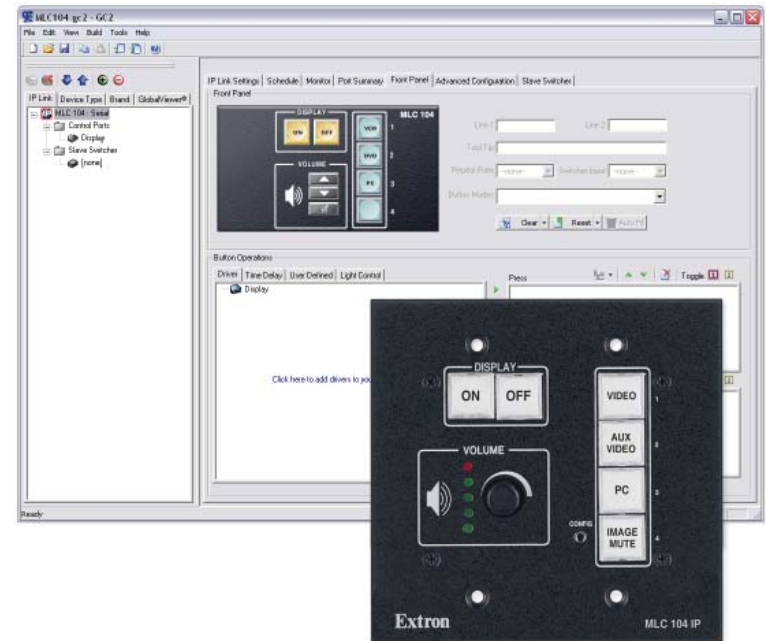


## Setup Guide



## MLC 104 and MLC 104 IP Series MediaLink™ Controllers

68-1315-01 A  
08 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.

**Conservier 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 présents dans la documentation utilisateur.

**Éviter 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.

## Precaución

**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 específicamente recomendados por el fabricante, ya que podrían 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.

## Avvertissement

**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** • Achémener 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'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Mettre au reut les batteries usagées conformément 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 Erdschluss, 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 Stromversorgung (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 dagegen gestellt 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 Objekten blockiert werden.

**Lithium-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 puentearla ni eliminarla.

**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 sobrecalentamiento 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。

# Table of Contents

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<b>Chapter One • Introduction</b> .....	1-1
About this Manual .....	1-2
About the MLC 104 Medialink Controllers.....	1-2
About Global Configurator .....	1-3
System Requirements.....	1-4
Installing the Software.....	1-4
Updating Firmware.....	1-5
<b>Chapter Two • MLC 104 Series Hardware Setup</b> .....	2-1
Right Side Panel Features and Connections .....	2-2
Left Side Panel Features and Connections .....	2-6
Front Panel Features and Basic Operation .....	2-7
Buttons .....	2-7
Volume control.....	2-8
Configuration (host control) port.....	2-8
<b>Chapter Three • MLC 104 Series Software Setup</b> ....	3-1
<b>Step 1: Download Device Drivers</b> .....	3-3
<b>Step 2: Create a New Project</b> .....	3-4
<b>Step 3: Add an MLC 104 IP or MLC 104 Controller and     Define its Location</b> .....	3-5
<b>Step 4: Define E-mail Settings (IP model only)</b> .....	3-7
Defining e-mail server settings.....	3-8
Setting up e-mail notifications .....	3-8
Adding e-mail contacts.....	3-10
<b>Step 5: Add a Serial or IR Device</b> .....	3-11
Downloading additional drivers.....	3-11
MLC 104 series port configuration .....	3-11
Adding a serial driver .....	3-11
Adding an IR driver .....	3-12
<b>Step 6: Configure the Front Panel Buttons</b> .....	3-14
Configuring an input button.....	3-14
Configuring the On and Off buttons.....	3-15
<b>Step 7: Create a Display Shutdown Schedule</b> .....	3-16
<b>Step 8: Create a Display Lamp Hour Warning E-mail     (IP model only)</b> .....	3-18

## Table of Contents, cont'd

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<b>Step 9: Create a Display Disconnection E-mail (IP model only)</b> .....	3-20
<b>Step 10: Build and Upload a Configuration</b> .....	3-21
Building a configuration.....	3-21
Uploading a configuration .....	3-22
Accessing GlobalViewer® .....	3-23



## MLC 104 MediaLink Controllers

# 1 Chapter One

## Introduction

- About this Manual
- About the MLC 104 MediaLink Controllers
- About Global Configurator
- System Requirements
- Installing the Software
- Updating Firmware

68-1315-01 Rev. A  
08 06

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# Introduction

## About this Manual

This setup guide allows you to easily and quickly set up and configure the Extron MLC 104 or MLC 104 IP controller. The following step by step instructions first show you how to set up the hardware, then how to use the Global Configurator (GC) program to

- download drivers
- add A/V devices to a GC configuration
- configure the front panel buttons
- set a shutdown schedule
- set up e-mail alerts that can flag a projector disconnection or warn that lamp hours are exceeded (IP model only)

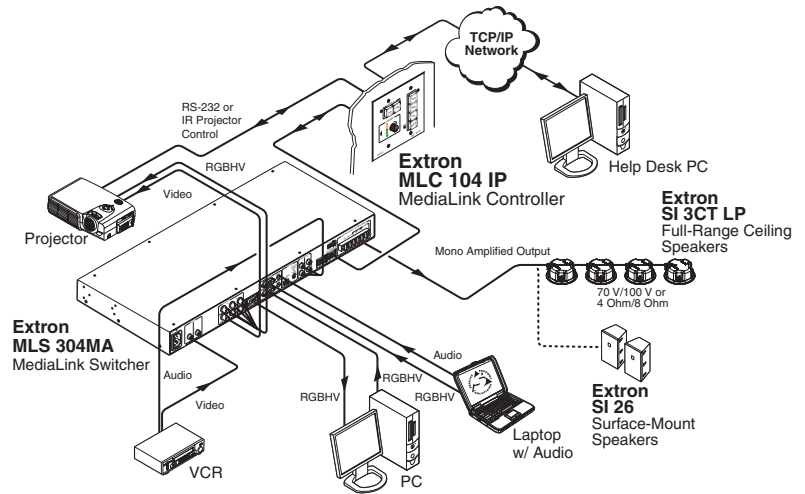
## About the MLC 104 Medialink Controllers

The Extron MLC 104 Series MediaLink™ Controllers can control a projector and various other items such as VCR and DVD players.

