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Chapter 1: Introduction

This document provides information about installing, configuring, and using the Wavelink TelnetCE Client for Symbol MC9000 Windows CE devices.

This section provides the following information:

• Document assumptions

• Document conventions

• An overview of the TelnetCE Client

Document Assumptions

This document assumes that the reader has the following:

• Familiarity with Symbol MC9000 mobile devices and the Microsoft Windows CE operating system.

• Knowledge of wireless networks and wireless networking protocols.

• Knowledge of TCP/IP, including IP addressing, subnet masks, routing, BootP/DHCP, WINS, and DNS.

• Knowledge of Telnet services and terminal emulation, including IBM 5250/3270, HP, and VT100/220.

Document Conventions

The following section contains information about text-formatting conventions in this manual.
Table 1-1 lists the conventions that are used in this manual.

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
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<tr>
<td>courier new</td>
<td>Any time you interact directly with text-based user interface options, such as a button, or type specific information into an text box, such as a file pathname, that option appears in the Courier New text style. This text style is also used for keys that you press, filenames, directory locations, and status information. For example: Press ENTER. Click OK.</td>
</tr>
<tr>
<td>bold</td>
<td>Any time this document refers to a labelled user interface option, such as descriptions of the choices in a dialog box, that option appears in the Bold text style. Examples: Enable the DHCP checkbox. Access the TelnetCE Client Session menu.</td>
</tr>
<tr>
<td>italics</td>
<td>Italicized text is used to indicate the name of a window or dialog box. For example: The Update Utility dialog box. The Profile Manager dialog box.</td>
</tr>
</tbody>
</table>

Table 1-1: Text-Formatting Conventions

If you have questions about the terminology in this document, see Glossary on page 183.

About the TelnetCE Client

This section provides an overview of the TelnetCE Client.

TelnetCE Client Overview

The TelnetCE Client is a Windows CE-based application that facilitates IBM 5250/3270, VT 100/220, and HP Telnet emulation.

The TelnetCE Client comes pre-installed on Symbol MC9000 mobile devices.

Currently, you can create and manage configurations for the TelnetCE Client using one of the following methods:
• Manual configuration (at the mobile device)

• The TelnetCE Client configuration utility (which uses Microsoft ActiveSync)

**TelnetCE Client Components**

You can modify the following TelnetCE Client components:

• Host profiles

• Emulation parameters

• Localization

**Host Profiles**

A host profile contains all of the information that a mobile device needs to connect to a particular host, including the IP address of the host, the TCP port number on which the host is listening for Telnet requests, the emulation type, and login information.

Host profiles provide an easy way for users at a mobile device to establish a connection with a host without having to remember the parameters that are required to establish the session.

**Emulation Parameters**

The configuration utility allows you to configure the emulation parameters for Telnet sessions. For example, you can change the way the virtual screen displays on the mobile device, the type and size of font that is used, and the type of printer to which the mobile device may be connected.

You can configure global and per-host emulation parameters.

Global emulation parameters apply to terminal emulation with hosts for which you have not configured a per-host profile.

Configuring per-host emulation parameters allows you to specify the emulation parameters for terminal emulation sessions with a particular host.

**Localization**

Localization allows you to deploy language profiles with the TelnetCE Client. The language profile that you deploy with the TelnetCE Client determines the language in which the TelnetCE Client interface displays.
**TelnetCE Client**

The TelnetCE Client provides the following functionality:

- Use host profiles to initiate Telnet sessions with hosts.
- Engage in up to four simultaneous Telnet sessions.
- Configure Wavelink licensing (authorization).
- Configure new host profiles.
- View and modify certain global and per-host emulation parameters.
- View version information.
Chapter 2: Installation

This section contains the following information:

• Installation requirements for the TelnetCE Client

• Installing the TelnetCE Client.

NOTE The TelnetCE Client is pre-installed on Symbol MC9000 mobile devices. However, if you want to create configurations that you can download to the mobile device through a Microsoft ActiveSync connection, you must install the TelnetCE Client installation utility. The installation process documented in this section (see Installing the TelnetCE Client Installation Utility on page 6) allows you to deploy newer versions of the TelnetCE Client to the MC9000 mobile device.

Using Microsoft ActiveSync to Install the TelnetCE Client

This section provides information about using Microsoft ActiveSync to install the TelnetCE Client.

The Microsoft ActiveSync installation method pushes the TelnetCE Client application from a host system to the mobile device via a serial connection.

Installation Requirements

This section contains information about the host system requirements and the CE device requirements for the TelnetCE Client.

The host system requires the following:

• Microsoft Windows 9x/ME/NT/XP

• Microsoft ActiveSync 3.6 (or better)

• RS232 serial port

• 10 MB hard disk space (for installation utility)

The CE device on which you want to install the TelnetCE Client requires the following:
• 1.5 MB Flash memory

You will also need the following equipment to perform the installation:

• MC9000 serial/charging cable (also called the ActiveSync cable)

**Installation Overview**

The following tasks are required to install the TelnetCE Client to a mobile device:

1. Obtain the TelnetCE Client installation executable
   \( \text{wltn_s90_ce30_8b_4in1_4xxxx.exe} \).

2. Use the TelnetCE Client installation executable to install the TelnetCE Client installation utility on the host system.

3. Create a Microsoft ActiveSync partnership between the host system and the mobile device.

4. Use the TelnetCE Client installation utility to download the TelnetCE Client to the mobile device over the Microsoft ActiveSync connection.

**Installing the TelnetCE Client Installation Utility**

This section provides detailed instructions for installing the TelnetCE Client installation utility on the host system.

The TelnetCE Client installation executable file
\( \text{wltn_s90_ce30_8b_4in1_4xxxx.exe} \) installs the TelnetCE Client installation utility on the host system. You use the installation utility to install the TelnetCE Client to mobile devices over a Microsoft ActiveSync connection between the host system and the mobile device.

To install the TelnetCE Client installation utility on the host system:

1. Obtain the TelnetCE Client installation executable
   \( \text{wltn_s90_ce30_8b_4in1_4xxxx.exe} \) from the Wavelink Corporation Web site.
NOTE You can obtain the TelnetCE Client installation executable at www.wavelink.com/downloads. You will need to register with Wavelink Corporation before you will be able to download any of the products. Use the menus to navigate to the emulator section of the Web site and select to download the Microsoft ActiveSync installation for your mobile device type.

2 From the host machine, launch

\texttt{wltn\_s90\_ce30\_8b\_4in1\_4xxxx.exe}.

The TelnetCE Client setup wizard launches and the \textit{Welcome} dialog box appears.

3 Click \textit{Next}.

The \textit{Choose Destination Location} dialog box appears, as shown in Figure 2-1.

![Choose Destination Location Dialog Box](image)
4 Accept the default destination folder or use the **Browse...** button to select a different destination folder.

**NOTE** The destination folder is the location on the host system where the files for the TelnetCE Client installation utility are installed.

5 Click **Next**.

The **Select Program Folder** dialog box appears, as shown in Figure 2-2.

![Select Program Folder Dialog Box](image)

**Figure 2-2.** Select Program Folder Dialog Box

6 Accept the default Program Folders name, select a different Programs folder, or type a new folder name.
NOTE The Program Folder name is the name of the folder in which the TelnetCE Client installation utility will be located in the Programs group of the Windows Start menu on the host system.

7 Click Next.

The Wavelink MC9000 TelnetCE setup wizard displays the progress of the installation of the TelnetCE Client installation application on the host system.

After the installation is complete, you are prompted to place an icon for the TelnetCE Client installation utility on the desktop.

8 Select whether to create a shortcut icon to the TelnetCE Client installation utility on the desktop:

- Click Yes to create a shortcut on the desktop.
- Click No to prevent the installation wizard from creating a shortcut on the desktop.

Figure 2-3 shows the shortcut icon.

![Figure 2-3. TelnetCE Client Installation Utility Shortcut Icon](image)

After the installation is complete, the Setup Complete dialog box appears.

9 If you want to immediately launch the TelnetCE Client installation utility, enable the Launch Wavelink MC9000 TelnetCE check box.

10 Click Finish to close the MC9000 TelnetCE setup wizard.
NOTE Once you have installed the TelnetCE Client installation application on the host system, you will be able to install the TelnetCE Client to mobile devices through Microsoft ActiveSync.

Installing the TelnetCE Client

After you have installed the TelnetCE Client installation utility on the host system, use the installation utility to download the TelnetCE Client application to the mobile device over a Microsoft ActiveSync connection.

You can also use the TelnetCE Client installation utility to download configurations to the mobile device, including host profiles, host-specific and global emulation parameters, and localization. For more information about configuring the TelnetCE Client and downloading configurations to the mobile device, see Chapter 3: Configuration on page 15.

To download the TelnetCE Client to the mobile device:

1. Ensure that you have an active Microsoft ActiveSync connection between the host system and the mobile device.

NOTE For more information about creating a Microsoft ActiveSync partnership between a host system and a mobile device, see Appendix A: Using Microsoft ActiveSync on page 69.

2. On the host system, launch the TelnetCE Client installation utility.

   The Wavelink TelnetCE Configuration - MC9000 dialog box appears, as shown in Figure 2-4.
3 In the Wavelink TelnetCE Configuration - MC9000 dialog box, click Application Only.

The Add/Remove Programs application launches, and the Installing Applications dialog box appears, as shown in Figure 2-5.

4 Click Yes.

The Installing Applications dialog box displays the progress of the installation of the TelnetCE Client and its associated files to the mobile device. After the TelnetCE Client files are deployed to the mobile device, the Application Downloading Complete dialog box appears.
After the files are deployed, the *Installing Wavelink TelnetCE* dialog box appears on the mobile device and shows the progress of the application installation. The *Installing Wavelink TelnetCE* dialog box automatically closes after the installation process is complete.

The *Application Downloading Complete* dialog box, shown in Figure 2-6, appears on the host system.

![Application Downloading Complete Dialog Box](image)

**Figure 2-6. Application Downloading Complete Dialog Box**

5  **Click** [OK] to close the *Application Download Complete* dialog box.

**NOTE** You have now installed the TelnetCE Client application on the mobile device. The TelnetCE Client is loaded with the default configuration, which does not include any host profiles. For information about using the TelnetCE Client installation utility to create and download TelnetCE Client configurations to the mobile device, see *Chapter 3: Configuration* on page 15.

Double-click the **Terminal Emulators** icon, shown in Figure 2-7, in the shell screen of the mobile device to launch the TelnetCE Client.

![Terminal Emulators](image)

**Figure 2-7. TelnetCE Client Shortcut**
**NOTE** You can access the list of installed programs on the mobile device by selecting Programs from the WindowsCE Start menu.

6 On the host system, click OK to close the Application Downloading Complete dialog box.

7 Close the Wavelink TelnetCE Configuration - MC9000 dialog box.

**NOTE** You have now installed the TelnetCE Client on the mobile device. The TelnetCE Client retains its previous configuration (host profiles and local and per-host emulation parameters). For more information about modifying and downloading configurations to the mobile device, see Chapter 3: Configuration on page 15.

---

**Uninstalling the TelnetCE Client**

This section provides the following information:

- Uninstalling the TelnetCE Client
- Uninstalling the TelnetCE Client installation utility

**Uninstalling the TelnetCE Client**

The TelnetCE Client is pre-installed on the MC9000. Wavelink Corporation recommends that you talk to your Symbol representative, if you want to remove the TelnetCE Client from the mobile device.

**Uninstalling the TelnetCE Client Installation Utility**

If you will not be using the TelnetCE Client installation utility, you can remove the application from the host system.

**To remove the TelnetCE Client installation utility from the host system:**

1 From the Windows Start menu on the host system, select Settings > Control Panel.

2 In Control Panel, double-click Add/Remove Programs.
The Add/Remove Programs window appears.

3 From the list of programs that are currently installed on the host system, select Wavelink TelnetCE - MC9000, as shown in Figure 2-8.

![Figure 2-8. Removing the TelnetCE Client Installation Utility](image)

4 Click Change/Remove.

5 Click Yes.

The Remove Programs From Your Computer dialog box appears and displays the status and results of the uninstall process.

6 Click OK to close the Remove Programs From Your Computer dialog box.

7 Close the Add/Remove Programs window.
Chapter 3: Configuration

This section covers the following topics:

- Configuring TelnetCE Client host profiles.
- Configuring TelnetCE Client global and per-host emulation parameters.
- Configuring TelnetCE Client localization.
- Downloading configurations to the mobile device.

Configuring Host Profiles

This section provides the following information:

- An overview of host profiles and configuring host profiles.
- Accessing the Host Profiles dialog box.
- Configuring host profiles.

About Host Profiles

The TelnetCE Client allows you to configure host profiles for mobile devices. Host profiles provide a method to specify the parameters of a Telnet connection from a mobile device to a host. For example, a host profile allows you to specify the IP address of a host and the TCP port number on which the host listens for Telnet connections from clients.

You configure host profiles in the Host Profiles dialog box, which you can access through the TelnetCE Client installation utility. You can manually configure host profiles at the mobile device. Manually configuring the TelnetCE Client is covered in Manually Modifying Host Profiles on page 47.

Host Profile Configuration Overview

The following tasks outline the process of configuring host profiles for the TelnetCE Client:

1. Access the Host Profiles dialog box.
2 Add, modify, or remove host profiles and save the changes.

3 Download the configuration to mobile devices.

When you save the host profiles that you have configured, the application that you are using creates a configuration file that contains the parameters and settings of the host profile.

The download process downloads the configuration file to the mobile device. The new configuration file overwrites the existing configuration file on the mobile device.

**Accessing Host Profiles**

The following section explains how to access the Host Profiles dialog box, where you can add, modify, or delete host profile configurations that you can then download to the mobile device through Microsoft ActiveSync.

**To configure host profiles from the TelnetCE Client installation utility:**

1 On the host system, launch the TelnetCE Client installation utility (Wavelink MC9000 TelnetCE).

   The Wavelink TelnetCE Configuration - MC9000 dialog box appears, as shown in Figure 3-1.

![Wavelink TelnetCE Configuration - MC9000](image)

*Figure 3-1. Wavelink TelnetCE Configuration - MC9000 Dialog Box*
2 Click the **Host Profiles** button icon.

The *Host Profiles* dialog box appears, as shown in Figure 3-2.

![Host Profiles Dialog Box](image)

**Figure 3-2. Host Profiles Dialog Box**

3 Use the *Host Profiles* dialog box to add, modify, or remove host profiles.

**NOTE** For more information about using the Host Profiles dialog box, see *Configuring Host Profiles* on page 18.

4 After you have configured the host profiles that you want to download to the mobile device, click **OK**.

The host profiles are saved and the *Host Profiles* dialog box closes.

5 Download the new configuration to the mobile device using Microsoft ActiveSync.

**NOTE** For more information on downloading configurations with Microsoft ActiveSync, see *Downloading Configurations* on page 36.
Configuring Host Profiles

This section provides information on the following tasks:

- Creating a host profile.
- Modifying a host profile.
- Removing a host profile.

Creating Host Profiles

You can use the Host Profiles dialog box to create new host profiles for the TelnetCE Client.

To create a host profile:

1. Access the Host Profiles dialog box.

2. In the Host Profiles dialog box, click **New**.

   The Host Profiles dialog box displays tabs with parameters that allow you to configure the settings for the host profile.

   The name of the host profile appears in the left pane of the Host Profiles dialog box.

3. Configure the settings for the host profile.

   **NOTE** For information about the parameters in the tabs of the Host Profiles dialog box, see Host Profile Settings on page 19.

4. After you have configured the settings for the new host profile, click **OK** to save the configuration.

   **NOTE** You can configure several host profiles before you click **OK**. TelnetCE will maintain the settings. If you click **Cancel**, the dialog box closes and the configurations that you have made are lost.

Modifying Host Profiles

You can use the Host Profiles dialog box to modify existing host profiles.
To modify an existing host profile:

1. Access the Host Profiles dialog box.

2. In the left pane of the Host Profiles dialog box, select the host profile that you want to modify.

   The Host Profiles dialog box displays tabs that contain the settings for the host profile.

3. Use the tabs in the Host Profiles dialog box to modify the host profile.

   **NOTE** For more information about the parameters in the tabs of the Host Profiles dialog box, see Host Profile Settings on page 19.

4. After you have modified the host profile, click OK to save the new configuration.

Removing Host Profiles

You can use the Host Profiles dialog box to remove host profiles from the configuration.

To remove a host profile:

1. Access the Host Profiles dialog box.

2. In the left pane of the Host Profiles dialog box, select the host profile that you want to remove.

3. Click Remove.

4. Click OK.

   The new configuration is saved and the Host Profiles dialog box closes.

Host Profile Settings

This section explains the options in the tabs of the Host Profiles dialog box.

**Host Settings**

Figure 3-3 shows the Host tab in the Host Profiles dialog box.
The following list describes the options in the Host tab:

**Name**
Specifies the name of the host profile.

**Type**
Determines the type of emulation used to connect to the host. (The type of emulation that you select determines the tabs that appear in the Host Profiles dialog box for that host profile.)

**Address**
Specifies the IP address of the host.

**Port**
Specifies the TCP port number on which the host listens for Telnet connections from clients.

**IBM Settings**
Figure 3-4 shows the IBM Settings tab in the Host Profiles dialog box. (The IBM Settings tab only appears if you have selected IBM-based emulation from the Type menu list in the Host tab.)
The following list explains the options in the IBM Settings tab:

**Workstation ID**

Specifies an identifier for the client. You can use the following variables to provide a unique identifier for the client:

- `%a %d`. Captures octets of the IP address of the mobile device (%a captures the first octet, %d captures the last octet). For example, `%a%b%c%d` would capture all four octets of the IP address of the mobile unit.

- `%m %r`. Captures octets of the MAC address of the mobile device (%m captures the first octet, %r captures all six octets). For example, `%m%n%o%p%q%r` would capture all six octets of hardware address of the mobile unit.

- `%s`. Captures the session number.

- `%t`. Captures the terminal ID of the device.
VT Settings

Figure 3-5 shows the VT Settings tab in the Host Profiles dialog box. (The VT Settings tab only appears if you have selected VT-type emulation from the Type menu list in the Host tab.)

![Host Profiles VT Settings](image)

**Figure 3-5. Host Profiles VT Settings**

The following list describes the options in the VT Settings tab:

**Telnet Negotiation String**

Specifies the Telnet negotiation string the client should send to the host to establish a session.

**Autologin Settings**

Figure 3-6 shows the Autologin tab in the Host Profiles dialog box. (The Autologin only appears if you have selected VT-type emulation from the Type menu list in the Host tab of the Host Profiles dialog box.)
Chapter 3: Configuration

Figure 3-6. Host Profiles Autologin Tab

The following list describes the parameters in the Autologin tab:

- **Name (Prompts)**: Specifies the host-side Telnet login prompt.
- **Name (Responses)**: Specifies the response to the login prompt that the client should send to the host.
- **Password (Prompts)**: Specifies the host-side password prompt.
- **Password (Responses)**: Specifies the response to the password prompt that the client should send to the host.
- **Command (Prompts)**: Specifies the command prompt at the host.
- **Command (Responses)**: Specifies the response to the command prompt that the client should send to the host.
- **CFG in terminal**: Enables or disables the option to allow the user at the terminal to configure the corresponding response.

**Configuration Settings**

Figure 3-7 shows the Configuration tab in the Host Profiles dialog box.
Manually Configuring Host Profiles

Users at the mobile device can access host profile configurations through the TelnetCE Client. For more information about configuring host profiles at the mobile device, see *Manually Modifying Host Profiles* on page 47.

**Configuring Emulation Parameters**

This section provides information about the following:

- Global and per-host emulation parameters.
• Using the TelnetCE Client installation utility to configure global and per-host emulation parameters.

• Using the Configuration Manager.

**About Emulation Parameters**

The TelnetCE Client allows you to configure the emulation parameters for host connections.

