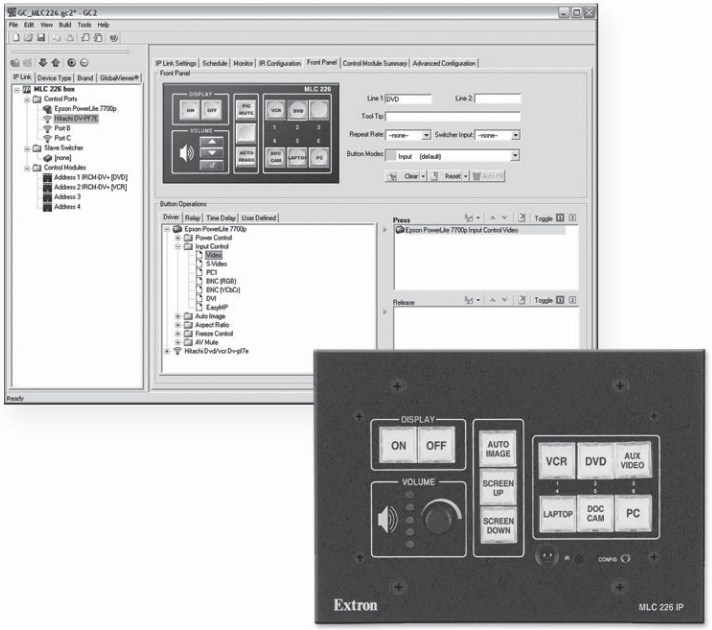
Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

Setup Guide



MLC 226 IP Series

MediaLink™ Controllers

68-1288-01 **A**
07 06

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Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Öbjekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: 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. 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 his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:
Extron Electronics
1001 East Ball Road
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:
Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:
Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:
Extron Electronics, Japan
Kyodo Building
16 Ichibancho
Chiyoda-ku, Tokyo 102-0082
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

安全须知 • 中文

这个符号提示用户该设备用户手册中有重要的操作和维护说明。

这个符号警告用户该设备机壳内有暴露的危险电压，有触电危险。

注意

阅读说明书 • 用户使用该设备前必须阅读并理解所有安全和使用说明。

保存说明书 • 用户应保存安全说明书以备将来使用。

遵守警告 • 用户应遵守产品和用户指南上的所有安全和操作说明。

避免追加 • 不要使用该产品厂商没有推荐的工具或追加设备，以避免危险。

警告

电源 • 该设备只能使用产品上标明的电源。 设备必须使用有地线的供电系统供电。 第三条线（地线）是安全设施，不能不用或跳过。

拔掉电源 • 为安全地从设备拔掉电源，请拔掉所有设备后或桌面电源的电源线，或任何接到市电系统的电源线。

电源线保护 • 妥善布线， 避免被踩踏，或重物挤压。

维护 • 所有维修必须由认证的维修人员进行。 设备内部没有用户可以更换的零件。为避免出现触电危险不要自己试图打开设备盖子维修该设备。

通风孔 • 有些设备机壳上有通风槽或孔，它们是用来防止机内敏感元件过热。 不要用任何东西挡住通风孔。

锂电池 • 不正确的更换电池会有爆炸的危险。 必须使用与厂家推荐的相同或相近型号的电池。 按照生产厂的建议处理废弃电池。

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Chapter One

Introduction

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About this Manual

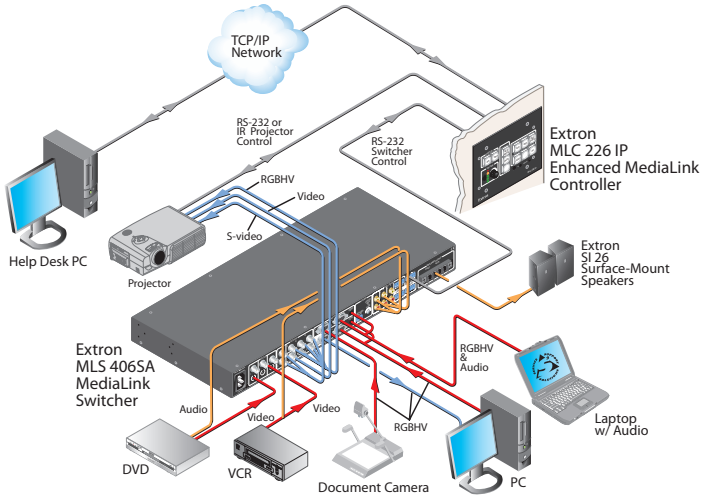
This setup guide allows you to easily and quickly set up and configure your Extron MLC 226 IP MediaLink™ controller. The following step by step instructions first show you how to set up the hardware, then how to use the Global Configurator program to

- download drivers
- add A/V devices to a GC configuration
- configure the front panel buttons,
- set a shutdown schedule
- set up email alerts that can flag a projector disconnection or warn that lamp hours are exceeded

About the MLC 226 IP MediaLink Controllers

The Extron MLC 226 IP Series MediaLink Controllers are capable of controlling a projector and various other items such as lights, a projector lift, or a screen motor. Although this setup guide pertains to all models in the series (the MLC 226 IP, AAP, and L) the primary model mentioned in this setup guide is the MLC 226 IP. All models are referred to as the MLC 226 IP, MLC, or controller. All models offer RS-232 and IR-based projector (display) control along with IR or serial control of other devices (typically A/V input sources); relays for controlling items such as a projector lift, motorized projection screen, and lights; and RS-232 remote control of an Extron switcher.

The MLC 226 IP offers two methods of projector and source device control: RS-232 or infrared (IR). The MLC can learn IR signals from remote controls to communicate with sources such as VCRs and DVD players. Users can create their own device drivers (through IR or RS-232 control) or go to the Extron Web site (**www.extron.com**) to obtain device drivers.



A typical application for an MLC 226 IP controller

About Global Configurator

Extron Global Configurator (GC) software is an application that allows non-programmers to configure a wide range of Extron IP Link®-enabled products, and create entire GlobalViewer® systems. It provides an integrated environment for defining A/V control and system monitoring functionality from an easy-to-use graphical user interface. It allows you to configure a single room controller as well as facilitate building a Web-based asset management and remote monitoring system for hundreds of A/V devices in multiple locations.

Global Configurator provides the following features for the MLC 226 IP:

Offline configuration — Using Global Configurator, you can configure your MLC 226 IP MediaLink controller without having the actual device on hand, eliminating the need to connect your MLC before starting the configuration.

GlobalViewer Web pages — GlobalViewer Web pages (HTML, XML, and JavaScript) allow you to control and manage devices such as VCRs, DVDs, and displays connected to an MLC 226 IP. These pages are generated when you build and upload your project files in GC.

GlobalViewer can be viewed using Microsoft® Internet Explorer® (version 6 and above) from any computer with access to the network.

System Requirements

The MLC 226 IP and Global Configurator have the following hardware and software requirements:

- Intel® Pentium® III 1 GHz processor
- Microsoft Windows® NT SP4, Windows 2000 SP2, or Windows XP SP2
- Microsoft Internet Explorer 6.0 with ActiveX enabled
- Microsoft Windows Script 5.6
- 512 MB of RAM
- 50 MB of available hard disk space
- A network connection with a minimum data transfer rate of 10 Mbps; however, 100 Mbps is recommended.

Installing the Software

Before getting started with Global Configurator, you must install the software. The configuration software is available at no charge via the Extron Web site at **www.extron.com**.

To install the software on your hard drive, do the following:

1. Go to **www.extron.com** and click the **Download** tab.
2. Click the **IP Link® Software** link or icon.
3. Click the **Global Configurator** link or icon.
4. From the **Global Configurator** page, click the **Download Now** button.
5. Provide the necessary information, then click the **Download GCSWxxxxx.exe** button.

The program wizard walks you through the remaining process. By default, the installation creates the necessary directories, placing icons, files, drivers, and a help file for Global Configurator within them.

Updating Firmware

Extron periodically updates product firmware in conjunction with the release of new software revisions. When updating any Extron software to the latest revision level, please be sure to read the supplied release notes, or contact an Extron Application Engineer to determine if your Extron product also requires a firmware update.

NOTE *For more information regarding how to update the firmware, refer to Appendix B in the* MLC 226 Series User's Manual.

