IOLAN SCG Hardware Installation Guide
Expandable Models

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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 SCG. It covers hardware features as well as installation and operation of the IOLAN. This document does not cover how to configure your IOLAN. Information to configure your IOLAN can be found in the IOLAN Secure User's Guide V5.0 and greater and in the IOLAN SCG Quick Start Guide that came with your product.

Chapter Overviews

Main Topics	Description
IOLAN SCG Components	Components of your IOLAN.
Reset Function	Resetting the IOLAN to custom or factory defaults.
Configuring the IOLAN SCG	Methods to configure the software features for the IOLAN.
Appendix A - Technical Specifications	Overall technical specifications including input power and environmental specifications.
Appendix B - Labels	Product label.
Appendix C - Pinouts and Cabling Diagrams	Cables and connectors used with the IOLAN.
Appendix D - Maintaining your IOLAN	Maintenance of your IOLAN.
Appendix E - Mechanical	Mechanical drawings showing product dimensions.

Additional Documentation

Document	Description
IOLAN Secure 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.
IOLAN Secure CLI (Command Reference Guide) Guide V5.0 and greater	Command 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 matter 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.

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS GUIDE ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS GUIDE ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

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.

Perle reserves the right to make changes without further notice, to any products to improve reliability, function, or design.

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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.10.28.2018	Updates to Front panel information. Added serial pinout.
December 2018	A.12.20.2018	Updates to Technical specifications for Wireless models.

Table of Contents

Overview

For infrastructure management, the Perle's IOLAN SCG Series will provide the most versatile access to your IT equipment's serial and USB 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 them remotely from anywhere there is a network or modem connection. These advanced console servers provide models that include integrated wireless technology, 4G/LTE cellular technology, and remote modem support.

IOLAN SCG Models

All IOLAN SCG models have the following basic hardware set;

- IOLAN SCG Chassis: 1U-tall (1.75 inch), rack-mountable chassis
  - 16/32/48 RJ45 ports or
  - 16/32/48 USB ports
  - any combination of 16 port modules up to a total of 48 ports on the back of the unit
- 2 auto-sensing Ethernet Combo ports (RJ45 10/00/1000 Mbps/SFP 100/1000 Mbps)
- 1 Micro-USB and 1 RS232 RJ45 Console Admin Port
- Two USB front ports for serial class devices
- Micro SD card slot (SD card provided by the user)
- Front Panel Display with keyboard

Additional hardware on some models

- Internal V.92 modem with one RJ11 connector
- Cellular WWAN capability based on 4G LTE technology (North American or European)
- SIM card slot to be used for 4G LTE networks
- Wireless LAN (Wifi) client 802.11 a,b,g,n @2.4Ghz/5Ghz support

What's Included

The following components are included with your product:

- IOLAN SCG Chassis: 1U-tall (1.75 inch), rack-mountable chassis
- Combination of
  - 16 port USB modules
  - 16 port RS232 RJ45 modules
  - to a maximum total of 48 ports in the back of the unit
- Power cables for dual AC
- Quick Start Guide
- Rack mount kit
- 1 meter CAT5 straight-through patch cable
- Adapter to convert from Cisco (RJ45) pin-out to DB9F

Added components for wireless models:

- 2 x RP-SMA Antennas

Added components for cellular models:

- Two multi-band swivel-mount dipole antennas

What You Need to Supply

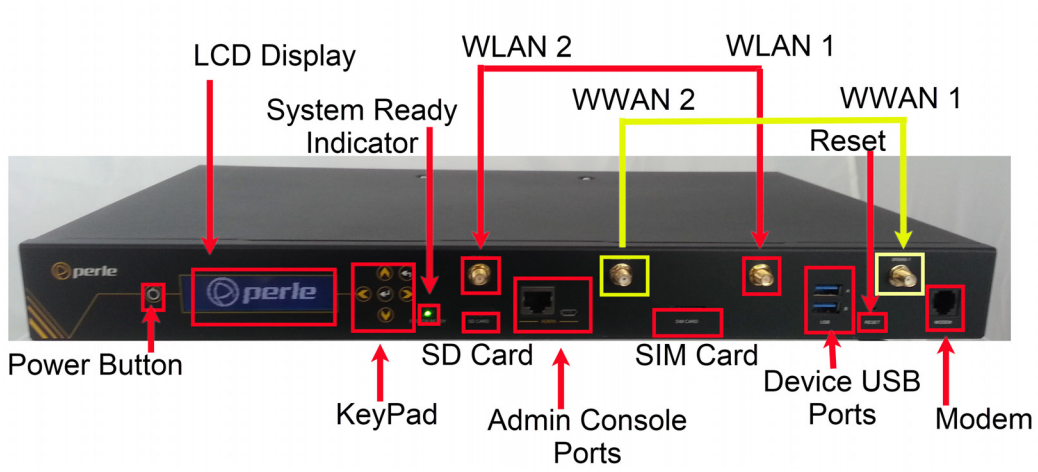
Before you can begin, you need to have the following:

- A serial cable(s) to connect serial devices to your IOLAN unit
- An Ethernet CAT5e 10/100/1000BASE-T cable or an SFP module with the appropriate fiber cable to connect the IOLAN unit to the network
- Data Plan subscription with a supported carrier and activated 3FF SIM Card for SCG-LA and SCG-LE models only)

IOLAN SCG Components

IOLAN SCG Front View

(Pictured SCG50 RRU LAWM)



IOLAN SCG Back Views

Three module bays are available on the back of the IOLAN unit. A combination of 16-port USB modules and 16-port RS232 RJ45 modules can be installed to provide up to forty-eight serial RS232 RJ45 ports and/or USB ports. The modules are field upgradeable.

Note: When installing modules into the IOLAN, Bay 1, Bay2, and Bay 3 must be populated in consecutive order starting at Bay 1.

Each IOLAN has an additional two USB device ports on the front of the unit.

IOLAN SCG50RRR-LAWM (Shown)

IOLAN SCG50UUU-LAWM (Shown)

IOLAN SCG 50RRU-LAWM (Shown)

Installing IOLAN SCG Modules

1. Disconnect power from the IOLAN. Failure to do so will result in damage to the IOLAN.
2. Using your fingers, loosen the retainer screws holding the face plate to the unit.
3. Gently remove the face plate and set aside.
4. Align the expansion module up with the opening where you want to insert the module.
5. Gently push the module into place until you hear a audible click.

6. Tighten the retainer screws on each side.

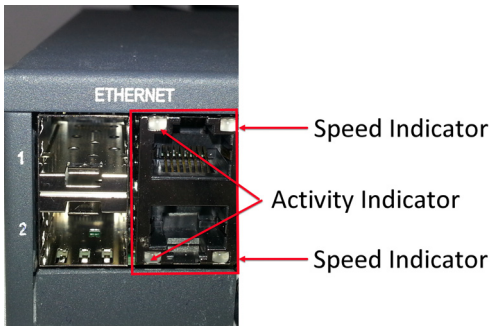
Warning: When installing modules into the IOLAN, the power to the unit must be turned off to avoid damage. The modules are **NOT** hot swappable.

Warning: Power must be off before attempting to insert or remove a module. Failure to do so will result in damage to the IOLAN.

Ethernet LAN Ports

There are two Ethernet combo pairs (RJ45 and SFP) identified as Ethernet 1 and 2. The two Ethernet RS232 RJ45 ports provide the standard Ethernet interface speeds of 10/100/1000 Mbps through twisted pair (UTP) cables of up to 100 meters (328ft) in length. The two Ethernet SFP transceiver ports support the use of single mode, multi-mode, fiber optic and copper SFP transceiver modules. When using the SFP transceiver ports, the speed and distance will be calculated by the module inserted. SFP modules are provided by you.