You make changes to emulation parameters with the Configuration Manager utility, which provides an organized list of the emulation parameters that you can modify.

Emulation parameters are divided into two groups:

• **Per-host.** Per-host emulation parameters apply only to a specific host profile on the client. You can access the emulation parameters for a specific host profile through the *Host Profiles* dialog box.

• **Global.** Global emulation parameters apply to all of the host profiles with which you have configured a client. Per-host emulation parameter configurations pre-empt global emulation parameter configurations.

The following tasks outline the process of configuring emulation parameters:

1. Access the Configuration Manager.

2. Use the Configuration Manager to modify emulation parameters and save the configuration.

3. Download the configuration to the mobile device.

The Configuration Manager generates a configuration file that contains global and per-host emulation parameter settings.

When you download the configuration file to the mobile device, any existing configuration file is overwritten.

**Accessing the Configuration Manager**

This section contains information about using the TelnetCE Client installation utility to access the Configuration Manager to modify global or per-host configuration parameters for the TelnetCE Client.
Accessing the Configuration Manager for Global Settings

You can access the global emulation parameters through the TelnetCE Client installation utility.

To access global emulation parameters through the TelnetCE Client installation utility:

1. On the host system, launch the TelnetCE Client installation utility (Wavelink MC9000 TelnetCE).

   The Wavelink TelnetCE Configuration - MC9000 dialog box appears, as shown in Figure 3-8.

   ![Wavelink TelnetCE Configuration - MC9000 Dialog Box](image)

   **Figure 3-8.** Wavelink TelnetCE Configuration - MC9000 Dialog Box

2. Click the **Emulation Parameters** button icon.

   The Configuration Manager appears.

3. Use the Configuration Manager to configure the global emulation parameters.

   **NOTE** For information on using the Configuration Manager, see *Using the Configuration Manager* on page 28.
4 After you configure the emulation parameters, click the Save icon to save the configuration to the host.

5 Close the Configuration Manager.

6 Use the TelnetCE Client installation utility and Microsoft ActiveSync to download configurations to the mobile device.

**NOTE** For information about using Microsoft ActiveSync to download the configuration to the mobile device, see *Downloading Configurations* on page 36.

**Accessing the Configuration Manager for Per-Host Settings**

You can use the TelnetCE Client installation utility to access the Configuration Manager and modify per-host emulation parameters.

**To access and modify per-host emulation parameters from the TelnetCE Client installation utility:**

1 On the host system, launch the TelnetCE Client installation utility (Wavelink MC9000 TelnetCE).

   The Wavelink TelnetCE Configuration - MC9000 dialog box appears.

2 Click the Host Profiles button.

   The Host Profiles dialog box appears.

3 In the left pane of the Host Profiles dialog box, select the host profile with the emulation parameters that you want to modify.

   The Host Profiles dialog box displays the parameters of the host profile.

4 Select the Configuration tab.

5 Click Modify.

   The Configuration Manager appears.

6 Use the Configuration Manager to configure the emulation parameters that will be applied to the host profile that you previously selected.
NOTE For information about using Configuration Manager, see Using the Configuration Manager on page 28.

7 After you have modified the emulation parameters in the Configuration Manager, click the Save icon to save the configuration to the host system.

8 Close the Configuration Manager.

9 In the Host Profiles dialog box, click OK.

10 Use the TelnetCE Client installation utility and Microsoft ActiveSync to download the configuration to the mobile device.

NOTE For information about using Microsoft ActiveSync to download configurations to the mobile device, see Downloading Configurations on page 36.

Using the Configuration Manager

The Configuration Manager is the utility that allows you to modify global and per-host emulation parameters.

Figure 3-9 shows the Configuration Manager.
Chapter 3: Configuration

Figure 3-9. Configuration Manager

The left pane of the Configuration Manager displays the emulation parameters that you can modify. The emulation parameters are grouped by category.

When you select a parameter in the left pane, information about the parameter displays in the right pane, as shown in Figure 3-10.

Figure 3-10. Emulation Parameter Information
Emulation Parameters

Modifiable emulation parameters are grouped by category in the left pane of the Configuration Manager.

The following list describes the different categories:

**COM**
Parameters in this category configure the function of the COM port on mobile devices.

**Emulation**
Parameters in this category configure terminal emulation functions on mobile devices.

**Magnetic Stripe Reader**
Parameters in this category configure the function of magnetic stripe readers on mobile devices.

**Scanner**
Parameters in this category configure the function of bar code scanners on mobile devices.

Appendix C: Emulation Parameters on page 97 contains detailed information about each of the modifiable parameters in the Configuration Manager.

Modifying Emulation Parameters

Determine the emulation parameters that you want to modify and use the Configuration Manager to make modifications.

**To modify an emulation parameter:**

1. Access the Configuration Manager.

2. In the left pane of the Configuration Manager, locate the parameter that you want to modify.

3. Double-click the emulation parameter or right-click the emulation parameter and choose Edit from the menu list.

A dialog box appears that allows you to modify the parameter configuration, as shown in Figure 3-11.
4. Use the dialog box to configure the parameter.

5. After you have configured the parameter, click **OK** to keep the setting.

   Click **Cancel** or the Close button to cancel any changes you have made.

6. In the Configuration Manager, click the **Save** icon, as shown in Figure 3-12.

   ![Configuration Manager Save Icon](image)

   **Figure 3-12. Configuration Manager Save Icon**

   The configuration changes are saved to the host system.

7. Close the Configuration Manager and download the new configuration to clients.

**Using the Find Function**

Use the Find function of the Configuration Manager to locate parameters or information by supplying a partial or full string that the Configuration Manager can use to locate the parameter or information that you want to find.

**To use the find function:**

1. From the Configuration Manager **Edit** menu, select **Find**, as shown in Figure 3-13.
The Find dialog box appears.

2 Input the partial or full string for the parameter or information that you want to find, as shown in Figure 3-14.

3 Enable the Search all text checkbox to search not only the parameters, but also the help files.

4 Click Find Next to begin the search.

Continue to click Find Next until you locate the parameter or information for which you are searching.

**Achieving Desired Display Size**

You may need to modify certain emulation parameters to achieve the display size (the number of character rows and columns) that you need.

One of the best ways to achieve the desired display settings on the new device is to modify the following parameters until you achieve the desired result:
• Font type
• Font size (pt.)
• Scroll bars
• Font clipping

Table 3-1 provides some examples of parameters and the display sizes that result.

<table>
<thead>
<tr>
<th>Font</th>
<th>Font Size</th>
<th>Scroll Bars</th>
<th>Clipping</th>
<th>Display Result Rows X Columns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tahoma</td>
<td>8</td>
<td>Yes</td>
<td>None</td>
<td>20 x 24</td>
</tr>
<tr>
<td>Tahoma</td>
<td>10</td>
<td>Yes</td>
<td>Right:2*</td>
<td>16 x 22</td>
</tr>
<tr>
<td>New Courier</td>
<td>8</td>
<td>Yes</td>
<td>None</td>
<td>20 x 32</td>
</tr>
<tr>
<td>New Courier</td>
<td>10</td>
<td>No</td>
<td>None</td>
<td>16 x 28</td>
</tr>
</tbody>
</table>

* Capital W's are clipped (cut short)

Table 3-1: Modifying Parameters to Achieve Desired Display Size

**Configuring Localization**

This section provides information about the localization capabilities and configuring localization for the TelnetCE Client.

**About Localization**

Localization allows you to install language files to a mobile device that cause the TelnetCE Client interface to display in a particular language.

The TelnetCE Client offers the following languages:

• English (United States)
• English (United Kingdom)
• French (European)
• French (Canadian)
• Swiss
• Swedish
• Spanish
• Norwegian
• Japanese Katakana
• Italian
NOTE Wavelink Corporation does not provide most language message files. You must install the appropriate language message files on the mobile unit before the TelnetCE Client can provide the localization that you require.

**Configuring Localization**

Localization is configured through the *Localize* dialog box, which you can access through the TelnetCE Client installation utility.

The following is a list of the tasks for configuring and installing localization:

1. Access the *Localize* dialog box.
2. Select the desired language and save the configuration.
3. Download the configuration to clients.

The configuration is saved to a file that is downloaded to the mobile device. The new configuration file overwrites existing configuration files on the mobile device.

You can use the TelnetCE Client installation utility (Wavelink MC9000 TelnetCE) to configure localization.

**To configure localization with the TelnetCE Client installation utility:**

1. On the host system, launch Wavelink MC9000 TelnetCE.

   The *Wavelink TelnetCE Configuration - MC9000* dialog box appears, as shown in Figure 3-15.
2 Click the **Localization** button icon.

The *Localize* dialog box appears.

3 Select the language profile that you want to install on the client, as shown in Figure 3-16.

4 Click **OK**.

The configuration is saved to the host system and the *Localize* dialog box closes.
5  Use the installation utility and Microsoft ActiveSync to download the new configuration to the mobile device.

**NOTE** For more information about using Microsoft ActiveSync to download configurations to mobile devices, see the next section.

## Downloading Configurations

This section provides information about using the TelnetCE Client installation utility and a Microsoft ActiveSync connection to download configurations to mobile devices.

**To download configurations to mobile devices:**

1  Connect the host system to the mobile device with the correct type of serial cable.

2  Ensure that you have an active Microsoft ActiveSync connection between the host system and the mobile device.

**NOTE** For information about creating a Microsoft ActiveSync partnership between a host system and a mobile device, see Appendix A: Using Microsoft ActiveSync on page 69.

3  On the host system, launch the TelnetCE Client installation program (Wavelink MC9000 TelnetCE).

   The *Wavelink TelnetCE Configuration - MC9000* dialog box appears.

4  Click **Config Only**.

   The *TelnetCE Install* dialog box appears and displays the progress of the installation.

   After the installation is complete, a new *Wavelink TelnetCE Configuration - MC9000* dialog box appears, as shown in Figure 3-17.
5 Click OK to close the dialog box.

6 Close the Wavelink TelnetCE Configuration - MC9000 dialog box.

**Downloading the Application and the Configuration**

The Application & Configuration button in the Wavelink TelnetCE Configuration - MC9000 dialog box downloads the TelnetCE Client application and the configuration file to the mobile device.

To avoid errors that might occur, you should wait until the application is installed on the mobile device before you authorize the download of the configuration to the mobile device.

**To download the application and the configuration:**

1 Connect the host system to the mobile device with the correct serial cable.

2 Ensure that you have an active Microsoft ActiveSync connection between the host system and the mobile device.

3 On the host system, launch the TelnetCE Client installation utility (Wavelink MC9000 TelnetCE).

   The Wavelink TelnetCE Configuration - MC9000 dialog box appears.

4 Use the buttons in the Configuration sections of the dialog box to configure the TelnetCE Client.

5 After you have created the configuration for the TelnetCE Client, click Application & Config.

   The Add/Remove Programs application launches and the Installing Applications dialog box appears.

6 Click Yes.
The TelnetCE Client is downloaded to the mobile device. The *Installing Applications* dialog box shows the progress of the download. When the download is complete, the *Application Downloading Complete* dialog box appears.

After the TelnetCE Client is downloaded, the application is installed on the mobile device.

Wait until the installation of the TelnetCE Client on the mobile device is complete before you perform the next step.

7 In the *Application Downloading Complete* dialog box that appears on the host system, click **OK**.

The configuration is downloaded to the mobile device.

After the configuration is downloaded, the *Wavelink TelnetCE Configuration - MC9000* dialog box appears and indicates that the update is successful, as shown in Figure 3-18.

![Figure 3-18. Configuration Install Successful](image)

8 Click **OK** to close the *Wavelink TelnetCE Configuration - MC9000* dialog box.
**Chapter 4: Using the TelnetCE Client**

This section covers the following topics:

- TelnetCE Client authorization
- Using the TelnetCE Client.
- Manually configuring the TelnetCE Client, including host profiles and emulation parameters.

**Authorizing Clients**

The TelnetCE Client comes pre-installed and fully authorized (licensed) on Symbol MC9000 mobile devices. Authorization allows you to engage in up to four simultaneous Telnet sessions with host servers.

Because the TelnetCE Client is already fully authorized, the Authorization option in the TelnetCE Options menu of the TelnetCE Client is unavailable for you to select, and you will not be able to configure authorization parameters for the TelnetCE Client.

**Using and Configuring the TelnetCE Client**

This section contains information about the following:

- Launching the TelnetCE Client.
- Connecting to a host.
- Disconnecting from a Telnet session.
- Exiting the TelnetCE Client.
- Accessing and using the virtual keyboards.
- Manually modifying host profiles.
- Manually modifying emulation parameters.
- Using the TelnetCE Client menus.
• Working with multiple Telnet sessions.

**Launching the TelnetCE Client**

You can launch the TelnetCE Client from the shell screen (which is the default screen) of the MC9000 device.

**To launch the TelnetCE Client:**

1. In the shell screen of the mobile device, double-click the Terminal Emulators icon.

   Figure 4-1 shows the icon.

   ![Figure 4-1. TelnetCE Client Icon](image)

   The TelnetCE Client launches and displays the default screen, shown in Figure 4-2.
Connecting to Hosts

Once you have launched the TelnetCE Client, you can connect to host systems. You must have a host profile that specifies the parameters of the Telnet session before you can connect to a host system.

1. On the mobile device, launch the TelnetCE Client.
   
   The TelnetCE Client launches and displays the default screen.

2. Press the Enter key.
   
   The Select Host dialog box appears, as shown in Figure 4-3.
NOTE If you have configured only one host profile for the TelnetCE Client, the Select Host dialog box does not appear and the client immediately attempts to connect to the host for which the single host profile is configured.

3 In the Select Host dialog box, select the host to which you want to connect.

4 Click OK.

The TelnetCE Client attempts to establish a Telnet session with the host.

Disconnecting a Telnet Session

At any point during a Telnet session, you can disconnect from the session by accessing the TelnetCE Options menu.

To disconnect from a Telnet session:

1 Access the TelnetCE Client Term menu.

2 Select Disconnect Session [#]-[name], where:

   • # is the session number and

   • name is the name of the host profile

Figure 4-4 provides an example.
When you make the selection, the session that you select is terminated.

**Exiting the TelnetCE Client**

You can exit and close the TelnetCE Client from the *TelnetCE Options* menu.

**To exit and close the TelnetCE Client:**

1. Access the TelnetCE Client *TelnetCE Options* menu.
2. Select *Exit*, as shown in Figure 4-5.
The TelnetCE Client closes, and any active host connections are terminated.

**Accessing and Using the Virtual Keyboards**

The TelnetCE Client includes the following two virtual keyboards, which allow you to click the keys that you want to use during a Telnet session rather than using the external keyboard on the mobile device:

- Emulation
- Numeric

**Viewing the Emulation Keyboard**

You can view the emulation keyboard, which is specific to the type of emulation for the active Telnet session.

**To access the virtual emulation keyboard:**

1. Access the TelnetCE Options menu.

2. Select View > Emulation Keyboard, as shown in Figure 4-6.
The TelnetCE Client displays the virtual emulation keyboard for the active session.

**NOTE** Virtual keyboards are different for each type of emulation. A limited version of the virtual emulation keyboard appears when the TelnetCE Client is not engaged in any active sessions.

Figure 4-7 shows the 5250 emulation virtual keyboard.

**To turn off the virtual emulation keyboard:**

1. Access the TelnetCE Options menu.
Select View > Emulation Keyboard.

NOTE Alternatively, you can click the Off button on the virtual emulation keyboard.

Viewing the Numeric Keyboard

You can access the virtual numeric keyboard from the TelnetCE Options menu.

To access the virtual numeric keyboard:

1. Access the TelnetCE Options menu.

2. Select View > Numeric Keyboard, as shown in Figure 4-8.

![Figure 4-8. Selecting to View the Virtual Numeric Keyboard](image)

The virtual numeric keyboard, as shown in Figure 4-9, appears in the lower part of the TelnetCE Client window.
Using the Virtual Keyboards

The following is a list of notes about using the virtual emulation keyboard:

- Click Alpha to access the alphabetical keyboard.
- Click NUM to access the numeric keyboard.
- Click Func1 to access the Function and Roll Up/Down keys.
- Click Func2 to access the Dup, Clear, Print, and similar keys.
- Click Punc to access punctuation characters.
- Click Alt to access alternate keystrokes, such as TermConfig and Prog Info.

See Appendix B: Keyboard Maps on page 77 for external and virtual keyboard maps for VT, HP, and 3270/5250 emulation.

Manually Modifying Host Profiles

Although it is not recommended, you can modify host profiles from the TelnetCE Client. (Wavelink Corporation recommends that you make modifications to host profiles through the TelnetCE Client installation utility.)

To manually modify a host profile:

1. Access the TelnetCE Options menu.

2. Select Configure > Host Profiles, as shown in Figure 4-10.
The Input Password dialog box appears.

**NOTE** If you have not configured an RF Config Password, the Input Password dialog box does not appear. Instead, the Edit Host Profile dialog box appears. Skip steps 3 and 4.

3 Type the password.

**NOTE** The password to access host profiles is set in the Emulation > Common > RF Config Password parameter of the Configuration Manager. The default password is “system. See Using the Configuration Manager on page 28 for information about using the Configuration Manager.

4 Click OK.

The Edit Host Profile dialog box appears, as shown in Figure 4-11.
5 Select one of the following options:

- Select the host profile that you want to modify, then click **Edit** to make modifications to the host profile that you have selected.

- Click **Add** to create a new host profile.

- Select a host profile, then click **Delete** to remove the host profile that you have selected.

If you have selected to add or edit a host profile, the *Edit Host Profile* dialog box appears, as shown in Figure 4-12.

6 Use the *Edit Host Profile* dialog box to configure the parameters of the host profile.

See the list below for information on the different parameters in the *Edit Host Profile* dialog box.
7 After you have configured the host profile, click **Save**.

8 Close the *Edit Host Profile* dialog box.

The options that appear in the *Edit Host Profile* dialog box are as follows.

<table>
<thead>
<tr>
<th>Alias</th>
<th>The name for the host profile.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Specifies the IP address of the host.</td>
</tr>
<tr>
<td>Port</td>
<td>Specifies the TCP port on which the host accepts Telnet requests.</td>
</tr>
<tr>
<td>Emulation</td>
<td>Specifies the type of emulation for the host profile.</td>
</tr>
<tr>
<td>Save</td>
<td>Saves the changes you have made to the configuration of the host profile.</td>
</tr>
<tr>
<td>More</td>
<td>Opens the <em>More Options</em> dialog box, which allows you to configure options that are specific to the type of emulation for which you have configured the host profile.</td>
</tr>
<tr>
<td>Config</td>
<td>Provides access to the emulation parameters for the host profile. For more information about modifying emulation parameters from the TelnetCE Client, see <em>Manually Modifying Emulation Parameters</em> on page 50.</td>
</tr>
</tbody>
</table>

---

**Manually Modifying Emulation Parameters**

Although it is not recommended, you can manually modify the emulation parameters for a specific host profile. (Wavelink Corporation recommends that you use the TelnetCE Client installation utility to make changes to the emulation parameters.) You can modify emulation parameters during a session or when you are disconnected from any sessions.

*NOTE* If you want to modify global emulation parameters, you will have to use the TelnetCE Client installation utility. You cannot modify global emulation parameters for the TelnetCE Client at the mobile device.

To modify the emulation parameters for a host profile:

1 Access the *TelnetCE Options* menu.
2 Select Configure > Emulation, as shown in Figure 4-13.

![TelnetCE Options](image)

**Figure 4-13. Selecting to Configure Emulation Parameters**

the Input Password dialog box appears and prompts you for the Term Config Password.

**NOTE** If you have removed the Term Config Password, then the Input Password dialog box does not appear. Instead, the Select Host profile dialog box appears. You can skip steps 3 and 4.

