IOGEAR®

An ATEN International Company

User Manual
DVI USB Console Extender

GCE611U / GCE616U

PART NO. M11225

www.iogear.com

Table of Contents

Introduction

GCE611U is a DVI and USB based Console Extender with RS-232 support, it allows a user to access a DVI/USB computer system from up to 200' (60m) away and delivers excellent resolution for up to 1920x1200 @ 60 Hz at 100' (30 m); and 1024x768 @ 60 Hz at 200' (60 m) . The number of computers to be accessed remotely can be expanded by deploying a compatible DVI KVM switch. GCE611U is perfect for use in many types of installation where you need to have easy access to the console, but at the same time concerned about the environment such as the dust and dirt of the factory floor, or the harsh environmental a construction site, or bad whether.

GCE616U is a Dual Link DVI and USB based Console Extender with RS-232 support, it allows a user to access a DVI/USB computer system from up to 200' (60m) away and delivers excellent resolution for up to 2560x1600 @ 60 Hz at 130' (40 m); 1920x1200 @ 60 Hz at 100' (30 m); and 1024x768 @ 60 Hz at 200' (60m) . The number of computers to be accessed remotely can be expanded by deploying a compatible DVI KVM switch. GCE616U is perfect for use in many types of installation where you need to have easy access to the console, but at the same time concerned about the environment such as the dust and dirt of the factory floor, or the harsh environmental a construction site, or bad whether.
Both GCE611U and GCE616U use two CAT5e cables, one dedicated to transmit DVI and stereo audio signal, the other for HDCP, RS-232, and microphone signals.

Package Contents

GCE611U
1 x GCE611U local unit
1 x GCE611U remote unit
1 x USB DVI-D Single Link KVM Cable set (6', 1.8m)
2 x Power Adapters
1 x Mounting Kit
1 x User manual

GCE616U
1 x GCE616U local unit
1 x GCE616U remote unit
1 x USB DVI-D Dual Link KVM Cable Set (6', 1.8m)
2 x Power Adapters
1 x Mounting Kit
1 x User manual

Requirements

Consoles
- A DVI single link or dual link DVI monitor capable of the highest resolution you will be using on any monitor in the installation.
- A USB keyboard
- A USB mouse
- Stereo microphone and stereo speakers (optional)

Computers
The following equipment must be installed on each computer that is to be connected to the system:
- A DVI port
- 2 USB ports for the mouse and keyboard
- Microphone and speaker ports (optional)

Cables
- For optimal signal integrity, and to simplify the layout, we strongly recommend that you use the high quality custom KVM Cable that is provided with this package.
- Cat 5e cable with solid conductors is required to connect the Local and Remote units. Cable of a lower standard will result in degrading of the video signal. We strongly recommend using Cat 5e or higher grade cables.
- For better quality over longer distances, we suggest using 350MHz Low Skew Cable with solid conductors.

Maximum Cable Distance

| Connection	Distance
Computer to Local Unit	16'
Local Unit to Remote Unit via Cat5e cable	200'
Remote Unit (GCE611U / GCE616U) to monitor	16'

Overview

Front View on Local Unit
GCE611U / GCE616U
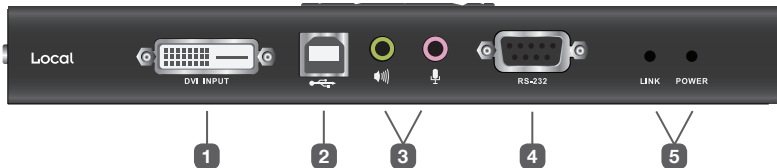
No	Component	Description
1	DVI-D Port	Connect a DVI cable from a computer to this port.
2	USB Type B Input	The USB cable from your computer or USB hub plugs in here.
3	Audio Ports	These mini stereo ports are for the speakers (green) and microphone (pink).
4	RS-232 Serial Port	Connect the RS-232 cable from your computer into this port.
5	LEDs	The unit has two LEDs to indicate the operating status. See page 12 for full details.

