

Composer for the 4350 Mobile Fault Finder Series



User's guide
Version 2.20

boosting wireless efficiency

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Purpose and scope

The purpose of this guide is to help you successfully use the Composer for the 4350 Mobile Fault Finder Series features and capabilities. This guide includes task-based instructions that describe how to install, configure, use, and troubleshoot the Composer for the 4350 Mobile Fault Finder Series. Additionally, this guide provides a description of Willtek's warranty, services, and repair information, including terms and conditions of the licensing agreement.

Assumptions

This guide is intended for novice and intermediate users who want to use the Composer for the 4350 Mobile Fault Finder Series effectively and efficiently. We are assuming that you have basic computer and mouse/track ball experience and are familiar with basic telecommunication concepts and terminology.

Related information

Use this guide in conjunction with the following information:

4350 Mobile Fault Finder: Getting Started Manual (ordering number M 295 543)

Technical assistance

If you need assistance or have questions related to the use of this product, call one of Willtek's technical assistance centers. You can also contact Willtek by e-mail at customer.support@willtek.com.

Table 1 Technical assistance centers

Region	Phone number	Fax number
Europe, Middle East, Asia, Africa	+49 (0) 89 996 41 386 +49 (0) 89 996 41 227	+49 (0) 89 996 41 440
Americas	+1 973 386 9696	+1 973 386 9191
China	+86 21 5836 6669	+86 21 5835 5238

Conventions

This guide uses naming conventions and symbols, as described in the following tables.




Table 2 Typographical conventions

Description	Example
User interface actions appear in this typeface .	On the Status bar, click Start .
Buttons or switches that you press on a unit appear in this TYPEFACE .	Press the ON switch.
Code and output messages appear in this typeface.	All results okay
Text you must type exactly as shown appears in this typeface .	Type: a:\set.exe in the dialog box.
Variables appear in this <typeface>.	Type the new <hostname>.
Book references appear in this typeface.	Refer to Newton's Telecom Dictionary
A vertical bar means "or": only one option can appear in a single command.	platform [a b e]
Square brackets [] indicate an optional argument.	login [platform name]
Slanted brackets < > group required arguments.	<password>

Table 3 Keyboard and menu conventions

Description	Example
A plus sign + indicates simultaneous keystrokes.	Press Ctrl+s
A comma indicates consecutive keystrokes.	Press Alt+f,s
A slanted bracket indicates choosing a submenu from menu.	On the menu bar, click Start > Program Files .

Table 4 Symbol conventions

	This symbol represents a general hazard .
	This symbol represents a risk of electrical shock .
	NOTE This symbol represents a note indicating related information or tip.

Overview



1

This chapter provides a general description of the Composer for the 4350 Mobile Fault Finder Series.

About the Composer for the 4350 Mobile Fault Finder Series

The Composer software

- allows quick and easy customization of 4350 test programs.
- creates loadable .csl files which contain the network and mobile lists (selectable in the 4350 test program), along with the corresponding network and mobile phone connection data.
- uses Wizards for customizing bay data.
- allows default values for all operational parameters to be customized for different networks and mobile phone types.
- is an external Windows®-based program.
- allows for external/remote setup of simulated networks / mobile phone loss data.
- transfers simulated network and loss data to the 4350 via floppy disks.

The 4350 Series Mobile Fault Finder

- tests mobile phones at the point-of-return using upgradeable programs to simulate various networks.
- runs sequence programs
- contains a pre-loaded set of simulated networks and mobile phone loss data
- provides no GUI for setting up sequence programs, simulated networks, or mobile phone loss data

Installation

2

This chapter describes how to install the Composer for the 4350 Mobile Fault Finder Series. The topics discussed in this chapter are as follows:

- ["Software requirements" on page 4](#)
- ["Hardware requirements" on page 4](#)
- ["Installing the software" on page 4](#)

Software requirements

The Composer software can be installed from CD on a PC with either Windows 2000 with Service Pack 2 or Windows XP as the operating system. Ensure to have sufficient administrator's rights to install the software on the PC.

Hardware requirements

The Composer software can be executed on a PC. A floppy disk drive is required to transfer program scripts into the 4350 Series Mobile Fault Finder using floppy disks.

Installing the software

Insert the Composer CD into the CD drive.

If the installation does not start automatically, call up `install.bat` from the CD by double-clicking on the file name in the Windows Explorer. The Composer Setup program will start and guide you through the installation; follow the on-screen instructions.

When the Composer Setup is completed, the Composer Utility software will be installed. Unzip the files into the folder where you previously installed Composer.



Warning

Make sure that you install the Composer Utility into the same folder as Composer itself, otherwise you will not be able to use the additional Utility functions!

Getting Started

3

This chapter describes the functionality of the instrument. Topics discussed in this chapter are as follows:

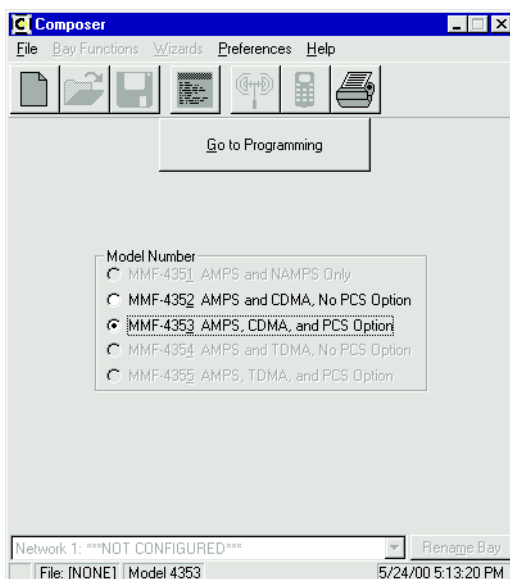
- ["Starting the Composer software" on page 6](#)
- ["System overview" on page 6](#)
- ["Operational overview" on page 9](#)
- ["System preferences" on page 11](#)
- ["Control channel programming" on page 12](#)
- ["Voice channel programming" on page 14](#)
- ["Network wizard" on page 15](#)
- ["Mobile connection wizard" on page 20](#)
- ["File librarian" on page 27](#)
- ["Viewing the output file" on page 29](#)

Starting the Composer software

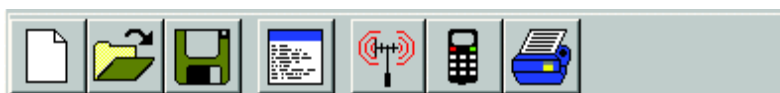
If you installed the software in the Composer applications group, click on **Start > Programs > Composer > Composer** to call up the software.

System overview

The initial Composer screen consists of six sections: menu options, toolbar, work area, model number selection screen, control area, status area.



Menu Options



The File menu includes: New CSL File, Open Existing CSL File, Save, Save As, View Current CSL File, and Exit commands.

The Bay Functions menu includes: Rename Bay, Go to Voice Channel, Go to Control Channel, and Apply commands.

The Wizards menu includes: Network, Mobile Connection and Hard Copy wizards.

The Preferences menu allows selection of Composer Preferences.

The Help menu allows access to the Help system, which includes context-sensitive help and a tutorial.

Toolbar Options

The toolbar consists of:



Create a NEW file with default parameters
Starts a new, unnamed Composer Settings source code file.



Open an existing CSL file
Opens an existing Composer Settings source code file, loading its parameters into Composer.



Save current CSL file
Saves the current Composer Settings file. If the file has not been named, this reverts to Save As.



View the current CSL file
Opens a separate window to view the Composer Settings source file that Composer is creating.



Network Wizard
Opens the Network wizard.



Mobile Connection Wizard
Opens the Mobile Connection wizard



Hard Copy Wizard
Opens the Hard Copy Printout Wizard

Work area

The appearance of the work area varies with the selected function.

Model number selection screen

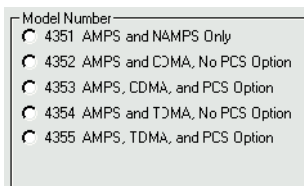


Table 1 Model number and capabilities

Model #	AMPS	NAMPS	CDMA	TDMA	PCS
4351	X	X			
4352	X	X	X		
4353	X	X	X		X
4354	X	X		X	
4355	X	X		X	X

After selecting the model number, click **Go to Programming** to set up the control and voice channel, or go to the **Preferences** menu to select different settings.

Note

After selecting **Go to Programming**, select **File > New CSL File**.

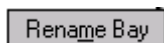
Control area

Network Selection box



Select the current active network from the drop down list.

Rename Bay button



Rename the currently active network.

The bay name is displayed on the 4350 network selection screen.

The Status area



Composer provides a status bar, which contains program operation data.

File: [NONE]

File Name panel file.

Model 4353

Model Type panel
Contains the 4350 model type selected.

1/20/00 2:37:07 PM

Date panel
Contains the current time and date, updated in real time.

Operational overview

Composer uses Microsoft Windows operational interface functions.

Note

If your mouse is configured for right-handed use, the left mouse button is the primary button and the right button is the secondary button.

Audience Composer users should be familiar with 4350 Series Mobile Fault Finder (4350) operation, and with cellular/ PCS standards and operation.

Refer to the 4350 Series Mobile Fault Finder user's guide for information on operating and upgrading the 4350.

Purpose Composer generates a read-only customized Composer Settings file (.csl) which contains customized network and mobile phone data.

Menu operations Left-click the mouse to view menu/ sub-menu options.

Highlight and left-click again to select a menu or sub-menu option.

Keyboard shortcuts, where available, are listed to the right of the menu/sub-menu option.



Types of command buttons Command Buttons: **Set Defaults**

To select a command button, move the mouse cursor over it and left-click the mouse or press **Tab** to move; the focus rectangle from one command button to the next.

Press **Shift+Tab** to reverse the movement of the focus rectangle.



Button with Focus Rectangle: 

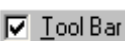
Button without Focus Rectangle: 

The command button with the focus rectangle is activated. To change any text value, enter it manually or press the  or  key, or press the space bar to select or deselect a check box.

Radio Button: 

Radio Buttons are used where only one choice can be selected. Selecting one choice will automatically de-select any others.

To select a radio button, either left-click the mouse on it or use the **Tab** key to move the focus rectangle on to the control, then press the  or  key.

Check Box: 

Check boxes are used where none, any or all choices can be selected.

Check boxes are also used to shift between two choices.

