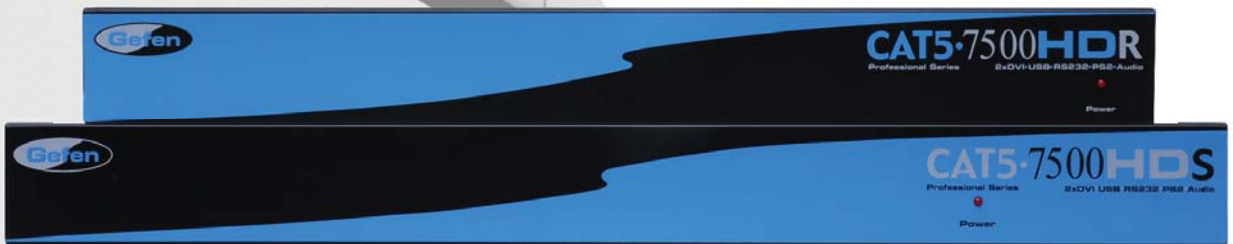


Gefen

CAT5•7500HD

EXT-CAT5-7500HD
User Manual



www.gefen.com

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INTRODUCTION

Thank you for purchasing the new extend•it CAT5•7500HD series by Gefen, Inc.

The CAT5•7500HD by Gefen allows users the benefits of extending USB, audio in, audio out, PS/2, RS-232, and video signals beyond the desktop. In a growing number of applications, broadcast stations and production facilities there is a need to locate a computer remotely, from the keyboard, mouse, and video monitor. A CPU may need to be shared between several users or moved to another room because of annoying fan noise.

The CAT5•7500HD series can be used to extend computers with noisy fans, printers, hard drives, scanners, cameras, keyboards, mouse, and any other USB-type peripherals. The CAT5•7500HD has the potential to cover the distance of 200 feet over industry standard Category 5 (CAT-5) cables. One can connect additional CAT5•7500HD series to the same computer, allowing access to the same computer from other locations up to 200 feet apart.

Lengths and Distances Supported:

| | |
|---------------------|------------------|
| Up to 200 Feet..... | 1280x1024 @ 60Hz |
| Up to 150 Feet..... | 1920x1200 @ 60Hz |

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING THE CAT5•7500HD SYSTEM

- Industry standard Category-5 (CAT-5) cables are used to operate CAT5•7500HD systems.
- The CAT5•7500HD units are housed in a metal box for better RF shielding.

HOW IT WORKS

CONTENTS

The CAT5•7500HD system consists of:

- (1) CAT5•7500HDS (Sender unit)
- (1) CAT5•7500HDR (Receiver unit)
- (2) 5 VDC power supply
- (2) DVI cables (6FT)
- (1) USB cable (6FT)
- (2) PS/2 cables (6FT)
- (1) Audio cable (6FT)
- (1) Rack ears
- (1) User Manual

HOW IT WORKS

In its most basic application, the CAT5•7500HDS Sender unit resides next to the computer. Supplied with the system, DVI cables, PS/2 keyboard, PS/2 mouse, audio, and USB cables, they connect the computer to the CAT5•7500HDS Sender unit.

The CAT5•7500HDR Receiver unit is placed next to the monitors, keyboard, mouse, and USB peripherals at the remote location. The monitor and keyboard are connected to the CAT5•7500HDR, similar to the way they are connected to the back of the computer (PC or Macintosh).

CAT5•7500HDS FRONT PANEL DESCRIPTIONS



|
1

Front Panel Function Descriptions

- 1 **Power On Indication** - Indicates that the unit is on and plugged in.

