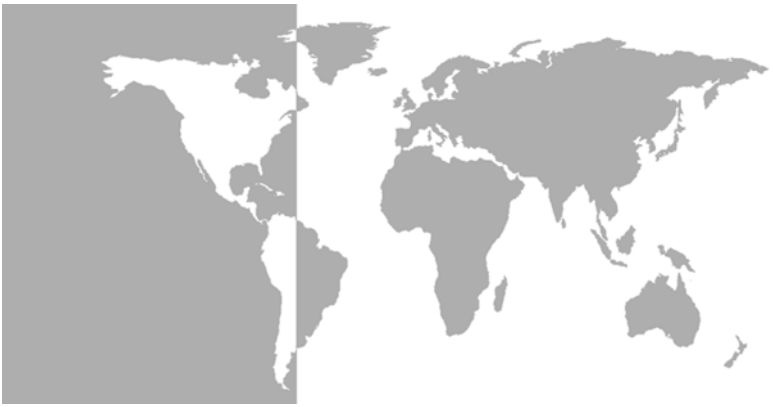
GE Infrastructure
Sensing



Instrument Data Manager

User's Manual

GE Infrastructure
Sensing

Instrument Data Manager

User's Manual
910-185D
October 2004

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[INSTRUMENT DATA MANAGER SOFTWARE]

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Table of Contents

Table of Contents (cont.)

Chapter 4: Instrument Setup

Chapter 5: IDM Operation

Table of Contents (cont.)

Chapter 1

Features & Capabilities

Instrument Data Manager (IDM) is a software program that permits interactive communication between a GE Infrastructure Sensing instrument and a personal computer (PC).

Basic Features

IDM operates on a 16-bit DOS operating system (MS-DOS or PC-DOS version 3.3 or higher), and it can be run from within a DOS window that is launched from within Windows 9X or NT.

Capabilities

The following primary tasks may be performed with the Instrument Data Manager software:

- save the instrument's programmed site file data to the hard drive on the PC.
- display text output of the live measurement data on the computer monitor
- display graphical output of the live measurement data on the computer monitor.
- create and save graph and log files to the hard drive on the computer.
- save data as an ASCII file for use in a spreadsheet or database program.
- interface with multiple GE Infrastructure Sensing instruments.

Chapter 2

Installation

Before beginning the installation, make sure the personal computer system meets the requirements listed below.

Personal Computer Requirements

IDM requires an Intel 486 processor or better (including laptops). In addition to a minimum processor speed of 33 MHZ, the PC must meet the following requirements:

- RS232 standard serial interface
- 2 MB of RAM (4 MB recommended)
- Math co-processor (not required, but recommended)
- At least one high-density disk drive
- A hard drive with at least 2 MB of free space available for storing the program, plus adequate space to store site and log files.
- A graphics card:
  – *VGA or equivalent (recommended board)*
  – *Hercules Monochrome Graphics Card or equivalent*
- A mouse (not required, but recommended):
- Windows 95/98, Windows NT, MS-DOS or PC-DOS version 3.3 or higher
- A Hewlett Packard PCL-compatible Laser or PostScript® printer

Software Installation

After verifying that the personal computer meets the minimum requirements listed on page 2-1, proceed as follows:

Installing IDM on MS-DOS Computers

To install IDM, you must copy the IDM files into a directory on your PC's hard disk.

IMPORTANT: *Make backup copies of your source disk to guard against accidental damage.*

Use the following steps to install IDM on your PC's hard disk:

Note: *The following steps are based on the MS-DOS version 5.0 and may vary depending on which version of MS-DOS you are running. Consult your MS-DOS manual.*

1. Turn on the computer and monitor.
2. Insert the IDM disk into the disk drive.
3. At the C:\> prompt, type **md∧IDM** and then press the **ENTER** key.

Note: *The ∧ symbol represents a space.*

When the C:\> prompt appears again, this indicates that your computer has created a directory named IDM.

4. Copy the IDM files into the IDM directory by typing:

copy∧a:*.*∧C:\IDM

Note: *Insert the appropriate drive letter where "a" appears. For example,* ***copy∧b:*.*∧C:\IDM****.*

5. Press the **ENTER** key.

As DOS copies the files, it displays the file names. When all the files are copied, DOS indicates how many files were copied.

Installing IDM for Windows 95/98/NT

1. From 95/98/NT, open Windows/NT Explorer.
2. Create a folder and name it **IDM**.
3. Insert the IDM disk into the drive and copy its contents to the new IDM folder.
4. In Windows 95/98/NT, from the **Start** menu select the Find command and click on Files or Folders.
5. Type in **IDM.exe** and select **OK**.
6. The **IDM.exe** file should appear in a box below. Right click on **IDM.exe**.
7. Select **Create Shortcut**.
8. A message appears asking if you would like to create a shortcut on the desktop. Select **Yes**. The shortcut appears on your desktop.

Hardware Installation

After the Instrument Data Manager (IDM) software has been installed in accordance with the instructions in the previous section, the system hardware must be properly set up. To complete this task, the following items are required:

- a personal computer with IDM installed and at least one available serial port
- a GE Infrastructure Sensing instrument that has been configured for use with IDM and which has an available serial port

Note: *Check with the factory to make sure that your instrument is equipped with the necessary hardware and software versions for IDM compatibility.*

Changing an Instrument's Network ID Number

To exchange data with an instrument, IDM has to identify the instrument and establish a communications link with it. IDM identifies each instrument using a Network ID Number.

The default ID number for all instruments shipped from the factory is 1. ID Numbers can range from 1 to 254. Each instrument on the network must have a unique ID Number. IDM will not recognize more than one instrument with the same ID Number. If you only intend to use IDM with one instrument, proceed to the next section, *Connecting the Instrument to the PC/Network*, since this information does not apply to your application.

The easiest way to change an instrument's ID Number is to use the COMM menu option in the instrument's User Program. Refer to the instrument's manual for more information.

IMPORTANT: *If multiple instruments are networked together, they must all have the same COMM settings.*

If you are using XMT868s and do not have a Remote Control Communication Unit (RCCU), you must use IDM to change the ID Number as follows:

Changing the ID Number for the XMT868

1. Connect one instrument to the network as described in *Connecting the Instrument to the PC/Network* on page 2-5. **DO NOT CONNECT MORE THAN ONE** instrument.
2. Launch the IDM program.
3. Establish communications with the instrument using the **Connect to a New Instrument** command in the "Global" submenu (**ALT+G, ALT+C**). Enter ID Number 1.

Changing an Instrument's Network ID Number (cont.)

4. Enter the **SITE EDIT MENU** command in the Edit Function submenu (page 6-6).
5. Select **ONLINE, PROG, GLOBAL** and **COMM**.
6. Click on **Next Item/Enter** (**ALT+N**) until the Network **I.D?** prompt appears.
7. Enter the new **ID** Number between 2 and 254 and click on **Exit Page** (**ALT+X**) until you reach the instrument Menu window.

Note: *Use ID Numbers other than 1 for all instruments in a multiple-instrument installation. This allows you to add new instruments without having conflicting ID Numbers. You may want to record the number for future reference.*

8. Select the **Close Connection to Instrument** command (**ALT+M**).
9. Repeat steps 1 through 9 for each instrument.

Connecting the Instrument to the PC/Network

IMPORTANT: *If you are planning to network instruments, you must read the previous section,* **Changing an Instrument's Network ID Number,** *before making connections.*

To use IDM, you must make a physical connection from the instrument's RS232 port to your computer's serial port (COM1 or COM2). Most PC serial ports have either a DB9 or DB25 male connection. You can either order a cable with a mating connector from the factory or build your own cable.

If you are using a factory-supplied cable, plug the PC end of the cable into the appropriate serial port. Use Table 2-1 on page 2-6 to make the proper connections to the instrument's RS232 terminal block.

Connecting the Instrument to the PC/Network (cont.)

Table 2-1: Factory-Supplied Cable Connections

Wire Color	Terminal Block Pin
Black	Transmit TX
Red	Receive RX
Green	Common (RTN or GND)
White*	Clear to Send (CTS)
Yellow*	Data Terminal Ready (DTR)
* Not required for IDM. Insulate those leads or cut them off to prevent shorts. Also, jumper the pins on the terminal block together.	

Note: *The PT868 uses a plug-in phone-jack type connector to make these connections.*

Note: *See GE Infrastructure Sensing document EIA-RS Serial Communications (916-054) for more details. If you chose to use a non-GE Infrastructure Sensing cable, make the connections as shown in Table 2-2 below.*

Table 2-2: Non-Factory Supplied Cable Connections

Terminal Block Pin on Meter	9 Pin	25 Pin
Transmit TX	2	3
Receive RX	3	2
RTN or Com	5	7
Clear to Send (CTS)	not used	not used
Data Terminal Ready (DTR)	not used	not used
Note: *The CTS and DTR pins on the meter's terminal block should be jumpered together to ensure proper operation.*		

Chapter 3

Initial Setup

Before proceeding with this chapter, make sure that the IDM software has been installed in accordance with the instructions provided in Chapter 2, *Installation*. Also, be certain that the personal computer has been restarted since the completion of the installation procedure. Then, follow the instructions below to perform the initial IDM configuration.

