datavideo

HD-SDI TO ANALOG CONVERTER
CONVERTER
DAC-50S
Instruction Manual

www.datavideo.com

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Disclaimer of Product and Services

The information offered in this instruction manual is intended as a guide only. At all times, Datavideo Technologies will try to give correct, complete and suitable information. However, Datavideo Technologies cannot exclude that some information in this manual, from time to time, may not be correct or may be incomplete. This manual may contain typing errors, omissions or incorrect information. Datavideo Technologies always recommend that you double check the information in this document for accuracy before making any purchase decision or using the product. Datavideo Technologies is not responsible for any omissions or errors, or for any subsequent loss or damage caused by using the information contained within this manual. Further advice on the content of this manual or on the product can be obtained by contacting your local Datavideo Office or dealer.

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

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
Standard Warranty

- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.

- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.

- The product warranty period beings on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.

- Damage caused by accident, misuse, unauthorized repairs, sand, grit or water is not covered under warranty.

- Viruses and malware infections on the computer systems are not covered under warranty.

- Any errors that are caused by unauthorized third-party software installations, which are not required by our computer systems, are not covered under warranty.

- All mail or transportation costs including insurance are at the expense of the owner.
- All other claims of any nature are not covered.
- Cables and batteries are not covered under warranty.
- Warranty only valid in the country or region of purchase.
- Your statutory rights are not affected.

Three Year Warranty

- All Datavideo products purchased after July 1st, 2017 are qualified for a free two years extension to the standard warranty, providing the product is registered with Datavideo within 30 days of purchase.
- Certain parts with limited lifetime expectancy such as LCD panels, DVD drives, Hard Drive, Solid State Drive, SD Card, USB Thumb Drive, Lighting, Camera module, PCIe Card are covered for 1 year.
- The three-year warranty must be registered on Datavideo's official website or with your local Datavideo office or one of its authorized distributors within 30 days of purchase.

Disposal

For EU Customers only - WEEE Marking

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

CE Marking is the symbol as shown on the left of this page. The letters "**CE**" are the abbreviation of French phrase "Conformité Européene" which literally means "European Conformity". The term initially used was "EC Mark" and it was officially replaced by "CE Marking" in the Directive 93/68/EEC in 1993. "CE Marking" is now used in all EU official documents.

1. Introduction

The DAC-50S converts the digital HD/SD-SDI video input to one of the following analog output combinations:

- one component (YUV) output + one composite (CV) output;
- one S-Video (Y/C) output + two composite (CV) outputs,

with both of which paired with two analog audio outputs (R and L). The outputs can be easily connected to analog video monitor or deck devices such as BataCAM and VHS. The DAC-50S is also able to scale down the signal to connect analog output ports to SD analog equipment.

The DAC-50S provides an SDI Loop-thru output, which makes it suitable for more different applications. It further outputs one pair of analog audio channels selected from 16 de-embedded SDI audio channels (Selection is determined by DIP switch settings).

The DAC-50S is housed in a rugged aluminum frame, making it durable enough to endure even in the roughest conditions. It is also suitable for 2U rack mount kit of RMK-2 on standard rack, and fits the battery holder of MB-4.

Features

- Converts 3G/HD/SD-SDI input to analog video and 2 unbalanced analog audio channels.
- Two available output combinations:
  - one analog component (YUV) output + one composite (CV) output
  - one analog S-Video (Y/C) output + two composite (CV) outputs
- Supports NTSC / PAL output.
- Define de-embedded audio channels sent to analog audio outputs via a DIP switch.
- Solid aluminum housing that fits the 2U rack mount kit of RMK-2 and battery holder of MB-4.

2. Connections & Controls
Rear Panel
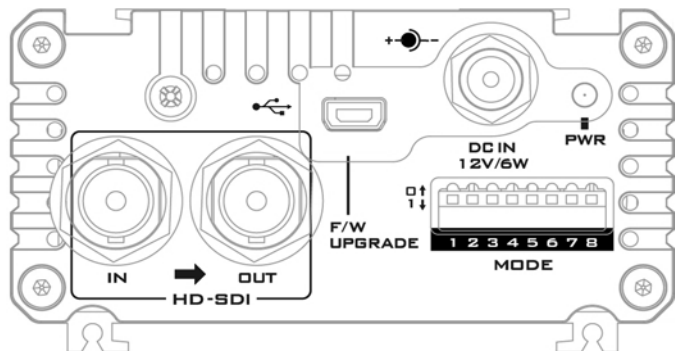
|	
	HD/SD-SDI Input Connects to an HD-SDI input source
	HD/SD-SDI Output HD-SDI loop-thru output
	USB Firmware Upgrade Connects to PC for firmware upgrade
	DC In Socket Connects the supplied 12V PSU to this socket. The connection can be secured by screwing the outer fastening ring of the DC In plug to the socket.

