# PowerCommand iWatch™ Operator's Manual

### **Remote Network Monitoring**



#### The Power of One<sup>™</sup>

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# **Safety Precautions**

The PowerCommand Network can be used to remotely operate power transfer equipment (e.g., transfer switches, paralleling systems) and start and stop generator sets. All of the safety precautions for that equipment must be observed. Refer to the Operator's Manual for the equipment that is being monitored and controlled by the network for important safety precautions.

The following symbols, found throughout this manual, alert you to potentially dangerous conditions to the operator, service personnel, or the equipment.

**ADANGER** This symbol warns of immediate hazards which will result in severe personal injury or death.

**<u>AWARNING</u>** This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

**<u>ACAUTION</u>** This symbol refers to a hazard or unsafe practice which can result in personal injury or product or property damage.

#### MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Keep your hands, clothing, and jewelry away from moving parts.
- Before starting work on the generator set, disconnect battery charger from its AC source, then disconnect starting batteries, negative (-) cable first. This will prevent accidental starting.

- Make sure that fasteners on the generator set are secure. Tighten supports and clamps, keep guards in position over fans, drive belts, etc.
- Do not wear loose clothing or jewelry in the vicinity of moving parts, or while working on electrical equipment. Loose clothing and jewelry can become caught in moving parts. Jewelry can short out electrical contacts and cause shock or burning.
- If adjustment must be made while the unit is running, use extreme caution around hot manifolds, moving parts, etc.

#### ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Remove electric power before removing protective shields or touching electrical equipment. Use rubber insulative mats placed on dry wood platforms over floors that are metal or concrete when around electrical equipment. Do not wear damp clothing (particularly wet shoes) or allow skin surface to be damp when handling electrical equipment.
- Use extreme caution when working on electrical components. High voltages can cause injury or death. DO NOT tamper with interlocks.
- Follow all applicable state and local electrical codes. Have all electrical installations performed by a qualified licensed electrician. Tag and lock open switches to avoid accidental closure.
- Jewelry is a good conductor of electricity and should be removed before working on electrical equipment.



#### MEDIUM VOLTAGE GENERATOR SETS

#### (601V to 15kV)

- Medium voltage acts differently than low voltage. Special equipment and training is required to work on or around medium voltage equipment. Operation and maintenance must be done only by persons trained and qualified to work on such devices. Improper use or procedures will result in severe personal injury or death.
- Do not work on energized equipment. Unauthorized personnel must not be permitted near energized equipment. Due to the nature of medium voltage electrical equipment, induced voltage can remain even after the equipment is disconnected from the power source. Plan the time for maintenance with authorized personnel so that the equipment can be de-energized and safely grounded.

#### **TRANSFER SWITCHES**

- AC and DC voltages in the transfer switch components present serious shock hazards that can result in severe personal injury or death. Read and follow these instructions.
- Keep the transfer switch cabinet closed and locked. Make sure only authorized personnel have cabinet and operational keys.
- Due to the serious shock hazard from medium voltages within the cabinet, all service and adjustments to the transfer switch must be performed only by an electrician or authorized service representative.

- If the cabinet must be opened for any reason:
  - 1. Move the operation selector switch on the generator set to Stop.
  - Disconnect battery charger from its AC source. Disconnect the starting batteries of the generator set. (Remove the negative [–] lead first to prevent arcing from igniting explosive battery gas.)
  - 3. Remove AC power to the automatic transfer switch. If the instructions require otherwise, use extreme caution due to the danger of shock hazard.

#### **GENERAL SAFETY PRECAUTIONS**

- The PowerCommand Network allows remote operation of equipment. PowerCommand Software for Windows can remotely start and stop a genset or exercise a transfer switch. Network modules can independently control other network modules and operate other electrical devices such as fans or pumps etc. Make certain that all appropriate personnel are notified before remotely operating equipment and make them aware of any equipment that can be energized automatically.
- Do not work on this equipment when mentally or physically fatigued, or after consuming any alcohol or drug that makes the operation of equipment unsafe.
- Use only the latest physical and logical connection diagrams for installing and maintaining the PowerCommand Network. If changes are made to the physical or logical network connections, make sure the site connection diagrams are updated. Create a new CSV file if the number or type of modules changes or if the bindings change.



## 1. Introduction



FIGURE 1-1. THE REMOTE NETWORK MONITORING SYSTEM

#### WELCOME

The PowerCommand iWatch<sup>™</sup> is a Windows CE based device that provides monitoring and control of generators and/or transfer switches via the Cummins PowerCommand FT-10 (Echelon LonWorks) network. Access to PowerCommand iWatch can be obtained either over an Ethernet LAN/WAN or by using Internet Explorer version 6.0 or higher.