**Front View for Remote Unit**
GCE611U / GCE616U
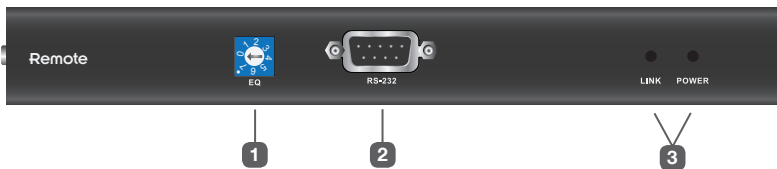
No	Component	Description
1	EQ Switch	Use this to adjust the video quality of the remote console.
2	RS-232 Serial Port	RS-232 serial devices – such as touchscreens or barcode scanners – plug into this port; also for firmware upgrade.
3	Audio Ports	The unit has two LEDs to indicate operating status. See page 12 for full details.

Rear View on Local Unit
GCE611U / GCE616U
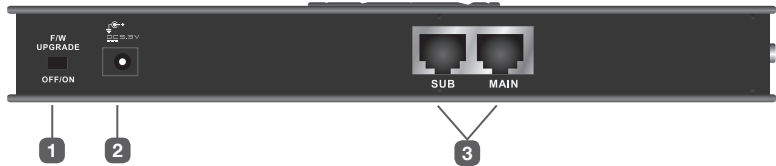
| No	Component	Description
1	F/W Upgrade Switch	Use this switch to turn on the firmware upgrade mode. Reset the power to proceed with the firmware upgrade. Switch it off and reset the power to return to normal mode.
2	Power Jack	The cable from the DC Power adapter connects here.
3	Sub / Main	The 2 Cat5e cable that connects the Remote and Local Units plugs in here.

Rear View on Remote Unit
GCE611U / GCE616U
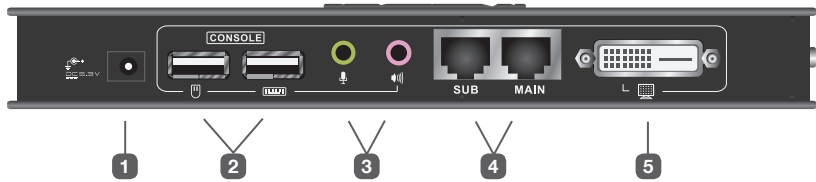
| No	Component	Description
1	Power Jack	The cable from the power adapter connects here.
2	USB	The USB cable for your keyboard / mouse plugs in here.
3	Audio Ports	These mini stereo ports are for the speakers (green) and microphone (pink).
4	Sub / Main	The 2 Cat5e cable that connects the Remote and Local Units plugs in here.
5	DVI-D Port	This DVI port is for connecting to a compatible monitor.

Rack Mounting

For convenience and flexibility, the GCE611U and GCE616U can be mounted on system racks. To rack mount a unit do the following:

1. Using the screws provided in the Rack Mount Kit, screw the mounting bracket into the top or bottom of the unit as show in the diagram below:
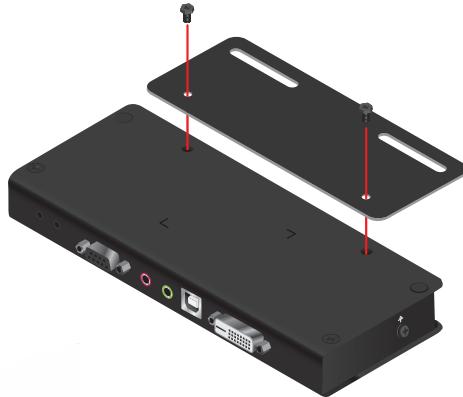
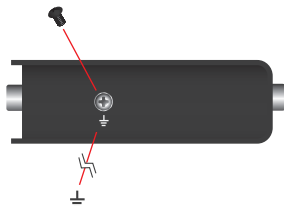2. Screw the bracket into any convenient location on the rack.
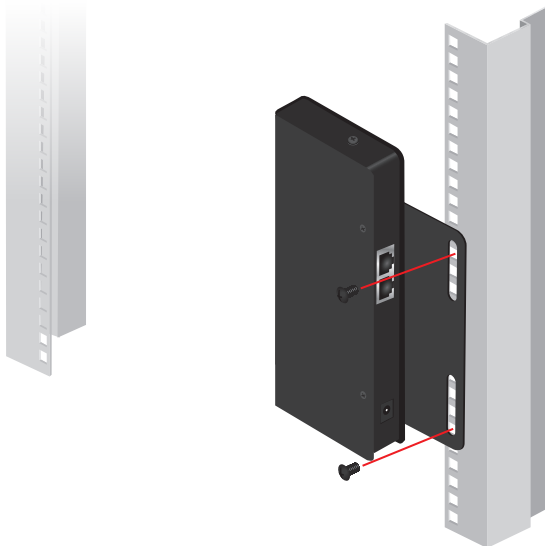
Installation

Grounding

To prevent damage to your installation it is important that all devices are properly grounded.

