

IMPORTANT:
Go to www.extron.com for the complete user guide, installation instructions, and specifications before connecting the product to the power source.

IPCP Pro Series • Setup Guide

The Extron IPCP Pro Series IP Link® Pro Control Processors integrate Ethernet connection into AV systems to allow users to remotely control, monitor, and troubleshoot AV equipment, including display devices and switchers. All models include an embedded web server. Depending on the model, an IPCP Pro control processor can include multiple bidirectional serial ports, relays, IR/serial ports, digital I/O, flex I/O, switched 12 VDC power output ports, a volume control port, or contact input ports for use in applications that require control and monitoring of multiple devices within a large-scale AV system.

All models include an Extron eBUS port, which allows a variety of eBUS devices to be connected to a single control processor. eBUS devices include an array of button panels as well as power and signal hubs. eBUS devices are automatically recognized by the control processor and can be added or removed at any time.

The dual-NIC (network interface controller) models feature two network interfaces. One (at the LAN port) is for connection to the corporate or “house” network. The second network interface (at the AV LAN port) is for dedicated control of local AV devices.



This guide provides instructions for an experienced installer to install an IPCP Pro Series control processor and to create a basic configuration.

Use the Extron Toolbelt software to discover and manage the IPCP Pro control processor and other Extron control products. Configure the control processor using Extron Global Configurator software running in Global Configurator Professional (GC Professional) or Global Configurator Plus (GC Plus) mode, or program the control processor using Extron Global Scriptor (GS). The IPCP integrates seamlessly with Extron GlobalViewer® Enterprise (GVE) software and Extron Control for Web, iOS, and Android for remote control applications. These control processors support multiple TouchLink® Pro touchpanel interfaces over a standard Ethernet network. Global Configurator and other useful software applications are available at www.extron.com.

Setup Checklist: How to Proceed With Installation

Get Ready

- Familiarize yourself with the features of the control processor (see [Front Panel Features – Single-NIC Models](#) on page 4, [Front Panel Features – Dual-NIC Models](#) on page 5, [Rear Panel Features – Single-NIC Models](#) on page 6, and [Rear Panel Features – Dual-NIC Models](#) on page 7) and of any TouchLink Pro touchpanels that will be part of the system.
- Download and install the latest version of the following:
 - **Toolbelt software** — for discovering the control processor and other control products, for managing core settings, and for upgrading firmware if the need arises.
 - **Global Configurator (GC) software** — for setting up and configuring the control system. GC Professional and GC Plus modes include a link to the **Toolbelt** software.
 - **Global Scriptor software** — for setting up and programming the control processor (as an alternative to GC)
 - **GUI Designer software** — for designing layouts for Extron TouchLink Pro touchpanels and third party touch interfaces
 - **IP Link Pro device drivers** — for use with GC, to make control of AV devices possible
 - **IR Learner Pro software** — for use with models that have IR receiver ports, to create your own IR drivers using the remote control of an AV device, if drivers are not already available from Extron

All are available from www.extron.com (see [Locating Software, Firmware, and Driver Files on the Extron Website](#) on page 14).

- Obtain network information for the unit from the network administrator. You will need the following details for each IP Link Pro device:

<input type="checkbox"/> DHCP setting (on or off)	<input type="checkbox"/> Subnet mask	<input type="checkbox"/> Username
<input type="checkbox"/> Device (IPCP Pro, TouchLink Pro, IPL Pro) LAN IP address	<input type="checkbox"/> Gateway IP address	<input type="checkbox"/> Passwords
<input type="checkbox"/> AV LAN IP address (for dual-NIC models)		
- Write down the MAC address of each network interface card (NIC) on each IP Link Pro device to be used.

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- Obtain model names and setup information for devices the IPCP will control.
- Each control processor comes with a factory-installed Secure Sockets Layer (SSL) security certificate. If you intend to install a different SSL certificate, contact your IT department to obtain the certificate or for instructions on how to obtain one. See “Secure Sockets Layer (SSL) Certificates” in the *IPCP Pro Series User Guide* for requirements and guidelines regarding SSL certificates.

Mount and Cable All Devices

- Mount the unit to a rack or furniture (see [Mounting](#) on the next page).
- Cable devices to the control processor (see [Cabling and Features](#) on page 8).
- Connect power cords and power on all the devices.

Set Up the Control Processor and Touchpanels for Network Communication

- For **single-NIC models**: Connect the PC that you will use for setup, the LAN port of the control processor, and the touchpanels to the same Ethernet network. For control processor LAN connections, see [Control, Bidirectional – LAN and AV LAN \(Ethernet\)](#) on page 4.
- For **dual-NIC models**: Connect the PC that you will use for setup, the control processor, and the touchpanels to the network. For control processor LAN and AV LAN connections, see [Control, Bidirectional – LAN and AV LAN \(Ethernet\)](#) on page 4.
- Start Toolbelt and use it to set the IP address, subnet, gateway IP address, DHCP status, and related settings. See the flowchart in [Network Communication Setup](#) on the next page.

NOTE: When setting up DHCP during network configuration or if using a host name instead of an IP address, the user must enter a qualified host name (*Username.HostName.Domain*). For example: `somename.extron.com`.

Configure or Program the Control Processor and Touchpanels

The most basic steps are outlined below in the recommended order.

NOTE: See the *Toolbelt Help File*, *Global Configurator Help File*, *Global Scripter Help File*, and *GUI Designer Help File* as needed for step-by-step instructions and detailed information. The help file for GC includes an introduction to the software and how to start a project and configuration.

- If TouchLink Pro or third party touchpanels are part of the system, start and use GUI Designer to **design, save, and build the graphical user interface (GUI) layout** for the touchpanels.

NOTE: To redeem (activate) a LinkLicense™, go to www.extron.com//llredeem and follow the online instructions.

- Using GC, **create a new GC Professional or GC Plus project and configure the control processor and other IP Link Pro devices**. The configuration tells the control processor:
 - how its ports function
 - how to control other products
 - which touchpanels to interact with
 - what to monitor
 - when to do things
 - whom to notify, how, and under what circumstances
- Configure ports on the control processor.
 - Select device drivers and link them to each serial, IR/serial, or Ethernet port.
 - Select settings (serial protocol, relay behavior, digital I/O or flex I/O settings) as needed.
- Add eBUS devices and set them up:
 - Ensure that the hardware address set on each device is distinct and matches the address used in the configuration.
 - Assign button functions as desired.
- Set up monitors, schedules, macros, and local variables.
- Add touchpanels and set them up:
 - Upload the GUI configuration to the touchpanels using Global Configurator.
 - Assign any appropriate functions, monitors, or schedules to the touchpanels and their buttons.
- If not using GC Professional or GC Plus, use Global Scripter** to program the control system as desired.
 - Program ports on the control processor.
 - Program each serial, IR/serial, or Ethernet port.
 - Program relay behavior, digital I/O, and flex I/O settings as needed.

- Add eBUS devices and set them up:
 - Ensure that the hardware address (eBUS ID) set on each device is distinct and matches the address programmed for it in the IPCP.
 - Program button functions as desired.
- Add touchpanels and set them up:
 - Upload the GUI configuration to the touchpanels.
 - Program the touchpanel buttons.
- Save and build the project.
- Upload the system configuration to the control processor.

Test and Troubleshoot

- Test the system. (See the *IPCP Pro User Guide* for an outline of the system testing procedure.)
- Make adjustments to wiring or configuration as needed.

Network Communication Setup

Network setup is essential prior to configuration. Use the following flowchart as a guide to setting up the control processor for network use.

