

User Guide

**Video to VGA/HD Converter/Scaler
DVI-3420a**

**Video to DVI Converter/Scaler
DVI-3410a**



TABLE OF CONTENTS

SECTION	PAGE
PRODUCT SAFETY	1
PRODUCT LIABILITY	1
1.0 INTRODUCTION	2
2.0 SPECIFICATIONS	3
3.0 PACKAGE CONTENTS	4
4.0 CONNECTING THE HARDWARE	4
5.0 OPERATING THE UNIT	6
6.0 TROUBLESHOOTING	8
7.0 LIMITED WARRANTY	9
8.0 REGULATORY COMPLIANCE	9

WARNING – Product Safety

1. Do not dismantle the product housing or modify the printed circuit board module as this may result in electrical shock or burn.
2. Do not attempt to service this product yourself as opening or removing the product housing may expose you to dangerous voltages or other hazards. Refer all servicing to qualified service personnel.
3. Keep this product away from liquids. Spills into the product housing may result in fire, electrical shock, or equipment damage. If liquid spills into the housing, unplug the product immediately. Have the product checked by a qualified service engineer before using it again.
4. Place the product in an even and stable location. If the product falls or is dropped, it may cause an injury and/or malfunction.
5. Avoid exposing the product to extreme temperatures or to high humidity levels as this may result in damage to the product.
6. Only use the supplied External AC Power Adapter. The use of other power adapters may cause this product to fail or may cause a fire.
7. Do not twist or exert excessive force on the ends of the connected cables as this can cause them to malfunction. Take care to ensure that all connected cables are not forced to bend more than their minimum bend radius.

Product Liability Statement

Every effort has been made to ensure that this product is free of defects. DVI Gear cannot be held liable for the use of this product or for any direct or indirect consequential damages arising from its use. It is the responsibility of the users of this product to check that it is suitable for their requirements and that it is installed correctly. DVI Gear reserves the right to revise any of its hardware and software following its policy to modify and/or improve its products where necessary or desirable. This statement does not affect the legal rights of the user in any way.

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1.0 INTRODUCTION

Thank you for purchasing this Converter / Scaler product from DVI Gear. The models DVI-3410a and DVI-3420a are designed to convert a standard definition video signal (Composite, S-Video and/or Component Video) to a wide variety of PC and HDTV resolutions. The two units are similar in operation and specifications except that the DVI-3420a has an analog output, while the DVI-3410a has a digital DVI Output.

Our digital video distribution products have been serving the professional AV industry for more than fifteen (15) years. Today, DVI Gear offers a full range of high performance products including: scalable AV-Over-10GbE Systems, Switchers, Splitters, Scalers, Up/Down/Cross-Converters, Format Converters, as well as a wide range of long-reach Digital Cables, Extenders, and Fiber Optic Transmission systems.

1.1 Features

These Converter / Scaler units have many unique features and benefits:

- Ultra-compact, high performance Converter / Scalers
- Converts Composite Video, S-Video or Component Video inputs to PC/HD or DVI outputs
- Advanced scaling and deinterlacing functions
- Supports worldwide video formats: NTSC 3.58, NTSC 4.43, PAL, PAL M, PAL N and SECAM
- Supports PC resolutions up to UXGA; supports HDTV resolutions up to 1080p
- 32 MByte frame memory; frame rate conversion from 50-85 Hz
- On-Screen Display for all setup adjustments
- Heavy-duty metal case
- Locking connector for AC Power Adapter for added security

