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InPower™ ONAN
User's Guide

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1. Introduction

SYSTEM OVERVIEW

InPower ONAN version 6.0 is a Windows-based service, maintenance, and diagnostic tool used with Recreational Vehicle (RV), commercial mobile (CM), home standby, and Marine Generator Sets (Gensets). This tool provides electronic service functions including setting adjustments, monitoring, strip chart, initial calibration, update calibration data logging, viewing faults, and report capability.

The InPower ONAN tool also can be used to save a device's trims and settings to a file. The stored settings can be viewed off-line and they can be used to configure multiple installations of the same application controller type.

Each copy of InPower ONAN is packaged and installed separately. No more than one InPower ONAN product can be installed on the same PC.

InPower ONAN requires one of the following operating systems: Microsoft Windows 2000, Windows Me, Windows NT 6.0, or Windows

XP. Refer to the Installing InPower ONAN section for recommended system hardware and software. Installing and using InPower ONAN requires experience using the Windows operating system.

The service PC, running InPower ONAN, is connected to the genset control via an RS-232 serial communications harness. Figure 1-1 illustrates a method used to connect a service PC to a RV genset.

The harness is connected to the (COM) port on the PC with a DB9 connector. Diesel gensets (HDKAx, starting with Spec K), Commercial Mobile, and Marine gensets also require the use of an RS-232 to RS-485 converter. For RV installations, the other end of the serial cable is connected with either an 8-pin connector (gas/LP) or a 10-Pin connector (diesel). For Marine installations, the other end of the serial cable is connected with an 8-pin connector to the genset and an 8-pin connector to the remote connection. The interface harness kits required are listed in Table 1-1.
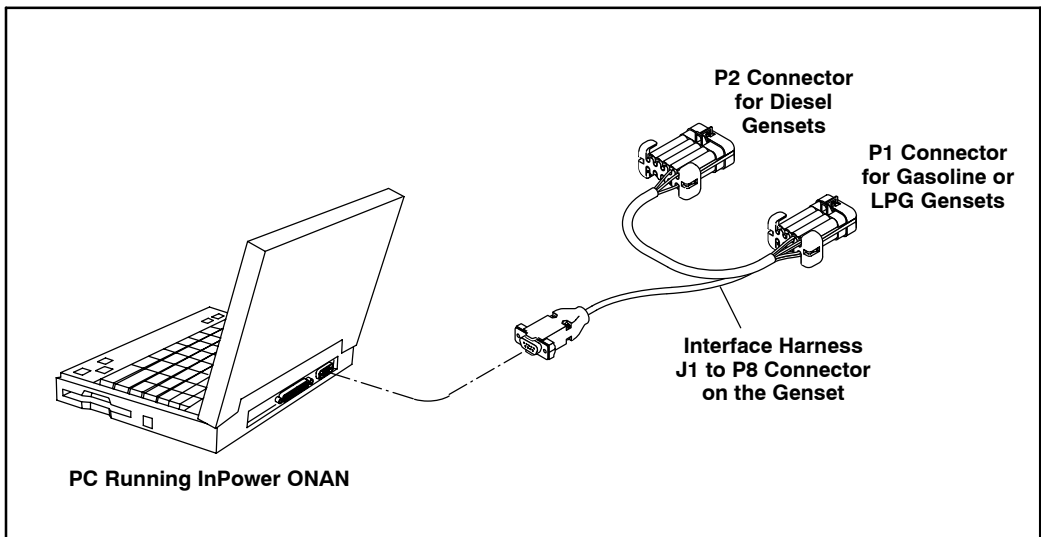

P2 Connector for Diesel Gensets

P1 Connector for Gasoline or LPG Gensets

Interface Harness J1 to P8 Connector on the Genset

PC Running InPower ONAN

FIGURE 1-1.TYPICAL INPOWER ONAN SERIAL CONNECTION METHOD

Table 1-1. Interface Harness Kits

Model	Fuel Type	Required Kit	RS-232 to RS-485 Converter
HDKAx (Starting with Spec K)	Diesel	541–1374	Yes
810HQD, 1215HQD, and 1218HQD	Diesel	541–1374	Yes
DKHA	Diesel	541–1374	Yes
HDKCx	Diesel	541–1287	No
HGJAA, HCJAD, HGJAE, and HGJAF (Units with controls built in 2005 or later)	Gasoline/LPG	541–1287	No
MDKBH – MDKBS and MDDCx	Diesel	541–1289	Yes
MGKBx (Starting with Spec C)	Gasoline	541–1289	Yes
All	Gasoline or Diesel	541–1389	Yes

SYSTEM SECURITY

InPower ONAN 6.0 does not require a hardware security device.

USER INTERFACE

The InPower ONAN software operates in the Windows graphical environment and is compatible with Windows. You can access the system like any other Windows application. If you are unfamiliar with Windows, or have questions, refer to the *Microsoft Windows User's Guide* for your specific operating system, or click on **Help**, from the Windows **Start** menu, to view the Windows Help Topics.

All system commands are accessible by mouse and keyboard. Frequently used commands have keyboard shortcuts and tool bar access.

InPower ONAN uses the Windows Explorer tree hierarchy for navigating a connected file or device (*referred to as Device Explorer, in InPower ONAN*).

The tool's main window displays a Menu Bar and a Toolbar for access to the tool's functions. Only commands applicable to the current active window are enabled, all other commands from the Menu Bar or Toolbar are grayed out.

Refer to the InPower ONAN Basics Section for a detailed description of the user interface features.

ABOUT THIS USER'S GUIDE

This User's Guide covers installation and operation of the InPower ONAN service tool. Specific subjects are covered in the following sections:

Section 1 provides a general description of the software tool and related components.

Section 2 describes InPower ONAN general, user, and site setup procedures.

Section 3 provides an overview of the main menu and toolbar functions. Each of Menu items and Toolbar buttons are described. Some

features are cross-referenced to their corresponding manual section.

Section 4 describes genset service, adjustment, and test features available with InPower ONAN. This section provides details about each of the files that are displayed when you are connected to a genset, and how these features are used.

Sections 5 through 13 describe individual service tool features.

Definitions for new terms that are used in this user's guide can be found in the Glossary, in Appendix A.

Last minute software changes and corrections may be found in the InPower ONAN ReadMe file.

SYSTEM REQUIREMENTS

Recommended PC

The following section specifies the recommended laptop PC specifications.

Please note that InPower ONAN version 6.0 does not support the Windows 95 or Windows 98 operating systems.

- An IBM PC or 100% compatible PC
- Recommended Operating System:
  - If using **Windows 2000**, the PC have a **300 MHz** processor or faster and have at least **128 MB RAM**.

  - If using **Windows XP Pro, NT V6.0**, the PC must be able to operate at **500 MHz** and greater and have at least **256 MB RAM** and a **1.5 GB** hard drive.

- Microsoft Internet Explorer version 5.5 or higher
- SVGA (1024x768) color display
- Windows compatible pointing device and 101 key enhanced keyboard
- 16X CD-ROM
- One free serial communications port

⚠ **WARNING** *Electrical equipment and engines present hazards that can result in property damage, severe personal injury or death. The InPower ONAN tool is for use by trained and experienced technicians only. Refer to important Safety Instructions in the equipment's Operator and Maintenance manuals.*

INPOWER ONAN VERSION 6.0 UPDATES

The following new features were added with the InPower ONAN version 6.0 release:

- Support has been added for the DKHA Auxilliary Power Unit (APU) diesel-powered generator.
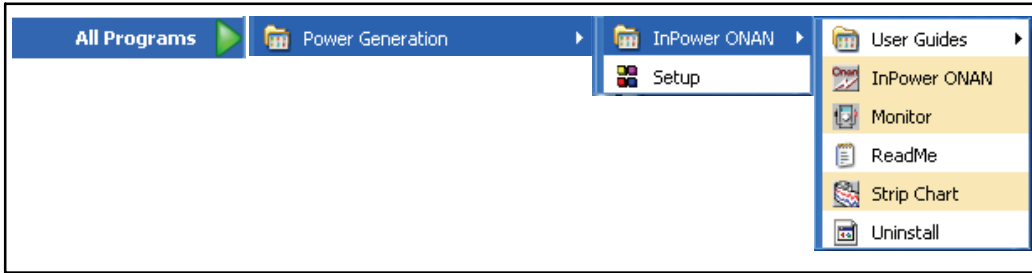
FIGURE 1-2. START MENU GROUP SHORTCUTS

START MENU GROUP SHORTCUTS

InPower ONAN installs **Start–Menu** shortcuts for the InPower ONAN applications (refer to Figure 1-2). The Setup feature is described in Section 2. Each of the InPower ONAN group programs are described in this User Guides. The Monitor feature is described in section 5. The Strip chart feature is described in section 9. The ReadMe file and the Uninstall feature are described in this section. Clicking on any one of these shortcuts will launch the selected application.

Readme File

When InPower ONAN is installed, a Readme file is copied to the Power Generation group. This file contains last minute instructions for using InPower ONAN. Open and review these instructions after the initial software installation.

Uninstall

This program will uninstall InPower ONAN from the Windows directory.

The uninstall program does not remove the directory "C:\Program Files\Power Generation". This directory contains files including the capture files that were saved to this directory (default location). Be aware that if you remove this directory manually these capture files will be removed.

To remove InPower ONAN software, perform the steps described in the installation instructions that are provided with the InPower ONAN CD.
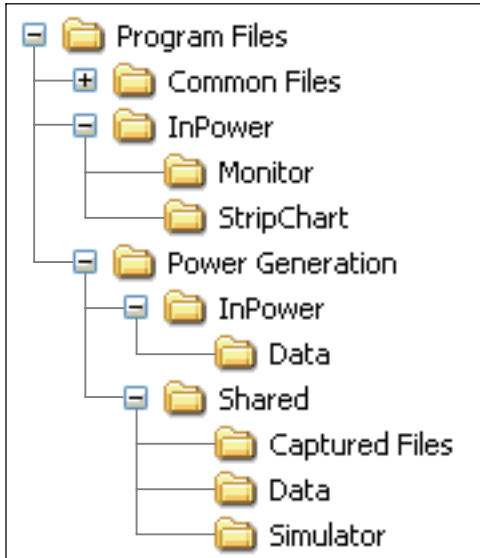
FIGURE 1-3. DIRECTORY STRUCTURE

DIRECTORIES INSTALLED WITH INPOWER ONAN

The directories installed with InPower ONAN are located under the Program Files directory. InPower ONAN installs a common set of subdirectories (folders) with each InPower ONAN product. Figure 1-3 shows the InPower ONAN and Power Generation directories that are installed. The following section provides a description of the folders for each of the subdirectories under the InPower ONAN and Power Generation directories.

The directories installed under InPower ONAN are listed first, followed by the directories under Power Generation.

Monitor

The Monitor folder contains the Target Parameter List files (.TPL). This folder will contain one or more .TPL files. These files support the InPower ONAN software. The user will not need to view or access any of these files.

Strip Chart

The Strip Chart folder contains one or more strip chart parameter listing files (.TPL).

The files contain chart design parameters, the user will not need to view or access these files.

Data

The two Data folders contain data files. These files support the InPower ONAN software. The user will not need to view or access any of these files.

Simulator

The Simulator folder contains Captured (.CAP) files that are used to simulate a connected device. The files are read only. The Simulator feature does not allow for simulating **Edit-Save Adjustments** operations.

Captured File

The Captured File folder stores extracted (captured) device information. Initially, this folder will not contain any files. Files are created when the user chooses to **Capture to File** from a connected device (**Device** menu). The user names the file and InPower ONAN appends a .CAP extension.

Captured files are read-only files. You can connect to and view these files, but you cannot modify the file contents. Captured files can be copied (written) to a connected device, as long as the captured file is from the same device type.

CALIBRATION DIRECTORIES INSTALLED WITH INPOWER ONAN

Starting with InPower ONAN version 6.0, a directory structure is downloaded in a PGA directory during installation (see Figure 1-4). This file structure is to be used for downloading calibration files from the InCal website. These directories will only be used by InPower Pro users.

Service files and logical DFAs are also part of the website InCal distribution and are copied to their respective folders.

- **Service Files:** D:\Program Files\Power Generation\InPower\Data

- **Logical DFAs:** D:\Program Files\Power Generation\Shared\Data
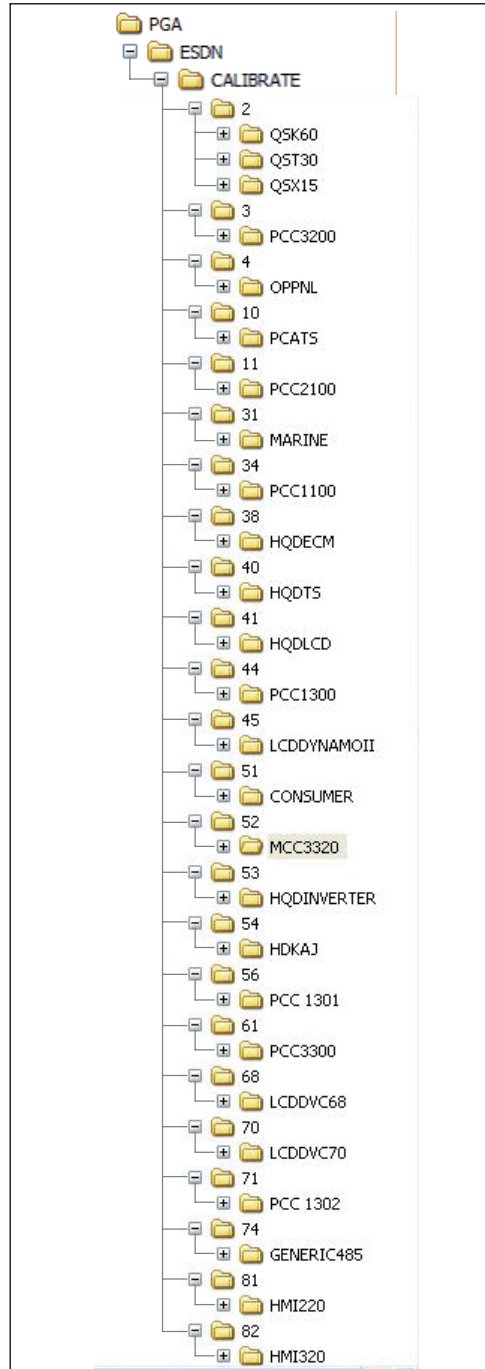
FIGURE 1-4. PGA DIRECTORY STRUCTURE

2. Setup

SETUP

The **Setup** dialog allows the installer or System Administrator to set user preferences and make changes to both Sites and Devices.

General Setup

The **Setup** feature can be accessed from the **Start** menu. Figure 2-1 shows the Setup dialog as it appears after the initial setup.

Three Setup tabs are displayed; the **Unit of Measurement** tab is the default tab selection. To select another tab, click on the desired tab. When the **Site Setup** tab is selected, clicking on a COM port or a Consumer Device in the Site List allows for editing of the current sites. The default sites, as set up, allow for connections to all consumer devices; changing the setup is not required to use the service tool. Each

of the **Setup** features are described in this section.

If you need to set up another COM port, refer to **Create Site** in this section for an example of how to set up another COM port.

Unit of Measurement

This feature allows selection of a list of pre-defined units of measure, based on a region or country. InPower ONAN will convert and display values according to the units of measure selected from the **System Of Measurement** drop down list which includes two categories (United States and Metric).

Users can create their own list by entering a name in the **System of Measurement** dialog. To customize a setup, select individual **Unit Descriptions**, by **Unit Type**, from drop down lists. Click on the **Apply** button to save the changes.
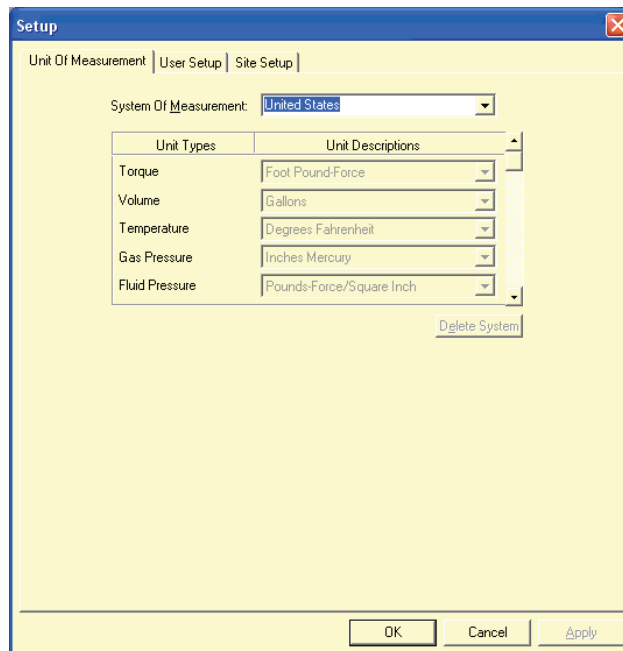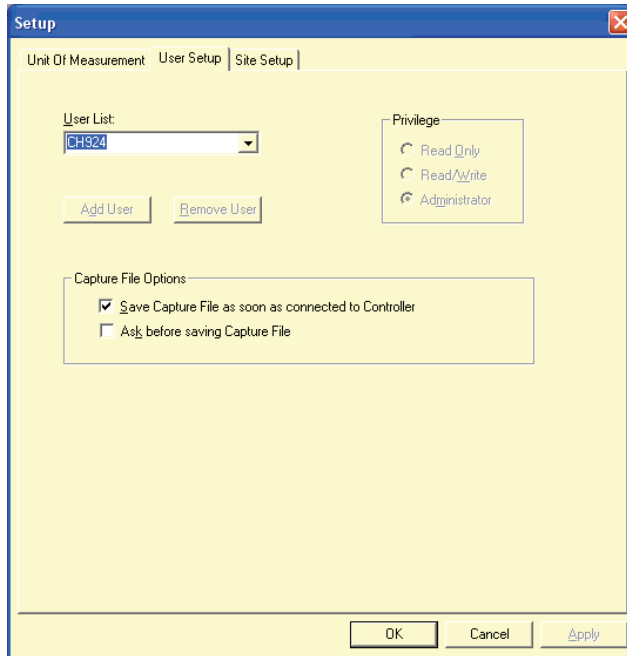

FIGURE 2-1. SETUP DIALOG – UNIT OF MEASURE

FIGURE 2-2. USER SETUP

User Setup – System Administration

The System Administration feature (**User Setup**) allows a person using the Windows log on (with System Administrator privileges) to establish a user profile for each user on the system. After the initial setup, only the System Administrator will have access to the **User Setup** dialog.

Note: With InPower ONAN, using the System Administration feature requires the user to have admin rights on the PC. The first user of User Setup is automatically set to have administrative privileges. This person should then assign privileges to other personnel. Using this feature is not recommended for most users. If you do not have admin rights, conflicts between Windows User Administration and InPower ONAN User Setup can occur, preventing user access to InPower ONAN. When this occurs, a Windows Administrator may be required to change the PC's user access. The user name must exactly match the Windows user name.

Three access levels are available as follows:

Read Only: User can connect to a device and read all parameter settings, fault information and history records.

Read/Write: User has full use of all InPower ONAN features, including making adjustments.

Administrator: Administrator has full use all InPower ONAN features and the ability to establish and maintain user privileges for all users on this PC.

Capture File Options

The **User Setup** dialog allows the user to set their preference to either automatically create a capture file each time they connect to a device (default setting) or to be prompted before creating a capture file. Click inside the checkbox next to the desired setting then click on the **OK** button. Figure 2-2.
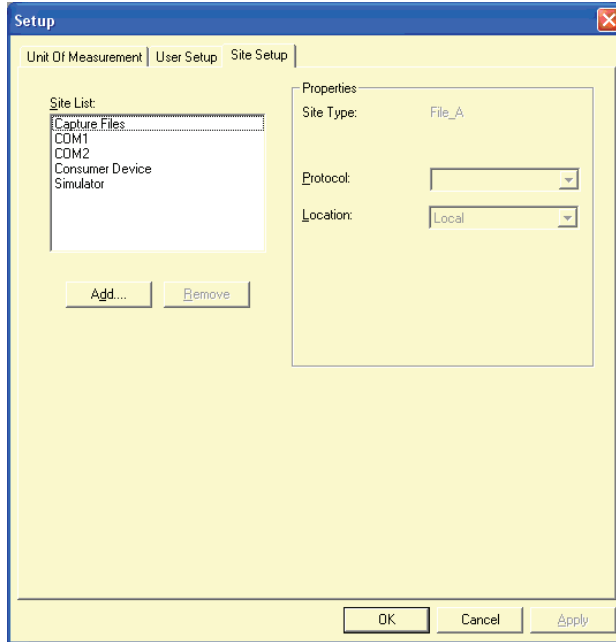
FIGURE 2-3. SITE SETUP DIALOG

Site Setup

The **Site Setup** dialog allows the user to **Add**, **Remove**, or edit a site or port (see Figure 2-3).

To remove an item from the **Site List**, select the item and click on the **Remove** button. A popup will be displayed to prompt you to continue (**Yes**) or cancel this operation (**No**) (see Figure 2-4). Click on the **Yes** button to remove the item, or click on the **No** button to cancel the removal.
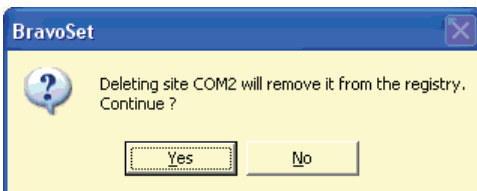

FIGURE 2-4. REMOVING A DEVICE PROMPT

To add an item, click on the **Add** button. the Create Site dialog is displayed. This feature is described in the following section.

