GeoVision inc

GV-Keyboard V3

User's Manual

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

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Regulatory Notices

FCC Notice

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 when the equipment is operated in a commercial environment.

Class A

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

CE Notice

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

RoHS Compliance

The Restriction of Hazardous Substances (RoHS) Directive is to forbid the use of hazardous materials of production. To meet the RoHS Directive requirements, this product is made to be RoHS compliant.

WEEE Compliance

This product is subject to the Waste Electrical and Electronic Equipment (WEEE) Directive and made compliant with the WEEE requirements.

Naming and Definition

GV-System	GeoVision Analog and Digital Video Recording Software. The GV-System also refers to **GV-Multicam System**, **GV-NVR System, GV-DVR System** and **GV-Hybrid DVR System** at the same time.

Introduction

The GV-Keyboard V3 is designed to program and operate GV-System / GV-Control Center, and it can also be connected with PTZ cameras directly for PTZ control.

Key Features:

- A Keyboard can control up to 16 GV-Systems / 16 GV-Control Centers.
- Multiple Keyboards can work with up to 8 monitors for Digital Matrix, TV Quad and Spot Monitor applications in GV-System.
- Multiple Keyboards can work with up to 8 monitors for Matrix View and ViewLog applications in GV-Control Center.
- A Keyboard can directly set up and control up to 32 PTZ cameras.

GV-System:
If you use the Keyboard with GV-System, see **Chapter 1** for detailed installation and operations.

GV-Control Center:
If you use the Keyboard with GV-Control Center, see **Chapter 2** for detailed installation and operations.

PTZ Cameras:
If you use the Keyboard to directly control PTZ cameras, see **Chapter 3** for detailed installation and operations.

Important:

1. The Keyboard for **GV-System** and for **GV-Control Center** has a different button design.
2. The Keyboard is protected with a password. Every time when you use the Keyboard, you will need to enter the default password ”0000” to unlock it. To change the default password and set the auto lock time, see *Chapter 6 Basic Programming and Operation.*
3. To see the list of **PTZ camera protocol** supported by the Keyboard for direct control, see *Supported PTZ Protocols and Brands, Appendix*.

Chapter 1 GV-System

This chapter is for users that connect the Keyboard to the GV-System.

1.1 Introduction

You can use the Keyboard to program and operate GV-Systems. You can also connect multiple Keyboards to control assigned monitors for Digital Matrix, TV Quad and/or Spot Monitor applications.

Key Features

- Up to 16 GV-Systems supported
- Up to 8 monitors for Digital Matrix, TV Quad and Spot Monitor applications can work with multiple Keyboards
- OSD panel supported

Note: The Keyboard also supports controlling any PTZ camera connected to GV-System. Click Here to see the supported IP cameras. You can also find the supported PTZ cameras from *Supported PTZ Protocol and Model*, *Appendix, DVR User's Manual* on the Surveillance System Software DVD.

1.1.1 Packing List

- GV-Keyboard x 1
- Power Adaptor (DC Output 12V, 1A) x 1
- USB Cable x 1
- RJ-11 Cable x 1
- Wall Terminal Block x 1
- GV-Keyboard Software CD x 1
- GV-Keyboard Quick Start Guide x 1

1.1.2 System Requirements

OS Supported	32-bit	Windows XP / Vista / 7 / Server 2008
	64-bit	Windows 7 / Windows Server 2008
System Supported		GV-System V8.4 or later
Note: Currently, GV-Keyboard V3 does not support embedded operating systems.		

1.2 Overview

1.2.1 Keyboard Overview

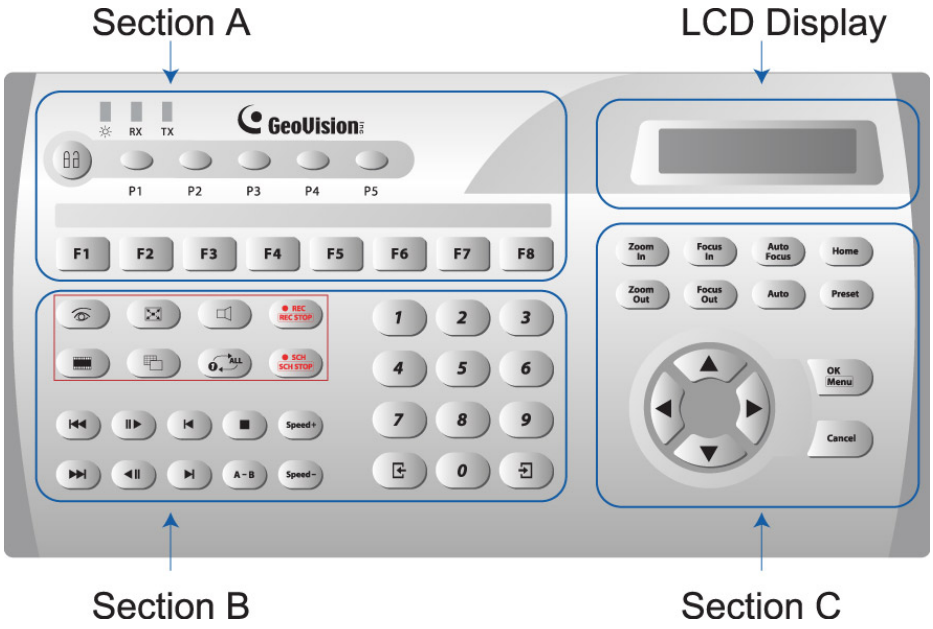


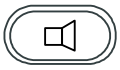
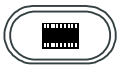
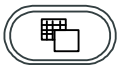
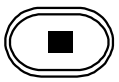
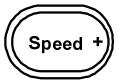
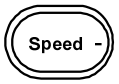
Figure 1-1

Note: The difference between the Keyboard for GV-System and for GV-Control Center is at the section B buttons, highlighted in the red square in above figure.

- **Section A**

☼	Yellow POWER LED.
RX	Red RX LED (Receive).
TX	Green TX LED (Transmit).
P1	Changes DVR ID.
P2	Select a PTZ camera to control.
P3	Configures the Keyboard parameters, including password, key beep and auto-lock period.
P4	Sets up the PTZ camera settings.
P5	Displays the firmware version.
	Locks the Keyboard.
F1-8	Function keys.

- **Section B**

	Launches Multicam Surveillance System (GV-System).
	Turns full screen view on/off.
	Turns the sound on/off.
	Starts/Stops recording.
	Launches ViewLog.
	Switches the screen divisions.
	Plays next events automatically.
	Starts/Stops the scheduled recording.
	Goes to the previous event.
	Goes to the next event.
	Plays/Pauses a video event.
	Rewinds/Pauses a video event.
	Moves one frame back.
	Moves one frame forward.
	Stops a video event.
	Sets the starting and ending frames for auto playing.
	Increases playback speed.
	Decreases playback speed.

	Switches to the previous screen or camera.
	Switches to the next screen or camera.
Numeric buttons	Enters the login password; Selects a specific camera; Changes the Time Setting in ViewLog.

- **Section C**

	Zooms in the display image of PTZ camera in GV-System; Zooms in the display image in ViewLog.
	Zooms out the display image of PTZ camera in GV-System; Zooms out the display image in ViewLog.
	**Focus In:** Press the **Auto Focus** button to select Auto Focus, and press this button to increase the focus on the camera. **Open Iris:** Press the **Auto Focus** button to select Auto Iris, and press this button to increase the aperture on the camera.
	**Focus Out:** Press the **Auto Focus** button to select Auto Focus, and press this button to decrease the focus on the camera. **Close Iris:** Press the **Auto Focus** button to select Auto Iris, and press this button to decrease the aperture on the camera.
	Press the button for 2 sec. to switch between Auto Focus and Auto Iris. **Auto Focus:** Switch to Auto Focus and press the button again to enable Auto Focus. **Auto Iris:** Switch to Auto Iris and press the button again to enable Auto Iris.
	Sets the PTZ camera for auto mode.
	Moves the PTZ camera to the default position.
	Moves the PTZ camera to a preset location.
	Calls up the Login dialog box; Enters the settings; Opens the OSD menu.
	Closes the OSD menu; Returns to the previous menu; Calls up the menu to exit GV-System or ViewLog.
	PTZ control; Navigates the display image in ViewLog; Navigates the OSD menu; Changes the Time Setting in ViewLog.

1.2.2 Rear Panel Overview

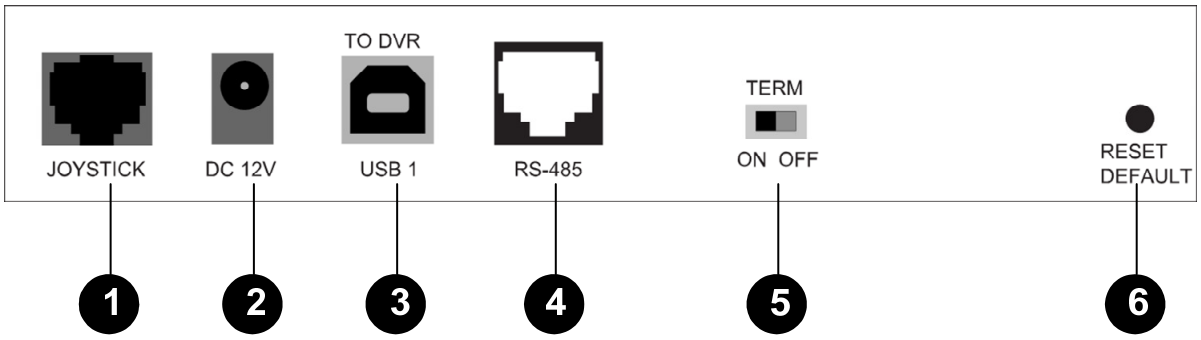


Figure 1-2

No	Name	Function
1	Joystick	Connects to GV-Joystick for PTZ control.
2	DC 12V	Connects to the power adaptor.
3	USB1 Port	Connects to one GV-System.
4	RS-485 Port (RJ-11)	Through the supplied Wall Terminal Block, the RS-485 port can connect to up to 16 GV-Systems. For details see *1.3.2 Connecting to Multiple GV-Systems.*
5	Terminal Resistance	Used in the last daisy-chained GV-System.
6	Reset	Resets the Keyboard when it does not respond to commands.
Note: There is no such function of loading default in the Rest button.		

1.3 Getting Started

You can connect the Keyboard to one GV-System by using the supplied USB cable, or up to 16 GV-Systems through the RS-485 pins on the Wall Terminal Block. You can also connect multiple Keyboards for different monitors.

1.3.1 Connecting to One GV-System

To connect the Keyboard to one GV-System, use USB port on the Keyboard.

Item required for connection:

- Supplied USB Cable

GV-System

Figure 1-3

Note: When you use the USB port on the Keyboard for connection, it is not required to connect the Keyboard to a power supply.

1.3.2 Connecting to Multiple GV-Systems

You can connect one Keyboard to up to 16 GV-Systems and switch control among them. To connect multiple GV-Systems, use the RS-485 port on the Keyboard. See the diagram below for connection.

Items required for connections:

- Supplied RJ-11 Cable
- Supplied Wall Terminal Block
- Supplied Power Adaptor
- RS-485/RS-232 interface converter, e.g. GV-NET Card, GV-NET/IO Card, GV-Hub V2 and GV-COM V2

Use the RJ-11 cable to connect between the RS-485 port on the Keyboard and the Wall Terminal Block. Then connect the Pin-2 **(Black wire)** and Pin-6 **(White wire)** of the Wall Terminal Block to the RS-485/ S-232 interface converter, which then connects to the GV-System.

