

WTI Part No. 14073  
Rev. A

# DCM-8R4 Series

Remote Site Manager with Power Control

**Models Covered:**

DCM-8R4-1  
DCM-8R4-2

## User's Guide





## Warnings and Cautions: Installation Instructions



### Secure Racking

If Secure Racked units are installed in a closed or multi-unit rack assembly, they may require further evaluation by Certification Agencies. The following items must be considered.

1. The ambient within the rack may be greater than room ambient. Installation should be such that the amount of air flow required for safe operation is not compromised. The maximum temperature for the equipment in this environment is 45°C. Consideration should be given to the maximum rated ambient.
2. Installation should be such that a hazardous stability condition is not achieved due to uneven loading.

### Input Supply

Check nameplate ratings to assure there is no overloading of supply circuits that could have an effect on overcurrent protection and supply wiring.

### Grounding

Reliable earthing of this equipment must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than direct connections to the branch circuit.

### No Serviceable Parts Inside; Authorized Service Personnel Only

Do not attempt to repair or service this device yourself. Internal components must be serviced by authorized personnel only.

- **Shock Hazard - Do Not Enter**

### Disconnect Power

If any of the following events are noted, immediately disconnect the unit from the outlet and contact qualified service personnel:

1. If the power cord becomes frayed or damaged.
2. If liquid has been spilled into the device or if the device has been exposed to rain or water.

### Disconnect Power Before Servicing

Before attempting to service or remove this unit, please make certain to disconnect the power supply cable from the power source.

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# 1. Introduction

The DCM-8R4 Console Management + Power Control Switch, is designed for remote management installations where rack space is precious and only a few network elements are on site. The DCM-8R4 combines eight RS232 Console ports with four power reboot outlets and an internal 33.6Kbps Modem all in one package. The DCM-8R4 provides remote access to RS232 console ports and maintenance ports on servers, routers and other equipment, and also allows control of power switching and reboot operations. System Administrators can access remote devices in order to change configuration parameters, connect users to restricted ports, collect buffered data, and perform Power On/Off/Reboot operations and a variety of other administrative functions.

## **Security Features and Co-Location Features**

In order to protect access to sensitive configuration and operation features, the DCM-8R4 provides two different levels of password security; the Supervisor and the Non-Supervisor Level. The Supervisor Level allows access to all configuration and switching functions, and the Non-Supervisor Level only allows access to assigned plugs and ports, and cannot be used to change unit configuration.

In addition to password security features, the DCM-8R4 also includes an Invalid Access Lockout feature, which can automatically lock ports if the unit detects a series of invalid attempts to enter command mode.

## **Easy to Configure, Easy to Use**

The DCM-8R4 can be configured and operated via modem or locally via serial port. Simple, user friendly-commands allow you to assign unit parameters, view status, and initiate port connections and power switching operations. Outlets and serial ports can be addressed by number or by user-defined names.

## **DCM-8R4-1 and DCM-8R4-2 Models**

This User's Guide discusses the both the DCM-8R4-1 and the DCM-8R4-2 models. Throughout this User's Guide, both models are referred to as the "DCM-8R4". The only difference between the two models is that the DCM-8R4-1 is designed for 100 to 120 VAC power operation, and the DCM-8R4-2 is designed for 100 to 240 VAC power operation. All other features function identically.

## Typographic Conventions

Throughout this manual, typefaces and characters have been used to denote the following:

**COURIER FONT** Indicates characters typed on the keyboard.  
For example, /**ON** 3 or /**OFF** 4.

**[Bold Font]** Text set in bold face and enclosed in square brackets indicates a specific key. For example, **[Enter]** or **[Esc]**.

## 2. Unit Description

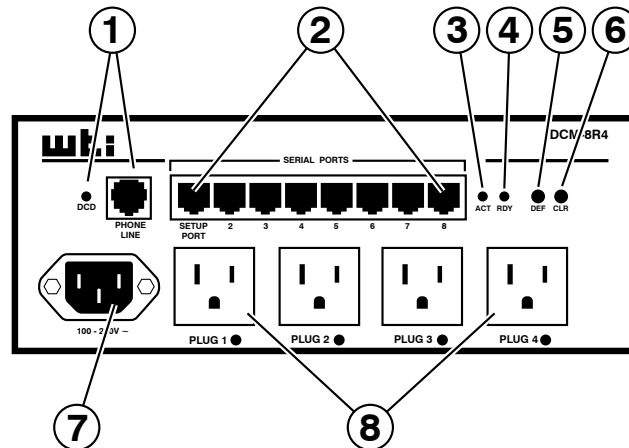


Figure 2.1: Front Panel - Model DCM-8R4-1 Shown (120 VAC)

As shown in Figure 2.1, the DCM-8R4 front panel includes the following components:

- ① **Phone Line Port (Internal Modem Port) and DCD Indicator:** For connection to your phone line. The DCD Indicator will light when the Data Carrier Detect signal is present. For information regarding modem configuration, please refer to Section 5.7.1.
- ② **Serial RS232 Ports:** For connection to console ports on target devices. Standard RJ45 connectors configured as DTE ports, similar to a serial port on a PC. When connecting a modem, use a standard serial cable. When connecting a PC or other DTE device use a null modem cable.

### Notes:

- *Ports 1 is a System Setup Port. In order to ensure local access by system administrators, Supervisor Level command capability cannot be disabled at Port 1, and the Port Mode cannot be set to "Buffer" or "Passive".*
  - *Port 2 can also be used as a Setup Port, providing that the Port Mode is set to Any-to-Any and the Supervisor Mode is enabled.*
- ③ **Activity Indicator:** An LED which lights to indicate data activity at any of the Serial RS232 Ports.
  - ④ **RDY Indicator:** (Ready) Flashes when the unit is ready to receive commands.



- ⑤ **DEF Button:** The Set Button has two functions; it can either be used as a manual On/Off switch for the DCM-8R4's four switched outlets, or it can also be used to initialize the unit to default parameters.
  - **Manual Switching:** To manually switch the outlets Off or On, press and hold the DEF Button for approximately five seconds. Note that the Manual Switching function can also be disabled as described in Section 5.6.
  - **Initialization:** To initialize the unit to default parameters, press and hold both the DEF and CLR buttons, wait for the RDY LED to stop blinking and remain lit, and then release both buttons.

**Notes:**

- *During initialization, the RDY LED will stop blinking and remain lit.*
  - *When the initialization procedure is performed, all command selected parameters will be cleared, and the DCM-8R4 will revert to default parameters.*
  - *After initialization, all plugs will reboot.*
- ⑥ **CLR (Clear) Button:** Restarts the DCM-8R4 operating program without changing user-selected parameters, breaking port connections, or changing plug status. To restart the DCM, press and hold the CLR button until the RDY LED stops blinking and remains lit.
  - ⑦ **Power Inlet:** An AC inlet which supplies power to the DCM-8R4. Includes cable keeper (not shown.)
    - **Model DCM-8R4-1 (120 VAC):** IEC-320-C14, 100 - 120 VAC Power Inlet.
    - **Model DCM-8R4-2 (240 VAC):** IEC-320-C14, 208 - 240 VAC Power Inlet.
  - ⑧ **Switched Plugs and Plug Indicators:** Four AC Outlets that can be switched On, Off, Rebooted or set to user-defined Default values in response to user commands.
    - **Model DCM-8R4-1:** Four 100-120 VAC, NEMA 5-15 Outlets with indicator lights. 15 Amps Total Load.
    - **Model DCM-8R4-2:** Four 208-240 VAC, IEC-320-C13 Outlets with indicator lights. 10 Amps Total Load.

## 3. Getting Started

This section describes a simplified installation procedure for the DCM-8R4 hardware, which will allow you to communicate with the unit in order to demonstrate basic features and check for proper operation.

Note that this Quick Start Guide does not provide a detailed description of unit configuration, or discuss advanced operating features in detail. For more information, please refer to the remainder of this User's Guide.

### 3.1. Hardware Installation

#### 3.1.1. Apply Power to the DCM-8R4

Connect the power supply cable to the unit's power inlet and then snap the Cable Keeper into place.

Refer to the safety precautions listed at the beginning of this User's Guide and to the power rating nameplate on the DCM unit, and then connect the unit to an appropriate power source. The table below also lists information concerning power requirements for DCM-8R4 units.

Model No.	Total Outlets	Input Voltage	Input Feed	Max. Load
DCM-8R4-1	4	100 to 120 VAC	15 Amp	12 Amps*
DCM-8R4-2	4	100 to 240 VAC	10 Amp	10 Amps

\* In accordance with UL requirements for branch circuits, this value has been de-rated to 80%.

When power is applied to the DCM-8R4, the RDY LED on the instrument front panel should light, and then begin to flash within about 90 seconds, indicating that the unit is ready to receive commands. In addition, the four switched outlets will also be switched to their default On/Off positions (the factory default setting for all four plugs is "On.")

#### 3.1.2. Connect your PC to the DCM-8R4

The DCM-8R4 can either be controlled by a local PC Serial Port or controlled via modem. In order to select parameters, connect ports or control outlets, commands are issued to the DCM-8R4 via either the Modem Port or a Serial RS232 Port.

- **Serial Port:** Use the supplied null modem cable to connect your PC COM port to Serial Port 1 (The System Setup Port.)
- **Modem:** Connect your telephone line to the DCM-8R4 Phone Line Port.

### 3.2. Communicating with the DCM-8R4

The DCM-8R4 command interface consists of a series of ASCII text menus, which may be accessed via Local PC or modem.

**Note:** *When the unit is shipped from the factory, communications parameters are set as follows: 9600 bps, RTS/CTS Handshaking, 8 Data Bits, One Stop Bit, No Parity. Although the DCM-8R4 allows these parameters to be easily redefined, for this Quick Start procedure, it is recommended to configure your communications program to accept the default parameters.*

1. **Access Command Mode:** Connect to the DCM-8R4 via a local connection to a Serial Port or via Modem:
  - a) **Via Local PC:** Start your communications program and press **[Enter]**.
  - b) **Via Modem:** Use your communications program to dial the number for the line that is connected to the DCM-8R4 Phone Line Port.
2. **Password Prompt:** Normally at this point, no user accounts have been defined yet, so if the password prompt is displayed, you can simply press **[Enter]** to bypass the prompt. However, if you have previously defined one or more passwords, enter the password and then press **[Enter]**. The Status Screen will be displayed, followed by the DCM command prompt.

### 3.3. Connecting Ports and Switching Outlets

Proceed as follows to connect ports and switch outlets:

1. **Review the Help Menu:** At the command prompt, type **/H** and press **[Enter]** to display the Help Menu, which provides a basic listing of all available DCM-8R4 commands.
2. **Creating Connections Between Ports:** The DCM-8R4 can perform two different types of port connections; Resident Connections and Third Party Connections:
  - a) **Resident Connection:** Your resident port issues a **/C** command to connect to a second port.
    - i. To connect your resident port to Port 3, type **/C 3 [Enter]**. While you are connected to Port 3, the unit will not recognize additional commands issued via your resident port. However, the unit will recognize a Resident Disconnect Sequence issued at either connected port.
    - ii. Issue the Resident Disconnect Sequence (Logoff Sequence) to disconnect your port from Port 3; type **^x** (press **[Ctrl]** and **[X]** at the same time).

- b) **Third Party Connection:** Your resident port issues a /C command to create a connection between two other ports.
  - i. To connect Port 3 to Port 4, type /c 3 4 [Enter].
  - ii. While Ports 3 and 4 are connected, your resident port will still recognize commands. Type /s [Enter] to display the Status Screen. The "STATUS" column should now list Ports 3 and 4 as connected and the other ports as "Free".
  - iii. Issue a Third Party Disconnect command; type /D 3 [Enter]. The unit will display the "Are you Sure (y/n)?" prompt. Type y and press [Enter] to disconnect.
  - iv. Type /s [Enter] to display the Status Screen. The "STATUS" column should now list Ports 3 and 4 as "Free".
3. **Controlling Outlets:** You may wish to perform the following tests in order to make certain that the switched outlets are functioning properly.
  - a) **Reboot Outlet:** At the command prompt, type /BOOT 1 and press [Enter]. The unit will display the "Are you Sure (y/n)?" prompt. Type y and press [Enter] to reboot Plug 1. The status indicator for Plug 1 should go Off, pause for a moment and then go back On, indicating that the boot cycle has been successfully completed.
  - b) **Switch Outlet Off:** At the command prompt, type /OFF 1 and then press [Enter]. The unit will display the "Are you Sure (y/n)?" prompt. Type y and press [Enter] to switch Plug 1 Off. The status indicator for Plug 1 should go Off, indicating that the command has been successfully completed. Leave Plug 1 in the "Off" state, and then proceed to the next step.
  - c) **Switch Outlet On:** At the command prompt, type /ON 1 and press [Enter]. The unit will display the "Are you Sure (y/n)?" prompt. Type y and press [Enter] to switch Plug 1 On. The status indicator for Plug 1 should then go back On, indicating that the command has been successfully completed.
4. **Exit Command Mode:** To exit command mode, type /x and press [Enter]. When the "Sure" prompt is displayed, type y and press [Enter].

This completes the Quick Start instructions for the DCM-8R4. Prior to placing the unit into operation, it is recommended to refer to the remainder of this user's guide for important information regarding advanced configuration capabilities and more detailed operation instructions.

## 4. Hardware Installation

This Section provides further details regarding installation of the DCM-8R4.

### 4.1. Power Supply Connection

#### 4.1.1. Installing the Power Supply Cable Keeper

The DCM-8R4 includes a cable keeper, which is designed to prevent the power supply cable from being accidentally disconnected from the unit.

When attaching the power supply cable to the unit, first swing the cable keeper out of the way, then plug the power cable securely into the power input. When the cable is in place, snap the cable keeper over the plug to secure the cable to the unit.

#### 4.1.2. Connect the DCM-8R4 to Your Power Supply

Refer to the cautions listed below and at the beginning of this User's Guide, and then connect the DCM-8R4 unit to an appropriate power supply.



#### CAUTIONS:



- ***Before attempting to install this unit, please review the warnings and cautions listed at the front of the user's guide.***
- ***This device should only be operated with the type of power source indicated on the instrument nameplate. If you are not sure of the type of power service available, please contact your local power company.***
- ***Reliable earthing (grounding) of this unit must be maintained. Particular attention should be given to supply connections when connecting to power strips, rather than directly to the branch circuit.***

When power is applied to the DCM-8R4, the RDY LED on the instrument front panel should light, and then begin to flash within about 90 seconds, indicating that the unit is ready to receive commands. In addition, the four switched outlets will also be switched to their default On/Off positions (the factory default setting for all four plugs is "On.")

## 4.2. Connecting Control Devices to the DCM-8R4

The DCM-8R4 can be controlled and configured via local serial connection, or controlled remotely via modem.

### 4.2.1. Control via Local PC

Use the supplied null modem cable to connect your PC COM port to the DCM-8R4's RS232 System Setup Port (Port 1.) The System Setup Port is a female RS232 format RJ45 connector, wired in a DCE configuration. In the default state, the System Setup Port is configured for 9600 bps, no parity, 8 data bits, 1 stop bit. For a description of the serial port interface, please refer to Appendix A.

### 4.2.2. Control via Modem

If you wish to use the DCM-8R4's internal modem to contact the unit, connect an RJ11 phone line to the Internal Modem port, located on the DCM-8R4 back panel. For information on Modem Port configuration, please refer to Section 5.8. Note that an external modem can also be connected to the DCM-8R4 serial ports as described in Appendix B.

