

## User Guide

**DVI-7520**  
**DVI-7525**

**HDMI HDBaseT Extender Set, 70m**  
**HDMI HDBaseT Extender Set, 100m**



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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

DVIGear's DVI-7520 and DVI-7525 utilize HDBaseT™ technology to provide a simple and cost-effective solution for extension of uncompressed HDMI or DVI, embedded audio, bidirectional IR, RS-232 and Ethernet (DVI-7525 only) using a single twisted pair CAT-X cable.

These extenders support the full range of HDBaseT features, including support for 4K /30p (UHD) resolution, bidirectional IR, POH (Power over HDBaseT) and long-range operation. They support extension of HDMI signals with 1080p resolution up to 330 ft. (~ 100 meters) and 4K (UHD) resolution up to 230 ft. (~ 70 meters).

Today there are many HDBaseT products that utilize non-standard implementations of power over the HDBaseT link. This problem has created interoperability challenges for system integrators who are faced with HDBaseT products that do not work with each other or, in some cases, cause equipment failures. To solve this problem, DVIGear's DVI-7520 and DVI-7525 include a fully-compliant implementation of Power over HDBaseT (POH), a key component of the HDBaseT standard.

Our digital video distribution products have been serving the professional AV industry for more than fifteen (15) years. Today, DVIGear 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 DVI-7520 and DVI-7525 offer several exceptional features:

- Extend HDMI, Ethernet (DVI-7525 only), RS-232, and bidirectional IR over a single CAT-X cable
- Support 4K resolutions up to 4096x2160 /30p
- Support HDBaseT POH standard with remote power from TX to RX unit over the CAT-X cable
- Fully HDCP 1.4 compliant, EDID and CEC transparent
- Extend 1080p HDMI signals up to 100 meters (DVI-7525) or 70 meters (DVI-7520)
- Extend 4K (UHD) HDMI signals up to 70 meters (DVI-7525) or 40 meters (DVI-7520)
- Multiple extender pairs can be cascaded for applications that require extreme distances
- Heavy-duty mounting brackets included. Units may also be rack-mounted using the optional rack mount kit (DVIGear p.n. DVI-7520-RMK)

## 2.0 SPECIFICATIONS

Model	DVI-7520	DVI-7525
Extender Set	DVI-7520: HDBaseT HDMI Extender Set, 70m	DVI-7525: HDBaseT HDMI Extender Set, 100m
Transmitter	DVI-7520-Tx: HDBaseT HDMI Transmitter, 70m	DVI-7525-Tx: HDBaseT HDMI Transmitter, 100m
Receiver	DVI-7520-Rx: HDBaseT HDMI Receiver, 70m	DVI-7525-Rx: HDBaseT HDMI Receiver, 100m
Performance		
Video	Supports HDMI v1.4, HDCP, and CEC	
HDBaseT Class Type	HDBaseT Class B	HDBaseT Class A
Audio	Supports HDMI embedded audio: up to 7.1 PCM, Dolby Digital TrueHD, and DTS-HD Master Audio	
HDCP	Supports HDMI signals with or without HDCP encryption	
Control	Supports Ethernet (DVI-7525 only), bidirectional IR and RS-232 pass-through	
Power	Supports local 12VDC power, as well as 48V POH (Tx unit to Rx unit)	
EDID	EDID of connected display is transparent	
Cable Equalization	Automatic, adaptive	
Supported HDTV Formats	Supports HDTV resolutions up to 4096x2160 (4K)	
Supported PC Resolutions	Supports all single-link DVI resolutions up to 1600x1200 and 1920x1200, HDMI resolutions up to 4096x2160 (4K)	
Input DDC Signal	5.0 Vpp (TTL)	
Input Video Signal	0.5 to 1.0 Vpp	
IR Carrier Freq. Range	33-55 kHz @ 5 volts	
RS-232 Baud Rate	Up to 115,200 baud	
Connections / Indicators		
HDMI Input / HDMI Output	1x 19-pin Female HDMI connector	
HDBaseT Interface	1x RJ45 with 48V POH	
IR Remote Control	1x IR IN: 3.5mm Stereo Mini-Jack	
	1x IR OUT: 3.5mm Mini-Jack	
RS-232	1x 3-pin, 3.5 mm pitch Phoenix Connector	
Ethernet Interface	None	1x RJ45
Power	1x Screw-locking 5.5 mm / 2.0 mm female connector	
Diagnostic Indicators	Power, Status, Link, and HDCP LEDs	
Power		
Power Consumption	Tx Unit: 10.8 watts (Maximum) Rx Unit: 10.8 watts (Maximum)	Tx Unit: 11.8 watts (Maximum) Rx Unit: 11.8 watts (Maximum)
Remote Power	48V POH from Tx unit to Rx unit	
External AC Power Adapter	Input: 100-240VAC, 50-60Hz / Output: +12VDC @ 1.5A	
ESD Protection	± 15 kV	