- The IP model (MLC 104 IP) can be configured and controlled either via RS-232 serial communication or via an Ethernet network using standard Internet protocol.
- The non-IP model (MLC 104) has nearly all the features of the IP model, but can be configured and controlled via RS-232 only.

The Extron MLC 104 Series MediaLink™ Controllers can control a projector and an optional Extron switcher. Throughout this setup guide they are referred to as the MLC 104 IP, MLC 104, MLC, or controller. Both models offer RS-232 or IR based display (projector) control and RS-232 control of an Extron switcher.

Users can go to the Extron Web site ([www.extron.com](http://www.extron.com)) to obtain device drivers.



**A typical application for an MLC 104 IP Medialink™ Controller**

## About Global Configurator

The Extron Global Configurator 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 build a Web-based asset management and remote monitoring system for hundreds of A/V devices in multiple locations.

**CAUTION** You **must** use Global Configurator version 2.2 or later to configure the MLC 104 series. Using an earlier version (2.0.0 through 2.1.x) risks damage to the products. Immediately update any existing controllers configured with older versions of the software. See "Installing the Software" later in this chapter for instructions on how to install GC 2.2.

Global Configurator provides the following features for the MLC 104 series:

**Offline configuration** — Using Global Configurator, you can configure your MLC 104 Medialink controller without having the actual device on hand, eliminating the need to connect your MLC before starting the configuration.

**GlobalViewer Web pages (IP model only)** — GlobalViewer Web pages (HTML, XML, and JavaScript) allow you to control and manage devices such as VCRs, DVDs, and displays connected to an MLC 104 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

- Intel® Pentium® III processor or later with at least a 1 GHz clock speed
- Microsoft® Windows NT, Windows 2000, Windows XP, or later operating system
- Microsoft Internet Explorer 6.0 or later
- 512 MB of RAM
- 50 MB of hard disk space
- A network connection with a minimum data transfer rate of 10 Mbps

### 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](http://www.extron.com).

**CAUTION** *You must use Global Configurator version 2.2 or later to configure the MLC 104 series. Using an earlier version (2.0.0 through 2.1.x) risks damage to the products. Immediately update any existing controllers configured with older versions of the software.*

To install the software on your hard drive:

1. Go to [www.extron.com](http://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 GCSWxxxx.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 104 Series User's Manual.*



# Chapter Two

## **MLC 104 Series Hardware Setup**

Right Side Panel Features and Connections

Left Side Top Panel Features and Connections

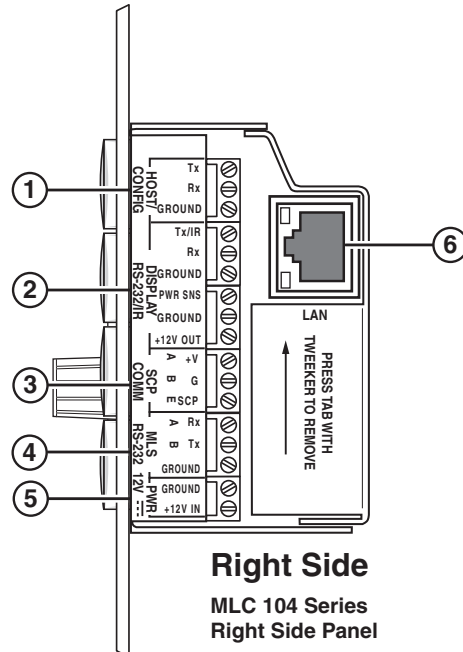
Front Panel Features and Basic Operation



# Hardware Setup

This chapter describes right, left, and front panel features, basic front panel operation, and how to connect cables to the MLC 104 series controller.

## Right Side Panel Features and Connections



**Right Side**  
MLC 104 Series  
Right Side Panel

- 1 **Right panel, Host/Config port** — For MLC configuration and control, connect to the 3-pin captive screw.

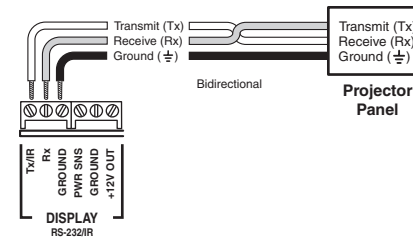
This port has the following RS-232 protocol:

- 38400 baud
- 1 stop bit
- no parity
- 8 data bits
- no flow control

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

From this port, commands sent from a driver or user-defined command strings (entered via the 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 connectors, as shown on the following page.

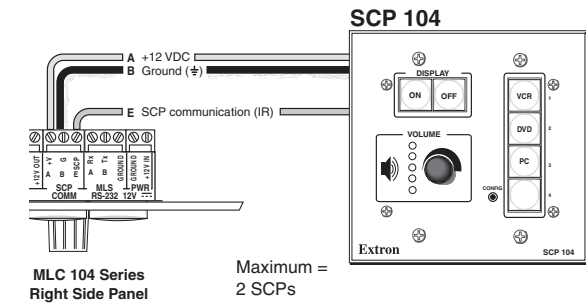


MLC 104 Series  
Right Side Panel

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

- 3 **SCP Comm port** — The SCP 104 replicates the MLC’s front panel controls. You can connect up to two Extron SCP 104 control pads to this port to allow remote control of the MLC 104 controller.

SCPs can be daisy chained. Extron recommends the Comm-Link (CTL and CTLP) cable for these connections.



