



Installation Guide

USB 2.0 Dual Link DVI KVM Switch

GCS1204

Part No. M1043



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Conventions

This manual uses the following conventions:

Monospaced Indicates text that you should key in.

[] Indicates keys you should press. For example, [Enter] means to press the **Enter** key. If keys need to be chorded, they appear together in the same bracket with a plus sign between them: [Ctrl+Alt].

1. Numbered lists represent procedures with sequential steps.

- Bullet lists provide information, but do not involve sequential steps.

—> Indicates selecting the option (on a menu or dialog box, for example), that comes next.

For example, Start —> Run means to open the Start menu, and then select Run.



Indicates critical information.

Package Contents

- 1- USB 2.0 DVI KVMP Switch
- 4- Custom KVM Cable Sets (6 ft)
- 1- USB-to-PS/2 Converter
- 1- Firmware Upgrade Cable
- 1- Power Adapter
- 1- User Manual
- 1- Registration form

Verify all the components are present and that nothing was damaged in shipping. If you encounter a problem, contact your dealer, or IOGEAR.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and / or any of the devices connected to it.

Requirements

USB mouse

USB keyboard

Microphone and speakers (optional)

Monitor with a DVI input.

Computers

A DVI-D port

USB Type A port

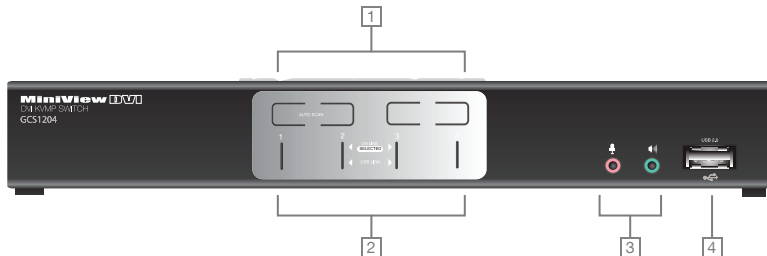
Audio ports (optional)

Operating Systems

OS	Flavor	Version
Windows		2000 and higher
Linux	RedHat	7.1 and higher; FedoraCore 2 and higher
	SuSE	9.0 and higher
Unixa	AIX	4.3 and higher
	FreeBSD	4.2 and higher
	Sun	Solaris 9 and higher
Novell	Netware	5.0 and higher
MAC		OS 9.0 and higher

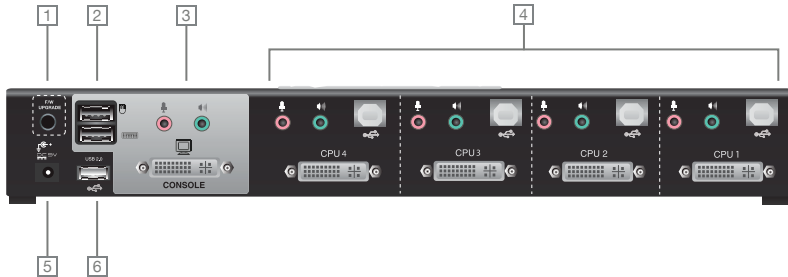
Note: Supports Linux Kernel 2.6 and higher.

Components




No.	Component	Description
1	Port Select Pushbuttons	Press a pushbutton for longer than two seconds to bring the KVM, USB, and audio focus to the computer attached to its corresponding port.
2	Port LEDs	The Port LEDs are located below the Port selection buttons The upper ones are the KVM port LEDs and the lower are the USB LEDs
		KVM: Lights Dim Orange to indicate the computer attached to the port is on line. It changes to bright Orange when the port is selected and flashes to indicate auto scan has been activated.
		USB: Lights dim green to indicate a USB connection. It changes to bright Green to indicate to indicate the KVM is focused on the port
3	Console Ports Audio	The connections for your main console microphone and speakers. These audio ports have priority over the ports in the rear panel.
4	USB 2.0 Peripheral Port	One of the two USB 2.0 peripheral ports. It is backwards compatible with USB-1

Rear View



No.	Component	Description
1	Firmware Upgrade Port	Connection for the firmware up-grade cable
2	USB Console Ports	USB1.0 Keyboard and mouse connections
3	Console Port Section	Monitor, mike, and speaker connections
4	CPU Port Section	Connections for the cables that link the switch to your computers. Each CPU port is comprised of a microphone jack, speaker jack, USB type B socket and a DVI connector
5	Power Jack	Power adapter connection
6	USB Peripheral Port	Connection for USB 2.0 peripherals (printers, scanners, etc)

