Installation Guide

USB 2.0 DVI KVMP Switch

GCS1782 / GCS1784

PART NO. M1024

Table of Contents

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

[GCS1782] 2-Custom KVM Cable Sets (6ft)

[GCS 1784] 4 custom Cable sets (6ft)

2 7.1 Audio cables (6ft) [GCS1782 only]

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

A USB mouse
A USB keyboard
Microphone and speakers (optional)
Monitor with a DVI input

Computers
A DVI-D port
USB Type A port
Audio ports (optional)

Cables
Two (6 ft) DVI-D KVM custom cable sets
are provided with this package, which
incorporates cables for microphones (pink)
and 2.1 channel surround sound speakers
(green)

Two additional 6 ft audio cables are
included for 7.1 sound and are used in
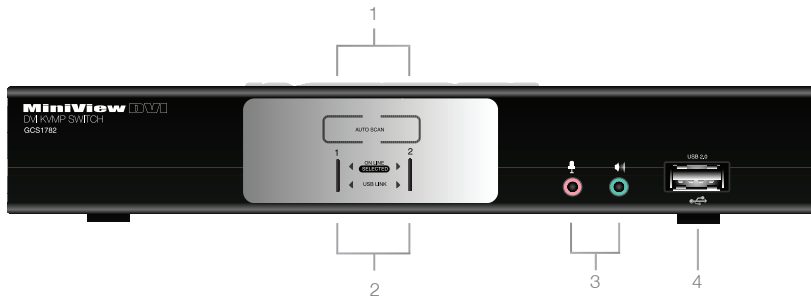conjunction with the 2.1 audio cables on
the KVM cable

Operating Systems

OS	Distribution	Version
Windows		2000 and higher
Linux	RedHat	9.0 and higher; Fedora Core 4 and higher
	SuSe	9.0 and higher
Unix	AIX	4.3 and higher
	FreeBSD	4.2 and higher
	Sun	Solaris 9 and higher
Novell	Netware	6.0 and higher
MAC		OS 9.0 and higher

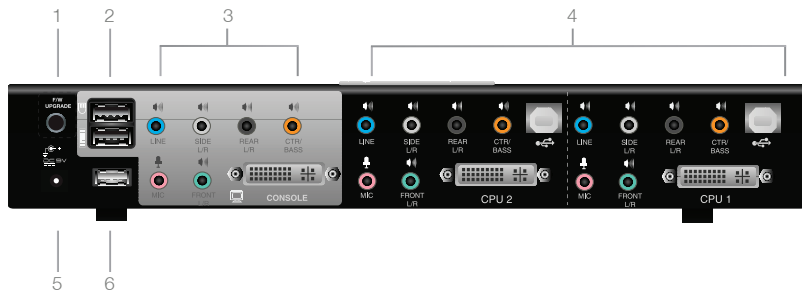Note: Supports Linux Kernel 2.6 and higher.

Components

Front View

AUTO SCAN

ON LINE
SELECTED
1   2
USB LINK

USB 2.0

No	Component	Description
1	Port Selection 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 Pushbuttons. The upper one (Orange) are the KVM Port LEDs; the lower ones (Green) are the USB LEDs:
		KVM Lights DIM ORANGE to indicate that the computer attached to the port is (On Line). Changes to BRIGHT ORANGE to indicate that the computer attached that port has KVM focus (Selected). Flashes to indicate that the computer attached to its port is in Auto Scan mode.
		USB Lights GREEN to indicate that there is a USB connection to the computer attached to the port. Changes to BRIGHT GREEN to indicate that the computer attached has access to the USB peripherals.
3	Console Ports (Audio)	Connections for your microphone and 2.1 speakers
4	USB 2.0 Peripheral Port	Connection for a USB peripheral device (printer, scanner, etc.)