200' (61 m) max.  
to Last Device

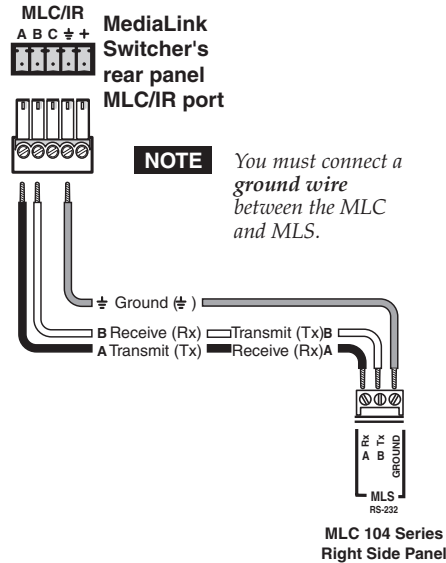
**Extron CTLP Cable Color Code:**  
 E SCP Communication = White  
 C Control Module Communication = Violet  
 B Ground (±) & Drain Wire = Black & Drain Wire  
 A +12VDC = Red

### An MLC 104 series controller daisy chained to a SCP 104

**NOTE** The maximum distance allowed between an MLC controller and a SCP 104 is 200' (61 m).

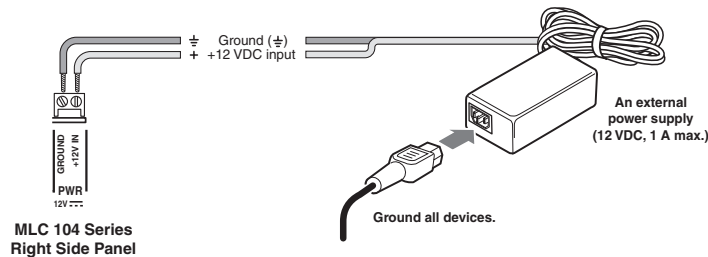
- ④ **MLS RS-232 port** — This port can control an optional Extron switcher or other RS-232 controllable device.

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 diagram.



**NOTE** For a list of Extron switchers this connector supports, refer to the MLC 104 Series User's Manual.

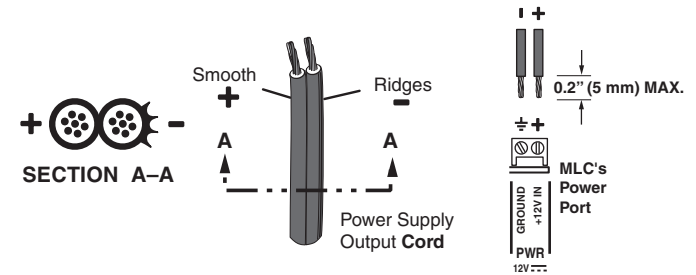
- ⑤ **PWR (power) connector** — To provide power to the MLC, connect a cable between this port and a 12 VDC, 1 amp (maximum) power supply, as shown below. For power wiring instructions, see the diagram on the following page.



**Connecting an MLC 104 Series controller 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 diagram below.



### Power wiring

- ⑥ **LAN connector and LEDs (IP model only)** — An Ethernet connection can be used on an ongoing basis to control the MLC 104 IP (and the devices connected to it) in an Ethernet network.

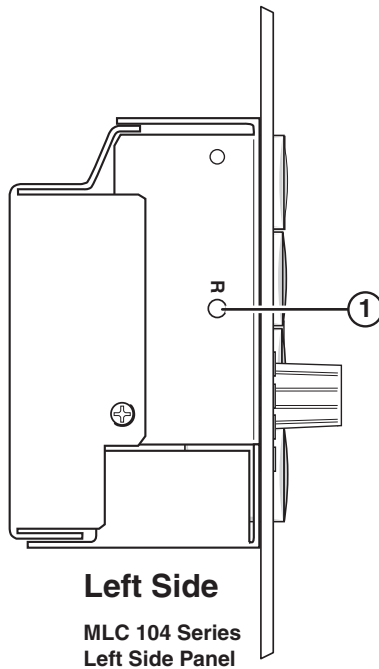
- Use a **straight-through cable** for connection to a switch, hub, or router.
- Use a **crossover cable** for connection directly to a PC.

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

LAN port defaults are as follows:

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

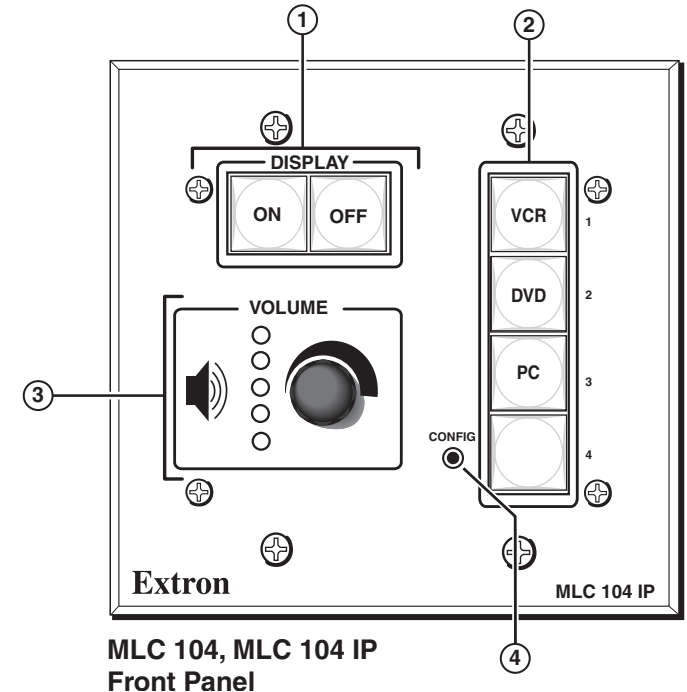
### Left Side Panel Features and Connections



- ① **Reset button and LED** — Pressing this recessed button causes various IP functions and Ethernet connection settings to be reset to their factory defaults. Refer to chapter 2 in the *MLC 104 Series User's Manual* for details.

### 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 104 Series User's Manual* for details.



#### Buttons

The MLC 104 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 can be associated with each of these buttons.
- ② **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

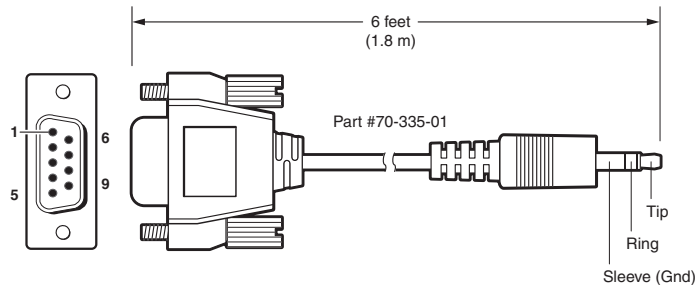
- ③ **Volume knob and LEDs** — Rotate this knob to adjust the audio volume. Global Configurator lets you select whether this knob will control the projector's audio levels or the optional MediaLink switcher's audio levels.

