

WTI Part No. 12348  
Rev. B

# CPM Series

## Control Port Manager



**Models CPM-1600 and CPM-800**

## User's Guide

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# 1. Introduction

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WTI's CPM-1600 and CPM-800 Control Port Managers provide a cost effective means for control and management of network hardware without SNMP in-band restrictions. Both models allow on-site or remote communication with any piece of equipment with an RS-232 command port. Devices can be accessed without the need to travel to the installation site, even when your network is down.

## **Versatile Connectivity**

The CPM provides a practical solution for applications that require communication between devices operating at dissimilar baud rates. Up to 16 different devices can be connected to the CPM without the need to select a common baud rate. Each port can be individually configured for specific baud rates, parity, handshaking format, and various other parameters and options.

## **Easy Set-Up and Operation**

Configuration of the CPM is simple. A convenient menuing system is used to select communications parameters, and enable or disable options. The CPM can be easily configured to fit the requirements of almost any data communications application.

## **Limited Command Access**

The CPM is ideal for situations that require limited access to important commands. Each port can be individually configured to allow access to all commands (Administrator), or only allow access to basic commands (User).

## **Modular Design**

RJ11 jacks and RS-232 Modular Adapters allow for quick, easy connection to computers, modems, and other LAN hardware. The CPM is compact and takes only one rack unit (1.75 inches) of vertical rack space.

## **Buffered Ports**

The CPM has 256KB or 512KB of non-volatile, dynamically allocated buffer memory. This prevents data overflow during communication between two ports operating at dissimilar baud rates.

## **Modem Communication**

The CPM can either be controlled by a local PC that communicates with the unit via cable, or controlled via modem by a remote PC. ProComm® (or another communications program) is used to send commands to connect ports or display status. All devices connected to the CPM have access to the modem. Modem ports are password protected to restrict unauthorized access to connected devices.

## **Configuration Backup**

Once you have configured the CPM to fit the requirements of your application, parameters and options can be sent to an ASCII text file and saved for future retrieval. If configuration is accidentally altered or deleted, parameters can be reloaded using your terminal emulation software.

## CPM-1600 and CPM-800

This User's Guide discusses *both* the CPM-1600 and CPM-800 Control Port Managers. The CPM-1600 includes 16 ports, and the CPM-800 includes eight ports. All other features function identically.

## Typographic Conventions

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

- ^** (e.g. **^E**)            Indicates a key combination used to invoke a command. For example, the text "**^A**" (Control A) indicates the [**Ctrl**] key and the [**A**] key must be pressed simultaneously.
- COURIER FONT**        Indicates characters typed on the keyboard.  
For example, **/^E** or **/P 02**.
- [Bold Font]**            Text set in bold face and enclosed in square brackets, indicates a specific key. For example, [**Enter**] or [**Esc**].
- < >**                    Indicates required keyboard entries:  
For Example: **/P <n>**
- [ ]**                      Indicates optional keyboard entries.  
For Example: **/W [n]**

## 2. Unit Description

---

### 2.1. Front Panel

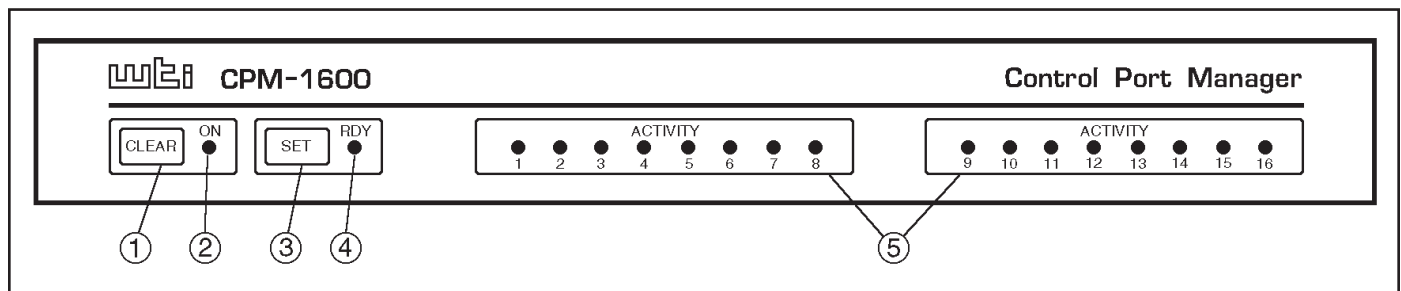


Figure 2.1: Instrument Front Panel

- ① **CLEAR:** Used to restart the CPM operating program without changing user-selected parameter settings or breaking port connections.
- ② **ON:** Lights when AC Power is applied to the unit.
- ③ **SET:** Used to initialize the CPM to the defaults specified by Setup Switch configuration. To initialize the CPM, press and hold both the SET button and the CLEAR button, release only the CLEAR button, and then release the SET button.  
**Note:** When the CPM is initialized, all command-selected parameters will be cleared, and the CPM will revert to the default parameters specified by the current Set-Up Switch configuration.
- ④ **RDY:** Flashes to indicate the unit is operational.
- ⑤ **ACTIVITY:** The Activity LEDs light to indicate that a corresponding port is receiving data. Note that the model shown here is the CPM-1600 (16 ports), model CPM-800 has eight Activity indicators.

## 2.2. Back Panel

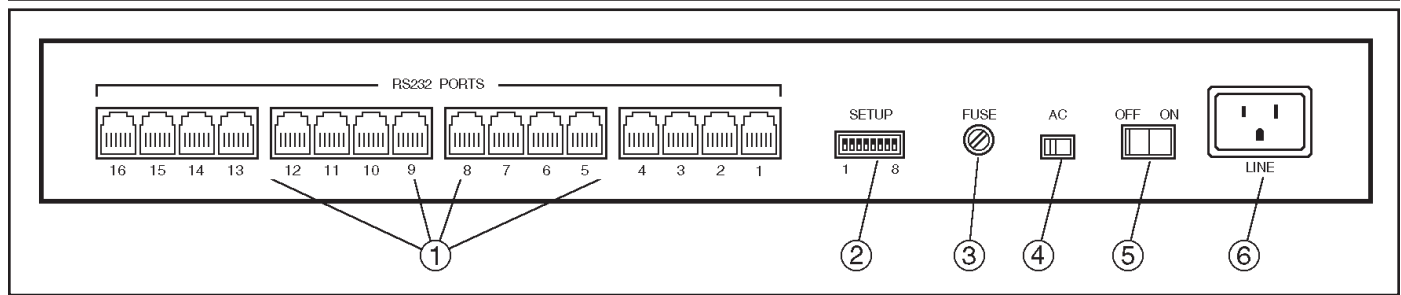


Figure 2.2: Instrument Back Panel (Model CPM-16 Shown)

- ① **RS-232 PORTS:** For connection to switched devices, accepts six wire RJ11 cable. Note that the model shown here is the CPM- 1600 (16 Ports), model CPM-800 has eight RS-232 Ports.
  - Port 1 is used for communication with the CPM during set-up and configuration. When the CPM is initialized to the default state, Port 1 is the only port with access to all CPM commands.
  - Port 1 can either be connected to a PC or modem. Connection to a modem allows the CPM to be controlled by a remote PC.
- ② **SETUP Switches:** A bank of eight dip switches, used to set baud rate, handshake, response message type, port mode, and duplex mode.
- ③ **FUSE:** Use only 250 V 1/8 amp slo blo fuse
- ④ **AC:** 115/220 V AC Selector Switch
- ⑤ **Power Switch:** Applies AC Power to unit.
- ⑥ **LINE:** Receptacle for AC Power Cord (included).

## 3. Getting Started

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This section provides a brief overview of the CPM's basic capabilities, and describes tests that can be performed to determine if the unit is operating properly.

### 3.1. Communication Parameters

---

The Setup Switches, located on the CPM Back Panel, are used to select default settings for all CPM RS-232 ports. A label located adjacent to the Setup Switches summarizes switch functions.

When the CPM is shipped from the factory, the Setup Switches are configured for 9600 baud, 8 Bits-No Parity, DTR handshaking, verbose command response, and no echo (all switches down).

For the purpose of this overview, use the default Setup Switch configuration. Set your communications program (e.g. ProComm) to use the following parameters:

- 9600 Baud
- 8 Bits, No Parity
- DTR Handshaking
- Full Duplex

**Using Other Parameters (Optional):** If desired, the CPM can be set to match the parameters used by the communications program. Refer to the label on the bottom of the CPM, and configure Setup Switches accordingly. After changing the Set-Up Switches, initialize the CPM; press and hold the SET and CLEAR keys, release CLEAR, and then release SET.

**Note:**

- Section 4.1 describes procedures for setting the CPM to match the parameters used by your communications program.
- If Setup Switches are changed, the new configuration will not take effect until the CPM is initialized.

### 3.2. Connecting your PC to the CPM

---

In order to set-up the unit, a PC must be connected to Port 1. Port 1 is always used for communication during set-up. This is because Port 1 is the only CPM port that will allow access to all commands when the unit has been initialized to the default state.