Selecting an item from the **Site List** enables the edit feature. When a capture file or a simulator site file is selected, the file location (path) is displayed and can be edited (see Figure 2-5). When a port is selected, the COM port can be edited (see Figure 2-6).

Use the **Apply** button to save the data in the current dialog box to the InPower ONAN settings. Use the **Cancel** button to close the **Setup** dialog without saving any changes made during this session. Use the **OK** button to accept the existing settings.
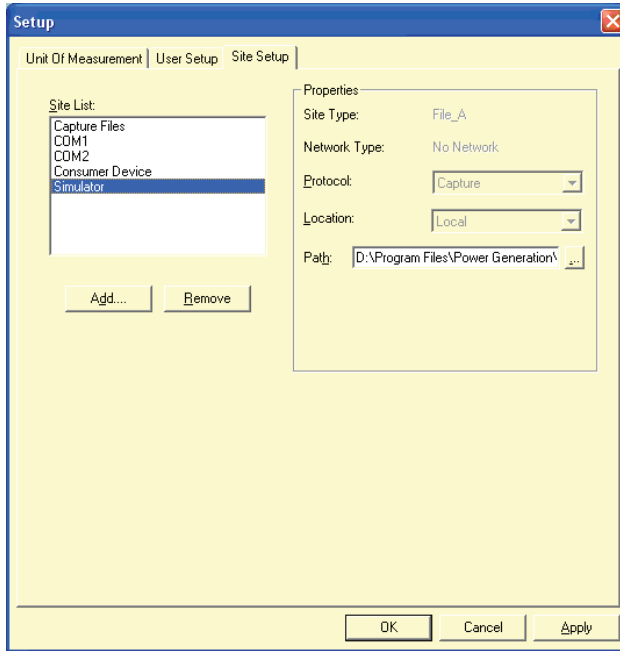
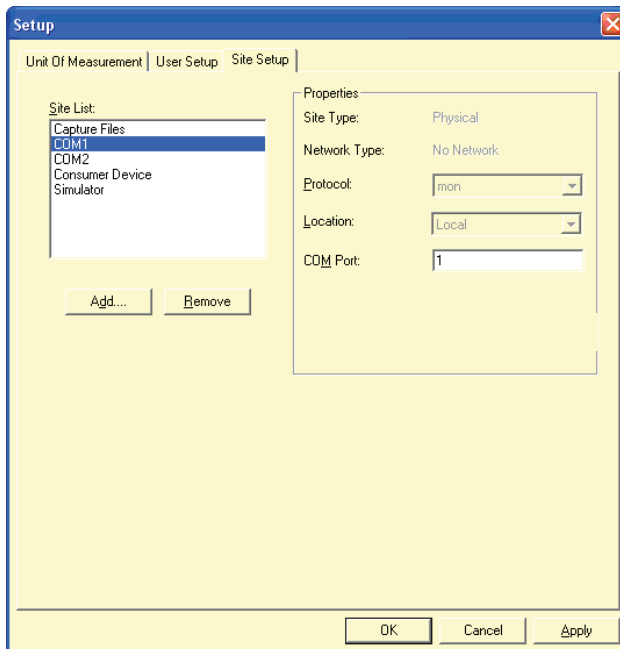**FIGURE 2-5. SITE SETUP DIALOG – SIMULATOR**
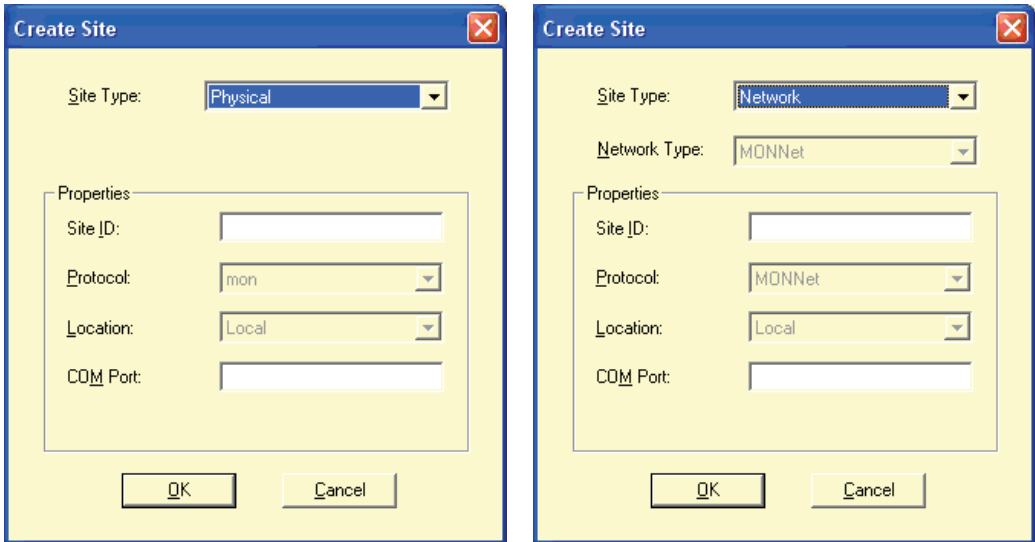

FIGURE 2-6. SITE SETUP DIALOG – COM1

FIGURE 2-7. CREATE SITE DIALOGS

Create Site

When the user selects the **Add** button, the **Create Site** dialog appears (Figure 2-7). This dialog allows the user to select a **Site Type**, **Site ID**, and **COM Port**. **Protocol**, **Location**, and **Network Type** are automatically selected.

Use each of the dialog fields as follows:

Site Type − Use **Physical** for direct device connections or **Network** for connection to multiple devices. Network sites are available only if the RS-485 adapter is used to connect to the genset. A Physical connection connects to all devices and is the recommended site type for basic tool operation.

Note: Initial and Update Calibration features are disabled when the Site Type = Network.

Network Type − If the **Site Type** is set to **Network**, the Network Type is automatically set to **MONNet**.

Site ID − A description of the connection site (for example, COM1, RV connection).

Protocol − Automatically set to **mon** as the protocol for all physical site types (the default, Physical site w/MON protocol, connects to all devices) or **MONNet** for network connection site types (multiple devices).

Location − Automatically set to **Local**.

COM Port: − Enter the COM port for devices.

Note: To use COM3 or COM4 with InPower ONAN, use the following example to create them and to add them to the Site List.

The following example describes how to add a new COM port.

Example: To add a COM3 port, click on the **Add** button in the **Site Setup** dialog. Select *Physical* from the **Site Type** drop-down list. Enter the **Site ID**.: *COM3*. **Protocol:** is automatically set to *mon* and the **Location:** is automatically set to *Local*. Set the **COM Port:** to *3*. When finished, click the **OK** button to save the entries. The new port will be added to the **Site List**.

MONNET INPOWER ONAN SETUP

Refer to information earlier in this section for a general description of the Setup feature. Launch the Setup program from the **Start** menu – **Power Generation** program group.

In this example a new site will be created specifically for connecting to a MONNet (PCCNet) network.
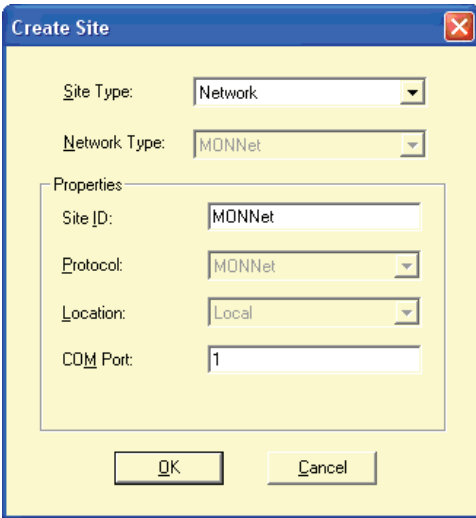

FIGURE 2-8. MONNET SITE SETUP

Select the **Site Setup** tab and then click on the **Add** button, located below the **Site List**. Create a new site for connecting to the MON-Net. Select the Site Type **Network** from the

drop-down list. Select Network Type **MON-Net**. Enter a Site ID. Enter **1** (or the desired com port) for the COM Port. Click on the **OK** button to create the new site (Figure 2-8).

Select the MONNet site from the site list and note that the Device Setup feature is disabled (Figure 2-9). When InPower ONAN is connected to a MONNet site it automatically checks the number of devices that are connected to the site and shows the active devices under the site. Click on the the Setup **Apply** button to save the device setup. Click on the **OK** button to exit the Device Setup dialog.
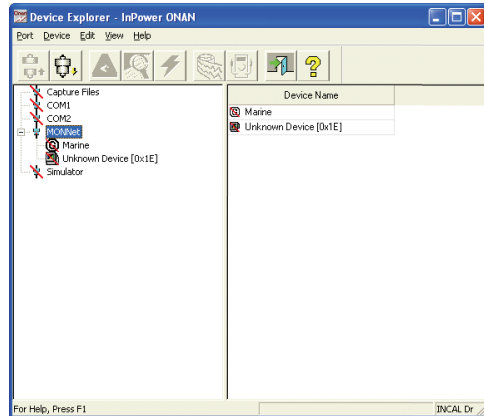

FIGURE 2-9. MONNET DEVICE SETUP

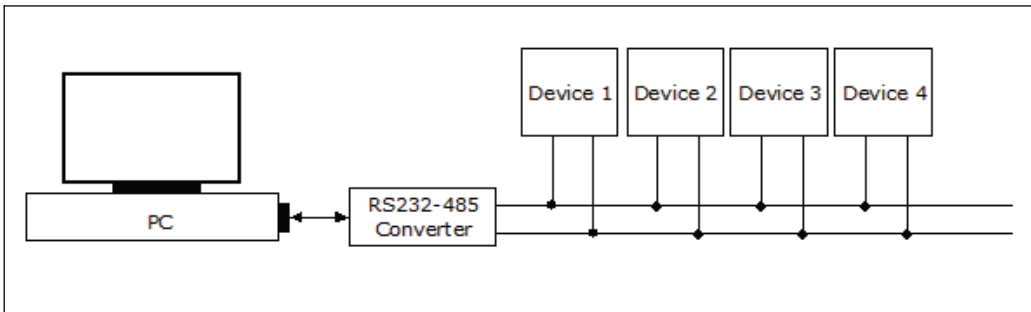A typical connection for a MONNet application is shown in Figure 2-10.

FIGURE 2-10. MONNET CONNECTION

3. InPower ONAN Basics

This section describes InPower ONAN's user interface features.

STARTING INPOWER ONAN

Start InPower ONAN by selecting **Programs** from the **Start** menu. Click on **Power Generation** and then click on **InPower ONAN**. The programs in the InPower ONAN program group will be displayed. Click on **InPower ONAN,** from within the **InPower ONAN** group, to launch the InPower ONAN service tool application and display the InPower ONAN Main Window (Figure 3-1).

THE MAIN WINDOW

The main window, named **Device Explorer**, includes the **Menu Bar**, the **Toolbar**, the **Status Bar**, and the left and right window panes.

The **Menu Bar** contains the groups of commands that are used to access tool functions and features. A list of menu options is available under each main menu entry (Figure 3-2).

The InPower ONAN **Menu Bar** expands to display additional menu features when InPower ONAN is connected to a device or a file.

When a **Menu Bar** command is grayed (dimmed), the command is not available. You may need to select another action (such as connecting to a port or device) before the grayed

command will be displayed in black type—indicating that the feature is available.

- To display the list of options under a menu entry, move the mouse pointer to the menu name and click on the mouse button. (Clicking refers to using the mouse select button, typically the left button.)

- To select an option from a menu list, move the mouse pointer to the option name and click on it.

The **Toolbar** provides direct graphical interface shortcuts to some of the more frequently used menu options. Buttons on the Toolbar represent frequently used tool functions.

When a **Toolbar** button is grayed (dimmed), the shortcut to that command is not available. You may need to select another action (such as connecting to a device or file) before the grayed command will be displayed in color (or black type)—indicating that it is available.

Placing the mouse pointer on a **Toolbar** button, the **Status Bar** describes the function of the button. The Status Bar also shows a description of operations as they occur.

The left window pane works like Windows Explorer to navigate the directory tree. The right window pane displays the contents (or screens) for the item selected in the left window pane.
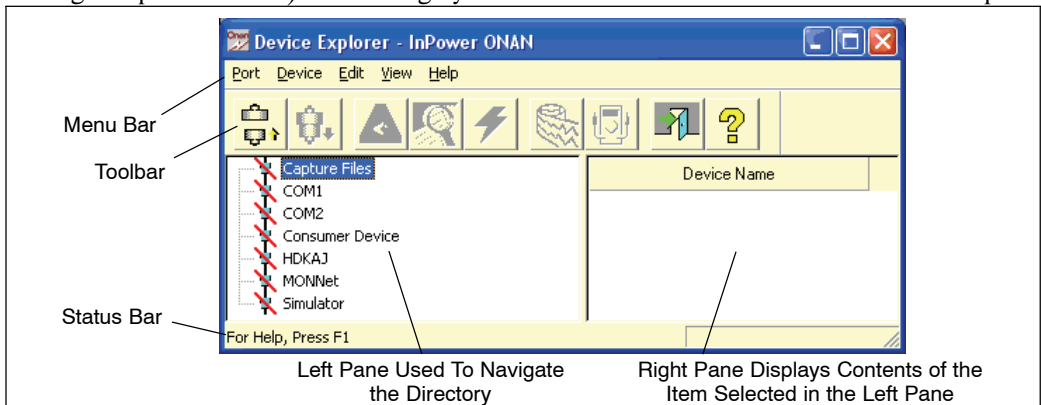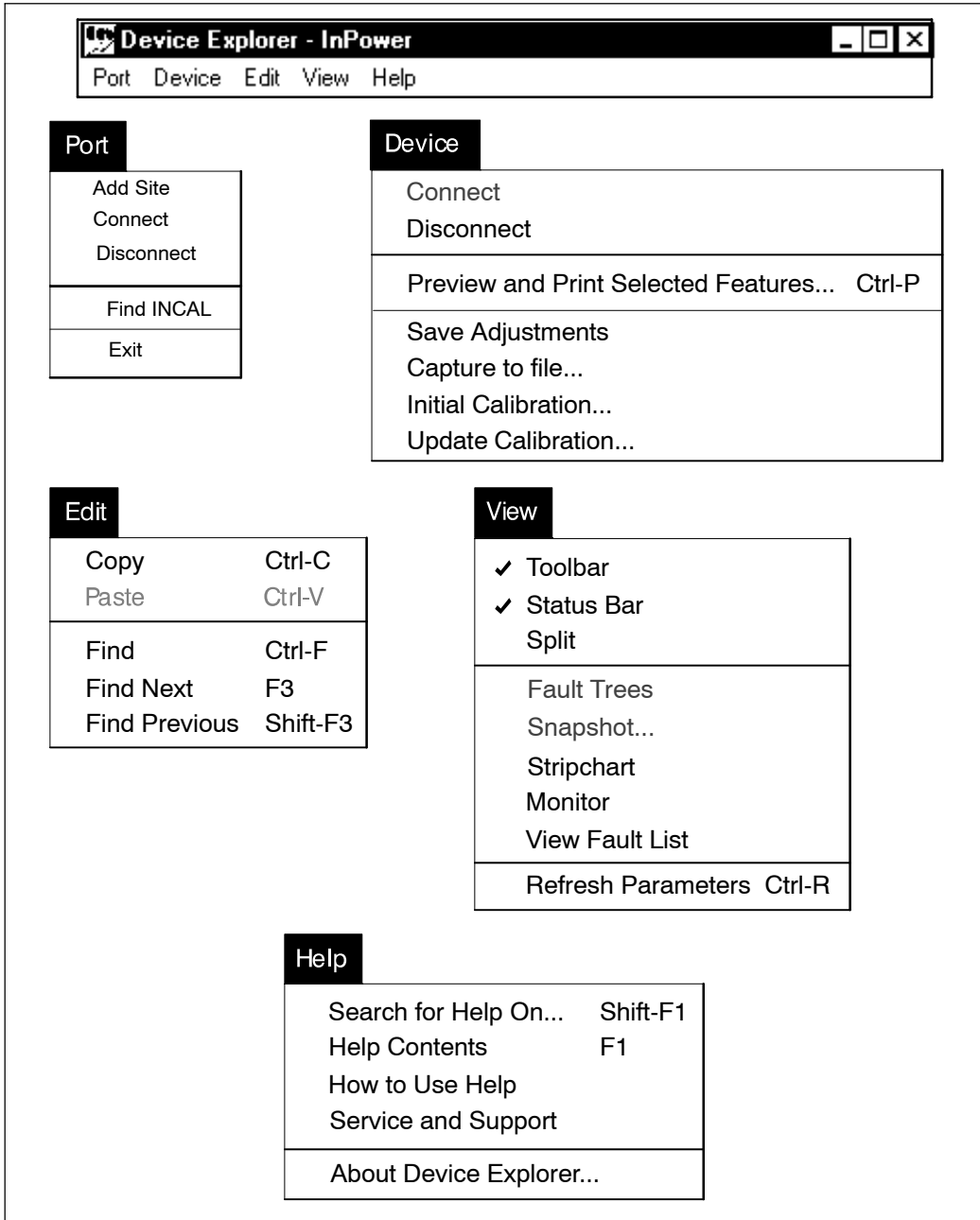

FIGURE 3-1. MAIN WINDOW

3-1

Device Explorer - InPower

Port Device Edit View Help

Port

Add Site
Connect
Disconnect
Find INCAL
Exit

Device

Connect	
Disconnect	
Preview and Print Selected Features...	Ctrl-P
Save Adjustments	
Capture to file...	
Initial Calibration...	
Update Calibration...	

Edit

Copy	Ctrl-C
Paste	Ctrl-V
Find	Ctrl-F
Find Next	F3
Find Previous	Shift-F3

View

✔ Toolbar
✔ Status Bar
Split
Fault Trees
Snapshot...
Stripchart
Monitor
View Fault List
Refresh Parameters Ctrl-R

Help

Search for Help On...	Shift-F1
Help Contents	F1
How to Use Help	
Service and Support	
About Device Explorer...	

FIGURE 3-2. MENU SYSTEM CONTENTS

MENU DESCRIPTIONS

This section provides a brief description of the functions performed by each of the InPower ONAN menu commands. Some of the menus are not displayed until the tool is connected to a Port (COM port or .CAP file).

Several of the menu features have Toolbar shortcuts (see Figure 3-3), and some features can be enabled simply by double clicking on the item from the directory tree in the left window.

Port

The **Port** menu allows the user to **Connect** to and **Disconnect** from a port. *InPower ONAN uses the term Port to refer to either a COM Port or a .CAP(ture) File, including Simulator files.* The Port menu also allows the user to **Add** a local **Site**, **Find InCAL** calibrations, and it has an **Exit** selection for exiting InPower ONAN.

In order to connect to a COM port, the PC must be physically connected to a device via the correct interface harness.

Device

The **Device** menu is used to **Connect** to, and **Disconnect** from, a device, and for performing read and write functions with a connected device. *InPower ONAN uses the term device when referring to a controller such as the Genset control.*

Use InPower ONAN to change a device's trims and settings, then use the **Device** menu to **Save Adjustments**. The **Capture to a File** menu is used to save the device's parameters (Refer to the Capture File section for details on using Capture files). The **Initial Calibration** and **Update Calibration** menus are used to calibrate a device and, if necessary, update the calibration. For more information on Calibration, see Sections 7 and 8.

Edit

The **Edit** menu works within the directory of the connected device to **Find** a specified string of data. The *Edit* menu can also be used to **Copy** and **Paste** selected data.

View

The **View** menu is used to view data from the connected device in a **Monitor** display or **Strip Chart** display.

Help

The **Help** menu commands are used to find on-line information about using InPower ONAN and Windows. **Help** is also used to display Service and Support information and to obtain InPower ONAN product and version information.

USER INTERFACE

In addition to the Menu commands, frequently used commands have toolbar access. Only commands applicable to the current active window are enabled. All other commands are grayed out. InPower ONAN also uses dialog boxes whenever the user must enter information.

Toolbar

Some frequently used commands have toolbar shortcut buttons. Figure 3-3 shows the Toolbar and lists what each of the buttons represent.

Connect/Disconnect: Use to either connect to, or disconnect from a site. If connecting to a port (COM or file) and only one device exists, then InPower ONAN connects to the device automatically. This button toggles between the Connect and Disconnect icon, depending on whether the user is connected or disconnected.

View Faults: Displays the Fault Information Window for the selected device. (Refer to Section 5).
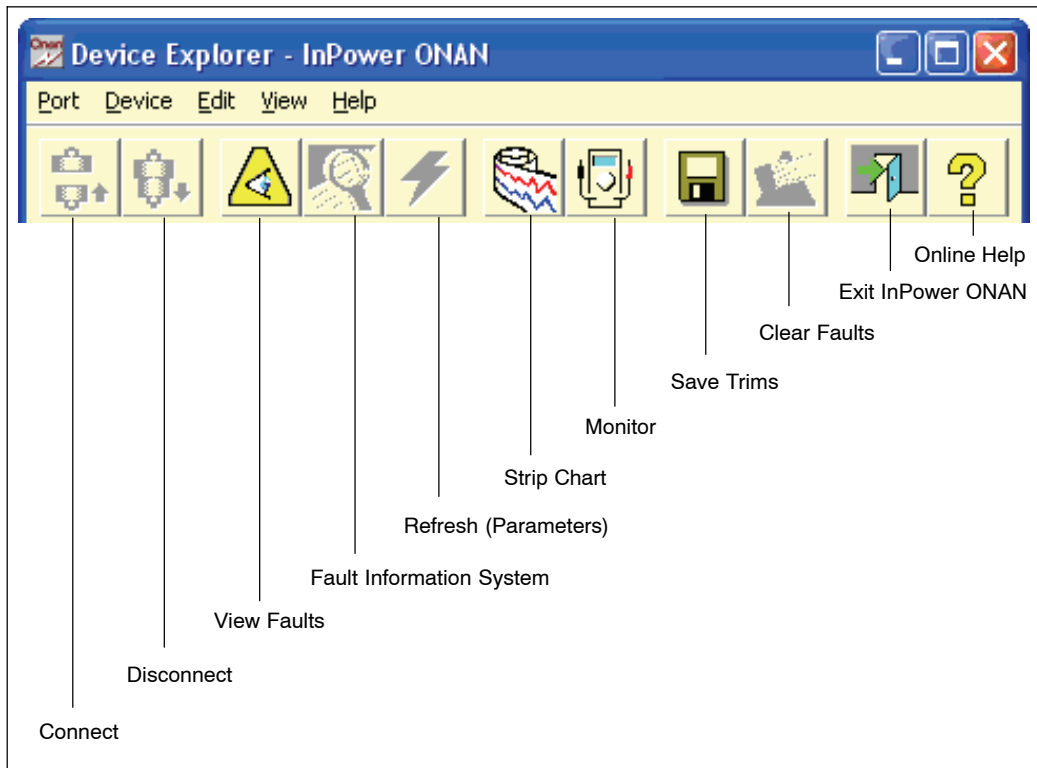
FIGURE 3-3. TOOLBAR

Fault Information System: Not available with InPower ONAN version 6.0.

