Getting Started with the MRV Communications 5150 Power Control Series

Corporate Headquarters

MRV Communications, Inc. Corporate Center

20415 Nordhoff Street

Chatsworth, CA 91311

Tel: 818-773-0900

Fax: 818-773-0906

www.mrv.com (Internet)

MRV Americas Service and Support

295 Foster Street

Littleton, MA 01460

Tel: 800-435-7997

Tel: +011 978-952-4888 (Outside U.S.)

Email: service@mrv.com

MRV America Sales	**MRV International Sales**
295 Foster Street	Business Park Moerfelden
Littleton, MA 01460	Waldeckerstrasse 13
Tel: 800-338-5316 (U.S.)	64546 Moerfelden-Walldorf
Email: sales@mrv.com	Germany
	Tel: (49) 6105/2070
	Fax: (49) 6105/207-100
	Email: sales@mrv.com

451-0318D

Contents

Introduction

The MRV Communications Inc. 5150 Series family of products provides easy, practical, and secure solutions for power distribution, power management and load-measurement for remote internetworking equipment and branch AC circuits.

The **In-Reach 5150 Power Control Series** continues to support the elimination of unnecessary trips to remote locations by allowing remote control of the power on/off status for distant critical equipment, minimizing the impact of locked-up devices on mission-critical networks.

Features and Benefits

5150 Series products are available in 8-outlet and 16-outlet configurations for 100-120VAC up to 30A, and for 208-240VAC up to 30A (Continental Europe and North America). See *Standard Models* in Technical Specifications.

Power Distribution

A 5150 Series distributes a maximum of 30A AC power (dependant on 5150 Series model) across a maximum of 16 attached devices.

Remote Power Management

A 5150 Series offers individual remote control over the power on/off status to a maximum of 16 devices.

Load and Environment Measurement

The 5150's load measurement feature eliminates guesswork by supplying the cumulative operating load in amperes. This allows on-site technicians to maximize the equipment installed and operated on a circuit without worry. Use of the circuit is maximized, while effectively allowing a 10% to 20% safety margin. Remote users also may access this information at any time from the command line or control screen interface.

Power-up Sequencing

When the 5150 Series is powered on, each of the power receptacles (ports) are powered sequentially with a two-second delay between each port. Power sequencing staggers the individual loads, eliminating the potential of a blown fuse or circuit breaker due to excessive in-rush current and allows circuit support for operating load capacities of 80% to 90%. If power to the 5150 is lost and then regained, all outlets return to an ON state regardless of their state before power was lost. To change this default behavior, use the Wake-Up State if the desired outlet default state is off.

Port Grouping

When you are managing a device directly, you can have groups of multiple outlets on the same strip. When using the LX-4000 Series, outlet groups can span multiple 5150 units. Changes may then be applied to all ports in the named group with one easy command sequence.

Security

The 5150 Series ships with three predefined usernames, including an administrator. The administrator may create up to 57 additional usernames, with individualized access to ports and commands. All usernames support password protection. For configurations requiring multiple fully-privileged users, the 5150 Series allows the administrator to grant administrative privileges to other users in the system.

User Interfaces and LEDs

The 5150 Series features three types of user interfaces: the command line, the control screen, and the LX-4000 Series products. For easy port recognition, both individual ports and port groups may be assigned descriptive names for use in control commands. For the on-site technician, LEDs on the 5150 Series indicate individual port power status and cumulative power load.

Automatic Timeout

For added security, a user session will be automatically terminated after five minutes of inactivity; if a user is called away unexpectedly, an unprotected channel will not remain open indefinitely.

Safety and Compliance

Safety Precautions

This section contains important safety and regulatory information that should be reviewed before installing and using the 5150 Series. For input and output current ratings, see "Ratings" in Technical Specifications.

Only for installation and use in a Restricted Access Location in accordance with the following installation and use instructions.	*Seulement pour l'installation et l'utilisation dans une Zone Interdite conformément aux installations et l'utilisation des indications suivants.*
	Nur zur Installation und Verwendung in einem Sicherheitsbereich gemäß den folgenden Installations- und Verwendungsanleitungen.

This equipment is designed to be installed on a dedicated circuit.

Cet équipement est conçu à être installé sur un circuit spécialisé.

Diese Ausrüstung ist zur Installation in einem festen Stromkreis vorgesehen.

Dedicated circuit must have circuit breaker or fuse protection. 5150 Series products have been designed without a master circuit breaker or fuse to avoid becoming a single point of failure. It is the customer's responsibility to provide adequate protection for the dedicated power circuit. Protection should not exceed 120% of the Total Output Rating of the 5150 Series and must meet all applicable local, state and federal codes and regulations.

Le circuit spécialisé doit avoir un disjoncteur ou une protection de fusible.
Des Tours Electrique ont été conçus sans disjoncteur général ni fusible pour éviter que cela devient un seul endroit de panne. C'est la responsabilité du client de fournir une protection adéquate pour le circuit-alimentation spécialisé. La protection ne doit pas dépasser 120 % l'Indice du Total de Sortie de la Tour Electrique et doit être conforme à toutes les régulations locales, d'état et fédéral applicables.

Der feste Stromkreis muss mit einem Schutzschalter oder einem Sicherungsschutz versehen sein.
Ein 5150Series verfügt über keinen Hauptschutzschalter bzw. über keine Sicherung, damit kein einzelner Fehlerpunkt entstehen kann. Der Kunde ist dafür verantwortlich, den Stromkreis sachgemäß zu schützen. Der Schutz darf 120% der Gesamtausgangsnennleistung des 5150 Series nicht überschreiten und muss alle geltenden lokalen, regionalen und Bundesvorschriften erfüllen.

The plug on the power supply cord shall be installed near the equipment and shall be easily accessible.	*La prise sur le cordon d'alimentation sera installée près de l'équipement et sera facilement disponible.*	Der Stecker des Netzkabels muss in der Nähe der Ausrüstung installiert werden und leicht zugänglich sein.
Installation Orientation: IR-515x-xxxxV units are design to be installed in vertical orientation.	*Installation Orientation : Les unités IR-515x-xxxxV sont conçues pour être installées dans une orientation verticale.*	Installationsausrichtung: IR-515x-xxxxV -Einheiten sind zur vertikalen Installation vorgesehen.
Always disconnect the power supply cord before opening to avoid electrical shock.	*Toujours déconnecter le cordon d'alimentation avant d'ouvrir pour éviter un choque électrique.*	Ziehen Sie vor dem Öffnen immer das Netzkabel heraus, um die Gefahr eines elektrischen Schlags zu vermeiden.
WARNING! High leakage current! Earth connection is essential before connecting supply!	*ATTENTION ! Haut fuite très possible ! Une connection de masse est essentielle avant de connecter l'alimentation !*	ACHTUNG! Hoher Verluststrom! Ein Erdungsanschluss ist vor dem Einschalten der Stromzufuhr erforderlich!
Warning: 208-240/230V models only: Outlets are not fused. Outlet circuit protection is provided by the building installation, which shall not exceed 20A branch circuit protection	*Attention: les modèles 208-240/230V seulement : Les prises n'ont pas de fusible incorporé. Une protection de la prise du circuit est fournie par l'installation du bâtiment, qui ne devrait pas dépasser 20A protection d'une branche de circuit.*	Achtung: Nur für 208-240/230V-Modelle: Die Anschlussstellen sind nicht gesichert. Der Ausgangsstromkreisschutz erfolgt durch die elektrische Gebäudeinstallation, die einen Abzweigschutz von 20A nicht übersteigen darf.

Compliance

Units have been safety tested/certified to the following standards: USA and Canada to UL 60950:2000 and CAN/CSA 22.2 No. 60950-00, European Union to EN60950:2000.

USA Notification

Warning: Changes or modifications to these units not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment under FCC rules.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canadian Notification

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n 'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

Japanese Notification

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準
に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波
妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ず
るよう要求されることがあります。

Quick Start Guide

The following instructions will help you quickly install and configure your 5150 Series for use on your network. For detailed information on each step, go to the page number listed to the right.

For your network security, MRV Communications strongly recommends the changing of all predefined passwords for Control Screen and Network Access Device access prior to attachment to your network.

NOTE: When you are configuring the 5150 Series through the LX Series, you must first connect the 5150 Series to the LX-Series with a serial cable.

1. Mount the 5150 Series (page 6).

2. Connect to the power source (page 7).

3. Connect the devices to the 5150 Series (page 8).

4. Configure the 5150 Series (page 8).

    - Log as the Administrator (page 11).