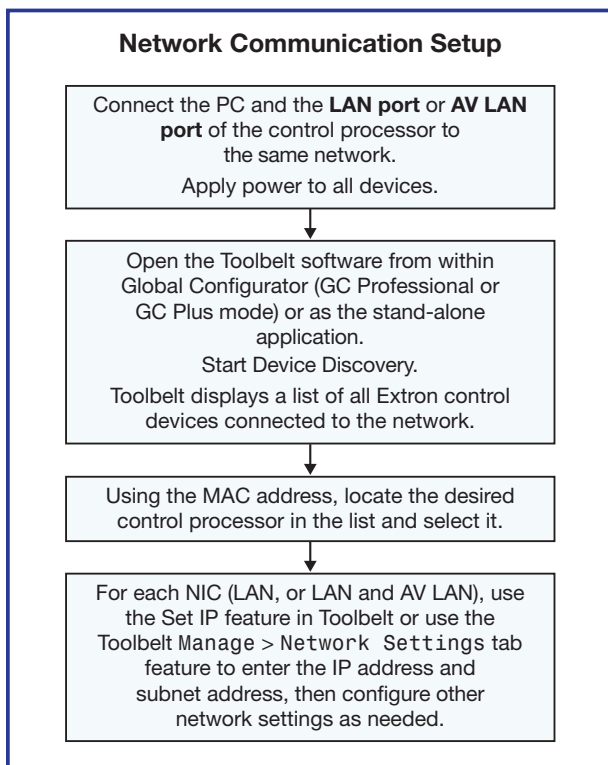


Figure 1. Network Setup

Mounting

Securely mount the control processor and other devices and attach cables using the wiring section (see **Cabling and Features** on page 8) as a wiring guide. Optional 1U rack shelves and furniture mounting bracket kits are available for use with the control processor. Read the instructions and UL guidelines that come with the rack shelf or mounting kit for installation procedures. See the product-specific page at www.extron.com for a list of compatible accessories for mounting your control processor.

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Panels and Locations of Features

Location and quantity of LEDs and corresponding connectors vary by model, but the functions and port wiring are identical across models for each port type.

Front Panel Features – Single-NIC Models

IPCP Pro Single-NIC Embedded Control Processor
(within another device)

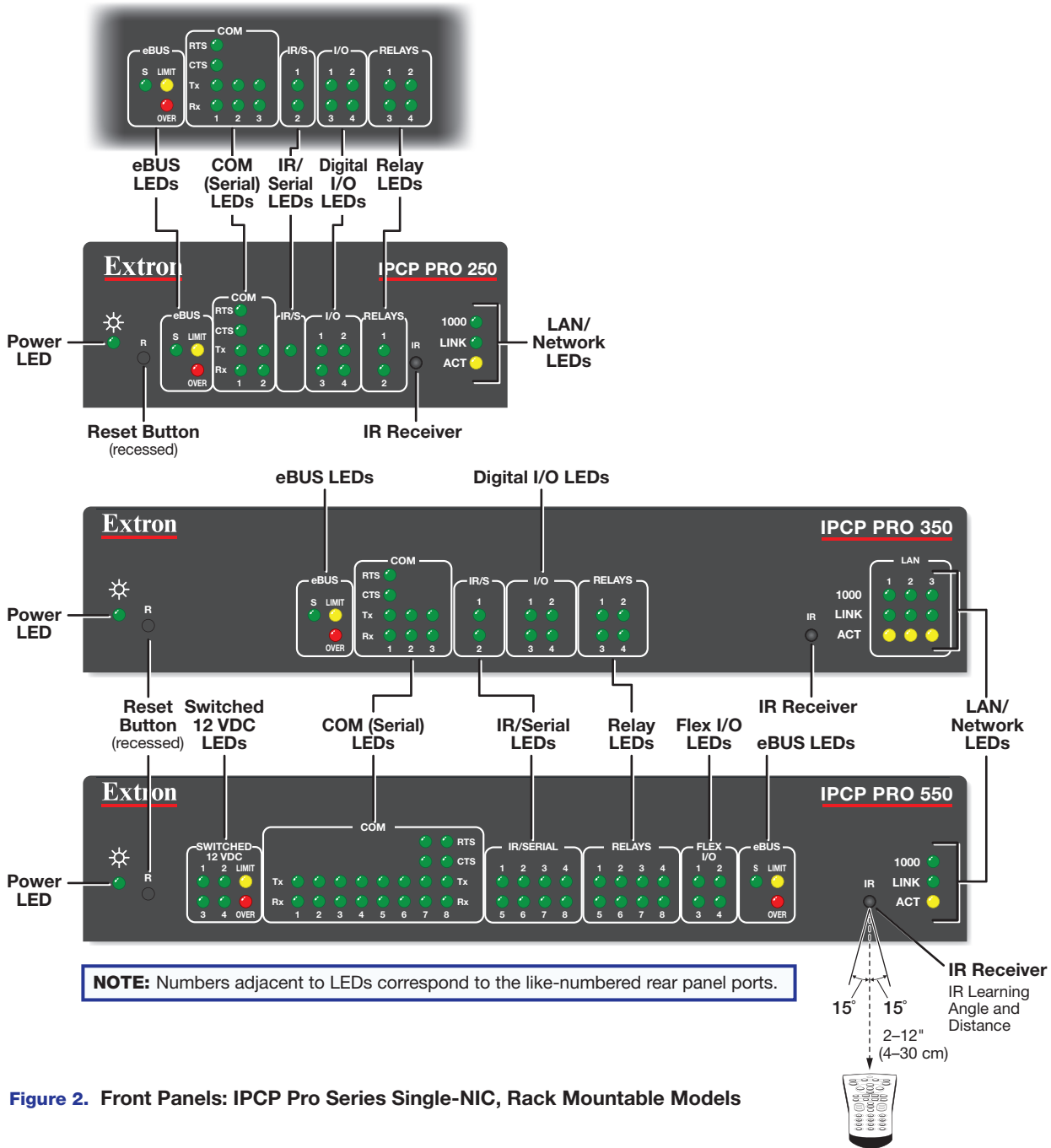


Figure 2. Front Panels: IPCP Pro Series Single-NIC, Rack Mountable Models

NOTES:

- For reset mode information, see the *IPCP Pro Series User Guide*.
- The Reset button and power LED for the IPCP Pro embedded control processors are located next to the rear panel connectors.
- The embedded control processors do not have an IR learning sensor.

Front Panel Features – Dual-NIC Models

This section shows the front panel of a representative dual-NIC model, not all models.

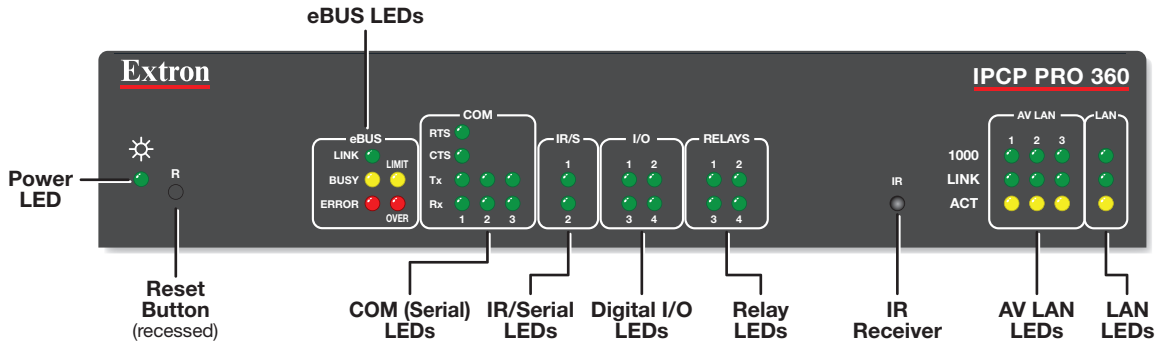


Figure 3. IPCP Pro 360 Front Panel (Dual-NIC)

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Rear Panel Features – Single-NIC Models

IPCP Pro Single-NIC
Embedded
Control Processor
(within another device)

