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# Getting Started Guide

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## HP E7480A CDMA Post-Processing Software



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### **WARNING**

The **WARNING** notice denotes a hazard. It calls attention to a procedure, practice, or the like, that, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

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## Typographic Conventions

- Italics* • Used to emphasize important information:  
Use this software *only* with the HP XXXXX system.
- Used to indicate a variable:  
Type `LOAD BIN filename`.
- Instrument Display** • Used to show on-screen prompts and messages that you will see on the display of an instrument:  
The HP xxxxxX will display the message `CAL1 SAVED`.
- [Keycap]** • Used for labeled keys on the front panel of an instrument or on a computer keyboard:  
Press `[Return]`.
- {Softkey}** • Used for simulated keys that appear on an instrument display:  
Press `{Prior Menu}`.
- User Entry** • Used to indicate text that you will enter using the computer keyboard; text shown in this typeface must be typed *exactly* as printed:  
Type `LOAD PARMFILE`
- Used for examples of programming code:  
`#endif // ifndef NO_CLASS`
- Path Name** • Used for a subdirectory name or file path:  
Edit the file `usr/local/bin/sample.txt`
- Computer Display** • Used for menus, messages, prompts, and window labels that appear on a computer monitor:  
The **Edit Parameters** window will appear on the screen.  
Double-click **EXIT** to quit the program.



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**Installing and Starting the Software**





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## What You'll Find in This Chapter...

To Do This	See This
Review a description of the HP E7480A.	<a href="#">"Introduction" on page 1-3</a>
Review the system requirements.	<a href="#">"Requirements" on page 1-4</a>
Install the system software.	<a href="#">"Installing the Software" on page 1-6</a>
Install and use the License Manager.	<a href="#">"HP License Manager" on page 1-7</a>
Start the software.	<a href="#">"HP License Manager" on page 1-7</a>



## Introduction

The HP E7480A is an optimization and performance-monitoring tool designed to process large amounts of collected data and simplify the increasingly difficult task of optimization. The HP E7480A provides the ability to analyze one or multiple drives at a time through either separate maps, or together in a merged format. The HP E7480A provides seamless, efficient, and fast data management solutions for the Hewlett-Packard E74xx Drive Test Solutions.

## Product Features

- **Mapping Analysis:** Shows system information geographically on maps. Multiple Maps are supported.
- **Data Window Analysis:** Provides a table of the drive data in user-defined columns of data. The data is filtered depending on the analysis in view. Data windows are flexible through data options and schemes so unique data windows can be created. The data window is tied directly to the map and, since multiple maps are supported, multiple data windows are supported.
- **Graphing Analysis:** Plots multiple system parameters vs. time. Any analysis can be plotted on a graph as a series, and multiple series can be plotted on graphs. Graphs can plot specific points or can be animated through the data. Graph information can be linked back to the map and the data window.
- **Multiple Layers:** Allows the user to view multiple layers, including street maps, MapInfo compatible files, and one plot layer, all on one map.



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## Requirements

### Minimum Requirements

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**Windows 95 or Windows 98:**

Computer	166 MHz Pentium Processor
Resources	16 MB RAM
Hard disk	10 MB for installation; 100 MB for drive test data

**Windows NT 4.0 or higher**

Computer	166 MHz Pentium Processor
Resources	32 MB RAM
Hard disk	10 MB for installation; 100 MB for drive test data

### Recommended Requirements

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**Windows 95 or Windows 98:**

Computer	200 MHz Pentium Processor
Resources	32 MB RAM
Hard disk	10 MB for installation; 100 MB for drive test data

**Windows NT 4.0 or higher:**

Computer	200 MHz Pentium Processor
Resources	48 MB RAM
Hard disk	10 MB for installation; 100 MB for drive test data



Installing and Starting the Software  
**Requirements**

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**NOTE**

To perform an analysis with the HP E7480A on data you collect using an HP E7450A system or an HP E6450A receiver, you must use version A.02.01 or later of the HP E74xx software to collect the data.

