



Hall Research Technologies, Inc.

DVI-to-VGA Video Scaler

Converts Digital DVI to Analog VGA or HDTV Component Output

With Programmable Output Resolution!



Model SC-DV-2


UMA1061 Rev. D

**CUSTOMER
SUPPORT
INFORMATION**

Order toll-free in the U.S. 800-959-6439
FREE technical support, Call 714-641-6607 or fax 714-641-6698
Mail order: Hall Research Technologies, 1163 Warner Ave., Tustin, CA 92780
Web site: www.hallresearch.com • E-mail: info@hallresearch.com

www.DVIConnect.com

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This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been designed to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are intended to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



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Hall Research Technologies, Inc.

Home of the Mini-Cat®

1. Introduction

1.1 General

The SC-DV-2 is a high performance PC/HDTV scaler that accepts Digital DVI input and converts it to analog RGB output (PC VGA or HDTV Component).

The input resolution is automatically detected while the output resolution and refresh rate can be selected through OSD menu and front panel push buttons.

The SC-DV-2 Video Processor combines the functions of a video scaler, scan-converter, and format transformer and is packed into a compact and durable metal housing with easy-to-use touch buttons.

The controls include input/output setup picture adjustment, H/V phase adjustment, System information and many other advanced options.

The SC-DV-2 allows you to specify a resolution and refresh rate for its output. Then it will output a steady (uninterrupted) VGA signal to your display device at the specified rate regardless of the input. This effectively allows any DVI switch, such as HRT's SW-DVI-2A or SW-DVI-4A, to become a seamless switch. The output timing is constant regardless of what is happening at the input. So when you switch from one input to another, the display device does not see any interruption in the signal coming to it.



1.2 Features

- Converts Digital DVI from any PC (or digital output from a DVD player) to analog VGA or component output.
- Ideal for use with high-resolution displays such as LCD, plasma, or DLP projectors.
- The resolution of any PC or HDTV video signal can be scaled up or scaled down to any other PC or HDTV resolution. It can also change the frame rate of the output.
- 50 MB Video memory for real-time frame rate conversion.
- Signal format conversion between RGBHV and YPbPr.
- Input: PC(VGA/SVGA/XGA/SXGA) + HDTV(480i 576i 480p 567p 720p 1080i), @ 60 to 85 Hz
- Output: PC(VGA/SVGA/XGA/SXGA) + HDTV(480p/576p/720p/1080i)
- Automatically detects input mode and timing parameters
- Easy- to- use push buttons and OSD menu control.

2. Installation

2.1 Input connection

The SC-DV-2 can accept both PC and HDTV input in digital DVI format.

Use the DVI-to-DVI cable to connect the DVI output of a PC or HDTV device to the DVI input connector of the SC-DV-2.

The SC-DV-2 can automatically detect the mode and resolution of the DVI input.

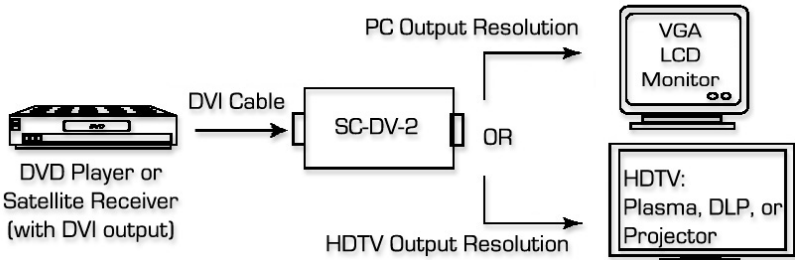
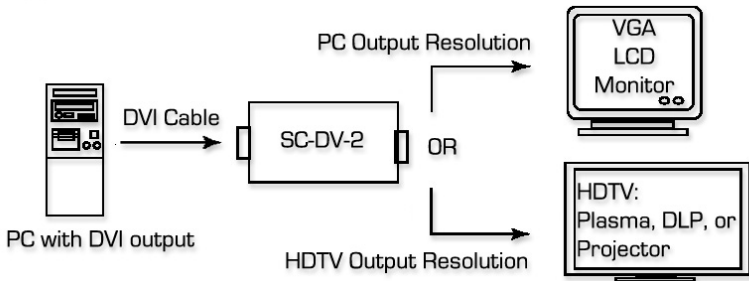
2.2 Output connection

The SC-DV-2 can output a variety of PC and HDTV resolutions in analog RGBHV (or YPbPr) formats.

When one of the PC resolutions is selected as the output, use a 15-pin D-Sub VGA cable to connect the PC/HDTV output of the SC-DV-2 to the VGA input of a display monitor.

When one of the HDTV resolutions is selected as output, use a 15-pin D-Sub to YPbPr/3 RCA adaptor cable to connect the PC/HDTV output of the SC-DV-2 to the YPbPr input of a HDTV device.

2.3 Connection Block Diagrams



In the above diagrams the output of the SC-DV-2 connects to the VGA monitor via a HD15 Cable and to the HDTV via a HD15 to 3 RCA cable.

Note that the SC-DV-2 is not HDCP compliant. HDCP refers to digital content protection of some high-resolution DVD players or Satellite receivers. Depending on the brand of the equipment, if you are playing a high-resolution HDCP encoded video through the SC-DV-2, you may not get a picture, or the output of the DVD player may emerge at a lower resolution!