    - Change passwords for all predefined users (Admn, Gen1, Gen2) (page 23).

    - Configure location, port and group naming (page 21).

    - Configure port names   (page 28).

    - Configure group names (page 30).

    - Configure new user(s) with port and display access (page 18).

5. Connect to the 5150 Series (page 8).

Installation

Before installing your 5150 Series, refer to the following lists to ensure that you have all the items shipped with the unit as well as all other items required for proper installation.

Standard Accessories

- Mounting bracket hardware:
  Vertical - two mounting brackets, two nut plates and four sets of screws and washers
  Horizontal/Rack – two mounting brackets and four screws
- RJ45 to RJ45 crossover cable
- RJ45 to DB9F serial port adapter (for connection to standard DB9M DTE serial port)
- Outlet retention clips, one per outlet (208-240V units only – not included with the 16-port horizontal unit)
- Separate power input cord (208-240V units only – 30 Amp models have a fixed cord)

Additional Required Items

- Phillip screwdriver
- Screws, washers and nuts to attach the 5150 Series to your rack
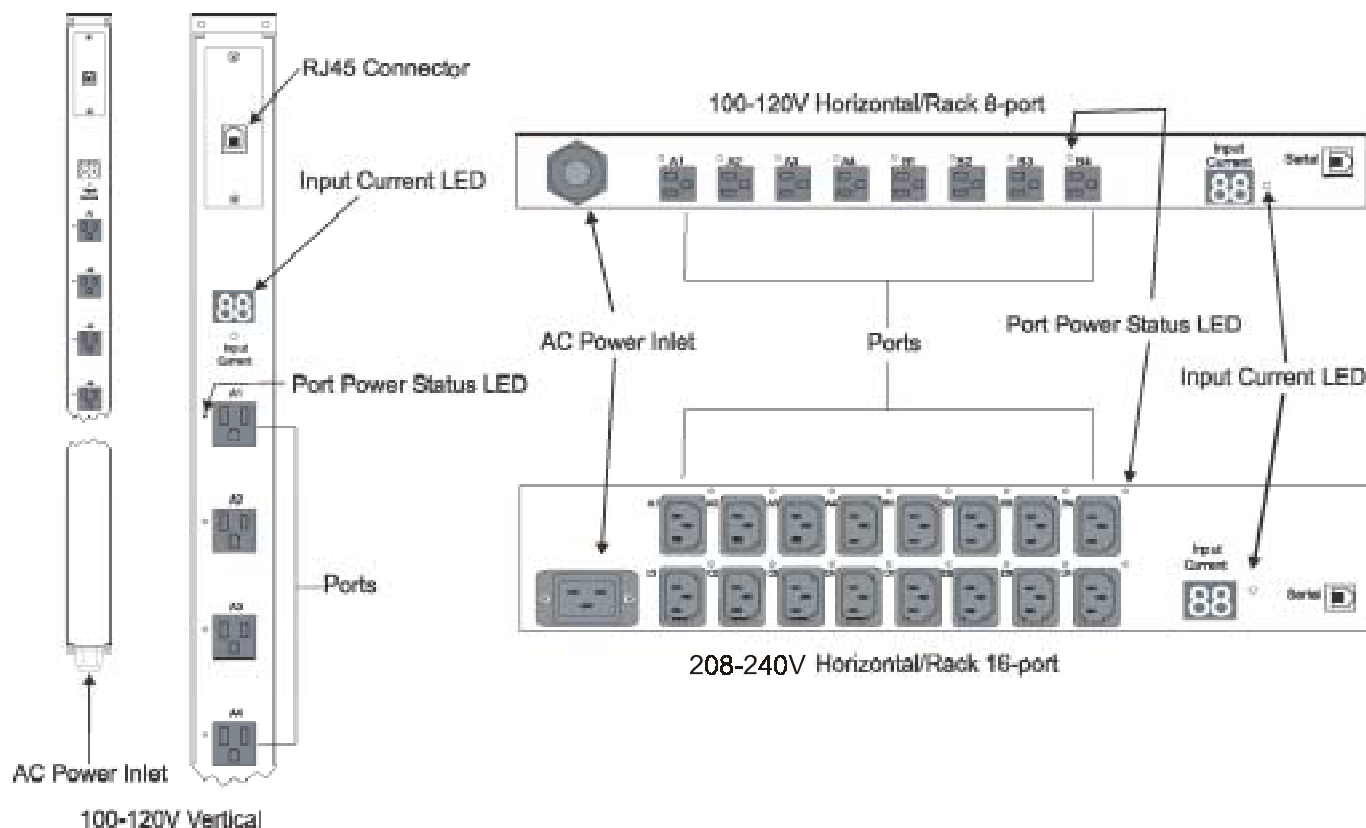
Figure 1 - 5150 Series Views

Equipment Overview

A letter/number combination is printed above each 5150 Series port. The ports are labeled A1 through A4, B1 through B4, C1 through C4, and D1 through D4. These names may be used in commands that require a port name. See "Port Naming and Grouping" for more information. The power inlet of the 5150 Series connects the 5150 Series to the electrical power source. See the Technical Specifications for more information.

Mounting

Horizontal/Rack 5150 Series

1. Select the appropriate bracket mounting points for proper mounting depth within the rack.

2. Attach one bracket to these mounting points with two screws.

3. Repeat with the other mounting bracket on the opposite side of the enclosure.

4. Install the enclosure into your rack, using the slots in each bracket. The slots allow about ¼ inch of horizontal adaptability to align with the mounting holes of your rack.

NOTE: A mounting bracket kit for 23" wide rack or cabinets is available. Contact your MRV Communications Sales Representative for more information.

Vertical/Rack 5150 Series

NOTE: If the vertical brackets are included in your accessory rack-mount kit, you must install them prior to completing the rack mount procedure. Start at step 1 to install the vertical portion of the rack mount hardware. If your 5150 model has the mounting hardware as part of the chassis, go to step 3.

1. Attach one vertical flange bracket to the top rear of the 5150 Series with two flathead screws, as shown in Figure 2.
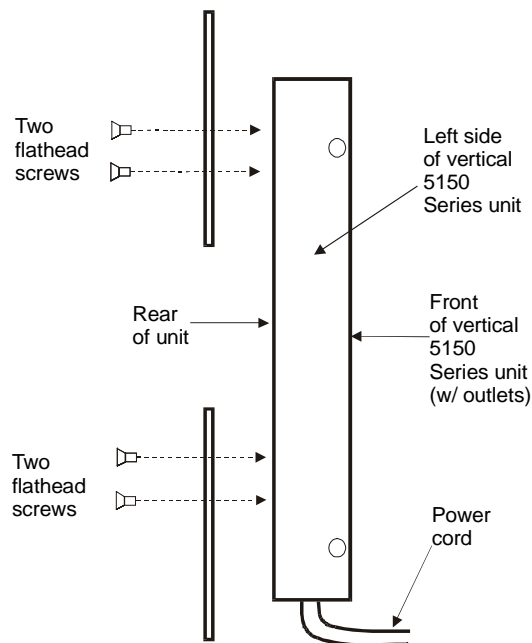
Figure 2 - Mounting the Vertical Bracket on the Vertical 5150 Series (Side View)

2. Repeat with the other vertical mounting bracket on the bottom rear of the 5150 Series.

3. *If you had to install vertical brackets (see step 1)):*

   Attach one horizontal mounting bracket to the top flange of the vertical bracket you just attached to the 5150 Series with one set of screws and washers through each of the slots in the bracket into the vertical bracket, as shown in Figure 3 (brackets may differ from the illustration).

   If you did not need to install the vertical brackets:

   Attach one horizontal mounting bracket to the existing integrated mounting holes with one set of screws and washers through each of the slots in the bracket into the nut plate, as shown in Figure 3 (brackets may differ from the illustration). The slots allow about 1½ inches of vertical adaptability.

4. Repeat with the other mounting bracket on the bottom flange of the 5150 Series.

5. Attach the top and bottom brackets to your rack.
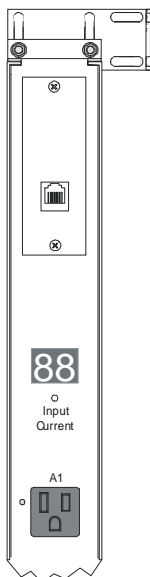
Figure 3 - Vertical 5150 Series with Horizontal Bracket

Connecting to the Power Source

On 100-120V units, the input power cord is attached to the base of the 5150 Series unit. On most 208-240V units, you must first attach the power cord to the 5150 Series unit before connecting the 5150 Series to the power source. 30 Amp models have an attached cord. Each port powers up sequentially, with a two-second delay between each port, eliminating a potential blown primary fuse or circuit breaker from excessive in-rush current.