To check or uncheck a check box, either left-click the mouse on it or use **Tab** to move the focus rectangle over the control, then press the space bar.

Spinner Control: 

Left-click the mouse on either the top arrow or bottom arrow to automatically increment or decrement the number appearing in the attached box.

Number or text entry boxes

Number Entry:  Text Entry: 

To manually change numbers, left-click the mouse on the text inside the box and type in the new number.

Number boxes accept only numeric entries. Alpha entries ("ABC") are not accepted.

To select the text box, left-click the mouse on the text inside the box and type in new text.


Text boxes accept both alpha ("ABC") and numeric ("123") entries.



To select either type of box without using the mouse, press **Tab** until the information in the desired box is highlighted. Type in the new data.

Combination boxes

Combination Box: 

Combination boxes are used where a large number of pre-selected choices (either text or numeric) are available. The Network Selection Drop Box is a combination box.

To use the combination box, left-click the mouse on the arrow  attached to the box. This displays a list of available choices. Left-click the mouse over the desired choice.

If the mouse is not available, press **Tab** until the box is highlighted, then use the  or  key to select the desired choice.

Drag-and-drop interface


The Network Wizard and the Mobile Connection Wizard use the Microsoft® Windows drag-and-drop interface.

Drag-and-drop is an object-oriented GUI. Each Composer element becomes an object.

Dragging is accomplished by moving the mouse cursor over an object, then pressing and holding down the left mouse button. If the object is drag-able, a special cursor appears that can be moved around the screen while the left mouse button is held down.

Dropping is accomplished by moving the mouse cursor over a compatible object and releasing the mouse button. A compatible object will be highlighted when the mouse is moved over it.

The Wizards handle all functions necessary to move the data from one bay to another.

If a certain area is not available for dropping, the mouse cursor will change to a  symbol.

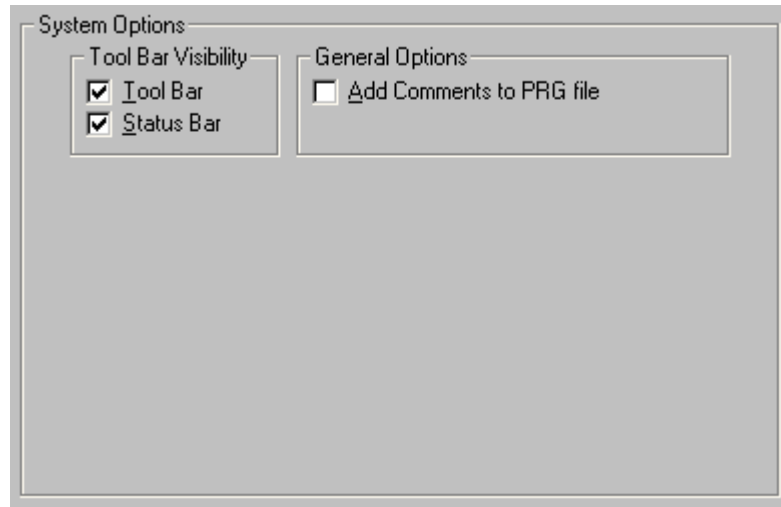
Attempting to drop an object on a non-compatible object, or dropping onto an unused area will simply cause the drop to be rejected.

Using the drag-and-drop function without a mouse can be accomplished through buttons, keyboard controls or menus. See [Chapter 4 "Composer How-Tos"](#) for an explanation of a specific function.

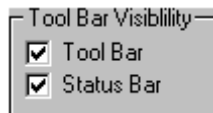
System preferences

After selecting a model number, click , or select a different Preferences setting from the Main Menu.

System preferences To set Composer preferences, select **Preferences > Composer Preferences** from the main menu.



Toolbar visibility

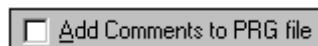


To view the toolbar/status bar, check the toolbar/status bar option.

To hide the toolbar/status bar uncheck the toolbar/status bar option.

General options

Add comments



Check this box to add comments for each line of SCPI code.

Control channel programming

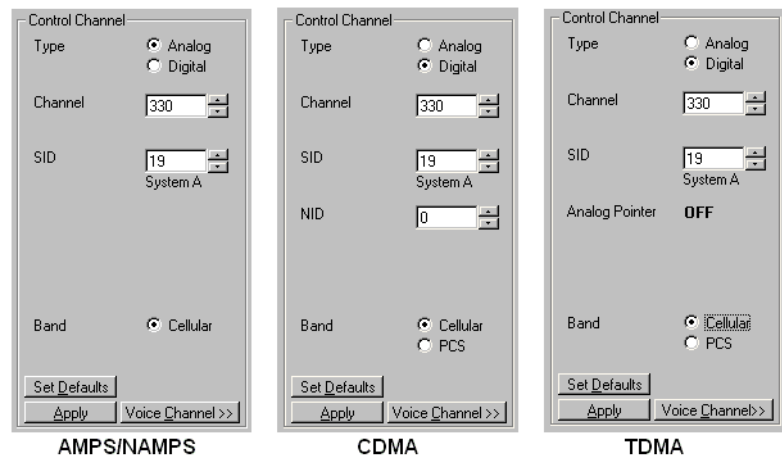
To program control channel parameters for each network:

- 1 Select a model number.
- 2 Left-click **Go to Programming** to open the Control Channel screen.



CAUTION

Ensure that the correct 4350 model number is selected to allow loading of the desired .csl files.



Setting default values

To select the default values or reset all parameters to a default value, left-click **Set Defaults**.

Setting customized values

To select customized values, click on the desired control for:

Analog: Select Type, Channel, SID and Band.

Digital: Select Type, Channel, SID, NID and Band.

Channel Use this to select the channel number assigned to the control channel.

Note

Ensure that the SID is set to the correct value for your system.

SID Use this to set the value of the system ID.

NID Use this to set the value of the network ID.

Note

This is only available for CDMA.

Analog Pointer The analog channel directs the mobile phone to the selected digital control, to speed up acquisition time.


Note

This is only available for TDMA cellular.

Note



The Analog Pointer is not customizable. This information is displayed only for notification to the user that this function is being used in the currently selected mode.

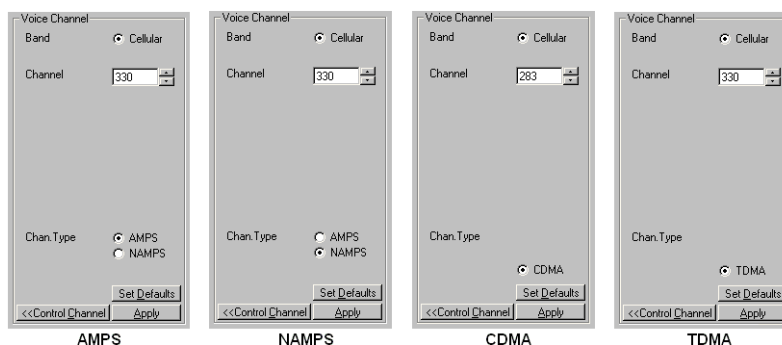
Band Use this to select the control channel band: Cellular (800 MHz) or PCS (1900 MHz).

Apply Use  to save the control channel values.

If you attempt to leave this screen without saving the changes, you will be prompted to **Save Changes?**


Voice channel programming

To program the voice channel parameters for each type of mobile phone to be tested, select a model number and then left-click on . At the Control Channel screen, click on  to open the Voice Channel screen.



NOTE: When the Control Channel is selected as PCS, the Voice Channel will default to PCS, and appear like so:

Setting default values

To select the default values or reset all parameters to default values, left-click .

Setting customized values

Refer to ["Operational overview" on page 9](#) for help on using Windows controls.

To select customized values, click on the desired control for:

Analog: Band, Channel, Chan. Type

Digital: Band, Channel, Chan. Type

Band Indicates the Voice Channel band: Cellular (800 MHz) or PCS (1900 MHz).

Note

The selected voice channel band is the same as the selected control channel band.

Channel Use this to select the voice channel value.

Note

This may be set to any value within the range of channels available to this band and type. Ensure that the Voice Channel number is set to the correct value for your system.

Channel Type Indicates the channel type AMPS, NAMPS, CDMA, or TDMA.



Note

Voice Channel options are linked to Control Channel options.

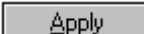
Example: For CDMA Control Channels, select CDMA Voice Channels.
For analog Control Channels, select AMPS or NAMPS Voice Channels.

Return to control channel

Click  to return to the Control Channel area.

If the  button is disabled, left-click .

Apply

Use  to save the Voice Channel values.

If you attempt to leave this screen without saving the changes, you will be prompted to **Save Changes?**

Network wizard

The Network Wizard is designed to organize and maintain a library of network setup data.

The 4350 supports the storage and selection of the operational parameters of up to ten (10) networks. Each network parameter file includes:

- Control channel data
(SID, NID – if digital, Analog Pointer – if TDMA cellular, Band, Type)
- Voice channel information
(Band, Type)

The 4350 allows the user to select network parameter files from a stored network library.

The Network Wizard allows the user to customize the loading, saving, and arranging of network information for use with the 4350.

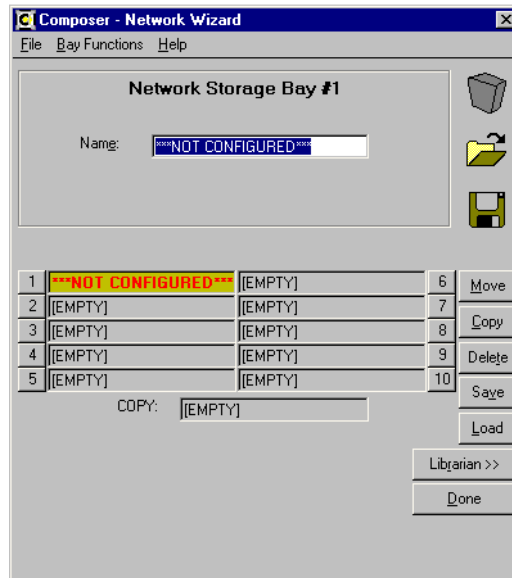
Managing network files

The Network Wizard enables the management of network data files.

Note

Operational parameters cannot be set from this screen.

At the main menu, click  to open the Network Wizard.



Selecting the active network

Management of network files begins with the selection of a network.