If the MLC is configured for use with a MediaLink Switcher or 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.

### Configuration (host control) port

- ④ **Front panel Config port** — This 2.5 mm mini stereo jack provides an RS-232 connection for configuration and control. An optional cable for this port is the 9-pin D to 2.5 mm stereo mini TRS RS-232 cable, shown below, (Extron part #70-335-01).



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

#### Pin out for TRS RS-232 cable wiring

This port has the following RS-232 protocol:

- 38400 baud
- 1 stop bit
- no parity
- 8 data bits
- no flow control

# Chapter Three

## MLC 104 Series Software Setup

Step 1: Download Device Drivers

Step 2: Create a New Project

Step 3: Add an MLC 104 Controller and Define its Location

Step 4: Define E-mail Settings (IP model only)

Step 5: Add Serial and IR Devices

Step 6: Configure the Front Panel Buttons

Step 7: Create a Display Shutdown Schedule

Step 8: Create a Display Lamp Hour Warning E-mail (IP model only)

Step 9: Create a Display Disconnection E-mail (IP model only)

Step 10: Build and Upload a Configuration

This chapter provides the steps for setting up your MLC 104 series 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.
- **Schedule** a projector shutdown, create a lamp hour **warning alert**, and create a projector disconnection **e-mail alert**.

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 104 or MLC 104 IP controller and defining its location
- 4 Defining e-mail settings (**IP model only**)
- 5 Adding serial or IR devices
- 6 Configuring the front panel buttons
- 7 Creating a display shutdown schedule
- 8 Creating a display lamp hour warning e-mail (**IP model only**)
- 9 Creating a display disconnection e-mail (**IP model only**)
- 10 Building and uploading a configuration

**NOTE** *This setup guide provides instructions for the primary setup and configuration of the MLC 104. For additional information and more detailed instructions, refer to the MLC 104 Series User's Manual or the GC Help file accessed through the GC software.*

**CAUTION** *You must use Global Configurator version 2.2 or later to configure the MLC 104 series. Using an earlier version (2.0.0 through 2.1.x) risks damage to the products. Immediately update any existing controllers configured with older versions of the software. See "Installing the Software" in chapter 1 for instructions on how to install GC 2.2.*

### Step 1: Download Device Drivers

In order to configure an MLC to control a device, 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 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.

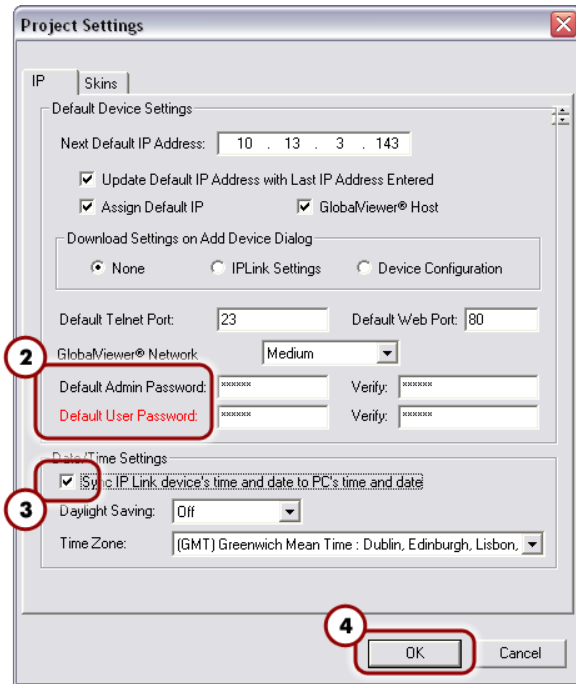
2. Click the **Add Drivers Subscription** button.
  - 3a. From the **Available Manufacturers/Device Types** box, choose the required manufacturer(s) from the **left** window by clicking its name. For the following exercises, choose **Epson**.
  - 3b. From the **Available Manufacturers/Device Types** 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.

**NOTE** *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 downloaded 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, 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 104 series 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.

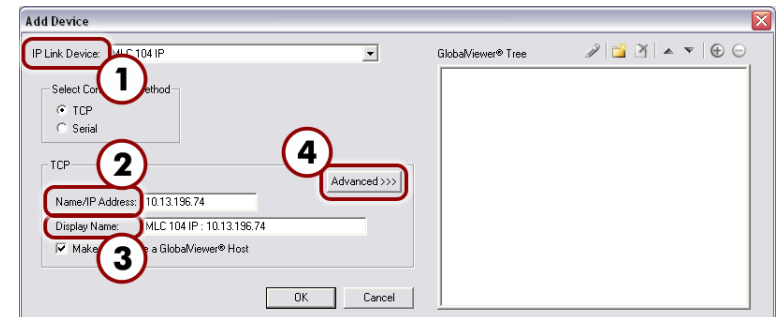
3. Click the **Sync IP Link device's time and date to PC's time and date** check box and fill in the appropriate Daylight Saving time zone values in the menu drop boxes, if necessary.
4. Click the **OK** button. The **Add Device** dialog box appears.

### Step 3: Add an MLC 104 IP or MLC 104 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 104 IP and MLC 104 controller to Global Configurator.

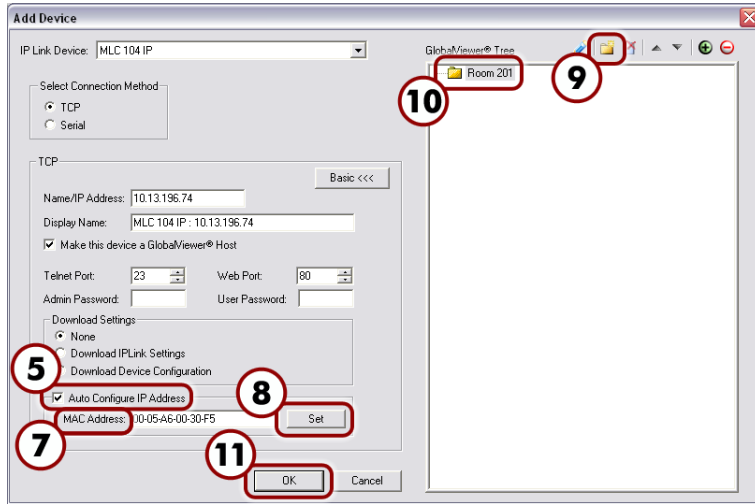
**NOTE** If the **Add Device** dialog box is not displayed, select **Add Device** from the **Edit** menu.