Refresh: Provides an immediate update of all the parameter values for a connected device.

Strip Chart: Launches the Strip Chart application and brings up the default charting screen for the connected device. (Refer to Section 9.)

Monitor: Launches the Monitor application and brings up the default Monitor screen for the connected device. (Refer to Section 6.)

Save Trims: When connected to a device, the Save command allows adjustment changes for trims and settings to be written to the device.

Clear Faults: Not available with InPower ONAN version 6.0.

Exit: Used to close the InPower ONAN program.

Help: Brings up the InPower ONAN online help file.

Dialog Boxes

A dialog box is a window that requires information from the user. Often, when you select a function or menu option, the software will display a dialog box. You will then provide the required information by selecting an item from a list, by clicking on an option button, or by entering text. Numerous different dialog boxes are used with InPower ONAN. The dialog boxes are described throughout this manual.

The following rules will apply to all the dialog boxes and system messages unless specified otherwise.

- • The **Cancel** button allows you to close and exit a dialog box without saving any modifications, and without executing any commands.

- • The **OK** button allows you to save any changes made and/or execute a command and close the dialog or message box.

All lists that the dialog boxes display are sorted alphabetically.

NOTES

4. Genset Service

This section describes how to use InPower ONAN for making adjustments and performing tests on a genset. When the user is connected to a genset, they can also access the Monitor and Fault features. These features are described in Sections 5 and 6.

GENSET SERVICE

InPower ONAN performs several functions including genset service and diagnostic functions. The **Adjustment** feature is used to perform service adjustments and trims.

The **Test** feature is used for diagnostics. **Test** is used to temporarily override a variety of input and output parameters, as described in the Test section.

⚠ WARNING *Electrical shock and moving parts can cause severe personal injury or death. Notify personnel before starting a generator set. Refer to the equipment Oper-*

ator's Manual for important safety precautions.

You must be connected to the genset in order to write adjustment trims and setting changes to the controller, and to temporarily send test commands to the genset controller. The features described may not apply to all control types.

Connecting to a Genset

Connection between the service PC and the genset is made with a special RS-232 interface harness.

Figures 4-1 and 4-2 show two types of connections to a genset in a recreational vehicle. Figure 4-3 shows how to connect to a marine genset. The interface harness from the service PC can be connected to the engine harness at the remote connector. Disconnect remote connections and connect the tools. Interface harnesses are available for all connection methods.

P2 Connector
for Diesel
Gensets

P1 Connector
for Gasoline or
LPG Gensets

Interface Harness
J1 to P8 Connector
on the Genset

PC Running InPower ONAN
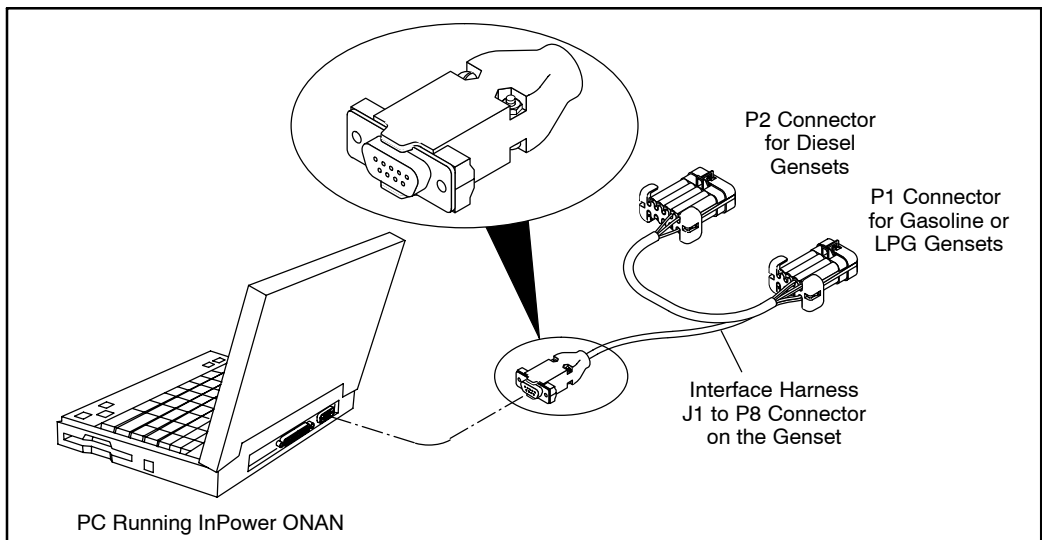
FIGURE 4-1. INPOWER ONAN SERIAL CONNECTION FOR HDKCx AND DKHA DIESEL GENSETS AND HGJAA, HCJAD, HGJAE, AND HGJAF GASOLINE/LPG GENSETS

P3 Connector (Used for connecting to an inverter, transfer switch, or display)

P2 Connector for Diesel Gensets

P1 Connector for Gasoline or LPG Gensets

Interface Harness J1 to P8 Connector on the Genset

DB9 Connector

RS-232 to RS-485 Converter

PC Running InPower ONAN
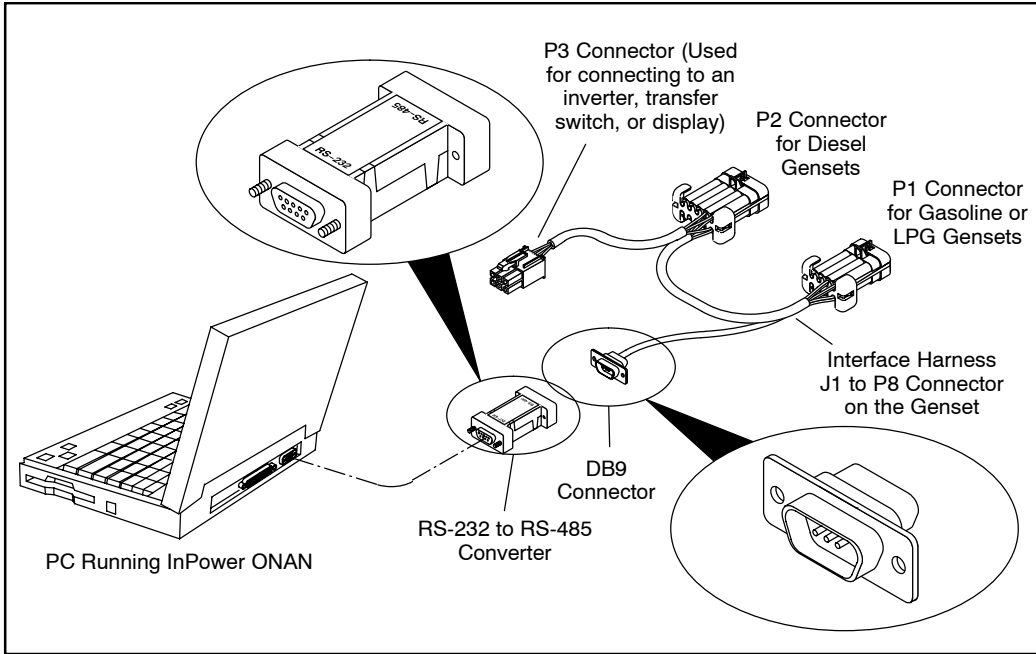
FIGURE 4-2. INPOWER SERIAL CONNECTION FOR HDKAx (STARTING WITH SPEC K), 810HQD, 1215HQD, and 1218HQD DIESEL GENSETS

P4 Connector to J4 Connector (Remote Connection)

P2 Connector to Displays and/or Network Module

RS-232 to RS-485 Converter

PC Running InPower ONAN
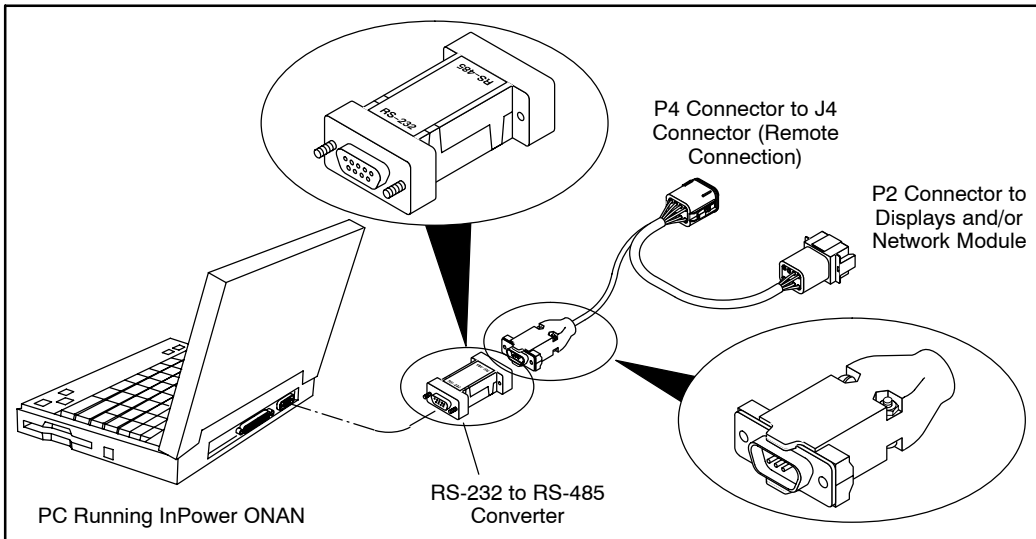
FIGURE 4-3. INPOWER ONAN SERIAL CONNECTION FOR MARINE GENSETS (MDKBH – MDKBS, MDDCx, AND MGKBx [STARTING WITH SPEC C])

Connecting to an HQD Inverter, Transfer Switch, or Display

InPower ONAN can also be used with recreational vehicles with an HQD generator to communicate with the inverter, transfer switch, or display.

Connection between the service PC and the device is made with a special RS-232 interface harness.

Figure 4-4 shows how to connect to an inverter or a transfer switch. Figure 4-5 shows how to connect to a display. The interface harness from the service PC can be connected to the inverter or transfer switch. The interface harness from the service PC must be connected to an adapter harness that is connected to the display and a power source. Connections to these devices require an RS-232 to RS-485 communications converter. Interface harnesses are available for all connection methods.

NOTE: When using InPower is connected to the transfer switch to do an update or an intitial calibration, the display must either be asleep or disconnected.
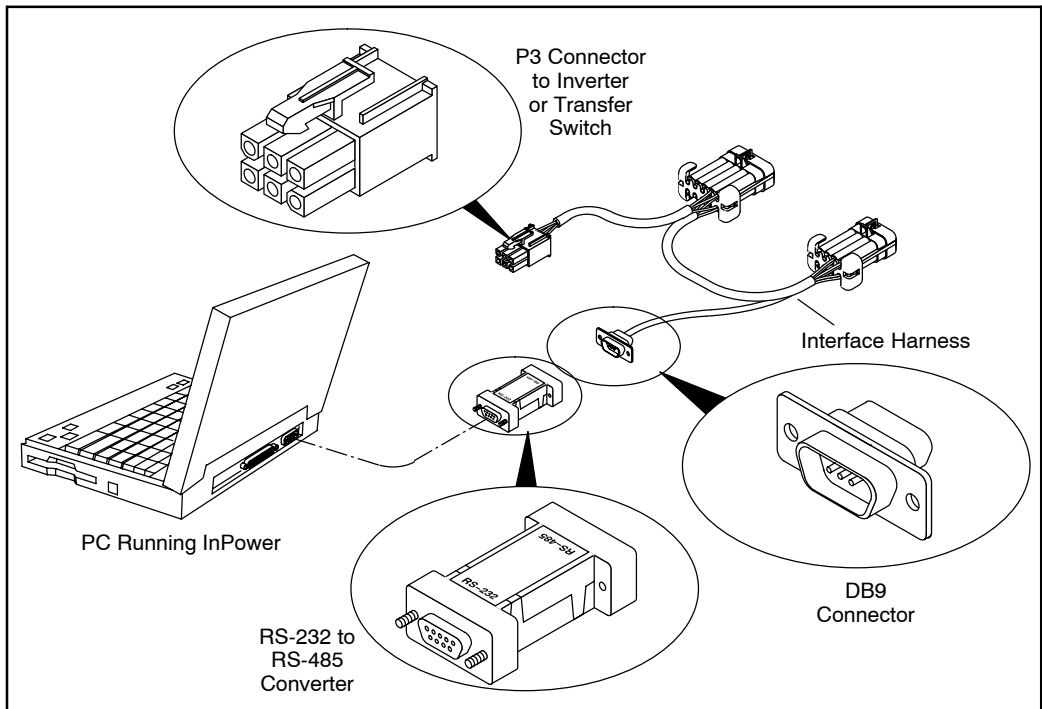
FIGURE 4-4. INPOWER SERIAL CONNECTION FOR AN HQD INVERTER OR TRANSFER SWITCH
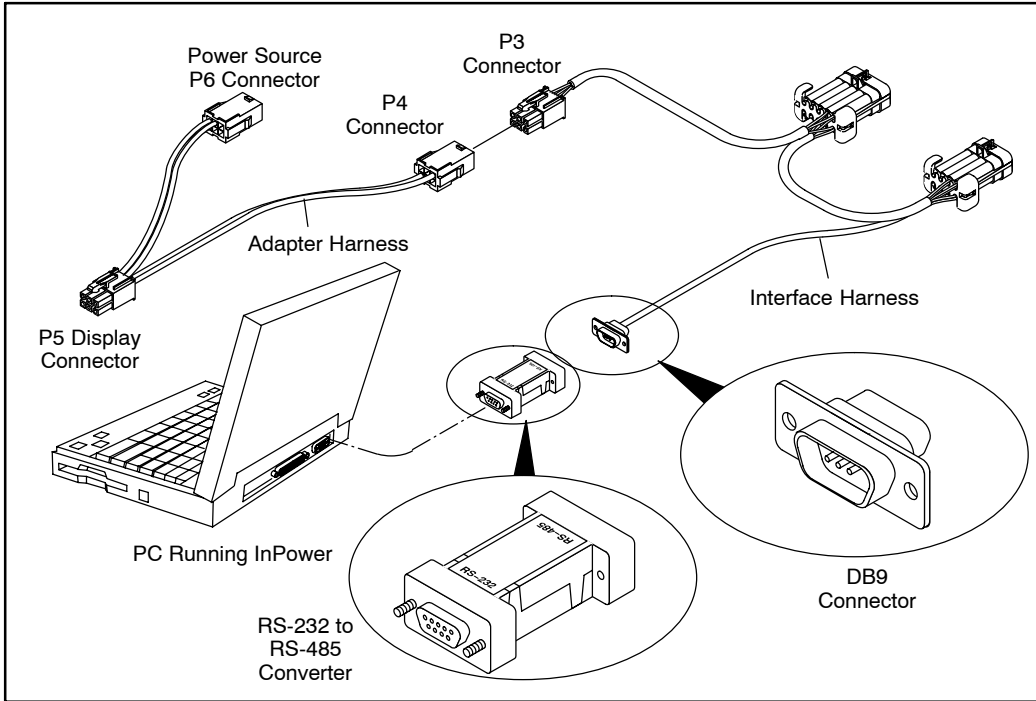
FIGURE 4-5. INPOWER SERIAL CONNECTION FOR AN HQD DISPLAY

Left Pane Used To Navigate the Directory

Display Directory Folders By Clicking On The + Sign And Hide Folders By Clicking On The – Sign

Right Pane Displays Contents Of The Item Selected In The Left Pane
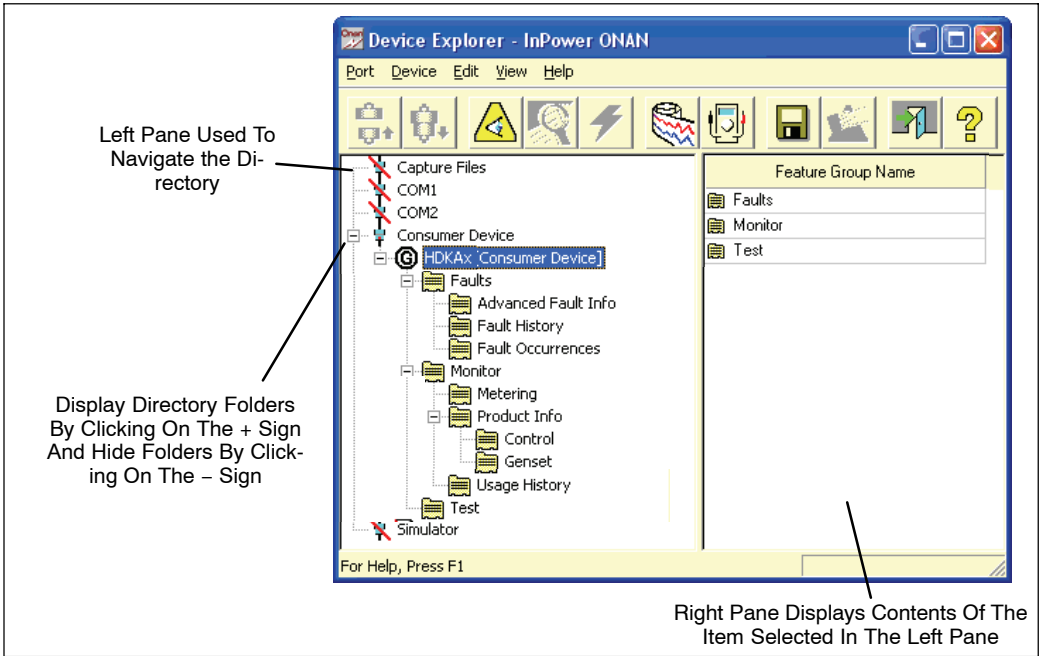
FIGURE 4-6. DEVICE EXPLORER – TYPICAL GENSET DEVICE FEATURES

Starting InPower ONAN

Start InPower ONAN and connect the device to the port (COM1, COM2, etc.) that matches the COM port on the service PC that is being used for the genset connection. The available COM port sites are displayed in the Device Explorer directory (left pane). Double click on the COM port or designated site (or click on the COM port and then click on the **Connect** button on the toolbar).

If InPower ONAN has problems connecting to a site, the message shown in Figure 4-7 is displayed. If, after a few seconds, the program still cannot connect to the site, the connection failure message shown in Figure 4-8 is displayed. If you get this message, click on **OK**, make sure the selected COM port is available, make sure the COM port is being used, verify that the RS-485 adapter is correctly installed,

make sure the genset is powered and the control is awake, check all connections, and repeat the procedure for connecting to the COM port.

Note: To wake up the genset control, press and hold the Stop button on the genset until the switch's status light is enabled.
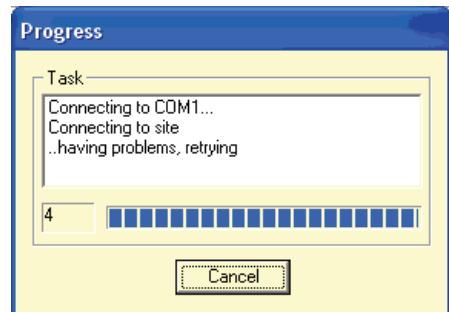
FIGURE 4-7. CONNECTION PROBLEM MESSAGE
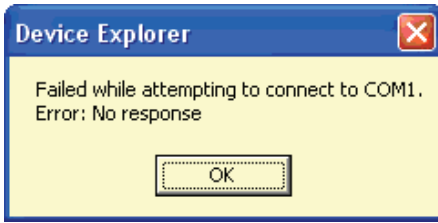
FIGURE 4-8. CONNECTION FAILURE MESSAGE

FIGURE 4-9. CONSUMER DEVICE PROGRESS MESSAGES

The InPower ONAN Device Explorer displays the features that are available for gensets in the directory, listed under the device in the left pane. To view the genset features, make sure the genset is powered up and the genset control is awake, double click on the site (COM1, COM2, etc), and expand the genset directory.

When you double click on a site the first time after InPower ONAN is started, the Progress messages shown in Figure 4-9 are displayed to show you that InPower ONAN is connecting to the device and verifying parameters. When completed, a message is displayed to inform you of the location where capture files were placed (Figure 4-10). Click on **OK** to acknowledge the message.

If a connection failure message is displayed when attempting to connect to an available device, make sure the device is turned on and check all connections.

FIGURE 4-10. ANNOUNCEMENT OF CAPTURE FILE LOCATION

Figure 4-6 shows some of the features listed for gensets. Not all features are available with all gensets. The features that are available include:

- Adjustments
- Faults
- Monitor
- Test

The **Adjustments** and **Test** features are covered in this section. The **Monitor** and **Faults** features are covered in Sections 5 and 6.