2.0 SPECIFICATIONS

Input Format	Composite Video (NTSC, PAL, SECAM), S-Video or YCbCr
Input Signal	Composite Video: 1V p-p, 75Ω S-Video: Y = 1V p-p, 75Ω / C = 0.7 V p-p, 75Ω Component Video: Y = 1V p-p, 75Ω / Cb, Cr = 0.7 V p-p, 75Ω
Output Format	DVI-3420a: RGB, HV or YPbPr DVI-3410a: Single-Link DVI-I (analog + digital)
Output Signal	DVI-3420a: RGBHV: 0.7 V p-p, 75Ω, H/V: 3 to 5 p-p TTL, Y: 1 V p-p 75Ω, Pb/Cb, Pr/Cr: 0.7 V p-p 75Ω DVI-3410a: Single-Link DVI-I (analog + digital)
Input Connector Type	Composite Video RCA, S-Video 4-pin DIN, YCbCr 8-pin DIN
Output Connector Type	DVI-3420a: VGA (HD-15 pin) female DVI-3410a: DVI-I female
Control	Front Panel Buttons
Information Display	On-Screen Display
Video Adjustments	Brightness, Contrast, Color, H and V Position
Weight (Net)	DVI-3410a: 10.9 oz. (310 g) DVI-3420a: 9.5 oz. (270 g)
Dimensions (H-W-D)	DVI-3410a: 1.2" x 6.3" x 3.0" (30.5 mm x 160.7 mm x 77.2 mm) DVI-3420a: 1.2" x 5.7" x 3.0" (30.3 mm x 145.7 mm x 76.9 mm)
Power Source	External AC Power Adapter: 100~240VAC to 5VDC@2.0A, 50-60 Hz

2.1 Output Resolutions and Formats:

PC Resolutions		Vertical Rate	Format	Scan Type
VGA	640x480	50, 60, 72, 75, 85 Hz	RGBHV	Progressive
SVGA	800x600	50, 60, 72, 75, 85 Hz	RGBHV	Progressive
XGA	1024x768	50, 60, 70, 75, 85 Hz	RGBHV	Progressive
WXGA	1280x768	50, 60 Hz	RGBHV	Progressive
SXGA	1280x1024	50, 60, 75 Hz	RGBHV	Progressive
UXGA ²	1600x1200	60 Hz	RGBHV	Progressive
HDTV Resolutions		Vertical Rate	Format ⁽³⁾	Scan Type
480p	720x480	50, 60Hz	YPbPr, RGBHV	Progressive
576p	720x576	50, 60Hz	YPbPr, RGBHV	Progressive
720p	1280x720	50, 60Hz	YPbPr, RGBHV	Progressive
1080i ⁽¹⁾	1920x1080	50, 60Hz	YPbPr, RGBHV	Pseudo Interlaced ⁽¹⁾
1080p ⁽²⁾	1920x1080	50, 60Hz	YPbPr, RGBHV	Progressive

Note 1: The 1080i Output is actually a doubled 540p signal. It will appear as 1080i on most displays; however, it is not a true 1080i signal format.

Note 2: UXGA and 1080p available only on DVI-3420a.

Note 3: DVI-3410a has digital RGBHV output only without a YPbPr output.

3.0 PACKAGE CONTENTS

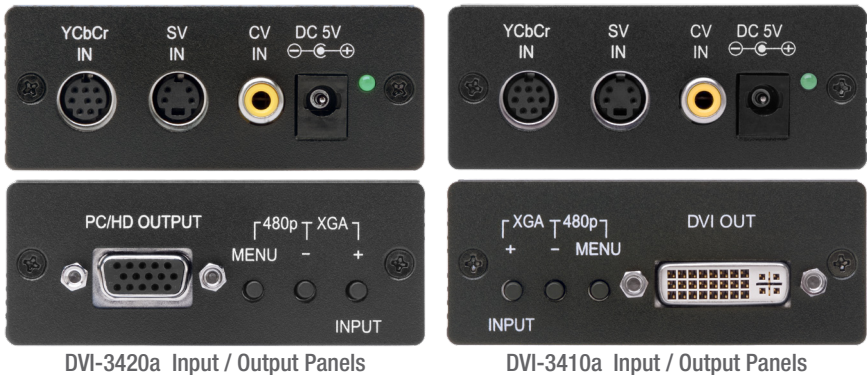
Before attempting to use this unit, please check the packaging and make certain the following items are contained in the shipping carton:

- 1x DVI-3410a Video to DVI Converter / Scaler, or
1x DVI-3420a Video to VGA/HD Converter / Scaler
- 1x External AC Power Adapter
- 1x 8-Pin Mini-DIN to 3x RCA Breakout Cable
- 1x User Guide

Note: Please retain the original packing material in case you need to return the unit. If you find any items are missing, contact your reseller or DVI Gear immediately. Please have the Model Number, Serial Number, and Invoice Number available for reference when you call.