1. Use a grounding wire to ground both units by connecting one end of the wire to the grounding terminal, and the other end of the wire to a suitable grounded object.

2. Make sure that the computer that the Local Unit connects to and the monitor that the Remote Unit connects to are properly grounded.

Cat5e Cables
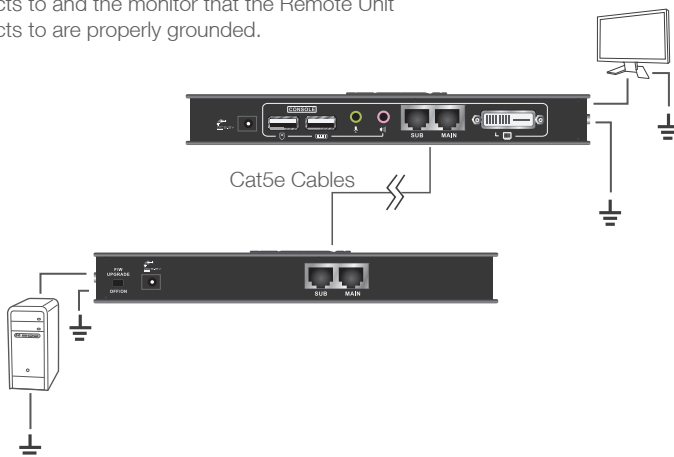
3. For increased grounding protection, use STP (shielded twisted pair) cable to connect the Local and Remote Units. There are two methods that can be used:

   a) In addition to the eight paired wires, STP cable also contains a grounding wire. Solder this wire to the RJ-45 connector as shown to the eright:
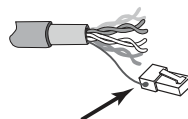
   b) The second method is to use the STP cable shielding for grounding. In this case, make sure that the shielding makes tight contact with the top inside of the RJ-45 connector as shown to the right:
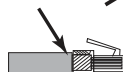
   In either case, make sure that the sides of the RJ-45 connector make tight contact with the grounding contacts on the sides of the RJ-45 socket.

Setting Up

Setting up the GCE611U / GCE616U DVI KVM Extender system is simply a matter of plugging in the cables. Make sure that all the equipment to be connected up is powered off. Refer to the installation diagram on the following page and do the following:

1. Plug the DVI KVM cable supplied with this unit into appropriate ports on the front of the Local Unit;

2. Plug the other end of the DVI KVM cable into the appropriate ports on the local computer. Each connector is marked with an appropriate icon to indicate what it is.

   Note: If you are integrating GCE611U / GCE616U with a KVM switch, the other end of the DVI KVM cable plugs into the appropriate ports on the KVM switch.

3. For control of serial devices, connect the RS-232 serial port on the local unit to a serial port on the local computer.

DVI KVM Cable

Local Computer
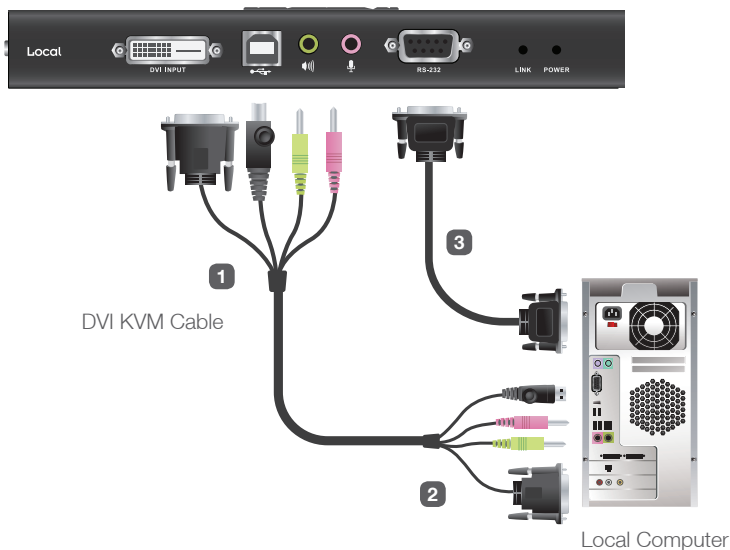
4. Plug one end of the Cat5e cable into Local Unit's Sub / Main ports. Plug the other end of the Cat 5e cable into the Sub / Main ports of the Remote Unit.
5. Connect one of the power adapters (supplied with this package with the Local Unit's Power Jack.)
6. Plug the remote console devices (mouse, keyboard, monitor, speakers, microphone), into the corresponding ports on the Console side of the Remote Unit.
7. Connect the second power adapter (supplied with this package) with the Remote Unit's Power Jack.