To attach a 208 - 240V power cord to the 5150 Series unit:

1. Plug the female end of the power cord firmly into its connector at the base of the 5150 Series.

2. Use a screwdriver to tighten the two screws on the retention bracket.

To connect the 5150 Series to the power source:

Plug the male end of the 5150 Series power cord into the AC power source.

Connecting Devices to the IR-5150 Series

To avoid the possibility of noise due to arcing:

Keep the device's on/off switch in the off position until after it is plugged into the 5150 Series port.

-or-

Log in to the 5150 Series and turn the ports off before connecting the devices to the 5150 Series. After connecting the devices, turn them on using the 5150 Series.

On 110-120V units, connect devices to the 5150 Series ports.

On 208 – 240V units, install a retention clip on each port. Pull the open prongs out slightly and insert them into holes on the sides of the 5150 Series adjacent to the port. Then insert the device's power cord and gently snap the retention clip over the cord.

NOTES:

1. MRV Communications recommends even distribution of attached devices across all available outlets to avoid exceeding the outlet or quad ratings limitations. See the Ratings in the Technical Specifications for more information.

2. The outlet retention clips on the 208 – 240V 5150 Series are designed for use with MRV Communications IEC 60320/C13 to IEC 60320/C14 cable (151-3368). The retention clip may not properly fit 3rd party cables.

3. Retention clips are not used with the 16-port horizontal units.

Connecting to the 5150 Series

The 5150 Series is equipped with a single RJ45 RS-232 serial port for attachment to a PC or networked terminal server using the supplied RJ45 to RJ45 crossover cable and RJ45 to DB9F serial port adapter as required. See the Technical Specifications for more information on the RS-232 serial port.

Operations

IMPORTANT

The remaining pages in this manual up to Appendix A are relevant to you if you are configuring and managing the 5150 Series via the native CLI. However, if you are configuring and managing the 5150 Series via the LX-Series unit, refer to the *LX-Series Commands Reference Guide* for further information.

If your 5150 Series unit is to be managed via an LX-4000 Series unit, refer to the *LX Commands Reference Guide* for details on the appropriate commands. Refer to the Power Control chapter of the *LX-Series Configuration Guide* for Power Management commands when the 5150 Power Control series unit is connected to an LX unit.

Interfaces

Two management methods are available to control the IR-5150 Series products:

1. Telnet to the serial port connected to the IR-5150 and manage the product with a CLI session native to the device. Use this management method when the IR-5150 is connected to the In-Reach IR series of products.

   NOTE: Refer to *Getting Started with the MRV Communications 5150 Power Control Series* when the 5150 Power Control Series unit is connected to an IR-8000/9000 unit.

2. Manage the IR-5150 using the CLI commands or web interface found on the LX series products. Power commands on the LX are available to control the IR-5150 when the serial port connecting the IR-5150 is configured to 'Power Master'.

   NOTE: Refer to the Power Control chapter of the *LX-Series Configuration Guide* for Power Management commands when the 5150 Power Control series unit is connected to an LX unit.

The balance of this guide details how to configure and monitor the IR-5150 Series with Telnet or direct connectivity.

When a valid user logs in, the command line prompt (`In-Reach:`) appears. From this prompt, commands may be issued according to your privileges. The control screen is accessed from the command line with the Show command. You can return to the command line from the control screen by typing **c**.

You can end a IR-5150 Series session either from the command line or the control screen.

Port Naming and Grouping

When a command calls for a 5150 Series port name, you may specify it in one of two ways: a predefined absolute name or a descriptive name assigned by the administrator.

An absolute name is specified by a period (.) followed by a group letter and port number. Beginning at the top of the 5150 Series, the first four ports form group A, the next four ports form group B, the third set of four ports forms group C, and the final set of four ports forms group D. Ports within each group are numbered 1 through 4. A letter/number value is printed above each port. To specify an absolute port name, enter a period followed by the group letter and the labeled port numerical value.

Alternatively, descriptive port names may be created on the control screen and used in commands that require a port name. See "Using the Control Screen" in this chapter for more information about descriptive port names.

Additionally, 5150 Series ports may be assigned group names on the control screen, enabling you to issue a command that affects all ports in the group. Specify the group name with the command, such as on, off or reboot. See "Using the Control Screen" for more information about group names.

Usernames and Passwords

The 5150 Series has three predefined usernames, shown in the following table.

Predefined Usernames

Name	Password	Privileges
Admn	admn	Fully-privileged
Gen1	gen1	Semi-privileged
Gen2	gen2	Semi-privileged

NOTE: For security, MRV Communications recommends changing the passwords for the predefined usernames. See "Changing a Password" for more information about changing passwords.

An additional 57 users may be added.

By default, only the Admn user can perform administrative operations such as adding/deleting usernames and command privileges, changing passwords, and displaying port and user information. The Admn user may also view the status of all 5150 Series ports, access the control screen, and control power to all ports.

NOTE: By default, the Gen1 and Gen2 users can view the status of all 5150 Series ports, access the control screen, and control power to all ports. The administrator may change these privileges.

The administrator creates additional usernames with the Add User command, and then uses the Add Port command to grant these users the right to view the status of and control power to specific 5150 Series ports. The administrator uses the Set Show command to grant control screen access to additional users.

The administrator may grant administrative privileges to another user with the Admnp command. This command may also be used to remove administrative privileges previously granted. This feature allows the 5150 Series to have more than one administrator-level user.

Additional usernames must contain from 1-16 characters; spaces are not allowed. A username is not case sensitive. Passwords may contain up to 16 characters, and are case sensitive. The administrator may change a password with the Set Password command. See "Administration Commands" in this chapter for more information about commands that create and manage usernames.

NOTE: For security, when a password is typed, either blanks or asterisks appear on the screen instead of the typed password characters.

Logging In

Logging into the 5150 Series directly requires the use of a terminal or terminal emulation software. The terminal or emulation software must be configured to support ANSI or VT100, a supported data rate (300, 1200, 2400, 4800, 9600, 19200, or 38400 BPS)- 8 data bits-no parity-one stop bit and Device Ready output signal (DTR or DSR).

To log in directly to the 5150:

1. Press **Enter** twice. The following appears, where **x.x** is the firmware version:

   ```
   MRV Comm In-Reach IR-5150 Version x.x

   Username:
   ```

2. At the Username: prompt, enter a valid username and press **Enter**.

   If you do not enter a valid username within 60 seconds, the session ends with the message:

   ```
   Your time is up. Try again later

   Session ended.
   ```

3. At the Password: prompt, enter a valid password and press **Enter**.

   If you do not enter a valid password within 60 seconds, the session ends with the message:

   ```
   Your time is up. Try again later
   Session ended.
   ```

   If you enter an invalid password, the following message appears:

   ```
   Username/Password entered is NOT valid
   Username:
   ```

   You are given three attempts to enter a valid username and password combination. If all three fail, the session ends with the message:

   ```
   Username/Password entered is NOT valid
   Check your Username/Password and try again later
   Session ended.
   ```

When you enter a valid username and password, the 5150 command prompt (`In-Reach:`) appears. If a location identifier was defined, it will be displayed before the `In-Reach:` prompt. See "Creating a Location Description and Login Banner" in this chapter for more information.

Using the Command Line

You may enter commands in uppercase, lowercase or using a combination. You must enter all command characters correctly; there are no command abbreviations. The Admn user can issue any command. Other usernames may be granted access to some or all commands.

An administrator may lock one or more ports on the control screen. When a port is locked, its on/off state cannot be changed (by general or added users) from the command line or the control screen until the administrator unlocks the port. See "Using the Control Screen" for more information about locking and unlocking ports.

The command line supports two types of commands: operations and administration. In most cases, you must have administrative privileges to use the administration commands. The following tables list and briefly describe each command.