4.0 CONNECTING THE HARDWARE

The first step is to connect a video source to the input of the Scaler and to connect its output to a display device. Below you'll find images of the unit showing the locations of the input, output and power connectors.



4.1 Connecting the Input

Both the DVI-3420a and DVI-3410a Video Scaler can accept standard definition Composite Video, S-Video or Component Video inputs. Composite Video may be connected to the unit via a RCA input connector. S-Video can be connected via the 4-pin mini-DIN Connector. Component Video may be connected via the 8-pin mini-DIN Connector using the provided 3x RCA to 8-Pin mini-DIN breakout cable.

4.2 Connecting the Output

The DVI-3420a Video Scaler outputs analog RGBHV or YPbPr formats. When a PC signal output is required, use a high quality HD15-pin (VGA) cable to connect the output signal to the desired destination device. If connection to an



Analog HDTV display device is required, please use a high quality HD15-pin to Component Video (3x RCA) adaptor cable.

The DVI-3410a provides digital RGB output signals via a DVI connector. It is recommended that you use DVI Gear's Super High Resolution (SHR™) Series cables for all output connections.

Note: *Proper signal levels are very important to the operation of this product. If this unit fails to operate correctly, the most likely cause of the problem are incorrect low signal levels, use of a low quality cable, or the use of a wrong input cable type.*

4.3 Connecting Power to the Unit

This unit is shipped with an External AC Power Adapter that converts 100~240VAC@50-60 Hz to 5VDC. Connect the DC Output Cord from the Power Adapter to the back of the unit and then plug the Power Adapter into an AC power receptacle. When AC power is applied in this fashion, the Power LED indicator will illuminate.

4.4 Getting the Best Results

There are many factors affecting the quality of results when scaling video signals. Some basic precautions will ensure the best possible performance from this product.

Output Display Device – The quality of the output signal will depend largely upon the type and quality of display device used. For instance, some video projectors just look better than others.

Using Native Resolution – It is always best to set the output resolution of the scaler to the native resolution and refresh rate of the display device. This allows the unit's scaling engine to do most of the work, which usually results in a superior picture.

Distance between the Video Scaler and the Display Device – This plays a major role in the final result. Long distances are possible, but special measures should be taken in order to avoid cable losses. These include using high quality (coax-type) VGA cables and premium DVI cables such as DVI Gear's Super High Resolution™ cables. Line amplifiers or repeaters may also be necessary

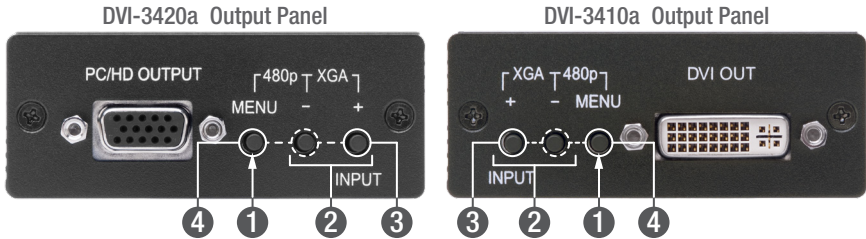
Output Connection Cables – Low quality cables are susceptible to interference. They degrade signal quality due to poor impedance matching and cause elevated noise levels. Therefore, cables should be of the best quality. Coax-type computer cables are recommended because of their superior internal shielding characteristics.

Interference from Nearby Electrical Devices – These can have an adverse effect on signal quality. For example, an older computer monitor often emits very high electromagnetic fields that can interfere with the performance of video equipment in its proximity.

5.0 OPERATING THE UNIT

5.1 Controlling the Unit

The Scaler is controlled via three buttons with status indicated by an On-Screen Display.



