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HP 85878A
EMI Report Generator
User's Guide

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Table of Contents

Chapter 7. Printing Data

Chapter 8. Exporting Data

Chapter 9. Customer Support

Appendix A. Hardware Interface Installations

Index

Chapter 1

Getting Started

This chapter provides instructions for installing the HP 85878A EMI report generator software and describes the application interface. Use this chapter to familiarize yourself with the overall application, then use the subsequent chapters to learn how to perform the tasks of capturing measurement data and creating reports.

Topics in this chapter include:

- What You Received with Your HP 85878A Software

- Hardware Supported

- Personal Computer Requirements

- Preparing for Use

- Installing the Hardware Key

- Installing the HP 85878A Software

- Running the Application for the First Time

- HP 85878A Product Description

- HP 85878A Main Window Features

Note To take full advantage of this product, you should be familiar with performing EMI measurements and using the Hewlett-Packard equipment supported by the HP 85878A software. For further information on these topics, see the Product Note 8590EM-1, Electromagnetic Compatibility, included with this software package. The product note describes how the equipment fits into the EMI measurement process. For more detailed information about performing measurements using HP equipment, check the appropriate documentation for those products.

What You Received with Your HP 85878A Software

If you are missing any of the following items, notify your local Hewlett-Packard sales office or representative.

Standard Product

- Six disks containing the HP 85878A software
- Hardware key
- HP 85878A User's Guide
- Product Note 8590EM-1, Electromagnetic Compatibility

Option 001

- Microsoft Word for Windows 7.0

Option 488

- National Instruments AT-GPIB/TNT(PnP) interface card

Hardware Supported

The following hardware is supported by the EMI report generator software:

EMC Analyzers	EMI Receivers	EMI Receiver Systems
HP 8591EM	HP 85422E	HP 8542E
HP 8593EM	HP 85462A	HP 8546A
HP 8594EM		HP 84100EM
HP 8595EM		HP 84110EM
HP 8596EM		HP 84125A
		HP 84125B

Personal Computer Requirements

The following describes the minimum and recommended requirements of personal computer configurations. If the minimum requirements are not met, the HP 85878A may not operate correctly.

Minimum PC Requirements

Computer	100% IBM-PC compatible
CPU	486/50
RAM	12 MB
Parallel Port	Hardware key **must** be installed on LPT1
Graphics	VGA 14-inch monitor with any Windows-supported video board
Hard Disk	12 MB free disk space 25 MB free work environment
Floppy Disk	3.5 inch, 1.44 MB
GPIB	National Instruments Corporation's AT-GPIB or AT-GPIB/TNT(PnP) interface card
or HP-IB	HP 82341C interface card
or RS-232	RS-232 serial interface (COM port)
Pointing Device	Any mouse or trackball

Recommended PC Requirements

CPU	486/50 or better
RAM	16 MB
Parallel Port	Hardware key **must** be installed on LPT1
Graphics	SVGA 17-inch monitor with graphics accelerator
Hard Disk	12 MB free disk space 75 MB free work environment
Floppy Disk	3.5 inch, 1.44 MB
GPIB	National Instruments Corporation's AT-GPIB or AT-GPIB/TNT(PnP) interface card
or HP-IB	HP 82341C interface card
or RS-232	RS-232 serial interface (COM port)
Pointing Device	Any mouse or trackball

Preparing for Use

Before the HP 85878A software can run on your computer, the following hardware and software must be installed first:

- Microsoft Windows 95 operating system
- Microsoft Word for Windows, version 7.0a (highly recommended)
- RS-232 Serial Interface (COM port)
- **or** National Instruments Corporation's AT-GPIB or AT-GPIB/TNT(PnP) interface card with associated driver software
- **or** HP 82341C (HP-IB) interface card and associated driver software

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Note If using the RS-232 serial interface, install the HP 85878A application first in order to access the HP 85878A Serial Config utility to configure this interface.

Instructions for installing the interface boards and the driver software is contained in Appendix A, "Hardware Interface Installations."

Installing the Hardware Key

A hardware key is included with the HP 85878A software. This hardware key *must* be installed on the first parallel port (LPT1) of the computer in order to acquire data from the receiver. However, the hardware key is *not* required if you are only editing data files previously created or creating a report; this allows you to capture data using one computer and produce a report using another computer. Up to five hardware keys may be cascaded on the parallel port of the computer to run multiple software packages on the computer.

The hardware key is not specific to any individual computer. Therefore, it can be moved to another computer at any time. For example, if the original computer must be repaired, the software and hardware key may be loaded onto another computer.

Installing the HP 85878A Software

It takes only a few minutes to install the HP 85878A software. The Install program in the HP 85878A software makes the installation easy.

1. Insert disk 1 of the HP 85878A software into the floppy drive then click on the Windows 95 **Start** button.

2. Click on **Run...**, enter the letter of your floppy drive followed by the word "setup," then click the **OK** button. For example, if your floppy drive is "A," you will enter **A:\setup**.

3. A Welcome screen will appear. Click **OK** to continue the installation.

4. The destination directory screen appears with a default drive and directory specified. If you do not want to use this destination, you must specify a different location at this time for the **Hp85878A** directory to be created. After you have specified the destination, click **OK**.

5. To complete your setup, follow the instructions on your screen.

Quick Tour Demonstration

Upon completion of the HP 85878A software installation, you will be prompted to take a five-minute Quick Tour. This Quick Tour will provide you with a brief overview on how to use this application to "capture" your measurement data and create a report. You can also run the Quick Tour at any time by choosing Help, Quick Tour from the main menu.

Running the Application for the First Time

Follow these basic steps to open the HP 85878A application for the first time.

1. The first time you run the HP 85878A software, a default file named "untitled.mdb" is opened. At this time, you may either choose a new file with a more meaningful name via File, New or continue using this file and rename it later. *(Remember, a file is required to store your captured data sessions.)*

    It should be noted that subsequent executions of the HP 85878A software will use the file that was in use when the application was last exited. That is, the file to which data sessions are stored will always stay the same unless you specify a new file via the File, New menu.

2. The Configure dialog box will appear enabling you to configure the I/O bus by selecting one of the three interfaces which connect the computer to the measuring receiver. The default set during installation is: GPIB, select code of 0, and bus address of 18. Do one of the following:

    *   Choose OK to use the default I/O bus setting.

    *   Choose Cancel to close the HP 85878A application in order to set up and configure your hardware interface. Refer to Appendix A, "Hardware Interface Installations," for more information on how to install and configure the three different types of interfaces.
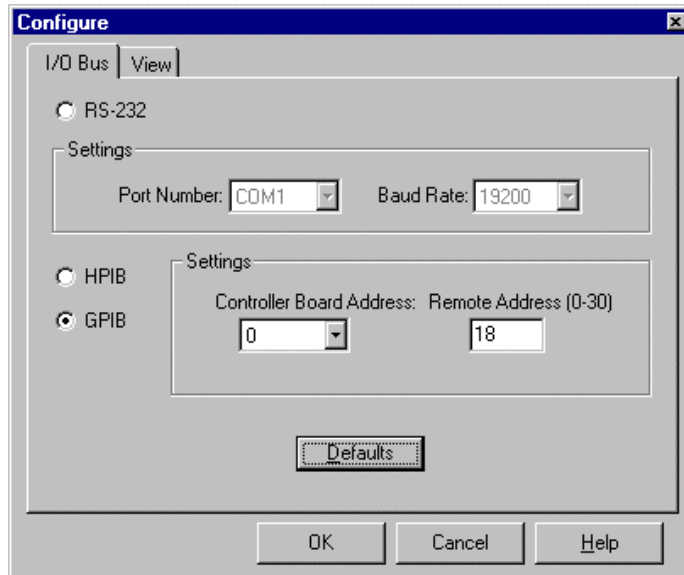
For information regarding the View tab, refer to "Changing the Header and Session Pane Display" in Chapter 5.

Important!

After installing the HP 85878A software, make sure you have the correct hardware configuration on your system. Use Help, Service, TestBus to test your current configuration if you have any doubt about your setup.

The three I/O buses available are:

- RS-232 (COM port) requires the use of port number COM1, COM2, COM3, or COM4 and a baud rate of 4800, 9600, 14400, or 19200.

- HPIB (HP 82341C I/O card) requires the following two addresses be specified: remote address between 0 and 30 and controller board address between 0 and 7.

- GPIB (National Instruments AT-GPIB I/O card) requires the following two addresses be specified: remote address between 0 and 30 and controller board address between 0 and 7.

The Defaults button resets the values back to the installation values.

Uninstalling the HP 85878A Software

1. Click on the Windows 95 **Start** button.

2. Select **Programs**, **HP EMI,** then **HP 85878A Uninstall**. The Confirm Uninstall message will appear. You will see a display box which lists the HP 85878A filenames as they are listed in a log file. When this is complete, a message is displayed that the software is uninstalled.

HP 85878A Product Description

The HP 85878A EMI report generator software provides report generation and archival of data for EMI applications. The report generator allows you to:

- Transfer data from your instrument to your computer
- Generate reports using the data you collected
- Archive the data on your personal computer

The HP 8590EM Series and the HP 8540A/E Series have a built-in EMI measurement engine which allows you to easily complete compliance or precompliance EMI measurements. Use your equipment to make those measurements and then archive and report your results using the HP 85878A EMI report generator. With the report generator software, you can integrate your test session results into a standard Windows 95 desktop interface. Microsoft Word for Windows is used to generate standard reports. You can archive your data in a relational database, allowing you to maintain your data using Microsoft Access 7.0.

The HP 85878A application is composed of a single main window with two panes: the header pane and session pane. The session pane is a tabbed interface, where each tab represents a session, and the tab whose contents are currently visible represents the "active session." When a tab is selected, the associated header data for that tab appears in the header pane. Each tab contains data from a single test session and is labeled with a field from the header pane. The tabs are ordered left to right with the leftmost tab being the newest data and the rightmost is the oldest.

Data in the session pane consists of 2 or more (up to 12 total) data items represented as icons. The 12 kinds of data items are: header (session) data, screen capture, signal list, linear plot, log plot, trace A/B/C data, instrument settings, correction factors, limit lines, and annotation. Data for each item is collected from an attached measuring receiver when File, Get Data is selected from the menu; the Get Data dialog box allows you to specify which of the 11 data items you wish to capture. Besides using the data items captured in the automated report generator (using File, Create Report), the icons can be dragged and dropped into Word for Windows and other Windows applications which support OLE (object linking and embedding) formats.

HP 85878A Functionality

The primary function of the HP 85878A software is to capture test session data AFTER the measurements are performed by an instrument. The HP 85878A software fits into your test environment as a tool for taking a snapshot of what was measured by the analyzer or receiver. There is no direct contact between the HP 85878A software and the equipment under test. In addition, there is no way for the HP 85878A software to pass data back into a receiver or analyzer. All communication is one way.

You can think of your computer running the HP 85878A software as a kind of stop-motion camera for recording what is happening in your test environment. In your daily work, you can schedule a large number of tests. Each test may be unique, with its own instrument settings and conditions. After you perform each test, you quickly "capture" the test data and save it into the computer environment. Then you can reset your instrument and perform the next test, knowing that you have captured everything you need to record about the previous test. Each data capture is identified using date, time, and whatever other information (that is, header data) you need to differentiate among the various tests you have run.

Once you have the test information stored, you can sift through it and use it to create printed reports, to compare results, or to document your work process.

HP 85878A Main Window Features

When you start the HP 85878A application, you will see a single main window with two panes—a header pane and session pane, a menu bar, and a toolbar. The main window features are described in more detail in the sections which follow.
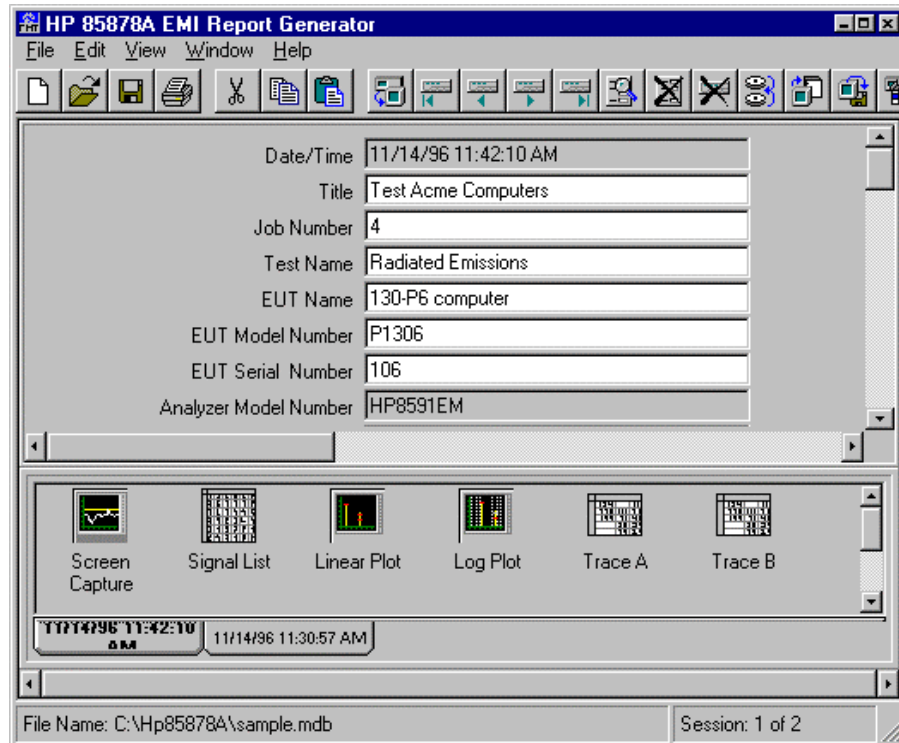
Header and Session Panes

The main HP 85878A window is divided into two panes. The upper pane is the header pane and the lower pane is the session pane. The header pane consists of multiple text fields corresponding directly to the fields of the active session's header data item. You may directly enter and modify information in all fields except for Date/Time, Analyzer Model #, and Analyzer Serial #, which are automatically generated by the application from the attached receiver. If the current file contains no sessions, the header pane will initially be empty but may be modified and will be copied into the next session that is captured from the receiver. The order of the header pane fields can be customized using Edit, Configure.

The purpose of the fields in the header pane is to allow you to identify and keep track of test session data. Some examples of how you would use these fields include:

- Keeping track of the date and time a particular test was performed

- Recording a particular setting used on the instrument

- Making a report listing the tests that an operator performed on a given day

You do not have to use all the fields that appear in the header pane. Use those that are most useful to you in tracking your test sessions. For example, the header fields make it possible to specify search criteria for session data. You can also use these fields to identify session data in order to perform merge and delete operations. Chapter 6, "Managing Files and Sessions," contains more information on these topics.

After capturing data, the session pane will contain icons representing the data items collected in that test session. The tabs at the bottom of the session pane display the date and time (of the receiver) when you used the HP 85878A application to collect the session data from the instrument. Refer to the section "Changing the Header and Session Pane Appearance" in Chapter 5 for detailed information on rearranging the header fields and changing the tab label of the session(s) from Date/Time.

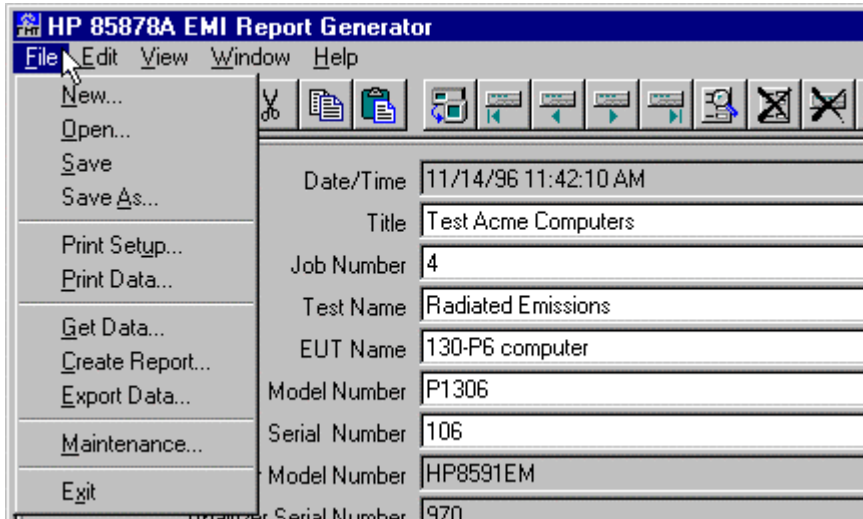The session pane shown below has the View, Header menu item unchecked.
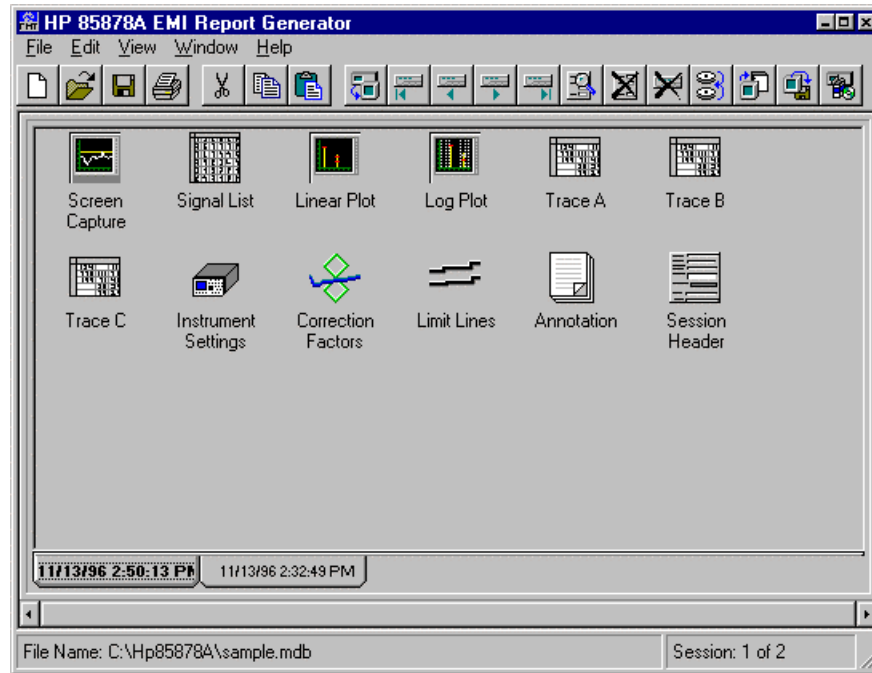
Main Menu Descriptions

The main menu items, listed below, are described in detail in the sections which follow.

- File
- Edit
- View
- Window
- Help

File Menu

The File menu provides the following functions for the HP 85878A software:

| New	Creates a new file.
Open	Opens an existing file.
Save	Saves the header data.
Save As	Saves a file using the file name or directory specified.
Print Setup	Allows you to define specific printer properties.
Print Data	Prints the data items as specified.
Get Data	Captures data from the instrument.
Create Report	Creates a new report in Microsoft Word.
Export Data	Exports test data using the specified format.
Maintenance	Repairs or compacts selected files.
Exit	Exits the HP 85878A software.

Edit Menu

The Edit menu provides the following functions for the HP 85878A software:
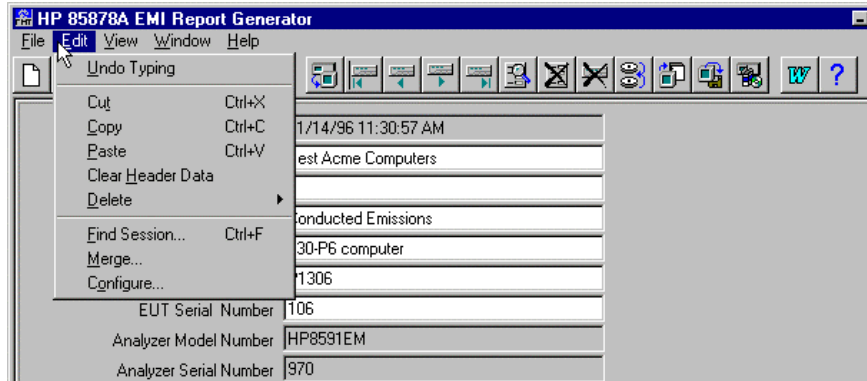
Undo	Reverses the previous command. (Refer to the section "Undo of a Delete" in Chapter 6 for more detailed information.)
Cut	Copies the data to the clipboard and removes the data or data item.
Copy	Copies the selected items or header data.
Paste	Pastes the previously copied or cut data.
Clear Header Data	Clears the data from the currently active header.
Delete	Deletes a data item, session, or session group.
Find Session	Finds the specified test session.
Merge	Merges session group(s) from another file.
Configure	Changes the I/O Bus configuration, specifies the session tab label, and reorders the fields on the header pane.