Operations Command Summary

Command	Description
ILoad	Displays the total cumulative input load
Login	Brings up the Username: prompt
Off	Turns one or more ports off
On	Turns one or more ports on
Quit	Ends a session
Reboot	Reboots one or more ports
Report	Displays available port information for current user
Show	Displays the control screen
Show CLI	Displays the CLI status
Show SCP	Displays the SCP status
Show SCPAUTH	Displays the SCPAUTH status
Show BUTTON	Displays the BUTTON status
Status	Displays the on/off status of one or more ports
Vers	Displays the In-Reach firmware version

Administrative Command Summary

Add Port	Grants a username access to one or all ports
Add User	Adds a username
Admnp	Grants or removes administrative privileges for a username
Del Port	Removes access to one or all ports for a username
Del User	Deletes a username
List Port(s)	Displays information about one or all ports
List User(s)	Displays information about one or all users
Set Banner	Enables or disables the In-Reach banner displayed at the Username: prompt
Set Location	Specifies a descriptive field for the control screen and login banner
Set Password	Changes the password for a username
Set Screen	Enables or disables confirmation for control screen operations that change port states

Set Show	Enables or disables Show command access for a username
Set CLI	Enables or disables the CLI.
Set SCP	Enables or disables SCP (Serial Command Protocol).
Set SCPAUTH	Enables or disables SCP Authentication.
Set Button	Enables or disables the reset button.

To display the names of commands that you may execute:

At the command prompt, press **Enter**. A list of valid commands for your username appears.

Operations Commands

Operations commands manage 5150 Series port states, provide information about the environment and control session operations.

For most operations commands that affect port states, you may specify multiple port names on one command line, separated by a space or a comma, to a maximum of 50 characters.

NOTE: Users must be granted access to affect any change in port state.

Turning Ports On

The On command turns on one or more ports. When the command completes, a display indicates the number of ports that were turned on and the number of ports that are locked in their current state.

To turn ports on:

At the `In-Reach:` prompt, type `on`, followed by one or more port names separated by spaces or commas, and press **Enter**.

-or -

Type `on`, followed by a group name, and press **Enter**.

-or -

Type `on all` and press **Enter**.

Examples

The following command turns the second port on, using the port 's absolute name:

    In-Reach: on port .a2<Enter>

The following command turns on all the ports in the group named ops_srv:

    In-Reach: on port ops_srv<Enter>

The group name was previously defined on the control screen.

The following command turns on ports A1 and C3, using the ports' absolute names:

    In-Reach: on ports .a1 .c3<Enter>

Turning Ports Off

The Off command turns off one or more ports. When the command completes, a display indicates the number of ports that were turned off and the ports that are locked in their current state.

To turn ports off:

At the `In-Reach:` prompt, type `off`, followed by one or more port names separated by spaces or commas, and press Enter.

-or -

Type `off`, followed by a group name, and press **Enter**.

-or -

Type `off all` and press **Enter.**

Examples

The following command turns the sixth and eighth ports off, using the ports' absolute names:

```
In-Reach: off port .b2 .b4<Enter>
```

The following command turns off the port named ops_2:

```
In-Reach: off port ops_2<Enter>
```

The port name was previously defined on the control screen.

The following command turns off all ports:

```
In-Reach: off port all<Enter>
```

Rebooting Ports

The Reboot command reboots one or more ports. This operation turns the port(s) off, delays for a period of time and then turns the port(s) on. The delay interval is 15 seconds by default, or the minimum-off time specified on the control screen, whichever is greater.

When the command completes, a display indicates the number of ports that were rebooted and the ports that are locked in their current state.

If you plan to reboot a large number of ports simultaneously by specifying all ports or a group name that is assigned to many ports, it may be beneficial to set staggered minimum-off time values among the ports. This enables you to avoid an excessive in-rush of current and possible circuit overload. See "Using the Control Screen" for information about the minimum-off time.

To reboot one or more ports:

At the `In-Reach:` prompt, type `reboot`, followed by one or more port names separated by spaces or commas, and press **Enter**.

-or -

Type `reboot`, followed by a group name, and press **Enter**.

-or -

Type `reboot all` and press **Enter**.

Examples

The following command reboots the ports named ops_2 and shp_2:

```
In-Reach: reboot ops_2 shp_2<Enter>
```

These port names were previously defined on the control screen.

The following command reboots all the ports in the group named ops_srv:

```
In-Reach: reboot ops_srv<Enter>
```

The group name was previously defined on the control screen.

The following command reboots all ports:

```
In-Reach: reboot all<Enter>
```

Displaying Port Status

The Status command displays the on/off status of one or more ports. For the three predefined usernames Admn, Gen1, and Gen2, this command can be used to display the status of all ports, including ports for which power control access is not allowed. For additional usernames, the command displays the status of only those ports for which the username has power control access.

The display indicates the number of ports that are on as well as those that are off. If you do not specify any parameter with this command, the status of all ports is displayed.

To display on/off status of one or more ports:

At the `In-Reach:` prompt, type `status`, followed by one or more port names separated by spaces or commas, and press **Enter**.

-or -

Type `status`, followed by a group name, and press **Enter**.

-or -

Type `status all` and press **Enter**.

-or -

Type `status` and press **Enter**.

Examples

The following command displays the on/off status of the port named shp_2:

```
In-Reach: status shp_2<Enter>
```

The port name was previously defined on the control screen.

The following command displays the on/off status of all ports:

```
In-Reach: status<Enter>
```

Accessing the Control Screen

The Show command displays the control screen, which contains 2 to 4 pages of information, depending on the type of 5150 Series. You may specify a page by its absolute name: .A for page 1, .B for page 2, .C for page 3 and .D for page 4. You may also use a page name defined on the control screen. If you do not specify a page name, page 1 is displayed. See "Using the Control Screen" for more information about control screen pages.

The Show command is always available to the predefined usernames Admn, Gen1 and Gen2. By default, added usernames are not allowed to use the Show command. The administrator may use the Set Show command to enable and disable Show command access for other usernames.

To access the control screen:

At the In-Reach: prompt, type show, optionally followed by a page name, and press **Enter**. If you omit a page name, the first page is displayed.

To return to the command line from the control screen, press **c**.

Displaying the Cumulative Input Load

The Iload command displays the current cumulative input load for the 5150 Series, in quarter-ampere granularity. This value is also displayed on the control screen. Additionally, the digital LED above the ports on the In-Reach indicates the total input load in half-ampere granularity to 10 amperes and whole-ampere granularity above 10 amperes.

To display the cumulative input load:

At the In-Reach: prompt, type iload and press **Enter**.

Displaying the In-Reach Firmware Version

The Vers command displays the In-Reach firmware version.

To display the firmware version:

At the In-Reach: prompt, type vers and press **Enter**.

Displaying the Available Port Information and Status

The Report command is used to display port information and status for all assigned ports for the current user.

To display available port information and status:

At the In-Reach: prompt, type report and press **Enter**.

Example

```
In-Reach: report<Enter>

Port   Port        Group       Control    Module
 ID    Name        Name        Status     Status

 .A1   Port_A1     Group_A     Lckd On    Normal
 .A2   Port_A2     Group_A     Off        Normal
 .C1                           On         Normal
```

Starting a New Session

The Login command activates the Username: prompt. The current session ends, allowing a user to log in and start a new session under a different username.

To start a new session:

At the `In-Reach:` prompt, type `login` and press **Enter**. The `Username:` prompt appears.

Ending a Session

The Quit command ends a session. You may also end the current session and immediately start a new one with the Login command. Additionally, you may end a session from the control screen by pressing **q**. A session ends automatically when no activity is detected for five minutes, or upon loss of connection to the 5150 Series.

To end a session:

At the `In-Reach:` prompt, type `quit` and press **Enter**.

Administration Commands

Administration commands include the Add, Del, List, and Set commands, plus the Admnp command. Some of these commands manage usernames and their privileges. Other administration commands affect the control screen.

Administration commands may only be issued by a user with administrative privileges, such as the predefined Admn user or another user who has been granted administrative privileges with the Admnp command.

To display a list of available Add commands:

At the `In-Reach:` prompt, type `add` and press **Enter**.

The following display appears:

```
ADD commands are:
USER PORT
```

To display a list of available Del commands:

At the `In-Reach:` prompt, type `del` and press **Enter**.

The following display appears:

```
DEL commands are:
USER PORT
```

To display a list of available List commands:

At the `In-Reach:` prompt, type `list` and press **Enter**.

The following display appears:

```
LIST commands are:
USER USERS PORT PORTS
```

To display a list of available Set commands:

At the `In-Reach:` prompt, type `set` and press **Enter**.

The following display appears:

```
SET commands are:
BANNER LOCATION PASSWORD SHOW SCREEN
```

Adding a Username

The Add User command adds a username and password. See "Usernames and Passwords" in this chapter for more information.

