# Remotely control your computer

## Optional Accessories

CAT-5 Cables

DVI Cables

## CAT5•7500HD

The Professional Series CAT5•7500HD KVM (keyboard, video, mouse) extender sends two digital video displays plus accompanying peripherals away from the computer so you can operate in silence or locate your CPU in a separate and secure location. It supports two DVI displays, four USB devices and/or PS/2 keyboard/mouse, RS-232 for serial communication systems, two audio devices and an additional microphone port. Industry standard CAT-5e cables are used to connect your computer to the remote devices at distances up to 200 feet. High definition digital resolutions up to 1920x1200 are supported.

### How It Works

The CAT5•7500HD sender connects to your computer with the supplied cables. The receiver connects to your DVI displays and peripherals - up to 200 feet away. Multiple CAT-5 cables connect the sender (computer) and receiver (peripherals) to each other.

**The CAT5•7500HD is HDCP compliant.**

DVI, HDCP & HDMI Defined

### Features:

- Extends any DVI compliant device up to 150 feet (45 meters) from the computer at 1920x1200
- Extends any DVI compliant device up to 200 feet (60 meters) from the computer at 1280x1024
- Extends USB 1.1 compliant devices up to 200 feet
- Uses CAT-5e cable for DDC and control signals
- Video is transmitted digitally for zero signal loss
- Supports resolutions up to 1080p, 2K, and 1920 x 1200
- Supports DDWG standard for DVI compliant monitors
- Includes rack ears
- HDCP compliant

### 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 Connector: DVI-I (29 pin) female (digital only)
- USB Input: USB type "B" connector
- USB Output: two USB type "A" connectors
- Link Connector: RJ-45 Shielded
- Power Supply: 5V DC
- Power Consumption: 20 watts (max)
- Dimensions: 17"W x 1.75" H x 4.375" D
- Shipping Weight: 10 lbs.

### Package Includes:

- CAT5•7500HD-S
- CAT5•7500HD-R
- Two 6 foot DVI Cables
- Two 6 foot PS/2 Cables
- One 6 foot USB Cable
- One 6 foot Audio Cable
- One 5V Power Supply
- Rack Ears
- User's Manual

dvi RoHS 1080P PROGRESSIVE

EXT-CAT5-7500HD

meditronik części elektroniczne i komputerowe

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# CAT5 • 7500HD

## USER MANUAL

www.gefen.com

## ASKING FOR ASSISTANCE

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(800) 545-6900

Fax (818) 772-9120

**Technical Support Hours:**
8:00 AM to 5:00 PM Monday thru Friday.

**Write To:**

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c/o Customer Service
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Chatsworth, CA 91311

support@gefen.com
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**Notice**

Gefen Inc. reserves the right to make changes in the hardware, packaging and any accompanying documentation without prior written notice.

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# INTRODUCTION

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

The ex•tend•it CAT5•7500HD by Gefen allows users the benefits of extending USB, audio in, audio out, PS/2, RS232, 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.