Note that after the unit has been installed and configured, other CPM ports can also be granted access to all CPM commands. This allows any CPM port to function as a "Control Port" after configuration is complete.



The CPM can either be controlled by a local PC that communicates via cable, or controlled by a remote PC that communicates via modem. For the purpose of this overview, a local PC running ProComm (or a similar communications program), will be cable connected to CPM Port 1.

**Note: Communication via Modem (Optional):** If desired, this overview can also be performed via modem.

Perform the following procedure to connect a PC to Port 1.

1. Attach an appropriate Snap Adapter to your PC COM port. Make certain to connect to the PC COM port used by your communications program.
  - a) For 25 pin PC COM ports, use the SA-12F Snap Adapter supplied with the CPM.
  - b) For nine pin PC COM ports, use the SA-9F Snap Adapter supplied with the CPM.
  - c) For a description of the Snap Adapter interface, please refer to Appendix A.
2. Attach one end of the RJ11 cable (included with the CPM) to Port 1. Attach the other end of the cable to the Snap Adapter installed in your PC COM port. Note that the cable used for connection must be a six wire, straight wired RJ11 cable.

### **3.3. Apply Power to the CPM**

---

Connect the power cable to the CPM and plug the cable into an AC power source. Press the Power Switch to ON. The ON LED should light, and the RDY LED should begin to flash.

**Note:** If all Port Activity LEDs flash upon power-up, this may indicate a problem with the CPM unit. Please contact WTI Technical Support as described in Appendix D.

### 3.4. Communicating with the CPM Unit

Perform the following procedure to enter the CPM Command Mode, explore the unit's basic features, and check for proper operation.

1. If you have not already done so, start your communications program (e.g. ProComm).
2. Issue the "Wake Port" command to access the CPM Command Mode and make certain the port is ready to receive commands. Type /, then simultaneously press the [Ctrl] key and the [E] key, and then press [Enter] (/^E [Enter]). The "CPM>" prompt should appear.
  - a) If the "CPM>" prompt is displayed, you have successfully accessed the Command Mode. This indicates the PC has contacted the CPM, and the unit is operating properly.
  - b) If the "CPM>" prompt is *not* displayed, this may indicate a problem in communicating with the CPM unit. Check the following:
    - **Cable Connection:** Check the cable connection between the CPM unit and the PC. Make certain the Snap Adapter and RJ11 cable connectors are firmly seated.
    - **Communication Parameters:** Make certain the CPM and ProComm are using the same communication parameters.
3. Type /H and press [Enter]. The CPM Help Screen will appear as shown in Figure 3.1. The Help Screen lists all available CPM commands, along with a brief description of each command.

```

/^E      Wake-Up Port
/X      Sleep - Only Accepts Wake-Up Command
/H      Help - Displays Command List
/S      Status - Displays Status Screen          n  Port # or Name
/W [n]  Who - Displays Port Parameters          N  Port #
/C <n> [n] Connect - Local [Remote]           |  "or"
/D <n> |...| * Disconnect                    *  "all"
/E <n> | * Erase Buffer                       <> Required Entry
/I      Initialize / Test Unit                [] Optional Entry
/F      Enter Site ID
/J      Read Site ID
/P <n>  Set Port Parameters
/U      Read Port Parameters
/L-[n]  Load Port Parameters
/G-00   Reset All Ports

/D, /E, /I Commands: Add /Y to bypass "SURE? (Y/N)"

```

Figure 3.1: The CPM Help Screen

SYSTEM STATUS			VERSION 1.4					MEMORY 512KB	
PORT	NAME	STATUS	BAUD	B/P	HS	MODE	TIMEOUT	BUFF	CTS
01		*FREE	9600	8N	DTR	ANY	OFF	----	H
02		FREE	9600	8N	DTR	ANY	OFF	----	L
03		FREE	9600	8N	DTR	ANY	OFF	----	L
04		FREE	9600	8N	DTR	ANY	OFF	----	L
05		FREE	9600	8N	DTR	ANY	OFF	----	L
06		FREE	9600	8N	DTR	ANY	OFF	----	L
07		FREE	9600	8N	DTR	ANY	OFF	----	L
08		FREE	9600	8N	DTR	ANY	OFF	----	L
09		FREE	9600	8N	DTR	ANY	OFF	----	L
10		FREE	9600	8N	DTR	ANY	OFF	----	L
11		FREE	9600	8N	DTR	ANY	OFF	----	L
12		FREE	9600	8N	DTR	ANY	OFF	----	L
13		FREE	9600	8N	DTR	ANY	OFF	----	L
14		FREE	9600	8N	DTR	ANY	OFF	----	L
15		FREE	9600	8N	DTR	ANY	OFF	----	L
16		FREE	9600	8N	DTR	ANY	OFF	----	L

Figure 3.2: The Status Screen

4. Type **/S** and press **[Enter]**. The CPM Status Screen will appear as shown in Figure 3.2. The Status Screen summarizes current conditions at all CPM Ports. The various fields of the Status Screen are explained in Section 8.4.
5. **Port Connection:** The CPM can perform two different types of port connections; Resident Connections and Third Party Connections.
  - a) **Resident Connection:** This type of connection occurs when your resident port issues a **/C** command to connect to a second port.
    - i. To connect Port 1 to Port 3, type **/C 3** and press **[Enter]**. Note that while Port 1 is connected to Port 3, the CPM will *not* recognize commands received via Port 1. However, the CPM *will* recognize a Resident Disconnect Sequence issued at a connected port.
    - ii. Issue the Resident Disconnect Sequence to disconnect Port 1 from Port 3; type **[Enter]+++[Enter]**.

- b) **Third Party Connection:** This type of connection occurs when your resident port issues a command to create a connection between two other ports.
  - i. To connect Port 3 to Port 4, type **/C 3 4** and press **[Enter]**.
  - ii. Note that while Ports 3 and 4 are connected, Port 1 will still recognize CPM commands. Type **/S** and press **[Enter]**, the Status Screen will appear. Note that the "STATUS" column now lists Ports 3 and 4 as connected, while Port 1 is listed as "FREE".
  - iii. Issue a Third Party Disconnect command to disconnect Ports 3 and 4. Type **/D 3** and press **[Enter]**.
  - iv. Type **/S** and press **[Enter]** to re-display the Status Screen. Note that the "STATUS" column now lists Ports 3 and 4 as "FREE".
6. Define the Site I.D. message. The Site I.D. allows the user to denote the location or name of the CPM unit. The Site I.D. cannot include non-printable ASCII codes such as NULLS and Line Feeds.
  - a) Type **/F** and press **[Enter]**. The CPM will prompt the user to enter the Site I.D.. Key in the desired Site I.D. and press **[Enter]**. Up to 32 characters long.
  - b) To display the Site I.D., type **/J** and press **[Enter]**.
  - c) Note that the Site I.D. will be cleared when the CPM is initialized.

This completes the introductory overview of the CPM unit. After you have determined that the unit is operating properly, configure the CPM as described in Section 4.

## 4. Hardware Installation

---

This section describes the procedures for installing the CPM and connecting devices to the unit.

### 4.1. Configure Setup Switches

---

When the CPM is shipped from the factory, the Setup Switches are configured for 9600 baud, 8 Bits-No Parity, DTR handshaking, verbose command response, and no echo (all switches down). These switch settings are compatible with most applications. If the default settings are not compatible with your application, change the switch settings as described in the following subsections.

Setup Switches should be configured to match the communication parameters used by the device attached to Port 1. This allows access to the CPM if the unit is initialized to default parameters.

**Note:** Communication parameters (baud rate, parity, and etc.) can also be individually selected for each CPM port by accessing the Command Mode and invoking the /P command as described in Section 5.3.4. However, when the CPM is initialized, parameters will return to the settings specified by the current Set-Up Switch configuration.

#### 4.1.1. Default Baud Rate (Sw1, Sw2, Sw3)

Setup Switches one through three select the *default* baud rate for all CPM Ports. The default baud rate must match the baud rate your control device will use when communicating with the CPM. If the control device will communicate via modem, select a default baud rate that is compatible with the modem.

After the CPM has been installed, the port configuration command (/P) can also be used to select individual baud rates for each port.

SW			Baud Rate
1	2	3	
D	D	D	9600*
U	D	D	300
D	U	D	1200
U	U	D	2400
D	D	U	4800
U	D	U	9600
D	U	U	19.2K
U	U	U	38.4K

\* = Factory Default

### 4.1.2. Default Handshake (Sw4)

The default handshake format should be set to match the device attached to CPM Port 1. Setup Switch 4 can select either DTR (hardware) or XON/XOFF handshaking.

After the CPM has been installed, the port configuration command (/P) can also be used to select both DTR *and* XON/XOFF handshaking, or no handshaking. The /P command can select a different handshaking format for each port.

