

# Gefen

®

## CAT5-5600A

**EXT-CAT5-5600A**  
**User Manual**



[www.gefen.com](http://www.gefen.com)

## ASKING FOR ASSISTANCE

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### Notice

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

**CAT5-5600A** is a trademark of Gefen LLC

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# INTRODUCTION

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Congratulations on your purchase of the Gefen CAT5-5600A. Your complete satisfaction is very important to us.

## **Gefen**

Gefen is a unique product line catering to the growing needs for innovative home theater solutions. We specialize in total integration for your home theater, while also focusing on going above and beyond customer expectations to ensure you get the most from your hardware. We invite you to explore our distinct product line and hope you find your solutions. Don't see what you are looking for here? Please call us so we can better assist you with your particular needs.

## **The Gefen CAT5-5600A**

The Gefen CAT5-5600A extends two (2) VGA monitors, audio, and USB up to 330 feet (100 meters) using three CAT-5 cables. Display resolutions up to 1920x1200 @ 60Hz are supported. Local monitors can be connected to the Sender Unit and up to four monitors can be connected to the Receiver Unit. Four USB connectors on the Receiver Unit allow control of the computer system from the KVM workstation. Mini-stereo connectors provide for the connection and the extension of two independent stereo (3.5 mm) audio devices.

## **How It Works**

Place the CAT5-5600A Sender Unit next to the VGA source. Use the included VGA cables to connect the sources to the Sender Unit. Optionally connect local monitors to the Sender Unit using VGA cables. Connect up to four monitors to the Receiver Unit with VGA cables. Connect the USB devices to the input and output connectors. For audio, connect mini-stereo cables between the audio sources and the audio inputs on the Sender Unit. Connect mini-stereo cables between the audio outputs on the Receiver Unit and the audio devices. Use three CAT-5 cables to connect the Sender Unit to the Receiver Unit, up to 330 feet (100 meters) away. Connect the included locking power supplies to both the Sender Unit and Receiver Unit then connect both power cables to available electrical outlets. The computer can now be controlled from the KVM workstation.

## OPERATION NOTES

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### READ THESE NOTES BEFORE INSTALLING OR OPERATING THE CAT5-5600A

- VGA and audio can be extended up to 1000 feet (300 meters).
- USB can be extended up to a maximum of 330 feet (100 meters).
- Shielded (STP) CAT-5e/CAT-6a is recommended. However, unshielded (UTP) CAT-5e/CAT-6a is acceptable.

**NOTE:** Shielded cable has an advantage by providing immunity to Electromagnetic Interference (EMI), cell phones and A/C motors.

# FEATURES

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## Features

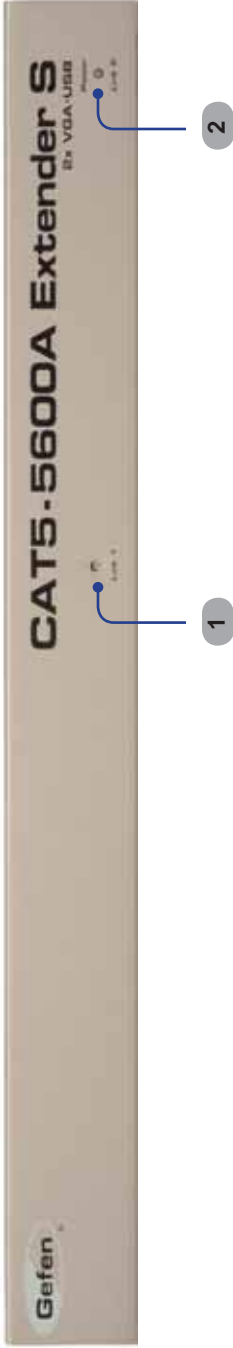
- Extends two VGA and two audio sources up to 1000 feet (300 meters)
- Extends USB 2.0 devices up to 330 feet (100 meters)
- Supports resolutions up to 1920x1200 (WUXGA) @ 60 Hz
- Backward-compatible with USB 1.1 devices
- Color, brightness, and focus equalization controls to compensate for distance and skew variations found in different CAT-5 cabling
- Optional low-power Standby Mode
- Works with PC and Mac computers
- Locking power connectors
- Rack-mountable