## 4.3. Connecting Devices to the Switched Outlets

Connect the power cord from your switched device to one of the AC Outlets located on the DCM-8R4 back panel. Note that when power is applied to the DCM-8R4, the AC Outlets will be switched "ON" by default.

Maximum power ratings are summarized in the table below:

Model No.	Total Outlets	Input Voltage	Input Feed	Maximum Load
DCM-8R4-1	4	100 to 120 VAC	15 Amp	12 Amps*
DCM-8R4-2	4	100 to 240 VAC	10 Amp	10 Amps

\* In accordance with UL requirements for branch circuits, this value has been de-rated to 80%.

#### 4.4. Connecting Other Devices to the DCM-8R4 Serial Ports

The DCM-8R4 serial ports are female RS232 format RJ45 connectors, wired in a DCE configuration. In the default state, the serial ports are configured for 9600 bps, no parity, 8 data bits, 1 stop bit. For a description of the serial port interface, please refer to Appendix A.

When properly configured, the serial ports can be connected to almost any device that includes an RS232 console port. In addition, the serial ports can also be used to allow local users to configure and control the DCM-8R4 unit; Ports 1 is designated as a "Set Up Port", and accordingly cannot be reconfigured as a buffer mode or passive mode port in order to ensure the port's availability for local communication with the DCM-8R4.

1. Determine which DCM-8R4 serial port will be used for connection to the new device (e.g. Port 3).
2. Use an Ethernet Cable and RJ45 to DB9 Adapter to connect the COM port on your PC to Serial Port 1 on the DCM-8R4 unit.
  - a) To connect external modems, router switches, or other DTE and DCE devices to the DCM-8R4 serial ports, please refer to Appendix B for information regarding cables and adapters.
3. Access the DCM-8R4 command mode and select communication parameters for each serial port as described in Section 5.7.

This completes the DCM-8R4 installation instructions. Please proceed to the next Section for instructions regarding basic unit configuration.

## 5. Configuration

### 5.1. Supervisor Mode and Non-Supervisor Mode

In order to restrict access to sensitive command functions, the DCM-8R4 features two operating modes; Supervisor Mode and Non-Supervisor Mode.

- **Supervisor Mode:** Allows access to all configuration menus, switching functions and status screens. The Supervisor Mode status screens show On/Off conditions for all serial ports and switched outlets, and list all currently defined system parameters.
- **Non-Supervisor Mode:** Allows access to port connection, switching and reboot commands, but does not allow access to configuration functions. Non-Supervisors may only issue commands to, or view status of the ports and plugs that are specifically allowed by their password/account.

The DCM-8R4 will display a password prompt when the unit is contacted via Serial Port or Modem. The password entered at this prompt determines whether the unit will start-up in Supervisor Mode or Non-Supervisor Mode. If the password allows access to Supervisor Mode, then the Supervisor Mode will be active. If the password does not permit access to Supervisor Mode, then the Non-Supervisor Mode will be active. The process of defining passwords and granting Supervisor rights is discussed in Section 5.4 and Section 5.6.1.

#### **Notes:**

- *If you wish to restrict access to configuration menus, you must create at least one password that permits access to Supervisor Mode.*
- *If you do not create at least one password that permits access to Supervisor Level commands, then the DCM-8R4 will always start-up in Supervisor Mode, allowing unprotected access to configuration and switching functions.*
- *If you do not create at least one password that permits Supervisor Level commands, then the Password Prompt will not be displayed when you access the DCM-8R4 command mode.*



## 5.2. Communicating with the DCM-8R4

In order to configure the unit or invoke command functions, you must first connect to the DCM-8R4 and access command mode. The command mode can be accessed via modem or local PC. In order to access the command mode, your installation must include the following:

- **Access Via Modem:** A phone line must be connected to the DCM-8R4's Modem Port. Your PC Must include a communications program (such as TeraTerm or Hyperterminal™.)
- **Access Via Local PC:** Your local PC must be connected to a DCM-8R4 RS232 Serial Port. The local PC must include a communications program (such as TeraTerm or Hyperterminal™.)

To access command mode, proceed as follows:

1. The DCM-8R4 is transparent to parity and will accept 7 or 8 bit characters, but will always answer back at 8 bits, no parity. Make certain your communication program is set for the appropriate baud rate, bits, parity and Communications Port.
  - a) **Via Modem:** Start your communications program. Dial the number for the line connected to the DCM-8R4's Phone Line port. Wait for the Connect message, then proceed to Step 2.
  - b) **Via Local PC:** Start your communications program and press **[Enter]**. Wait for the connect message, then proceed to Step 2.
2. **Password:** If you have not yet created a password that permits access to Supervisor Mode, the password prompt will not be displayed.
  - a) If a password that permits access to Supervisor Mode has been defined, the unit will display the Password Prompt. Key in a password that permits access to Supervisor Mode, and press **[Enter]**.
  - b) Note that the Password feature is case sensitive.
3. If a valid password is entered, the DCM-8R4 will display the Status Screen, followed by the "DCM>" Command Prompt.

## 5.3. System Setup Port

Port 1 is designated as a System Setup Port, and will therefore, always permit access to Supervisor Mode. In order to ensure that access to command functions is always available, the Supervisor Mode cannot be disabled at Port 1, and the Port Mode for Port 1 cannot be set to "Buffer" or "Passive" modes, which would prevent command mode access via the Port.

**Note:** Port 2 can also function as a Setup Port, providing that the Port Mode is set to "Any-to-Any" or "Modem", and the Supervisor Mode is enabled.

## 5.4. Password Functions

The DCM-8R4's password directory allows you to define up to 32 passwords. These passwords are not only used to protect access to the DCM-8R4 unit, but are also used to determine the type of commands that each user will be allowed to invoke, and the ports and switched outlets that each user will be allowed to control.

Passwords that have access to Supervisor Mode are allowed to change configuration parameters and may connect to any DCM-8R4 port and switch any DCM-8R4 outlet. On the other hand, passwords which are denied access to Supervisor Mode are not allowed to change configuration parameters, and are restricted to the ports and outlets specifically allowed by that password. The password directory feature is described in greater detail in Section 5.6.1.

Note that once you have defined at least one password that permits access to Supervisor Mode, the DCM-8R4 will display a password prompt whenever you attempt to access command mode. Supervisor Level commands are summarized in Section 10.2 of this User's Guide.

### Notes:

- *If you do not define at least one password that permits access to Supervisor Mode, then Supervisor Level commands will be available to all ports, and port access and configuration functions will not be password protected.*
- *If you wish to restrict users from changing DCM-8R4 configuration parameters or connecting to restricted ports, you must define at least one password that permits access to Supervisor Mode as described in Section 5.6.1.*
- *If the unit is reset to default parameters, all passwords will be erased, and Supervisor Level commands will be available at all ports, without password protection.*

Note that if you wish to completely deny a given port's access to Supervisor Mode (even with a Supervisor password), the Port Parameters menus (/P) can be used to disable the Supervisor Mode at the Internal Modem Port and at any RS232 Serial Port except for Port 1 (the System SetUp Port.)

## 5.5. Configuration Menus

The following sections describe options and parameters that can be accessed via each of the configuration menus.

### Notes:

- Configuration menus are only available when the Supervisor Mode is active. Configuration menus are not available if you have logged in using a password that does not permit access to Supervisor Level commands.
- Refer to the Help Screen (/H), then enter the appropriate command to access the desired menu.
- To exit from a parameters menu, press the **[Esc]** key.

## 5.6. The System Parameters Menu

The System Parameters Menus allow you to select parameters such as the Site I.D. Message, Command Confirmation and other options and is also used to create passwords/accounts.

To access the System Parameters menu, type `/F` at the command prompt, and then press **[Enter]**. The System Parameters Menu will be displayed as shown in Figure 5.1. To define System Parameters, key in the number for the desired parameter, press **[Enter]** and then follow the instructions in the resulting submenu.

The System Parameters Menu allows you to define the following parameters:

1. **Site ID:** Defines a brief text message, which can describe the location or function of the DCM-8R4 unit. (Up to 32 characters, Default = undefined.)
2. **Command Confirmation:** When enabled, the DCM-8R4 will display a confirmation prompt before executing certain commands. When disabled, the prompt will be suppressed and commands will be executed immediately. (Default = On/Enabled.)

```
SYSTEM PARAMETERS:

1. Site ID:                (undefined)
2. Command Confirmation:  On
3. Automated Mode:       Off
4. Manual Switch Button: On
5. Command Prompt:       DCM
6. Password on Dial Back: Off
7. Dial Back Attempts:   3
8. Dial Back Delay:      30 Secs
9. Create/Edit user password

Enter Selection,
Press <ESC> to Exit ...
```

Figure 5.1: The System Parameters Menu

3. **Automated Mode:** When enabled, the DCM-8R4 will execute port connection, port disconnection, switching, reboot and exit commands without displaying a confirmation prompt, status screen or confirmation messages. For more information, please refer to Section 6.6. (Default = Off.)  
  
**Note:** *When this option is enabled, security functions are suppressed, and users are able to access configuration menus and control plugs without entering a password.*
4. **Manual Switch Button:** Enables/disables the DEF Button's manual plug control function, but does not effect the DEF Button's ability to reset parameters to default values. (Default = "On".)
  - Off: Disables the manual plug control function.
  - On: Enables manual plug control. When pressed and held for five seconds, all outlets will be toggled On or Off.
5. **Command Prompt:** Allows the command prompt to be set to either "NPS", "IPS", "DCM", "NBB", "RSM" or "CMS". (Default = DCM.)
6. **Password on Dial Back:** Enables/Disables the "Password on Dial Back" feature as described in Section 5.6.2. (Default = Off.)
7. **Dial Back Attempts:** Sets the number of times that the DCM-8R4 will attempt to call the dial back number when the Dial Back feature is properly configured and enabled, and you attempt to access command mode via Modem. For more information on the Dial Back feature, please refer to Section 5.6.2. (Default = 3.)
8. **Dial Back Delay:** Sets the amount of time that will elapse between Dial Back Attempts. For more information on the Dial Back Feature, please refer to Section 5.6.2. (Default = 30 Seconds.)
9. **Create/Edit User Password:** Provides access to a series of menus that are used to create, edit, and delete passwords/accounts as described in Section 5.6.1.

### 5.6.1. The Password Directory

In addition to defining passwords and assigning command privileges to each password, the Edit Password Directory function allows you to determine which ports and switched outlets each password will be allowed to control, and also configures Dial Back parameters. The Password Directory allows for the definition of up to 32 separate passwords.

**Note:** *The Password Directory menu is only available when you have logged into command mode using a password that permits access to Supervisor Mode.*

To access the Password Directory menu, first, type `/F` and press **[Enter]** to display the System Parameters Menu (Figure 5.1.) At the System Parameters Menu, type 9 and press **[Enter]** to display the Edit Password Directory menu.

The Edit Password Directory menu offers the following options:

1. **Add Name/Password:** Creates new passwords and assigns Supervisor Mode access and port access rights as described in Section 5.6.1.1.
2. **Edit/Delete from List:** Allows you to select user accounts from a displayed list and then edit or delete the desired account as described in Section 5.6.1.2.
3. **Edit/Delete from Search:** Allows you to search for a specific username, and then edit or delete the account as described in Section 5.6.1.2.
4. **Delete Entire Directory:** Clears the password directory, and deletes all existing passwords as described in Section 5.6.1.3.

**Note:** *In addition to the edit/delete functions discussed here, you can also view the entire directory using the "View Password Directory" function. To view a list of all currently defined accounts, access the command mode using a password and port that permit Supervisor level commands, then type `/V`, press **[Enter]** and follow the instructions in the resulting submenu.*

#### 5.6.1.1. Adding Passwords

The "Add Name/Password" menu is used to create new user accounts and add passwords to the password directory. To create new passwords/accounts, first access the System Parameters Menu (Figure 5.1.) At the System Parameters Menu, type 9 and press **[Enter]** to display the Edit User Password menu, then type 1 and press **[Enter]** to access the Add Name/Password menu.

The Add Name/Password Menu allows you to assign the following parameters:

1. **Name:** Assigns a username to the password. (Default = undefined.)
2. **Password:** After initially keying in the password, you will need to enter the password a second time in order to verify that it is correct. (Default = undefined.)
3. **Dial Back Number:** Defines the number that the DCM-8R4 will dial when the Dial Back feature is enabled and the unit is contacted via modem. For more information on the Dial Back Mode, please refer to Section 5.6.2. (Default = undefined.)

4. **Dial Back Mode:** Enables/Disables the Dial Back Mode for this password. For more information on the Dial Back Mode, please refer to Section 5.6.2. (Default = Off.)
5. **Supervisor Mode:** Enables/Disables Supervisor Mode for this password. When Supervisor Mode is enabled, the password will provide access to all configuration menus, and allow connections to all ports. When Supervisor Mode is disabled, the password will not permit access to configuration menus, and will only allow access to ports specifically permitted by the password. (Default = Off.)

**Note:** *In order to access Supervisor Mode from any given port, the port at which the password is issued must also permit Supervisor Commands.*

6. **Port Access:** Determines which ports this password will be allowed to create connections with. (Default = none.)

**Notes:**

- *Several different passwords/accounts can be allowed to create connections to the same port.*
- *When selecting ports, key in the number for the desired port and then press **[Enter]**. To select additional ports, enter the number for each corresponding port. Note that each port number selected must be followed by the **[Enter]** key.*

7. **Plug Access:** Determines which Plugs (Outlets) this password will be allowed to control. (Default = none.)

**Notes:**

- *Several different passwords/accounts can be allowed access to the same outlets.*
- *When selecting outlets, key in the number for the desired outlet and then press **[Enter]**. When selecting additional outlets, each outlet number selected must be followed by the **[Enter]** key.*

8. **Save Entry:** Saves newly defined user accounts to memory. Note that if you exit from the menu without first saving, the password and account information will not be saved.

### 5.6.1.2. Editing and Deleting Passwords

The DCM-8R4 offers two functions that can be used to edit or delete passwords: The "Edit/Delete from List" function and the "Edit/Delete from Search" function.

To edit or delete existing passwords, first access the System Parameters Menu (Figure 5.1.) At the System Parameters Menu, type 9 and press **[Enter]** to display the Password Directory Menu. At the Password Directory Menu, either type 2 and press **[Enter]** to select the password from a list, or type 3 and press **[Enter]** to select the password using the search function.

Once you have selected the desired account, the Edit/Delete Users Menu will be displayed. The Edit Users Menu provides access to the same options that are present in the "Add Name/Password" menu, discussed in Section 5.6.1.1.

**Note:** *After you have edited a user account, it is important to always save the account before exiting the Edit Users menu; if the account is not saved, then the edited account information will be discarded when you exit from the menu.*

### 5.6.1.3. Deleting the Entire Password Directory

The Edit Password Directory menu can also be used to delete the entire password directory, rather than accessing each individual password and deleting them one at a time. To delete the Password Directory and clear all passwords, first access the System Parameters Menu. At the System Parameters Menu, type 9 and press **[Enter]** to display the Password Directory Menu. At the Password Directory Menu, type 4 and press **[Enter]** to delete all currently defined user accounts.