## 2.1 Specifications (Continued)

HDBaseT	DVI-7520	DVI-7525
Category Cable Type	Recommended: CAT6A S/FTP (550 MHz) AWG 23 Required: CAT5e or better Compliant with TIA/EIA-568B termination standard	
Maximum Extension Distances <sup>(1)</sup>	up to 230 ft. (70 meters) @ 1920x1080 /60p / 36-bit	up to 330 ft. (100 meters) @ 1920x1080 /60p / 36-bit
	up to 130 ft. (40 meters) @ 4096x2160 /30p, 1920x1080 /60p / 48-bit, and 1920x1080 /120p	up to 230 ft. (70 meters) @ 4096x2160 /30p, 1920x1080 /60p / 48-bit, and 1920x1080 /120p
Maximum Pixel Clock Freq.	Supports pixel clock rates up to 340 MHz	
Maximum Video Bit Rate	Supports digital signal bit rates up to 3.4 Gbps./color, 10.2 Gbps. total	
Gain	0 – 10 dB @ 100 MHz	
Resolution Range	800x600 – 1920x1200, 4096x2160 / 30p	
Signal to Noise Ratio	> 70 dB @ 100 MHz over 70m cable	> 70 dB @ 100 MHz over 100m cable
Return Loss	< -30 dB @ 5 KHz	
Total Harmonic Distortion	< 0.005% @ 1 KHz	
Min. / Max. Signal Level	< 0.3 Vpp / 1.45 Vpp	
Differential Phase Error	±10° @ 135 MHz over 70m cable	±10° @ 135 MHz over 100m cable
Propagation Delay	< 7 µs @ 70 meters	< 10 µs @ 100 meters
Power Over HDBaseT (POH)	Fully-compliant implementation of Power over HDBaseT (POH). Tx unit is a PSE device and Rx unit is a PD device.	
<b>Mechanical</b>		
Construction	Heavy-duty steel enclosure with jet black finish	
Dimensions (W x D x H)	Each Unit: 6.8" x 3.9" x 1.0" (173.1 mm x 100.1 mm x 25.6 mm)	
Weight	Tx Unit: 14.5 oz. (411 grams)	Tx Unit: 14.7 oz. (418 grams)
	Rx Unit: 15.1 oz. (428 grams)	Rx Unit: 15.2 oz. (432 grams)
<b>Environmental</b>		
Operating Temperature	Environment: +32° to +95° F (0° to +35° C)	
Typical Case Temperature	Tx Unit: 98.6° F (37° C); Rx Unit: 105.8° F (41° C); (Ambient Environment 30°C, 10 Hours)	
Storage Temperature	Environment: -4° to +158° F (-20° to +70° C)	
Operating/Storage Humidity	10% to 90% (non-condensing)	
<b>Regulatory Approvals</b>		
TX / RX Units	FCC, CE, RoHS	
External AC Power Adapter	FCC, CE, UL, C-UL, CEC, GS, PSE, RoHS	
<b>Warranty</b>		
Limited Warranty	3 Years Parts and Labor	
<b>Accessories</b>		
Included	1x User Guide, 1x External AC Power Adapter, 1x IR Transmitter, 1x IR Receiver, 2x 3-pin RS-232 male Phoenix Connectors (3.5 mm pitch, P/N 1840379), 4x Mounting Brackets with Screws, 2x HDMI Jack Screws	
Optional	Additional AC Power Adapter with USA, Euro, UK, or Australia Plugs (DVI-7520-PS2), IR Receiver (DVI-7360-IR-RX), IR Transmitter (DVI-7360-IR-TX), 19" Rack Mount Kit (DVI-7520-RMK)	