Each combo pair consists of a RS232 RJ45 port and a SFP transceiver port. Only one port in each combo pair can be active at a time. Should both ports in a combo pair be connected, then the first port to get a link up will take priority. The IOLAN supports the active standby feature that permits the grouping of two Ethernet interfaces - one from each of the combo Ethernet ports to form a group. This feature allows Ethernet traffic on either interface to be routed to the other interface should the connection fail. Both interfaces will have the same MAC address. Once the IOLAN has connected and the link is established, the speed LED will turn on. This LED will indicate whether you have a 10, 100 or 1000 Mbps link on either of the Ethernet combo ports.



Ethernet LAN RJ45 10/100/1000

Connect LAN cables to the Ethernet 1 and/or Ethernet 2 ports on the back of the IOLAN. Cat5e cables are recommended for 1000 Mbps connections.

Ethernet/SFP Link Status

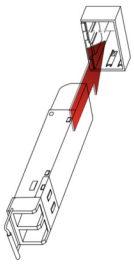
Speed Indicator	Activity Indicator	Description
Green	Flashes with activity	1000 Mbps
Orange	Flashes with activity	10 /100 Mbps
Off	N/A	No LAN connection

SFP modules

SFP modules are inserted in the SFP transceiver slots on the back of the IOLAN. The IOLAN will automatically detect the speed of the SFP inserted.

Inserting the SFPs

1. Align the SFP module in front of the slot to establish alignment.
2. Insert the module and push inwards with your thumb until you hear a click. Do not force the SFP module in. SFP modules are keyed so you can only insert them one way.
3. If the SFP module is equipped with a clasp, ensure the clasp is in the locked position.The appropriate fiber cable can now be connected to the SFP module.

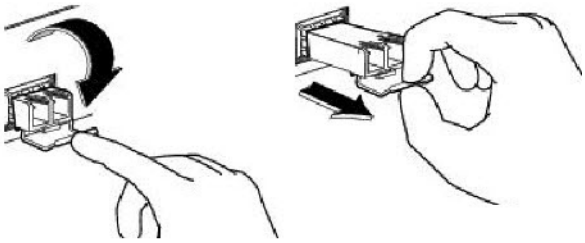


Once the device is connected and the link is established the speed LED will turn on. This LED will indicate whether you have a 100 or 1000 Mbps link. See ***Ethernet/SFP Link Status***.

Removing SFPs

1. Disconnect the fiber cable from the SFP module.

2. If the SFP module is equipped with a clasp, move it to the unlocked position and use the clasp to pull the SFP towards you.
3. If the SFP module is not equipped with a clasp, then with your fore finger and thumb, firmly grip the SFP and pull towards you.



Power Switches

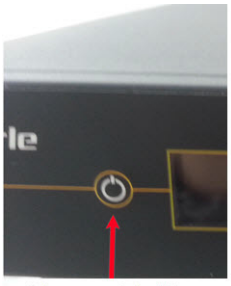
The two power connectors are located on the back panel of the IOLAN. Both power switches should be in the off position when connecting the power cords. Both power cords can be connected to the IOLAN providing redundant power to the IOLAN. If one power supply should fail the IOLAN will use the other power supply to continue to power the unit without interruption.

Warning: Before servicing this product ensure both power sources have been disconnected.

Power Button

The power button provided on the front panel allows you to “soft” power-down the IOLAN. Pressing the power button for 6 seconds will cause the IOLAN to power off. Pressing the power button again will power up the system.

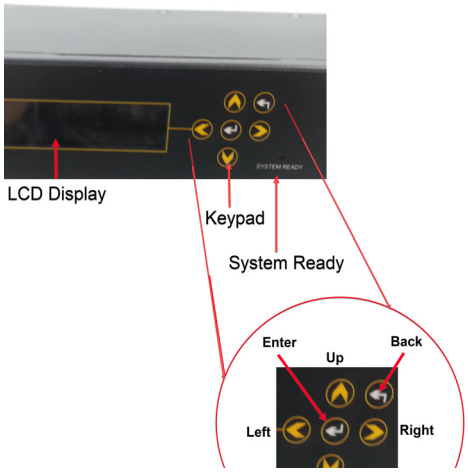
Note: When the power is turned off using this method, the power supplies are still active.