Switch 4	Handshake
Down	DTR *
Up	XON/XOFF

\* = Factory Default

### 4.1.3. Default Response Message Format (Sw5)

The CPM can respond with either verbose (English text) or terse (numeric / abbreviated ) messages. Both terse and verbose response messages are summarized in Section 8.2.

After the unit has been installed, the /P command can also set the response message format to "none" (Quiet Mode). When the Quiet Mode is selected, the CPM will *not* send messages in response to commands. The /P command can select a different Response Message Format for each port.

Switch 5	Response Message Type
Down	Verbose (English Text) *
Up	Terse (abbreviated / numeric)

\* = Factory Default

### 4.1.4. Default Command Echo (Sw7)

Switch Seven enables or disables the Command Echo. When enabled, characters sent to the CPM will be echoed back to the control device.

After the CPM is installed, the /P command can individually select the Command Echo Mode for each port.

Switch 7	Command Echo
Down	Disable*
Up	Enable

\* = Factory Default

#### Note:

- If the Setup Switch configuration is changed while the unit is powered on, the new configuration will not take effect until the CPM is initialized. The CPM can be initialized by invoking the /I command, or by pressing and holding the CLEAR and SET keys, releasing the CLEAR key, and then releasing the SET key.
- Setup Switches 6 and 8 are not used.

## 4.2. Connecting a Modem to the CPM

---

The CPM can either be controlled by a local PC that communicates with the unit via cable, or controlled by a remote PC that communicates via modem.

The CPM's Modem Mode provides several useful options that can be employed when the unit is controlled via modem. The Modem Mode, which is only available on CPM Ports 1 and 2, provides password protected access to the Command Mode, and allows the user to re-define the Modem Reset Message and Hang-Up Message.

### Note:

- An external modem can also be connected to *any* other CPM port, providing the modem does not require password protection, or an externally generated reset message or hang-up message.
- The Modem Mode can also provide password protected access to the Command Mode when the CPM is controlled by a local device that communicates with the unit via cable.

Regardless of whether the unit will be controlled via cable or modem, the Control Device should communicate with the CPM via Port 1. This allows access to the unit if the CPM is initialized to default parameters. In the default state, Port 1 is the only port with access to all CPM commands. After the CPM has been installed and configured, Port 2 can also be connected to a modem to allow remote access to the Command Mode.

To connect a modem to the CPM, proceed as follows:

1. Install the SA-25M Snap Adapter (included with the unit) in the modem's serial port.
2. Connect a six wire, straight wired RJ11 cable from the Snap Adapter to CPM Port 1. Refer to Appendix A for information on Snap Adapters and straight wired cables.

## 4.3. Initialize the Unit to Default Settings

---

If Setup Switch configuration has been changed while the CPM is powered on, the unit must be initialized in order for the new switch configuration to take effect.

**Caution:** When the CPM is initialized, the unit will revert to the parameters specified by the current Set-Up Switch configuration. Any command-selected parameters will be lost.

1. Simultaneously press the SET button and CLEAR button, located on the face of the CPM unit.
2. Release the CLEAR button, wait one second, and then release the SET button.

## 4.4. Connecting Devices to the CPM

---

From modems to printers, many different types of devices can be connected to the CPM. To physically connect a device to the CPM, proceed as follows.

1. Access the Command Mode.
2. Determine which CPM port will be used for connection to the new device (e.g. Port 3).
3. Type **/S** and press **[Enter]**. The CPM will display the Status Screen. Find the "BUFF" column in the Status Screen. The BUFF column lists the amount of memory currently being used to store buffered data for each port.
  - a) If the Status Screen indicates the port has data stored in buffered memory, issue the **/E** command to clear the buffer. The **/E** command uses the following format:  

**/E nn [Enter]**

Where **nn** is the number of the CPM port buffer to be cleared. For example, to clear the buffer for port three, type **/E 3** and press **[Enter]**.
  - b) Note that buffered data which has been cleared using the **/E** command cannot be recovered.
4. Attach an appropriate Snap Adapter to an RS-232 serial port on the device you intend to connect. Refer to Appendix A for more information on WTI Snap Adapters.
  - a) **Modem:** Ports 1 and 2 can be configured for the Modem Mode, which provides Password restricted access to the Command Mode, and allows the user to re-define the Modem Reset and Hang-Up Messages. An external modem can also be connected to any other CPM port, providing the modem does not require password protection, or an externally generated reset or hang up message. Connect an SA-25M Snap Adapter to the modem's serial port.
  - b) **PC:** Any CPM RS-232 Port can be used for connection to a PC. For 25 pin PC COM ports, use an SA-12F Snap Adapter. For 9 pin PC COM ports, use an SA-9F Snap Adapter.
  - c) **Printer:** Any CPM RS-232 Port can be used for connection to a printer. Use an SA-12M Snap Adapter.
  - d) **Other Devices:** For a description of the CPM Port interface, please refer to Appendix A.
5. Connect a 6 wire, straight wired RJ11 cable from the Snap Adapter to a vacant CPM RS-232 port.
6. Select communication parameters for the port as described in Section 5.3.4.



# 5. Configuration

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This section describes procedures that are used to configure the CPM to fit the requirements of your application.

## 5.1. Access to the CPM Command Mode

---

When the Command Mode is active, the user can invoke commands to configure the unit, display status, and connect or disconnect ports. The Command Mode can be accessed from a local PC that communicates with the CPM via cable, or accessed by a remote PC that communicates via modem.

1. Start the communications program (e.g. Procomm) on your local or remote PC. Make certain the CPM and ProComm are set for the same communication parameters (e.g. baud, parity, etc.).
2. Access the CPM Command Mode.
  - a) **Local Access:** To access the command mode from a local PC, type /**^E** and press **[Enter]**. The CPM Command Mode is now active.
  - b) **Remote Access:** To access the command mode from a remote PC, proceed as follows:
    - i. Dial the number for the modem connected to CPM Port 1. The CPM will respond with the "ENTER PASSWORD" prompt.
    - ii. If you have defined a password for modem access, key in your password and press **[Enter]**. If the password has not been defined, just press **[Enter]**. The "CPM>" prompt will appear.
    - iii. The Password prompt will not be displayed when the CPM is first configured, or immediately after the unit has been initialized. In the default state, the port will be set for the "Any-to-Any" Port Mode, and the Password feature will be disabled.
    - iv. Type /**^E** and press **[Enter]** to make certain the Command Mode is active, and the unit is ready to receive commands.

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## 5.2. Defining and Reading the Site I.D.

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When your application involves communication with several CPM units, the Site I.D. can indicate the location or name of each unit. If you have already defined the Site I.D. in Section 3, and have not reinitialized the CPM, skip this section.

### Note:

- The Site I.D., cannot include non-printable ASCII Codes, such as NULLS and Line Feeds.
  - The Site I.D. will be cleared when the CPM is initialized to default settings.
1. Access the Command Mode.
  2. Type **/F** and press **[Enter]**. The CPM will prompt the user to enter the Site I.D.. Key in the desired Site I.D. and press **[Enter]**. Up to 32 characters long.
  3. To display the Site I.D., type **/J** and press **[Enter]**.

---

## 5.3. Port Configuration

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### 5.3.1. Configuration Conventions

When responding to prompts, invoking commands, and selecting items from the port configuration menu, note the following:

- To select an item from the Port Configuration menu, key in the number for the item and press **[Enter]**.
- When defining the Port Name or Password, do not use ASCII Control Codes, the slash character (/), quotation marks ("), the asterisk character (\*) or blank spaces.
- The Port Name *cannot* begin with a number.
- Refer to the instructions in each screen for additional functions available under that screen.
- To exit a menu or prompt without changing its current configuration, press **[Esc]**.
- Note that the Password and Port Names are case sensitive. When defining the Passwords or Port Names, take care to note the exact text, including the case of each character.

## 5.3.2. Port Modes

The CPM offers two port operation modes; the Any-to-Any Mode and the Modem Mode.

### 5.3.2.1. The Any-To-Any Mode

When the Any-to-Any Mode is selected, the CPM will respond to ASCII commands to connect that port to any other port. All CPM ports can be configured for the Any-to-Any Mode.

When a port is configured for the Any-to-Any Mode, a password will *not* be required in order to access the Command Mode. In addition, the port will not send the defined Modem Reset Message or Hang-Up Message.

### 5.3.2.2. The Modem Mode

The Modem Mode allows the port to be connected to an external modem. A port configured for Modem Mode can also perform all of the functions normally available in the Any-to-Any Mode. Only Ports 1 and 2 can be configured for the Modem Mode.

In addition to allowing data transfer, the Modem Mode also provides several functions specifically related to modem communication. When the Modem Mode is selected, the user can also define a password to restrict remote access to the Command Mode. When the CPM is contacted via modem, the unit will prompt the caller to enter the password. The CPM allows three attempts to enter the password. If the correct password is not entered in three attempts, or if the user does not respond to the password prompt within 30 seconds, the CPM will disconnect and reset the modem.

The Modem Mode also allows redefinition of the Modem Reset Message and Hang-Up Message. Although the default reset and hang-up messages are compatible with most modems, these messages can be re-defined when necessary.

