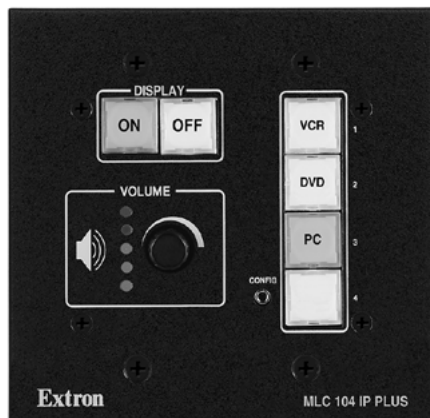


MLC 104 IP Plus

MEDIALINK™ CONTROLLER WITH IP LINK®



- Universal projector control
- Integrated IP Link
 - Proactive maintenance
 - Event scheduling
 - Remote technical support
 - Theft alerts
- RS-232 Port for MLS - MediaLink Switcher control
- Three digital control ports
- Supports for optional IRCM - Infrared Control Modules
- Inactivity timer for display shut-off
- Front panel security lockout
- IR learning sensor for capturing remote control commands
- Configurable backlit buttons
- Volume control with five level-status LEDs
- Integral Web server with memory for GlobalViewer® and custom Web pages
- Versatile mounting options

The Extron MLC 104 IP Plus MediaLink Controller with built-in IP Link Ethernet Control is an easy-to-use control panel for any small classroom or conference room. It standardizes the control interface, making display systems simple to use and easy to support.



Extron® Electronics

www.extron.com

DESCRIPTION

The Extron **MLC 104 IP Plus** MediaLink Controller is an easy-to-use control panel for any small classroom or meeting room. It is designed to control a wide range of smaller A/V systems and includes Extron's innovative IP Link Ethernet control technology to enable remote diagnostics, asset management and support. The MLC 104 IP Plus standardizes the control interface for all systems, making projector-based and switcher-based systems simple to use. Standardization also makes setup and maintenance easier to support.

The flexible MLC 104 IP Plus acts as an extended remote control panel. It is not a switcher; instead, as a controller, it tells the projector or switcher when to switch between its various inputs. Presenters with little or no training can walk into any multimedia classroom and operate the A/V system. The MLC 104 IP Plus includes universal projector control, using pre-built drivers from Extron, for a projector's power, input switching, and volume control. The MLC 104 IP Plus features backlit buttons that can be custom-labeled for easy identification. The illuminated buttons are helpful for presenters in low-light environments.

The MLC 104 IP Plus is also capable of learning IR commands for centralized control of external source devices, such as DVD players and VCRs, when used with optional IRCM - Infrared Control Modules.

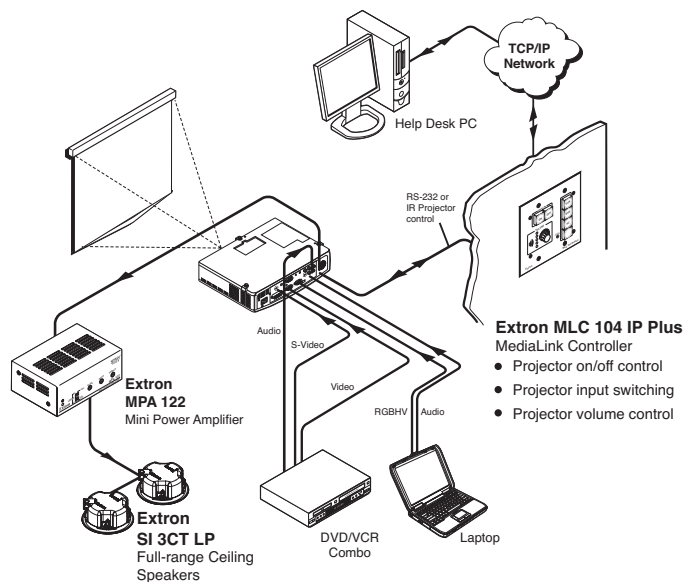
Especially vital for high traffic areas, the MLC 104 IP Plus is housed in a secure two-gang enclosure and can be mounted in a lectern, desk, wall, rack, or wall box.