Power Button

Front LCD Display and Keypad

The IOLAN provides a front LCD Display and Keypad. The LCD display provides the ability to monitor the IOLAN while in operational mode, as well as providing configuration and administration options. Upon boot-up or a period of no user activity, the front panel will have scrolling enabled by default. The IOLAN will continue to scroll through the default status displays until a key is pressed on the keypad.These initial default status displays can be configured via the WebManager, DeviceManager or CLI. See the IOLAN Secure User's Guide V5.0 and greater or IOLAN Secure Command Line Interface Reference Guide V5.0 and greater for more information. Pressing any key on the keypad will stop the scrolling and allow you to use the up and down arrow keys to scroll through the status screens. The back arrow key will take you to the main menu to select Status, Configuration or Administration. Use the keypad button to move within the menus and sub-menus.
The Front LCD Display has additional options such as customizable status display, keypad lock and keypad enable security pin. See the IOLAN Secure User's Guide V5.0 and greater for more information on these features.



Button	Action
Right arrow	To move from one menu/sub menu option to another. In edit mode, to scroll through options for input entry or to move to the next input field.
Left arrow	To return to the previous option. In edit mode, to scroll through options for input entry.
Enter (center button)	To select the presented option. In edit mode, to enter input mode or to save the selected option and exit edit mode.
Up arrow	To scroll up the list of parameters within an option.
Down arrow	To scroll down the list of parameters within an option.
Back arrow	To go back to previous option

Front Panel options with associated parameters

Main Menu	
IOLAN Name The default IOLAN Name is: IOLAN-xxxxxx (xxxxxx being the last 6 digits of the MAC address as specified on the Product Label). See ***Appendix B - Labels***.	Shows the name of the IOLAN.
Date/Time	Shows current date and time.
Status	**Action**
Uptime*	Shows the duration of time that the IOLAN has been powered on. (24 hour clock).
Connections*	Shows the number of connections on the EIA-232 and USB serial ports.
Firmware*	Shows the current version of firmware.
Eth1 IP address*	Shows the Eth1 IPv4 address if configured, else shows 000.000.000.000 for not configured/ no DHCP enabled.
Eth2 IP address*	Shows the Eth2 IPv4 address if configured, else shows 000.000.000.000 for not configured/ no DHCP enabled.
WLAN and WWAN status information will only display if the IOLAN SCG has a WLAN or WWAN interface.	
WLAN IP Address*	Shows the WLAN IPv4 address if configured, else shows Not Connected.
WWAN IP Address*	Shows the WWAN IPv4 address if configured, else shows No SIM or Not Connected.
WLAN	If connected shows the SSID and the signal percentage.
WWAN	If connected shows the Network Name and the signal percentage.
*** Displays on the Front Panel Display by default. To change the displayable status information see the IOLAN Secure User's Guide V5.0 and greater.**	

EIA-232: X **USB: X** Port Connections (X in position shows device connected at that port number)	Ports 1-16: EIA232/USB/NONE • 1 - 8 : X_ X _ XXXX • 9 -16 : _XXX _____ Port 17-32: EIA 232/USB/NONE • 17-24: XXXX _XX_ • 25-32: _XXX XXXX Ports 33-48: EIA232/USB/NONE • 33-40: XXXX XXXX • 41-48: _____ _____ Ports 49-51 Modem| X USB A | _ USB B | X
Eth1 IPv6	Shows the Eth1 IPv6 address if configured, else shows :: for not configured / no DHCP enabled.
Eth2 IPv6	Shows the Eth1 IPv6 address if configured, else shows :: for not configured / no DHCP enabled.
WLAN IPv6	Shows the WLAN IPv6 address if configured, else shows :: for not configured / no DHCP enabled.
IPv6 Gateway	Shows the IPv6 gateway address if configured, else shows :: for not configured.
Eth1 MAC Address	xx:xx:xx:xx:xx:xx
Eth2 MAC Address	xx:xx:xx:xx:xx:xx
WLAN MAC Address	xx:xx:xx:xx:xx:xx
Chassis Serial #	xx:xxxxxxxxxxxxxx
Console Port	Baud Rate: xxxx
Internal Temperature	Temperature in Celsius
Custom Text	Two lines of text you can input.