Left-click on one of the numbered control buttons (1-10), or use **Tab** to move the focus rectangle into the network box and press **Enter** to activate the network.

Naming or renaming the network

A network must have a name before it can be written to the output file.

Note

The current name appears in the Name: box.

- 1 If the name is highlighted, type in a new name or double-click on the Name: box to bring up the Rename Settings Bay dialog box.
- 2 Type a new name into the dialog box.


Note

Network names are limited to twenty (20) characters. If you attempt to enter more than 20 characters, the name will be truncated to the first 20 characters.

Moving network data

Moving a network name from any bay number (1-10) to any other bay number, moves the source network data into the new bay and deletes the network data from the old bay.

Using a mouse:

- 1 Move the cursor over the name of the network to be moved.
- 2 Press and hold the left mouse button (the antenna symbol appears).
- 3 Drag the cursor to the new bay (the new bay is highlighted) .
- 4 Release the left mouse button.

Using menus:

- 1 Left-click a bay to select a source network.
- 2 From the Bay Functions menu, select Move Bay.
- 3 In the Move dialog box, select the From and To entries.
- 4 Click **OK**.

Using buttons:

Note

The currently selected bay is assumed to be the bay to be moved.

Click on the Move button, or use **Tab** to move the focus rectangle onto the Move button, or select **Alt-M**.

In the Move To dialog box, select the new bay number.



Click **OK**.

Copying a network

Copying a network name from any bay number (1-10) to any other bay number copies the source network data into the new bay. It does not delete the network data from the source bay.

Network data may be copied to any bay. The data is copied into the new bay. Either or both copies may be renamed.

Using a mouse:

- 1 Move the cursor over the name of the network to be copied.
- 2 Press and hold the left mouse button (the antenna symbol appears).
- 3 Drag the cursor to the Copy box. .
- 4 Release the left mouse button.
- 5 Press and hold the left mouse button over the Copy box (the antenna symbol appears).
- 6 Drag the cursor to the new bay (the new bay is highlighted). .

Note

The copied location will not be deleted.

- 7 Release the left mouse button.
- 8 Make as many copies of the Copy location as needed.

Using menus:

- 1 Left-click a bay to select a source network.
- 2 From the Bay Functions menu, select Copy Bay.
- 3 In the Copy To dialog box, select the copy From and To entries.
- 4 Click **OK**.

Using buttons:

Note

The currently selected bay is assumed to be the bay to be moved.

- 1 Click on the Copy button, or use **Tab** to move the focus rectangle onto the Copy button, or select **Alt-C**.
- 2 Select the Copy To bay number.
- 3 Click **OK**.

Deleting a network



When customized network information is deleted, the network is set to default values.



Caution

Once the information in a network is erased, it cannot be recovered.

Using a mouse:

- 1 Move the cursor over the network to be deleted.
- 2 Press and hold the left mouse button (the antenna symbol appears and changes to a  symbol as it is dragged away.)
- 3 Drag the cursor to the  icon. The antenna symbol re-appears and the trash can is outlined when the cursor is in the proper position.
- 4 Release the left mouse button.
- 5 Respond to the warning message that appears.

Using menus:

- 1 Left-click a bay to select a source network.
- 2 From the Bay Functions menu, select Delete Bay.
- 3 In the Delete dialog box, select the bay to delete the data from.
- 4 Click **OK**.

Using buttons:

Note


The highlighted bay is assumed to be the bay to be deleted.

- 1 Click on the Delete button, or use **Tab** to move the focus rectangle onto the Delete button, or select Alt-D.
- 2 Click **OK**.

Saving network data to disk

Network data files are saved using the bay name and an .ssl extension.

Using a mouse:

- 1 Move the cursor over the network to be saved to disk.
- 2 Press and hold the left mouse button (the antenna symbol appears).
- 3 Drag the cursor to the  icon. The icon is outlined when the cursor is in the proper position.
- 4 Release the left mouse button.

Note

The bay is saved on the local hard drive under the name assigned in the Name: box. For example, if the bay is named "Bay 15", the resulting file will be "Bay 15.ssl".

Using menus:

Note

The bay is saved on the local hard drive under the name assigned in the Name: box.

- 1 Left-click a bay to select a source network.
- 2 From the Bay Functions menu, select Save Bay.
- 3 At the Save dialog box, select the bay number.
- 4 Click **OK**.

Using buttons:


- 1 Left-click a bay to select the source network.
- 2 Click on the Save button, or use **Tab** to move the focus rectangle onto the Save button, or select **Alt-V**.
- 3 At the Save As dialog box, select the file path and bay name.
- 4 Click **OK**.

Loading network data from disk

Note

Only network data files with an .ssl extension can be loaded from a disk.

Using a mouse:

- 1 At the Network Wizard screen, move the cursor over the open file icon 
- 2 Press and hold the left mouse button.
- 3 While holding the left mouse button, drag the cursor to the desired network location. The network location will be highlighted **[EMPTY]** when the cursor hovers over it.
- 4 Release the left mouse button.
- 5 From the Open dialog box, double-click on the desired .ssl file.

Using menus:

- 1 At the Network Wizard screen, select **Bay Functions > Load Bay**.
- 2 At the Load Into dialog box, select a bay number to load data into.
- 3 At the Open dialog box, double-click on the desired .ssl file.

Using buttons:

- 1 At the Network Wizard screen, click on a network bay.
- 2 Click on the Load button, or use **Tab** to move the focus rectangle onto the Load button, or select **Alt-L**.
- 3 At the Open dialog box, double-click on the desired .ssl file.

Mobile connection wizard

The Mobile Connection Wizard is designed to organize and maintain a library of insertion loss factors (organized by make and model of the mobile phone).

Note


Insertion loss is affected by many factors: cable length, connector characteristics, isolation box characteristics, and mobile phone physical and electrical characteristics.

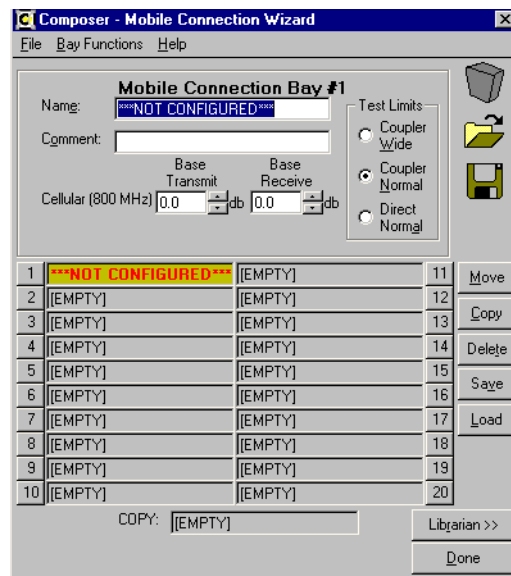
The 4350 allows the user to enter or load, store, re-arrange and recall up to twenty (20) insertion loss factor sets for cellular (800 MHz) and PCS (1900 MHz) transmit and receive bands, and to set pass/fail limits.

Managing the insertion loss files

The Mobile Connection Wizard enables the management of insertion loss data files.

Insertion loss factors and test limits are set at this screen.

Click  to open the Mobile Connection Wizard.



Selecting the active mobile connection bay

Management of insertion loss files begins with the selection of a mobile connection bay.

Click on one of the numbered control buttons (1-20) with the mouse, or use **Tab** to move the focus rectangle into the box and press **Enter** to activate the bay.

Naming or renaming the mobile connection bay

The current bay name appears in the Name: box.

If the name is highlighted, type in a new name.

To rename a bay, double-click on the Name: box to bring up the Rename Mobile Connection Bay dialog box. Type a new name into the dialog box.

Note

Bay names are limited to twenty (20) characters. If more than 20 characters are entered, the name will be truncated to the first 20 characters.

Adding comments to a mobile connection bay

Comments, such as the name and model of the phone, i.e.: "XYZ Model 42", may be added to the bay description.

Comments will be displayed on the 4350.

Left click in the Comment box, and type in a new comment or edit the current comment.

Note

Comments are limited to thirty (30) characters. If you attempt to enter more than 30 characters, the comment will be truncated to the first 30 characters.

Insertion loss

Insertion loss indicates signal strength loss between the 4350 Series Mobile Fault Finder's RF output jack and the mobile phone antenna, and can cause inaccurate test measurements or test failure.

Insertion loss is related to phone frequency and to whether the phone is transmitting or receiving. The 4350 adjusts for insertion loss of up to 30dB in both cellular (800 MHz) and PCS (1900 MHz) bands, in both transmit and receive modes.

To minimize insertion loss, connect the mobile phone directly to the 4350's RF output jack using a cable which is specially designed for the make and model of phone being tested. If the cable connector does not match the RF output connector on the 4350, use an adapter (which introduces additional insertion loss).

The antenna coupler provides no direct connection between the mobile phone and the 4350. Instead, the phone is placed in a special cradle, which is permanently fixed over a radiation plate. The signals from the 4350 are air coupled to the mobile phone through the radiation plate.

Both the direct connection and antenna coupler methods introduce some insertion loss into the test process, but each can be compensated for by programming the loss factors into the 4350 using Composer.

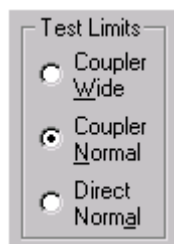
Characterizing insertion loss

Characterization is the process of adjusting for insertion loss factors. Composer provides default characterizations based on specific combinations of mobile phones (make and model) and the connection method (direct or coupled).

Enter customized loss factors into the appropriate boxes in the Mobile Connection Wizard in 0.1 dB increments up to 30 dB.

	Base Transmit		Base Receive
Cellular (800 MHz)	0.0	db	0.0
PCS (1900 MHz)	0.0	db	0.0

Setting test limits Test limits determine the pass/fail limits used by 4350 the test program.



Note

The direct connection method is more accurate than the coupled method.

Coupler Wide test limits allow for the most variation between the programmed loss factors and those actually present in the system of all the test limit settings. This setting may cause marginal units to pass.

Use the Coupler Normal test limits when testing a known and characterized make and model of phone in an RF isolation box.

Note

Include a generic phone type to be used for testing phones that have not been characterized. Select a test limit setting that is similar to the phone being tested.

Use the Direct Normal setting only if a direct connection is used. Using Direct Normal for coupled connections may result in test failures on healthy phones.