View Menu

The View menu provides the following functions for the HP 85878A software:
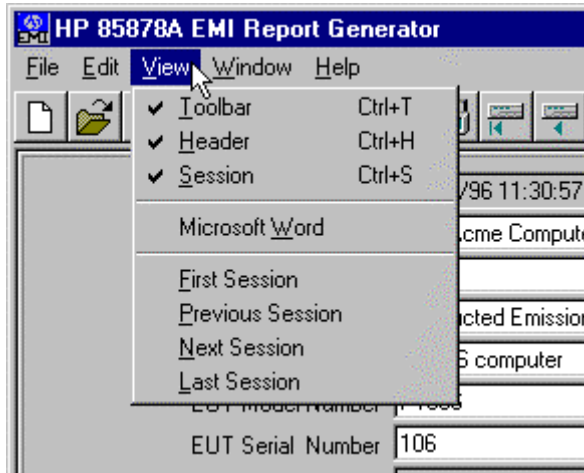
Toolbar	Shows or hides the toolbar display.
Header	Shows or hides the header pane.
Session	Shows or hides the session pane.
Microsoft Word	Opens up Microsoft Word.
First Session	Sets the focus to the most recent session captured.
Previous Session	Changes the focus to the session on the left.
Next Session	Changes the focus to the session on the right.
Last Session	Sets the focus to the first session captured.

By default, the toolbar, header pane, and session pane appear in the foreground when the application is first started. Any changes which hide the toolbar, header, or session panes are lost when exiting the application.

Window Menu

The Window menu provides the following functions for the HP 85878A software:
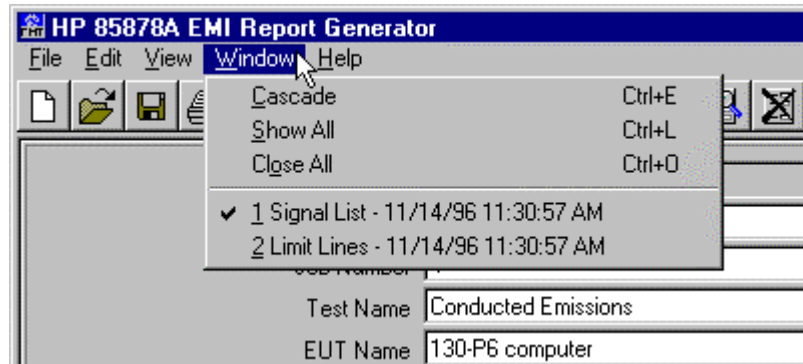
Cascade	Displays all open data item windows in a cascaded style.
Show All	Shows all open data item windows.
Close All	Closes all the open data item windows.
<**Data item**>	Lists the window names of the open data items.

The data item names corresponding to the currently opened windows are listed in the order in which they were opened. For example, in the illustration above, first the Signal List and then the Limit Lines windows were opened.

Help Menu

The Help menu provides the following functions for the HP 85878A software:
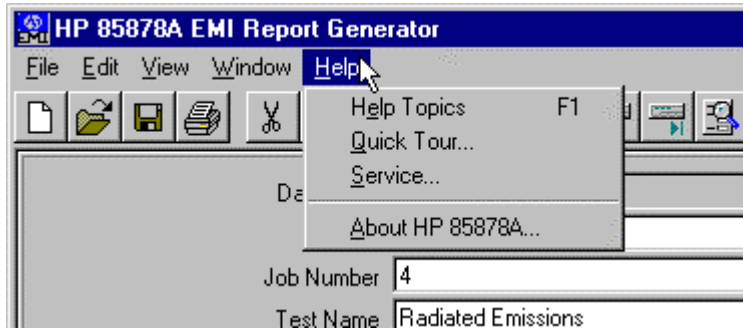
Help Topics	Lists the help topics available.
Quick Tour	Provides an animated tour of key HP 85878A features.
Service	Lists service information and functions.
About HP 85878A	Displays copyright information about the HP 85878A application including the current version number of the software and serial number, if the hardware key is present.

Toolbar Description

The toolbar provides the following functions for the HP 85878A software:

▯	New File	▤	Get Data Again	✕	Delete Session
▱	Open File	▤	First Session	▤	Merge
▯	Save File	▤	Previous Session	▤	Create Report
▤	Print Data	▤	Next Session	▤	Export Data
✂	Cut	▤	Last Session	▤	Configure
▤	Copy	▤	Find Session	W	Microsoft Word
▤	Paste	✕	Clear Header	?	Help

By positioning the cursor over each icon in the toolbar, descriptive text helps you identify each function. You can also customize the toolbar by adding, deleting, or reordering the icons. To access the Customize Toolbar dialog box, simply double-click on any blank area next to a toolbar icon (for example, to the right of the Help icon).

The Customize Toolbar window allows you to add or remove icons, or to add separators between icons. For example, the selection shown below will remove the Word icon (from being displayed on the toolbar) when the user clicks the Remove button.
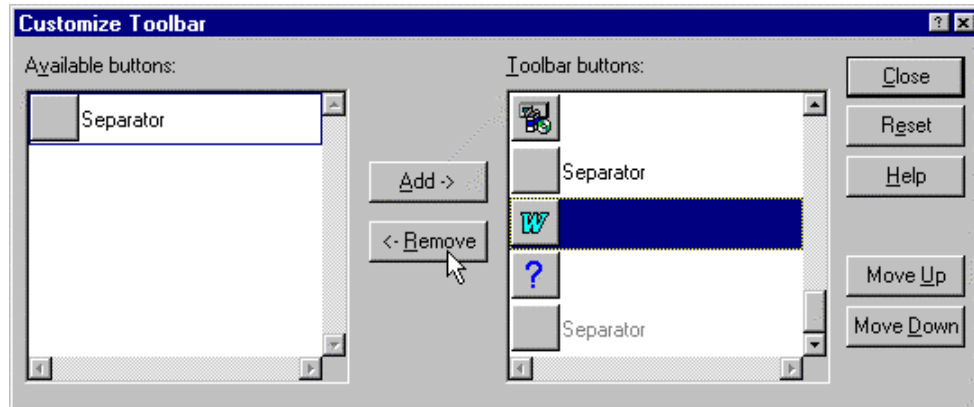
You can cut down the number of icons that appear to suit your own convenience. For example, if you find that in your work environment you only use the Get Data Again and Microsoft Word icons, you could remove all the icons except for these two.

The Move Up and Move Down buttons allow you to move icons or separators, without deleting them. For example, the selection shown below has moved the New icon down one position which in turn has moved the Open icon up one position.
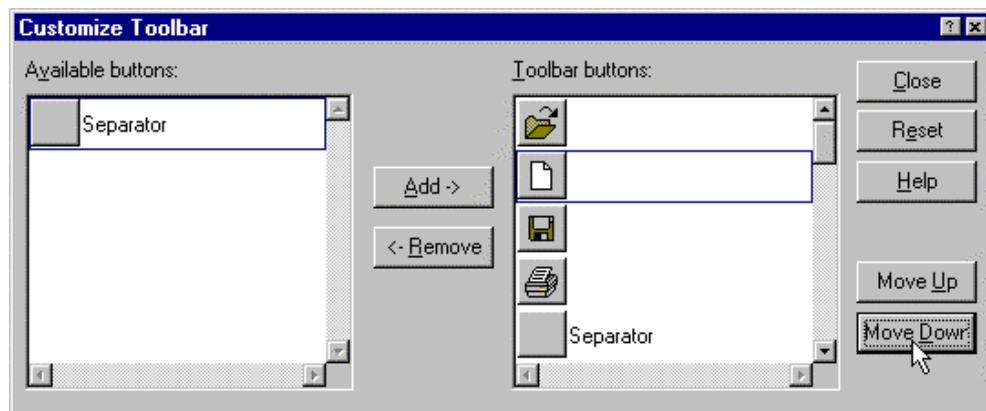
You can also reposition an icon by clicking and holding down the left mouse button then dragging it to the desired position. Likewise, you can move the icons back and forth between the Available and Toolbar button list areas.

Add   Adds the highlighted icon or separator to the displayed toolbar.

Remove   Removes the highlighted icon or separator from the displayed toolbar.

Close   Exits the dialog box after you have finished customizing.

Reset   Resets the toolbar to the way it appeared before you made changes.

Move Up   Repositions the highlighted icon up by one position.

Move Down   Repositions the highlighted icon down by one position.

Chapter 2

Acquiring Data from the Receiver

This chapter describes how to begin a test session and capture data from a measuring receiver. Before capturing data, you must have installed the hardware key, connected your computer to a receiver, and configured your hardware interface. The steps described in this chapter assume that you already have performed a measurement and have test data on the receiver; now you are ready to use the HP 85878A software to capture that data.

The topics described in this chapter include:

- Which Data Comes from the Receiver
- Selecting Data Items
- Capturing Data from the Receiver

For more information on viewing the data items you captured, refer to Chapter 5, "Viewing Data."

Which Data Comes from the Receiver

All or part of each data item comes from the measuring receiver. All of the following data items come entirely from the measuring receiver and *cannot* be modified from the HP 85878A application:

- Screen Capture
- Linear Plot
- Log Plot
- Trace A
- Trace B

- Trace C
- Instrument Settings
- Correction Factors
- Limit Lines

The Annotation data item comes directly from the receiver but is fully editable from the HP 85878A application. All of the Signal List data item, except the Comments, comes from the receiver; the Comments can only be entered using the HP 85878A application. The only header fields which come from the receiver are: Date/Time, Analyzer Model Number, and Analyzer Serial Number. These three fields are not editable by the user. All other header fields are editable.

The file type of the HP 85878A application is compatible with Microsoft Access 7.0. Therefore, if other data must be edited, it can readily be done using MS Access.

When your receiver is in signal analysis mode, the only data items available are:

- Screen Capture
- Trace A
- Trace B

- Trace C
- Instrument Settings

When your receiver is in EMC analyzer mode, all data items are available.

Selecting Data Items

To acquire data from the measuring receiver, select 1 or more of the 11 optional data items from the Get Data dialog box. Which items remain checked depend upon which items were used in the last Get Data action; a red check mark on the icon indicates that the data item is selected. Each item corresponds to a unified piece of data that the measuring receiver generates. Any combination of data items acquired at one time is called a test session.

The File, Get Data menu and the Get Data Again icon on the toolbar both enable you to perform a data capture. However, the Get Data dialog box does not always appear when the Get Data Again icon is selected; it only appears if there are no data items currently selected in the dialog box. As long as the hardware key is present and the interface hardware is configured properly between the computer and receiver, the Get Data dialog box is *always* available when selecting File, Get Data from the main menu; whereas the Get Data Again icon is provided for quick access in performing data captures.

Note If you have run Get Data previously and you want to capture the same data items in the next test session, then use the Get Data Again icon to perform your capture quickly. Using File, Get Data allows you to change or verify your data item selection before performing the data capture.

Each of the 11 data items is represented by a distinctive icon. Header information is also represented by the Session Header icon but is not available for selection during data capture since the header information is automatically saved with each session. Data for each item is collected from the attached measuring receiver when Get Data is performed.
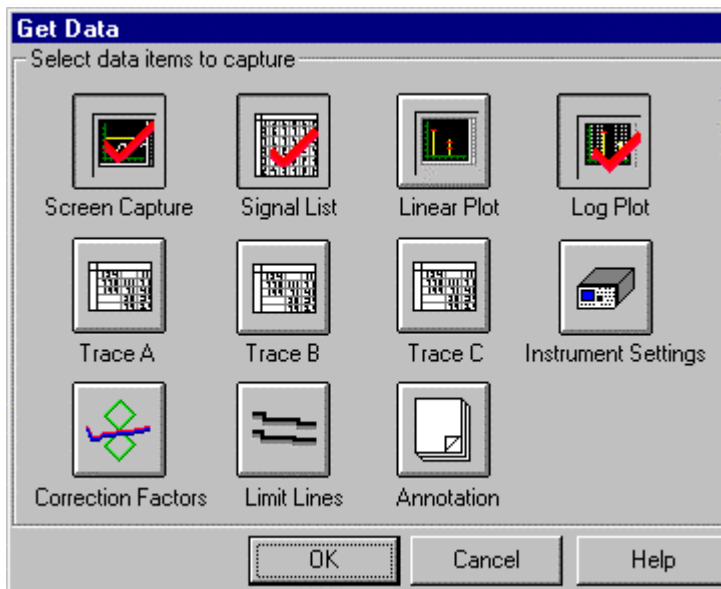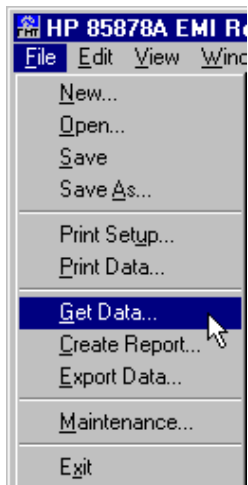
To capture information for a data item

1. From the File menu, choose Get Data.

2. Check the data item(s) that you want to capture.

3. Choose the OK button.

The table shown below helps you select which data items you want to capture. For more information about the contents of each data item, see Chapter 5, "Viewing Data."

Data Item	Description
Screen Capture	An image of what appears on the screen of the measuring receiver.
Signal list	A table with the following columns that can be added, removed, or reordered using Edit, Preferences: • Signal • QP-Lim1 • Frequency • Avg-Lim1 • Peak Amp • Peak-Lim2 • QP Amp • QP-Lim2 • Avg Amp • Avg-Lim2 • Limit Line 1 • Marked • Limit Line 2 • Comments • Corrections • Span • Peak-Lim1
Linear plot	An image of what appears on the screen of the measuring receiver when it is plotting the signal list on a linear frequency scale.
Log plot	An image of what appears on the screen of the measuring receiver when it is plotting the signal list on a log frequency scale.
Trace A	Consists of 401 frequency/amplitude pairs representing the data stored in trace A of the measuring receiver.
Trace B	Consists of 401 frequency/amplitude pairs representing the data stored in trace B of the measuring receiver.
Trace C	Consists of 401 frequency/amplitude pairs representing the data stored in trace C of the measuring receiver.

Data Item	Description
Instrument settings	Consists of the following fields, displayed in spreadsheet format: • Start Frequency • Amplitude Units • Stop Frequency • dB per Division • IF BW • Frequency Scale • Average BW • Video Average • Sweep Time • Video Avg Num of Sweeps • Attenuation • Reference Level • Input
Correction factors	Classifies the correction factors and displays a table consisting of: • Status (corrections on or off) • Points (number of) • Frequency and amplitude pairs • Type (Antenna, Cable, Other, and Amp Cor)
Limit lines	Describes the limit lines consisting of: • Limit line number (1 or 2) • Frequency and amplitude pairs • Frequency Scale • Amplitude Scale • Segments (on or off) • Margin Status • Margin value (on or off) • Limit Line Status
Annotation	Consists of ASCII text typed into the measuring receiver from the receiver's plug-in keyboard, or is fully editable from the HP 85878A application as a single text field.

Capturing Data from the Receiver

Note The hardware key *must* be installed on the first parallel port (LPT1) of the computer in order to acquire data from the receiver. The Get Data function is *not* available if any of the following is true: the key is missing, the key is not the right one, or the receiver is not communicating.

The transfer of data from the receiver into the HP 85878A application only occurs after data items have been selected and the OK button is clicked in the Get Data dialog box, or when the Get Data Again icon is selected from the toolbar (assuming that data items have been previously specified with the last capture). The data transfer process cannot be interrupted and may take from a few seconds to a few minutes. During the transfer, the hourglass cursor appears.

After the transfer is complete, since it is the most recent data, a new tab is created as the left-most tab on the session pane. This new tab becomes the active session, its header data is presented in the header pane, and the data items selected in the Get Data dialog box are displayed in the session pane.

Note Follow these guidelines to make sure you enter the correct header information:

- Any header field information you wish to add should be entered *after* the capture is complete.

- If you modify the header information for the active session *before* the capture, the header information you added will appear as part of the previous session's header as well.

- When Get Data runs, the program copies any existing user-entered header information from the previous session. This allows you to carry over information from one session to the next. If you do not want to carry over the information, you can use Clear Header Data *after* the Get Data operation is complete.

Test session tabs are labeled using the date and time of the receiver when the data is captured. You may also choose to change how these tabs appear using Edit, Configure; this option is explained in more detail in Chapter 5, "Viewing Data."

When the data transfer is complete, the test session is automatically saved in the currently open file.
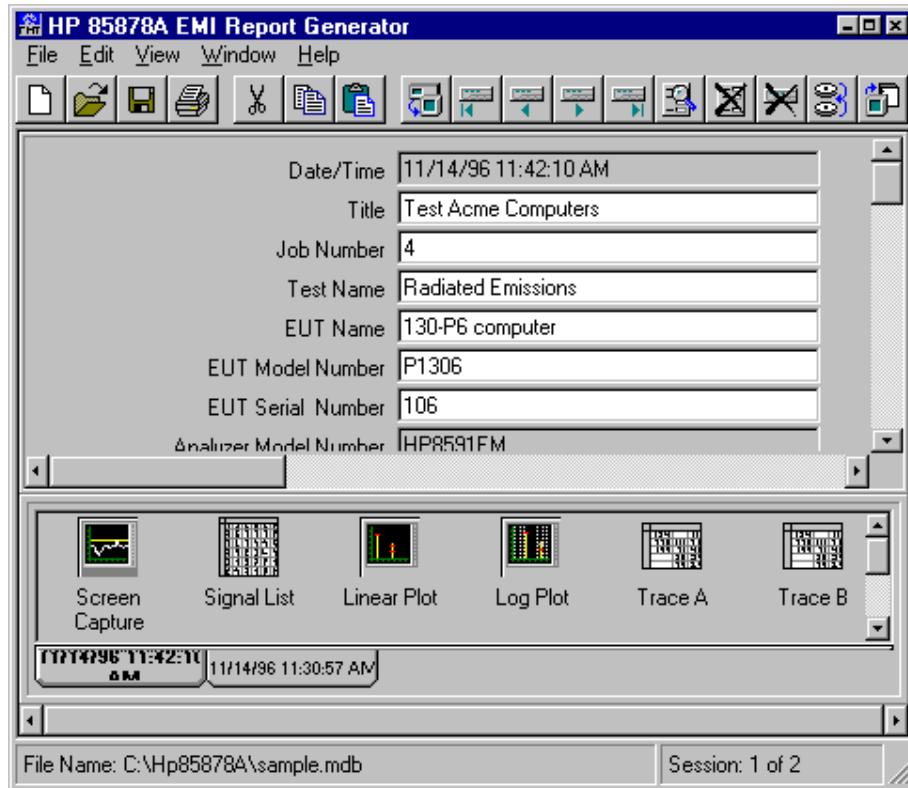
After you have run the Get Data command, you can open individual data items in the current session by clicking the mouse on the associated icon. When you double-click these individual icons, they open into their own windows.

Test Session Example

Before trying this test session example, you must have configured your hardware interface, connected your computer to an analyzer or receiver, and installed the hardware key. Your receiver should contain information of interest from the equipment under test, such as a signal list.

To add sessions to the sample.mdb file, follow the steps outlined below:

1. From the main menu, select **File**, **Open** then open the file **sample.mdb** provided in the Hp85878A directory.

    Notice that there are two test sessions available. Select each tab and observe the icons on the associated session pane.

2. From the main menu, select **File**, **Get Data**.

3. In the Get Data dialog box, check all of the data items displayed by clicking on them.

    Note the red check mark that appears when you select an icon.

4. Choose **OK** to begin the data transfer from the receiver.

5. When the data transfer is complete, you are automatically returned to the main window and the newly created session is now the active session.

6. From the main menu, select **File**, **Get Data** again and check only the Signal List data item by clicking on it.

7. Choose **OK** to begin the data transfer from the receiver.

    When the data transfer is complete, notice that now you have a second new tab. The second tab from the left is from your first session, where you selected all the data items. The left-most tab is from your most recent session, where you selected only the signal list.

8. Review the header information and edit any field(s), if necessary.

    After you have made changes to the header fields, the changes are saved when you change to another text field, switch to another session tab, or change the focus to another area.

Chapter 3

Creating and Editing Reports

The HP 85878A application allows you to create reports based on the data you have collected from test sessions. Reports can be created manually using any word processor or spreadsheet you desire. The HP 85878A application also has the ability to automatically create reports in Microsoft Word for Windows with templates, using the Create Report selection from the File menu.

This chapter describes how to create an MS Word report using the data you have acquired from the receiver. Topics covered in this chapter include:

- Creating a Report Manually
  - ◊ Drag-and-Drop Editing
  - ◊ Copy and Paste Editing
- Creating a Template-Based Report
  - ◊ Create Report Window
- Editing Reports
- Creating Your Own Report Template
  - ◊ Bookmark Format for HP 85878A Reports
  - ◊ EMI Data Item Names
  - ◊ Template Creation
  - ◊ EMI Template Bookmarks

Creating a Report Manually

A report can be created manually using any word processor, however, the HP 85878A application has been designed to work with MS Word. Data acquired by the HP 85878A application can be added to a report by two methods: drag-and-drop editing for OLE compatible applications or copying and pasting data items for Windows applications. Using either of these two methods enables you to build a report as desired.

