DVI EXTENDER

Fiber Optic and Twisted Pair DVI Signal Extender for Distances up to 325 feet (100 meters)

DVIEXTFIBLC

Instruction Guide

* Actual product may vary from photo

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FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Introduction

Thank you for purchasing a StarTech.com DVI Extender. Using industry-standard fiber optic and Category 5 UTP cables, you can operate your DVI display at up to 325 feet (100 meters) away from your computer system or other DVI signal source while maintaining excellent image quality. Under specific circumstances, you may use the DVI Extender for distances up to 1640 feet (500 meters).

Features

- Pure hardware design; no software or drivers required
- Operate a DVI-compliant display from up to 325 feet (100 meters) away from your location
- Supports a maximum resolution of 1600x1200 pixels in UXGA mode
- The DVI Extender is designed to match the capabilities of your display

Before You Begin

NOTE: Use caution when handling fiber optic cable to avoid any damage to the cable or connectors that might result in impaired operation.

System Requirements

- DVI compatible computer or other DVI video source
- DVI display
- Four strands of multimode fiber-optic cable terminated at each end with duplex LC connectors (if using surface cabling),

  OR

- Four strands of multimode fiber-optic cabling terminated at each end in duplex LC information outlets and four multimode fiber-optic patch cables with duplex LC connectors (if using premise cabling)
- Category 5 Unshielded Twisted Pair (UTP) cable with RJ45 connectors (if using surface cabling),

  OR

- Category 5 UTP cabling with two information outlets and two Category 5 UTP patch cords with RJ45 connectors (if using premises cabling)

NOTE: The maximum length of the Category 5 UTP cable, including patch cords (if used), must not exceed 325 feet (100 meters).

NOTE: The maximum length of the fiber-optic cable, including patch cords (if used), must not exceed 1640 feet (500 meters).

Do you need additional cables? Visit www.startech.com to find what you need and the name of your local StarTech.com dealer.

Contents

- 1 x DVI Extender User Guide
- 1 x Local Unit
- 1 x Remote Unit
- 1 x AC Power Adapter
- 2 x DVI M-M cable

Connecting Your DVI Extender

The DVI Extender is composed of two individual units: the Local Unit and the Remote Unit. Video signals in DVI format are transmitted from the Local Unit to the Remote Unit over four strands of multimode fiber cable. Information regarding the capabilities of the display (such as its native resolution and refresh rate) are conveyed from the Remote Unit to the Local Unit over a Category 5 UTP cable in EDID/DDC format.

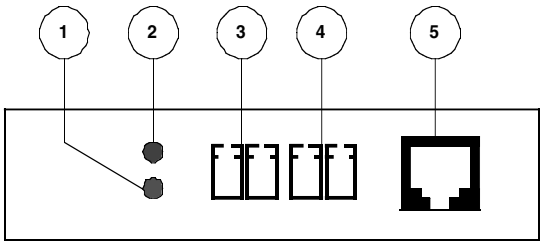
The Local Unit

The Local Unit connects to the video source (usually a computer) using a conventional DVI cable. Depending on your needs, it also connects to a power outlet through an AC power adapter.

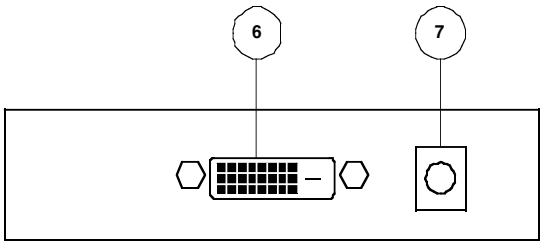
The Remote Unit

The Remote Unit connects to the video display using a conventional DVI cable. Depending on your needs, it also connects to a power outlet through an AC power adapter.

Front View



Rear View



Summary of Connectors and Indicators for Both Local and Remote Units

1	Status LED	Lit (green) when power is applied to the unit
2	Power LED	Lit (red) when power is applied to the unit
3	Link 1 Port	Duplex LC receptacle for connection to fiber network cable
4	Link 2 Port	Duplex LC receptacle for connection to fiber network cable
5	DDC Port	RJ-45 receptacle for connection to Category 5 network cable
6	DVI Converter	DVI-D receptacle for connection to computer or other DVI video source
7	Power Connector	Receptacle for connection of 12v DC power adapter

Network Cabling

The Local Unit and Remote Unit are interconnected by two sets of cables that perform separate functions:

• Digital video signals are transmitted from the Local Unit to the Remote Unit over four strands of multimode fiber cable. The Digital Visual Interface (DVI) is composed of four separate video channels, namely Red, Green, Blue and Clock. Each channel is transmitted over a separate strand of fiber.

• In many applications, the source of video information (computer) needs to know the capabilities of the display device to which it is connected. The most significant of these parameters are the maximum resolution and maximum refresh rate of the screen. Exceeding these values can result in a blank screen or even physical damage. This information is stored in the display in a format known as EDID and is provided to the computer using a protocol called DDC. This EDID/DDC information is obtained from the display by the Remote Unit and transmitted to the Local Unit over a Category 5 UTP cable. The information is then relayed to the computer over the DVI cable.