The diagram below illustrates the wiring to multiple GV-Systems and uses GV-NET Card as RS-485/RS232 interface converter as example.

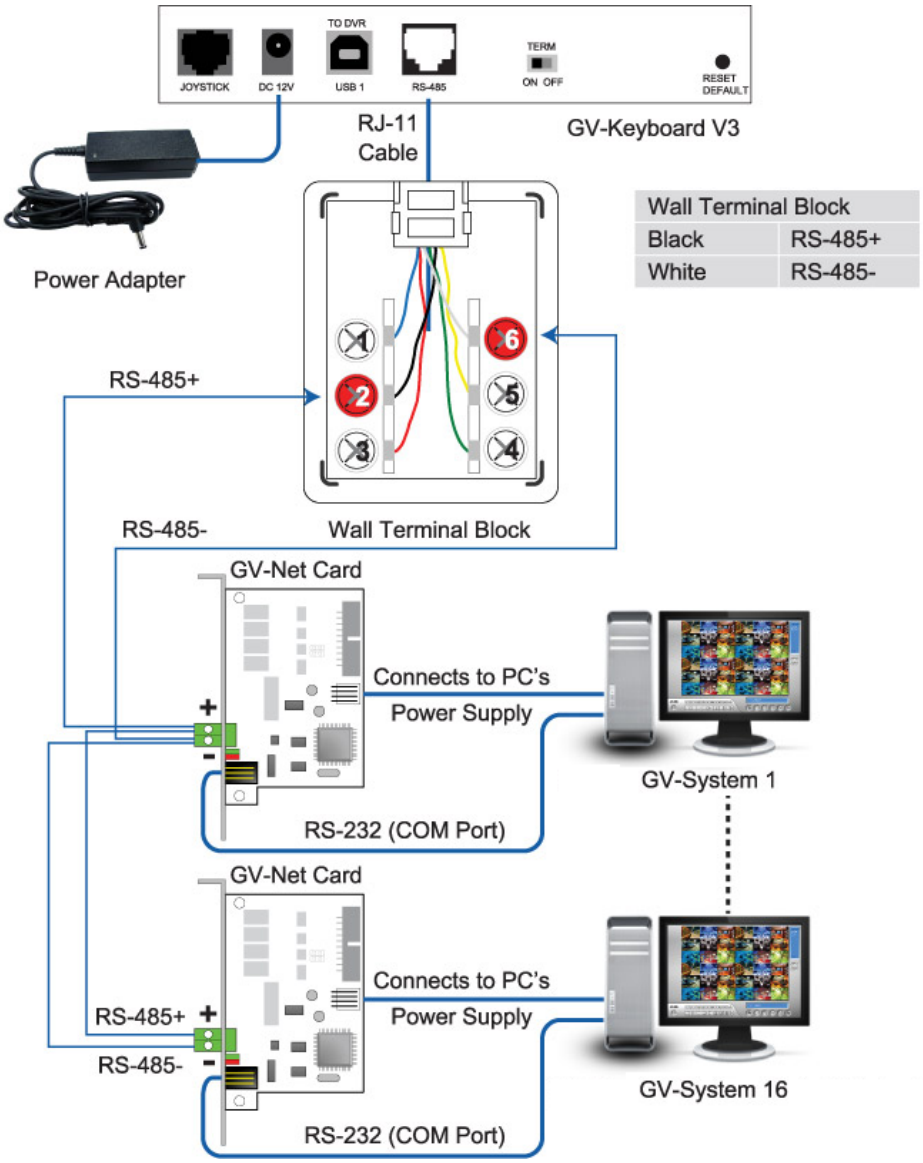


Figure 1-4

Note:

1. Because RS-485 communication has distance limitation, the distance between each Keyboard and the GV-System must be within 600 meters (1968.5 feet).
2. You can only use either USB port or RS-485 port on the Keyboard. Don't connect the USB cable on the Keyboard when using RS-485 connection.

To set up the Keyboard to control multiple GV-Systems and switch control among these servers, see *1.4.2 Setting a Keyboard for Multiple GV-Systems*.

1.3.3 Connecting Multiple Keyboards for Different Monitors

To use multiple Keyboards to control assigned monitors, use RS-485 cables to connect additional Keyboards to RS-485/RS-232 interface converters, and then connect these RS-485/RS-232 interface converters to the GV-System through USB ports.

A total of 8 Keyboards can be connected to control 8 assigned monitors for Digital Matrix, Spot Monitor and/or TV Quad applications in the GV-System.

Items required for connection:

- Supplied USB Cable
- RS-485/RS-232 interface converter, e.g. GV-Hub V2 and GV-COM V2

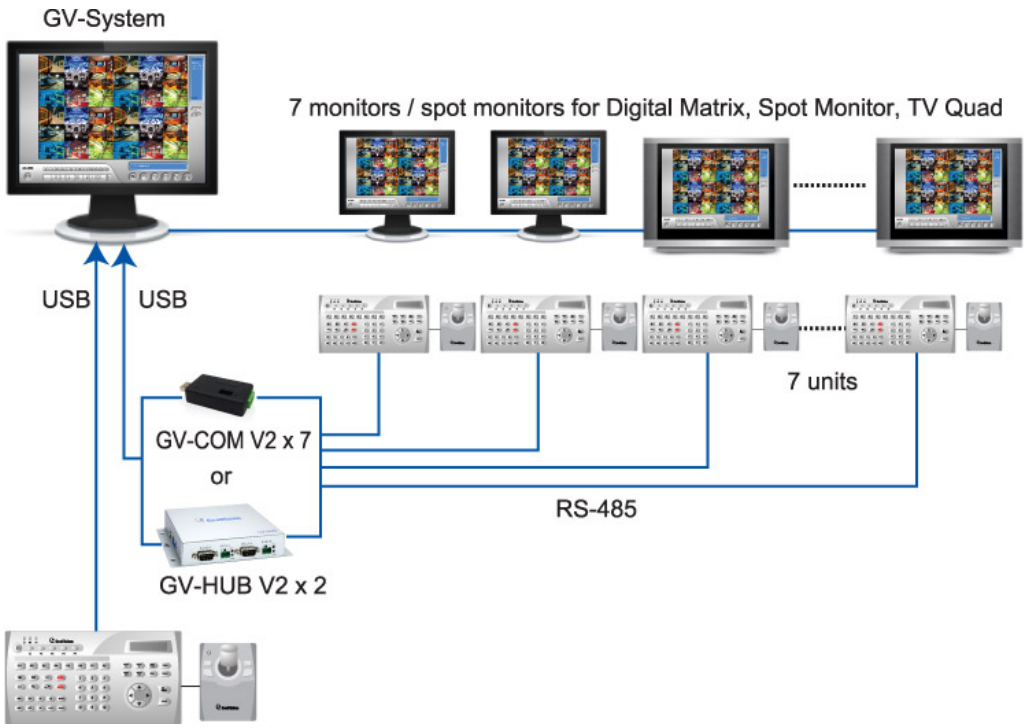


Figure 1-5

To assign a Keyboard for a spcific monitor control, see *1.4.3 Assigning Keyboards for Different Monitors*.

Note:

1. For **Digital Matrix** function, the maximum of 8 monitors can be applied; for **Spot Monitor** function, the maximum of 2 monitors can be applied; for **TV Quad** function, the maximum of 5 monitors can be applied. But, a total of 8 monitors (no matter from which functions) can work in conjunction with 8 assigned Keyboards.
2. Because RS-485 communication has distance limitation, the distance between each Keyboard and the GV-System must be within 600 meters (1968.5 feet).

1.3.4 Installing USB Drivers

It is required to install the USB driver for the USB connection. When the Windows Found New Hardware Wizard pops up, ignore the Wizard and follow the steps below to install the driver:

Note: You can only install the drivers by using the attached Software CD, or the Software DVD of GV-System V8.5 or later.

1. Insert the Software CD. This window pops up.

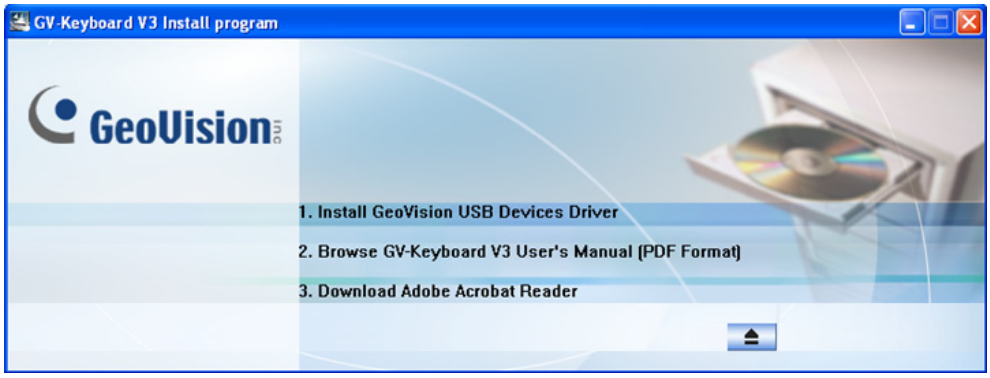


Figure 1-6

2. Select **Install Geovision USB Devices Driver**. This dialog box appears.

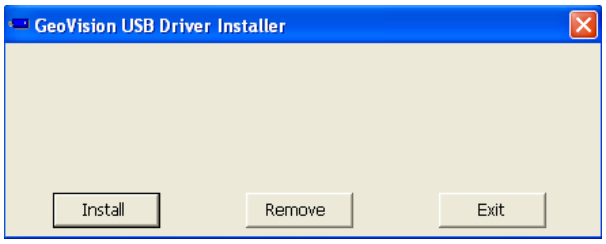


Figure 1-7

3. Click **Install** to install the driver. When the installation is complete, this message will appear: *Install done!*
4. Click **Exit** to close the dialog box.
5. To verify that the driver is installed correctly, go to Windows Device Manager. In the Ports (COM & LPT) field, you should see the entry for **STM Virtual COM Port**.

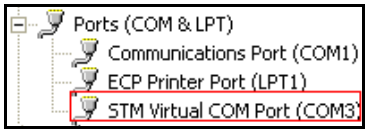


Figure 1-8

Note: Remember the COM port showing in the **STM Virtual COM Port** entry. It indicates the port number that the Keyboard is using.

1.3.5 Running the Keyboard Controller

To control the Keyboard, you need to run the **mcamctrl.exe** program always at the background.