The Cummins Power Generation Remote Network Monitoring (RNM) software is a suite of components that provide an easy-to-use system for the monitoring of remote generator sites.

The suite is composed of three major components.

- The PowerCommand iWatch Application
- The Configuration Tool Used during installation to define PowerCommand iWatch applications for remote sites.

• The OPC Multiplexor – Used during installation to connect remote sites.

The RNM system works with a Lonworks FT-10 network to communicate with all types of PowerCommand controls (PCC 3100, 3200, 2100, 1301, etc).

The following is included in this manual:

- Section 2 describes the PowerCommand iWatch Application as a series of Web based screens that provide for the monitoring and control of Generators, Transfer Switches, and Digital I/O Modules (DIMs) information and alarms. This section also describes alarm paging features within the RNM PowerCommand iWatch Application.
- Section 3 includes parts information.



#### WHO SHOULD USE THIS MANUAL?

This manual is designed to be used by generator operators and technicians.

Before using this manual, a network must be properly set up (see FT-10 Network Installation and Operation Manual 900–0529) and the PowerCommand iWatch control assembly must be installed (see Instruction Sheet C661). To install and configure an PowerCommand iWatch control, personnel must be trained and experienced in setting up FT-10 networks and familiar with LonMaker for Windows software.

#### WRITING CONVENTIONS

The following conventions are used in writing this manual:

• **Boldface** type indicates an item that requires specific attention. This is used for note blocks as shown in next column.

NOTE: This is an example of a note block. Special attention should be given to the instructions in this form.

• **Bold Italics** type indicates an item to select. This is used to direct user interface interaction steps as follows:

Once you have selected a file or entered a File Name, press the **Open** button to open the file (see Figure 1-2).

• Monospace type indicates text you will need to type in a data entry field. In the previous example, File Name is a data entry field.

Open		?
Look in:	Sample 💌 🔶 👻	) 🔯 🗙 💕 🏢 🛛 Tools 🗸
	Name 🔺	Size Type
<b>3</b>	🗐 ~\$mple File 4.txt	1 KB Text Document
History	🔋 Sample File 1.txt	0 KB Text Document
( instary	📋 Sample File 2.txt	0 KB Text Document
	🗐 Sample File 3.txt	0 KB Text Document
	📄 Sample File 4.txt	0 KB Text Document
My Documents	📋 Sample File 5.txt	0 KB Text Document
	🗐 Sample File 6.txt	0 KB Text Document
Desktop		
* Favorites		
	•	•
	File name: Sample File 4 tyt	
My Network		
Places	Files of type: Text Files (*.txt)	▼ Cancel

**FIGURE 1-2. OPEN DIALOG** 



# 2. PowerCommand iWatch Application

#### INTRODUCTION

The PowerCommand iWatch<sup>™</sup> application is a preconfigured Advantech Studio application that runs on an Advantech WebLink 2059. This application is deployed to a WebLink using the Advantech Studio development environment software. The application consists of a series of Web-based screens:

- Navigation
- Generator Monitoring and Control
- Automatic Transfer Switch (ATS) Monitoring and Control
- Digital I/O Monitoring and Control
- Alarming
- Paging Configuration

#### INSTALLATION

NOTE: The PowerCommand iWatch <sup>™</sup> application template is installed as part of the configuration tool. If you are using a configured applications by a system integrator, there are no further installation steps required to use the application installed on your PowerCommand iWatch.

#### **POWERCOMMAND iWATCH SETUP**

PowerCommand iWatch can be accessed via an Ethernet, a dial-in RAS connection, or both. Before it can be accessed, a static IP address must be established. A unique static IP address is required for both the Ethernet and the RAS connection.

Ethernet and RAS Connection settings are typically pre-programmed at the factory. The following information is provided if you wish to change the settings.

#### **Using the Ethernet**

To select the appropriate IP address when using the Ethernet,

- 1. Connect a monitor, keyboard, and mouse to the PowerCommand iWatch. Use standard Windows commands to navigate to the Control Panel folder. In this folder, select Network and Dial Up Connections.
- 2. Click on the PCI-RTL81391 icon and a data entry box will be displayed.
- 3. Click on the IP address tab and select "Specify an IP address."

- 4. In the space provided, enter the IP address, Subnet Mask, and, if required, the Default Gateway.
- 5. Close and save the address information to the registry.