CAT5•7500HDR FRONT PANEL LAYOUT

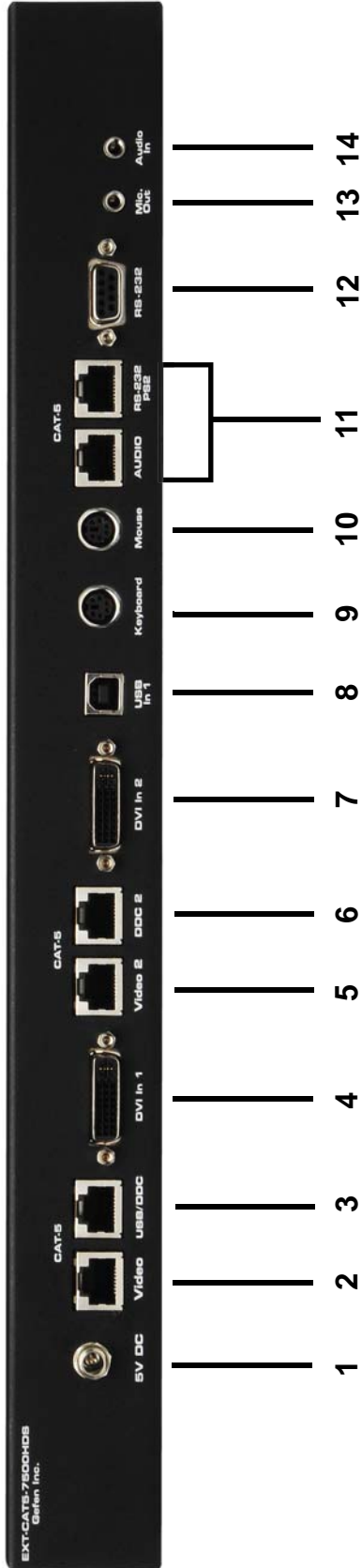


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Front Panel Function Descriptions

- 1 **POWER ON INDICATOR** - Indicates that the unit is on and plugged in.