To add a username:

At the `In-Reach:` prompt, type `add user`, optionally followed by a 1-16 character username. Spaces and colon characters are not allowed, and usernames are not case sensitive. Press **Enter**.

If you do not specify a username, you are prompted for it (Username:).

At the Password: prompt, type a password of up to 16 alphanumeric and other typeable characters (ASCI I 32 to 126 decimal). Passwords are case sensitive. Press **Enter**. To specify no password, press **Enter** at the prompt.

At the Verify Password: prompt, retype the password. Press **Enter**. To verify no password, press **Enter** at the prompt.

Examples

The following command adds username JaneDoe:

```
In-Reach: add user JaneDoe<Enter>
Password: *****<Enter>
Verify New Password: *****<Enter>
```

For security, password characters are displayed as asterisks.

The following command adds username JohnDoe:

```
In-Reach: add user<Enter>
Username: JohnDoe<Enter>
Password: ******<Enter>
Verify Password: ******<Enter>
```

The following command adds username Sydney with no password:

```
In-Reach: add user Sydney<Enter>
Password: <Enter>
Verify Password: <Enter>
```

Granting Port Access to a Username

The Add Port command grants a username access to one or all ports.

To grant access for more than one port, but not all ports, you must use multiple Add Port commands. When the command completes successfully, the following message appears, where x indicates the number of ports:

```
x port(s)added Command Completed Successfully
```

To grant port access to a username:

At the `In-Reach:` prompt, type `add port`, optionally followed by a username and a port name. Press **Enter**.

-or -

Type `add port`, followed by a username, then `all`. Press **Enter**.

If you omit a username, you are prompted for it (Username:). If you omit a port name, you are prompted for it (Port Name:).

If you enter an invalid username or port name, the command aborts with the message:

```
0 port(s)added. Command Completed Successfully
```

Examples

The following commands use absolute port names to grant the username JaneDoe access to ports A1, A2 and C2:

```
In-Reach: add port janedoe .a1<Enter>
In-Reach: add port janedoe .a2<Enter>
In-Reach: add port janedoe .c2<Enter>
```

The following commands grant access to the same ports, but they use the ports' descriptive names that were previously defined on the control screen (ops_1, ops_2 and shp_2):

```
In-Reach: add port janedoe ops_1<Enter>
In-Reach: add port janedoe ops_2<Enter>
In-Reach: add port janedoe shp_2<Enter>
```

The following command grants access to all ports for the username JohnDoe:

```
In-Reach:  add port<Enter>
Username: johndoe<Enter>
Port Name: all<Enter>
```

Deleting Port Access for a Username

The Del Port command removes a username's access to one or all ports. You cannot remove access to any port for the Admn user. When the command completes successfully, the following message appears, where x indicates the number of ports:

```
x port(s)deleted Command Completed Successfully
```

To delete port access for a username:

At the `In-Reach:` prompt, type `del port`, optionally followed by a username and a port name. Press **Enter**.

-or -

Type `del port all`. Press **Enter**.

If you omit a username, you are prompted for it (Username:). If you omit a port name, you are prompted for it (Port Name:).

If you enter an invalid username or port name, the command aborts with the message:

```
0 port(s)deleted.  Command Completed Successfully
```

Deleting a Username

The Del User command removes a username. You cannot delete the predefined usernames Admn, Gen1 or Gen2. When the command completes successfully, the following message appears:

```
0 port(s)deleted Command Completed Successfully
```

To delete a username:

At the `In-Reach:` prompt, type `del user`, optionally followed by a username. Press **Enter**.

If you omit a username, you are prompted for it (Username:). If you enter an invalid username, the command aborts with the message:

```
Name entered is NOT valid.
```

Displaying Port Information

The List Port and List Ports commands display information about one or all ports, respectively. This information includes:

- Descriptive port name, if applicable

- Group name assigned to the port, if any

- Usernames who may access the port

When requesting information about all ports, the display begins with port A1 's information, followed by a prompt to either continue with the next port 's information or quit the display. If you choose to continue, port A2 's information is displayed, followed by a prompt to continue or quit. You may choose to quit at any time. After the information for all ports has been displayed, or after quitting, you are returned to the command prompt.

To display information about one port:

At the `In-Reach:` prompt, type `list port`, optionally followed by a port name. Press **Enter**.

If you omit a port name, you are prompted for it (Port Name:).

To display information about all ports:

At the `In-Reach:` prompt, type `list ports` and press **Enter**.

Examples

The following command requests information about port B1 by specifying its absolute port name:

```
In-Reach: list port .b1<Enter>

.B1 hr_1 hr_srv
Usernames:
ADMN GEN1 GEN2
JOHNDOE
Username List for .B1 Complete
```

The display indicates that port B1 has the descriptive name hr_1 and is in the port group named hr_srv. The usernames who may access this port are Admn, Gen1, Gen2, and JohnDoe.

The following command requests information about all ports:

```
In-Reach: list ports<Enter>

.A1 ops_1 ops_serv
Usernames:
ADMN GEN1 GEN2
JANEDOE
Username List for .A1 Complete
Press:N)ext,Q)uit:
```

The first screen of the resulting display indicates that port A1 has a descriptive port name of ops_1 and is in the port group named ops_srv. The usernames who may access port A1 are Admn, Gen1, Gen2 and JaneDoe. The page ends with a prompt to continue with the display for the next port, A2, or quit and return to the `In-Reach:` prompt.

Displaying User Information

The List User and List Users commands display information about one or all users, respectively. When requesting information about one user, the display includes a list of all ports the user may access, and whether the Show command is enabled or disabled for the user. When requesting information about all users, the display indicates whether the Show command is enabled or disabled for each user and whether each user has been given administrative privileges.

To request information about one user:

At the `In-Reach:` prompt, type `list user`, optionally followed by a username. Press **Enter**.

If you omit a username, you are prompted for it (Username:).

To request information about all users:

At the `In-Reach:` prompt, type `list users` and press **Enter**.

Examples

The following command displays information about the username JaneDoe:

```
In-Reach: list user janedoe<Enter>

Active Port List for Username JANEDOE Show command disabled
A1 ops_1 ops_srv
A2 ops_2 ops_srv
C2 shp_2
List Complete
```

The display indicates that JaneDoe may not use the Show command to access the control screen. JaneDoe may access the following ports: A1, which has a descriptive name of ops_1 and is in the port group named ops_srv, A2, which has a descriptive name of ops_2 and is in the port group named ops_srv, and C2, which has a descriptive name of shp_2.

The following command requests information about all users:

```
In-Reach: list users<Enter>

ADMN Show command enabled Administrative user
GEN1 Show command enabled
GEN2 Show command enabled
JANEDOE Show command disabled
JOHNDOE Show command enabled
List Complete
```

Creating a Location Description and Login Banner

The Set Location command specifies text that appears in the control screen's Location field. The text is also appended to a `Welcome to` banner that appears when you successfully log in.

If you do not issue this command, or if you issue this command without specifying any text, the control screen's Location field will be blank and no `Welcome to` banner is displayed.

When this command completes successfully, the following message appears:

```
All pages changed locations
```

To create a location description and login banner:

At the `In-Reach:` prompt, type `set location`, optionally followed by up to 16 characters. Spaces are allowed. Press **Enter**.

Omitting any characters after typing 'set location' deletes any previously specified text.

Examples

The following command specifies Florida HQ as the descriptive location for the control screen and the login banner:

```
In-Reach: set location Florida HQ<Enter>
```

The following command deletes any previously-specified location description:

```
In-Reach: set location<Enter>
```

In this case, the control screen 's Location field will be blank, and no welcome banner is displayed after a successful login.

Enabling and Disabling the 5150 Series Banner

The Set Banner command is used to enable or disable the 5150 Series banner displayed at the Username: prompt.

To enable or disable the 5150 Series banner:

At the `In-Reach:` prompt type `set banner`, followed by `on` or `off` and press **Enter**.

Enabling and Disabling User Access to the Control Screen

The Set Show command enables or disables a username 's access to the Show command. This determines whether the username may access the control screen.

When the command completes successfully, one of the following messages is displayed, where USERNAME is the username specified in the command:

```
Show command enabled for USERNAME
Show command disabled for USERNAME
```

To enable or disable control screen access:

At the `In-Reach:` prompt, type `set show`, optionally followed by a username and on or off. Press **Enter**.

If you do not specify a username, you are prompted for it (Username:). If you do not specify on or off, you are prompted for it (Specify ON or OFF:).