Moving mobile connection bays

Moving a mobile connection bay from any location to any other location results in the source data being moved into the new bay and deleted from the source bay.

Using a mouse:

- 1 Move the cursor over the bay to be moved.
- 2 Press and hold the left mouse button (the mobile symbol appears).
- 3 Drag the cursor to the new bay (the new bay is highlighted).
- 4 Release the left mouse button.

Using menus:

- 1 Left-click a bay to select a source bay.
- 2 From the Bay Functions menu, select **Move Bay**.
- 3 In the Move dialog box, select the From and To bay numbers. Click **OK**.
- 4 Click **OK**.

Using buttons:

Note

The currently selected bay is assumed to be the bay to be moved.

- 1 Click on insert the **Move** button, or use **Tab** to move the focus rectangle onto the Move button, or select **Alt-M**.
- 2 At the Move To dialog box, select the new bay number.
- 3 Click **OK**.

Copying a mobile connection bay

Copying a mobile coupler bay name from any bay number (1-20) copies the source bay information into the new bay number.

Note

It does not delete the bay information from the source bay.

Data is copied into the new bay and two (2) copies of the source bay data are kept in the Librarian. Either or both copies may be renamed and their parameters edited.

Using a mouse:

- 1 Move the cursor over the name of the bay to be copied.
- 2 Press and hold the left mouse button (the mobile symbol appears).
- 3 Drag the cursor to the COPY: box.
- 4 Release the left mouse button.
- 5 Press and hold the left mouse button over the COPY: box (the mobile symbol appears).
- 6 Drag the cursor to the new bay (the new bay is highlighted).
- 7 Release the left mouse button.
- 8 Make as many copies of the COPY: location as needed.

Using menus:

- 1 Left-click a bay to select a source bay.
- 2 From the Bay Functions menu, select **Copy Bay**.
- 3 At the Copy dialog box, select the From and To bay numbers.
- 4 Click **OK**.

Using buttons:

Note

The currently selected bay is assumed to be the bay to be copied.

- 1 Click on the **Copy** button, or use **Tab** to move the focus rectangle onto the Copy button, or select **Alt-C**.
- 2 Select the Copy To bay number.
- 3 Click **OK**.

Deleting a mobile connection bay



When customized bay information is deleted, the bay is set to default values.



Warning

Once the information in a bay is erased, it cannot be recovered.

Using a mouse:

- 1 Move the cursor over the bay to be deleted.
- 2 Press and hold the left mouse button (the mobile symbol appears and changes to a  symbol as it is dragged away).
- 3 Drag the cursor to the  icon. The mobile symbol re-appears and the trash can is outlined when the cursor is in the proper position.
- 4 Release the left mouse button.
- 5 Respond to the warning message that appears.

Using menus:

- 1 Left-click a bay to select a source bay.
- 2 From the Bay Functions menu, select **Delete Bay**.
- 3 In the Delete dialog box, select the bay number.
- 4 Click **OK**.

Using buttons:

Note


The highlighted bay is assumed to be the bay to be deleted.


- 1 Click on the **Delete** button, or use **Tab** to move the focus rectangle onto the Delete button, or select **Alt-D**.
- 2 Click **OK**.

Saving mobile connection bay data to disk

Bay data files are saved using the bay name and an .msl extension.

Using a mouse:

- 1 Move the cursor over the bay to be saved.
- 2 Press and hold the left mouse button (the antenna symbol appears and changes to a  symbol as it is dragged away).

- 3 Drag the cursor to the  icon. The disk icon is outlined when the cursor is in the proper position.
- 4 Release the left mouse button.

Using menus:

- 1 Left-click a bay to select a source bay.
- 2 From the Bay Functions menu, select **Save Bay**.
- 3 In the Save dialog box, select the bay number to be saved.
- 4 Click **OK**.

Using buttons:

Note



The currently selected bay is assumed to be the bay to be deleted.

- 1 Click on the **Save** button, or use **Tab** to move the focus rectangle onto the Save button, or select **Alt-V**.
- 2 At the Save As dialog box, select a file path and name the bay.
- 3 Click **Save**.

Loading mobile connection bay data from disk

Bay data files loaded from a disk have a .msl extension.

Using a mouse:

- 1 Move the cursor over the  icon.
- 2 Press and hold the left mouse button.
- 3 Drag the cursor to the desired bay location. The bay location will be highlighted  when the cursor is in the proper position.
- 4 Release the left mouse button.
- 5 At the Open dialog box, select the desired .msl file.
- 6 Click **Open**.

Using menus:

- 1 Left-click on a bay to select it.
- 2 From Bay Functions menu, select **Load Bay**.
- 3 At the Load Into dialog box, selected the bay number to have the .msl loaded into it.
- 4 Click **OK**.
- 5 At the Open dialog box, select the desired .msl file.
- 6 Click **Open**.

Using buttons:

Note

The currently selected bay is assumed to be the bay to be deleted.

- 1 Left-click on a bay to select it.
- 2 Click on the **Load** button, or use **Tab** to move the focus rectangle onto the Load button, or select **Alt-L**.
- 3 At the Open dialog box, selected the desired .msl file.
- 4 Click **Open**.

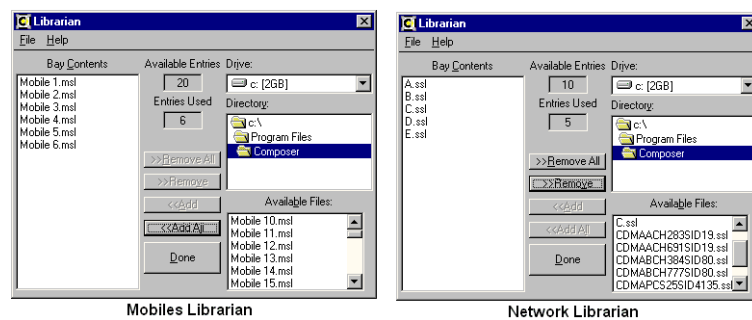
File librarian

Bay data entered at each of the Wizards can be viewed using the Librarian.

The Librarian enables access to only the files (on either local or network drives) which are compatible with the current application.

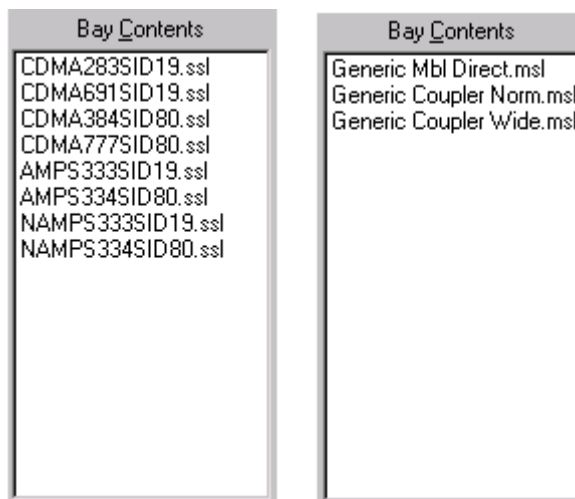
Selected files can be loaded into Composer at the Librarian.

The main screen



The Librarian dialog box disables the Wizards. Press **Done** to return to the Wizards.

Bay contents list



The Bay Contents window lists the bays created in either Wizard.

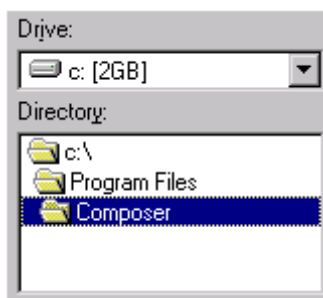
Note

Bay data cannot be changed from this screen.

Note

The Bay Contents window may not be completely filled if the Librarian is accessed from the Network Wizard as the Network Wizard accepts only 10 bays, but the Bay Contents window can display more than 10 entries.

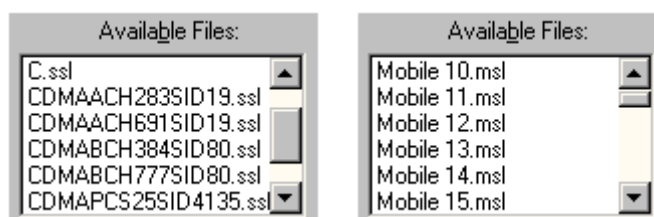
Drive and directory list



Select the file path for reading files by using the drive pull down menu to view all drives attached to this computer (floppy disks, hard disks, CD-ROMs, and mapped network drives).

The Directory and Available Files windows are updated as the file path is selected.

Available files list



The Available Files window lists all files in the selected directory which meet the setup criteria (file extension).

If no files in the selected directory match the setup criteria, the Available Files window is empty.

Available Entries, Entries Used



These windows display the number of available bays and the number of bays being used.

As bays are setup with the corresponding Wizard, the Bay Contents window listing changes.

Remove To delete an entry in the Bay Contents list, highlight it and click **>>Remove**.

Remove All To delete all entries in the Bay Contents list, click **>>Remove All**.

Add To add an entry from the Available Files list to the Bay Contents list, highlight it and click **<<Add**.

Note

The entry is not removed from the Available Files window.

Add All To add all entries from the Available Files List to the Bay Contents list, click **<<Add All**.


Note

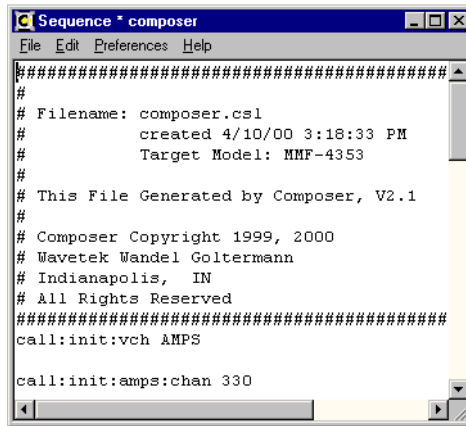
There may be more files in the Available Files list than available bays. Add All adds files to the Bay Contents list in the order in which they appear in the Available Files list, and when the Bay Contents list is full, subsequent files are ignored.

The preferred method of adding files is to use the Add button rather than the Add All button.

Done Click **Done** to transfer the Bay Contents list into bays managed by the Wizard.