To add the **MLC 104 IP**, do the following:



#### Add Device dialog box (Basic) (for IP version only)

1. From the **IP Link Device** drop-down menu, select **MLC 104 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., **MLC104IP GC**). You may choose to keep the default name.
4. Click the **Advanced** button.

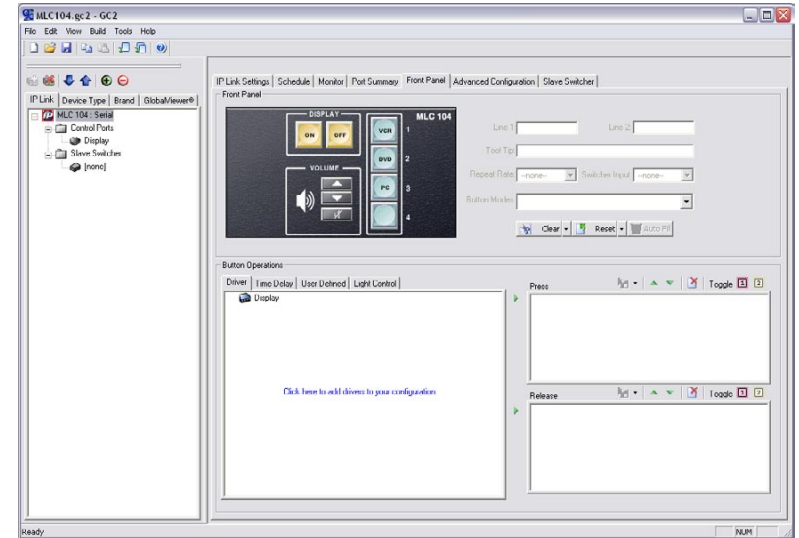


### Add Device dialog box (Advanced) (for IP version only)

5. Select the **Auto Configure IP Address** check box. The **MAC Address** text box becomes active and the first three octets of the MAC address appear.
6. Locate the MAC address on the rear of the Extron IP product or obtain it from your network administrator.
7. Enter the remainder of the MAC address in the **MAC Address** text box (the first three octets should be filled in).
8. Click the **Set** button. This assigns the new IP address to the IP device.
9. 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.
10. Assign a location-oriented name to the highlighted folder (e.g., **Room 201**).
11. Once finished, click the **OK** button. The Global Configurator Front Panel window appears, as shown on the following page.

To add the **MLC 104**, do the following:

1. From the **IP Link Device** drop-down menu, select **MLC 104**.
2. Select a serial port number (if more than one is available).
3. 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 E-mail Settings (IP model only)

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



### Defining e-mail server settings

Before you set up e-mail notifications, ensure that your **e-mail server**, **subnet mask** and **gateway** settings are set. If not, use the Change Device Setting feature to set them up.

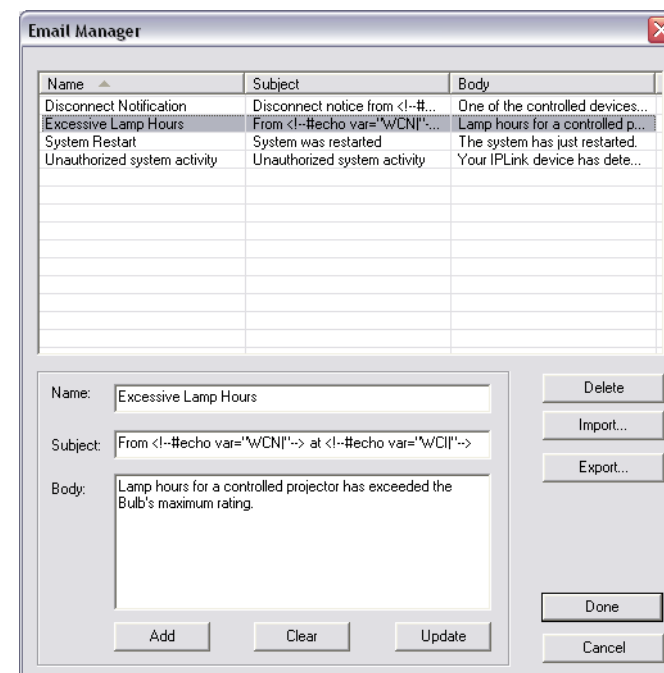
1. From the **Tools** menu, choose **Change Device Settings....**  
The Device Settings page appears and displays every device in the current project.
2. Select the **MLC 104 IP** from the list.
3. From the **Settings** menu, choose **Set Mail Server....**
4. Complete each of the fields with your **mail server IP address**, **mail server domain**, and, if necessary, your **user name** and **password**.
5. Click the **OK** button.
6. Go back to the **Settings** menu to complete the entries for your **subnet mask** and **gateway** settings.

### Setting up e-mail notifications

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

To set up an e-mail 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 on the following page.



**Email Manager dialog box**

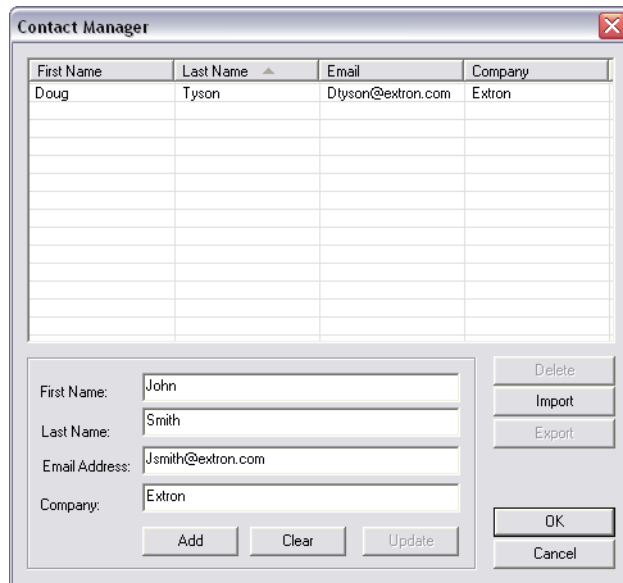
2. Select one of the choices under the **Name** field.  
This action automatically populates the Name, Subject, and Body fields for the action, but these fields can be altered, if needed.
- To create a custom notification e-mail message, do the following:
1. Fill in name, subject, and body sections in 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 e-mail contacts

To add e-mail contacts, do the following:

1. From the **Edit** menu, choose **Contact Manager**. A dialog box appears.
2. Fill in the name, e-mail address, and the company areas of the **Contact Manager** dialog box.



