

## IOLAN SCG Hardware Installation Guide



# Preface

## Audience

This guide is for the network or computer technician responsible for installing the Perle IOLAN SCG also referred to as the IOLAN within this document.

Familiarity with the concepts and terminology of Ethernet and local area networks is required.

## Purpose

This document describes the hardware and physical characteristics of the Perle IOLAN. It covers hardware features as well as installation and operation of the IOLAN. This document does not cover how to configure your Perle IOLAN. Information to configure your Perle IOLAN can be found in the IOLAN User's Guide V5.0 and greater, the IOLAN SCG Quick Start Guide on the Perle website.

## Chapter Overviews

Main Topics	Description
<i><b>IOLAN SCG Components</b></i>	Components of your IOLAN.
<i><b>Reset Function</b></i>	How to reset the IOLAN to custom or factory defaults.
<i><b>Configuring the IOLAN SCG</b></i>	Methods to configure the software features for the IOLAN.
<i><b>Appendix A - Technical Specifications</b></i>	Overall technical specifications including input power and environmental specifications.
<i><b>Appendix B - Label (sample)</b></i>	Product label.
<i><b>Appendix C - Cabling and Pinouts</b></i>	Cables and connectors used with the IOLAN.
<i><b>Appendix D - Maintaining your IOLAN</b></i>	Maintenance of your IOLAN.
<i><b>Appendix E - Mechanical</b></i>	Mechanical drawings showing product dimensions.

## Additional Documentation

Document	Description
IOLAN User's Guide V5.0 and greater	User guide explaining how to configure the IOLAN features using the WebManager or DeviceManager applications. New users should use these methods to configure the IOLAN SCG.
IOLAN CLI (Command Line Interface) Reference Guide V5.0 and greater	Command Line Interface Reference Guide using CLI commands to configure the IOLAN (this is an advanced way to configure the IOLAN).

## Document Conventions

This document contains the following conventions:

Most text is presented in the typeface used in this paragraph. Other typefaces are used to help you identify certain types of information. The other typefaces are:

**Note:** *Means reader take note:* notes contain helpful suggestions.

**Caution:** Means reader be careful. In this situation, you might perform an action that could result in equipment damage or loss of data.

### **Warning: IMPORTANT SAFETY INSTRUCTIONS**

Means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

## Cautions and Warnings

**Warning:** Power sources must be off prior to beginning the power connection steps. Read the installation instructions before you connect the unit to its power source.

**Warning:** Ensure that the voltage and current ratings of the intended power source are appropriate for the SCG as indicated on the product label.

**Warning:** Ensure that the installation and electrical wiring of the equipment is performed by trained and qualified personnel and that the installation complies with all local and national electrical codes.

**Warning:** The working voltage inputs are designed for operation with Safety extra low Voltage (SELV). Connect only to SELV circuits with voltage restrictions in line with IEC/EN 62368-1.

**Warning:** This equipment must be used in the manner specified by the manufacturer.

**Warning:** In case of malfunction or damage, no attempts at repair should be made by the user. Do not dismantle this product.

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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 this hardware guide may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

Modifications to this product not authorized by Perle could void the FCC approval and negate your authority to operate the product.

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## Publishing History

Date	Revision	Update Details
June 2018	A.06.21.2018	Initial release of the IOLAN SCG series.
October 2018	A.10.29.2018	Added pinout diagrams for serial ports.

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## Overview

For infrastructure management, the Perle's IOLAN SCG Series will provide the most versatile access to your IT equipment's serial consoles whether in a large scale data center or remote branch. The IOLAN SCG Series is the next edition in our highly successful line of serial console servers. The IOLAN SCG gives you a way to access serial devices remotely from anywhere there is a network connection.

## IOLAN SCG Models

The SCG model can be ordered with:

- 16/32/48 RS232 RJ45 ports
- 1 auto-sensing Ethernet port (RJ45 10/100/1000 Mbps).
- 1 Micro-USB and 1 RS232 RJ45 Console Admin Port

## What's Included

The following components are included with your product:

- IOLAN SCG Chassis: 1U-tall (1.75 inch), rack-mountable chassis
  - installed 16 RS232 RJ45 ports or
  - installed 32 RS 232 RJ45 ports or
  - installed 48 RS 232 RJ45 ports
- Power cable
- Quick Start Guide
- Rack mount kit
- 1 meter CAT5 straight-through patch cable
- Adapter to convert from Cisco (RJ45) pin-out to DB9F