FEATURES

- **Bidirectional RS-232 port for universal display control** – A dedicated port for communicating with virtually any projector or flat panel display via IR or RS-232. Control drivers can be downloaded or created using the intuitive software.
- **IP Link Ethernet monitoring and control** – An IP integration technology developed by Extron specifically engineered to meet the needs of professional A/V environments. IP Link allows the MLC 104 IP Plus to be controlled and proactively monitored over a LAN, WAN, or the Internet.
- **Three digital I/O ports** – Are configurable as digital inputs or digital outputs and can interface with a variety of devices, such as sensors, switches, LEDs, and relays.
- **Dedicated IR port** – For control of IR-controllable display devices and source equipment, such as VCRs and DVD players.
- **Support for optional IRCM - Infrared Control Modules** – For controlling additional external source devices.
- **IR learning capability** – For capturing IR remote codes from a device's handheld remote control.
- **Discrete ON and OFF display power controls** – Simplify system operations and eliminate the need for an external display remote.
- **RS-232 port for MLS - MediaLink Switcher support** – For controlling an optional Extron MLS - MediaLink Switcher.
- **Inactivity timer for display shutoff** – Adjustable timer controls automatic shutdown to preserve energy, prevent plasma burn-in, or extend projector lamp life.

FEATURES (Cont.)

- **Front panel security lockout** – When the security lock-out mode is engaged, the MLC 104 IP Plus's front panel becomes inoperable unless a user-defined PIN number is entered. No controller functions can be activated.
- **Configurable buttons** – Can be assigned to trigger a variety of functions such as selecting an input or sending a serial or IR command signal.
- **Macro capability** – Any button can be configured to execute multiple actions through the serial and IR control ports. For instance, the touch of a single button could trigger commands to turn on the display, select the display's RGB input, and select an input on the MLS - MediaLink Switcher.
- **Tri-color, backlit, easy-to-label buttons** – Can be customized for each installation and provide easy operation for presenters in low-light environments.
- **Volume control with volume indication for display or MLS - MediaLink Switcher** – Allows for convenient, centralized control without additional remotes. The five LEDs provide a clear indication of the current audio setting.
- **Optional wireless remote control** – The MLC 104 IP Plus can be controlled via IR using an IR 452 Remote Control with an IR Link Wall-Mountable IR Signal Repeater or IRL 20 IR Signal Repeater.
- **Optional SCP 104 Secondary Control Panel** – Duplicates the MLC 104 IP Plus's front panel buttons and offers a second access point within a room.
- **Integral high performance Web server** – Includes memory available for storing device drivers, GlobalViewer, and custom user Web pages.
- **Flexible mounting options** – There are a variety of optional mounting kits available that allow the MLC 104 IP Plus to be installed virtually anywhere, including walls, lecterns, or tables.
- **Mud ring** – Standard model includes MR 200 two-gang mud ring. AAP model includes MR 400 four-gang mud ring.
- **External international power supply included, part # 70-055-01**