Drag-and-Drop Editing

Note The drag-and-drop method is *only* available with applications that support the object linking and embedding (OLE) format, for example, MS Word 7.0a or greater.

Drag-and-drop allows you to select a data item icon in the HP 85878A application and copy it into an MS Word report quickly and easily with just the use of the mouse.

To drag and drop a data item into a report

The following two methods of drag-and-drop are for use with MS Word 7.0a and greater.
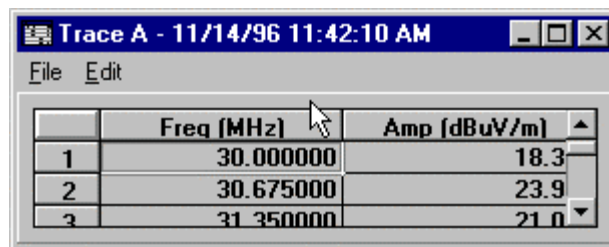
Method 1

1. Select the data item you want to move by clicking and holding down the left mouse button on its icon.

2. As you move the cursor, a copy of the data item icon appears (as long as you remain over the HP 85878A application).

3. With the mouse button still held down, drag the icon over an MS Word document and note that the icon now becomes a cursor with a plus and a dotted insertion point

4. Position the dotted insertion point at the location where you want to place the data item contents, then release the mouse button.

5. The data item contents now appear in the MS Word 7.0a document.

Method 2

An alternative method for using drag and drop is from an open data item window.

1. Do one of the following to open a data item window:

    - Double-click on the data item you want to move.

    - Click the right mouse button on the data item you want to move then select Open.

2. Do one of the following to select the data item contents.

    - For graphical data items, click on the image holding down the mouse button.

    - For textual data items, click on the border area around the table (as shown below) holding down the mouse button.

	Trace A - 11/14/96 11:42:10 AM	_ □ ✕
File	Edit	

	Freq [MHz]	Amp [dBuV/m]	▲
1	30.000000	18.3	
2	30.675000	23.9	
3	31.350000	21.0	▼

3. With the mouse button still held down, drag the icon over an MS Word document and note that the icon now becomes a cursor with a plus and a dotted insertion point

4. Position the dotted insertion point at the location where you want to place the data item contents, then release the mouse button.

5. The data item contents now appear in the MS Word document.

Drag-and-Drop Exception

To use drag and drop on the graphical data items with MS Word 6.0 or 7.0, follow the same steps listed above. However, once you have dropped the selected item into the Word 6.0 or 7.0 document, the following two steps *should* be performed to ensure that the graphical data is saved as part of the MS Word document.

1. In MS Word, double-click on the graphic. MS Word opens a separate window (containing the graphic) in picture editing mode.
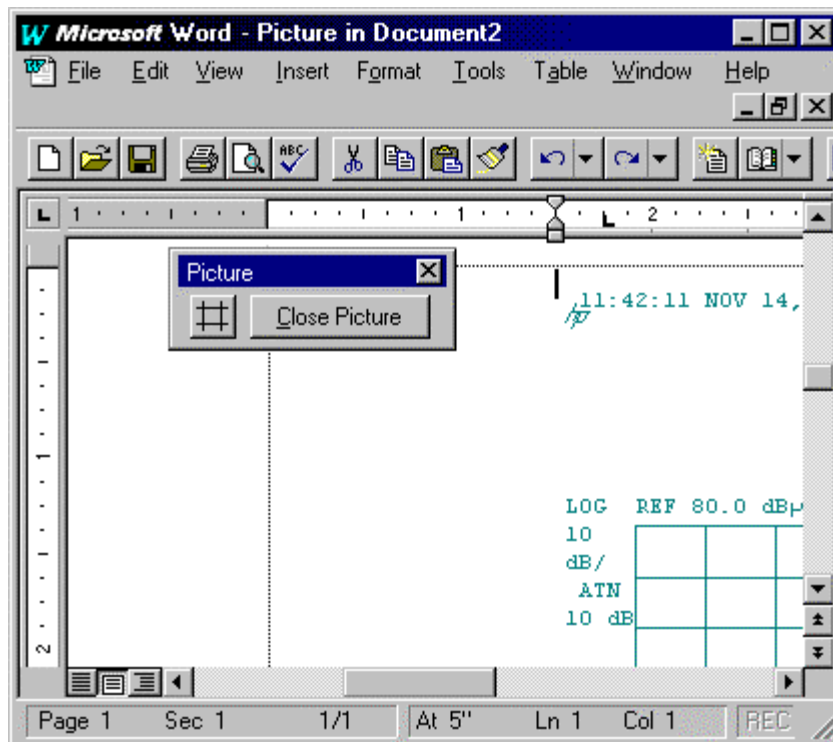
2. Click the Close Picture button to exit the picture editing mode.

Copy and Paste Editing

The copy and paste editing method can be used for all Windows applications.

To copy and paste data item contents into a report

1. In the HP 85878A application, highlight the desired data item then do one of the following:

    *   From the main menu, choose Edit, Copy.

    *   Position the cursor over the data item and click the right mouse button, then choose Copy.

    *   Click on the data item to highlight it, then press Ctrl-C on the keyboard.

2. In the document, locate the position where you want to place the data item contents.

3. In the document, do one of the following:

    *   From the main menu, choose Edit, Paste.

    *   Press Ctrl-V on the keyboard.

Creating a Template-Based Report

Note During the HP 85878A application installation, the install program searches for the directory where MS Word is located. The sequence of the directory search path is first MSOffice\Templates then Winword\Templates; whichever is encountered first is where the EMI Temp subdirectory is created and the HP 85878A report templates are copied into. If you do **not** have MSOffice or MS Word installed on your system, the install program will copy the HP 85878A report templates into the application directory under the Template subdirectory.

Report templates have been provided with the HP 85878A application as typical examples of EMI reports. These are MS Word document template files (*.DOT) which contain EMI data item bookmarks; the bookmarks support auto-insertion of data from one or more test sessions into the report. A new document created from one of these templates will contain text and data which serve as examples of what a report should look like. This example can be used as a building block for creating your own report in which you have the full text processing capabilities of MS Word.

Template-based reports may be created in two ways: from MS Word directly or from the HP 85878A application main menu File, Create Report.

To start a new document from an EMI template

1. From the File menu in MS Word, choose New.

2. In the New dialog box, select the EMI Temp tab.

3. To create a new report from an existing EMI template, click on one of the four EMI templates, and then choose the OK button.

4. MS Word gives the new document a temporary name, such as Document2, until you save it with a unique filename.

5. Use MS Word functions and any other editing functions (for example, drag-and-drop editing) to complete your report.

To create a new report document automatically

1. From the File menu in the HP 85878A application, choose Create Report.

2. In the Create Report dialog box, click the Select button.

3. The Select EMI Report Template dialog box will display the four available EMI templates and any other templates that you may have created.

4. Click on one of the EMI Templates then choose the Open button.

5. In the Create Report dialog box, highlight the test session data you wish to use by clicking on the Actual Session drop-down list box and making your selection.

6. If you wish to be prompted prior to inserting each piece of data, check the Prompt Before Each Insertion checkbox.

7. Choose the OK button to perform an automatic report generation.

Create Report Window

The Create Report window is accessed through the File menu in the HP 85878A application. This command allows you to select a template for a new report and then automatically opens MS Word (if it is not already open) and creates a new document based on the selected template. If the template contains one or more EMI data item bookmarks, session data is "auto-inserted" into the MS Word report document by the HP 85878A application when OK is selected.

The following four sections describe each of the areas contained in the Create Report window:

- Template Selection
- Actual Session Selection
- Session Identifier and Data Item To Insert Fields
- Prompt Before Each Insertion

Template Selection

Within the Create Report window, the default template name field appears at the top of the dialog box. At this time you may select one of four templates provided with the HP 85878A application or any template you may have created. Click on the Select button to open the Select EMI Report Template dialog box, make your selection, then choose the Open button. For more information on how to create your own EMI report templates, refer to the section "Creating Your Own EMI Report Template" later in this chapter.
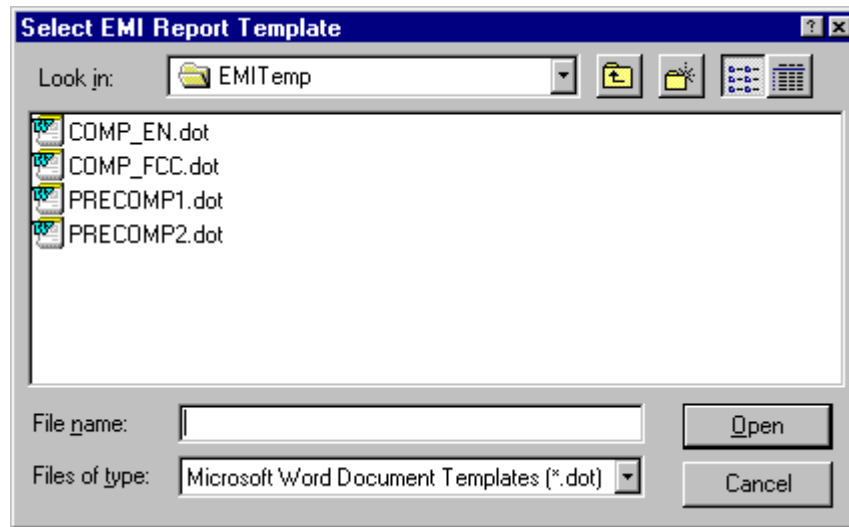
The four EMI report templates included with the HP 85878A application are:

PRECOMP1.DOT	Single session pre-compliant report, Radiated
PRECOMP2.DOT	Two session pre-compliant report, Radiated and Conducted
COMP-FCC.DOT	Two session FCC compliant report, Radiated and Conducted
COMP-EN.DOT	Four session European Norms compliant report, CISPR Radiated and Conducted, and FCC Radiated and Conducted

Actual Session Selection

The Actual Session field displays all of the sessions in the current file. For example, the sample.mdb file shown below contains two test sessions captured on 11/14/96. The Actual Session displayed in both cases of the Radiated and Conducted Session Identifier is the session captured most recently which is the one with a time stamp of 11:42:10 AM. The actual session with the time stamp of 11:42:10 AM is the Radiated session captured; the session with the time stamp of 11:30:57 AM is the Conducted session, which is shown as being selected as the appropriate session to match the Session Identifier.

The Session Identifier field is set by what has been defined in the selected EMI template. In this case, PRECOMP2.dot contains two sessions: Radiated and Conducted. To review the relationship between the selected EMI template and the Session Identifier bookmarks, switch to MS Word and choose Edit, Bookmark from the main menu. The Bookmark dialog displays all of the bookmarks used to create the PRECOMP2.dot template; note that Conducted and Radiated descriptions are in the position of <Session ID> as defined by the EMI template format.

EMI_<**Session ID**>_<DataItemName>_#

EMI_**Conducted**_<DataItemName>_1

EMI_**Radiated**_<DataItemName>_1

Create Report

Please select a report template:

C:\MSOFFICE\Templates\EMITemp\PRECOMP2.dot   [Select...]

For each session identifier shown below, please select the actual session from which to insert data:

Session Identifier	Actual Session	
Radiated	11/14/96 11:42:10 AM ▼	[Find...]
Conducted	11/14/96 11:30:57 AM ▼	[Find...]
	11/14/96 11:42:10 AM	
	11/14/96 11:30:57 AM	

The current report supports automatic insertion of the following data items:
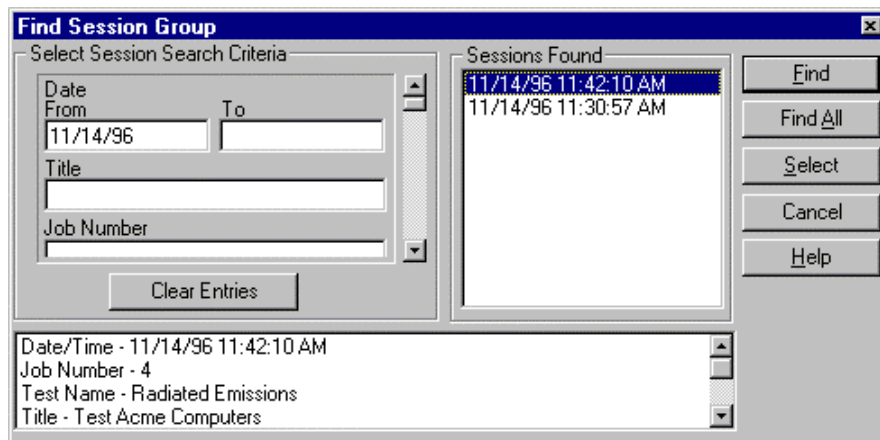
Session Identifier	Data Item To Insert
Radiated	Title
Radiated	EUT Name
Radiated	EUT Serial Number
Radiated	Site Description

☐ Prompt Before Each Insertion

[OK]   [Cancel]   [Help]

The Find button functions in conjunction with the Actual Session field in that it helps you limit the number of test sessions you need to work with in creating your report. When you have many test sessions in a file, the Find Session Group dialog box enables you to choose sessions based on specific criteria or you can review each session by the header information provided in the list area at the bottom of the dialog box. After making your selection of test sessions, choose the Select button and only these "selected" test sessions will remain in the Actual Session drop-down list box.

Find	Locates only the test sessions in the specified file which match the search criteria and places those sessions in the Sessions Found list.
Find All	Places *all* of the test sessions in the specified file in the Sessions Found list.
Select	Chooses *only* the highlighted test sessions to retain in the Actual Session drop-down list box (positioning them in date/time order). All other test sessions are removed from the list and the Find Session Group dialog box is closed.
Cancel	Closes the Find Session Group dialog box.
Clear Entries	Clears all entries from the Search Criteria fields, leaving them blank.

Session Identifier and Data Item to Insert Fields

The Session Identifier and Data Item To Insert fields at the bottom of the Create Report window display the bookmarks used in the selected EMI template for each type of test. It should be noted that this Session Identifier field corresponds directly to the Session Identifier field in the middle of the dialog box. As you scroll through the list of Data Item To Insert fields, note that these are the same fields as defined in the Bookmark dialog box in the MS Word document.

Prompt Before Each Insertion

The Prompt Before Each Insertion checkbox allows you to be prompted prior to the insertion of data, if checked, or leave unchecked if you want to fully utilize the auto-insertion report process. This feature can be useful when you are developing your own templates.

Editing Reports

When your report is created in MS Word for Windows, it is a Word document with a .DOC extension. You may open, close, save, or print this document in the same way you work with any Word document. Data within this document may now be edited using the standard Word commands. You may use Cut and Paste between the HP 85878A application and MS Word. This allows you to add items to your report in addition to those automatically inserted using Create Report.

You may give your report document any name you choose. Remember to use the .DOC extension, since it is now a document file rather than a template file. In MS Word, the EMI Report menu item is added.

Report Example

The following report example is based on the **sample.mdb** file provided with the HP 85878A application.

1. From the HP 85878A main menu, choose **File**, **Open** then select **sample.mdb** and click the **Open** button.

2. From the **File** menu, choose **Create Report.**

3. In the Create Report dialog box, choose the **Select** button, highlight **PRECOMP2.dot** as the report template, and then click the **Open** button.

4. For the Conducted Session Identifier, click on the Actual Session drop-down list box and highlight the test session **11/14/96 11:30:57 AM**.

   The Radiated and Conducted test session bookmarks predefined for the PRECOMP2.dot EMI template are displayed in the Session Identifier and Data Item To Insert fields at the bottom of the Create Report dialog box.

5. If you want a Prompt Before Each Insertion, click on the checkbox.

6. Click **OK** to start the report generation.

   The report you created from the sample.mdb file should resemble the one that appears below:

Creating Your Own Report Template

If your work site already has a predefined EMI report format, you may want to adapt your format into a report template. The automatic bookmarking feature in MS Word is what enables the automatic insertion of test session data into MS Word reports.

The tools described in the following sections have been provided so that template creation is simplified.

- Bookmark Format for HP 85878A Reports

- EMI Data Item Names

- Template Creation

- EMI Template Bookmarks

Bookmark Format for HP 85878A Reports

In an HP 85878A report, the bookmark format appears as:

EMI_<Session ID>_<DataItemName>_#

In general, each bookmark includes four components separated by three underlines. The first component is always "EMI" to indicate that it is an EMI bookmark. The second component is the session identifier. This is user-configurable to distinguish between different test data acquisition sessions; for information on how to create a session identifier, refer to the section "To add bookmarks to your template" later in this chapter. The third component is a description of individual EMI measurements that can be acquired from various HP EMI receivers, which is described in the next section "EMI Data Item Names." The fourth component is an integer ranging from 1 to 99 so that an EMI measurement can be inserted at different places in a report.

EMI Data Item Names

This section describes possible EMI data item names that can be inserted as the third bookmark component. Unless indicated by an asterisk (*) which means data inserted by user, these data items are obtained from EMI receivers.

Third Bookmark Component	Description
Annots	Annotations
InstrSettings	Instrument settings
LinearPlot	Linear plot
LogPlot	Log plot
ScreenCapture	Screen capture
SignalList	Signal list
TraceA	Trace A
TraceB	Trace B
TraceC	Trace C
CorrFactors	All correction factors
CorrFactorAnt	Antenna correction factor
CorrFactorCab	Cable correction factor
CorrFactorUsr	Amp Cor correction
CorrFactorOthr	Other correction factor
LimitLines	All limit lines
LimitLine1	Limit line 1
LimitLine2	Limit line 2
Header	All header data
Title	Title of the current EMI report
DateTime	Date/Time the EMI data are captured
JobNum	Job number *
TestName	Name of the current test *
EUTName	Equipment under test's name *

Third Bookmark Component	Description
EUTModelNum	Equipment under test's model number *
EUTSerNum	Equipment under test's serial *
AnalyzerModNum	Analyzer model number
AnalyzerSerNum	Analyzer serial number
SiteDescrpt	Test site description *
OperatorName	Operator name *
TestCompName	Test company name *
TestCompAddr	Test company address *
TestCompFax	Test company fax number *
TestCompEmail	Test company Email address *
CustomerName	Customer name *
CustomerAddr	Customer address *
CustomerPhone	Customer phone *
CustomerFax	Customer fax number *
CustomerEmail	Customer Email number *
Notes	Notes *

Template Creation

The following four procedures describe the process for creating your own template:

### To prepare a document for bookmarks

1. In MS Word, from the **File** menu, choose **New**.

2. In the New dialog box, select the **EMITemp** tab and highlight a template that is similar to what you want.

3. Choose the **Template** option from the Create New area then click **OK**.

    At the end of this step, the desired Microsoft Word document is opened and available for bookmark insertion.

To add the EMI Report menu to MS Word

A Microsoft Word macro named **rptmacrs.dot** is provided to facilitate the EMI bookmark creation. It resides in the HP 85878A executable directory. When active, this macro adds the EMI Report menu to the main menu bar. If this menu item is not visible, activate it using the following steps:

1. In MS Word, from the **File** menu, choose **Templates**.

2. Do one of the following:

    *   If the **rptmacrs.dot** is available in the Global Templates and Add-ins box, check its box and then click **OK**.

    *   The EMI Report should now be visible on the main menu bar.

    *   In the Global Templates and Add-ins box, choose the **Add** button, then use the Add Template dialog box to add the **rptmacrs.dot** in the HP 85878A executable directory.
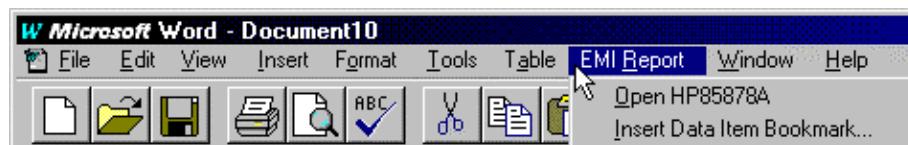
To add bookmarks to your template

1. Place the cursor at a desired location for a bookmark.

2. From the EMI Report menu, choose **Insert Data Item Bookmark**. The Insert Data Item Bookmark dialog box will appear.
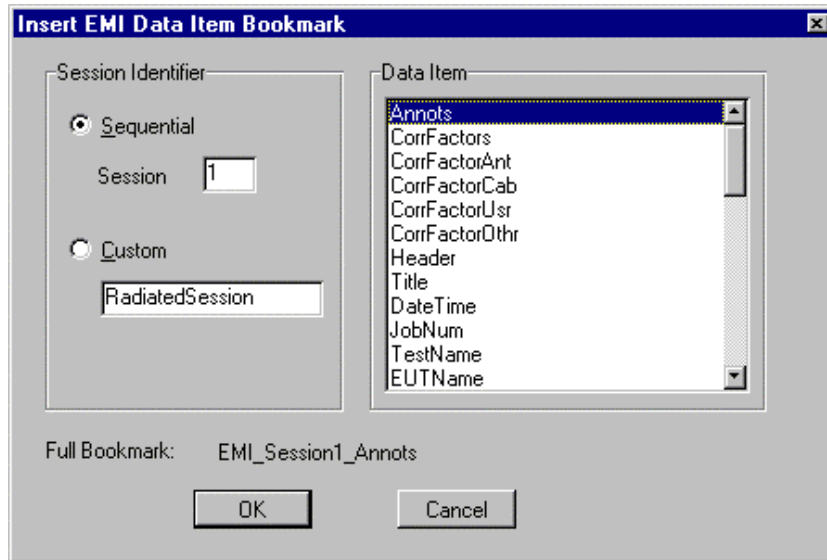
3. In the Session Identifier area, choose either the Sequential or Custom session option. If the Custom option is selected, the second bookmark component must be explicitly defined in the associated text box.