3 Type the Term Config Password.

**NOTE** The Term Config Password is configured in the Emulation > Common > Term Config Password parameter of the Configuration Manager. The default Term Config Password is “config”. For more information about using the Configuration Manager, see Using the Configuration Manager on page 28.

4 Click OK.

The Select Host dialog box appears, as shown in Figure 4-14.
NOTE If you have configured only one host profile for the TelnetCE Client, then the Settings dialog box for the host profile appears and you can skip steps 5 and 6.

5 Select the host profile that you want to configure.

6 Click OK.

The Settings dialog box for the host profile appears, as shown in Figure 4-15.

7 Use the tabs in the Settings dialog box to configure the emulation parameters for the host profile.
For information on the parameters in the different tabs of the Settings dialog box, see Emulation Parameters on page 53.

8 After you have configured the emulation parameters in the Settings dialog box, click OK to apply the changes and close the Settings dialog box.

Emulation Parameters

Figure 4-16 shows the VTXX tab of the Settings dialog box.

![Figure 4-16. Settings Dialog Box VTXX Tab](image)

The following list describes the options in the VTXX tab:

- **Local Echo (VT Only)**
  Indicates whether the TelnetCE Client echoes characters on the screen that it received from a VTXX host. Enable this checkbox to echo characters.

- **8 Bit Control Codes (VT Only)**
  Indicates whether to use 8-bit ANSI control codes for VTXX emulation.

- **Backspace Sends Delete (VT Only)**
  Indicates whether a Delete control character is sent to the host when a user at the client presses the Backspace key.

Figure 4-17 shows the IBM Host tab of the Settings dialog box.
The following list describes the options in the IBM Host tab:

**5250 - Column Separator**  
*Do*  
*(5250 only)*  
Instructs the TelnetCE Client to display a period or vertical line between each character when the host system uses a special column format mode.

**5250 - Swap Enter Key/Field Exit Key**  
*(5250 only)*  
Maps the *Enter* key to the *Field Exit* key and the *Clear* key to the *Enter* key.

**3270 - Alternate System Request**  
*(3270 only)*  
Encodes 3720 system requests as requests instead of default interrupt processes.

Figure 4-18 shows the Message tab of the *Settings* dialog box.
The following list describes the options in the Message tab.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Message Line</strong></td>
<td>Specifies the line from the host screen that the TelnetCE Client reads to display as the message line.</td>
</tr>
<tr>
<td>(5250/3270 only)</td>
<td>The TelnetCE Client displays the message line each time its contents change. When the contents of the message line are not valid, the line appears in reverse video at the top of the display.</td>
</tr>
<tr>
<td></td>
<td>Possible values are 0 - 24. Use a value of 0 to prevent the display message.</td>
</tr>
<tr>
<td><strong>Reset Required</strong></td>
<td>Indicates the situations that require the user to press the Reset key.</td>
</tr>
<tr>
<td>(5250/3270 only)</td>
<td><strong>On All messages</strong>: Requires a reset on screens that display information on line 24 (the bottom display line).</td>
</tr>
<tr>
<td></td>
<td><strong>On Errors</strong>: Requires a reset on screens that have an error indicator.</td>
</tr>
<tr>
<td></td>
<td><strong>Never</strong>: Never requires the user to use a reset, but automatically performs a reset when an error indicator is detected.</td>
</tr>
<tr>
<td><strong>Auto Reset Delay</strong></td>
<td>Specifies the amount of time (in seconds) to wait before sending a reset to the host when the Reset Required parameter is set to Never.</td>
</tr>
<tr>
<td>(5250/3270 only)</td>
<td>Possible values are 0 - 5. Use 0 to indicate no wait.</td>
</tr>
<tr>
<td><strong>Message Beeps</strong></td>
<td>Specifies the number of additional beeps that occur on the mobile device when the TelnetCE Client receives a system message.</td>
</tr>
<tr>
<td>(5250/3270 only)</td>
<td></td>
</tr>
<tr>
<td><strong>Use Enter as Reset</strong></td>
<td>Enable this checkbox if you want the Enter key on the mobile device to function as the Reset key when the mobile device is in an error state.</td>
</tr>
</tbody>
</table>

Figure 4-19 shows the Font tab of the Settings dialog box.
The following list describes the options in the Font tab.

**Name**
Specifies the font that the TelnetCE Client uses for emulation.

**Size**
Specifies the point size of the characters the TelnetCE Client uses for emulation.

**Weight**
Specifies the weight of the characters the TelnetCE Client uses for emulation.

**Left**
Specifies the amount of white space (in font points) to crop from the left of the font.

**Right**
Specifies the amount of white space (in font points) to crop from the right of the font.

**Top**
Specifies the amount of white space (in font points) to clip from the top of the font.

**Bottom**
Specifies the amount of white space (in font points) to clip from the bottom of the font.

Figure 4-20 shows the Display tab in the Settings dialog box.
Chapter 4: Using the TelnetCE Client

The following list describes the options in the Display tab.

**Force Black/White** Indicates whether the TelnetCE Client is forced to use a black-and-white display (white background, black text) for emulation.

**Menu** Indicates whether the TelnetCE Client displays the TelnetCE Client menu during a Telnet session.

**Hide Menu** Allows you to specify a command to hide the TelnetCE Client menu.

**Vertical Scrollbar** Indicates whether the TelnetCE Client shows the vertical scrollbar.

**Horizontal Scrollbar** Indicates whether the TelnetCE Client shows the horizontal scrollbar.

**Hide Keyboard** Allows you to specify a command to hide the TelnetCE Client virtual keyboard.

*Figure 4-21* shows the View tab of the *Settings* dialog box.
The following list describes the options in the View tab.

**Free Cursor**
Indicates whether the user is allowed to move the cursor into “protected” areas of the screen. Disable this checkbox to prevent the user from entering protected areas.

**Scrolling (Full Screen Mode)**
Enables or disables “view mode” on the TelnetCE Client, which allows the user to scroll around the virtual display.

**Scroll Offsets - Vert**
Specifies the number of columns that the vertical display moves when the cursor crosses the vertical edge of the screen.

Possible values are 0 - 80. Use the value 0 to indicate the current display size.

**Scroll Offsets - Horz**
Specifies the number of rows that the virtual display moves when the cursor crosses the horizontal edge of the screen.

Possible values are 0 - 24. Use the value 0 to indicate the current display size.
**Fixed Screen Mode** Indicates whether the TelnetCE Client fixes the display on the mobile device to a specific position in the virtual display. When you enable this checkbox, the same portion of the virtual display appears on the display screen without regard to the location of the cursor.

You must also specify the position with the **Fixed Screen Window Origin** group box.

**Fixed Screen Window Origin - Left** Specifies the virtual screen column where the display screen of the mobile device is fixed.

Possible values are 1 - 79.

**Fixed Screen Window Origin - Top** Specifies the virtual screen row where the display screen of the mobile device is fixed.

Possible values are 1 - 24.

Figure 4-22 shows the Cursor tab of the *Settings* dialog box.

![Figure 4-22. Settings Dialog Box Cursor Tab](image)
The following list describes the options in the Cursor tab.

**Cursor Edge Zones - Left**
Specifies the left border of the cursor zone in the virtual display. When the cursor moves outside of the border, the TelnetCE Client repositions the screen over the virtual display, centering the cursor on the display screen of the mobile device.

Possible values are 1 - 10.

**Cursor Edge Zones - Right**
Specifies the right border of the cursor zone in the virtual display. When the cursor moves outside of the border, the TelnetCE Client repositions the screen over the virtual display, centering the cursor on the display screen of the mobile device.

**Tiling - Vert Mode**
Determines how the TelnetCE Client handles vertical tiling. The options include:

- **None:** The TelnetCE Client repositions the screen around the cursor.
- **TopOnly:** The TelnetCE Client repositions the screen in the uppermost row of tiles.
- **All:** The TelnetCE Client always tiles vertically.

**Tiling - Horz Mode**
Determines how the TelnetCE Client handles horizontal tiling. The options include:

- **None:** The TelnetCE Client positions the screen around the cursor.
- **LeftOnly:** The TelnetCE Client positions the screen around the leftmost column of tiles.
- **All:** The TelnetCE Client always tiles horizontally.
Figure 4-23 shows the Beeps tab of the Settings dialog box.

![Settings Dialog Box Beeps Tab](image)

The following list describes the options in the Beeps tab.

**Tiling - Vert**
Specifies the height of the logical screen in “tiles” for tiling mode.
Possible values are 0 to the screen height. Use the value 0 to specify the height of the current display.

**Tiling - Horz**
Specifies the width of the logical screen in “tiles” for tiling mode.
Possible values are 0 to the screen width. Use the value 0 to specify the width of the current display.

**Message Beep**
Specifies the sound that the mobile device plays when it receives a message from the host.

**Error Beep**
Specifies the sound that the mobile device plays when it receives an error message from the host.

**Silent Mode**
Indicates whether to disable sounds for the TelnetCE Client.

**Test**
Tests the Message Beep and Error Beep sounds that you have selected.
Figure 4-24 shows the Telnet tab of the Settings dialog box.

![Delta Settings dialog box with Auto Connect option.](image)

**Figure 4-24. Settings Dialog Box Telnet Tab**

The following list describes the options in the Telnet tab.

**Auto Connect**

Indicates whether the TelnetCE Client automatically attempts to reconnect to a host after the host system closes a session.

Figure 4-25 shows the Printer tab of the Settings dialog box.

![Delta Settings dialog box with Printer tab options.](image)

**Figure 4-25. Settings Dialog Box Printer Tab**
The following list describes the options of the Printer tab.

**Printer**
Specifications the type of printer that is connected to the mobile device. If you select User Defined, you will need to specify the parameters (baud rate, parity, data, etc.) for the connection to the printer.

**Port**
Specifies the COM port on the mobile device to which the printer is connected.

**Baud** *(User Defined Only)*
Specifies the baud rate for the connection to the printer.

**Parity** *(User Defined Only)*
Specifies the parity type for the connection to the printer.

**Data** *(User Defined Only)*
Specifies the data bits for the connection to the printer.

**Stop** *(User Defined Only)*
Specifies the stop bits for the connection to the printer.

**Wakeup** *(User Defined Only)*
Specifies the printer-specific value that is used to wake up a printer.

**Hardware Flow Control** *(User Defined Only)*
Indicates whether the printer connection uses hardware flow control.

**Software Flow Control** *(User Defined Only)*
Indicates whether the printer connection uses software flow control.

### Working with Multiple Sessions

This section covers the following:

- Initiating multiple sessions
- Switching between active sessions
- Disconnecting a session

The TelnetCE Client supports up to four simultaneous sessions. The default configuration for the TelnetCE Client, however, only allows one active session.
NOTE To configure the TelnetCE Client to support more than one simultaneous sessions (up to four), access the Configuration Manager and modify the Emulation > Common > Number of Sessions parameter. For more information about creating and downloading configurations to mobile devices, see Chapter 3: Configuration on page 15.

Initiating a New Session

If the TelnetCE Client on the mobile device is configured to support multiple sessions, you can initiate a new session with the same host or with a different host.

To initiate a new session:

1. Access the TelnetCE Options menu.

2. Select the next unconnected session in the menu list, as shown in Figure 4-26.

![TelnetCE Options](image)

**Figure 4-26. Selecting to Initiate a New Session**

The TelnetCE Client displays the default screen, as shown in Figure 4-27.
Chapter 4: Using the TelnetCE Client

Figure 4-27. TelnetCE Client Default Screen

3 Press Enter.

The Select Host dialog box appears.

4 In the Select Host dialog box, select the host to which you want to establish a new session.

5 Click OK.

The new host connection is established.

Switching Between Active Sections
You can use the TelnetCE Options menu to switch between the active Telnet sessions.

To switch to a different active session:
1 Access the TelnetCE Options menu.

2 From the list of active sessions, select the session that you want to view, as shown in Figure 4-28.
The TelnetCE Client displays the session that you selected from the TelnetCE Options menu.

**Disconnecting an Active Session**

You must be viewing a session to disconnect from the session.

**To disconnect from an active session:**

1. Access the TelnetCE Options menu.

2. From the list of connected sessions, select the connection from which you want to disconnect.

   The TelnetCE Client displays the session.

3. Access the TelnetCE Options menu.

4. Select Disconnect Session, as shown in Figure 4-29.
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Figure 4-29. Disconnecting from a Session

The session ends, and the TelnetCE Client displays the default screen.

**Using the TelnetCE Client Menu**

This section describes the options in the TelnetCE Options menu of the TelnetCE Client.

The following list provides a description of each of the options in the TelnetCE Options menu.

- **Connect Session**: Allows you to establish a connection with a host.
- **Disconnect Session**: Disconnects the session.
- **Session**: Allows you to view the session that you select.
- **Configure > Emulation**: Allows you to manually configure emulation parameters for a specific host profile.
- **Configure > Host Profiles**: Allows you to manually configure host profiles for the TelnetCE Client.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configure &gt; Authorization</td>
<td>Option unavailable. (The TelnetCE Client comes fully licensed on MC9000 mobile devices.)</td>
</tr>
<tr>
<td>View &gt; Emulation Keyboard</td>
<td>Displays the virtual emulation keyboard.</td>
</tr>
<tr>
<td>View &gt; Numeric Keyboard</td>
<td>Displays the numeric keyboard.</td>
</tr>
<tr>
<td>View &gt; Fonts</td>
<td>Allows you to modify the font parameters for a specific host profile.</td>
</tr>
<tr>
<td>About TelnetCE...</td>
<td>Displays information about the TelnetCE Client application, the Symbol device, and the radio card on the mobile device.</td>
</tr>
<tr>
<td>Exit</td>
<td>Terminates the TelnetCE Client. All active Telnet sessions are also terminated.</td>
</tr>
</tbody>
</table>
Appendix A: Using Microsoft ActiveSync

This section provides information about creating Microsoft ActiveSync connections between host systems and mobile devices.

Before you can deploy a new version of the TelnetCE Client or configuration files for the TelnetCE Client to mobile devices, you must establish a Microsoft ActiveSync connection (partnership) between the host system (which runs the TelnetCE Client installation utility) and the mobile device.

Before you create a Microsoft ActiveSync partnership, ensure that you have the following:

- The appropriate serial cable for connecting the host system and the mobile device
- Microsoft ActiveSync 3.6 (or better) installed on the host system

Creating a partnership involves the following tasks:

1. Configuring the COM port on the mobile device with the correct protocol.
2. Free the COM port on the host system.
3. Create the partnership with the mobile device.

Selecting the Correct COM Port Protocol

The COM port on the mobile device must be configured to use the correct protocol. If you are having trouble establishing a Microsoft ActiveSync partnership with the mobile device, ensure that the COM port on the mobile device is using the correct protocol.

To configure the COM port protocol on the mobile device:

1. In the shell screen of the mobile device, double-click theCtl Panel icon, which is shown in Figure A-1.
The Ctl Panel appears.

2 Locate and select **Com Settings...** in the Ctl Panel, as shown in Figure A-2.

3 Double-click **Comm Settings...**.

   The Ctl Panel displays the parameters for the communication port on the mobile device.

4 Double-click **Port** until the correct value for communications (Serial1 @ 115200) with the mobile device is selected, as shown in Figure A-3.
5 Click **OK**.

6 Access the Ctl Panel **File** menu.

7 Select **Exit**.

The Ctl Panel closes.

**Freeing a COM Port**

Applications, including Microsoft ActiveSync, contend for “ownership” or exclusive use of the COM ports on the host system. Before you attempt to create a partnership, ensure that no other applications are using the COM port through which you will establish the partnership with the mobile device.

For example, if you have installed Avalanche Manager on the host system and have used the Manager to perform serial updates on the mobile device, then the Manager may have exclusive control of the COM ports on the host system. To free the COM port, access the Services service on the host system and stop the Wavelink Avalanche Manager service.
Creating a Partnership

Before you can install the Enabler on the mobile device, you must create a Microsoft ActiveSync partnership between the host system and the mobile device.

To create a partnership:
1. On the host system, launch Microsoft ActiveSync.
2. Connect the host system to the mobile device with the correct serial cable.

   The New Partnership dialog box appears, as shown in Figure A-4.

![New Partnership Dialog Box](image)

**Figure A-4. New Partnership Dialog Box**

3. Select the **Standard partnership** option button.
4. Click **Next**.
The New Partnership dialog box asks you to specify the number of partnerships, as shown in Figure A-5.

![New Partnership dialog box]

**Figure A-5. Select the Number of Partnerships**

5 In the New Partnership dialog box, determine the number of partnerships the mobile device will have:

- If you want the mobile device to establish a partnership only with the host system to which it is currently connected, then select the **Yes, I want to synchronize with only this computer** option button.

- If you want the mobile device to establish or retain a partnership with another host system, then select the **No, I want to synchronize with two computers** option button.

6 Click **Next**.

The New Partnership dialog box asks you to specify the synchronization settings, as shown in Figure A-6.
7 Disable all of the check boxes in the New Partnership dialog box.

8 Click Next.

The Setup Complete dialog box appears.

9 Click Finish.

Microsoft ActiveSync indicates that you are connected to the mobile device, as shown in Figure A-7.
Figure A-7. Microsoft ActiveSync Connected to Mobile Device
Appendix C: Emulation Parameters

This section contains information about the TelnetCE Client emulation parameters that you can modify using Configuration Manager, including descriptions and possible values for each parameter.

This section is divided into the following sub-sections:

- COM port parameters
- 5250/3270 Emulation parameters
- Emulation parameters, including common, display, keyboard, sound, and printing
- VT and HP Emulation parameters
- Magnetic Stripe Reader parameters
- Scanner parameters

COM Port Parameters

Use the COM port parameters in Configuration Manager to modify the settings for the COM port of the mobile device.
The following list describes the COM port parameters that appear in Configuration Manager:

<table>
<thead>
<tr>
<th><strong>Com Port Baud Rate</strong></th>
<th>The baud rate of the COM port on the mobile device.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>1200 2400 4800 9600 19200 38400</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>9600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Com Port Block Data</strong></th>
<th>Specifies whether data should be held until the Com Port Data Timeout is reached before adding the block of data to the keyboard buffer.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>Yes No</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Com Port Data Bits</strong></th>
<th>The number of data bits that the COM port on the mobile device uses.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>7 8</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Com Port Data End Char</strong></th>
<th>Select the end character that indicates that data preceding this character (and following the start character) should be entered into the keyboard buffer.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>0 - 255</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>3</td>
</tr>
</tbody>
</table>
Appendix C: Emulation Parameters

Com Port Data Entry Mode

Specifies how data sent through the COM port on the mobile device is entered. If you select “keyboard”, each byte is entered as if it came through the keyboard. For 5250 emulation, there is an option to tag a field with an identifier in combination with setting the entry mode to Com Entry Field. With both of these set, data is only entered into the field with the data identifier and is followed with a field exit.

Possible values: keyboard, Com Entry Field

Default value: keyboard

Com Port Data Start Char

Specifies the start character to indicate that the data that follows this character should be entered into the keyboard buffer.

Possible values: 0 - 255 (decimal value), 0 - FF (hex value), one alpha character

Default value: 2

Com Port Data Terminator

Specifies the data terminator. You should only add the terminator when using the start/end character to block the data or when the Com Port Data Block is set to “Yes”. To add a terminator, enter the four hex-digit scan code of the key to be added after the COM data is entered. To find the scan code of the desired key, use the diagnostics menu and select “Keyboard Test”. Make sure you are connected to the host with the desired emulation type, since the key values actually change for the emulation type. Press the desired key to display the key’s scan code.

Example value: 3B00 (for F1)

Default value: -
**Com Port Data Timeout**  Specifies the amount of time (in milliseconds) that the terminal should wait for the next character form the COM port, before the mobile device either descards the data it has received so far (if you are using start and stop characters) or sending the data to the host (if you are blocking data).