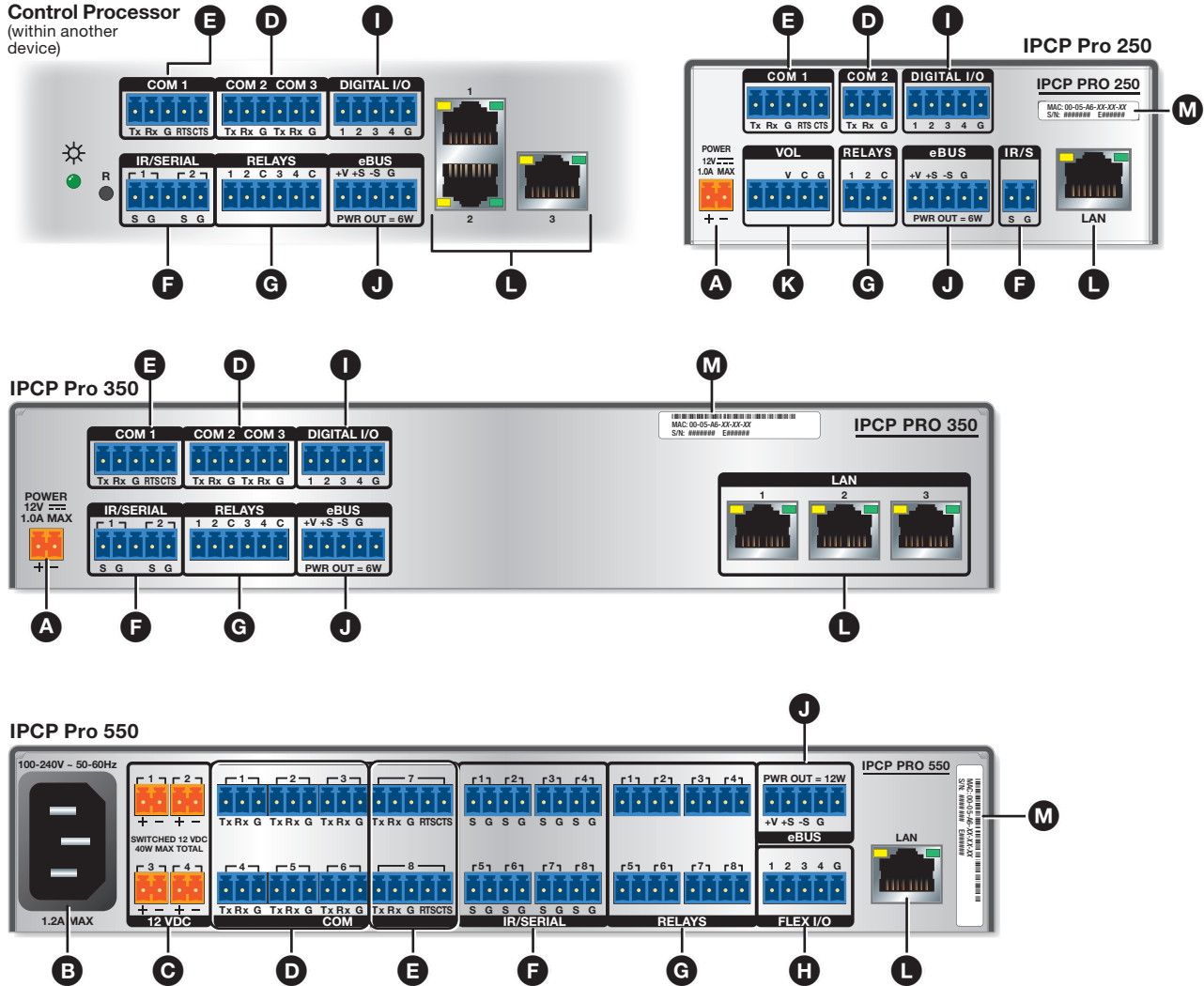


Figure 4. IPCP Pro Single-NIC Control Processors Rear Panels

- A** Power input connector (external power supply)
- B** Power input connector (internal power supply)
- C** Switched 12 VDC power output ports
- D** 3-pole COM ports (RS-232-only)
- E** 5-pole COM ports (RS-232/RS-422/RS-485)
- F** IR/serial output ports
- G** Relay ports
- H** Flex I/O ports (digital input/output or analog input)
- I** Digital I/O ports (digital input/output)
- K** Volume control port
- J** eBUS ports
- L** LAN connectors and LEDs (Ethernet)
- M** MAC address

Rear Panel Features – Dual-NIC Models

This section shows rear panels of some representative dual-NIC models.

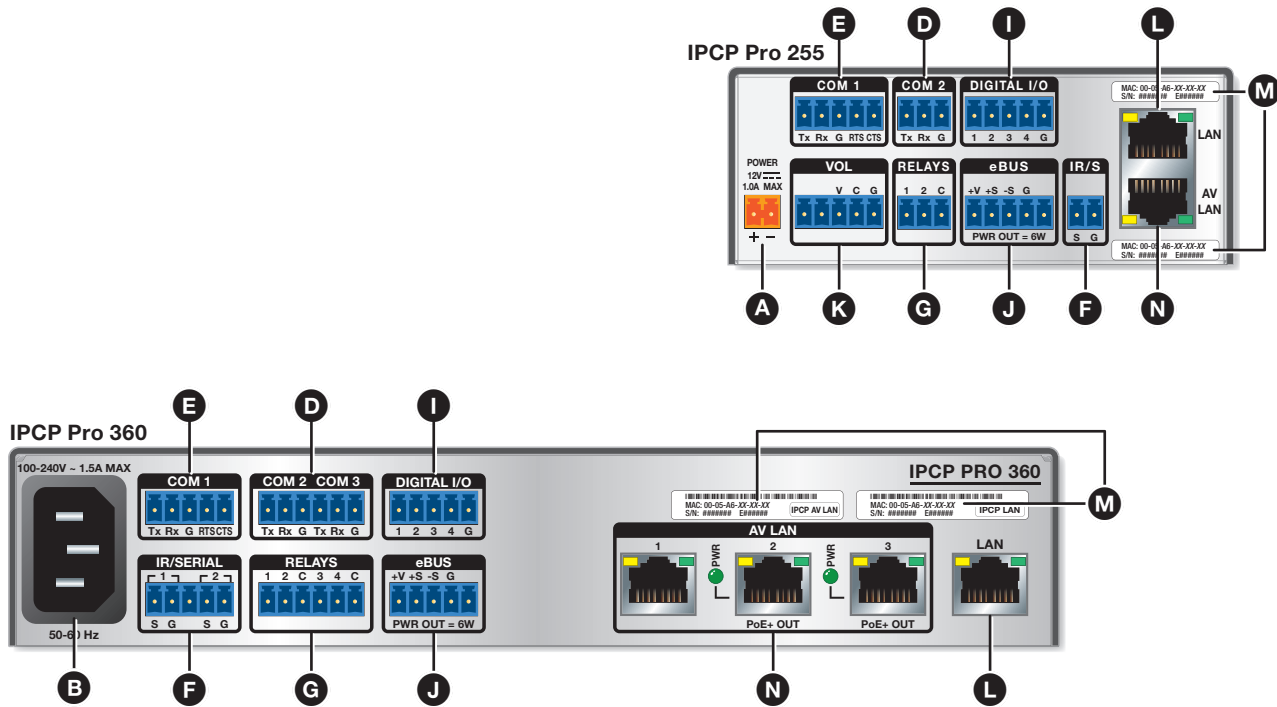


Figure 5. IPCP Pro Dual-NIC Control Processors Rear Panels

- | | |
|--|---|
| A Power input connector (external power supply) | I Digital I/O ports (digital input/output) |
| B Power input connector (internal power supply) | K Volume control port |
| D 3-pole COM ports (RS-232-only) | J eBUS ports |
| E 5-pole COM ports (RS-232/RS-422/RS-485) | L LAN connectors and LEDs (Ethernet) |
| F IR/serial output ports | M MAC addresses |
| G Relay ports | N AV LAN connector and LEDs (Ethernet) |

The following ports are not shown in figure 5 but are available in some dual-NIC models such as the IPCP Pro 555.

- | | |
|--|--|
| B Power input connector (internal power supply) | H Flex I/O ports (digital input/output or analog input) |
| C Switched 12 VDC power output ports | |

IPCP Pro Series • Setup Guide (Continued)

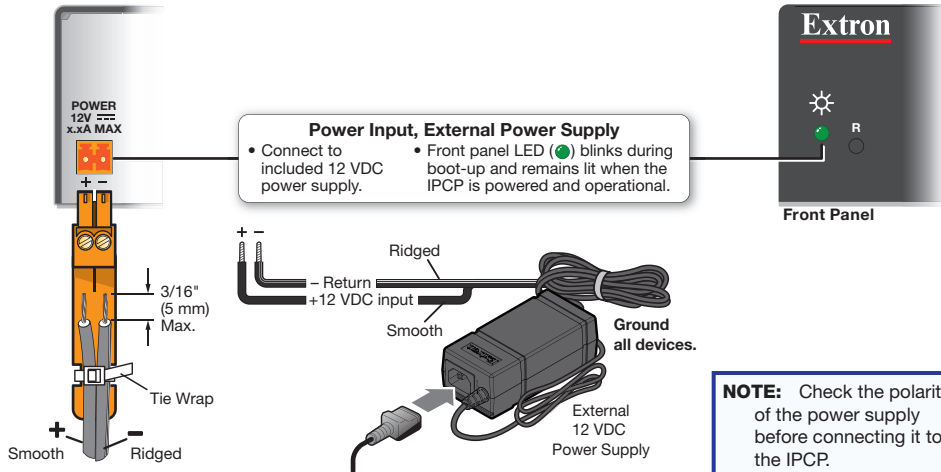
Cabling and Features

Attach cables using the following wiring diagrams as a guide. Full details are available in the *IPCP Pro Series User Guide*.