**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

**Front Panel Function Descriptions**

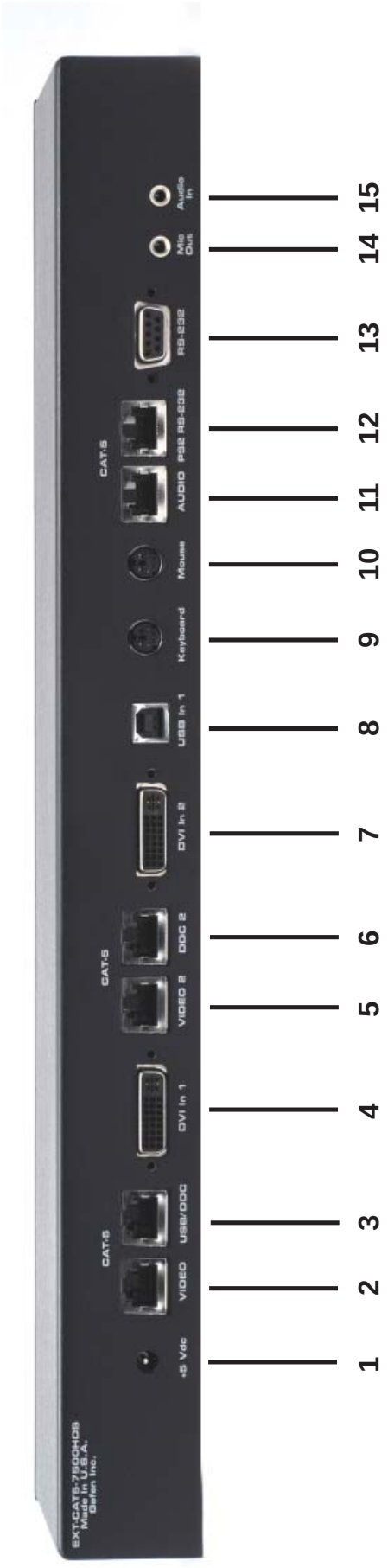
**1** **Power On Indication -** Indicates that the unit is on and plugged in.

## CAT5•7500HDR FRONT PANEL LAYOUT

**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 -** 5 VDC external power supply

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 -** PS/2 keyboard input from computer

10 **MOUSE -** PS/2 mouse input from computer

11 **AUDIO -** RJ-45 input extends audio in and audio out 2

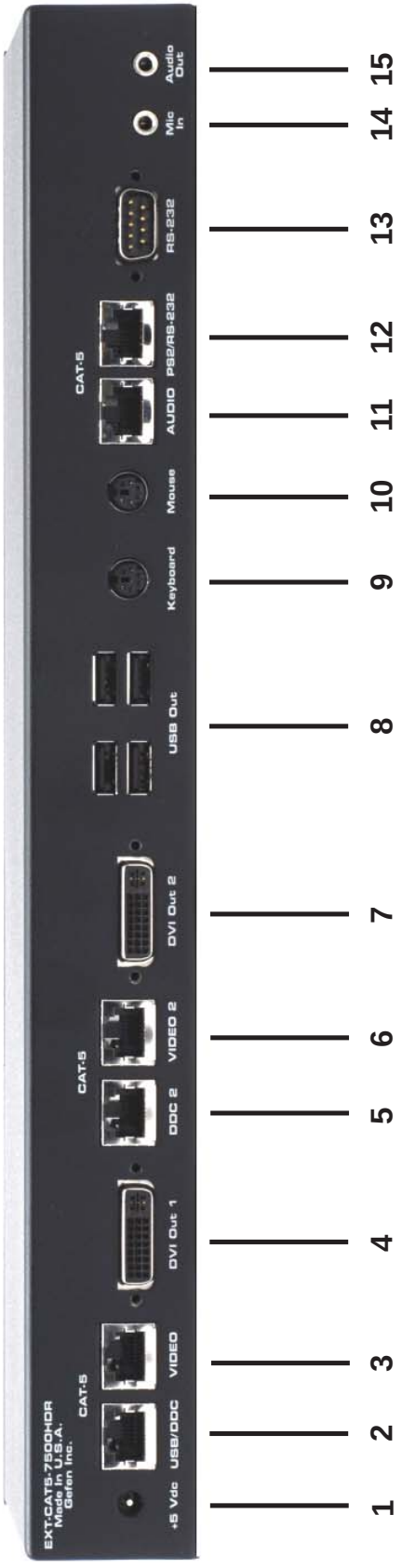
12 **SERIAL PS/2 -** RJ-45 input extends RS-232 and PS/2 signals

13 **RS232 IN -** RS232 input from computer

14 **AUDIO OUT 2 -** Audio mini jack input connects to computers microphone input

15 **AUDIO IN -** Audio mini jack input connects to computers audio output (Audio 2 offers improved signal to noise ratio by using differential signal technics)