IDM Start-up

IMPORTANT: *When running IDM under Windows 95/98/NT, disable the screen saver and make IDM the active window before recording real-time data. If the screen saver becomes active, or you switch to another application, IDM's clock will run slow after you switch back to IDM. This will cause IDM to record incorrect time tags for real-time data.*

Running IDM from DOS:

1. At the **C:\>** prompt, type **cd\IDM**.

Note: *To eliminate changing the directory each time you want to use IDM, include the C:\IDM directory in the PATH command in your AUTOEXEC.BAT file.*

2. Type **IDM** and hit [ENTER]. Your computer loads the IDM program.

A window similar to that shown in Figure 3-1 on page 3-2 appears.

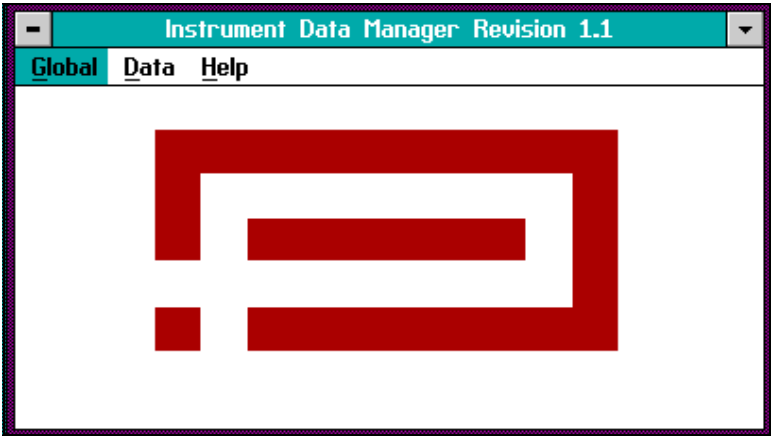

Figure 3-1: IDM Main Screen

Running IDM from Windows 95/98/NT

1. Double click on the **IDM** icon on your desktop.
2. If you did not create a shortcut, select **Run** from the **Start** menu.
3. Using the browse button, go to the IDM folder and select **IDM.exe**.
4. Select **OK**.

A window similar to that shown in Figure 3-1 above appears.

Note: *IDM will automatically open an instrument Menu Window if the **Automatic Connection to Instruments** option in the **Preferences** command is activated (see page 4-7).*

You are now ready to use IDM. Proceed to the following section.

Setting Up IDM

To begin using IDM, we recommend you read or skim the rest of this chapter to familiarize yourself with how IDM works and the basic operational features it offers. If you do not want to read the entire chapter, you should at least read *About IDM* on page 3-4. We then recommend you do the following:

- Select the necessary settings in the **Preferences** command as discussed on page 4-7. You should at least select the serial port, baud rate and printer type options.

IMPORTANT: *If you want to communicate with multiple instruments, all the instruments must have the same baud rate, data bits, stop bits, and parity settings. Refer to the instrument's manual for instructions on setting up the communications port.*

- If you are communicating with multiple instruments, you must assign each instrument a Network ID number. At the factory each instrument is shipped with the Network ID number set to 1. Since IDM will recognize an instrument only by its unique Network ID number, you cannot have multiple instruments with the same ID number. Refer to *Changing an Instrument's Network ID Number* on page 2-4 to change the ID numbers as required.
- Before IDM can exchange data with an instrument, you must establish communications with the instrument. You can use the **Connect to a New Instrument** command (refer to page 4-3) to connect to one instrument at a time or, if you want to connect to multiple instruments, use the **Scan Network for Instruments** command (see page 4-6).

After you complete the above, refer to *Main Menu* on page 4-1 to begin using IDM.

About IDM

IDM consists of two sets of top-level menus: the *Main Menu* and the *Instrument Menu*. Each of these menus is made up of submenus; and the submenus are made up of command options.

The *Main Menu* consists of submenus and commands that you can use without actually having to connect to an instrument. The *Instrument Menu*, on the other hand, only appears after you connect to an instrument. Its submenus and commands enable you to exchange data with an instrument.

IDM always has only one *Main Menu*. However, each time you establish communications with an instrument, IDM will open an *Instrument Menu* window for that instrument (in addition to the *Main Menu* window). For example, if you connect to four instruments, IDM will open four *Instrument Menu* windows.

Although IDM can establish communications with multiple instruments, it can only “talk” to one instrument at a time. Therefore, to talk to the desired instrument, you must select the corresponding *Instrument Menu* window by clicking on it with the mouse.

Charts

The *Data* submenu has two commands to view data in a line or bar chart. Both types of charts provide various viewing options. You can also customize charts to fit your own preferences.

This section describes the parts of a chart, shows you how to view data and customize a chart.

Understanding the Parts of a Chart

Figure 3-2 below shows the parts of a line chart. Bar charts have the same features in common. You can access these features by using your mouse to click on the desired button or using the keyboard equivalents.

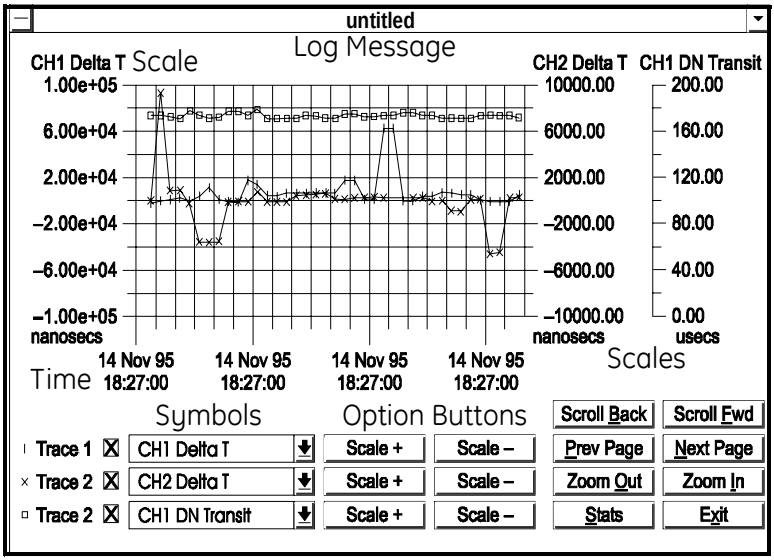

Figure 3-2: Parts of a Chart

Understanding the Parts of a Chart (cont.)

- The window title bar displays the *log message*.
- The upper-most portion of the chart window displays the log parameters with their corresponding *scales* and *plotted values*.
- IDM displays the *time* on the x-axis, beginning at the designated log start time. Each point is plotted at the selected log interval (i.e. every 5 seconds, 10 seconds, etc.).
- The bottom of the chart window displays the log parameters with their corresponding *symbols*. If you are viewing the chart on a color monitor, the symbols are also color coded. Since the chart displays up to three log parameters at once, each parameter is assigned a color and a symbol for easier viewing on color and monochrome monitors.
- The chart provides *option buttons* that enable you to adjust the chart scales and view the chart.

Proceed to the following sections to learn how to customize your chart with the option buttons.

Using the Chart Viewing Options

When you first view a log in chart form, the chart displays the first 19 data points. To view additional data points you can use the following options:

- **Scroll Back** - (**ALT+B**) to move back one data point.
- **Scroll Fwd** - (**ALT+F**) to move forward one data point.
- **Prev Page** - (**ALT+P**) to move back one chart screen.
- **Next Page** - (**ALT+N**) to move forward one chart screen.

Note: *When you first display the chart, the chart screen consists of 19 data points. The number of data points changes as you zoom in or out; therefore, one chart screen will consist of the number of data points consistent with the zoom view you have chosen.*

IDM also provides two more options that can increase or decrease the number of data points displayed on the screen.

- **Zoom Out** - (**ALT+O**) doubles the number of data points shown on the chart each time you click on this button.
- **Zoom In** - (**ALT+I**) displays half as many data points as previously shown on the chart. Each time you access this option, the chart halves the number of data points shown.

Lastly, IDM provides two more options that enable you to view the log information and exit this command.

- **Statistics** - (**ALT+S**) displays the log message, the total number of data points for the log, the log start date and time, and the log end date and time. Statistics also displays the minimum, maximum, and mean (average) of all values except for forward and reverse totals. Instead of displaying the mean for totals, the difference between the first and last reading is displayed.
- **Exit** - (**ALT+X**) exits the chart option and returns to *Data Menu*.

Customizing a Line/Bar Chart

Once you have selected the desired log and chart format, IDM enables you to customize the chart by:

- changing displayed log parameters
- changing the number of log parameters that are displayed
- adjusting the vertical scales

A.Changing Displayed Log Parameters

IDM automatically displays the first three log parameters when you first view a chart. Use the steps below to view other log parameters:

1. Click on the log parameter box (**TAB** to scroll and **ENTER** to select).

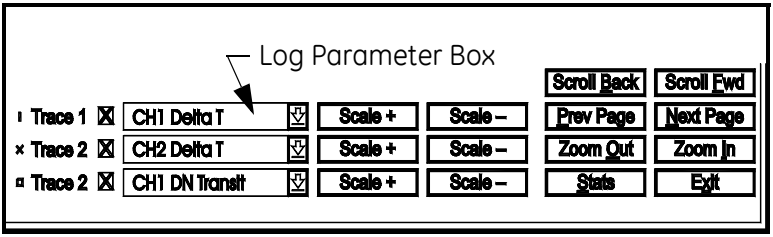

Figure 3-3: Log Parameter Selection

2. The available log parameters are listed in a drop-down menu. Click on the desired parameter and hit **ENTER**.
3. Repeat the above steps as desired.