## Package Includes

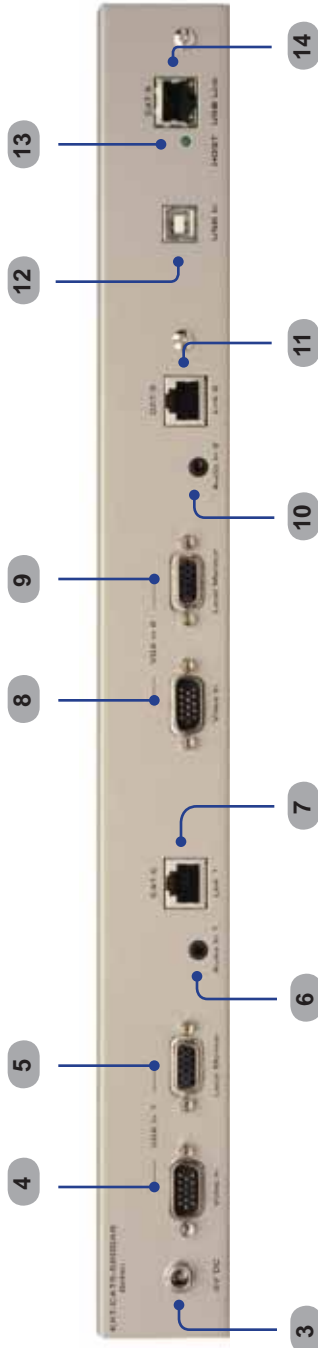
- (1) Gefen CAT5-5600A - Sender Unit
- (1) Gefen CAT5-5600A - Receiver Unit
- (2) 6 ft. VGA cables (M-M)
- (1) 6 ft. USB cable (A-B)
- (1) 6 ft. Mini-Stereo cable (3.5 mm)
- (2) 5 V DC Locking Power Supplies
- (1) Set of Rack Ears
- (1) User Manual

# SENDER PANEL LAYOUT

Front Panel



Back Panel



## SENDER PANEL DESCRIPTIONS

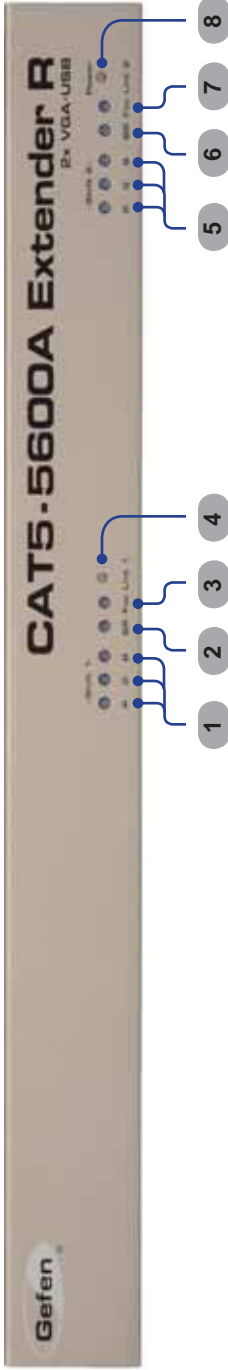
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- 1 Link 1 Indicator**  
When this LED glows bright red, power is being supplied to the unit. When the VGA 1 input source has been detected, this LED glows bright green.
- 2 Link 2 Indicator**  
When this LED glows bright red, power is being supplied to the unit. When the VGA 2 input source has been detected, this LED glows bright green.
- 3 5 V DC Locking Power Connector**  
Connect the included 5 V DC locking power supply to this connector.
- 4 VGA 1 Input**  
Connect a VGA cable from the computer to this connector.
- 5 Local Monitor**  
Connect a VGA cable from the local VGA monitor to this connector.
- 6 Audio In 1**  
Connect a 3.5 mm mini-stereo cable from the audio source to this jack.
- 7 Link 1 / CAT-5**  
Connects the CAT-5 cable to the Link 1 / CAT-5 jack on the Receiver Unit.
- 8 VGA 2 Input**  
Connect a VGA cable from the computer to this connector.
- 9 Local Monitor**  
Connect a VGA cable from the secondary local VGA monitor to this connector.
- 10 Audio In 2**  
Connect a 3.5 mm mini-stereo cable from the audio source to this jack.
- 11 Link 2 / CAT-5**  
Connects the CAT-5 cable to the Link 2 / CAT-5 jack on the Receiver Unit.
- 12 USB In**  
Connect the USB host device to this port.
- 13 USB Link Indicator**  
This LED will turn bright green once the host USB device has been connected to the Sender Unit.
- 14 CAT-5 / USB Link**  
Connects the CAT-5 / USB Link on the Sender Unit to the CAT-5 / USB Link on the Receiver Unit using CAT-5 cabling.