#### 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 a Serial or IR Device

Adding an A/V device (projector displays, VCRs, DVDs, etc.) for an MLC to control requires that you first add 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 "MLC 104 port configuration" 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 previously 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 on the start options dialog.
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.

#### MLC 104 series port configuration

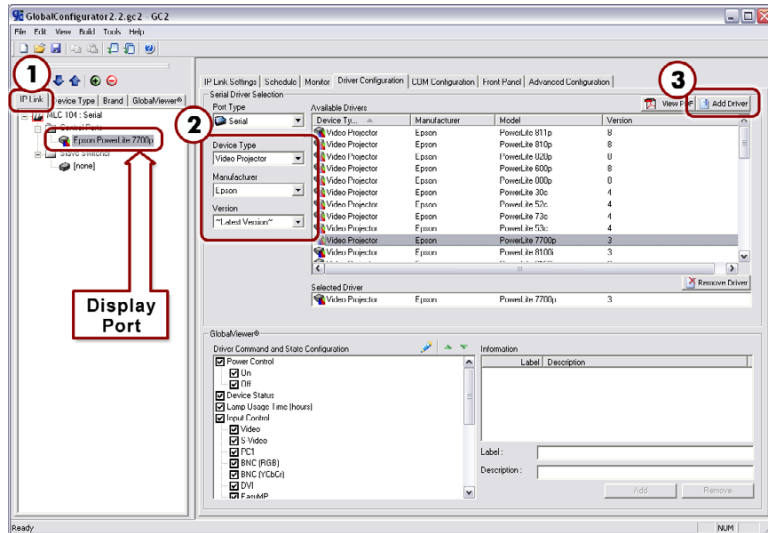
The MLC 104 and MLC 104 IP have a single port that you can configure to use for a serial or IR device. The following illustrates how to add a projector or a DVD using each type of driver.

##### 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 device type (choose **video projector**), and manufacturer (choose **Epson**). For this example, select the **Epson PowerLite 7700p** video projector from the **Available Drivers** field.

- 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 later as buttons on your GlobalViewer® Web page.



**Add Serial Driver window**

### Adding an IR driver

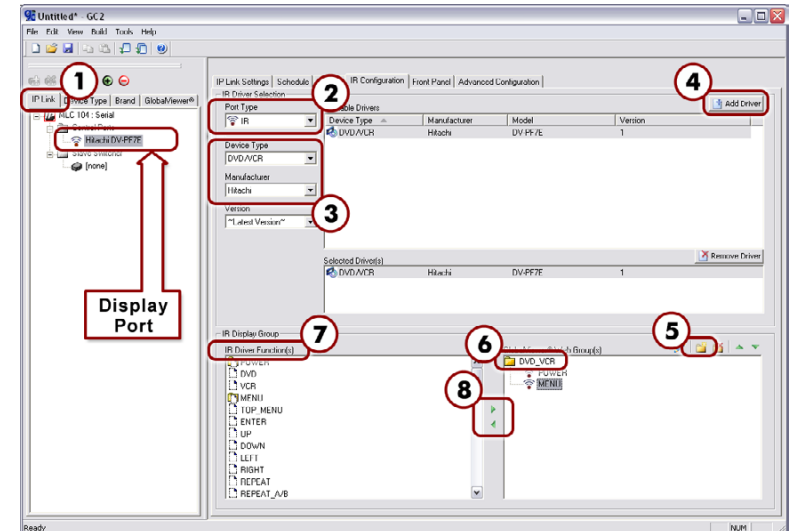
- From the IP Link tab (on the left pane), select the port named **Display**.
- Use the drop-down menu under **Serial Driver Selection** to change the port type to **IR** (notice the menu name change to **IR Driver Selection**). Click the **OK** button to confirm the change.
- Under **IR Driver Selection**, choose device type (choose **DVD/VCR**), and manufacturer (choose **Hitachi**). In the **Available Drivers** field, choose **Hitachi DV-PF7E**.
- 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 (IP model only), do the following:

- Under the **IR Display Group** field, use the **Add Group** button to add a folder (i.e., group) to the **GlobalViewer Web Group(s)** field.
- 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".
- Under the **IR Driver Function(s)** field, select the desired functions (e.g., **Power** or **Menu**).
- 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 **Display** icon is renamed to match the name of the added device.

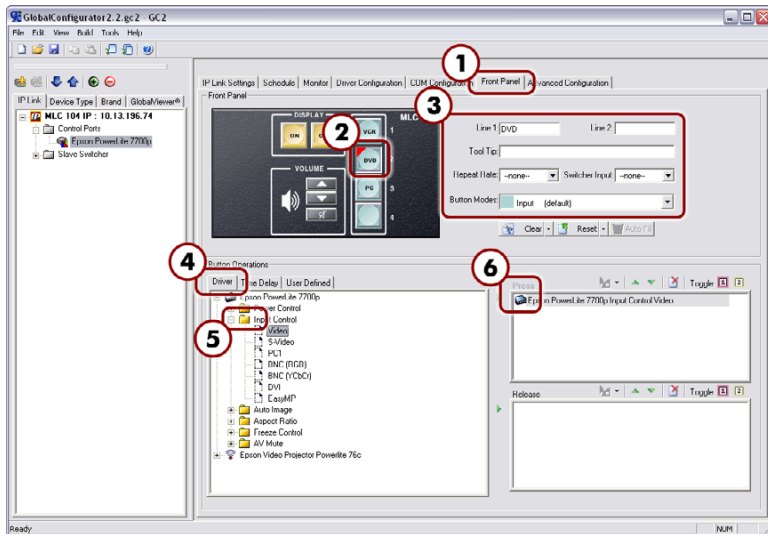


**Add IR Driver window**

### Step 6: Configure the Front Panel Buttons

Once the device drivers are added, you can configure the MLC's 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 an MLC, 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 104 include the following, grouped together on the MLC front panel: VCR, DVD, PC, and a blank button for custom use.