Hardware Setup

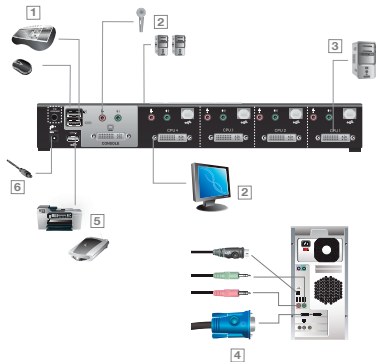
 Make sure that power to all the devices you will be installing has been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.

Cable Connection

To install your GCS1204, refer to the diagram on the following page. The numbers in the diagrams correspond to the steps, below.

1. Connect your USB keyboard and mouse into the USB Console Ports located on the unit's rear panel.
2. Connect your microphone, speakers, and monitor into the Console ports located on the unit's rear panel
3. Using the KVM cables, connect the DVI connector to a DVI socket in the CPU Port section of the switch, then connect the accompanying USB, microphone and speaker connectors to their corresponding USB, microphone, and speaker sockets.
4. At the other end of the cable, connect the USB, video, microphone, and speaker cables to their respective ports on the computer.
5. Connect your USB peripherals to the type A sockets (one is located on the front, the other is located on the rear of the unit).
6. Connect the power adapter that came with your switch to the jack on the switch then connect the adapter to an AC power source.

7. Verify your connections: ports are correct and icons match the connection type i.e. mouse and mouse icon
8. Power on the computers.



Basic Operation

Manual Switching

There are two convenient methods to access the computers:

Manual – pressing the port selection pushbuttons located on the unit's front panel.

Hotkey – entering key combinations from the keyboard. Hotkey port selection is discussed in the next chapter.

Manual port selection

Press and release a port selection pushbutton to focus the computer on the corresponding port. The USB and Audio focus do not change (expect a 2 sec delay).

Press a port selection pushbutton twice to focus the audio on the corresponding port (expect a 2 sec delay).

Press and hold a port selection pushbutton for more than 2 seconds to change KVM, USB, and Audio focus to the computer on the selected port.

Press and hold port selection pushbuttons 1 and 2 for more than 2 seconds to start Auto Scan Mode.

Hotkey switching

All port switching begins by tapping the **Scroll Lock** key twice. The tables below describe the actions that each combination performs.

Note:

If the Scroll Lock key conflicts with programs running on the computer, or your keyboard does not have a Scroll Lock, see the section titled **Advanced Switching** to use the alternate switching method.

Cycling though the ports

Hotkey	Action
[Scroll Lock] [Scroll Lock] [Enter]	Increments the KVM, USB, and Audio focus to the next higher port (port 4 wraps to 1)
[Scroll Lock] [Scroll Lock] [K] [Enter]	Increments only KVM focus to the next port
[Scroll Lock] [Scroll Lock] [U] [Enter]	Increments only the USB hub to the next port
[Scroll Lock] [Scroll Lock] [S] [Enter]	Increments only Audio to the next port

* The USB ports cannot be switched independently of each other.

Port ID Numbering

Each CPU port on the GCS1204 is assigned a port number (1, 2, 3, or 4). The port numbers are marked on the rear panel of the switch and each switch LED has a corresponding number for easy identification

The Port ID of a computer is derived from the CPU port number to which it is connected. For example, a computer connected to CPU port 2 has a Port ID of 2.

The Port ID is used to specify which computer gets the KVM, USB peripheral, and / or audio focus with the Hotkey port selection method

Going Directly to a Port

Note: The n stands for the computer's Port ID number. Replace the n with the appropriate Port ID when entering hotkey combinations

Hotkey	Action
[Scroll Lock] [Scroll Lock][n][Enter]	Brings the KVM, USB hub, and audio focus to the computer attached to the specified port.
[Scroll Lock] [Scroll Lock][n] [K] Enter]	Brings only the KVM focus to the computer attached to the specified port.
[Scroll Lock] [Scroll Lock] [n] [U] [Enter]	Brings only the USB hub focus to the computer attached to the specified port.
[Scroll Lock] [Scroll Lock] [n] [S] [Enter]	Brings only the audio focus to the computer attached to the specified port.
[Scroll Lock] [Scroll Lock] [n] [K] [U] [Enter]	Brings the KVM and USB hub focus to the computer attached to the specified port
[Scroll Lock] [Scroll Lock] [n] [K] [S] [Enter]	Brings the KVM and audio focus to the computer attached to the specified port.
[Scroll Lock] [Scroll Lock] [n] [U] [S] [Enter]	Brings the USB hub and audio focus to the computer attached to the specified port.

