

# Technical Reference

## Capstone Remote Monitoring System (User Edition)

This document presents the control and monitoring features for the User Edition Capstone Remote Monitoring System (CRMS) software.

### Chapter 7: Communication Control

This chapter presents communication control information.

#### Communication Settings

To open the Communication Settings Panel, select the **[Communication][Settings]** menu item from the MicroTurbine Menu Bar.

Figure 7-1 presents the Communication Settings panel.

- **Communication Settings**

Select connection type: Local (**Serial**) or Remote (**Modem** or **TCP/IP**).

After making the selection, the corresponding connection-type child panel will appear on the Communication Setting Panel. The setting for each child panel is saved upon changing the type of connection or closing the Comm Setting panel.

The settings from each connection type are described below.

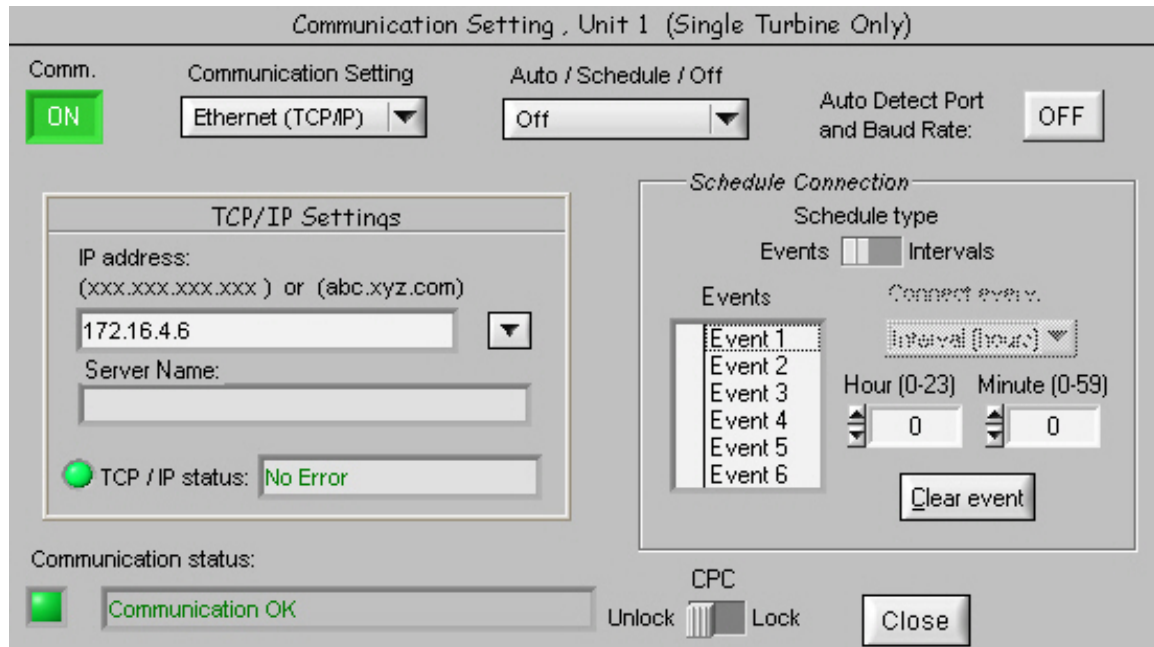


Figure 7-1. Communication Setting Panel

❑ **Serial Port Settings**

Serial Port Settings are shown in Figure 7-2.

- **User or Maintenance**

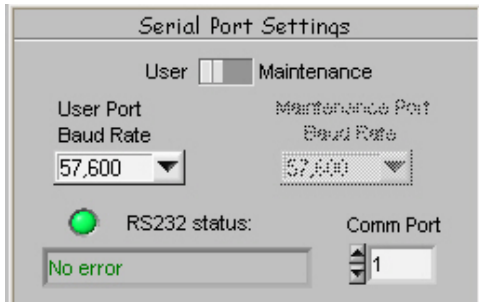
Select whether CRMS is connected to the User port or to the Maintenance port.

- **Baud Rate**

Select the baud rate for the appropriate port (default is 57,600 bps).

- **Comm Port**

Select the appropriate serial Comm port.



**Figure 7-2. Serial Port Settings Panel**

❑ **Modem Settings**

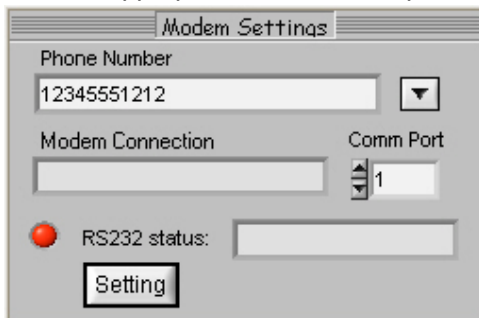
Modem Settings are shown in Figure 7-3.

- **Phone Number**

Enter the telephone number. Notice that no spaces are required between the digits.

- **Comm Port**

Select the appropriate serial Comm port.



**Figure 7-3. Modem Settings Panel**

- **Modem Settings**

By clicking the **Setting** button on the Modem Settings panel, the Modem Configuration panel will be displayed. The following parameters can be specified from the Modem Configuration panel:

- **Redial Attempts** (Number of)
- **Call Delay** (Seconds)
- **Baud Rate** (Connection Speed)
- **Dial Type** (Tone versus Pulse)

Refer to the Modem Configuration paragraph at the end of this section.