Chapter Two

MLC 226 IP Hardware Setup

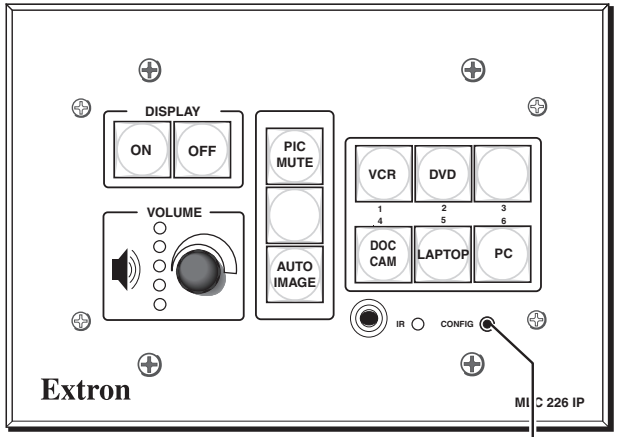
Panels and Cabling

Front Panel Features and Basic Operation

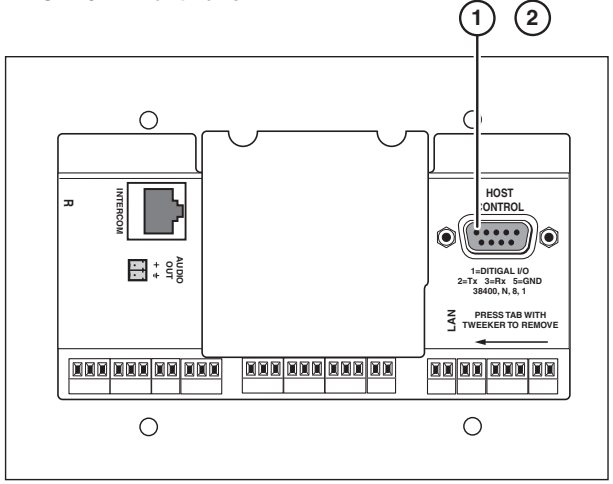
This chapter describes front and rear panel features, basic front panel operation, and how to connect cables to the MLC 226 IP controller.

Panels and Cabling

Host/Config port cabling



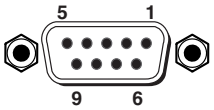
MLC 226 IP Front Panel



MLC 226 IP Rear Panel

① **Rear panel Host Control port** — For MLC configuration and control, connect to the 9-pin HD connector. This connector also has one pin (pin 1) designated for digital input/output.

RS-232 protocol:
- 38400 baud
- 1 stop bit
- no parity
- 8 data bits
- no flow control



DB9 Pin Locations
Female

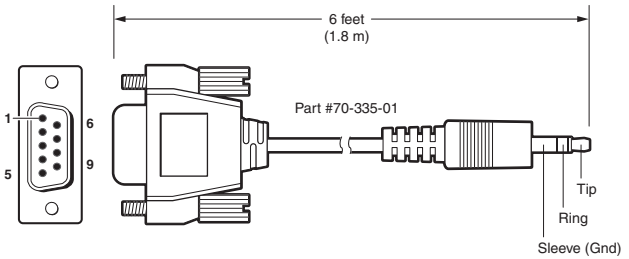
The pin assignments of this connector are as follows:

Pin	Function	Description
1	Digital I/O	Digital input/output
2	Tx	Transmit data
3	Rx	Receive data
4	–	No connection
5	Gnd	Signal ground
6	–	No connection
7	–	No connection
8	–	No connection
9	–	No connection

Pin 1 and the ground pin together act as a digital input/output port (depending on the configuration). This allows for an additional way to trigger events or functions (such as triggering relays, issuing commands, or sending an email).

There is also a +5 VDC selectable pull-up resistor for this circuit.

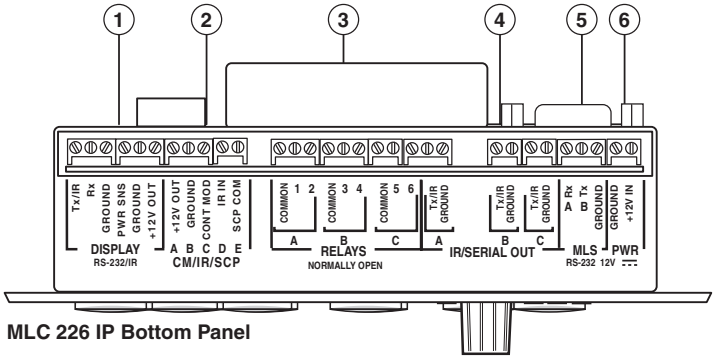
② **Front panel Config (Host Control) port** — This 2.5 mm mini stereo jack serves the same RS-232 function as the rear panel Host Control port, but is independent from it. The optional 9-pin D to 2.5 mm stereo mini TRS RS-232 cable shown below, (part #70-335-01) can be used for this connection. This port has the same RS-232 protocol as the rear panel port mentioned above (①).



9-pin D	Connection	TRS Plug
Pin 2	Computer's RX line	Tip
Pin 3	Computer's TX line	Ring
Pin 5	Computer's signal ground	Sleeve

Wiring for the TRS RS-232 cable option

Rear panel connections

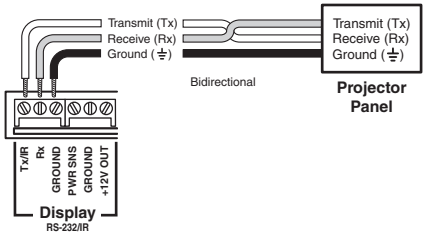


MLC 226 IP Bottom Panel

① **Display control RS-232/IR port** — This port is configurable for bidirectional RS-232 or infrared signal output.

From this port, commands sent from a driver or user-defined command strings (entered via Global Configurator) can be sent to the display device.

For bidirectional RS-232 communication, the transmit, ground, and receive pins must be wired at both the controller and the projector ports, as shown below.



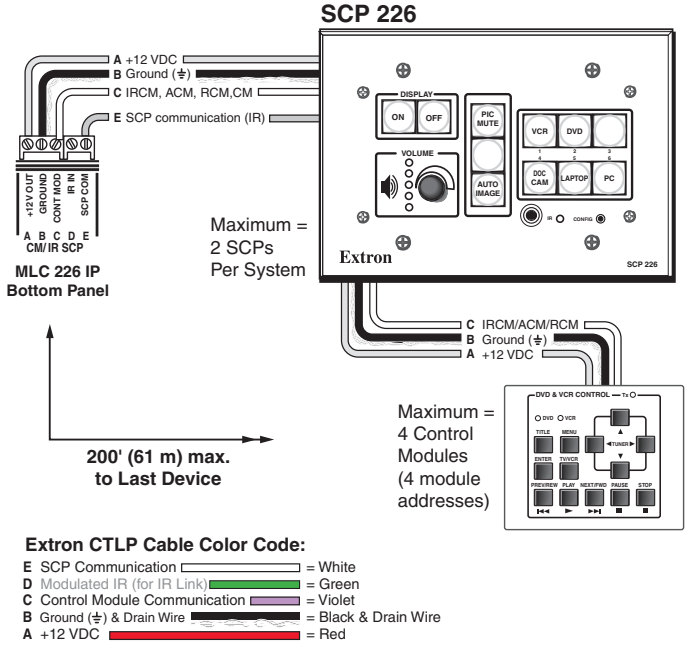
MLC 226 IP Bottom Panel

NOTE *Each projector or display may require different wiring. For details, refer to the manual that came with your projector.*

② **CM/IR/SCP port** — You can connect up to four Extron control modules (IRCMs, ACMs, RCMs, CMs), one Extron IR signal repeater (IRL 20 or IR Link), and/or two Extron SCP 226 control panels to this port to allow remote control of the MLC 226 IP controller or other items. A maximum of seven devices can be connected to this port.

The SCP 226 replicates the MLC's front panel controls. The SCP 226 and the IR receiver can receive IR signals from an optional IR 402 remote control and send them to the controller. Once the MLC is set up, control modules can be used to control VCRs, DVD players, tape decks, a projector lift, or screen control. For device control, refer to the appropriate device's user's manual.

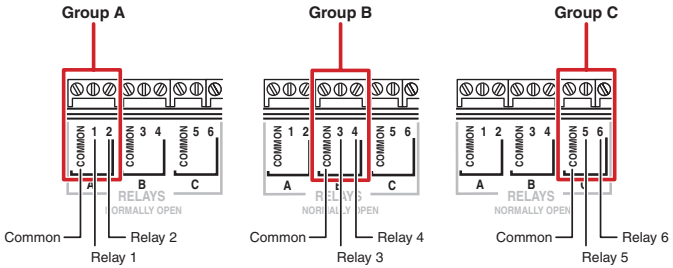
The control modules, IR receiver, and SCPs can be daisy chained, as shown in the following diagram. Extron Comm-Link (CTL and CTLP) cable is recommended for these connections.



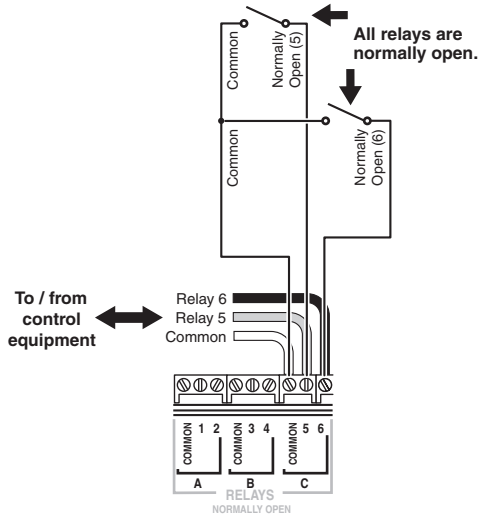
Connecting control modules and an SCP 226 to the MLC 226 IP controller

NOTE *The maximum total distance between the MLC 226 IP and a connected device is 200' (61 m).*

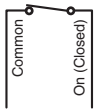
③ **Relay ports** (24 V, 1 A) — Through Global Configurator, each relay can be associated with a front panel button, or can be operated independently using Simple Instruction Set (SIS) commands. For a list of commands and additional information, refer to the *MLC 226 Series User's Manual*.