Auto Scanning

The GCS1204's Auto Scan feature automatically cycles KVM focus through the computer ports at regular intervals. This allows you to monitor computer activity without having to switch from port to port manually.

Note:

1. **N** stands for the number of seconds the GCS1204 will dwell on a port before moving on to the next. Replace **N** with a number between 1 and 99 when entering the hotkey combination.
2. While Auto Scan Mode is in effect, ordinary keyboard and mouse functions are suspended – only Auto Scan Mode compliant keystrokes and mouse clicks can be input. You must exit Auto Scan Mode in order to regain normal control of the console (hit the space bar or the Esc key).
3. Although the video focus switches from port to port, the keyboard, mouse, and USB focus remain on the port where Auto Scanning began.



Hotkey	Action
[Scroll Lock] [Scroll Lock] [A] Enter	Invokes Auto Scan. The KVM focus cycles from port to port at 5 second intervals (default interval)
[Scroll Lock] [Scroll Lock] [A] [N] Enter	The KVM focus cycles from port to port at N seconds interval

Advanced Configuration

Advanced Switching Hotkey Setting Mode

In some instances the default hotkey settings conflict with programs running on your computer, and in some instances the default hotkeys either do not exist on your keyboard (MAC keyboards for instance do not have a Scroll Lock key), or are inconvenient to use, so The Hotkey Setting Mode allows you to select alternate configurations for the KVM's hotkeys.

When HSM is active, the Caps Lock, and Scroll Lock LEDs flash in succession to indicate that HSM is in effect. They stop flashing and revert to normal status when you exit HSM.

Ordinary keyboard and mouse functions are suspended – only Hotkey compliant keystrokes (described in the sections that follow), can be input.

At the conclusion of some hotkey operations, you automatically exit hotkey mode. With some operations, you must exit manually. To exit HSM manually, press the **Esc** key, or the **Spacebar**.

Invoking Hotkey Setting Mode (Default)

1. Press and hold down **[Num Lock]** (the **Clear** key on MAC keyboards).
2. Press and release **[-]**.
3. Release **[Num Lock]** (the **Clear** key on MAC keyboards).

To Toggle to the alternate **Hotkey Setting Mode** (HSM):

1. Press and hold down **[Num Lock]** (the **Clear** key on MAC keyboards)
2. Press and release **[-]**.
3. Release **[Num Lock]** (the **Clear** key on MAC keyboards)
4. Press and release **[H]**.

Invoking Hotkey Setting Mode (Alternate)

1. Press and hold down **[Ctrl]**.
2. Press and release **[F12]**.
3. Release **[Ctrl]**.

Summary of Hotkey Settings

NOTE:

The term “invoke HSM” in the following table refers to the default or alternate method chosen above

Action	Key sequence	result
Port Switching	Invoke HSM Press and release [T]	Changes the [Scroll Lock] key to [Ctrl]
USB reset	1. Invoke HSM. 2. Press and release [F5]	Resets the USB peripheral ports
Restore Default Settings	1. Invoke HSM. 2. Press [R] [Enter] .	Reset the KVM to its default hotkey settings
Hotkey Beeper Control	1. Invoke HSM. 2. Press [B]	Toggles the Beeper On and Off
Disable Port Switching Hot Keys	1. Invoke HSM 2. Press [X] [Enter]	Toggles Hotkey Switching on or off

Other OS Mode	1. Invoke HSM 2. Press [F1] .	Reset keyboards and mice under some special OS's that do not support USB 2.0
Mouse Emulation Control	1. Invoke HSM 2. Press [M] .	Allows the special programming of multifunction mice to operate through the KVM
List Hotkey Settings	1. Open a word processor 2. Invoke HSM. 3. Press and release [F4] .	Prints a list of the current hotkey settings in your text editor or word processor
Display Emulation Technology	1. Invoke HSM 2. Press and release [D]	Display Emulation Technology eliminates the problems of your display reverting to default resolution when switching between computers, or displaying a default resolution if the KVM is not focused on the computer while it is booting.
Alternative Manual Port Selection Settings	1. Invoke HSM 2. Press and release [S]	Toggles between the default and the alternative front panel pushbutton port selection settings See the table on the following page for comparisons