ATTENTION:

- Installation and service must be performed by experienced personnel.
- L'installation et l'entretien doivent être effectués par du personnel expérimenté.

Power Input – External

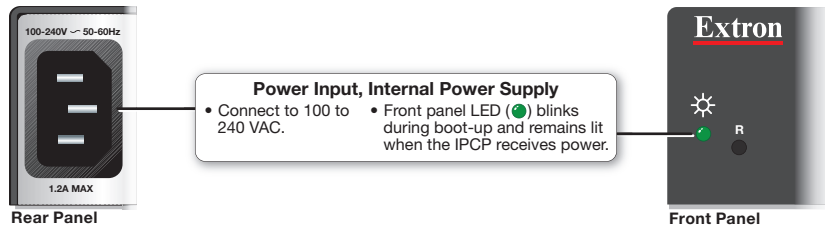


ATTENTION:

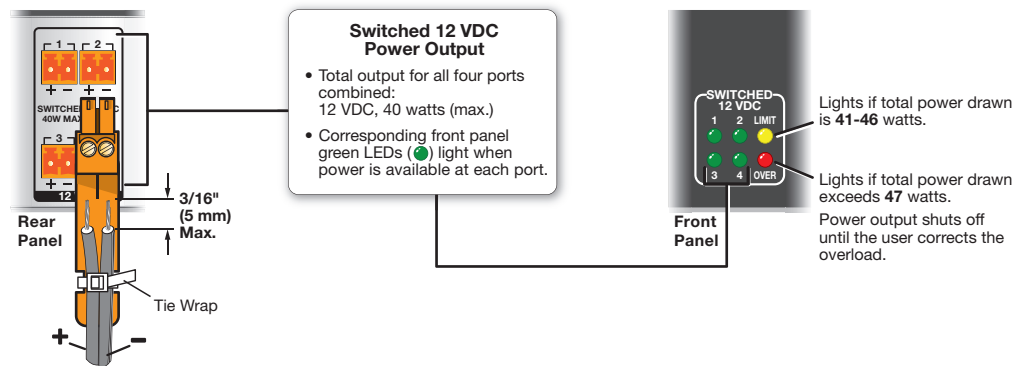
- Always use a power supply supplied or specified by Extron. Use of an unauthorized power supply voids all regulatory compliance certification and may cause damage to the supply and the unit.
- Utilisez toujours une source d'alimentation fournie par Extron. L'utilisation d'une source d'alimentation non autorisée annule toute conformité réglementaire et peut endommager la source d'alimentation ainsi que l'unité.

NOTE: Check the polarity of the power supply before connecting it to the IPCP.

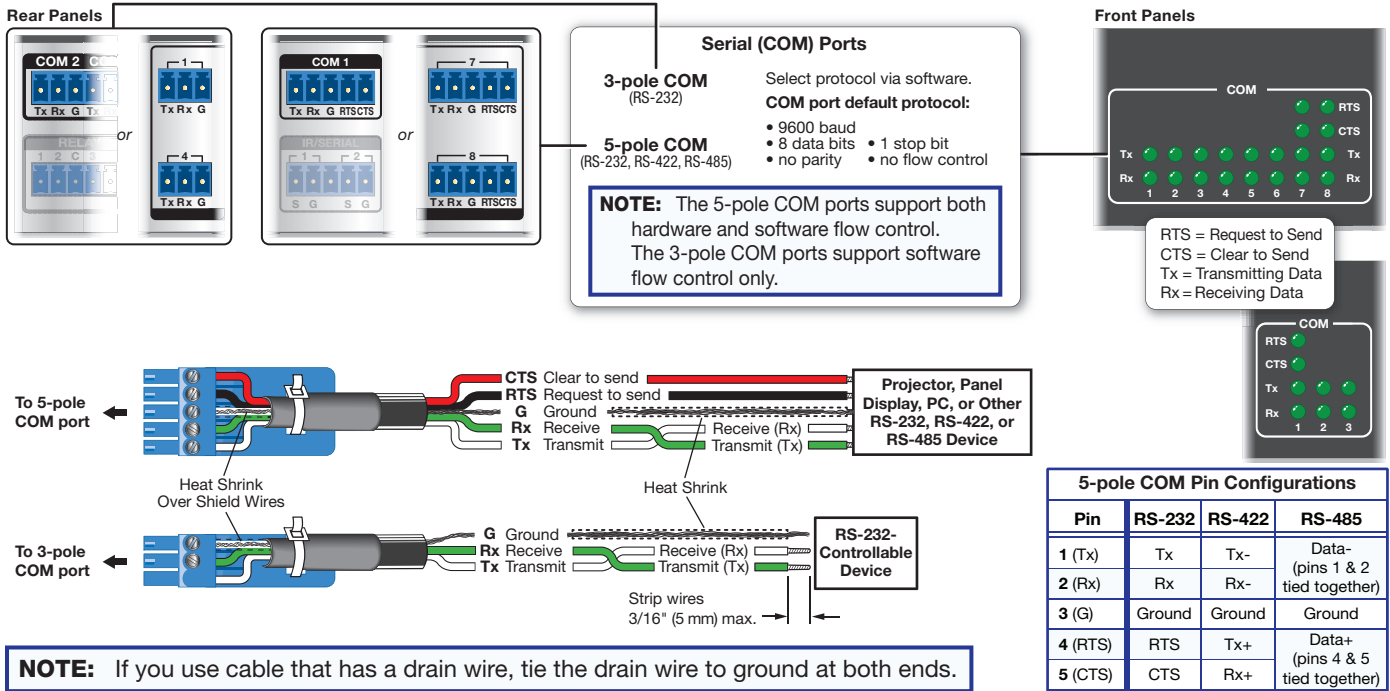
Power Input – Internal



Power Output – Switched 12 VDC Power Output



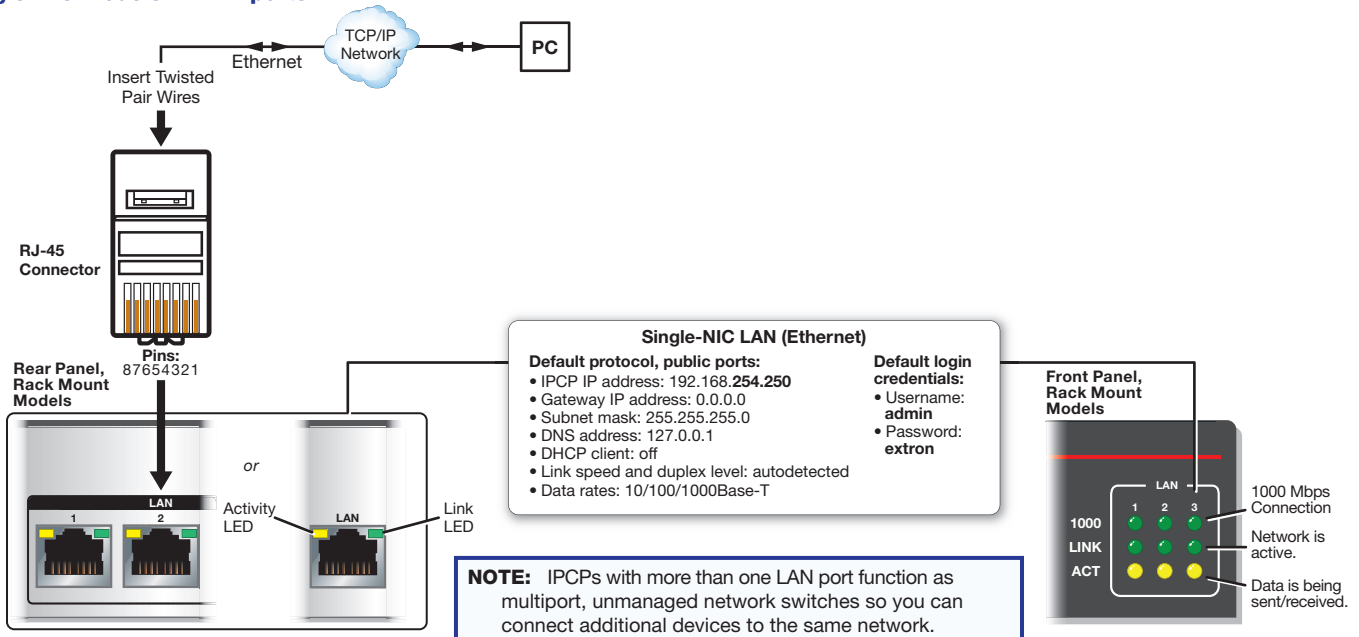
Control, Bidirectional – Serial (COM)