Configuration	
IPv4 network The default IPv4 address for the IOLAN is 000.000.000.000	Eth1 DHCP: OFF/ON Eth1 IPv4 • IPv4 address • IPv4 network mask Eth2 DHCP: OFF/ON Eth2 IPv4 • IPv4 address • IPv4 network mask WLAN DHCP : OFF/ON WLAN IPv4 • IPv4 address WLAN Network Mask Default Gateway
IPv6 network The IOLAN has a factory default link local IPv6 address based upon its MAC Address. For example, the link local address is: IOLAN MAC Address: 00-80-D4-AB-CD-EF Link Local Address: fe80::0280:D4ff:feAB:CDEF	Eth1 IPv6 method • Auto • None • DHCPv6 Eth2 IPv6 method • Auto • None • DHCPv6 WLAN IPv6 method • Auto • None • DHCPv6
Console Port (speed) The speed will be set on both the RJ45 and Micro-USB console ports	• 9600 • 115200 • 57600 • 38400 • 19200

Administration	
Date/Time Settings	Set the date and time.

WLAN WPS	The IOLAN will scan (120 seconds) all networks to find the closest AP that is currently in WPS mode. The IOLAN will exchange credentials with that AP and then create an internal wireless profile (association) and will then exit WPS mode. Start Yes or No
Reboot Device	The IOLAN will be rebooted. Confirm Yes or No
Factory Default	Sets the IOLAN configuration to the custom factory default if you have downloaded one, else the configuration is set to the Perle factory default. Lose All Data? Yes or No

Using the Front Panel

To enter setup information (for example IPv4 address):

1. From the Main Menu (IOLAN name, date and time), press the Down arrow to scroll to Configuration, now press the Center button for Enter.
2. Press the Down arrow.
   The display should read Eth1 DHCP : OFF
3. Press the Down arrow again.
   The display should now read:
   Eth1 IPv4
   000.000.000.000
4. Press the Enter button to go into Edit mode. A cursor will flash under the first zero (0) in the IP address.
5. To enter values:
   - Use the left or right arrow to move the cursor to the left or right position.
   - Use the up or down arrow to increment or decrement the numerical value.
6. Press the Center button for Enter
7. Press the Down arrow to scroll to the next screen to enter the Network mask.
8. Use steps 4 to 6 to enter the Eth1 Network Mask.
9. Press the Down arrow to continue to enter addresses for Eth2 if desired, else press the Back button twice to go to the Main Menu.
10. You will need to reboot the IOLAN using the power switches on the back of the unit to have the new IP address take effect.

SD Card

The SD card may be used for storage of firmware and configuration files. Please refer to the IOLAN Secure User's Guide V5.0 and greater for more details.

Console Ports

The IOLAN has one RJ45 console port (8 pin connector with DTE pinouts) on the front of the IOLAN 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 cord/s, then switch the power switch/s 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. Select the Device Manager from the list, 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 - Pinouts and Cabling Diagrams*** for cabling information.
See the IOLAN Secure 5.0 Command Line Reference Guide and greater for more information on using the CLI commands.

Micro-USB Console Port

The Micro-USB console port uses a standard Micro-B USB connector.
To connect to the Micro-USB Console port:

1. Connect the power cords, then set the power switch/s on the back of the unit to the On position.
2. Allow the IOLAN to complete the boot up sequence.
1. 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.
2. 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.
3. Start a terminal emulation program (such as Putty or SecureCRT) on the com port where you have connect the cable to the PC.
4. 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)
5. Press the Enter key on the keyboard and the login prompt will display.
6. The login is **admin** and password is **superuser**.