To save to the registry,

- 1. Go the the Start menu and select Run.
- 2. When the input menu is displayed, type in "regsave."
- 3. Select OK. The message "Registry file is saved to the storage device successfully" is displayed.
  - **NOTE:** If you do not save the registry file, your changes will be lost if there is a loss of power.
- 4. Disconnect the monitor, keyboard, and mouse.

#### **Using an RAS Connection**

To establish the static IP address for the RAS connection,

- Connect a monitor, keyboard, and mouse to the PowerCommand iWatch. Use standard Windows commands to navigate to the Control Panel folder. In this folder, select RAS Server. A window with four tabs is displayed.
- 2. In the "General" tab, select "Enable RAS" and "Use Static IP Address." Enter the IP address in the data entry box.
- 3. Click on the "Input Lines" tab and select the modem.
- 4. Click on the "Login Security" tab and enable all four protocols.
- 5. Click on the "Users" tab and enter the user name and password for anyone who is authorized to access PowerCommand iWatch.
- 6. Exit out of the RAS Server window.
- 7. When prompted to save your changes to the registry, select OK. The message "Registry file is saved to the storage device successfully" is displayed.
- 8. Disconnect the monitor, keyboard, and mouse.



#### ACCESSING THE POWERCOMMAND iWATCH

Once PowerCommand iWatch is properly setup, a password must be entered to access it using one of the following methods.

#### **Using Ethernet**

- 1. Open Internet Explorer on your PC and type "http://xxx.xxx.xxx/studio/rnm/web/main. html" in the address line, where "xxx.xxx. xxx.xxx" is the static IP address of the Power-Command iWatch unit.
  - **NOTE:** The PC needs to be on the same subnet as the PowerCommand iWatch or it will not be able to communicate with it.
- 2. When the connections is made, the login screen is displayed. Enter the appropriate login to access the rest of the menus.

User names and passwords are established when the PowerCommand iWatch is initially configured. Three default user names and passwords are available to give the operator three different levels of access.

- Monitor the system
- Monitor and control the system
- Monitor, control, and configure the system

Additional information on login security is included later in this manual.

#### **Using an RAS Connection**

1. Initiate a dial-up phone conversation with the PowerCommand iWatch from your PC, using the correct phone number.

2. Enter your user name and password.

Upon receiving a correct name and password, the PowerCommand iWatch automatically connects to your PC. It will also issue your PC an RAS IP address that is 1 number greater than its own.

- 3. Open Internet Explorer on your PC and type "http://xxx.xxx.xxx/studio/rnm/webmain1. html" in the address line, where "xxx.xxx.xxx.xxx" is the RAS IP address of the PowerCommand iWatch unit.
- 4. When the connections is made, the login screen is displayed. Enter the appropriate login to access the rest of the menus

#### NAVIGATION SCREENS

When you start up the PowerCommand iWatch application, the Log On dialog box is displayed (see Figure 2-1). A user name and password must be entered in this dialog box in order to use the program. A valid pair must be entered prior to selecting the *OK* button to continue.

Log On	×
User Name:	OK.
Password:	Cancel

FIGURE 2-1. LOG ON DIALOG BOX



2-2

#### **Main Navigation Screen**

The main navigation screen is shown in Figure 2-2. This screen displays the percentage of free memory and is the starting point for navigation. If more than five gensets or ATSs are configured, *Back* and *Next* buttons are available, depending on which of the five gensets or ATSs is being viewed. Navigation buttons *File Mgmt, Paging System*, *Alarms*, and *Logout* provide navigation to the file management, paging configuration, alarm summary, and login/logout screens respectively. The *English Units* button allows for switching the type of units displayed between Metric and English. The label displayed on the button located on the bottom left corner of the screen represents the current display mode.

Figure 2-3 shows the result of selecting the **English Units** button in the previous screen. The label has changed to Metric Units to reflect the current type of units of measurement. Select **Metric Units** to switch back to English units of measurement.

Figure 2-4 is an example of a main navigation screen that shows the animation of the paralleling bus when paralleling gensets are configured.



