

## **User Guide**

**Dual-Link DVI Active Cable Extender™**

**DVI-7176b**



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## **WARNING – Product Safety**

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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**

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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 Dual-Link DVI Active Cable Extender™ (ACE™) unit from DVI Gear. This product is an adaptive cable equalizer capable of mitigating insertion losses on copper Dual-Link DVI cables with lengths up to 200 ft. (~ 60 meters).

Although this product will work with almost any DVI cable, its performance cannot be guaranteed in all cases due to the wide variations in the quality of conventional DVI cables. For best results, always use DVI Gear's Super High Resolution™ (SHRD™) Dual-Link DVI cables.

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, Scalars, 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

The Dual-Link DVI Active Cable Extender™ (ACE™) unit has many unique features and benefits:

- Supports all HDTV resolutions up to 1080p (8-bit and 12-bit color)
- Supports PC resolutions up to 3840×2400
- Supports digital bit rates up to 3.30 Gbps.
- Supports HDCP (pass-through)
- Maximum distance from source to ACE™: 200 ft. (~ 60 meters)
- Maximum distance from ACE™ to display: 15 ft. (~ 5 meters)
- Automatic or precise Manual Adjustment of cable equalization
- Locking connector for AC Power Adapter for added security
- Rugged, ultra-compact metal enclosure
- LEDs indicate presence of sufficient power and active DVI signal



## 2.0 SPECIFICATIONS

Performance	
Compliance	DVI v1.0, HDMI, HDCP
Maximum Pixel Clock Frequency	Up to 330 MHz
Maximum Bit Rate	Up to 3.30 Gbps (effective)
Supported HDTV Resolutions	480p, 720p, 1080i, 1080p, (8-bit and 12-bit color)
Supported PC Resolutions	Single-Link: up to 1920x1200 and 2048x1080; Dual-Link: up to 3840x2400
Input Signal Equalization	Adaptive equalization, provides up to +40 dB correction @ 825 MHz
Cable Equalization Modes	Auto EQ Mode – for cable lengths up to 30 meters
	Manual EQ Mode – for cable lengths longer than 30 meters
Connections	
Input / Output	2x DVI 29-pin female connectors
Power Input	1x 5.5 / 2.5 mm locking connector
Cable Length	
Maximum Input Cable Length	200 ft. (~ 60 meters) <sup>1,2</sup>
Maximum Output Cable Length	15 ft. (~ 5 meters) <sup>1</sup>
DDC Support	
EDID / HDCP Support	Yes, pass-through
Mechanical	
Construction	Rugged steel enclosure with durable black finish
Dimensions (H-W-D)	1.1" x 2.1" x 2.6" (29.2 mm x 53.7 mm x 67.1 mm)
Weight	4.7 oz (132 g)
Environmental	
Operating Temperature	+32° to +122° F (0° to +50° C)
Storage Temperature	-4° to +158° F (-20° to +70° C)
Humidity (storage / operating)	10% to 90% (non-condensing)
Power Requirements	
External AC Power Adapter	Input: 100~240VAC / 50-60Hz      Output: 5VDC, 3.0A
Power Consumption (typical)	3.0 watts
Regulatory Approvals	
ACE™ Unit	FCC, CE, and RoHS
External AC Power Adapter	FCC, CE, UL, C-UL, CEC, GS, PSE, RoHS
Warranty	
Limited Warranty	3 Years Parts and Labor
Model Number	
DVI-7176b	DVI Dual-Link Active Cable Extender
Accessories	
Included: 1x External AC Power Adapter with USA plug, 1x User Guide Optional: International AC Power Adapter with Euro, UK, or Australian plug (p.n. DVI-7206-PS)	

**Note 1:** Maximum cable lengths using DVI Gear's 22AWG Super High Resolution (SHRD™) Dual-Link cables.

**Note 2:** The maximum cable length with 1080p / 60Hz 8-bit color (1.5 Gbps.) input signal is 200 ft. (~ 60 meters). The maximum cable length with 1080p / 60Hz 12-bit color (2.25 Gbps.) input signal is 131 ft. (~ 40 meters).