See ***Appendix C - Pinouts and Cabling Diagrams*** for cabling information.

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

Micro SIM Card (only applies to certain models)

The SIM card slot is used for IOLANs that use 4G/LTE cellular technology. Data Plan subscription with a supported carrier and activated 3FF (Micro-SIM) Card is needed.

Installing the Micro SIM Card

1. Insert your Micro SIM card into the slot.
2. The Micro SIM card will fit only one way (do not force the Micro-SIM card in or you could damage your SCG).
3. Gently press the Micro- SIM card forward until you hear it click into place within the SIM slot.

Note: To verify that your MicroSIM card is correctly installed:
From the CLI command prompt run the show command.
SCG16 #show wwan status
SIM
ICCID 89302720396916966778
IMSI 302720391780097
PIN retry counter 5

Front USB A and B Serial Ports

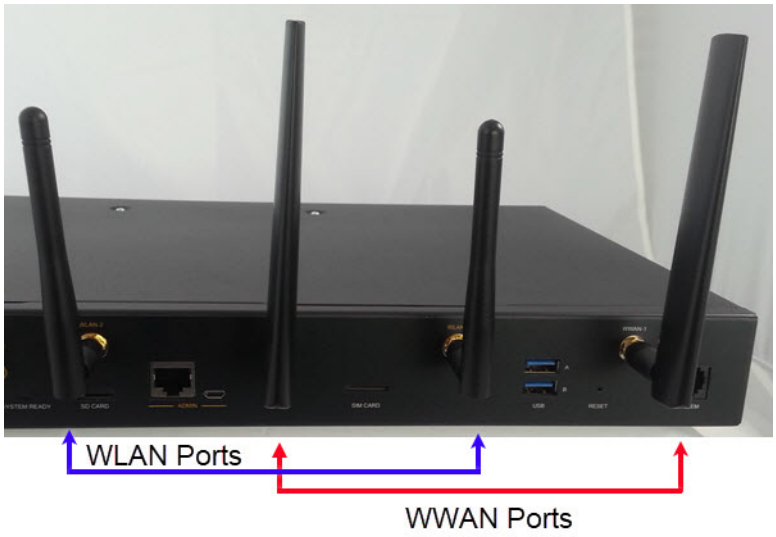
These ports are used to connect additional USB serial devices.

Modem Port (only applies to certain models)

Some IOLAN models come with a built-in modem with an RJ11 connector.

WLAN/WWAN Antennas (only applies to certain models)

Screw each of the antennas to the IOLAN. (hand tighten only - do not use tools to tighten).



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.

When you press and hold the RESET button for...	LED color	IOLAN System Status
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 Secure User's GuideV5.0 and greater for more information.

Connecting to the Front and Rear USB Device Ports

Connect devices, workstations, servers or routers using USB cables.

Configuring the IOLAN SCG

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

Front Panel

The Front Panel can be used to configure an IP address on the IOLAN, to configure parameters, control functions and to view statistics.

DeviceManager

The DeviceManager is a Windows®-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 Secure Command Line Interface Reference Guide V5.0 and greater for more information.

SNMP

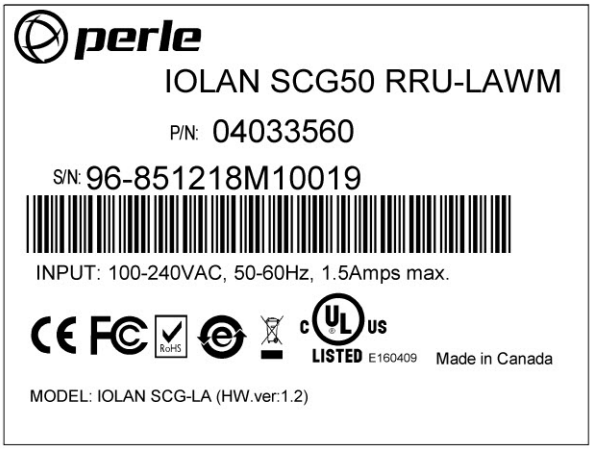
The IOLAN can be managed with an SNMP compatible management station that is running platforms such as HP Openview.