*Possible values:* 0 - 3000 (milliseconds)

*Default:* 50

**Com Port Flow Control**  Specifies the type of flow control the COM port on the mobile device uses.

*Possible values:*  
- Software
- Hardware
- None

*Default value:* None

**Com Port for IO**  The COM port on the mobile device that is used for input/output (IO).

*Possible values:*  1  2

*Default value:* 1

**Com Port IO Screen ID (5250/3270 Only)**  Specifies the screen identifier for the block data sent out of the COM port. The identifier needs to be found at the row and columns spcified in the Com Port IO Screen Row and Com Port IO Screen ID Col parameters. The data is followed by a colon and a second instance of the screen identifier.

*For example:* OUTCOM:EXAMPLE:OUTCOM

*Possible values:* Up to 10 alpha-numeric characters

*Default value:* OUTCOM
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Com Port IO Screen ID Col</strong> (5250/3270 Only)</td>
<td>Specifies the column on the display screen where the Com Port IO Screen ID will be found.</td>
<td>1 - 80</td>
<td>1</td>
</tr>
<tr>
<td><strong>Com Port IO Screen ID Row</strong> (5250/3270 Only)</td>
<td>Specifies the row on the display screen where the Com Port IO Screen ID will be found.</td>
<td>1 - 24</td>
<td>3</td>
</tr>
<tr>
<td><strong>Com Port Parity</strong></td>
<td>Select the parity that the COM port on the mobile device uses.</td>
<td>None, Odd, Even, Space, Mark</td>
<td>None</td>
</tr>
<tr>
<td><strong>Com Port Parity Mask</strong></td>
<td>Specifies the mark for the COM port parity. A mask can be applied to each byte received through the COM port. Setting the mask to FF will prevent the data from being modified.</td>
<td>0 - 255 (decimal), 0 - FF (hex)</td>
<td>FF</td>
</tr>
<tr>
<td><strong>Com Port Stop Bits</strong></td>
<td>Specifies the number of stop bits the COM port on the mobile device uses.</td>
<td>1, 2</td>
<td>1</td>
</tr>
</tbody>
</table>
Com Port Translate IO
Indicates whether data passing through the COM port is translated from a two-digit hex value to a single byte that contains the value of the two hex digits. If you select “Yes”, data received from the COM port will also be translated from a single value to a two-digit hex value before it enter through the keyboard buffer.

Possible values: Yes
No

Default value: No

Use Com Input/Output
Specifies whether the COM port can be used for data input/output. Selecting “auto” enables the COM port for data entry when the terminal is in a cradle or attached to a charger.

Possible values: Yes
No
Auto

Default value: No

Use Com Start/End Characters
Specifies whether start and end characters are used. Only data between the start and end characters will be entered into the keyboard buffer.

Possible values: Yes
No

Default value: No

Emulation - 3270 Parameters
Use the 3270 emulation parameters in Configuration Manager to configure parameters that are specific to 3270-type emulation.
The following list describes the 3270 emulation parameters that you can modify with Configuration Manager:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clear Field On Scans</strong></td>
<td>Specifies whether the mobile device erases the contents of the current entry field before filling it with scanned data.</td>
<td>Yes, No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Tab on Scans</strong></td>
<td>Specifies whether the mobile device uses a tab after each scan.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Underscore 3270 Fields</strong></td>
<td>Specifies whether entry fields are delineated with an underscore.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
</tbody>
</table>
### Use Alt 3270 System Request

Specifies whether TN3270 System Requests are coded as Test-Requests. (By default, TN3270 System Requests are coded as Interrupt-Processes.)

Possible values:
- Yes
- No

Default value: No

### Use LXE Coop Rules

Specifies whether emulation allows the 3270 entry field to be an auto-send field (available as an LXE cooperative programming rule). 3270 emulation does not natively support this option.

Possible values:
- Yes
- No

Default value: No

---

### Emulation - 5250 Parameters

Use the 5250 emulation parameters in Configuration Manager to set parameters that are related to 5250-type emulation.
The following list describes the 5250 parameters that you can modify with Configuration Manager:

**Enter Key Swapped**

Specifies whether the ENTER key works as the AS400 Enter key and the Field Exit key is moved to the previous Enter key location. By default, the Enter key on mobile devices is set up as the Field Exit key.

Possible values: Yes, No

Default value: No

**Scan In Fields Only**

Specifies whether the scanner stays even when the cursor is not on an input field. Note that this will affect the scanning of AID keys when the cursor is not on an input field.

Possible values: Enable, Disable

Default value: Disable

**Emulation - 5250 and 3270 - Common**

Use the common 5250 and 3270 emulation parameters in Configuration Manager to set parameters that are common to 5250- and 3270-type emulation.
The following list describes the common 5250/3270 emulation parameters that you can modify with Configuration Manager:

**Auto Reset Dealy**  Specifies the number of seconds to wait before the mobile device sends a reset to the host when the Reset Required parameter (see below) is set to Never.

Possible values: 0 - 5 (seconds)

Default value: 2

**Disable Data IDs**  Specifies whether to disable data identifiers. (You may want to disable data identifiers for emulation types that have screens that are not designed for use with data identifiers, but may mistakenly process them as such.)

Possible values: Yes  No

Default value: No

**Display Truncate Message**  Specifies whether to display a message that lets the user at the mobile device know that the bar code has been truncated. (You only need to enable this value if you have set the Oversize Scanning parameters to “Truncate”.)

Possible values: Yes  No

Default value: Yes

**Enable Free Cursor**  Specifies whether the user is allowed to enter “free cursor” mode, which lets the user move to protected areas of the screen. Unless you are certain that none of the host screens have a use for this feature, set the parameter to “Yes”.

Possible values: Yes  No

Default value: Yes
### Host Message Line
Specifies the screen row that contains the host messages. (Set the value to “0” to have the mobile device ignore host messages.)

**Possible values:** 0 - 24  
**Default value:** 24

### Oversize Scanning
Specifies how scanned data that is longer than the entry field is managed.

**Possible values:**
- Do Not Allow
- Split (between multiple entry fields)
- Truncate (to match the length of the field)

**Default value:** Do Not Allow

### Print End Identifier
Specifies the identifier for the print end.

**Possible values:** Up to 20 alpha-numeric characters  
**Default value:** PRN

### Print Escape Character
Specifies an escape character that is used to embed special values within a print screen.

**Possible values:**
- 0 - 255 (decimal)
- 0 - FF (hex)
- one alpha-numeric character

**Default value:** 5C (hex), 92 (decimal), or \(character\)
Print Identifier Column: Specifies the location (column) of the print start identifier.

**Possible values:** 1 - 80

**Default value:** 1

Print Identifier Row: Specifies the location (row) of the print start identifier.

**Possible values:** 1 - 24

**Default value:** 3

Print Start Identifier: Specifies the identifier for the print start.

**Possible values:** Up to 20 alpha-numeric characters

**Default value:** PRN:

Reset Required: Specifies when a reset is required. The reset occurs after the number of seconds specified in the Auto Reset Delay parameter.

**Possible values:** On Errors
Never
On All Messages

**Default value:** On Errors

Retry Workstation ID: Specifies whether to append a letter (starting with A) to the end of a workstation ID that is already in use on the host.

**Possible values:** Yes
No

**Default value:** No
Tab on Scans

Specifies whether the mobile device moves to the next field after a scan.

**Possible values:** Yes
No

**Default value:** Yes

Use Enter as Reset

Specifies whether the Enter key can be configured to also work as the Reset key when the mobile device is in an error state.

**Possible values:** Yes
No

**Default value:** No

**Emulation - Common**

Use the common emulation parameters in Configuration Manager to modify parameters that are common to all types of emulation (VT, HP, and 5250/3270).
The following list contains descriptions of the common emulation parameters that Configuration Manager allows you to modify:

**Auto Connect Session**
Specifies whether the mobile device attempts to reconnect after a connection has closed.

- **Possible values:** Yes, No
- **Default value:** No

**Caps Lock**
Specifies the initial keyboard mode. If you specify “Default”, the keyboard will default to the default mode for the emulation type. 5250/3270 emulation defaults to Caps Lock On. VT/HP emulation defaults to Caps Lock Off.

- **Possible values:** On, Off
- **Default value:** Default

**Key Macros**
(Spectrum 24 only)
Specifies a key macro so that a key sequence is ramped to perform a function other than its default function. A scan code is produced when pressing a key sequence on the mobile device. The macro feature involves changing the meaning of a key’s scan code to represent another scan code, a sequence of text, or a combination of scan codes and text.

Use the following syntax for the parameter:

```
CODE:[key sequence | \CODE] [..]
```

**Note:** Scan codes are not recursive when used in a definition.

**Example:**

```
0008:\0020 (backspace become space)
0020:\0008 (space becomes backspace)
```
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>License Server Address</td>
<td>Specifies the host name or the IP address of a license server. The mobile device will attempt to contact the license server and obtain a license when you attempt to connect to a host.</td>
<td>IP address or host name</td>
<td>-</td>
</tr>
<tr>
<td>Number of Sessions</td>
<td>Specifies the number of concurrent Telnet sessions the mobile device can support. (NCU versions support only 1 session.)</td>
<td>1 - 4</td>
<td>1</td>
</tr>
<tr>
<td>Program Exit Key</td>
<td>Specifies the scan code (in hex) to exit the program. If you specify “Default”, then there is no key to exit the program.</td>
<td>Four-digit hex value</td>
<td>-</td>
</tr>
<tr>
<td>Program Exit Password</td>
<td>Specifies the password the user must supply when the Program Exit Key is pressed. If you leave this parameter blank, the value “default” is displayed and no password is required.</td>
<td>Up to 10 alpha-numeric characters</td>
<td>Default</td>
</tr>
<tr>
<td>Proxy ARP (11 Mbps mobile units only)</td>
<td>Specifies if the mobile device uses proxy ARP, which allows an AP to answer ARP request for mobile devices. This option is only for 11 Mbps mobile units with version 2.24-09 (or newer) of the radio driver.</td>
<td>Enable, Disable</td>
<td>Disable</td>
</tr>
<tr>
<td><strong>RF Config Password</strong></td>
<td>Specifies the password the user at the mobile device must supply to access and modify the RF parameters of the mobile device.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Possible values:</strong></td>
<td>Up to 20 alpha-numeric characters</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>System</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Signature ID Column (5250/3270 Only)</strong></th>
<th>Specifies the location (column) of the signature capture identifier.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>0 - 79 (zero-based)</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>Default (disables signature capture)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Signature ID Row</strong></th>
<th>Specifies the location (row) of the signature capture identifier.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>0 - 23 (zero-based)</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>Default (disables signature capture)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Signature Identifier</strong></th>
<th>Specifies the data to identify a signature capture.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>any string</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sleep Timeout</strong></th>
<th>Specifies the amount of time (in minutes) the mobile device remains idle before it enters sleep mode to preserve batter power. Use the value “0” to keep the mobile device on until the user turns it off.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>0 - 255 (minutes)</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>2</td>
</tr>
</tbody>
</table>
### TCP Keep Alive

Specifies whether the mobile device periodically pings the host to which it is connected.

- **Possible values:** Enable, Disable
- **Default value:** Enable

### Term Config Password

Specifies the password that the user at the mobile device must supply to access and modify emulation parameters and host profiles.

- **Possible values:** Up to 20 alpha-numeric characters
- **Default value:** Config

### Use Timing Mark Heartbeat

Specifies whether the mobile device sends a timing mark to the host to verify if the session is still active.

- **Possible values:** Yes, No
- **Default value:** Yes

---

**Emulation - Display**

Use the emulation display parameters in Configuration Manager to modify display parameters on the mobile device.
The following list contains a description of the emulation display parameters that Configuration Manager allows you to modify:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Backlight Time</strong></td>
<td>Specifies the amount of time (in seconds) the backlight remains on after the user at the mobile device presses a key. Specify “0” to turn off the backlight.</td>
<td>0 - 99 (seconds)</td>
<td>5</td>
</tr>
<tr>
<td><strong>Cursor Column Offset</strong></td>
<td>Specifies the position on the display screen where the cursor will be located when the screen is reposition. This value is ignored if the mobile device is operating in fixed or tile mode. If you set this parameter to “Default”, then the cursor column is positioned five-eighths of the way from the left edge of the display screen.</td>
<td>0 to 1 less than the screen width</td>
<td>-</td>
</tr>
<tr>
<td><strong>Cursor Row Offset</strong></td>
<td>Specifies the position on the display screen where the cursor will be located when the screen is reposition. If the mobile device is operating in fixed or tile mode, the value in this parameter is ignored. If the value is set to “Default”, then the cursor row is positioned three-fourths of the way down the screen.</td>
<td>0 to 1 less than the screen height</td>
<td>-</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Possible values</td>
<td>Default value</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Cursor Type</strong></td>
<td>Select the type of cursor the mobile device displays.</td>
<td>Default</td>
<td>Default</td>
</tr>
<tr>
<td><em>(1x40/3x40/6x40/4040/5040 mobile units only)</em></td>
<td></td>
<td>None</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Underline</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Block</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alternating</td>
<td></td>
</tr>
<tr>
<td><strong>Double High Font</strong></td>
<td>Specifies whether the display font on the mobile device is in double-high mode.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Double Wide Font</strong></td>
<td>Specifies whether the display font on the mobile device is in double-wide mode.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emulation Font Name</strong></td>
<td>Specifies the font the mobile device uses for emulation.</td>
<td>any font name</td>
<td>Standard</td>
</tr>
<tr>
<td><strong>Enable Scrolling</strong></td>
<td>Specifies whether the user at the mobile device is allowed to enter view mode to scroll around the virtual display. You should set this parameter to “Yes” unless all applications on the mobile device are written to keep display data within the area around the entry fields.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Possible values</td>
<td>Default value</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td><strong>Fixed Screen Left Edge</strong></td>
<td>If you have enabled Fixed Screen Mode on the mobile device, this parameter specifies the left-edge column of the fixed screen.</td>
<td>1 - 80</td>
<td>1</td>
</tr>
<tr>
<td><strong>Fixed Screen Mode</strong></td>
<td>Specifies whether Fixed Screen Mode is enabled. When you enable Fixed Screen Mode, the same portion of the display screen is shown without regard to where the cursor is on the virtual display screen. Users will not be able to see entry fields that are beyond the fixed display area.</td>
<td>Enable, Disable</td>
<td>Disable</td>
</tr>
<tr>
<td><strong>Fixed Screen Top Edge</strong></td>
<td>If you have enabled Fixed Screen Mode, this parameter specifies the top row of the fixed screen.</td>
<td>1 - 24</td>
<td>1</td>
</tr>
<tr>
<td><strong>Font Type</strong> (Spt 1740 only)</td>
<td>The font type for emulation on the Spt 1740.</td>
<td>Default, System, Emulation</td>
<td>Default</td>
</tr>
<tr>
<td><strong>Horizontal Scroll</strong></td>
<td>If you have enabled View Mode, this parameter specifies the number of characters to move (scroll horizontally). The default value, “Displaysize”, is the current screen size. See Tiling for more information.</td>
<td>3 - 80, DisplaySize</td>
<td>DisplaySize</td>
</tr>
</tbody>
</table>
**Left Edge Cursor Zone**

Specifies how close the cursor can get to the left edge of the screen before the screen is scrolled. The value is the number of characters. When the cursor advances outside of the specified cursor zone on the display of the mobile device, the display is repositioned over the full-screen display so that the cursor is placed near the center of the display screen.

**Possible values:** 1 - 10

**Default value:** 4

**Preferred Offset Left Edge**

Specifies the column of the Preferred Screen Offset.

**Possible values:** 1 - 80

**Default value:** 1

**Preferred Offset Top Edge**

Specifies the row of the Preferred Screen Offset.

**Possible values:** 1 - 24

**Default value:** 1

**Preferred Screen Offset**

Indicates whether to reposition the physical display to the location specified in the Preferred Offset Top Edge and Preferred Offset Left Edge parameters whenever the cursor is located in the preferred offset.

**Possible values:** Enable

**Default value:** Disable

**Disable**
**Right Edge Cursor Zone**  Specifies how close the cursor can get to the right edge of the screen before the screen is scrolled. The value is in character positions. When the cursor advances outside the specified cursor zone on the display of the mobile device, the display is reposition over the full-screen display so that the cursor is near the center of the display screen.

**Possible values:** 1 - 10

**Default value:** 1

**System Font**  Specifies the system font on the mobile device.

**Possible values:** any font name

**Default value:** Standard

**Tiling Height**  Specifies the height of the display tile of a mobile device. If the height is greater than the display height on the mobile device, then this parameter will default back to the actual display height of the mobile device (DisplaySize).

**Possible values:** 1 - 24

**Default value:** DisplaySize
Tiling Horizontal
Specifies the type of horizontal tiling the mobile device uses. Tiling refers to dividing the logical display into adjacent blocks that are referred to as tiles. When a screen is displayed, the physical display is located directly over the tile that contains the cursor. In areas of the screen that are not tiled, the physical display will be roughly centered around the cursor, without regard to boundaries between tiles. Tiling is configured separately for horizontal and vertical components of the display.

Possible values: None (centered around cursor)
Left Only (centered on leftmost column)
All (always tile horizontally)

Default value: Left Only

Tiling Vertical
Specifies the type of vertical tiling the mobile device uses. See Tiling Horizontal for information about Tiling.

Possible values: None (positioned around cursor)
TopOnly (positioned at uppermost row)
All (always tile vertically)

Default value: TopOnly

Tiling Width
Specifies the width of a mobile device display tile.

Possible values: 1 - 24
DisplaySize

Default value: DisplaySize

Vertical Scroll
Specifies the number of rows to move when in screen mode.

Possible values: 3 - 24
DisplaySize

Default value: DisplaySize
**Viewing Contrast**

Specifies the viewing contrast for the mobile device. If you specify “Default”, then the most common setting for the mobile device is selected.

**Possible values:**
- 1 - 31 (for 7000-series devices)
- 0 - 7 (for other devices)

**Note:** The lowest setting is the lightest.

**Default value:** Default

---

**WinCE Font Clip Bottom**

(For WinCE only)

Specifies how much of the white space (in font points) should be cropped from the bottom of the font.

**Possible values:** any number of font points

**Default value:** 0

---

**WinCE Font Clip Left**

(For WinCE only)

Specifies how much of the white space (in font points) should be cropped from the left of the font.

**Possible values:** any number of font points

**Default value:** 0

---

**WinCE Font Clip Right**

(For WinCE only)

Specifies how much of the white space (in font points) should be cropped from the right of the font.

**Possible values:** any number of font points

**Default value:** 0

---

**WinCE Font Clip Top**

(For WinCE only)

Specifies how much of the white space (in font points) should be cropped from the top of the font.

**Possible values:** any number of font points

**Default value:** 0
WinCE Font Name (WinCE Only)  
Specifies the font name WinCE OS-based mobile devices use for emulation. The font that you specify must be installed on the mobile device.

**Possible values:** Any font name  
Default

**Default value:** Default

WinCE Font Size (WinCE Only)  
Specifies the font size (in pts) of the font that WinCE OS-based mobile devices use for emulation.

**Possible values:** 6 - 72

**Default value:** 12

WinCE Font Weight (WinCE Only)  
Specifies the weight of the font that WinCE OS-based mobile devices use for emulation.

**Possible values:** Thin  
Light  
Normal  
Medium  
Heavy  
Bold

**Default value:** Normal

WinCE Force Black and White (WinCE Only)  
Specifies whether to force black-and-white-only display (white background, black text) for emulation on WinCE OS-based mobile devices.

**Possible values:** Yes  
No

**Default value:** No

WinCE Hide Horizontal Scroll Bar (WinCE Only)  
Specifies whether to hide the horizontal scrollbar in the TelnetCE Client on WinCE OS-based mobile devices.

**Possible values:** Yes  
No

**Default value:** No
Emulation - Keyboard

Use the emulation keyboard parameters in Configuration Manager to set the keyboard functions on the mobile device.