**Note 1:** Maximum cable lengths using recommended CAT6A S/FTP (550 MHz) AWG 23 cable.

## 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-7520-TX or DVI-7525-TX HDMI HDBaseT Transmitter
- 1x DVI-7520-RX or DVI-7525-RX HDMI HDBaseT Receiver
- 1x User Guide
- 1x External AC Power Adapter (+12 VDC)
- 1x IR Transmitter
- 1x IR Receiver
- 2x 3-pin RS-232 Phoenix Connectors
- 4x Mounting Brackets with Screws
- 2x HDMI Jack Screws

**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 DVIgear immediately. Please have the Model Number, Serial Number, and Invoice Number available for reference when you call.

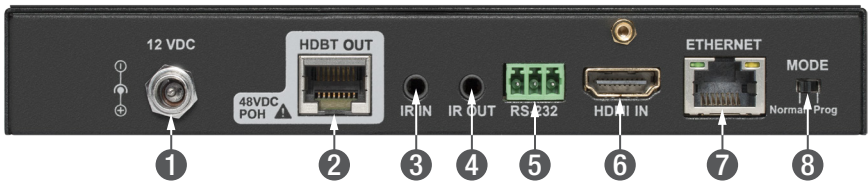
## 4.0 CONNECTING THE HARDWARE

Please study the images below and become familiar with the signal inputs, outputs, and the location of the power connector.



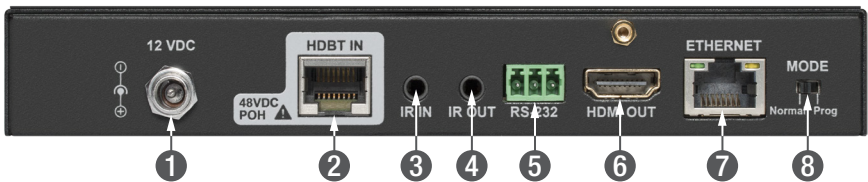
- 1 **HDCP LED:** ON indicates HDCP encrypted signal is present, blinking indicates non-encrypted signal, OFF indicates no signal.
- 2 **Link LED:** monitors the link status between the HDBaseT transmitter and receiver. When a proper connection is established, the LEDs on both Tx and Rx are ON, otherwise both LEDs are OFF.
- 3 **Status LED:** monitors internal HDBaseT activity, blinking when normal.
- 4 **Power LED:** ON when an active power source is applied.

**Note:** The configuration of the front panel LEDs on the DVI-7520 and DVI-7525 are identical.



Transmitter Unit Rear View

- 1 **12 VDC Power Input:** screw locking female connector for AC Power Adapter.
- 2 **HDBaseT Output:** RJ-45 female connector. *See warning below.*
- 3 **IR IN:** connect IR receiver to send IR signal over CAT-X cable to Rx Unit.
- 4 **IR OUT:** connect IR transmitter to accept IR signal from Rx Unit and output to a source device.
- 5 **RS-232:** 3-pin female Phoenix Connector for serial data pass-through.
- 6 **HDMI Input:** female connector; connect to an HDMI or DVI source.
- 7 **Ethernet:** RJ-45 female connector (only on DVI-7525).
- 8 **Service Switch:** reserved for qualified technical personnel