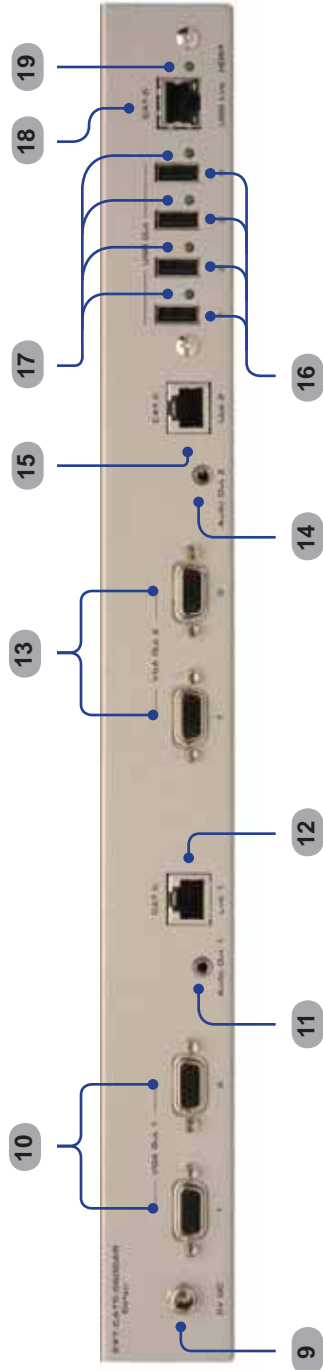


# RECEIVER PANEL LAYOUT

Front Panel



Back Panel



## RECEIVER PANEL DESCRIPTIONS

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- 1 RGB EQ Trimpots (Link 1)**  
Used to correct color delay based on extension distance, resolution, and cable skew found in different brands of CAT-5 cabling. See page 10 for more details.
- 2 Brightness EQ Trimpot (Link 1)**  
Adjusts the brightness of the picture.
- 3 Focus EQ Trimpot (Link 1)**  
Used to correct the focus (sharpness / softness) of the picture.
- 4 Link 1 Indicator**  
This LED will glow bright red when power is applied to the unit. If a video source is connected to the Sender Unit, the LED will glow bright green.
- 5 RGB EQ Trimpots (Link 2)**  
Used to correct color delay based on extension distance, resolution, and cable skew found in different brands of CAT-5 cabling. See page 10 for more details.
- 6 Brightness EQ Trimpot (Link 2)**  
Adjusts the brightness of the picture.
- 7 Focus EQ Trimpot (Link 2)**  
Used to correct the focus (sharpness / softness) of the picture.
- 8 Link 2 Indicator**  
This LED will glow bright red when power is applied to the unit. If a video source is connected to the Sender Unit, the LED will glow bright green.
- 9 5 V DC Locking Power Connector**  
Connect the included 5 V DC locking power supply to this receptacle.
- 10 VGA Out 1 (1 - 2)**  
Connect a VGA monitor to each of these connectors.
- 11 Audio Out 1**  
Connect 3.5 mm mini-stereo cable from this jack to an amplifier, powered speakers, or other audio output device.
- 12 CAT-5 / Link 1**  
Connects the CAT-5 cable to the CAT-5 / Link 1 jack on the Sender Unit.
- 13 VGA Out 2 (1 - 2)**  
Connect a VGA monitor to each of these connectors.
- 14 Audio Out 2**  
Connect 3.5 mm mini-stereo cable from this jack to an amplifier, powered speakers, or other audio output device.