**WinCE Hide Menu (WinCE Only)**

Specifies whether to hide the TelnetCE Client menu on WinCE OS-based mobile devices.

Possible values: Yes  
No  

Default value: No

**WinCE Hide Start Menu (WinCE Only)**

Specifies whether to hide the Windows Start menu on WinCE OS-based mobile devices.

Possible values: Yes  
No  

Default value: No

**WinCE Hide Vertical Scroll Bar (WinCE Only)**

Specifies whether to hide the vertical scrollbar in the TelnetCE Client on WinCE OS-based mobile devices.

Possible values: Yes  
No  

Default value: No

**WinCE Menu Toggle Key (WinCE Only)**

Specifies the key that shows/hides the Windows Start menu on WinCE OS-based mobile devices. Use the hex value of the key.

Example: 0x79 (F10 key)

Possible values: any hex value

Default value: -
The following list describes the keyboard parameters that you can modify with Configuration Manager:

**Alpha Keyboard Name**
*(5250 Only / Virtual Keyboard Only)*

You only need to configure this parameter if you have specified “Yes” in the Shift Keyboard To Field Type parameter. This parameter specifies the name of the keyboard that should become active when the cursor enters an alpha-only field.

**Possible values:** any keyboard name

**Default value:** CapsLock

**App Key 1**

Specifies the function of the first application key on the mobile device.

**Possible values:**
- PRINT
- HELP
- HOME
- ATTENTION
- ROLLUP
- ROLLDOWN
- CLEAR
- ENTER
- FIELDEXIT
- RESET
- F1 - F24
- SPT_UP_KEY
- SPT_DOWN_KEY
- SPT_FUNCTION_KEY
- SPT_KEY_UNASSIGNED
- SPT_SEND_KEY

**Default value:** SPT_FUNCTION_KEY
**App Key 2**  Specifies the function of the second application key on the mobile device.

**Possible values:** PRINT
HELP
HOME
ATTENTION
ROLLUP
ROLLODOWN
CLEAR
ENTER
FIELDEXIT
RESET
F1 - F24
SPT_UP_KEY
SPT_DOWN_KEY
SPT_FUNCTION_KEY
SPT_KEY_UNASSIGNED
SPT_SEND_KEY

**Default value:** SPT_KEY_UNASSIGNED

**App Key 3**  Specifies the function of the third application key on the mobile device.

**Possible values:** PRINT
HELP
HOME
ATTENTION
ROLLUP
ROLLODOWN
CLEAR
ENTER
FIELDEXIT
RESET
F1 - F24
SPT_UP_KEY
SPT_DOWN_KEY
SPT_FUNCTION_KEY
SPT_KEY_UNASSIGNED
SPT_SEND_KEY

**Default value:** RESET
Appendix C: Emulation Parameters

**App Key 4**

Specifies the function of the fourth application key on the mobile device.

**Possible values:**
- PRINT
- HELP
- HOME
- ATTENTION
- ROLLUP
- ROLLDOWN
- CLEAR
- ENTER
- FIELDEXIT
- RESET
- F1 - F24
- SPT_UP_KEY
- SPT_DOWN_KEY
- SPT_FUNCTION_key
- SPT_KEY_UNASSIGNED
- SPT_SEND_KEY

**Default value:** SPT_SEND_KEY

---

**Comma Period Swapped**

Specifies whether the period key is swapped with the comma key. (In some countries, commas are used more often than periods.)

**Possible values:**
- Yes
- No

**Default value:** No

---

**Keyboard Identifier Column (5250/3270 Virtual Keyboard Only)**

Specifies the location (column) of the string on the host to indicate that a virtual keyboard command follows.

**Possible values:** 1 - 80 (column number)

**Default value:** 1
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyboard Identifier Row (5250/3270 Virtual Keyboard Only)</td>
<td>Specifies the location (row) of the string on the host to indicate that a virtual keyboard command follows.</td>
<td>1 - 24 (row number)</td>
<td>3</td>
</tr>
<tr>
<td>Keyboard Identifier String</td>
<td>Specifies the string on the host to indicate that a virtual keyboard command follows.</td>
<td>up to 10 alpha-numeric characters</td>
<td>KBD</td>
</tr>
<tr>
<td>Numeric Keyboard Name</td>
<td>You only need to configure this parameter if you have specified “Yes” in the Shift Keyboard to Field Type parameter. This parameter specifies the keyboard that becomes active when the cursor enters a numeric-only field.</td>
<td>any keyboard name</td>
<td>NUM</td>
</tr>
<tr>
<td>Permanent Keyboard Name (SPT 1740 Only)</td>
<td>Specifies the name of the keyboard that will always be displayed. (The keyboard will not be displayed if another keyboard is viewable.)</td>
<td>any keyboard name</td>
<td>-</td>
</tr>
<tr>
<td>Shift Keyboard To Field Type (5250/3270 Virtual Keyboard Only)</td>
<td>Specifies whether the keyboard state should be modified to match the new field that is being entered (alpha or numeric).</td>
<td>Yes, No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
SPT Calc Key
(SPT Only)

Specifies the configuration of the SPT CALC hardware key.

Possible values: SPT_CALC_KEY
SPT_DOWN_KEY
SPT_UP_KEY
SPT_KEY_UNASSIGNED
SPT_FUNCTION_KEY
SPT_SEND_KEY
RESET
FIELDEXIT
F1 - F24
ROLLDOWN
ROLLUP
ATTENTION
HELP
HOME
CLEAR
PRINT
ENTER

Default value: SPT_CALC_KEY
**SPT Down Key**  
(SPT Only)  

Specifies the configuration of the SPT DOWN hardware key.

**Possible values:**
- SPT_CALC_KEY
- SPT_DOWN_KEY
- SPT_UP_KEY
- SPT_KEY_UNASSIGNED
- SPT_FUNCTION_KEY
- SPT_SEND_KEY
- RESET
- FIELDEXIT
- F1 - F24
- ROLLDOWN
- ROLLUP
- ATTENTION
- HELP
- HOME
- CLEAR
- PRINT
- ENTER

**Default value:** SPT_DOWN_KEY
SPT Find Key  
(SPT Only)  

Specifies the configuration of the SPT FIND hardware key.

Possible values:  
SPT_FIND_KEY  
SPT_CALC_KEY  
SPT_DOWN_KEY  
SPT_UP_KEY  
SPT_KEY_UNASSIGNED  
SPT_FUNCTION_KEY  
SPT_SEND_KEY  
RESET  
FIELDEXIT  
F1 - F24  
ROLLDOWN  
ROLLUP  
ATTENTION  
HELP  
HOME  
CLEAR  
PRINT  
ENTER  

Default value: SPT_FIND_KEY
<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
<th>Possible values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPT Up Key</strong></td>
<td>Specifies the configuration of the SPT UP hardware key.</td>
<td>SPT_CALC_KEY, SPT_DOWN_KEY, SPT_UP_KEY, SPT_KEY_UNASSIGNED, SPT_FUNCTION_KEY, SPT_SEND_KEY, RESET, FIELDEXIT, F1 - F24, ROLLDOWN, ROLLUP, ATTENTION, HELP, hOME, CLEAR, PRINT, ENTER</td>
</tr>
<tr>
<td><strong>Startup Keybaord</strong></td>
<td>Specifies which keyboard you want to appear when the TelnetCE Client launches on WinCE OS-based mobile devices.</td>
<td>Numeric, Emulation, None</td>
</tr>
<tr>
<td><strong>Sticky Keys</strong></td>
<td>Specifies whether multi-key sequences can be performed one key at a time on WinCE OS-based mobile devices.</td>
<td>Yes, No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Default value</th>
<th>SPT_UP_KEY, None, Yes</th>
</tr>
</thead>
</table>

**SPT Up Key (SPT Only)**

**Possible values:**

- SPT_CALC_KEY
- SPT_DOWN_KEY
- SPT_UP_KEY
- SPT_KEY_UNASSIGNED
- SPT_FUNCTION_KEY
- SPT_SEND_KEY
- RESET
- FIELDEXIT
- F1 - F24
- ROLLDOWN
- ROLLUP
- ATTENTION
- HELP
- hOME
- CLEAR
- PRINT
- ENTER

**Default value:** SPT_UP_KEY

**Startup Keybaord (WinCE Only)**

**Possible values:**

- Numeric
- Emulation
- None

**Default value:** None

**Sticky Keys (WinCE Only)**

**Possible values:**

- Yes
- No

**Default value:** Yes
WinCE Keyboard Toggle
Key
(WinCE Only)

Specifies the key that allows users at WinCE mobile devices to toggle between showing and hiding the popup keyboard. The key must be a Windows hex value. You can also preface the hex code with a modifier:

- Use <A> to specify the Alt key.
- Use <C> to specify the Ctrl key.
- Use <S> to specify the Shift key.

Example: <A><0x79> specifies [Alt] <F10>.

Default value: -
WSS1000 Help Key
(WSS1010/1040 Only) Specifies the configuration of the Help key on WSS1010/1040 mobile devices.

Possible values: F1 - F24
Attn
Clear
Enter
Field Exit
Help
Home
Print
Reset
Roll-down
Roll-up

Default value: F1

WSS1000 Menu Key
(WSS1010/1040 Only) Specifies the configuration of the Menu key on WSS1010/1040 mobile devices.

Possible values: F1 - F24
Attn
Clear
Enter
Field Exit
Help
Home
Print
Reset
Roll-down
Roll-up

Default value: F3

Emulation - Printing

Use the emulation printing parameters in Configuration Manager to set printing on the mobile device.
The following list describes the printing parameters that Configuration Manager allows you to modify:

- **Print Nulls to Spaces** *(5250/3270 Only)*
  - Specifies whether nulls are converted to and displayed as spaces. (Some applications display nulls instead of spaces.)
  - **Possible values:** Yes, No
  - **Default value:** No

- **Print Wakeup** *(WinCE Only)*
  - Specifies the string that WinCE OS-based mobile devices should send to wake up the printer. Data should be in hex format inclosed in ‘< >’ or ‘( )’.
  - **Example:** `<00> <00>` sends two nulls to the printer.
  - **Default value:** -

- **Printer Baud Rate** *(WinCE Only)*
  - Specifies the baud rate of the COM port that connects the WinCE OS-based mobile device to the printer.
  - **Possible values:** 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600, 115200
  - **Default value:** 9600

- **Printer Data Bits** *(WinCE Only)*
  - Specifies the data bits used by the COM port that connects the WinCE OS-based mobile device to the printer.
  - **Possible values:** 7, 8
  - **Default value:** 8
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Printer Flow Control</strong></td>
<td>Specifies the type of flow control used by the COM port that connects the WinCE OS-based mobile device to the printer.</td>
<td>Hardware, Software (XON/XOFF), None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Printer Parity</strong></td>
<td>Specifies the type of parity used by the COM port that connects the WinCE mobile device to the printer.</td>
<td>Even, Odd, Mark, Space, None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Printer Port</strong></td>
<td>Specifies the COM port that connects the WinCE mobile device to the printer.</td>
<td>COM1, COM2, COM7</td>
<td>COM1</td>
</tr>
<tr>
<td><strong>Printer Protocol</strong></td>
<td>Specifies the printer protocol to send data to the printer.</td>
<td>Normal (serial), TCPIP (IP printing)</td>
<td>Normal</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Possible values</td>
<td>Default value</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Printer Stop Bits (WinCE Only)</td>
<td>Specifies the stop bits used by the COM port that connects the WinCE mobile device to the printer.</td>
<td>Possible values: 1, 2</td>
<td>1</td>
</tr>
<tr>
<td>Printer Type</td>
<td>Specifies the type of printer that is connected to the mobile device.</td>
<td>Possible values: PS1000, PS1001, PS104, Line Printer (generic line printer), Dumb (no line monitoring), Comtec, Pathfinder, Rascal, Renegade, Cotec PS, Code Courier, Comtec RF, UserDefined</td>
<td>PS1000</td>
</tr>
<tr>
<td>Printer Option</td>
<td>Specifies whether a reprint prompt is displayed after a barcode is printed.</td>
<td>Possible values: Yes, No</td>
<td>Yes</td>
</tr>
<tr>
<td>RF Printer Retries (Comtec RF Printers Only)</td>
<td>Specifies the number of RF retries for the Comtec RF printer.</td>
<td>Possible values: 1 - 5</td>
<td>3</td>
</tr>
</tbody>
</table>
Emulation - Sound

Use the emulation sound parameters in Configuration Manager to configure the TelnetCE Client sounds on the mobile device.

The following list describes the sound parameters that you can modify with Configuration Manager:

- **Beep Delay**
  - Specifies the amount of time (in milliseconds) between additional message beeps.
  - **Possible values:** 0 - 1000 (milliseconds)
  - **Default value:** 75

- **Beep Duration**
  - Specifies the duration (in milliseconds) of beeps on the mobile device.
  - **Possible values:** 0 - 1000 (milliseconds)
  - **Default value:** 100

- **Beep Tone**
  - Specifies the tone (in Hz) of beeps on the mobile device.
  - **Possible values:** 0 - 1000 (Hz)
  - **Default value:** 1000

- **Beeper Volume**
  - Specifies the volume of the beeper on the mobile device.
  - **Possible values:** High, Low
  - **Default value:** High

- **Beeps with Message**
  - Specifies the number of additional beeps when a message is displayed on the message line.
  - **Possible values:** 0 - 9
  - **Default value:** 0
<table>
<thead>
<tr>
<th><strong>Parameter</strong></th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Beeper</strong></td>
<td>Specifies whether to offer support for the optional external beeper.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Incoming Screen Beep</strong></td>
<td>Specifies whether a beep sounds when a new screen arrives from the host.</td>
<td>Enable, Disable</td>
<td>Enable</td>
</tr>
<tr>
<td><strong>Keyclicks</strong></td>
<td>Specifies whether the mobile device beeps when a user at the mobile device presses a key.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Silent Mode</strong></td>
<td>Specifies whether the mobile device should operate in silent mode. When the mobile device is in silent mode, it does not beep.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
</tbody>
</table>
Emulation - VT and HP - Common

Use the common VT and HP parameters in the Configuration Manager to modify emulation parameters that are common to VT- and HP-type emulation.

The following list describes the common VT and HP parameters that you can modify with the Configuration Manager:

- **Alternate Escape Character**
  - Define the alternate Esc character to look for when parsing escape sequences.
  - **Possible values:** Up to three alpha-numeric characters
  - **Default value:** 1B

- **Auto-login**
  - Currently unavailable. Configure auto-login in host profiles.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Break Key</strong></td>
<td>Specifies whether the Break key interrupts the connection between the mobile device and the host.</td>
<td>Enable, Disable</td>
<td>Disable</td>
</tr>
<tr>
<td><strong>Disable Scanner</strong></td>
<td>Specifies whether the scanner on mobile devices is disabled after scans.</td>
<td>Never, Always, Only 1D, Only 2D</td>
<td>Never</td>
</tr>
<tr>
<td><strong>External Beeper on Error Beep</strong></td>
<td>Specifies whether to use the external beeper for error beeps.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Handle Telxon Sequences</strong></td>
<td>Specifies whether to support Telxon escape sequences that the host sends to mobile devices.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Local Echo</strong></td>
<td>Specifies whether mobile devices use local echoes to reflect data that it sends to the host.</td>
<td>On, Off</td>
<td>Off</td>
</tr>
<tr>
<td>Settings</td>
<td>Description</td>
<td>Possible values</td>
<td>Default value</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
<tr>
<td><strong>Map Underline</strong></td>
<td>Specifies whether the underline attribute is displayed as reverse video on mobile devices. Mobile devices do not display the underline attribute.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Remove ISO IDs</strong></td>
<td>Specifies whether to remove ISO data IDs from the beginning of bar codes.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Scan Terminator</strong></td>
<td>Specifies the scan terminator that is added after all scanned data. Precede hex values for letters with a backslash (for example, \0D).</td>
<td>Up to 10 alpha-numeric characters</td>
<td>\0D</td>
</tr>
<tr>
<td><strong>Use FEDEX Escape Sequence</strong></td>
<td>Specifies whether the FEDEX escape sequences are enabled.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>VT New Answer Back</strong></td>
<td>Specifies the New Answer Back string the mobile device displays when it receives an ENQ from the host. The New Answer Back option supports the following variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|                        | • %m - %r (MAC address octets)  
|                        | • %a - %d (IP address octets)  
|                        | • %s (session number)  
|                        | • %t (Terminal ID)  
| **Default value:**     | - |

| **VTHP Report Pen Position**  
**(SPT 1740 Only)** | Specifies whether to send a custom escape sequence to report the row and the column where the stylus touched the screen on the mobile device. The escape sequence is sent as ES%r,cR, where r is the row and c is the column. |
|--------------------------|---------------------------------------------------------------------------------------------------------------|
| **Possible values:**     | Yes  
|                          | No  
| **Default value:**       | No |

| **VTHP Report Screen Size**  
**(SPT 1740 Only)** | Specifies whether to send a custom escape sequence to report the physical screen size of the mobile device. The escape sequence is sent as ESC%r,cZ, where r is the number of rows and c is the number of columns. |
|--------------------------|---------------------------------------------------------------------------------------------------------------|
| **Possible values:**     | Yes  
|                          | No  
| **Default value:**       | No |

<table>
<thead>
<tr>
<th><strong>Warning Bells</strong></th>
<th>Specifies whether the mobile device beeps when the host sends a warning bell.</th>
</tr>
</thead>
</table>
| **Possible values:** | Yes  
|                          | No  
| **Default value:**       | Yes |
Emulation - VT and HP - HP

Use the HP emulation parameters in the Configuration Manager to set emulation parameters that are specific to HP-type emulation.

The following list describes the HP-related parameters that the Configuration Manager allows you to modify:

**Auto Send**

Specifies whether the mobile device automatically sends scanned data after the last entry field is scanned.

- **Possible values:** Enable, Disable

- **Default value:** Disable

**Message Line**

If you are using a message line, specify a line for the message.

- **Possible values:** 0 - 24 (0 for no message line)

- **Default value:** 0

Emulation - VT and HP - VT

Use the VT emulation parameters in the Configuration Manager to set emulation parameters that are specific to VT-type emulation.
The following list describes the VT-related parameters that the Configuration Manager allows you to modify:

**Backspace Key**  
Specifies the character that is send by the Backspace key.

**Possible values:**  
08 (Backspace)  
7F (Delete)

**Default value:** 08

**Control Codes**  
Specifies the bit size of the control codes that the TelnetCE Client sends to the host.

**Possible values:**  
7  
8

**Default value:** 7

**VT Copy Screen Text**  
Allow screen text at a given row, column, and length to be copied to a new row and column. The format of the parameter is Original Row, Original Column, New Row, New Column, Length.

**Possible values:**  
1 - 24 (row)  
1 - 80 (column)  
1-80 (length)

**Default value:** -

**VT Line Mode**  
Specifies whether the TelnetCE Client simulates a line mode-like behavior. Use this feature for hosts that do not support true line mode.

**Possible values:**  
On  
Off

**Default value:** Off

**VT Line Mode Clear Key**  
Specifies the Clear key for line mode. Use the scan code for the desired key.

**Possible values:** scan code

**Default value:** 001B
Magnetic Stripe Reader

Use the magnetic stripe reader parameters in the Configuration Manager to configure the behavior of the magnetic stripe reader on the mobile device.

The following list describes the magnetic stripe reader parameters that you can modify with the Configuration Manager:

**Enable MSR**
Specifies whether to enable the magnetic stripe reader function on the mobile device. (Disabling the magnetic stripe reader function minimizes CPU usage.)

**Possible values:** Yes, No

**Default value:** No

**MSR Beep Success**
Specifies whether the mobile device beeps after each successful read.

**Possible values:** Yes, No

**Default value:** Yes

**MSR Enable Read Key** *(5250/3270 Only)*
Specifies the key that enables the magnetic stripe reader on the mobile device.