If you specify an invalid username, the command aborts with the message:

```
Name entered is NOT valid.
```

Examples

The following command enables Show command access for the user JohnDoe:

```
In-Reach: set show johndoe on<Enter>
```

The following command disables Show command access for the user JaneDoe:

```
In-Reach: set show<Enter>
Username: janedoe<Enter>
Specify ON or OFF: off<Enter>
```

Changing a Password

The Set Password command changes a username's password. To change the password for any user other than Admn, you do not need to know the current password. To change the password for the Admn user, you must know the current password.

For security, when you type a password, the characters appear as asterisks (*) on the screen. When the command completes successfully, a confirmation message is displayed. See "Usernames and Passwords" for more information.

To change a password:

At the `In-Reach:` prompt, type `set password`, optionally followed by a username and press **Enter**.

If you do not specify a username, you are prompted for it (Username:).

If you specify an invalid username, the command aborts with the message:

```
Name entered is NOT valid
```

If you are changing the password for the Admn user, the `Enter Current Password:` prompt appears. Type the current password and press **Enter**.

At the `Enter New Password:` prompt, type the new password and press **Enter**. Passwords may contain up to 16 characters, and spaces are not allowed. To specify no password, press **Enter** at the prompt.

At the `Verify New Password:` prompt, retype the new password and press **Enter**. To verify no password, press **Enter** at the prompt.

Examples

The following command changes the password for the user named JohnDoe:

```
In-Reach: set password johndoe<Enter>
Enter New Password: ******<Enter>
Verify New Password: ******<Enter>
```

For security, password characters display as asterisks.

The following command blanks the password for the user named JaneDoe:

```
In-Reach: set password<Enter>
Username: janedoe<Enter>
Enter New Password: <Enter>
Verify New Password: <Enter>
```

Enabling or Disabling Confirmation for Control Screen Operations

The Set Screen command enables or disables a confirmation query when requesting port power changes on the control screen. When the Confirm option is set, you are prompted with `Are you sure?(Y/N)` when an on, off, or reboot operation is initiated on the control screen. When the Noconfirm option is set, the requested operation is completed immediately. The default value is Noconfirm. The Set Screen setting applies to all usernames.

To enable or disable confirmation for control screen operations:

At the `In-Reach:` prompt, enter `set screen`, followed by `confirm` or `noconfirm` and press **Enter**.

If you omit the confirm/noconfirm parameter or spell it incorrectly, the command aborts with the message:

```
SET SCREEN options are
NOCONFIRM CONFIRM
```

Example

The following command enables control screen confirmation queries:

```
In-Reach: set screen confirm<Enter>
```

Granting and Removing Administrative Privileges

The Admnp command grants or removes administrative privileges for usernames other than the predefined Admn user. This command allows a 5150 Series to have more than one administrative-level user. You cannot remove administrative privileges from the Admn user.

To grant or remove administrative privileges for a username:

At the `In-Reach:` prompt, type `admnp`, followed by **on** or **off**, optionally followed by a username and press **Enter**.

If you do not specify a username, you are prompted for it (Username:).

Examples

The following command grants administrative privileges to the username JohnDoe:

```
In-Reach: admnp on johndoe<Enter>
```

The following command removes administrative privileges from the username JohnDoe:

```
In-Reach: admnp off<Enter>
Username: johndoe<Enter>
```

Advanced Security Options

NOTE: Set commands can only be executed by an administrative user.

NOTE: These options are for use with the LX Series only. Although these commands exist on the 5150 Series CLI, they are normally administered from the LX-Series unit.

When you are managing an 5150 Series with an LX-Series unit, you can take security measures to restrict access to the 5150 Series CLI. The commands in this section detail enhanced security options available on the 5150 Series.

Enabling or Disabling the Reset Button

The set button command enables or disables the reset button on the 5150 Series. You do not need to perform a restart for a change to take effect. This occurs when the CLI or SCP (Serial Command Protocol) session ends. Disabling the reset button prevents someone who can access the unit from resetting to defaults and then using usernames and passwords to reconfigure the 5150 Series. The command format is as follows:

```
SET BUTTON ENABLE/DISABLE
```

Examples
```
In-Reach: set button enable
In-Reach: set button disable
```

Enabling or Disabling the CLI

The set CLI command enables or disables the CLI. You do not need to perform a restart for a change to take effect. This occurs when the CLI or SCP session ends. The command format is as follows:

```
SET CLI ENABLE/DISABLE
```

Examples
```
In-Reach: set cli enable
In-Reach: set cli disable
```

Enabling or Disabling SCP (Serial Command Protocol)

NOTE: If SCP is disabled, you cannot communicate to the 5150 Series via an LX power access port.

The set SCP command enables or disables the SCP protocol. You do not need to perform a restart for a change to take effect. This occurs when the CLI or SCP session ends. The command format is as follows:

```
SET SCP ENABLE/DISABLE
```

Examples
```
In-Reach: set scp enable
In-Reach: set scp disable
```

Enabling or Disabling SCP Authorization

NOTE: The SCP authorization is used between the LX and the 5150 Series serial connection.

The set SCP authorization command enables or disables SCP protocol authorization. You do not need to perform a restart for a change to take effect. This occurs when the CLI or SCP session ends. The command format is as follows:

```
SET SCPAUTH ENABLE/DISABLE
```

Examples
```
In-Reach: set scpauth enable
In-Reach: set scpauth disable
```

Displaying the CLI Status

To view the CLI status, type the following command:

```
SHOW CLI
```

which displays one of the following messages:

```
CLI is enabled
```

```
CLI is disabled
```

Displaying SCP Status

To view the SCP status, type the following command:

```
SHOW SCP
```

which displays one of the following messages:

```
SCP is enabled
```

```
SCP is disabled
```

Displaying SCP Authorization Status

To view the SCP authorization status, type the following command:

```
SHOW SCPAUTH
```

which displays one of the following messages:

```
SCPAUTH is enabled
```

```
SCPAUTH is disabled
```

Displaying Reset Button Status

To view the Reset button status, type the following command:

```
SHOW BUTTON
```

which displays one of the following messages:

```
BUTTON is enabled
```

```
BUTTON is disabled
```

Using the Control Screen

The control screen contains 5150 Series configuration and status information. Figure 4 shows an example of the first page of a control screen.

```
          MRV Comm In-Reach 5150 Power Control Series      1 of 4
Location:                                    Input Load:1.00A
Port Name:        [          ] [           ] [        ] [          ]
Control Status:     (x)On        (x)On        (x)On        (x)On
                    ( )Off       ( )Off       ( )Off       ( )Off
Module Status:      Normal       Normal       Normal       Normal
Minimum-On Time:    00:00:00     00:00:00     00:00:00     00:00:00
Minimum-Off Time:   00:00:00     00:00:00     00:00:00     00:00:00
Wake-Up State:      On           On           On           On
Group:            [          ] [           ] [        ] [          ]
Access:             All          All          All          All
Page: [        ]                             Temperature: 26.0
Press: C)mnd, E)dit,N)ext, Q)uit, Space-Bar to Select
```

Figure 4- Example Control Screen

Each page contains information about four ports. Page 1 contains information about absolute ports names A1 through A4, page 2 contains information about ports B1 through B4, page 3 contains information about ports C1 through C4, and page 4 contains information about ports D1 through D4.

The Show command accesses the control screen from the command line. Use the Arrow keys on your keyboard to move the cursor from field to field. The help line at the bottom of the screen displays key commands that, when typed on your keyboard, perform specific operations. The following chart describes these keys.

Control Screen Help Line

Key	Action
C)mnd	Pressing C activates the 5150 Series command line.
E)dit	Pressing E moves the cursor to the end of the current entry in an editable field. Each press of the Backspace key erases one character. When you finish editing the field, press Enter or Tab.
N)ext	Pressing N displays the next control screen page.
P)revious	Pressing P displays the previous control screen page.
Q)uit	Pressing Q ends the session. This is equivalent to the Quit command in the command line.
Space-Bar to Select	Pressing the Spacebar toggles among preset values. You may also use the Spacebar in the Control Status rows to change a port 's state to the state of the current cursor location: On or Off. Alternatively, you may use the Plus (+) and Minus (-) keys on the numeric keypad to switch among preset values.

Some fields on the control screen are display-only and cannot be changed. Other fields may be changed by toggling among preset values or by entering text. The following sections describe each control screen field.