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
USB Device ports	16, 32, 48 - USB ports + 2 on the front
Ethernet Ports	2 Ethernet 10/100/1000 Up to 100 meters (328 ft.) Auto-negotiation Auto-MDI/MDIX Ethernet isolation 1500 V
SFP Transceiver Ports	2 SFP slots supporting SERDES 100/1000Base-X SFP modules supplied by Perle, Cisco or other manufacturers of MSA compliant SFP's SFP's supporting SGMII protocol are also supported (example 1000Base-T).
Console Ports	
	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 too 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 ICES-003 (Canada) EN55032 (CISPR32)
	EN55024

Technical Specifications	
	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
Wireless - LA	PTCRB Verizon ATT
Wireless - LE	RED (Radio Equipment Directive -2014/53/EU)

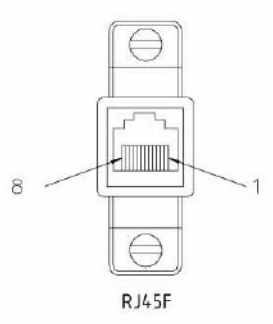
Appendix B - Labels

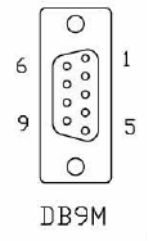


Appendix C - Pinouts and Cabling Diagrams

RJ45F to DB9M DTE (Straight-through)

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

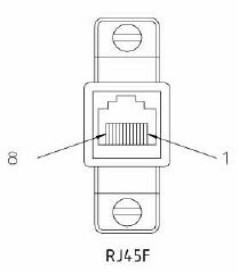


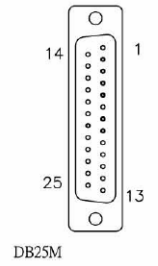


RJ45F		DB9M
(RTS) 1	———	7(RTS)
(DTR)2	———	4(DTR)
(TX)3	———	3(TX)
(GND)4	———	5(GND)
(DCD)5	———	1(DCD)
(RX) 6	———	2 (RX)
(DSR) 7	———	6(DSR)
(CTS) 8	———	8(CTS)

RJ45F to DB25M (Straight-through Adapter)

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

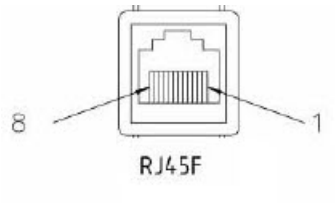




RJ45F		DB25M
(RTS) 1	———	4(RTS)
(DTR)2	———	20(DTR)
(TX)3	———	2(TX)
(GND)4	———	7(GND)
(DCD)5	———	8(DCD)
(RX) 6	———	3 (RX)
(DSR) 7	———	6(DSR)
(CTS) 8	———	5(CTS)

RJ45 Serial Ports (DCE) - Straight-through

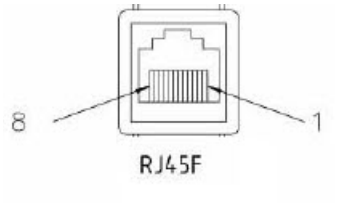
The following diagram shows the RJ45 serial port pinout (DCE) mode.



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

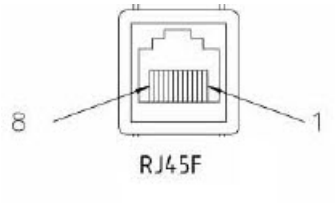
The following diagram shows the RJ45 serial pinout (DTE) mode.



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

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