DIP Switch
System I/O settings
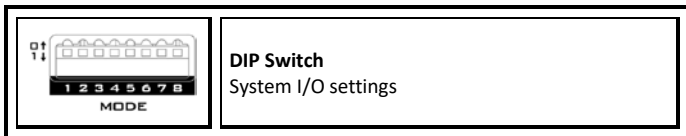
DIP Switch Setting			DIP SW1	DIP SW2	DIP SW3	SDI Audio De-Embed
0	1					
1	SDI Audio De-Embed		0	0	0	CH1&CH2
2			0	0	1	CH3&CH4
3			0	1	0	CH5&CH6
4	7.5 IRE	0 IRE	0	1	1	CH7&CH8
5	16:9	4:3	1	0	0	CH9&CH10
6	YUV+CV OUT	Y/C+2xCV OUT	1	0	1	CH11&CH12
7	SMPTE	EBU	1	1	0	CH13&CH14
8	Normal Operation	Firmware Upgrade	1	1	1	CH15&CH16

NOTE: Given a 16:9 HD video input, if DIP SW5 is set to 16:9, the image displayed on a 4:3 TV monitor will be anamorphic, i.e. the image will be compressed laterally. However, if DIP SW5 is set to 4:3, the image displayed on a 4:3 TV monitor will become edge-cropped, i.e. the left and right of the image will be partially cut off. The diagram below provides an illustration of the above.
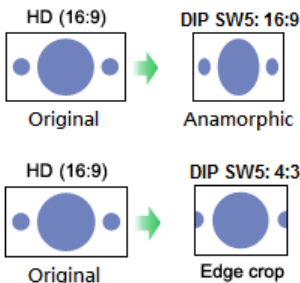
For an SD video input, if the input resolution is 16:9, set DIP SW5 to 16:9; if the input resolution is 4:3, set DIP SW5 to 4:3.

Front Panel
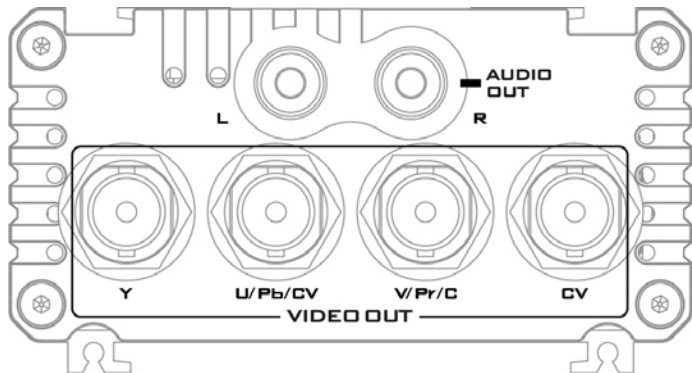
	Y Output Port Component video output port
	U/Pb/CV Output Port Component or Composite video output port
	V/Pr/C Output Port Component video output port

	CV Output Port Composite video output port
	Audio OUT SDI audio de-embed output via 2 unbalanced analog audio channels.

3.   Firmware Update

From time to time, Datavideo may release new firmware to either add new features or to fix reported bugs in the current DAC-50S firmware. Customers can update the firmware themselves if they wish or they can contact their local dealer or reseller for assistance should they prefer this method.

This section describes the firmware update process. Once started, *the update process should not be interrupted in any way* as this could result in a non-responsive unit.

Host Update

1. Set DIP SW8 to ON

2. Connect DAC-50S to the PC using a USB cable (DAC-50S is powered by the USB port so external power source is not required)

3. A USB device connection prompt window will appear on the PC screen (DAC-50S USB) and click "Open device to view files" to open the device.

4. Copy the new firmware file and paste it into the USB device to replace the existing firmware file on the device.
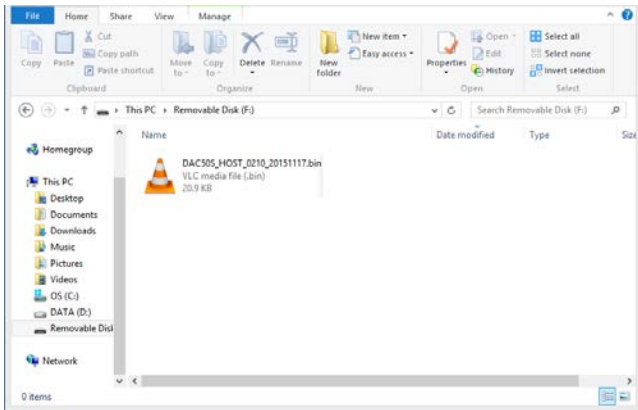
5. After the new firmware file has been saved in the device, safely remove the USB device VP733 Datavideo Tech USB Device as shown in the diagram below.
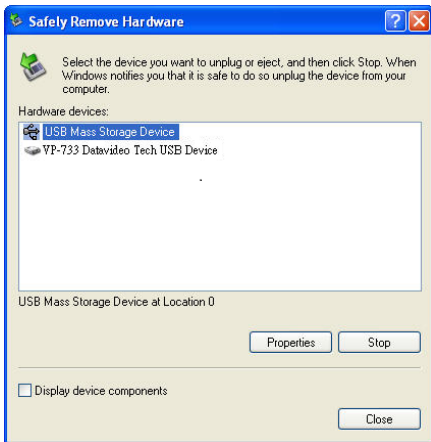
6. Update is complete after the device is safely removed, unplug the USB cable and set DIP SW8 to OFF.