When you are connected to a genset and the **Capture File** feature (described in Section 10) is enabled, a capture file of the genset control is automatically saved. This feature is used to create a copy of the gensets existing parameter values. **Always create a Capture file of the device parameters for reference, prior to making any adjustments.**

GENSET ADJUSTMENTS

This section describes how to make genset parameter value adjustments for trims and settings.

⚠ **CAUTION** *Improper adjustment can cause equipment malfunction or damage. Adjustments must be performed by trained and experienced personnel only. Refer to the equipment's Installation and Service manuals for adjustment sequences and procedures.*

Adjustment Basics

To access the available adjustment(s), use Device Explorer to navigate the left pane until you reach the desired folder, and click on it. The right pane will display the parameter(s) associated with the adjustments for that feature.

Figure 4-11 shows the genset voltage parameter for Marine gensets that can be adjusted.

The right pane displays the **Parameter** description, **Value**, **Units** of measure and the **Last Time** that the value was **Read**.

Placing the mouse pointer over a parameter will bring up an information pop-up box (see Figure 4-11). The pop-up provides a brief description of how the parameter value is used.

Note: Some values may require that the genset is running or stopped before they can be edited. Refer to the parameter's information pop-up for details.
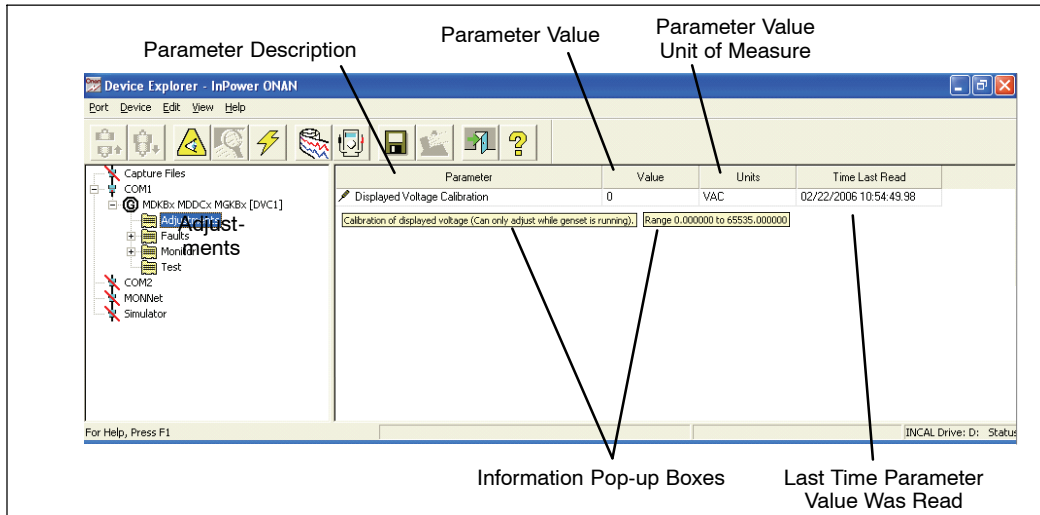
FIGURE 4-11. ADJUST PARAMETER INFORMATION
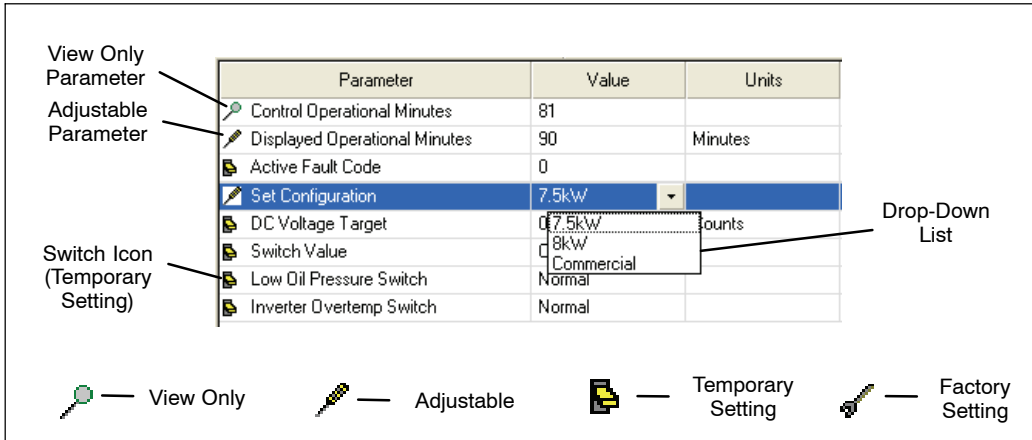
FIGURE 4-12. TYPICAL ADJUSTMENT FEATURES

Making Adjustments

Located to the left of each parameter is an icon that indicates if the parameter can be adjusted or if it is for monitoring (refer to Figure 4-12).

The screwdriver icon is used for trims and settings that can be written permanently to the device (read and write). When the cursor is placed over a parameter that can be adjust, the range for the parameter is displayed (Figure 4-13). The magnifying glass indicates that the parameter value is being monitored (read only). The switch icon is used to display settings that can be temporarily written to a device. The wrench icon represents factory settings that are not adjustable with InPower ONAN.

FIGURE 4-13. PARAMETER RANGE

Note: The value being monitored will not automatically update. The user can double click on the parameter to update the value field or click on the Refresh button (lightning bolt) on the toolbar.

Each parameter displays the current value and the units of measure for that value. Review this information before making adjustments. Parameter value trims and settings are displayed. *Trims* are numeric values that are entered directly into the Value cell. *Settings* are selected from drop-down lists, and they consist of several types of values such as On/Off and Enable/Disable.

To change a parameter value, double click inside the Value cell of the parameter that you wish to change. The current value will be highlighted, if there are only a few choices, a drop–down arrow will be displayed next to the Value.

If an arrow is displayed, click on the arrow to view a drop-down list of the available settings. Click on the desired setting, and it will be entered into the Value cell.

If you do not see an arrow, begin typing the new value, the new value entry will overwrite the current value. If the value entered is above or below the range of acceptable values, an error message dialog box will be displayed (Figure 4-14). Review the information in the dialog box to see the value limits, before clicking **OK,** to close the error message dialog box.
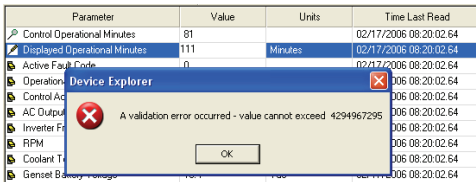
FIGURE 4-14. ADJUSTMENT ERROR

Saving Adjustments

Edit Mode: When selected, a parameter value remains in the edit mode (to change a numeric value or select from a drop-down list). When finished making adjustments, press the enter key or click on another parameter value to exit the edit mode.

Saving Adjustments: Adjustments are written to the device as they are entered. To make these changes permanent, click on the **Save Adjustments** button (floppy disc) on the toolbar or click on the **Device** menu and select **Save Adjustments**. Changes in adjustments will immediately alter the device's performance.

After the **Save Adjustments** button is selected, a *Save Adjustments* dialog is displayed. This feature allows you to view and confirm your changes by clicking on **Save.** You can make final edits within this dialog by double clicking inside the New Value box and entering a new parameter value or you can reset all of your changes by clicking on the **Cancel** button.

If the user loses connection with the device before saving an adjustment, the change will not be saved.

TEST

The **Test** feature is a diagnostic tool that is used to perform internal self-checks on the device (Self Test). Use InPower ONAN to verify inputs and outputs of the device, and test device protection functions (like Overspeed).

After changing a **Test** parameter, the user can observe or measure the results of the changes.

Note: There are two types of Test Commands: maintained inputs and momentary inputs. When a maintained input is set to active, the input will remain active. The InPower ONAN user MUST set the input back to inactive, when they are finished with the test or before leaving the site, otherwise the command will remain active.

Momentary inputs automatically change state to inactive after one second.

Maintained inputs generally have the screwdriver icon next to the parameter name and momentary inputs have the switch icon next to the parameter name.

The **Test** directory may contain the following groups (folders) of Test options:

- Starter Override Request
- Starter Override Command
- Starter Override Status
- Glow Plugs Override Request
- Glow Plugs Override Command
- Glow Plugs Override Status
- Fuel Pump Override Request
- Fuel Pump Override Command
- Fuel Pump Override Status
- Run Output Override Request
- Run Output Override Command
- Run Override Status
- Status Light Override Request
- Status Light Override Command
- Status Light Override Status
- Power Latch Override Request
- Power Latch Override Command
- Power Latch Override Status
- Inverter Enable Override Request
- Inverter Enable Override Command
- Inverter Enable Output Status
- Governor Output Override Request
- Governor Output Override Command (in percent)
- Governor Output Override Status
- Set High Idle

This section describes each group of tests listed in the **Test** directory. The Self Test feature can be used as a quick check to determine if the genset control is responding, by sending control inputs that should activate the control outputs. The other Tests are used for performing more specific test functions.

The Test parameter values are adjustable (see Figure 4-15). Some parameters have a numeric value that can be changed while others have values that can be selected from a drop-down list.

Override Requests

This test option allows you to enable or disable an override for each of the eight devices.

Override Commands

For the starter, glow plugs, fuel pump, run output, status light, power latch, and inverter, this test option allows you to set the override command to On or Off. For the governor output, this test option allows you to set the range from 0 to 100%.

Pressing the Stop button disables any override. Overrides are active for 60 seconds, and then are disabled.

⚠ WARNING *Overriding genset command may result in damage to the genset. Only trained and experienced personnel should override genset commands.*

Override Status

For the starter, glow plugs, fuel pump, run output, status light, power latch, and inverter, this test option allows you to see the current state of the override status. For the governor output, this test option allows you to vary the governor output from 0 to 100%.

Set High Idle

While the default value is **Normal**, this variable can be used to set a mechanical High Idle Stop by setting the value to "Set High Idle."

Parameter	Value	Units	Time Last Read
Fuel Pump Override Request	Disable		03/02/2006 09:14:42.28
Fuel Pump Override Command	Off		03/02/2006 09:14:42.21
Fuel Pump Override Status	Off		03/02/2006 09:14:42.15
Glow Plugs Override Request	Disable		03/02/2006 09:14:42.09
Glow Plugs Override Command	Off		03/02/2006 09:14:42.02
Glow Plugs Override Status	Off		03/02/2006 09:14:41.96
Run Output Override Request	Disable		03/02/2006 09:14:41.90
Run Output Override Command	Off		03/02/2006 09:14:41.84
Run Override Status	Off		03/02/2006 09:14:41.76
Starter Override Request	Disable		03/02/2006 09:14:41.70
Starter Override Command	Off		03/02/2006 09:14:41.63
Starter Override Status	Off		03/02/2006 09:14:41.57
Status Light Override Request	Disable		03/02/2006 09:14:41.51
Status Light Override Command	Off		03/02/2006 09:14:41.45
Status Light Override Status	Off		03/02/2006 09:14:41.38
Set High Idle	Normal		03/02/2006 09:14:41.32
Power Latch Override Request	Disable		03/02/2006 09:14:41.26
Power Latch Override Command	Off		03/02/2006 09:14:41.20
Power Latch Override Status	On		03/02/2006 09:14:41.13
Governor Output Override Request	Disable		03/02/2006 09:14:41.07
Governor Output Override Command (in percent)	0	%	03/02/2006 09:14:41.01
Governor Output Override Status	0	%	03/02/2006 09:14:40.95

FIGURE 4-15. ADJUSTABLE TEST PARAMETERS

NOTES

5. Monitor

This section describes how to use the Monitor features. There are two methods of monitoring parameters, the user can create a custom Monitor dialog for viewing selected parameters, or the user can view pre-selected parameters, based on the device type.

MONITOR AND DATALOG

The Monitor feature is used to view and record (datalog) parameters. The user can monitor preselected parameters with Device Explorer, or they can select the specific parameters they want to monitor and record, using the Monitor Dialog feature.

InPower ONAN's Device Explorer allows the user to navigate and view preselected parameters. Refer to the section named Using Monitor, for details.

MONITOR DIALOG

The Monitor Dialog allows the user to select the parameters they want to view, set a sampling rate and enable the data logging feature. Sampling allows real-time data viewing. Data logging stores information in a file for later use.

The Monitor Dialog is displayed when the Monitor command is launched from either the **Start** menu or the **Monitor** button, on the In-Power ONAN toolbar.

Monitor Dialog Features

The Monitor Dialog is shown in Figure 5-1. This section describes how to use the Monitor Dialog features.

File Menu: Used to create a **New** Monitor file or to **Open** an existing Monitor file. Also used to **Save** changes to an opened file or **Save As...,** to save changes to a new file. **Recent** allows the user to view recently opened files and is used as a shortcut to open a file.
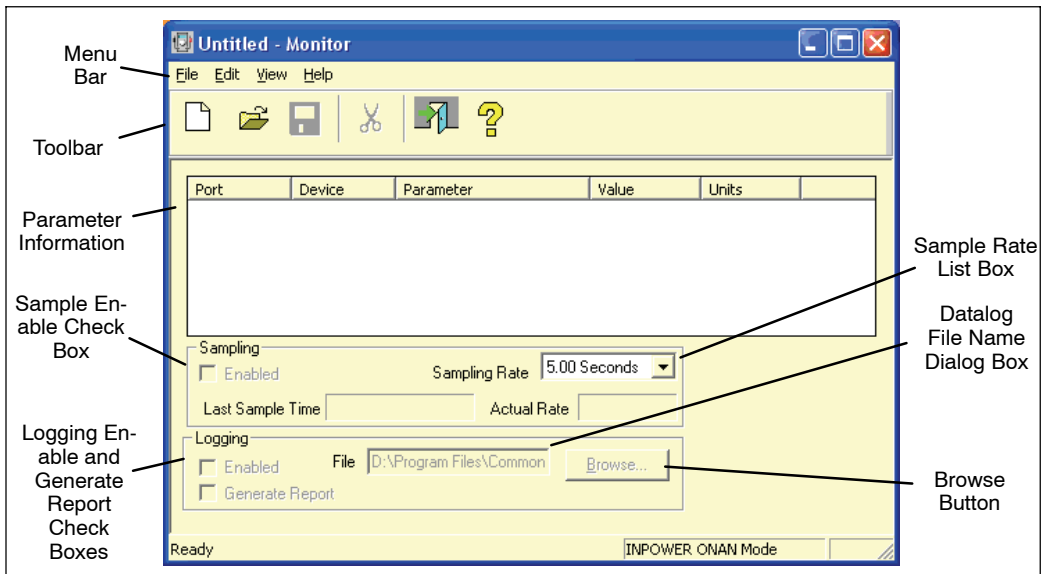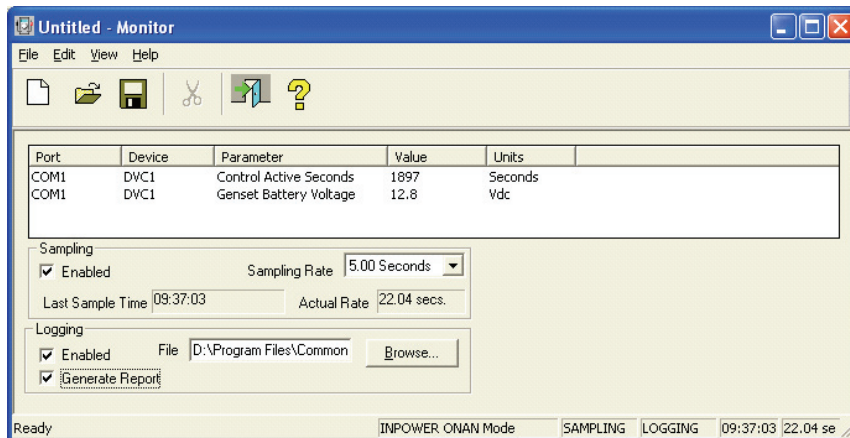

FIGURE 5-1. MONITOR DIALOG FEATURES

FIGURE 5-2. TYPICAL MONITOR DIALOG

Edit Menu: Use the **Edit** menu commands to **Add**, **Delete**, **Edit**, **Cut**, **Copy**, and **Paste** parameters into and out of the Monitor Dialog.

View Menu: Use the **View** command to hide or display the **Toolbar** and **Status Bar**.

Help Menu: Provides InPower ONAN **Help Topics** and **About Monitor** help.

Sampling: The **Monitor** dialog will sample at the selected setting. To select the sample rate, click on the **Sampling – Enabled** check box (enabled when checked). Enabling the Sampling feature activates the **Sampling Rate** list box. Select the desired sampling rate from the list box. Sample rates are available from 0.05 seconds to 60 seconds.

Logging: **Logging** allows the user to log parameter information to a .LOG file (at the selected Sampling Rate). **Sampling** must be enabled to use this feature. Before enabling data logging, enter a name in the file dialog. The log file uses the tab delimited file format. To select the **Logging** feature, click on the **Logging – Enabled** check box (enabled when checked). Enabling the **Logging** feature starts datalogging. To stop data logging, disable the **Logging** check box. Data can be logged to the default (Monitor.LOG) file. The **Browse** button allows the user to locate and overwrite a .LOG file in another directory.

Note: If the list of variables is long, the actual log rate (see Figure 5-1) may be longer than the selected rate.

Adding Parameters

Parameters can be added to the Monitor Dialog by selecting **Edit – Add** from the Menu bar or by clicking on the **Add** button, on the toolbar. The **Add** command launches InPower ONAN. Use Device Explorer to locate, select and copy the parameters that you want to add to the **Monitor** dialog.

After selecting a parameter, use the drag-and-drop procedure to add the parameter to the Monitor Dialog. (Or use the right menu button to **Copy** it, then move the cursor to the Monitor Dialog and use the right menu button again to **Paste** the parameter into the Monitor Dialog.)

Monitor settings can be saved to a template (.TPL file). These files are saved in the Monitor subdirectory of InPower ONAN. The template file stores the COM port information, this prevents the file from working on another COM port.

Each monitor screen provides the ability to log sampled values into a tab delimited .LOG file. This file format allows the data to be imported into Microsoft Excel.
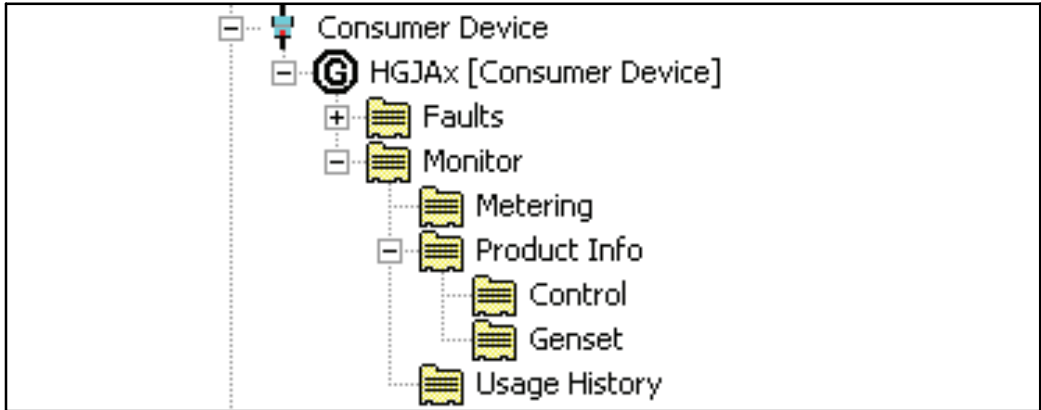
FIGURE 5-3. DEVICE EXPLORER – MONITOR DIRECTORY

USING MONITOR

When the user starts InPower ONAN and connects to a Port and a Device (or .CAP file), the **Monitor** directory will appear below the device (or file) in the Device Explorer menu (Figure 5-3). The **Monitor** directory contains the following sub-directories.

- Metering
- Product Info
    - Control
    - Genset
- Usage History

When the user is connected to a device, the monitor information displays current information (updated approximately every 0.05 seconds).

If the user connects to a capture file, the information will represent the parameter values at the time the capture file was created.

The user can manually update a parameter value by double clicking on the parameter.

Each group of **Monitor** features are described in this section.

Parameter	Value	Units	Time Last Read
Active Fault Code	19		02/23/2006 10:29:49.60
Control Active Seconds	9103	Seconds	02/23/2006 10:29:49.53
AC Output Voltage	0	VAC	02/23/2006 10:29:49.47
AC Output Frequency	0	Hz	02/23/2006 10:29:49.41
RPM	0	RPM	02/23/2006 10:29:49.36
Engine Temperature	0	degF	02/23/2006 10:29:49.30
Genset Battery Voltage	16.6	Vdc	02/23/2006 10:29:49.24
Manifold Temperature	-39.6	degF	02/23/2006 10:29:49.19
Manifold Pressure	571.8	psi	02/23/2006 10:29:49.13
Genset Control State	1		02/23/2006 10:29:49.08
Waveform Period	16777216		02/23/2006 10:29:49.02
Output Voltage Target	0	Counts	02/23/2006 10:29:48.96
Control AC Output Volts	0	Counts	02/23/2006 10:29:48.89
Governor PWM	2	%	02/23/2006 10:29:48.83
Voltage Regulator Firing Angle	0		02/23/2006 10:29:48.78
Field Voltage	0		02/23/2006 10:29:48.72
Set Configuration	5		02/23/2006 10:29:48.66

FIGURE 5-4. MONITOR – METERING (RV GENSET SHOWN)

METERING

The parameter displayed on the Metering directory varies from genset to genset.

PRODUCT INFO – CONTROL

The information included in the **Product Info – Control** directory is used primarily to identify the control and the current version of the software installed in the control.