These relays are open by default and operate as follows:

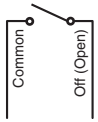


- **on** — relay closes and stays closed until otherwise instructed



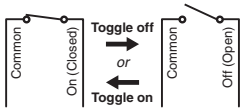
Relay On

- **off** — relay opens and stays open until otherwise instructed



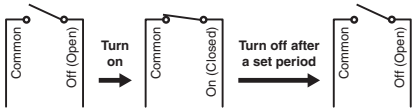
Relay Off

- **toggle** — relay changes from open to closed or from closed to open until otherwise instructed.



Relay Toggle

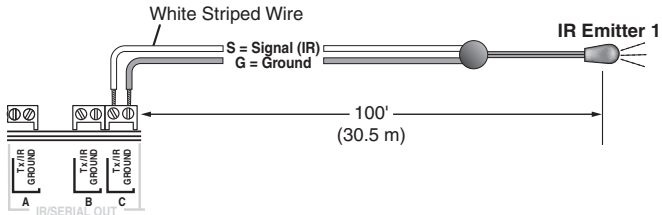
- **pulse** — momentary (timed) press to turn on, time-out to turn off. You can also use SIS commands or Global Configurator to specify pulse duration.



Relay Pulse

④ **IR/Serial Output ports** — These ports output either infrared (IR) signals or unidirectional RS-232 signals for controlling various devices such as VCRs and DVD players. Each port must be set up via Global Configurator for either IR or RS-232 communication and must be associated with a device driver.

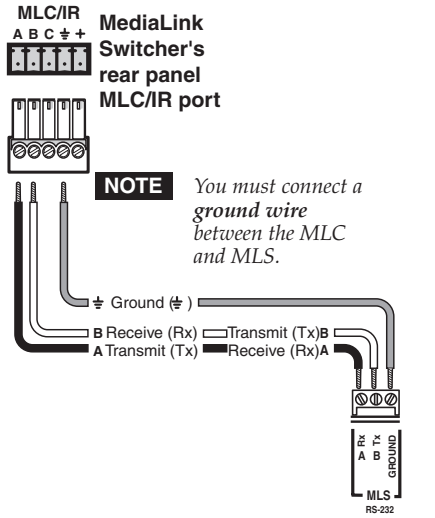
For **infrared (IR) output**, wire an IR Emitter (2 emitters, maximum, per port) as shown below for a modulated signal and ground.



Refer to the *MLC 226 Series User's Manual* for details on how to set up these ports for IR or RS-232 control.

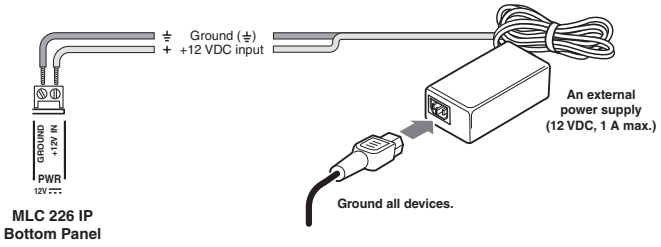
⑤ **MLS connector** — This connector can control an optional Extron switcher or other RS-232 controllable device.

WARNING *If you connect an optional switcher (such as an Extron MLS Series switcher) to the MLC, you* **must** *connect a ground wire between the switcher and the MLC, as shown in the following diagrams.*



MLC 226 IP Bottom Panel

⑥ **PWR (power) connector** — To provide power to the MLC, connect a cable between this port and a 12 VDC, 1 amp (maximum) power supply, as shown below. For wiring instructions, see the diagram on the following page.

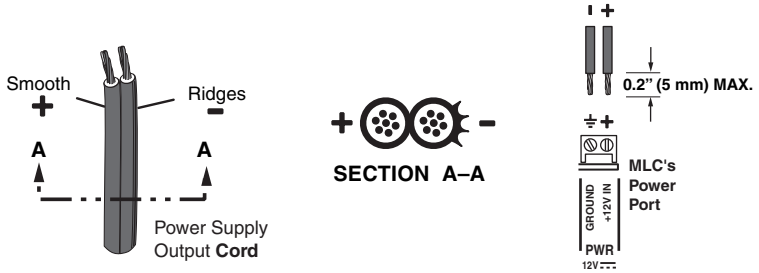


MLC 226 IP Bottom Panel

Connecting an MLC 226 to an external power supply

NOTE *Power the controller via an external power supply,* **not** *from an Extron switcher. The controller requires a separate 12 VDC power supply.*

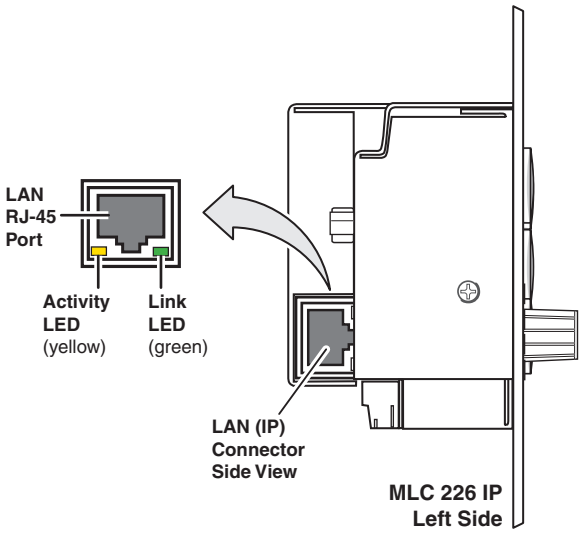
NOTE *Check the power supply's polarity before connecting it to the MLC. See the illustration below.*



Power wiring

Side panel connections

LAN connector and LEDs — An Ethernet connection can be used on an ongoing basis to control the MLC 226 IP (and the devices connected to it) in an Ethernet network.



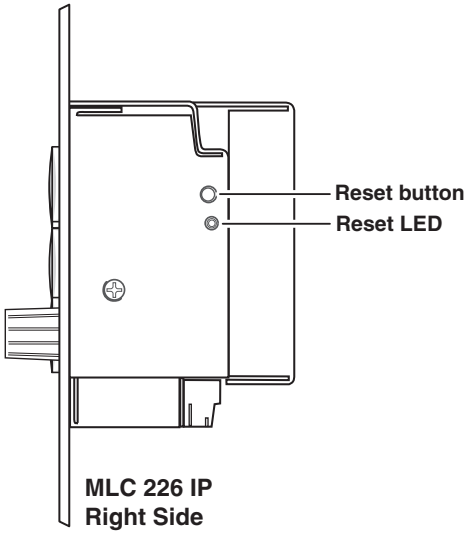
- Use a **straight-through cable** for connection to a switch, hub, or router.
- Use a **crossover cable** for connection directly to a PC.

Configure the settings for this port using either SIS commands, an embedded Web page, or Global Configurator.

LAN port defaults:

- IP address: 192.168.254.254
- gateway IP address: 0.0.0.0
- subnet mask: 255.255.0.0
- DHCP: off

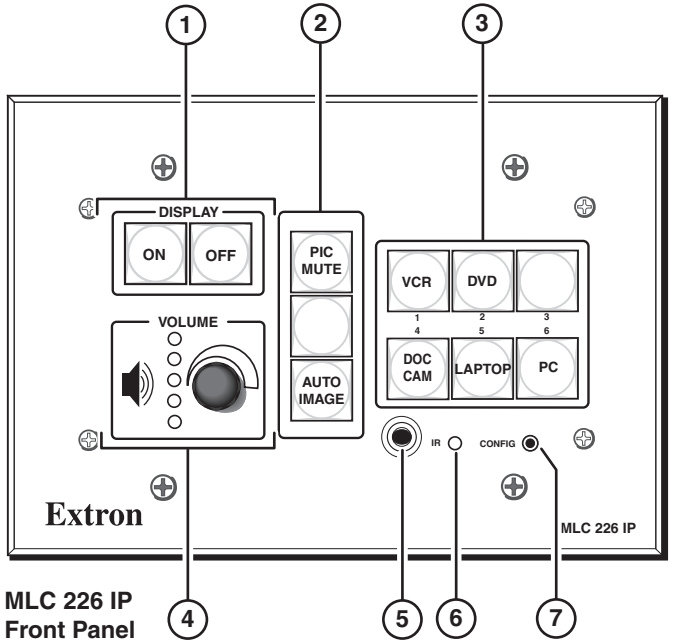
Reset button and LED — Pressing this recessed button causes various IP functions and Ethernet connection settings to be reset to the factory defaults. For details, refer to chapter 2 in the *MLC 226 Series User's Manual*.