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## Installing the Software

Do this	See this
1 Close all programs and windows before you install the HP E7480A and log on as follows to install the software: <ul style="list-style-type: none"><li>• If your operating system is Windows 95 or Windows 98, go to step 2.</li><li>• If your operating system is Windows NT, reboot and log on to your computer with administrative privileges.</li><li>• If you do not know your administrative privileges, contact your system administrator.</li></ul>	You are logged on to your system and ready to install the HP E7480A software.
2 Insert the HP E7480A CD into the CD-ROM drive, open the Start menu, and choose <b>Run</b> .	The Start menu opens and the Run dialog box appears.
3 Type <code>a:\setup</code> (where a is the drive name for the CD-ROM drive containing the CD). Click <b>OK</b> .	The installation program starts.
4 Follow the onscreen setup instructions to continue the software installation.	Instructions and information appear on the screen.
5 When instructed, reboot the computer to complete the installation.	You are ready to run the HP E7480A software.



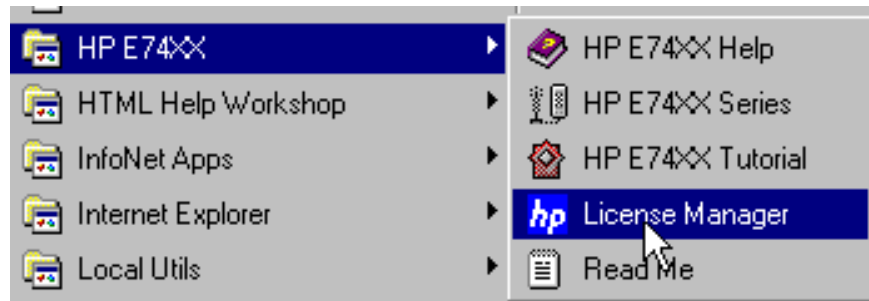
---

## HP License Manager

The hardware key that came with your Hewlett-Packard system enables and secures the functionality you purchased from HP. The HP License Manager, automatically installed when you install an HP E74xx Series product, enables you to manage licensing security information. You can use the software to:

- Add product options to license keys. You can add licenses (temporary or permanent) to the license key by entering a string obtained from an HP representative
- Transfer licensed product options between license keys in order to consolidate licenses onto one key.
- Transfer a license from one key to another.
- Transfer licenses between keys on different computers. You can move license options to license keys on another computer that is located anywhere from the same room to another country.

A License Manager icon appears in the HP74xx group and also in the E7480A group on the Program menu (see [Figure 1-1](#) for an example).



*Figure 1-1 A Sample HP E7480A License Manager Icon*



## **Starting the License Manager**

Open the **Start** menu and choose **Programs > HP E74xx > HP License Manager**. The License Manager software starts.

## **Learning the License Manager**

For further information about the HP License Manager, refer to the following resources:

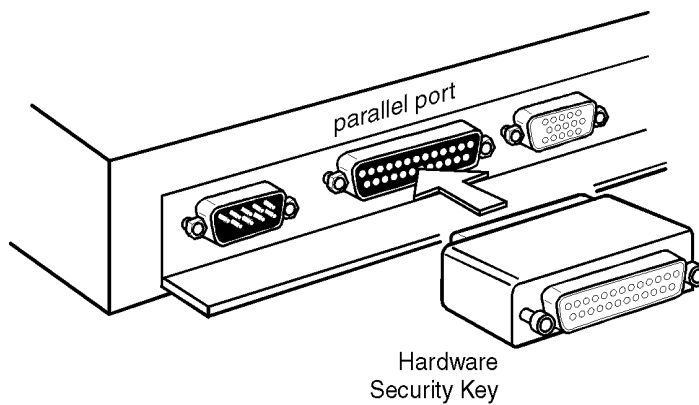
<b>Resource</b>	<b>Description</b>
<b>Online Help</b>	Available from the software's Help menu or by pressing F1, covers all functionality. It is the program's reference and includes step-by-step instructions for basic operations.
<b>Support</b>	Available from the Help menu, directs you to the support provided by HP.