Cat5e Cables
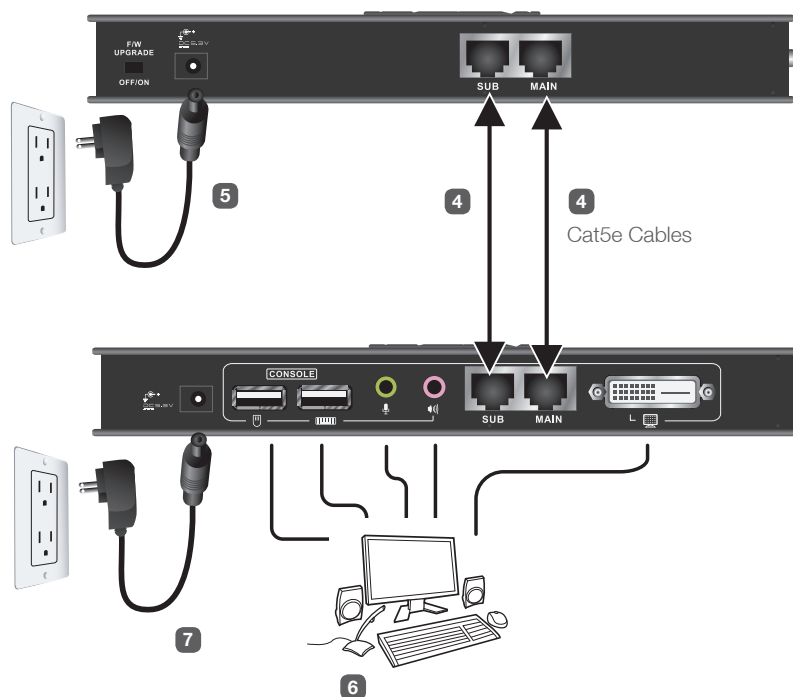
Note: The serial port on the Local Unit connects to the computer; the serial port on the Remote Unit connects to a serial device (optional).

Operation

Picture Ajustment

The EQ switch on the unit is designed to adjust the equalization strength and improve a blinking image.

The values range from 0-7 where:
* 7: strongest equalization
* 0: weakest equalization

LED Display

The GCE611U/ GCE616U Local and Remote Units have front panel LEDs to indicate their operating status, as shown in the tables, following:

- Local Unit

LED	Indication
Link (Green)	- Lights steadily to indicate that the connection to the Remote unit is OK. - Flashes when there is a problem with the connection to the Remote unit.
Power (Green)	- Lights steadily to indicate that the Local unit is receiving power.

- Remote Unit

| LED	Indication
Link (Green)	- Lights steadily to indicate that the connection to the Local Unit is OK. - Flashes when there is a problem with the connection to the Local Unit.
Power (Green)	- Lights steadily to indicate that the Remote unit is receiving power.

The Firmware Upgrade Utility

GCE611U and GCE616U have a Windows-based Firmware Upgrade Utility which provides a smooth, automated process for upgrading the firmware. The new firmware upgrade packages are posted on our web site as new firmware revisions become available. Please check the web site regularly to find the latest firmware and information relating to it.