FIGURE 2-2. MAIN NAVIGATION SCREEN WITH THREE GENSETS



Oneline D	iagram			Generation
	Cum	mins Power Gene	ration	
GenSet 1 Main Transfer P Stopped AUT 0 G1	GenSet 2 Stopped AUTO G2	GenSet 3 Running AUTO G3		
DIM 1				
Metric Units	Free Memory: 46.	5 % File Mgmt	Paging System	Alarms Logout

FIGURE 2-3. MAIN NAVIGATION SCREEN WITH METRIC UNITS SELECTED

CEView emulation -				
Oneline Di	iagram			Generation
	٧	VebLink Qual Tes	t3	
Genset1  Running  AUTO  G1  G1  S	Genset2 Stopped AUTO G2			
English Units	Free Memory: 49.	59 % File Mgmt	Paging System A	larms Logout

FIGURE 2-4. MAIN NAVIGATION SCREEN SHOWING PARALLELING GENSETS



#### Login/Logout Screen

If the *Logout* button is selected on any screen, the screen shown in Figure 2-5 is displayed. The only two options available are to select the *Logon* button or the *Main* button.



FIGURE 2-5. LOGIN/LOGOUT SCREEN

Selecting the *Logon* button displays the security dialog box shown in Figure 2-6.

A user name and password must be entered and the *OK* button selected to allow for navigation back to the Main Navigation screen. Selecting *Log Off* closes down the program.

🏘 Log On	×
Current user: Guest	ОК
User Name: Engineering	Cancel
Password:	Log <u>O</u> ff

#### FIGURE 2-6. SECURITY DIALOG



#### GENERATOR MONITORING AND CONTROL

The Genset Monitoring and Control screens are a collection of four screens to monitor and control the Gensets:

- AC Data
- Engine Data
- Paralleling Data (available only with paralleling gensets)
- Annunciator Display

These screens allow for the following control functionality:

- Remote start of a genset in the Auto mode
- Remote stop of a running genset
- Reset genset faults

#### **Genset Screens**

Figure 2-7 is an example is of the Genset AC Data Screen. The option to send the Remote Start command is available when the **Press to Start** button is highlighted. The **Press to Reset** button can be used to reset the fault code of an alarm that is present on the device. It is highlighted when the device has an active alarm. When there are no faults, the message "fault: 0" is displayed near the bottom of the screen (see Figure 2-7). When a fault occurs, the fault number, fault type, and fault description is displayed (see Figure 2-9). Additional information on genset fault codes is included in your genset Operator's Manual.

The Engine Data and the Annunciator screens are available by selecting the *Engine Data* and *Annunciator* buttons. The *Para Data* button is displayed only when there is a paralleling genset. If more than one genset is configured, the *Back* and *Next* buttons are available, depending on which genset is being viewed. Navigation buttons *Main*, *Alarms*, and *Logout* provide navigation to the main screen, alarm summary screen, and login/logout screens respectively. The fault code status bar near the bottom of the screen represents the fault code, fault type, and fault message of the selected genset device. Refer to the generator set Operator's or Service Manual for a list of fault code messages by device type.



FIGURE 2-7. GENSET AC DATA



Figure 2-8 shows the Genset AC Data screen when a genset is running. The **Press to Stop** button allows for a remote stop command to be initiated. If the device is Not In Auto mode, the **Press to Start** and **Press to Stop** buttons will not be available.

Genset shutdown alarms can be reset remotely as long as there is neither a network nor a hardwired

remote start active on the controller. The remote start signal from PowerCommand iWatch can be removed by selecting the **Press to Stop** button, even though it is not highlighted on the screen. The stop command is still recognized and the remote start signal is removed from the controller, allowing the shutdown fault to be reset when the **Press to Reset** button is selected.



FIGURE 2-8. GENSET AC DATA – GENSET IS RUNNING



Figure 2-9 shows an example of the Genset Engine Data Screen. This is displayed by selecting the *Engine Data* button on either the Genset AC Data screen, Genset Paralleling Data screen, or Genset Annunciator screen. This screen has navigation links for the Load AC Data and Annunciator screens. This example also shows the presence of a warning fault code on the device.

EView emulation -			
Genset1			Generation
Running	Load AC Data	Annunciator	Next >
AUTO	Engine	Data	
G1	Engine RPM	6522	RPM
	Oil Pressure	1.78	PSI
	Coolant Temp	78.80	Deg F
	Oil Temp	168.80	Deg F
67.00 % KW	Battery Voltage	0.00	Volts
	Fuel Rate	23.45	GPH
	Total fuel	32	Gal
Press to Start	Engine runtime	2234.50	HRS
	Total kwh	14324	KWH
Press to Stop	Engine Starts	134	Starts
Press to Reset			
fault:210 Warning	Genset1 (210)(1) Low Coolant Ter	пр	
Main		Alarms	Logout

FIGURE 2-9. GENSET ENGINE DATA



Figure 2-10 is an example of a Genset Annunciator screen. The indicator lights reflect the status of the generator. The lights are color coded to note severity of indicated situations. Yellow lights are warnings and red lights show shutdown situations. Figure 2-11 is an example of navigation link button *Para Data* that is available on the Genset AC Data, Genset Engine Data, and Genset Annunciator screens when viewing the status of a paralleling genset.