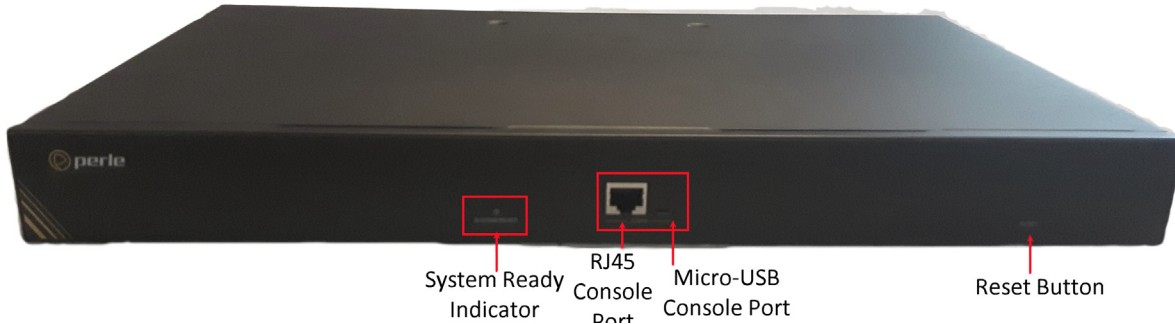
## What You Need to Supply

Before you can begin, you need to have the following:

- A serial cable(s) to connect serial devices to your IOLAN unit.
- An Ethernet CAT5e 10/100/1000BASE-T cable/to connect the IOLAN unit to the network

## IOLAN SCG Components

### IOLAN SCG Front View



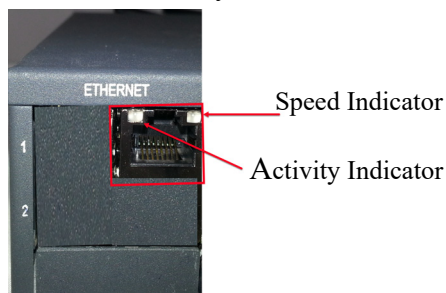
### IOLAN SCG Back View



### Ethernet LAN Port

The Ethernet RS232 RJ45 port provides the standard Ethernet interface speeds of 10/100/1000 Mbps through twisted pair (UTP) cables of up to 100 meters (328ft) in length.

Once the IOLAN has connected and the link is established, the speed LED will turn on. The LED will indicate whether you have a 10, 100 or 1000 Mbps link on the Ethernet port.



### Ethernet LAN RJ45 10/100/1000

Connect a LAN cable to the Ethernet port on the back of the IOLAN. Cat5e cables are recommended for 1000 Mbps connections.



## Ethernet Link Status

Speed Indicator	Activity Indicator	Description
Green	Flashes with activity	1000 Mbps
Orange	Flashes with activity	10 /100 Mbps
Off	N/A	No LAN connection

## Power Switch

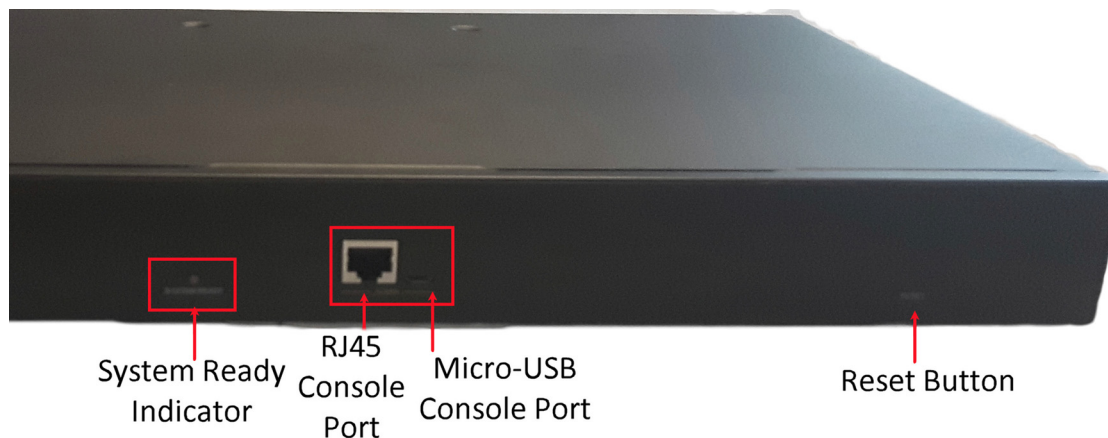
The IOLAN has one power connector located on the back of the IOLAN. The power switch should be in the off position when connecting the power cord.