Note that a modem can also be connected to a CPM port configured for the Any-to-Any Mode, providing the modem does not require an externally supplied reset message or hang-up message.

When using the Modem Mode, note the following:

- The SA-25 Snap Adapter allows correct transfer of DCD and handshaking signals. When using the SA-25, the DSR signal from the modem must be high in order to pull up the DTR signal.
- When a modem is connected to the CPM, other connected devices can use the modem for calling out. To call out from the modem, invoke the **/C** command to connect to the port, and access the modem as you normally would.

### 5.3.3. Command Availability

The "Commands" field in the Port Configuration menu allows the user to specify which CPM commands will be available to each port. The user can either select "All" commands or only "Basic" commands. The "All" option is normally selected for administrator ports, and allows access to all CPM commands. The "Basic" option is normally selected for user ports, and allows limited access to CPM commands. Section 8.3 summarizes "All" and "Basic" commands.

In the default state, Port 1 is the only port with access to "All" CPM commands. When ports are configured, at least one CPM port should be granted access to "All" CPM commands.

### 5.3.4. Port Configuration Commands

The following section describes the procedure for using the Port Configuration Menu to select options for each port.

Note that parameters and options selected via the Port Configuration Menu will stay in effect until the CPM is initialized using the /I command or the CLEAR and SET buttons. When the unit is initialized, parameters will revert to the defaults specified by the Setup Switch configuration.

After parameters have been selected, the configuration can be saved to an ASCII file on your PC. Later, if the CPM configuration is altered or deleted, the file with the saved parameters can be sent to the CPM to automatically reconfigure the unit without the need to manually re-define each parameter. Section 7 provides a description of the procedure for saving configuration parameters to an ASCII file.

To select port parameters, proceed as follows:

1. Access the CPM Command Mode.
2. Type /P, followed by the number of the port to be configured, and press [Enter]. For example, to configure Port 2, type /P 02 [Enter]. The Port Configuration menu will appear as shown in Figure 5.1.

The Port Configuration menu offers the following options:

- **1. Port Name:** Allows the user to assign a name to this port. For example, "MODEM". Up to eight characters.
- **2. Baud Rate:** Defines the baud rate for this port. The Baud rate can be set to any standard rate from 300 to 38.4K bps.
- **3. Bits/Parity:** Defines the data bits and parity for this port.
- **4. Stop Bits:** Defines the stop bits for this port.
- **5. Handshake:** Defines the handshake format for this port. The handshake can be set to XON/XOFF, DTR (hardware), Both, or None.

```

PORT PARAMETERS #02

1.  PORT NAME:
2.  BAUD RATE:          9600
3.  BITS/PARITY:       8-None
4.  STOP BITS:         1
5.  HANDSHAKE:         DTR
6.  MODE:              Any-to-Any
7.  COMMANDS:         All
8.  LOGOFF CHAR:       +
9.  DISCONNECT
    SEQ:               On
    TIMEOUT:           Off
10. TIMEOUT:          5 Sec
11. MESSAGE TYPE:     Verbose
12. ECHO:              On

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

```

Figure 5.1: Port Configuration Menu (Port 2 Shown)

- **6. Mode:** Defines the operation mode for this port. For Ports 1 and 2, the user can select either "Any-to-Any" mode or Modem Mode. For Ports 3 and above, only the Any-to-Any mode can be selected.

When the Modem Mode is selected for Ports 1 or 2, the CPM will display an additional menu that is used to select the following parameters:

- **1. Password:** Defines a Password to restrict modem access to the Command Mode. To disable the password requirement, press **[Enter]** without keying in a password. The Password is case sensitive, and can be up to 32 characters long.
- **2. Reset Message:** When necessary, this option can be used to re-define the modem reset message. The default Reset Message is ATQ0&C1&D0S0=1. This reset message is compatible with most modems.
- **3. Hang-Up Message:** When necessary, this option can be used to re-define the modem hang-up message. The default Hang-Up Message is ~~~+++~~~ATH0. This Hang-Up Message is compatible with most modems.
- **7. Commands:** Determines which commands will be available to this port. The port can be configured to recognize only Basic commands (user), or All commands (administrator). When the CPM is configured, at least one port (typically Port 1) should be granted access to All CPM commands.

- **8. Logoff Char.:** Defines the Logoff Character for this port. The Logoff Character determines the disconnect sequence that must be issued at this port in order to disconnect from a second port (Resident Disconnect). When defining the Logoff Character, note the following:
    - The default Logoff Character is "+". As a result, the default Resident Disconnect Sequence is **[Enter]+++[Enter]**.
    - The Resident Disconnect Sequence uses the format **[Enter]###[Enter]**, where # is the currently defined Logoff Character.
    - The Logoff Character should only be re-defined when the default Resident Disconnect Sequence is not compatible with your application.
    - The disconnect sequence is not used when performing a Third Party Disconnect. The /D command is used to initiate a Third Party Disconnect.
  - **9. Disconnect:** Enables or disables the Resident Disconnect Sequence and/or Timeout Disconnect for this port.
  - **10. Timeout:** Selects the Timeout Period for this port. When the Timeout Disconnect is enabled, and the port does not receive or transmit data for the specified Timeout Period, the port will disconnect from the associated port.
  - **11. Message Type:** Defines the type of response messages that will be sent when the CPM responds to commands. The user can select Verbose Messages (English Text Response), Terse Messages (Numeric / Abbreviation), or Quiet Mode (No Response).
  - **12. Echo:** Enables or Disables the command echo.
3. (Optional) After all ports have been configured, save the user-selected configurations parameters to an ASCII file as described in Section 7.

## 6. Operation

---

### 6.1. Port Connection and Disconnection

---

This section describes the procedure for using ASCII commands to make and break connections between CPM ports.

The CPM allows communication between devices without the requirement that both devices use the same communication parameters. This allows the user to connect devices that use dissimilar baud rates, parity, handshake, and etc.. The CPM converts data rates and other communications parameters, eliminating the need to select common parameters for all connected devices.

#### 6.1.1. Using ASCII Commands to Connect Ports

Two different types of connections can be made between CPM ports; Resident Connections and Third Party Connections.

In a Resident Connect, your resident port issues a /C command to connect to a second port. For example, if Port 4 issues the /C command to connect to Port 5, this is a Resident Connect.

In a Third Party Connect, your resident port issues a /C command to create a connection between two other ports. For example, if Port 1 is your resident port, and Port 1 issues a command to connect Port 2 to Port 3, this is a Third Party Connect.

#### Note:

- Port Names are case sensitive. When invoking the /C command, make certain to note the case of each letter of the Port Name.
- Ports that have been granted Basic (User) command capability, can only use the /C command to perform a Resident Connect. Ports with Basic command capability *cannot* initiate a Third Party Connect.

To Connect CPM ports, proceed as follows:

1. Access the CPM Command Mode.
2. Invoke the /C command to connect the desired ports.
  - a) **Resident Connect:** To connect your resident port to another port, type /C **nn** and press [Enter]. Where **nn** is the number or name of the port you want to connect.

#### Examples:

- To connect your resident port to Port 8, type /C **08** [Enter].
- To connect your resident port to a port named "MODEM", type /C **MODEM** [Enter].

- b) **Third Party Connect:** To connect any two ports (other than your resident port), type `/C nn NN` and press **[Enter]**. Where **nn** and **NN** are two CPM port numbers or port names.

**Examples:**

- To connect Port 5 and Port 6, from a third port with "All" command capability, type `/C 05 06 [Enter]`.
- To connect a Port named "SALES" to a Port named "MODEM", from a third port with "All" command capability, type `/C SALES MODEM [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. 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".

### 6.1.2. Disconnecting Ports

There are three different methods for disconnecting ports, the Resident Disconnect, the Third Party Disconnect, and the No Activity Timeout. Providing the timeout feature has been enabled, a No Activity Timeout can be used to disconnect resident ports *or* third party ports.

**Note:**

- Port Names are case sensitive. When invoking the `/D` command, make certain to note the case of each letter of the Port Name.
  - In the DTR mode, the DTR signal will drop for approximately 250 ms after a disconnect has occurred.
1. **Resident Disconnect:** A Resident Disconnect 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 Disconnect would be used to disassociate the two ports. A Resident Disconnect is initiated by invoking the Logoff Sequence.
    - a) The default Logoff Sequence is `[Enter]+++[Enter]`.
    - b) If the default Logoff Sequence is not compatible with your application, the Logoff Character can be redefined using the `/P` (Port Configuration) command. For example, if the Logoff Character is re-defined as `@`, the new Logoff Sequence will be `[Enter]@@@[Enter]`.