FIGURE 2-10. GENSET ANNUNCIATOR



FIGURE 2-11. GENSET ANNUNCIATOR FOR A PARALLELING GENSET



Figure 2-12 shows an example of a Genset Paralleling Data screen. The navigation buttons are available to the other three genset screens: *Load AC Data*, *Engine Data*, and *Annunciator*.

CEView emulation -				<u>- I ×</u>
Genset1			Contenter of	Power Generation
Running	Load AC Data Engine Data	Annunciator		Next >
AUTO	Paral	leling Data		
G1	L1	L2	L3	
	Voltage L-L 480	479	281	v
And Berne	Voltage L-N 240	239	241	V
27.00 % KW	Frequency 59.90			Hz
	Paralleling State :	Load Goverr	1	
Press to Start	Gen CB :	Closed		
Press to Stop	Utility CB :	Closed		
Press to Reset				
fault:0				
Main			Alarn	ns Logout

FIGURE 2-12. GENSET PARALLELING DATA SCREEN



#### **ATS MONITORING AND CONTROL**

The ATS Monitoring and Control screens are a collection of three screens used to monitor and control the ATS:

- ATS Load AC Data
- ATS Source AC Data
- ATS Annunciator Display

These screens allow for the following control functionality:

- Start a Test/Exercise of the ATS
- Stop a running Test/Exercise of the ATS
- Reset ATS fault codes

#### **ATS Screens**

Figure 2-13 shows an example of an ATS AC Data screen with the utility supplying the load. A Test/Exercise can be run when the **Press to Test** button is highlighted. The **Press to Reset** button is available to reset the fault code if an alarm is present on the device. Additional information on transfer switch fault codes is included in your transfer switch Operator's Manual.

**NOTE:** The type of test (for example, With Load or Without Load) must be configured at the ATS.

Buttons to navigate to the Source AC Data screen and the Annunciator screen are available through the **Source AC Data** and **Annunciator** buttons. If more than one ATS is configured, the **Back** and **Next** buttons are available, depending on which ATS is being viewed. Navigation buttons **Main**, **Alarms**, and **Logout** provide navigation to the main, alarm summary, and login/logout screens respectively. The fault code status bar near the bottom of the screen displays the fault code, fault type, and fault message of the selected ATS device. Refer to the transfer switch Operator's Manual or Service Manual for a list of fault code messages by device type.

Figure 2-14 shows an example of an ATS Source AC Data screen. The ATS Source AC Data button has been replaced with the button *Load AC Data* to navigate to the ATS Load AC Data screen. This example also shows a Test/Exercise in process with the *Press to Stop* button enabled to stop the Test/ Exercise.

Figure 2-15 shows an example of an ATS Annunciator screen. The same navigation and control buttons are available as on the ATS Load AC Data and ATS Source AC Data screens.



FIGURE 2-13. ATS AC DATA





FIGURE 2-14. ATS SOURCE AC DATA







#### **ATS Switch States**

The possible animations of the ATS switch state are shown in Figure 2-16. The extended status register

bits are represented in Table 2-1 for the ATS switch states.



FIGURE 2-16. ATS SWITCH ANIMATIONS

Switch State	Normal Avail.	Emergency Available	Normal Supplying Load	Emergency Supplying Load	Extended Status Value (bits 13–15)
А					0
В	~				32768
С		~			16384
D	~	~			49152
E	~		1		40960
F	1		1		57344
G	1			~	53248
Н					20480



#### DIGITAL I/O MONITORING AND CONTROL

The Digital I/O Module (DIM) Monitoring and Control screen is used to monitor and control the DIM modules:

• DIM Inputs/Relays

This screen allows for the following control functionality:

- Toggle the state of a relay
- Monitor the status of inputs

#### **DIM Screen**

The DIM screen represents the status of the DIM module relays and inputs through a series of animated red or green ovals (see Figure 2-17). Green indicates an open state of inputs and relays. Red indicates a closed state of inputs and relays.

If more than one DIM is configured, the **Back** and **Next** buttons are available, depending on which DIM is being viewed. Navigation buttons **Main**, **Alarms**, and **Logout** provide navigation to the main, alarm summary, and login/logout screens respectively.

The relay ovals, when selected, communicate a request to change the state of the relay. If the DIM module can perform the operation, the oval changes color.