Control, Bidirectional – LAN and AV LAN (Ethernet)

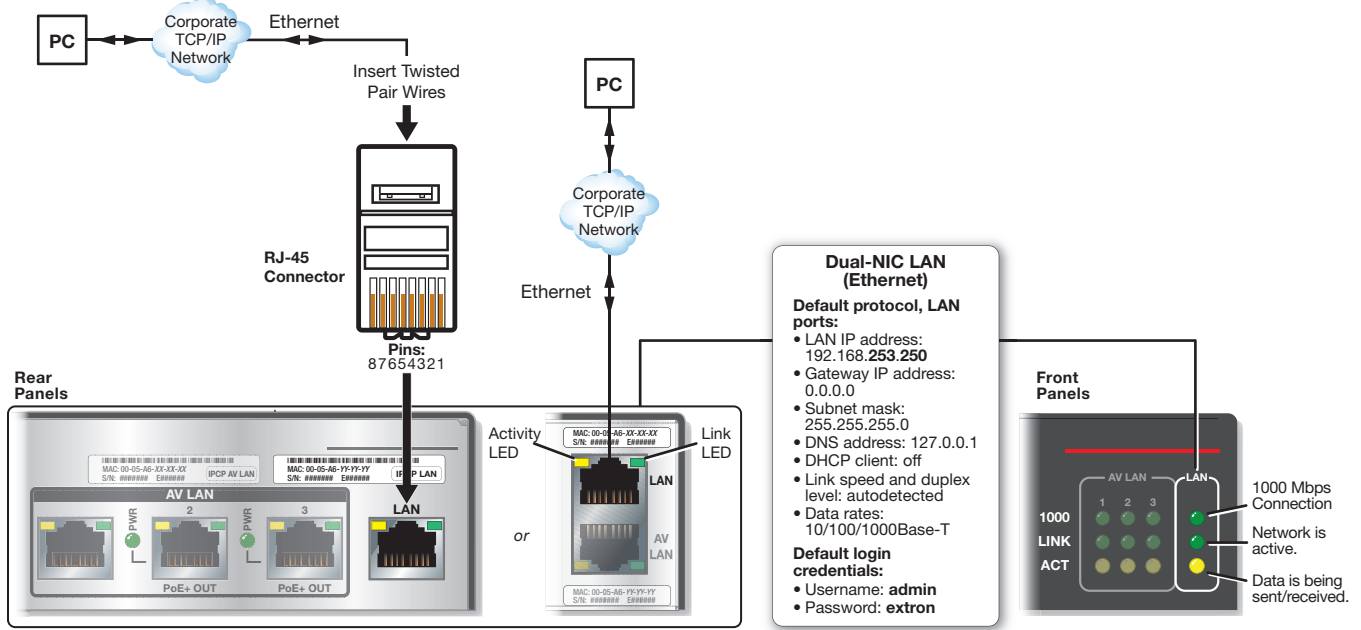
Default port IP addresses and recommended connections vary depending on whether the IPCP is a single-NIC or dual-NIC model.

Single-NIC models – LAN ports



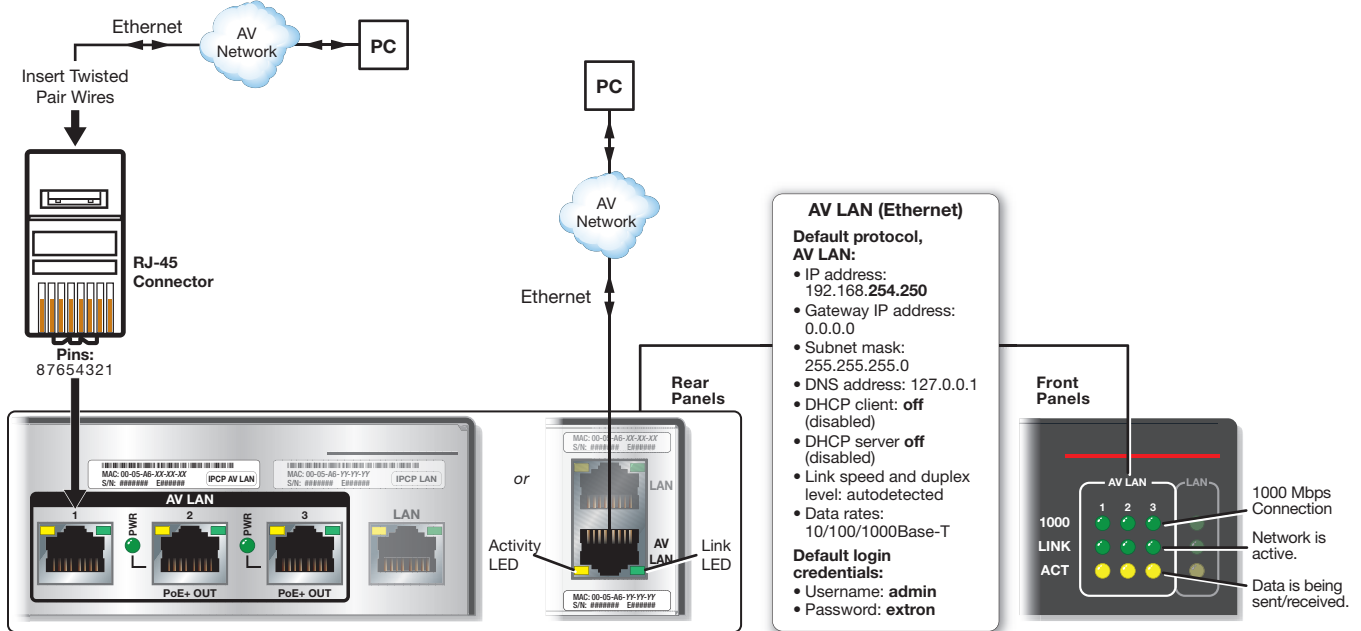
IPCP Pro Series • Setup Guide (Continued)

Dual-NIC models – LAN ports



NOTE: IPCPs with more than one LAN or AV LAN port function as multiport, unmanaged network switches so you can connect additional devices to the same network.

Dual-NIC models – AV LAN ports



NOTE: IPCPs with more than one LAN or AV LAN port function as multiport, unmanaged network switches so you can connect additional devices to the same network.

AV LAN DHCP Server

The AV LAN DHCP Server is disabled by default. It can be enabled to dynamically assign IP addresses to DHCP clients on the AV LAN.

Default protocol, AV LAN when DHCP server is enabled:

- DHCP server IP address: 192.168.254.1
- Subnet mask: 255.255.255.0
- Gateway: 0.0.0.0
- DNS address: 192.168.254.1
- DHCP dynamic address range for client devices: 192.168.254.100 - 192.168.254.149
- Maximum served addresses when DHCP server is enabled: 50
- DHCP client address lease time: 24 hours.

To use DHCP in the AV LAN:

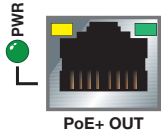
1. Using Toolbelt, enable the DHCP server for the AV LAN within the control processor (see the software or programming help file for details).
2. Enable DHCP on each client AV device (see the user guide for each product).
3. Connect client AV devices to the AV LAN.

All models (single- or dual-NIC)

Each NIC of the control processor is assigned a unique user hardware ID number (MAC address) (for example, 00-05-A6-05-1C-A0). You may need this address during control processor configuration. A label that indicates the MAC address is located on the rear or side panel of the unit.