❑ **TCP/IP Settings**

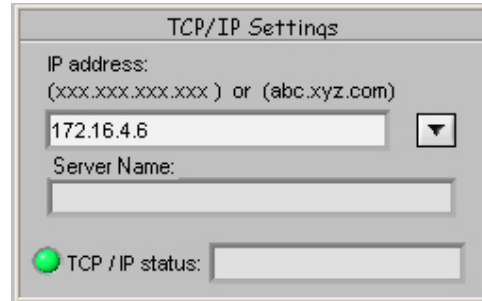
TCP/IP Settings are shown in Figure 7-4.

- **IP Address**

Enter the IP address.

- **CPC Locked/Unlocked**

Allows locked/unlocked communication with the MicroTurbine while connected to CPC.



**Figure 7-4. TCP/IP Settings Panel**

The following settings are available for the **Auto/Schedule/Off** pull-down menu:

- **Auto at Startup**

CRMS automatically connects and establishes communication with the MicroTurbine after starting the CRMS program.

- **Scheduled Connection**

This connection is based on a scheduled event (time of day, for example), or a specific time interval.

- **Off (No Connection)**

The user must manually connect each time CRMS is started.

- ❑ **Scheduled Connection**

During scheduled connection, CRMS downloads data and disconnects automatically. Scheduled connection is established for only 40 seconds. Scheduled connection is unavailable for a direct serial connection. The following settings are available:

- **Schedule Type**

Specifies Schedule Type: Events or Intervals.

- **Schedule by Events**

Each event specifies the connection time (hour and minute) at which CRMS will be connected to the MicroTurbine.

- **Hour**

Indicates the connection hour for a scheduled event. The Hour value should be selected in 0-23 digit format.

- **Minute**

Indicates the connection minute for a scheduled event. The Minute value should be selected in 0-59 digit format. For example, if Connect Hour equals 8 and Connect Minute equals 5, then CRMS will automatically call the MicroTurbine at 8:05AM.

- **Schedule by Intervals**

Indicates the period of time at which CRMS will regularly call the MicroTurbine. Interval time is selected from **Connect every:** pull-down menu and can be any of the following discrete values: 5 or 10 minutes, or 0.5, 1, 2, 3, 4, 6, 8, 12, 16, 20, or 24 hours.

After establishing communication, the information on the MicroTurbine Control Panel will begin updating.

The following data displays on the Communication Settings panel:

- **Communication Status**

The Communication Status LED and Indicator show MicroTurbine connection status.

If the Communication Status LED turns green, it indicates that the MicroTurbine is connected. If it turns red, then it indicates there is no connection, or there is a communication error.

The Communication Status indicator displays the controller communication status in literal form as noted in Table 7-1.

**Table 7-1. Communication Status**

| Comm Status                  | Description   |
|------------------------------|---|
| No Communication             | Not connected and/or not communicating to the Power Controller.                   |
| Communication OK             | Communicating to the Power Controller.  |
| Communication Error          | Communicating to the Power Controller, but error detected in receiving data.      |
| Internal Communication Error | Communicating to the Power Controller, but internal communication error detected. |
| String Length Error          | Command error detected by the Power Controller.                                   |
| CRC Error                    | Checksum error detected by the Power Controller.                                  |

- **Auto Detect Port and Baud Rate**

When the Serial Port Settings child panel is selected, the operator can click this button to ON in order to have the Comm Port and the Baud Rate automatically detected by CRMS, (should one not be certain of the correct settings for these parameters).

- **Port Status (RS232, TCP/IP)**

The Port Status is located on each child panel of each connection type and indicates the communication port status. If during an attempt to connect, the Port Status LED does not indicate green, then there is a communication port error.

- **Modem Connection**

Located on Modem Settings Panel are the following modem responses: connection status, connected baud rate, and connection protocol.

- **Changing Controller Baud Rates**

The default controller port speed is 57,600 bps. Changing of the baud rate for serial and modem type of connections can be performed from the Serial Port Settings child panel.

There is no provision for changing the controller baud rate for Ethernet connection. The controller baud rate for communication with the CPC should always be set to 57,600 bps.

To change controller baud rate, the CRMS program should communicate with the MicroTurbine. You can change baud rates for the maintenance or user communication port from any PC communication port.

To avoid baud rate conflicts, it is recommended that you restart the program after changing the baud rate setting for the port you are currently working on.

## Modem Configuration

To open the Modem Configuration panel, select the **[Communication][Settings]** menu item from the MicroTurbine Menu Bar. From the **Communication Setting** pull-down menu, select **Modem**, and then click on **Setting** from the Modem Settings panel. See Figure 7-5.

The following modem settings are available:

- **Redial Attempts** (Number of)
- **Call Delay** (Seconds)
- **Baud Rate** (Connection Speed)
- **Dial Type** (Tone versus Pulse)

**Note:** If you experience communication problems, it is a good idea to reduce the modem Baud Rate.

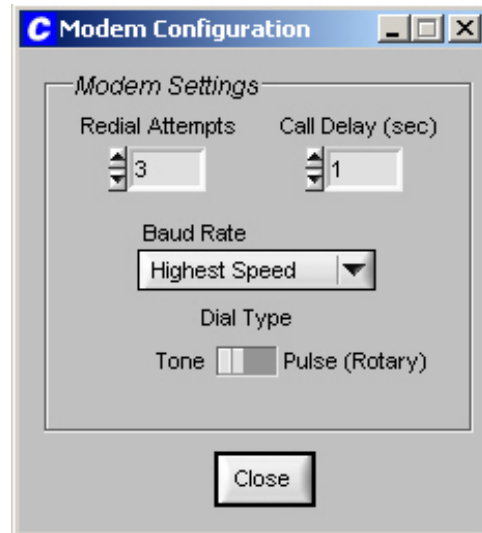


Figure 7-5. Modem Configuration Panel