**Notes:**

- *Deleted passwords cannot be recovered.*
- *If the Password Directory is deleted, the password prompt will no longer be displayed, and users will be able to access Supervisor Mode without a password. In order to restrict access to Supervisor commands, you must define at least one password that specifically permits access to Supervisor Mode.*

### 5.6.2. The Dial Back Function

The Dial Back Function provides an additional layer of security when callers attempt to access command mode via modem. When this function is properly configured, callers will not be granted immediate access to command mode upon entering a valid password; instead, the unit will disconnect, and dial a user-defined number before allowing access via that number. If desired, users may also be required to re-enter the password after the DCM-8R4 dials back.

Note that a separate Dial Back Number can be defined for each password, and the feature may also be independently enabled for each password. To enable this function, proceed as follows:

1. Access command mode using a port and password that permit access to Supervisor Mode, and then access the System Parameters Menu as described in Section 5.6.
2. **System Parameters Menu:** Note that dial back parameters selected via this menu are global, and will apply to all passwords. Define the following parameters:
  - **Password on Dial Back:** (Optional) Determines whether or not the Dial Back Mode will require the answering party to re-enter their password after a Dial Back is performed.
  - **Dial Back Attempts:** The number of times the DCM-8R4 will attempt to call the dial back number.
  - **Dial Back Delay:** The amount of time the DCM-8R4 will wait between Dial Back attempts.
3. **Edit Password Directory:** Access the Password Directory menu as described in Section 5.6.1. From this menu, you may either define new passwords that use the Dial Back Function, or alter existing passwords to include the Dial Back Function. The following parameters should be defined for each password that will use the Dial Back function:
  - **Dial Back Number:** The number that will be called when a Dial Back is performed. This is the number for the password owner's modem.
  - **Dial Back Mode:** Enables/Disables the Dial Back function for this password. When enabled, this password will require a dial back to be performed before allowing access, whenever this password user attempts to access the unit via modem.

**Note:** *In order for new parameters to be saved, you must Save the Password before leaving the menu.*



**Dial Back Example:**

Assume that the unit is configured as follows:

**System Parameters Menu:**

- Password on Dial Back: **On**
- Dial Back Attempts: **3**
- Dial Back Delay: **30 Seconds**

**User Account Parameters:**

- Name: **Test1**
- Password: **test1**
- Dial Back Number: **5551234**
- Dial Back Mode: **On**

Given this configuration, the unit would behave as follows :

1. **Password "test1" Entered at Modem Port:** Unit confirms that password is valid, then disconnects.
2. **Dial Back:** Unit dials "555-1234" (the Dial Back Number for "test1") and waits for the user's remote modem to answer.
3. **Password on Dialback:** When the modem at the Dial Back Number answers, the DCM-8R4 will prompt the user to re-enter the password before allowing access to command mode.
4. **Dial Back Attempts and Delays:** If the modem does not answer, the unit will then attempt to redial the number three times (Dial Back Attempts), and will pause for approximately 30 seconds (Dial Back Delay) between each redial.

```

PORT PARAMETERS #1:

1. Port Name:           (undefined)
2. Baud Rate:           9600
3. Bits/Parity:         8-None
4. Stop Bits:           1
5. Handshake Mode:      RTS/CTS
6. Port Mode:           Any-to-Any
   64. DTR Output:      Pulse
7. Supervisor Mode:    Permit
8. Logoff Character:    ^X
9. Sequence Disconnect: One Character Only
10. Inactivity Timeout: Off
11. Response Type:     Verbose
12. Command Echo:      On
13. Accept Break:      Yes
14. Invalid Access Lockout: Off

Enter: "<" previous port,
      ">" next port,
      <ESC> exit ...

```

Figure 5.2: Port Parameters Menu (Port 1 Shown)

## 5.7. The Serial Port Parameters Menus

The Port Parameters Menus are used to configure the DCM-8R4's Serial Ports, and allow you to assign a name to each port and select communication parameters. To access the Serial Parameters Menu, type /P *n* and press [Enter] (where *n* is the number or name of the port that you wish to configure.) The Port Parameters Menu will be displayed as shown in Figure 5.2.

**Note:** Port 9 is the Internal Modem port; the Port Mode for this port is set to "Modem" and cannot be changed. To configure the Modem port, type /P 9 and then press [Enter]. For more information on Modem Port configuration, please refer to Section 5.7.1.

The Port Parameters Menus allow you to define the following parameters:

1. **Port Name:** Assigns a name to this port. (Defaults: Ports 1 to 8 = undefined; Port 9 (Internal Modem Port) = "Internal\_Modem".)
 

**Note:** The first character of the Port Name must be a letter of the alphabet.
2. **Baud Rate:** Baud Rate for this port. (Defaults: Port 1 through Port 8 = 9,600 bps; Port 9 (Internal Modem Port) = 57.6 Kbps.)
 

**Note:** When this setting is changed, the new baud rate will not be applied until the user exits and then re-enters command mode.
3. **Bits/Parity:** The data bits and parity setting for this port. (Default = 8 Bits, No Parity.)
4. **Stop Bits:** The Stop Bits setting for this port. (Default = 1 Bit.)
5. **Handshake Mode:** Selects the handshake format for this port; XON/XOFF, RTS/CTS (hardware), Both, or None. (Default = RTS/CTS).

6. **Port Mode:** Selects the Port Mode for this port. Note that when the Port Mode is set to "Modem" the modem initialization string will be sent every 15 minutes. For more information on Port Modes, please refer to Section 5.7.2. (Default: Ports 1 to 8 = Any-to-Any; Port 9 = Modem.)

**Notes:**

- *In order to ensure local access to command mode functions, Port 1 (the System Setup Port) cannot be set to Buffer Mode or Passive Mode.*
- *The Port Mode for Port 9 (Internal Modem Port) will always be set to Modem Mode and cannot be changed.*

When Any-to-Any Mode, Passive Mode, or Buffer Mode is selected, the DCM-8R4 will display the DTR Output Prompt as shown in Figure 5.2. The DTR Output prompt is not displayed when Modem Mode is selected.

64. **DTR Output:** Determines how DTR will react when this port disconnects. DTR can be held low, held high, or pulsed for 0.5 seconds and then held high. In the default state, DTR will pulse for 0.5 seconds and then remain high. For more information on hardware lines, please refer to Appendix A. (Default = Pulse.)

When Port Mode is set to Modem Mode, the Port Parameters Menu will include additional prompts which are used to define the following:

61. **Reset String:** If necessary, this prompt can re-define the modem reset string, which is sent prior to the Initialization string. (Up to 48 Characters, Default = ATZ.)
62. **Initialization String:** Defines a command string that can be sent to initialize a modem to settings required by your application. (Up to 48 Characters, Defaults: Ports 1 through 8 = AT&C1&D2S0=1; Port 9 (Internal Modem Port) = ATE0M0&C1&D2S0=1.)
63. **Hang-Up String:** Although the DCM-8R4 will pulse the DTR line to hang-up an attached modem, the Hang-Up string parameter is often useful for controlling modems that do not use the DTR line. (Up to 48 Characters, Default = undefined.)

**Note:** *When communicating with the DCM-8R4 via modem, communications parameters will not be changed until you exit from command mode and discontinue the modem connection to the unit.*

7. **Supervisor Mode:** Permits or denies access to Supervisor Mode at this port. When Supervisor Mode is enabled, and a password that permits Supervisor level commands is entered at this port, the port will allow access to Supervisor Mode. When this feature is disabled, the port will not allow access to Supervisor Mode, even when a password that normally permits Supervisor Mode is entered at this port. (Default = Permit.)

**Note:** *Supervisor Mode cannot be disabled at Port 1 (the System Setup Port.)*

8. **Logoff Character:** Defines the Logoff Character for this port. The Logoff Character determines the command(s) or character(s) that must be issued at this port in order to disconnect from a second port. (Resident Disconnect.) (Default = ^X ([Ctrl] plus [X]).)
9. **Sequence Disconnect:** Enables/Disables and configures the Resident Disconnect command. This prompt offers the option to either disable the Sequence Disconnect, or select a one character format or a three character format. (Default = One Character).

**Notes:**

- *When a Resident Connection is initiated, the DCM-8R4 will send a message which lists the connected ports, and displays the one character or three character command that will be required in order to disconnect.*
  - *The One Character Disconnect sequence is intended for situations where the destination port will not receive the disconnect command. When the Three Character format is selected, the disconnect sequence will pass through to the destination port prior to breaking the connection.*
  - *When the One Character format is selected, resident connections are terminated by entering the selected Logoff Character only. There is no need to press [Enter] before and after the Logoff Character when the One Character format is selected.*
  - *When the Three Character format is selected, the Resident Disconnect Sequence will use the format "[Enter]LLL[Enter]", where L is the selected Logoff Character.*
10. **Inactivity Timeout:** Enables and selects the Timeout Period for this port. If enabled, and the port does not receive or transmit data for the specified Timeout Period, the port will disconnect and exit command mode. (Default = 5 Minutes.)

**Note:** *When connected ports time out and are disconnected, both ports will also exit from command mode.*
  11. **Response Type:** Selects the type of messages that this port will send when responding to commands. The user can select Verbose (English Text), Terse (Numeric / Abbreviation), or Quiet Mode (No Response). (Default = Verbose.)
  12. **Command Echo:** Enables or Disables the command echo for this port. (Default = On).
  13. **Accept Break:** Determines whether this port will accept breaks received from the attached device, and pass them along to a connected port. When enabled, breaks received at this port will be passed to any port that this port is connected to, and sent along to the device connected to the other port. When disabled, breaks will be refused at this port, and hence, not sent to the other port. (Default = Yes.)
  14. **Invalid Access Lockout:** Enables/Disables the Invalid Access Lockout feature at this port as described in Section 5.7.3. Briefly, the Invalid Access Lockout feature can be used to automatically disable a port when a user-defined number of invalid access attempts are detected. (Default = Off.)

### 5.7.1. Configuring the Internal Modem

The DCM-8R4 includes an internal modem, which can also be configured via the command interface. The configuration menu for the internal modem is identical to the configuration menus for the RS232 Serial Ports, except that the Port Mode for the Modem Port is always set at "Modem Mode" and the Any-to-Any Mode, Buffer Mode and Passive Mode are not available.

To access the Modem Port configuration menu, type `/P 9` and press **[Enter]**.

For a description of the various parameters that can be configured via the Modem Port Configuration Menu, please refer to Section 5.6.1.1.

### 5.7.2. RS232 Port Modes

The DCM-8R4 offers four different port operation modes; Any-to-Any Mode, Passive Mode, Buffer Mode, and Modem Mode. The Port Modes function as follows:

- **Any-to-Any Mode:** Allows communication between connected ports. Any-to-Any Mode Ports can be connected to other Any-to-Any, Passive, Buffer, or Modem Mode Ports by accessing command mode and invoking the `/C` command (see Section 6.3). The Any-to-Any Mode is available at all DCM-8R4 ports, except the Internal Modem Port.
- **Passive Mode:** Allows communication between connected ports, but does not allow access to command mode. Passive Mode Ports can be connected by accessing command mode from a free Any-to-Any or Modem Mode port and invoking the `/C` command (see Section 6.3). The Passive Mode is not available at Port 1 (the Set Up Port) or the Internal Modem Port.
- **Buffer Mode:** Allows collection and storage of data received from connected devices. Collected data can be retrieved by accessing command mode from a free Any-to-Any or Modem Mode Port, and issuing the Connect Command (`/C`.) Note that the Buffer Mode also allows pass-through communication with the connected device. The Buffer Mode is not available at Port 1 (the Set Up Port) or the Internal Modem Port.
- **Modem Mode:** A Modem Mode port can perform all functions normally available in Any-to-Any Mode, but the Modem Mode also allows definition of a Hang-Up String, Reset String, and Initialization String. Any DCM-8R4 serial port can be configured for Modem Mode, and the Internal Modem port is always configured for Modem Mode.

For more information on Port Modes, please refer to Section 6.4.

### 5.7.3. The Invalid Access Lockout Feature

When properly configured and enabled, the Invalid Access Lockout feature will watch all login attempts made at the DCM's serial ports. If a given port exceeds the selected number of invalid attempts specified for that port, then that port will be automatically disabled for a user-defined length of time.

When an Invalid Access Lockout occurs, you can either wait for the Lockout Duration period to elapse (after which, the DCM-8R4 will automatically reactivate the port), or you can issue the /UL command (type /UL and press **[Enter]**) to instantly unlock all DCM-8R4 serial ports.

#### Notes:

- *The Invalid Access Lockout Feature is available at all DCM Serial Ports.*
- *When a Port is locked, an external modem connected to that port will not answer.*
- *When a given DCM-8R4 serial port is locked, the other serial ports will remain unlocked, unless the Invalid Access Lockout feature has been triggered at those other ports.*
- *All invalid access attempts at each individual serial port are cumulative (the count for invalid access attempts is determined by the total number of invalid attempts at a given serial port.) If a valid login name/password is entered at any of the serial ports, then the count for that port will be restarted.*

The Invalid Access Lockout Menu allows the following parameters to be defined:

1. **Lockout Access:** Enables/Disables the Invalid Access Lockout feature. (Default = Off.)
2. **Lockout Attempts:** The number of invalid attempts required to activate the Invalid Access Lockout feature. (Default = 9.)
3. **Lockout Duration:** The length of time ports will remain locked when an Invalid Access Lockout occurs. If the duration is set at "Infinite", then ports will remain locked until the /UL command is issued. (Default = 30 Minutes.)

#### 5.7.4. Copying Parameters to Several Ports

The /CP command (Copy Port Parameters) provides a convenient means for selecting similar parameters for all or several DCM Serial Ports.

When the /CP command is invoked, the unit will display a menu which allows you to select parameters, and then copy them to all or several Serial Ports. The Copy Port Parameters menu can be used to set all parameters for the specified port(s), or define only a select group of parameters for the desired ports.

##### Notes:

- *The /CP command is only available to passwords and ports that permit access to Supervisor Level commands.*
- *The /CP command cannot be used to set Port 1 (the System Setup Port) to Passive Mode or Buffer Mode.*
- *The /CP command cannot be used to disable the Supervisor Mode at Port 1 (the System Setup Port.)*
- *The /CP command cannot be used to change the port mode for Port 9 (the Internal Modem Port.)*
- *The Copy Port Parameters Menu allows you to define the same parameters that are present in the Port Parameters Menu, as described in Section 5.7.*

To select common parameters for all or several DCM Serial Ports, proceed as follows:

1. Access the Command Mode using a password and port that permit access to Supervisor Level commands.
2. When the command prompt appears, invoke the /CP command as described below. The Copy Parameters menu will be displayed.
  - a) **All Ports:** To copy parameters to all DCM ports, type /CP and then press **[Enter]**.
  - b) **Range of Ports:** To copy parameters to a range of Serial Ports, type /CP m-n and then press **[Enter]**. Where m and n are DCM port numbers that specify the beginning and end of the desired range. For example, to copy parameters to ports 3 through 5, type /CP 3-5 and then press **[Enter]**.
  - c) **Several Ports:** To copy parameters to several Serial Ports, type /CP m,n,x **[Enter]**. Where m, n and x are the numbers for the desired ports. For example to copy parameters to ports 3, 5, and 7, type /CP 3,5,7 and then press **[Enter]**.
  - d) **Combination:** To invoke the /CP command in a manner where a range of Serial Ports is specified, along with other port(s) outside the range, type /CP m-n,x **[Enter]**. Where m, n and x are Serial Port numbers. For example to copy parameters to Ports 2 through 4, plus Port 6, type /CP 2-4,6 and then press **[Enter]**.

