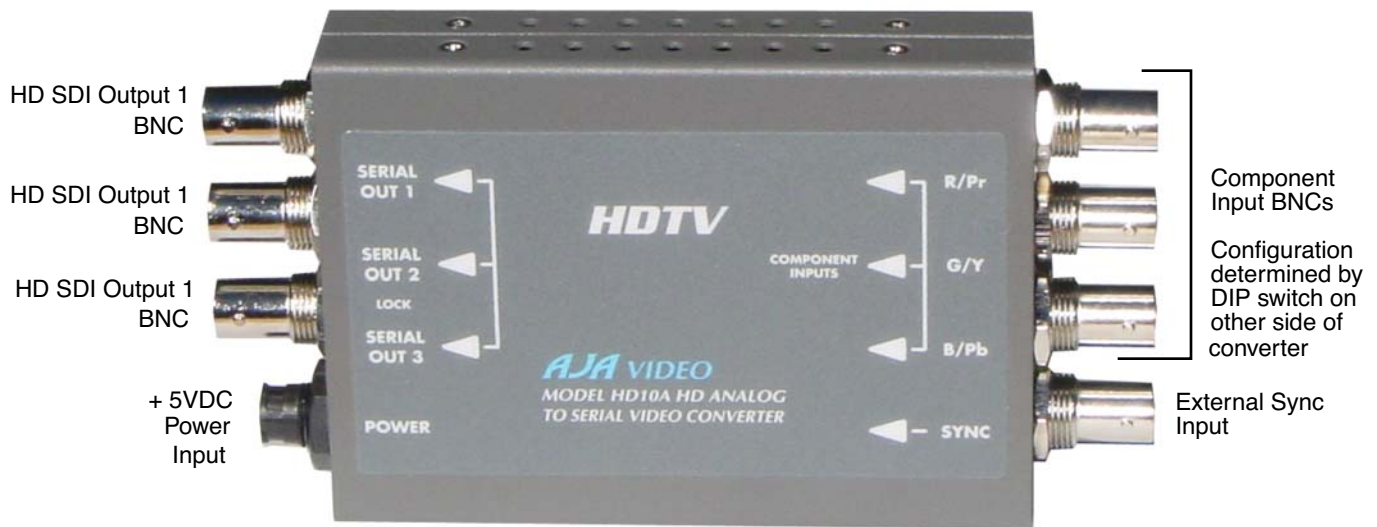
- High-Quality 10-bit HDTV A/D Conversion
- Full Bandwidth Component HD RGB or YPbPr Input
- Three HD-SDI Outputs
- Multi-Standard
- Internal or External Sync
- Optional 12V Power
- External DIP switch user interface for configuration
- Bi-level sync capable (internal jumper)

Block Diagram



HD10A Analog Component to Serial Digital HD Converter, Block Diagram

I/O Connections

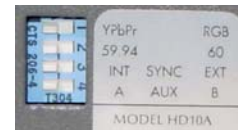


HD10A, Side View

User Controls

The user interface for the HD10A is a 4-switch DIP accessible through a cut-out in the bottom of the unit. Use the DIP switches to configure inputs, vertical frame rate, and select internal or external Sync.

Note: The DIP switch functions have changed during the manufacture of the HD10A. Definitions presented in this manual apply only to units manufactured after November 2004 (serial numbers above 00796).



DIP Switches

LEFT ↔ RIGHT

Switches 1 and 2 configure the input BNCs. Switch 3 selects Sync. The exact function of each DIP switch and what it controls is described on the following pages.

Switch 1—Selects YPbPr or RGB Component Video from the 3 input BNCs

LEFT	RIGHT
YPbPr: Selects YPbPr format component input	RGB: Selects RGB format component input

Switch 2—Select Vertical Framerate for the Component Inputs

LEFT	RIGHT
59.94: Selects 59.94 or 23.98 Hz framerate	60: Selects 60, 25, or 24 Hz framerate

Switch 3—Select Internal/External Sync

LEFT	RIGHT
Selects Internal sync	Selects External sync

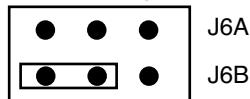
Switch 4—Not Functional

Setting Internal Jumper for Bi-level or Tri-level Sync

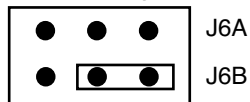
There is an internal jumper used for selecting Bi-level or Tri-level. The jumper is set at the factory to a default setting of Tri-level sync. To change this jumper setting, follow this procedure:

1. Remove the bottom converter cover by removing the screws securing it, and then sliding it off.
2. Locate the jumper on the circuit card inside and change it to one of the settings shown in the diagram below:

For Tri-level Sync (default):



For Bi-level Sync:



Installation

Typically, HD10A 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
Component Inputs	YPbPr, RGB (SMPTE-274), 3 BNCs
External Sync Input (optional)	If used, supplies Sync; if not used Sync is generated internally
HD Serial Outputs	HD-SDI, SMPTE-292/296, 3 BNCs

Item	Specification
Output Formats	SMPTE-292 1080i 50/59.94/60 Hz 1080p sf 23.98/24 1035i 50/59.94/60 Hz 720p 23.98/24/29.97/30/59.94/60 Hz
Frequency Response	+/- .5dB to 30MHz (Y) +/- .25dB to 15MHz (C)
Power (AJA power supply model DWP)	5v DC regulated, 4.5 watt
Size	5.8" x 3.1" x 1"(147 x 79 x 25mm)