4. In the Data Item box, select the desired data item to be inserted at this bookmark.

5. Review the full bookmark entry displayed at the bottom of the window to make sure that the desired item is selected then click **OK**.

6. Repeat steps 3 through 5 until all desired bookmarks are added.

To save your new template

1. From the File menu, choose **Save As**.

2. In the File Name box, type a name for the new template.

3. In the Save In box, open the Templates folder in the folder in which you installed MS Office or Word.

4. In the Save As Type box, select Document Template (*.dot).
   Click the **Save** button to save your new template as another EMI template.

EMI Template Bookmarks

The bookmarks for the four EMI templates provided with the HP 85878A application are listed below.

PRECOMP1.dot Bookmarks

EMI_Radiated_Annots_1   EMI_Radiated_Title_1
EMI_Radiated_EUTName_1   EMI_Radiated_EUTSerNum_1
EMI_Radiated_SiteDescrpt_1   EMI_Radiated_OperatorName_1
EMI_Radiated_TestName_1   EMI_Radiated_DateTime_1
EMI_Radiated_Notes_1   EMI_Radiated_LogPlot_1
EMI_Radiated_SignalList_1

PRECOMP2.dot Bookmarks

EMI_Conducted_Annots   EMI_Conducted_LogPlot
EMI_Conducted_SignalList   EMI_Radiated_Annots_1
EMI_Radiated_Title_1   EMI_Radiated_EUTName_1
EMI_Radiated_EUTSerNum_1   EMI_Radiated_SiteDescrpt_1
EMI_Radiated_OperatorName_1   EMI_Radiated_TestName_1
EMI_Radiated_DateTime_1   EMI_Radiated_Notes_1
EMI_Radiated_LogPlot_1   EMI_Radiated_SignalList_1

COMP_FCC.dot Bookmarks

EMI_Conducted_CorrFators_1	EMI_Conducted_CustomerAddr_1
EMI_Conducted_CustomerEmail_1	EMI_Conducted_CustomerFax_1
EMI_Conducted_CustomerName_1	EMI_Conducted_CustomerName_2
EMI_Conducted_CustomerName_3	EMI_Conducted_CustomerName_4
EMI_Conducted_CustomerPhone_1	EMI_Conducted_EUTName_1
EMI_Conducted_OperatorName_1	EMI_Conducted_SignalList_1
EMI_Conducted_TestCompAddr_1	EMI_Conducted_TestCompEmail_1
EMI_Conducted_TestCompFax_1	EMI_Conducted_TestCompName_1
EMI_Conducted_TestCompPhone_1	EMI_Radiated_CorrFactorAnt_1
EMI_Radiated_SignalList_1	

COMP_EN.dot Bookmarks

EMI_ConductedCispr_CorrFactors_1	EMI_ConductedCispr_JobNum_1
EMI_ConductedCispr_ScreenCapture_1	EMI_ConductedCispr_SignalList_1
EMI_ConductedFcc_CorrFactors_1	EMI_ConductedFcc_CustomerAddr_1
EMI_ConductedFcc_CustomerName_1	EMI_ConductedFcc_DateTime_1
EMI_ConductedFcc_EUTModelNum_1	EMI_ConductedFcc_JobNum_1
EMI_ConductedFcc_OperatorName_1	EMI_ConductedFcc_ScreenCapture_1
EMI_ConductedFcc_SignalList_1	EMI_RadiatedFcc_Title_2
EMI_RadiatedCispr_CorrFactors_1	EMI_RadiatedCispr_DateTime_1
EMI_RadiatedCispr_EUTName_1	EMI_RadiatedCispr_EUTSerNum_1
EMI_RadiatedCispr_JobNum_1	EMI_RadiatedCispr_LogPlot_1
EMI_RadiatedCispr_SignalList_1	EMI_RadiatedCispr_Title_1
EMI_RadiatedFcc_CorrFactors_1	EMI_RadiatedFcc_DateTime_1
EMI_RadiatedFcc_EUTName_1	EMI_RadiatedFcc_EUTSerNum_1
EMI_RadiatedFcc_JobNum_1	EMI_RadiatedFcc_JobNum_2
EMI_RadiatedFcc_LogPlot_1	EMI_RadiatedFcc_SignalList_1
EMI_RadiatedFcc_TestName_1	EMI_RadiatedFcc_Title_1

Chapter 4

Editing Data

There are three data items in which you can edit: all but three fields in the header pane, the Comments field in the Signal List data item, and the text field in the Annotation data item.

The topics described in this chapter include:

- Header Information Editing
- Comments Field (Signal List) Editing
- Annotation Editing

To open and view the contents of data items, you can double-click on the icons displayed in the session pane. For editing purposes in the Annotation and Signal List data items, you can use the Cut, Copy, Paste, and Select All commands from the Edit menu.

Header Information Editing

All of the fields within the header pane can be edited, except for:

- Date/Time

- Analyzer Model Number

- Analyzer Serial Number

These fields come entirely from the measuring receiver at the time of data capture.

All remaining fields can be edited from within the header pane and may contain up to 255 characters, except for the Notes field, which may contain up to 65536 characters. You can tab from one field to another, or use the scroll bars in the header pane to see additional fields.

After you click on the field you wish to edit, you can perform edit operations such as typing, deleting, or moving text. The Cut, Copy, and Paste commands in the main Edit menu will work on the header fields. The Delete menu item is for data items, sessions, and session groups, not for text. The Delete key on the keyboard allows you to delete text from header fields, or Edit, Undo Typing allows you to undo the most recent typing.
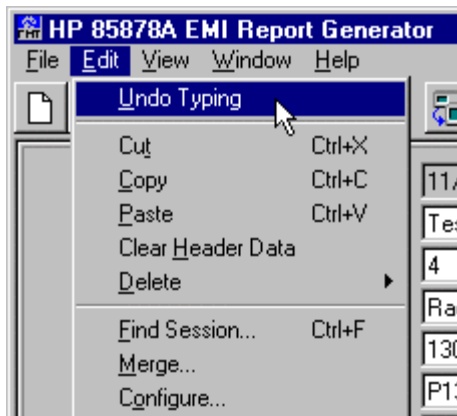
After you have made changes to the header fields, the changes are saved when changing to another text field, switching to another session tab, or changing the focus to another area. Your changes are also saved automatically when you perform a drag and drop operation.

All editable header fields may be cleared by using the Clear Header Data menu item from the Edit menu. When selected, all the editable data in the currently active header is erased. You can perform an Undo Clear Header Data as long as you remain within the session where the Clear Header Data action was performed; as soon as you change to another session, the undo buffer is cleared.

It should be noted that the Session Header data item *cannot* be edited but only displays header information that has been either captured with a test session or edited through the header pane fields as described above. This data item has been provided to enable you to easily copy and paste multiple parts of the header information into other applications.

Comments Field (Signal List) Editing

Only the Comments field of the Signal List data item is editable within its window. Open the signal list window by double-clicking on the Signal List data item icon. Position the cursor in the desired Comments field then double-click to initiate the editing mode. You can now perform any text editing operation: typing text, deleting text, cutting and pasting text, and so on. The Cut, Copy, Paste, and Select All commands in the signal list Edit menu also will work on the comments fields, as well as normal keyboard and mouse editing actions.
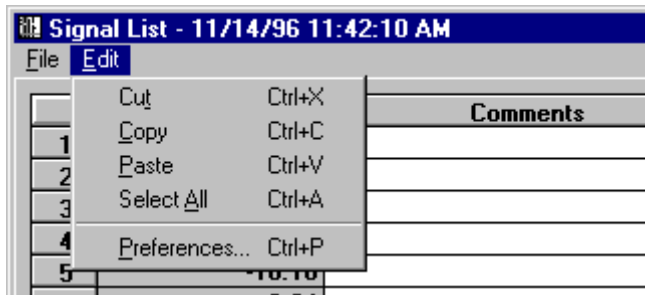
The maximum number of characters that can be contained in the comments field is 255. The changes to the comments are automatically saved when you move to another field.

For example, in the following illustration, the cursor is set in the comments field in the first row of the signal list. In this example, the comments added are "clock fundamental."

Signal List - 11/14/96 11:42:10 AM

File Edit

	Corrections (dB)	Comments
1	-15.20	clock fundamental
2	-11.17	
3	-10.58	
4	-10.10	
5	-10.10	
6	-8.84	
7	-8.84	
8	-8.77	
9	-8.31	
10	-7.19	
11	-6.66	
12	-6.66	
13	-5.84	
14	-5.84	
15	-5.84	
16	-4.92	

Annotation Editing

Open the Annotation window by double-clicking on the Annotation data item icon. The Annotation window opens as an editable and scrollable text field. You can perform any text editing operation: typing text, deleting text, cutting and pasting text, and so on. The Cut, Copy, Paste, and Select All commands in the Annotation Edit menu work in the annotation text field, as well as normal keyboard and mouse editing actions.
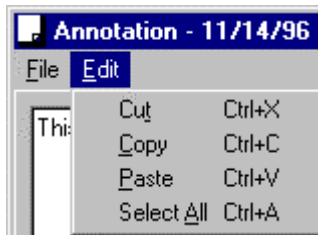
The changes to the text are automatically saved when you close the window. Changes are also saved when you perform a drag and drop operation.

For example, in the illustration below, the text added here in the Annotation data item will appear in the Annotation area of the report.
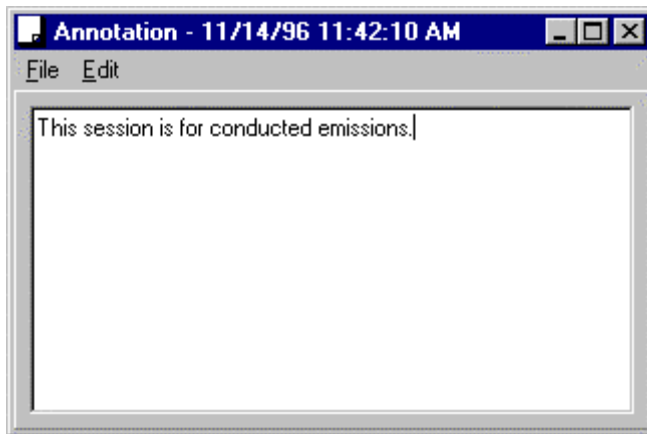
Chapter 5

Viewing Data

After you have acquired data from the receiver, each of the data items you selected may be accessed and viewed. This chapter describes how to display the contents of each data item type. It also describes how to view header data in two ways: through the header pane and through the header data item.
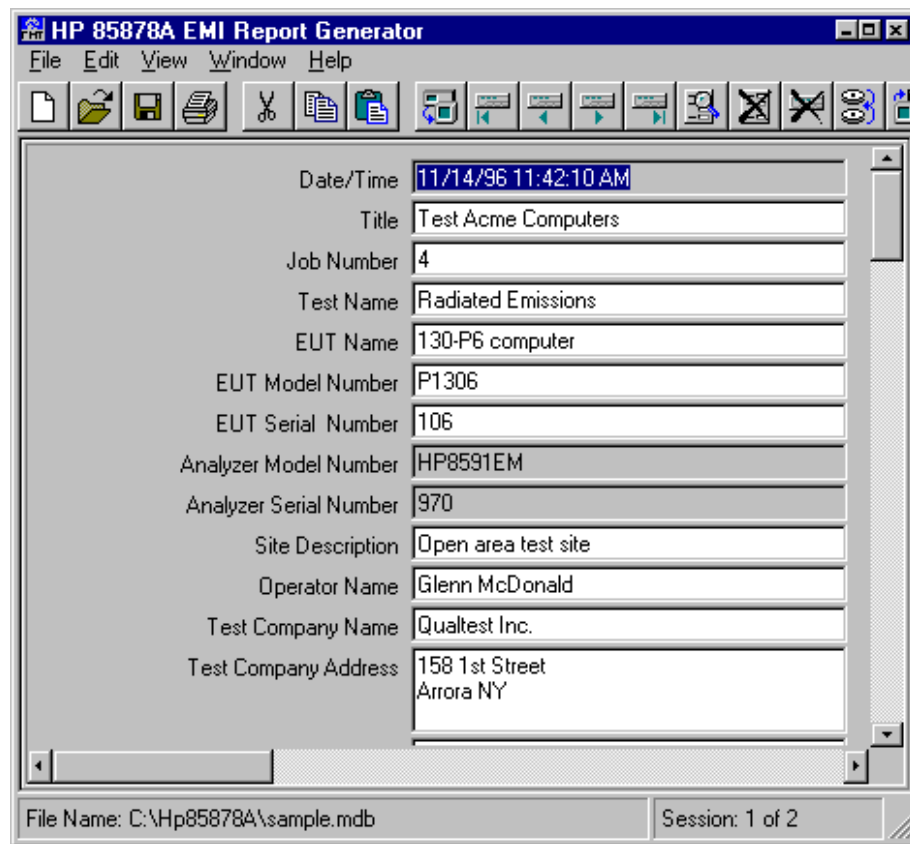
The topics explained in this chapter include:

- Viewing the Header Pane
- Changing the Header and Session Pane Display
- Opening and Viewing Data Items
    - ◊ Data Item Menus
    - ◊ Screen Capture
    - ◊ Signal List
    - ◊ Correction Factors
    - ◊ Limit Lines
    - ◊ Annotation
    - ◊ Session Header
    - ◊ Linear Plot
    - ◊ Log Plot
    - ◊ Trace A, Trace B, and Trace C
    - ◊ Instrument Settings

Viewing the Header Pane

The header pane is the upper section of the HP 85878A main window associated with a test session. Use the header pane fields to identify and keep track of test session data; you do not have to use all the fields that appear in the header pane.

The header is the only data item that you can view in two ways: in the header pane and in the Session Header data item window found in the session pane. The Session Header data item window is provided to give the user the ability to easily copy and paste multiple parts of the header information into other applications. You may also copy and paste individual fields one at a time from the header pane itself.

In the header pane, all fields are editable except for Date/Time, Analyzer Model Number, and Analyzer Serial Number. The date and time is taken from the receiver clock at the time of data capture. The Session Header data item can only be viewed, it *cannot* be edited.

The header pane consists of the following fields:

- Date/Time (of the Get Data)
- Title
- Job Number
- Test Name
- EUT Name
- EUT Model Number
- EUT Serial Number
- Analyzer Model Number
- Analyzer Serial Number
- Site Description
- Operator Name
- Test Company Name
- Test Company Address
- Test Company Phone Number
- Test Company Fax Number
- Test Company Email
- Customer Name
- Customer Address
- Customer Phone Number
- Customer Fax Number
- Customer Email
- Notes

Changing the Header and Session Pane Appearance

You can change the header and session pane appearance by using the Edit, Configure menu item. The View tab on this dialog box allows you to change the session tab labels and order of fields in the header pane, in the current session.

If you scroll through the Session Tab Labels field, you can select the label that will appear on your session pane tabs. For instance, you can select Test Name as the session pane tab, instead of the Date/Time. This would then display the test name you assigned on your session tabs, such as Radiated Emissions, Conducted Emissions, and so on.
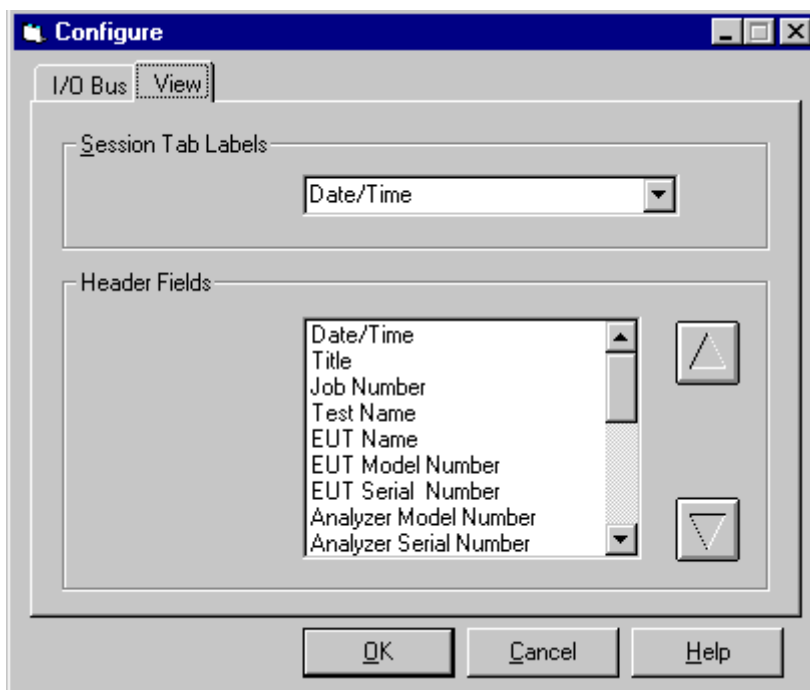
If you scroll through the Header Fields display, you can choose to rearrange the order of header fields. You can select one of the header fields, and move it up or down the list, using the arrow buttons. The example below shows the field Operator Name being moved up the list, to the spot immediately after the Date/Time. If you find that certain header fields are used more often, you may find this customization option helpful for you.

Date/Time	10/9/96 3:49:43 PM
Operator Name	Operator #1
Title	
Job Number	

Opening and Viewing Data Items

Test sessions consist of 2 to 12 individual data items. Each item is represented in the session pane as an icon. When double-clicked, each data item opens up a window for viewing. Clicking the right mouse button on a data item then selecting Open also opens up a window for viewing. This section describes the data item windows for:

- Screen Capture
- Signal List
- Linear Plot
- Log Plot
- Trace A
- Trace B

- Trace C
- Instrument Settings
- Correction Factors
- Limit Lines
- Annotation
- Session Header
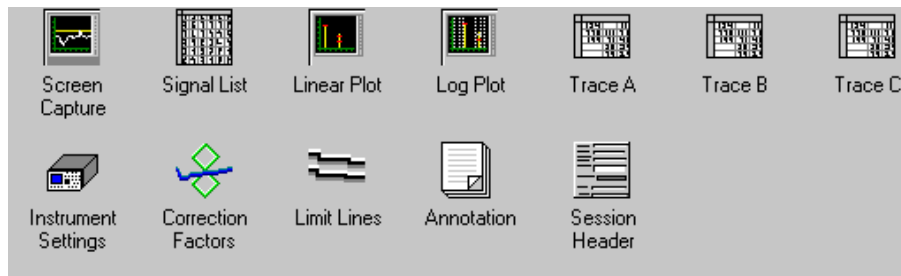
Clicking the right mouse button brings up the following menu selections for all of the data items except for Session Header:
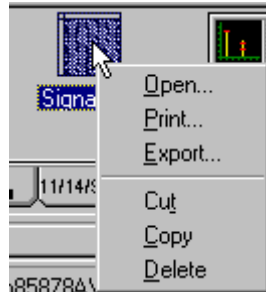
Open	Is the same as double-clicking the data item which opens up a window for viewing its contents.
Print	Brings up the Print dialog box which allows you the option of specifying another printer and associated properties and the number of copies you would like.
Export	Brings up the Export dialog box which allows you the option of specifying the destination directory, filename, and format option of the data item being exported.
Cut	Copies the entire data item to the Clipboard and removes it from the current test session.
Copy	Copies the entire data item to the Clipboard.
Delete	Removes the entire data item from the current test session.

Session Header does not have the Cut and Delete menu items available.

Data Item Menus

Each data item window has a File menu.
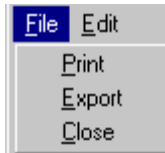
File menu for **all** data items

Non-editable text item windows have an Edit menu of Copy and Select All.