**NOTE** The steps in the following example require using a serial port driver.

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 **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 104 series front panel, the On/Off buttons can be used to power on or off a 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 104 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 sets the command to activate on the release of the button.

**NOTE** Failure to configure the On or Off buttons on Release may cause problems with the PIN Mode feature. Refer to the MLC 104 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.

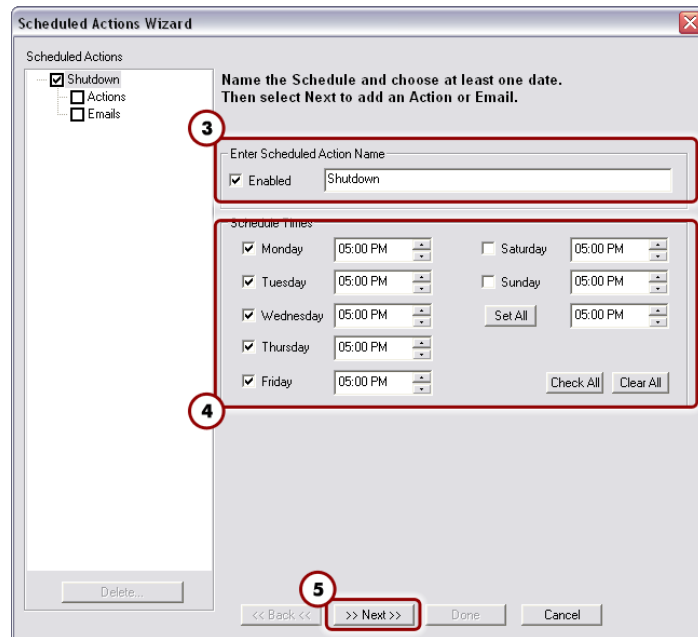
5. To configure the **Off** button, repeat steps 1 through 4.

### Step 7: 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.

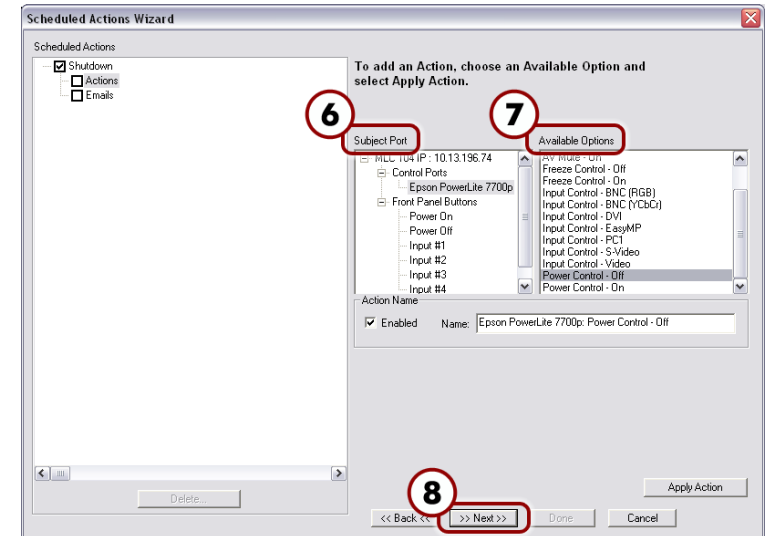


#### Scheduled Actions Wizard

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

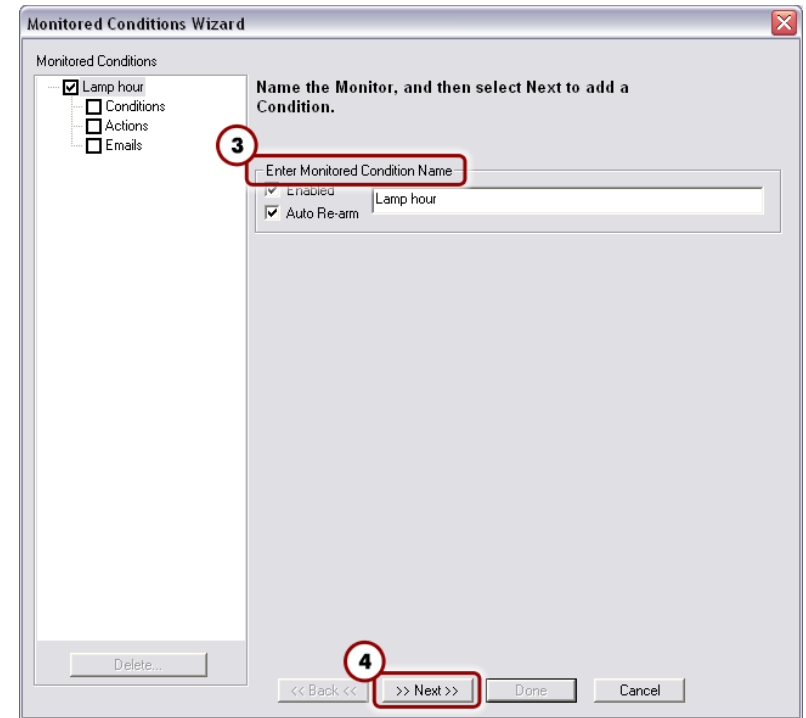
6. Select the device to be scheduled (for our purposes, choose the **Epson PowerLite 7700p**) from the **Subject Port** window.
7. Select the action **Power Control Off** from the **Available Options** window, then click the **Apply Action** button.
8. Click **Done**. The dialog box closes.

### Step 8: Create a Display Lamp Hour Warning E-mail (IP model only)

Global Configurator's monitoring feature enables you to configure a MLC 104 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 104 IP controller.