1. Run **mcamctrl.exe** from the GV folder.

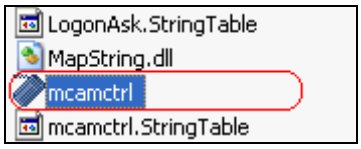


Figure 1-9

2. The Keyboard & Joystick dialog box appears.

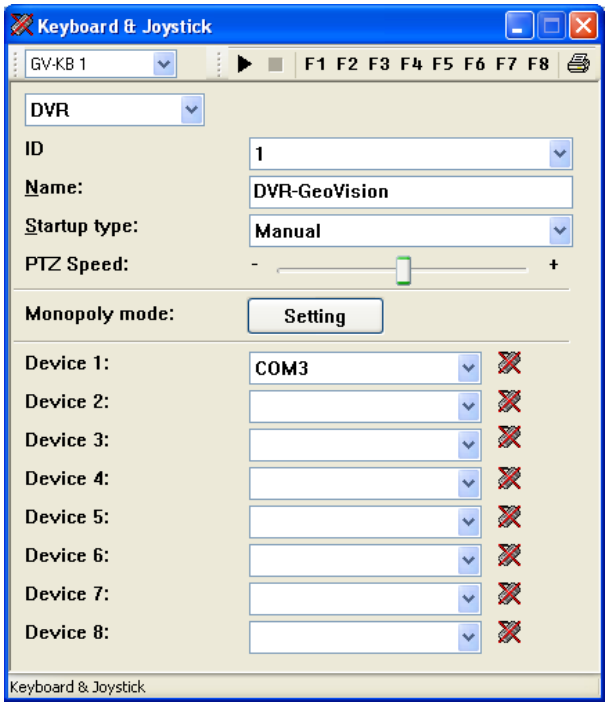


Figure 1-10

3. Configure the Keyboard & Joystick dialog box.
   A. At the top left, select **DVR** for GV-System.
   B. Choose an ID number.
   C. Name the GV-System. The name will be displayed on the Keyboard.
   D. Select the COM port that the Keyboard is connected to. For the COM port information, see step 5 in *1.3.4 Installing USB Drivers*.
4. Click ► to start the service. The Keyboard is now enabled to control GV-System.

The fields on the Keyboard & Joystick Controller dialog box:

Name	Description
GV-KB 1	Select the Keyboard to define F1-F8 functions.
DVR	Select **DVR** for the connected GV-System.
ID	Select an ID number for the GV-System. The default is 1.
Name	Give the GV-System a descriptive name.
Startup type	Select **Manual** or **Automatic** to choose whether to run the controller at next startup or not.
PTZ Speed	Adjust PTZ speed.
Monopoly Mode	Assign the Keyboard to control a specific monitor and set up the control mode.
Device 1-8	Select the COM port connecting to the Keyboard. Find the COM port number the Keyboard is using in the Ports field of Windows Device Manager.
►	Start the service.
■	Stop the service.
F1 - F8	Define eight function keys on the Keyboard to control output modules, display layout, PTZs, cameras and etc.
	Print out a label for the eight function keys.

Note:

1. To use the Keyboard to control multiple GV-Systems, see ***1.4.2 Setting a Keyboard for Multiple GV-Systems*** for further setup and operation.
2. To use more than one Keyboard to control assigned monitors, see ***1.4.3 Assigning Keyboards for Different Monitors*** for further setup.
3. To use function keys (F1-F8) on the Keyboard for instant access to many functions, see ***1.4.1 Setting Function Keys***.

1.3.6 Using the Keyboard for Login

You can use the Keyboard to log into the GV-System instead of using the general keyboard and mouse. For this kind of login, you must export the login ID and password from the GV-System first.

Note: The login IDs and passwords you set up can only be composed of digits.

1. Click the **Configure** button, select **System Configure**, select **Password Setup** and select **Local Account Edit**. The Password Setup dialog box appears.

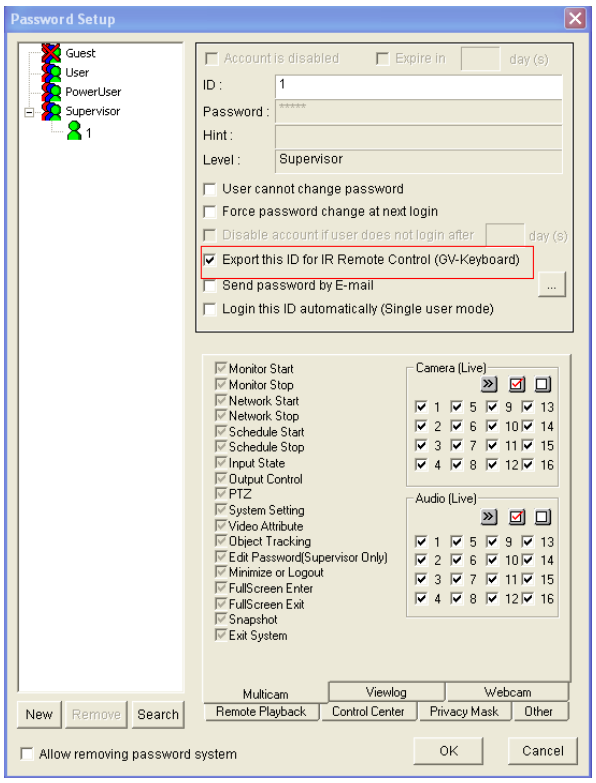


Figure 1-11

2. Select a user from the user list, and select **Export this ID for IR Remote Control (GV-Keyboard)** to export the ID and Password to the Login dialog box. Click **OK**.

After you complete the above setting, you can start to use the Keyboard to log into the GV-System. Click OK Menu to log into the GV-System. You will see the exported ID in the ID drop-down list of the Login dialog box. Click ▼ to select the user's ID. Type the password and click OK Menu.

1.4 Advanced Settings

Advanced Settings allows you to set up hot keys for instant access to many functions, set up a Keyboard for multiple GV-Systems or assign Keyboards for different monitors.

1.4.1 Setting Function Keys

To set up hot keys for instant access to many functions, follow the steps below.

1. Click a function key (F1-F8) to be configured. If multiple Keyboards are connected, first select one from 

drop-down list. This dialog box appears.

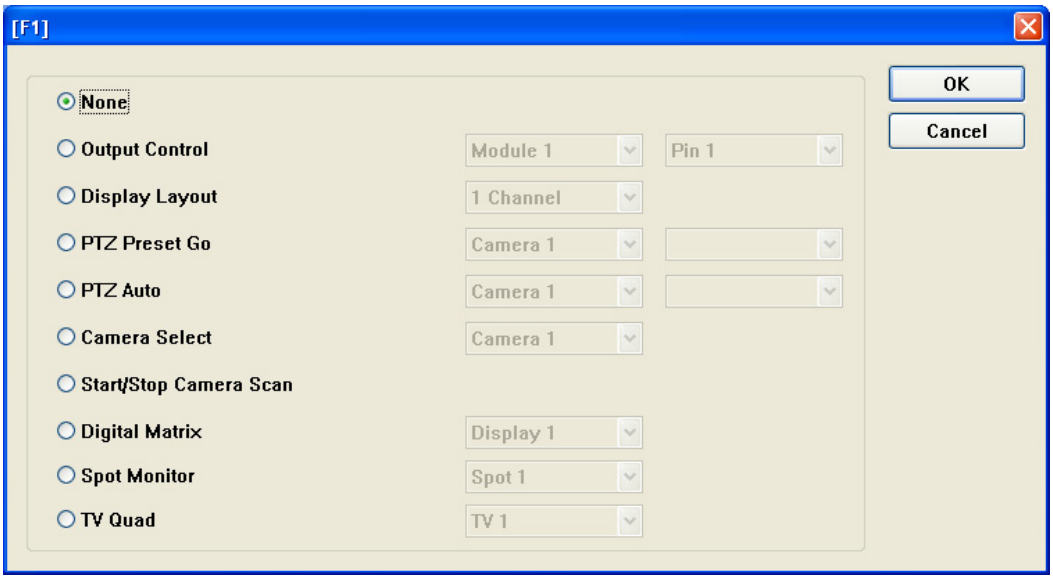


Figure 1-12

2. Select a desired function.
3. Click **OK** to finish configuring the function key.

When the Keyboard service starts and you press a defined function key, the camera view will be displayed or the output device will act based on the function you assigned to the function key.

Printing Function Key Labels

The Print Memo option allows you to print out the labels for the eight function keys (F1 - F8) so that you can paste them on the Keyboard for instant reference.

1. Click the **Printer** icon. This displays the Printer Memo dialog box.
2. Under every field from F1 to F8, type the information that you want to print on the labels. The words you type will also appear on Preview fields for print preview.
3. Click **Print**.

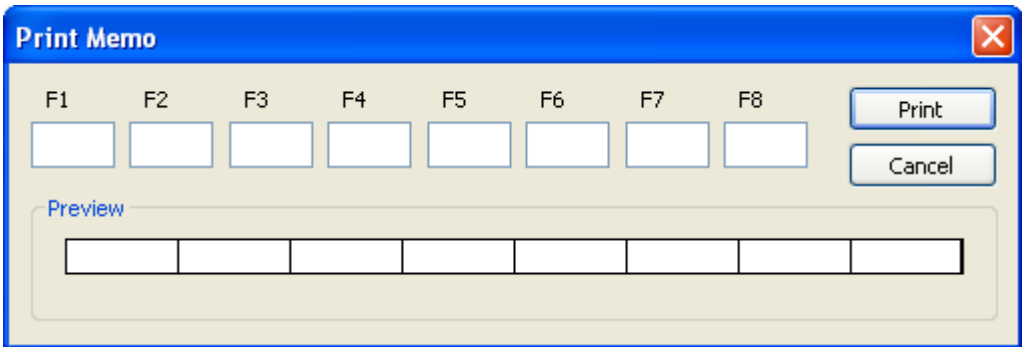


Figure 1-13

1.4.2 Setting a Keyboard for Multiple GV-Systems

To set up a Keyboard to control multiple GV-Systems, follow the steps below. For details on how to connect one Keyboard to multiple GV-Systems, see *1.3.2 Connecting to Multiple GV-Systems*.

1. Run **mcamctrl.exe** in each GV-System.
2. Set up the Keyboard Controller by following step 3 in *1.3.5 Running the Keyboard Controller*. And you must define a different ID and name on each GV-System.

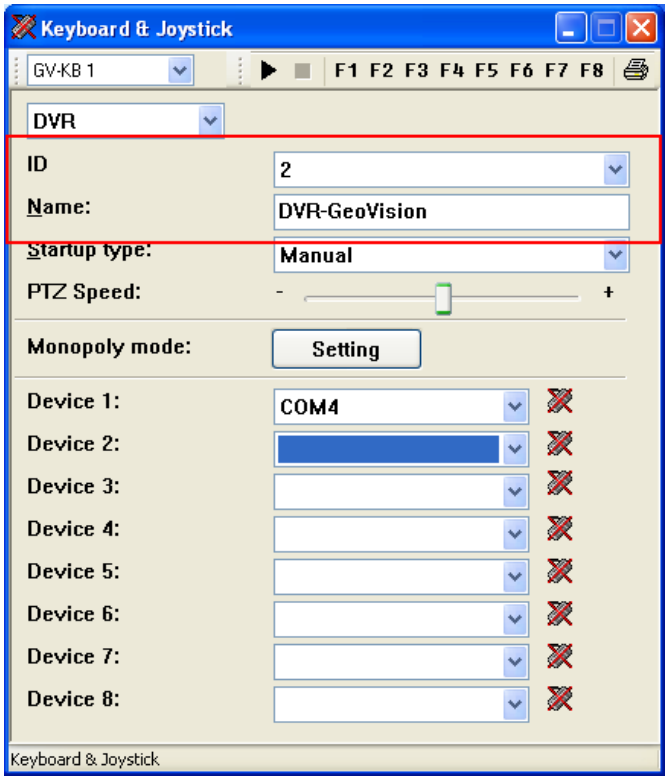


Figure 1-14

3. You can also set up hot keys for instant access to many functions. See *1.4.1 Setting Function Keys* section above.
4. Click ► to start the service. The Keyboard is now enabled to control GV-System.