**Warning:** Before servicing this product ensure the power source has been disconnected.

## Console Admin Ports

The IOLAN has one RJ45 console port (8 pin connector with DTE pinouts) on the front for use with PC's equipped with a serial com port. Additionally, the IOLAN has one Micro-USB console port which uses a standard Micro-B USB connector.



## RJ45 Console Port

To connect to the RJ45 console port:

1. Connect the power, then set the power switch on the back of the IOLAN to the On position.
2. Allow the IOLAN to complete the boot up sequence.
3. Connect an RJ45 cable directly from the IOLAN to the COM port on your PC using the RJ45-DB9 adapter that was shipped with your IOLAN.

4. On the PC, select Choose Start-> Control Panel-> Hardware and Sound or equivalent on the Windows Operating System you are using. The exact procedure may vary depending on the version of Windows you are using.
5. Click the Hardware tab and choose Device Manager, Expand the Ports (COM & LPT) section. This will expand the drop down to show the number of com ports on your system. Connect the cable to one of these ports (probably COM1 or COM2).
6. Start a terminal emulation program (such as Putty or SecureCRT) on the COM port where you have connected the cable to the PC.
7. Configure this COM port within the terminal emulation program with the following parameters:
  - 9600 baud
  - 8 data bits
  - 1 stop bit
  - No parity
  - None (flow control)
8. Press the Enter key on the keyboard and the login prompt will display.
9. The login is **admin** and password is **superuser**.

See [Appendix C - Cabling and Pinouts](#) for cabling information.

See the IOLAN CLI Reference Guide V5.0 and greater for more information on using the CLI commands.

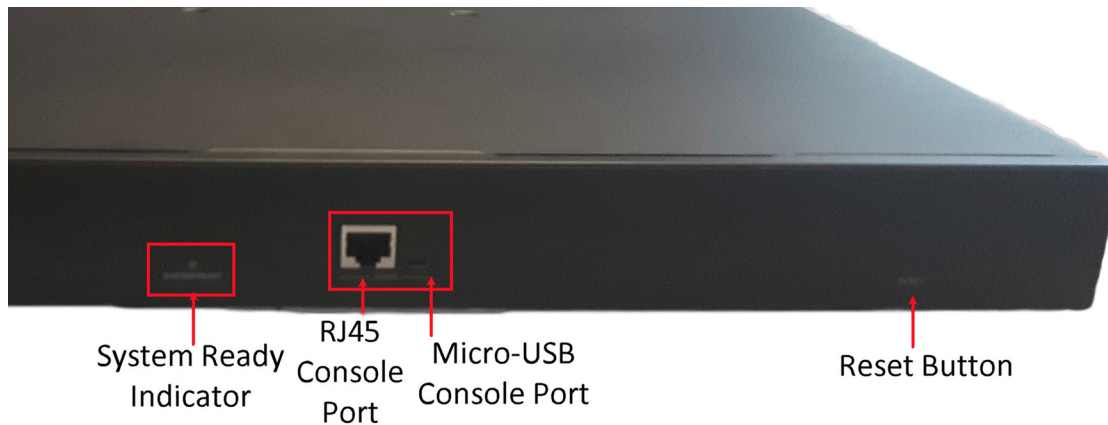
## Micro-USB Console Port

To connect to the Micro-USB Console port:

1. Connect the power, then set the power switch on the back of the IOLAN to the On position.
2. Allow the IOLAN to complete the boot up sequence.
3. Connect a USB cable to the PC's USB port, then connect the other end of the cable to the IOLAN Micro-B USB connector.
4. On the PC Choose Start -> Control Panel -> Hardware and Sound (or equivalent) on the Windows Operating System. Choose the Device Manager, and expand the Ports section. The assigned COM port can be identified.
5. Start a terminal emulation program (such as Putty or SecureCRT) on the com port where you have connect the cable to the PC.
6. Configure your COM port within the emulation program on the PC as:
  - 9600 baud
  - 8 data bits
  - 1 stop bit
  - No parity
  - None (flow control)
7. Press the Enter key on the keyboard and the login prompt will display.
8. The Login is **admin** and password is **superuser**.

See the IOLAN Command Line Interface Reference Guide V5.0 and greater for more information on using the CLI commands.