B.Changing the Number of Log Parameters that are Displayed

Each log parameter box has an ON/OFF box next to it. When an "X" appears inside the box, this means IDM displays the log parameter on the chart.

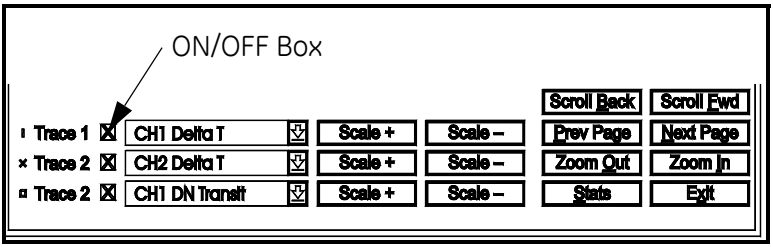

Figure 3-4: Log Parameter Display

To shut off a log parameter, click on the ON/OFF box (**TAB** to scroll through the choices, and **ENTER** to select) that corresponds to the log parameter you want to shut off. When the "X" disappears, the parameter also disappears from the chart.

To turn on a log parameter, click on the ON/OFF box again (TAB and ENTER). The log parameter reappears.

C.Adjusting the Vertical Scales

Each log parameter has an adjustable vertical scale and two scale buttons as shown in Figure 3-5 below. The **Scale +** button increases the scale increments and the **Scale -** button decreases the scale increments.

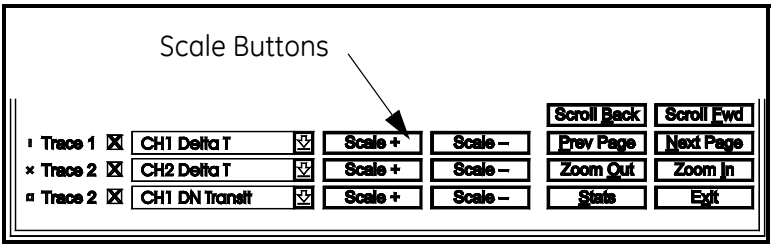

Figure 3-5: Log Parameter Adjustment

Each time you click on one of these buttons the scale changes in factors of 2, 5, and 10. For example, if the scale is 0 to 100 ft/s, when you click on the **Scale +** button, the scale changes to 0 to 200 ft/s. If you click on it again, it changes to 0 to 500 ft/s; click again, it changes to 0 to 1,000 ft/s.

To increase or decrease the scale, click on the appropriate scale button (**TAB** to scroll and **ENTER** to select).

How to Print Screens/Charts

IDM provides a command that enables you to print IDM windows (including charts) appearing on your PC screen. To print IDM screens, you must have a Hewlett Packard PCL-compatible laser or PostScript® printer. IDM will not print to other printers.

Use the steps below to properly setup IDM to print data.

1. Select the **Preferences** command (**ALT+G** and **ALT+P**).
2. Click on the Graphics Printer Type box (**TAB** to scroll and **ENTER** to select).

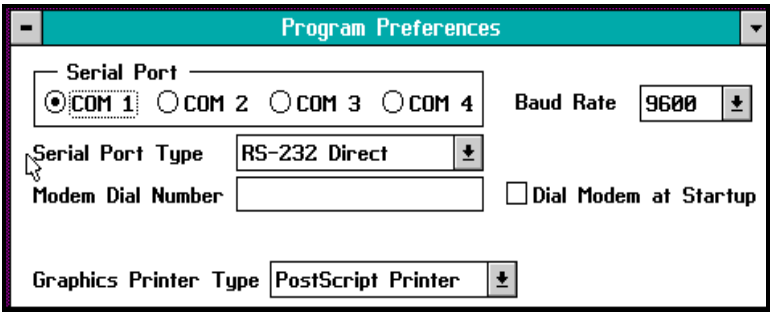

Figure 3-6: Graphics Printer Selection

3. Select the appropriate printer type (↓ and **ENTER**).
4. Click on **OK** (**ALT+O**).
5. Display the desired data on your screen.

Note: *IDM will only print the active window.*

6. Using the computer's keyboard, press and hold down the **Shift** key while you press the **Print Scrn** key. Depending on your particular computer, the command for printing a screen display may be:

    - **Print Scrn**
    - **Cntrl + Prnt Scrn**
    - **FN + Prnt Scrn**

How to Print Screens/Charts (cont.)

To print a graph, you must display the graph on the screen and use your computer's **Print Scrn** command. This is done by pressing and holding down the **Shift** key while you press the **Print Scrn** key.

IDM sends the data to your printer.

Chapter 4

Instrument Setup

After your hardware and software has been installed as described in Chapters 2 (*Installation*) and 3 (*Initial Setup*) of this manual and the instrument's *User's Manual*, the procedure for establishing communications with an instrument may be started.

Main Menu

As discussed in *About IDM* on page 3-4, IDM has two sets of menus: the *Main Menu* and the *Instrument Menu*. The *Main Menu* window appears when you enter IDM and consists of following two submenus:

- Global - contains commands to enter setup data and initiate communications between the PC, dial-up modem, and instrument(s)
- Data - displays logs in a chart and can also save or print logs in ASCII format so they can be downloaded into a database, spreadsheet or word-processing program

IMPORTANT: *When operating IDM, do not press any of the keys on the instrument keypad or communicate with a Remote Control Communications Unit (RCCU). You should use your mouse or the PC's keyboard to control communication. Also make sure the instrument is in normal RUN mode.*

The commands associated with the above submenus are described in the following sections.

Global Submenu

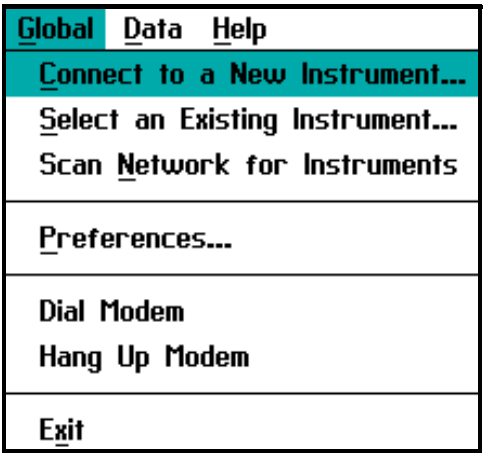

Figure 4-1: Global Submenu Selection

The Global submenu consists of the following commands:

- **Connect to a New Instrument** - establishes communications with a new instrument.
- **Select an Existing Instrument** - lets you switch from "talking" with one instrument to another when IDM is connected to multiple instruments.
- **Scan Network for Instrument** - automatically establishes communications with all the instruments connected to the network.
- **Preferences** - enables you to select the communications port, baud rate, printer type and column separators for logs (when saving logs as ASCII files). You can also set IDM to automatically connect to instruments upon entering the program.
- **Dial Modem** - tells a modem to connect to an instrument.
- **Hang up Modem** - disconnects your computer from the instrument.
- **Exit** - exits the IDM program.

Connecting to a New Instrument

Before IDM can exchange data with an instrument, it must establish a communications link. The **Connect to a New Instrument** command enables you to establish a link with an instrument. This command is particularly helpful if you have a multiple-instrument installation and you want to connect to one specific instrument.

Note: *If you are using multiple instruments, each meter must have a unique ID Number. See* Changing an Instrument's Network ID Number *on page 2-4 for more information.*

Note: *IDM also provides two other commands that enable you to establish communications. The* **Scan Network for Instruments** *command (page 4-6) searches the network for instruments and establishes communications with each instrument. The Preferences command (page 4-7) has an Auto-Connect option that directs IDM to search and establish communication with each instrument upon entering the program.*

To establish communication with an instrument:

1. If you have not done so, select the serial port and baud rate using the **Preferences** command as described in *Using Preferences* on page 4-7.

IMPORTANT: *All instruments on a network must have the same baud rate (typically 9600), data bits, stop bits, and parity settings. Refer to the instrument's manual for instructions on setting up the communications port.*

2. Select the **Connect to a New Instrument** command (**ALT+G** and **ALT+C**).
3. Enter the instrument's ID number (1 to 254).
4. Select **OK** (**ALT+O**).

Connecting to a New Instrument (cont.)

IDM retrieves system, channel, log and code information from the instrument and opens a new *Instrument Menu* window. You should repeat steps 2 and 3 for any other meters that you want to use.

Although IDM can establish simultaneous communications with multiple instruments, it can only talk to one instrument at a time. Therefore, to talk to the desired instrument, you must select the corresponding *Instrument Menu* window by clicking the mouse on it (you can also use the **Select an Existing Instrument** command to switch windows).

Note: *Every time you connect to an instrument, a new window with an* Instrument Menu *appears. Each Instrument Menu window takes up a significant amount space on the screen; therefore, if you are planning to connect to multiple instruments, you should minimize the Instrument Menu windows you are not using.*

Selecting an Existing Instrument

Although IDM provides the capability of connecting to multiple instruments, you can only talk to one instrument at a time. The **Select an Existing Instrument** command lets you switch from one instrument to another.

To select an instrument:

1. Choose the **Select an Existing Instrument** command (**ALT+G** and **ALT+S**). A window similar to the one shown in Figure 4-2 below appears.