Before You Begin
To prepare for the Firmware Upgrade, do the following:

1. Using a computer connected to the Local Unit, go to the product page on the IOGEAR web site. Click on the "Driver Download" at the left side of the product page which leads you to the firmware and driver download page.
2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. Use a Serial RS-232 cable to connect to the COM port on your computer to the RS-232 port of the Local Unit.
   Note: The Serial RS-232 cable is not provided in the package.
4. Make sure both Local and Remote units are connected by the Cat5e cable and Link, then unplug the Local unit's power adapter.
5. In the Local Unit's rear panel, turn the FW Upgrade switch On. This enables both the Local and Remote Units to operate in Firmware Upgrade Mode when the Local Unit is powered on again.
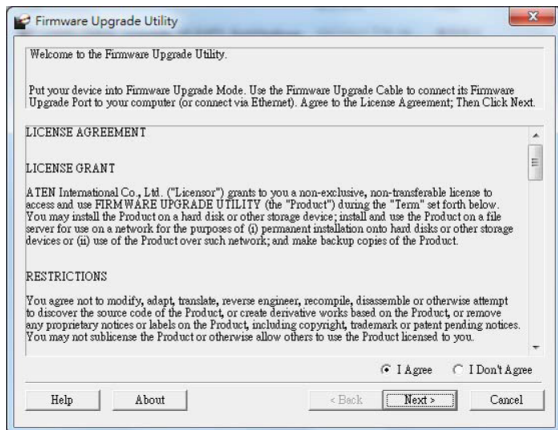6. Plug in the Local Unit's power adapter to power it on.

Cat5e Cables
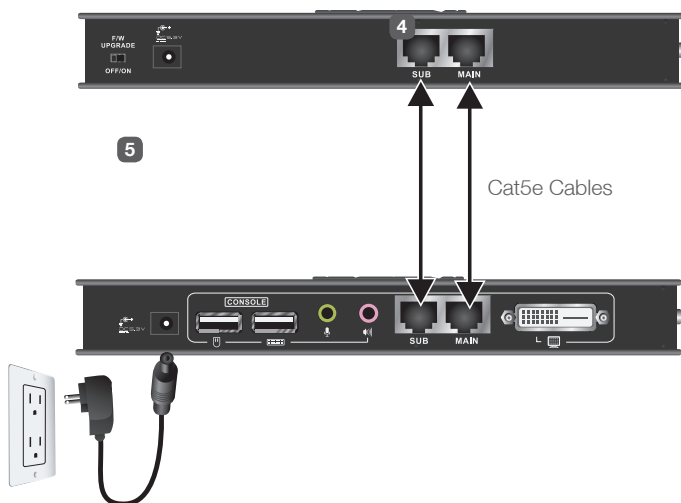
Starting the Upgrade

To upgrade your firmware:

1. Run the downloaded Firmware Upgrade Package file – either by double clicking the file icon, or by opening a command line and entering the full path to it.
The Firmware Upgrade Utility Welcome screen appears:

Note: The screens shown in this section are for reference only. The wording and layout of the actual screens put up by the Firmware Upgrade Utility may vary slightly from these examples.

2. Read and agree to the **License Agreement** (enable the **I Agree** radio button).
3. Click **Next** to continue. The Firmware Upgrade Utility main screen appears:
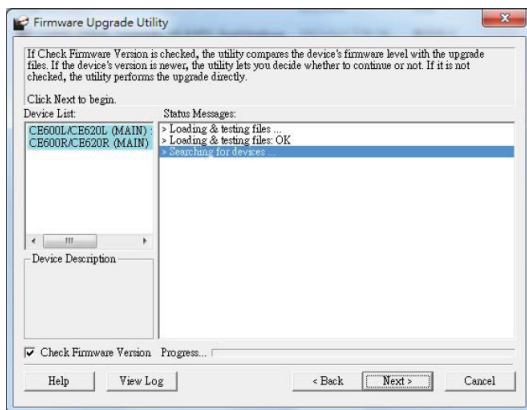
The Utility inspects your installation. The Local and Remote Units are listed in the **Device List** panel and automatically selected for upgrade.

4. Click **Next** to perform the upgrade.

   If you enabled **Check Firmware Version**, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher than the upgrade version, it brings up a dialog box informing you of the situation and gives you the option to **Continue** or **Cancel**.

   If you did not enable Check Firmware Version, the Utility installs the upgrade files without checking whether or not they are a higher level.