To switch control among GV-Systems, press **P1** on the Keyboard, enter a two-digit ID and press OK Menu.

1.4.3 Assigning Keyboards for Different Monitors

You can connect up to 8 Keyboards to one GV-System for Digital Matrix, Spot Monitor and/or TV Quad applications. To assign a Keyboard for a specific monitor control, follow the steps below. For details on connecting multiple Keyboards, see *1.3.3 Connecting Multiple Keyboards for Different Monitors.*

1. Run **mcamctrl.exe** from the GV folder.
2. Set up the Keyboard Controller by following step 3 in *1.3.5 Running the Keyboard Controller.* And you must select all the COM ports that multiple Keyboards are connected with.

Note: Be sure to verify the driver installation of each Keyboard in the Ports field of Windows Device Manager. If the driver of any Keyboard is not installed properly, select **Install or Remove GeoVision GV-Series Driver** on the Software CD to re-install it.

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3. Assign a Keyboard to a specific monitor.
   A. Click the **Setting** button of Monopoly Mode.

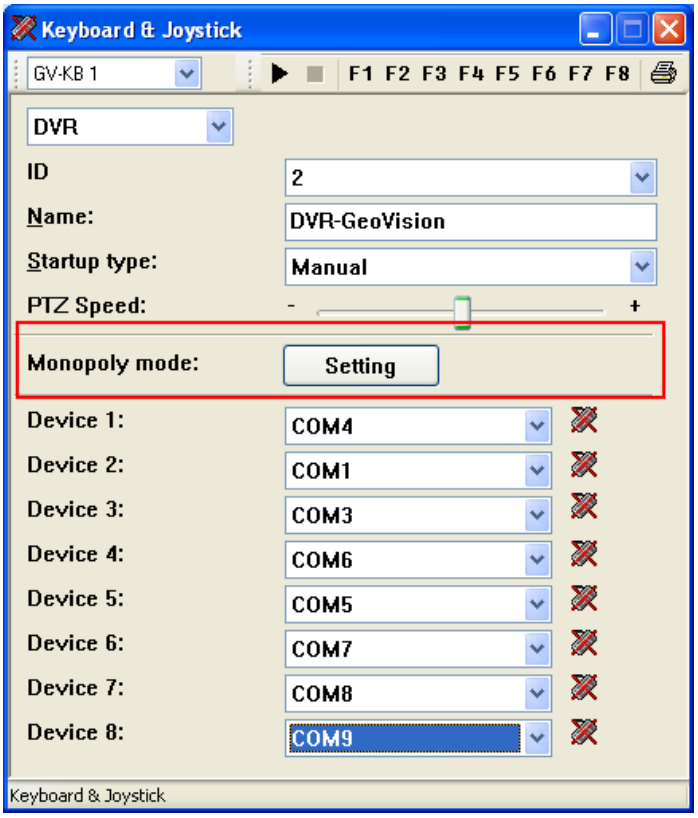


Figure 1-15

B. Select a **Device** tab to define the Keyboard, select **Used for a specific monitor**, select among **Digital Matrix**, **Spot Monitor** and **TV Quad**, and select its monitor number using the drop-down list.

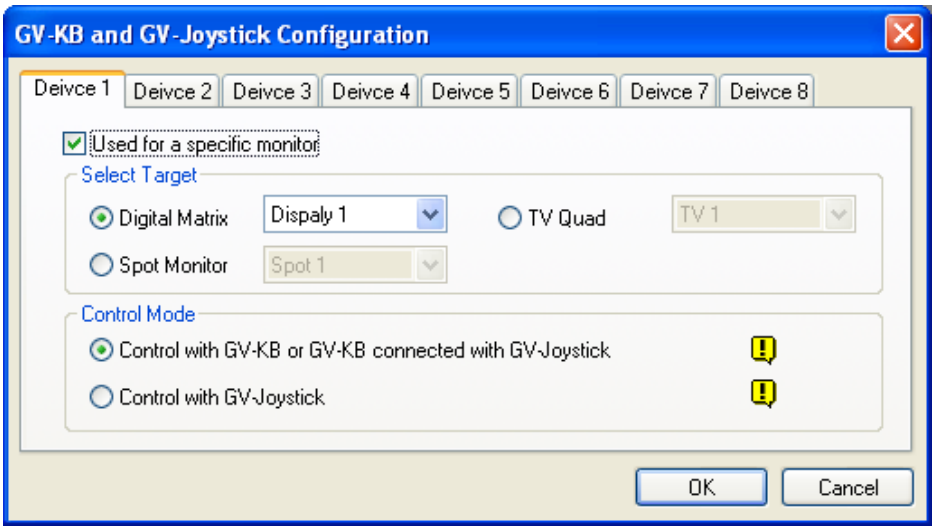


Figure 1-16

4. Click each **Device** tab to define every Keyboard.
5. You can also set up hot keys for instant access to many functions. See *1.4.1 Setting Function Keys* section above.
6. Click ► to start the service. Every Keyboard is now enabled to control the designated monitor.

1.5 On-Screen Display Menus

In GV-System and ViewLog modes, you can press OK Menu to call up the on-screen display (OSD) menus.

1.5.1 The OSD Menu in GV-System

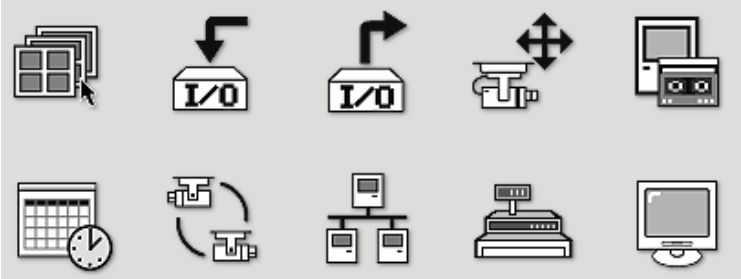


Figure 1-17

	**Screen Division** Changes the screen divisions.
	**Input Device** Displays all or several input module panels.
	**Output Device** Forces output devices.
	**PTZ Camera** Enables/Disables PTZ camera, Preset Go, Auto (Auto Pan), AF (Auto Focus) and Hide PTZ Panel.
	**Monitor** Starts/Stops monitoring all or some cameras.
	**Schedule** Enables/Disables the schedule.
	**Camera Scan** Enables/Disables the rotation through screen divisions.
	**Network** Enables/Disables remote applications, including Modem Server, TCP Server, Multicast Server, Connect to VSM, Twin Server, WebCam Server and Connect to Center V2.
	**POS** Enables/Disables/Switches multiple POS Live Views. 1. Press ▼ and press OK Menu to enable POS1 Live View. 2. Select POS on OSD menu again, select **View Mode Switch** and press OK Menu to enable switching between **Show All** or **Hide All** POS Live Views.

	3. Enter POS again and you can switch to **Show All** or **Hide All** to show or hide all POS Live Views or disable the **View Mode Switch** function. You can only set up one function every time you enter POS. For example, if you have enabled **Show All** of the POS Live Views but now want to disable POS1 and POS2, you will have to enter POS to disable POS1 and then enter POS again to disable POS2.
	**Spot Monitor** Configures settings such as scan and zoom by selecting Spot1 to configure channels 1 to 16 or Spot2 to configure channels 17 to 32.

Changing the OSD Options

To change the OSD options with the Keyboard, follow the steps below:

1. Press the **OK/Menu**  button to open the OSD (Figure 1-17).
2. Use the direction buttons to select a menu you want.
3. Press  to open the menu.
4. Use the direction buttons to select a menu option, and then press  to change the setting.

   OR

   Simply press  to enable or disable an option in the case of Schedule and Camera Scan.

1.5.2 The OSD Menu in ViewLog

Figure 1-18

	**Video Event Search** Locates a video event. 1. Press the ▶ and ◀ buttons to move back and forth along the OSD time to select a unit of time. (Month/Date/Year Hr.:Min.:Sec.) 2. Use the numeric buttons to enter a desired time or press ▲ and ▼ to change the display time. 3. Press the **OK/Menu** button to view the search result. If the event at the specified time can't be located, the previous or next video event available will be displayed.
	**View Mode** Changes the view modes, including Single View, Thumbnail View, Quad View and Multi View.
	**Playback Mode** Changes the playback modes, including Real Time, Frame by Frame and Just Key Frame.

Changing the ViewLog OSD Options

To change the ViewLog OSD options with the Keyboard, follow the steps below:

1. Press OK Menu to open the OSD (Figure 1-18).
2. Use the direction buttons to select a menu you want.
3. Press OK Menu to open the menu.
4. Use the direction buttons to select a menu option, and then press OK Menu to change the setting.

1.6 Shortcut Key Conflict Test

This test determines whether the Keyboard's keys are conflicting with certain shortcut keys of other applications.

1. Run **GvKeyTest.exe** from the GV folder. This dialog box appears.

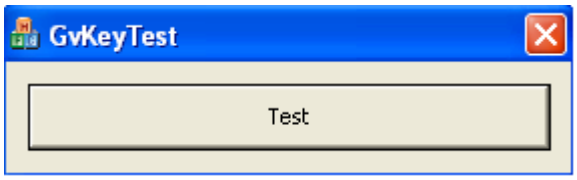


Figure 1-19

2. Click the **Test** button. If there are shortcut key conflicts, a message box similar to the one below appears.

Figure 1-20

3. Disable the shortcut key settings of another application.

Chapter 2 GV-Control Center

This chapter is for users that connect the Keyboard to the GV-Control Center.

2.1 Introduction

You can use the Keyboard to program and operate Matrix View and ViewLog in GV-Control Center.

Key Features

- Up to 16 GV-Control Centers supported
- Up to 8 monitors for Matrix View and ViewLog can work with multiple Keyboards
- OSD panel supported

Note: The Keyboard also supports controlling any PTZ camera connected to GV-Control Center. Click Here to see the supported IP cameras. You can also find the supported PTZ cameras from *Supported PTZ Protocol and Model*, *Appendix, DVR User's Manual* on the Surveillance System Software DVD.

2.1.1 Packing List

- GV-Keyboard x 1
- Power Adaptor (DC Output 12V, 1A) x 1
- USB Cable x 1
- RJ-11 Cable x 1
- Wall Terminal Block x 1
- GV-Keyboard Software CD x 1
- GV-Keyboard Quick Start Guide x 1

2.1.2 System Requirement

OS Supported	32-bit	Windows XP / Vista / 7 / Server 2008
	64-bit	Windows 7 / Server 2008
System Supported		GV-Control Center V8.5 or later
Note: Currently, GV-Keyboard V3 does not support embedded operating systems.		