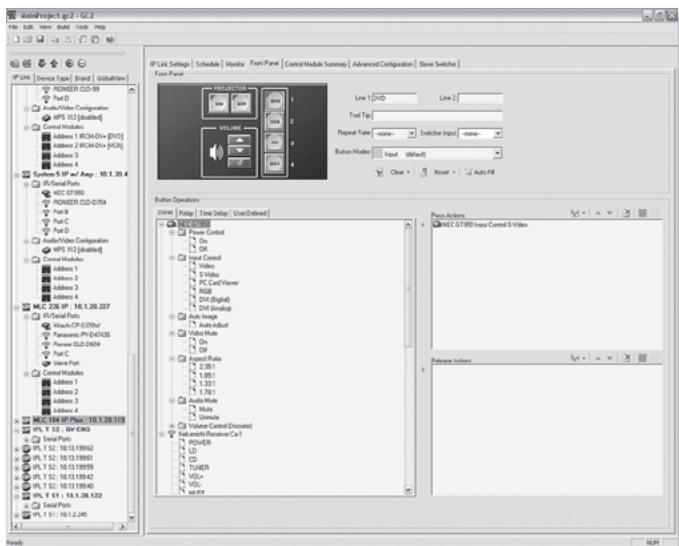


FREE CONFIGURATION SOFTWARE

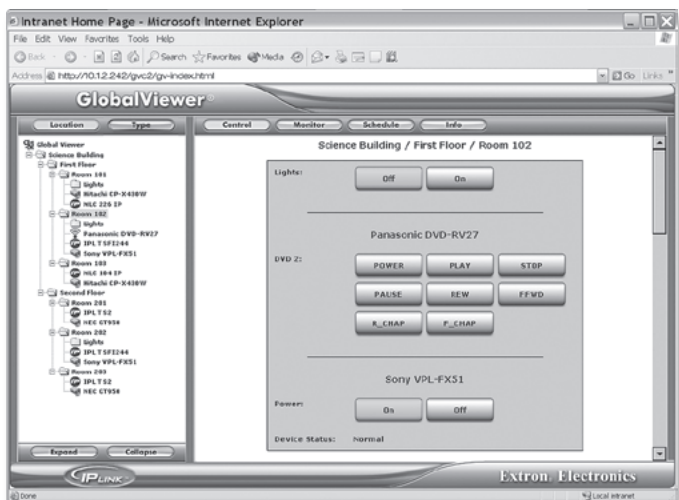
Easy System Configuration using Global Configurator Software

The MLC 104 IP Plus can be fully configured using Extron's Global Configurator software. Extron creates and administers a wide selection of drivers for use with the MLC 104 IP Plus. Drivers enable the MLC 104 IP Plus to control basic display functions such as power, input selection, and volume adjustment. Users can customize drivers or go to the Extron Web site to download RS-232 or IR drivers compatible with the latest and most popular display and source devices. Global Configurator also adds support for GlobalViewer, a free Web-based asset management and remote control software application specifically designed to work with products that include IP Link technology.

The MLC 104 IP Plus is designed to work with almost every Extron switcher, including the MLS - MediaLink switchers and VersaTools™ MediaLink switchers, which are specifically designed to complement MediaLink controllers. Each product of the MLS line switches video, computer-video, and/or audio and provides unique features such as volume and tone control. The MLC 104 IP Plus can also work as a stand-alone device to control a projector without the aid of a switcher.



Configure the MLC 104 IP Plus using free Global Configurator software.



GlobalViewer Web application for remote monitoring and control

IP LINK



Web-Based Asset Management

The MLC 104 IP Plus is equipped with Extron's IP Link, a high performance intelligent network integration technology specifically engineered to meet the needs of professional A/V environments — from small K-12 classrooms to large universities and businesses. GlobalViewer®, a free Web-based asset management and remote control software application, is specifically designed to work with products that include IP Link technology. Together, GlobalViewer & IP Link facilitate key asset management functions including:

- Proactive maintenance – GlobalViewer can store and display information about connected devices like serial numbers, owner identification, maintenance history, and installed firmware versions. This centralized data can be collected and used to reduce maintenance costs and guide future purchasing decisions. For instance, a projector can be polled routinely to track lamp usage and total life time. When lamp usage reaches a predetermined number of hours, the MLC 104 IP Plus can send a notice via e-mail.
- Event scheduling – GlobalViewer uses the real-time clock and calendar in IP Link-enabled devices to maximum value. User-defined tasks are easy to configure and schedule with Extron Global Configurator software, which doesn't require programming skills. For instance, an administrator can schedule all projectors to turn off every Friday at close of business.
- Remote technical support – Technicians can troubleshoot systems remotely because GlobalViewer provides the real-time status of connected devices. Information such as connection status, power state, and current input selection is displayed in a central location. For many connected devices, technicians can toggle power on or off, switch sources, control volume, and more without leaving their office. Many common problems can be resolved without a trip to where the equipment is located.
- Theft alerts – IP Link-enabled products are always on and routinely poll their attached devices for status information. If any serially controlled device such as a projector or display is physically disconnected from the serial port, the MLC 104 IP Plus monitoring its status will know immediately. In such an event, it can send an e-mail message notifying security personnel of the possible theft. For fast action, e-mails can be sent to multiple addresses including cell phones and wireless PDAs.