Edit menu for non-editable text data items

Non-editable graph item windows have an Edit menu of Copy only.
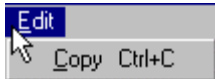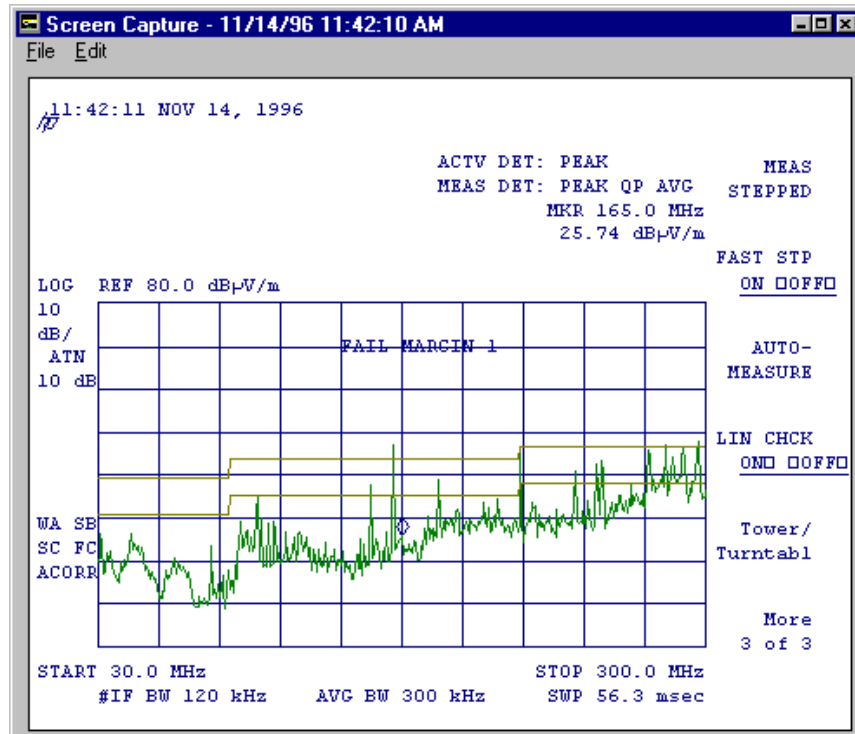
Edit menu for non-editable graph data items

Editable item windows (that is, Annotation and Signal List only) have an Edit menu of Cut, Copy, Paste, and Select All. The Edit menu for the Signal List data item also has the Preferences menu which allows you to add, remove, or reorder the column definitions.
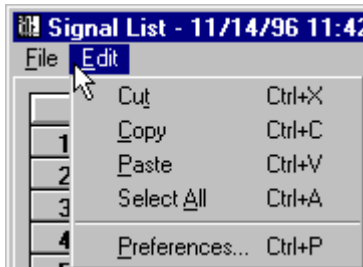
Edit Menu for Editable Data Items
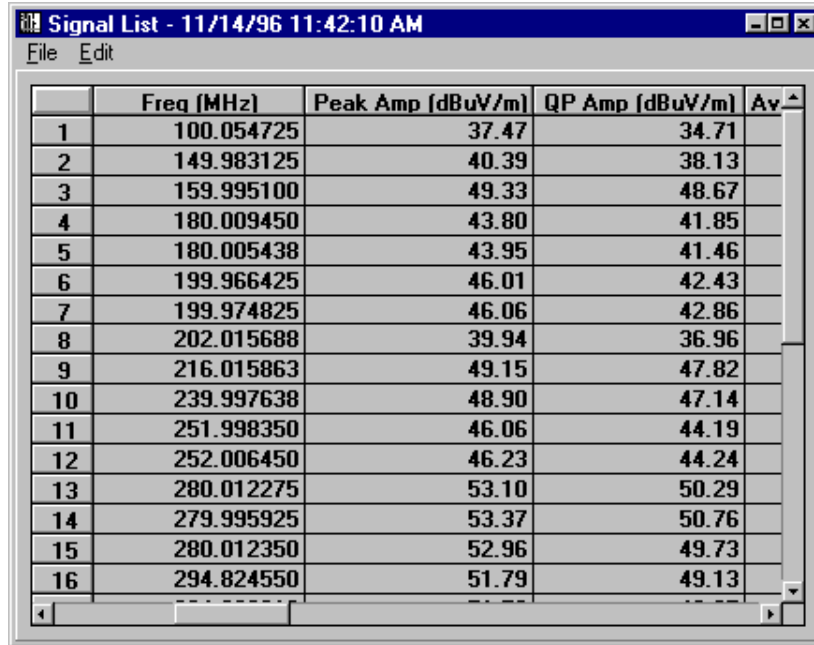
Screen Capture

The screen capture is an image of what appears on the screen of the measuring receiver. This data item is not editable but can be resized.

Signal List

The Signal List data item consists of a table as shown below:

You can resize the signal list, or adjust the width of the columns. Adjust the column width by positioning your cursor in the column heading area between two columns until the sizing arrows appear, then use these arrows to set the desired width.

The scroll bars allow you to view the defined columns. For instance, to get the displayed signal list below, you would scroll to the right to see the Comments field.

The signal list comments field is editable. The Edit menu for the signal list contains the following selections:
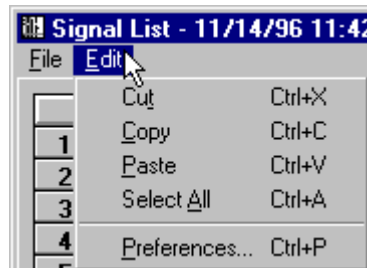
The Edit, Preferences selection accesses the Signal List Column Definition dialog box which enables you to add, remove, or reorder the columns. When you highlight a column description in the Available Columns field, you can add or append that column to the display by using the Add and Append buttons. When you highlight a column in the Displayed Columns field, you can remove or reposition that column by using the Remove button or up and down arrows. When you are satisfied with the column arrangement, click Apply to set up the new signal list order.
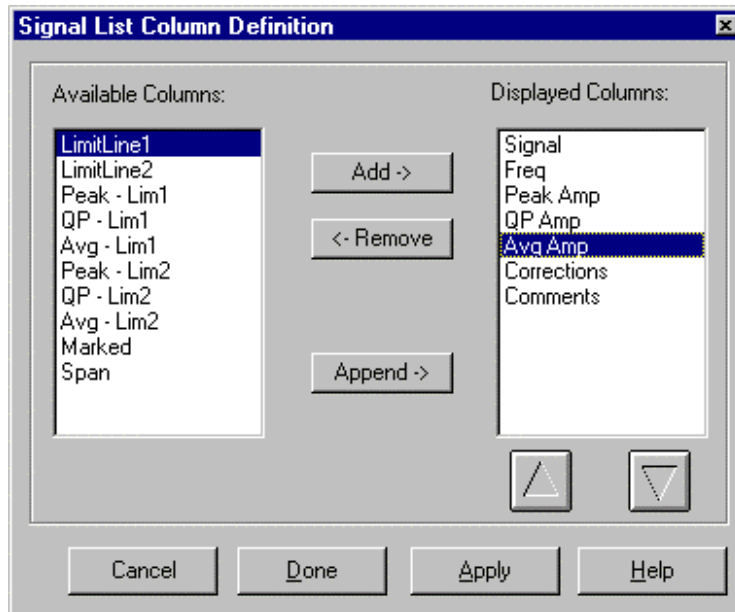
Add   Adds the highlighted column to the Displayed Columns list. If a column is highlighted in the Displayed Columns list, then the added column is positioned directly above it. If no column is highlighted in the Displayed Columns list, then the added column is positioned at the top of the list.

Remove Removes the highlighted column from the Displayed Columns list. If a column is highlighted in the Available Columns list, then the removed column is positioned directly above it. If no column is highlighted in the Available Columns list, then the removed column is positioned at the top of the list.

Append Adds the highlighted column to the bottom of the Displayed Columns list.

Up/Down (Arrows) move the highlighted Displayed Column up or down by one position with each click.

Cancel Exits the Signal List Column Definition dialog box without performing any action.

Done   Applies any column changes and exits the window.

**Apply**   Applies any column changes without exiting the window.

The signal list is sorted by the first column in the Displayed Columns field. When the signal list data item window is initially opened, the following five columns are displayed: signal (number), frequency (MHz), peak amplitude, QP amplitude, and average amplitude. If the data item window is closed and reopened, it retains its previous column configuration. No data can be edited by the user except for the data in the Comments column.

The 17 signal list columns available are:

Signal   Number representing the order of the signal when the data was acquired

Freq   Frequency of the signal (MHz)

Peak Amp   Peak amplitude

QP Amp   Quasi-peak amplitude

Avg Amp   Average amplitude

LimitLine1   Amplitude value of limit line 1

LimitLine2   Amplitude value of limit line 2

Corrections   Total amplitude of corrections applied to the signal (dB)

Peak - Lim1   Peak limit line 1 subtracted from the corrected peak amplitude of the signal

QP - Lim1   Quasi-peak limit line 1 subtracted from the corrected quasi-peak amplitude of the signal

Avg - Lim1   Average limit line 1 subtracted from the corrected average amplitude of the signal

Peak - Lim2   Peak limit line 2 subtracted from the corrected peak amplitude of the signal

QP - Lim2   Quasi-peak limit line 2 subtracted from the corrected quasi-peak amplitude of the signal

Avg - Lim2   Average limit line 2 subtracted from the corrected average amplitude of the signal

Marked   User-defined flag

Span   Frequency span of the receiver when the center frequency was selected during an automated measurement

Comments   Comment added by user, otherwise, field remains blank

Linear Plot

The linear plot is an image of what appears on the screen of the measuring receiver when it is plotting the signal list on a linear frequency scale. This data item is not editable but can be resized.
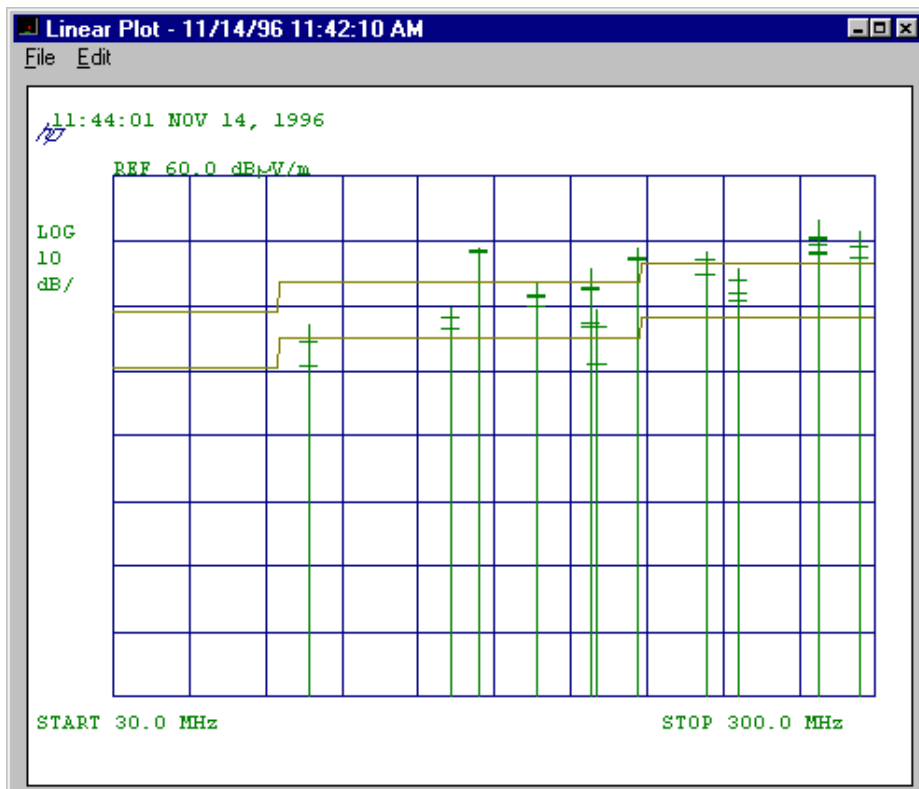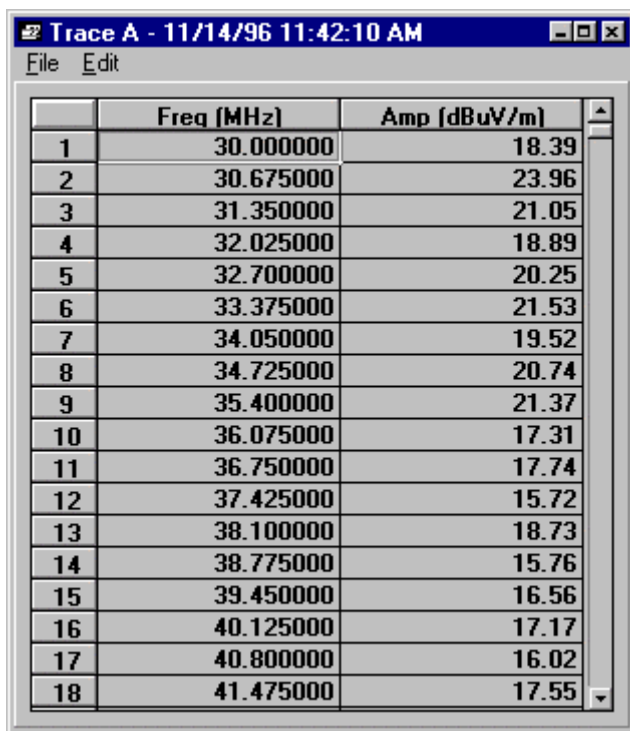
Log Plot

The log plot is an image of what appears on the screen of the measuring receiver when it is plotting the signal list on a log frequency scale. This data item is not editable but can be resized.
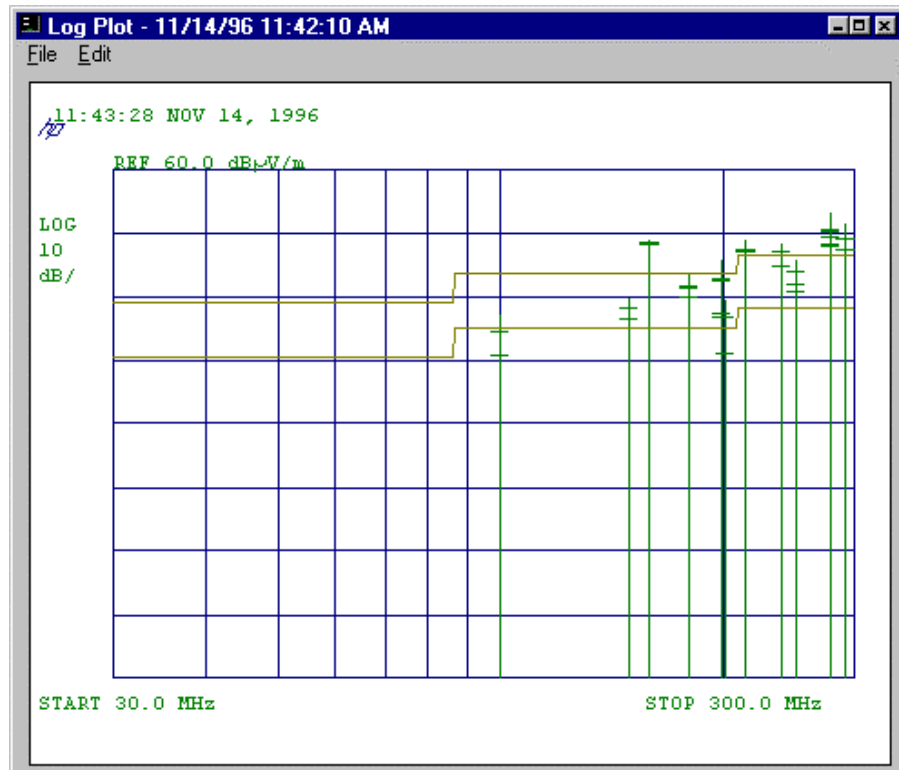
Trace A, Trace B, and Trace C

Trace data in the HP 8590EM Series analyzers and the HP 8540A/E Series receivers consists of 401 points of frequency and amplitude pairs. When in linear frequency scale, the frequency points are evenly spaced between the start and stop frequencies of the instrument. In log frequency scale, the frequency numbers are logarithmically spaced. The trace data is displayed in the Trace A, Trace B, and Trace C data item windows. (Trace A is shown below.) These data items are not editable but can be resized. To adjust the column width, move your cursor to the column heading area until the sizing arrows appear, then use these arrows to set the desired width.
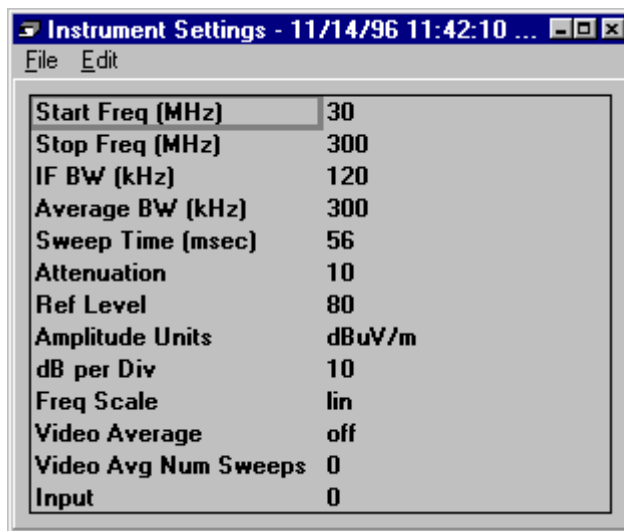
	Freq (MHz)	Amp (dBuV/m)
1	30.000000	18.39
2	30.675000	23.96
3	31.350000	21.05
4	32.025000	18.89
5	32.700000	20.25
6	33.375000	21.53
7	34.050000	19.52
8	34.725000	20.74
9	35.400000	21.37
10	36.075000	17.31
11	36.750000	17.74
12	37.425000	15.72
13	38.100000	18.73
14	38.775000	15.76
15	39.450000	16.56
16	40.125000	17.17
17	40.800000	16.02
18	41.475000	17.55

Trace A - 11/14/96 11:42:10 AM
File Edit

Instrument Settings

The main instrument settings for the test sessions you are recording are the ones the instrument was using at the time you captured data. These settings match the data on the screen capture and on Trace A, Trace B, and Trace C.

The instrument setting information is displayed as shown below. This data item is not editable but can be resized.
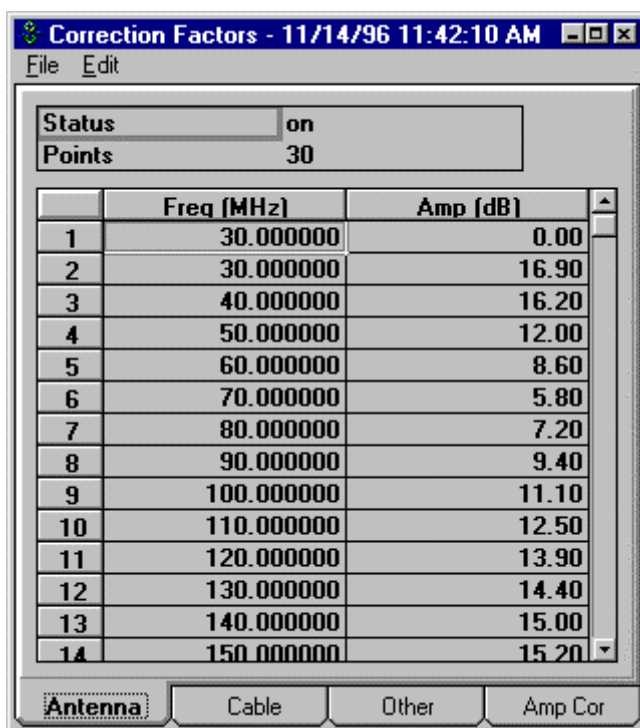
The instrument settings include:

- Start frequency
- Stop frequency
- IF bandwidth
- Average bandwidth
- Sweep time
- Attenuation
- Reference level

- Amplitude units
- dB per division
- Frequency scale
- Video average status
- Video average number of sweeps
- Input

Correction Factors

The HP 8590EM Series analyzers and the HP 8540A/E Series receivers can contain up to four independent sets of corrections factors designated as Antenna, Cable, Other, and Amplitude Correction. The correction factors consist of a description of the correction factor and a table of frequency-amplitude points. The correction factors are displayed as shown below. This data item is not editable but can be resized. To adjust the column width, move your cursor to the column heading area until the sizing arrows appear, then use these arrows to set the desired column width.
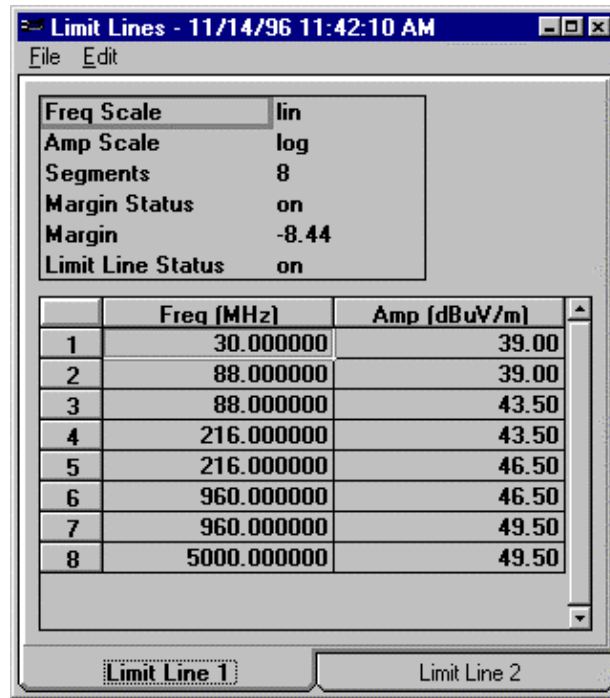
	Freq [MHz]	Amp [dB]
1	30.000000	0.00
2	30.000000	16.90
3	40.000000	16.20
4	50.000000	12.00
5	60.000000	8.60
6	70.000000	5.80
7	80.000000	7.20
8	90.000000	9.40
9	100.000000	11.10
10	110.000000	12.50
11	120.000000	13.90
12	130.000000	14.40
13	140.000000	15.00
14	150.000000	15.20

Status: on
Points: 30

Tabs: Antenna | Cable | Other | Amp Cor

The correction factors include:

- Status (corrections on or off)
- Points (number of)
- Frequency and amplitude pairs
- Type (Antenna, Cable, Other, and Amp Cor)

Limit Lines

There can be either 1 or 2 limit lines stored in the HP 8590EM Series analyzers and the HP 8540A/E Series receivers while in EMI receiver mode. If available, both the limit-line description and the limit-line segment table are displayed for limits 1 and 2 as shown below. This data item is not editable but can be resized. To adjust the column width, move your cursor to the column heading until the sizing arrows appear. You can then use these arrows to change the column width.