MLC 226 IP
Right Side

Front Panel Features and Basic Operation

There are several features that must be set up prior to using the MLC. Refer to chapter 4 in the *MLC 226 Series User's Manual* for details.



MLC 226 IP
Front Panel

Buttons

The MLC 226 IP Series controllers have backlit buttons. The button caps are removable so the button labels can be changed.

(1) **Display On/Off buttons** — After they have been configured, press the **On** button to turn the display device on, and press the **Off** button to power it off. Only one of these two buttons can be selected (active) at once. Using Global Configurator, other functions and relays can be associated with each of these buttons.

(2) **Function/room control buttons** — These buttons can be set up to control the MLC's relays and to execute the IR or RS-232 commands of your choice.

③ **Input selection buttons** — By default, these buttons are a mutually exclusive group (only one of these buttons can be selected at a time).

Press an input selection button to select the desired audio and video input on the projector or an optional Extron switcher. The button lights brighter and remains lit while an audio-video input is selected.

Volume control

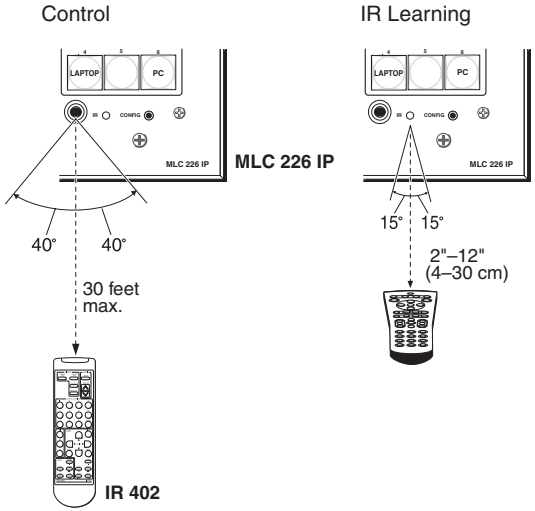
④ **Volume knob and LEDs** — Rotate this knob to adjust the audio volume. Global Configurator lets you select whether this knob will control the projector's audio levels or the optional switcher's audio levels.

If the MLC is configured for use with a MediaLink Switcher or certain projectors, the MLC's LEDs light to indicate volume ranges (with steadily lit LEDs) and minimum/maximum volume limits (with flashing LEDs).

If the MLC is configured for increment/decrement volume adjustment, the LEDs scroll up/down briefly.

IR signal sensors

These sensors allow for IR remote control of the MLC and for IR learning. The IR remote control must be pointed directly at these devices for best results.



IR control and learning

⑤ **IR control receiver** — This larger infrared receiver accepts IR signals from the Extron IR 402 infrared remote control, which mimics the MLC's front panel controls.

⑥ **IR learning receiver** — This smaller sensor receives and "learns" commands from other devices' infrared remote control so an IR driver can be created. Refer to the *IR Learner Help file* for IR learning procedures. This receiver accepts infrared signals from 30 kHz to 62 kHz.

Configuration port

⑦ **Front panel Config (Hot Control) port** — This is a front panel version of the rear panel Host port (the 9-pin D connector), but is independent of that port. See "Host/Config port cabling" in this chapter for a wiring diagram and port protocol.

Chapter Three

MLC 226 IP Software Setup

MLC 226 IP Software Setup

This chapter provides the steps for setting up your MLC 226 IP controller using the Global Configurator (GC) software. By means of example, you will learn how to

- **Add drivers** that allow control of A/V devices.
- **Configure** the controller's **power buttons**, and **input selection buttons** to control a video projector.
- **Configure** an **IRCM-DV+ control module** to control the functions of a **DVD/VCR player**.
- **Schedule** a projector shutdown, a lamp hour **warning alert**, and a projector disconnection **email alert**.

NOTE *This setup guide assumes that the following parameters are set and working on your current network: **IP address, gateway IP address, subnet mask, mail server IP address**, and **domain name**. If these parameters are not set, call your network administrator before continuing.*

Each of the following steps of configuration are described in detail in the subsequent sections of this chapter.

1. Downloading device drivers.
2. Creating a new project.
3. Adding an MLC 226 IP controller and defining its location.
4. Defining email settings.
5. Adding serial and IR devices.
6. Configuring the front panel buttons.
7. Configuring the control modules using the Auto Fill feature.
8. Creating a display shutdown schedule.
9. Creating a display lamp hour warning email.
10. Creating a display disconnection email.
11. Building and uploading a configuration.

NOTE *This setup guide provides instructions for the primary setup and configuration of the MLC 226 IP. For additional information and more detailed instructions, refer to the* MLC 226 Series User's Manual *or the* GC Help file *accessed through the GC software.*

Step 1: Download Device Drivers

In order to configure the MLC 226 IP to control a device on a network, you must download the drivers for each device.

For the purposes of this setup guide and tutorial, you will download two drivers to use in the following examples: one serial driver (for a video projector) and one IR driver (for a DVD/VCR player).

If you prefer to download the drivers required for your own network configuration, replace our example drivers with your own in the following exercises.

To download the required drivers, do the following:

1. Double-click the **GC** icon to launch Global Configurator.

   The **GC 2 Start Options** dialog box appears.

2. Click the **Add Drivers Subscription** button.

3a. From the **Available Manufacturers/Device Types** box, choose the required manufacturer(s) from the **left** window by clicking its name. For the following exercises, choose **Epson**.

3b. From the **Available Manufacturers/Device Types** box, choose the required device(s) from the **right** window by clicking its icon. For the following exercises, choose **video projector**.

4. From the far right column of buttons, click the **Subscribe** button. The selected items appear in the **Current Driver Subscriptions** window.

5. Repeat steps 3-5 above, choosing **Hitachi** as the manufacturer and **DVD/VCR** as the device.

6. Click the **Download** button to download the drivers under the **Current Driver Subscriptions** window.

NOTE *If you wish to unsubscribe to a particular driver, check its check box and then click the **Unsubscribe** button.*

7. After all of your drivers are successfully subscribed, click the **OK** button. The **GC 2 Start Options** dialog reappears.

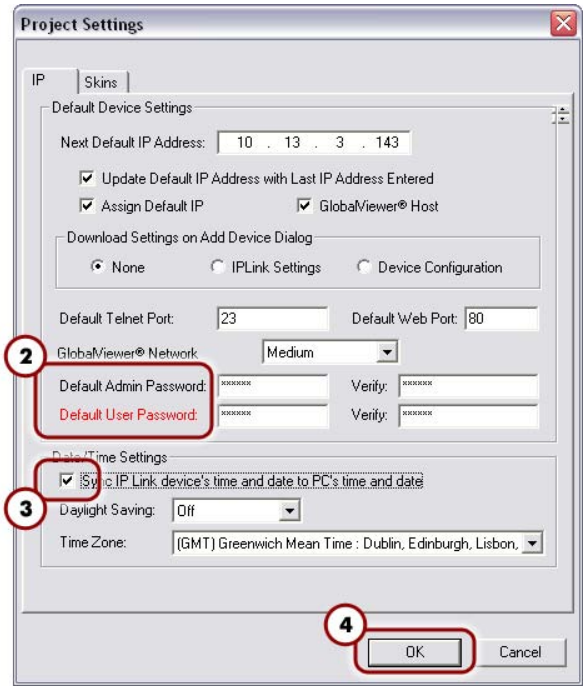
WARNING *When adding new drivers to an* open *project, you must close (and save) the configuration for a successful download. Reopen the configuration to view the uploaded drivers. See Step 5: Add Serial and IR Devices for detailed instructions.*

Step 2: Create a New Project

1. If the **GC 2 Start Options** dialog is displayed, select the "Create a New Project" option and click the **OK** button.

   The **Project Settings** dialog box appears, as shown below.

NOTE *You can also access the* **Project Settings** *dialog box via the* **Edit** *menu.*



Project Settings dialog box

2. If passwords have been set on the MLC 226 IP, enter the administrator and user passwords. Ensure that both passwords are repeated in the **Verify** fields.

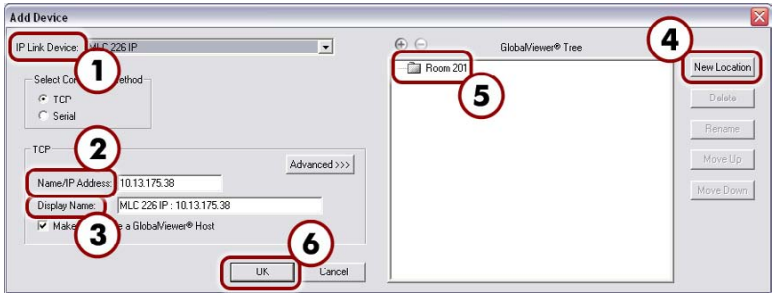
NOTE *If a password has been set on the MLC 226 IP controller but none is entered here, you will be unable to upload a new configuration. By default, there is no password set on the controller.*

3. Click the **Sync IP Link device's time and date to PC's time and date** check box and fill in the appropriate Daylight Saving time zone values in the menu drop boxes, if necessary.
4. Click the **OK** button. The **Add Device** dialog box appears.