---

## Starting the E7480A

Do this	See this
1 Insert the hardware key into the parallel port of your computer.	See <a href="#">Figure 1-2</a> .
2 Open the Start menu and select HP E7480A and then click the HP E780A icon.	You are ready to run the HP E7480A software.



key.cdr

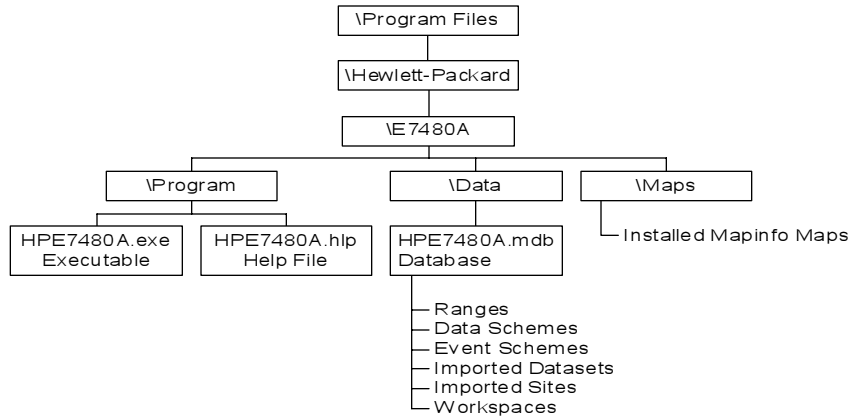
**Figure 1-2** Attach the hardware security key to your computer's parallel port.





## Directory Structure

The HP E7480A installation places the program in the following directory by default:



*Figure 1-3 The Default Directory Structure of the HP E7480A*



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**Starting and Learning the E7480A**



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## What You'll Find in This Chapter

To Do This	See This
Use online help.	<a href="#">"Online Help" on page 2-3</a>
Start using the software. A tutorial takes you through the basic steps.	<a href="#">"Step-by-Step" on page 2-4</a>
Use shortcut keys.	<a href="#">"Using Shortcut Keys" on page 2-18</a>



---

## Online Help

The online help, available from the Help menu and by pressing F1, provides both reference and learning materials as follows:

- Introduction describes the features and the analysis types available in the software.
- Start-up covers product requirements, installation, and starting the software, topics you'll also find in this guide.
- Learning the HP E7480A provides online the same training you'll find in Step-by-Step on [page 2-4](#).
- User Interface describes the menus and their commands, the toolbars, and the windows you'll use in the program.
- Supported Data Types details the measurements and other data that the HP E7480A software will import and process.
- Using the HP E7480A provides step-by-step instructions on using all the features of the software.
- Analyzing the Data provides the information you need to plot and map data, including how to print it.
- How Do I answers some commonly asked questions about how to compare data and troubleshoot your CDMA system.
- Glossary of Terms is the place to find the definition of new terms.
- Support includes the website you can reference for information, as well as a list of support phone numbers.

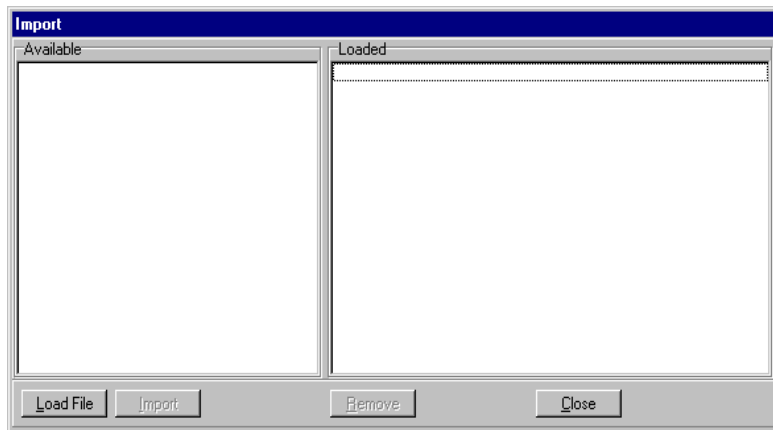
---

## Step-by-Step

If you are new to the HP E7480A post-processing software, you can use the following procedures to get started. Each procedure leads you step-by-step through the basics of how you load and analyze data.