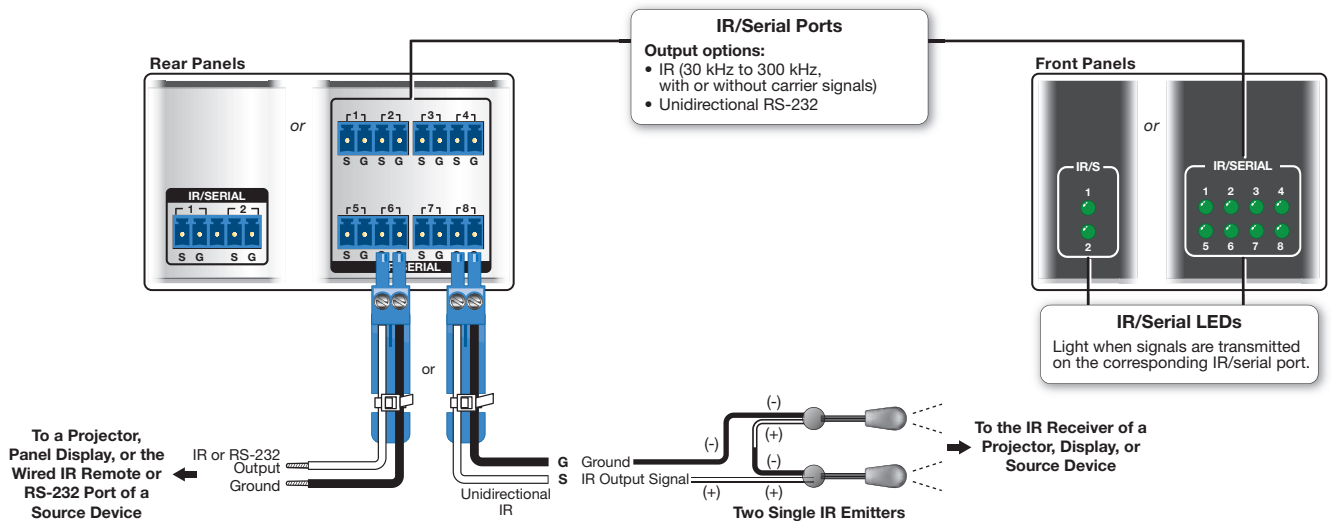
Some models, such as the IPCP Pro 360, offer Power over Ethernet+ (PoE+) output on RJ-45 connectors labeled “PoE+ Out,” which can output a maximum of 30 watts per port. The corresponding Power LED lights when the port provides power. For details, see the *Global Configurator Help* file.



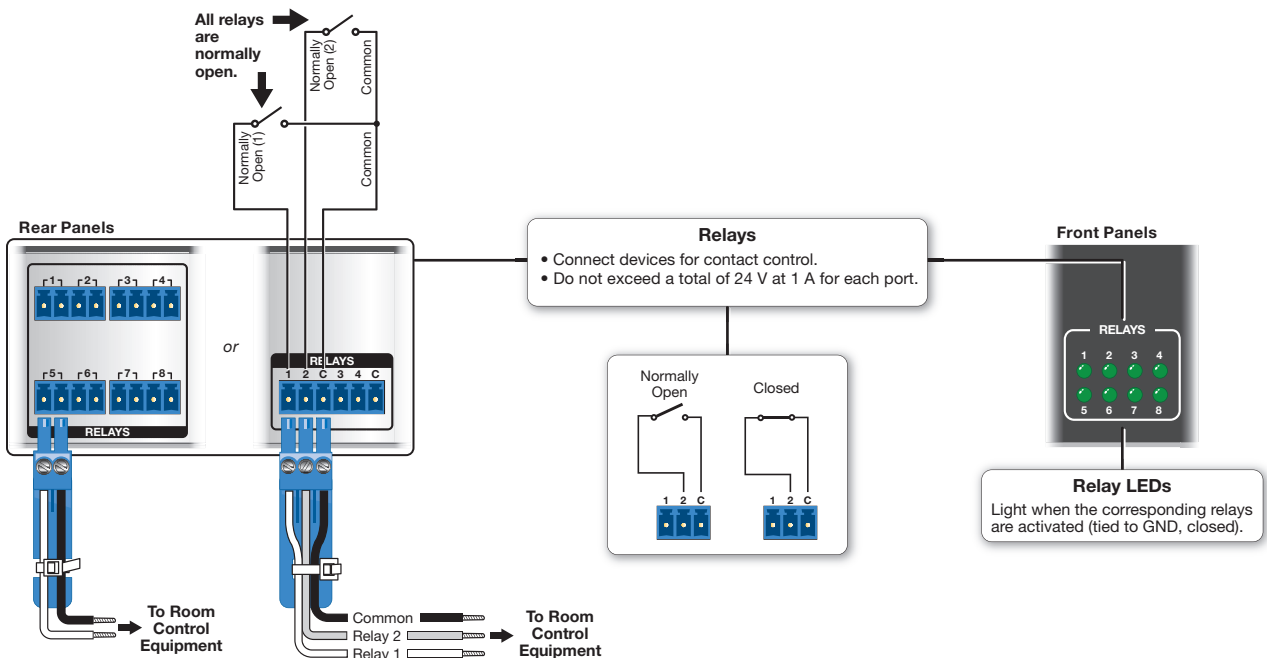
ATTENTION:

- Power over Ethernet (PoE) is intended for indoor use only. It is to be connected only to networks or circuits that are not routed to the outside plant or building.
- L'alimentation via Ethernet (PoE) est destinée à une utilisation en intérieur uniquement. Elle doit être connectée seulement à des réseaux ou des circuits qui ne sont pas routés au réseau ou au bâtiment extérieur.