# CAT5•7500HDR BACK PANEL LAYOUT



# CAT5•7500HDR BACK PANEL FUNCTIONS

**1** **POWER -** 5 VDC external power supply

**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/DDC1 -** RJ-45 input extends USB and DDC1 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 OUT -** USB Output to Devices

**9** **KEYBOARD -** PS/2 mini din connects to PS/2 keyboard

**10** **MOUSE -** PS/2 mini din connects to PS/2 mouse

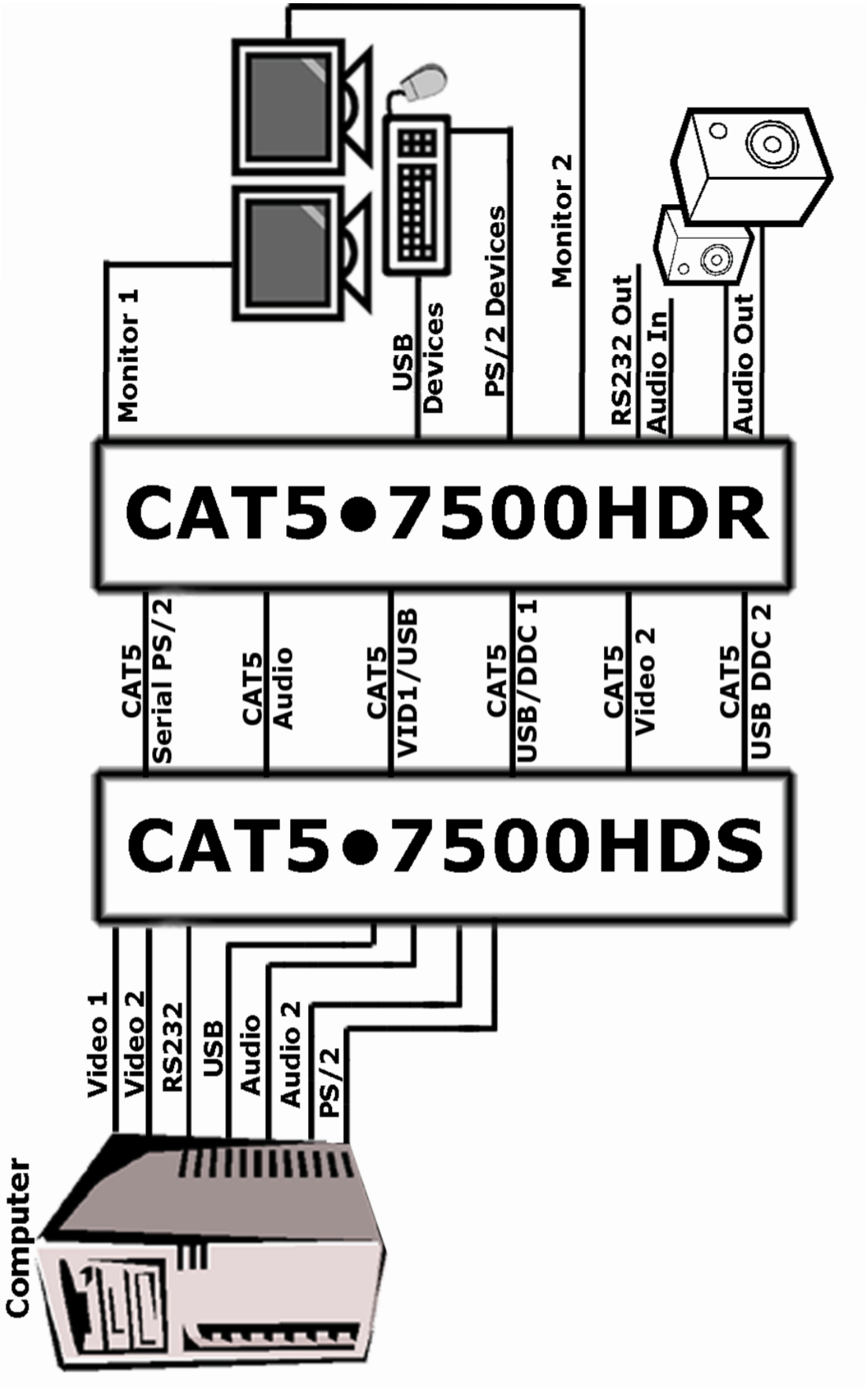
**11** **AUDIO -** RJ-45 input connects CAT-5 cable to receive extended audio in and audio out 2 signals