### Starting the Software and Loading Data

Do This	Additional Information (if applicable)
1 Start the HP E7480A software	
2 Choose <b>File &gt; Import/Remove Drives</b> .	The Import/Remove Drives dialog box appears (see <a href="#">Figure 2-1</a> ).



*Figure 2-1 The Import/Remove Drives Dialog Box*

3 Click the <b>Load File</b> button.	The Open dialog box appears (see <a href="#">Figure 2-2</a> ).
--------------------------------------	--



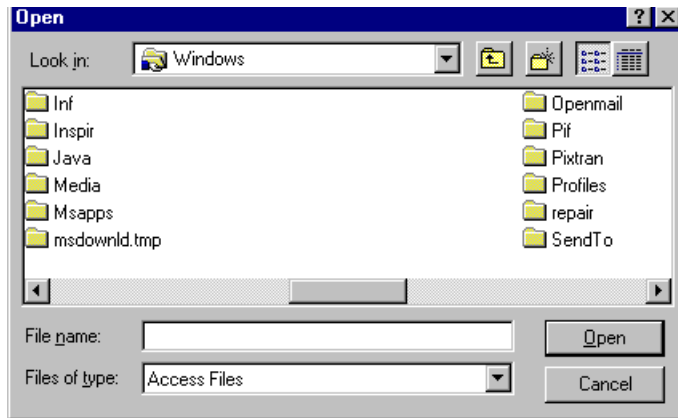
**Step-by-Step**

---

**Do This**

**Additional Information (if applicable)**

---



**Figure 2-2 The Open Dialog Box**

- 
- |   |  |
|---|--|
| 4 Open the directory that contains your HP drive test data and select a database.<br>Data files are named with an MDB extension. For example, the directory may be C:\Programs\Hewlett-Packard\E74xx and the default file is called data.mdb. | A list of datasets that were recorded with the E74xx appears under Available.          |
| <hr/>   |  |
| 5 Select the dataset(s) you want and click the <b>Import</b> button.  | After all selected datasets are imported, the name(s) appear(s) in the Loaded section. |
| <hr/>   |  |
| 6 Click <b>Close</b> to close the dialog box.   |  |
- 

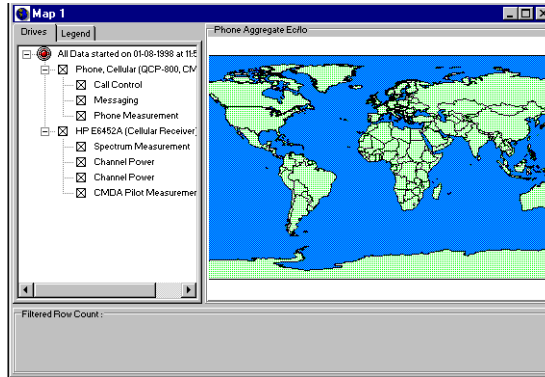


## Viewing Data in a Map Window

---

Do This	Additional Information (if applicable)
1 Click the <b>New Map Window</b> button or press <b>F4</b> to open a New Map Window.	The imported data is displayed in the Drives tab of the Map window.

---



*Figure 2-3 The New Map Window*

---

2 Click to select data from the Drives tab.	The LED light turns from red (closed) to green (open).
3 Position the mouse over the map portion of the Map window.	The data loads into memory. The Analysis window opens to show the receiver, phone, PN values, and other choices.
4 From the Analysis Tree on the right side of the window, click a Plus button to expand the contents of the receiver or the phone.	The tree expands to show the different analyses that can be performed.