Figure 2-18 shows an example of the first relay and input with custom names that were set with the configuration tool prior to downloading the application to the PowerCommand iWatch.

EView emulation -						
Digital I/O Module (1)						
Digital Input/Output Module						
relay1	relay9					
relay2	relay10	12. 				
elay3 relay3	relay11					
relay4	relay12					
relay5	relay13 💭 relay13					
relay6	relay14					
relay7 relay7	relay15 💭 relay15					
relay8	relay16					
input1	input5		•			
input2	input6					
input3	input7					
input4	input8					
Main		Alarms	Logout			

FIGURE 2-17. DIM - RELAYS 2, 3, AND 15 ENGAGED, INPUTS 1, 6, AND 7 CLOSED



CEView er	nulation -			
Dig	ital I/O Module (1)			Power Generation
	Digital Input/Output Module		stato.	
	Alarm Horn	relay9		
	relay2	relay10	<u>.</u>	
	relay3	relay11		
	relay4	relay12		
	relay5	relay13		
	relay6	relay14		
	relay7	relay15		
	relay8	relay16		
	Door Intrusion Switch	innut5		
	innut?	innut6		
	input3	input7		
	innutd	innut8		
		mpace		
	Main		Alarms	Logout

FIGURE 2-18. DIM WITH CUSTOM NAMED RELAYS AND INPUTS



#### ALARMING AND PAGING

The Alarming and Paging screens are a collection of five screens used to monitor and acknowledge alarms and configure and test the paging subsystem.

- Alarm Summary
- Alarm History
- Paging Schedule Configuration
- Pager Number Configuration
- SMTP Server Management

These screens allow for the following functionality:

- Monitor and acknowledge alarms
- Configure pager schedules
- Configure and test pager numbers

 Configure pager numbers assigned to schedules

#### **Alarm Screens**

The alarm screens are used to view and acknowledge alarms. The alarms can be view in a summary mode (unacknowledged or active alarms) or in a historical mode (all alarm events, within a specified time range).

Figure 2-19 shows an example of an alarm summary with an ATS alarm acknowledged and still active and a Genset alarm unacknowledged and active. This *History* button can be used to navigate to the Alarm History screen. Selecting the *Ack Last* button acknowledges the last unacknowledged alarm. Selecting the *Ack All* button acknowledges all unacknowledged alarms. Navigation buttons *Main* and *Logout* provide navigation to the main and login/logout screens respectively.

EView emulation -					
Alarms				Power Generation	
🔥 Active Time 🗸	Message				
<ul> <li>02/04/2003 00:18:52.470</li> <li>✓ 02/04/2003 00:18:32.041</li> </ul>	Genset1 (210)(1) Low Coolan ATS1 (106)(0) Test Start-A	t Temp			
Main Hist	ory	Ack Last	Ack All	Logout	

FIGURE 2-19. ALARM SUMMARY



Figure 2-20 shows an example of an Alarm History screen. All historical alarm events that are stored on the unit can be displayed on this screen.

Alarms H	istory	Comparison Power Generation
Active Time $\Box$	Ack Time	Message
02/28/2005 18:02:07		Genset1 (220)(4) Mag Pickup
02/28/2005 18:02:44		Genset1:RESET : ON
02/28/2005 18:02:47		Genset1:RESET : ON
02/28/2005 18:02:47		Genset1 (220)(4) Mag Pickup
02/28/2005 18:02:51		Genset1 (220)(4) Mag Pickup
02/28/2005 18:02:51	02/28/2005 18:03:11	Genset1 (220)(4) Mag Pickup
02/28/2005 18:02:56		Genset1:RESET : ON
02/28/2005 18:02:56	02/28/2005 18:03:09	Genset1:RESET : ON
02/28/2005 18:03:31	02/28/2005 18:03:40	Genset1 (210)(1) Low Coolant Temp
02/28/2005 18:03:31		Genset1 (210)(1) Low Coolant Temp
02/28/2005 18:04:03	02/28/2005 18:04:08	Genset1 (240)(1) Low Fuel - Day
02/28/2005 18:04:03		Genset1 (240)(1) Low Fuel - Day
02/28/2005 18:04:37	02/28/2005 18:04:42	Genset1 (214)(1) Low Coolant LVL
02/28/2005 18:04:37		Genset1 (214)(1) Low Coolant LVL
02/28/2005 18:05:01		Genset1:RESET : ON
02/28/2005 18:05:03	02/28/2005 18:05:09	Genset1:RESET : ON
02/28/2005 18:05:03		Genset1:RESET : ON
02/28/2005 18:05:33	02/28/2005 18:05:42	Genset1 (230)(1) Low DC Voltage
02/28/2005 18:05:33		Genset1 (230)(1) Low DC Voltage 🚽
•		• •
Main	OnLine	Ack Last Ack All Logout

FIGURE 2-20. ALARM HISTORY



#### **Paging Configuration Screens**

The paging configuration screens allow the end user of the application to configure the paging schedule and pager numbers to be used when and fault code change is detected on a device.