CUSTOM GRAPHICAL USER INTERFACE

Technology enhanced classrooms provide instructors with new tools to teach and interact within the presentation environment. Many instructors desire the flexibility of not only controlling the environment via an in-room controller mounted on a wall or lectern, but also from a control page on a computer monitor or wireless device. Since no special control software is needed, and access is available from any networked PC in the room, the cost of deployment is low. In addition, customized graphical user interfaces are attractive and require minimal training for users.

Custom GUI Features

- Web-based PC or touch-monitor GUI customized for your organization
- Low-cost, rich graphic control environment for each and every room
- Includes placement of full color school or organization logo
- Use our free template or Extron will do all the work for a small, one-time customization fee
- All source code provided

Extron offers two options for creating a customized graphical interface for your installation. You can download and modify one of our predesigned templates or use our low-cost GUI Customization Service.

Both methods can be used to support the MLC 104 IP Plus. The integrated IP Link Web server technology enables control from any networked PC or laptop using either a mouse or touch-monitor located in the room. Whether you choose to download and customize a template yourself, or use our GUI Customization Service, you'll be able to deploy a Web-based graphical user interface that provides a secure, alternate control point for instructors, in addition to the MLC 104 IP Plus push-button control panel.

For more information, contract your Extron Customer Support Representative or visit www.extron.com/customgui on the Web.

Source Name Title

Automatically displays source name selected

Room Name

The classroom description is automatically displayed from GlobalViewer configuration setup

Custom Color Scheme

Pick from a selection of colors to coordinate with school colors

Online Help

Displays online reference screens, or customizable URL, or e-mail address for help support

Display Power On/Off

Control your display power, plus up to two additional functions

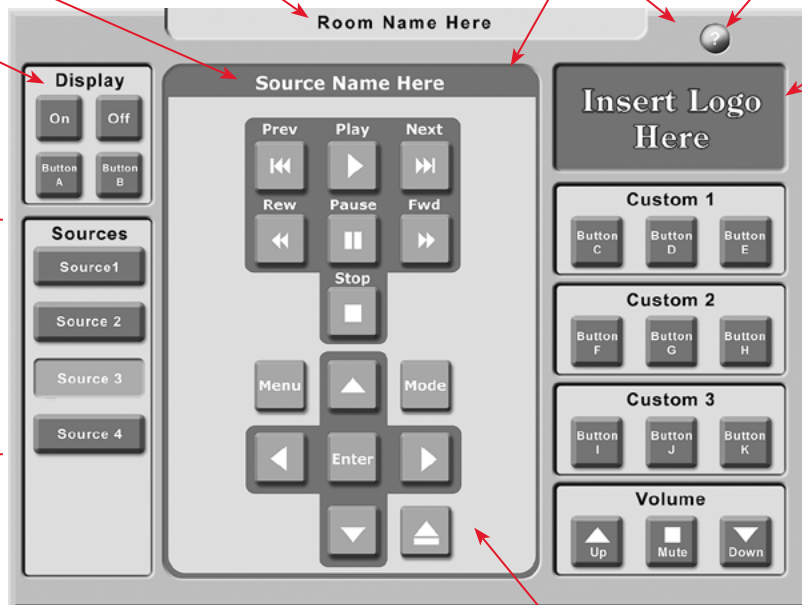
Source Selection Buttons

Buttons can be custom-labeled with user defined text

Logo Graphics
Insert your full color school or department logo here

Additional Room Control

Additional function groups control room devices, such as lighting, screen up/down motors and powered drapes