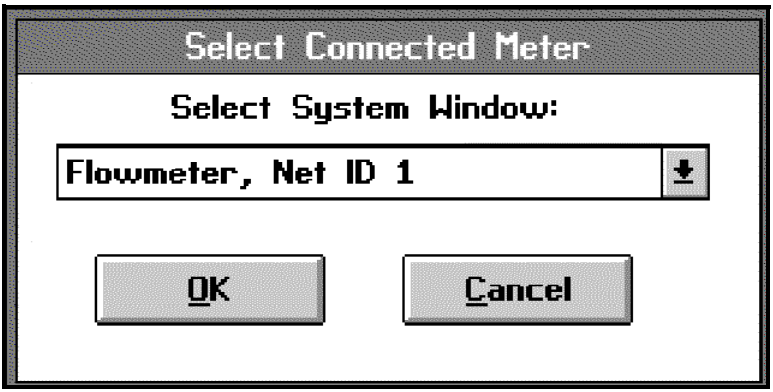

Figure 4-2: Instrument Selection

2. Display the available instruments by clicking on the downward arrow of the **Select System Window** box (**ENTER**). A list of instruments appears.

Note: *The list will only display instruments that have a communications link with IDM.*

3. Select the desired instrument (↓ and **ENTER**).

Note: *You can use this command to select an instrument even if the Instrument Menu window is minimized.*

4. Select **OK** (**ALT+O**).

The Instrument Menu window for the specified instrument appears.

Network Scan for Instruments

When issued, this command scans the network for instruments and establishes communications with each one. You can specify how many instruments you want IDM to search for and a range of ID numbers to scan within. This command can take as long as 10 minutes to complete if you are scanning for a substantial number of instruments.

Note: *If you are using multiple instruments, each instrument must have a unique ID Number. See* Changing an Instrument's Network ID Number *on page 2-4 for more information.*

To scan the network for instruments:

1. Select the **Scan Network for Instruments** command (**ALT+G** and **ALT+N**).
2. Enter the number of instruments that you want to search for and the maximum network ID number to scan. For example, if you want to search for five instruments and all of their ID numbers are under 20, enter 5 in the first box and 20 in the second box.

IMPORTANT: *All instruments on a network must have the same baud rate, data bits, stop bits, and parity settings. Refer to the instrument's manual for instructions on setting up the communications port.*

3. Select **Start Scan** (**ALT+S**) to begin. Press **Cancel** (**ALT+C**) at any time to stop scanning.

IDM opens a new Instrument Menu window for each instrument.

Using Preferences

The **Preferences** command enables you to enter set up information for the overall operation of IDM. This command lets you select the following:

- serial port
- baud rate
- printer type
- column separator for logs (used when saving a log as an ASCII file)
- which instruments IDM will automatically establish communications with when entering the program (Auto-Connect Option).

Note: *The* **Preferences** *command also has options for setting up a modem. Refer to* Using Dial Modem *on page 4-8.*

To select or change any of these settings:

1. Select the **Preferences** command (**ALT+G** and **ALT+P**).
2. Click on the desired boxes (**TAB** and **ENTER**) and make your selections.

IMPORTANT: *All instruments on a network must have the same baud rate, data bits, stop bits, and parity settings. Refer to the instrument's manual for instructions on setting up the communications port.*

3. Select **OK** (**ALT+O**).

IMPORTANT: *If you are using a mouse and you select the port that your mouse is connected to, IDM will disable your mouse. If this happens, reenter the Preferences command and reset the serial port. If IDM does not allow you to reset the serial port, either restart IDM or reboot your computer.*

Using Dial Modem

The **Dial Modem** command enables you to use your computer's modem to communicate with an instrument at a remote location rather than using the RS232 or RS485 port. To use this feature, you must first set up the following parameters using the **Preferences** command.

1. Select the **Preferences** command (**ALT+G** and **ALT+P**).
2. Select the serial port.
3. At the serial port select "Hayes-Type Modem."
4. Enter the remote modem's telephone number in the Dial Number box. This string can include the Hayes modem "Dial string" command characters ("P" for pulse-dial, "," for pause, etc.), but do not enter the Hayes dial command's initial "ATD" prefix, as IDM already provides this.
5. If you want IDM to dial the remote modem every time it runs, select the "Dial Modem at Startup" checkbox.

Note: *You can automate the process of dialing the remote modem and connecting to the remote instrument by selecting both the* "Dial Modem at Startup" *and* "Auto-connect at Startup" *checkboxes. Then, when IDM runs, it automatically dials the remote modem and connects to the instruments specified in the Preferences window's "auto-connect list."*

6. Select **OK**.
7. To dial the modem, select the **Dial Modem** command (**ALT+G**, ↓, and **ENTER**).
8. Use the **Connect to New Instrument** command to connect to the remote instrument.

Using Hang Up Modem

This command hangs up the modem, disconnecting IDM from the remote modem. The **Hang Up Modem** command (**ALT+G**, ↓, and **ENTER**) does not close the open display windows; you should do this yourself before hanging up the modem. IDM automatically hangs up the modem when exiting the program.

Exiting

To exit IDM:

1. Select the **Exit** command (**ALT+G** and **ALT+X**).
2. Use the mouse or keyboard to:

   - select **Yes** (**ALT+Y**) and exit IDM.
   - select **No** (**ALT+N**) and return to IDM.

Note: *In addition to the **Exit** command you can exit IDM at anytime by pressing* **CTRL+C**.

Data Submenu

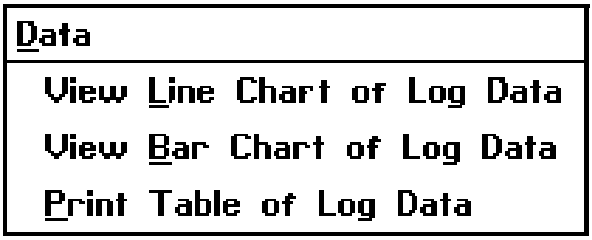

Figure 4-3: Data Submenu Selection

The *Data* submenu, as shown in Figure 4-3 above, consists of the following commands

- **View Line Chart of Log Data** - displays the specified log in a point-to-point line chart.
- **View Bar Chart of Log Data** - displays the specified log in a bar chart.
- **Print Table of Log Data** - prints the specified log in table format or saves the log in ASCII format.

Each of the commands in the *Data* submenu will only display logs that are stored on your PC's hard disk or on a floppy disk. If the log or logs you want to view are stored in the instrument's memory, you must upload them to your PC's hard disk or floppy disk using the **Upload Site to PC Disk** command (refer to page 6-1).

Viewing a Line Chart or Bar Chart of Log Data

The first two commands in the *Data* submenu display logged data in a line or bar chart. Once you chart the desired log, you can use the many options available to view data or customize the chart to meet your needs.

Use the following steps to chart the desired logs:

Note: *You do not have to connect to an instrument to use these commands. However, the log you want to view must be stored on your PC's hard disk or a floppy disk. If it is not, use the* **Upload Site to PC Disk** *command (page 6-1) to upload the desired log to your PC.*

1. Select the **View Line Chart of Log Data** command (**ALT+D** and **ALT+L**) or **View Bar Chart of Log Data** (**ALT+D** and **ALT+B**) depending on the type of chart you want.
2. Select the desired log (**TAB** to scroll and **ENTER** to select).

To manipulate the chart, refer to *Using the Chart Viewing Options* on page 3-7 and *Customizing a Line/Bar Chart* on page 3-8. To print the chart, refer to *How to Print Screens/Charts* on page 3-11.

Printing a Table of Logged Data

This command lets you print a log (in table format) or save the log as an ASCII file so you can import it into a spreadsheet, database or other software program.

Note: *You do not have to connect to an instrument to use this command. However, the log you want to print or save must be stored on your PC's hard disk or a floppy disk. Use the* **Upload Site to PC Disk** *command to upload the desired log to your PC as described on page 6-2.*

To print or save a log:

1. Go to **Preferences**.
2. Set column separators using the **command** (**ALT+G** and **ALT+P**).
3. Select the **Print Table of Logged Data** command (**ALT+D** and **ALT+P**).
4. Select the desired log (**TAB** and **ENTER**). A window similar to the one shown in Figure 4-4 below appears.

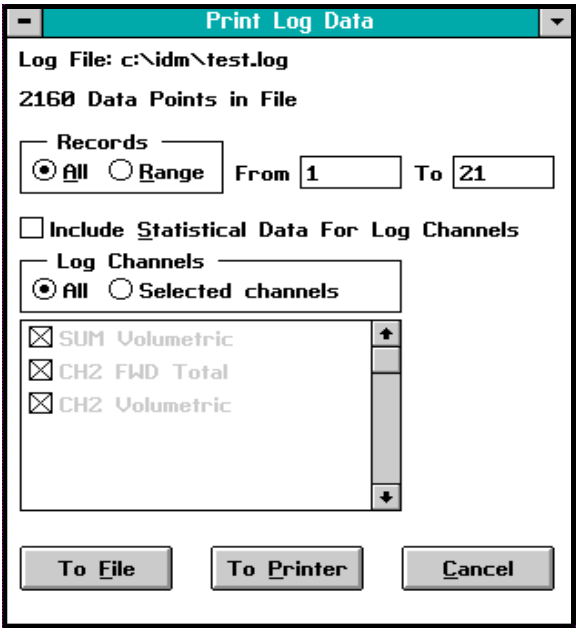

Figure 4-4: Log Record Selection

Printing a Table of Logged Data (cont.)

This dialog box displays the name of the log you selected and the number of records contained in that log. A record contains the readings for each log parameter for one log interval. For example, if you log readings every 5 seconds for 12 hours, your log will contain 8,640 records (readings).