**Possible values:** Attn, Clear, Enter, Field Exit, Help, Home, Print, Reset, Roll-Up, Roll-Down, F1 - F24

**Default value:** Print
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MSR Read Wait Time</strong></td>
<td>Specifies the time (in seconds) for the magnetic stripe reader to wait for a card to be swiped after the magnetic stripe reader is enabled.</td>
<td>0 - 255</td>
<td>10</td>
</tr>
<tr>
<td><strong>MSR Track Selection</strong></td>
<td>Specifies the tracks to be read.</td>
<td>Any tracks, All Tracks, Track 1 only, Track 2 only, Tracks 1 &amp; 2, Track 3 only, Tracks 1 &amp; 3, Tracks 2 &amp; 3</td>
<td>Tracks 1 &amp; 2</td>
</tr>
<tr>
<td><strong>Codabar Add Postamble String</strong></td>
<td>Specifies the string to be added to the end of Codabar barcode data.</td>
<td>Up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
<tr>
<td><strong>Codabar Add Preamble String</strong></td>
<td>Specifies the string to be added to the beginning of Codabar barcode data.</td>
<td>Up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
</tbody>
</table>

**Scanner - Codabar**

Use the Codabar scanner emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles Codabar scan codes.

The following list describes the Codabar scanner parameters that Configuration Manager allows you to modify:

- **Codabar Add Postamble String**
- **Codabar Add Preamble String**
**Codabar CLSI**
Specifies whether the 14-character Codabar symbol is reformatted to remove the start and stop characters from Codabar barcode scans.

**Possible values:** Yes
   No

**Default value:** No

**Codabar Maxlength**
Specifies the maximum length (in characters) for Codabar scans.

**Possible values:** 0 - 60

**Default value:** 0

**Codabar Minlength**
Specifies the minimum length (in characters) for Codabar scans.

**Possible values:** 0 - 30

**Default value:** 0

**Codabar NOTIS**
Specifies whether to remove the start and stop characters from Codabar scans.

**Possible values:** Yes
   No

**Default value:** No

**Codabar Redundancy**
Specifies whether Codabar redundancy is enabled.
(Redundancy requires the mobile device to decode a barcode from two separate scans. The two scans occur with a single activation of the scanner trigger.)

**Possible values:** Yes
   No

**Default value:** No
**Codabar Scans Strip End** Specify the number of characters to strip from the end of Codabar bar scans.

Possible values: 0 - 255

Default value: 0

**Codabar Scans Strip Start** Specify the number of characters to strip from the beginning of Codabar bar scans.

Possible values: 0 - 255

Default value: 0

**Symbology Codabar** Specifies whether the Codabar symbology is enabled on the mobile device.

Possible values: Enable
               Disable

Default value: Disable

---

**Scanner - Code11**

Use the Code11 scanner emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles Code11 scan codes.

The following list describes the Code11 parameters that Configuration Manager allows you to modify:

**Code11 Add Postamble String** Specifies the string to be added to the end of Code11 barcode data.

Possible values: Up to 20 alpha-numeric characters

Default value: -

**Code11 Add Preamble String** Specifies the string to be added to the beginning of Code11 barcode data.

Possible values: Up to 20 alpha-numeric characters

Default value: -
**Code11 CD**

Specifies the number of check-digits read with Code11 barcodes. This does not include the number of check digits in the Code11 length specification, even if the application receives a report on the number. (This option is not available on the SPT 1740).

**Possible values:** 0 - 3

**Default value:** 1

**Code11 Maxlenght**

Specifies the maximum length of Code11 barcodes.

**Possible values:** 0 - 60

**Default value:** 0

**Code11 Minlength**

Specifies the minimum length of Code11 barcodes.

**Possible values:** 0 - 30

**Default value:** 0

**Code11 Redundancy**

Specifies whether Code11 redundancy is enabled. (Redundancy requires the mobile device to decode a barcode from two separate scans. The two scans occur with a single activation of the scanner trigger.)

**Possible values:** Yes

No

**Default value:** No

**Code11 Return CD**

Specifies whether the Code11 check-digit is returned as part of the scanned data. This field has no effect on Code11 length specification; the length specification only accounts for data characters. (This feature is unavailable on the SPT 1740.)

**Possible values:** Yes

No

**Default value:** No
Use the Code128 scanner emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles Code 128 scan codes.

The following list describes the Code128 scanner parameters that you can modify with Configuration Manager:

**Code128 Add Postamble String**
Specifies the string to be added to the end of Code128 barcode data.

- **Possible values:** Up to 20 alpha-numeric characters
- **Default value:** -

**Code128 Add Preamble String**
Specifies the string to be added to the beginning of Code128 barcode data.

- **Possible values:** Up to 20 alpha-numeric characters
- **Default value:** -
**Code128 Maxlength**  Specifies the maximum length for a Code128 barcode.

Possible values: 0 - 60

Default value: 0

**Code128 Minlength**  Specifies the minimum length for a Code128 barcode.

Possible values: 0 - 30

Default value: 0

**Code128 Redundancy**  Specifies whether Code128 redundancy is enabled. (Redundancy requires the mobile device to decode a barcode from two separate scans. Two scans occur with a single activation of the scanner trigger.)

Possible values: Yes
                 No

Default value: No

**Code128 Scans Strip End**  Specifies the number of characters to strip from the end of a Code128 barcode scan.

Possible values: 0 - 255

Default value: 0

**Code128 Scans Strip Start**  Specifies the number of characters to strip from the beginning of a Code128 barcode scan.

Possible values: 0 - 255

Default value: 0

**Symbology Code 128**  Specifies whether Code128 symbology is enabled on the mobile device.

Possible values: Enable
                 Disable

Default value: Enable
Use the Code39 scanner emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles Code39 scan codes.

The following list describes the Code39 scanner parameters that Configuration Manager allows you to modify:

**Code39 Add Postamble String**
- Specifies the string to be added to the end of Code39 barcode data.
- **Possible values:** Up to 20 alpha-numeric characters
- **Default value:** -

**Code39 Add Preamble String**
- Specifies the string to be added to the beginning of Code39 barcode data.
- **Possible values:** Up to 20 alpha-numeric characters.
- **Default value:** -

**Code39 CD**
- Specifies whether a Code39 check-digit is returned as part of the scanned data.
- **Possible values:** Yes, No
- **Default value:** No

**Code39 Full ASCII**
- Specifies whether Code39 barcodes are processed to allow the full representation of the ASCII character set.
- **Possible values:** Yes, No
- **Default value:** No

**Code39 Maxlength**
- Specifies the maximum length of Code39 barcodes.
- **Possible values:** 0 - 60
- **Default value:** 0
Scaner - Code93

Use the scanner Code93 emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles Code 93 scan codes.

**Code39 Minlength**

Specifies the minimum length of Code39 barcodes.

**Possible values**: 0 - 30

**Default value**: 0

**Code39 Redundancy**

Specifies whether Code39 redundancy is enabled. (Redundancy requires the mobile device to decode a barcode from two separate scans. The two scans occur with a single activation of the scanner trigger.)

**Possible values**: Yes, No

**Default value**: No

**Code39 Scans Strip End**

Specifies the number of characters to strip from the end of a Code39 barcode scan.

**Possible values**: 0 - 255

**Default value**: 0

**Code39 Scans Strip Start**

Specifies the number of characters to strip from the beginning of a Code39 barcode scan.

**Possible values**: 0 - 255

**Default value**: 0

**Symbology Code39**

Specifies whether Code39 symbology is enabled.

**Possible values**: Enable, Disable

**Default value**: Enable
The following list describes the Code93 parameters that Configuration Manager allows you to modify:

**Code93 Add Postamble String**
Specifies the string to add to the end of Code93 barcode scans.

**Possible values:** Up to 20 alpha-numeric characters

**Default value:** -

**Code93 Add Preamble String**
Specifies the string to add to the beginning of Code93 barcode scans.

**Possible values:** Up to 20 alpha-numeric characters

**Default value:** -

**Code93 Maxlength**
Specifies the maximum length for Code93 barcodes.

**Possible values:** 0 - 60

**Default value:** 0

**Code93 Minlength**
Specifies the minimum length for Code93 barcodes.

**Possible values:** 0 - 30

**Default value:** 0

**Code93 Redundancy**
Specifies whether Code93 redundancy is enabled. (Redundancy requires a mobile device to decode a barcode from two separate scans. The two scans occur with a single activation of the scanner trigger.)

**Possible values:** Yes

No

**Default value:** No

**Code93 Scans Strip End (Spectrum 24 Only)**
Specifies the number of characters to strip from the beginning of Code93 barcodes.

**Possible values:** 0 - 255

**Default value:** 0
Use the common scanner emulation parameters in the Configuration Manager to set the way the TelnetCE Client handles all types of scanned data.

The following list describes the common scanner emulation parameters that the Configuration Manager allows you to modify:

**Code93 Scans Strip Start (Spectrum 24 Only)**

Specifies the number of characters to strip from the end of Code93 barcodes.

**Possible values:** 0 - 255

**Default value:** 0

**Symbology Code93**

Specifies whether Code93 symbology is enabled on the mobile device.

**Possible values:** Enable

**Default value:** Enable

**Add Scan Identifier**

Specifies whether to add a scan identifier to all scanned data. The identifier is used to indicate scanned data to a host. (If you enable this parameter, you must specify the scan identifier in the Scan Identifier parameter.)

**Possible values:** Yes

**Default value:** No

**All Scan Strip Start**

Specifies the number of characters that are stripped from the beginning of all barcodes.

**Possible values:** 0 - 20

**Default value:** 0
Appendix C: Emulation Parameters

All Scan Strip End
Specifies the number of characters that are stripped from the end of all barcodes.

Possible values: 0 - 20

Default value: 0

Allow Scan Ahead
Specifies whether a user can scan ahead while the host is processing data from the previous scan. If you do not enable this parameter, the scanner is disabled while the host process the data from the previous scan.

Possible values: Yes
No

Default value: No

Auto Send Scans
Specifies whether the mobile device automatically sends data to the host after a barcode scan.

Possible values: Yes
No
Last Only (if data is scanned into last field)

Default value: No

Bidir Redundancy
Specifies whether bi-directional redundancy is enabled. If bi-directional redundancy is enabled, then two decodes of the barcode in opposite laser sweep directors are required. (The default setting allows two decodes of the barcode in the same sweep direction.)

Possible values: Yes
No

Default value: No
### Green Scan LED On-Time

Specifies the amount of time (in milliseconds) the green LED light remains on after the mobile device completes a scan.

**Possible values:** 0 - 10000 (milliseconds)

**Default value:** 3000

### Remove Barcode Header

Specifies a string. If the beginning characters of a barcode scan match the specified string, the string is removed from the barcode. If you specify a string, then the Scan Identifier, Scans Strip Start, Scans Strip End, and Preamble String are ignored. (The default setting will not remove any header.)

**Possible values:** any string

**Default value:** -

### Scan Escape Code

**(5250/3270 Only)**

Specifies the scan escape code that is used to identify aid keys (for example, F1, F10, or Enter) that are scanned. Input the hex value of the character.

**Possible values:** hex value of a character

**Default value:** 1B
**Scan Handler**

Specifies commands that provide special processing of scanned data. You can specify scans to do any of the following:

- Strip data from the start/end of a barcode
- Replace selected text within a barcode
- Append/prepend data to the barcode
- Translate data within a barcode

Use the following syntax:

```
<symbology(length)[command]
```

Use the following letters in the `symbology` parameter to specify a symbology:

- A = any
- B = UPCE0
- C = UPC1
- D = UPCA
- E = MSI
- F = EAN8
- G = EAN 13
- H = Codabar
- I = Code3of9
- J = D2of5
- K = I2of5
- L = Code11
- M = Code93
- N = Code128
- O = PDF417
- P = D2of5 IATA
- Q = UCC/EAN128
Scan Handler

Specifies the (length) parameter as one of the following:

- The minimum and maximum length formatted as [min-max], where min is the minimum length and max is the maximum length.

- A specific value to match a specific length.

- 0 to match any length.

For the [command] parameters, specify any of the following single-character codes followed by any variables that are specific to that code:

- \[S(loc)(char)\] to strip characters from the barcode, where:
  - (loc) is the location, either S (start of barcode) or E (end of barcode)
  - (char) variable is the number of characters to strip

  Example: \(Q(16)[SS1]\) strips off the first character of UCC/EAN128 barcodes of length 16.

- \[R(char)(repl)\] to replace characters in the barcode, where:
  - (char) is the character to replace
  - (repl) is the replacement character

  Example: \(A(9-12)[R29]\) replaces all 2s with 9s in any barcode of lengths between 9 and 12.

NOTE You may specify the character directly, or you may specify the two-digit hex value for the character.
Scan Handler

[A(app)] appends data to the end of the barcode, where:

- (app) is the data to append (between 1 and 8 bytes)

**NOTE** The data may include two-digit hex values. You must preface each hex value with a backslash (\).

**Example:** A(0)[A123] appends 123 to the end of all barcodes.

- [P(pre)] to add data to the beginning of a barcode (prepend), where:

- (pre) is the value to prepend (between 1 and 8 bytes)

**NOTE** The data may include two-digit hex values. You must preface each hex value with a backslash.

**Example:** A(0)[P123] prepends 123 to all barcodes.

Scan Handler

- [X(trans);(repl)] to translate barcode data (between 1 and 8 bytes), where:

- (trans) is the data to translate
- (repl) is the replacement data

**NOTE** The data may include two-digit hex values. You must preface each hex value with a backslash.

**Example:** A(0)[X123;ABC] translates all occurrences of 123 to ABC in all types of barcodes.
• \([C(char);(loc);(siz)]\) to cut barcode data (1 to 8 characters) based on a starting character, where:

  • \((\text{char})\) is the search string (1 to 8 characters)
  • \((\text{loc})\) is the start location of the search (in characters)
  • \((\text{siz})\) is the size (in characters)

**NOTE** The data may include two-digit hex values. You must preface hex values with a backslash.

**Example:** A(0)[C00;3;18] converts to 18 characters starting with the third in scan when the barcode starts with 00.

**Scan Identifier**

Specifies a scan identifier. The scan identifier is placed in front of all scanned data to indicate scanned data to the host. You can use two-digit hex values to specify a value. Preface hex values with a backslash. (You must set the Add Scan Identifier parameters to “Yes” for the Scan Identifier parameter to be valid.)

**Possible values:** any string

**Default value:** -

**Scanner Angle**

Specifies the type of scanner angle for the scanner on the mobile device.

**Possible values:** Narrow
Wide

**Default value:** Narrow
**Scanning Type**

Specifies the type of scanner on the mobile device.

**Possible values:** LRT
- Laser Only
- Contact with Pulse
- Contact without Pulse
- Auto with Pulse
- Auto without Pulse
- Wand Simulator
- Dual Trigger
- Single Trigger
- Liberty

**Default value:** - (automatically selects the type for the current standard on the mobile device)

**STLR Scan Timeout**

Specifies the timeout (in seconds) for single-position trigger long-range scanners. These are primarily for 6840LR mobile devices.

**Possible values:** 0 - 255 (seconds)

**Default value:** 3

**Symbology Supps**

Specifies whether the scanner reads supplemental barcodes with UCPC and EAN barcodes.

**Possible values:** Enable
- Disable

**Default value:** Disable
**Transmit Code ID Char**  Specifies whether a prefix symbology code is added to scanned data that is returned to the application. The ASCII characters represent the following symbologies:

- A = UPD, UPCE0, UPCE1, EAN8, EAN13
- B = Code39
- C = Codabar
- D = Code128
- E = Code 93
- F = I2of5
- G = D2of5
- H = Code11
- J = MSI
- K = UCCEAN128

Possible values: Yes  
No

Default value: No

**UPC EAN Linear**  Specifies whether the decoder must decode all label blocks in the same sweep.

**Note:** UPC labels are divided into left and right blocks (manufacturer and item numbers). Setting this parameter to “No” allows the decoder to combine a block from a partially decoded UPC label with a block decoded in an earlier scan. Setting this parameter to “Yes” forces the decoder to decode all label blocks in the same sweep, which is the preferred method when scanning multiple labels with potentially interchangeable blocks in the laser field.

Possible values: Yes  
No

Default value: No
**UPC EAN Security**

Specifies the level of the decode algorithm for UPC and EAN barcodes. This parameter prevents incorrect decodes by aiding in decoding poor labels. The lower the level, the less stringent but more aggressive the decoding. Higher security levels provide greater protection against incorrect decodes.

**Possible values:** 0 - 3

**Default value:** 0

**UPC EAN Supp 2**

Specifies whether to allow decodes of barcodes with two supplemental characters. (This feature is not available on the SPT 1740.)

**Possible values:** Yes, No

**Default value:** No

**UPC EAN Supp 5**

Specifies whether to allow decodes of barcodes with five supplemental characters. (This feature is not available on the SPT 1740.)

**Possible values:** Yes, No

**Default value:** No
**UPC EAN Supp Mode**

Specifies the method by which supplemental barcodes are handled.

**Possible values:**

- **NoSupps** (ignore supp barcodes)
- **OnlySuppLabels** (verifies that the UPC labels has an attached supp barcode that matches the enabled lengths)
- **SuppsOptional** (reports if the decoder determines there is a supp of any length)

**NOTE** With the OnlySuppsLabel method, two-character and five-character supplemental barcodes are valid if you set the UPC EAN Supp 2 and UPC EAN Supp 5 parameters to “Yes”.

**Default value:** NoSupps

**UPC EAN Supp Retry**

Specifies the number of times the barcode should be read if checking for a supplemental barcode. (If labels with or without supplements are returned to the application, this option determines how many times the decoder attempts to decode the UPC label before it registers that there are no supplements.)

**Possible values:** 2 - 10

**Default value:** 5
Use Scanner As Keyboard Wedge

Specifies whether the program can use scanned data as keyboard data. This will bypass all special handling that is performed on data.

Possible values: Enable, Disable

Default value: Disable

WS1000 Blink Mode (WSS1010/1040 Only)

Specifies the duty cycle for blink mode on scanners for WSS1010/1040 mobile devices. The duty mode percentage specifies the percentage of time the scan pulses when the scan is active. Higher percentages improve scanning aggressiveness (the speed at which the scan is acquired), while lower duty cycles improve the battery life on scanners that are always active.

Possible values: 100% Duty Cycle, 75% Duty Cycle, 67% Duty Cycle, 50% Duty Cycle, 40% Duty Cycle, 33% Duty Cycle, 29% Duty Cycle, 25% Duty Cycle

Default value: 100% Duty Cycle

Scanner - D2of5

Use the scanner D2of5 emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles D2of5 scan codes.
The following list describes the D2of5 parameters that you can modify with Configuration Manager:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values:</th>
<th>Default value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>D2of5 Add P{ostamble String</td>
<td>Specifies the string to be added to the end of D2of5 barcode data.</td>
<td>up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
<tr>
<td>D2of5 Add Preamable String</td>
<td>specify the string to be added to the beginning of D2of5 barcode data.</td>
<td>up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
<tr>
<td>D2of5 Maxlength</td>
<td>Specifies the maximum length for a D2of5 barcode.</td>
<td>0 - 60</td>
<td>0</td>
</tr>
<tr>
<td>D2of5 Minlength</td>
<td>Specifies the minimum length for a D2of5 barcode.</td>
<td>0 - 60</td>
<td>0</td>
</tr>
<tr>
<td>D2of5 Redundancy</td>
<td>Specifies whether D2of5 redundancy is enabled.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
</tbody>
</table>
Appendix C: Emulation Parameters

**Scanner - EAN13**

Use the scanner EAN13 emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles EAN 13 scan codes.

---

**D2of5 Scans Strip End** *(Spectrum 24 Only)*

Specifies the number of characters to strip from the end of D2of5 barcodes.