The parameters displayed on the Product Info – Control directory varies from genset to genset.

Parameter	Value	Units	Time Last Read
Master Checksum	198		02/23/2006 10:15:04.09
Control Identification	49		02/23/2006 10:15:04.03
Software Part Number	3265524		02/23/2006 10:15:03.98
Software Version	2.41		02/23/2006 10:15:03.91
Boot Block SW Part Number	3224052		02/23/2006 10:15:03.86
Boot Block SW Version	2.39		02/23/2006 10:15:03.78

FIGURE 5-5. MONITOR – PRODUCT INFO – CONTROL (RV GENSET SHOWN)

Parameter	Value	Units	Time Last Read
Control Operational Minutes	81		02/16/2006 15:33:20.38
Displayed Operational Minutes	90	Minutes	02/16/2006 15:33:20.38
Model Character 1	7		02/16/2006 15:33:20.38
Model Character 2	.		02/16/2006 15:33:20.38
Model Character 3	5		02/16/2006 15:33:20.38
Model Character 4	H		02/16/2006 15:33:20.38
Model Character 5	D		02/16/2006 15:33:20.38
Model Character 6	K		02/16/2006 15:33:20.38
Model Character 7	A		02/16/2006 15:33:20.38
Model Character 8	J		02/16/2006 15:33:20.38
Model Character 9	-		02/16/2006 15:33:20.38
Model Character 10	1		02/16/2006 15:33:20.38
Model Character 11	1		02/16/2006 15:33:20.38
Model Character 12	4		02/16/2006 15:33:20.38
Model Character 13	5		02/16/2006 15:33:20.38
Model Character 14	0		02/16/2006 15:33:20.38
Model Character 15	0		02/16/2006 15:33:20.38
Serial Number Character 1	J		02/16/2006 15:33:20.38
Serial Number Character 2	0		02/16/2006 15:33:20.38
Serial Number Character 3	5		02/16/2006 15:33:20.38
Serial Number Character 4	0		02/16/2006 15:33:20.38
Serial Number Character 5	8		02/16/2006 15:33:20.38
Serial Number Character 6	4		02/16/2006 15:33:20.38
Serial Number Character 7	5		02/16/2006 15:33:20.38
Serial Number Character 8	0		02/16/2006 15:33:20.38
Serial Number Character 9	2		02/16/2006 15:33:20.38
Serial Number Character 10	1		02/16/2006 15:33:20.38

GENSET MODEL

GENSET SERIAL NUMBER

FIGURE 5-6. MONITOR – PRODUCT INFO – GENSET

PRODUCT INFO – GENSET

All **Product Info – Genset** information direc-
tories for newer model gensets (2005 or newer)
include the genset model and serial number
(see Figure 5-6). Some also include Control
Operational Minutes and Displayed Opera-
tional Minutes parameters. Only the Displayed
Operational Minutes parameter can be ad-
justed.

NOTE: With some generator models, the seri-
al number is displayed in a text string and not
as shown in Figure 5-6.

Parameter	Value	Units	Time Last Read
Control Operational Minutes	81		02/23/2006 08:14:37.03
Displayed Operational Minutes	90	Minutes	02/23/2006 08:14:37.03
Number of Start Attempts	60		02/23/2006 08:14:37.03
Number of Starts	35		02/23/2006 08:14:37.03
Load Period <25%	41	Minutes	02/23/2006 08:14:37.03
Load Period <50%	21	Minutes	02/23/2006 08:14:37.03
Load Period <75%	27	Minutes	02/23/2006 08:14:37.03
Load Period >75%	11	Minutes	02/23/2006 08:14:37.03
Session Period <30min	20		02/23/2006 08:14:37.03
Session Period <120min	18		02/23/2006 08:14:37.03
Session Period <240min	35		02/23/2006 08:14:37.03
Session Period >240min	45		02/23/2006 08:14:37.03

FIGURE 5-7. MONITOR – USAGE HISTORY

USAGE HISTORY

The **Usage History** information allows the user to view records related to the devices run time and events. Figure 5-7 is an example of a list a parameters available on a typical genset. The Usage History parameters can vary from genset to genset. Parameters listed may include the following.

- Control Operational Minutes

- Displayed Operational Minutes

- Number of Start Attempts

- Number of Starts – Displays the number of times the genset started and reached run mode

- Number of Overcranks – Displays the number of times the genset cranks but fails to start

- Load Period <25% – Displays the number of minutes the unit was operated at less than or equal to 25% of load

- Load Period <50% – Displays the number of minutes the unit was operated between 26 and 50% of load

- Load Period <75% – Displays the number of minutes the unit was operated between 51 and 75% of load

- Load Period >75% – Displays the number of minutes the unit was operated at greater than 75% of load

- Session Period <30min – Displays the number of times the unit was operated for greater than 2 but less than 30 minutes

- Session Period <120min – Displays the number of times the unit was operated between 31 and 120 minutes

- Session Period <240min – Displays the number of times the unit was operated between 121 and 240 minutes

- Session Period >240min – Displays the number of times the unit was operated for longer than 240 minutes

Only the Displayed Operational Minutes parameter can be adjusted.

6. Fault Information

This section describes the fault information features available for consumer products.

Three categories of fault information are available with RV gensets: **Advanced Fault Info**, **Fault History**, and **Fault Occurrences**. Marine gensets include the same three categories of fault information plus an additional category, **Fault Bypass Info**.

The **Fault Information Window** displays detailed information for each of the parameters listed in each category.

FAULT INFORMATION

Use the InPower ONAN Device Explorer to view **Faults** for a connected device. Current fault information for a device is only available when you are connected to the device.

To access the **Fault Information Window**, start InPower ONAN and connect to a port, then connect to a device. To view the fault categories, select the device name and either expand the device directory or else click on the View Faults shortcut button (Figure 6-1).

Each fault is represented by a fault code indicating a particular malfunction or abnormal condition within the device.
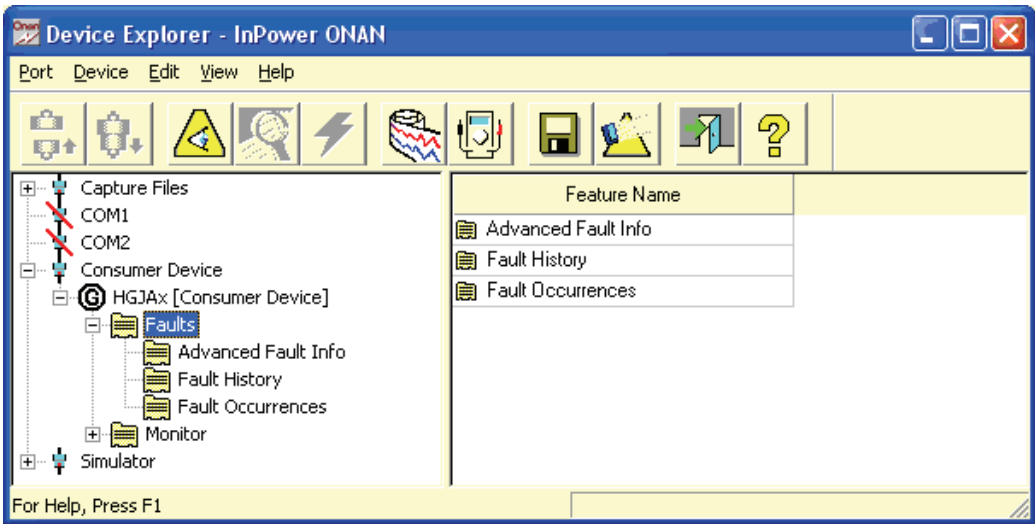
FIGURE 6-1. FAULT INFORMATION WINDOW FOR RV GENSET
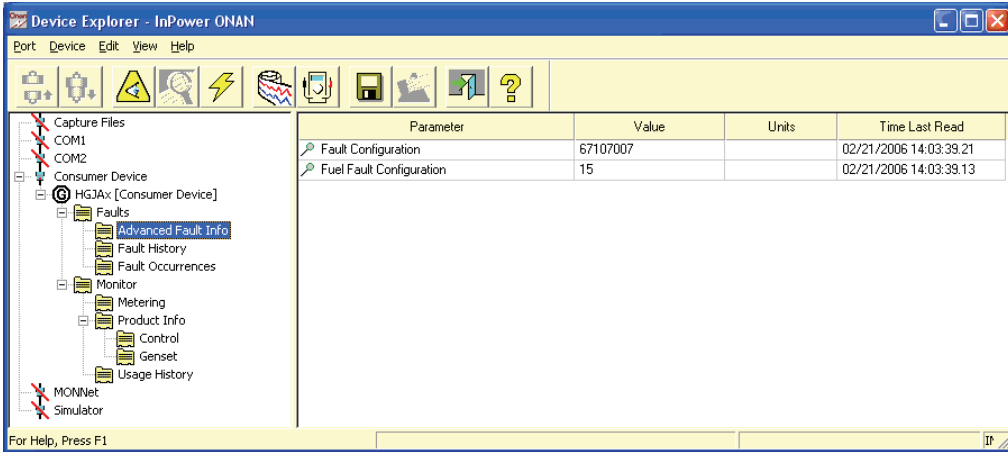
FIGURE 6-2. ADVANCED FAULT INFORMATION

Advanced Fault Information

The Advanced Fault Information window (Figure 6-2) is for factory use only. This window shows the number of faults enabled in the software. For some gensets, it also shows the number of fuel faults enabled in the software.

NOTE: The time listed in the Time Last Read column is the time that InPower last read the fault; it is not the actual time of occurrence.
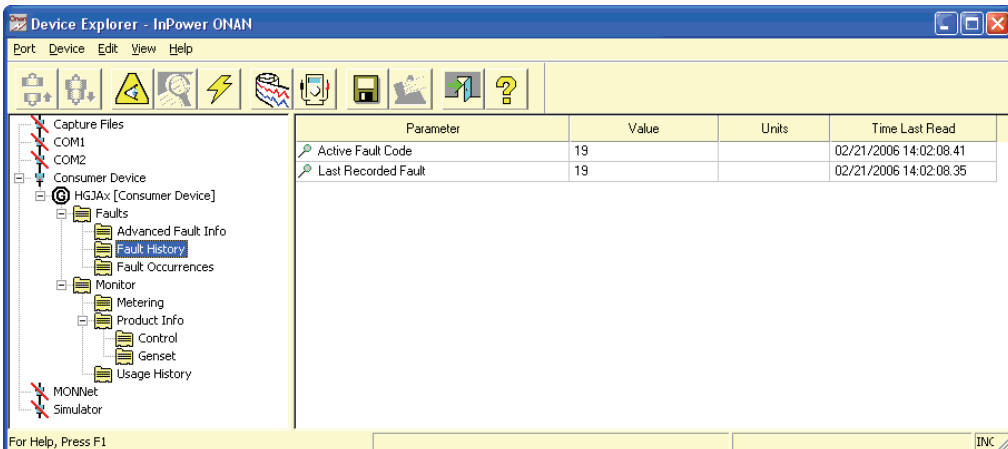
Fault History

The Fault History window (Figure 6-3) lists all active fault codes for a connected device and the last recorded faults that occurred (some display the last five faults).

To find information about fault codes and how to correct faults, refer to the Fault Help menu (see page 6-5). Use this information to match a specific fault to the symptoms observed by the operator. This information can help you determine which fault to address first.

NOTE: The time listed in the Time Last Read column is the time that InPower last read the fault; it is not the actual time of occurrence.

FIGURE 6-3. FAULT HISTORY

FIGURE 6-4. FAULT OCCURRENCES

Fault Occurrences

The Fault Occurrences window (Figure 6-4) lists all possible faults that are available with the device and the number of times each fault occurred.

NOTE: The time listed in the Time Last Read column is the time that InPower last read the fault; it is not the actual time of occurrence.

FIGURE 6-5. FAULT BYPASS INFORMATION (FOR SELECT MARINE GENSETS ONLY)

Fault Bypass Info

Fault Bypass Information is only available with Marine MDDCx gensets. This screen displays the number of minutes the control was operated in fault bypass mode and other events that may have occurred while in fault bypass mode. If any of these events occur, a number is placed in the Value column.

Clearing Inactive Faults

InPower ONAN does not allow removal of an individual inactive fault. The **Clear Faults** button is disabled.

To clear faults, press the Stop or Start switch on the genset, as described in the genset Operator's Manual.
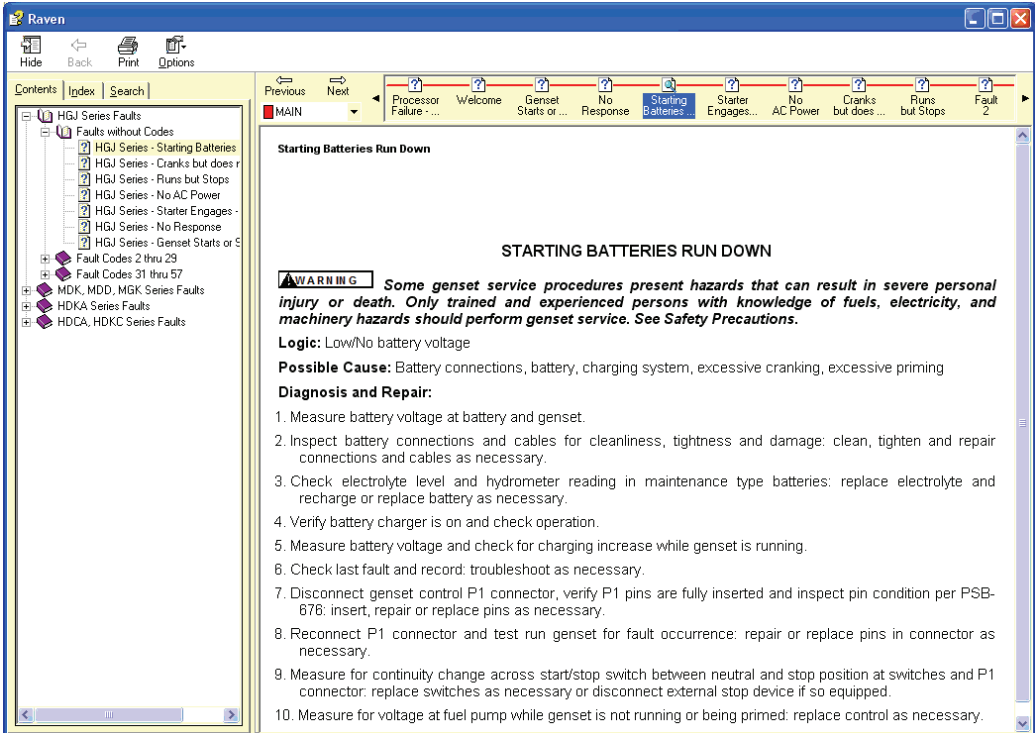
FIGURE 6-6. ONAN FAULT INFORMATION HELP FILES

ONAN FAULT INFORMATION

Onan Fault information is available from the Help menu. It includes a list of possible faults that can occur with each genset model. Each individual fault includes a fault description, a list of possible causes, and diagnosis and repair procedures.

NOTES

7. Initial Calibration

ABOUT INITIAL CALIBRATION

The Initial Calibration feature is used to download a calibration file into a corrupt device that will not respond to an Update Calibration. An Update Calibration should be used whenever possible. Initial Calibration should be used as a recovery method only. This section covers the procedures for performing an Initial Calibration.

NOTE: InPower ONAN calibration fails if the INCAL CD is being accessed from a shared drive.

INITIAL CALIBRATION SETUP

Initial Calibration Setup for Gensets

You must connect the service PC to the genset in order to perform either an Initial Calibration or an Update Calibration procedure.

Connection between the service PC and the genset is made with a interface wiring harness and, if needed, an RS-232 to RS-485 converter. Connections are shown in Figures 7-1, 7-2, and 7-3. The appropriate interface harness kit is listed in Section 1.

⚠ **CAUTION** *Improper calibration can cause equipment malfunction or damage. Adjustments must be performed by trained and experienced personnel only.*
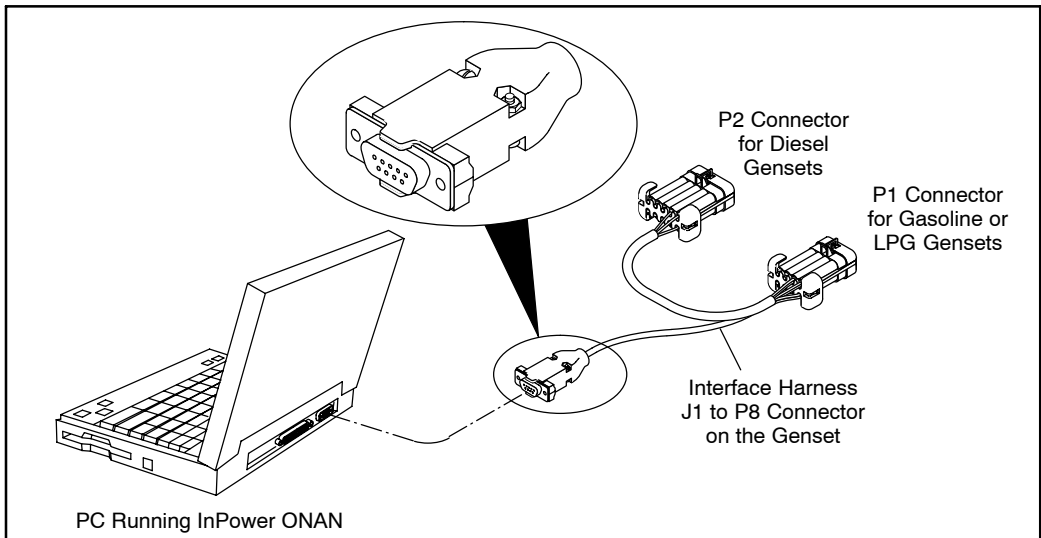

P2 Connector for Diesel Gensets

P1 Connector for Gasoline or LPG Gensets

Interface Harness J1 to P8 Connector on the Genset

PC Running InPower ONAN

FIGURE 7-1. INPOWER ONAN SERIAL CONNECTION FOR HDKCx AND DKHA DIESEL GENSETS AND HGJAA, HCJAD, HGJAE, AND HGJAF GASOLINE/LPG GENSETS
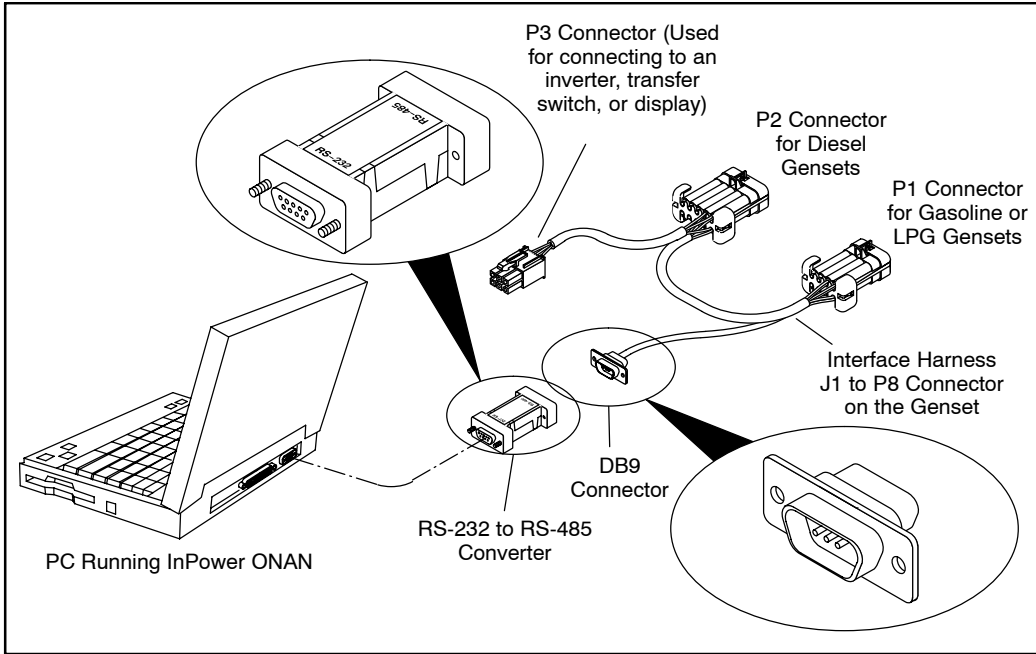
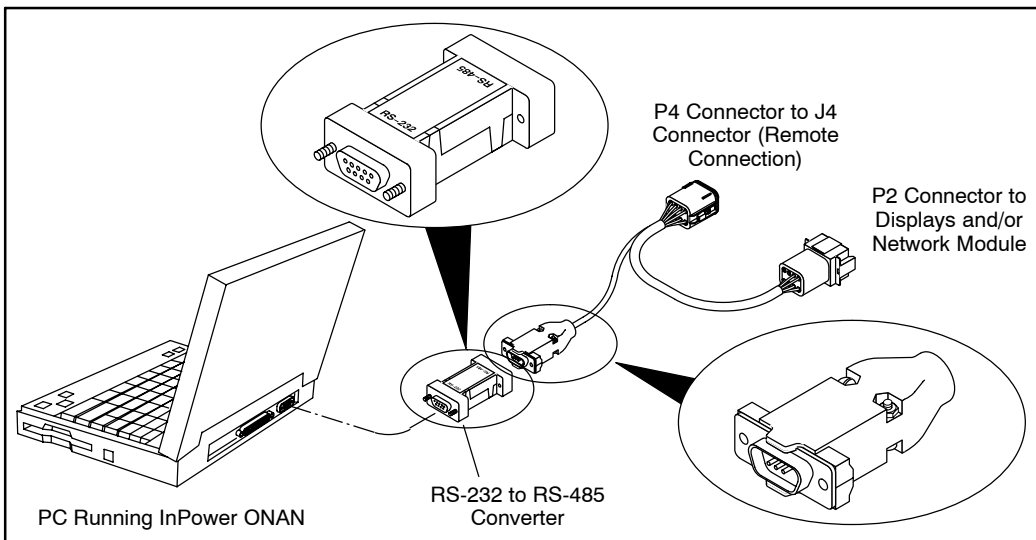**FIGURE 7-2. INPOWER SERIAL CONNECTION FOR HDKAx (STARTING WITH SPEC K), 810HQD, 1215HQD, and 1218HQD DIESEL GENSETS**

FIGURE 7-3. INPOWER ONAN SERIAL CONNECTION FOR MARINE GENSETS (MDKBH – MDKBS, MDDCx, AND MGKBx [STARTING WITH SPEC C])

Initial Calibration Setup for HQD Inverters, Transfer Switches, and Monitors

InPower ONAN can also be used with recreational vehicles with an HQD generator to communicate with the inverter, transfer switch, or display. You must connect the service PC to the device in order to perform either an Initial Calibration or an Update Calibration procedure.