5. Select the number of records desired (**TAB** and **ENTER**). Use the **Range** option to enter the range of records you want to view.
6. Do one of the following:
   - Select **To Printer** (**ALT+P**) to send the log to a printer and exit this command.
   - Select **To File** (**ALT+F**) to save the log as an ASCII file and proceed to Step 7.

IMPORTANT: *When you print to a file, IDM saves the data as a .prt file. This is the **only** way you can change a log to a text file so that you can view it in a spreadsheet program such as Excel, Lotus 123, or Quattro Pro.*

7. IDM now prompts you to give the ASCII file a name. Save the file using a new name or overwrite an existing output file.
8. Select **OK** (**ALT + O**).

IDM writes the log to an ASCII file and exits this command.

Chapter 5

IDM Operation

Each time you connect to an instrument, IDM opens a new window displaying the Instrument Menu. If you are communicating with multiple instruments, you can minimize the windows you are not using to save space on your PC screen.

Instrument Menu

The Instrument Menu consists of the following commands:

- **System** - enables you to adjust the PC and instrument clocks, print and delete site data, clear totalizers, erase logs from the instrument's memory and disconnect communications with an instrument.
- **Upload/Download** - uploads and downloads site data between the PC and the instrument and downloads logs from the instrument to the PC.
- **Edit Functions** - edits site data and logs, and also enables you to calibrate your unit.
- **Real-Time** - displays and logs real-time data.

The commands associated with the above submenus are described in the following sections.

IMPORTANT: *When operating IDM, do not press any of the keys on the instrument keypad or communicate with a Remote Control Communications Unit (RCCU). You should use your mouse or the PC's keyboard to control communication. Also make sure the instrument is in normal RUN mode.*

System Submenu

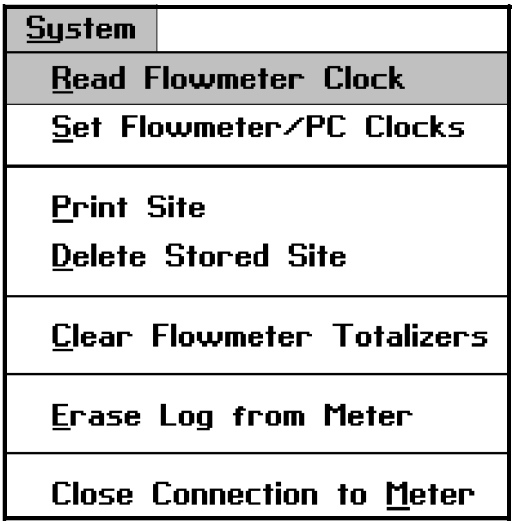

Figure 5-1: System SubMenu Selection

The System submenu, as shown in Figure 5-1 above, consists of the following six commands:

Note: *All of these commands may not be accessible with all instruments.*

- **Read Instrument Clock** - displays the date and time of the PC and instrument clocks.
- **Set Instrument/PC Clocks** - lets you edit or synchro-nize the instrument date and time to your PC date and time.
- **Print Site** - prints a site that is stored in the instrument's memory.
- **Delete Stored Site** - erases the specified site from the instrument's memory.
- **Clear Instrument Totalizers** - resets the forward and reverse totals to zero. This is used only for flowmeters.
- **Erase Log from Instrument** - erases a log file from the instrument's memory.

System Submenu (cont.)

- **Close Connection to Instrument** - terminates communication with an instrument and closes the *Instrument Menu* window. (Closing the *Instrument Menu* window with the control-menu box also terminates communication with the instrument.)

Reading the Instrument Clock

The **Read Instrument Clock** command displays the current date and time of both the instrument and your PC.

If you want to change the date and time of your instrument or PC, use the **Set Instrument/PC Clocks** command as described on page 5-4.

To view the date and time:

1. Select the **Read Instrument Clock** command (**ALT+S** and **ALT+R**). A window similar to that shown in Figure 5-2 below appears:

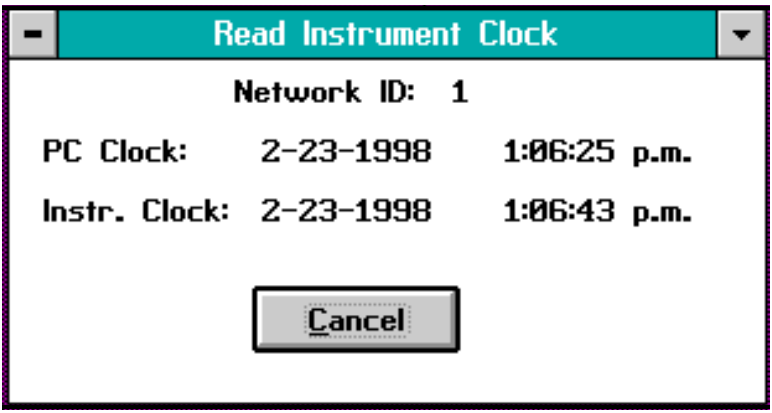

Figure 5-2: Instrument/PC Clock Reading

2. To exit, select **Cancel** (**ALT+C**).

Setting the Instrument/PC Clocks

The **Set Instrument/PC Clocks** command enables you to edit the current date and time for the instrument. It also lets you synchronize the instrument and PC clocks so you can accurately compare data between sites. Synchronization is accurate to one second.

1. To set the clock, select the **Set Instrument/PC Clock** command (**ALT+S** and **ALT+S**). A window similar to the one shown in Figure 5-3 below appears.

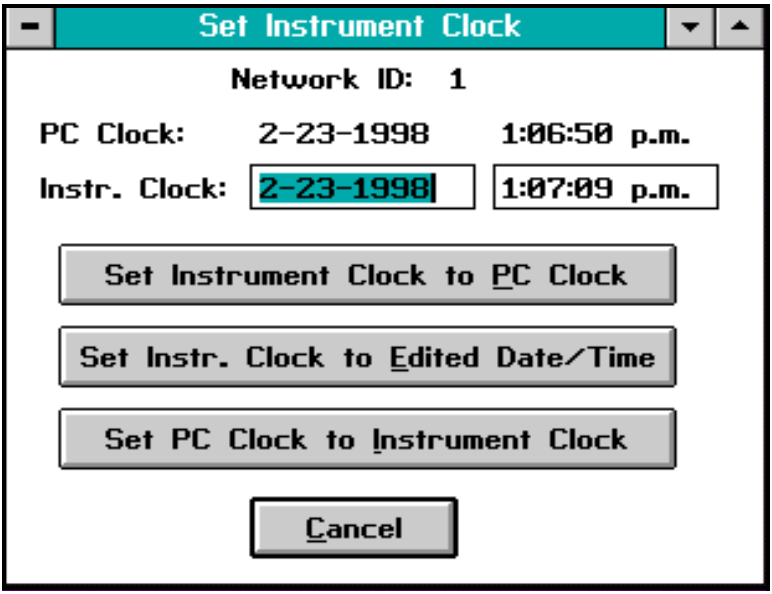

Figure 5-3: PC/Instrument Clock Setting

Setting the Instrument/PC Clocks (cont.)

2. To synchronize clocks, select one of the following options:

   - **Set Instrument Clock to PC Clock** (ALT+P), or
   - **Set Instrument Clock to Edited Date/Time** (ALT+E), or
   - **Set PC Clock to Instrument Clock** (ALT+M).

IDM synchronizes the clocks and automatically exits this command.

To edit the instrument clock, move the cursor (TAB) to the instrument date or time box. You can only edit information enclosed in a box.

Printing the Site

The **Print Site** command prints a specified site. But you must have the meter connected to your computer. This command will only let you print sites that are stored in the instrument's memory. IDM will ask you to print to a file or a printer. If you select **To File**, it saves it as a ***.prt** text file, which you can import into a word processor.

If you select **To Printer**, the file will be directed to your attached printer, but it is not saved to your hard drive.

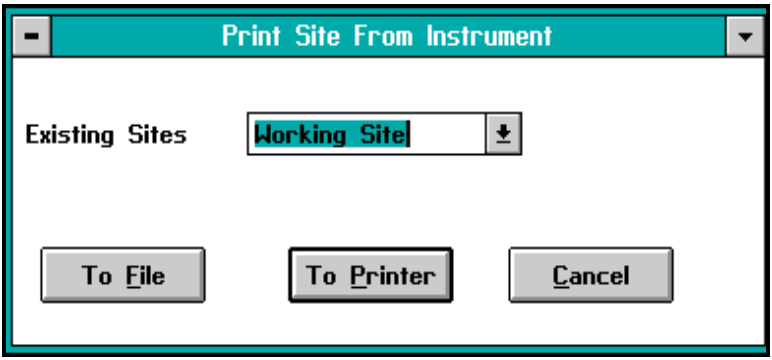

Figure 5-4: Print Site Setting

To print a site:

1. If you have not selected a printer type, do so using the **Preferences** command as described on page 4-7.
2. Select the **Print Site** command (**ALT+S** and **ALT+P**). (See Figure 5-4 above.)
3. Display the list of available sites by clicking on the arrow of the **Existing Sites** box (**ALT+X**).
4. Select the site you want to print (↓ and **ENTER**).

Note: *The Working Site is the site the instrument is currently using to take measurements.*

5. Select **To File** or **To Printer**.

IDM prints the selected site.