NOTE: An alarm event on a device fault code starts a paging sequence. The sequence is stopped by acknowledging all alarms in the Alarm Summary or Alarm History screens. The paging sequence will disconnect a dial-up session if alarms are not acknowledged within the time-out period.

The paging system cycles through a list of five pager numbers within five pager schedules. If no pagers are assigned to any schedules, the paging system does not operate.

Figure 2-21 shows an example a Pager Schedule Configuration screen. The upper portion of the

screen represents the list of five available schedules. The first four schedules allow for configuration of name, enable/disable option, date range, time range, and days of week of a schedule. This is performed by using the edit controls in the lower right corner of the screen. The fifth schedule is the default schedule used in the event that none of the first four schedules are enabled or match the current day of week or date/time range.

The Paging Priority Section, in the lower left portion of the screen, allows the user to select the order of the five pager numbers to be used in the cycle of paging that occurs during an alarm event. To select a pager number the buttons **1** through **5** can be pressed and the list of pager numbers is displayed as shown in Figure 2-22.

To select a pager number to assign to the previously selected slot, click on the pager number name.

II.		Bower
Pager Interface		Generation
Pager Schedules		
Weekdays (Service Tech 1, Service Te	ch 2, Service Mgr, Customer Serve	, Emergency Serv
After Hours (Emergency Serv, Custom	er Serve, Service Mgr, Service Tec	h 2, Service Tec
Weekends (Service Tech 1, Service Te	ch 1, Service Tech 1, Service Tech	1, Service Tec
Not Used (Customer Serve, Service Te	ch 2, Emergency Serv, Service Tec	h 1, Service Mgr
Default (Emergency Serv, Emergency	Serv, Service Mgr, Emergency Serv	, Emergency Serv)
Paging Priority	Schedule Name:	Default
1 5 Emergency Serv		
2 5 Emergency Serv		
3 3 Service Mgr		
4 5 Emergency Serv		
5 5 Emergency Serv	Page Interval 30 (	min) Save Schedule
Configure Pager		Main

FIGURE 2-21. PAGER SCHEDULE CONFIGURATION





FIGURE 2-22. PAGER SCHEDULE CONFIGURATION WITH PAGER NUMBER SELECT

Once a selected schedule is configured, selecting the *Save Schedule* button saves the schedule and the changes are reflected in the selection list. To configure the pager numbers, press the *Configure Pager* to view the Pager Number Configuration screen (see Figure 2-23).

The Pager Number Configuration screen allows the user to define pager numbers and the sequence of numbers that send a page upon connection to the paging service.

The name to assign to a pager number is entered in the left section of the data entry fields.

The phone number of the pager service to dial is entered in the upper section of the center data entry fields.

The number of three-second delays to add to the dialing string are entered in the lower left section of the center data entry fields.

The pattern of numbers the pager service expects when connected are entered in the lower right section of the center data entry fields. A question mark (?) is used as a place holder for the actual number that will be sent to the pager. Additional numbers, pauses, and pound signs (#) may be entered in this field to build the proper dialing string.

To test and display the dialing string that will be built using the above reference fields, press the **Test** button associated with the pager number fields. The fully populated dialing string is displayed in the Dial String field and the status of the connection attempt is displayed in the Modem Status field (see Figure 2-24).

Once a pager number is configured and tested the *Accept* button marks the pager number as selectable on the Pager Number Select pop-up on the Pager Schedule Configuration screen (see Figure 2-23). If the *Accept* button is not is not selected, the changes will not be saved.