Sample MLC 104 IP Plus Computer Control Page

Source Control

Button layout changes based on source selection

SPECIFICATIONS

CONTROL — HOST PORTS

Serial host port	1 bidirectional RS-232 front panel 2.5 mm mini stereo jack
Baud rate and protocol	38400, 8 data bits, 1 stop bit, no parity
Serial control pin configurations.....	Mini stereo jack: tip = TX, ring = RX, sleeve = GND
Ethernet host port.....	1 RJ-45 female
Ethernet data rate.....	10/100Base-T, half/full duplex with autodetect
Ethernet protocol.....	ARP, DHCP, ICMP (ping), TCP/IP, Telnet, HTTP, SMTP
Ethernet default settings	Link speed and duplex level = autodetected IP address = 192.168.254.254 Subnet mask = 255.255.0.0 Default gateway = 0.0.0.0 DHCP = off
Web server.....	Up to 200 simultaneous sessions 7.25 MB nonvolatile user memory
Secondary control panel (SCP).....	(1) 3.5 mm 5-pole direct insertion captive screw connector
Program control	Extron's Global Configurator for Windows® Extron's Simple Instruction Set (SIS™) Microsoft® Internet Explorer, Telnet
IR learning frequencies.....	30 kHz to 62 kHz
IR learning distance.....	2" (5.1 cm) to 12" (30.5 cm) from the front panel

CONTROL — SERIAL PORTS

Display control port	(1) 3.5 mm direct insertion captive screw connector, 3 pole, for bidirectional RS-232 control (±5 V)
Switcher control port.....	(1) 3.5 mm direct insertion captive screw connector, 3 pole, for bidirectional RS-232 control (±5 V)
Baud rate and protocol (RS 232).....	115200 to 300 baud (9600 baud = default); 8 (default) or 7 data bits; 1 (default) or 2 stop bits; no parity (default), or even or odd parity

CONTROL — IR PORT

IR control port	(1) 3.5 mm direct insertion captive screw connector, 2 pole TTL level (0 to 5 V) infrared control up to 1 MHz
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DIGITAL I/O CONTROL

Number/type.....	3 digital input/output (configurable)
Connector	(1) 3.5 mm direct insertion captive screw connector, 4 pole
Pin configuration	1, 2, 3 = digital inputs/outputs 1, 2, and 3; GND = GND
Digital inputs	
Input voltage range.....	0-12 VDC
Input impedance.....	28k ohms
Programmable pullup.....	2k ohms to +5 VDC
Digital outputs.....	250 mA sink from 24 VDC, maximum
Threshold low to high.....	>2.0 VDC
Threshold high to low.....	<0.8 VDC

GENERAL

External power supply	100 VAC to 240 VAC, 50/60 Hz, external, autoswitchable; to 12 VDC, 1 A, regulated
Power input requirements.....	12 VDC, 0.285 A (0.305 A if used with an optional IRCM-DV+)
NOTE: An MLC 104 IP Plus Series controller must be powered by its own power supply. It cannot be powered by an MLS switcher.	
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Rack mount	Yes, with optional rack mounting kits, and also wall- and furniture-mountable with optional mounting kits
Enclosure type	Metal

Enclosure dimensions

MLC 104 IP Plus faceplate	4.5" H x 4.6" W x 0.1" D (11.4 cm H x 11.7 cm W x 0.3 cm D) (2 gang)
MLC 104 IP Plus AAP faceplate.....	4.5" H x 8.3" W x 0.1" D (11.4 cm H x 21.2 cm W x 0.3 cm D) (4 gang)
MLC 104 IP Plus L faceplate.....	3.15" H x 6.5" W x 0.1" D (8.0 cm H x 16.5 cm W x 0.3 cm D)
Device.....	2.75" H x 3.5" W x 2.0" D (7.0 cm H x 8.9 cm W x 5.9 cm D) (fits some 2 gang boxes) (Depth excludes knob and buttons.)
Product weight.....	1.9 lbs (0.9 kg)
Shipping weight	6 lbs (3 kg)
Vibration.....	ISTA 1A in carton (International Safe Transit Association)
Listings	UL, CUL
Compliances.....	CE, FCC Class A, VCCI, AS/NZS, ICES
MTBF.....	30,000 hours
Warranty.....	3 years parts and labor
NOTE: All nominal levels are at ±10%	