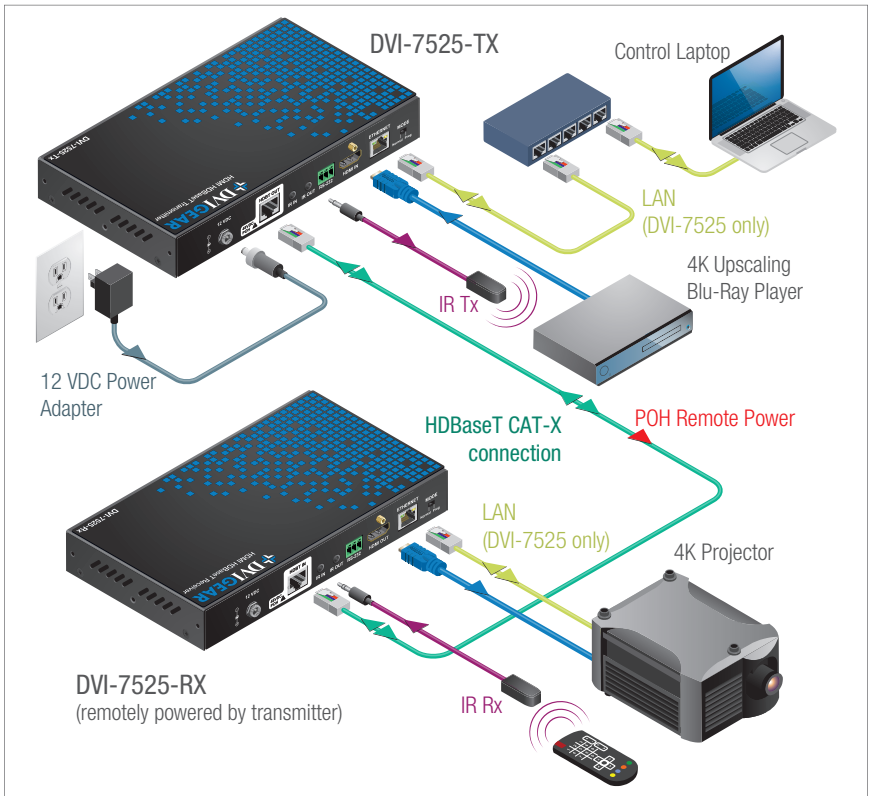
Receiver Unit Rear View

- 1 **12 VDC Power Input:** screw locking female connector for AC Power Adapter.
- 2 **HDBaseT Input:** RJ-45 female connector. *See warning below.*
- 3 **IR IN:** connect IR receiver to send IR signal over CAT-X cable to Tx Unit.
- 4 **IR OUT:** connect IR transmitter to accept IR signal from Tx Unit and output to display device.
- 5 **RS-232:** 3-pin female Phoenix Connector for serial data pass-through.
- 6 **HDMI Output:** female connector; connect to an HDMI or DVI display.
- 7 **Ethernet:** RJ-45 female connector (only on DVI-7525).
- 8 **Service Switch:** reserved for qualified technical personnel.

**WARNING:** *The HDBaseT ports are designed to connect to compatible DVIgear products only. Do not connect any device to the HDBaseT connector unless you are sure it is compatible. Connecting incompatible devices with similar connectors may cause harm to the devices.*

*It is typical for HDBaseT receiver units to operate at higher temperatures than transmitter units. In order to ensure proper operation and long term reliability, care must be taken to ensure airflow is not restricted in any way.*





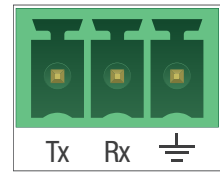
This HDBaseT extension system consists of a Transmitter unit (DVI-7520-TX or DVI-7525-TX) and a Receiver unit (DVI-7520-RX or DVI-7525-RX). To connect this system, first remove power from all devices (installing devices while powered may cause damage). Connect a CAT-X twisted pair cable to the HDBT OUT on the transmitter unit. Connect the other end of the CAT-X twisted pair cable to the HDBT IN on the receiver unit. Connect an HDMI or DVI signal source to the HDMI IN port on the transmitter unit. Connect an HDMI or DVI display device (e.g. projector) to the HDMI OUT on the receiver unit.

