

## **User Guide**

**Video to VGA/HD Converter/Scaler**

**DVI-3420a**

**Video to DVI Converter/Scaler**

**DVI-3410a**



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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 professional video conversion products have been serving the industry for several years. DVI Gear offers a full line of high quality Video Scalers, Scan Converters, Analog-Digital Converters and DVI/HDMI Converters, as well as Signal Switchers and Distribution Amplifiers.

### 1.1 Liability Statement

Every effort has been made to ensure that this product is free of errors. DVI Gear cannot be held liable for the use of this hardware or any direct or indirect consequential damages arising from its use. It is the responsibility of the user of the hardware to check that it is suitable for his/her requirements and that it is installed correctly. All rights reserved. No parts of this manual may be reproduced or transmitted by any form or means electronic or mechanical, including photocopying, recording or by any information storage or retrieval system without the written consent of the publisher.

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.

All third party trademarks and copyrights are recognised. The DVI Gear logo is a registered trademark of DVI Gear, Inc. All other trademarks are the property of their respective holders.

### 1.2 Features

- 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 DC power connector for added security



### 1.3 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.



## 2.0 SPECIFICATIONS

### Signal Specifications:

<b>Input Format</b>	Composite Video (NTSC, PAL, SECAM), S-Video or YCbCr
<b>Input Signal</b>	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
<b>Output Format</b>	DVI-3420a: RGB,HV or YPbPr DVI-3410a: Single-Link DVI-I (analog + digital)
<b>Output Signal</b>	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)
<b>Input Connector Type</b>	Composite Video RCA, S-Video 4-pin DIN, YCbCr 8-pin DIN
<b>Output Connector Type</b>	DVI-3420a: VGA (HD-15 pin) female DVI-3410a: DVI-I female
<b>Control</b>	Front Panel Buttons
<b>Information Display</b>	On-Screen Display
<b>Video Adjustments</b>	Brightness, Contrast, Color, H and V Position
<b>Weight</b>	0.68 lbs / 308 grams (net weight)      2.25 lbs. / 1 KG (shipping)
<b>Dimensions – HxWxD</b>	1.2" x 6.3" x 3.1" (31 x 161 x 78 mm)
<b>Power Source</b>	External AC Power Adapter: 100–240VAC to 5VDC@2.0A, 50-60 Hz

### Output Resolutions and Formats:

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

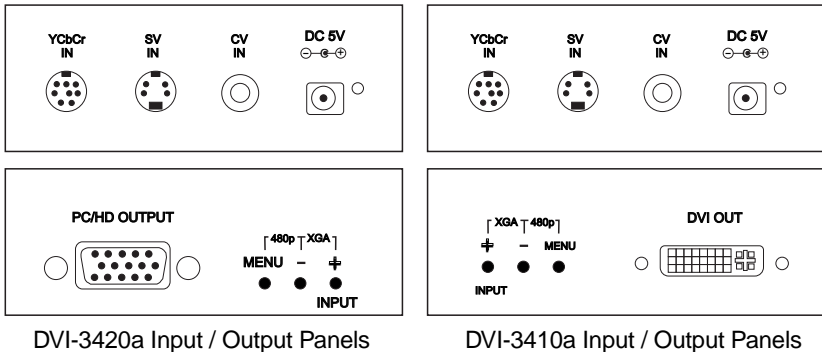
Before attempting to use this unit, please check the packaging and make certain the following items are contained in the shipping carton:

- DVI-3410a Video to DVI Scaler/Converter, or  
DVI-3420a Video to VGA/HD Scaler/Converter
- External AC Power Adapter (100~240VAC to 5VDC)
- 8 Pin Mini-DIN to 3x RCA Breakout Cable
- User Guide

**Note:** Please retain the original packing material should the need ever arise to return the unit. If you find any items are missing, contact your reseller or DVIgear 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 drawings 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 can output analog RGBHV or YPbPr formats. When a PC signal output is required, use a HD-15 to HD-15 (VGA) Cable to connect the output signal to the desired destination device. If you wish to connect this product to an Analog HDTV display device, please use a high quality HD15 to Component Video (3x RCA) adaptor cable (DVI-Gear product numbers: DVI-VC02, DVI-VC06 or DVI-VC12).

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

**Note:** Proper signal levels are very important to the operation of this product. If improper operation of the unit occurs and the unit has power, the most likely cause of the problem is high or low signal levels, use of a low quality cable, or the use of a wrong input cable.

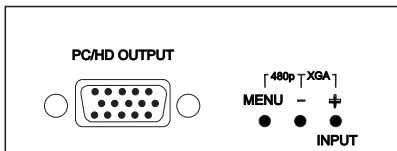
## 4.3 Connecting Power to the Unit

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.

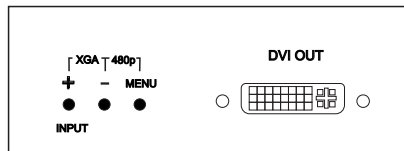
## 5.0 OPERATING THE UNIT

### 5.1 Connecting Power to the Unit

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



DVI-3420a

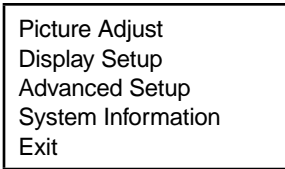


DVI-3410a

- **Menu Button:** This Button displays the Menu Options via the On-Screen Display on the display device connected to the output.
- **+ and – Buttons:** These Buttons allow navigation within the Menu and adjustments of the parameters available.

- **XGA Reset:** Simultaneously depressing the – and + buttons returns all settings to factory default values and sets the output resolution to XGA @ 60 Hz.
- **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.



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:



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).

After trying the above suggestions should the problem still persist, contact your dealer for additional suggestions. Should the dealer’s technical personnel be unable to assist you, please contact DVIGear via telephone at (888) 463-9927 (United States and Canada); international callers may dial (770) 421-6699, or use e-mail at [support@dvigear.com](mailto:support@dvigear.com)



## **7.0 LIMITED WARRANTY**

LIMITED WARRANTY – With the exceptions noted in the next paragraph, DVI Gear, Inc. warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of one year from the date of purchase. Should this product, in DVI Gear's opinion, prove defective within this warranty period, 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 those products which 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 originally 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.

LIMITATIONS – All products sold are “as is” and the above Limited Warranty is in lieu of all other warranties for this product, expressed or implied, and is strictly limited to two years from the date of purchase. DVI Gear assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

DVI Gear makes no other representation of warranty as to fitness for the purpose or merchantability or otherwise in respect of any of the products sold. 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 whether such damages be 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, CSA and CE. This product is RoHS compliant.



Your Digital Connectivity Experts

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