2. **Third Party Disconnect:** A Third Party Disconnect is used to disconnect two ports by invoking the /D command at a third port. For example, if you are communicating via Port 1, and you wish to disconnect Port 3 from Port 4, a Third Party Disconnect would be used.
  - a) The /D (Disconnect) command can be invoked by any port that has been granted access to "All" commands (Administrator).
  - b) The /D command line can specify both connected ports, or either of the two connected ports. For example, if Port 3 is connected to Port 4, and Port 1 has access to "All" commands, the user can invoke one of the following commands at Port 1:

/D 03 04 [Enter]

or

/D 03 [Enter]

or

/D 04 [Enter]

3. **No Activity Timeout:** Providing the Timeout Disconnect feature has been enabled for either connected port, the No Activity Timeout can be used to disconnect Resident Ports, or Third Party Ports.
  - a) The Timeout Feature is enabled and defined by invoking the /P command to access the Port Configuration Menu for the desired port. Option 9 is used to enable or disable the Timeout Feature, and Option 10 is used to define the Timeout Period.
  - b) When the Timeout Feature has been enabled, the port will automatically disconnect when no additional data is received for the defined Timeout Period. The default Timeout Period is 5 seconds.

## 6.2. Defining Hunt Groups

---

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

**Note:** Port Names are case sensitive. When invoking the /C command, make certain to note the case of each letter of the Port Name.

1. Access the CPM Command Mode.
2. Invoke the /P command to access the Port Configuration Menu for the desired Port(s). For example, to configure Port 4, type **/P 4 [Enter]**.
3. From the Port Configuration Menu, select item 1. to define the Port Name.
4. Repeat steps 2 and 3 above to assign similar or identical names to the other port(s) you wish to include in the Hunt Group. For example, a series of ports in a Hunt Group could be named "PRINTER1", "PRINTER2", "PRINTER3", and etc., or all ports in the group could be assigned the same name (e.g. "PRINTER").

5. To connect to the next available port in the hunt group, invoke the /C (Connect) command using the port name to specify the desired group of ports. For example, /C **PRINTER** [Enter].
6. The CPM will connect to the first available port in the Hunt Group. If all ports in the specified Hunt Group are presently connected, the CPM will respond with the "BUSY" message.

Note that it is only necessary to enter enough letters of the port name to differentiate the ports in the Hunt Group from other ports. For example, to connect your resident port to the first available port in a group of ports named "SALES1", "SALES2", "SALES3", and etc., the connect command can be invoked as /C **S**, providing no other port names begin with the letter "S".

The names of ports in Hunt Groups must be unique. Otherwise ports with names that are similar or identical to the Hunt Group, will also be included in the Hunt Group.

#### **Hunt Group Example 1:**

1. Assume CPM Ports 1 and 2 have been configured in the Modem Mode, and modems have been installed at both ports.
2. Assume Port 1 has been named "MODEM1" and Port 2 has been named "MODEM2".
3. If your resident port is Port 4, and you want to connect to the first available Modem, access the CPM Command Mode, type /C **MODEM** and press [Enter].

#### **Hunt Group Example 2:**

1. Assume Ports 3, 4, and 5 have been configured in the Any-to-Any Mode and printers are attached to each port.
2. All three ports have been named "PRINTER".
3. If your resident port is Port 1, and you want to connect Port 2 to the first available printer, access the CPM Command Mode, type /C **02 PRINTER** and press [Enter].

## **6.3. Port Buffers**

---

When two ports are communicating at dissimilar baud rates, the Port Buffers prevent data overflow at the slower of the two ports.

The Port Buffer provides 256K or 512K (optional) of non-volatile memory that is shared for buffering purposes by all CPM ports. Buffer memory is dynamically allocated in blocks of 2K characters. The Status Screen lists the amount of Buffer Memory currently used by each port.

Note that if data is allowed to accumulate in a port buffer, this will decrease the amount of buffer memory available to other ports. If the Status Screen indicates an accumulation of data at an unused port, the /E (Erase Buffer) command can be invoked to clear the buffer. To clear a buffer, type /E **nn** [Enter], where **nn** is the number of the port buffer to be cleared.

## 7. Saving Configuration Parameters

---

After you have configured the CPM to fit the requirements of your application, configuration parameters can be downloaded to your PC and saved as an ASCII text file. Later, if the configuration is accidentally altered, the file with the saved parameters can be uploaded to automatically reconfigure the CPM without the need to manually define each parameter.

The saved parameters can also be uploaded to other CPM units. This allows rapid set-up when several CPM units will be configured with the same parameters.

This section describes the procedure for using ProComm to save and load CPM parameters. Note that this procedure can also be applied to other communications programs.

### 7.1. Sending Parameters to a File

---

1. Start Procomm and access the CPM Command Mode.
2. Use the **/P** command to disable the CPM's echo feature as described in Section 5.3.4. When the Port Configuration menu is displayed, option 12 is used to enable or disable the echo feature.
3. Press the **[Page Down]** key.
4. ProComm's Download Menu will appear. Select (A) ASCII. ProComm will display a prompt which reads "ASCII DOWNLOAD - Please enter file name".
5. Type in a name for the file that will contain the saved CPM parameters using the full path and drive designation. For example, "**C:\CPM.PAR**".
6. At the ProComm screen, type **/U** and press **[Enter]**. The CPM will send a series of command lines to the file specified in Step 5 above. Each line describes parameters for an individual Port.
  - a) The **/U** command must be invoked *before* ProComm's download timeout is reached. The download timeout can be redefined using ProComm's set-up menu.
  - b) ProComm will emit a Beep when the download timeout period has elapsed.
7. When the CPM has finished sending parameters, press **[Esc]** to terminate ProComm's Download mode.

## 7.2. Restoring Saved Parameters

---

This section describes the procedure for using ProComm to send stored parameters to the CPM unit.

1. Start ProComm and access the CPM Command Mode. Press the **[Page Up]** key to activate ProComm's Upload menu.
2. Select (A) ASCII. The system will display a prompt which reads "ASCII UPLOAD - Please enter the file name".
3. Key in the name of the ASCII text file with the stored parameters using the full path and drive designation and press **[Enter]**. For example, **C:\CPM.PAR [Enter]**.
4. ProComm will send the ASCII text file to the CPM and saved parameters will be restored. When ProComm has finished sending parameters to the CPM, press **[Esc]** to terminate ProComm's Upload mode.
5. Type **/S** and press **[Enter]**, the CPM's Status Screen will be displayed. Check the Status Screen to make certain the CPM has been configured with the saved parameters.

## 8. Command Reference Guide

---

This section describes the CPM's command set and explains options available to each command.

### 8.1. Command Conventions

---

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

- **Slash Character:** Almost all commands begin with the Slash Character (/). The only exception is Resident Disconnect Sequence (Default = **[Enter]+++[Enter]**).
- **Asterisk Character:** When the asterisk character is entered as the argument of the **/D** command (Disconnect Port), or the **/E** command (Erase Buffer) the command will be applied to all ports. For example, to disconnect all ports, type **/D \* [Enter]**.
- **Suppress "SURE (Y/N)?" Prompt:** When the **/D** (Disconnect Port), **/E** (Erase Buffer), or **/I** (Initialize Unit) commands are invoked, the **/Y** option can be included in the command line to override the "SURE (Y/N)?" prompt. For example, to disconnect Port 8 without displaying the "SURE? (Y/N)" prompt, type **/D/Y 8 [Enter]**.
- **Enter Key:** All commands are invoked by pressing the **[Enter]** key.
- **Command Mode:** CPM Ports will only recognize commands when the Command Mode has been accessed. To access the Command Mode, type **/^E** and press **[Enter]**.
- **Connected Ports:** When the **/C** command has been issued to connect two ports, most CPM commands will not be recognized by either of the two connected ports. The only exception is the Resident Disconnect Sequence (Default = **[Enter]+++[Enter]**) which will cause the two ports to disconnect.

## 8.2. Command Response

---

When commands are sent to the CPM, the unit can respond with either verbose (English Text) or terse messages (numeric / abbreviated). The default message type for all CPM ports can be set to either terse or verbose by configuring Setup Switch Five.