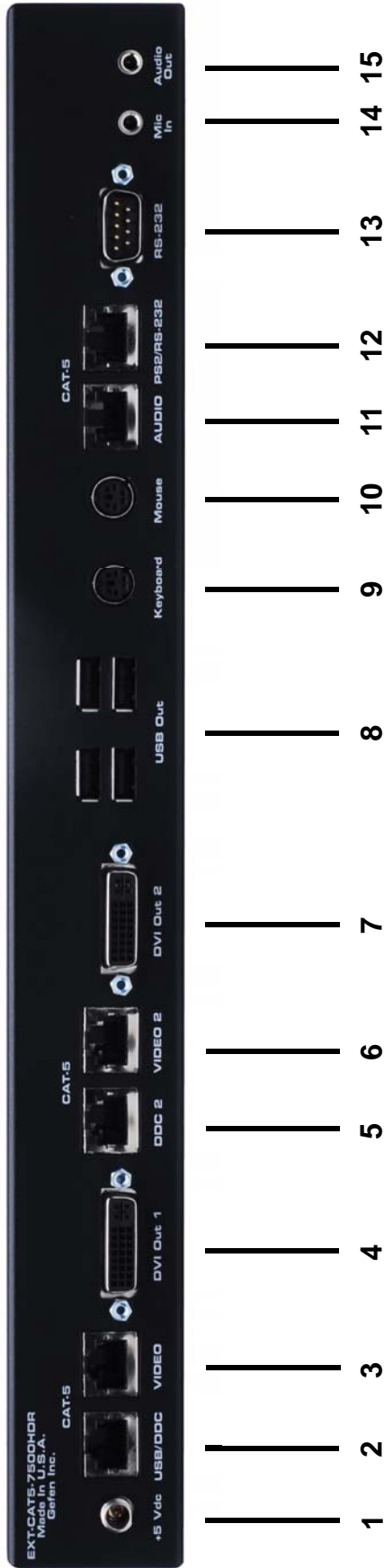
CAT5•7500HDS BACK PANEL LAYOUT



CAT5•7500HDS BACK PANEL LAYOUT

- 1 **POWER** - 5V DC external power supply plugs in here with a locking power connector. When attaching the power tip, gently screw it into the threaded socket until it refuses to turn any further. Do not apply force when turning the connector.
- 2 **CAT5 Video 1** - RJ-45 input extends DVI input 1 with CAT-5 cable
- 3 **CAT5 USB / DDC1** - RJ-45 input extends USB and DDC1 signals with CAT-5 cable
- 4 **DVI IN 1** - DVI Input connects to your computer with the supplied DVI cable
- 5 **CAT5 Video 2** - RJ-45 input extends DVI input 2 with CAT-5 cable
- 6 **CAT5 USB / DDC2** - RJ-45 input extends USB and DDC2 signals with CAT-5 cable
- 7 **DVI IN 2** - DVI Input connects to your computer with the supplied DVI cable
- 8 **USB IN** - USB Input from computer
- 9 **KEYBOARD** - Mini-DIN PS/2 keyboard input from computer
- 10 **MOUSE** - PS2 mouse input from computer
- 11 **AUDIO / PS2 and RS-232** - RJ-45 input extends audio as well as RS-232 and PS2 signals with a set of two (2) CAT-5 cables here.
- 12 **RS-232 IN** - RS-232 DB9 serial input from computer
- 13 **MIC OUT** - 3.5mm mini-Stereo input jack connects to computers' mic input
- 14 **AUDIO IN** - 3.5mm mini-Stereo input jack connects to computers' audio output