FPGA Update

1. Set DIP SW7 / SW8 to ON.

2. Connect the power to the device.

3. Use the mini-USB cable to connect the device to the computer, which will automatically detect the device.

4. Open the device drive.
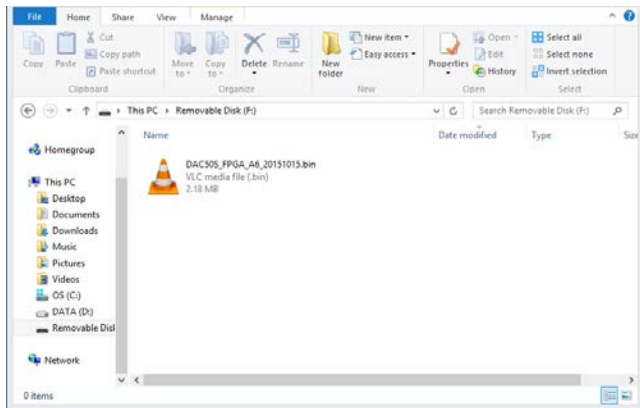
5. Delete the existing file and copy the latest FPGA firmware file into the device.

6. The firmware update will now start, which takes approximately 2 minutes.

7. After the firmware file is successfully copied into the device, safely remove the USB device.

8. Set DIP SW7 / SW8 to OFF to complete the update.

4. Frequently-Asked Questions

This section describes problems that you may encounter while using DAC-50S. If you have questions, please refer to related sections and follow all the suggested solutions. If problem still exists, please contact your distributor or the service center.

No.	Problems	Solutions
1.	**Severe color bar noise is seen on the DAC-50S output terminal if the SDI-IN source is a 100% color bar.**	DAC-50S does not support 100% color bar and downgrading it to 75% will solve this issue.

5. Dimensions
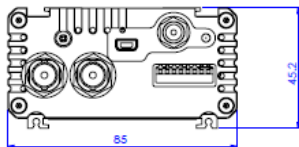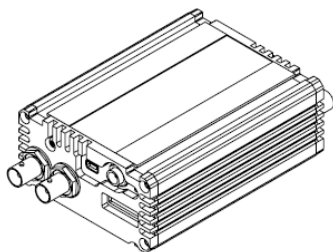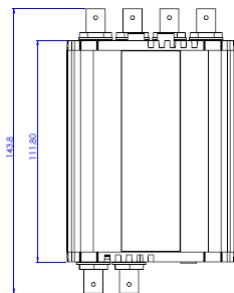
All measurements in millimeters (mm)

6. Specifications

Input Interface	HD/SD-SDI x 1 (BNC)
Output Interface	Component YPbPr x 3 (BNC) Composite x 2 (one is the same connector as U/Pb) (BNC) S-Video Y/C x 2 (the same connector as Y and V/Pr) (BNC) Audio L/R x 2 (RCA) HD-SDI loop-through x 1 (BNC)
Input Format	1080p 50/59.94 Hz 1080i 50/59.94 Hz 720p 50/59.94 Hz NTSC 525/29.97, PAL 625/25
Output Format	625/25 PAL, 525/29.97 NTSC
F/W Upgrade	mini USB x 1
DIP Switches	8-PIN DIP Switch 1: SDI audio de-embed 2: SDI audio de-embed 3: SDI audio de-embed 4: IRE (7.5 IRE & 0 IRE) 5: Aspect Ratio (16:9 & 4:3) 6: Video Output (YUV + CV OUT or Y/C + TWO CV OUT) 7: Audio Level (SMPTE & EBU) 8: Firmware Upgrade
Power	DC 12V / 0.5A (6W)
Dimensions	143.8 x 85 x 45.2 mm
Weight	461.3 g

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.com for answers to common questions, support requests or contact your local office below.

Please visit our website for latest manual update.
www.datavideo.com/product/DAC-50S

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