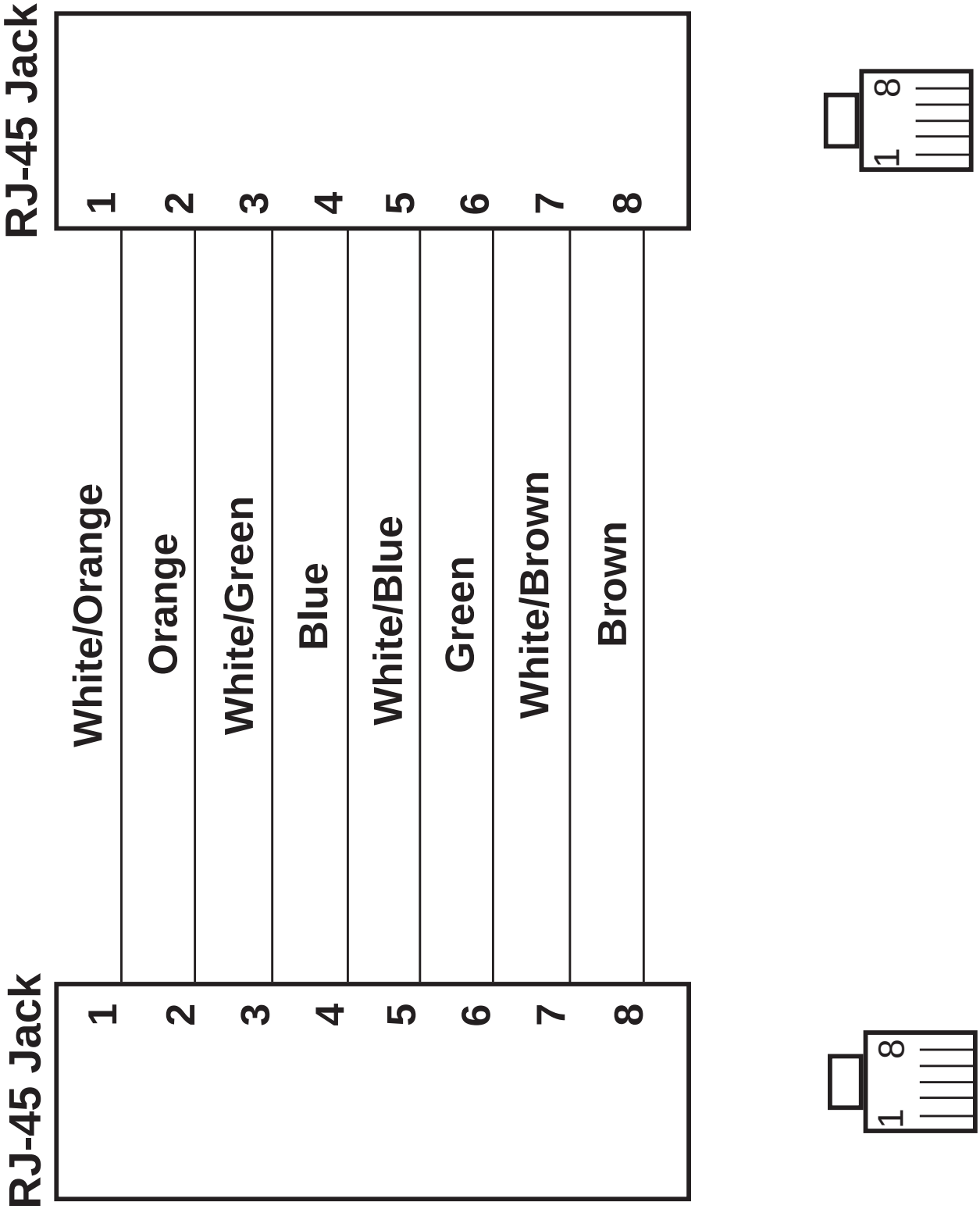
**12** **SERIAL PS/2 -** RJ-45 input connects CAT-5 cable to receive extended RS-232 and PS/2 signals