Step 3: Add an MLC 226 IP Controller and Define its Location

The most essential step in creating a configuration in a GC project is to add an IP Link device. The following instructs how to add an MLC 226 IP controller to Global Configurator.

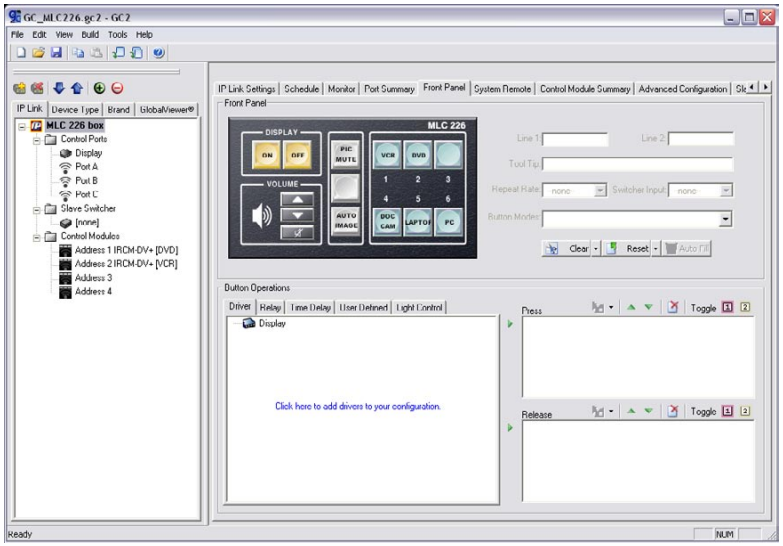
NOTE *If the Add Device dialog box is not displayed, select* **Add Device** *from the* **Edit** *menu.*



Add Device dialog box (Basic)

1. From the **IP Link Device** drop-down menu, select **MLC 226 IP.**
2. Enter or edit the host name or IP address in the **Name/IP Address** text box so that it matches the one assigned to the product by your network administrator.
3. In the **Display Name** box, enter an easy to remember, descriptive name (e.g., **MLC226 GC**). You may choose to keep the default name.
4. Click the **New Location** button in the upper right corner of the **Add Device** dialog box. A **Location** folder is created, in edit mode. You can use additional folders to create up to eight location levels.
5. Assign a location-oriented name to the highlighted folder (e.g., **Room 201**).
6. Once finished, click the **OK** button. The

Global Configurator front panel window appears, as shown below.



The Global Configurator Front Panel window

NOTE *This Global Configurator project can be saved at any time by selecting* **Save** *from the* **File** *menu.*

Step 4: Define Email Settings

Global Configurator supports scheduling, monitoring, and email alerts for all connected devices (such as our video projector). For example, you can create a schedule to shut down a projector at a predetermined time, and/or create an email alert that warns a school administrator if the projector's lamp hours are nearing expiration.

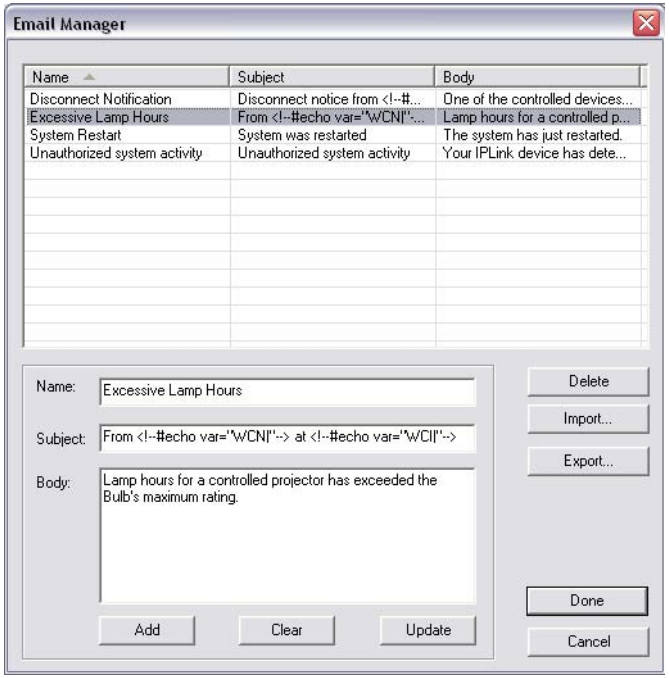
NOTE *Before beginning, ensure that your email server settings are set. If not, contact your network administrator to set them up for you.*

Setting up email notifications

The Email Manager provides preset messages for some of the most common actions performed in GC.

To set up an email notification for a specified action, do the following:

1. From the Global Configurator **Edit** menu, choose **Email Manager**. The **Email Manager** dialog box appears, as shown below.



Email Manager dialog box

2. Select one of the choices under the **Name** field.

   This action automatically populates the Name, Subject, and Body fields for the action, but these fields can be altered, if needed.

To create a custom notification email message, do the following:

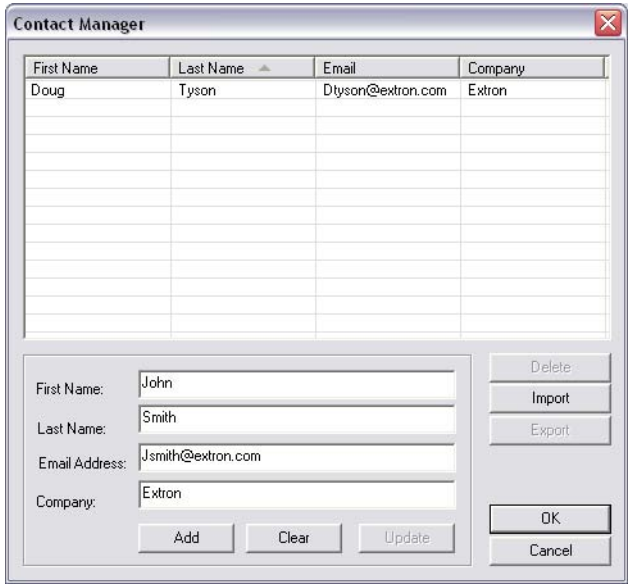
1. Fill in name, subject, and body sections in the **Email Manager** dialog box
2. Click the **Add** button. The custom message joins the list of preset messages.
3. Click the **Done** button to close the dialog box.

Adding email contacts

To add email contacts, do the following:

1. From the **Edit** menu, choose **Contact Manager**.

   A dialog box appears.



Contact Manager dialog box

2. Fill in the name, email address, and the company areas of the **Contact Manager** dialog box.
3. Click **Add** to add the newly-created contact to the list.
4. Click **OK** to close the dialog box.

Step 5: Add Serial and IR Devices

Adding an A/V device (projector displays, VCRs, DVDs, etc.) for the MLC 226 IP to control requires adding the device's driver to the GC configuration.

Downloading additional drivers

If you successfully downloaded device drivers in "Step 1: Download Device Drivers", proceed to "Adding a serial driver" below.

If you have not downloaded or need additional device drivers for your open project, you'll need to save and close the current project to access new drivers. To do so,

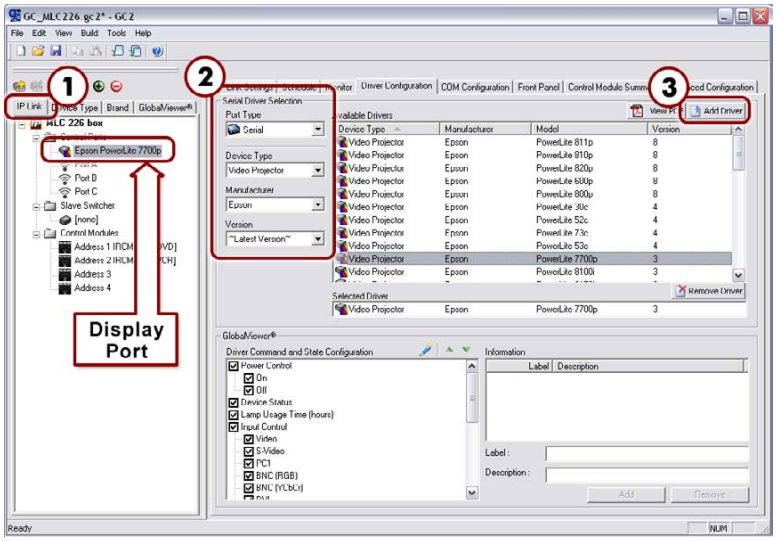
1. Select **New** from the file menu, but click the **Yes** button when prompted to save.
2. If the file was not previous saved, you must enter a project name in the **Project Name** field.
3. Click the **OK** button. This automatically closes the current project.
4. Click the **Add Drivers Subscription** button.
5. Follow the instructions under "Step 1: Download Device Drivers".
6. Reopen the saved project by choosing **Open An Existing Project** from the list of options.

You are now ready to add A/V devices to the configuration using the new drivers.