**Possible values:** 0 - 255

**Default value:** 0

**D2of5 Scans Strip Start** *(Spectrum 24 Only)*

Specifies the number of characters to strip from the beginning of D2of5 barcodes.

**Possible values:** 0 - 255

**Default value:** 0

**Symbology D2of5**

Specifies whether D2of5 symbology is enabled on the mobile device.

**Possible values:** Enable

  Disable

**Default value:** Enable
The following list describes the EAN13 parameters that you can modify with Configuration Manager:

**Convert EAN13 to ISBN**
Specifies whether EAN13 codes are converted to ISBN codes.

**Possible values:** Yes
No

**Default value:** No

**EAN13 Add Postamble String**
Specifies the string to be added to the end of EAN13 barcode data.

**Possible values:** up to 20 alpha-numeric characters

**Default value:** -

**EAN13 Add Preamble String**
Specifies the string to be added to the beginning of EAN13 barcode data.

**Possible values:** up to 20 alpha-numeric characters

**Default value:** -

**EAN13 Maxlength**
Specifies the maximum length for an EAN13 barcode. (Use 0 to represent any length.)

**Possible values:** 0 - 60

**Default value:** 12

**EAN13 Minlength**
Specifies the minimum length for an EAN13 barcode. (Use 0 to represent any length.)

**Possible values:** 0 - 30

**Default value:** 12

**EAN13 Scans Strip End (Spectrum 24 Only)**
Specifies the number of characters to strip from the end of an EAN13 barcode.

**Possible values:** 0 - 255

**Default value:** 0
EAN13 Scans Strip Start (Spectrum 24 Only) Specifies the number of characters to strip from the beginning of an EAN13 barcode.

Possible values: 0 - 255

Default value: 0

Hyphenate ISBN Specifies whether the output ISBN code is hyphenated. (You must also enable the Convert EAN13 to ISBN parameter.)

Possible values: Yes
No

Default value: No

Symbology EAN13 Specifies whether EAN13 symbology is enabled on the mobile device.

Possible values: Enable
Disable

Default value: Enable

Scanner - EAN8

Use the scanner EAN8 parameters in Configuration Manager to configure the way the TelnetCE Client handles EAN8 scan codes.
The following list describes the EAN8 parameters that Configuration Manager allows you to modify:

- **EAN8 Add Postamble String**
  Specifies the string to be added to the end of EAN8 barcode data.
  
  Possible values: up to 20 alpha-numeric characters

  Default value: -

- **EAN8 Add Preamble String**
  Specifies the string to be added to the beginning of EAN8 barcode data.
  
  Possible values: up to 20 alpha-numeric characters

  Default value: -

- **EAN8 Convert**
  Specifies whether EAN8 barcodes are converted to EAN13. The conversion increases the EAN8 label to 13 characters by adding 0s. (This parameter is automatically enabled when you place EAN13 and EAN8 labels into the same input field.)
  
  Possible values: Yes, No

  Default value: No

- **EAN8 Maxlength**
  Specifies the maximum length for an EAN barcode. (Use 0 to represent any length.)
  
  Possible values: 0 - 60

  Default value: 8

- **EAN Minlength**
  Specifies the minimum length for an EAN8 barcodes. (Use 0 to represent any length.)
  
  Possible values: 0 - 30

  Default value: 8
### EAN8 Scans Strip End (Spectrum 24 Only)
Specifies the number of characters to strip from the end of an EAN8 barcode.

**Possible values:** 0 - 255  
**Default value:** 0

### EAN8 Scans Strip Start (Spectrum 24 Only)
Specifies the number of characters to strip from the beginning of an EAN8 barcode.

**Possible values:** 0 - 255  
**Default value:** 0

### Symbology EAN8
Specifies whether EAN8 symbology is enabled on the mobile device.

**Possible values:** Enable, Disable  
**Default value:** Enable

---

**Scanner - I2of5**

Use the I2of5 emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles I2of5 scan codes.

The following list describes the I2of5 parameters that Configuration Manager allows you to modify:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I2of5 Add Postamble String</td>
<td>Specifies the string to be added to the end of I2of5 barcode data.</td>
<td>up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
<tr>
<td>I2of5 Add Preamble String</td>
<td>Specifies the string to be added to the beginning of I2of5 barcode data.</td>
<td>up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
</tbody>
</table>
**I2of5 Maxlength**

Specifies the maximum length of an I2of5 barcode. (Use 0 to indicate any length.)

**Possible values:** 0 - 60

**Default value:** 0

**I2of5 Minlength**

Specifies the minimum length of an I2of5 barcode. (Use 0 to indicate any length.)

**Possible values:** 0 - 30

**Default value:** 0

**I2of5 Redundancy**

Specifies whether I2of5 redundancy is enabled. (Redundancy requires the mobile device to decode a barcode from two separate scans. The two scans occur with a single activation of the scanner trigger.)

**Possible values:** Yes  
No

**Default value:** No

**I2of5 Scans Strip End**

Specifies the number of characters to strip from the end of I2of5 barcodes.

**Possible values:** 0 - 255

**Default value:** 0

**I2of5 Scans Strip Start**

Specifies the number of characters to strip from the beginning of I2of5 barcodes.

**Possible values:** 0 - 255

**Default value:** 0

**Symbology I2of5**

Specifies whether I2of5 symbology is enabled on mobile devices.

**Possible values:** Enable  
Disable

**Default value:** Enable
Scanner - MSI

Use the MSI emulation parameters in Configuration Manager to configure the way the TelnetCE Client handles MSI scan codes.

The following list describes the MSI parameters that Configuration Manager allows you to modify:

- **MSI Add Postamble String**
  - Specifies the string to be added to the end of MSI barcode data.
  - **Possible values:** up to 20 alpha-numeric characters
  - **Default value:** -

- **MSI Add Preamble String**
  - Specifies the string to be added to the end of MSI barcode data.
  - **Possible values:** up to 20 alpha-numeric characters
  - **Default value:** -

- **MSI CD**
  - Specifies the number of check digits scanned. MSI code has 1 or 2 check digits. Do not include the number of check digits in the MSI length specification, even if they are reported back to the application.
  - **Possible values:** 1, 2
  - **Default value:** 1

- **MSI Maxlength**
  - Specifies the maximum length for an MSI barcode. (Use 0 to represent any length.)
  - **Possible values:** 0 - 60
  - **Default value:** 55
<table>
<thead>
<tr>
<th><strong>MSI Minlength</strong></th>
<th>Specifies the minimum length for an MSI barcode. (Use 0 to represent any length.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>0 - 30</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MSI Redundancy</strong></th>
<th>Specifies whether MSI redundancy is enabled. (Redundancy requires the mobile device to decode a barcode from two separate scans. The two scans occur with a single activation of the scanner trigger.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>Yes, No</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MSI Return CD</strong></th>
<th>Specifies whether MSI check digit is returned as part of the scanned data.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>Yes, No</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>MSI Scans Strip End (Spectrum 24 Only)</strong></th>
<th>Specifies the number of characters to strip from the end of an MSI barcode.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Possible values:</strong></td>
<td>0 - 255</td>
</tr>
<tr>
<td><strong>Default value:</strong></td>
<td>0</td>
</tr>
</tbody>
</table>
Appendix C: Emulation Parameters

**Scanner - PDF417**

Use the PDF417 scanner parameters in Configuration Manager to specify the way that the TelnetCE Client handles PDF417 scan codes.

The following list describes the PDF417 parameters that Configuration Manager allows you to modify:

**Symbology PDF417 (WinCE 8146 Only)**

Specifies whether PDF417 symbology is enabled on the mobile device.

**Possible values:** Enable, Disable

**Default value:** Enable

**MSI Scans Strip Start (Spectrum 24 Only)**

Specifies the number of characters to strip from the beginning of an MSI barcode.

**Possible values:** 0 - 255

**Default value:** 0

**Symbology MSI**

Specifies whether MSI symbology is enabled on the mobile device.

**Possible values:** Enable, Disable

**Default value:** Enable

**Scanner - UCC128**

Use the UCC128 scanner parameters in Configuration Manager to specify the way that the TelnetCE Client handles UCC128 scan codes.
The following list describes the UCC128 parameters that you can specify with Configuration Manager:

**UCC/EAN 128 Add Postamble String**

- Specifies the string to be added to the end of UCC/EAN128 barcode data.

  **Possible values**: up to 20 alpha-numeric characters

  **Default value**: -

**UCC/EAN 128 Add Preamble String**

- Specifies the string to be added to the beginning of UCC/EAN128 barcode data.

  **Possible values**: up to 20 alpha-numeric characters

  **Default value**: -

**UCC/EAN 128 Scans Strip End**

- Specifies the number of characters to strip from the end of UCC/EAN128 barcode scans.

  **Possible values**: 0 - 255

  **Default value**: 0

**UCC/EAN 128 Scans Strip Start**

- Specifies the number of characters to strip from the start of UCC/EAN128 barcode scans.

  **Possible values**: 0 - 255

  **Default value**: 0

**Scanner - UPCA**

Use the UPCA emulation parameters in Configuration Manager to specify the way that the TelnetCE Client handles UPCA scan codes.
The following list describes the UPCA parameters that you can specify in Configuration Manager:

**Symbology UPCA**
Specifies whether UPCA symbology is enabled on mobile devices.

Possible values: Enable  
Disable

Default value: Enable

**UPCA Add Postamble String**
Specifies the string to be added to the end of UPCA barcodes.

Possible values: Up to 20 alpha-numeric characters

Default value: -

**UPCA Add Preamble String**
Specifies the string to be added to the beginning of UPCA barcodes.

Possible values: Up to 20 alpha-numeric characters

Default value: -

**UPCA Maxlength**
Specifies the maximum length of a UPCA barcode. (Use 0 to indicate that any length is acceptable.)

Possible values: 0 - 60

Default value: 12

**UPCA Minlength**
Specifies the minimum length of a UPCA barcode. (Use 0 to specify no minimum length.)

Possible values: 0 - 30

Default value: 12
### UPCA Preamble

Specifies whether the preamble (first) character is returned to the application with the scanned data of a UPCA barcode.

**Possible values:** Yes, No

**Default value:** Yes

### UPCA Return CD

Specifies whether the check digit is returned as part of the scanned data of a UPCA barcode.

**Possible values:** Yes, No

**Default value:** Yes

### UPCA Scans Strip End (Spectrum 24 Only)

Specifies the number of characters to strip from the end of a UPCA barcode.

**Possible values:** 0 - 255

**Default value:** 0

### UPCA Scans Strip Start (Spectrum 24 Only)

Specifies the number of characters to strip from the beginning of a UPCA barcode.

**Possible values:** 0 - 255

**Default value:** 0

---

**Scanner - UPCE0**

Use the UPCE0 scanner emulation parameters in Configuration Manager to specify the way the TelnetCE Client handles UPCE0 scan codes.
The following list describes the UPCE0 parameters that Configuration Manager allows you to modify:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symbology UPCE0</strong></td>
<td>Specifies whether UPCE0 symbology is enabled on mobile devices.</td>
<td>Enable, Disable</td>
<td>Enable</td>
</tr>
<tr>
<td><strong>UPCE0 Add Postamble String</strong></td>
<td>Specifies the string to be added to the end of UPCE0 barcodes.</td>
<td>up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
<tr>
<td><strong>UPCE0 Add Preamble String</strong></td>
<td>Specifies the string to be added to the beginning of UPCE0 barcodes.</td>
<td>up to 20 alpha-numeric characters</td>
<td>-</td>
</tr>
<tr>
<td><strong>UPCE0 Convert</strong></td>
<td>Specifies whether the six-character UPCE0 label is converted to the equivalent 12-character UPCA label.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>UPCE0 Maxlength</strong></td>
<td>Specifies the maximum length for a UPCE0 barcode. (Use 0 to indicate that any length is acceptable.)</td>
<td>0 - 60</td>
<td>6</td>
</tr>
</tbody>
</table>
Use the UPCE1 scanner emulation parameters in Configuration Manager to specify the way that the TelnetCE Client handles UPCE1 scan codes.
The following list explains the UPCE1 parameters that Configuration Manager allows you to modify:

**Symbology UPCE1**
Specifies whether UPCE1 symbology is enabled on the mobile device.

**Possible values:** Enable
Disable

**Default value:** Enable

**UPCE1 Add Postamble String**
Specifies the string to be added to the end of UPCE1 barcode data.

**Possible values:** up to 20 alpha-numeric characters

**Default value:** -

**UPCE1 Add Preamble String**
Specifies the string to be added to the beginning of UPCE1 barcode data.

**Possible values:** up to 20 alpha-numeric characters

**Default value:** -

**UPCE1 Convert**
Specifies whether to expand the six-character UPCE1 label to the equivalent 12-character UPCA label.

**Possible values:** Yes
No

**Default value:** No

**UPCE1 Maxlength**
Specifies the maximum length for a UPCE1 barcode. (Use 0 to indicate that any length is acceptable.)

**Possible values:** 0 - 60

**Default value:** 6

**UPCE1 Minlength**
Specifies the minimum length for a UPCE1 barcode. (Use 0 to indicate no minimum length.)

**Possible values:** 0 - 30

**Default value:** 6
<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
<th>Possible values</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UPCE1 Preamble</strong></td>
<td>Specifies whether the UPC preamble (first) character is returned to the application as part of the scanned data of the UPCE1 barcode.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>UPCE1 Return CD</strong></td>
<td>Specifies whether the UPC check digit is returned to the application as part of the scanned data of the UPCE1 barcode.</td>
<td>Yes, No</td>
<td>No</td>
</tr>
<tr>
<td><strong>UPCE1 Scans Strip End</strong></td>
<td>Specifies the number of characters to strip from the end of a UPCE1 barcode.</td>
<td>0 - 255</td>
<td>0</td>
</tr>
<tr>
<td>(Spectrum 24 Only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>UPCE1 Scans Strip Start</strong></td>
<td>Specifies the number of characters to strip from the start of a UPCE1 barcode.</td>
<td>0 - 255</td>
<td>0</td>
</tr>
<tr>
<td>(Spectrum 24 Only)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Keyboard Maps

This section provides the following keyboard maps:

- 53-key MC9000 boot procedures
- 53-key MC9000 5250/3270 emulation keyboard maps
- 53-key MC9000 VT emulation keyboard maps
- TelnetCE Client virtual keyboard maps

MC9000 Boot Procedures

This section provides external keyboard maps for boot procedures for 53-key MC9000 devices.

53-Key MC9000 Boot Procedures

Table B-1 describes boot procedures for 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>Boot Type</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm Boot</td>
<td>Press and hold Power key for 7 seconds.</td>
</tr>
<tr>
<td>Cold Boot</td>
<td>Press and hold Power key for 20 seconds.</td>
</tr>
</tbody>
</table>

Table B-1: 53-Key MC9000 Boot Procedures

5250/3270 Emulation Keyboard Maps

This section contains external and virtual keyboard maps for 5250/3270 emulation on 53-key MC9000 devices.
53-Key MC9000 5250/3270 External Keyboard Emulation
Local Terminal Functions

Table B-2 shows local terminal function key sequences for the external keyboard of 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>Local Function</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Information</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;P&gt;</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;D&gt;</td>
</tr>
<tr>
<td>Keyclicks On/Off</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;K&gt;</td>
</tr>
<tr>
<td>Quiet Mode On/Off</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Q&gt;</td>
</tr>
<tr>
<td>Terminal Configuration</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;C&gt;</td>
</tr>
<tr>
<td>Host Profiles</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;R&gt;</td>
</tr>
<tr>
<td>Message Recall</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;M&gt;</td>
</tr>
<tr>
<td>Free Cursor Mode</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;F&gt;</td>
</tr>
<tr>
<td>Close Session</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;T&gt;</td>
</tr>
<tr>
<td>Previous Session</td>
<td>&lt;Upper Left Button&gt;</td>
</tr>
<tr>
<td>Next Session</td>
<td>&lt;Upper Right Button&gt;</td>
</tr>
<tr>
<td>Caps Lock</td>
<td>&lt;Func&gt; &lt;Shift&gt;</td>
</tr>
<tr>
<td>View Mode On/Off</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Z&gt;</td>
</tr>
<tr>
<td>Scroll Left</td>
<td>&lt;Ctrl&gt; &lt;Left&gt;</td>
</tr>
<tr>
<td>Scroll Right</td>
<td>&lt;Ctrl&gt; &lt;Right&gt;</td>
</tr>
<tr>
<td>Scroll Up</td>
<td>&lt;Ctrl&gt; &lt;Up&gt;</td>
</tr>
<tr>
<td>Scroll Down</td>
<td>&lt;Ctrl&gt; &lt;Down&gt;</td>
</tr>
<tr>
<td>Display Backlight On/Off</td>
<td>&lt;Func&gt; &lt;Z&gt;</td>
</tr>
<tr>
<td>Keypad Backlight On/Off</td>
<td>&lt;Func&gt; &lt;X&gt;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5250 Key</th>
<th>Key Sequence</th>
<th>5250 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>&lt;Ctrl&gt; &lt;A&gt;</td>
<td>F1</td>
<td>&lt;Func&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>&lt;Bksp&gt;</td>
<td>F2</td>
<td>&lt;Func&gt; &lt;2&gt;</td>
</tr>
</tbody>
</table>

Table B-2: 53-Key MC9000 External Keyboard 5250/3270 Local Terminal Functions

53-Key MC9000 External Keyboard 5250 Emulation Keys

Table B-3 shows external keyboard key sequences for 5250 emulation keys on 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>5250 Key</th>
<th>Key Sequence</th>
<th>5250 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>&lt;Ctrl&gt; &lt;A&gt;</td>
<td>F1</td>
<td>&lt;Func&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>&lt;Bksp&gt;</td>
<td>F2</td>
<td>&lt;Func&gt; &lt;2&gt;</td>
</tr>
</tbody>
</table>

Table B-3: 53-Key MC9000 External Keyboard 5250 Emulation Keys
### 53-Key MC9000 External Keyboard 3270 Emulation Keys

Table B-4 shows external keyboard 3270 emulation keys for 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>5250 Key</th>
<th>Key Sequence</th>
<th>5250 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back Tab</td>
<td>&lt;Shift&gt; &lt;Func&gt;</td>
<td>F3</td>
<td>&lt;Func&gt; &lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;Space&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear</td>
<td>&lt;Alt&gt; &lt;Shift&gt;</td>
<td>F4</td>
<td>&lt;Func&gt; &lt;4&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;1&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delete</td>
<td>&lt;Func&gt; &lt;Bksp&gt;</td>
<td>F5</td>
<td>&lt;Func&gt; &lt;5&gt;</td>
</tr>
<tr>
<td>Dup</td>
<td>&lt;Shift&gt; &lt;Func&gt;</td>
<td>F6</td>
<td>&lt;Func&gt; &lt;6&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;4&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enter</td>
<td>&lt;Ctrl&gt; &lt;Ent&gt;</td>
<td>F7</td>
<td>&lt;Func&gt; &lt;7&gt;</td>
</tr>
<tr>
<td>Erase Input</td>
<td>&lt;Ctrl&gt; &lt;E&gt;</td>
<td>F8</td>
<td>&lt;Func&gt; &lt;8&gt;</td>
</tr>
<tr>
<td>Field Exit</td>
<td>&lt;Ent&gt;</td>
<td>F9</td>
<td>&lt;Func&gt; &lt;9&gt;</td>
</tr>
<tr>
<td>Field Minus</td>
<td>&lt;Func&gt; &lt;^&gt;</td>
<td>F10</td>
<td>&lt;Func&gt; &lt;0&gt;</td>
</tr>
<tr>
<td>Help</td>
<td>&lt;Ctrl&gt; &lt;G&gt;</td>
<td>F11</td>
<td>&lt;Shift&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>Home</td>
<td>&lt;Shift&gt; &lt;Func&gt;</td>
<td>F12</td>
<td>&lt;Shift&gt; &lt;2&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;5&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert</td>
<td>&lt;Shift&gt; &lt;Func&gt;</td>
<td>F13</td>
<td>&lt;Shift&gt; &lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;8&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Print</td>
<td>&lt;Ctrl&gt; &lt;P&gt;</td>
<td>F14</td>
<td>&lt;Shift&gt; &lt;4&gt;</td>
</tr>
<tr>
<td>Reset</td>
<td>&lt;Esc&gt;</td>
<td>F15</td>
<td>&lt;Shift&gt; &lt;5&gt;</td>
</tr>
<tr>
<td>Roll Up</td>
<td>&lt;Shift&gt; &lt;Func&gt;</td>
<td>F16</td>
<td>&lt;Shift&gt; &lt;6&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;6&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roll Down</td>
<td>&lt;Shift&gt; &lt;Func&gt;</td>
<td>F17</td>
<td>&lt;Shift&gt; &lt;7&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;7&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Request</td>
<td>&lt;Ctrl&gt; &lt;S&gt;</td>
<td>F18</td>
<td>&lt;Shift&gt; &lt;8&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>&lt;Func&gt; &lt;Space&gt;</td>
<td>F19</td>
<td>&lt;Shift&gt; &lt;9&gt;</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>&lt;Left Arrow&gt;</td>
<td>F20</td>
<td>&lt;Shift&gt; &lt;0&gt;</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>&lt;Right Arrow&gt;</td>
<td>F21</td>
<td>&lt;Ctrl&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>&lt;Up Arrow&gt;</td>
<td>F22</td>
<td>&lt;Ctrl&gt; &lt;2&gt;</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>&lt;Down Arrow&gt;</td>
<td>F23</td>
<td>&lt;Ctrl&gt; &lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F24</td>
<td>&lt;Ctrl&gt; &lt;4&gt;</td>
</tr>
</tbody>
</table>