Connection between the service PC and the device is made with a interface wiring harness and, if needed, an RS-232 to RS-485 converter. Connections are shown in Figures 7-4 and 7-5. The appropriate interface harness kit is listed in Section 1.

⚠ **CAUTION** *Improper calibration can cause equipment malfunction or damage. Adjustments must be performed by trained and experienced personnel only.*
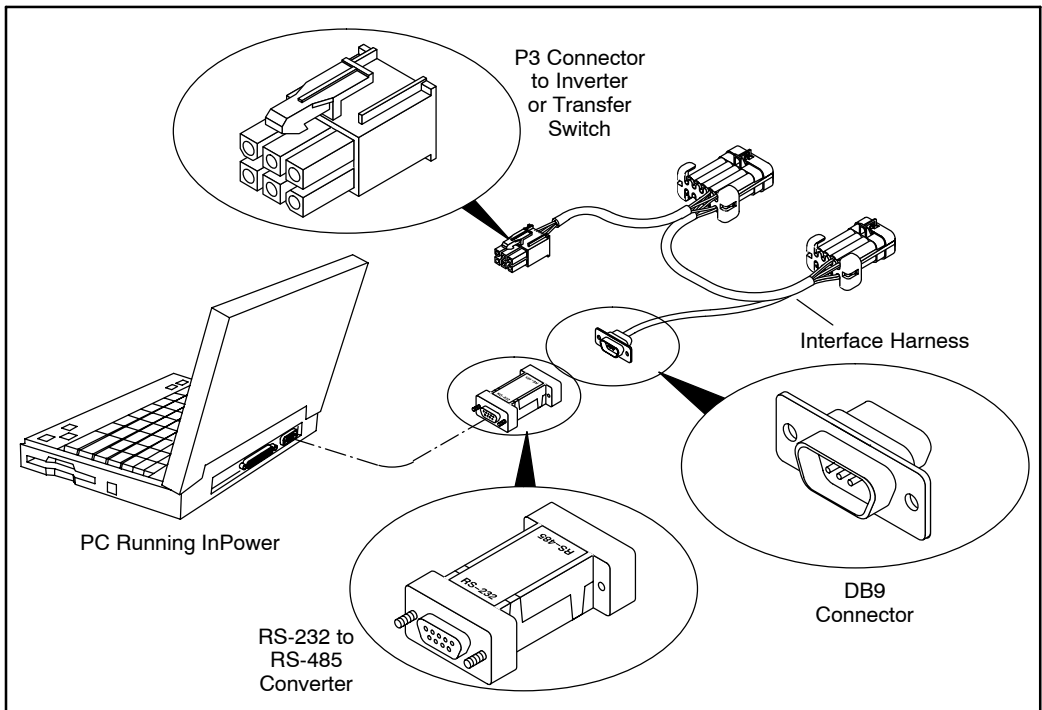

FIGURE 7-4. INPOWER SERIAL CONNECTION FOR AN HQD INVERTER OR TRANSFER SWITCH
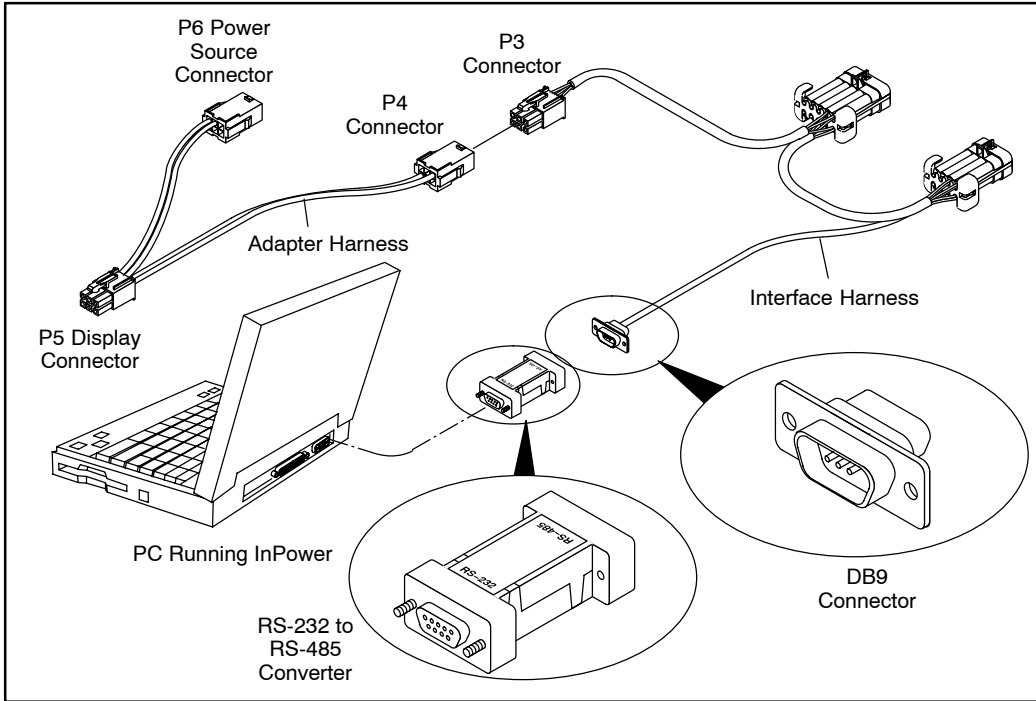
FIGURE 7-5. INPOWER SERIAL CONNECTION FOR AN HQD DISPLAY

The figure shows the following labeled components:

- P6 Power Source Connector
- P3 Connector
- P4 Connector
- Adapter Harness
- P5 Display Connector
- Interface Harness
- PC Running InPower
- RS-232 to RS-485 Converter
- DB9 Connector

INITIAL CALIBRATION

Use of a Capture File can reduce the amount of adjustment that may be required when replacing the base board. If the old base board is operational, and a capture file has not already been created, correct any active faults (if possible). Create a Capture File following the procedure described in the Capture File section of the InPower User's Guide.

Connect the interface wiring harness from the service PC to the device, as shown in Figure 7-1 thru 7-3.

Connect to the port by double clicking on the port that matches the COM port on the service PC being used for the genset connection (COM1, COM2, etc.) or the Site setup (Section 2). The available COM ports are displayed in the Device Explorer directory (left pane).

Note: Initial Calibration and Update Calibration are only available with a physical connection type (MON protocol).

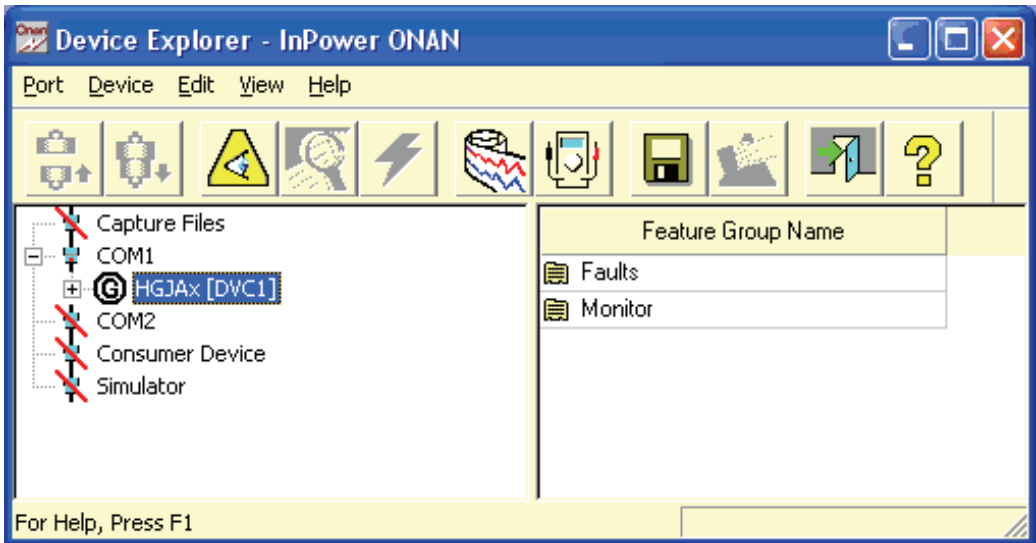Select the device by clicking on it (Figure 7-6).
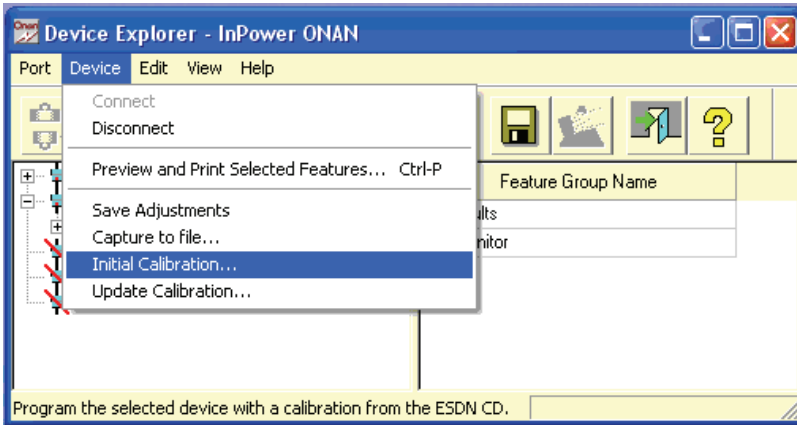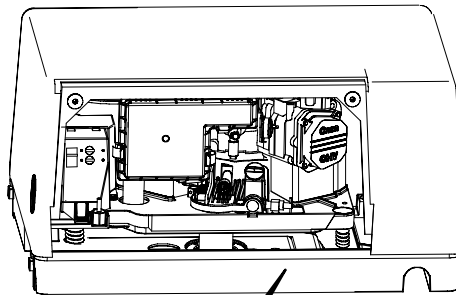

FIGURE 7-6 MAIN WINDOW

FIGURE 7-7. MAIN WINDOW

After connecting to the device, click on the **Device** menu and click on **Initial Calibration** (Figure 7-7).

Refer to the genset engine label for the calibration part number (Figure 7-8). The model family is needed to select the correct calibration.

If a pop-up message is displayed, indicating that there is an error loading INCAL, either the CD drive letter was not correctly specified during InPower ONAN installation, the CD is not installed, or it is defective. INCAL is included on the installation CD. If the CD is in the CD drive, click on **Yes**, and specify the correct CD drive designation. If the CD is not in the drive, insert the CD and click on **No**.

FIGURE 7-8. GENSET DATAPLATE AND CALIBRATION LABEL
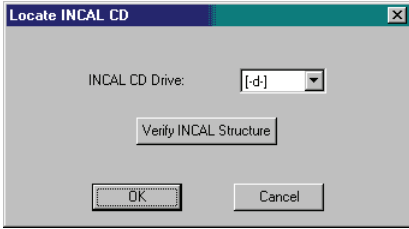
FIGURE 7-9. FIND INCAL

FIGURE 7-10. INCAL LOCATION FOUND

The INCAL CD location can be verified by clicking on the **Port** menu and clicking on **Find INCAL** (Figure 7-9). Select INCAL CD drive designation from the drop-down list, then click on **Verify INCAL Structure**. A pop-up message will verify the INCAL location (Figure 7-10).

Selecting Calibration Part Number

The Select Calibration window (Figure 7-11). lists all of the calibration files that are available from the Power Generation INCAL CD.

Use the scroll bar to locate the Calibration model that matches the model shown on the genset engine label (Figure 7-8).

The data, displayed in each column, can be sorted in ascending or descending order by clicking on the column heading.

Click on the matching calibration part number to select it. When the matching calibration part number for the genset model is selected, click on **Next**, to continue the Initial Calibration.
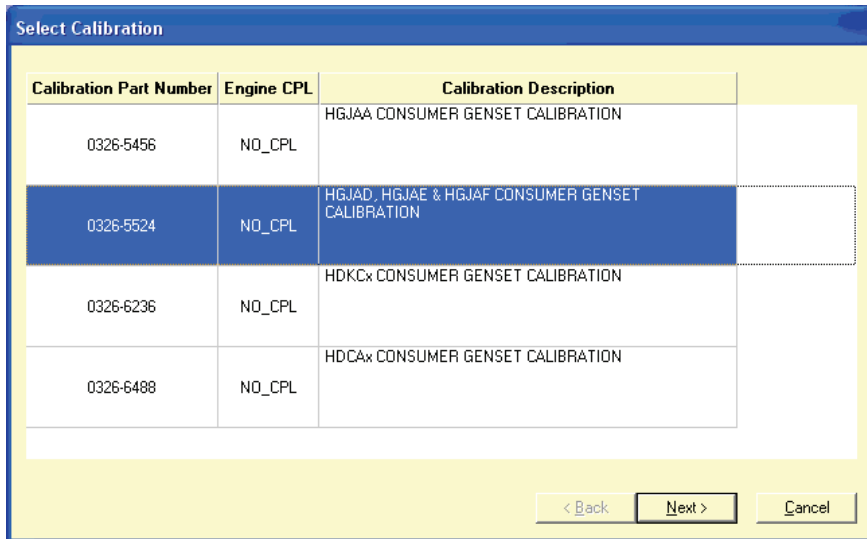
FIGURE 7-11. SELECT CALIBRATION
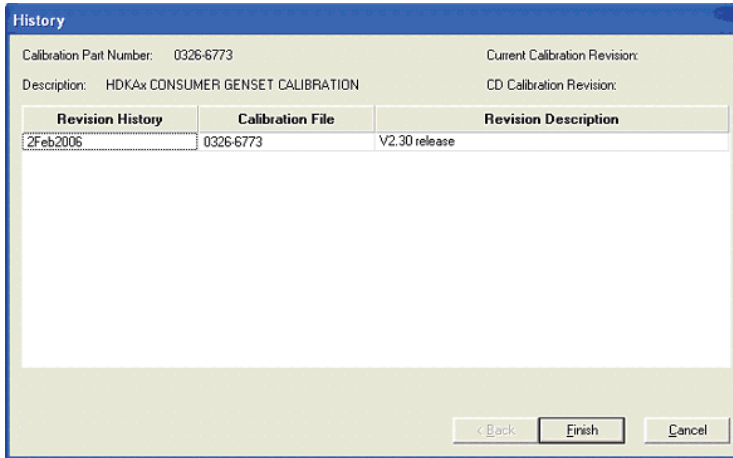
FIGURE 7-12. HISTORY

History

The History window is displayed when the **NEXT** button is selected (Figure 7-12). This feature displays the calibration file Revision History, Calibration File (part number) and Revision Description.

If this window displays a calibration file that does not match the model listed on the genset engine label, click on the **Back** button to choose the correct calibration file.

If History displays the calibration file part number that was previously selected, click on the **Next** button to proceed to the Save and Restore Parameters feature.

Save and Restore Parameters

The Save and Restore Parameters window displays the Parameter Descriptions, Values, and Units of measure information (Figure 7-13).

FIGURE 7-13. SAVE AND RESTORE PARAMETERS

Use Capture File Feature

From the Save and Restore Parameters window, click on the **Set Data Plate From Capture File** button to select the capture file created from the previous control (if available).
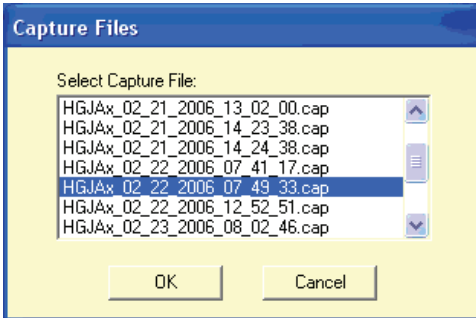
FIGURE 7-14. SELECTING A CAPTURE FILE

If using the Set Data Plate From Capture File button, browse to the Capture file location and select the file, then click on the **OK** button (Figure 7-14). Using a capture file, during an initial calibration, will only restore the data-plate information. 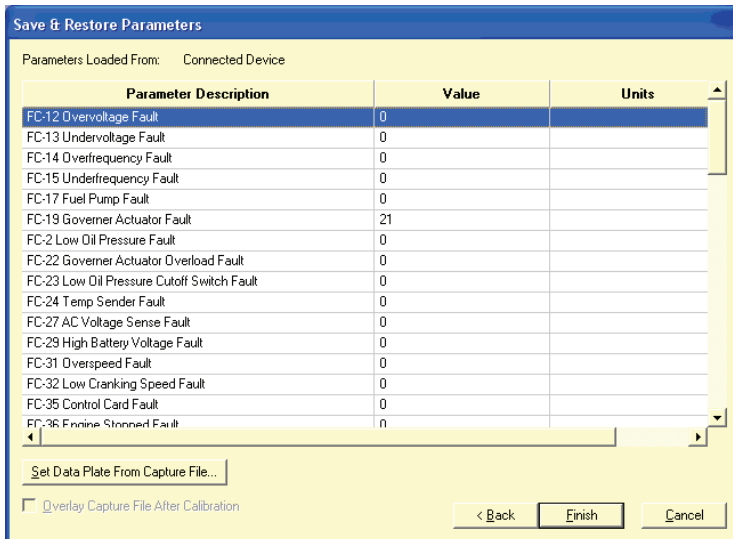To restore the remaining capture file parameter settings, click on the box next to the **Overlay Capture File After Calibration.** If this feature is not used, the capture file can still be used after performing the initial calibration to overwrite the parameter settings. This is not recommended because user data will be cleared during the download.

The Save and Restore window will display the capture file name selected(Figure 7-15).

Verify that the information displayed in the parameter list matches the information shown on the genset, alternator and engine data tags. Use the scroll bar to review all of the information. If any information needs to be corrected, double click on the data and enter the correct information.

After confirming that the correct information is displayed in the parameter list, click on the **Next** button.

FIGURE 7-15. CAPTURE FILE SELECTED

Calibration Download

The calibration file download may take a few minutes or longer, depending on the service PC and the communication port.

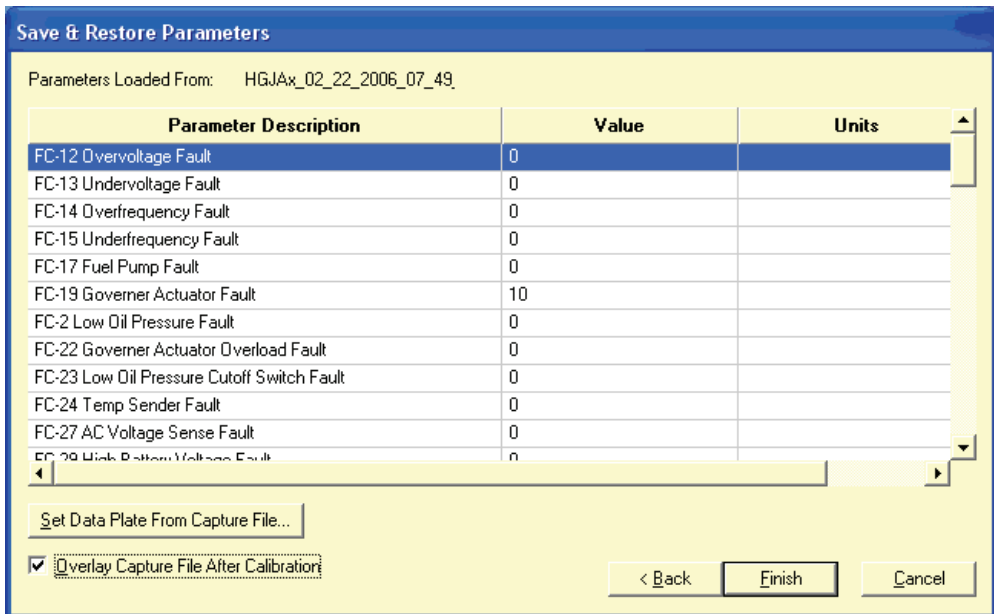When the download is complete, a final pop-up message informs the user if the download completed successfully. If the download completed successfully, click on the **OK** button to close the pop-up message. (Figure 7-16).

If the pop-up message indicates that the download was not successful, repeat the Initial Calibration procedure. If the download is still not successful, record the error message and contact the Service and Support number listed in the front of this User's Guide.
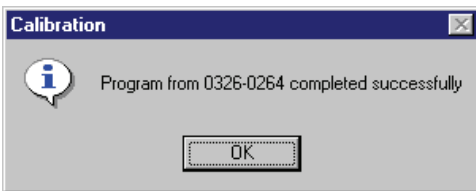
FIGURE 7-16. FEATURE LIST

WRITING ADJUSTMENTS FROM A CAPTURE FILE

If a capture file was made prior to the control being replaced, and the **Overlay Capture File After Calibration** feature was not used, the capture file can still used after performing the initial calibration. The previous parameter adjustments and settings, stored in the capture file, can be written to the new control (device). Refer to Section 10 (Capture File). Follow the procedures described under *Writing to a Device.*

Note: Read only information cannot be written to when overlaying a capture file.