**Note:** Proper operation of this product depends on the use of high quality cables. CAT6A S/FTP (550 MHz) 23AWG twisted pair cable is recommended to maximize extension distances.

#### 4.1 Bidirectional Signals: RS-232, IR, and Ethernet

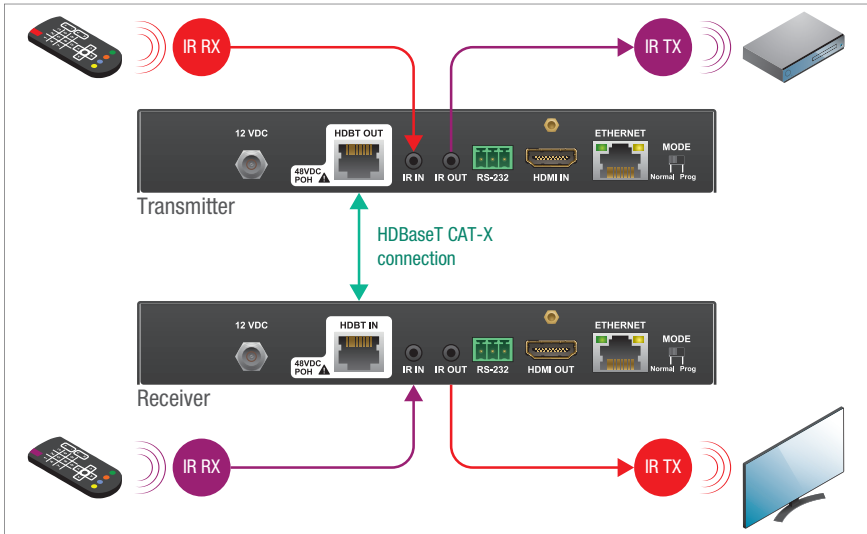
In these extenders, the video, embedded audio and power travel in one direction, from the transmitter to the receiver unit. However, the RS-232, IR, and Ethernet (DVI-7525 only) pass-through signals are bidirectional. If used, they require connections on both sides of the extension system. To use these bidirectional

pass-through data lines, connect desired devices to the transmitter and receiver units. For RS-232, use serial cables and the supplied 3-pin Phoenix Connectors to connect a controller unit (e.g. touch panel) and serial controlled device (e.g. projector) to the RS-232 ports on the Tx and Rx. Please see the drawing of the female Phoenix Connector on the unit for RS-232 pin definitions.



The right pin is the Ground when facing the unit.

These extenders support bidirectional IR using two independent IR signals. An IR signal may be extended over the CAT-X cable from the Tx Unit to the Rx Unit by doing the following. Connect the supplied IR Receiver to the IR IN port of the Tx Unit. Next, connect the supplied IR Transmitter to the IR OUT port on the Rx Unit. To send an IR signal in the opposite direction (i.e. from Rx to Tx), simply connect the IR Receiver to the IR IN on the Rx Unit and the IR Transmitter to the IR OUT on the Tx Unit.



The DVI-7525 extender pair supports extension of 100BaseT Ethernet over the CAT-X cable. Take care to only connect compatible devices to the ports marked “Ethernet” on the rear of the DVI-7525 extender pair. Connecting Ethernet devices to the HDBaseT ports or connecting HDBaseT devices to the Ethernet ports may result in damage. Please see the warning at the bottom of page 6.