---



**Step-by-Step**

---

5 Click an analysis, such as Receiver Best Server Ec/Io.

Some results require additional selections, such as PN or Freq. For example, when you select CW or Channel, you'll need to select the frequency from the Freq drop-down list. All offset measurements require that you select a PN from the PN list to the right of the Analysis Tree.

The data is plotted on the map.

---

6 To better view the data, click the **Size To Fit** button.



---

7 To view the meaning of the different colors and symbols on the map, click the Legend tab in the Map window.

The legend name and the ranges within the legend are displayed.





## Adding Street Maps

The Map Layer Properties feature provides the following options:

- Each map layer can be viewed as a different color or through a specified range.
- Each layer can have different properties.
- By default, street files are usually black. You can lighten street colors so that streets appear more as a background.
- Additionally, street files may take time to load each time the map moves or redraws. You can set Zoom Layering properties to display street files only when you zoom in to specific areas.

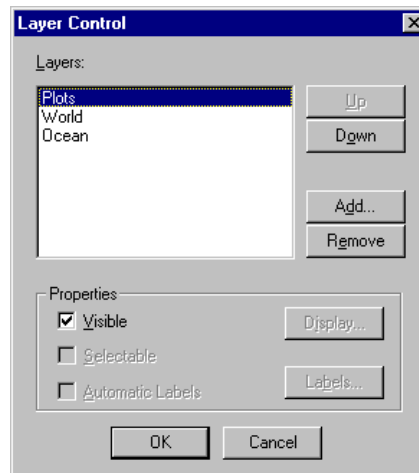
---

**Do This**

- 1 With a map displayed, choose **Map > Layer Dialog**, right-click in the Map window and select Layer Dialog, or click the Map Layer Control button.

**Additional Information (if applicable)**

The Layer Control dialog box opens (see [Figure 2-4](#)).



**Figure 2-4 The Layer Control Dialog Box**

- 
- 2 Click **Add**.

The Open dialog box opens.

---



**Step-by-Step**

- 
- |   |   |  |
|---|---|--|
| 3 | Locate and select the map layer file(s) you want to load, including street files, and click <b>Open</b> . | The map layers are listed in the Layer Control dialog box. |
|---|---|--|
- 
- |   |   |  |
|---|---|--|
| 4 | Use the <b>Up</b> and <b>Down</b> buttons to re-order the layers, if desired. |  |
|---|---|--|
- 
- |   |                   |   |
|---|-------------------|---|
| 5 | Click <b>OK</b> . | The layers you selected are displayed in the Map window, along with the data. |
|---|-------------------|---|
- 

---


**NOTE**

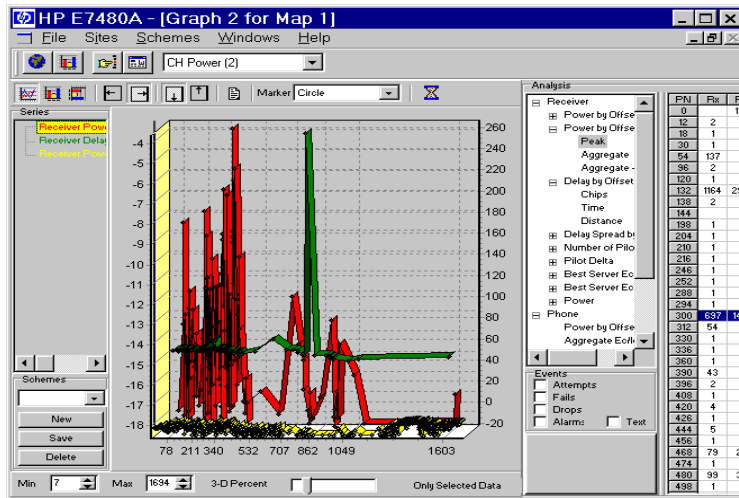
---

For more information on modifying map layers, refer to the online help.