FINAL ADJUSTMENTS

Prepare to start the genset and test the operation of the entire system. Refer to the genset service manual for adjustment procedures and observe all safety precautions described in the genset service manual.

After completing all necessary adjustments, make a new capture file. Store a copy of the capture file at the site and return a copy to Service for cataloging.

8. Update Calibration

ABOUT UPDATE CALIBRATION

The Update Calibration feature is used to replace a current calibration file with a newer version from the Power Generation INCAL CD. The new calibration file is written over the current calibration file, in the genset baseboard.

Note: Initial Calibration and Update Calibration are only available with a physical connection type (MON protocol).

Calibration updates are performed at the site, using InPower ONAN. This section describes the procedures for performing Update Calibration.

NOTE: InPower ONAN calibration fails if the InCal CD is being accessed from a shared drive.

UPDATE CALIBRATION SETUP

The service PC must be connected to the genset in order to perform the Update Calibration procedure.

Connection between the service PC and the genset is made with a interface wiring harness and, if needed, an RS-232 to RS-485 converter. Figures 7-1 thru 7-3 (Section 7) show the methods of connection.

⚠ **CAUTION** *Improper calibration can cause equipment malfunction or damage. Adjustments must be performed by trained and experienced personnel only.*

Connect the serial communication cable from the service PC to the device, as shown in Figure 7-1 thru 7-3.
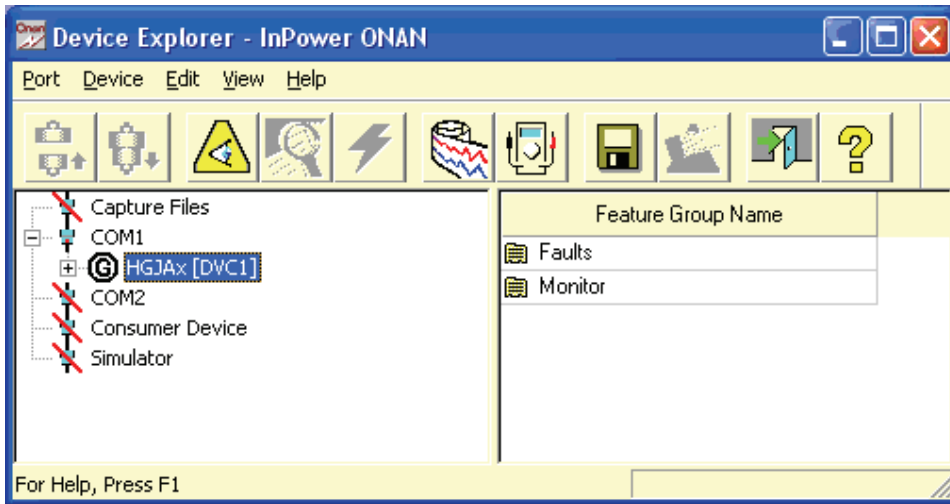
FIGURE 8-1. MAIN WINDOW

Connecting to the Device

Connect to the port (COM1, COM2, etc.) that matches the COM port on the service PC being used for the genset connection. The available COM ports are displayed in the Device Explorer directory (left pane). Double click on the COM port (or click on the COM port and then click on the **Connect** button, on the toolbar).

Select the device by clicking on it. Device Explorer displays the features that are available for gensets (Figure 8-1).

UPDATE CALIBRATION

After connecting to the device, click on the **Device** menu and click on **Update Calibration** (Figure 8-2).

If prompted with the message, "Could not find a matching Calibration Part Number ...," click on the **OK** button. Use the Initial Calibration feature (Section 7) to update the calibration file.

After selecting **Update Calibration**, the History window is displayed.
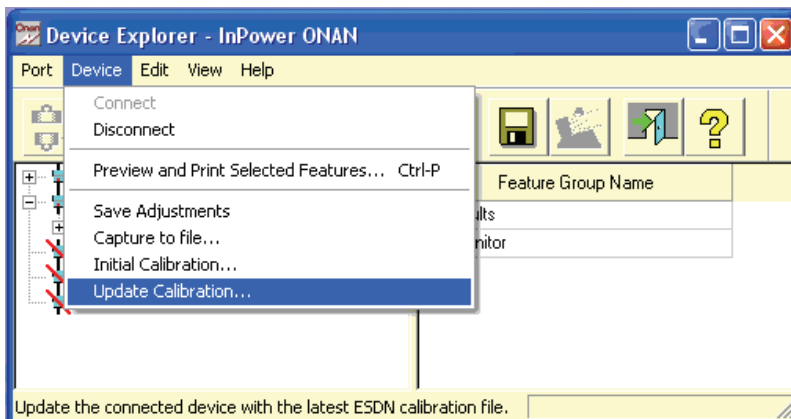
FIGURE 8-2. UPDATE – DEVICE MENU
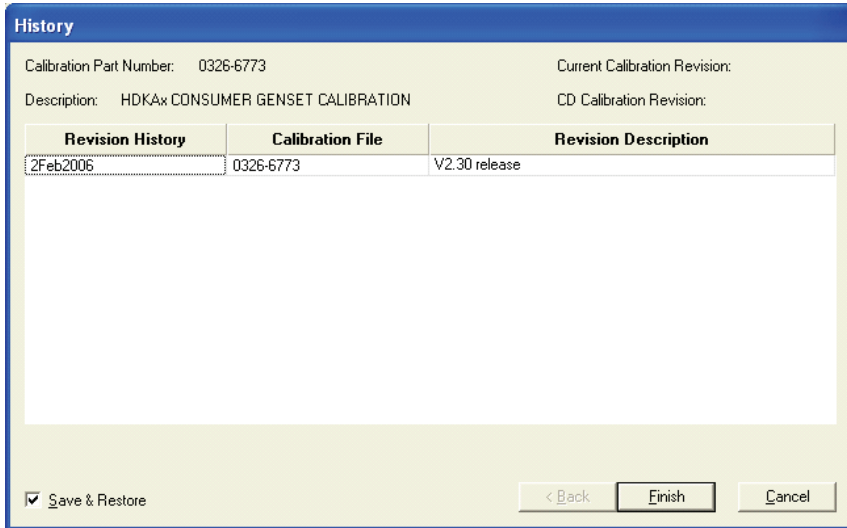
FIGURE 8-3. HISTORY

History

The History window displays information about the currently installed calibration part number and calibration revision across the top of the window (Figure 8-3).

The History window also displays information, from the Power Generation INCAL CD, about the Revision History, Calibration File part number and Revision Description.

The **Save and Restore** checkbox is used to save the current adjustment trims and settings. Make sure the checkbox is enabled (checked) before proceeding.

Click on the **Finish** button to proceed with the calibration update.

The message "Do you wish to calibrate the controller now?" is displayed. (Figure 8-4). Click on the **Yes** button to continue.

Note: Popup messages may be displayed behind an open window. To view all open windows, including popup messages, hold down the Alt key and repeatedly press the Tab key to view each open window.

FIGURE 8-4. UPDATE NOW

When the download is complete, a popup message informs the user if the download completed successfully (Figure 8-5). Click on the **OK** button to acknowledge.

FIGURE 8-5. COMPLETED

NOTES

9. Strip Chart

STRIP CHART

The Strip Chart feature displays data in a graphical form on a real-time strip chart. Up to six parameters can be displayed in one chart. Data is scrolled from right to left, so the most recent data appears at the right.
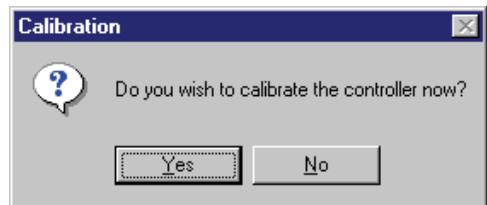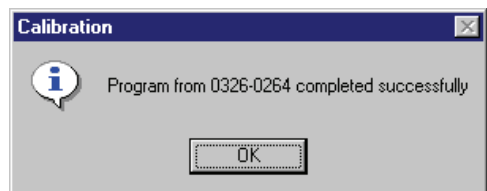
Chart parameters can be saved to chart file (.TPL file), allowing the user to save custom parameter selections and settings. The chart file will store the charts graph settings (Y-axis limits, sampling rate, line styles, etc.) and port identification. A chart file can be used with other ports. Chart files are saved in the Strip Charts directory.

Data is not logged using the Strip Chart feature, refer to the **Monitor** section if data logging is required.

Figure 9-1 shows a typical strip chart. Each of the parameters contained in the chart are named in the legend at the top of the chart.

The **Y-Axis** displays the range of each parameter value. The **Time** that the sample was taken for each interval is displayed at the bottom of the chart.

Starting the Strip Chart Feature

The Strip Chart feature can be launched in two ways:

1. Launch **Strip Chart** from the Windows **Start−Programs** menu, under the **Power Generation−InPower ONAN** group shortcuts.
2. Start InPower ONAN, connect to a device, then click on the **Strip Chart** button, on the InPower ONAN toolbar.

Starting a strip chart from InPower ONAN, while connected to a device, allows InPower ONAN to identify the device and display the correct strip chart file type. This prevents accidentally opening a strip chart file for the wrong device type.

If the chart file does not exist, Strip Chart will display the **File-Open** screen, with a listing of chart files in the **Strip Charts** directory.
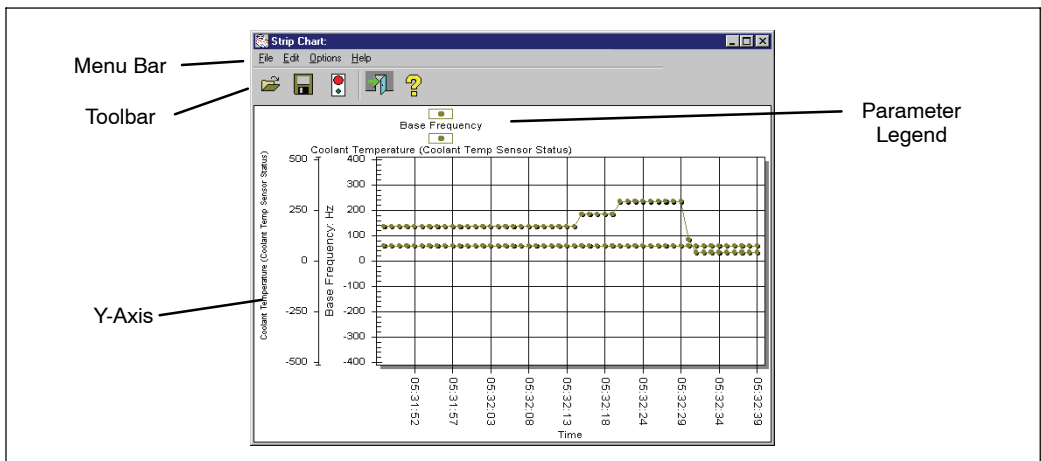

FIGURE 9-1. TYPICAL STRIP CHART

CREATING A CUSTOM STRIP CHART

Strip charts can be customized by adding or deleting parameters, adjusting the sampling rate, changing line styles, changing the Y-axis limits and making format changes.

The user can customize an existing strip chart, or create a new strip chart and define each of its properties. To create a new strip chart, launch the Strip Chart feature from the **Start-Programs** menu, without specifying any chart file to open.

Adding Parameters

Click on **Add Parameters**, from the **Edit** menu, to launch InPower ONAN. To add parameters to the strip chart, drag individual parameters from InPower ONAN (right pane) and drop the parameter on the strip chart. Multiple parameter selections may be dragged and dropped on the Strip Chart, to add several parameters at once. Parameters can also be added by selecting a parameter and using the **Edit – Copy** command from InPower ONAN and the **Edit – Paste** command from the Strip Chart menu bar.

Since parameters with different units of measure may be added to the graph, a separate Y-axis will be displayed for each graphed parameter.

As parameters are added to the graph, an additional Y-axis will appear, indicating the parameter's description and unit of measure. A new legend item will appear at the top of the graph, indicating the point shape and color that will be used when plotting the parameter's values, and these values will automatically begin to be displayed.

Immediately after the first parameter is added to the Strip Chart graph, the applet automatically begins monitoring parameter values at half-second intervals. The sampling rate may be modified via the **Options** dialog, described later in this section.
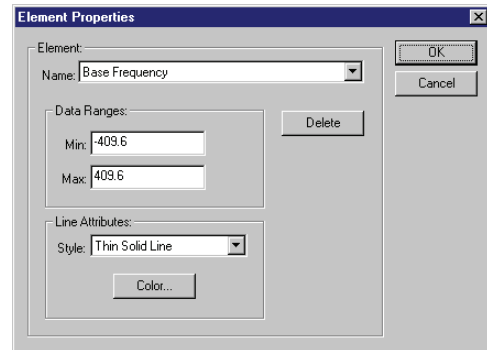
FIGURE 9-2. PARAMETER PROPERTIES

Parameter Properties Dialog

The **Parameter Properties** dialog, shown in Figure 9-2, is accessible from the **Edit–Properties** menu.

The **Name** combo box, at the top of the dialog, provides access to each of the parameters currently displayed on the Strip Chart. The user may delete the selected parameter from the strip chart by clicking on the **Delete** button.

The **Data Ranges** associated with the selected parameter may be modified by entering new values into the edit boxes. These new values will control the minimum and maximum data values displayed on the Y-axis of the graph.

The **Line Attributes** may also be modified by selecting a new line style from the **Style** combo box. A new line color may be selected by clicking on the **Color** button, which invokes the Windows common Color dialog. Current changes are applied after the user clicks on the **OK** button, to close the dialog.

FIGURE 9-3. SAMPLING RATE DIALOG

Sampling Rate Dialog

The Sampling rate feature is available from the Strip Chart – **Options** menu. The **Sampling Rate** dialog, shown in Figure 9-3, allows the user to select the strip chart sampling rate. Sampling can be enabled or disabled using the **Sampling Enable** feature (see **Strip Chart Menu Bar Functions**).
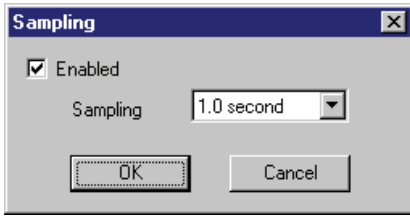
When finished customizing the strip chart, choose the **File–Save As...** menu option. Name the file and save in the **Strip Charts** directory.

Note: Saving a Custom Strip Chart saves only the chart settings, it does not save (log) data.

See **Context Menu** for additional commands that are available for customizing strip charts.

Strip Chart Menu Bar Functions

This section describes each of the menu commands that are available from the Strip Chart menu bar.

File-Open: Allows the user to specify a particular chart (.TPL) file to load from the list of chart files, in the Strip Chart directory. Logged data (.LOG file) can also be opened and viewed with the Strip Chart feature.

After a .TPL file has been selected, the applet will open the file and load the parameters and settings from that file. Since parameter values will be graphed, only the first six parameters that have numeric values will be accepted.

File- Save: Allows saving the current selection of parameters to a chart file.

File - Save As: Allows saving the current set of parameters to a new chart file name and/or location.

File-Close: Closes the Strip Chart

Edit-Add Parameter: Allows adding parameters to the Strip Chart graph from InPower ONAN. This command opens InPower ONAN, allowing the user to select parameters to be added to the Strip Chart. Drag individual parameters from InPower ONAN and drop the parameter on the Strip Chart graph.

Edit-Paste: Allows pasting the parameter(s) from the Windows clipboard into the strip chart. The **Paste** menu option will remain disabled until one or more parameters have been cut or copied to the Windows Clipboard.

Edit-Properties: Opens the **Element Properties** dialog. (This feature can also be activated by double clicking on the parameter names in the strip chart's legend.) The **Element Properties** dialog allows the user to perform a variety of commands relating to the display properties of the Strip Chart.

Options-Sampling: This option displays the **Sampling Rate** dialog, which allows the user to change the strip chart sampling rate. The sample rate is adjustable from 0.05 seconds to 60 seconds.

Options-Sampling Enable: This option is used to enable or disable the collection of sample data. A check mark is displayed next to **Sampling Enable** on the **Options** drop down menu to indicate that the feature is enabled. Click once on **Sampling Enable** to stop collecting sample data. Click on it again to start collecting sample data again.
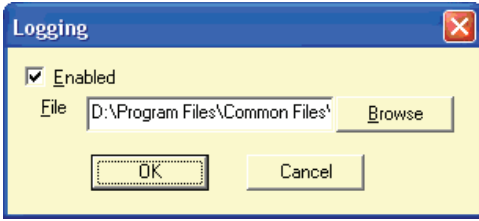
FIGURE 9-4. LOGGING DIALOG

Options-Logging: This option provides you with a means to assign a location for storing strip log files. The default file location is listed on the menu (see Figure 9-4). If necessary, select the **Browse** button to select another location. Logging can be enabled from this menu. When all adjustments are completed, click on the **OK** button.

Options-Logging Enabled: This option is used to enable the logging option to save a file at the location set up with the Logging dialog. If a strip chart log has already been created, the message shown in Figure 9-5 is displayed.

FIGURE 9-5. LOGGING MESSAGE

FIGURE 9-6. CONTEXT MENU FEATURES (RIGHT MENU BUTTON)

Context Menu Features

The **Context Menu**, shown in Figure 9-6, may be accessed by clicking on the right mouse button (or equivalent pointing device button) while the cursor is inside the graph. This set of menu items provides the users with additional customization features.
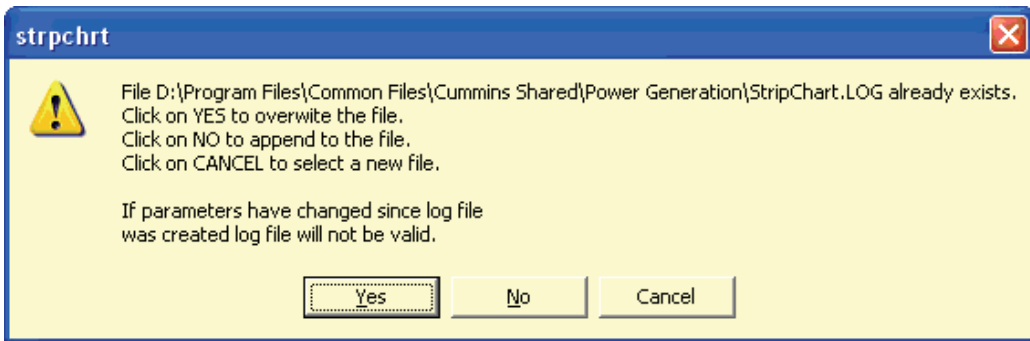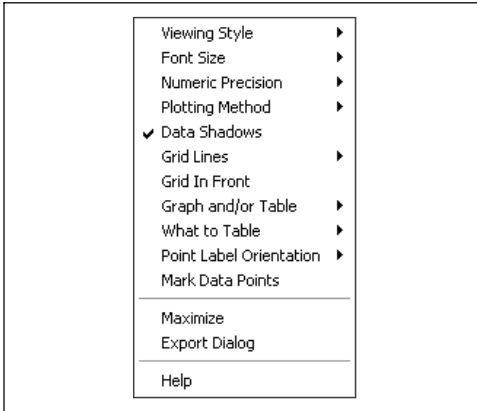
Viewing Style: This controls the viewing style of the object. Possible values include color, monochrome, or monochrome with symbols.

Font Size: This controls the font size used in the graph's image creation process. The font sizes available are large, medium, or small.

Note: It is recommended that the user change the Font Size to the Medium setting, or Large setting if only a few parameters are being monitored. This selection will make it easier to read the parameter legends.

Numeric Precision: This controls the number of decimal places associated with the graph's data. Possible values include zero, one, two, or three decimal places.

Plotting Method: This give you the option of selecting the type of chart you wish to view. Possible plotting methods include line, bar, point, area, two types of points with best fit line, two types of points with best fit curve, points with line, points with spline, spline, and histogram chart types.

Data Shadows: This controls whether shadows will be placed behind plotting method graphics. The shadows add depth to the images; however, they will slow image creation significantly when graphing many subsets and/or points.

Grid Lines: This controls the horizontal and vertical lines that make up the graphs grid. Possible values include horizontal and vertical grid lines, horizontal grid lines only, vertical grid lines only, or no grid lines.

Grid In Front: This controls whether the graphs grid is placed behind or in front of the plotting method graphics.

Graph and/or Table: This controls what is displayed in the graph's area. Possible values include graph, table, or graph with table.

What to Table: This controls what information is included in the objects table. Possible values include tabling those subsets that are graphed or tabling all subsets.

Point Label Orientation: This controls the orientation of the point labels. Possible values include automatic, horizontal, or vertical.

Mark Data Points: This controls whether data-points are marked with a small circle.

Maximize: This function maximizes the graph display. To return to the default display size, click inside the solid bar at the top of the window or use the **Esc** key.

Customization Dialog: This function displays the chart Customization dialog.

Export Dialog: Graphs can be exported in the formats shown in Table 9-1, for the listed destinations. This dialog allows the user to print a Strip Chart (see Printing a Strip Chart, Figure 9-8).

TABLE 9-1.

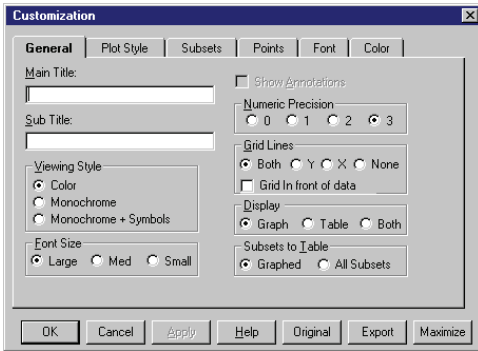| FORMAT	DESTINATIONS
Metafile	Clipboard, File, and Printer
Bitmap	Clipboard and File
OLE Object	Clipboard
Text / Data	Clipboard and File

Help: Displays graph−related help topics.