3. **Selecting Parameters:** To select parameters to be copied, key in the number for the desired parameter, press **[Enter]**, and then follow the instructions in the submenu. Note that it is not necessary to define all port parameters; for example, the /CP command could be used to select only the Baud Rate for all specified ports.
4. **Clear Menu:** After defining several parameters, if you wish to clear the /CP menu and start again, type - (dash) and press **[Enter]**. The Copy Parameters menu will be reset.
5. **Exit Without Copy:** To exit from the Copy Parameters menu without copying selected parameters to the selected Serial Ports, type **x** and then press **[Enter]**. The DCM-8R4 will exit from the Copy Parameters menu.
6. **Copy Parameters:** When you have finished selecting parameters, press **[Esc]** to copy the selected parameters to the Serial Ports. If the "Sure" confirmation prompt is displayed, type **y** to proceed or **n** to abort the command.



## 5.8. The Plug Parameters Menu

The Plug Parameters Menu are used to define Plug Names, Plug Passwords, boot/sequence delay times and Power Up Default values for each of the DCM-8R4's Switched AC Outlets. To access the Plug Parameters menu, type `/PL n` and then press **[Enter]** (Where `n` is the number or name of the plug you wish to configure.)

The Plug Parameters Menu allows you to define the following parameters:

1. **Plug Name:** (Up to 16 Characters, Default = undefined.)
2. **Boot/Seq. Delay:** When more than one plug is switched On/Off or a reboot cycle is initiated, the Boot/Sequence delay determines how much time will elapse between switching operations, as described in Section 5.8.1. (Default = 0.5 Second.)
3. **Power Up Default:** Determines how this plug will react when the Default command (`/DPL`) is invoked, or after power to the unit has been interrupted and then restored. After the default command is invoked, or power is restored, the DCM-8R4 will automatically switch each plug On or Off as specified by the Power-Up Default. (Default = On).

**Note:** *The Default Plugs command (`/DPL`) is only available to passwords and ports that permit access to Supervisor Level commands.*

### 5.8.1. The Boot / Sequence Delay Period.

The Boot / Sequence Delay value will be applied differently for Reboot operations as opposed to simple On/Off operations as described below:

1. Reboot Cycles:
  - a) **Single Plug:** The Boot/Seq. Delay determines how long the plug will remain Off before it is switched back On again.
  - b) **Several Plugs:** The Boot/Seq. Delay determines how long the plug will remain "Off", and also how long the DCM-8R4 will pause before proceeding to the next plug.
2. **On/Off Switching:** The Boot/Seq. Delay determines how long the DCM-8R4 will pause before proceeding to the next plug.

**Examples:** Assume that a user is allowed access to plugs one through four, and that the Boot / Sequence Delays for each plug have been set as follows: Plug 1 = 1 Second, Plug 2 = 2 Seconds, Plug 3 = 5 Seconds, Plug 4 = 1 Minute.

If the user applies an "On" command to all four plugs, the DCM-8R4 will respond as follows:

1. Turn On Plug 1, Wait 1 Second.
2. Turn On Plug 2, Wait 2 Seconds.
3. Turn On Plug 3, Wait 5 Seconds.
4. Turn On Plug 4.

If a "Reboot" Command is applied to Plug 3, the DCM-8R4 will respond as follows:

1. Turn Off Plug 3, Wait 5 Seconds, Turn On Plug 3.

If a Reboot Command is applied to all four plugs, the DCM-8R4 will respond as follows:

1. Turn Off all four plugs (short delay between plugs.)
2. Wait 1 Second, Turn On Plug 1, Wait 1 Second.
3. Wait 2 Seconds, Turn On Plug 2, Wait 2 Seconds.
4. Wait 5 Seconds, Turn On Plug 3, Wait 5 Seconds.
5. Wait 1 Minute, Turn on Plug 4.

## 5.9. Save Configuration Parameters

After you have finished configuring the DCM-8R4 to fit your application, it is recommended to save all parameters to an ASCII file.

Saving Parameters to an ASCII file allows you to create a "backup" of your currently defined configuration. As described in Section 8, this provides quick recovery in the event that the unit is accidentally reset to default parameters, and also allows you to copy parameters to other DCM-8R4 units when several units need to be configured with the same parameters.

## 6. Operation

This section describes the procedure that is used to control outlet switching and make and bread port connections. In order to control switching and port connection functions, you must first access the DCM-8R4 command mode as described in Section 5.2, and then invoke simple ASCII commands as described in this section. ASCII commands are also used to display status screens and to log out of command mode.

The command mode also includes a Help Menu, which summarizes all available DCM-8R4 commands. To display the Help Menu (Figure 6.1), type `/H` and press **[Enter]**.

### Notes:

- Wait for the "DCM>" prompt to appear before entering commands. The prompt will not reappear until the previous command is complete.
- Commands are not case sensitive. All commands are invoked by pressing **[Enter]**.
- Users are only allowed to issue commands to the outlets and ports that are permitted by the password entered during login.
- If command confirmation is enabled, the DCM-8R4 will display the Status Screen after commands are successfully completed.
- When switching and reboot operations are initiated, Boot/Sequence Delay times will be applied as described in Section 5.8.1.
- If the password entered at login does not permit Supervisor Level commands, then the Help Screen will only list Non-Supervisor commands.

```
DCM-8R4          v1.00          Site ID: (undefined)

Display
/H      Display Help Screen
/S      Display Status
/SD     Port Diagnostics
/W [n]  Port Parameters (Who)
/V      View Password Directory
/J      Display Site ID

Control
/DPL    Set Plugs to Default State
/BOOT <n> Boot Plug n
/ON <n> Turn On Plug n
/OFF <n> Turn Off Plug n
/C <m> [n] Connect - Local [remote]
/D <n>  Disconnect
/E <n>  Erase Buffer
/UL     Unlock Invalid Access
/X      Exit/Disconnect

Configuration
/F      System Parameters
/PL [n] Plug Parameters
/P [n]  Port Parameters
/CP <z> Copy Serial Port Parameters
/U      Send Parameters to File
/UF     Upgrade Firmware
/FD     Factory default the unit

-----+
| [n] = optional name or number |
| <m> = required name or number |
| <n> = required name(s) or     |
|   = required number(s) or    |
|   = * for "all"              |
| n:n = plug n through plug n  |
| n+n or n n = plug n and plug n |
| ,y = bypass "Sure? (y/n)"    |
| z  n,n-n,... | *            |
-----+

DCM>
```

Figure 6.1: The Help Screen

## 6.1. The Status Screen

When you login to the DCM-8R4 command mode, the first screen displayed after login is the Status Screen. The Status Screen lists the current status of the DCM-8R4's Switched AC Outlets and RS-232 Serial Ports and displays the firmware version and currently defined Site I.D. Message. You can also display the status screen at any time by typing `/s` and pressing **[Enter]**.

## 6.2. Switching Outlets

To switch or default outlets or initiate a Boot Cycle, access the command mode using a password that permits access to the desired outlet(s) and then proceed as follows:

1. **Switch Outlet(s) On:** To power-on an outlet, type `/ON n` and press **[Enter]**. Where "n" is the number or name of the desired outlet. For example:

`/ON 1` or `/ON ROUTER`

2. **Switch Outlet(s) Off:** To power-off an outlet, type `/OFF n` and press **[Enter]**. Where "n" is the number or name of the desired outlet. Note that the `/OFF` command can also be entered as `/OF`. For example:

`/OFF 2` or `/OF ROUTER`

3. **Boot Outlet(s):** To initiate a Boot cycle, type `/BOOT n` and press **[Enter]**. Where "n" is a the number or name of the desired outlet. Note that the `/BOOT` command can also be entered as `/BO`. For example:

`/BOOT 1` or `/BO ATMSWTCH`

4. **Set Outlets to Power Up Defaults:** Type `/DPL` and press **[Enter]**. All outlets will be set to their default On/Off status. The procedure for defining the default On/Off status is described in Section 5.5.5.
5. **Suppress Command Confirmation Prompt:** To execute a Boot/On/Off command without displaying the "Sure?" prompt, include the `,Y` option at the end of the command line. For example:

`/ON,Y ROUTER` or `/BOOT,Y 2`

### 6.2.1. Applying Commands to Several Outlets

As described below, switching and reboot commands can be applied to only one Switched AC Outlet, or to several outlets.

**Note:** *When switching and reboot operations are initiated, Boot/Sequence Delay times will be applied as described in Section 5.8.1.*

1. **Several Outlets:** To apply a command to several plugs, enter the numbers or names for the outlets, separated by a "plus sign" (+). For example to switch outlets 1, 3, and 4 Off, enter the following:

```
/OFF 1+3+4 [Enter]
```

2. **Series of Outlets:** To apply a command to a series of outlets, enter the number for the outlets that mark the beginning and end of the series, separated by a colon (:). For example, to switch outlets 1 through 3 On, enter the following:

```
/ON 1:3 [Enter]
```

4. **All Outlets:** To apply a command to all outlets, enter an asterisk character in place of the name or number. For example, to Boot all outlets, enter the following:

```
/BO * [Enter]
```

## 6.3. Serial Port Connections

Two different types of connections can be made between DCM-8R4 serial ports; Resident Connections and Third Party Connections.

- **Resident Connections:** Your resident port issues a /C command to connect to a second port. For example, Port 4 issues the /C command to connect to Port 5.
- **Third Party Connections:** (Supervisor Mode Only) Your resident port issues a /C command to create a connection between two other ports. For example, Port 1 is your resident port, and Port 1 issues a command to connect Port 2 to Port 3.

#### Notes:

- *Third Party Connections can only be initiated when the Supervisor Mode is active.*
- *You can only create connections to the ports that are allowed by the password entered at login.*

### 6.3.1. Connecting Serial Ports

To Connect ports, proceed as follows:

1. Access the Command Mode using a password that permits access to the desired DCM Serial Port(s).
2. Invoke the /C command to connect the desired ports.
  - a) **Resident Connection:** To connect your resident port to another port, type /C **x** and then press **[Enter]**. Where **x** is the number or name of the port you want to connect. The DCM will display the numbers of the connected ports, along with the command sequence that will be required in order to disconnect the two ports.

**Example:** To connect your resident port to Port 5, type /C 5 **[Enter]**.

- b) **Third Party Connection:** (Supervisor Mode Only) To connect any two ports (other than your resident port), type /C **x x** **[Enter]**. Where **x** and **x** are two port names or numbers. The DCM will display the numbers of the two connected ports.

**Example:** To connect Port 5 to Port 6, type /C 5 6 **[Enter]**.

When the /C command specifies the port name, it is only necessary to enter enough letters to differentiate the desired port from other ports. Type an asterisk (\*) to represent the remaining characters in the port name. For example, to connect your resident port to a port named "SALES," the connect command can be invoked as /C **S\***, providing no other port names begin with the letter "S."

### 6.3.2. Disconnecting Ports

There are three different methods for disconnecting ports, the Resident Disconnection, the Third Party Disconnection, and the No Activity Timeout. Providing the Timeout feature is enabled, a No Activity Timeout will disconnect resident ports or third party ports.

**Note:** The "DTR Output" parameter in the Port Parameters Menu determines how the DTR signal will react when the port disconnects. The DTR signal can either be held low, held high, or pulsed and then held high.

1. **Resident Disconnection:** Disconnects your resident port from another port. For example, if you are communicating via Port 3, and Port 3 is connected to Port 4, a Resident Disconnection would be used to disassociate the two ports. The DCM-8R4 offers two different Resident Disconnection command formats; the One Character Format and the Three Character Format (for more information, please refer to Section 5.6.):
  - a) **One Character (Default):** When the One Character Disconnection Sequence is selected, simply enter the selected Logoff Character once (Default = ^x ([Ctrl] plus [X])). Note that it is *not* necessary to enter a carriage return before or after the Logoff Character.
  - b) **Three Characters:** Uses the format "[Enter]LLL[Enter]", where L is the selected Logoff Character. For example, if the Logoff Character is defined as "+", then the three character disconnect sequence would be [Enter]+++[Enter].
  - c) If the default Resident Disconnect Sequence is not compatible with your application, both the command format and Logoff Character can be redefined via the Port Configuration menus, as described in Section 5.6.
2. **Third Party Disconnection:** (Supervisor Mode Only) The /D command is issued from your resident port to disconnect two third party ports. For example, if your Resident Port is Port 1, a Third Party Disconnection could be used to disconnect Port 3 from Port 4.
  - a) The /D command uses the format: /D x x [Enter], where x and x are the numbers of the ports that you wish to disconnect.
  - b) The /D (Disconnect) command can only be invoked by passwords and ports that permit access to Supervisor Level commands.
  - c) The /D command can specify both connected ports, or either of the two ports. For example, if Port 1 is your resident port, any of the following commands can be used to disconnect Port 3 from Port 4:

/D 3 4 [Enter]

or

/D 3 [Enter]

or

/D 4 [Enter]

3. **No Activity Timeout:** Providing the Timeout feature is enabled at either connected port, the No Activity Timeout can disconnect Resident Ports, or Third Party Ports.
  - a) To configure the Timeout Feature for the Serial RS232 Ports, proceed as described in Section 5.7.
  - b) When the Timeout Feature is enabled, the port will automatically disconnect if no data is received for the defined Timeout Period.

**Notes:**

- *When two connected ports time out, both ports will exit command mode after disconnecting.*
- *The Timeout value also applies to unconnected ports that are left in Command Mode. When an unconnected port is left in Command Mode, and no additional data activity is detected, the port will automatically exit Command Mode when its defined timeout value elapses.*



### 6.3.3. Defining Hunt Groups

A Hunt Group creates a situation where the DCM will scan a group of ports and connect to the first available port in the group. Hunt Groups are created by assigning identical or similar names to two or more ports. Hunt Groups can be defined using Any-to-Any, Passive, Buffer, or Modem Mode Ports.

1. Access the Command Mode as described in Section 5.2. Make certain to use a password and port that permit Supervisor Level commands.
2. Access the Port Configuration Menu for the desired Port as described in Section 5.7.
3. Use the Port Configuration Menu to define a Port Name for the first port in the group.
4. Repeat steps 2 and 3 above to assign identical names to the other ports in the Hunt Group. For example, a series of ports in a group could all be named "SERVER".
5. To connect to the next available port in the hunt group, invoke the /C command using the port name to specify the desired group. For example, /C **SERVER** **[Enter]**.
6. Your port will be connected to the first available port in the group. If all ports are presently connected, the DCM-8R4 will respond with the "BUSY" message.
7. It is only necessary to enter enough letters of the port name to differentiate the Hunt Group ports from other ports. Type an asterisk (\*) to represent the remaining characters in the port name. For example, to connect your resident port to the first available port in a group of ports named "SALES1", "SALES2", and "SALES3", the connect command can be invoked as /C **s\*** **[Enter]**, providing no other port names begin with the letter "S".

Hunt Group port names must be unique. Otherwise, ports with similar names will also be included in the Hunt Group.

#### Hunt Group Example 1:

1. Ports 3 and 4 are Modem Mode ports, and external modems are installed at both ports. Port 3 is named "MODEM1" and Port 4 is named "MODEM2".
2. Your resident port is Port 1. To connect to the first available external Modem, access the Command Mode and type /C **MODEM\*** **[Enter]**.

#### Hunt Group Example 2:

1. Ports 3, 4, and 5 are Any-to-Any Mode ports. All three ports are named "SERVER".
2. Your resident port is Port 1. If you want to connect Port 2 to the first available server, access the Command Mode and type /C **2 SERVER** **[Enter]**.