Control, Unidirectional – IR/Serial

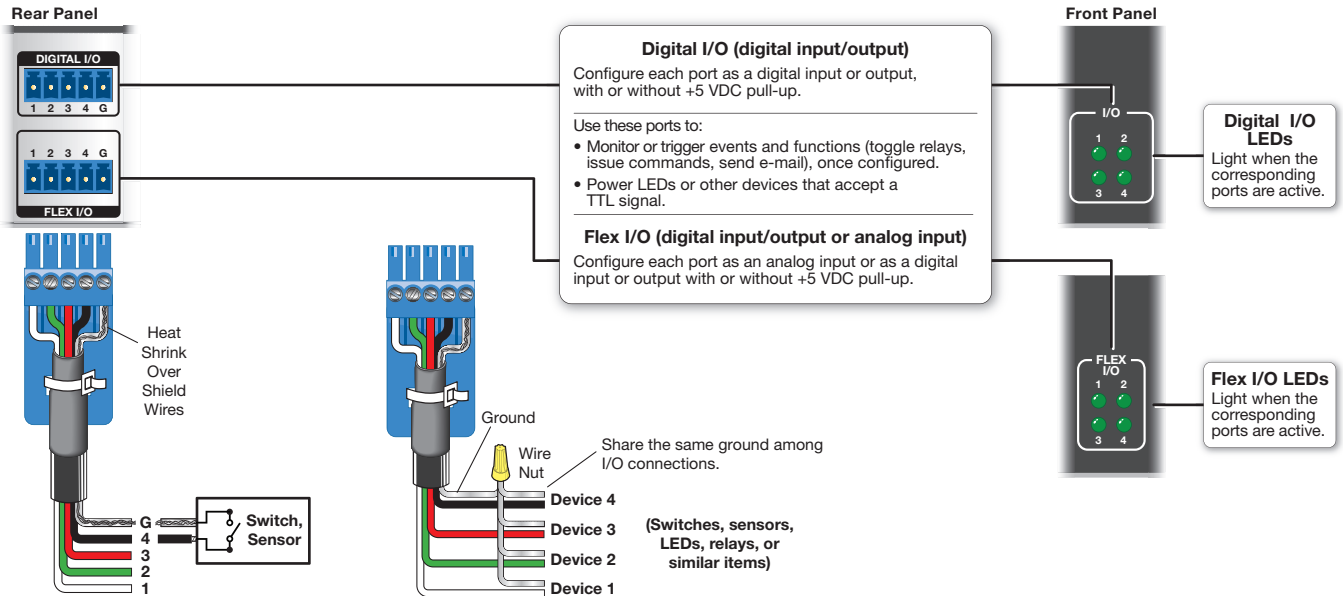


Control, Unidirectional – Relays

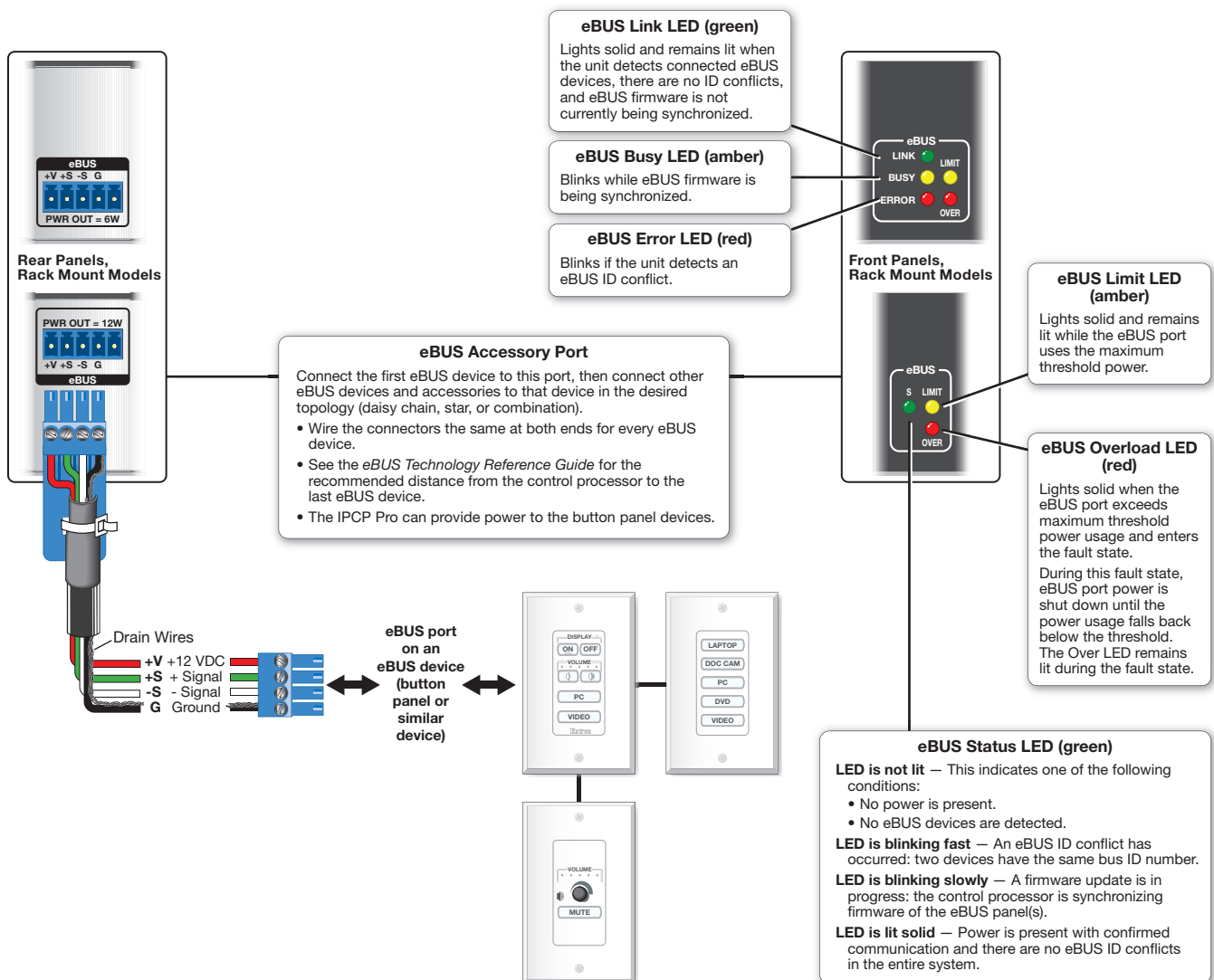


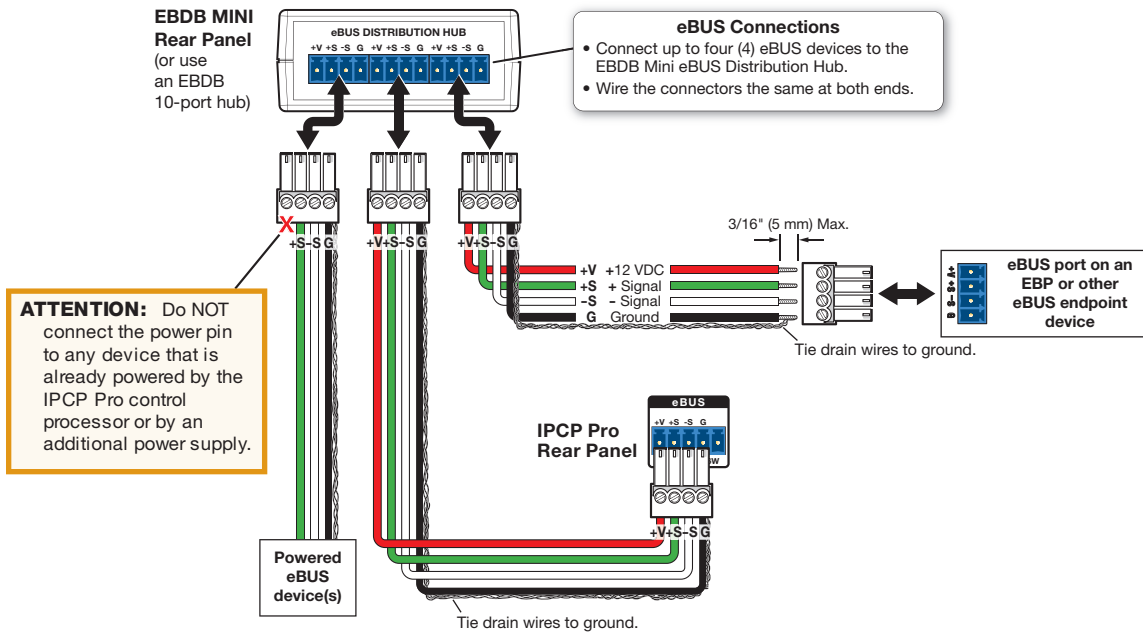
IPCP Pro Series • Setup Guide (Continued)

Control, Unidirectional – Flex I/O or Digital I/O

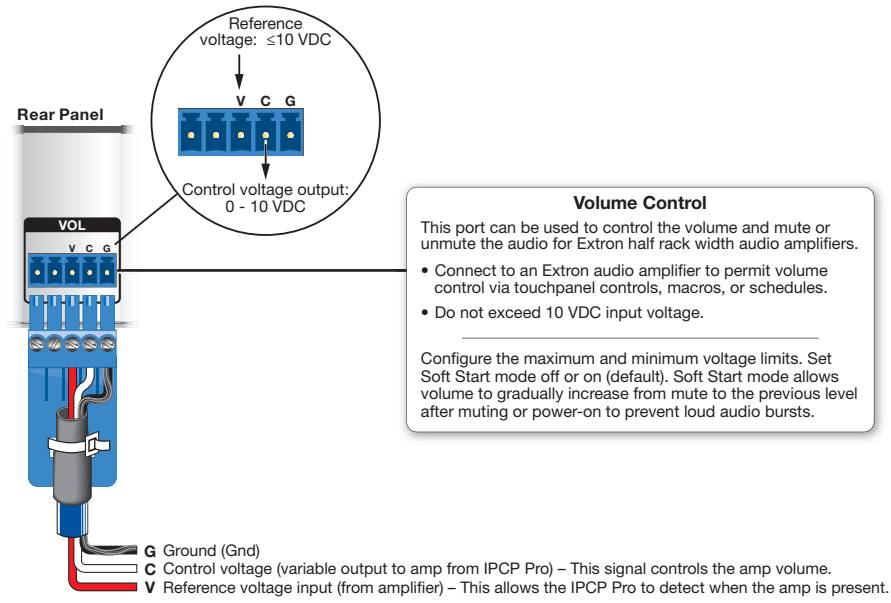


Control – eBUS



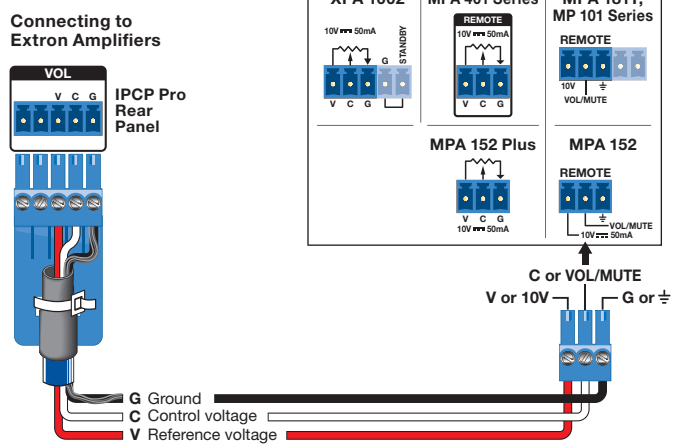


Control – Volume



NOTE: Use shielded cable and place the control processor as close as possible to the amplifier to avoid picking up background noise via the cable. Ideal cable length is six feet (1.8 m) or less.