FIGURE 9-7. CHART CUSTOMIZATION DIALOG

Chart Customization Dialog

An additional level of editing is available that allows the user to customize the chart dialog. To access this feature, double click within the chart to display the **Customization** dialog. This dialog has tabs for each of the editable features.

Click on the desired tab to view the available settings for that feature. These features can be used to enhance the chart by changing border colors, text size and colors, and many other chart display features.
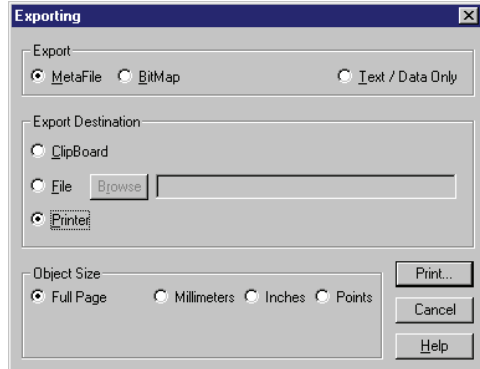

FIGURE 9-8. EXPORT – PRINT DIALOG

Printing a Strip Chart

A Strip Chart can be printed by using the Export dialog (Figure 9-8). Use the right menu button to access the Export Dialog, then select the **Printer** radio button and select the **Print** button.

Viewing Logged Data

Logged data, created with the Monitor feature (refer to Monitor Section 5) can be displayed with the Strip Chart feature. Select **Open** from the Strip Chart **File** menu. Select file type .LOG and enter the file location and name.

Strip Chart will display logged data. Since the data is not being displayed on a real-time basis, the data is static. Use the left and right arrow buttons, located on the keyboard, to navigate the data within the .LOG file.

10. Capture File

CAPTURE FILE

InPower ONAN provides a method of extracting (capturing) a device's parameter values. Capturing saves device information in a file that is identified with a .CAP extension. The files are saved in the **Capture Files** directory (Figure 10-1).

Capture files are used to store a copy of a device's parameter values, History and Faults. Capture files are read only files that can be viewed after disconnecting from the device. Capture files can also be used as a template to write the captured settings to another device of the same type.

Viewing a Capture File

To view a capture file, the user must connect to it using InPower ONAN. Double click on the Capture file name in the **Capture Files** directory structure. Capture file contents can be viewed, like devices, using Device Explorer.

CREATING A CAPTURE FILE

A Capture files will be automatically captured each time you connect to a site or you will be prompted to create one, depending on your set-up selection (Section 2). Capture files can also be created by selecting the **Capture to file** command from the **Device** menu. This feature displays the **Capture File** dialog (Figure 10-2).

The user names the file, and InPower ONAN appends the file name with the .CAP extension. Capture files are not editable by InPower ONAN (read-only). A capture file can be overwritten, allowing the user to re-capture parameters and settings to the same file.
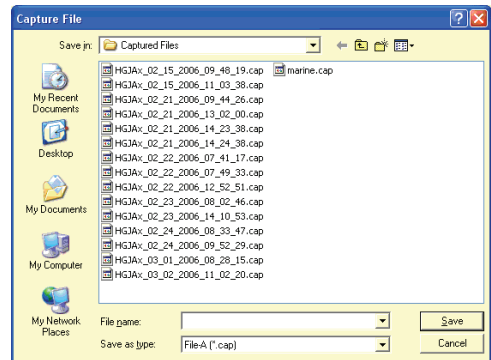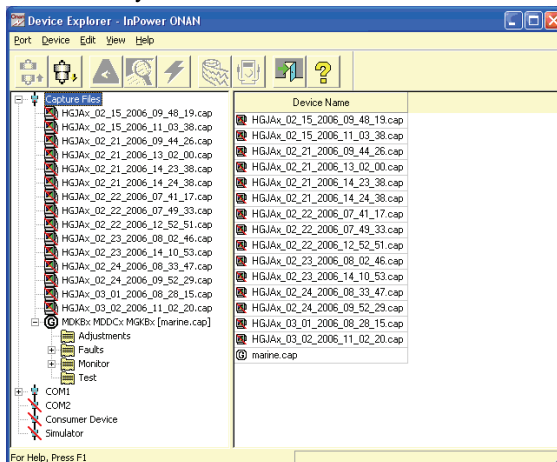

FIGURE 10-1. CAPTURE FILE DIALOG

FIGURE 10-2. CAPTURE FILE DIRECTORY

WRITING TO A DEVICE

Capture files can be used to overwrite the parameter values of a connected device (of the same device type) with the parameter values from a capture file. One capture file can be used repeatedly (like a template) to configure many devices of the same type.

To write to a device you must have registered software of the correct device type.

To write from a Capture file, connect to the Capture file first, then click on the target device, and connect to it. Next, select the Capture file and drag-and-drop the Capture file onto the target device. The message displayed in Figure 10-3 is displayed. To overwrite the device parameters, click on the **OK** button.
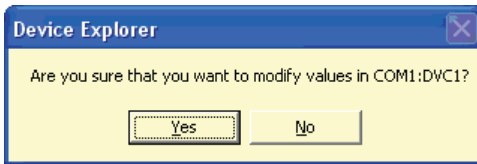

FIGURE 10-3. DEVICE MODIFICATION MESSAGE

The **Edit – Copy** and **Edit – Paste** features can also be used to to write parameter settings from a Capture file to a device. This feature can be used to copy the entire Capture file, or individual folders or parameters.

Start by connecting to the Capture file, Use **Edit – Copy** to copy the desired information from the Capture file. When copying a folder or individual parameters, use Device explorer to display the desired folder or parameters in the right pane. Hold down the Control key while selecting the desired folder (s) or parameter(s) then use the **Edit – Copy** command. Connect to the target device and use the **Edit – Paste** feature to overwrite the target device's parameters with the parameter settings from the Capture file.

Note: A capture file from a genset (for example) can be copied to another genset, but it cannot be copied to any other device type.

11. Simulator

SIMULATOR

InPower ONAN provides a means of demonstrating the service tool without connecting to an actual device. A Capture file is used for simulation. This file contains most of the information that is normally displayed when you are connected to a device.

Simulator files are read only, although during simulation, the user may be allowed to make editorial changes to help demonstrate the tool. Any changes made during simulation will not be saved.

If an arrow is displayed, click on the arrow to view a drop-down list of the available settings. Click on the desired setting, and it will be entered into the Value cell.

The simulator file(s) are stored in the **Simulator** directory. To run an InPower ONAN simulation, double click on the **Simulator** directory and then double click on the desired simulator file (*.CAP file).

Figure 11-1 shows the contents of a typical genset Simulator file. The examples shown in this section display files that are available with an HDKAx genset.
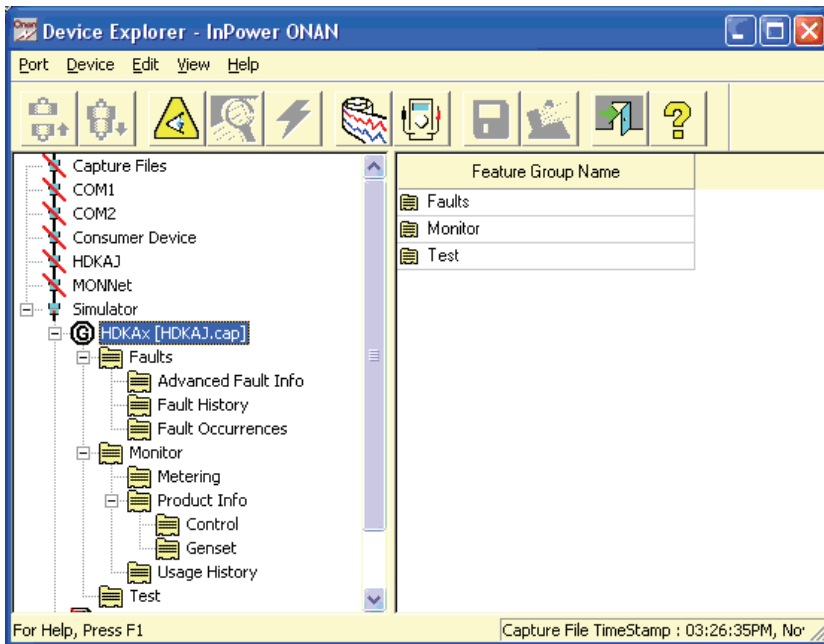
FIGURE 11-1. TYPICAL SIMULATOR FILE

NOTES

12. Reports

This section describes how to create, save, and print reports. Reports consist of parameter groups and their values at the time the report was created. Reports can be printed directly from InPower ONAN, or they can be saved to a file for use in a spreadsheet, database, or word processing program.

CREATING A REPORT

Start InPower ONAN and connect to a port, then connect to a device (or file). Use the Device Explorer (tree view) to locate and select the information you wish to include in the report.

Note: When selecting parameters for a report, be careful to avoid selecting too many parameters. If a folder is selected that contains additional folders, the parameters of all of the folders in the group will be selected.

You can create a report from a single group of parameters or from several groups of parameters. A few smaller reports are generally more manageable than a very large report.

To create a report for a single group of parameters: Select the group folder, if it contains additional folders, click on the + symbol next to the folder or double click on the folder to expand it. Select the desired folder and use the mouse or keyboard menu button to display the pop-up menu (Figure 12-1). Select **Preview and Print Feature** from the pop-up menu, to create a report for the selected folder and display the **Parameter List Report** window (Figure 12-2).

To create a report with more than one group of parameters: Select each folder individually, use the mouse or keyboard menu button to display the pop-up menu, click on **Select Feature**, in the pop-up menu. Each folder selected will be marked with a check mark, to indicate that it has been selected for use in the report (Figure 12-1).

After selecting the desired parameter groups, use the **Preview and Print Selected Features** menu pick from the InPower ONAN **Device** menu to create a report and display the **Parameter List Report** window (Figure 12-2).

Selected folders can be deselected by clicking on a folder with a check mark, then use the mouse or keyboard menu button to display the pop-up menu, click on **Deselect Feature**, in the pop-up menu.
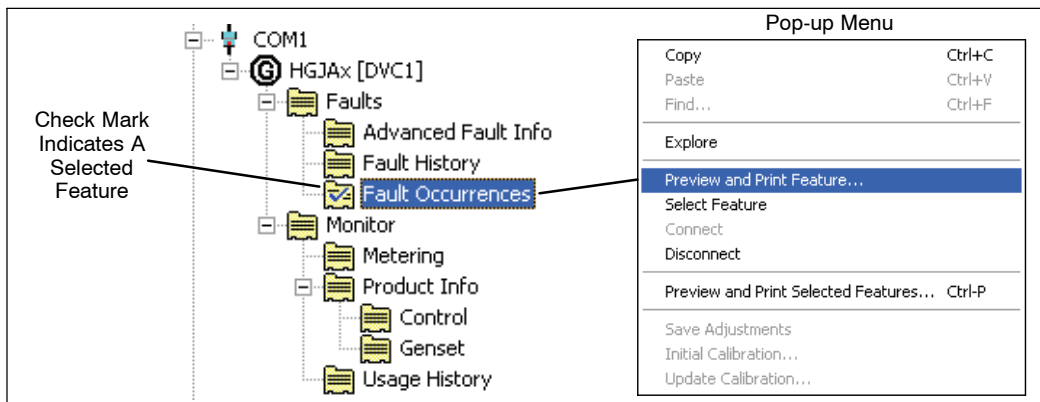

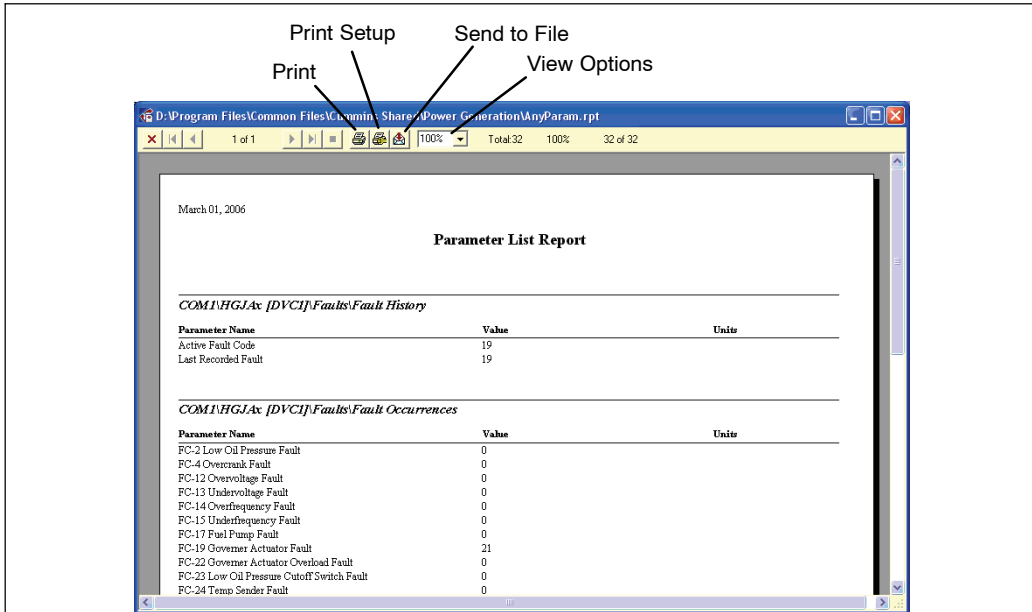**FIGURE 12-1. SELECTING FEATURES FOR A REPORT**

FIGURE 12-2. PARAMETER LIST REPORT WINDOW

The **Parameter List Report** window allows viewing the report contents. Each selected parameter group is shown. The window contains a toolbar with a **Print** command button, a **Print Setup** button, a **Send to File** button and a drop-down list for selecting viewing magnification options. The window also has navigation arrows for moving between the pages of the report.

PRINTING A REPORT

Reports can be printed by clicking on the **Print** button, on the toolbar. The standard Windows print dialog is displayed.

Printed reports are organized according to the InPower ONAN navigation directory. Each group of parameters is printed in the same order that the information is displayed in the InPower ONAN directory structure.

Each group of reports is titled with the directory location and name, the date the report was printed, and the page number at the bottom of each page. Reports are designed to print on either Letter (8 1/2 by 11 inch) or A4 size sheets.

InPower ONAN does not support narrow or other non-standard printers, including 32-column printers.

SENDING A REPORT TO A FILE

Reports can be sent to a file by using the **Send to File** button on the **Parameter List** window toolbar. Click on the **Send to File** button, and the **Export Dialog** will be displayed (Figure 12-3).
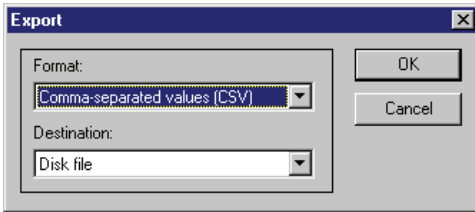

FIGURE 12-3. PRINT CAPTURE DIALOG

This window contains a **Format** dialog and a **Destination** dialog. Use the **Format** drop-down list to select the desired file format.

In the **Destination** drop-down list, select **Disk File**. Click on the **OK** button and a Pop-up window confirming the **Number Format** and **Date Format** is displayed (Figure 12-4). Click on the **OK** button and the **Choose Export File** dialog is displayed (Figure 12-5).

Enter the file name and select the drive and directory location for the file, then click the **OK** button to start the the export process.
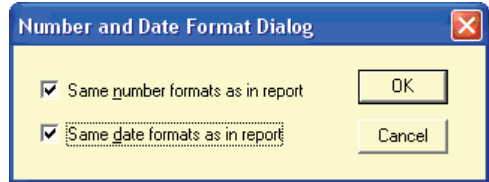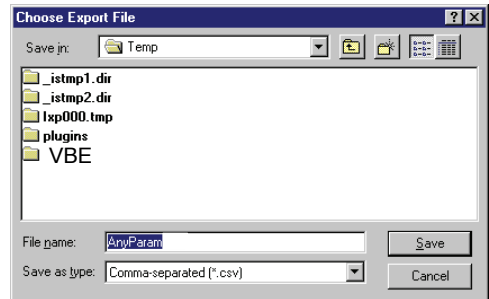

FIGURE 12-4. NUMBER AND DATE FORMAT LOG

FIGURE 12-5. CHOOSE EXPORT FILE

NOTES

13. Help

Use the **Help** menu to find information about using InPower ONAN, to find Service and Support information, and to find out about the installed InPower ONAN product type and software version.

SEARCH FOR HELP ON...

The **Help - Search for Help On...** feature allows searching for help on a specific topic or keyword (standard Windows Help format). Access this feature by clicking on the **Help** menu, then click on **Search for Help On...** .

CONTENTS

The **Help - Contents** feature provides access to the list of subjects in the InPower ONAN help file (standard Windows Help format). Access this information by clicking on the the **Help** menu and then clicking on **Contents.**

HOW TO USE HELP

The **Help - How to Use Help** feature displays the standard **Windows Help Topics** dialog. Use this feature to find answers to basic Windows operation questions. Access this information by clicking on the the **Help** menu, and then click on **How to Use Help.**

SERVICE AND SUPPORT

The **Help - ONAN Faults Information** menu lists information about how to troubleshoot fault conditions for a given genset. To view this information, click on the **Help** menu, then click on **Service and Support**.

ABOUT DEVICE EXPLORER

The **Help - About...** feature initiates the **About Device Explorer** box (Figure 13-1). This box displays the product type and software version. The expiration date for the software is also shown. To view this information, click on the **Help** menu, then click on **About...**.
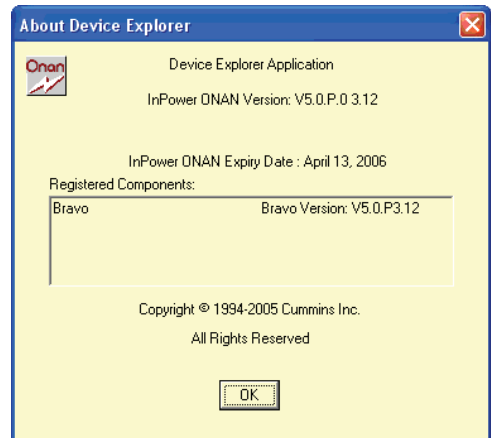

FIGURE 13-1. HELP – ABOUT

NOTES

A. Glossary

Calibrating – The process of reprogramming a device. This requires the ESDN version of In-Power ONAN.

Calibration – Term used to describe the program and factory settings for a device.

Calibration Table – Name used to refer to a Data Table, XY Table, or XYZ Table that contains one or more calibration variables.

Calibration Variable – Data that is stored in the controller's non-volatile memory, and which may not be altered after sale by either a customer or service technician.

Capture File – A capture (.cap) file contains all of the trim values, monitor values, and table values of a given device (e.g. Generator set). This file can be thought of as a "template" for configuring other devices of the same type, or it can be used as a backup file.

Channel – A channel is the physical communication media that connects the devices and the properties of these media (such as transmission speed).

CSV File – Comma Separated Value file (same as a comma delimited file). The file format used by InPower ONAN to save datalog information. Allows the file to imported into Microsoft Excel.

Data Table – Data table is a structure containing a variable in each of the columns. The data cells are viewed and edited in spreadsheet format.

Device – As used in InPower ONAN, refers to any one of a series of application controllers used in Power Generation applications. These include: Generator-drive engine controllers, Genset controllers and Automatic Transfer Switch controllers.

Electronic Control Module (ECM) – The hardware residing on an engine which carries out all the engine management functions (e.g. timing, fueling).

Electronic Software Database & Network (ESDN) – A worldwide Cummins corporate database of released electronic software. It provides calibration files reprogramming devices.

Graphical User Interface (GUI) – A term used to describe the way in which a user interacts with the software program.

Initial Calibration – Manually select software to download.

InPower ONAN – Name given to the Power Generation Products based service tool.

MON – A communications protocol for one device connected to the service tool using RS-485 and RS-232 serial communications. All devices can communicate with the service tool.

MONNet – A communications protocol for more than one device connected to the service tool using RS-485 communications only.

Network Connection – This term is used to describe a connection using the MONNet protocol and an RS-485 adapter.

Parameter – This term is used with InPower ONAN to refer to properties whose *values* determine the behavior of a *device*. With InPower ONAN there are two main types of properties; trims that have a range of numeric values, and settings that consist of a small number of predefined values such as On or Off.

Physical Connection – This term is used to describe a connection using the MON protocol and no RS-485 adapter.

Port – As used in InPower ONAN, it refers to the channel by which a connection can occur. Port connections can occur with COM ports, or with Simulator or Capture files in the InPower ONAN directory structure.

PowerCommand® Control (PCC) – A microprocessor based genset monitoring, metering and control system with integrated AVR and engine governing.

Protocol – Protocol is a language that each node on a network knows how to speak and interpret. The protocol is what allows devices to exchange messages with one another.

Save Trims – Term used with InPower ONAN to indicate the process of permanently storing parameter changes to a device.

Site – The name of a connection setup (COM1, COM2, etc).

Template – 1. View template in InPower ONAN describes how to display data table information. 2. Template can also describe the Capture (.CAP) file that contains trim values that can be used to configure multiple-devices (e.g. genset controllers).

Tool – A set (or bundle) of software applets that are targeted at a specific customer or end–user function.

Trim – Data that is stored in the controller's non-volatile memory, but which may be altered after sale by either a customer or service technician.

Update Calibration – Automatically updates software, saves user information, and transfers to a new control.

Volatile/Non–volatile Memory – The contents of volatile memory is lost following a loss of power to the controller. Data stored in non-volatile memory is retained.

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