## 6.4 Port Modes

### 6.4.1. Any-to-Any Mode

Any-to-Any Mode Ports can be connected to other Any-to-Any, Passive, Buffer, or Modem Mode ports by accessing command mode and issuing the /C Command. The Any-to-Any Mode is the default port mode at Ports 1 through 8.

### 6.4.2. Passive Mode

Passive Mode Ports function the same as Any-to-Any Mode Ports, but do not allow access to command mode. A Passive Mode Port can communicate with other ports, but cannot enter command mode, and therefore cannot redefine parameters, display status, connect ports or control power outlets.

Passive Mode Ports can be connected by accessing command mode from a free Any-to-Any or Modem Mode Port, and invoking the Third Party Connect or Resident Connect Command as described in Section 6.3. Passive Mode ports will not buffer data, except during baud rate conversion.

**Note:** *In order to ensure access to command mode functions, the Passive Mode is not available at Port 1 (the SetUp Port) or at Port 9 (the Internal Modem Port.)*

### 6.4.3. Buffer Mode

The Buffer Mode allows collection of data from various devices without the requirement that all devices use the same communication parameters (e.g., baud rate, parity, etc.).

#### Notes:

- *Buffer Mode Ports cannot access command mode.*
- *Buffer Mode is not available at Port 1 (the Set Up Port) or the Internal Modem Port (Port 9.)*

#### 6.4.3.1. Reading Data from Buffer Mode Ports

To check port buffers for stored data, access command mode using a password and port that permit Supervisor commands, and type /s [Enter] to display the Status Screen. The "Buffer Count" column indicates the amount of data currently being stored for each port.

To retrieve data from buffer memory, go to a free Any-to-Any or Modem Mode Port, then issue the /C command using the following format:

/C n [Enter]

Where n is the number of the port buffer to be read.

**Note:** *In order to read data from a given port, your password must allow access to that port.*

If the buffer contains data, the DCM-8R4 will display a prompt that offers the following options:

- **Next Screen:** To send data one screen at a time, press the Space Bar. Each time the space bar is pressed, the next screen is sent.
- **Scroll All:** To send all data currently stored in the buffer, type 1 and press **[Enter]**.
- **Skip/Connect:** To skip sending the buffered data, yet remain connected to the port, type 2 and press **[Enter]**.
- **Erase/Connect:** To erase all data currently stored in the buffer, yet remain connected to the port, type 3 and press **[Enter]**.
- **Exit:** To exit from Read Buffer mode, press **[Esc]**.

**Note:** *Only one user can read from a port buffer at a time. If a second user attempts to read from a port that is already being read, an error message will be sent.*

To clear data from any port buffer (with or without reading it first), access command mode using an account and port that permit Supervisor commands, then issue the /E (Erase Buffer) command using the following format:

/E n **[Enter]**

Where n is the number of the port buffer to be cleared.

**Note:** *The /E command cannot erase data from a port buffer that is currently being read by another port.*

#### 6.4.3.2. Port Buffers

The Status Screen lists the amount of Buffer Memory currently used by each port. The DCM-8R4 uses buffer memory in two different ways, depending on the user-selected port mode.

- **Any-to-Any, Passive, and Modem Mode Ports:** When two ports are communicating at dissimilar baud rates, the buffer memory prevents data overflow at the slower port.
- **Buffer Mode Ports:** Stores data received from connected devices. The user issues a connect command (/C) from an Any-to-Any or Modem Mode port to retrieve data.

If the Status Screen indicates an accumulation of data, the /E (Erase Buffer) command can be invoked to clear the buffer.

**Note:** *When a Buffer Mode port is reconfigured as an Any-to-Any, Passive, or Modem Mode port, any data stored in the buffer prior to changing the port mode will be lost.*

#### 6.4.4. Modem Mode

The Modem Mode provides features specifically related to modem communication. A Modem Mode Port can perform all functions normally available in Any-to-Any Mode. The Modem Mode is available to all Serial RS232 Ports, and is the default port mode at the Internal Modem Port (Port 9.)

When the Modem Mode is selected, the Port Configuration menu will display three additional prompts, which allow you to re-define the modem reset string, initialization string, and hang-up string.

When a call is received at a Modem Mode port, the unit will prompt the caller to enter a password. The DCM-8R4 allows three attempts to enter a valid password. If a valid password is not entered within three attempts, or if the user does not respond to the login prompt within 30 seconds, the modem will disconnect.

#### Notes:

- *When a Modem Mode port exits command mode, or the DCD line is lost while command mode is active, the DCM-8R4 will pulse DTR to the modem. The unit will then send the user-defined modem command strings to make certain the modem is properly disconnected and reinitialized.*
- *The Serial RS232 Ports can use the DCM-8R4's Internal Modem for placing outbound calls. If an external modem is installed at a DCM-8R4 Serial Port, other ports can use the modem for calling out. To call out, invoke the /C command to connect to the port, then access the modem as you normally would.*
- *If desired, the Invalid Access Lockout feature can provide additional security for Modem Mode ports. When properly configured, the Invalid Access Lockout will automatically shut down a port whenever that port exceeds the user defined number of invalid access attempts. For more information, please refer to Section 5.7.3.*

### 6.5. Logging Out of Command Mode

When you have finished communicating with the DCM-8R4, it is important to always disconnect using the /X command, rather than by simply closing your communications program.

When you disconnect using the /X command, this ensures that the DCM-8R4 has completely exited from command mode, and is not waiting for the inactivity timeout period to elapse before allowing additional connections.

## 6.6. The Automated Mode

The Automated Mode allows the DCM-8R4 to execute switching and reboot commands, without displaying menus or generating response messages. Automated Mode is designed to allow the DCM-8R4 to be controlled by a device which can generate commands to control power switching functions without human intervention.

When Automated Mode is enabled, the /ON, /OFF, /BOOT, /DPL and /X commands are executed without a "Sure?" confirmation prompt and without command response messages; the only reply to these commands is the "DCM>" prompt, which is displayed when the command is complete.

**Note:** *When the Automated Mode is enabled, the password prompt will not be displayed at login, and you will be able to access Supervisor Level command functions (including the configuration menus) and control plugs and ports without entering a password.*

To enable/disable Automated Mode, access the System Parameters menu (see Section 5.6,) then set the "Automated Mode" option to "On". When Automated Mode is enabled, DCM-8R4 functions will change as follows:

1. **All Password Security Suppressed:** When a user attempts to access command mode, the password prompt will not be displayed. All users will be allowed to access both switching and configuration functions, and all commands will be immediately accepted without the requirement to enter a password.
2. **Status Screen Suppressed:** The status screens will not be automatically displayed after commands are successfully executed. Note however, that the /S command can still be invoked to display the status screen as needed.
3. **"Sure?" Prompt Suppressed:** All commands are executed without prompting for user confirmation.
4. **Error Messages Suppressed:** If the [Enter] key is pressed without entering a command, the DCM-8R4 will not respond with the "Invalid Command" message. Note however, that an error message will still be generated if commands are invoked using invalid formats or arguments.

All other status display and configuration commands will still function as normal.

## **6.7. Manual Operation**

In addition to command driven functions, the DCM-8R4's switched plugs can also be toggled On and Off manually. To manually toggle all plugs On or Off, press the DEF Button, and hold it down for approximately five seconds.

If desired, the DEF Button's manual plug control ability can also be disabled via the System Parameters menu as described in Section 5.6.

## 7. Status Screens

The DCM-8R4 includes a series of status screens can be used to display connection status, outlet status and communication parameters for the RS232 serial ports, Internal Modem Port and switched outlets, and also summarize currently defined user passwords. There are four different status screens; The Main Status Screen (/S), the Port Diagnostics Screen (/SD), the Port Parameters Screens (/W) and the User Directory (/V).

### 7.1. The Main Status Screen (/S)

The Main Status Screen lists the general status of the DCM-8R4's RS-232 serial ports, Internal Modem Port and also the On/Off status of the four switched outlets. To display the Main Status Screen, access the command mode and type /s [Enter], the Main Status Screen will appear as shown in Figure 7.1.

Note that the screen format will vary, depending upon whether your password permits or denies access to Supervisor commands. If the password entered at login does not allow Supervisor commands, then the Main Status Screen will only display the status of the ports and outlets that are allowed by that account.

The Main Status Screen lists the following items:

#### Port Section:

- **Port:** The Port Number for each serial port.
- **Name:** The user-defined name for each serial port.
- **Command Access:** The status of the Invalid Access Lockout feature at each port.

```
DCM-8R4          v1.00          Site ID: (undefined)

PORT |      NAME      |  CMD ACCESS  |  STATUS  |  MODE  |  BUFFER COUNT
-----+-----+-----+-----+-----+-----
 1 | (undefined) | Unlocked | Free | Any | 0 |
 2 | (undefined) | Unlocked | Free | Any | 0 |
 3 | (undefined) | Unlocked | Free | Any | 0 |
 4 | (undefined) | Unlocked | Free | Any | 0 |
 5 | (undefined) | Unlocked | Free | Any | 0 |
 6 | (undefined) | Unlocked | Free | Any | 0 |
 7 | (undefined) | Unlocked | Free | Any | 0 |
 8 | (undefined) | Unlocked | Free | Any | 0 |
 9 | Internal_Modem | Unlocked | Free | Modem | 0 |
-----+-----+-----+-----+-----+-----
PLUG |      NAME      |  BOOT/SEQ DELAY  |  STATUS  |  DEFAULT  |
-----+-----+-----+-----+-----
 1 | (undefined) | 0.5 Secs | ON | ON |
 2 | (undefined) | 0.5 Secs | ON | ON |
 3 | (undefined) | 0.5 Secs | ON | ON |
 4 | (undefined) | 0.5 Secs | ON | ON |
-----+-----+-----+-----+-----
"/H" for help.

DCM>
```

Figure 7.1: The Main Status Screen (/S)

**Port Section (Continued)**

- **Status:** The connection status for each port. This column will list the number of the other port in "c-nn" format, where "nn" is the number of the port connected to this port (for example, "C-03".)
- **Mode:** The user-selected Port Mode.
- **Buffer Count:** The amount of data (in bytes) stored in the buffer for this port.

**Plug Section:**

- **Plug:** The Plug Number for each switched outlet.
- **Name:** The user-defined name for each switched outlet.
- **Boot/Sequence Delay:** The currently defined Boot/Sequence Delay value for each switched outlet.
- **Status:** The current On/Off status of each switched outlet.
- **Default:** The user-defined default On/Off status for each switched outlet.



```

DCM-8R4          v1.00          Site ID: (undefined)

PORT DIAGNOSTICS:

PORT |      NAME      | STATUS | BAUD | COM | HS | MODE | BUF | CTS
-----+-----+-----+-----+-----+-----+-----+-----+-----
 1 | (undefined) | *Free | 9600 | 8N1 | RTS | Any | 0 | H
 2 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 3 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 4 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 5 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 6 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 7 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 8 | (undefined) | Free | 9600 | 8N1 | RTS | Any | 0 | L
 9 | Internal_Modem | Free | 57.6K | 8N1 | RTS | Modem | 0 | H
-----+-----+-----+-----+-----+-----+-----+-----+-----

"/H" for help.
DCM>

```

Figure 7.2: The Port Diagnostics Screen (/SD)

## 7.2. The Port Diagnostics Screen (/SD)

The Port Diagnostics Screen provides more detailed information about each port. To display the Port Diagnostics Screen (Figure 7.2), access the command mode and type /SD [Enter].

Note that the screen format will vary, depending upon whether your password permits or denies access to Supervisor commands. If the password entered at login does not allow Supervisor commands, then the Port Diagnostics Screen will only display the status of the ports allowed by that password. The Port Diagnostics Screen lists the following items:

- **Port:** The Port Number.
- **Name:** The user-defined name for each port.
- **Status:** The connect status for each port. When the port is connected, this column will list the number of the other port connected to this port. If the column contains an asterisk, this indicates the port has accessed command mode.
- **Baud:** The baud rate selected for each port.
- **COM:** The Data Bits, Parity, and Stop Bits selected for each port. For example, "8N1" indicates Eight data bits, No parity, and One stop bit.
- **HS:** The handshaking (flow control) mode for each port.
- **Mode:** The user-selected Port Mode.
- **BUF:** The amount of data (in bytes) stored in the buffer for this port.
- **CTS:** The High/Low status of the CTS line at the RS232 interface.

```
PORT PARAMETERS #4:

1. Port Name:          (undefined)
2. Baud Rate:         9600
3. Bits/Parity:       8-None
4. Stop Bits:         1
5. Handshake Mode:    RTS/CTS
6. Port Mode:         Any-to-Any
  64. DTR Output:     Pulse
7. Supervisor Mode:   Permit
8. Logoff Character:  ^X
9. Sequence Disconnect: One Character Only
10. Inactivity Timeout: 5 Min
11. Response Type:    Verbose
12. Command Echo:     On
13. Accept Break:     Yes
14. Invalid Access Lockout: Off

DCM>
```

**Figure 7.3: The Port Parameters Screen (/W)**

### 7.3. The Port Parameters Screen (/W)

The /W (Who) command can be used to display the Port Parameters Screen, which lists more detailed information about an individual RS232 serial port as shown in Figure 7.3. The Port Parameters Screen is only available when you have logged into command mode using a password that permits access to Supervisor Level commands.

For more information on the various items displayed on the Port Parameters Screen, please refer to the port configuration description in Section 5.6.

When the /W command is applied to a Serial RS232 Port, the following format is used:

**/W x [Enter]**

Where **x** is the number for the Serial Port that you wish to display.

Name	Password	Dial Back #	DB	SA
SUPER	(defined)	5551212	Off	On
admin	(defined)	5556621	On	On
tech1	(defined)	(undefined)	Off	On
tech2	(defined)	(undefined)	Off	On
sean2	(defined)	5550621	On	Off
kelly	(defined)	5550203	On	Off
john6	(defined)	(undefined)	Off	Off
david	(defined)	5554321	On	On
pete2	(defined)	5559547	On	Off
service	(defined)	(undefined)	Off	On
guest	(defined)	(undefined)	Off	Off
jane5	(defined)	5553489	On	Off

Reached End of Directory.  
DCM>

Figure 7.4: The User Directory Screen (/W)

## 7.4. The User Directory

The User Directory Command (/V) allows you to view a listing of all currently defined user accounts. To display the User Directory, access command mode using a port and password that permit access to Supervisor Level commands. When the command prompt appears, type /v and press **[Enter]**. The screen shown in Figure 7.4 will be displayed.

The following User Directory parameters are listed:

- **Name:** The assigned username for each password account.
- **Password:** This column indicates whether or not a password has been defined for each account. Note that actual passwords are not displayed, and instead this column will read either "(defined)" or "(undefined)".
- **Dialback Number:** The user-defined Dialback Number for each password account. For more information on the Dialback feature, please refer to Section 5.6.2.
- **DB (Dialback):** This column lists the status of the Dialback feature for each password account. If Dialback is enabled, the column will read "ON".
- **SA (Supervisor Access):** This column indicates whether or not each password account will permit access to Supervisor Level commands. If the password account will permit Supervisor Level commands, this item will read "ON."

For more information on the User Directory, and a description of the process used to define password accounts, please refer to Section 5.6.1.

## 8. Saving and Restoring Configuration Parameters

After the DCM-8R4 has been properly configured, parameters can be downloaded and saved as an ASCII text file on your local or remote PC. Later, if the configuration is accidentally altered, the file with the saved parameters can be uploaded to automatically reconfigure the unit without the need to manually assign each parameter.