   As the upgrade proceeds, status messages appear in the Status Messages panel, and the progress toward completion is shown on the Progress... bar. The highlight / color of the device name in the Device List panel also changes as follows:
   - Green: the device is being prepared for upgrade
   - Blue: firmware upgrade is in progress
   - Magenta: firmware upgrade is successful

Upgrade Succeeded

After the upgrade has completed, a screen appears to inform you that the procedure was successful:
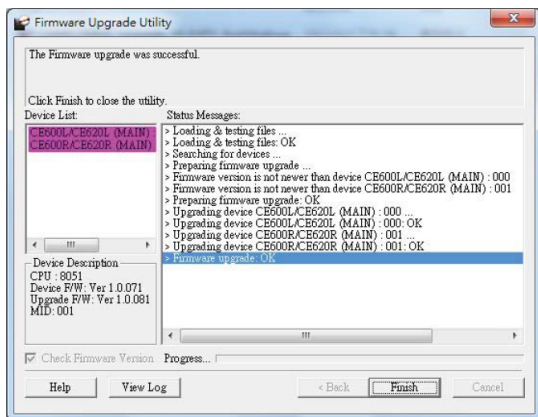
1. Click **Finish** to close the Firmware Upgrade Utility.
2. After successfully upgrading the firmware, unplug the Local unit's power adapter.
3. Turn the FW Upgrade switch **Off** to exit the Firmware Upgrade Mode for both Local and Remote Units.
4. Plug in the Local unit's power adapter to turn it on.

Upgrade Failed

If the Upgrade Succeeded screen does not appear, then the upgrade failed to complete successfully. You should repeat the upgrade procedure from the beginning.

Specifications

Function			Local unit	Remote unit
Connectors	Console Ports	Keyboard	N/A	1 x USB Type A Female (White)
		Video	N/A	1 x DVI-D Female (White)
		Mouse	N/A	1 x USB Type A Female (White)
		Speakers	N/A	1 x Mini Stereo Jack Female (Green)
		Mic.	N/A	1 x Mini Stereo Jack Female (Pink)
	KVM Ports	Video	1 x DVI-D Female (White)	N/A
		Speakers	1 x Mini Stereo Jack Female (Green)	N/A
		Mic	1 x Mini Stereo Jack Female (Pink)	N/A
		USB	1 x USB Type B Female (White)	N/A
	RS-232		1 x DB-9 Female (Black)	1 x DB-9 Male (Black)
	Power		1 x DC Jack (Black)	
	Sub / Main		2 x RJ-45 Female (Black)	
LEDs	Link		1 (Green)	1 (Green)
	Power		1 (Green)	1 (Green)
Switches	EQ Switch		N/A	1 x 8-position switch
	F/W Upgrade		1 x Slide Switch	N/A
Emulcation	Keyboard / Mouse		USB	
Video			2560 x 1600 @ 60Hz (40m) (GCE616U only); 1920 x 1200 @ 60Hz (30m); 1024 x 768 @ 60Hz (60m)	
Power Consumption			GCE611U:DC5.3V, 2.65W	GCE611U:D5.3V, 4.24W
			GCE616U:DC5.3V, 3.18W	GCE616U:DC5.3V,5.04W
Environment	Operating Temp		0–50ºC	
	Storage Temp		-20–60ºC	
	Humidity		0–80% RH, Non-condensing	
Physical Properties	Housing		Metal	
	Weight		0.48 kg	0.48 kg
	Dimensions (L x W x H)		20.20 x 8.54 x 2.50 cm	20.20 x 8.70 x 2.50 cm

Troubleshooting

Operation problems can be due to a variety of causes. The first step in solving them is to make sure that all cables are securely attached and seated completely in their sockets.

Problem	Action
No video	Make sure that all cables are securely plugged into their sockets.
Poor qulity video	The video quality can be improved by adjusting the EQ switch on the GCE611U / GCE616U to increase or reduce the video signal compensation.
	The video quality can be improved by reducing the refresh rate.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential setting. This product generates, uses, and can radiate radio frequency energy and, if not installed and used as directed, it may cause harmful interference to radio communications. Although this product complies with the limits for a Class A digital device, there is no guarantee that interference will not occur in a particular installation.

CE Compliance

This device has been tested and found to comply with the following European Union directives: Electromagnetic Capability (2004/108/EC), Low Voltage (2006/95/EC) and R&TTED (1999/5/EC).

Limited Warranty

WE'RE HERE TO HELP YOU!
NEED ASSISTANCE SETTING UP THIS PRODUCT?

Make sure you:
1. Visit www.iogear.com for more product information
2. Visit www.iogear.com/support for live help and product support

Warranty Information

This product carries a 3 Year Limited Warranty. For the terms and conditions of this warranty, please go to http://www.iogear.com/support/warranty

Register online at http://www.iogear.com/register

Important Product Information
Product Model _____

Serial Number _____

Contact

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