## 4.2 Power Connections and POH Remote Power

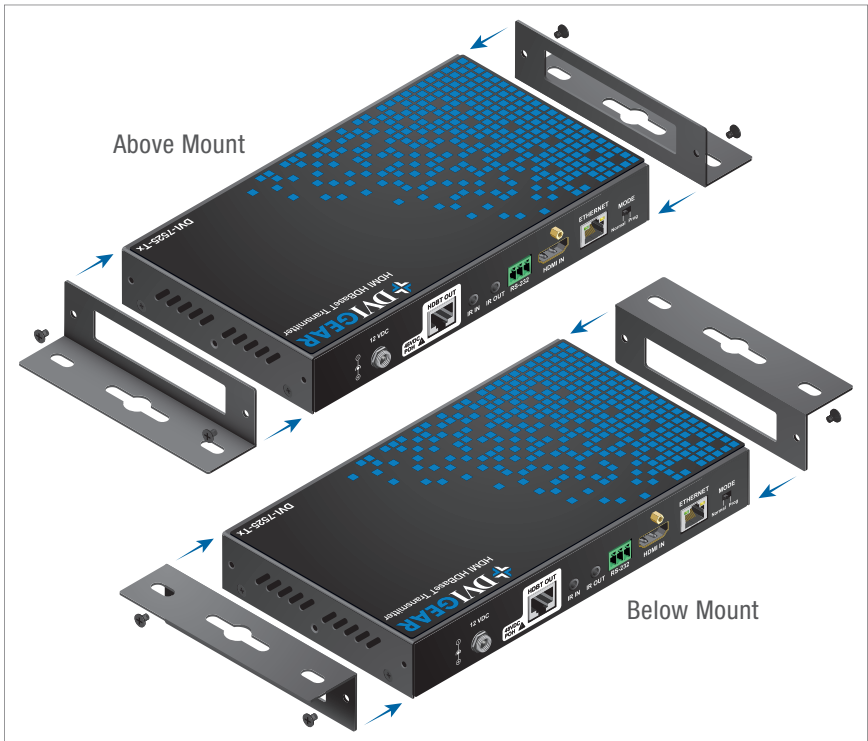
The DVI-7520 and DVI-7525 are fully compliant with the Power over HDBaseT (POH) component of the HDBaseT standard. During POH operation, the transmitter unit functions as a PSE (Power Sourcing Equipment) device that

sends 48 VDC power over the CAT-X cable to the receiver unit, which acts as a PD (Powered Device). This feature eliminates the need for an external power supply at the receiver. To maintain compatibility and interoperability with other POH system components, these products use a sophisticated handshake feature that prevents power exchange with non-standard (incompatible) devices.

For POH operation, connect the supplied AC Power Adapter to the 12 VDC Power Input on the transmitter unit and then to a working AC power source. Once the transmitter unit detects the POH compatible receiver unit, it will provide power over the CAT-X cable. If non-POH operation is desired, simply connect the optional AC Power Adapter to the 12 VDC Power Input on the receiver unit. In this case, the transmitter unit no longer supplies power to the receiver unit.