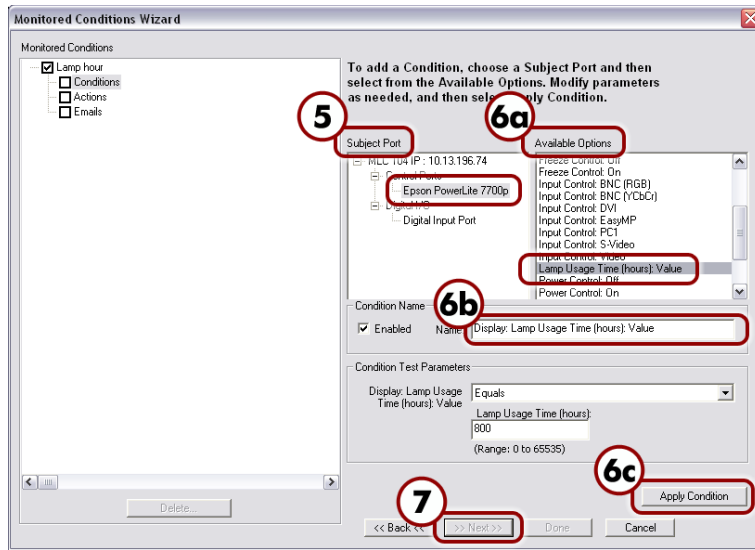
To set a display lamp hour warning e-mail, do the following:

1. Click the **Monitor** tab in the Global Configurator window.
2. Click the **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 the **Next** button 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 (choose **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:
  - 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 e-mail notification.
8. Click on the appropriate e-mail message and contacts, then click **Apply Email/Contacts**.



### Display lamp hour e-mail notification

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

## Step 9: Create a Display Disconnection E-mail (IP model only)

To set a display disconnected e-mail alert, do the following:

- Click the **Monitor** tab in the Global Configurator window.
- Click the **Add Monitor** button below the **Monitored Conditions** window. The **Monitored Conditions Wizard** window appears.
- Enter a name (enter **Disconnected**) in the **Enter Monitored Condition Name** field area. The label now appears in the left pane.
- Click **Next** to specify a condition.
- Select the desired equipment (for our purposes, choose the **Epson PowerLite 7700p**) from the **Subject Port** window and **Connection Status: Disconnected** from **Available Options**.
- Click **Apply Condition**, then click **Next**.

- Click **Next** again to add an e-mail notification.
- Highlight the appropriate e-mail message (**Disconnect Notification**) and contacts (**e-mail recipient**), and click **Apply Email/Contacts**.
- Click **Done**. The dialog box closes.

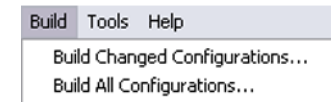
## Step 10: Build and Upload a Configuration

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 for the MLC 104 IP.

### Building a configuration

To build a configuration, do the following:

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



### The Build menu

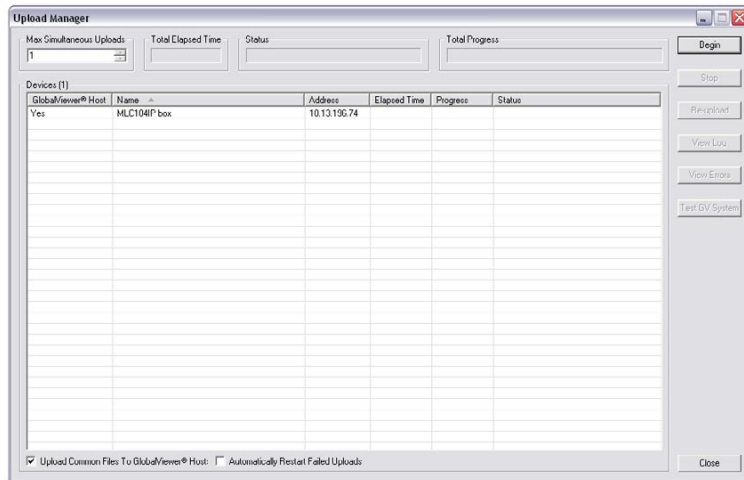
An activity bar appears, indicating that the build is progressing. The Upload Manager dialog appears when the build is complete.

### Uploading a configuration

The process of uploading your project is essential to successfully configuring the MLC 104 and creating a GlobalViewer Web page for the MLC 104 IP. 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:

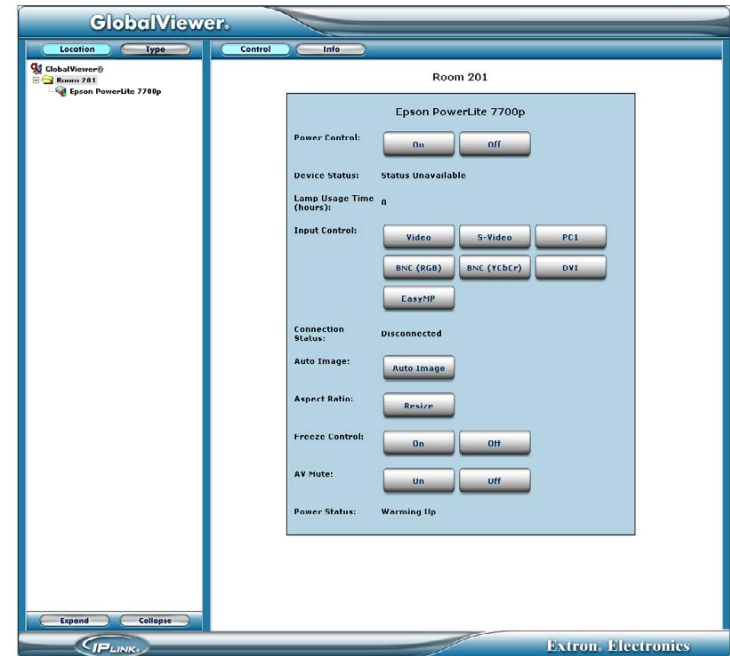
1. Click **Begin**. The Upload Manager monitors the progress of the download.
2. Click **Close**.

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

### Accessing GlobalViewer®

After uploading a configuration file to a MLC 104 IP controller, there are two ways to access the GlobalViewer Web page:

- From the **Upload Manager** window, click the **Test GV System** button.
- Right-click the MLC 104 IP controller icon in the IP Link tree and select **Open GlobalViewer® Webpage**.



#### **GlobalViewer main page**



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<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

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<http://golfingnear.com>

Email search by domain

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