Viewing the output file

Select the  icon to view the Composer Settings(.csl) file.



```
#####  
#  
# Filename: composer.csl  
#      created 4/10/00 3:18:33 PM  
#      Target Model: MMF-4353  
#  
# This File Generated by Composer, V2.1  
#  
# Composer Copyright 1999, 2000  
# Wavetek Wandel Goltermann  
# Indianapolis, IN  
# All Rights Reserved  
#####  
call:init:vch AMP5  
  
call:init:amps:chan 330
```


This screen displays the output (.CSL) file generated by Composer. Use this screen to:

- verify that all parameters are set as desired,
- print a hard copy of the output file for archiving purposes,
- cut and paste text from this screen into other documents.



Caution

Any edits made at this screen are not made to the .csl file.

Resize the Sequence window by moving the cursor over the border of the window until the cursor changes to a double-headed arrow . Left-click and drag the border until the window is the desired size.

Fonts

Select the font for this screen (and the printer) from the **Preferences > Font** menu.

Printing

Select **File > Print** to print from this screen.



Note

Composer locates and uses the default printer for the computer.

The default font is Fixedsys 10 pt. Regular.


Editing



Caution



Edits to this screen are not reflected in the .csl file.

Select text using the mouse

- 1 Move the cursor  in front of the selected text, and left-click the mouse button.
- 2 To select text, click and drag the cursor across the text to highlight it.

- 3 Release the left mouse button.

Select text using the keyboard

- 1 Use the  keys to move the cursor in front of the selected text.
- 2 Press and hold the **Shift** key.
- 3 Use  to highlight the selected text.
- 4 Release the **Shift** key.

Select all text using the mouse

- 1 From the Edit menu, select **Select All**.

Select all text using the keyboard

- 1 Press **Ctrl-A**.


Copy text using the mouse

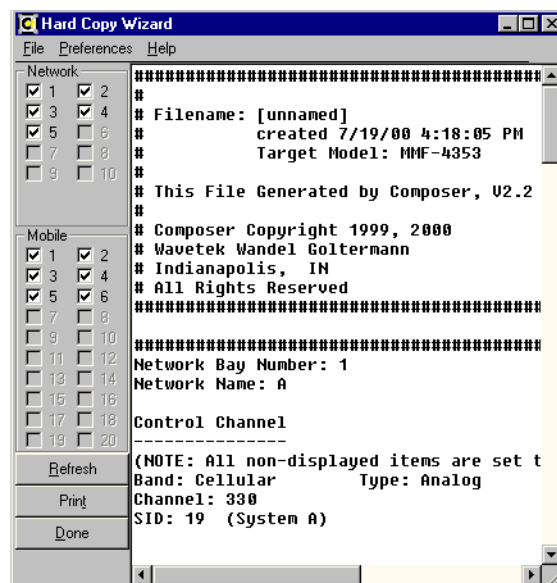
- 1 Highlight selection.
- 2 From the Edit menu, select **Copy**.

Copy text using the keyboard

- 1 Highlight selection.
- 2 Press **Ctrl-C**.

Hardcopy wizard

For a hard copy of the data bay print out, select **Wizards > Hard Copy Wizard**, or click  at the main screen.



The Bay Data Print Out window displays Network Storage and Mobile Connection Bay data.

The display window Resize the Bay Data Print Out window for easier viewing.

To resize, position the cursor over one of the edge borders or corners until the cursor changes to double arrows \leftrightarrow , \updownarrow , click and drag to adjust the size of the window.

The control channel and voice channel data appears on the display window. Use the scroll bars to see the entire display.

Network check boxes Select which network bay data to print by clicking the cursor on the check box . Bays associated with unchecked boxes will not appear in the printout.

Disabled boxes indicate bays that are not configured, and are not printed.

Coupler loss check boxes Select which coupler loss information to print by clicking the cursor on the check box. Bays associated with unchecked boxes will not appear in the printout.

Disabled boxes indicate bays that are not configured, and are not printed.

File menu Click **Refresh** or select **Files > Refresh** to update the display after making changes to the bay data.

Print Click **Print** or select **Files > Print**.

Preferences menu Select the font from the **Preferences > Font** menu.

Select the default font from the **Preferences > Default Font** menu. The default font is Fixedsys 10pt Regular.

Help menu This box displays copyright notices and software version number.

Click **OK** to return to the hard copy printout window.

Composer How-Tos

4

This chapter provides task-based instructions for using the Composer for the 4350 Mobile Fault Finder Series features. Topics discussed in this chapter are as follows:

- ["How do I save the Composer Settings \(.csl\) file?" on page 34](#)
- ["How do I rename an existing .csl file?" on page 35](#)
- ["How do I load a previously saved .csl file?" on page 35](#)
- ["How do I clear Composer and start a new .csl file?" on page 35](#)
- ["How do I view the .csl file?" on page 35](#)
- ["How do I name or rename a network or mobile bay?" on page 35](#)
- ["How do I select a new or different network?" on page 36](#)
- ["How do I tell Composer what hardware features I have?" on page 36](#)
- ["How do I open the Network Wizard?" on page 37](#)
- ["How do I open the Mobile Connection Wizard?" on page 37](#)
- ["How do I print the .csl file?" on page 37](#)
- ["How do I set the font for the Sequence window?" on page 37](#)
- ["How do I set the default font for the Sequence window?" on page 37](#)
- ["How do I get more help?" on page 37](#)
- ["How do I move data from one bay to another?" on page 37](#)
- ["How do I add bay files from disk?" on page 39](#)
- ["How do I delete a bay?" on page 40](#)
- ["How do I get a printout of the bay data?" on page 41](#)
- ["How do I set the font for the hard copy printout?" on page 41](#)
- ["How do I set the default font for the hard copy printout?" on page 41](#)

How do I save the Composer Settings (.csl) file?

The Composer output file has a .csl (Combined Setup Load) extension. This file is copied to the 4350's boot disk.


Note

In order for the file to be loaded into the 4350, the file must be named composer.csl. To archive a file, any file name is acceptable, providing that the file is renamed to composer.csl before it is transferred to the 4350 disk.

Note

A warning appears if you attempt to save with a file name other than composer.csl.

To save the .csl file:

From the main screen, click on  or select **File > Save**.

If the file has previously been saved, Composer will attempt to re-save it under the existing name. This results in a request from Composer that you confirm the overwrite.

A new, previously unsaved file needs to be named in one of two formats:

DOS 8.3 format A 1-8 character filename and 3 character extension. (composer.csl)

DOS 8.3 format is required if the file is written to a floppy diskette.

Composer examines the drive letter selected at the **Save As** dialog box. The DOS 8.3 format is strictly enforced for drives A or B. (These drives are assigned as floppy disk drives in a Windows environment.)

Composer assumes that the files may be transferred to a 4350, which supports only DOS 8.3 file names.

When naming the file, Composer automatically adds the .csl file extension.

Windows long file name The valid length is in the range from 1 to 256 characters.

Long File Name format may be used if the file is being saved to a local hard drive.

Considerations For drives other than A or B, use either DOS 8.3 or Windows Long File Name formats.

Once a file is saved, its name is displayed in the Status Area.

To rename a previously saved file, select **File > Save As** from the main menu.


How do I rename an existing .csl file?

To rename a .csl file, select **File > Save As** from the main menu, and save the file under a new name.

How do I load a previously saved .csl file?

A previously saved .csl file can be reloaded into and modified in Composer.

To re-load .csl file:

From the main screen, click  or select **File > Open Existing CSL File**.

Once the file is loaded, its name will be displayed in the Status Area.


How do I clear Composer and start a new .csl file?

Composer is automatically cleared when first loaded.

To clear Composer during use:

From the main menu, click  or select **File > New CSL File**.

How do I view the .csl file?

At the main screen, click  or select **File > View Current CSL File**.

This opens the Sequence window.

What appears in the Sequence window depends on several factors:

- Networks must be named before they are saved. Unnamed networks will not appear in the .csl file.
- No comments will appear in the file if Add Comments is not checked.

Note

If only the header is displayed, ensure that at least one network is named.

How do I name or rename a network or mobile bay?

Note

An unnamed bay will not be written to the .csl file.

Rename a Network Bay from the main screen:

- 1 From the main menu, select **Bay Functions>Rename Bay** or use **Tab** to move the focus rectangle onto the Rename Network button, and press **Enter**.
- 2 Name or rename the bay.

Note

Bay names are limited to twenty (20) characters. Names longer than 20 characters will be rejected.

- 3 Click **OK**.

From the Network Wizard or Mobile Connection Wizard:

- 1 Click the mouse cursor inside the Name area or use **Tab** to move the focus rectangle into the Name area.
- 2 Type the desired name into the network name area.

How do I select a new or different network?

At the main screen:

- 1 Click on in the **Network Selection** drop list.
- 2 Select the desired network or use **Tab** to move the focus rectangle into the Network Selection Drop List.
- 3 Use or to select the desired network number.

At the Network Wizard:

Click the mouse cursor anywhere within the Name: area for the desired network or click on the network number button or use **Tab** to move the focus rectangle onto the desired network number button and press **Enter**.

How do I tell Composer what hardware features I have?

The 4350's hardware features are coded into the model number:

- Model 4351 -- AMPS and NAMPS
- Model 4352 -- AMPS, NAMPS, and CMDA
- Model 4353 -- AMPS, NAMPS, CMDA, and PCS
- Model 4354 -- AMPS, NAMPS, and TMDA
- Model 4355 -- AMPS, NAMPS, TMDA, and PCS

Select the model number of the 4350 before selecting **Go to Programming**.


How do I open the Network Wizard?

At the main screen, click on  or select **Wizards > Network Wizard**.

Note

Close the Network Wizard to return to the main screen.

How do I open the Mobile Connection Wizard?

At the main screen, click on  or select **Wizards > Mobile Connection Wizard**.

Note

Close the Mobile Connection Wizard to return to the main screen.

How do I print the .csl file?

- 1 At the main menu, select **File > View Current CSL File**.
- 2 At the Sequence window, select **File > Print**.

How do I set the font for the Sequence window?

From the Sequence window, select **Preferences > Font**.

How do I set the default font for the Sequence window?

From the Sequence window, select **Preferences > Default Font**.

The default font is Fixedsys 10 pt. Regular.

How do I get more help?



Press **F1** for context-sensitive help for the screen you're using.

How do I move data from one bay to another?



Caution

Moving data from one bay to another deletes the data in the source bay.

Select either the Network Wizard  or the Mobile Connection Wizard .