Adding a serial driver

1. From the IP Link tab (on the left pane), select the port named **Display**.
2. Use the drop-down menus under **Serial Driver Selection** to select the port type (**Serial**), device type (**video projector**), and manufacturer (**Epson**). For this example, select the **Epson PowerLite 7700p** video projector from the **Available Drivers** field.
3. Click the **Add Driver** button. The Epson projector appears within the **Selected Driver** field.

   Notice that this action also populates the **Driver Command and State Configuration** field with predefined functions. These functions appear as buttons on your GlobalViewer Web page.



Add serial driver window

Adding an IR driver

To add an IR driver to a port:

1. From the IP Link tab (left pane), select the IR port labeled **Port A** beneath the MLC 226 tree.
2. Use the drop-down menus under **IR Driver Selection** to select the port type (**IR**), device type (**DVD/VCR**), and manufacturer (**Hitachi**). In the **Available Drivers** field, choose **Hitachi DV-PF7E**.

NOTE *If you are unable to find the correct IR driver in the drop-down menu, or the Extron Web site, you can "learn" the command using the IR Learner software. You can download this software from the Extron Web site download center. Refer to the* IR Learner User's Guide *for instructions on how to use this software.*

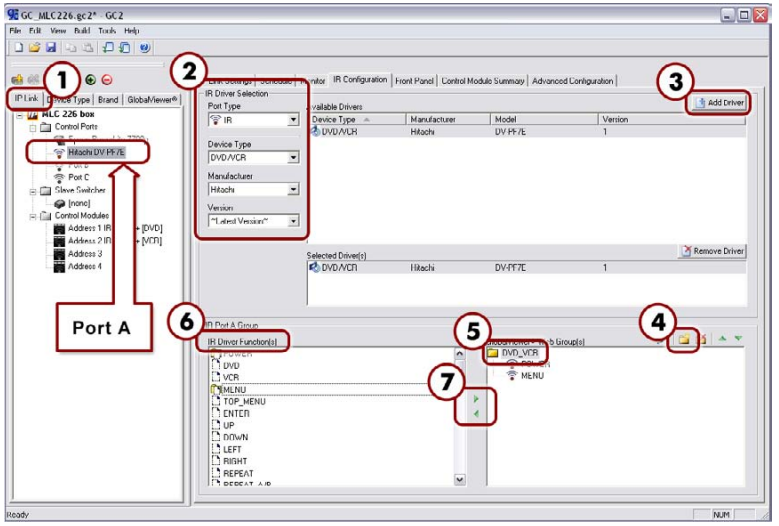
3. Click the **Add Driver** button. The Hitachi DVD/VCR appears within the **Selected Driver(s)** field.

   Notice that this action also populates the **IR Driver Function(s)** field with predefined functions.

To view these IR driver functions as buttons on your GlobalViewer Web page, do the following:

4. Under the **IR Port A Group** field, use the **Add Group** button to add a folder (i.e., group) to the **GlobalViewer Web Group(s)** field.
5. Rename the folder according to the function of the device and/or any name that allows you to easily recognize the device. In this case, use the name "DVD_VCR".
6. Under the **IR Driver Function(s)** field, select the desired functions (e.g., **Power** or **Menu**).
7. Use the small green arrows between the two fields to populate the DVD_VCR folder with the functions you require. You can also drag and drop them into the folder.

   Notice that the **Port A IR** icon is renamed to match the name of the added device.

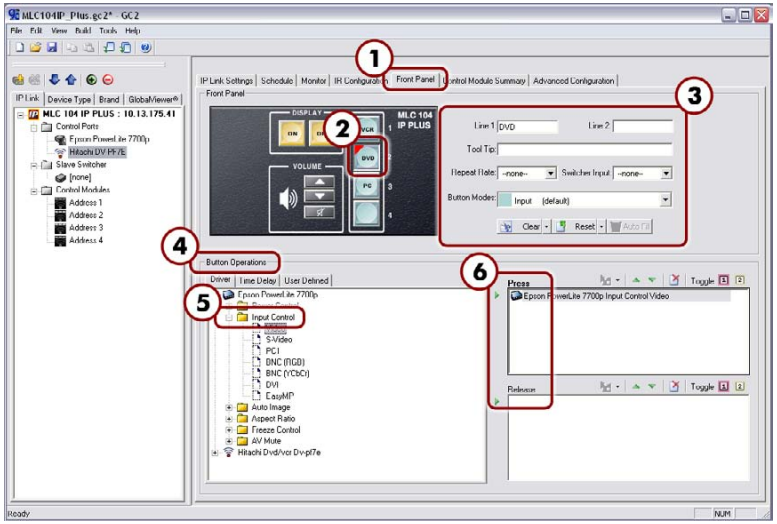


Add IR driver window

Step 6: Configure the Front Panel Buttons

Once the device drivers are added, you can configure the MLC 226 IP front panel buttons. For this exercise, you will configure Input and On/Off buttons. Additionally, you can modify a button caption, add a tool tip, set repeat rates, and select button modes.

NOTE *You can customize any front panel button (DVD, VCR, On/Off, etc.) on the MLC 226 IP, but most are shipped with the most common operations labeled for you.*



Front Panel window with configured buttons

Configuring an input button

Input buttons on the MLC 226 IP include the following, grouped together on the MLC front panel: **VCR**, **DVD**, **PC**, **Laptop**, **Doc Cam** and a **blank** button for custom use.

To configure the **DVD** button to switch to a DVD player when pressed, do the following:

1. Select the **Front Panel** tab.
2. Choose the green **DVD** input button.
3. Notice that the default in the **Line 1** (a caption field) reads **DVD**. You can change this to a different name, if desired, and set the tool tip, repeat rate, and button mode, if applicable.
4. Under the **Button Operations** field, select the driver tab and expand the tree under the **Epson PowerLite 7700p projector** icon. A list of possible projector operations appear.
5. Expand the **Input Control** folder to view the input control options.
6. Drag the **Video** icon (under Input Control) over to either of the right-sided window fields labeled **Press** or **Release**. The one you choose determines whether the command will activate on the press of the button or on the release of it.

   Notice that the Epson PowerLite 7700p projector now appears under your chosen **Press** or **Release** field, and the DVD button is marked with a red triangle. This indicates that the DVD button is now configured.

Configuring the On and Off buttons

Grouped within the **Display** section of the MLC 226 IP front panel, the On/Off buttons can be used to power on or off a network projector.

To configure the on/off buttons, do the following:

1. In the window under the **Front Panel** tab, click the yellow **On** button on the MLC 226 front panel.
2. Under the **Button Operations** field, expand the tree under the **Epson PowerLite 7700p projector** icon. A list of operations appear.
3. Expand the **Power Control** folder to view the options.
4. Drag the **On** icon to the right-sided window field labeled **Release**. This determines whether the command will activate on the press of the button or on the release of it.

NOTE *Failure to configure the On or Off buttons on Release may cause problems with the Pin Mode feature. Refer to the* MLC 226 User's Manual *for details.*

Notice that the Epson PowerLite 7700p projector now appears under the **Release** field, and the front panel **On** button is marked with a red triangle. This indicates that the On button is now configured.

5. To configure the **Off** button, repeat steps 1 through 4.

Step 7: Configure the Control Modules Using the Auto Fill Feature

Control modules are optional hardware keypads that can be used to trigger IR and serial control commands. Once added to the system, each button can have a function associated with it.

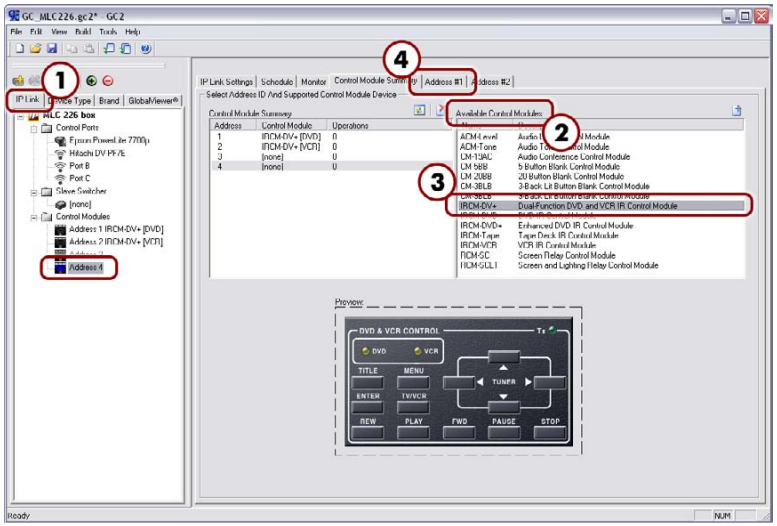
The Auto Fill feature automatically associates the correct IR commands with control module buttons for the selected IR driver. For example, the Play command is automatically assigned to the **Play** button of the control module keypad.