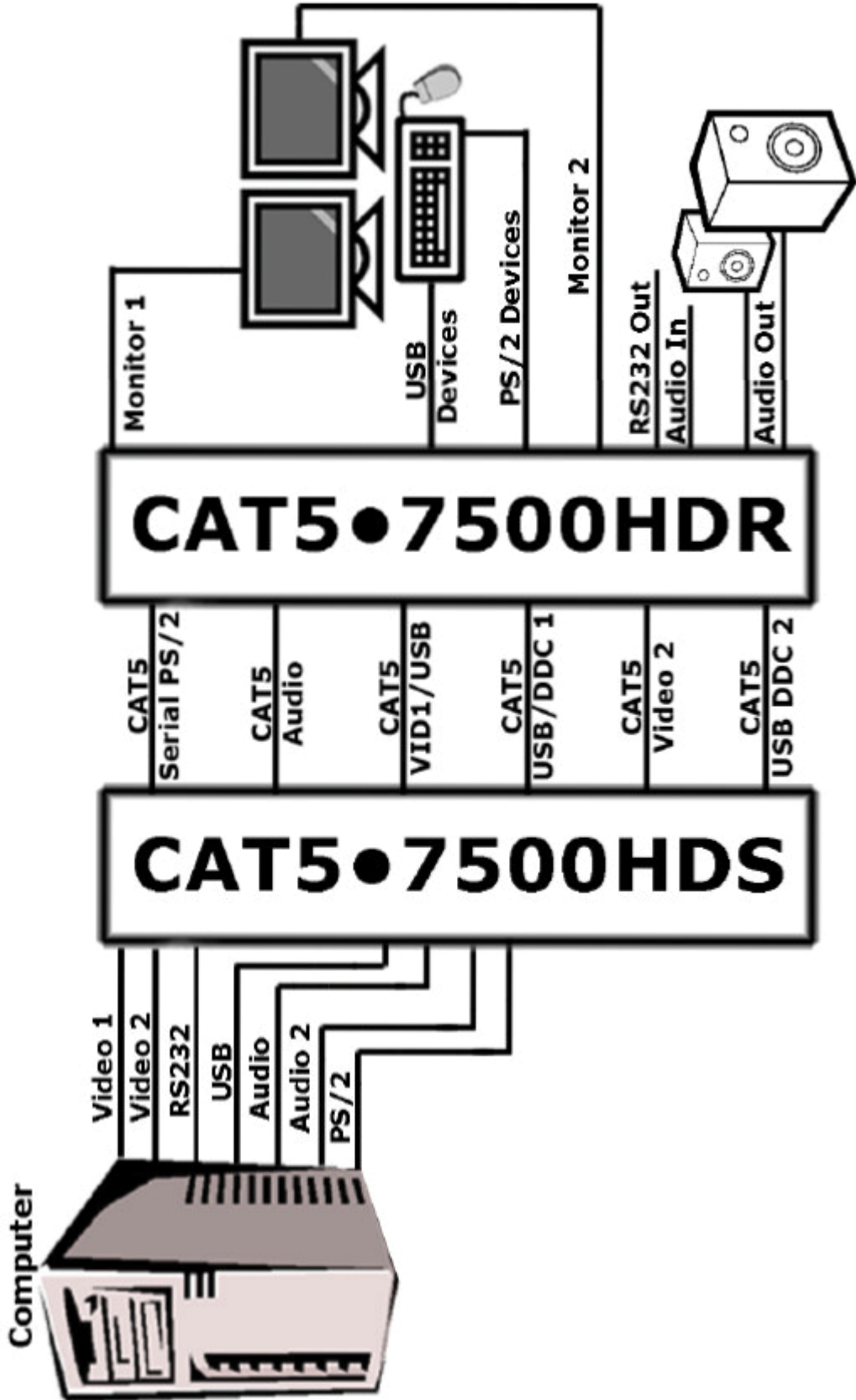
CAT5•7500HDR BACK PANEL LAYOUT



CAT5•7500HDR BACK PANEL FUNCTIONS

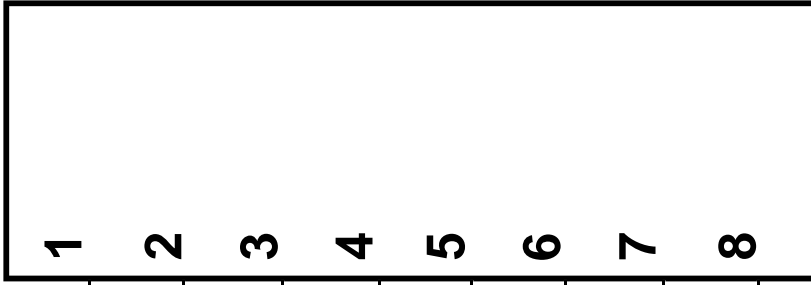
- 1 **POWER** - 5V DC external power supply plugs in here with a locking power connector. When attaching the power tip, gently screw it into the threaded socket until it refuses to turn any further. Do not apply force when turning the connector.
- 2 **CAT5 USB / DDC1** - RJ-45 input extends USB and DDC1 signals with CAT-5 cable
- 3 **CAT5 Video 1** - RJ-45 input extends video input 1 with CAT-5 cable
- 4 **DVI OUT 1** - DVI output connects to the monitor 1 for local video
- 5 **CAT5 USB / DDC2** - RJ-45 input extends USB and DDC2 signals with CAT-5 cable
- 6 **CAT5 Video 2** - RJ-45 input extends video input 2 with CAT-5 cable
- 7 **DVI OUT 2** - DVI output connects to the monitor 2 for local video
- 8 **USB OUTS - (4)** USB Outputs to Extended Devices / Peripherals
- 9 **KEYBOARD** - PS/2 mini-DIN connects to PS/2 keyboard
- 10 **MOUSE** - PS/2 mini-DIN connects to PS/2 mouse
- 11 **AUDIO** - RJ-45 input connects CAT-5 cable to receive extended audio MIC IN and AUDIO OUT.
- 12 **SERIAL & PS/2** - RJ-45 input connects CAT-5 cable to receive extended RS-232 and PS/2 signals
- 13 **RS-232** - DB-9 connector connects to RS-232 devices
- 14 **MIC IN** - 3.5mm mini-Stereo jack connects to microphone
- 15 **AUDIO OUT** - 3.5mm mini-Stereo audio jack connects to speakers