## RECEIVER PANEL DESCRIPTIONS

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**15 CAT-5 / Link 2**

Connects the CAT-5 cable to the CAT-5 / Link 2 jack on the Sender Unit.

**16 USB Output Ports (1 - 4)**

Connect USB devices to these ports.

**17 USB Connection Indicators (1 - 4)**

These LEDs will turn bright green when a USB device has been connected.

**18 CAT-5 / USB Link**

Connects the CAT-5 cable to the CAT-5 / USB Link jack on the Sender Unit.

**19 USB Link Indicator**

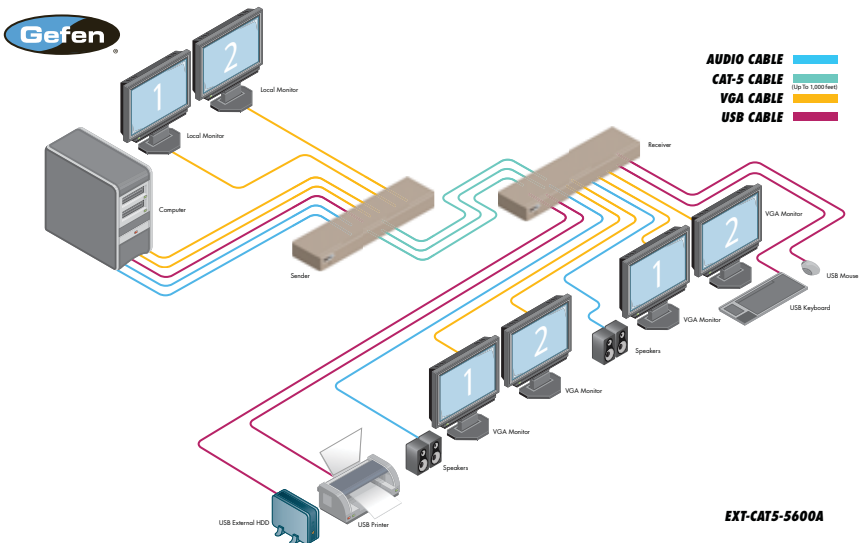
This LED will turn bright green once the host USB device has been connected to the Receiver Unit.

# CONNECTING AND OPERATING THE CAT5-5600A

## How to Connect the CAT5-5600A

1. Connect the VGA source to the Sender Unit using the included VGA cable. Another VGA cable can be used to connect a second VGA source to the Sender Unit. A local VGA monitor can also be connected to the Sender Unit.
2. Connect the included USB cable from the computer to the Sender Unit.
3. Connect the VGA monitor(s) and USB devices to the Receiver Unit. Up to four (4) USB devices and four (4) VGA monitors can be connected to the Receiver Unit. The VGA monitors connected to VGA Out 2 can be used as a set of mirrored outputs for VGA Out 1.
4. Connect the Sender and Receiver units together with up to 330 feet of CAT-5e or CAT-6a cable. Be sure to make the corresponding connections between the Sender Unit and Receiver Unit (e.g. Link 1 on the Sender Unit to Link 1 on the Receiver Unit, etc).
5. Connect the included 5 V DC power supplies to both the Sender Unit and Receiver Unit.
6. The remote computer can now be controlled from the Receiver unit.

## Wiring Diagram for the CAT5-5600A



# CONNECTING AND OPERATING THE CAT5-5600A

## Adjusting the Signal Quality

The CAT5-5600A has five EQ trim pots on the Receiver Unit. Note that adjusting any one of the trimpots may also require adjustment of another trimpot, depending upon the resolution, type of CAT-5/CAT-6 cable, and the distance.