- Using buttons**
- 1 Click on the **Move** button, or type **Alt-M**.
 - 2 At the Move To dialog box fill in bay number.
 - 3 Click OK, or type **Alt-O**.

- Using menus**
- 1 Left-click on the network to be moved to select it.
 - 2 At the Network Wizard, select **Bay Functions > Move Bay**.
 - 3 At the Move dialog box, fill in the From and To entries.
 - 4 Click **OK**, or type **Alt-O**.



- Using Drag and Drop**
- 1 Move the mouse cursor over the source bay.
 - 2 Press and hold the left mouse button.
 - 3 While holding the left mouse button, move the cursor over the destination bay. (The bay is highlighted when the mouse is over a valid position.)
 - 4 Release the left mouse button. (The name of the destination bay should be updated, and the name of the source bay should be cleared.)
 - 5 Repeat Steps 3 and 4 as needed to make as many copies of the source bay as required.

Note

If you attempt to move data into a network that is already named, you will be asked to confirm the move.

How do I copy data from one bay to another?

Copying data from one bay to another does not delete the data in the old bay.

Select either the Network Wizard  or the Mobile Connection Wizard .

- Using buttons**
- 1 Click on the Copy button, or type **Alt-C**.
 - 2 At the Copy To dialog box, fill in the bay number.
 - 3 Click **OK**, or type **Alt-O**.

- Using menus**
- 1 Select the source bay by clicking on its selection button or in its name area.
 - 2 From the Network Wizard, select **Bay Functions > Copy Bay**.
 - 3 At the Copy dialog box, fill in the From and To entries.

- 4 Click **OK**, or type **Alt-O**.



Using Drag and Drop

- 1 Move the mouse cursor over the source bay.
- 2 Press and hold the left mouse button.
- 3 While holding the left mouse button, move the cursor over the destination bay. (The destination bay is highlighted when the mouse is over a valid position.)
- 4 Release the left mouse button. (The name of the destination bay should be updated while the name of the source bay is retained.)
- 5 Repeat steps 3 and 4 as needed to make as many copies of the source bay as required.

Note

If you attempt to move data into a network that is already named, you will be asked to confirm the move.

How do I add bay files from disk?

Select either the Network Wizard  or the Mobile Connection Wizard .

Adding Single Files


Using buttons

- 1 Left-click on the destination bay to select it.
- 2 Click the Load button, or type **Ctrl-L**.
- 3 At the Open dialog box, select the file (.ssl/.msl) to be loaded.
- 4 Click **Open**.

Using menus

- 1 At the Bay Functions menu, select **Load Bay**.
- 2 At the Load Into dialog box, fill in the bay number.
- 3 Click **OK** or type **Alt-O**.

Using Drag and Drop

- 1 At the Wizard menu, move the cursor over the  icon.
- 2 Press and hold the left mouse button.
- 3 While holding the left mouse button, drag the cursor to the destination bay. (The bay is highlighted selected.)
- 4 Release the mouse button.
- 5 At the Open dialog box, select the file (.ssl/.msl) to be loaded.
- 6 Click **Open**.

- Using the Librarian**
- 1 At the Wizard screen, click **Librarian>>**.
 - 2 At the Librarian screen, use the mouse to select the desired file from the Drive List and Directory List.
 - 3 Click **<<Add**.
 - 4 Click **Done**.

Adding Multiple Files



Note

Adding multiple files at one time can be done only from The Librarian.

- 1 At the Wizard screen, click **Librarian>>**.
- 2 At the Librarian screen, use the mouse to select the desired files from the Drive List and Directory List. (The File List accepts multiple entries.)
- 3 Press and hold **Ctrl**. Drag the mouse over any number of consecutive entries.
- 4 Click **<<Add**.
- 5 Click **Done**.


ALL files from the Available Files list can be added to the Bay List by clicking **<<Add All**.

How do I delete a bay?

Select either the Network Wizard  or the Mobile Connection Wizard .


- Using buttons**
- 1 Left-click to select the bay to be deleted.
 - 2 Click the DELETE button, or type **Alt-T**.
 - 3 Respond to the warning that appears.

- Using menus**
- 1 From the Wizard screen, select **Bay Functions > Delete Bay**.
 - 2 At the Delete dialog box, enter the bay number to be deleted.
 - 3 Click the **OK** button.


- Using Drag and Drop**
- 1 Left-click to select the bay to be deleted.
 - 2 Move the mouse cursor over the selected bay.
 - 3 Press and hold the left mouse button.
 - 4 While holding the left mouse button, drag the cursor to the  icon. (The Trash Can will be outlined when the cursor is in the proper position.)
 - 5 Release the mouse button.

- 6 Respond to the warning that appears.


How do I get a printout of the bay data?

- 1 From the Wizard's main screen, select **Wizards > Hard Copy Wizard** or click .
- 2 At the Bay Data Printout screen, select which bays to print out by selecting the corresponding Network and Mobile check boxes.
- 3 Select **File > Print** or click **Print**.

How do I set the font for the hard copy printout?

- 1 From the Wizard's main screen, select **Wizards > Hard Copy Wizard** or click .
- 2 At the Bay Data Printout window, select **Preferences > Font**.
- 3 Select the font and style.

How do I set the default font for the hard copy printout?

- 1 The Network Information Printout Window font is selected from the CSL List Window Menu.
- 2 At the Wizard main screen, select **Wizards > Hard Copy Wizard** or click .
- 3 At the Bay Data Printout window, select **Preferences > Default Font**. The default font is Fixedsys 10 pt. Regular.

Using the Composer Utility Software

5

This chapter describes how to use the Composer Utility. The topics discussed in this chapter are as follows:

- ["Overview" on page 44](#)
- ["Accessing the Composer Utility features" on page 44](#)
- ["4351, 4352, and 4353 utility features" on page 45](#)
- ["4354 and 4355 utility features" on page 48](#)
- ["4351, 4352, 4353, 4354 and 4355 common utility features" on page 52](#)

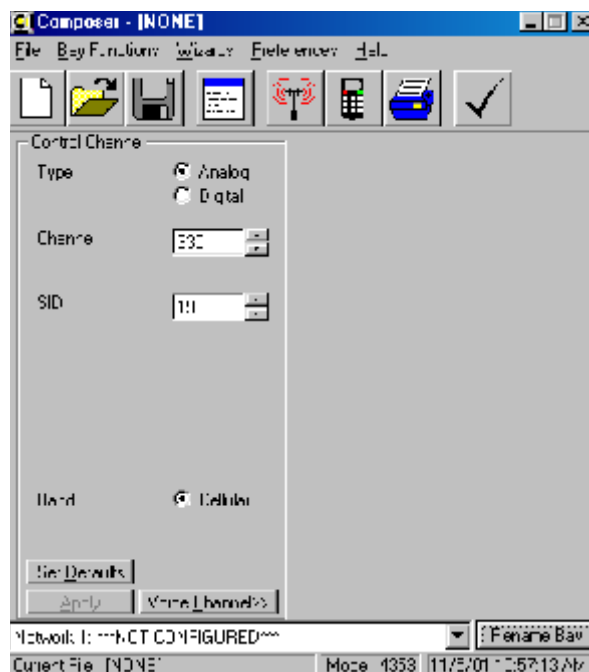
Overview

The Composer CDMA and TDMA Utility software retains the Composer features. These features allow the user to create, store, and change Composer files that contain Mobile and Network Bay configuration data for the complete line of Mobile Fault Finder products. New features allow the user to create, store and change additional Mobile Fault Finder Files. The new features are:

- Korean PCS Band
Composer Version 2.2Q adds the Korean PCS Band selection option when working with the 4353.
- Test Selection
This feature allows the user to select the tests that will be performed by the Mobile Fault Finder.
- Test Limit Editing
This feature allows the user to set the pass/fail test limits for all tests performed by the Mobile Fault Finder.
- Header File Creation
This feature allows the user to create and load Header files. These files contain information that is included in the Mobile Fault Finder test report.
- Print Method Selection
This feature allows the user to select whether the Mobile Fault Finder will print results or not. It will also allow the user to select the print method if results are to be printed.

Accessing the Composer Utility features

All of the new features are accessed through the check mark button on the tool bar, or through **Wizards > Tests, Limits and Header Wizards** as shown below.



During installation, two sets of folders will be created that contain all of the files necessary to perform an "Upgrade Test" on a Mobile Fault Finder.



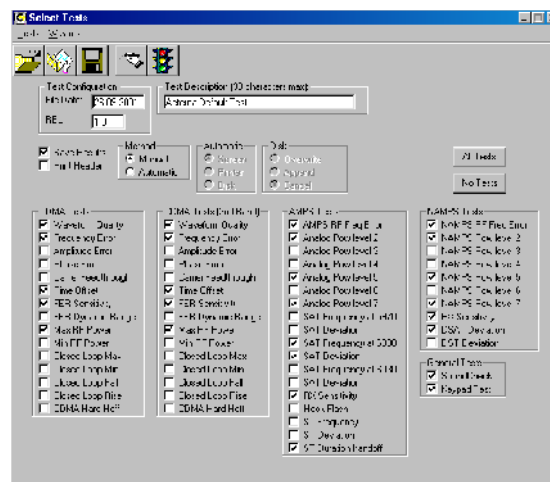
Warning

Do not open or alter any files contained in these folders. The Mobile Fault Finder will not be able to load these files if altered outside of the Composer Utility software.

4351, 4352, and 4353 utility features

Select Tests menu

The MAIN.mpg file must be opened before selecting any tests or editing any test limits. MAIN.mpg is located in the 4351_52_53Utility\UtilityAlterable folder that was created when the WinZip self-extracting (ComposerUtility.exe) file was run during installation. The default test will appear as shown below after MAIN.mpg is opened. Click the **X** box or choose **Tests > Exit Select Tests** to close Select Tests. The main Composer menu will appear.



Test Configuration and Test Description

Information entered in the Test Configuration and Test Description text boxes will appear in the Test Configuration portion of the Upgrade and Configuration menu when loaded onto the Mobile Fault Finder. Use these text boxes for configuration control of the test programs you create.