Deleting a Stored Site

This command enables you to delete unwanted site files from the instrument's memory. Use the steps below to delete a site file.

1. Select the **Delete Stored Site** command (**ALT+S** and **ALT+D**). A window similar to the one shown in Figure 5-5 below appears.

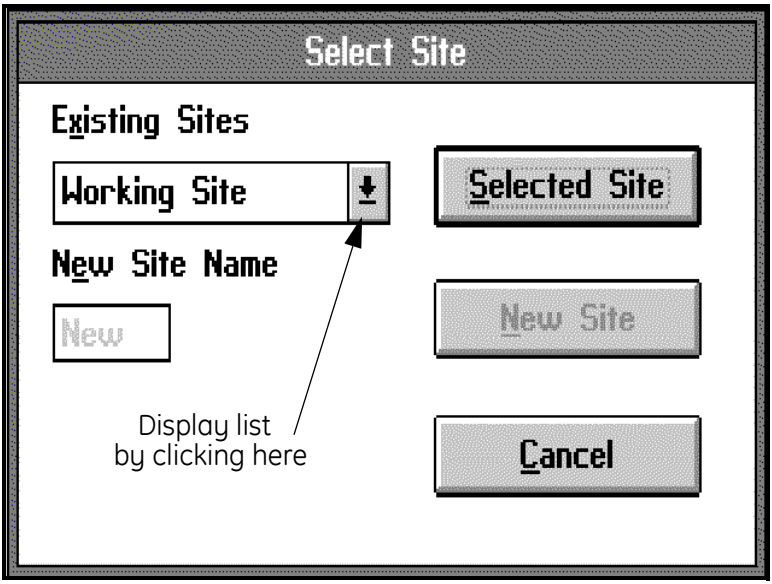

Figure 5-5: Site Selection

2. Display the list of available sites by clicking on the arrow of the **Existing Sites** box (**ALT+X**).
3. Select the site you want to delete (↓ and **ENTER**).
4. Click on **Selected Site** (**ALT+S**).

IDM deletes the site file from the instrument's memory and automatically exits to the Main Screen.

Clearing the Instrument Totalizers

To clear the instrument's forward and reverse totalizers, select the **Clear Instrument Totalizers** command (**ALT+S** and **ALT+C**). IDM automatically clears the totalizers and exits to the Main Screen.

Note: *Totalizers are used only for flowmeters. This menu item is grayed out for other instruments.*

Erasing a Log from an Instrument

This command enables you to delete unwanted logs from the instrument's memory. Use the steps below to delete a log.

1. Select the **Erase Log from Instrument** command (**ALT+S** and **ALT+E**). A window similar to the one shown in Figure 5-6 below appears.

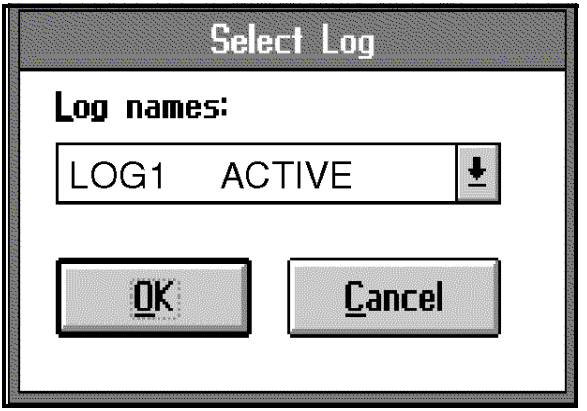

Figure 5-6: Log Selection

2. Display the list of available logs by clicking on the arrow of the **Log Names** box (**ALT+L**).
3. Select the log you want to delete (↓ and **ENTER**).
4. Click on **OK** (**ALT+O**).

IDM deletes the log from the instrument's memory and automatically exits to the Main Screen.

Closing the Connection to an Instrument

This command terminates communication with the specified instrument and closes the *Instrument Menu* window associated with it.

To disconnect an instrument, select the **Close Connection to Instrument** command (**ALT+S** and **ALT+M**). IDM automatically disconnects the current instrument.

Chapter 6

Data Handling

After IDM has been installed and configured in accordance with the instructions given in the first five chapters of this manual, you are ready to begin collecting data.

Upload/Download Submenu

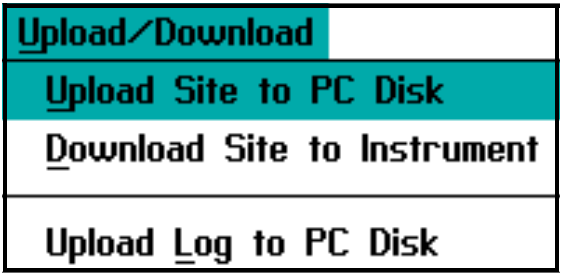

Figure 6-1: Upload/Download Selection

The Upload/Download submenu, as shown in Figure 6-1 above, consists of three commands that let you exchange site and log files between your PC and instrument. The Upload/Download submenu consists of the following commands:

- **Upload Site to PC Disk** - sends a copy of site data from the instrument's memory to the PC's hard disk or to a floppy disk.
- **Download Site to Instrument** - sends a copy of site data from the PC's hard disk or floppy disk to the instrument's memory.
- **Upload Log to PC Disk** - sends a copy of a log from the instrument's memory to the PC's hard disk or to a floppy disk.

Upload/Download Submenu (cont.)

Note: *When you upload and download site and log data between instruments or your PC, you should make sure the instrument's software versions are the same. For example, if you upload a site from a DF868 with software version F2K, you can download that site to the same instrument or a DF868 with the same software version. The software version is displayed during the power up sequence.*

Uploading a Site to a PC Disk

This command lets you save a site from the instrument's memory to the PC's hard disk or floppy disk. IDM saves the data as a **.sit** file, which can download back to the instrument using the **Download Site to Instrument** command on page 6-4. The purpose of the command is to provide a backup copy of site data. You cannot print the ***.sit** file. If you want a text file or printout of the site information, refer to page 5-6.

Note: *IDM does not actually move the site from the instrument to the PC, but sends a copy of the specified site to the desired location.*

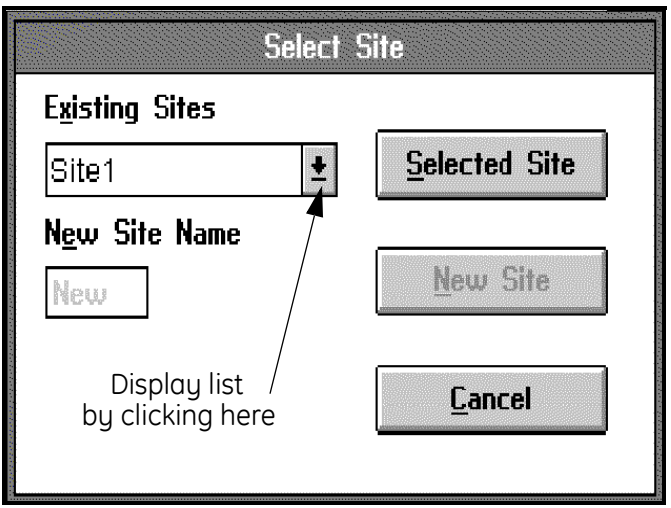

Figure 6-2: Upload Site Selection

Uploading a Site to a PC Disk (cont.)

1. Select **Upload Site to PC Disk** command (**ALT+U** and **ALT+U**). A window similar to the one shown in Figure 6-2 on page 6-2 appears.
2. Display the list of available sites by clicking on the arrow of the **Existing Sites** box (**ALT+X**).
3. Select the site you want to upload (↓ and **ENTER**).

Note: *The Working Site is the site the instrument is currently using to take measurements.*

4. Choose **Selected Site** (**ALT+S**).
5. IDM prompts you to enter a new file name for the site or overwrite an existing site file.

IDM sends a copy of the site to the specified location and exits to the main screen.

Downloading a Site to an Instrument

This command lets you send a site from the PC's hard disk or floppy disk to the instrument's memory. IDM does not actually move the site from the PC to the instrument, but sends a copy of the specified site to the instrument's memory.

1. Select **Download Site to Instrument** command (**ALT+U** and **ALT+D**). A window similar to the one shown in Figure 6-3 below appears.

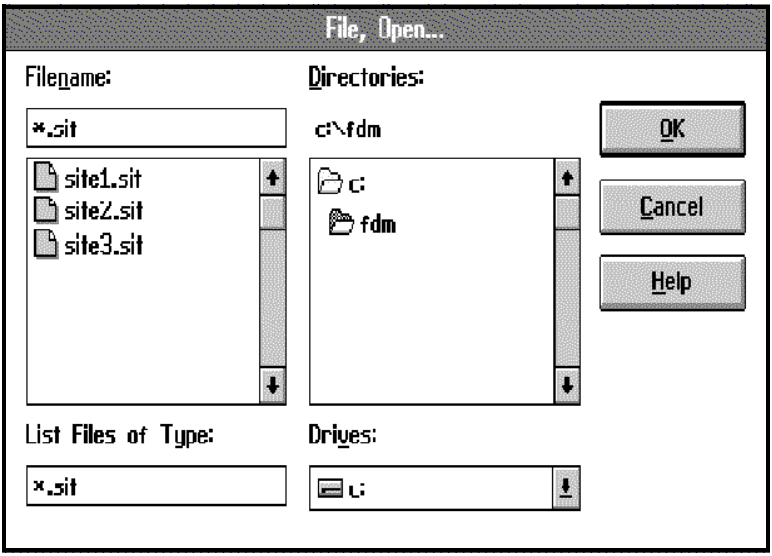

Figure 6-3: Download Site Selection

2. Select the site you want to download and click on **OK** (**ALT+O**).
3. IDM prompts you to enter a new name for the site or overwrite an existing site.