2.2 Overview

2.2.1 Keyboard Overview

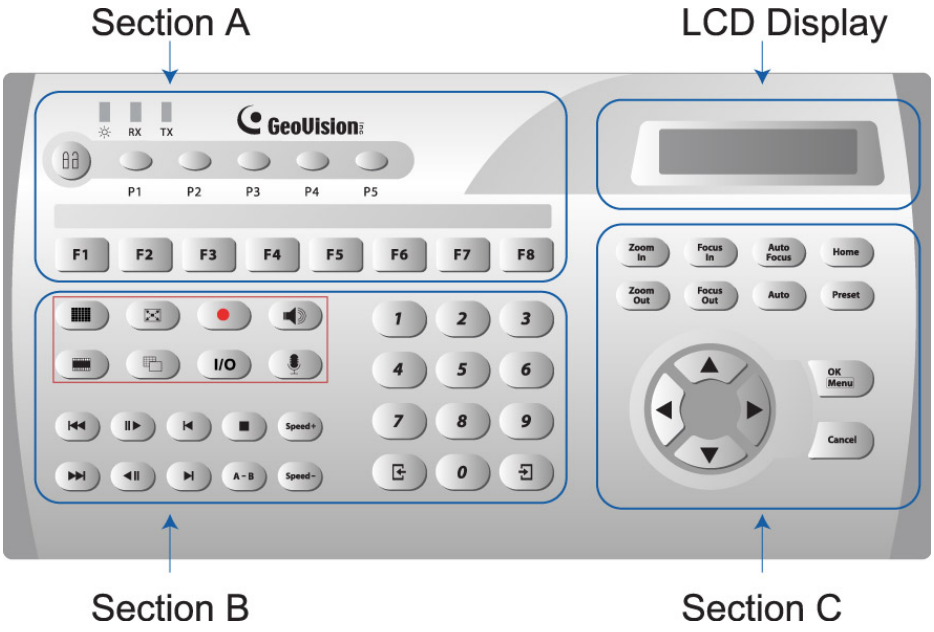


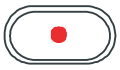
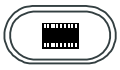
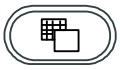
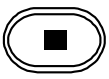
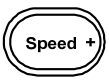
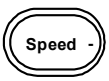
Figure 2-1

Note: The difference between the Keyboard for GV-System and for GV-Control Center is at the section B buttons, highlighted in the red square in above figure.

- **Section A**

☼	Yellow POWER LED.
RX	Red RX LED (Receive).
TX	Green TX LED (Transmit).
P1	Changes GV-Control Center ID.
P2	Select a PTZ camera to control.
P3	Configures the Keyboard parameters, including password, key beep and auto-lock period.
P4	Sets up the PTZ camera settings.
P5	Displays the firmware version.
	Locks the Keyboard.
F1-8	Function keys.

- **Section B**

	Switches Matrix Views in GV-Control Center.
	Turns full screen view on/off.
	Starts/Stops recording.
	Turns the sound on/off on single view.
	Switches ViewLog players. For this function, you must have opened and connected to 5 ViewLog players.
	Switches the screen divisions.
	Force all output devices in Advanced I/O List of I/O Central Panel to be triggered.
	Turns the microphone on/off on single view.
	Goes to the previous event.
	Goes to the next event.
	Plays/Pauses a video event.
	Rewinds/Pauses a video event.
	Moves one frame back.
	Moves one frame forward.
	Stops a video event.
	Sets the starting and ending frames for auto playing.
	Increases playback speed.
	Decreases playback speed.

	Switches to the previous screen or camera.
	Switches to the next screen or camera..
Numeric buttons	Selects a specific camera; Changes the Time Setting in ViewLog.

- **Section C**

	Zooms in the display image of PTZ camera in Matrix View; Zooms in the display image in ViewLog.
	Zooms out the display image of PTZ camera in Matrix View; Zooms out the display image in ViewLog.
	**Focus In:** Press the **Auto Focus** button to select Auto Focus, and press this button to increase the focus on the camera. **Open Iris:** Press the **Auto Focus** button to select Auto Iris, and press this button to increase the aperture on the camera.
	**Focus Out:** Press the **Auto Focus** button to select Auto Focus, and press this button to decrease the focus on the camera. **Close Iris:** Press the **Auto Focus** button to select Auto Iris, and press this button to decrease the aperture on the camera.
	Press the button for 2 sec. to switch between Auto Focus and Auto Iris. **Auto Focus:** Switch to Auto Focus and press the button again to enable Auto Focus. **Auto Iris:** Switch to Auto Iris and press the button again to enable Auto Iris.
	Sets the PTZ camera for auto mode.
	Moves the PTZ camera to the default position.
	Moves the PTZ camera to a preset location.
	Enters the settings; Opens the OSD menu.
	Closes the OSD menu; Returns to the previous menu; Calls up the menu to exit Matrix View or ViewLog.
	PTZ control; Navigates the display image in ViewLog; Navigates the OSD menu; Changes the Time Setting in ViewLog.

2.2.2 Rear Panel Overview

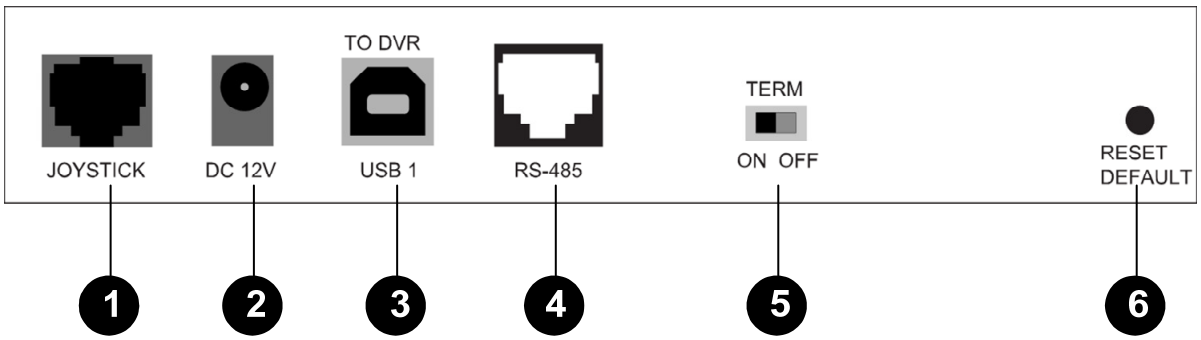


Figure 2-2

No	Name	Function
1	Joystick	Connects to GV-Joystick for PTZ control.
2	DC 12V	Connects to the power adaptor.
3	USB1 Port	Connects to one GV-Control Center.
4	RS-485 Port (RJ-11)	Through the supplied Wall Terminal Block, the RS-485 port can connect to up to 16 GV-Control Centers. For details see *2.3.2 Connecting to Multiple GV-Control Centers.*
5	Terminal Resistance	Used in the last daisy-chained GV-Control Center.
6	Reset	Resets the Keyboard when it does not respond to commands.
Note: There is no such function of loading default in the Rest button.		

2.3 Getting Started

You can connect the Keyboard to one GV-Control Center by using the supplied USB cable or up to 16 GV-Control Center through the RS-485 pins on the Wall Terminal Block. You can also connect multiple Keyboards for different monitors.

2.3.1 Connecting to One GV-Control Center

To connect the Keyboard to one GV-Control Center, use USB port on the Keyboard.

Item required for connection:

- Supplied USB Cable

GV-Control Center

Figure 2-3

Note: When you use the USB port on the Keyboard for connection, it is not required to connect the Keyboard to a power supply.

2.3.2 Connecting to Multiple GV-Control Centers

To use the Keyboard to control up to 16 GV-Control Centers, build the connection through the RS-485 port on the Keyboard. See the diagram below for connections.

Items required for connections:

- Supplied RJ-11 Cable
- Supplied Wall Terminal Block
- Supplied Power Adaptor
- RS-485/RS-232 interface converter, e.g. GV-NET Card, GV-NET/IO Card, GV-Hub V2 and GV-COM V2

Use the RJ-11 cable to connect between the RS-485 port on the Keyboard and the Wall Terminal Block. Then connect the Pin-2 **(Black wire)** and Pin-6 **(White wire)** of the Wall Terminal Block to the RS-485/ S-232 interface converter, which then connects to the GV-Control Center.

The diagram below illustrates the wiring to multiple GV-Control Centers and uses GV-NET Card as RS-485/RS232 interface converter as example.

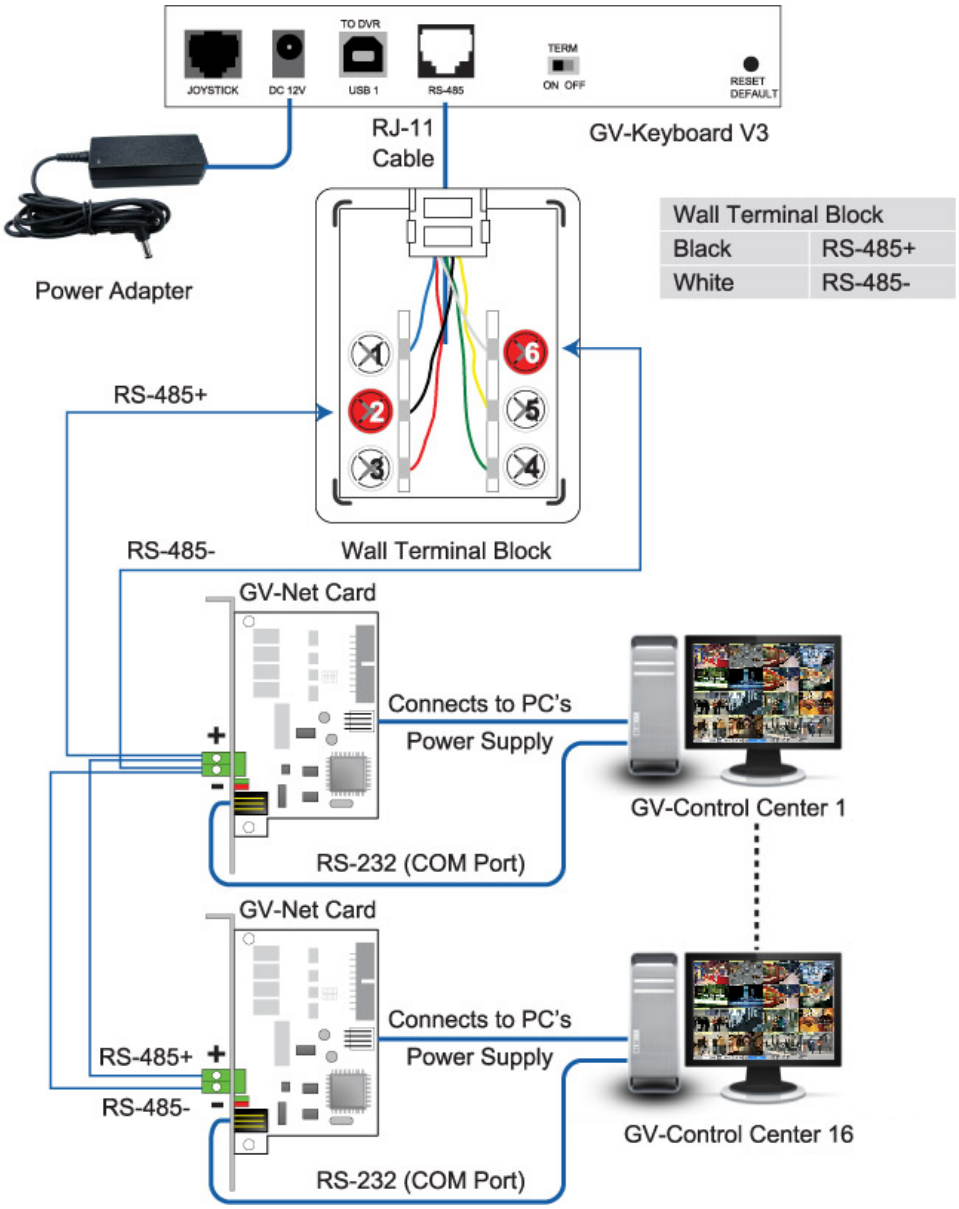


Figure 2-4

Note:

1. Because RS-485 communication has distance limitation, the distance between each Keyboard and the GV-Control Center must be within 600 meters (1968.5 feet).
2. You can only use either USB port or RS-485 port on the Keyboard. Don't connect the USB cable on the Keyboard when using RS-485 connection.