After the default response message type has been selected via Setup Switch Five, the Port Configuration (/P) command can be used to specify an individual response message format for each port. In addition to the Terse and Verbose response modes, the /P command can also select the Quiet Mode. When the Quiet Mode is selected for a CPM port, that 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
1	PORT CONNECT
2	BUSY
3	PORT DISCONNECT
4	INVALID COMMAND
5	SURE ? (Y/N)
6	INVALID PARAMETER
7	INVALID SYNTAX
8	INVALID ACCESS
9	INVALID PORT TYPE
A	COMMAND ABORTED

## 8.3. Command Summary

The chart below summarizes all available CPM Commands:

Function	Command Syntax	Command Availability	
		All (Admin.)	Basic (User)
Wake-up	<code>/^E [Enter]</code>	X	X
Sleep	<code>/X [Enter]</code>	X	X
Help	<code>/H [Enter]</code>	X	X
Status	<code>/S [Enter]</code>	X	X
Who (View Port Parameters)	<code>/W [n] [Enter]</code>	X	X <sup>❶</sup>
Connect	<code>/C &lt;n&gt; [n] [Enter]</code>	X	X <sup>❷</sup>
Resident Disconnect <sup>❸</sup>	<code>[Enter]+++[Enter]</code>	X	X
Third Party Disconnect <sup>❹</sup>	<code>/D[/Y] &lt;n&gt; [n] [Enter]</code> <code>/D[/Y] * [Enter]</code>	X	
Erase Buffer	<code>/E[/Y] &lt;n&gt; [Enter]</code> <code>/E[/Y] * [Enter]</code>	X	
Initialize	<code>/I[/Y] [Enter]</code>	X	
Enter Site ID	<code>/F [Enter]</code>	X	
Read Site ID	<code>/J [Enter]</code>	X	X
Set Port Parameters	<code>/P &lt;n&gt; [Enter]</code>	X	
Read Port Parameters	<code>/U [Enter]</code>	X	

- ❶ A port with "Basic" command capability cannot view parameters for a port configured for the Modem Mode. This prevents passwords from being displayed.
- ❷ A port with "Basic" command capability *can* perform a Resident Connect, but *cannot* perform a Third Party Connect.
- ❸ Resident Disconnect: Used to disconnect your resident port from another port. Note that the Disconnect Sequence can be redefined via the Port Configuration Menu (/P).
- ❹ Third Party Disconnect: Used to disconnect two or more non-resident ports. Must be issued from a third port with "All" command capability.

## 8.4. Command Set

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### Wake Up (Access Command Mode) (/^E)

---

Waking a port will provide access to the CPM command mode, allowing the user to enter commands to connect ports, display status and etc.. When the Command Mode is inactive, the CPM will not respond to any commands except the /^E command.

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /^E [Enter]

**CPM Response:** The CPM will respond as follows:

**Any-to-Any Mode:** The "CPM>" prompt will appear.

**Modem Mode:** The CPM will display the "ENTER PASSWORD" prompt. When the correct password is entered, the "CPM>" prompt will appear. After three unsuccessful attempts to enter the password, the port will be put back to sleep.

### Sleep (Exit Command Mode) (/x)

---

Puts the Port to sleep and exits the CPM Command Mode. While a port is sleeping, the unit will not recognize any CPM commands except the /^E (Wake Up) command. Note that exiting from the Command Mode will not terminate user-specified port connections. The /X Command functions as follows:

- **Any-to-Any mode:** Exits the CPM Command Mode. When the Command Mode is inactive, the port will not respond to any command except the Wake-up command (/^E).
- **Modem mode:** Disconnects and resets the modem. The hang-up message is sent, the hardware line to modem drops for 250ms and the reset message is sent.

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /X [Enter]

**CPM Response:** (Terse and Verbose) PORT ASLEEP

### Help (/H)

---

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

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /H [Enter]

**CPM Response:** Displays Help Screen



SYSTEM STATUS			VERSION 1.4					MEMORY 512KB		
PORT	NAME	STATUS	BAUD	B/P	HS	MODE	TIMEOUT	BUFF	CTS	
01	SYSOP	*FREE	9600	8N	DTR	ANY	OFF	----	H	
02	MODEM	C-05	9600	8N	DTR	MODEM	5 MIN	----	H	
03	SALES1	FREE	9600	8N	DTR	ANY	OFF	----	L	
04	SALES2	*FREE	9600	8N	DTR	ANY	OFF	----	L	
05	SALES3	C-02	9600	8N	DTR	ANY	OFF	----	H	
06	SALES4	FREE	9600	8N	XON	ANY	15 MIN	----	L	
07	ENGR1	*FREE	9600	8N	DTR	ANY	5 SEC	----	L	
08	ENGR2	C-09	9600	8N	DTR	ANY	OFF	----	H	
09	ENGR3	C-08	9600	8N	DTR	ANY	5 MIN	----	H	
10	RPB	*FREE	9600	8N	DTR	ANY	OFF	----	L	
11	AND1	*FREE	9600	8N	DTR	ANY	OFF	----	H	
12		FREE	9600	8N	DTR	ANY	NONE	----	L	
13		FREE	9600	8N	DTR	ANY	OFF	----	L	
14		FREE	9600	8N	DTR	ANY	OFF	----	L	
15		FREE	9600	8N	DTR	ANY	BOTH	----	L	
16		FREE	9600	8N	DTR	ANY	OFF	----	L	

Figure 8.1: The Status Screen

## Status (/s)

Displays the Status Screen (Figure 8.1), which lists current conditions and parameters for all CPM ports.

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /S [Enter]

**CPM Response:** Status screen.

The Status Screen lists the following parameters:

**Port:** The Port Number.

**Name:** The user-defined Port Name.

**Status:** Indicates the current status of each port as follows:

**\***: Indicates the port has accessed the CPM Command Mode.

**FREE:** Indicates the port is not in use.

**C-*nn*:** Indicates the port is connected to Port number "*nn*".

**Baud:** Lists the Port's baud rate.

**B/P:** Lists the port's data bits and parity settings.

**HS:** Lists the port's handshaking setting: XON/XOFF, DTR, BOTH, or NONE.

**Mode:** Lists the user-selected port mode. The Mode column will list either the Any-to-Any Mode or the Modem Mode for each port. Note that the Modem Mode is only available to Ports 1 and 2.

**Timeout:** Indicates the status of the no data timeout feature. When the Timeout feature is disabled, this column will read "OFF". When the Timeout feature is enabled, this column will list the user-defined Timeout period.

**Buff:** Lists the amount of data currently stored in the buffer for this port. The CPM will allocate buffer memory in blocks of 2K characters. If necessary, the /E command can be issued from a port with "All" command capability to clear data from port buffers.

**CTS:** Lists the status of the port's input hardware signal. H is (high) active and L is (low) inactive.

## Who (View Port Parameters) (/w)

---

Displays the current configuration of an individual port, but does not allow the user to change port parameters.

**Note:** When this command is issued from a port with Basic (User) command capabilities, the CPM will *not* display parameters for any port configured for the Modem Mode. This prevents the port password from being displayed.

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /w [n] [Enter]

Where "n" is the number or name of the desired port.

**CPM Response:** Displays port parameters.

### Examples:

To display parameters for your resident port, access the CPM Command Mode and type the following:

```
/w [Enter]
```

To display parameters for Port 7, access the CPM Command Mode and type the following:

```
/w 07 [Enter]
```

To display parameters for a port named "SALES", access the CPM Command Mode and type the following:

```
/w SALES [Enter]
```

## Connect (/c)

---

Establishes a bi-directional connection between two ports. There are two different types of CPM port connections:

- **Resident Connect:** If the /C command specifies one port name or number, the CPM will connect your resident port with the specified port.
- **Third Party Connect:** If the /C command specifies two port numbers or names, the CPM will connect the two ports indicated by the command. Note that a Third Party Connect command must be issued from a third port, which has been granted access to "All" CPM commands. Ports which have been configured for "Basic" command capability *cannot* perform a Third Party Connect.

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /C <n> [n] [Enter]

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

**CPM Response:**

**Verbose:** PORT CONNECT

**Terse:** 1

**Examples:**

Resident Connect: To connect your resident port to Port 16, access the CPM Command Mode and type:

```
/C 16 [Enter]
```

Third Party Connect: To connect Port 12 to Port 14, access the CPM Command Mode from a third port with "All" command capability and type the following:

```
/C 12 14 [Enter]
```

## Third Party Disconnect (/D)

---

When two ports are connected, the /D command can be invoked at a third port with "All" command capabilities. Note that the /D command cannot be used to disconnect your resident port. To disconnect your resident port, issue the Logoff Sequence (Default = [Enter]+++[Enter]) or wait for the Timeout Period to elapse (if enabled).

**Command Availability:** All (Administrator)

**Command Format:** /D [/Y] <n> [n] [n] [Enter]

Where:

- /Y (Optional) suppresses the "SURE? (Y/N)" prompt.
- n Is the number or name of the port(s) to be disconnected.  
To disconnect all ports, enter an asterisk.

### CPM Response:

**Verbose:** SURE? (Y/N), if Y is entered, the CPM will respond with "PORT DISCONNECT".

**Terse:** 5, if Y is entered, the CPM will respond with 3.

### Examples:

To disconnect Port 2 from Port 3, invoke either of the following commands from a third port with "All" Command Capability:

```
/D 2 [Enter] or /D 3 [Enter]
```

To disconnect Port 2 from Port 3 without the "SURE? (Y/N)" prompt, access the CPM Command Mode from a third port with "All" command capability and type one of the following commands:

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

To disconnect a group of ports with similar names (e.g. PC1, PC2, PC3), access the CPM Command Mode from another port with "All" command capability and type the following:

```
/D PC [Enter]
```

To disconnect all ports, access the CPM Command Mode from a port with "All" command capability and type the following:

```
/D * [Enter]
```

## Erase Buffer (/E)

---

Erases data from the buffer for a specified port.