### 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-7176b Dual-Link DVI Active Cable Extender™ (ACE™) unit
- 1x External AC Power Adapter
- 1x User Guide

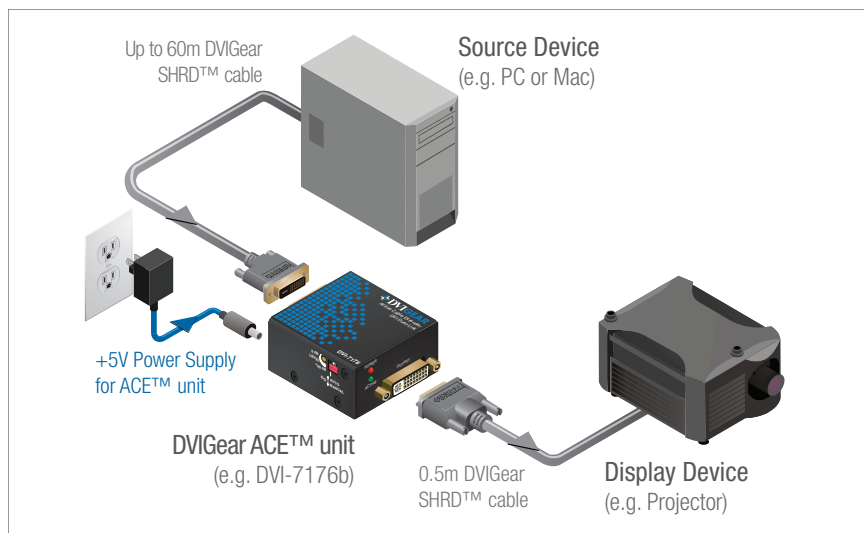
**Note:** Please retain the original packing material in case you need to return the unit. If you find any items are missing, contact your reseller or DVI Gear immediately. Please have the Model Number, Serial Number, and Invoice Number available for reference when you call.

### 4.0 CONNECTING THE HARDWARE

Please study the images below and become familiar with the signal input, output, and power input. See Section 5, "Operating the Unit," for additional information.



## 5.0 OPERATING THE UNIT



1. Turn OFF the DVI source and the DVI display device.
2. Connect a high quality DVI (long) cable between the output of the DVI source and the “INPUT” port of the ACE™ unit.
3. Connect a high quality DVI (short) cable between the DVI input on the display device and the “OUTPUT” port of the ACE™ unit.
4. Connect the External AC Power Adapter to the ACE™ unit. Take care to insert the locking plug into the DC power connector on the ACE™ unit and rotate a quarter turn clockwise so that it locks securely into position.
5. Plug the AC Power Adapter into an active AC power socket. The red POWER LED should be illuminated.
6. Turn ON the DVI source and DVI display device. The green ACTIVE LED should be illuminated, and there should be a stable image on the DVI display. There should be no artifacts (streaks, sparkles, etc.) visible in the displayed image.
7. On the side of the ACE™ unit there is a cable equalization switch that can be set for AUTO (automatic) or MANUAL adjustment. The AUTO position is preferred and works well with most cables. For DVI cables longer than 30 meters (100 ft.), the MANUAL EQ position can give better results. When the switch is set to the MANUAL EQ position, a 25x turn potentiometer is activated, allowing very precise control of the amount of cable equalization. For best results, take care to rotate this potentiometer adjustment slowly. Note that at the end of its range you will feel a slight clicking in the adjustment even though it continues to rotate.



## 6.0 TROUBLESHOOTING

If the DVI ACE™ unit does not appear to be working properly, please check the following:

1. Verify that the External AC Power Adapter is plugged in and delivering power to the DVI ACE™ unit. In this case the red POWER LED should be brightly lit. If the red POWER LED is dim, flickering or off altogether, then check the AC power source and/or replace the power adapter.
2. Verify that the cables connected to the Input and Output ports of the DVI ACE™ unit are premium grade cables (such as DVI Gear's Super High Resolution™ Dual-Link DVI cables) and do not exceed the recommended cable lengths specified in Section 2 of this User Guide.
3. Inspect the DVI connectors on both the cables and on the DVI ACE™ unit for damage, bent pins, loose connections, etc.
4. Turn ON the DVI source and verify that the green ACTIVE LED is illuminated. If it is not, double-check the source to ensure that it is outputting an active DVI signal.
5. As a final check, bypass the DVI ACE™ unit and connect the DVI source directly to the DVI display device using a high quality DVI cable with a length of 3 meters (10 ft.) or less. If the image is visible on the display, then follow the procedure below in step 6.
6. Turn OFF all system components, as well as the DVI ACE™ unit. Restart the DVI display, then the DVI ACE™ unit, and finally the DVI source device. Recheck steps 1-4 above.

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 DVI Gear via telephone at 1.888.463.9927 (toll-free for United States and Canada) or 1.770.421.6699. You may contact DVI Gear by e-mail at [support@dvigear.com](mailto: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 is compliant with appropriate FCC, CE and RoHS rules and regulations. The supplied AC Power Adapter is compliant with FCC, CE, UL, C-UL, CEC, GS, PSE and RoHS rules and regulations.



Your Digital Connectivity Experts

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