The limit line description reflects the settings used by the receiver at the time of data acquisition.

- Frequency Scale, linear or logarithmic
- Amplitude Scale, linear or logarithmic
- Segments, number of
- Margin Status, on or off
- Margin, value of
- Limit Line Status, on or off

Annotation

The annotation consists of ASCII text typed into the measuring receiver from the receiver's plug-in keyboard. This annotation is fully editable from the HP 85878A software as a single text field. Although annotation in the HP 8590EM Series analyzers and HP 8540A/E Series receivers are limited to 1024 characters, this text can be edited from the HP 85878A to a total of 8000 characters of text.
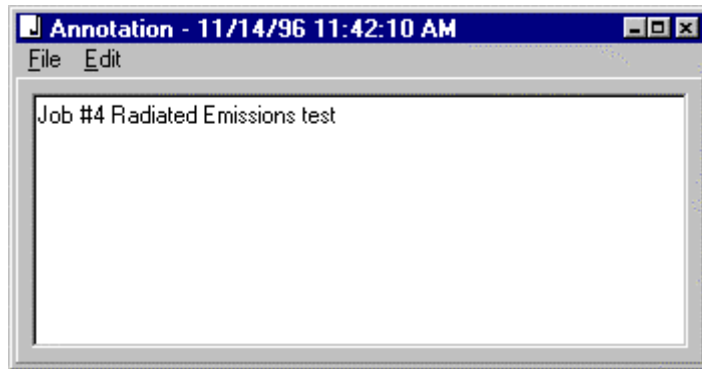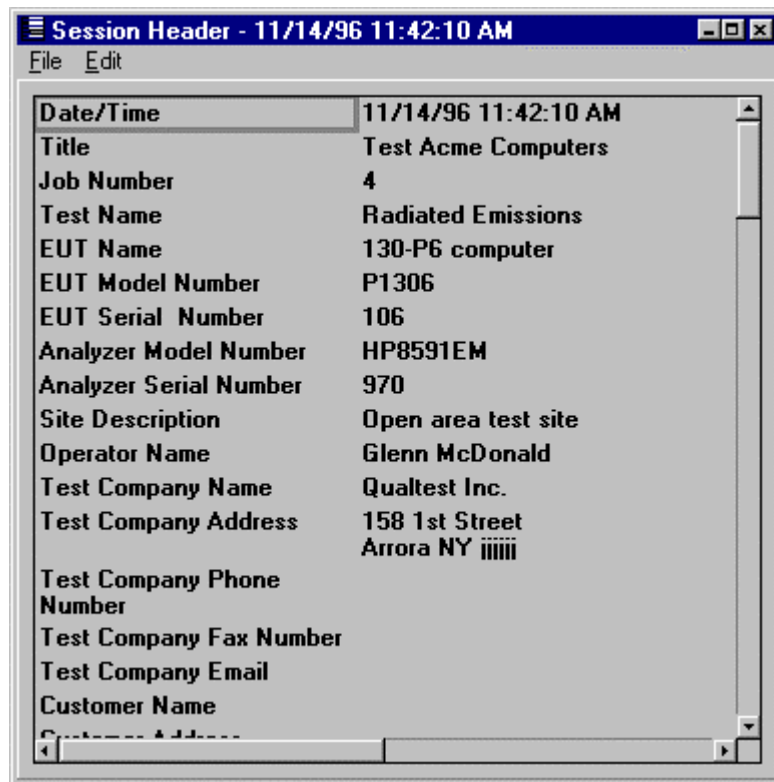
Session Header

Session Header is the only data item that you can view in two ways: in the header pane and in its data item window. The data item window allows you to copy and paste parts of the header information into other applications.

You can only change the header data through the header pane. Within the Session Header data item window, the fields are not editable. The window may be resized.

The order in which the header data fields appear can be changed by the user. The Edit, Configure menu item in the HP 85878A main window provides this capability. Refer to the section on "Changing the Header and Session Pane Appearance" at the beginning of this chapter for more information.

Chapter 6

Managing Files and Sessions

In your work environment, you may generate a number of test results. The HP 85878A software allows you to save test results in a file consisting of individual test sessions. It is up to you how you combine test sessions within a file: one test session per file, or twenty test sessions per file. As hundreds of test sessions are saved, you may find the speed of access to slow down. After you have stored the test sessions, you can go back and search through the file using the criteria you specify. You can then select and delete test sessions, or select test sessions from other files to merge into the current file.

This chapter describes how to accomplish the following tasks from within the HP 85878A software:

- Creating New Files
- Opening Files
- Saving Files
  ◊ Saving Header Data
- Finding Sessions
  ◊ Search Criteria
- Merging Sessions
- Deleting Data
  ◊ Item
  ◊ Session
  ◊ Session Group
  ◊ Header Data
  ◊ Undo a Delete
- Maintaining Files
  ◊ Repairing a File
  ◊ Compacting a File

Creating New Files

A new (empty) file can be created in which to capture new sessions or to save previously captured sessions as a new group. (Refer to "Merging Sessions" later in this chapter.) When a new file is created, it displays: blank header fields, an unlabeled tab, and the new filename (with its full directory path in the status bar at the bottom of the window).
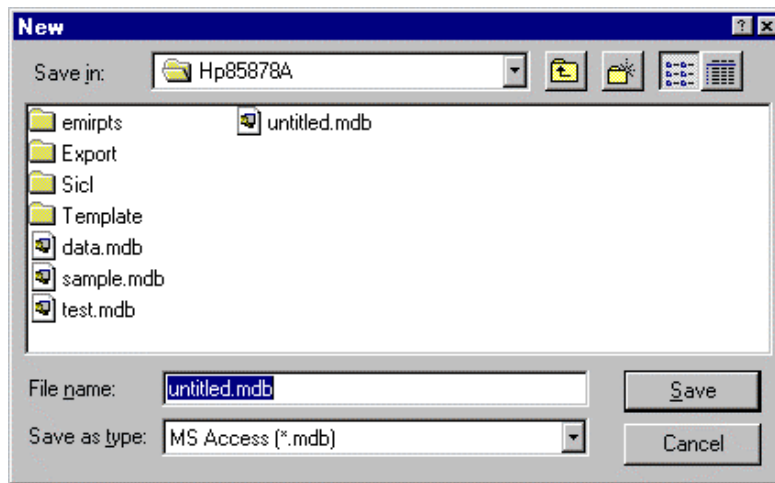
To create a new file

1. Do one of the following:

   - On the toolbar, click the New icon.

   - From the File menu, choose New.

2. Select the directory from the Save in drop-down list box in which you want to save the file.

3. Type a filename in the File Name box.

4. Choose the Save button.

Opening Files

A file previously created and saved may be opened at any time using File, Open. The opened file now becomes the active and current file. When the application is started, it automatically attempts to open the file that was open when the application was last exited. If the previously opened file is unavailable or no longer valid, you will be given the option of selecting a different file to open.
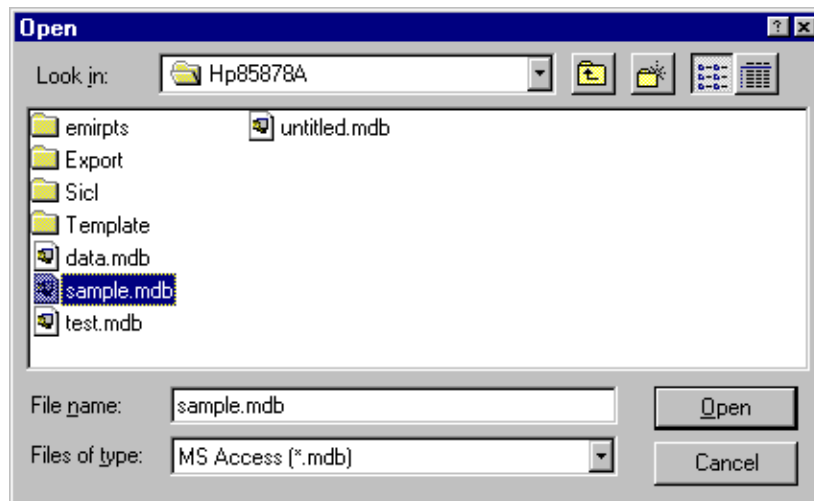
To open an existing file

1. Do one of the following:

    • On the toolbar, click the Open icon.

    • From the File menu, choose Open.

2. In the list area, select the name of the file you want to open.

    If you do not see the file you want to open, select a new drive or directory from the Look In drop-down list box.

3. Choose the Open button.

Saving Files

All session data acquired from the Get Data operation is saved to the open file immediately after the acquisition. Any edits done in a specific data item window is saved when the window is closed. Any unsaved data, whether in a data item window or the header pane, is saved when the application is exited properly.

Therefore, the only time you would need to explicitly save a file would be when creating a duplicate file using the File, Save As menu selection.
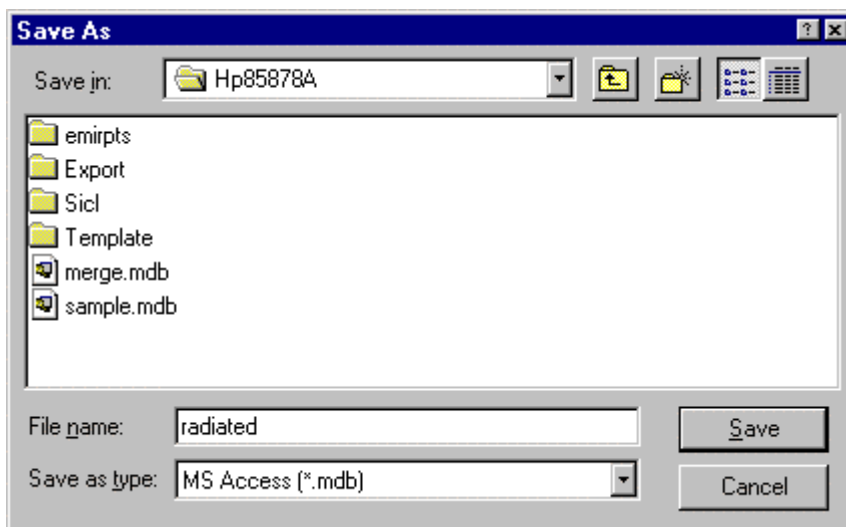
To save a new file

1. From the File menu, choose Save As.

2. Select the directory in which you want to save the file from the Save in drop-down list.

3. Type a filename in the File Name box.

4. Choose the Save button.

Saving Header Data

The File, Save menu selection (or Save icon in the toolbar) is for saving header data only. When editing any of the header data fields, you can save the new information by either selecting File, Save or selecting another session as the active session.

To save header data

1. Make your changes to the header data fields.

2. Do one of the following:

    • On the toolbar, click the Save icon.

    • From the File menu, choose Save.

Finding Sessions

The current file can be searched for specific information. To search for a session, use either the Edit, Find Session menu item or the Find Session icon on the toolbar. The Find Session dialog box will appear which allows you to fill in certain fields which need to be matched. Entries in these fields can include text, which will be matched precisely, and the wildcards: question mark (?), asterisk (*), number sign (#), range of characters ([chars]), and outside a range of characters ([!chars]). If multiple fields are used as search criteria, then the test session must match *all* selected fields.

```
┌─ Find Session ─────────────────────────────── ⊠ ┐
│ ┌─Select Session Search Criteria────────┐           │
│ │ ┌Date─────────────────────────┐  ▲     ┌─────────┐ │
│ │ │ From          To             │  ▐     │  Find   │ │
│ │ │ │3/96       │  │11/96      │  │        └─────────┘ │
│ │ │                              │        ┌─────────┐ │
│ │ │ Title                        │        │ Cancel  │ │
│ │ │ │                          │  │        └─────────┘ │
│ │ │                              │        ┌─────────┐ │
│ │ │ Job Number                   │        │  Help   │ │
│ │ │ │                          │  ▼     └─────────┘ │
│ │ └──────────────────────────────┘                  │
│ │        ┌─── Clear Entries ───┐                     │
│ │        └─────────────────────┘                     │
│ └────────────────────────────────────────────────┘   │
└───────────────────────────────────────────────────────┘
```
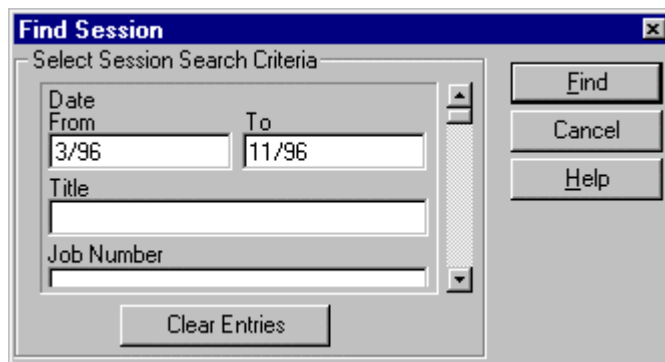
Find	Locates only the test sessions in the current file which match the search criteria.
Clear Entries	Removes all entries from the Search Criteria fields, leaving them blank.

To use the search function, choose a search criteria field and enter the appropriate information for that field. Select the Find button to initiate the search. The search begins from the active session to the right looking for a match. If no match is found, there is no change in the application. If a match is found, that session becomes the active session. Selecting the Find button again performs the same search for the next session to the right which matches. The search does not wrap around; that is, the search begins at the next session to the right and continues until the end of the file is reached. In order to search the beginning of the file, you must choose the first session to the farthest left and perform the search again.

Session Searching Example

The search function allows you to find a specific session in the current file. For example, if you had been capturing test data into one file on a daily basis for a month's period of time and you wanted to review the data taken on the 15th day of that month, you would use a procedure as follows:

1. Click on the first tabbed session on the far left in order to begin your search from the most recent session. Remember, the search process moves from left to right to the end of the file.

2. From the Edit menu, choose Find Session to access the Find Session dialog box.

3. In the Date From box, enter in the 15th day of the month for which you are searching in the format *mm/dd/yy*.

4. Click on the Find button to initiate the search.

5. The tabbed session with the 15th day of the month displayed on the label will now become the active session.

6. Click on the Cancel button to close the Find Session dialog box.

Search Criteria

The search criteria fields are:

- Date
- Title
- Job Number
- Test Name
- EUT Name
- EUT Model Number
- EUT Serial Number
- Operator Name
- Site Description
- Test Company Name
- Customer Name

Conventions for entering in dates as search criteria are as follows:

- Date must be formatted as either month, day, and year (mm/dd/yy) or month and year (mm/yy)

- Separators between numbers can only be either a forward slash (/) or a blank space

Note If only entering a "From" date as search criteria, the search starts from that date and ends with the most recent date.

More complex searches may be done using wildcard characters and expressions. The following is a list of the available wildcard characters and the number of digits or strings they match:

Wildcard Characters	Matches in expression
?	Any single character
*	Zero or more characters
#	Any single digit (0 through 9)
[chars]	Any single character in chars
[!chars]	Any single character not in chars

You may use an expression that contains any combination of characters and operators (that is, wildcard characters) to specify a search pattern. An expression can be simple, such as **j?b**, which finds any three-letter word beginning with "j" and ending with "b," or it can be complex, with several parts enclosed in parentheses, which are individually evaluated.

The following table shows examples of test expressions for different patterns.

| Kind of match	Pattern	Match (True)	No match (False)
Multiple characters	"a*a"	"aa", "aBa",	"aBC"
	"*ab*"	"abc", "AABB",	"aZb", "bac"
Special character	"a[*]a"	"a*a"	"aaa"
Multiple characters	"ab*"	"abcdefg", "abc"	"cab", "aab"
Single character	"a?a"	"aaa", "a3a", "aBa"	"aBBBa"
Single digit	"a#a"	"a0a", "a1a", "a2a"	"aaa", "a10a"
Range of characters	"[a-z]"	"f", "p", "j"	"2", "&"
Outside a range	"[!a-z]"	"9", "&", "%"	"b", "a"
Not a digit	"[!0-9]"	"A", "a", "&", "~"	"0", "1", "9"
Combined	"a[!b-m]"	"An9", "az0",	"abc", "aj0"

To find a session

1. From the File menu, choose Find Session.

2. Choose a search criteria field and enter the appropriate information for which you want to search on.

3. Choose the Find button.

4. When you finish searching for sessions, choose the Cancel button to close the window.

Merging Sessions

One or more test sessions from previously-created files in this application can be merged into the open file. Selecting either the Edit, Merge menu item or the Merge icon in the toolbar brings up the Merge Sessions dialog box. You can then use the Browse button to identify a file in which to search for test sessions of interest. After specifying the search criteria, push the Find button and any matching sessions will appear in the Sessions Found list area.

Each session can be individually selected in the Sessions Found list and its associated header will be displayed in the list box at the bottom of the Merge Sessions dialog box. In order to merge a session or group of sessions from the displayed list, the session(s) need to be highlighted using click, shift-click, or control-click from the mouse. When the Merge button is selected, the sessions are added to the open file sorted by date/time order, and the file is automatically saved.
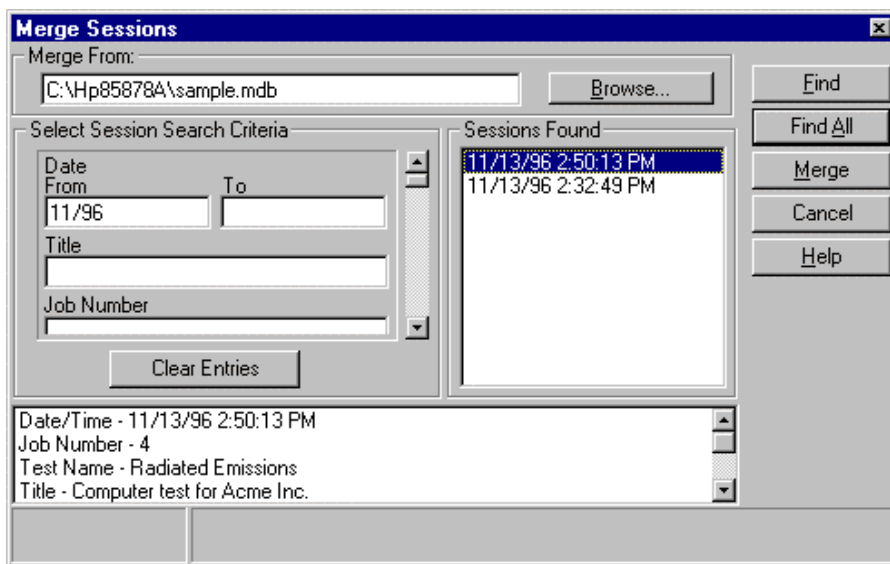
Browse	Accesses the Open dialog box to specify the file in which to merge sessions from.
Find	Locates only the test sessions in the specified file which match the search criteria and places those sessions in the Sessions Found list.

|	
Find All	Places *all* of the test sessions in the specified file in the Sessions Found list.
Merge	Performs the merge by copying the selected session(s) to the open file (positioning them in date/time order).
Cancel	Closes the Merge Sessions dialog box.
Clear Entries	Clears all entries from the Search Criteria fields, leaving them blank.

Merge Sessions Example

The merge function allows you to combine similar sessions from many different files into one file. For example, if you wanted to compare radiated emissions tests from different files and place these sessions in a file named "Radiated," you would use a procedure as follows:

1. Create a new file by choosing **File**, **New** then enter in the filename **Radiated** and choose the **Save** button.

2. From the main menu, select **Edit**, **Merge** to open the Merge Sessions dialog box.

3. Use the **Browse** button to select the file to be used in the Merge From field.

4. Select the Test Name search criteria field and enter **Radiated Emissions**, then choose the **Find** button. All sessions that match the test name Radiated Emissions will be placed in the Sessions Found list area.

5. From the Sessions Found list area, select the desired radiated emissions sessions to be placed into the Radiated file created in step 1 then choose the **Merge** button to copy these sessions to the file.