**Note:** Buffered data which has been cleared by the /E command cannot be recovered.

**Command Availability:** All (Administrator)

**Command Format:** /E [/Y] <n>

Where:

**n** is the specified port number. To erase buffers for all ports, enter an asterisk in place of the port number.

**/Y** suppresses the "SURE? (Y/N)" prompt

**CPM Response:**

**Verbose:** SURE? (Y/N), if Y is entered, the CPM will respond with "OK".

**Terse:** 5, if Y is entered, the CPM will respond with 0.

**Examples:**

To clear the buffer for Port 3, access the CPM Command Mode from a port with "All" command capability and type the following:

```
/E 3 [Enter]
```

To clear all port buffers, without displaying the "SURE? (Y/N)" prompt, access the CPM Command Mode from a port with "All" command capability and type the following:

```
/E/Y * [Enter]
```

## Initialize (/I)

---

Tests the CPM's internal memory and initializes the system with the default parameters specified by the Setup Switch configuration.

**Caution:** When the /I command is invoked, the CPM will revert to the parameters specified by the Set-Up Switch configuration. Any command selected parameters will be lost.

**Command Availability:** All (Administrator)

**Command Format:** /I [/Y] [Enter]

Where **/Y** is a command option used to suppress the "SURE? (Y/N)" prompt.

**CPM Response:**

**Verbose:** SURE? (Y/N), if Y is entered, the CPM will begin the memory test and initialization sequence.

**Terse:** 5, if Y is selected, the CPM will begin the memory test and initialization sequence.

---

## Enter Site ID (/F)

---

When your application involves communication with several CPM units, the Site I.D. can be used to indicate the location or name of each unit. The Site I.D. message can be up to 32 characters long, and cannot include non-printable ASCII codes such as NULS and Line Feeds.

**Command Availability:** All (Administrator)

**Command Format:** /F [Enter]

**CPM Response:** (Verbose and Terse) ENTER SITE ID.

---

## Read Site ID (/J)

---

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

**Command Availability:** All (Administrator) / Basic (User)

**Command Format:** /J [Enter]

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

---

## Set Port Parameters (/P)

---

Displays a menu which allows the user to select options and parameters for an individual port.

**Note:** When the unit is initialized (using the /I command or the SET and CLEAR buttons), parameters selected via the /P command will revert to the defaults specified by the Setup Switch configuration.

Please refer to Section 5.3 for a detailed description of the procedure for defining Port Parameters.

**Command Availability:** All (Administrator)

**Command Format:** /P <n> [Enter]

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

**CPM Response:** The Port Parameters Menu will be displayed.

---

## Read Port Parameters (/U)

---

Sends configuration parameters to an ASCII text file as described in Section 7. When the /U command is invoked, the system will send a series of command lines describing current port configuration.

**Command Availability:** All (Administrator)

**Command Format:** /U [Enter]

**CPM Response:** The CPM will send a series of command lines.

# A. Description of System Interfaces

## A.1. RS-232 Ports

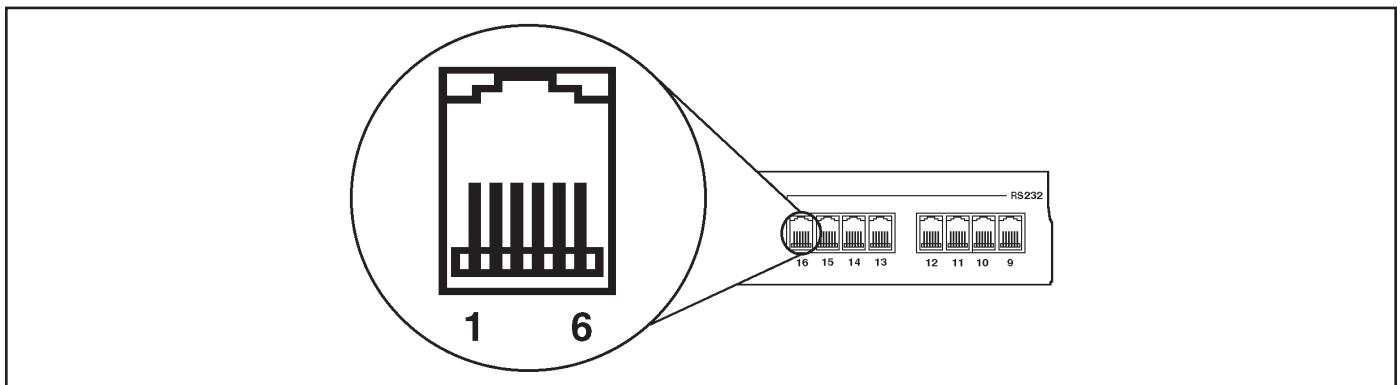


Figure A.1: RS-232 Port Connectors

### A.1.1. Circuitry at Ports 1 and 2 (Modem Ports)

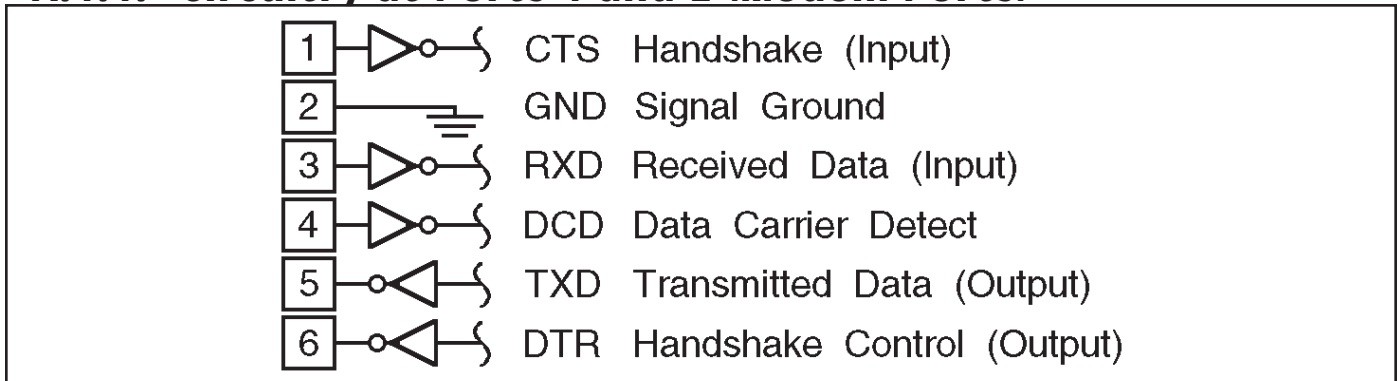


Figure A.2: Circuitry at Ports 1 and 2 (Modem Ports)

### A.1.2. Circuitry at Ports 3 and Above

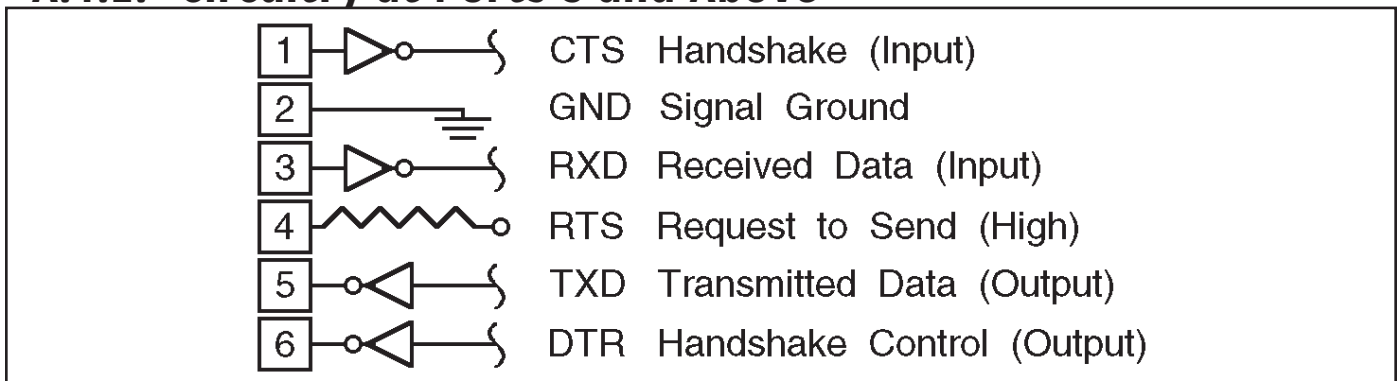


Figure A.3: Circuitry at Ports 3 and Above

## A.2. Snap Adapters

Figures A.4 and A.5 below describe several WTI Snap Adapters commonly used with the CPM unit. The CPM uses the AT&T wiring standard.