## Viewing Data in the Graph Window

Do This	Additional Information (if applicable)
1 Once you have opened a Map window, click the <b>New Graph Window</b> button or press <b>F5</b> to open a New Graph Window.	
2 To plot some data on the graph, select an analysis in the Analysis Tree.	Some results require additional selections, such as PN or Freq. For example, when you select CW or Channel, you'll need to select the frequency from the Freq drop-down list. All offset measurements require that you select a PN from the PN list to the right of the Analysis Tree.
3 Click the Plot Series button on the Graph toolbar.	The data is plotted (see <a href="#">Figure 2-5</a> ).



*Figure 2-5 The New Graph Window with a Series Plotted*

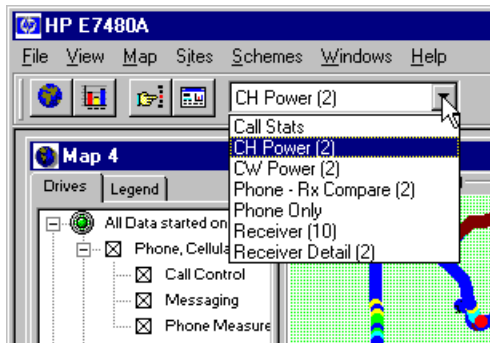
## Changing the Data Scheme in a Data Window

Each map has a data window attached to it. The data window can be changed to reflect different data schemes. For example:

- When you are evaluating phone data only, you may be interested in looking at a data window that contains phone data only.
- When you are evaluating a combination of phone and receiver data, you may be interested in looking at a scheme that includes both phone and receiver data.

### To change a window's data scheme

Do This	Additional Information (if applicable)
1 Select the map window in which you wish to change the data scheme.	
2 On the main toolbar, select the scheme from the drop-down list.	



*Figure 2-6 The Schemes Drop-Down Box*

#### NOTE

To evaluate data, make sure that you have loaded a dataset and selected an analysis type. Refer to [“Viewing Data in a Map Window”](#) on page 2-6.

## Modifying a Data Scheme

---

**Do This**

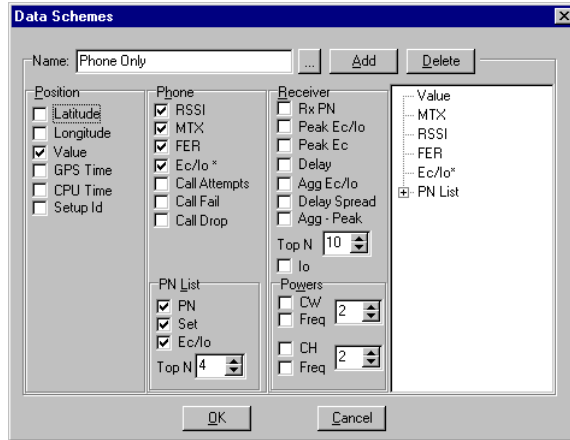
- 1 Click the Data Schemes button.



**Additional Information (if applicable)**

The Data Schemes dialog box opens (see [Figure 2-7](#)).

---



**Figure 2-7 The Data Schemes Dialog Box**

- 
- 2 To modify an existing scheme, click the ellipse button.



The Schemes dialog box opens and lists all schemes that have been created.