Power Generation

			•	Power			
🔃 💫 Pager Inte	erface			Generation			
Pager configuration							
Name	Page	r Number	E-mail Addres	s			
C T 1	763 59	55-1212					
Service lech l	4	2#	Accept	Test			
C:- T1 3	763 55	5-1213					
Service lech Z	4	2#	Accept	Test			
с · х	763 55	5-1214	ServiceNgr@Cunnins.c	01			
Service Agr	4	?#	Accept	Test			
Custosos Cosso	763 55	55-1215	CustomerServe@Cummin	S,COL			
custoller serve	4	?#	Accept	Test			
E-orgonov Corv	763 55	5-8879	l				
Mergency serv	4	2#	Accept	Test			
Modem Name PC	ICIA_CA	RD_NENBER-	FN56R-NFV2	Paging ●			
Modem Status Pager #							
Dial String				Schedule #			
		Main	Pager Schedule	Configure SMTP			

FIGURE 2-23. PAGER CONFIGURATION

# Example: 18005550000 4 1?# This example would generate the following dialing string: 18005550000,,,,,1123456789# This would dial the number 18005550000, delay 12 seconds, enter 1, enter the number 123456789 to display on the pager, and then enter a # sign to complete the sequence

#### FIGURE 2-24. DIALING STRING



When a paging event is occurring, the Paging indicator light is red and the Pager Index # and Schedule # reflects the schedule and pager number entry being used. The Modem Status and Dial String fields display the current status. The actual page being sent replaces the **123456789** number used in the previous example with the sequence of numbers shown in Figure 2-25.

#### 1SSCCNNTTFFFF - 120101030210

Where:

 has no meaning but is required by some numeric paging systems
 SS is the site number
 CC is the device class (1–Genset, 2–ATS)
 NN is the device number within its class
 TT is the Fault Type
 FFFF is the Fault Code

#### FIGURE 2-25. NUMBER SEQUENCE

The right data entry field is used to enter an e-mail address that an alphanumeric version of the page can be sent to. NOTE: Additional configuration is required to the PowerCommand iWatch<sup>™</sup> application prior to it being used to send e-mail pages. A Simple Mail Transport Protocol (SMTP) mail service must be connected for through dial-up networking and the SMTP mail service settings must be configured in the paging scripts within the application.

#### **SMTP Server Setup Screen**

The SMTP server setup screen is used to configure your server to send e-mail pages (see Figure 2-26). To configure your server, enter the server name, your e-mail address, your name, and your password.

To send a message, enter the e-mail address of the recipient, enter the message, and select the **Send** button. Send, dial up, and modem status messages are then displayed (see Figure 2-27).

SMTP Server Ma	nagement Generation
Server Name:	xxxxxxxx@xxxxxx.com
Sender Email Address:	xxxxxx.xxx@xxxxxx.com
Username:	XXXXXXXX
(SMTP Configura	ation must be changed using the site configuration tool)
Send Test Email	Send
To:	
Message:	XXXXX XXXXXXX XXX XXXXXXX XXXXXXXXXXXX
Status:	
Dial Up Status: Modem Status:	Email has been sent sucessfully.
Back Free Mem	nory: 48.18 % Alarms Main



#### FIGURE 2-26. SMTP SERVER MANAGEMENT

SMTP Server Ma	nagement Ceneration
Server Name:	xxxxxxx@xxxxxx.com
Sender Email Address:	xxxxxx.xxxx@xxxxxx.com
Username:	XXXXXXXX
(SMTP Configura	ation must be changed using the site configuration tool)
Send Test Email	Send
To:	
Message:	XXXXX XXXXXXX XXX XXXXXXX XXXXXXXXXXX
Status:	
	Error Getting Host IP Address
Dial Up Status:	Waiting
modern Status:	U Failed Sending Email, Retry 1 of
Back Free Men	nory: 47.52 % Alarms Main

FIGURE 2-27. STATUS MESSAGES



#### FILE MANAGEMENT

screen can be selected from the main navigation screen.

The File Management screen (see Figure 2-28) is used to manage alarm and historical data files. This

The file size is displayed when you select an individual file. To delete a file, highlight it and select the *Delete* button.

Alarm and Historical File Mana	agement C Power
Refresh Files	
Alarm Files	Historical Data Files D1050126.hst 02050126.hst 03050126.hst 04050126.hst 01050121.hst 02050121.hst 03050121.hst 01050125.hst 02050125.hst 03050125.hst 04050125.hst
Selected File Name:	Selected File Name: 04050126.hst
Delete Free Memory: 47.98 %	Delete Alarms Main

FIGURE 2-28. FILE MANAGEMENT SCREEN



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## 3. Parts Information



#### FIGURE 3-1. POWERCOMMAND iWATCH PARTS

REF NO.	PART NO.	QTY USED	PART DESCRIPTION	REF NO.	PART NO.	QTY USED	PART DESCRIPTION
			PowerCommand iWatch	2	300-5277	1	Battery Charger
			Assembly (Includes the	3	300-5934	1	Modem, PCMCIA
			following)	4	326-5410	1	ModLon
1	416–1032	1	Battery, Lead Acid				



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