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	Connections for your monitor, mike, and speakers
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.
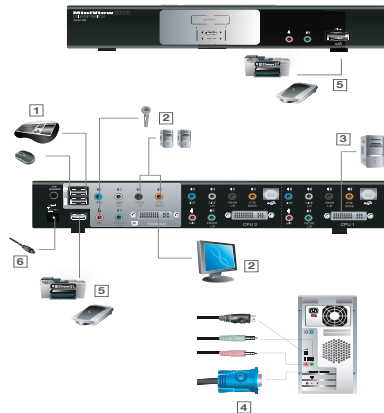
Cable Connection

To set up your GCS1782 installation, refer to the installation diagrams on the following pages (the numbers in the diagrams correspond to the steps, below), and do the following:

1. Connect your USB keyboard and mouse into the USB Console Ports located on the unit's back panel.

2. Connect your microphone, speakers, and monitor into the Console ports located on the unit's rear panel

Note: The IOGEAR KVM cable set provided 2.1 channel surround sound only. You must use the included audio cable for 7.1 audio

3. Using the KVM cable set, connect the DVI connector into any available DVI socket in the CPU Port setion of the switch, then connect the accompanying USB, microphone and speaker connectors into their corresponding USB, microphone, and speaker sockets.

4. At the other end of the cable, connect the USB, video, microphone, and speaker cables into their respective ports.

5. Connect your USB peripherals into the type A sockets (one is located on the front, the second is located on the rear).

6. Connect the power adapter that came with your switch into the jack on the switch then connect the adapter to an AC power source.

7. Verify your connections: ports are correct and that the Icons match the connection type

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; and 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 focus KVM, USB, Audio and the computer on the corresponding port.

Press and hold port selection pushbuttons 1 and 2 for more than 2 seconds to start Auto Scan Mode, at 5seconds dwell time (default).

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 other programs running on the computer, see the section titled **Advanced Switching** to switch to the alternate method.

Cycling though the ports

Hotkey	Action
[Scroll Lock] [Scroll Lock] [Enter]	Increments the KVM, USB, and Audio focus to the next higher port (GCS1784 - 4 wraps to 1)
[Scroll Lock] [Scroll Lock] [K] [Enter]	Increments only KVM to the next port
[Scroll Lock] [Scroll Lock] [U] [Enter]	Increments only USB to the next port*
[Scroll Lock] [Scroll Lock] [S] [Enter]	Increments only Audio to the next port

* The USB ports are locked together, therefore they cannot be independently switched.

Port ID Numbering

Each CPU port on the switch is assigned a port number (1 or 2 for the GCS1782 and 1,2,2,4 for the GCS1784). 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 it is connected to. 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	Result
[Scroll Lock[ScrollLock][**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 GCS1782's Auto Scan feature automatically cycles the 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. The **n** stands for the number of seconds that the CS1782 should dwell on a port before moving on to the next. Replace the **n** with a number between 1 and 99 when entering this 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 do not switch. They remain on the port when Auto Scanning began.

Hotkey	Result
[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** second intervals.

Advanced Configuration

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 and mouse clicks (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 MACs).
2. Press and release **[-].**
3. Release **[Num Lock]** (the **Clear** key on MACs).

To Toggle to or from the alternate **Hotkey Setting Mode** (HSM):
1. Press and hold down **[Num Lock].**
2. Press and release **[-].**
3. Release **[Num Lock].**
4. Press and release **[H].**

Invoking Hotkey Setting Mode (Alternate)
1. Press and hold down **[Ctrl]**.
2. Press and release **[F12]**.
3. Release **[Ctrl]**.