## Reset Function



## Resetting the IOLAN SCG

This inset reset button allows you to reset the IOLAN, reset the IOLAN to its Perle or custom factory default configuration or reset the IOLAN to the Perle factory default settings. The Power/Ready LED color and the resetting of the IOLAN default configuration vary depending on how long you press and hold the RESET button, as shown in the table below.

When you press and hold the RESET button for...	LED color	IOLAN System Status
Less than 3 seconds	Blinking amber	Reboots. All configuration and files will remain the same.
Between 3 and 10 seconds	Blinking amber, then turns solid amber when you release the RESET button	Reboots and resets the configuration to the factory default (either the Perle or custom default configuration). All configuration, user IDs, passwords and security certificates are deleted.
Over 10 seconds	Blinking amber, then turns solid amber when you release the RESET button	Reboots and resets the configuration to the Perle factory default configuration. All configuration, user IDs, passwords and security certificates are deleted, even if a custom default configuration has been defined.

## Connecting to the RS232 RJ45 Device Ports

Connect devices, workstations, servers or routers using a straight through serial cable. Should your environment need to use rolled cables, the IOLAN software provides that ability through software configuration. See the IOLAN User's Guide V5.0 and greater for more information.

## Configuring the IOLAN SCG

The IOLAN can be configured, operated and monitored using any of the following methods. See the IOLAN User's Guide V5.0 and greater for more details on these methods.

### DeviceManager

The DeviceManager is a Windows<sup>®</sup>-based application that can be used to connect to the IOLAN to actively manage and configure it. It can be used to create new IOLAN configurations both on-line and off-line.

### WebManager

The Perle WebManager is an embedded Web based application that provides an easy to use a browser interface for managing the IOLAN. This interface provides the ability to configure and manage the IOLAN. This is accessible through any standard desktop web browser. You must have preconfigured a valid IP address on the IOLAN before connecting with the WebManager.

### CLI

A text-based Command Line Interface based on industry standard syntax and structure. The CLI can be accessed from the console port. Once a valid IP address is configured on the IOLAN, Telnet, SSH or the Web interface can also be used to access the IOLAN for administration purposes. See the IOLAN Command Line Interface Reference Guide V5.0 and greater for more information.

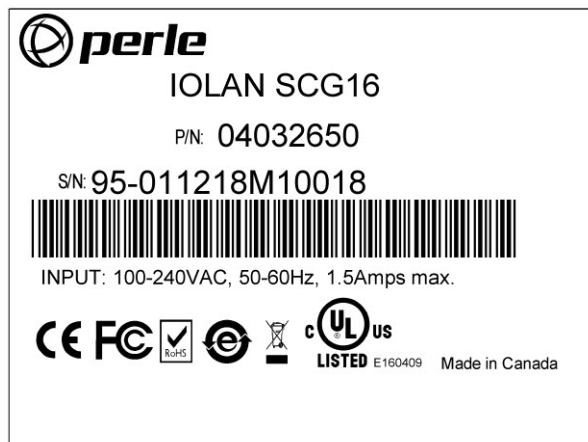
### SNMP

The IOLAN can be managed with an SNMP compatible management station that is running platforms such as HP Openview.

## Appendix A - Technical Specifications

Technical Specifications	
Input power	100-240 VAC, 50-60 Hz, 1.5 Amps max
Interfaces	
RJ45 Serial class RS232 ports	16, 32, 48 - shielded RJ45 ports
Ethernet Port	1 Ethernet 10/100/1000 Up to 100 meters (328 ft.) Auto-negotiation Auto-MDI/MDIX Ethernet isolation 1500 V
Console Port	
	RJ45 DTE - serial port Micro-USB Type B female port - serial interface
Standards	IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow Control
Environmental Specifications	
Operating Temperature Ranges	0°C to 55°C (32°F to 131°F)
Storage Temperature	-40°C to 85°C (40°F to 185°F)
Operating Humidity Range	5% to 90% non-condensing
Storage Humidity Range	5% to 90% non-condensing
Operating Altitude	Up to 3,048 meters (10,000 feet)
Standards and Certifications	
Safety	UL/ULC/EN 62368-1 (previously 60950-1) CE Mark CAN/CSA-C22.2 No. 62368-1-14
EMI/EMC	FCC 47 Part 15 Subpart B Class A or better ICES-003 (Canada) EN55032 (CISPR32)
	EN55024
	EN61000-3-2 Limits for Harmonic Current Emissions EN61000-3-3 Limits of Voltage Fluctuations and Flicker EN61000-4-2 (ESD): Contact: EN 61000-4-3 (RS): EN 61000-4-4 (EFT): EN61000-4-5 (Surge): EN 61000-4-6 (CS): EN 61000-4-8 (PFMF): EN 61000-4-11