Saved parameters can also be uploaded to other DCM-8R4 units. This allows rapid set-up when several units will be configured with the same parameters.

The "Save Parameters" procedure can be performed from any terminal emulation program (e.g. ProComm, TeraTerm, Hyperterminal, etc.), which allows downloading of ASCII files.

**Note:** *The "Save Parameters" feature is only available when the Supervisor Mode is active.*

### 8.1. Sending Parameters to a File

1. Start your communications program and access the DCM-8R4 command mode using a Password and port that permit access to Supervisor Level commands.
2. When the DCM-8R4 command prompt appears, type /U and press **[Enter]**. The DCM-8R4 will prompt you to prepare your communications program. Set up your communications program to receive an ASCII download, and specify a name for the file that will receive the saved parameters (e.g. DCM8R4.PAR).
3. When the communications program is ready to receive the file, return to the DCM-8R4 command mode, and press **[Enter]** to proceed.
4. The DCM-8R4 will send a series of ASCII command lines which specify the currently selected parameters.

## 8.2. Restoring Saved Parameters

This Section describes the procedure for using your communications program to send saved parameters to the DCM-8R4.

**Note:** *The "Restore Parameters" feature is only available when the Supervisor Mode is active.*

1. Start your communications program and access the DCM-8R4 command mode as described in Section 5.2.
2. If the Password Prompt is displayed, key in a password that permits access to Supervisor Level commands, and then press **[Enter]**.
3. Configure your communications program to upload an ASCII text file.
4. Upload the file with the saved parameters. If necessary, key in the file name and directory path.
5. When the upload is complete, make certain to terminate the communications program's upload mode.

**Note:** *The current On/Off status of each DCM-8R4 plug will not be saved or restored.*

At this point, saved parameters should have been restored to the DCM-8R4 unit. Check the configuration menus and status screens to make certain that saved parameters have been correctly restored.

## 9. Upgrading DCM-8R4 Firmware

When new, improved versions of the DCM-8R4 firmware become available, the "Upgrade Firmware" function can be used to update the unit. Updates can be installed via the Internal Modem Port or Serial Port 1.

### Notes:

- *The upgrade command (/UF) will only function when invoked at Serial Port 1 or the Internal Modem Port (Port 9.)*
  - *When the upgrade procedure is complete, parameters may be set to their default states. Therefore, it is recommended to save previously selected configuration parameters to an ASCII file (as described in Section 8.1) before beginning this upgrade procedure.*
  - *If the upgrade includes new parameters or features which were not included in the previous firmware version, these new parameters will be set to their default values.*
1. Obtain the update file. Firmware modifications can either be mailed to the customer on a CDROM, sent via email, or downloaded from WTI. Copy the upgrade file to your hard drive and then proceed as follows.
  2. Access the DCM-8R4 command mode via either the Internal Modem Port (Port 9) or Serial Port 1. If the password prompt is displayed, key in a password that permits access to Supervisor Level commands.
  3. When the command prompt appears, type `/UF` and press **[Enter]**. The DCM-8R4 will display a screen which offers the following options:
    1. **Continue Upload and Keep Current Parameters:** All existing parameter settings will be restored when the upgrade is complete
    2. **Continue Upload and Default the System:** When the upgrade is complete, all parameters will be set to default values.
    3. **Abort Upload:** Cancels upgrade and returns to command prompt.Key in number for the desired upload option and then press **[Enter]**.
  4. Use your communication program's (e.g., HyperTerminal) upload/send function to transfer the upgrade to the DCM-8R4 unit. Select ASCII format, then specify the filename and directory location where the firmware upgrade file resides on your hard drive.

**Note:** *The Upload function will timeout after one minute of inactivity. If the function times out, reselect the desired upload option as described in Step 3 and press **[Enter]** to continue or **[Esc]** to abort.*

5. If the upload is successful, the DCM-8R4 will prompt the user to continue the upgrade or abort.
  1. **Upgrade:** To continue with the upgrade, type 1 and press **[Enter]**. The DCM-8R4 will erase the previous firmware, move new firmware from SRAM to program flash memory, calculate and store the new checksum, and reboot. Do not attempt to reconnect to the unit until the RDY indicator blinks to indicate the process is complete.
  2. **Abort:** To abort the procedure, type 2 and press **[Enter]**.
6. **Incomplete Upload:** If the upload is interrupted, times-out, or if the update file becomes corrupted during transfer, the DCM-8R4 will display a screen which asks for confirmation before proceeding. To proceed, type 1 and press **[Enter]**, then return to Step 4 above to retry the upload, or press **[Esc]** to reboot the DCM-8R4 unit.
7. **Recovery Mode:** In the rare event that the DCM-8R4 operating system becomes corrupted during installation, front panel indicators will blink, and the unit will automatically switch to Recovery Mode. For further instructions, please contact WTI Customer Service as described in Appendix C.

When firmware upgrades are offered, an updated Users Guide or addendum will also be available.

## 10. Command Reference Guide

### 10.1. Command Conventions

Most commands described in this section conform to the following conventions:

- **Slash Character:** Most DCM-8R4 commands begin with the Slash Character (/).
- **Port Name Wild Card:** It is not always necessary to enter the entire port name. Port names can be abbreviated in command lines by entering the first character(s) of the name followed by an asterisk (\*). For example, a port named "SERVER" can be specified as "S\*". Note however, that this command would also be applied to any other port name that begins with an "S".
- **Suppress "Sure?" Prompt:** The ,Y option can be included in the command line to override the "Sure?" prompt. For example, to disconnect Port 8 without displaying the Sure prompt, type /D ,Y 8 and then press **[Enter]**.
- **Enter Key:** Most commands are invoked by pressing **[Enter]**.
- **Connected Ports:** When two ports are connected, most DCM-8R4 commands will not be recognized by either of the connected ports. The only exception is the Resident Disconnect Sequence (Default = ^x (**[Ctrl]** plus **[X]**)).
- **Configuration Menus:** To exit from a configuration menu, press **[Esc]**. The only exception to this rule is the Copy Parameters Menu (/CP), and in that case the **[Esc]** key is used to confirm the copy operation.



## 10.2. Command Summary

Function	Command Syntax	Command Availability	
		Supervisor	Non-Super.
<b>Display</b>			
Display Help Screen	/H [Enter]	X	X <sup>1</sup>
Display Unit Status	/s [Enter]	X	X <sup>2</sup>
Port Diagnostics	/SD [Enter]	X	X <sup>2</sup>
Port Parameters (Who)	/w [n] [Enter]	X	X <sup>5</sup>
View Password Directory	/V [Enter]	X	
Display Site I.D.	/J [Enter]	X	X
<b>Control</b>			
Set Plugs to Default State	/DPL[, Y] [Enter] <sup>4</sup>	X	X <sup>2</sup>
Boot Plug n	/BOOT[, Y] <n> [Enter] <sup>4</sup> /BO[, Y] <n> [Enter] <sup>4</sup>	X	X <sup>2</sup>
Turn On Plug n	/ON[, Y] <n> [Enter] <sup>4</sup>	X	X <sup>2</sup>
Turn Off Plug n	/OFF[, Y] <n> [Enter] <sup>4</sup> /OF[, Y] <n> [Enter] <sup>4</sup>	X	X <sup>2</sup>
Connect - Local [Remote]	/C <n> [n] [Enter]	X	X <sup>5</sup>
Disconnect Port (Third Party) <sup>6</sup>	/D[, Y] <n> [n] [Enter] <sup>4</sup> /D[, Y] * [Enter] <sup>4</sup>	X	
Resident Disconnect <sup>7</sup>	^X	X	X
Erase Buffer	/E[, Y] <n> [n] [Enter] <sup>4</sup> /E[, Y] * [Enter] <sup>4</sup>	X	
Unlock Invalid Access	/UL [Enter]	X	
Exit/Disconnect	/X[, Y] [Enter] <sup>4</sup>	X	X
<b>Configuration</b>			
System Parameters	/F [Enter]	X	
Plug Parameters	/PL [n] [Enter]	X	
Serial Port Parameters	/P [n] [Enter]	X	
Copy Serial Port Parameters	/CP <n> [Enter]	X	
Save Parameters to File	/U [Enter]	X	
Upgrade Firmware	/UF [Enter]	X	
Set to Factory Defaults	/FD[, Y] [Enter] <sup>4</sup>	X	

- <sup>1</sup> The Non-Supervisor Mode Help Menu will not include commands that are only available to Supervisors.
- <sup>2</sup> Command only applies to the ports and plugs that are allowed by the password/account.
- <sup>3</sup> Non-Supervisors can only apply this command to their resident port.
- <sup>4</sup> The ",Y" argument can be included to suppress the command confirmation prompt.
- <sup>5</sup> Non-Supervisors are not allowed to create third party connections, or connect to ports that are not allowed by their password/account.
- <sup>6</sup> Third Party Disconnect: Disconnects two or more nonresident ports. Must be issued from a third port with Supervisor command capability.
- <sup>7</sup> Resident Disconnect: Disconnects your resident port from another port. The disconnect sequence can be redefined via the Port Configuration Menus.

## 10.3 Command Response Messages

When commands are sent to the DCM, the unit can respond with either verbose (English Text) or terse messages (numeric / abbreviated). The port configuration command (/P) can be used to specify an individual response format for each port. In addition to the Terse and Verbose response modes, the port configuration command can also select the Quiet Mode. When the Quiet Mode is selected, the port will not send messages in response to commands.

The table below summarizes the various response messages for both the Terse and Verbose modes.

Terse	Verbose
0	OK
0	RAM Test Passed
1	Connected *
2	Busy
3	Disconnected
4	Invalid Command
5	Are You Sure (Y/N)?
6	Invalid Parameter
7	Invalid Syntax
8	Invalid Access
9	Enter Site ID:
A	Aborted
B	Enter Password:
C	Invalid Password
D	RAM Test Failed at *
E	Inactivity Timeout, Disconnected
F	Data in Buffer from Previous Connection ... Re-Enter Log-Off Sequence to Purge Buffer.
G	Asleep
H	Plug Defaulted
I	Plug Booted
J	Plug Turned On
K	Plug Turned Off

\* These verbose Response Messages include additional information not provided by terse Response Messages.

## 10.4. Command Set

This Section provides information on all DCM commands, sorted by functionality.

### 10.4.1. Display Commands

#### **/H Help**

---

Displays a Help Screen, which lists all available DCM commands along with a brief description of each command.

**Note:** *When the /H command is invoked by a Non-Supervisor, the Help screen will not include commands that are only available in Supervisor Mode.*

**Availability:** Supervisor / Non-Supervisor

**Format:** /H [Enter]

**Response:** Displays Help Screen.

#### **/S Display Unit Status Screen**

---

Displays the Unit Status Screen, which summarizes general parameters for the plugs and ports, lists the connection status for each RS232 Serial Port, and current On/Off status of each plug. For more information, please refer to Section 7.1.

**Note:** *When this command is executed by a Non-Supervisor, the Unit Status Screen will only list plugs and ports that are allowed by the password entered at login.*

**Availability:** Supervisor / Non-Supervisor

**Format:** /s [Enter]

**Response:** Displays Main Status Screen.

#### **/SD Display Port Diagnostics**

---

Displays the Port Diagnostics Screen, which provides detailed information regarding the status of each port. For more information, please refer to Section 7.2.

**Note:** *When this command is executed by a Non-Supervisor, the Port Diagnostics Screen will only list ports that are allowed by the password entered at login.*

**Availability:** Supervisor / Non-Supervisor

**Format:** /SD [Enter]

**Response:** Displays Port Diagnostics Screen.

**/W      Display Port Parameters (Who)**

---

Displays configuration information for an individual port, but does not allow the user to change parameters. For more information, please refer to Section 7.3. Note that when you have logged into command mode using a password/account that does not permit access to Supervisor Level commands, the /W command can only be used to display parameters for your resident port.

**Availability:** Supervisor / Non-Supervisor

**Format:** /w [*x*] [Enter]

Where *x* is the port number or name. If the "*x*" argument is omitted, parameters for your resident port will be displayed.

**Response:** Displays port parameters.

**Example:** To display parameters for a port named "SERVER", access the Command Mode from a port and account that permits Supervisor commands, and type  
/w SERVER [Enter].

**/V      View Password Directory**

---

Displays a menu which lists all currently defined User Password accounts. The Password Directory Screen will list the User Name, whether or not a password has been defined, the Dialback Number, the Status of the Dialback feature, and whether or not Supervisor Access is enabled for each password/account. For more information on defining, editing and deleting passwords, please refer to Sections 5.4 and 5.6.1.

**Availability:** Supervisor Only.

**Format:** /v [Enter]

**Response:** The DCM-8R4 will Display the Password Directory screen.

**/J      Display Site ID**

---

Displays the user-defined Site I.D. message.

**Availability:** Supervisor / Non-Supervisor

**Format:** /j [Enter]

**Response:** Displays Site I.D. Message.

## 10.4.2. Control Commands

### **/DPL Set Plugs to Default State**

---

Sets all four switched outlets to their user-defined default state. For information on setting outlet defaults, please refer to Section 5.7.

**Note:** *When this command is executed by a Non-Supervisor, it will only be applied to the plugs that are allowed by the password entered at login.*

**Availability:** Supervisor / Non-Supervisor

**Format:** `/DPL [ ,Y] [Enter]`

Where , Y is an optional command argument, which can be included to suppress the command confirmation prompt.

**Response:**

**Verbose:** Lists plugs to be defaulted, and then displays the command confirmation prompt. If "Y" is entered in response to the prompt, the DCM-8R4 will display the "Processing - Please Wait" message and then display the status screen when the default operation is complete.

**Terse:** 5, if Y, unit will respond with H.

### **/BOOT Initiate Boot Cycle**

---

Initiates a boot cycle at the selected plug(s). When a Boot cycle is performed, the DCM-8R4 will first switch the selected plug(s) Off, then pause for the user defined Boot/Sequence Delay Period, then switch the plug(s) back on. For more information on the Boot/Sequence Delay Period, please refer to Section 5.8.1. The /BOOT command can also be entered as /BO.

**Note:** *When this command is executed by a Non-Supervisor, it will only be applied to the plugs that are allowed by the password entered at login.*

**Availability:** Supervisor / Non-Supervisor

**Format:** `/BOOT [ ,Y] <n> [Enter]` or `/BO [ ,Y] <n> [Enter]`

Where:

, Y (Optional) Suppresses the Command Confirmation Prompt.

n The number or name of the plugs that you intend to boot. To apply the command to several plugs, enter a space character or a plus sign (+) between each plug number. To apply the command to a range of plugs, enter the numbers for the first and last plugs in the range, separated by a colon character (:). To apply the command to all plugs allowed by your password, enter an asterisk character (\*).

**Response:**

**Verbose:** "Sure? (y/n)", if Y, the unit will indicate that the command is in process, and then display the main status screen when complete.

**Terse:** 5, if Y, the unit will respond with I.

**Example:** Assuming that your password allows access to Plug 2 and Plug 3, to initiate a boot cycle at Plugs 2 and 3, invoke either one of the following command lines:

`/BOOT ,Y 2+3 [Enter]` or `/BO ,Y 2+3 [Enter]`

---

**/ON Switch Plug(s) ON**

---

Switches selected outlet(s) On, as described in Section 6.2. When a several plugs are switched On by this command, Boot/Sequence Delay Period will be applied as described in Section 5.8.1.