Location Field

The display-only Location field contains text that was specified with the Set Location command. The text in this field is also appended to a `Welcome to` banner that appears when a user successfully logs in.

Input Load Field

The display-only Input Load field indicates the current cumulative input load in amperes of all devices attached to the 5150 Series. You may also obtain this value from the command line with the Iload command, or by viewing the Input Current LED on the front of the 5150 Series.

Port Name Field

The editable Port Name field contains a descriptive name for the device connected to the port. Use this name in commands that require a port name, as an alternative to using the port 's absolute name. See "Port Naming and Grouping" for more information about port names.

To specify a port name:

Position the cursor in the relevant Port Name field.

Type `e`. If you are changing an existing name, press the **Backspace** key to erase characters. Type a 1-8 character name. Press **Enter** or **Tab**.

Control Status Field

The editable Control Status field indicates the port 's current state with a character in the On or Off field. An **x** indicates the port is accessible. An asterisk (*) indicates that the administrator has locked the port, or that the current username does not have access rights to the port.

To turn a port on or off:

Position the cursor in the port 's desired state (On or Off) and press the **Spacebar** or the **Plus** (+) key. The x will move to the new state.

To reboot a port:

Position the cursor in the port's On or Off field and press **r**. If the port is already off, it will turn on immediately. If the port is on, it will turn off, delay and then turn back on. The delay interval is either 15 seconds or the minimum-off time, whichever is greater. During the reboot delay, the Off field contains an **r**, indicating that the port is going to reboot.

Module Status Field

The display-only Module Status field indicates the port 's current status.

Module Status Field Values

Display	Description	Control Status field
Normal	The port is working correctly.	'x'
No Rspns	The interface cannot communicate with the port.	'o'
OnS Fail	The port was instructed to be on, but it is off.	'o' in On field
Off Fail	The port was instructed to be off, but it is on.	'o' in Off field

Minimum-On Time Field

The editable Minimum-On Time field indicates the minimum amount of time that a port will stay on before it can be turned off by a command. The default value is Ø. Manual commands in the control screen's On and Off fields are always immediate and ignore this value.

Minimum-Off Time Field

The editable Minimum-Off Time field indicates the minimum amount of time that a port will stay off before it can be turned on by a command. The default is Ø. Manual commands in the control screen's On or Off fields are always immediate, ignoring this value except during a reboot. During a reboot, whether initiated from the command line or the control screen, the value in this field determines the time that a port remains in the off state during the reboot cycle, if it is longer than 15 seconds.

You may use this value to stagger the startup of ports when a command is issued to reboot multiple ports at the same time. For example, setting different minimum-off time values may be useful when you issue a Reboot All command or a Reboot command for a large group.

NOTE: The wake-up power sequencing feature applies only when the entire 5150 Series unit receives power, not when the power state is changed from the command line or the control screen.

It may be important in your configuration to set the minimum-off time values differently to avoid a circuit overload caused by an excessive in-rush of current that may occur when too many devices power up simultaneously.

The following example shows one way to configure the minimum-off time values for the four ports on each control screen page:

```
Minimum-Off Time:     00:00:15   00:00:30   00:00:45   00:01:00
```

To change a port 's minimum-off time value:

Position the cursor in the port 's Minimum-Off Time field and press the **Spacebar** or the **Plus** (+) or **Minus** (-) key. Each press moves through preset values to a one hour maximum.

The preset values are: 15 seconds, 30 seconds, 45 seconds, 1 minute, 1 minute 15 seconds, 1 minute 30 seconds, 1 minute 45 seconds, 2 minutes, 3 minutes, 4 minutes, 5 minutes, 10 minutes, 15 minutes, 30 minutes and one hour.

Wake-up State Field

The editable Wake-up State field indicates the state that the port will go to, in sequence, when the 5150 Series is powered up, either during normal operation or when power is restored after an outage. The options are On and Off. The default is On. When power is first supplied to the 5150 Series, the ports are off. Shortly after the 5150 Series wakes up, the ports are sequenced on in two-second increments.

Only ports that are set with a wake-up state of Off will remain off.

To change a port 's wake-up state:

Position the cursor in the field and press the **Spacebar**, the **Plus** (+) key or the **Minus** (-) key. Each press toggles between On and Off .

Group Field

The editable Group field may contain a descriptive name. All ports with the same group name may be acted upon simultaneously with the On, Off and Reboot commands from the command line. Individual on, off and reboot commands initiated on the control screen do not affect other ports that have been assigned the same group name. Only command line actions that contain the group name parameter will cause all ports within the same group to power up, down or reboot as a group.

If you assign the same group name to a significant number of ports, consider staggering the minimum-off time values of the affected ports to help prevent an excessive in-rush load from occurring when a command is issued to reboot the group.

To specify a group name:

Position the cursor in the port's Group field.

Press **e**. If you are changing an existing name, press the **Backspace** key to erase characters. Type a 1-8 character name. Press **Enter** or **Tab**.

Access Field

The editable Access field allows the administrator to easily change port access for the usernames Admn, Gen1 and Gen2. Port access for additional usernames must be enabled with the Add Port command from the command line.

To change port access for the Admn, Gen1 or Gen2 usernames:

1. Position the cursor in the port 's Access field.

2. Use the **Spacebar**, the **Plus** (+) key or the **Minus** (-) key to switch among the preset options:
    All -grants port access to Admn, Gen1 and Gen2 (this is the default).
    Admn -grants port access to Admn.
    Gen1 -grants port access to Admn and Gen1.
    Gen2 -grants port access to Admn and Gen2.

Page Field

The editable Page field may contain a name for the current control screen page. When you want to display a specific page of the control screen, you may use this page name as a parameter in the Show command, or you may specify a page with its absolute name: .A for page 1, .B for page 2, .C for page 3, .D for page 4 etc.

To specify a page name:

1. Position the cursor in the Page field.

2. Press **e**. If you are changing an existing name, use the **Spacebar** to erase characters. Type a 1-8 character string. Press **Enter** or **Tab**.

Temperature Field

Environmental temperature monitoring is not currently available on the 5150 Series.

Ending a Session

You may end a session from the command line or the control screen.

If you made configuration changes during the session, they are automatically stored in non-volatile memory. After you end the session, wait for the following message before taking any action that will power down the In-Reach:

```
Updating configuration memory ...
Update complete
Session ended
```

A session ends automatically after five minutes of inactivity.

To end a session:

From the In-Reach: prompt, type quit and press **Enter**.

-or -

From the control screen, press **q**.

Appendix A - Resetting to Factory Defaults

You may reset the non-volatile RAM that stores all configurable 5150 Series options. This clears all administrator-editable fields on the control screen and resets all command line configurable options to their default values, including usernames and passwords.

You may reset the 5150 Series to factory defaults by issuing a command or by pressing the reset button. You must have administrator-level privileges to issue the command. Using the reset button may be necessary when a forgotten password prevents administrator login. Either method updates the current working configuration to the factory defaults.

To reset the 5150 Series to factory defaults from the command line:

At the `In-Reach:` prompt, type `set cnfg all factory` and press **Enter**.

When the command completes successfully, the following message appears, where **n** is the total number of ports divided by 4:

```
Config changed on n board(s), 0 ignore(s).
```

At the `In-Reach`: prompt, type `quit` to write the configuration permanently.

To reset the 5150 Series to factory defaults using the reset button:

On the front of the 5150 Series, locate the recessed reset button directly below the Input Current LED. You will need a non-conductive, non-metallic tool that fits inside the recess.

Insert the tool in the recess, then depress and hold the reset button for at least five seconds. When you first press the reset button, the Input Current LED changes to two side-by-side horizontal lines in the middle of the display. Continuing to press the reset button for five seconds begins the reset, which is indicated by three side-by-side pairs of horizontal lines in the top, middle and bottom of the display. At this point, you may release the reset button. When the reset completes, the LED returns to displaying the cumulative input load.