To set up the Keyboard to control multiple GV-Control Centers and switch control among these servers, see *2.4.2 Setting a Keyboard for Multiple GV-Control Centers*.

2.3.3 Connecting Multiple Keyboards for Different Monitors

To use multiple Keyboards to control assigned monitors, use RS-485 cables to connect additional Keyboards to RS-485/RS-232 interface converters, and then connect these RS-485/RS-232 interface converters to the GV-Control Center USB ports.

A total of 8 Keyboards can be connected to control 8 assigned monitors for Matrix View and /or ViewLog applications in the GV-Control Center.

Items required for connection:

- Supplied USB Cable
- RS-485/RS-232 interface converter, e.g. GV-Hub V2 and GV-COM V2

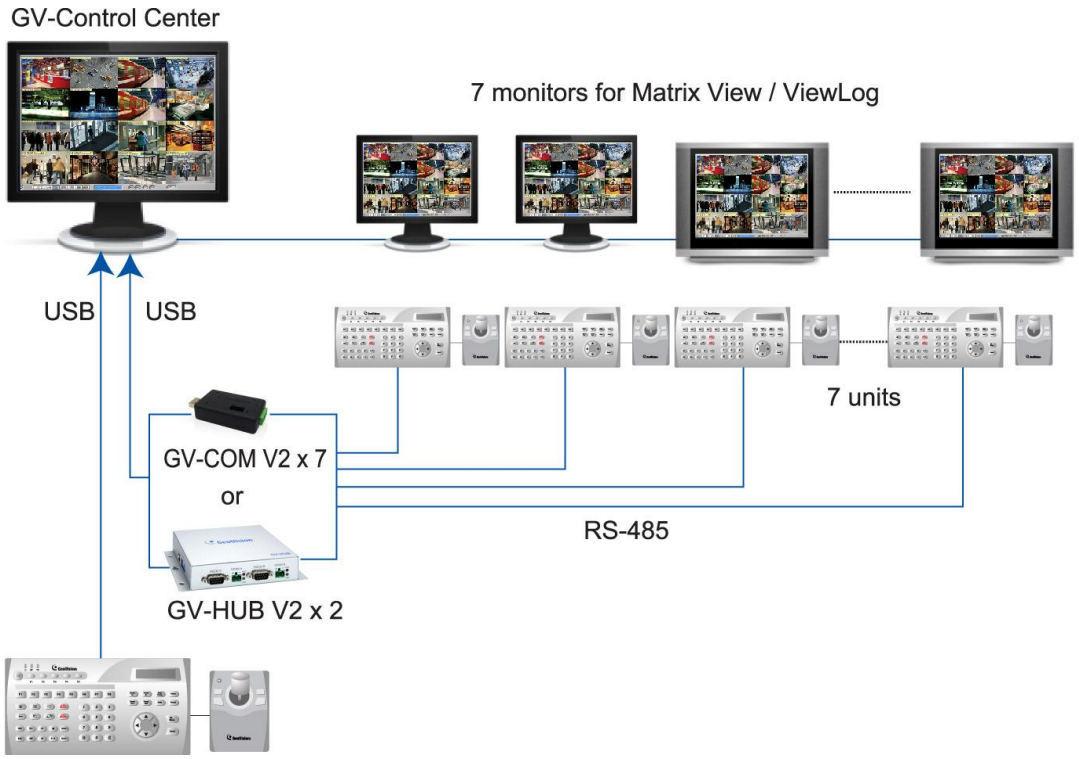


Figure 2-5

Note: Because RS-485 communication has distance limitation, the distance between each Keyboard and the GV-Control Center must be within 600 meters (1968.5 feet).

To assign a Keyboard for a specific monitor control, see *2.4.3 Assigning Keyboards for Different Monitors*.

2.3.4 Installing USB Drivers

It is required to install the USB driver for the USB connection. For details, see *1.3.4 Installing USB Drivers.*

2.3.5 Running the Keyboard Controller

To control the Keyboard, you need to run the **mcamctrl.exe** program always at the background. Follow the steps below.

1. Run **mcamctrl.exe** from the GV-Control Center folder.

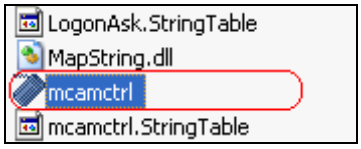


Figure 2-6

2. The Keyboard & Joystick dialog box appears.

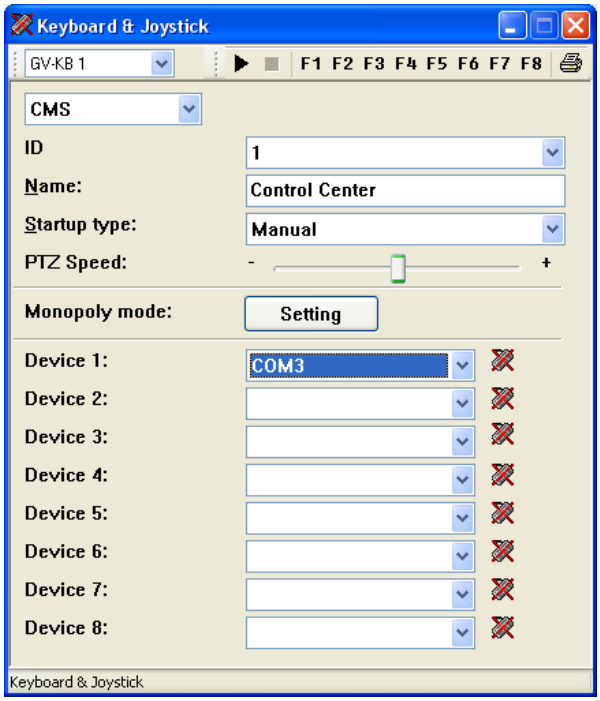


Figure 2-7

3. Configure the Keyboard & Joystick dialog box.
   A. At the top left, select **CMS** for GV-Control Center.
   B. Choose an ID number.
   C. Name the GV-Control Center. The name will be displayed on the Keyboard.
   D. Select the COM port that the Keyboard is connected to. For the COM port information, see step 5 in *1.3.4 Installing USB Drivers*.

4. Click ► to start the service. The Keyboard is now enabled to control GV-Control Center.

The fields on the Keyboard & Joystick Controller dialog box:

Name	Description
GV-KB 1	Select the Keyboard to define F1-F8 functions.
CMS	Select **CMS** for the connected GV-Control Center.
ID	Select an ID number for the GV-Control Center. The default is 1.
Name	Give the GV-Control Center a descriptive name.
Startup type	Select **Manual** or **Automatic** to choose whether to run the controller at next startup or not.
PTZ Speed	Adjust PTZ speed.
Monopoly Mode	Assign the Keyboard to control a specific monitor and set up the control mode.
Device 1-8	Select the COM port connecting to the Keyboard. Find the COM port number the Keyboard is using in the Ports field of Windows Device Manager.
►	Start the service.
■	Stop the service.
F1 - F8	Define eight function keys on the Keyboard to control output modules, display layout, PTZs, cameras and etc.
	Print out a label for the eight function keys.

Note:

1. To use the Keyboard to control multiple GV-Control Center, see ***2.4.2 Setting a Keyboard for Multiple GV-Control Centers*** for further setup and operation.
2. To use more than one Keyboard to control assigned monitors, see ***2.4.3 Assigning Keyboards for Different Monitors*** for further setup.
3. To use function keys (F1-F8) on the Keyboard for instant access to many functions, see ***2.4.1 Setting Function Keys***.

2.4 Advanced Settings

Advanced Settings allows you set up hot keys for instant access to many functions, set up a Keyboard for multiple GV-Control Centers or assign Keyboards for different monitors.

2.4.1 Setting Function Keys

To set up hot keys for instant access to many functions, follow the steps below.

1. Click a function key (F1-F8) to be configured. If multiple Keyboards are connected, first select one from 

drop-down list. This dialog box appears.

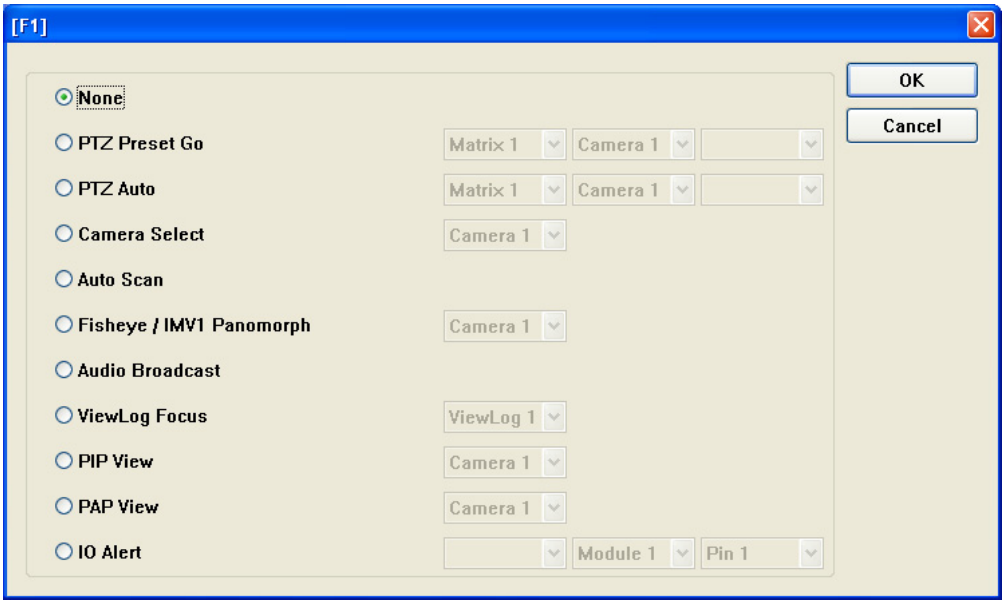


Figure 2-8

2. Select a desired function.
3. Click **OK** to finish configuring the function key.

When the Keyboard service starts and you press a defined function key, the camera view will be displayed or the output device will act based on the function you assigned to the function key.

Printing Function Key Labels

The Print Memo option allows you to print out the labels for the eight function keys (F1 - F8) so that you can paste them on the Keyboard for instant reference. For details see the same topic in *1.4.1 Setting Function Keys*.

2.4.2 Setting a Keyboard for Multiple GV-Control Centers

To set up a Keyboard to control multiple GV-Control Centers, follow the steps below. For details on how to connect one Keyboard to multiple GV-Control Centers, see *2.3.2 Connecting to Multiple GV-Control Centers*.

1. Run **mcamctrl.exe** in each GV-Control Center.
2. Set up the Keyboard Controller by following step 3 in *2.3.5 Running the Keyboard Controller*. And you must define a different ID and name on each GV-Control Center.