CAT5•7500HD WIRING DIAGRAM



CAT5 LINK CABLE - WIRING DIAGRAM

RJ-45 Jack



White/Orange

Orange

White/Green

Blue

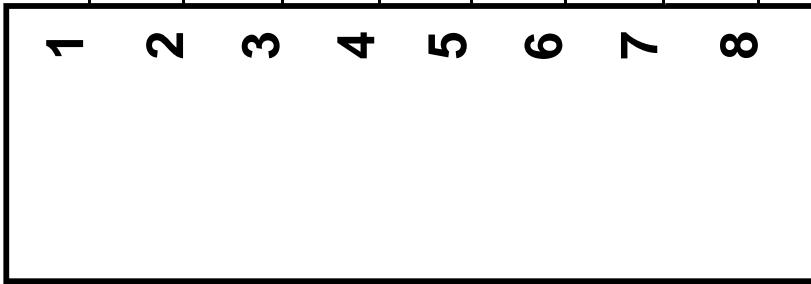
White/Blue

Green

White/Brown

Brown

RJ-45 Jack



1

2

3

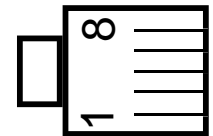
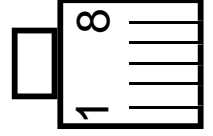
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8



SERVICE SWITCH USAGE GUIDE

Gefen CAT5 HD products (Sender and Receiver) both contain a pair of service switches (also called dip switches) located underneath the unit. These service switches are used to select from sets of configurations that will equalize the signal to best match the conditions in your setup. For the CAT5•7500HD, there are 1 set of switches for each monitor under both the Sender and Receiver units. The switches are hidden beneath black stickers. Each bank of dip switches have 4 switches. Switches 3 and 4 are not used. (*Note: Adjustments should be done with sources and display on.)

| Sender Dip Switch Settings | | |
|-----------------------------------|----------|----------|
| Setting | Switch 1 | Switch 2 |
| No Boost | OFF | ON |
| Normal Boost (Default) | OFF | OFF |
| Strong Boost | ON | OFF |
| Undefined | ON | ON |

| Receiver Dip Switch Settings | | |
|-------------------------------------|----------|----------|
| Setting | Switch 1 | Switch 2 |
| No EQ (Default) | OFF | OFF |
| EQ Setting 2 | ON | OFF |
| EQ Setting 3 | OFF | ON |
| Maximum EQ | ON | ON |

Adjustment Guidelines:

- 1) Strong boost should not be used on stranded cables. Strong boosting will cause pixels or no picture on these cables.
- 2) Using the wrong settings will not damage the units; it will either produce no image or a noisy image.
- 3) To eliminate the possibility of cross talk and interference, cables must be terminated with 568B scheduling. (See page 9 for details)

What kind of CAT-5e cable should I be using?

Solid core CAT-5e cable rated at 350 Mhz and terminated in 568a or 568b is the minimum requirement. For resolutions greater than 1280x1024 or 1080i, Gefen recommends solid CAT-6 cables.

I'm getting no video on the screens, what can I check?

First thing to check is make sure that the video CAT5 is linked to the other video CAT5 port and the same with the DDC ports. Test to make sure the units are working with short CAT-5e cables 15-20 feet. You can also make sure you have the correct boost setting configured (please refer to page 10).

I'm getting no video on the screens using ADC to DVI adapters, what is wrong?

ADC to DVI adapters remove the necessary 5V line that the extenders require on the input to operate. To enable the 5V you will need to open up the Sender unit. Next to each DVI input connector will be a jumper that needs to be shorted to enable 5V to the input. This should only be enabled when using a ADC to DVI Adapter otherwise damage to your video card may result.

How can I fix a flickering picture?

Flickering or a blinking image is the result of a loss of sync between the display and the source. Try lowering the resolution, if this helps, the CAT-5 cables you are using are unable to handle the bandwidth of the higher resolution and thus you are losing sync. Try a shielded CAT-6 cable on the video line to reduce interference, which can be caused by EMI. A shielded CAT-6 with metal RJ-45 connectors with the drain wire soldered to the connectors will resolve an EMI issue. You can also try adjusting the service switches. Page 10 contains a guide to setting the service switches.

Why is there a green or pink tint to my picture?