Model	Version Description	Part Number
MLC 104 IP Plus	Black	60-818-02
MLC 104 IP Plus	White	60-818-03
MLC 104 IP Plus	RAL9010 White	60-818-05
MLC 104 IP Plus AAP	Black	60-818-12
MLC 104 IP Plus AAP	White.....	60-818-13
MLC 104 IP Plus AAP	RAL9010 White	60-818-15
MLC 104 IP Plus L	Black	60-818-32
MLC 104 IP Plus L	White.....	60-818-33
MLC 104 IP Plus L	RAL9010 White	60-818-35
MLC 104 IP Plus	Controller Only	60-818-00

Included Accessories

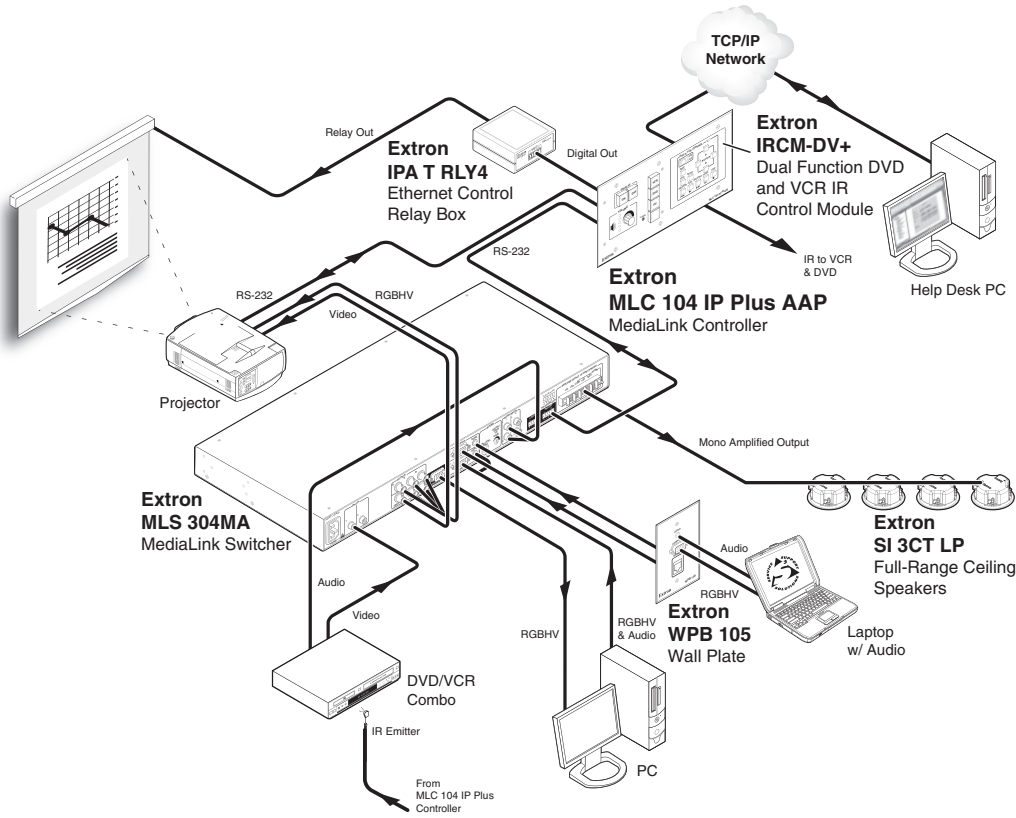
MLC 104 IP Plus	
12V/1Amp power supply	70-055-01
MR 200 2-gang mud ring.....	70-086-X1
Button labels text.....	33-954-01
Button labels icon	33-955-01
6' RJ-45 crossover cable.....	26-591-01
MLC 104 IP Plus L	
12V/1Amp power supply	70-055-01
Button labels text.....	33-954-01
Button labels icon	33-955-01
6' RJ-45 crossover cable.....	26-591-01
International Faceplate Labels	33-1164-0X
MLC 104 IP Plus AAP	
12V/1Amp power supply	70-055-01
MR 400 4-gang mud ring.....	70-519-4X
Button labels text.....	33-954-01
Button labels icon	33-955-01
6' RJ-45 crossover cable.....	26-591-01
International Faceplate Labels	33-1167-02