1. From the left pane IP Link tab, select **Address 1** beneath the folder called "Control Modules".

NOTE *Global Configurator automatically recognizes any control module currently connected to the controller. The IRCM-DV+ will appear at Address 1 & 2 or Address 3 & 4. If Address x IRCM-DV+ [DVD] is already shown in the MLC 226 IP tree view, skip 2 & 3, and proceed to 4.*

2. Select **IRCM-DV+** in the **Available Control Module** section.

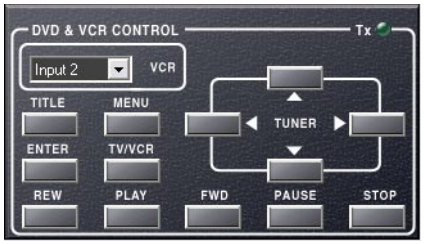
3. Double-click the selection, then click the **OK** button to add the IRCM-DV+ module.



Control module main window

4. Select the **Address #1** tab.

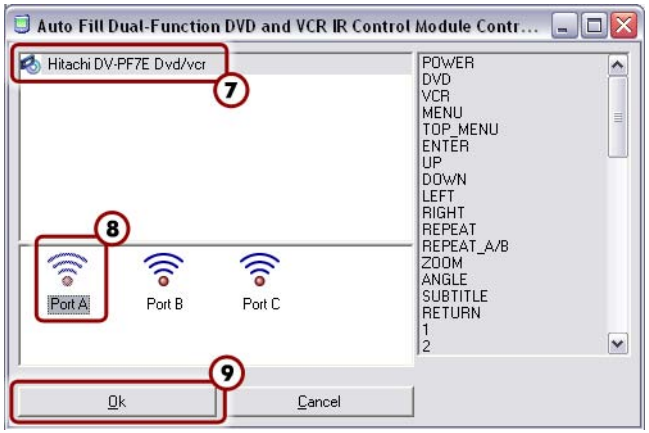
5. In drop-down menu within the DVD area (in the upper left corner of the IRCM-DV+), select **Input 2**, as illustrated on the following page. This associates the DVD functions whenever Input 2 is selected.



Input 2 button selection

6. Click **Auto Fill** button. A dialog box appears.

NOTE *You must have an applicable IR driver installed to use* **Auto Fill**.



Control module configuration

7. From the **Auto Fill Dual-Function DVD and VCR IR Control Module** dialog box, select the **Hitachi DV-PF7E DVD/VCR** IR driver. All functions for the selected driver appear in the right side pane of the dialog box.

8. Select **Port A** from the choices in the bottom portion of the dialog box.

9. Click the **OK** button. The dialog box closes.

   All commands that match a button on the module are assigned to that button. Red triangles on the buttons of the control module indicate that all the matching buttons have been auto-filled.

10. Repeat the above steps to configure **Address 2 IRCM-DV+[VCR]**.

NOTE *In step 2, you will need to select a different input button in the VCR half of the control module button.*

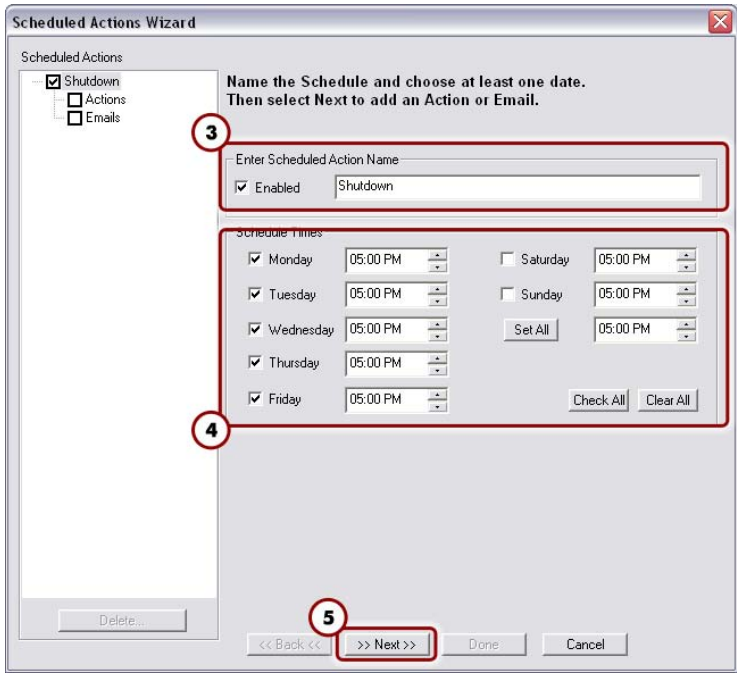
NOTE *If using an IRCM-DV+, you must associate each half with an input.*

Step 8: Create a Display Shutdown Schedule

Global Configurator's (GC) scheduling feature enables you to schedule actions and events for a selected device. Scheduling is often useful for setting a projector or other device to shut down or turn on at a predetermined time (e.g., in a school, all projectors can be set to power off at 5:00 P.M.).

To schedule a display shutdown:

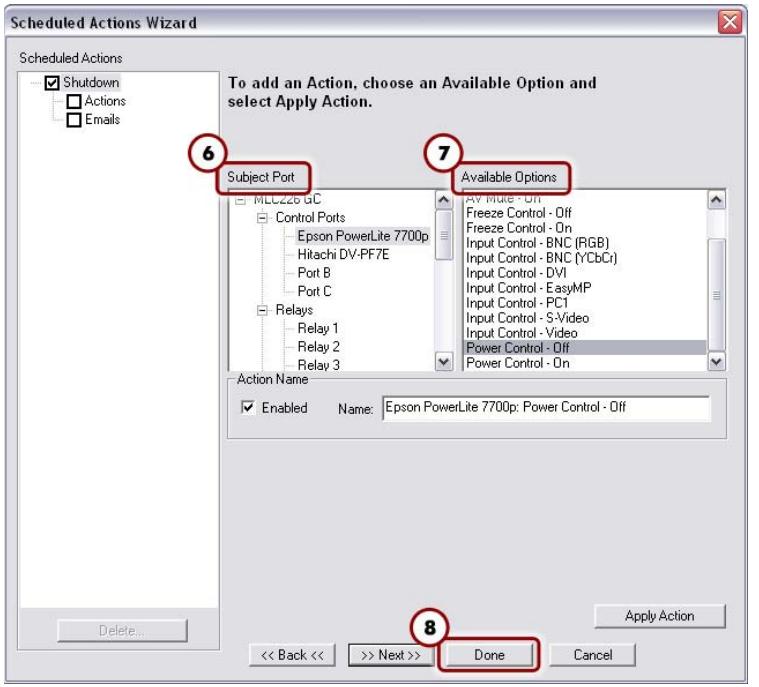
1. Click on the **Schedule** tab in the Global Configurator window.
2. Click the **Add Schedule** button below the **Scheduled Actions** window. The **Scheduled Actions Wizard** dialog box appears.



Scheduled Actions Wizard

3. Enter a name (e.g., **Shutdown**) in the **Enter Scheduled Action Name** field.
4. Indicate the time for the desired action and uncheck inactive times (e.g., weekend hours when staff are away).

   For events that occur at the same time daily, change the time alongside the **Set All** button. Click the **Set All** button to automatically change all selected days of the week.
5. Click **Next**. This takes you to the actions page, where you can specify the action.



Display shutdown action selection dialog

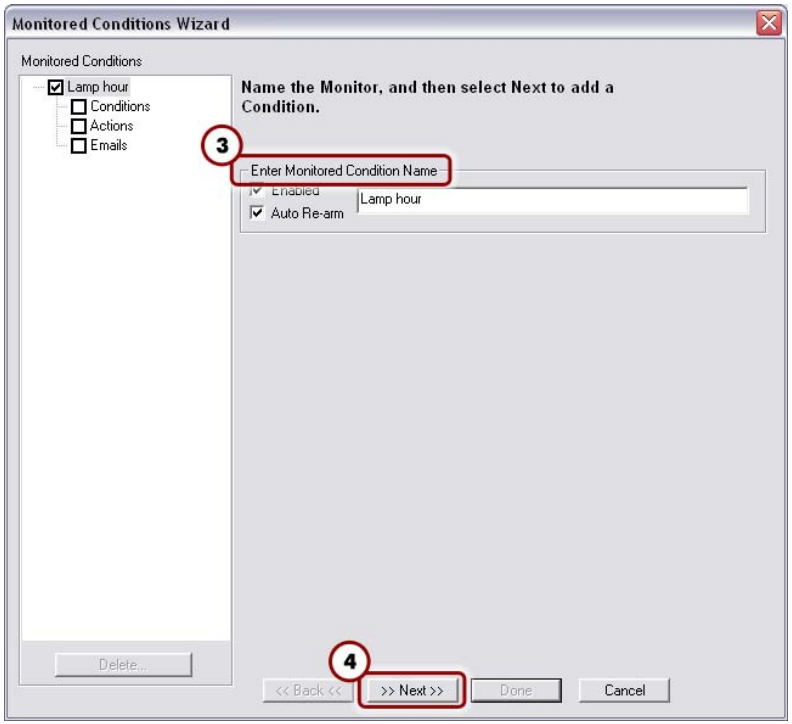
6. Select the device to be scheduled (e.g., **Epson PowerLite 7700p**) from the **Subject Port** window.
7. Select the action, **Power Control Off** from **Available Options** window, and click **Apply Action**.
8. Click **Done**. The dialog box closes.