A tint of green or pink in the picture is a result of incorrect colorspace being transmitted. This can be resolved by recycling power on your devices including the extender. If this does not help, the DDC data containing the colorspace is not being transmitted correctly due to loss in the CAT5 cable, try replacing the DDC cable.

Why is the USB dropping out every so often?

Drop outs occur on occasion but if it is happening quite often, then interference along the DDC line that is also transmitting USB is causing the problem. Try using a shielded CAT-5e cable on this line instead.

I can't seem to get my RS-232 devices to detect and connect, what's wrong?

The CAT5-7500HD system only extends the Tx and Rx lines of RS-232. If you need full RS-232 extension of every line, you will need the standalone RS-232 Extender units.

Can I run the CAT-5 cable through a patch bay or punchdown block?

No, the signal will not transmit reliably.

CAT-5

Category 5 cable, commonly known as Cat 5, is an unshielded twisted pair type cable designed for high signal integrity. The actual standard defines specific electrical properties of the wire, but it is most commonly known as being rated for its Ethernet capability of 100 Mbit/s. Its specific standard designation is EIA/TIA-568. Cat 5 cable typically has three twists per inch of each twisted pair of 24 gauge copper wires within the cable.

CAT-5e

Similar to Cat 5 cable, but is enhanced to support speeds of up to 1000 megabits per second.

DDC

Short form for Display Data Channel, a VESA standard for communication between a monitor and a video adapter. Using DDC, a monitor can inform the video card about its properties, such as maximum resolution and color depth. The video card can then use this information to ensure that the user is presented with valid options for configuring the display.

DDWG

Digital Display Working Group DDWG are the creators of the DVI specification.

DVI

Digital Visual Interface. Connection standard developed by Intel for connecting computers to digital monitors such as flat panels and DLP projectors. A consumer electronics version, not necessarily compatible with the PC version, is used as a connection standard for HDTV tuners and displays. Transmits an uncompressed digital signal to the display. The latter version uses HDCP copy protection to prevent unauthorized copying of source material.

USB

Universal Serial Bus. An external peripheral interface standard for communication between a computer and external peripherals over a cable using bi-serial transmission.

VESA

Video Electronic Standards Association, a consortium of manufacturers formed to establish and maintain industry wide standards for video cards and monitors. VESA was instrumental in the introduction of the Super VGA and Extended VGA video graphics standards with a refresh rate of 70 Hz, minimizing flicker and helping to reduce user eyestrain and fatigue.

PS/2

A port type developed by IBM for the purpose of connecting a keyboard or mouse to a PC. The PS/2 port has a mini-DIN plug connector containing 6 pins. PS/2 ports are used so that the serial port can be used by another device. The PS/2 port is often called the mouse port.

SPECIFICATIONS

| | |
|---------------------------------|--------------------------------------|
| Video Amplifier Bandwidth | 165 MHz |
| Single Link Range | 1080p / 1920 x 1200 |
| Input Video Signal | 1.2 volts p-p |
| Input DDC Signal | 5 volts p-p (TTL) |
| DVI Output Connector Type | DVI-I (29 pin) female (digital only) |
| Link Connector | RJ-45 Shielded |
| USB Input | USB type "B" connector |
| USB Output | 2 USB type "A" connectors |
| PS/2 Keyboard Connectors | 6 Pin MiniDin |
| PS/2 Mouse Connectors | 6 Pin MiniDin |
| RS-232 Connector | DB-9 |
| Audio Connection | mini-Stereo phone jack 3.5mm |
| Power Consumption | 20 Watts (max. each unit) |
| Power Supply | 5 VDC (External) |
| Dimensions | 17"W x 1.75"H x 4.375"D |
| Shipping Weight | 8 Lbs |

WARRANTY

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, please visit Gefen's Warranty web page at <http://www.gefen.com/kvm/aboutus/warranty.jsp>

PRODUCT REGISTRATION

Please register your product online by visiting Gefen's web site at <http://www.gefen.com/kvm/Registry/Registration.jsp>

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