Optional Accessories

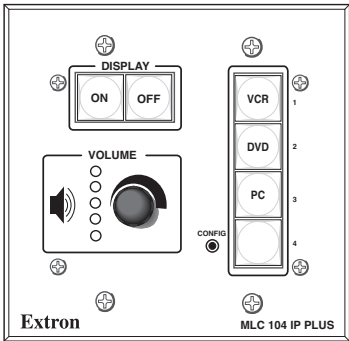
UC50' (50' / 15 m)	Universal Projector Control 50' (15.2 m)	26-518-01
MLC IR/RS-232-35'	35' (10.6m).....	26-621-35
MLC PW/RS-232/VC-35'	35' (10.6 m).....	26-626-35
CFG Cable	9-pin D Female to 2.5 mm TRS 6' (1.8 m)	70-335-01
MLS 100 A	4 Input Audio MediaLink™ Switcher	60-497-01
MLS 102 VGA	Two Input VGA & Audio	60-497-04
MLS 103 V	Three Input Video & Audio	60-497-02
MLS 103 SV	Three Input S-Video & Audio	60-497-03
IPA T RLY4	Four Relays	60-545-03
MLS 304MA	Mono Audio Amplifier	60-550-01
MLS 304SA	Stereo Audio Amplifier	60-550-02
IRL 20	IR Signal Repeater	60-580-01
IR 402	Handheld IR Remote Control.....	70-207-01
SCP 104	Black	60-672-02
IRCM-DV+	Black	70-220-02
IR Emitter and Shield Kit	IR Emitter Kits.....	70-283-01
CM-98LB	Nine-Button AAP, Black	70-494-02

Specifications are subject to change without notice.

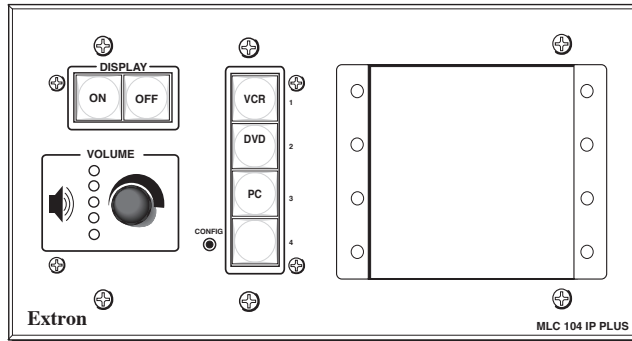
APPLICATION DIAGRAM



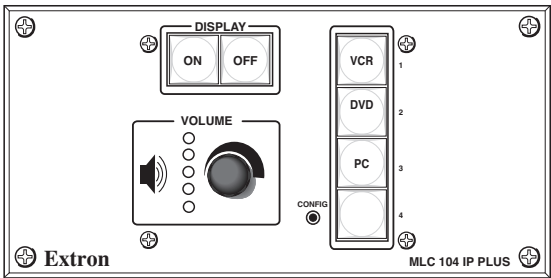
PANEL DRAWINGS



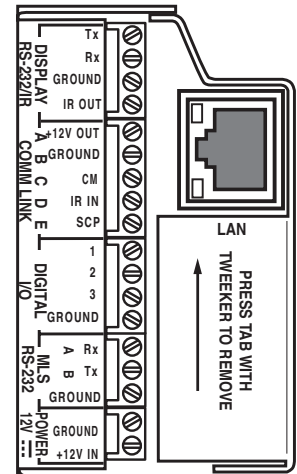
MLC 104 IP Plus - Front



MLC 104 IP Plus AAP - Front



MLC 104 IP Plus L - Front



MLC 104 IP Plus Series - Right Side (without faceplate)



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