Appendix B - Technical Specifications

Standard Models

Vertical Installation

Model	Voltage	Inlet	Cordset (10')	Outlets
IR-5150-1108V	100-120V, 50/60Hz	Hardwired	NEMA 5-15P, 15A/125V straight	8 NEMA 5-15R
IR-5150-2108V	100-120V, 50/60Hz	Hardwired	NEMA 5-20P, 20A/125V straight	8 NEMA 5-15R
IR-5150-2108VL	100-120V, 50/60Hz	Hardwired	NEMA L5-20P, 20A/125V locking	8 NEMA 5-15R
IR-5150-3108VL	100-120V, 50/60Hz	Hardwired	NEMA L5-30P, 30A/125V locking	8 NEMA 5-15R
IR-5150-1116V	100-120V, 50/60Hz	Hardwired	NEMA 5-15P, 15A/125V straight	16 NEMA 5-15R
IR-5150-2116V	100-120V, 50/60Hz	Hardwired	NEMA 5-20P, 20A/125V straight	16 NEMA 5-15R
IR-5150-2116VL	100-120V, 50/60Hz	Hardwired	NEMA L5-20P, 20A/125V locking	16 NEMA 5-15R
IR-5150-3116VL	100-120V, 50/60Hz	Hardwired	NEMA L5-30P, 30A/125V locking	16 NEMA 5-15R
IR-5152-2108VL	208-240v, 20A TL North American feed	IEC 60320/C20	NEMA L5-20P, 20A/240V locking	8 IEC 60320/C13
IR-5152-3108VL	208-240v, 30A TL North American feed	Hardwired	NEMA L6-30P, 30A/240V locking	8 IEC 60320/C13
IR-5152-2116VL	208-240v, 20A TL North American feed	IEC 60320/C20	NEMA L5-20P, 20A/240V locking	16 IEC 60320/C13
IR-5152-3116VL	208-240v, 30A TL North American feed	Hardwired	NEMA L6-30P, 30A/240V locking	16 IEC 60320/C13
IR-5152-1108V	208-240V, 50/60Hz	IEC 60320/C20	*	8 IEC 60320/C13
IR-5152-1116V	208-240V, 50/60Hz	IEC 60320/C20	*	16 IEC 60320/C13

Horizontal/Rack Installation

Model*	Voltage	Inlet	Cordset	Outlets
IR-5150-1108H	100-120V, 50/60Hz	Hardwired	NEMA 5-15P, 15A/125V straight	8 NEMA 5-15R
IR-5150-2108H	100-120V, 50/60Hz	Hardwired	NEMA 5-20P, 20A/125V straight	8 NEMA 5-15R
IR-5150-2108HL	100-120V, 50/60Hz	Hardwired	NEMA L5-20P, 20A/125V locking	8 NEMA 5-15R
IR-5150-3108HL	100-120V, 50/60Hz	Hardwired	NEMA L5-30P, 30A/125V locking	8 NEMA 5-15R
IR-5150-1116H	100-120V, 50/60Hz	Hardwired	NEMA 5-15P, 15A/125V straight	16 NEMA 5-15R
IR-5150-2116H	100-120V, 50/60Hz	Hardwired	NEMA 5-20P, 20A/125V straight	16 NEMA 5-15R
IR-5150-2116HL	100-120V, 50/60Hz	Hardwired	NEMA L5-20P, 20A/125V locking	16 NEMA 5-15R
IR-5150-3116HL	100-120V, 50/60Hz	Hardwired	NEMA L5-30P, 30A/125V locking	16 NEMA 5-15R
IR-5152-2108HL	208-240v, 20A TL North American feed	IEC 60320/C20	NEMA L5-20P, 20A/240V locking	8 IEC 60320/C13
IR-5152-3108HL	208-240v, 30A TL North American feed	Hardwired	NEMA L6-30P, 30A/240V locking	8 IEC 60320/C13
IR-5152-2116HL	208-240v, 20A TL North American feed	IEC 60320/C20	NEMA L5-20P, 20A/240V locking	16 IEC 60320/C13
IR-5152-3116HL	208-240v, 30A TL North American feed	Hardwired	NEMA L6-30P, 30A/240V locking	16 IEC 60320/C13
IR-5152-1108H	208-240V, 50/60Hz	IEC 60320/C20	*	8 IEC 60320/C13
IR-5152-1116H	208-240V, 50/60Hz	IEC 60320/C20	*	16 IEC 60320/C13

* IEC 60320/C19 to CEE7/7 Schuko for use in continental Europe.

Ratings

5150 Series Power Ratings

IR-515x-xxxxV*

* IR – In Reach

515x – Model

5150 = (100-120V)

5152 = (208-240V)

xxxx – last four digits

1st digit –

1 – current rating 15/16 Amps

2 – current rating 20 Amps

3 – current rating 30 Amps

2nd digit – 1 – number of input feeds (1)

3rd digit – 08 = 8 outlets, 16 = 16 outlets

4th digit – V = '0' U – Vertical, H = 1 or 2

U horizontal

5th digit – L = Locking Power

N/A = Not present

Available Configurations *Configurations Disponibles* Verfugbare Konfigurationen [4]								
	Input Current Ratings [1,2] L'indice du courant d'entrée Eingangsstromstarke		**Output Current Ratings** L'indice du courant de sortie Ausgangsstromstarke					
Number of Outlets *Nombre de prises* Anzahl der Anschussstellen	**Voltage** *Tension* Spannung	**Current** *Courrant* Strom	**Outlet** *Prise* Ansclussstelle	**Quad** [3]				**Total** *Total* Insgesamt
				A	**B**	**C**	**D**	
08	100-120V 50/60Hz	15	10	15	15			15
08	100-120V 50/60Hz	20	10	15	15			20
08	100-120V 50/60Hz	30	10	15	15			30
16	100-120V 50/60Hz	15	10	15	15	15	15	15
16	100-120V 50/60Hz	20	10	15	15	15	15	20
16	100-120V 50/60Hz	30	10	15	15	15	15	30
08	208-240V 50/60Hz	20	6	10	10			20
16	208-240V 50/60Hz	20	6	10	10	10	10	20
08	208-240V 50/60Hz	30	6	10	10			30
16	208-240V 50/60Hz	30	6	10	10	10	10	30
08	208-240V 50/60Hz	16	6	10	10			16
16	208-240V 50/60Hz	16	6	10	10	10	10	16

[1] All current ratings are in amperes.

Tous les indices de courant sont en amperes.

Alle Angaben der Stromstarke erfolgen in Ampere.

[2] Input current ratings are based on the power input configuration.

Les indices du courant d'entrée sont bases sur la configuration de tension d'entrée.

Die Eingangsstromstarke hangt von der Eingangkonfiguration ab.

[3] A=A1+A2+A3+A4, B=B1+B2+B3+B4, C=C1+C2+C3+C4, D=D1+D2+D3+D4.

[4] **The following configurations are NOT available:**

100-120V units with 16A input current rating.

208-240V and 230V units with 15A input current rating.

Les configurations suivantes NE SONT PAS disponible:

Unites de 100-120V avec indice de courant d'entrée de 16A.

Unites de 208-240V et 230V avec indice de courant d'entrée de 15A.

Die folgenden Konfigurationen sind NICHT verfugbar:

100-120V-Einheiten mit einer Eingangsstromstarke von 16A

208-240V und 230V-Einheiten mit einer Eingangsstromstarke von 15A

Data Connection

RS-232 Serial Port

The 5150 Series is equipped standard with an RJ45 RS-232c serial port. This connector may be used for direct local access or from other serial devices such as an LX-4000 Series. An RJ45 crossover cable is provided for connection to an RJ45 DTE serial port.
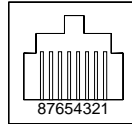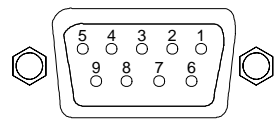

RS-232 Serial Port

Pin	DTE Signal Name		Input/Output
1	Request to Send	RTS	Output
2	Data Terminal Ready	DTR	Output
3	Transmit Data	TD	Output
4	Signal Ground		
5	Signal Ground		
6	Receive Data	RD	Input
7	Data Set Ready	DSR	Input
8	Clear to Send	CTS	Input

RJ45 to DB9F Serial Port Adapter

Additionally, an RJ45 to DB9F serial port adapter is provided for use in conjunction with the RJ45 crossover cable to connect to a PC DB9M DTE serial port. The adapter pinouts below reflect use of the adapter with the provided RJ45 crossover cable.

RJ45 to DB9F Serial Port Adapter

Pin	DCE Signal Name		Input/Output
1			
2	Receive Data	RD	Output
3	Transmit Data	TD	Input
4	Data Terminal Ready	DTR	Input
5	Signal Ground		
6	Data Set Ready	DSR	Output
7	Request to Send	RTS	Input
8	Clear to Send	CTS	Output

LED Indicators

The 5150 Series is equipped with a status LED for each power receptacle.   A lit/on LED indicates that power is being supplied at the port and a darkened/off LED indicates that there is no power at the port.

INDEX