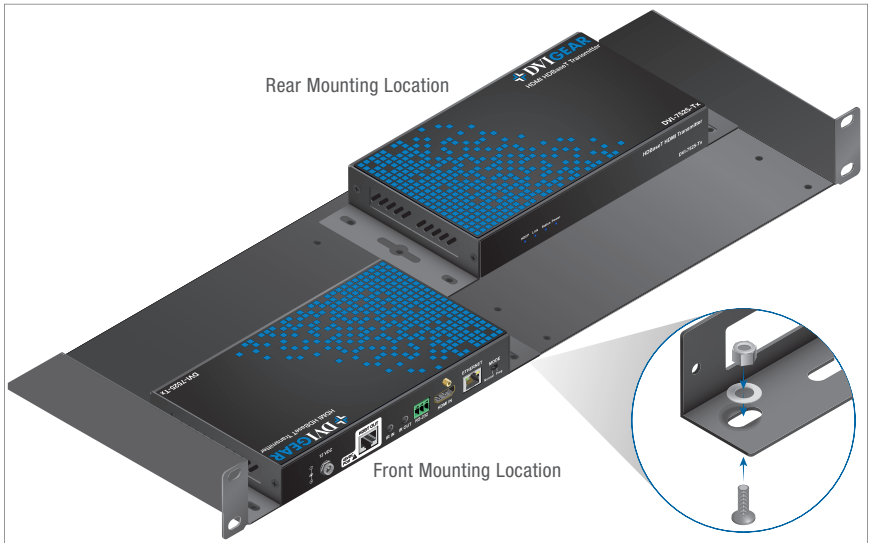
**Note:** This product utilizes a locking DC power connector to prevent the power cable from disengaging. Insert the DC plug into the power input jack on the rear panel, then gently rotate the locking collar in the clockwise direction until it is secure. To remove the power connection, simply unscrew the locking collar counter-clockwise and then extract the power cable.

### 4.3 Mounting Hardware



Each transmitter and receiver unit comes with a pair of mounting brackets to facilitate installation on furniture or other surfaces. These mounting brackets are reversible, so the unit may be installed above or below the mounting surface. To affix each bracket to an extender unit, place the side of the bracket with the large rectangular ventilation opening against the side of the unit. Next, use the supplied screws to secure the bracket to the two mounting holes located on the each side of the extender units. These mounting brackets may also be used to attach the extender units to the optional rack mount kit (DVI Gear p.n. DVI-7520-RMK).

To do this, first attach the mounting brackets to the units using the instructions above. Next, place the units into the desired location on the DVI-7520-RMK. Note that there are three (3) locations available: Front, Middle, and Rear. Two units may be mounted side-by-side and either forward-facing or rear-facing. Finally, use the screws, washers, and nuts included with the DVI-7520-RMK to secure the units to the rack mount kit. See the drawing below.





## 5.0 OPERATING THE UNIT

Once all connections have been made and power has been applied to all components, this extension system should function immediately. This product has no adjustments and does not require configuration.

## 6.0 TROUBLESHOOTING

**WARNING:** *The HDBaseT ports are designed to connect to compatible DVI Gear products only. Do not connect any device to the HDBaseT port of this product unless you are sure it is compatible. Connecting incompatible devices may cause harm to the devices.*

*It is typical for HDBaseT receiver units to operate at higher temperatures than transmitter units. In order to ensure proper operation and long term reliability, care must be taken to ensure airflow is not restricted in any way.*

If this unit does not appear to be functioning, make certain the 12 VDC power adapter is connected securely to a functioning AC power outlet and to the Tx unit. Check that the Power LEDs on both Tx and Rx units are ON continuously.

If the system fails to display a signal, power OFF all devices and confirm that the following connections are properly installed: the Tx unit must be connected to the source using the shortest possible high quality cable. The Rx unit must be connected to the display using the shortest possible high quality cable. Ensure that the the CAT-X cable between the Tx and Rx is of the highest quality possible and within the allowable length noted on page 4. Verify that none of the cables used show signs of damage and are not forced to bend beyond their minimum bend radius.

If the IR connection is not functioning, verify that the IR Transmitter and IR Receiver are connected in the correct configuration according to section 4.1 and that all connectors are securely seated.

Once all connections have been verified, power the display device on *first* and *then* the signal source. If the system still fails to display an image, check to ensure that the HDMI or DVI signal source is compatible with the display by making a direct connection between the two so as to bypass the HDBaseT extender pair. If there is still no image, then there is a compatibility issue between the source and the display that must be resolved.

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@dvi-gear.com](mailto:support@dvi-gear.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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