---



**Step-by-Step**

- 
- 3 Select or deselect options to add or remove additional information for viewing in this scheme.
- Data schemes are broken into five groups:
- Position
  - Phone
  - PN list
  - Receiver
  - Power
- 

- 4 To change the order of the data, in the tree view to the right of the form, select the desired data and drag it up or down in the list.
- 

- 5 Click **OK** and close the form.
- 

---

**NOTE**

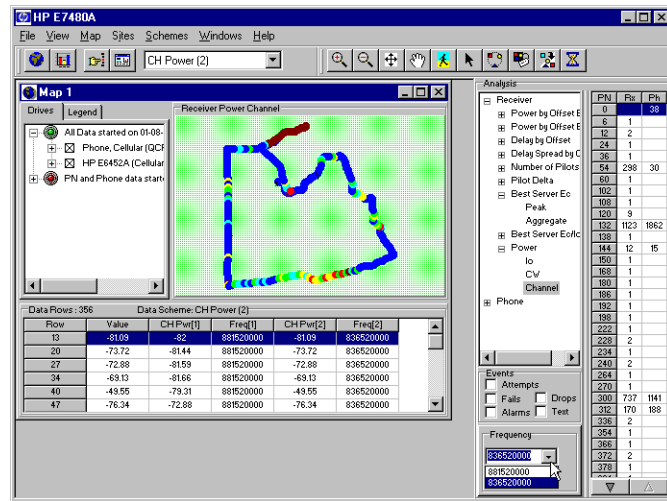
---

When you save, if you change the name of the scheme, you create a new scheme as opposed to renaming the existing scheme.



## Plotting Power

Do This	Additional Information (if applicable)
1 After you load the appropriate data, select the Power option in the Analysis window.	
2 Select a data type. If you select receiver power, the lo value is plotted.	
3 If you are performing a receiver analysis and the data type is CW or Channel, select the appropriate frequency from the drop-down box, located below the Events box.	All the collected CW or channel power frequencies are listed (see <a href="#">Figure 2-8</a> ).






**Figure 2-8 Select the Frequency when You Plot Power**

- 4 Click the **Size to Fit** button to zoom the extents of the map to fit only those points that have been plotted.



## Printing Graphs and Maps

### To print a graph

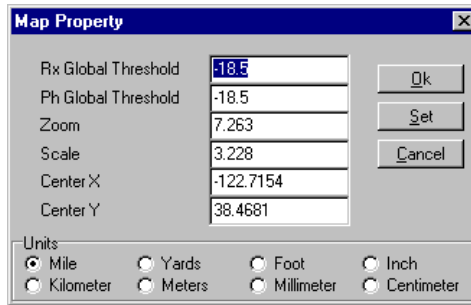
Do This	Additional Information (if applicable)
1 Click the New Map Window button.	A new Map window opens.
	
2 Select the data on the Drives tab.	The LED should be green and the appropriate check boxes should be selected for the hardware or virtual front panels you want to view.
3 Click the New Graph Window button to open a new Graph window.	
	
4 Plot some series on the graph.	
5 Click the Toggle Legend button on to include a legend in the printed copy.	
	
6 Choose <b>File &gt; Print Setup</b> and select the printer and printer properties. Click <b>OK</b> .	The Printer Setup window opens.
7 Choose <b>File &gt; Print</b> .	The Please enter a graph title box opens.
8 Enter a title for the graph and click <b>OK</b> .	The graph prints.





## To print a map

Do This	Additional Information (if applicable)
1 Click the New Map Window button.	A new Map window opens.
2 Perform an analysis as described in <a href="#">“Viewing Data in a Map Window”</a> on page 2-6.	
3 Choose <b>Map &gt; Property Page</b> and make changes to the map scale for printing. Click <b>OK</b> .	The Map Property dialog box opens.



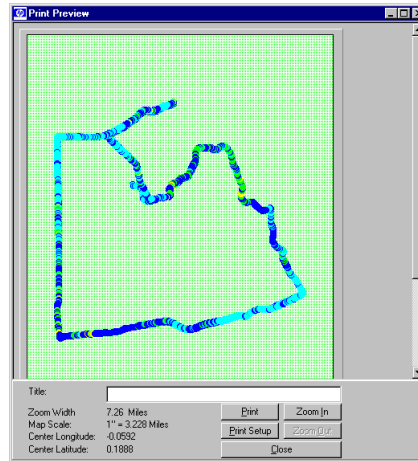
*Figure 2-9 The Map Property Dialog Box*

4 Choose <b>File &gt; Print Preview</b> .	The Print Preview dialog box opens (see <a href="#">Figure 2-10</a> ).
---	--



Starting and Learning the E7480A  
**Step-by-Step**

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*Figure 2-10 The Print Preview Dialog Box*

- 
- 5 Add a title (optional).