- 1 Menu Button:** This Button displays the Menu Options via the On-Screen Display on the display device connected to the output.
- 2 + and – Buttons:** These Buttons allow navigation within the Menu and adjustments of the parameters available.
- 3 XGA Reset:** Simultaneously depressing the – and + buttons returns all settings to factory default values and sets the output resolution to XGA@60 Hz.
- 4 480p Reset:** Simultaneously depressing the MENU and – buttons returns all settings to factory default values and sets the output resolution to 480p.

Pressing the Menu Button results brings up the Initial or **Main Menu**. Move the cursor to the desired setup option by using the + and – buttons. Press the Menu Button again to call up that option.

Picture Adjust
Display Setup
Advanced Setup
System Information
Exit

When the desired option is reached and selected, a new Menu will appear and you once again use the + & – buttons to select the parameter you wish to change or adjust.

5.2 Setup Example

If you select the first item on the main menu, **Picture Adjust**, a secondary menu will provide the following selections:

Brightness
Contrast
Color
Tint
H. Peaking Filter
Sharpness
V. Peaking Gain
Reset
Exit

For example, if you want to change the Color level, use the + / - buttons to navigate to this item on the Menu, then press the Menu button again to select that option. When Color is selected, a sub-menu for the adjustment will appear:



Use the + and - buttons to increase or decrease the value of the setting. Press Menu again to leave the setting. Move the arrow to **Exit** and press Menu again to Exit.

5.3 Display Setup

When this is selected, an Output Resolution sub-menu will appear allowing for the desired resolution to be selected noted in the Input/Output Signal Specification on page 3. Use the + and - Buttons to choose the desired PC or HDTV output resolution from the available selections in the sub-menu.

5.4 Advance Setup

Advance Setup allows you to turn off the Film Mode (3:2 Pull Down), turn off the OSD (On-Screen Display) and set the "No Signal" Display to either a Blue or Black screen.

5.5 System Information

When selected, the OSD shows the unit's current Input Mode, Output Resolution and Vertical Refresh Rate.



6.0 TROUBLESHOOTING

Other than checking for faulty cables, the only common problem is choosing an incorrect Input or Output Setting. Make sure the display is capable of handling the resolution and refresh rate selected. Also be sure to use the correct type of cable for the output format selected (RGB or YPbPr).

If the problem persists after trying the above suggestions, please contact your dealer for additional assistance. If the dealer's technical personnel are unable to assist you, please contact DVIGear via telephone at 1.888.463.9927 (toll-free for United States and Canada) or 1.770.421.6699. You may contact DVIGear by e-mail at support@dvigear.com.



7.0 LIMITED WARRANTY

LIMITED WARRANTY – Subject to the limitations stated below, DVI Gear warrants that this product will be free from defects in materials and workmanship for a period of three (3) years from the date of purchase.

Should the product, in DVI Gear's opinion, prove defective within the warranty period stated above, DVI Gear, at its option, will repair or replace this product without charge. Any defective parts replaced become the property of DVI Gear. This warranty does not apply to products that have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not intended.

If repairs are necessary under this warranty policy, the original purchaser must obtain a Return Authorization Number from DVI Gear and return the product freight prepaid to a location designated by DVI Gear. After repairs are complete, the product will be returned, freight prepaid.

The foregoing warranty is the sole and exclusive warranty given by DVI Gear, express or implied, and DVI Gear disclaims all implied warranties, including but not limited to implied warranties of merchantability or fitness for a particular use.

LIMITATIONS – The liability of DVI Gear with respect to any defective products will be limited to the repair or replacement of such products. In no event shall DVI Gear be responsible or liable for any damage arising from the use of such defective products, including but not limited to loss of use, revenue or profit, whether such damages are direct, indirect, consequential or otherwise and whether such damages are incurred by the reseller, end user, or any third party.

8.0 REGULATORY COMPLIANCE

This product has been tested for compliance with: FCC Class B and CE. The External AC Power Adapter supplied with this product has been tested for compliance with: UL, C-UL and CE. This product is RoHS compliant.



Your Digital Connectivity Experts

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