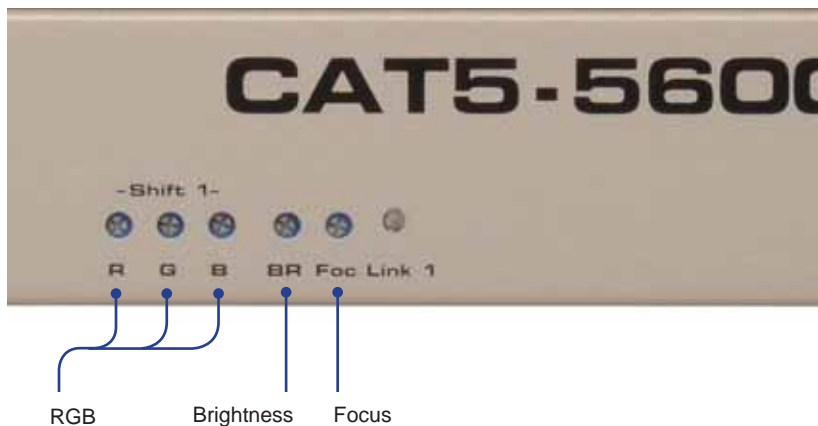
The first set of three trim pots are used to correct the R/G/B color delay. Color delay is a result of variances in the cable skew. Adjust each of these trim pots to achieve best results.

The Brightness (BR) trimpot is used to adjust the brightness of the picture.

The Focus (Foc) trimpot is used to adjust the focus (sharpness / softness) of the picture.

To adjust the EQ trimpots:

1. Insert a small flat-headed tool into the EQ trim pot on the front panel of the Receiver Unit.
2. The trim pot has 8 set positions. Turn the trim pot clockwise until it clicks into the next position. Continue adjusting the trim pot until the issue is resolved.
3. Carefully remove the adjustment tool.



# DIP SWITCHES

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## DIP Switch Location

The Gefen CAT5-5600A contains DIP switches on the bottom of both the Sender Unit and Receiver Unit. Each DIP switch performs a different function.

### Sender Unit



Two DIP switches located on the bottom of the CAT5-5600A Sender Unit. There are two sets of DIP switches on the Sender Unit: One for each VGA input.

### ***DIP Switch 1 - Green Mode (Default = ON)\****

- **OFF** - Enable Green Mode

When DIP switch 1 on the Sender Unit is set to the OFF position, the CAT5-5600A is placed in Green Mode. In this mode, the USB devices are not powered if the USB cable from the Sender Unit to the computer source is disconnected. Automatic Power Mode consumes less than 1 Watt of power.

- **ON** - Disable Green Mode

If DIP switch 1 is set to the ON position, then the CAT5-5600A is placed in Power Always Mode. In this mode, the USB ports are always powered whether or not a USB cable is connected from the computer to the Sender Unit.

### ***DIP Switch 2 - Not Used***

- Reserved for future expansion.

# DIP SWITCHES

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## Receiver Unit



The DIP switches plus the trimpot located on the bottom of the CAT5-5600A Receiver Unit. There are two sets of DIP switches and a trimpot on the Receiver Unit: One for each output.

### **DIP Switch 1 - Green Mode (Default = ON)**

- **OFF** - Enable Green Mode

When DIP switch 1, on the Receiver Unit, is set to the OFF position, the CAT5-5600A Receiver Unit is placed in Automatic Power Mode. In this mode, the USB devices are not powered if the USB cable from the Sender Unit to the computer source is disconnected. Green Mode consumes less than 1 Watt of power.

- **ON** - Disable Green Mode

If DIP switch 1, on the Receiver Unit, is set to the ON position, then the CAT5-5600A Receiver Unit is placed in Power Always Mode. In this mode, the USB ports are always powered whether or not a USB cable is connected from the computer to the Sender Unit.

## DIP SWITCHES

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### ***DIP Switch 2 - EDID Mode (Default = OFF)***

- **OFF** - Pass Through Mode

The EDID stored in display, connected to the Receiver Unit, is copied to the VGA input of the Sender Unit.