Save Results

You must check the Save Results check box if the Mobile Fault Finder should print results to the screen, a printer, or a floppy disk. The Manual Method allows the Mobile Fault Finder operator to select the print method (screen, printer, or disk) from the Mobile Fault Finder screen. The Automatic Method can be used to eliminate Mobile Fault Finder operator selection for the printing of results. If the Automatic Method is used, select the desired device (screen, printer or disk). If **disk** is selected as the print device, select how result files are saved to the floppy disk if the same file already exists on the disk (i.e. the same phone was tested a second time). The existing file can be overwritten or appended, or the save to disk can be cancelled.

Mobile Fault Finder operators should be informed when automatic printing of result files is implemented. They will need to make sure a printer is ready, or a floppy disk inserted before they begin any tests.

Print Header Check the Print Header check box if header information should be included in printed results. Any header file that has been loaded onto the Mobile Fault Finder using Upgrade Composer will be printed to a printer or a disk. Header information will not be printed if a header file has not been loaded onto the Mobile Fault Finder.

Selecting tests Selectable tests are divided into five separate groups. Tests will be run when their associated check box is checked. Uncheck all check boxes within a test group to eliminate that group. Click on the All Tests button to check, or No Tests to uncheck all of the test check boxes. The Mobile Fault Finder automatically detects the mobile's capabilities, and only runs tests appropriate for the current mobile under test.

As an example, NAMPS Tests will only be performed on mobiles that support NAMPS, even if NAMPS tests are selected.

CDMA Tests

Tests in this test group will be run on the band selected in the Mobile Fault Finder Network selection.

CDMA Tests (2nd Band)

Tests in this test group will be run on the opposite band selected in the Mobile Fault Finder Network selection. Tests in this test group are only run on dual band phones.

If the Network selected on the Mobile Fault Finder is a CDMA PCS band Network, Tests selected under CDMA Tests will be run in the PCS band, and tests selected under CDMA Tests (2nd Band) will be run in the Cellular band, when testing Dual Band phones.

If the Network selected on the Mobile Fault Finder is a CDMA Cellular band Network, CDMA Tests will be run in the Cellular band, and CDMA Tests (2nd Band) will be run in the PCS band.

AMPS Tests

Tests in this test group will be run on mobiles that support AMPS. This can include Tri Mode, Dual Mode or AMPS only mobiles.

NAMPS Tests

Tests in this test group will be run on mobiles that support NAMPS.

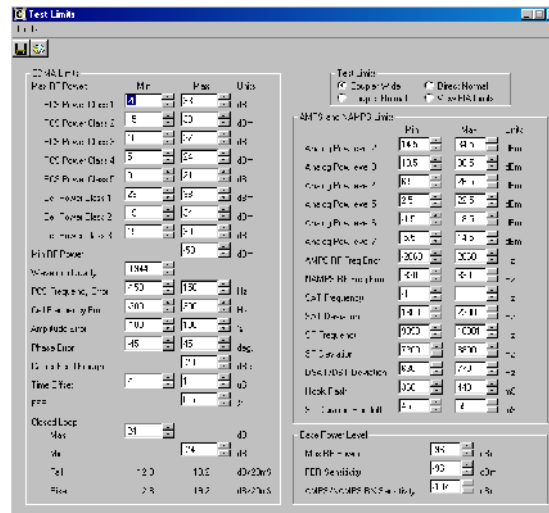
General Tests

Sound Check: This is the CDMA Voice Echo check. It will only be performed on one band, whichever is first, when testing Dual band mobiles.

Keypad Test: This is the Mobile Keypad test. This test will only be performed on the Network selected on the Mobile Fault Finder. The keypad is only tested once per mobile.

Test Limits menu

The Test Limits menu is accessed through the Stop Light icon on the Select Tests tool bar, or through **Wizards > Limits Wizard**. The Test Limits menu is shown below. To close this screen click the **X** box or select **Limits > Exit Limits**. The Select Tests menu will appear.



Test Limits

The test limits used during a test are dependent upon the RF connection to the Mobile. There are three types of connections. Two of these are through the Antenna Coupler, and the other is through a direct RF connection. The test limit type used during a test is selected when a phone selection is made on the Mobile Fault Finder. Make sure you select the correct Test Limits type before you begin editing.

If you are unsure of the correct Test Limits type open the Composer.csl file with Composer, enter the Mobile Connection Wizard, and select the appropriate Mobile Connection Bay. The Test Limits type will be shown in the Test Limits box.

If a printout of a Mobile Fault Finder test report is available you can directly compare the limits to determine the correct Test Limits type.

The measurement units used in the Test Limits menu are the same units reported by the Mobile Fault Finder. This allows a direct comparison between the Test Limits menu and a printed report.

CDMA Limits

The CDMA Limits box contains all of the test limits associated with CDMA tests currently available on the Mobile Fault Finder in both the PCS and Cellular bands.

Max RF Power

Make sure you select the proper frequency band (PCS or Cell), and the proper Power Class before editing Max RF Power limits. The mobile's abilities and Power Class are printed at the top of the Mobile Fault Finder test reports.

AMPS and NAMPS Limits

The AMPS and NAMPS Limits box contains all of the limits associated with AMPS and NAMPS tests currently available on the Mobile Fault Finder. Analog Pow level 2 – 7 limits are common to both AMPS and NAMPS tests.

SAT Frequency

The Mobile Fault Finder reports the actual SAT Frequency (not the SAT Frequency error). The Test Limits menu uses SAT Frequency error. The changes made to these limits will affect all three SAT Frequency tests (SAT Frequency at 5970, 6000, and 6030). All other AMPS and NAMPS limits appear as they do on the Mobile Fault Finder test report.

Base Power Level

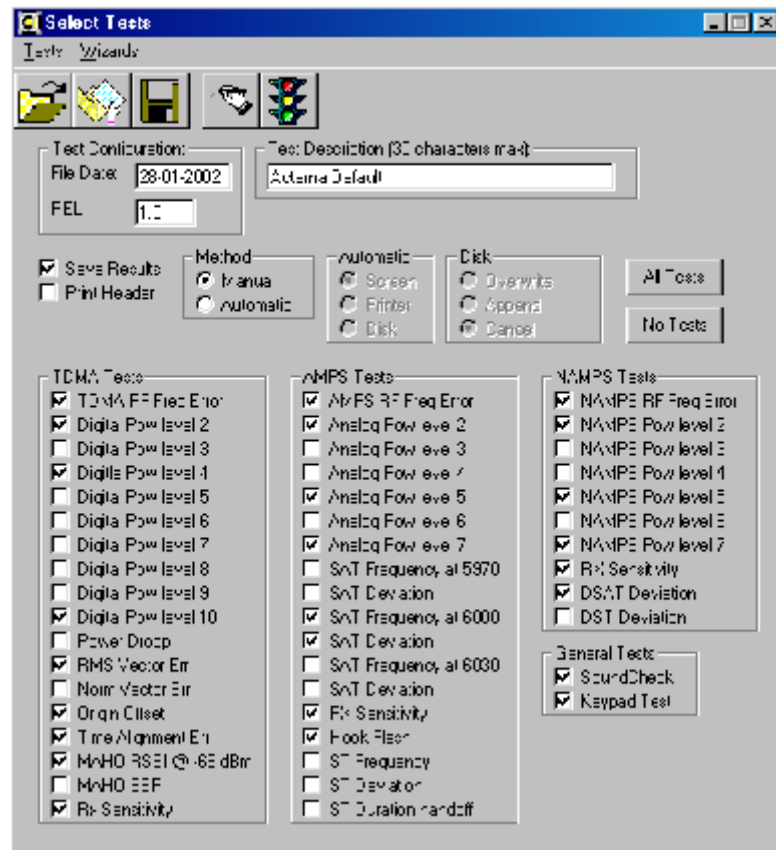
The user can alter the Mobile Fault Finder's Base Power output level for three tests:

- MAX RF Power
This is the Base power output during the CDMA Max RF Power test in both the PCS and Cellular bands.
- FER Sensitivity
This is the Base power output during the CDMA FER Sensitivity test in both the PCS and Cellular bands.
- AMPS/NAMPS RX Sensitivity
This is the Base power output during the RX Sensitivity test. The same level is used for both AMPS and NAMPS.

4354 and 4355 utility features

Select Tests menu

The MAIN.mpg file must be opened before selecting any tests or editing any test limits. MAIN.mpg is located in the 4354_55Utility\UtilityAlterable folder that was created when the WinZip self-extracting (ComposerUtility.exe) file was run during installation. The default test will appear as shown below after MAIN.mpg is opened. Click the **X** box or choose **Tests > Exit Select Tests** to close Select Tests. The main Composer menu will appear.



Test Configuration and Test Description

Information entered in the Test Configuration and Test Description text boxes will appear in the Test Configuration portion of the Upgrade and Configuration menu when loaded onto the Mobile Fault Finder. Use these text boxes for configuration control of the test programs you create.

Save Results

You must check the Save Results check box if the Mobile Fault Finder should print results to the screen, a printer, or a floppy disk. The Manual Method allows the Mobile Fault Finder operator to select the print method (screen, printer, or disk) from the Mobile Fault Finder menu. The Automatic Method can be used to eliminate Mobile Fault Finder operator selection for the printing of results. If the Automatic Method is used, select the desired device (screen, printer or disk). If **disk** is selected as the print device, select how result files are saved to the floppy disk if the same file already exists on the disk (i.e. the same phone was tested a second time). The existing file can be overwritten or appended, or the save to disk can be cancelled.

Mobile Fault Finder operators should be informed when automatic printing of result files is implemented. They will need to make sure a printer is ready, or a floppy disk inserted before they begin any tests.

Print Header Check the Print Header check box if header information should be included in printed results. Any header file that has been loaded onto the Mobile Fault Finder using Upgrade Composer will be printed to a printer or a disk. Header information will not be printed if a header file has not been loaded onto the Mobile Fault Finder.

Selecting tests Selectable tests are divided into four separate groups. Tests will be run when their associated check box is checked. Uncheck all check boxes within a test group to eliminate that group. Click on the All Tests button to check, or No Tests to uncheck all of the test check boxes. The Mobile Fault Finder automatically detects the mobile's capabilities, and only runs tests appropriate for the current mobile under test.

As an example, NAMPS Tests will only be performed on mobiles that support NAMPS, even if NAMPS tests are selected.

TDMA Tests

Tests in this test group will be run on TDMA capable mobiles on the band selected in the Mobile Fault Finder Network selection. The tests in this test group will be run on both the PCS and Cellular bands if Tri-Mode Test is selected on the Mobile Fault Finder.