**Note:** *When this command is executed by a Non-Supervisor, it will only be applied to the plugs that are allowed by the password entered at login.*

**Availability:** Supervisor / Non-Supervisor

**Format:** /ON[ ,Y] <n> [Enter]

Where:

- ,Y (Optional) Suppresses the Command Confirmation Prompt.
- n The number or name of the plugs that you intend to switch On. To apply the command to several plugs, enter a space character or plus sign (+) between each plug number. To apply the command to a range of plugs, enter the numbers for the first and last plugs in the range, separated by a colon (:). To apply the command to all plugs allowed by your password, enter an asterisk character (\*).

**Response:**

**Verbose:** The DCM-8R4 will list the plugs that will be switched On, and then display the "Sure? (y/n)" prompt, if Y is entered in response to the prompt, the unit will indicate that the command is in process, and then display the main status screen when complete.

**Terse:** 5, if Y, the unit will respond with J.

**Example:** Assuming that your password allows access to Plug 2 and Plug 3, to switch Plugs 2 and 3 On, invoke following command:

/ON,Y 2+3 [Enter]

---

**/OFF Switch Plug(s) Off**

---

Switches selected outlet(s) Off, as described in Section 6.2. When a several plugs are switched Off by this command, Boot/Sequence Delay Period will be applied as described in Section 5.8.1. The /OFF command can also be entered as /OF.

**Note:** *When this command is executed by a Non-Supervisor, it will only be applied to the plugs that are allowed by the password entered at login.*

**Availability:** Supervisor / Non-Supervisor

**Format:** /OFF[,Y] <n> [Enter] or /OF[,Y] [Enter]

Where:

- ,Y (Optional) Suppresses the Command Confirmation Prompt.
- n The number or name of the plugs that you intend to switch Off. To apply the command to several plugs, enter a space character or plus sign (+) between each plug number. To apply the command to a range of plugs, enter the numbers for the first and last plugs in the range, separated by a colon character (:). To apply the command to all plugs allowed by your password, enter an asterisk character (\*).

**Response:**

**Verbose:** The DCM-8R4 will list the plugs that will be switched Off, and then display the "Sure? (y/n)" prompt, if Y is entered in response to the prompt, the unit will indicate that the command is in process, and then display the main status screen when complete.

**Terse:** 5 if Y, unit will respond with K.

**Example:** Assuming that your password allows access to Plug 2 and Plug 3, to switch Plugs 2 and 3 Off, invoke either one of the following command lines:

/OFF,Y 2+3 [Enter] or /OF,Y 2 3 [Enter]

**/C Connect**

---

Establishes a bidirectional connection between two ports. For more information, see Section 6.3. There are two types of connections:

- **Resident Connect:** If the /C command specifies only one port, your resident port will be connected to the specified port.
- **Third Party Connect:** If the /C command specifies two ports, the unit will connect the two ports indicated. Third Party Connections can only be initiated by ports and accounts that permit Supervisor commands.

**Notes:**

- *Non-Supervisor accounts are only to connect to the serial ports that are specifically allowed by the account.*
- *Non-Supervisors cannot create Third Party connections; Non-Supervisors are only allowed to create connections between their resident port and the ports allowed by their password/account.*
- *If the user account permits Supervisor commands, you are allowed to connect to any port.*

**Availability:** Supervisor / Non-Supervisor

**Format:** /C <x> [x] [Enter]

Where **x** is the number or name of the port(s) to be connected.

**Response:**

Verbose: "Connected x x." When a Resident Connection is initiated, the DCM-8R4 will also display the Resident Disconnect Sequence.

Terse: 1



---

**/D Third Party Disconnect**

---

Invoke the /D command at your resident port to disconnect two other ports. Note that the /D command cannot disconnect your resident port.

**Availability:** Supervisor Only

**Format:** /D [,Y] <x> [x] [Enter]

Where:

- ,Y (Optional) suppresses the "Sure?" prompt.
- x Is the number or name of the port(s) to be disconnected. To apply the command to several plugs, enter a space character or a plus sign (+) between each plug number. To apply the command to a range of plugs, enter the numbers for the first and last plugs in the range, separated by a colon (:). To apply the command to all plugs allowed by your password, enter an asterisk character (\*).

**Response:**

**Verbose:** "Sure (y/n)?", if Y, unit will respond with "Disconnected".

**Terse:** 5, if Y, unit will respond with 3.

**Example:** To disconnect Port 2 from Port 3 without the "Sure?" prompt, access the Command Mode from a third port with Supervisor Level command capability and type:

/D,Y 2 [Enter] or /D,Y 3 [Enter]

---

**^X Resident Disconnect Sequence**

---

The Resident Disconnect Sequence is used to disconnect your resident port from another port as described in Section 6.3.2. Although the default Resident Disconnect Sequence is ^x ([Ctrl] plus [X]), the command can be redefined via the Port Configuration Menus as described in Section 5.7.

**Note:** *The Resident Disconnect Sequence cannot be used to terminate a Direct Connection.*

**Availability:** Supervisor / Non-Supervisor

**Format (Default):** ^x

**Response:**

**Verbose:** The DCM-8R4 will send the "Disconnected" message, followed by the Unit Status Screen.

**Terse:** 3

---

**/E Erase Buffer**

---

Erases data from the buffer for a specified port(s). Note that erased data cannot be recovered.

**Availability:** Supervisor Only

**Format:** /E [ ,Y] <x> [x] [Enter]

Where:

- ,Y (Optional) Suppresses the "SURE? (Y/N)" (command confirmation) prompt.
- x Is the number or name of the port buffer(s) to be cleared. To apply the command to several ports, enter a space character or a plus sign (+) between each port number. To apply the command to a range of ports, enter the numbers for the first and last ports in the range, separated by a colon character (:). To apply the command to all ports allowed by your password, enter an asterisk character (\*).

**Response:**

**Verbose:** The unit will display the command confirmation prompt. If Y is entered in response to the prompt, the unit will erase the specified buffer and then respond with "OK".

**Terse:** 5, if Y, the unit will respond with 0.

**Example:** To clear the buffer for Port 3, access the Command Mode from a port and account that permit Supervisor commands, and type /E 3 [Enter].

---

**/UL Unlock Port (Invalid Access Lockout)**

---

Unlocks DCM Serial Ports that have been locked by the Invalid Access Lockout feature. Normally, when a user-defined number of unsuccessful password attempts are detected at a given port, the Invalid Access Lockout feature will shut down that port for a user specified time period in order to prevent further access attempts. When the /UL command is invoked, the DCM-8R4 will immediately unlock all ports that are currently in the locked state. For more information on the Invalid Access Lockout feature, please refer to Section 5.7.3.

**Availability:** Supervisor Only.

**Format:** /UL [Enter]

**Response:** The DCM-8R4 will unlock all RS232 Serial Ports.

---

**/X Exit Command Mode**

---

Exits command mode. Note that exiting from command mode will not terminate port connections.

- **Any-to-Any Mode:** Exits command mode.
- **Modem Mode:** Disconnects and resets modem, hang-up message is sent, hardware line to modem drops for 500 ms, and reset message is sent.

**Availability:** Supervisor / Non-Supervisor

**Format:** /x[,y] [Enter]

Where ,y is a command argument that can be used to suppress the command confirmation prompt.

**Response:**

**Verbose:** Disconnected.

**Terse:** 3

### 10.4.3. Configuration Commands

---

**/F Set System Parameters**

---

Displays a menu which is used to define the Site ID message, create user accounts, set the system clock, and configure and enable the Invalid Access Lockout feature. For more information, refer to Section 5.6.

**Availability:** Supervisor Only

**Format:** /F [Enter]

**Response:** Displays System Parameters Menu.

---

**/PL Set Plug Parameters**

---

Displays a menu that is used to select options and parameters for Switched Outlets. Section 5.8 describes the procedure for defining plug parameters.

**Availability:** Supervisor Only

**Format:** /PL [x] [Enter]

Where x is the number or name of the plug to be configured.

**Response:** The Plug Parameters Menu is displayed.

---

**/P Set RS232 Port Parameters**

---

Displays a menu that is used to select options and parameters for the RS232 Serial Ports. Section 5.7 describes the procedure for defining port parameters.

**Availability:** Supervisor Only

**Format:** /P [x] [Enter]

Where x is the number or name of the port to be configured.

**Response:** The Port Parameters Menu is displayed.

---

**/CP Copy RS232 Port Parameters**

---

Allows quick set-up when several RS232 ports will be configured with similar parameters. When the /CP command is invoked, the DCM-8R4 will display a menu that can be used to copy parameters to all or several RS232 ports. For more information, please refer to Section 5.7.4.

**Availability:** Supervisor Only

**Format:** /CP <x> [Enter]

Where:

- x Is the number of the port(s) where the copied parameters will be applied. To apply the command to several ports, enter a comma between each port number. To apply the command to a range of ports, enter the numbers for the first and last ports in the range, separated by a dash character (-). To apply the command to all plugs allowed by your password, omit the port number argument.

**Response:** Displays Copy Parameters Menu.

---

**/U Send Parameters to a File**

---

Saves all user-defined DCM-8R4 configuration parameters to an ASCII text file as described in Section 8.1. Please see Section 8.2 for instructions regarding restoring saved parameters.

**Availability:** Supervisor Only

**Format:** /U [Enter]

**Response:** The DCM-8R4 will display several prompts, and then send a series of command lines.

---

**/UF Upgrade Firmware**

---

When new versions of the DCM-8R4 firmware become available, this command is used to update existing firmware as described in Section 9. This command will only function at the Internal Modem Port (Port 9) and at Serial Port 1 (the Set Up Port.)

**Availability:** Supervisor Only

**Format:** /UF [Enter]

**Response:** The DCM-8R4 will display a menu which offers the options to retain existing parameters, default parameters, or abort.

---

**/FD Set to Factory Defaults**

---

Clears all user-defined parameters, and resets the unit to factory default values.

**Availability:** Supervisor Only

**Format:** /FD [,y] [Enter]

Where ,y is an optional argument that can be used to suppress the command confirmation prompt.

## Appendix A. Interface Description

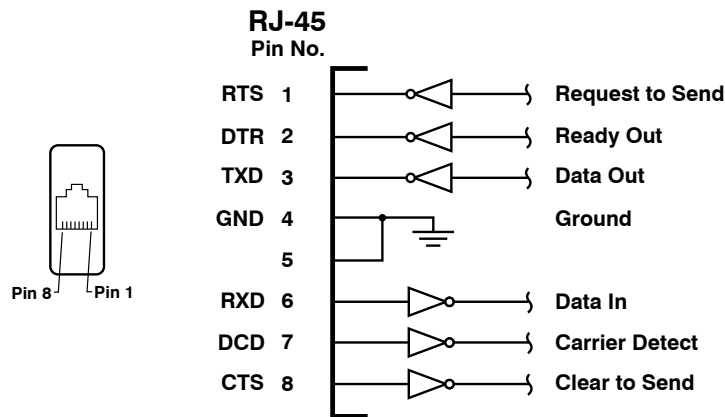


Figure A.1: Serial Port Interface

### A.1. Serial Port (RS232)

DCD and DTR hardware lines function as follows:

1. **When connected:**

- If either port is set for Modem Mode, the DTR output at either port reflects the DCD input at the other end.
- If *neither* port is set for Modem Mode, DTR output is held high (active).

2. **When not connected:**

- If the port is set for Modem Mode, upon disconnect DTR output is pulsed for 0.5 seconds and then held high.
- If the port is *not* set for Modem Mode, DTR output is controlled by the DTR Output option (Serial Port Parameters Menu, Option 23). Upon disconnect, Option 23 allows DTR output to be held low, held high, or pulsed for 0.5 seconds and then held high.

## Appendix B. Connecting Devices to the DCM-8R4

This section describes the cables and adapters that are used to connect common devices to the DCM-8R4's RJ-45 serial ports. For information regarding other WTI cables and adapters, please refer to the "Serial Cables and Adapters" document, which can be found on the CDROM included with the DCM-8R4.

### B.1. Straight RJ-45 Cables and Rollover RJ-45 Cables

The connection examples described in this section include the use either an RJ-45 Straight cable or an RJ-45 Rollover cable. The difference between the two types of cables is the way that the pins in the connectors at each end of the cable are linked to each other.

In Straight Cables the pins on each connector are linked to the same pin number on the connector at the other end of the cable; for example, Pin 1 on the right hand connector is linked to Pin 1 on the left hand connector, as shown in Figure B.1 below.

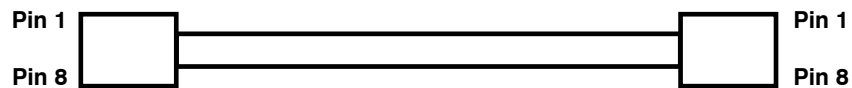
For Rollover Cables, the order of the pins is reversed; Pin 1 on the right hand connector would be linked to Pin 8 on the left hand connector, as shown in Figure B.2.

WTI RJ-45 Straight cables are available in three different models:

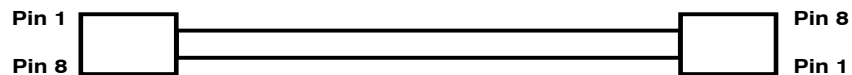
- RJX-7-15: 15 Feet Long
- RJX-7-25: 25 Feet Long
- RJX-7-30: 30 Feet Long

WTI also offers an RJ-45 Rollover cable:

- RJ-ROLL



**Figure B.1: Straight Cables**



**Figure B.2: Rollover Cables**

## B.2. Connecting DB-9M DTE Devices

The DX9F-DTE-RJ Snap Adapter can be used with a Straight RJ-45 cable to attach the following DB-9M DTE devices to the DCM-8R4's RJ-45 Serial Ports:

- PCs and Laptops
- Console Ports on WTI RSM and TSM Series Units
- Console Ports on WTI MPC Series Units
- Other Devices with a DB-9M DTE Console Port

When connecting a DB-9M DTE device to an RJ-45 Serial Port on the DCM-8R4, please refer to Figure B.3 and Figure B.4 below:

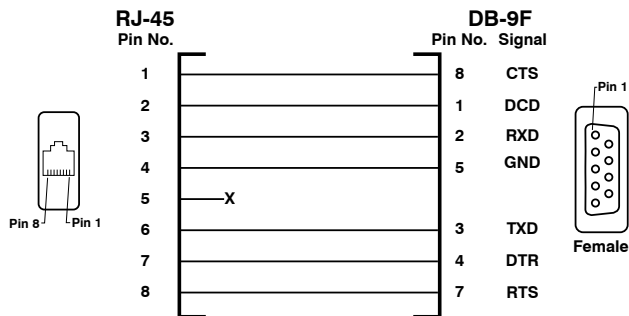


Figure B.3: DX9F-DTE-RJ Snap Adapter Interface

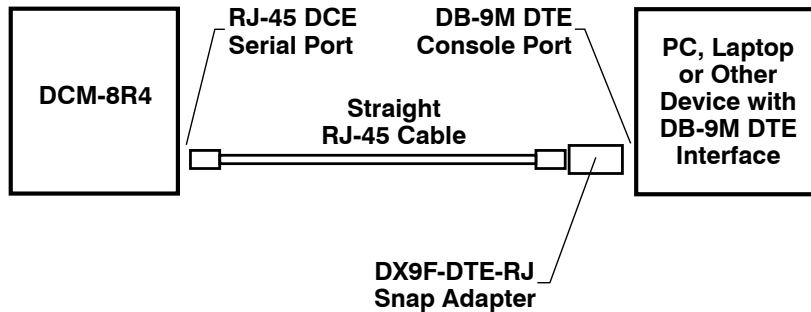


Figure B.4: Connecting DB-9M DTE Devices to an RJ-45 Serial Port on the DCM-8R4

### B.3. Connecting DB-25F DTE Devices

The DX25M-DTE-RJ Snap Adapter can be used with a Straight RJ-45 cable to attach the most DB-25F DTE devices to RJ-45 Serial Ports on DCM-8R4 units.