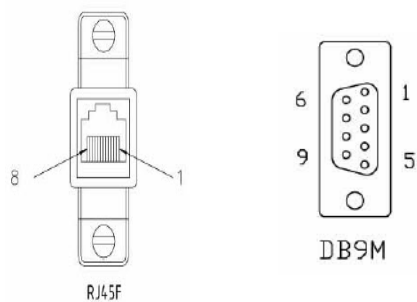
## Appendix B - Label (sample)



## Appendix C - Cabling and Pinouts

### RJ45F to DB9M DTE (Straight-through)

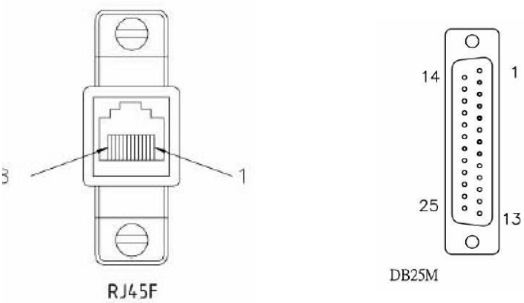
The following diagram shows the IOLAN RJ45→DB9M DTE adapter pinouts.



RJ45F	DB9M
(RTS) 1	7(RTS)
(DTR)2	4(DTR)
(TX)3	3(TX)
(GND)4	5(GND)
(DCD)5	1(DCD)
(RX) 6	2 (RX)
(DSR) 7	6(DSR)
(CTS) 8	8(CTS)

# RJ45F to DB25M (Straight-through Adapter)

The following diagram shows the IOLAN RJ45F→DB25M (DTE) adapter pinouts.

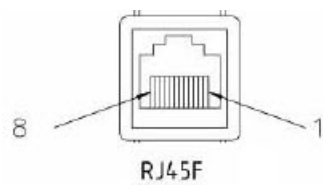


RJ45F	DB25M
(RTS) 1	4(RTS)
(DTR)2	20(DTR)
(TX)3	2(TX)
(GND)4	7(GND)
(DCD)5	8(DCD)
(RX) 6	3 (RX)
(DSR) 7	6(DSR)
(CTS) 8	5(CTS)



# RJ45 Serial Ports (DCE) - Straight-through

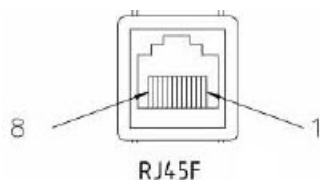
The following diagram shows the RJ45 serial port pinout (DCE) mode.



RJ45		
(CTS)	(IN)	1
(DSR)	(IN)	2
(RX)	(IN)	3
(GND)		4
(NOT USED)		5
(TX)	(OUT)	6
(DTR)	(OUT)	7
(RTS)	(OUT)	8

## RJ45 Serial Ports DTE - Rolled

The following diagram shows the RJ45 serial pinout (DTE) mode.

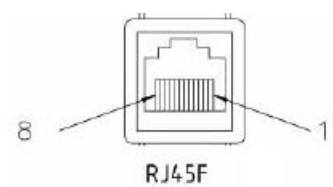


### RJ45

(RTS))	(OUT)	1
(DTR)	(OUT)	2
(TX)	(OUT)	3
(GND)		4
(DCD)	(IN)	5
(RX)	(IN)	6
(DSR)	(IN)	7
(CTS)	(IN)	8

# RJ45 Console Port (DTE)

The following diagram shows the RJ45 console port (DTE) mode.



RJ45		
(RTS))	(OUT)	1
(DTR)	(OUT)	2
(TX)	(OUT)	3
(GND)		4
(GND)		5
(RX)	(IN)	6
(DSR)	(IN)	7
(CTS)	(IN)	8

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## Appendix D - Maintaining your IOLAN

Ensure there is clearance of 50.8mm (2 inches) on all sides of the IOLAN to provide proper airflow through the unit

- Do not use solvents or cleaning agents on this unit
- Keep vent holes clear of debris
- If case gets dirty wipe with a dry cloth
- Ensure all cables are in working condition

## Appendix E - Mechanical