**13** **RS232 -** DB-9 connector connects to RS-232 devices

**14** **AUDIO IN -** Audio mini jack connector connects to microphone

**15** **AUDIO OUT 2 -** Audio mini jack connects to speakers


Monitor 1
USB Devices
PS/2 Devices
Monitor 2
RS232 Out
Audio In
Audio Out
CAT5•7500HDR
CAT5 Serial PS/2
CAT5 Audio
CAT5 VID1/USB
CAT5 USB/DDC 1
CAT5 Video 2
CAT5 USB DDC 2
CAT5•7500HDS
Video 1
Video 2
RS232
USB
Audio
Audio 2
PS/2
Computer


RJ-45 Jack
1
2
3
4
5
6
7
8
White/Orange
Orange
White/Green
Blue
White/Blue
Green
White/Brown
Brown
RJ-45 Jack
1
2
3
4
5
6
7
8


8
1


8
1

# 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)

## Frequently Asked Questions

***What kind of CAT-5e cable should I be using?***
Solid core CAT-5e cable rated at 350 Mhz, terminated in 568a or 568b is the minimum requirement. CAT-6 cables are also a viable cable to use. Higher resolutions and transmission lengths greater then 80 feet might require low skew cables for optimum performance.

***Why does the CAT5 sender unit have a HDMI connector on the input?***
A HDMI connector was used on the input to optimize space on the board by using the smaller connector. HDMI is electrically equivalent to DVI-D.

***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. Units shipped starting 12-2005 have the service switches inside the unit enabled. Please refer to the Service Switch Usage Guide on 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/HDMI 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 the 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 to see if that helps, if it does, 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-5e cable on the Video to reduce interference. You can also try adjusting the service switches. Usually this is caused from either too much or too little of a boost. Please refer to the service switch guide on page 9 for the different combinations.

***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.

***I can't seem to get my RS-232 devices to detect and connect, what's wrong?***
The CAT5-9000HD system only extends the Tx and Rx lines of RS232. If you need full RS232 extension of every line, you will need the standalone RS232 Extender units.

***Can I run the CAT-5 cable through a patch bay?***
No, the signal will not transmit reliably

***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.

***Why does the CAT5 sender unit have a HDMI connector on the input?***
A HDMI connector was used on the input to optimize space on the board by using the smaller connector. HDMI is electrically equivalent to DVI-D.

***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 (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/HDMI 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 the 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 to see if that helps, if it does, 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. You can also try adjusting the service switches. Usually this is caused by EMI and a shielded CAT-6 with metal RJ-45 connectors with the drain wire soldered to the connectors will resolve the issue. Please refer to the service switch guide on page 10 for the different combinations.

***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 CAT5-9000HD system only extends the Tx and Rx lines of RS232. If you need full RS232 extension of every line, you will need the standalone RS232 Extender units.

***Can I run the CAT-5 cable through a patch bay?***
No, the signal will not transmit reliably

# SPECIFICATIONS

Video Amplifier Bandwidth ..... 1.65 GHz

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

RS232 Connector ..... DB-9

Audio Connection ..... mini-phone Stereo 3.5mm

Power Consumption ..... 20 Watts (max.)

Power Supply ..... 5 VDC (External)

Dimensions ..... 17”W x 1.75”H x 4.375”D

Shipping Weight .....10Lbs

# WARRANTY

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

If equipment fails because of such defects and Gefen Inc. is notified within two (2) year from the date of shipment, Gefen Inc. 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 cable must be free from any scratches, markings, and neatly coiled.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen Inc. assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen Inc., 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 CAT5•7500HD features and specifications is subject to change without notice.