AMPS Tests

Tests in this tests group will be run on mobiles that support AMPS. These tests are performed independent of the Network selection made on the Mobile Fault Finder. If a TDMA Network is selected, TDMA and then AMPS tests will be performed. If a NAMPS Network is selected, NAMPS and then AMPS tests will be performed. If an AMPS Network is selected only AMPS tests will be performed.

NAMPS Tests

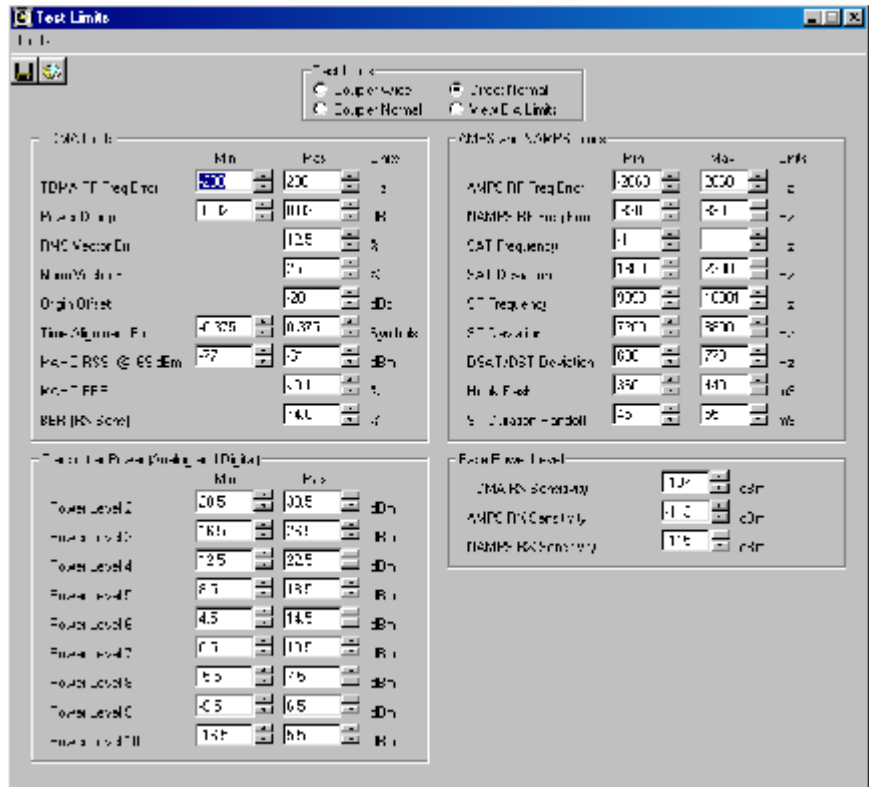
Tests in this test group will be run only if the Network selection made on the Mobile Fault Finder uses an NAMPS traffic channel.

General Tests

Sound Check: This is the TDMA Voice Echo check. It will only be performed on one band when Tri-Mode Test is selected on the Mobile Fault Finder.

Keypad Test: This is the Mobile Keypad test. This test will only be performed on the Network selected on the Mobile Fault Finder. The keypad test is only tested once per mobile.

Test Limits menu The Test Limits menu is accessed through the Stop Light icon on the Select Tests tool bar, or through **Wizards > Limits Wizard**. The Test Limits menu is shown below. To close this menu click the **X** box or select **Limits > Exit Limits**. The Select Tests menu will appear.



Test Limits The test limits used during a test are dependent upon the RF connection to the Mobile. There are three types of connections. Two of these are through the Antenna Coupler, and the other is through a direct RF connection. The test limit type used during a test is selected when a phone selection is made on the Mobile Fault Finder. Make sure you select the correct Test Limits type before you begin editing.

If you are unsure of the correct Test Limits type open the Composer.csl file with Composer, enter the Mobile Connection Wizard, and select the appropriate Mobile Connection Bay. The Test Limits type will be shown in the Test Limits box.

If a printout of a Mobile Fault Finder test report is available you can directly compare the limits to determine the correct Test Limits type.

The measurement units used in the Test Limits menu are the same units reported by the Mobile Fault Finder. This allows a direct comparison between the Test Limits menu and a printed report.

TDMA Limits

The TDMA Limits box contains all of the test limits associated with the TDMA tests currently available on the Mobile Fault Finder. These limits apply to both the PCS and Cellular band.

Transmitter Power (analog and digital)

The Transmitter Power test limits are common to TDMA, AMPS, and NAMPS tests. They are also common to TDMA tests run in the PCS or Cellular bands. Power Levels 7 through 10 are tested only if a direct connection to the Mobile is used, even if the associated check boxes are checked.

AMPS and NAMPS Limits

The AMPS and NAMPS Limits box contains all of the limits associated with AMPS and NAMPS tests currently available on the Mobile Fault Finder excluding Transmitter Power.

SAT Frequency: The Mobile Fault Finder reports the actual SAT Frequency (not the SAT Frequency error). The Test Limits menu uses SAT Frequency error. The changes made to these limits will affect all three SAT Frequency tests (SAT Frequency at 5970, 6000, and 6030). All other AMPS and NAMPS limits appear as they do on the Mobile Fault Finder test report.

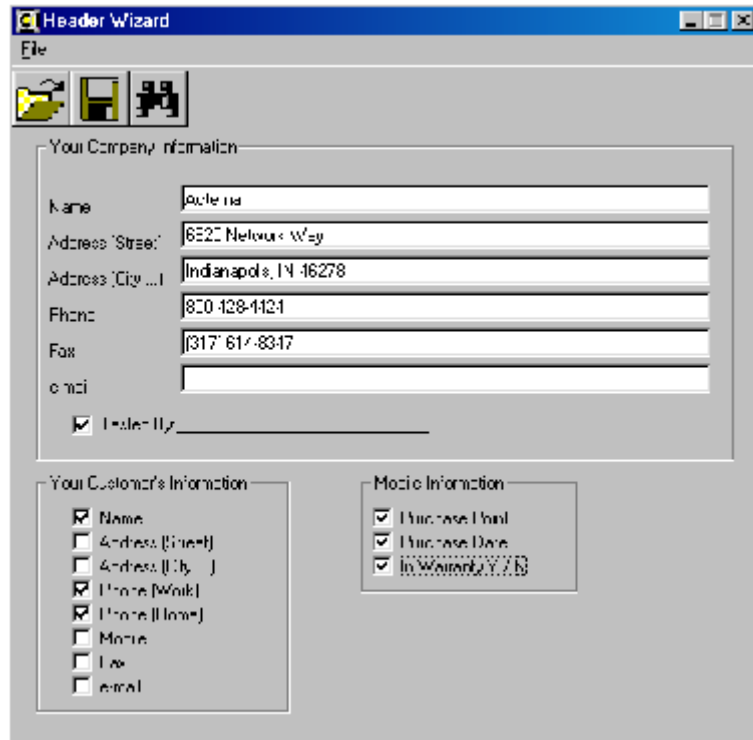
Base Power Level

The user can alter the Mobile Fault Finder Base Power output during each of the Receiver Sensitivity tests.

4351, 4352, 4353, 4354 and 4355 common utility features

Header Wizard

The Header Wizard allows the user to customize the Mobile Fault Finder test report. The Header Wizard is accessed through the hand-writing icon on the Select Tests tool bar, or through **Wizard > Header Wizard**. The Header Wizard menu is shown below. To close this screen click the **X** box or select **File > Exit Header**. The Select Tests menu will appear.



Your Company Information

Type information into any of these fields that you wish to appear in the header. If you do not want a field to appear, simply leave it blank. Check the Tested By check box if you would like to include a line in the header where the Mobile Fault Finder operator can write their name.

Your Customer's Information

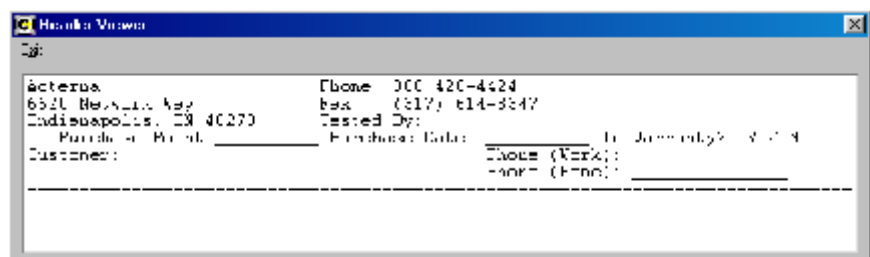
Lines will appear in the header where the Mobile Fault Finder operator can fill in any desired customer information. Check the items you would like to include in the header and leave the rest unchecked.

Mobile Information

Lines will appear in the header where the Mobile Fault Finder operator can enter the mobile's point of purchase, purchase date, and warranty information. Check the items you would like to include and leave the rest unchecked.

View Header

The user can view the header, as it will appear in the test report before loading it onto a Mobile Fault Finder. To view a header, click the Binoculars icon on the Header Wizard tool bar, or select **File > View Header File**. An example header file is shown below:



Do not try to edit the header in the Header Viewer menu. Any changes made here are not saved. Close the Header Viewer and make changes in the Header Wizard menu.

Saving utility files

When changes are made to any of the selected tests, test limits, or both, the changes affect all of the files contained in the UtilityAlterable folder. It is recommended that you create a new folder when you save any changes. Three files will appear in the new folder.

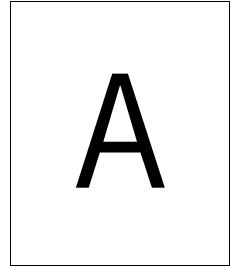
Creating an upgrade test disk

Start with a blank formatted floppy disk. Copy all of the files from the Utility-Common folder onto the floppy. Next copy the three files from the folder you created (or the UtilityAlterable folder) onto the floppy disk. Any further changes only require you to replace the three altered files on the Upgrade Test disk.

Loading header files

Header files are loaded onto the Mobile Fault Finder along with the Composer.csl file. Check the Load *.hdr File check box under General Options in the Composer Preferences menu if a header file should be loaded. You will be asked to locate the header file to be loaded when you save the Composer.csl file. Locate and click on the desired header file. Be sure to copy the same header file to the Composer disk when you create an Upgrade Composer disk. If the header file is missing the Mobile Fault Finder will display an error message during the upgrade.

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