Step 9: Create a Display Lamp Hour Warning Email

Global Configurator's monitoring feature enables you to configure a MLC 226 IP controller to monitor many parameters of the connected display devices. For example, a monitor alert can warn the school administrator if a display lamp hour limit is close to expiration, or if a display is inexplicably disconnected from the MLC 226 IP controller.

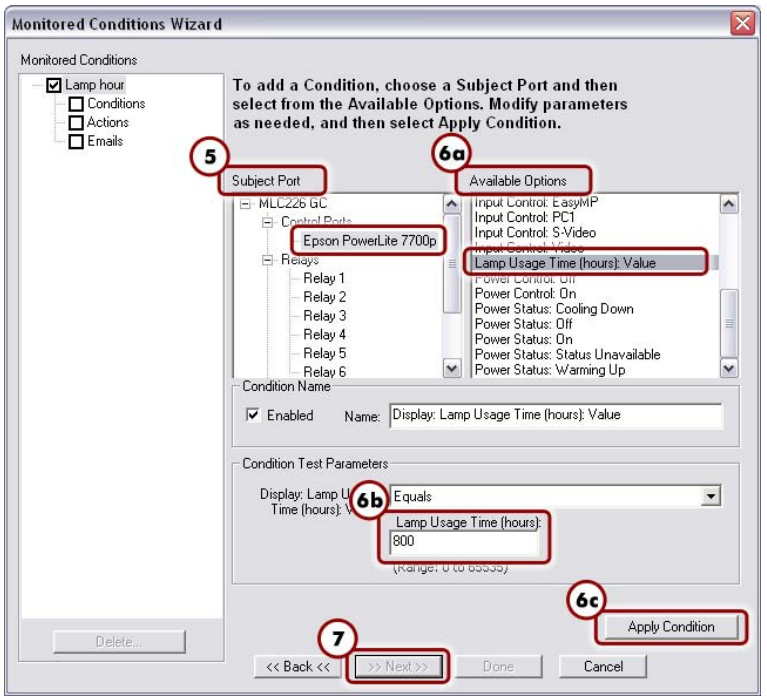
To set a display lamp hour warning email, do the following:

1. Click the **Monitor** tab in the Global Configurator window.
2. Click **Add Monitor** button below the **Monitored Conditions** dialog. The **Monitored Conditions Wizard** dialog appears.
3. Enter a name (e.g., **Lamp hour**) in the **Enter Monitored Condition Name** field area. The label now appears in the left pane.
4. Click **Next** to specify a condition. This takes you to the actions page, where you can specify the action.



Monitored Conditions Wizard dialog

5. In the **Subject Port** window, select the display (e.g., **Epson PowerLite 7700p**) for which the lamp hour warning is to be set. A list of monitoring options appears under the **Available Options** window.
6. Set the lamp hour limit by doing the following steps:
   a. Choose **Lamp Usage Time (hours): Value** under the **Available Options** window.
   b. Enter a value (e.g., 800) in the **Lamp Usage Time (hours)** box.
   c. Click **Apply Condition** for each condition assigned.
   d. Click **Next**.
7. Click **Next** again to add an email notification.
8. Click on the appropriate email message and contacts, and click **Apply Email/Contacts**.



Display lamp hour email notification

9. Click **Done**. The dialog box closes.

Step 10: Create a Display Disconnection Email

To set a display disconnected email alert, do the following:

1. Click the **Monitor** tab in the Global Configurator window.
2. Click **Add Monitor** below the **Monitored Conditions** window. The **Monitored Conditions Wizard** window appears.
3. Enter a name (e.g., **Disconnected**) in the **Enter Monitored Condition Name** field area. The label now appears in the left pane.
4. Click **Next** to specify a condition.
5. Select the desired equipment (e.g., **Epson PowerLite 7700p**) from the **Subject Port** window and **Connection Status: Disconnected** from **Available Options**.
6. Click **Apply Condition** and click **Next**.
7. Click **Next** again to add an email notification.
8. Highlight the appropriate email message (**Disconnect Notification**) and contacts (**email recipient**), and click **Apply Email/Contacts**.
9. Click **Done**. The dialog box closes.

Step 11: Build and Upload a Configuration

The Global Configurator project file contains all the configuration data (port assignments, product/device locations, scheduling data, etc.) you have created in Global Configurator. This is the data used to build the project's GlobalViewer Web pages.

Building a configuration

To build a configuration, do the following:

1. Click the **GlobalViewer tab** at the left pane window to open **GlobalViewer Designer.**
2. Confirm that all configured products have been given a location. If not, drag each product to the desired location or create new ones.
3. Save your project file. If a project file has not been saved, GC prompts you to do so before building the configuration.
4. From the **Build** menu, choose **Build All Configurations** or **Build Changed Configurations**.

Build Menu

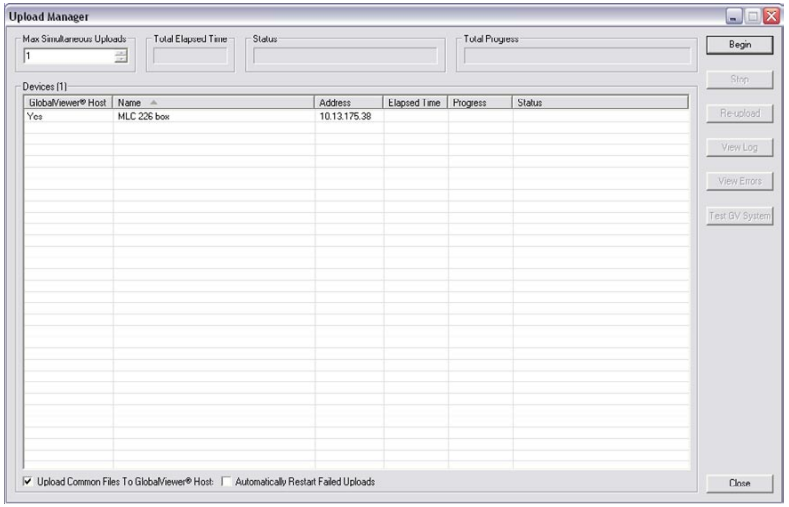
An activity bar appears, indicating that the build is progressing. The Upload Manager dialog appears when the build is complete.

Uploading a configuration

The process of uploading your project is essential to successfully configuring the MLC 226 IP and creating a GlobalViewer Web page. You can upload the project to one MLC at a time or several at once.

NOTE *You can configure devices offline, but the device must be connected to the network for a successful upload.*

The Upload Manager appears only after a build has been successfully performed on at least one device. If errors occur during the build of any devices, a dialog box appears listing the errors.



The Upload Manager window before file upload

To begin the upload, do the following:

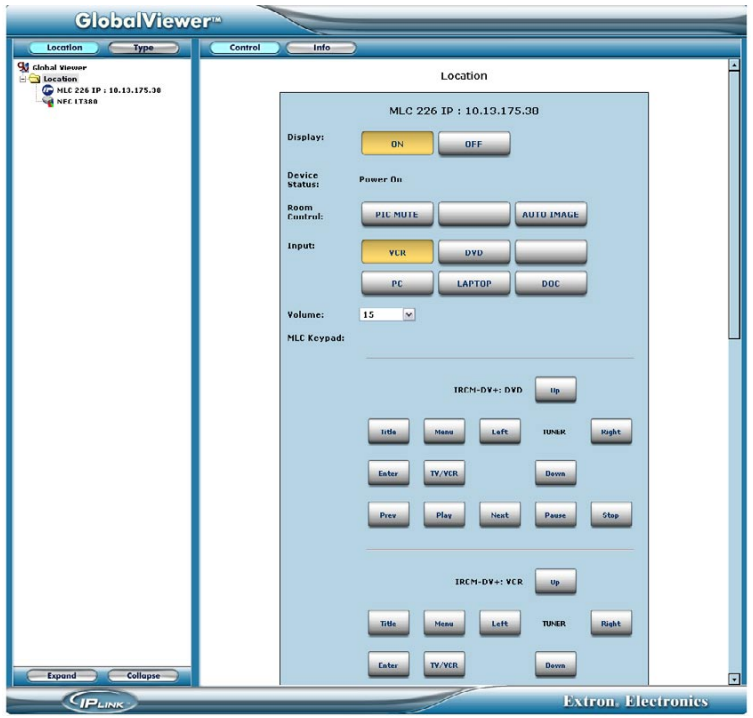
1. Click **Begin**. The Upload Manger monitors the progress of the download.
2. Click **Close**.

   The configuration should now be successfully uploaded to the appropriate product(s).

Accessing GlobalViewer

After uploading a configuration file to a MLC 226 IP controller, there are two ways to access the GlobalViewer page:

- From the **Upload Manager** window, click the **Test GV System** button.
- Right-click the MLC 226 IP controller icon in the IP Link tree and select **Open GlobalViewer® Webpage**.



GlobalViewer main page