3. Configuration & Operation

3.1 Front and Rear Panels



3.2 Menus and Adjustments

Pressing the Menu button will bring up the OSD menu controls on the screen as follows:

- Input set up
- Output set up
- Picture Adjust
- HV Adjust
- OSD Adjust
- System Information
- Auto Adjust
- Exit

Use +, or - to move the arrow cursor to your desired selection, then press MENU to confirm your selection and enter into sub menu.

Input set up - When selected, a sub menu for selecting YPbPr/RGB will appear:

YPBPR ... ✓ RGB




The SC-DV-2 automatically detects and shows the input format as YPbPr or RGB. However, you can manually select the YPbPr or RGB to match the format of your input. Selecting a format that doesn't coincide with your input will result in an abnormal picture.

Output set up - When selected, a sub-menu appears that allows you to set the *Output Mode* (refresh-rate and resolution).

Output Modes

	PC Resolutions	HDTV Resolutions	
VGA	640 X 480@60/72/75/85Hz	1080i-RGB	1920 X 1080@60Hz
VGA 70	720 X 400@70Hz	720p-RGB	1280X 720@60Hz
VESA 85	640 X 400@85Hz	576p-RGB	720X 576@60Hz
SVGA	800 X 600@60/72/75/85Hz	480p-RGB	720 X 480@60Hz
XGA	1024 X 768@60/70/75/85Hz	1080i-YPbPr	1920 X 1080@60Hz
Mac	1152 X 864@ 70/75Hz	720p-YPbPr	1280 X 720@60Hz
WXGA	1280 X 768@60Hz	576p-YPbPr	720 X 576@60Hz
1280A	1280 X 960@60Hz	480p-YPbPr	720 X 480@60Hz
SXGA	1280 X 1024@60/75Hz		

Picture Adjust - When selected, the following adjust parameters will appear:

Contrast  070
 Bright  130
 Color  070
 Reset
 Exit

The factory preset values are shown above

Select reset to reset all adjustment back to the factory preset values.

HV adjust - When selected, the following sub-menu appears.

H-position  184
 V-position  32

Use + - to adjust the best horizontal and vertical position of the picture.

OSD adjust - When selected, you can adjust the Horizontal and Vertical position of the OSD menu.

System information - When selected, it shows the input/output resolutions and their vertical refresh rates on the screen.

Auto adjust - When selected, the SC-DV-2 will automatically adjust all the parameter to the factory preset value.

Exit - Select to exit from the current menu page.

Notes

- ❖ The default output resolution is XGA @ 60Hz.
- ❖ The unit has non-volatile memory. It saves all your settings before power off, and recalls those settings on next power on.

Quickly Jumping to XGA or 480p Output

At any time, pressing + and - buttons simultaneously for a few seconds will reset the output resolution to XGA@60Hz, and other settings back to factory default values. Pressing the Menu and – together for a few seconds will choose 480P output mode.

4. Troubleshooting

There are no field serviceable parts or circuits in the device. If you think that the device is malfunctioning (or you have no picture output), please first try to reset to factory default settings by pressing the “+” and “-” buttons (or “menu” and “-” buttons) simultaneously for 2 seconds (See above).

Contacting Hall Research Technologies

If you determine that your scaler is malfunctioning, do not attempt to repair the unit. Contact HRT’s Tech. Support at 714-641-6607.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description.

Shipping and Packaging

If you need to transport or ship your Video Processor:

- Package it carefully. We recommend that you use the original container.
- Before you ship the units back to Hall Research Technologies for repair or return, contact us to get a Return Authorization (RMA) number.

5. Specifications

General

Input Format: Digital RGBHV, YPbPr, YCbCr
 Input Connector: 29-pin DVI-I
 Output Signal: RGB: 0.7Vp-p, 75 ohm, HV: 3 to 5 Vp-p TTL
 Y: 1 Vp-p 75 ohm; PbPr: 0.7 Vp-p 75 ohm
 Output Connector: HD-15 Female VGA
 Power: 5V DC at 2 A max (Universal power supply included)

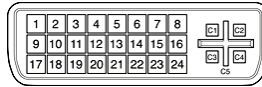
Input Resolutions

	PC Resolutions		HDTV Resolutions
VGA	640 X 480@60/72/75/85Hz	1080i	1920 X 1080@60Hz
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Reference Information



DVI Connector pinout

N/U = Not Used

Pin	Signal name	Pin	Signal name
1	TMDS Data2-	13	TMDS Data3+ (N/U)
2	TMDS Data2+	14	+5V Power
3	TMDS Data2/4 Shield	15	Ground for +5V Power
4	TMDS Data4- (N/U)	16	Hot Plug Detect
5	TMDS Data4+ (N/U)	17	TMDS Data0-
6	DDC Clock	18	TMDS Data0+
7	DDC Data	19	TMDS Data0/5 Shield
8	Analog vertical sync	20	TMDS Data5- (N/U)
9	TMDS Data1-	21	TMDS Data5+ (N/U)
10	TMDS Data1+	22	TMDS Clock Shield
11	TMDS Data1/3 Shield	23	TMDS Clock+
12	TMDS Data3- (N/U)	24	TMDS Clock-
C1	Analog red	C4	Analog horizontal sync
C2	Analog green	C5	Analog ground
C3	Analog blue		



The difference between a “good” installation and a “great” one!™



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