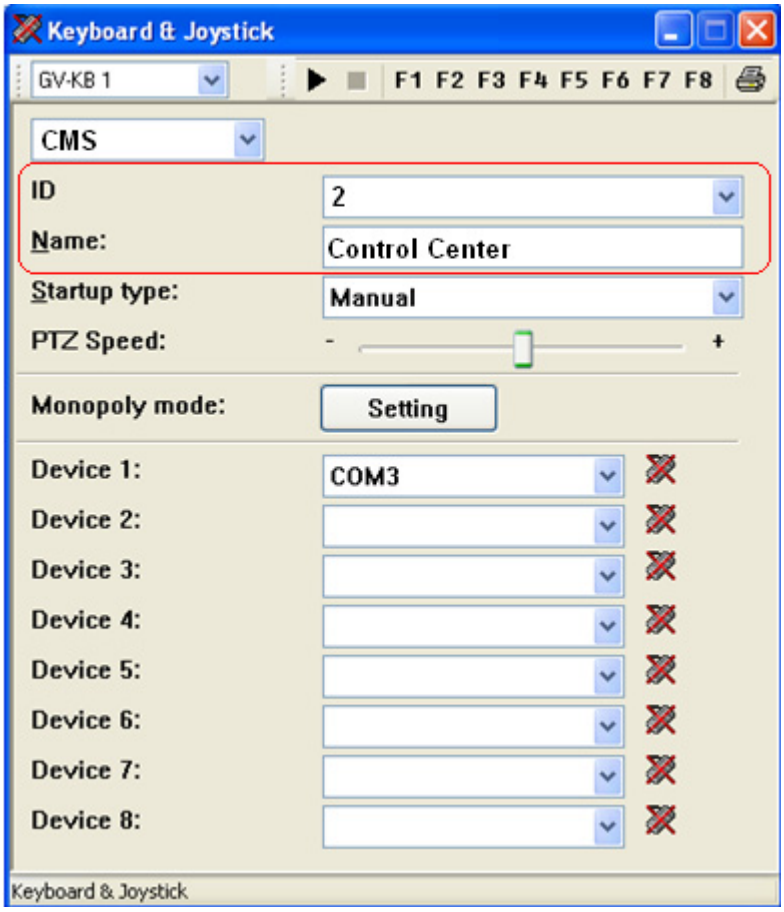


Figure 2-9

3. You can also set up hot keys for instant access to many functions. See *2.4.1 Setting Function Keys*.
4. Click ► to start the service. The Keyboard is now enabled to control GV-Control Center.

To switch control among GV-Control Centers, press **P1** on the Keyboard, enter a two-digit ID and press OK Menu.

2.4.3 Assigning Keyboards for Different Monitors

You can connect up to 8 Keyboards to one GV-Control Center for Matrix View and ViewLog applications. To assign a Keyboard for a specific monitor control, follow the steps below. For details on connecting multiple Keyboards, see *2.3.3 Connecting Multiple Keyboards for Different Monitors.*

1. Run **mcamctrl.exe** from the GV folder.
2. Set up the Keyboard Controller by following step 3 in *2.3.5 Running the Keyboard Controller.* And you must select all the COM ports that multiple Keyboards are connected with.

Note: Be sure to verify the driver installation of each Keyboard in the Ports field of Windows Device Manager. If the driver of any Keyboard is not installed properly, select **Install or Remove GeoVision GV-Series Driver** on the Software CD to re-install it.

---

3. Assign a Keyboard to a specific monitor.
   A. Click the **Setting** button of Monopoly Mode. This dialog box appears.

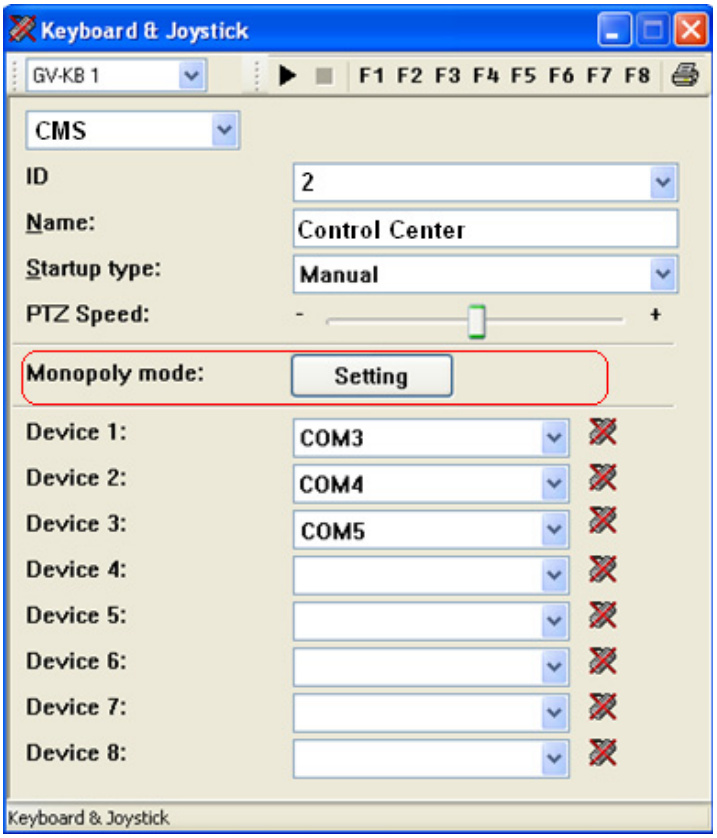


Figure 2-10

B. Select a **Device** tab to define the Keyboard, select **Used for a specific Matrix monitor** and select a matrix to be controlled using the drop-down list.

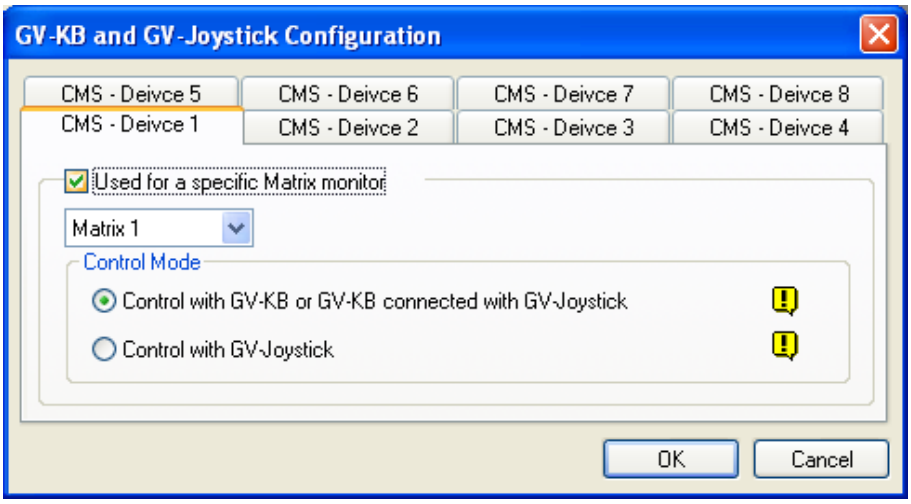


Figure 2-11

4. Click each **Device** tab to define every Keyboard.
5. You can also set up hot keys for instant access to many functions. See *2.4.1 Setting Function Keys* section above.
6. Click ► to start the service. Every Keyboard is now enabled to control the designated monitor.

2.5 On-Screen Display Menus

2.5.1 The OSD Menu in Matrix View

Under Matrix View, you can press OK Menu to call up the on-screen display (OSD) menu. The GV-Control Center OSD menu provides three options: Monitor, PTZ Camera Control and Camera Scan.

Figure 2-12

	**Monitor** Starts/Stops monitoring all the channels of the Matrix View.
	**PTZ Camera** Enables/Disables PTZ camera, Preset Go, Auto (Auto Pan), AF (Auto Focus) and Hide PTZ Panel.
	**Camera Scan** Enables/Disables a rotational display of each channel.

Using the OSD Menu

To change the OSD options with the Keyboard, follow the steps below:

1. Press the **OK/Menu** OK Menu button to open the OSD (Figure 2-12).
2. Use the direction buttons to select a menu you want.
3. Press OK Menu to open the menu.
4. Use the direction buttons to select a menu option, and then press OK Menu to change the setting.

   OR

   Simply press OK Menu to enable or disable an option in the case of Camera Scan.

2.5.2 The OSD Menu in ViewLog

For details see the same topics in *1.6.2 The OSD Menu in ViewLog*.

Chapter 3 Direct Connection to PTZ Cameras

You can connect up to 32 PTZ cameras to the Keyboard directly for PTZ control. For supported PTZ protocols and brands, see *Supported PTZ Protocols and Brands, Appendix*.

Figure 3-1

Note: A mix of different camera brands together for control is not allowed.

3.1 Installing PTZ Cameras

The PTZ cameras can be connected to the Keyboard through RS-485 or RS-422 wiring.

Items required for connection:

- Supplied RJ-11 Cable
- Supplied Wall Terminal Block
- Supplied Power Adaptor

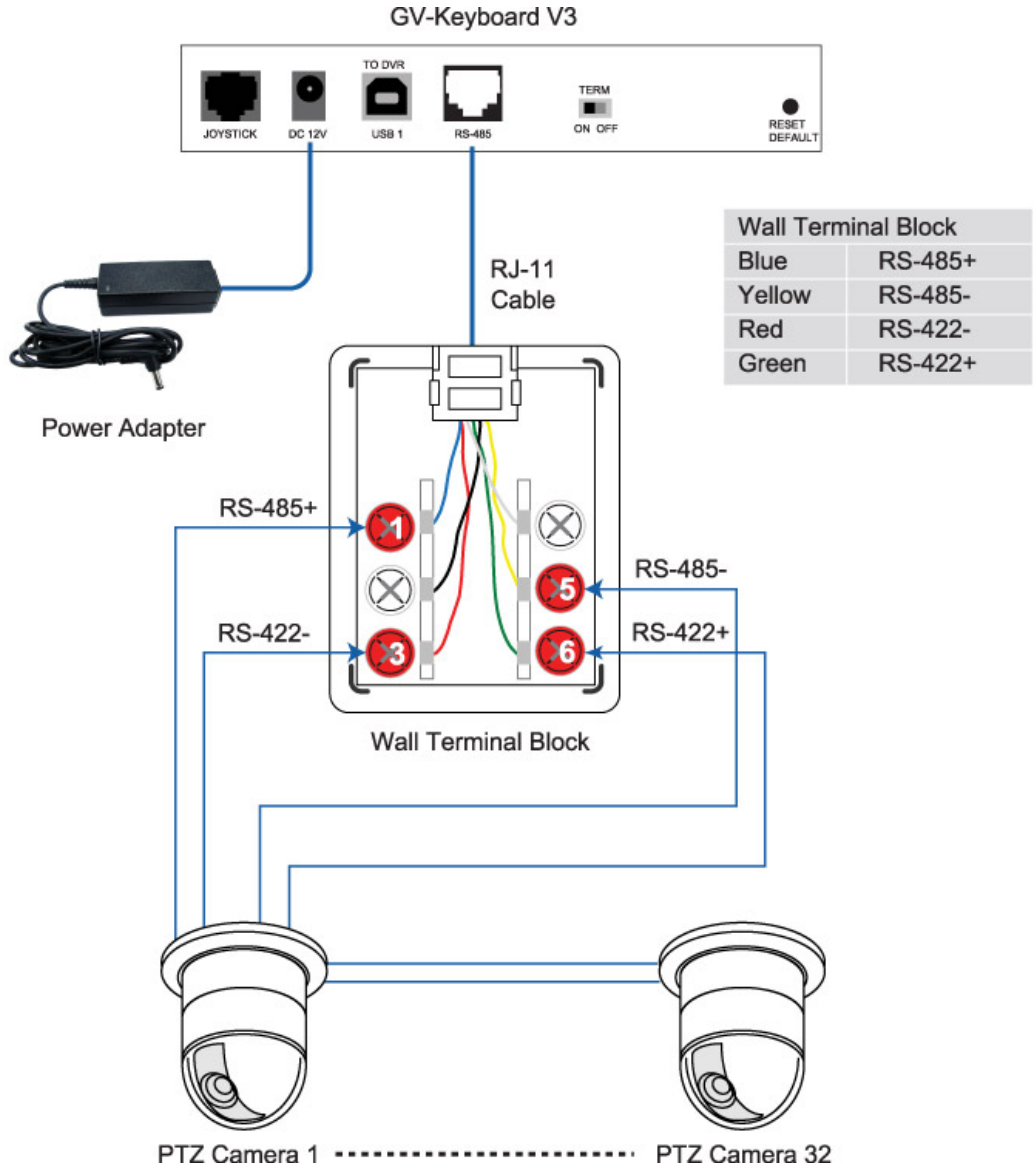


Figure 3-2

Note: Because RS-485 communication has distance limitation, the distance between the Keyboard and PTZ cameras must be within 600 meters (1968.5 feet).

3.2 Setting up PTZ Cameras

After installing PTZ cameras, follow the steps below to set up the camera's number, type, baud rate and PTZ ID through the Keyboard.

Figure 3-3

1. Press OK Menu, and type the default password "**0000**" to unlock the Keyboard.
2. Press **P4**, and press ▲, ▼ or numeric buttons to select a PTZ camera, and press OK Menu.
3. Press ▲ or ▼ to set up a **PTZ Type**, and press OK Menu.
4. Press ▲ or ▼ to set up **Baud Rate**, and press OK Menu.
5. Press ▲, ▼ or numeric buttons to set up the **PTZ ID**, and press OK Menu.
6. After the above settings, you can press **P2** and press ⏎ or ⏎ to select a PTZ camera that you want to control. Alternatively, you can press **P2**, enter a two-digit number and press **OK** to select a PTZ camera.
7. To bring up the OSD menu, press OK Menu. To close the OSD menu, press the **Cancel** button.

Note:

1. The number of preset points supported varies among the PTZ models.
2. It will not work to press two buttons together to control a PTZ camera.
3. Function Keys (F1 to F8) on the Keyboard are not supported in the direct connection to PTZ cameras.

Chapter 4 Upgrading the Firmware

GeoVision will periodically release the updated firmware on the website. The new firmware can be simply loaded into the Keyboard by using the Updated Utility included in the software CD.

Note: The firmware upgrade is only supported by GV-Keyboard V3.

WARNING: While the firmware is being updated, the USB cable must not be removed. The interruption of power supply during updating causes not only update failures but also damages to the device. In this case, please contact your sales representative and send your device back to GeoVision for repair.

---

1. Using the supplied USB cable, connect the Keyboard to the local computer.
2. Insert the Software CD, and select **Run Firmware Update Utility**. This dialog box appears.

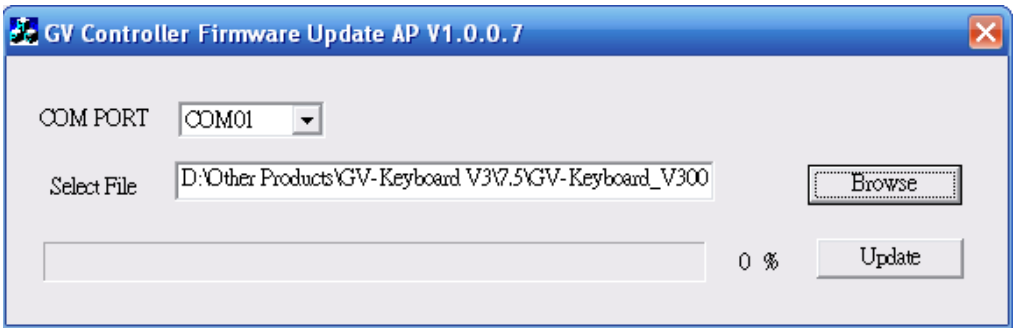


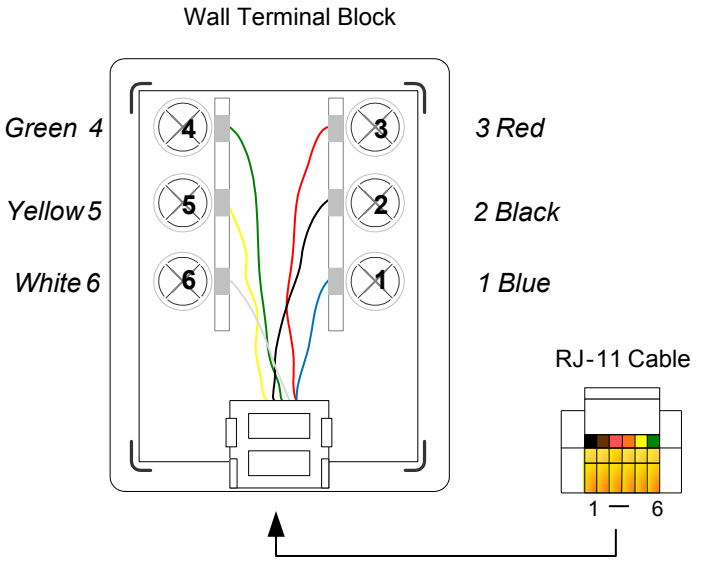
Figure 4-1

3. Select the COM port that the Keyboard is connected.
4. Click the **Browse** button to locate the firmware file (.img) saved at your local computer.
5. Click **Update** to start firmware upgrading. When the upgrading is finished, an “Update Success” message will appear.

To check whether the firmware has been upgraded successfully, press **P5** on the Keyboard. The new firmware version should be displayed on the LCD, as illustrated below.

Figure 4-2

Chapter 5 Wall Terminal Block



Pin	Function
1	PTZ / RS-485+
2	DVR / RS-485+
3	PTZ / RS-422-
4	PTZ / RS-422+
5	PTZ / RS-485-
6	DVR / RS-485-

Figure 5-1

Chapter 6 Basic Programming and Operation

Function	Procedure
For GV-System Only	
Launching Main System	1. Press  . 2. When the message "Multicam System-Please Login!" appears on the screen, press  to open the Login dialog box. 3. Select a valid ID, enter a password, and press  .
Launching ViewLog	1. Press  . 2. When the Privilege Confirmation dialog box appears, select a valid ID, enter a password, and press  .
For GV-Control Center Only	
Switching Matrix View	1. Make sure you have opened at least 2 matrix views. 2. Press  .
For PTZ Camera	
Selecting a PTZ camera	Press **P2**, and press  to select a PTZ camera that you want to control.
Setting up PTZ cameras	Press **P4** to set up PTZ cameras. For details on the PTZ camera setup, see 3.2 *Setting up PTZ Cameras*.
Function	**Procedure**
Getting started	Press any key, and enter a password. (The default password is **0000**.)
Changing GV-System / Control Center ID	Press **P1**, and enter a two-digit GV-System / Control Center ID.
Changing password	1. Press **P3**, enter a password, and press  to browse the options on the LCD display. 2. When "Password Change" appears, press  and enter a four-digit password.
Disabling/Enabling key beep	1. Press **P3**, enter a password, and press to browse the options on the LCD display. 2. When "Audio Setting" appears, press  and press to enable/disable the key beep.
Setting auto-lock period	1. Press **P3**, enter a password, and press  to browse the options on the LCD display. 2. When "Auto Time Lock" appears, press  and enter an idle period after which the Keyboard is automatically locked. * The Keyboard can be used only when the correct password is entered.

Troubleshooting

Problem	Checklist
No power to Keyboard	➢ Check USB connection. ➢ If you are using the RS-485 port for connection, make sure to connect the power adaptor.
Keyboard has power but does not respond to any buttons pressed	➢ Check that Keyboard is not locked. See “Getting started”, *Chapter 6 Basic Programming and Operation*.
Keyboard responds to some, but not all buttons	➢ Check if Keyboard keys are conflicting with other applications. See *1.6 Shortcut Key Conflict Test*.
Message "Connect fail" displays on LCD	➢ Verify that the selected ID in Keyboard & Joystick Controller is consistent with the DVR / CMS ID. See “Changing GV-System / Control Center ID”, *Chapter 6 Basic Programming and Operatio*. ➢ Check that the COM port setting in Keyboard & Joystick Controller is correct. See Step 5 of *1.3.4 Installing USB Drivers*. ➢ If multiple GV-Systems / GV-Control Centers are daisy-chained together, (1) check connections among GV-Systems / GV-Control Centers, and (2) turn on Terminal Resistance to increase frequency response. ➢ If you are using the wall terminal block, make sure (1) terminal screws are not loose, and (2) the cables are attached to the appropriate terminal screws. See *Chapter 5 Wall Terminal Block*.
Keyboard LEDs are not visible	➢ Yellow POWER LED: check the power source. When you press a key and the RX or TX LED does not light up, ➢ Red RX LED: check the connection between the Keyboard and GV-System. ➢ Green TX LED: check if the Keyboard is malfunctioning.

Specifications

OS Supported	**32-bit**	Windows XP / Vista / 7 / Server 2008	
	64-bit	Windows 7 / Server 2008	
System Supported		GV-System V8.4 or later GV-Control Center V8.5 or later	
Connection		USB	USB 2.0
		DVR/RS-485+ DVR/RS-485-	Connects to GV-NET card, GV-NET/IO card, GV-Hub or GV-COM
		PTZ/RS-485+ PTZ/RS-485-	Connects to PTZ cameras
		PTZ/RS-422+ PTZ/RS-422-	
Communication		RS-485	9,600 bps (between the keyboard and GV-System / GV-Control Center)
		RS-485 / 422	2,400 ~ 115,200 bps (between the keyboard and PTZ cameras)
Power		DC IN	DC 12V 1A
Environmental Conditions		Operation temperature	0 ˚C ~ 50 ˚C / 32 °F ~ 122 °F
		Humidity	5 % ~ 95 % (non-condensing)
Dimensions (L x W x H)		161 x 300 x 45 mm / 6.34 x 11.81 x 1.77 in	
Note: Currently, GV-Keyboard V3 does not support embedded operating systems.			

Appendix

Supported PTZ Protocols and Brands

You can directly set up and control the following PTZ protocols and Brands through the Keyboard.

COP 53
COP 55
DongYang
Dynacolor
Lilin
Messoa D
Messoa P
Pelco D
Pelco P
Samsung
Sensormatic
VIDO
Visca
Note: The GV-Keyboard V3 only supports original factory models. Other brands of cameras claiming of the same protocol compatibility may not work properly with GV-Keyboard V3. GeoVision takes no responsibility of such incompatibility.