6. Use the **Browse** button again to select the next file, then simply click on the **Find** button to locate any radiated emissions sessions in this file; the search criteria is still the same.

7. Repeat steps 5 and 6 until all radiated emissions sessions have been found and copied to the Radiated file.

The Select Session Search Criteria area uses the same fields and search expressions as in searching for a session. Refer to the "Search Criteria" section in this chapter for more information.

Deleting Data

The Edit, Delete menu item selects either a data item, session, or session group for deletion. However, header data is deleted via the Edit, Clear Header Data menu. If you change your mind or make a mistake, you can reverse a delete action by using Edit, Undo.
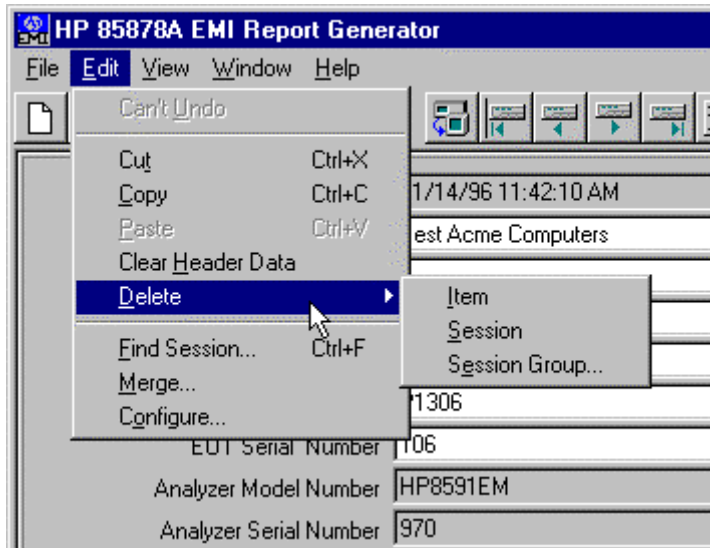
Item

Deletion of data items is accessed via the Edit, Delete, Item menu and is only available when a data item has been highlighted in the active session. If the data item window is open, it is closed.

It should be noted that the *only* data item that cannot be deleted is the Session Header.

To delete a data item

1. Highlight the data item you wish to remove on the session pane.

2. Do one of the following:

   - From the Edit menu, choose Delete, Item.

   - Click the right mouse button, then choose Delete.

   - Press the Delete key on the keyboard.

Session

Deletion of a session is accessed via the Edit, Delete, Session menu and is only available if the file contains test sessions. When a session tab is highlighted, it becomes the active session and can be deleted from the file after the Delete Session Message is displayed confirming the action. If any data item windows are open, they are closed.

To delete a session

1. Highlight the tab of the session you wish to remove.
2. Do one of the following:
   - From the Edit menu, choose Delete then Session.
   - Press the Delete key on the keyboard.
3. When the Delete Session Message is displayed, click OK.

Session Group

Deletion of a session group is accessed via the Edit, Delete, Session Group menu and is only available if the file contains test sessions. When selected, the Delete Session Group dialog box appears which is similar to the Find Session dialog box in that it allows you to find sessions based on matching selected header fields. The Find button displays a list of the sessions that match the search criteria in the Sessions Found list area. If Find All is used, all sessions are displayed, independent of the search criteria.

When a specific session in the Sessions Found list area is highlighted, its header data is displayed in the list area at the bottom of the dialog box for visual verification. In order to delete a session or group of sessions, the session(s) need to be highlighted using a click, shift-click, or control-click from the mouse. When one or more sessions is selected, the Delete button is enabled. When the Delete button is pressed, a confirming dialog box appears. If the action is confirmed with OK, the selected sessions are deleted from the file. If any data item windows associated with the deleted test sessions are open, they are closed.
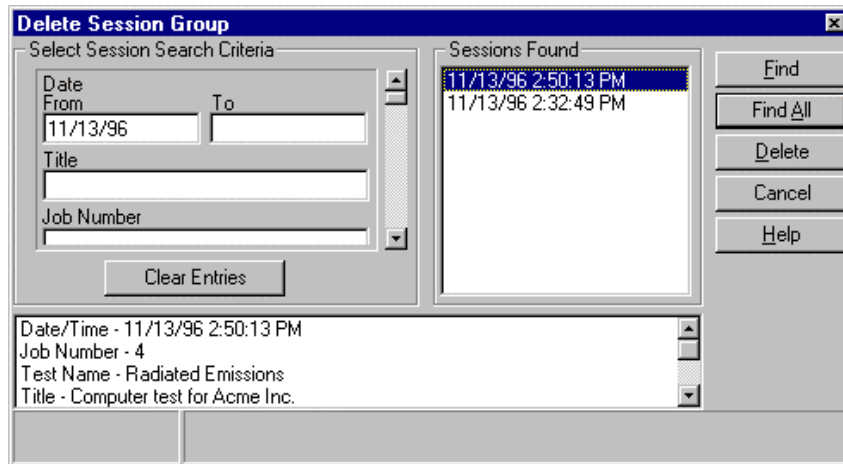
Find	Locates only the test sessions in the specified file which match the search criteria and places those sessions in the Sessions Found list.
Find All	Places *all* of the test sessions from the open file in the Sessions Found List, independent of the search criteria.
Delete	Removes the highlighted session(s) from the open file. The Delete Session Group dialog box remains open.
Cancel	Closes the Delete Session Group dialog box.
Clear Entries	Clears all entries from the Search Criteria fields, leaving them blank.

To delete a session group

1. From the Edit menu, choose Delete, Session Group.

2. In the Select Session Search Criteria area, select and enter the search criteria information, and then choose the **Find** button.

   All sessions that match the search criteria will be placed in the Sessions Found list area.

3. In the Sessions Found list area, highlight the session(s) to be deleted, and then choose the Delete button.

4. Choose the Cancel button to close the window.

Header Data

Individual fields in the header can be deleted using standard Windows editing methods. However, complete deletion of header data can be accessed via the Edit, Clear Header Data menu. When selected, all editable data in the currently active header is erased. It should be noted that the date/time and measuring receiver fields are not editable and are not cleared, and that the Session Header data item itself is not deleted from the session; only its data is cleared. The changes are saved automatically when you leave the active session either by selecting another session or exiting the application.
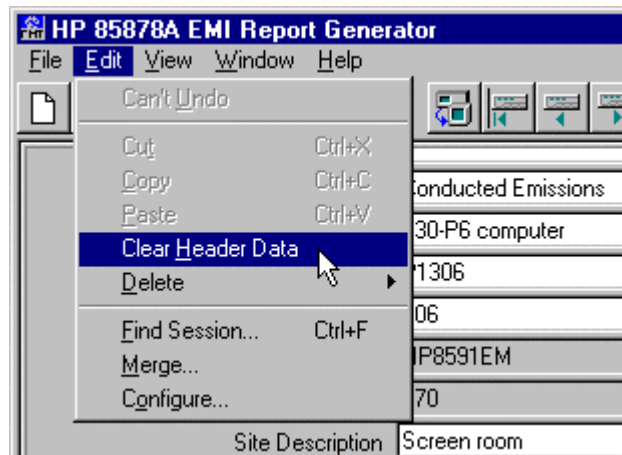
To clear header data

1. Select the tab of the session in which you wish to clear the header data.

2. From the Edit menu, choose Clear Header Data.

3. When the Clear Header Data Message is displayed, click OK.

Undo of a Delete

The process of undoing an action is categorized in two ways: application and session. Reversing application deletions pertain to the merge process, session groups, and individual sessions. As long as you remain working in this file, any of these application deletions may be reversed in the order that they were done; that is, the undo command is buffered saving all of the deletions until you change files.

Reversing deletions that relate to a session are: editing any header field; using Edit, Clear Header Data; and cutting or deleting data items from a session. Any of these session deletions remain in a buffer until you change sessions. For example, if you clear the header data and delete the signal list data item of a session, as long as you remain working in this session, you will be able to retrieve either the header data or the signal list. However, if you select another session for viewing prior to undoing these deletions then return to the previous session, you will *not* be able to reverse the deletions.

If any combination of application and session deletions are done, as long as you remain working in the same file, all application deletions can be reversed.

Maintaining Files

If the HP 85878A software is terminated in an unusual way, such as in a power outage, the file in which test sessions are saved may become corrupted. You may repair any suspicious corrupted file by selecting the File, Maintenance menu item and selecting the Repair File button. Repairing a file automatically compacts it also.

Over time, HP 85878A files may become fragmented, using more disk space than necessary. In order to remove this wasted space and perform the compaction process, the Compact File button has been provided.
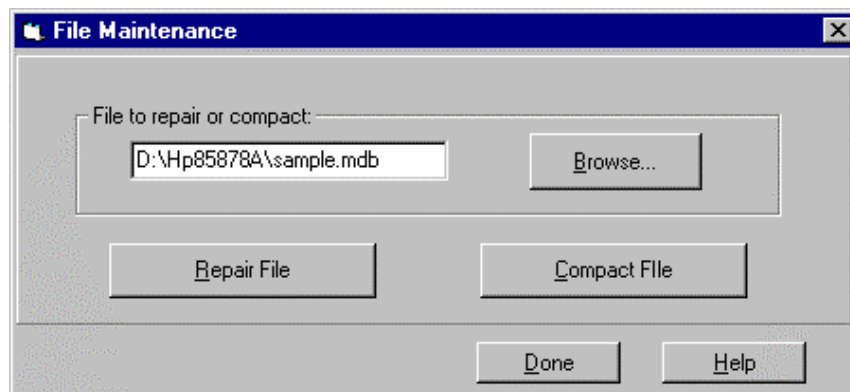
Browse	Accesses the Open dialog box to specify the file to repair or compact.
Repair File	Fixes corrupted files due to unusual termination of the application for reuse, for example, hardware failure. Any open data item window will be closed with the use of this button. The compact process is also performed as part of the repair.
Compact File	Removes wasted space in a file, reducing file size.
Done	Closes the File Maintenance window without performing any actions.

Repairing a File

If you suspect a file is corrupted, use the File, Maintenance menu to attempt to repair your file. Indications of a corrupted file may be such things as: a data item may not open, error messages referencing "invalid bookmarks," or header data is not properly displayed. When this occurs, it is recommended that you first try to "repair" the file by using the File, Maintenance menu selection. It should be noted that the repair process attempts to restore a file to its normal state. Depending on the severity of the corruption, loss of data may be unavoidable.

Repair File Example

In the case that a file is corrupted such that it cannot be opened during startup of the HP 85878A application, use the following to attempt to repair the corrupted file:

1. Close the HP 85878A application.

2. Use Windows Explorer to rename the corrupted file.

3. Restart the HP 85878A application again and follow the prompts to open it successfully.

4. From the File menu, choose Maintenance to open the File Maintenance dialog box.

5. Specify the corrupted file in the File to repair or compact field, then choose the Repair File button.

6. After the repair process is complete, the File Maintenance Message is displayed; click the OK button to close this message.

7. Choose the Done button to close the File Maintenance dialog box.

8. From the File menu, choose Open to open the repaired file. If the previously corrupted file opens, the repair was successful; if it does not open, the file is unrepairable.

To repair a file (that can be opened from the HP 85878A application)

1. From the File menu, choose Maintenance.

2. Select the Browse button to specify the directory and file.

3. Choose the Repair File button.

4. Choose the Done button to close the window.

Compacting a File

If you delete sessions from a file, it can become fragmented and use disk space inefficiently. Compacting the file rearranges how the data is stored in the file.

To compact a file

1. From the File menu, choose Maintenance.

2. Select the Browse button to specify the directory and file.

3. Choose the Compact File button.

4. Choose the Done button to close the window.

Chapter 7

Printing Data

Data can be printed from either the HP 85878A main menu or directly from a data item. Printing from the HP 85878A main menu brings up a dialog box which allows you to select any combination of data items to print. After those are selected, a standard Window's print dialog appears from which the print can be initiated. A print from a data item window prints all the data of that item.

This chapter describes the following printing methods:

- Printing from the HP 85878A Main Menu
    - ◊   Print Setup
- Printing from Data Item Menu
- Printing from Pop-up Menu

Printing from the HP 85878A Main Menu

Printing from the HP 85878A main menu File, Print Data accesses the Print Data dialog box. Only the data items that are present in the currently active session are available for printing; the unavailable data items are disabled. At this time, you may check any number of available data items to be printed. When a data item has been selected, a red check will appear on the icon. Choose the OK button to print the contents of the selected data items.
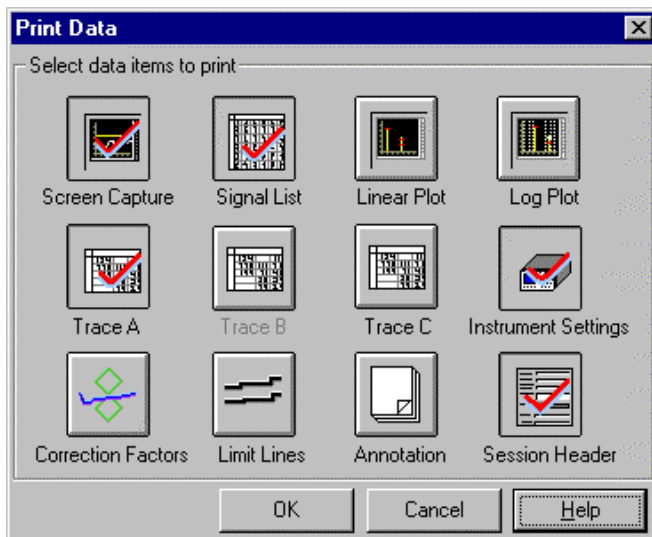
To print from the HP 85878A main menu

1. Do one of the following:

   • From the File menu, choose Print Data.

   • On the toolbar, click the Print Data icon.

2. Check the data item(s) that you want to print.

3. Choose the OK button.

Print Setup

The Properties dialog box for your default Windows printer is configured based on the printer configuration for your system.
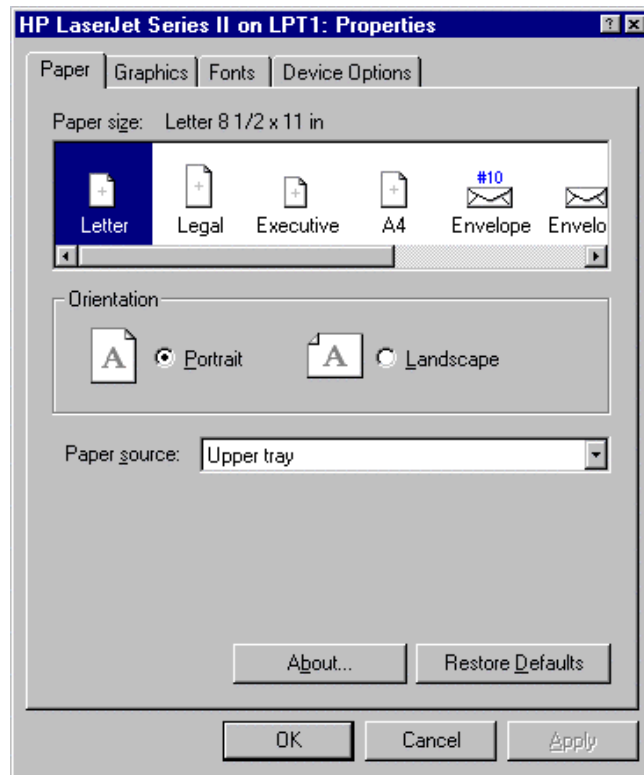
To set up printer properties

1.   From the File menu, choose Print Setup.

2.   Specify the printer properties you want to use.

3.   Choose the OK button.

Printing from a Data Item Menu

Each data item present in the currently active session is available for printing.

To print from a data item menu

1. Double-click on the data item to open it.

2. From the data item menu, select File then Print.

3. The Print dialog box appears. You now have the option to specify another printer and associated properties and the number of copies you would like.

4. Choose the OK button.
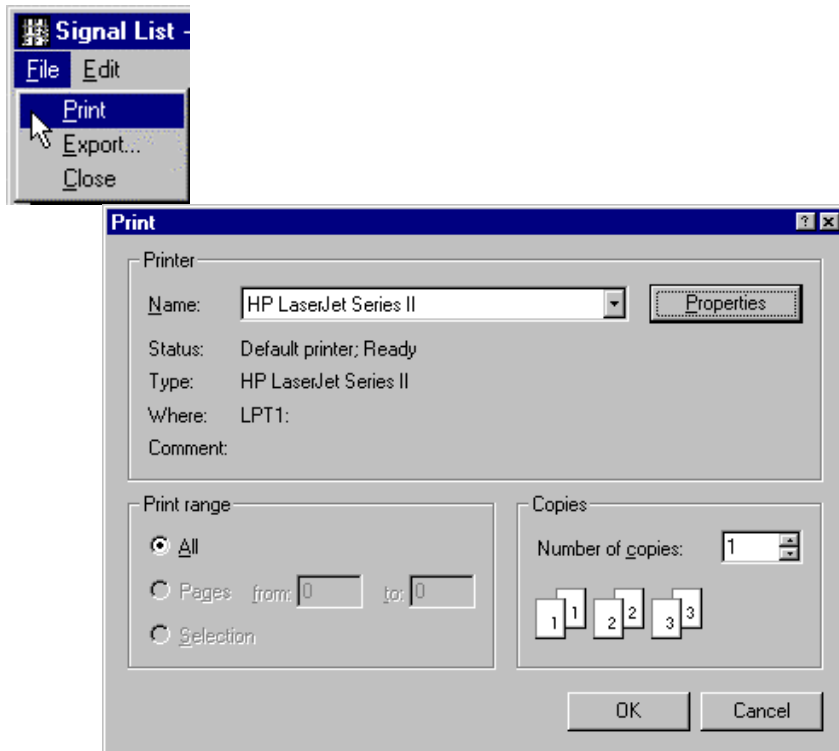
Printing from a Pop-Up Menu

You can print the contents of a data item directly from the active session.

To print from a pop-up menu

1. Position the cursor over the data item and click the right mouse button.

2. From the pop-up menu, choose Print.

3. The Print dialog box appears. You now have the option to specify another printer and associated properties and the number of copies you would like.

4. Choose the OK button.
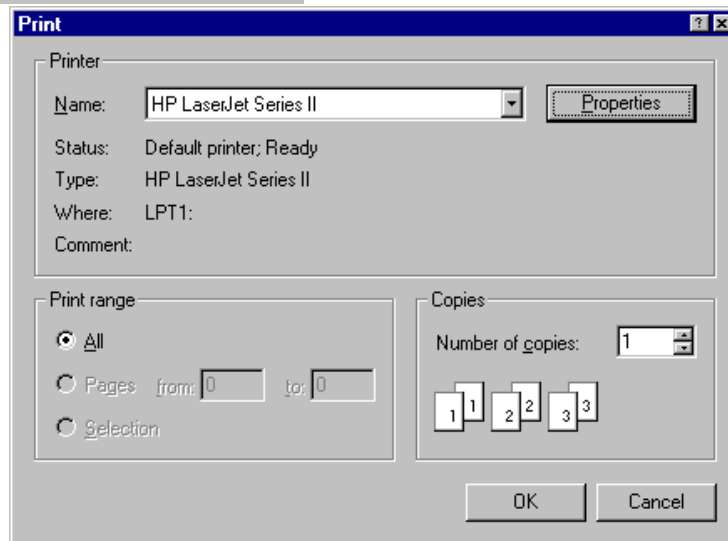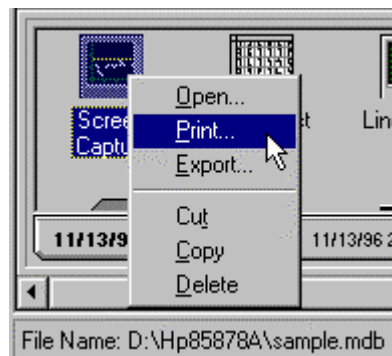
Chapter 8

Exporting Data

Data items can be exported to other files either from the HP 85878A main menu or directly from a data item. Exporting from the HP 85878A main menu allows you to specify multiple data items at one time and the associated filename in which you want to save them under. For text items with columns of data—signal list, trace A, trace B, trace C, limit lines, correction factors, session header, and instrument settings—the format options in which to store each item are: space-separated, tab-separated, or comma-separated; the extension for the text format options is .TXT. For the graphical items--screen capture, linear plot, and log plot—the format options are: Windows Bitmaps (.BMP), PC Paintbrush (.PCX), Graphics Interchange Format (.GIF), HP Graphics Language (.HGL), or Tagged Image File Format (.TIF). The Annotation data item, saved as unformatted text (.TXT), is not affected by either of the format options.