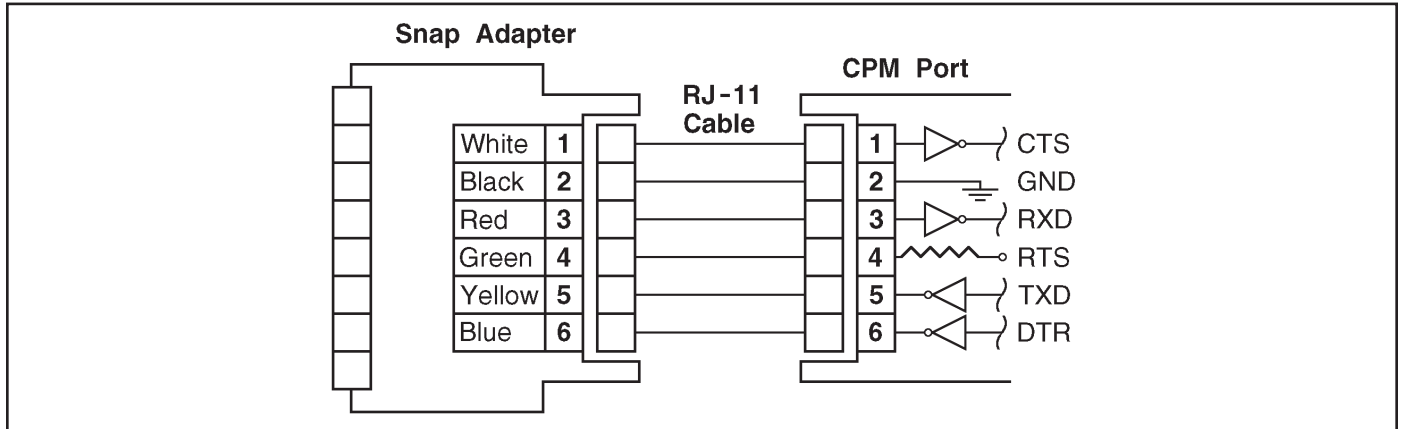


Figure A.4: Snap Adapter Interface

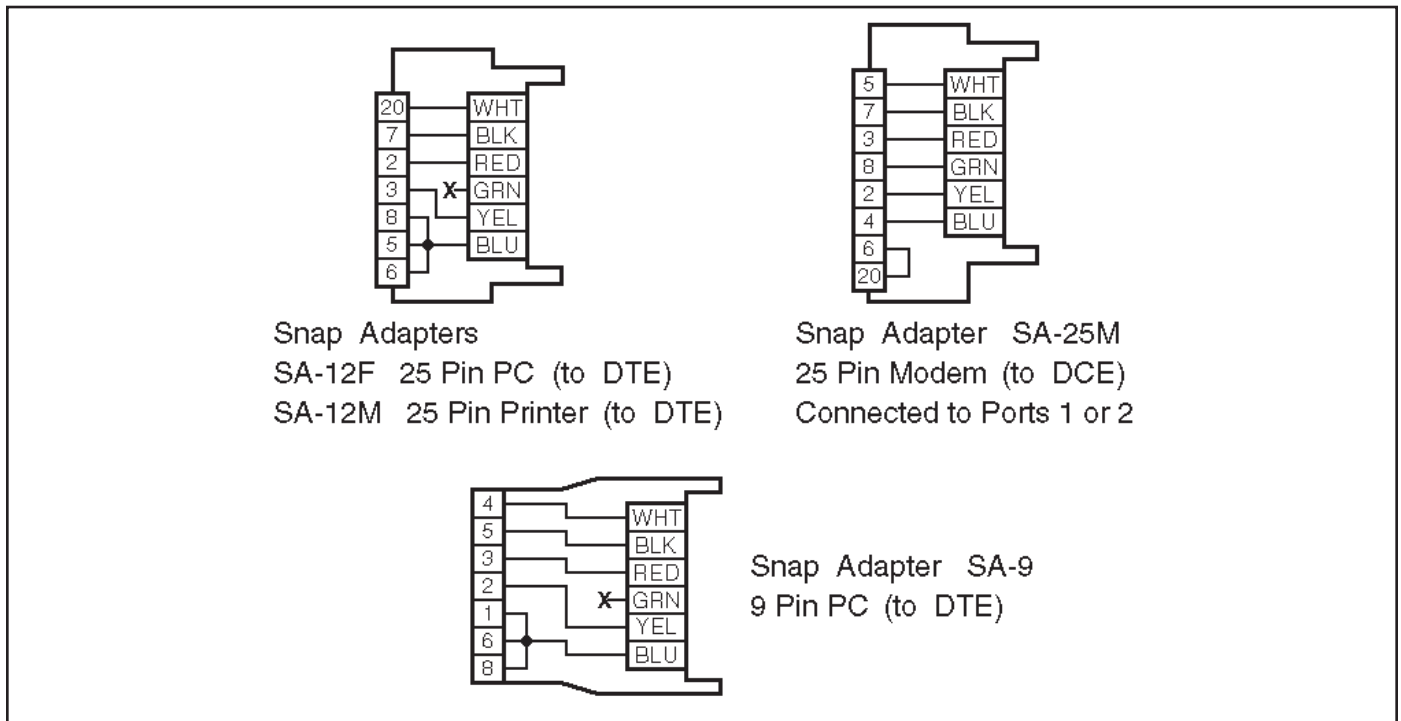


Figure A.5: Snap Adapters



### A.3. Cables

The following 6-wire, straight wired RJ11 cables are available from WTI.

Part No.	Length	Part No.	Length
AC-5	5 ft.	AC-50	50 ft.
AC-10	10 ft.	AC-100	100 ft.
AC-15	15 ft.	AC-150	150 ft.
AC-25	25 ft.	RJC-6	Extension Cable Coupler

The CPM will accept any 6-wire, straight wired RJ11 cables. Do not use standard crossover (phone) cables. Refer to the Figure below to determine if your cable is straight wired, or crossover.

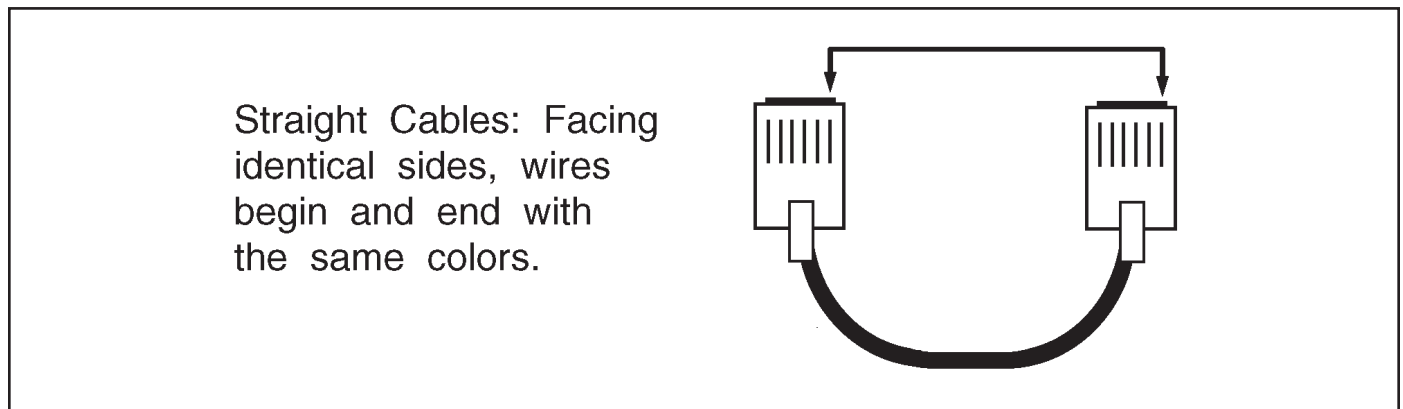


Figure A.6: Straight Cables

**Note:** Make sure your baud rate / cable combinations do not exceed the speed / lengths shown below:

<b>Baud</b>	9600	19.2K	38.4K
<b>Feet</b>	750	500	300

## B. Specifications

---

**Interface:** 16 RS232C serial inputs use RJ11 connectors - which require 4-wire straight RJ11 cables and modular adapters and 6-wire cable if using CTS/DTR flow control.

**Coding:** Asynchronous, 7/8 bits ASCII.

**Parity:** Even, Odd, None

**Stop Bits:** 1 or 2.

**Data Rate:** 300 to 38.4K BPS (all standard rates).

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

**Timeout:** No activity timeout disconnects port. None, 1, 5, 10, 15 seconds, 1, 5, 15, 30 minutes.

**Memory:** Non-volatile 256K (512K optional) battery-backed SRAM SIMMs (some models may use DIPs). Auto configuring, dynamically allocated.

**Setup Switch:** 8 position, sets default parameters for baud rate, flow control and port mode.

**LEDs:** Power On, Ready, Data Activity for Ports 1-16.

**Temperature:** 0°C to 50°C (operating)

**Power:** Internal 115/230 VAC 50/60 Hz, 5 watts

**Size:** 1.75" x 17.0" x 6.5" (H x W x D)

**Weight:** 6 lbs. shipping weight

## C. FCC Notice

---

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

## 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  
949-586-9950  
Toll Free: 1-800-854-7226  
Fax: 949-583-9514  
Email: [service@wti.com](mailto:service@wti.com)

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September 1995, June 2000

Part Number: 12348 Revision: B