IDM sends a copy of the site to the instrument and exits to the Main Screen.

Uploading a Log to a PC Disk

This command lets you send a log from the instrument's memory to the PC's hard disk or floppy disk. This command saves the log as a ***.log file, which you can view as described on page 4-10. To print the ***.log file, refer to **Print Table of Logged Data** on page 4-12.

Note: *IDM does not actually move the log from the instrument to the PC, but sends a copy of the specified log to the desired location.*

1. Select **Upload Log to PC Disk** command (**ALT+U** and **ALT+U**). A window similar to the one shown in Figure 6-4 below appears.

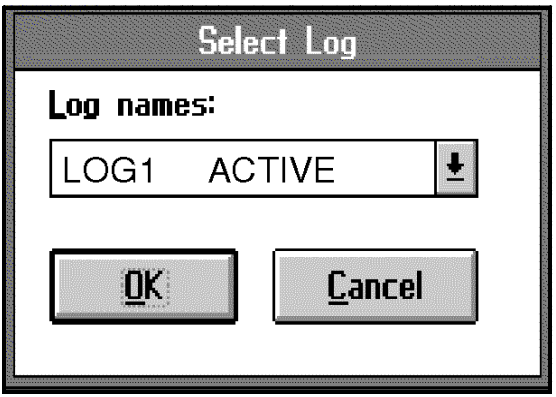

Figure 6-4: Log Selection

2. Display the list of available logs by clicking on the arrow of the Log Names box (**ALT+L**).
3. Select the log you want to upload (↓ and **ENTER**). IDM can only upload logs that are "active" or "completed." IDM cannot upload a "pending" log.
4. Click on **OK** (**ALT+O**).
5. IDM prompts you to enter a new name for the log or overwrite an existing log.

IDM sends a copy of the log to the specified location and exits to the Main Screen.

Using the Edit Functions Submenu

This command enables you to edit site and log information, calibrate and test option cards, and perform other functions. The commands listed under the Edit Functions submenu depend on the instrument and its available options.

The site, log and calibration/test information will be different depending on the particular instrument you use. Refer to the menu maps in your instrument's manual to help guide you.

The three most common commands in the Edit Functions submenu are:

- **SITE EDIT MENU** - enables you to enter and change site information.
- **LOG EDIT MENU** - lets you enter and change log information.
- **Calibration/test** - lets you calibrate outputs and test installed option cards.

Use the general information that follows to use the above commands.

1. Select the desired command (**ALT+E**, ↓ and **ENTER**). A window similar to the one shown in Figure 6-5 on page 6-7 appears. (This screen represents the **Site Edit Menu** command for a Two-Channel GM868).

Using the Edit Functions Submenu

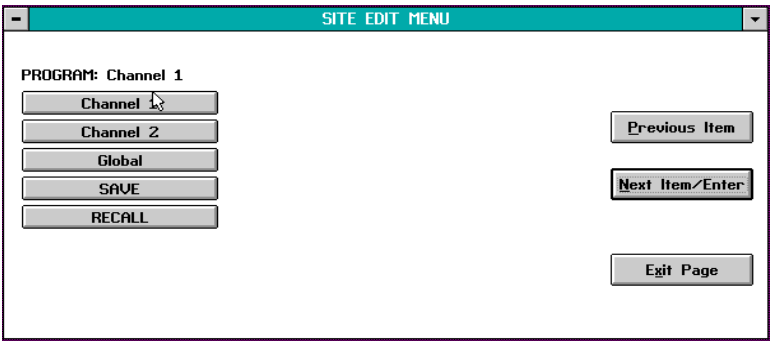

Figure 6-5: Site Edit Selection

2. IDM displays the instrument Program Menus you use to enter or change the site, log, calibration, or test information. The information that appears in the IDM windows will be the same as the menu structure described in the instrument's user manual. To enter information, use the mouse (**TAB** and **ENTER**) and enter the desired instrument Program Menus.

3. Once you enter the desired instrument Program Menus, IDM displays the instrument Prompts. IDM will read the site information stored in the instrument one prompt at a time. For example, if you clicked on Channel 1 and System in the instrument Program Menus, the window shown in Figure 6-6 below appears.

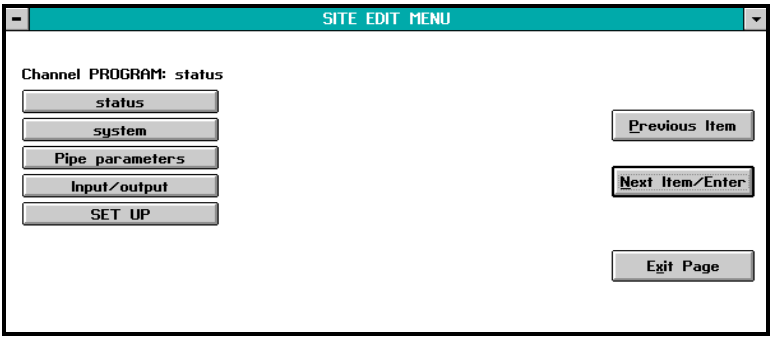

Figure 6-6: Channel 1/System Selections

Using the Edit Functions Submenu (cont.)

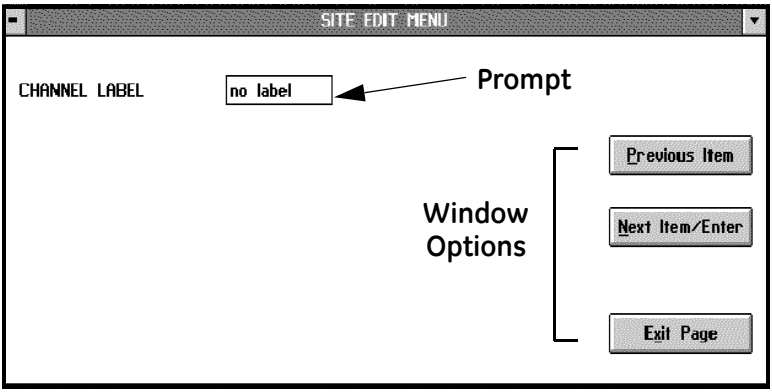

Figure 6-7: Site Edit Window Options

IDM reads only the first prompt (see Figure 6-7 above): Channel Label. You can do one of the following.

Use one of the window options:

- Return to the previous prompt/menu by selecting **Previous Item** (**ALT+P**)
- View the next prompt by selecting **Next Item/Enter** (**ALT+N**).
- Exit the current menu or sub-menu by selecting **Exit Page** (**ALT+X**).

Enter site information:

- Use the keyboard to type in the desired information.
- Use the mouse (**TAB** and **ENTER**) to click on the desired selection.
- Display the list of available options by clicking on the arrow (↓) located at the right of the desired box, then clicking on your selection (↓ and **ENTER**).

Refer to your instrument's user manual as a guide to moving through the instrument Program Menus.

Using the Real Time Sub-Menu

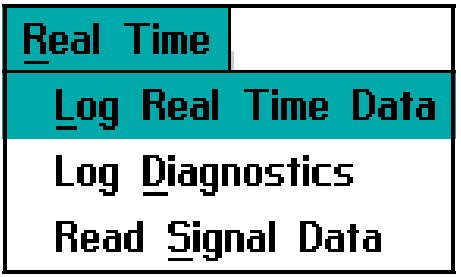

Figure 6-8: Real Time Selections

This submenu, which is shown in Figure 6-8 above, enables you to log real-time measurements and diagnostics, and view signal data.

Logging Real Time Data

This command enables you to simultaneously view and log up to ten parameters using your PC. A single log file can hold data from different instruments. You can choose to display the real-time log in numeric form or in a line or bar chart. IDM stores measurements on your PC to the specified file. Use the steps below to view and log real time measurements.

Note: *When you log data, the log start date and time must exceed the current date and time of both the instrument and PC clocks; therefore, you should synchronize the instrument and PC clocks before logging data.*

This command saves the log as a ***.log file, which you can view as described on page 4-10. To print the ***.log file, refer to **Print Table of Logged Data** on page 4-12.

1. Select the **Log Real Time Data** command (**ALT+R** and **ALT+L**). A window similar to the shown in Figure 6-9 on page 6-10 appears.

Logging Real Time Data (cont.)

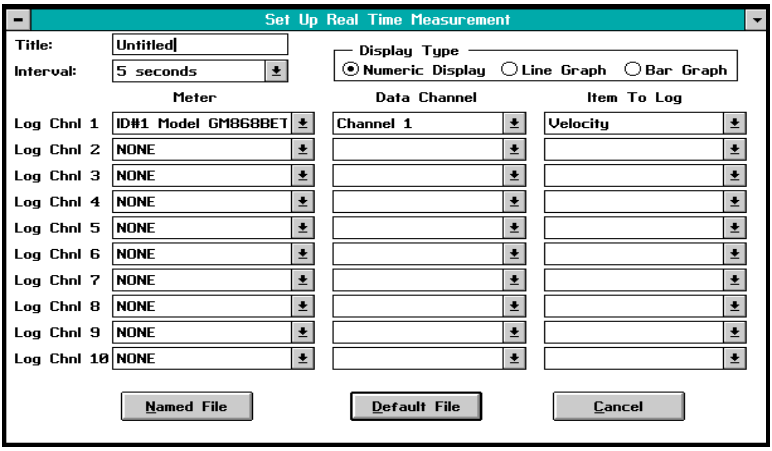

Figure 6-9: Real Time Data Selection

2. IDM enables you to enter a title, select a display type, an update interval and the measurements you want to view. To change the information in this window, use the mouse (**TAB** and **ENTER**) to click on the desired location to edit. Depending on the parameter you are editing, you will have to do one of the following:

   - Use the keyboard to type in the desired value.
   - Use the mouse (**TAB** and **ENTER**) to click on the desired selection.
   - Display the list of available options by clicking on the arrow (↓) located at the right of the desired box, then clicking on your selection (↓ and **ENTER**).