This chapter describes the following exporting methods:

- Exporting Files from the HP 85878A Main Menu
- Exporting Files from a Data Item Menu
- Exporting a File from a Pop-up menu

Exporting Files from the HP 85878A Main Menu

To export files from the HP 85878A main menu, use File, Export Data to access the Export Data dialog box. Only the data items that are present in the currently active session are available for exporting; the unavailable data items are disabled. At this time, you may check any number of available data items to be exported. When a data item has been selected, a red check will appear on the icon. The filenames displayed next to the data item icons are the default filenames that will be used for export; use these text fields to enter a different name. Filenames can be up to 255 characters long, which includes the path. The Browse button allows you to select the directory in which the files will be saved. When OK is selected, the specified data items are stored in the specified formats under the specified filenames. The default destination directory for the exported data items is: \HP85878A\Export\. This can be changed by typing in a new directory or by using the Browse button.
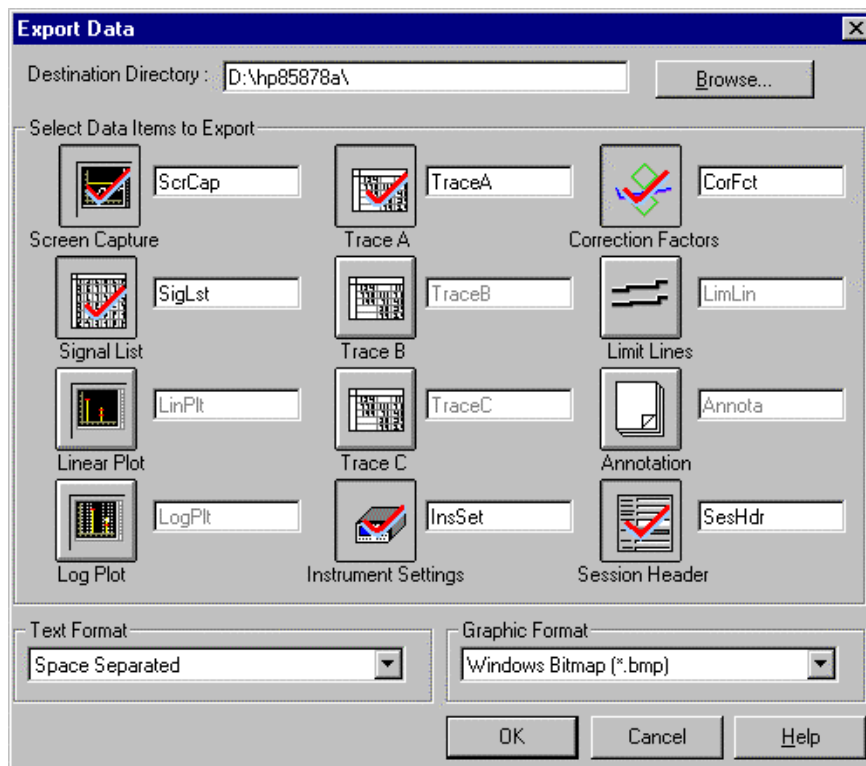
For data items using columns of data—signal list, trace A, trace B, trace C, limit lines, correction factors, session header, and instrument settings—the Text Format options are:

- Comma-Separated (.TXT)

- Tab-Separated (.TXT)

- Space-Separated (.TXT)

For the graphical items—screen capture, linear plot, and log plot—the Graphics Format options are:

- Windows Bitmaps (.BMP)

- PC Paintbrush (.PCX)

- Graphics Interchange Format (.GIF)

- HP Graphics Language (.HGL)

- Tagged Image File Format (.TIF)

The Annotation data item is not affected by either of the format options and is always stored as unformatted text (.TXT).

To export files from the HP 85878A main menu

1. Do one of the following:

   - From the File menu, choose Export Data.

   - On the toolbar, click the Export Data icon.

2. Use the Browse button to specify the destination directory for the exported files.

3. Check the data item(s) that you want to export and rename any files, if necessary.

4. Specify the Text Format and Graphics Format options for the data items selected.

5. Choose the OK button.

Exporting Files from a Data Item Menu

Each data item present in the currently active session is available for exporting.

To export a file from a data item menu

1. Double-click on the data item to open it.

2. From the data item window menu, select File then Export.

3. The Export dialog box appears. You now have the option to specify the destination directory, filename, and format option of the data item being exported.

4. Choose the OK button.
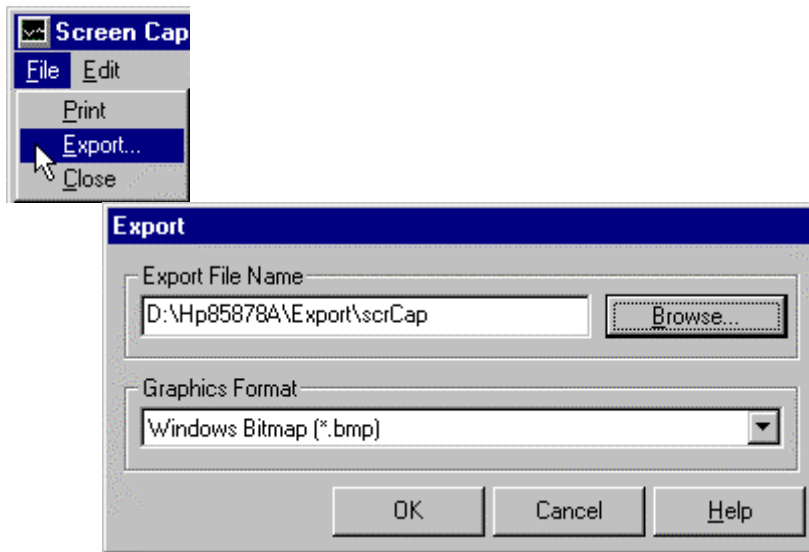
Exporting a File from a Pop-Up Menu

You can export the contents of a data item directly from the active session.

To export a file from a pop-up menu

1. Position the cursor over the data item and click the right mouse button.

2. From the pop-up menu, choose Export.

    The Export dialog box appears. You now have the option to specify the destination directory, filename, and format option of the data item being exported.

3. Choose the OK button.

Chapter 9
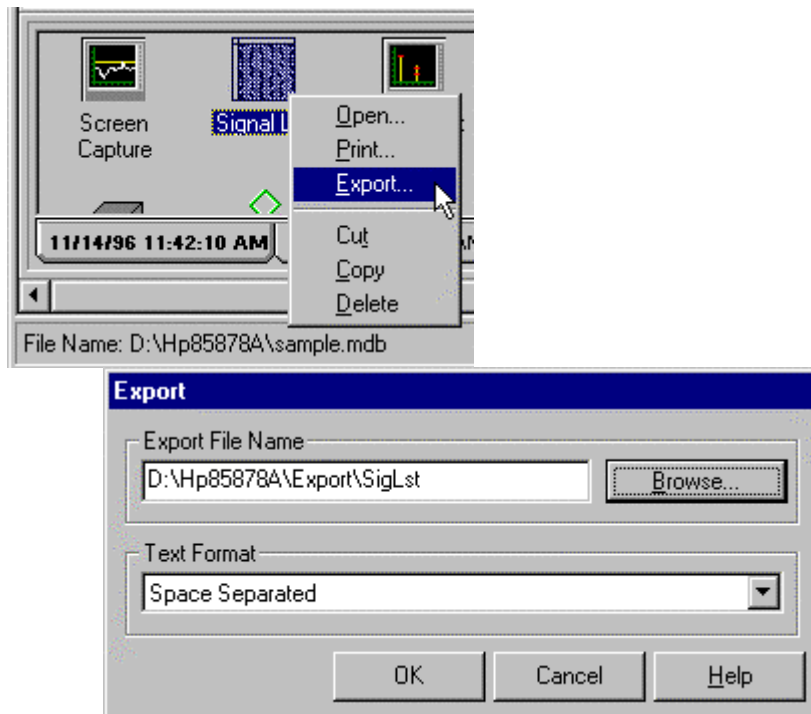
Customer Support

Your EMI software is designed to provide dependable service. It is unlikely that you will experience a problem. However, Hewlett-Packard's worldwide sales and service organization is ready to provide the support you need.

If You Have a Problem

If you have a problem, refer to the following for possible help:

- HP 85878A User's Guide
- Online Help
- Readme file
- Respective documentation for:
    ◊ National Instruments AT-GPIB/TNT interface card
    ◊ HP 82341C (HP-IB) interface card

If you still have a problem, please read the warranty printed at the front of this manual, then contact the nearest HP Sales and Service Office. If our EMI software is covered by a separate support agreement, please be familiar with its terms.

Service Menu

You can access the Service dialog box under Help, Service in the main menu of the HP 85878A application. This has been provided to help you and your HP service personnel in troubleshooting any problems you may have with the application. The Service dialog box consists of the following three tabs: Status, Test Bus, and Logger.
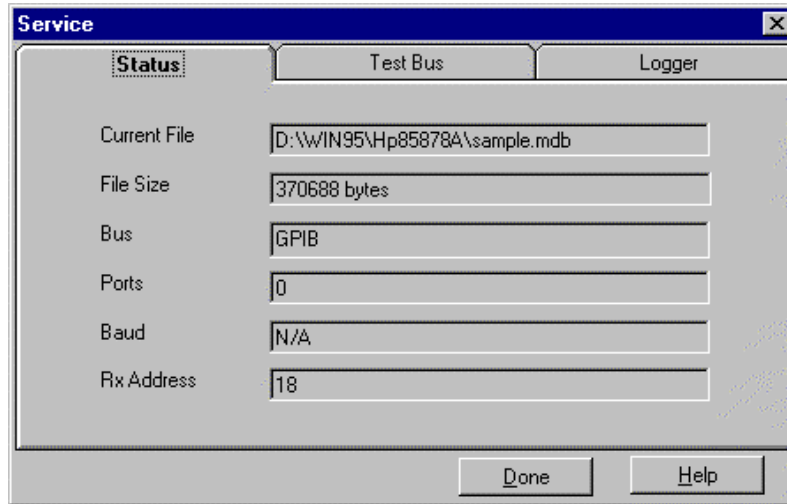
Status	displays the current filename and associated path, file size, interface type, and receiver address being used.
Test Bus	checks the communication path by testing the I/O bus when the Start Test button is pressed. The results from the test appear in the Test Results text box.
Logger	Logs diagnostic text to a file. The functions available on this tab are: selecting what information to log (Log Errors or Log Bus Traffic), starting and stopping the logging, viewing the log, and clearing the log. If the log viewer is open with logging turned on, it is updated in real time as logging occurs. Additionally, the log viewer provides a File menu with Save As and Close commands, and an Edit menu with Copy and Select All commands, allowing the current contents of the log to be easily manipulated in ASCII format. The contents of the log is also saved to the default log file HP85878A.log located in the HP 85878A application directory.

Additional Support Services

Using Online Help

Online Help provides a convenient, quick way to look up information about a feature you would like to know more about. You can access Help through the Help menu or by pressing F1 to get context-sensitive Help.

Help Contents

For information on Help topics, choose Contents from the Help menu. You can use the Contents screen to get quick access to key reference topics.

Help Search

The fastest way to find a particular topic in Help is to use the Search dialog box. To display the Search dialog box, you can either choose Help Search from the Help menu or click the Search button on any Help topic screen.

Context-Sensitive Help (F1)

All EMI measurement software windows are context-sensitive. Press F1 to get context-sensitive Help directly without having to go through the Help menu.

Calling HP Sales and Service Offices

Sales and service offices are located around the world to provide complete support for your EMI software. To obtain support information, contact the nearest Hewlett-Packard Sales and Service office listed in Table 9-1. In any correspondence or telephone conversations, refer to the EMI software by its product number and full serial number. With this information, the HP representative can quickly determine whether your unit is still within its warranty period.

Table 9-1. Hewlett-Packard Sales and Service Offices

US FIELD OPERATIONS		
Customer Information Hewlett-Packard Company 19320 Pruneridge Avenue Cupertino, CA 95014, USA (800) 752-0900	**California, Northern** Hewlett-Packard Co. 301 E. Evelyn Avenue Mountain View, CA 94041 (415) 694-2000	**California, Southern** Hewlett-Packard Co. 1421 South Manhatten Ave Fullerton, CA 92631 (714) 999-6700
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Appendix A

Hardware Interface Installations

The HP 85878A software uses one of the following interface types with the EMC analyzer to make your EMI measurements.

- AT-GPIB/TNT(PnP)

- AT-GPIB/TNT

- HP-IB interface

- RS-232 serial interface

The computer uses the software to communicate with the EMC analyzer via the interface card or port. The sections which follow explain how to install and configure the various cards or ports that support the HP 85878A software.

Note The following are the major steps needed to configure the hardware, install the software, and verify the hardware operation. For complete installation and configuration instructions, refer to the documentation shipped with your interface package.

Setup of AT-GPIB/TNT(PnP) for Windows 95

There are three basic steps for installing and configuring the
AT-GPIB/TNT(PnP) card.

1. Software installation

2. Hardware setup and installation

3. Verification

Note For this installation, the software *must* be installed before the hardware.

Software Installation AT-GPIB/TNT(PnP)

1. From the Windows 95 **Start** menu, select **Settings**, **Control Panel**, then
   double-click on the **Add/Remove Programs** icon.

2. Insert the GPIB Software for Windows 95 setup disk into the disk drive.

3. In the Add/Remove Programs Properties window, select the
   Install/Uninstall tab and click on the **Install** button.

4. Follow the setup instructions displayed on the computer screen to complete
   the installation.

Hardware Setup and Installation AT-GPIB/TNT(PnP)

1. Shut down Windows 95 and turn off the computer.

2. Remove the computer cover and install the GPIB interface card. If possible,
   avoid using the first or last slot as it is difficult to connect the GPIB
   interface cable with the card in either of these locations.

3. Turn on the computer. When Windows 95 is loaded, the message "New
   Hardware Found. National Instruments AT 488.2 Plug and Play" is
   displayed.

4. From the Windows dialog box, click **OK** to select the default driver.

The installation is now complete.

Verification AT-GPIB/TNT(PnP)

It is important to test your hardware configuration before attempting to use the AT-GPIB interface. Use the following procedure to verify correct operation.

1. From the Windows 95 **Start** menu, select **Programs, NI-488.2 Software for Windows 95**, then **Diagnostics**.

2. In the Diagnostics window, select **Test All**.

3. When the message "Please close all GPIB applications" appears, select **OK**.

4. When the test is complete, the message "Passed" will be displayed. Select **Exit**.

5. Click on the Windows 95 **Start** button and select **Settings** then **Control Panel**.

6. In the Control Panel window, double-click on the **System** icon.

7. In the System Properties window, select the **Device Manager** tab then double-click on **National GPIB Interface**.

8. Select **AT-GPIB/PnP** then click on the **Properties** button.

9. In the AT-GPIB/PnP Properties window, select the **Resources** tab.

10. Verify that there are no conflicts.

If there are no resource conflicts, the interface card should work properly. In case of conflicts (that is, if there are no IRQs available on the computer), refer to Appendix C in the *Getting Started with Your Plug and Play GPIB Hardware and Software for Windows 95* document.

11. Click the **OK** button to close the AT-GPIB/PnP Properties window.

12. Click the **OK** button to close the System Properties window.

Setup of AT-GPIB/TNT for Windows 95

There are four basic steps for installing and configuring the AT-GPIB/TNT card.

1. Software installation
2. Hardware configuration
3. Hardware installation
4. Hardware verification

Note The drivers shipped with the TNT card will not work under Windows 95. Download the driver for Windows 95 Version 1.1, or later, from the National Instrument's Web site at *http://www.natinst.com*. For this installation, the software *must* be installed before the hardware.

Software Installation (AT-GPIB/TNT)

1. From the Windows 95 **Start** menu, select **Settings**, **Control Panel**, then double-click on the **Add/Remove Programs** icon.

2. Insert the NI-488.2 Software for Windows and the AT-GPIB/TNT disk 1 into the disk drive.

3. In the Add/Remove Programs Properties window, select the **Install/Uninstall** tab and click on the **Install** button.

4. Follow the setup instructions displayed on the computer screen to complete the installation. From the GPIB setup options, select the **GPIB setup option from the NI-488.2 (M) software**. (Do not use the option for the GPIB analyzer. This does not pertain to the HP 85878A software.)

Hardware Configuration (AT-GPIB/TNT)

Follow the procedure below to configure the hardware BEFORE it is installed.

1. From the Windows 95 **Start** menu, select **Settings**, **Control Panel**, then double-click on the **Add New Hardware** icon.

2. Start the Add New Hardware wizard by clicking on **Next**. When it prompts you to search for hardware, click on **No**. (No is selected at this time because the hardware has not been installed yet.)

3. Click **Next** to display the hardware types list, then double-click on **National Instruments GPIB Interfaces**.

4. Select the **AT**-**GPIB/TNT** model, then click **Next**.

5. The Add New Hardware wizard will display the DMA, I/O range, and Interrupt Request for the AT-GPIB/TNT card.

6. Use the settings from the step above to configure the AT-GPIB/TNT card. Refer to the *AT-GPIB/TNT Getting Started* manual to assist you with this procedure.

7. When Windows 95 has finished installing the software necessary for supporting your hardware, click on **Next** to end the installation. When the software prompts you to power down the computer, click on **Yes**.

Hardware Installation (AT-GPIB/TNT)

1. Shut down Windows 95 and turn off the computer.

2. Remove the computer cover and install the GPIB interface card. If possible, avoid using the first or last slot as it is difficult to connect the GPIB interface cable with the card in either of these locations.

3. Turn on the computer to start Windows 95.

Hardware Verification (AT-GPIB/TNT)

1. From the Windows 95 **Start** menu, select **Settings** then **Control Panel**.

2. In the Control Panel window double-click on the **System** icon.

3. In the System Properties window, select the **Device Manager** tab then double-click on **National Instruments GPIB Interfaces**.

4. Select **AT-GPIB/PnP** then click on the **Properties** button.

5. In the AT-GPIB/PnP Properties window, select the **Resources** tab.

6. Verify that the I/O range, DMA, and Interrupt Request are the same values as what were set on the card and that there are no conflicts.

7. Click the **OK** button to close the AT-GPIB/PnP Properties window.

8. Click the **OK** button to close the System Properties window.

9. To test the AT-GPIB/TNT card, select the Windows 95 **Start** button, **Programs, NI-488.2M Software for Windows 95**, then **Diagnostics**.

10. In the Diagnostics window, select **Test All**.

11. When the message "Please close all GPIB applications" appears, select **OK**.

12. When the test is complete, the message "Passed" will be displayed. Select **Exit**.

If the test does not pass, refer to the *At-GPIB/TNT Getting Started* manual for more information.

HP-IB Interface

The HP-IB interface card (HP 82341C) can be configured and installed using the following steps:

1. Hardware installation
2. Software installation
3. Hardware verification

Hardware Installation (HP 82341C)

1. Shut down Windows 95 and turn off the computer.
2. Remove the computer cover and install the HP-IB interface card. If possible, avoid using the first or last slot as it is difficult to connect the GPIB interface cable with the card in either of these locations.

Use the default switch settings on the HP 82341C card.

3. Turn on the computer to start Windows 95.

Software Installation (HP 82341C)

1. Place the HP I/O Libraries for Instrument Control compact disc (CD) into the CD drive of your computer to load the HP 84231C software.
2. From the Windows 95 **Start** menu, select **Run**.
3. In the Run dialog box, select the CD ROM drive. Use the Browse button if you do not know the location of the CD ROM drive.
4. Select **Setup.exe** to load the driver.
5. In the HP I/O Libraries Installation window, select **Windows 95**.
6. Verify the SICL and VTL file locations then press **Install**.
7. When the installation is complete, the message "Installation Succeeded" will be displayed. Click **OK**.

8. To complete the configuration, select the Windows 95 **Start** button, **Programs**, **HP I_O LIBRARIES**, then **I_O Config**.

9. In the Interface Configuration Application-I/O Config window, select the **HP 82340/82341 HP-IB** in the Available Interface Types area then click **Configure**.

10. Make any necessary changes then click **OK**.

11. When the driver is successfully installed, recycle the power and restart Windows 95.

Hardware Verification (HP 82341C)

1. From the Windows 95 **Start** menu, select **Settings** then **Control Panel**.

2. In the Control Panel window, double-click on the **System** icon.

3. In the System Properties window, select the **Device Manager** tab.

4. Verify that **HP-IB** is listed.

There is no diagnostic test for the HP-IB card.

RS-232 Serial Interface

To use the RS-232 serial interface with the HP 85878A software, the HP 85878A software must first be installed.

1. From the Windows 95 **Start** menu, select **Programs**, **HP EMI**, then **HP 85878A Serial Config**.

2. To use the HP 85878A software with the RS-232 serial interface, select **RS-232** from the Available Interface Types area, then click on **Configure**.

Verify that the baud rate matches in the following three areas:

- HP 85878A application (located in the Configure dialog box)

- EMC analyzer (located under the **[CONFIG]** key)

- HP 85878A Serial Config application (located in the RS-232 / Serial Configuration dialog box)

1. Make any necessary changes then click **OK**.

2. To exit the I/O Config window, click **OK** again.

3. Recycle the power and restart Windows 95. The COM channel will not function properly until the power has been recycled.

Index