NOTE: The term "invoke HSM" in the following table refers to the method chosen above

Summary of Hotkey Settings

Action	Key sequence	Result
Port Switching	Invoke your 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 Switchin 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 multi-function 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 remembers the brand and display information of the monitor attached to the KVM. It eliminates the problem 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 @ 5 sec dwell	Starts AutoScan at 5 sec dwell

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 operating platform. If your console uses a PC compatible keyboard and you have a Mac or Sun attached to a port, for example, you can change the port's keyboard operating platform configuration so that the PC compatible keyboard emulates the 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	PC Keyboard	Sun Keyboard
[Shift]	Shift	[Ctrl] [T]	Stop
[Ctrl]	Ctrl	[Ctrl] [F2]	Again
⊞	⌘	[Ctrl] [F3]	Props
[Ctrl] [1]	🔇	[Ctrl] [F4]	Undo
[Ctrl] [2]	🔈	[Ctrl] [F5]	Front
[Ctrl] [3]	🔉	[Ctrl] [F6]	Copy
[Ctrl] [4]	⏏	[Ctrl] [F7]	Open
[Alt]	Alt	[Ctrl] [F8]	Paste
[Print Screen]	F13	[Ctrl] [F9]	Find
[Scroll Lock]	F14	[Ctrl] [F10]	Cut

PC Keyboard	Mac Keyboard	PC Keyboard	Sun Keyboard
📋	=	[Ctrl] [1]	⊏ 🔇
[Enter]	Return	[Ctrl] [2]	◖ - 🔉
[Backspace]	Delete	[Ctrl] [3]	◑ - 🔊
[Insert]	Help	[Ctrl] [4]	🌙
[Ctrl] ⊞	F15	[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 (GCS1782) 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 CS1782 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 didn't 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.
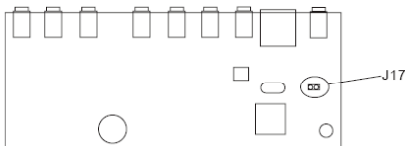
Click **Finish** to close the Firmware Upgrade Utility.

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

Upgrade Failed

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

1. Power off the CS1782 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 CS1782 board:

3. Power on the CS1782. It will now work with the factory default firmware.

4. Do the firmware upgrade procedure again.

5. After the upgrade procedure completes, power off the switch, remove the jumper cap from J17, close the housing, and power the CS1782 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.
USB devices not responding.	KVM switch needs to be reset.	Power off all devices on the installation. Power off the KVM switch; wait five seconds; then power up
There are ghost images on the external monitor.	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 CS1782 has a built-in USB 2.0 hub, so will not support PCs or OS that do not support USB 2.0.
	The distance between the external console and the CS1782 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	2 (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 Out Port	2 x Mini Stereo Jack F (green; 1 x front panel, 1 x rear panel
		Line In Port	1 x Mini Stereo Jack F (blue)
		Microphone Port	2 x Mini Stereo Jack F (pink; 1 x front panel, 1 x rear panel)
		Side Speaker Out Port	1 x Mini Stereo Jack F (gray)
		Rear Speaker Out Port	1 x Mini Stereo Jack F (black)
		Center/Subwoofer Port	1 x Mini Stereo Jack F (orange)

Function	GCS1782 (GCS1784)
Power Consumption	DC 5.3V, 4.8W

* The GCS1784 provides 2.1 sound only

Function		GCS1782 (GCS1784)	
Computer Connectors	KB / Mouse	2 x USB 1.1 Type B (white)	
	Video	2 (4) x DVI-I F (white)	
	Audio	Line Out Port	2 (4) x Mini Stereo Jack F (green)
		Line In Port	2 (4) x Mini Stereo Jack F (blue)
		Microphone Port	2 (4) x Mini Stereo Jack F
		Side Speaker Out Port	2 (4) x Mini Stereo Jack F (gray)
		Rear Speaker Out Port	2 (4) x Mini Stereo Jack F (black)
		Center/Subwoofer Port	2 (4) x Mini Stereo Jack F (orange)
	F/W Upgrade	1 x 4-conductor 3.5 mm Jack	
	Power	1 x DC 5.3V Jack	
	USB Hub	2 x USB 2.0 Type A (black)	

Switches	Selected	2 (4) x Pushbutton
LEDs	On Line	2 (4) (Orange)
	USB Link	2 (4) (Green)

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);

Limited Warranty

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HEALTH

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