Example:



NOTE: When audio mute is active, the control processor sets output voltage to 0 VDC, even if the voltage range (minimum and maximum voltage limits) has been set to levels above zero, such as 2 V to 8 V.

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Reset Modes: a Brief Summary

The IP Link Pro control processors offer the following reset modes:

- **Use Factory Firmware:** Press and hold the front panel **Reset** button while applying power to the unit. Hold the button down until the Power LED flashes twice, or for 6 seconds, then release the button. The control processor enters factory firmware mode. For units with firmware prior to version 2.x, the LED flashes quickly. Use this mode to revert to factory firmware in the event of a firmware failure.
- **Project Recovery:** See the *IPCP Pro Series User Guide* for instructions. Use this mode to recover the project in the event of a lost user name and password.
- **Reset All IP Settings:** Press and hold the front panel **Reset** button for 6 seconds. After the Power LED flashes twice, release and momentarily press the **Reset** button. Use this mode to reset all network settings to factory default values without affecting user-loaded files.
- **Reset to Factory Defaults:** Press and hold the front panel **Reset** button for 9 seconds. After the Power LED flashes three times, release and momentarily press the **Reset** button. Use this mode to return the control processor to factory default settings.

For detailed information on each mode and its use, see the *IPCP Pro Series User Guide* at www.extron.com.

Resources

Obtaining Control Drivers

Extron provides an extensive selection of device drivers available on the Extron website. If the system requires a control driver that is not already available, you have additional options:

- Request a new serial (RS-232) or Ethernet driver from Extron.
- Create your own custom IR device driver using IR Learner Pro software. Follow the directions in the *IR Learner Pro Help* file to create a driver by using the remote control for that device and the IR receiver port on the front panel of the IPCP Pro.

Obtaining Instructions, Information, and Assistance

A checklist of basic setup steps is provided at the beginning of this guide. For additional information see the help files and the *IPCP Pro Series User Guide*, available at www.extron.com.

If you have questions during installation and setup, call the [Extron S3 Sales & Technical Support Hotline](tel:18006339877) or the [Extron S3 Control Systems Support Hotline](tel:18006339877) (1.800.633.9877).

Locating Software, Firmware, and Driver Files on the Extron Website

There are three main ways to find software, firmware, and device drivers within www.extron.com:

- Via links from the web page for the specific product
- Via the [Download Center](#) page (Click on the **Download** tab at the top of any page within www.extron.com.)
- Via links from search results

NOTES:

- For some software you have the option to click the **Download Now** button to begin downloading the software file. For other software there is a link for contacting an Extron support representative who can provide you access to the latest version. To obtain Global Configurator (GC Professional, GC Plus) software, you must have an Extron Insider account and contact an Extron support representative. Extron provides training to our customers on how to use the software. Access to Global Configurator Professional is available to users who successfully complete Extron Control Professional Certification.
- **New RS-232 and Ethernet drivers are required.** You must use serial and Ethernet drivers developed specifically for the IP Link Pro platform. With the exception of IR device drivers, drivers used for the previous generation IP Link (non-Pro) control processors are not compatible.

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Overall Configuration Procedure for the Control Processor

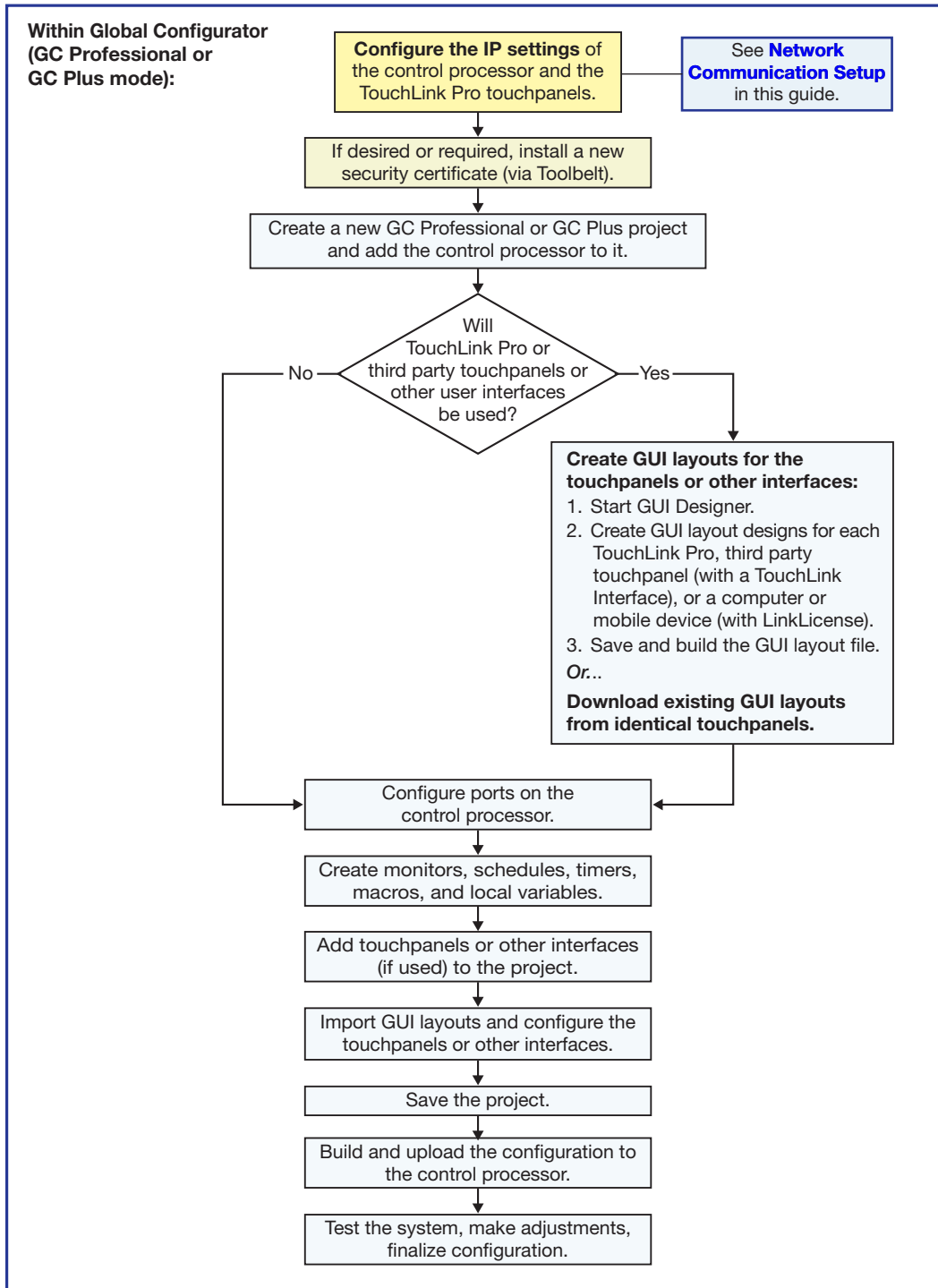


Figure 6. Overall Configuration Steps

If you have questions during installation and setup, you can call the **Extron S3 Sales & Technical Support Hotline** or the **Extron S3 Control Systems Support Hotline** (1.800.633.9877).

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