---

  - 6 Click **Print Setup** and select the printer and printer properties. Click **OK**.

---

  - 7 Click **Print** to print the map.

---



## Using Shortcut Keys

The software application uses the following shortcut keys.

Key	Description
F1	Online Help
F4	New Map Window
F5	New Graph Window
F6	Analysis Window
Ctrl+I	Import/Remove Drives
Ctrl+E	Export Data
Shift+F5	Cascade Windows

### The Right Mouse Button

In addition to the above keys, several shortcut menus are available by clicking the right mouse button. Place the cursor in the area described below and right-click the mouse to display the shortcut menu.

Map Map Controls (Redraw, Layers, Projections, Properties, Zoom in, Zoom out, Pan, etc.)

Graph Allows you to pan over the graph.



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**Solving Problems**



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## What You'll Find in This Chapter

To Do This	See This
Allocate and monitor resources.	"Resource Issues" on page 3-3
Improve performance.	"Improving Performance: Questions & Answers" on page 3-5



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## Resource Issues

---

### CAUTION

It is possible to exceed Windows 95 or Windows 98 allocated resource levels by opening too many windows while running the E7480A system. This may cause erratic behavior of the application and require the operator to reboot the operating system in order to recover. This may also corrupt an open HP E7480A database, with potential loss of data. Windows will not display any warning or feedback when this occurs.

The number of allowable open windows is dependent on the types you choose, as different windows require varying amounts of resources.

To provide the maximum amount of available resources to the measurement application, it is strongly recommended that you close all other applications before running the HP E7480A software. This includes all applications found in the Startup folder. It is also recommended that you run the Windows resource meter in a minimized configuration in order to monitor available remaining resources.

### To start the Windows resource meter

Do This	Additional Information (if applicable)
1 Choose <b>Start &gt; Programs &gt; Accessories &gt; System Tools &gt; Resource Meter</b> .	The Resource Meter dialog box appears.
2 Click <b>OK</b> .	

While this application utilizes system resources, it provides a way of determining when the system is running low on available resources. Opening new windows with less than 20% remaining resources in any of the three categories could cause Windows to overrun its resources.



Solving Problems

**Resource Issues**

The only solution for increasing the number of windows available during a measurement is to use Windows NT. It does not have the same system resource limitations as does Windows 95 and 98.



## Improving Performance: Questions & Answers

Check the following for performance improvement.

Q: Does your computer have the minimum recommended memory requirements?

A: Refer to Chapter 1, “Requirements”. If you do not have enough memory, you need to upgrade the computer to meet the minimum requirements.

Q: Does your computer have the minimum recommended hard drive space requirements?

A: Refer to Chapter 1, “Requirements”. If you do not have enough free hard disk space, free up space on your hard drive to meet the minimum requirements.

Q: Do you have other memory intensive programs running at the same time as the E7480A?

A: If you do, close all other programs and note whether there is an improvement in the performance of the E7480A.

Q: Do you have multiple Maps open?

A: If you have multiple maps open, try limiting the number of open maps.

Q: Do you have multiple graphs open with multiple series on each graph?

A: If you have multiple graphs open, try limiting the number of graphs and graph series.

Q: Do you have multiple drives with over four hours of collection selected?

A: If you have multiple drives with over four hours of data, try limiting the number of selected drives.



Solving Problems

**Improving Performance: Questions & Answers**

Q: Have you tried all the above steps and performance has still not improved?

A: If you have tried all of the above suggestions and no performance improvement is apparent, reboot the computer.