Comparison of Default and Alternate Manual Port Selection Settings

Action	Default	Alternate
Press and release a port selection pushbutton	Switches only the KVM focus to the selected port	KVM, Audio and USB focus switch to the selected port
Press a port selection pushbutton twice	Audio focus switches to the selected port	Audio focus switches to the selected port
Press and hold a port selection pushbutton for more than 2 seconds	KVM focus, USB, and Audio focus switch to the selected port	Switches only the KVM focus to the selected port
Press and hold port selection pushbuttons 1 and 2 for more than 2 seconds	Starts AutoScan at 5 sec dwell	Starts AutoScan at 5 sec dwell

The Firmware Upgrade Mode

Firmware Upgrade Mode

To set the KVM to Firmware Upgrade Mode:

1. Invoke your HSM.
2. Key in: upgrade
3. Press **[Enter]**.

The front panel LEDs flash to indicate Firmware Upgrade Mode is in effect. To exit Firmware Upgrade Mode, you must power off the switch. See The **Firmware Upgrade Utility** for details

Keyboard Operating Platform

The KVM's default port configuration is for a PC compatible keyboard. If you are using a PC compatible keyboard and you have a Mac or Sun attached to a port, you can change the port's keyboard operating platform configuration to emulate a Mac or Sun keyboard.







1. Bring the KVM focus to the port you want to set.
2. Invoke HSM.
3. Press and release the appropriate Function key (see table below).

Function Key	Operation
[F2]	Enables Mac keyboard emulation, see Mac Keyboard Emulation,
[F3]	Enables Sun keyboard emulation, see Sun Keyboard Emulation
[F10]	Disables keyboard emulation. Key presses are passed straight through. When your console uses a Mac keyboard to access a Mac attached to a port, for example



After completing this procedure, you automatically exit HSM.

The PC compatible (101/104 key) keyboard can emulate the functions of Mac and Sun keyboards when the Control key [Ctrl] is used in conjunction with other keys. The emulation mappings are listed in the table on the next page.










PC Keyboard	Mac Keyboard
[Shift]	Shift
[Ctrl]	Ctrl
	
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Alt]	Alt



PC Keyboard	Mac Keyboard
[Print Screen]	F13
[Scroll Lock]	F14
	=
[Enter]	Return
[Backspace]	Delete
[Insert]	Help
[Ctrl] 	F15



PC Keyboard	Sun Keyboard
[Ctrl] [T]	Stop
[Ctrl] [F2]	Again
[Ctrl] [F3]	Props
[Ctrl] [F4]	Undo
[Ctrl] [F5]	Front
[Ctrl] [F6]	Copy
[Ctrl] [F7]	Open
[Ctrl] [F8]	Paste
[Ctrl] [F9]	Find

PC Keyboard	Sun Keyboard
[Ctrl] [F10]	Cut
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Ctrl] [H]	Help
	Compose
	

Note: Press and release the first key [Ctrl], then press and release the activation key.

The Firmware Upgrade Utility


The Windows-based Firmware Upgrade Utility (FWUpgrade.exe) provides a smooth, automated process for upgrading the KVM switch's firmware.

The Utility comes as part of a Firmware Upgrade Package that is specific for each device. New firmware upgrade packages are posted on our Website as new firmware revisions become available. Check the web site regularly to find the latest packages and information relating to them.

Before you Begin

To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation (disconnect the computer from the KVM) go to our Internet support site and choose the model name that relates to your device (GCS1204) to get Firmware Upgrade Packages.
2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. Use the Firmware Upgrade Cable provided with this unit, to connect a COM port on your computer to the Firmware Upgrade Port of your switch.

- 
4. Shut down the computers on your GCS1204 installation.
 5. Invoke Firmware Upgrade Mode. The front panel LEDs flash together to indicate Firmware Upgrade Mode is in effect.

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.

2. Read 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. All the devices capable of being upgraded by the package are listed in the Device List panel.

- 
4. As you select a device in the list, its description appears in the Device Description panel.
 5. After you have made your device selection(s), 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 they are a higher level, or not. As the Upgrade proceeds, status messages appear in the Status Messages panel, and the progress toward completion is shown on the Progress bar.

