



## HDMI to HD/SD-SDI Converter

### DAC-9



## Quick Start Guide

[www.datavideo-tek.com](http://www.datavideo-tek.com)

Rev 240409

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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.



## Warnings and Precautions

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

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 purchase. If this 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.

This warranty does not affect your statutory rights within the Country of purchase.

## Disposal



### For EU Customers only - WEEE Marking

This symbol on the product indicates that it should not be treated as household waste. It must be handed over to the applicable take-back scheme for the recycling of Waste

Electrical and Electronic Equipment. For more detailed information about the recycling of this product, please contact your local Datavideo office.

## Packing List

Items	Description	Q'ty
1	DAC-09	1
2	Switching Adaptor DC 12V 1.5A	1
3	Instruction Manual	1

## **Introduction**

The Datavideo DAC-9 is stand alone HDMI to SDI/HD-SDI video converter. This converter is an ideal accessory for Digital Video Switchers such as the Datavideo SE-900, SE-1000 and SE-2000 where long SDI cable runs are required between the camera and mixer.

## **Features**

- Rugged case design
- Velcro straps for securing to a camera or tripod
- Compatible with HDMI NTSC or PAL signals
- Audio can be embedded within SDI output signal
- DC 12V Operation

### **Input:**

1 x HDMI

### **Outputs:**

2 x SDI / HD-SDI on BNC (SMPTE 292M standard 1.5Gbps)

### **Supported HDMI input video formats:**

720x480 Interlaced (NTSC)

720x576 Interlaced (PAL)

1280x720 / 50Hz Progressive

1280x720 / 59.94Hz Progressive

1280x720 / 60Hz Progressive

1920x1080 / 50Hz Interlaced

1920x1080 / 59.94Hz Interlaced

1920x1080 / 60Hz Interlaced

## Front Panel



### DC In Socket

Connect the supplied 12V 1.5A PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.



### Power Switch

Switches the power On / Off.



### HDMI Input Connector

Receives HDMI input signal from your HDMI equipped Camera or device.

See supported HDMI input formats on page 5

## Rear Panel



### SDI / HD-SDI Outputs

4:2:2 SDI Video data supports SMPTE 292M standard at 1.5Gbps.

## SDI Cabling Advice

Start with good cabling. BNC coax cables and connectors are not all made to the same standard. From the thickness and grade of the centre conductor to the type of dielectric, all these factors contribute to impedance, attenuation and Return Loss (RL). Serial Digital Video coax like Belden 1694A or Canare L5CFB are good examples of broadcast quality SDI cable.

A 75 Ohm ( $\Omega$ ) impedance must be maintained throughout the DAC-9 SDI signal or cable path, including BNC connectors etc.

Return Loss is the portion of the transmitted SDI signal that is not admitted to the receiver (mixer) and is then reflected back along the cable toward the transmitter (DAC-9). Reflections in the transmission path will cause attenuation as well as distortion of the SDI signal received. The signal is attenuated because part of it is reflected back and does not make it to the receiver (SE-1000 for example); it is also distorted because the reflected signal mixes with the original signal causing it to distort as well as adding to the noise floor.

Care must also be taken with cable length, as it will affect the error rate in the SDI signal. Cable lengths beyond acceptable limits will see error rates reach a tipping point and this will bring about a total loss of picture also known as the **Cliff Effect**. Always check with your supplier for cabling advice on the maximum distance for a particular signal and data rate, in this case an SDI signal that complies with the SMPTE 292M standard at 1.5 Gbps. Datavideo Taiwan have determined that single BNC SDI cable (5CFB) runs of up to 100m should be possible with this unit before the signal would need to be re-clocked or repeated.

### ***Here is a basic list of other things to avoid***

- Do not step on or rest equipment on the cables.
- Do not roll dollies or trolleys over the cables.
- Do not put kinks or sharp bends in the cables.
- Do not exceed the minimum bend radius of the cable.  
The general rule for an acceptable bend radius is 10 times the diameter of the cable.
- Cable pulls should be done carefully – do not jerk or stretch the cable(s).  
Do not exceed the cable's maximum pulling tension.  
(call the cable supplier / manufacturer for this information.)
- Do not pull cable ties too tight on cable looms.  
If you cannot move any cable inside a loom tie, the tie is too tight.  
Put an extra piece of cable in when tightening loom ties - then remove it afterwards to create the space.
- Do not put cable management fixings at standard distances apart.  
This can lead to deformity at a given wavelength, which can increase RL.  
Place your loom cable ties at random distances for the same reason.

## Specifications

<b>Input</b>	<ul style="list-style-type: none"><li>• 1x HDMI input</li></ul>
<b>Output</b>	<ul style="list-style-type: none"><li>• 2x HD/SD-SDI output</li></ul>
<b>Supported HDMI Input Formats</b>	<ul style="list-style-type: none"><li>• 720x480 Interlaced</li><li>• 720x576 Interlaced</li><li>• 1280x720 / 50Hz Progressive</li><li>• 1280x720 / 59.94Hz Progressive</li><li>• 1280x720 / 60Hz Progressive</li><li>• 1920x1080 / 50Hz Interlaced</li><li>• 1920x1080 / 59.94Hz Interlaced</li><li>• 1920x1080 / 60Hz Interlaced</li></ul>
<b>HD SDI Signal</b>	<p>SMPTE 292M standard complied with</p> <ul style="list-style-type: none"><li>• Output return loss : More than 15 dB (5MHz to750MHz) More than 10 dB (750MHz to 1.5 GHz)</li><li>• Output level : 0.8 Vpp <math>\pm</math> 10%</li><li>• Transition time : Min then 270 ps</li><li>• Difference between rise time and fall time within 100 ps</li><li>• Eye aperture ratio : More than 90%</li><li>• DC offset : 0 <math>\pm</math> 0.5V</li><li>• Equalizer use 5C-FB cable support 100 meters</li></ul>
<b>SD SDI Signal</b>	<p>SMPTE 292M standard complied with</p> <ul style="list-style-type: none"><li>• Output return loss : More than 15 dB (5MHz to750MHz) More than 10 dB (750MHz to 1.5 GHz)</li><li>• Output level : 0.8 Vpp <math>\pm</math> 10%</li><li>• Transition time : 0.4 ~ 1.5ns</li><li>• Difference between rise time and fall time within 100 ps</li><li>• Eye aperture ratio : More than 90%</li><li>• DC offset : 0 <math>\pm</math> 0.5V</li><li>• Equalizer use 5C-FB cable support 100 meters</li></ul>
<b>Operating Temperature</b>	<ul style="list-style-type: none"><li>• 0°C to 40°C (32°F to 102°F)</li></ul>
<b>Humidity</b>	<ul style="list-style-type: none"><li>• 10% to 90% (non condensing)</li></ul>
<b>Dimension &amp; Weight</b>	<ul style="list-style-type: none"><li>• 145mm (W) x 85mm (D) x 30mm (H) / lbs/ 0.33Kgs</li></ul>
<b>Power</b>	<ul style="list-style-type: none"><li>• Output DC 12V / 1.0A</li></ul>

## Service & Support

It is our goal to make your products ownership a satisfying experience. Our supporting staff is available to assist you in setting up and operating your system. Please refer to our web site [www.datavideo-tek.com](http://www.datavideo-tek.com) for answers to common questions, support requests or contact your local office below.

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