• In certain applications, the EDID/DDC function is not required. In this situation, the DDC cable can be omitted from the configuration and the system can be operated at the maximum range of the fiber connection – 1640 feet (500 meters).

Preparing Your Site

Before you can install the DVI Extender, you need to prepare your site.

1: Determine where the computer is to be located and set up the computer.

2: Determine where you want to locate the display

3: Decide whether the power adapter is to be connected to the Local Unit or the Remote Unit.

4a: If you are using surface cabling, ensure you have enough multimode fiber and Category 5 UTP cabling to connect the two locations.

OR

4b: If you are using premises cabling, ensure multimode fiber and Category 5 UTP cabling is installed between the two locations, with duplex LC and RJ45 information outlets located near both the computer and the display.

Installing the Local Unit

1: Place the Local Unit near the computer.

2: Switch off the computer.

3: Connect the DVI output of the computer to the DVI port of the Local Unit using the DVI M-M cable provided.

Installing the Remote Unit

1: Place the Remote Unit near the DVI display.

2: Switch off the display.

3: Connect the DVI port of the Remote Unit to the DVI input of the display using the DVI M-M cable provided.

Connecting the Local Unit to the Remote Unit

NOTE: To ensure proper operation, we recommend that only Category 5 or better Unshielded Twisted Pair (UTP) cabling be used to connect the Local Unit to the Remote Unit. The UTP cabling must have a straight-through conductor configuration with no crossovers, and must be terminated with 8-conductor RJ45 connectors at both ends. Category 5 UTP cable is the typical data communications cable installed in most commericial and in some residential locations.

With Surface Cabling

1: Remove the dust covers from the Link ports of the Local Unit and the Remote Unit.

2: Plug one end of the first duplex multimode cable (not included) into the Link 1 port on the Local Unit. Plug the other end of this cable into the Link 1 port on the Remote Unit.

3: Plug one end of the second duplex multimode cable (not included) into the Link 2 port on the Local Unit. Plug the other end of this cable into the Link 2 port on the Remote Unit.

4: Plug one end of the Category 5 UTP cabling (not included) into the DDC port on the Local Unit. Plug the other end of the Category 5 UTP cabling into the DDC port on the Remote Unit.

With Premises Cabling

1: Remove the dust covers from the Link ports of the Local Unit and the Remote Unit.

2: Plug one end of the first duplex multimode patch cord (not included) into the Link 1 port on the Local Unit. Plug the other end of this cable into the first LC receptacle on the adjacent information outlet.

3: Plug one end of the second duplex multimode patch cord (not included) into the Link 2 port on the Local Unit. Plug the other end of this cable into the second LC receptacle on the adjacent information outlet.

4: Plug one end of a Category 5 patch cord (not included) into the DDC port on the Local Unit. Plug the other end of the patch cord into the RJ45 receptacle on the adjacent information outlet.

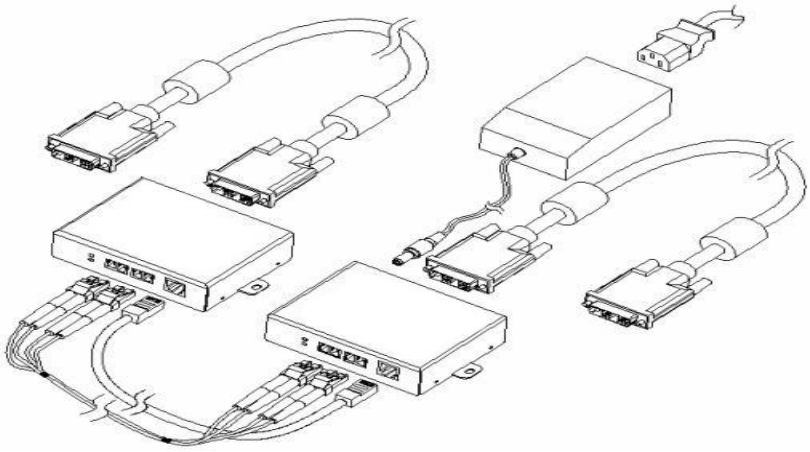
5: Plug one end of the third duplex multimode patch cord (not included) into the Link 1 port on the Remote Unit. Plug the other end of this cable into the first LC receptacle on the adjacent information outlet.

6: Plug one end of the fourth duplex multimode patch cord (not included) into the Link 2 port on the Remote Unit. Plug the other end of this cable into the second LC receptacle on the adjacent information outlet.

7: Plug one end of the second Category 5 patch cord (not included) into the DDC port on the Remote Unit. Plug the other end of this cord into the RJ45 receptacle on the adjacent information outlet.

NOTE: The maximum length of the Category 5 UTP cable, including patch cords, must not exceed 325 feet (100 meters).

NOTE: It is essential that the fiber connections are not crossed. The left channel of Link 1 on the Local Unit must be connected to the left channel of Link 1 on the Remote Unit, and so on (see diagram below).