After the upgrade has completed, a screen appears to inform you that the procedure was successful.

Click **Finish** to close the Firmware Upgrade Utility.

After a successful completion, the switches exit Firmware Upgrade Mode, and reset themselves.

Upgrade Failed

If the Upgrade Succeeded screen does not appear, it means that the upgrade failed to complete successfully, in which case you should do the following:

1. Power off the GCS1204 and remove its housing.
2. Using a jumper cap, short the jumper on the mainboard labeled J17. The diagram below indicates the jumper location on the GCS1204 board:



3. Power on the GCS1204. It will now work with the factory default firmware.
4. Repeat the firmware upgrade procedure.
5. After the upgrade procedure completes, power off the switch, remove the jumper cap from J17, close the housing, and power the GCS1204 on again.

Troubleshooting

Symptom	Possible Cause	Action
Mouse / Keyboard not responding.	Improper mouse and/or keyboard reset.	Unplug the cable(s) from the console port(s), then plug it/them back in.
	KVM switch needs to be reset.	Power off all devices on the installation. Power off the KVM switch; wait five seconds; then power up
USB devices not responding.	USB ports need to reset.	Unplug the device's USB cable from the USB port on the switch's rear panel, then plug it back in.
	PC or OS does not support USB 2.0.	The GCS1204 has a built-in USB 2.0 hub, so will not support PCs or OS that do not support USB 2.0.
There are ghost images on the external monitor.	The distance between the external console and the GCS1204 is too great. The maximum VGA cable distance should not exceed 20m and, in some cases, may need to be shorter. Replace the VGA cable with one of an appropriately short length.	

Specifications

Function	GCS1782(GCS1784)		
Computer Connections	4		
CPU Port Selection	Front Panel Pushbuttons; Hotkey		
Console Connectors	Keyboard	1 x USB Type A F (black, rear panel)	
	Mouse	1 x USB Type A F (black, rear panel)	
	Video	1 x DVI-I F (white)	
	Audio*	Line in Port	2x Mini Stereo Jack (green; 1 x front panel, 1 x rear panel)
		Microphone Port	2x Mini Stereo Jack (pink; 1 x front panel, 1 x rear panel)
Power Consumption	DC 5.3V, 4.8W		
Computer Connectors	KB /	USB X 2	



	Mouse	
	Video	Dual Link DVI
	F/W Upgrade	3.5mm
	Power	1
	USB Hub	2
Switches	4 ea	Port Selection
LEDs	4	Green
	4	Orange

Video Specifications

DVI-D:

2560 x 1600 @ 60Hz (Dual Link);

supports Apple 20", 23", 30" Cinema Display;

supports Viewsonic 22" LCD monitor

DVI-A:

2048 x 1536; DDC2B

Supports Special monitors to 3840 x 2400 @

13Hz (Single Link);

Federal Communications Commission (FCC) Statement

15.21

You are cautioned that changes or modifications not expressly approved by the part responsible for compliance could void the user's authority to operate the equipment.

15.105(b)

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.



Operation is subject to the following two conditions:

- 1) this device may not cause interference and
- 2) this device must accept any interference, including interference that may cause undesired operation of the device.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

CE Statement

This device has been tested and found to comply with the requirements set up in the council directive on the approximation of the law of member states relating to EMC Directive 89/336/EEC, Low Voltage Directive 73/23/EEC and R&TTE Directive 99/5/EC.

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Warranty

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

Make sure you:

1. Use the live chat at www.iogear.com to try and solve any issues you may be having with the product
2. Visit the Tech Info Library/FAQ on www.iogear.com (under the Support tab)
3. Call the 24/7 tech support line at 1(866) 946-4327 (U.S. only) or (949) 453-8782

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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> or call 1-866-946-4327

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

Important Product Information

Product Model _____

Serial # _____





About Us



FUN

IOGEAR offers connectivity solutions that are innovative, fun, and stylish, helping people enjoy daily life using our high technology products.



GREEN

IOGEAR is an environmentally conscious company that emphasizes the importance of conserving natural resources. The use of our technology solutions helps reduce electronic waste.



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IOGEAR supports healthy and fit lifestyles. By integrating products with the latest scientific developments, IOGEAR's solutions enhance the life of end-users.

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