When connecting a DB-25F DTE device to an RJ-45 Serial Port on the DCM-8R4, please refer to Figure B.5 and Figure B.6 below:

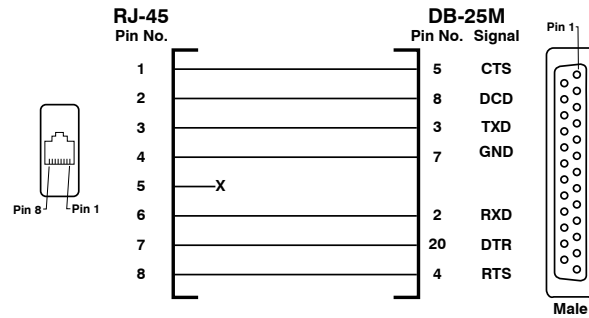


Figure B.5: DX25M-DTE-RJ Snap Adapter Interface

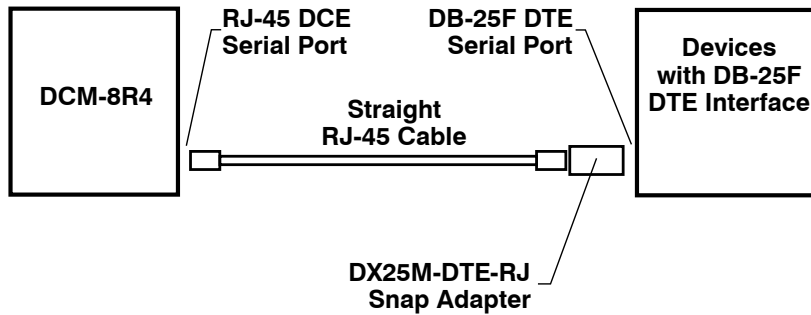


Figure B.6: Connecting DB-25F DTE Devices to an RJ-45 Serial Port on the DCM-8R4



## B.4. Connecting DB-25F DCE Devices

The DX25M-DCE-RJ Snap Adapter can be used with a Straight RJ-45 cable to attach the following DB-25F DCE devices to RJ-45 serial ports on the DCM-8R4:

- External Modems with DB-25F DCE Serial Port
- Other Devices with a DB-25F DCE Console Port

When connecting a DB-35F DCE device to an RJ-45 serial port on the DCM-8R4, please refer to Figure B.7 and Figure B.8 below:

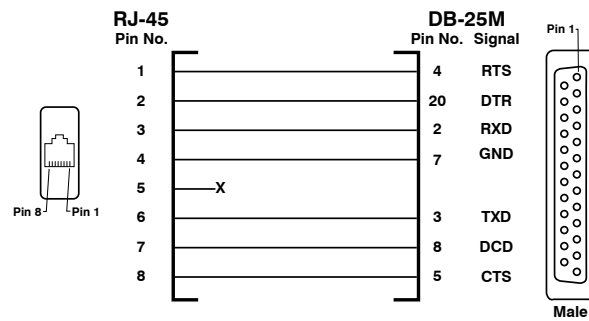


Figure B.7: DX25M-DCE-RJ Snap Adapter Interface

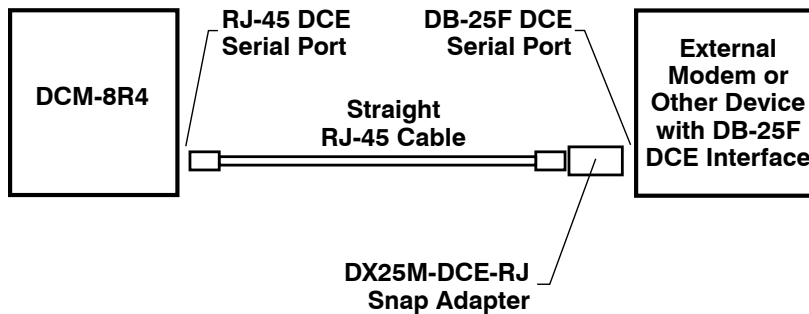


Figure B.8: Connecting DB-25F DCE Devices to an RJ-45 Serial Port on the DCM-8R4

## B.5. Connecting RJ-45 DCE Devices

An RJ-ROLL Rollover cable can be used to connect the following RJ-45 DCE devices to the RJ-45 serial ports on DCM-8R4 units:

- Cisco Routers with RJ-45 DCE Console Port
- Sun Routers with RJ-45 DCE Console Port
- Other Devices with RJ-45 DCE Console Port

When connecting an RJ-45 DCE device to an RJ-45 serial port on an DCM-8R4 unit, please refer to Figure B.9 below:

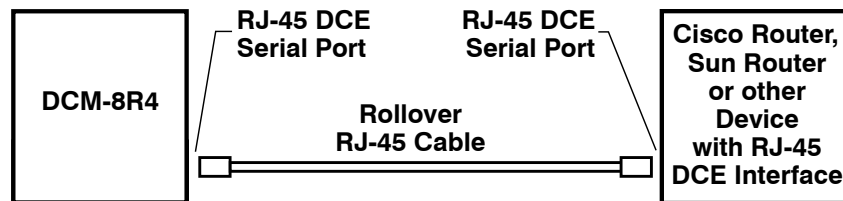


Figure B.9: Connecting RJ-45 DCE Devices to the DCM-8R4

## B.6. DX9F-NULL-RJ Snap Adapter

The DX9F-NULL-RJ Snap Adapter is used for straight through cable connections (Pins 2 through 8).

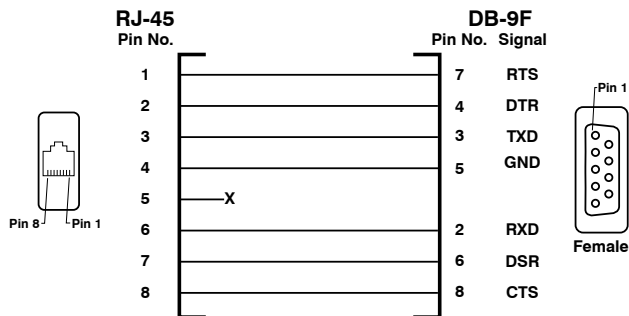


Figure B.10: DX9F-NULL-RJ Snap Adapter Interface

## Appendix C. Specifications

### Power Input/Output:

**Voltage:** 100 - 120 VAC or 208 - 240 VAC, 50/60 Hz

### AC Input Feed:

120 VAC Models: 20 Amps Max. Input Feed

240 VAC Models: 16 Amps Max. Input Feed

**AC Inlets:** One (1) IEC320-C20

### AC Outlets:

120 VAC Models: 4 each, NEMA 5-15R Outlets

240 VAC Models: 4 each, IEC320-C13 Outlets

### RS232 Port Interface:

**Connectors:** Eight (8) RJ45 connectors (DTE pinout.)

**Coding:** 7/8 bits, Even, Odd, No Parity, 1, 2 Stop Bits.

**Flow Control:** XON/XOFF, RTS/CTS, Both, or None.

**Data Rate:** 300 to 115.2K bps (all standard rates).

**Inactivity Timeout:** No activity timeout disconnects port/modem sessions.

Off, 5, 15, 30, 90 minutes.

**Break:** Send Break or Inhibit Break

**Site ID:** 32 Characters.

**Port Name:** 16 Characters per port.

**Username & Passwords:** 32 character usernames; 16 character passwords (case sensitive.) Up to 128 pairs, definable port, plug and system access.

**Internal Modem:** V.34

### Physical/Environmental:

#### Dimensions:

Width: 9" (22.9 cm)

Depth: 5" (12.7 cm)

Height: 3.5" (8.9 cm)

**Shipping Weight:** 4 Lbs.

**Operating Temperature:** 32°F to 122°F (0°C to 50°C)

**Humidity:** 10 - 90% RH

### Control Ports:

**Serial Console Ports:** 8 each, RJ45, RS232C

**Internal Modem Port (Phone Line):** RJ11 connector for connection to your telco line

## **Appendix D. Customer Service**

Customer Service hours are from 8:00 AM to 5:00 PM, PST, Monday through Friday. When calling, please be prepared to give the name and make of the unit, its serial number and a description of its symptoms. If the unit should need to be returned for factory repair it must be accompanied by a Return Authorization number from Customer Service.

WTI Customer Service  
5 Sterling  
Irvine, California 92618

Local Phone: (949) 586-9950  
Toll Free Service Line: 1-888-280-7227  
Service Fax: (949) 583-9514

Email: [service@wti.com](mailto:service@wti.com)

## Appendix E. Mounting Options

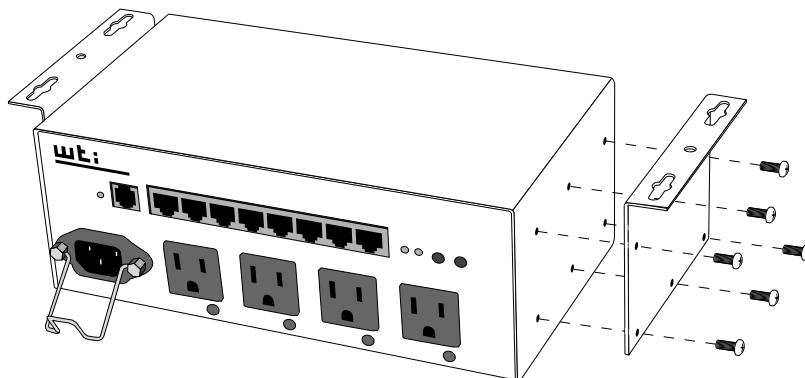
The DCM-8R4 offers a variety of different mounting options to fit the requirements of almost any application. In addition to the standard Wall Mount brackets included with the unit, the DCM-8R4 can also be mounted in a 19" equipment rack using the optional "L" brackets or mounted to a DIN rail using the optional DIN brackets.

### E.1 Wall Mounting

The standard Wall Mount brackets, included with the unit can be used to mount the DCM-8R4 to a wall, ceiling, floor, desktop or other flat surface.

The Wall Mount brackets can be used to mount the DCM on almost any flat surface, with the front panel facing upwards, downwards or perpendicular to the mounting surface.

- **Front Panel Facing Upwards:** Use the screws provided with the mounting kit to secure the wall mount brackets to the DCM unit as shown in Figure E.1. Use six screws per mounting bracket as shown.
- **Front Panel Facing Downwards:** Use the screws provided to secure the wall mount brackets to the DCM. In this configuration, the mounting brackets should be secured to the DCM with the mounting "ears" aligned with the bottom of the unit, facing outwards. Use six screws per mounting bracket.
- **Front Panel Facing Outwards:** In this configuration, the mounting brackets should be secured to the DCM with the mounting "ears" aligned with the back of the unit, facing outwards. Four screws are used to secure each wall mount bracket to the DCM unit. When mounting each bracket to the sides of the DCM, use the four screw holes that are located closest to the rear of the unit.

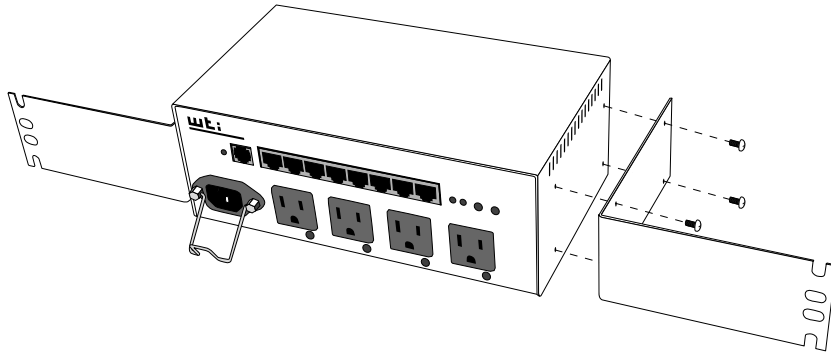


**Figure E.1: Wall Mounting (Front Panel Facing Upwards)**

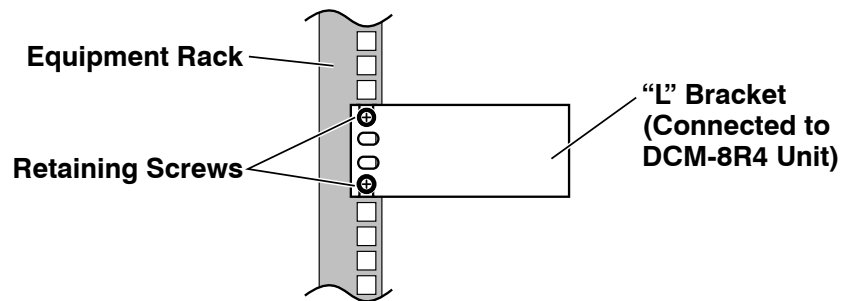
## E.2 Rack Mounting

WTI offers optional Rack Mount Brackets (WTI Part No. DCM-8R4-19R) that can be used to mount the DCM-8R4 in a standard, 19" equipment rack.

To mount the DCM in an equipment rack, first use four screws to secure the Rack Mount Brackets to the sides of the unit as shown in Figure E.2, then secure the Rack Mount brackets to your equipment rack as shown in Figure E.3.



**Figure E.2: Rack Mounting - Attaching Rack Mount Brackets to DCM-8R4**



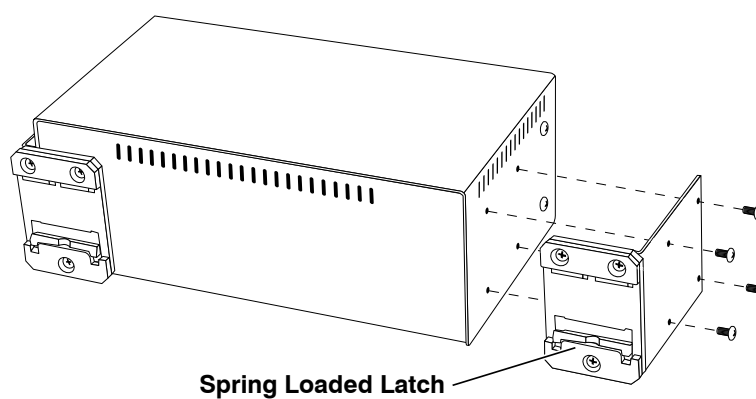
**Figure E.3: Rack Mounting - Installing DCM-8R4 in Equipment Rack**

### E.3. DIN Rail Mounting

WTI also offers an optional DIN Rail Mounting Kit (WTI Part No. DCM-8R4-DIN) that can be used to mount the DCM-8R4 on a standard DIN Rail or top hat rail.

To mount the DCM-8R4 on a DIN Rail, first use four screws to attach the DIN Mounting Brackets to the DCM unit as shown in Figure E.4, and then attach the DIN Mounting Brackets to your DIN Rail.

**Note:** Make certain that the spring loaded latches on the DIN Mounting Brackets are oriented as shown in Figure E.4, with the latches positioned towards the floor. If the DIN Mounting Brackets are mounted upside down, the DCM unit may not be securely fastened to the DIN Rail.



**Figure E.4:** DIN Rail Mounting

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July, 2009

Part Number: 14073, Revision: A

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