3. After making changes, you can do one of the following:

   - Select **Default log file** (**ALT+D**) to save the log to your PC using the file name “default.log.”
   - Select **Named log file** (**ALT+N**) to give the log a new name or overwrite an existing log on your PC.
   - Select **Cancel** (**ALT+C**) to exit this command and return to the Main Screen.

Logging Real Time Data (cont.)

Note: *You can minimize the log window to clear screen space without affecting data logging. IDM will continue to log data even when the log window is minimized.*

If you do not select **Cancel**, the real time log appears in the selected display format (numeric, line or bar chart). To manipulate the line or bar chart refer to *Using the Chart Viewing Options*, page 3-7, and *Customizing a Line/Bar Chart*, page 3-8.

To end real-time logging, click on Exit (**ALT+E** in numeric format or **ALT+X** in line or bar chart format).

Logging Diagnostics

This command enables you to log diagnostic parameters.

1. Select the **Log Diagnostics** command (**ALT+R** and **ALT+D**), as shown in Figure 6-10 below.

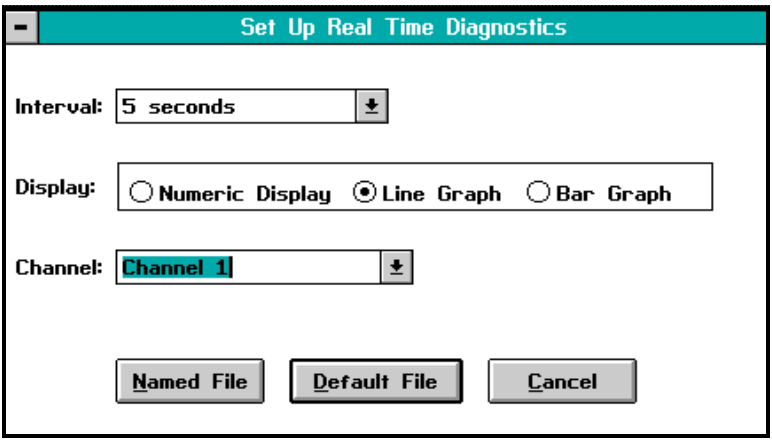

Figure 6-10: Real Time Diagnostics Selection

2. Select the length of **Interval**.
3. Select the type of **Display**.

Logging Diagnostics (cont.)

4. Use the pull down menu to sselect the channel format.

- Channel 1
- Channel 2
- Add Channels
- Subtract Channels
- Average Channels

To view the data, select **Named File**, or click on the **Default File**, which displays the screen shown in Figure 6-11 below.

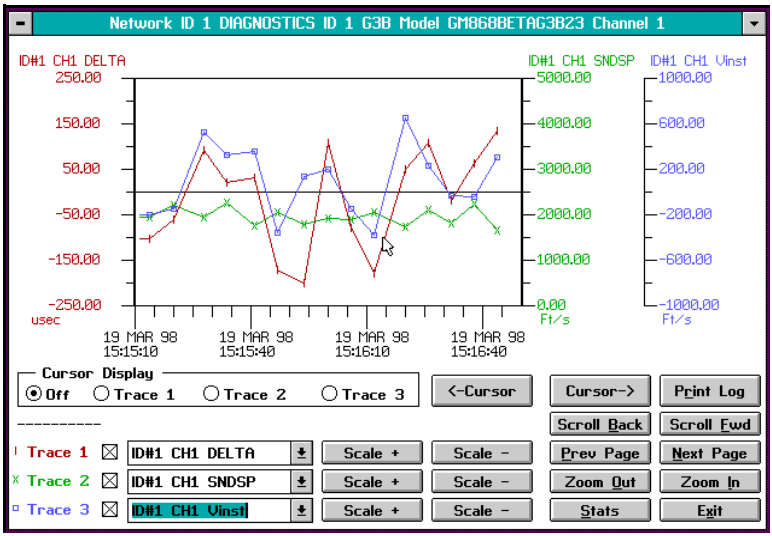

Figure 6-11: Diagnostic Chart Selection

You can select up to three traces to view in the graph window. The parameters in the pull down menus vary according to the type of instrument used to gather data.

Reading Signal Data

To read signal diagnostic data, use the pull down menus to select **Data Channel** and **Signal Type**. Then select **Read** to view the data. (See Figure 6-12 and Figure 6-13 below.)

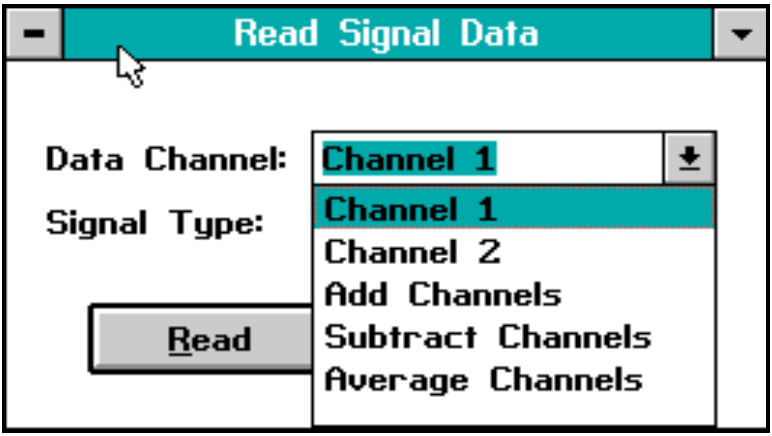

Figure 6-12: Data Channel Selection

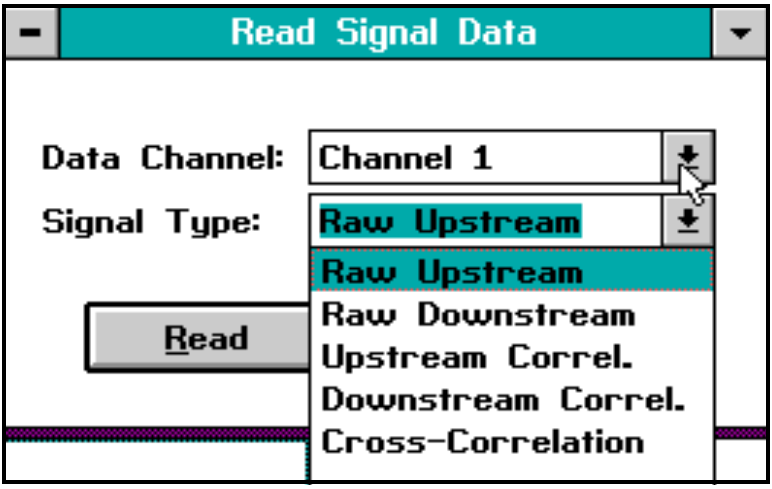

Figure 6-13: Signal Type Selection

Appendix A

Importing ASCII Files into Microsoft Excel

Microsoft Excel accepts tabs or commas as column delimiters. To import an IDM.prt file into Excel:

1. Launch Excel.
2. Select the File Menu.
3. Select **Open**.
4. Under **Files of Type**, choose **All Files** (***.***)
5. Open the ***.prt** file you wish to import.

Note: *You cannot open* ***.sit** *or* ***.log** *files directly. You must first convert them to* ***.prt** *by printing them to a file. See page 5-6 for site files and page 4-12 for log files.*

6. Set Delimiters to tabs or commas. Excel will not recognize spaces, semicolons, etc., as delimiters.
7. Press the **OK** button and then the **FINISH** button.

Appendix B

Frequently Asked Questions

Q: How do I upload a log from my instrument and bring it into a spreadsheet?

A: See *Printing a Table of Logged Data*, page 4-12.

Q: How do I bring my program (site) data into a word processor?

A: See *Printing a Table of Logged Data*, page 4-12.

Q: How do I print a graph out of IDM?

A: See *How to Print Screens/Charts*, page 3-11.

Q: Why can't I establish communication with my unit?

A: See *Connecting the Instrument to the PC/Network*, page 2-5. Also see *Connecting to a New Instrument*, page 4-3.

Q: How do I program meters using IDM?

A: See *Instrument Menu*, page 5-1.

Q: How do I view the line data from the instrument?

A: See *Using the Chart Viewing Options*, page 3-7.

Q: How do I log data to a hard drive?

A: See *Uploading a Site to a PC Disk*, page 6-2.

Q: How do I log real time data to a hard drive?

A: See *Logging Real Time Data*, page 6-9.

USA

1100 Technology Park Drive
Billerica, MA 01821-4111
Web: www.gesensing.com

Ireland

Shannon Industrial Estate
Shannon, County Clare
Ireland