- **ON** - Local EDID Mode

The EDID stored in display, connected to the Local Monitor Output (see page 4), is copied to the VGA input of the Sender Unit.

### ***Pole Frequency Trim Pot***

- Use this trim pot in conjunction with the Brightness and Focus trim pots on the Receiver Unit front panel, in order to decrease unwanted distortion and improved noise reduction.

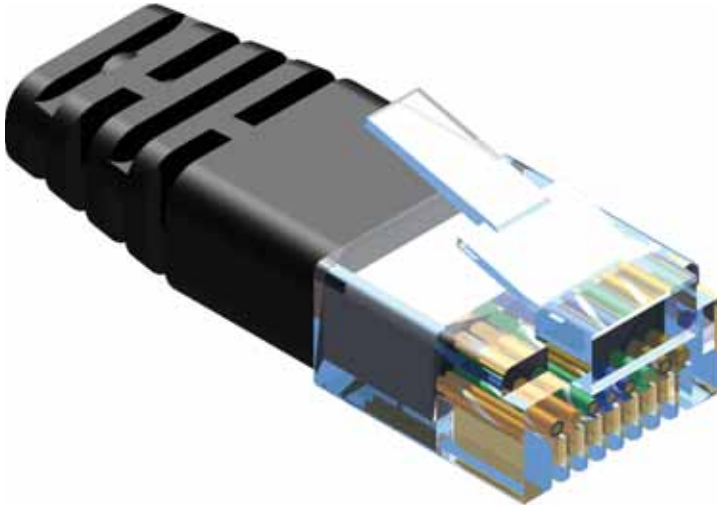
To adjust the Pole Frequency trim pot:

1. Insert a small flat-headed tool into the trim pot on the front panel of the Receiver Unit.
2. The trim pot has 8 set positions. Turn the trim pot clockwise until it clicks into the next position. Continue adjusting the trim pot until the issue is resolved.
3. Carefully remove the adjustment tool.



## NETWORK CABLING DIAGRAM

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Gefen recommends the TIA/EIA-568-B wiring option. Please adhere to the table below when field-terminating the CAT-5e / CAT-6a cable for use with Gefen products.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown

CAT-5e / CAT-6a cabling comes in stranded and solid core types. Gefen recommends using solid core cabling.

It is recommended to use one continuous run from one end to the other. Connecting through a patch is not recommended.

## RACK MOUNT INSTALLATION

Rack mount ears are provided for installation of this unit into a 1U rack mount space.

1. Locate the side screws on the unit.
2. Remove the front 2 screws that are located closest to the front of the unit.
3. Using the removed screws, screw the rack mounting bracket into the unit.
4. Repeat the procedure on the opposite side of the unit.



## SPECIFICATIONS

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Maximum Video Bandwidth.....	350 MHz
Input Video Signal.....	1.2 V p-p
Input DDC Signal.....	5 V p-p (TTL)
Horizontal Frequency Range.....	15 - 70 kHz
Vertical Frequency Range.....	30 - 170 kHz
VGA Connectors (Sender Unit).....	(2) HD-15, male; (2) HD-15, female
VGA Connectors (Receiver Unit).....	(4) HD-15, female
USB Connector (Sender Unit).....	(1) Type B
USB Connectors (Receiver Unit).....	(4) Type A
Audio Input Connectors (Sender Unit / Receiver Unit).....	(2) 3.5 mm
Link Connectors (Sender Unit / Receiver Unit).....	(3) RJ-45
DIP Switches (Sender Unit / Receiver Unit).....	Standby Power Mode Select
EQ Trim Pot (Receiver Unit).....	5-position potentiometer
Power Supply (Sender / Receiver).....	5 V DC
Power Consumption.....	30 W per unit (max.)
Operating Temperature.....	0 - 40 °C
Dimensions (Sender / Receiver).....	17" W x 1.75" H x 5.25" D
Shipping Weight.....	11 lbs.

## WARRANTY

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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>**

Rev A1



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This product uses UL listed power supplies.