Completing the Installation

1: Connect the AC power adapter to either the Local Unit or Remote Unit as convenient. Connect the AC cord to an available AC outlet.

2: Switch on the computer and DVI display.

3: Check that the Power LEDs on the Local Unit and Remote Unit are both on.

4: Check that the Status LEDs on the Local Unit and Remote Unit are both on.

Troubleshooting

The following section provides troubleshooting help. The topics are arranged in the order in which they should be executed in most situations. If you are unable to resolve the problem after following these instructions, please contact technical support for further assistance (see page 9).

Symptom: All LEDs on Local Unit and Remote Unit are off.
Cause: The DVI Extender is not receiving power from the adapter.
Remedy: (1) Ensure that the power adapter is connected to the Local Unit or Remote Unit.
(2) Check that the adapter is connected to a live source of electrical power.

Symptom: Power LED on one unit is on, power LED on other unit is off.
Cause: There is no DDC connection between the Local Unit and Remote Unit.
Remedy: (1) Ensure that a Category 5 UTP cable with straight-through conductors is connected between the Local Unit and Remote Unit.
(2) Connect a short Category 5 patch cord between the Local Unit and Remote Unit. Recheck the operation of the system.

Symptom: Status LED on Remote Unit is off.
Cause: (a) There is no fiber connection between the Local Unit and Remote Unit.
(b) There is no active video source connected to the Local Unit.
Remedy: (1) Ensure that multimode fiber cables are connected between the Local Unit and Remote Unit.
(2) Ensure that each port on the Local Unit is connected to the corresponding port on the Remote Unit (i.e. Link 1 to Link 1, Link 2 to Link 2).
(3) Connect two short multimode fiber patch cords between the Local Unit and Remote Unit. Recheck the operation of the system.
(4) Ensure that a DVI video source is properly connected to the Local Unit.
(5) Ensure that the DVI video source is powered on and is configured for a DVI display. Connect the display directly to the video source to confirm its operation.

Symptom: Display screen is black
Cause: The display is not receiving a signal from the DVI Extender.
Remedy: (1) Check that power is applied to the display.
(2) Check that the display is connected to the Remote Unit with a DVI cable.
(3) Ensure that each port on the Local Unit is connected to the corresponding port on the Remote Unit (i.e. Link 1 to Link 1, Link 2 to Link 2).
(4) Power the display OFF then ON again.
(5) Do not remove the DVI cable from the Local Unit during normal operation.

Symptom: Display is distorted or noisy.
Cause: The screen resolution is not set properly.
Remedy: (1) On the computer or other device to which the Local Unit is connected, adjust the output resolution to UXGA (1600x1200) at 60Hz refresh rate or less.
(2) Reset the system.

Symptom: The display does not operate after computer wakes up from Standby Mode.
Remedy: Power the display OFF and ON again.

Symptom: Display switches off and on intermittently.
Remedy: Power the display OFF and ON again.

Specifications

Range (over Category 5 UTP cable)	325 feet (100 meters)
Range (over multimode fiber)	1640 feet (500 meters)
Fiber Cable Compatibility	62.5/125_m or 50/125_M multimode
DVI Cable	6.6 feet (2 meters)
Maximum	UXGA: 1600x1200 @ 60Hz Refresh
DVI Bandwidth	1.65 Gb/s per Channel
Power Adapter	12v, 3A, Center Positive
Local Unit Connector (upstream)	1 x DVI-D Receptacle
Local Unit Connector (downstream)	1 x RJ-45 Receptacle 2 x Duplex LC Receptacle
Remote Unit Connector (upstream)	1 x RJ-45 Receptacle 2 x Duplex LC Receptacle
Remote Unit Connector (downstream)	1 x DVI-D Receptacle
Local/Remote Unit Dimensions (each)	4.2″ x 3.2″ x 1.0″ 107mm x 80mm x 26mm
Local/Remote Unit Weight (each)	0.6 lb. (0.3 kg)
Total System Shipping Weight	2.4 lb. (1.1 kg)
Temperature Range	39°F - 104°F (4°C - 40°C)
Regulatory Testing	FCC, CE Class B

Technical Support

The following technical resources are available for this StarTech.com product:

On-line help:

We are constantly adding new information to the *Tech Support* section of our web site. To access this page, click the *Tech Support* link on our homepage, **www.startech.com**. In the tech support section there are a number of options that can provide assistance with this product.

Knowledge Base - This tool allows you to search for answers to common issues using key words that describe the product and your issue.

FAQ - This tool provides quick answers to the top questions asked by our customers.

Downloads - This selection takes you to our driver download page where you can find the latest drivers for this product.

Call StarTech.com tech support for help:
USA/Canada: 1-800-265-1844
UK/Ireland/Europe: 00-800-7827-8324
Support hours: Monday to Friday 9:00AM to 5:00PM EST (except holidays)

Warranty Information

This product is backed by a one-year warranty. In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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