### 53-Key MC9000 External Keyboard 5250 Emulation Keys

Table B-3: 53-Key MC9000 External Keyboard 5250 Emulation Keys

### 53-Key MC9000 External Keyboard 3270 Emulation Keys

Table B-4: 53-Key MC9000 External Keyboard 3270 Emulation Keys
<table>
<thead>
<tr>
<th>3270 Key</th>
<th>Key Sequence</th>
<th>3270 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear EOF</td>
<td>&lt;Ctrl&gt; &lt;O&gt;</td>
<td>F5</td>
<td>&lt;Func&gt; &lt;5&gt;</td>
</tr>
<tr>
<td>Delete</td>
<td>&lt;Func&gt; &lt;Bksp&gt;</td>
<td>F6</td>
<td>&lt;Func&gt; &lt;6&gt;</td>
</tr>
<tr>
<td>Dup</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;4&gt;</td>
<td>F7</td>
<td>&lt;Func&gt; &lt;7&gt;</td>
</tr>
<tr>
<td>Enter</td>
<td>&lt;Enter&gt;</td>
<td>F8</td>
<td>&lt;Func&gt; &lt;8&gt;</td>
</tr>
<tr>
<td>Erase Input</td>
<td>&lt;Ctrl&gt; &lt;E&gt;</td>
<td>F9</td>
<td>&lt;Func&gt; &lt;9&gt;</td>
</tr>
<tr>
<td>Field Mark</td>
<td>&lt;Ctrl&gt; &lt;F&gt;</td>
<td>F10</td>
<td>&lt;Func&gt; &lt;0&gt;</td>
</tr>
<tr>
<td>Home</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;5&gt;</td>
<td>F11</td>
<td>&lt;Shift&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>Insert</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;8&gt;</td>
<td>F12</td>
<td>&lt;Shift&gt; &lt;2&gt;</td>
</tr>
<tr>
<td>New Line</td>
<td>&lt;Ctrl&gt; &lt;N&gt;</td>
<td>F13</td>
<td>&lt;Shift&gt; &lt;3&gt;</td>
</tr>
<tr>
<td>Reset</td>
<td>&lt;Func&gt; &lt;.&gt;</td>
<td>F14</td>
<td>&lt;Shift&gt; &lt;4&gt;</td>
</tr>
<tr>
<td>System Request</td>
<td>&lt;Ctrl&gt; &lt;S&gt;</td>
<td>F15</td>
<td>&lt;Shift&gt; &lt;5&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>&lt;Func&gt; &lt;Space&gt;</td>
<td>F16</td>
<td>&lt;Shift&gt; &lt;6&gt;</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>&lt;Left Arrow&gt;</td>
<td>F17</td>
<td>&lt;Shift&gt; &lt;7&gt;</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>&lt;Right Arrow&gt;</td>
<td>F18</td>
<td>&lt;Shift&gt; &lt;8&gt;</td>
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<tr>
<td>Up Arrow</td>
<td>&lt;Up Arrow&gt;</td>
<td>F19</td>
<td>&lt;Shift&gt; &lt;9&gt;</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>&lt;Down Arrow&gt;</td>
<td>F20</td>
<td>&lt;Shift&gt; &lt;0&gt;</td>
</tr>
<tr>
<td>PA1</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;1&gt;</td>
<td>F21</td>
<td>&lt;Ctrl&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>PA2</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;2&gt;</td>
<td>F22</td>
<td>&lt;Ctrl&gt; &lt;2&gt;</td>
</tr>
<tr>
<td>PA3</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;3&gt;</td>
<td>F23</td>
<td>&lt;Ctrl&gt; &lt;3&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>F24</td>
<td>&lt;Ctrl&gt; &lt;4&gt;</td>
</tr>
</tbody>
</table>

Table B-4: 53-Key MC9000 External Keyboard 3270 Emulation Keys

53-Key MC9000 External Keyboard 5250/3270 Emulation Character Map

Table B-5 shows external keyboard key sequences for 5250/3270 emulation characters on 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>^@</td>
<td>&lt;Ctrl&gt; &lt;Upper Left&gt;</td>
<td>@</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;B&gt;</td>
</tr>
<tr>
<td>^A</td>
<td>&lt;Ctrl&gt; &lt;A&gt;</td>
<td>A</td>
<td>&lt;Shift&gt; &lt;A&gt;</td>
</tr>
<tr>
<td>^B</td>
<td>&lt;Ctrl&gt; &lt;B&gt;</td>
<td>B</td>
<td>&lt;Shift&gt; &lt;B&gt;</td>
</tr>
<tr>
<td>^C</td>
<td>&lt;Ctrl&gt; &lt;C&gt;</td>
<td>C</td>
<td>&lt;Shift&gt; &lt;C&gt;</td>
</tr>
<tr>
<td>^D</td>
<td>&lt;Ctrl&gt; &lt;D&gt;</td>
<td>D</td>
<td>&lt;Shift&gt; &lt;D&gt;</td>
</tr>
<tr>
<td>^E</td>
<td>&lt;Ctrl&gt; &lt;E&gt;</td>
<td>E</td>
<td>&lt;Shift&gt; &lt;E&gt;</td>
</tr>
</tbody>
</table>

Table B-5: 53-Key MC9000 External Keyboard 5250/3270 Character Map
<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>^F</td>
<td>&lt;Ctrl&gt; &lt;F&gt;</td>
<td>F</td>
<td>&lt;Shift&gt; &lt;F&gt;</td>
</tr>
<tr>
<td>^G</td>
<td>&lt;Ctrl&gt; &lt;G&gt;</td>
<td>G</td>
<td>&lt;Shift&gt; &lt;G&gt;</td>
</tr>
<tr>
<td>^H</td>
<td>&lt;Ctrl&gt; &lt;H&gt;</td>
<td>H</td>
<td>&lt;Shift&gt; &lt;H&gt;</td>
</tr>
<tr>
<td>^I</td>
<td>&lt;Ctrl&gt; &lt;I&gt;</td>
<td>I</td>
<td>&lt;Shift&gt; &lt;I&gt;</td>
</tr>
<tr>
<td>^J</td>
<td>&lt;Ctrl&gt; &lt;J&gt;</td>
<td>J</td>
<td>&lt;Shift&gt; &lt;J&gt;</td>
</tr>
<tr>
<td>^K</td>
<td>&lt;Ctrl&gt; &lt;K&gt;</td>
<td>K</td>
<td>&lt;Shift&gt; &lt;K&gt;</td>
</tr>
<tr>
<td>^L</td>
<td>&lt;Ctrl&gt; &lt;L&gt;</td>
<td>L</td>
<td>&lt;Shift&gt; &lt;L&gt;</td>
</tr>
<tr>
<td>^M</td>
<td>&lt;Ctrl&gt; &lt;M&gt;</td>
<td>M</td>
<td>&lt;Shift&gt; &lt;M&gt;</td>
</tr>
<tr>
<td>^N</td>
<td>&lt;Ctrl&gt; &lt;N&gt;</td>
<td>N</td>
<td>&lt;Shift&gt; &lt;N&gt;</td>
</tr>
<tr>
<td>^O</td>
<td>&lt;Ctrl&gt; &lt;O&gt;</td>
<td>O</td>
<td>&lt;Shift&gt; &lt;O&gt;</td>
</tr>
<tr>
<td>^P</td>
<td>&lt;Ctrl&gt; &lt;P&gt;</td>
<td>P</td>
<td>&lt;Shift&gt; &lt;P&gt;</td>
</tr>
<tr>
<td>^Q</td>
<td>&lt;Ctrl&gt; &lt;Q&gt;</td>
<td>Q</td>
<td>&lt;Shift&gt; &lt;Q&gt;</td>
</tr>
<tr>
<td>^R</td>
<td>&lt;Ctrl&gt; &lt;R&gt;</td>
<td>R</td>
<td>&lt;Shift&gt; &lt;R&gt;</td>
</tr>
<tr>
<td>^S</td>
<td>&lt;Ctrl&gt; &lt;S&gt;</td>
<td>S</td>
<td>&lt;Shift&gt; &lt;S&gt;</td>
</tr>
<tr>
<td>^T</td>
<td>&lt;Ctrl&gt; &lt;T&gt;</td>
<td>T</td>
<td>&lt;Shift&gt; &lt;T&gt;</td>
</tr>
<tr>
<td>^U</td>
<td>&lt;Ctrl&gt; &lt;U&gt;</td>
<td>U</td>
<td>&lt;Shift&gt; &lt;U&gt;</td>
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<tr>
<td>^V</td>
<td>&lt;Ctrl&gt; &lt;V&gt;</td>
<td>V</td>
<td>&lt;Shift&gt; &lt;V&gt;</td>
</tr>
<tr>
<td>^W</td>
<td>&lt;Ctrl&gt; &lt;W&gt;</td>
<td>W</td>
<td>&lt;Shift&gt; &lt;W&gt;</td>
</tr>
<tr>
<td>^X</td>
<td>&lt;Ctrl&gt; &lt;X&gt;</td>
<td>X</td>
<td>&lt;Shift&gt; &lt;X&gt;</td>
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<tr>
<td>^Y</td>
<td>&lt;Ctrl&gt; &lt;Y&gt;</td>
<td>Y</td>
<td>&lt;Shift&gt; &lt;Y&gt;</td>
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<td>&lt;Func&gt; &lt;E&gt;</td>
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<td>&lt;Ctrl&gt; &lt;Bksp&gt;</td>
<td>\</td>
<td>&lt;Func&gt; &lt;G&gt;</td>
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<td>]</td>
<td>&lt;Func&gt; &lt;F&gt;</td>
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<td>^^</td>
<td>&lt;Ctrl&gt; ^</td>
<td>^</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;E&gt;</td>
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<tr>
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<td>&lt;Ctrl&gt; &lt;Space&gt;</td>
<td>_</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;N&gt;</td>
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<td>&lt;Func&gt; &lt;J&gt;</td>
</tr>
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<td>a</td>
<td>&lt;A&gt;</td>
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<tr>
<td>*</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;C&gt;</td>
<td>b</td>
<td>&lt;B&gt;</td>
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<tr>
<td>#</td>
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<td>c</td>
<td>&lt;C&gt;</td>
</tr>
<tr>
<td>$</td>
<td>&lt;Ctrl&gt; &lt;7&gt;</td>
<td>d</td>
<td>&lt;D&gt;</td>
</tr>
<tr>
<td>%</td>
<td>&lt;Ctrl&gt; &lt;8&gt;</td>
<td>e</td>
<td>&lt;E&gt;</td>
</tr>
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<td>&amp;</td>
<td>&lt;Ctrl&gt; &lt;9&gt;</td>
<td>f</td>
<td>&lt;F&gt;</td>
</tr>
<tr>
<td>‘</td>
<td>&lt;Func&gt; &lt;C&gt;</td>
<td>g</td>
<td>&lt;G&gt;</td>
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Table B-5: 53-Key MC9000 External Keyboard 5250/3270 Character Map
<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(</td>
<td>&lt;Ctrl&gt; &lt;0&gt;</td>
<td>h</td>
<td>&lt;H&gt;</td>
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<tr>
<td>)</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;A&gt;</td>
<td>i</td>
<td>&lt;I&gt;</td>
</tr>
<tr>
<td>*</td>
<td>&lt;*&gt;</td>
<td>j</td>
<td>&lt;J&gt;</td>
</tr>
<tr>
<td>+</td>
<td>&lt;Func&gt; &lt;S&gt;</td>
<td>k</td>
<td>&lt;K&gt;</td>
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<tr>
<td>.</td>
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<td>l</td>
<td>&lt;L&gt;</td>
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<tr>
<td>-</td>
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<td>&lt;M&gt;</td>
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<td>&lt;N&gt;</td>
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<td>o</td>
<td>&lt;O&gt;</td>
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</tr>
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<td>6</td>
<td>&lt;6&gt;</td>
<td>v</td>
<td>&lt;V&gt;</td>
</tr>
<tr>
<td>7</td>
<td>&lt;7&gt;</td>
<td>w</td>
<td>&lt;W&gt;</td>
</tr>
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<td>9</td>
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<td>y</td>
<td>&lt;Y&gt;</td>
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<td>&lt;Shift&gt; &lt;Func&gt; &lt;R&gt;</td>
<td>z</td>
<td>&lt;Z&gt;</td>
</tr>
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<td>&lt;Func&gt; &lt;R&gt;</td>
<td>{</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;E&gt;</td>
</tr>
<tr>
<td>&lt;</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;A&gt;</td>
<td>l</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;G&gt;</td>
</tr>
<tr>
<td>=</td>
<td>&lt;Func&gt; &lt;W&gt;</td>
<td>}</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;F&gt;</td>
</tr>
<tr>
<td>&gt;</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;B&gt;</td>
<td>~</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;J&gt;</td>
</tr>
<tr>
<td>?</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;G&gt;</td>
<td></td>
<td></td>
</tr>
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</table>

*Table B-5: 53-Key MC9000 External Keyboard 5250/3270 Character Map*
Virtual Keyboard 5250/3270 Emulation Local Terminal Functions

Table B-6 shows the TelnetCE Client virtual keyboard local terminal functions for 5250/3270-type emulation.

<table>
<thead>
<tr>
<th>Local Function</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Information</td>
<td>[Alt] &lt;Prog Info&gt;</td>
</tr>
<tr>
<td>Diagnostics</td>
<td>[Alt] &lt;Diags&gt;</td>
</tr>
<tr>
<td>Keyclicks On/Off</td>
<td>[Alt] &lt;KeyClks&gt;</td>
</tr>
<tr>
<td>Quiet Mode On/Off</td>
<td>[Alt] &lt;Quiet&gt;</td>
</tr>
<tr>
<td>Terminal Configuration</td>
<td>[Alt] &lt;TermConfig&gt;</td>
</tr>
<tr>
<td>Message Recall</td>
<td>[Alt] &lt;Recall Msg&gt;</td>
</tr>
<tr>
<td>Free Cursor Mode</td>
<td>[Alt] &lt;FreeCur&gt;</td>
</tr>
<tr>
<td>Close Session</td>
<td>[Alt] &lt;Close&gt;</td>
</tr>
<tr>
<td>Previous Session</td>
<td>[Alt] &lt;Prev Sess&gt;</td>
</tr>
<tr>
<td>Next Session</td>
<td>[Alt] &lt;Next Sess&gt;</td>
</tr>
<tr>
<td>Caps Lock</td>
<td>[Alt] &lt;CAPS&gt;</td>
</tr>
<tr>
<td>View Mode On/Off</td>
<td>N/A</td>
</tr>
<tr>
<td>Scroll Left</td>
<td>Scroll Bars</td>
</tr>
<tr>
<td>Scroll Right</td>
<td>Scroll Bars</td>
</tr>
<tr>
<td>Scroll Up</td>
<td>Scroll Bars</td>
</tr>
<tr>
<td>Scroll Down</td>
<td>Scroll Bars</td>
</tr>
</tbody>
</table>

Table B-6: TelnetCE Client Virtual Keyboard 5250/3270 Emulation Local Terminal Functions

Virtual Keyboard 5250 Emulation Keys

Table B-7 shows TelnetCE Client virtual keyboard key sequences for 5250 emulation.

<table>
<thead>
<tr>
<th>5250 Key</th>
<th>Key Sequence</th>
<th>5250 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>[Func2] &lt;Att&gt;</td>
<td>F1</td>
<td>[Func1] &lt;F1&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>[Alph] &lt;Left Arrow&gt;</td>
<td>F2</td>
<td>[Func1] &lt;F2&gt;</td>
</tr>
<tr>
<td>Back Tab</td>
<td>[Alpha] [SHFT] &lt;</td>
<td>F3</td>
<td>[Func1] &lt;F3&gt;</td>
</tr>
<tr>
<td>Clear</td>
<td>[Func2] &lt;Clear&gt;</td>
<td>F4</td>
<td>[Func1] &lt;F4&gt;</td>
</tr>
<tr>
<td>Delete</td>
<td>[Func2] &lt;Delete&gt;</td>
<td>F5</td>
<td>[Func1] &lt;F5&gt;</td>
</tr>
</tbody>
</table>

Table B-7: TelnetCE Client Virtual Keyboard 5250 Emulation Keys
Virtual Keyboard 3270 Emulation Keys

Table B-8 shows virtual keyboard key sequences for 3270 emulation.

<table>
<thead>
<tr>
<th>5250 Key</th>
<th>Key Sequence</th>
<th>5250 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dup</td>
<td>[Func2] &lt;Dup&gt;</td>
<td>F6</td>
<td>[Func1] &lt;F6&gt;</td>
</tr>
<tr>
<td>Enter</td>
<td>[Func2] &lt;Enter&gt;</td>
<td>F7</td>
<td>[Func1] &lt;F7&gt;</td>
</tr>
<tr>
<td>Erase Input</td>
<td>[Func2] &lt;ErInp&gt;</td>
<td>F8</td>
<td>[Func1] &lt;F8&gt;</td>
</tr>
<tr>
<td>Field Exit</td>
<td>[Alpha] &lt;Field Exit&gt;</td>
<td>F9</td>
<td>[Func1] &lt;F9&gt;</td>
</tr>
<tr>
<td>Field Minus</td>
<td>[Alpha] [SHFT] &lt;FldMinus&gt;</td>
<td>F10</td>
<td>[Func1] &lt;F10&gt;</td>
</tr>
<tr>
<td>Insert</td>
<td>[Func2] &lt;Insert&gt;</td>
<td>F13</td>
<td>[Func1] &lt;F13&gt;</td>
</tr>
<tr>
<td>Print</td>
<td>[Func2] &lt;Print&gt;</td>
<td>F14</td>
<td>[Func1] &lt;F14&gt;</td>
</tr>
<tr>
<td>Reset</td>
<td>[Func2] &lt;Reset&gt;</td>
<td>F15</td>
<td>[Func1] &lt;F15&gt;</td>
</tr>
<tr>
<td>Roll Up</td>
<td>[Func2] &lt;Roll Up&gt;</td>
<td>F16</td>
<td>[Func1] &lt;F16&gt;</td>
</tr>
<tr>
<td>Roll Down</td>
<td>[Func2] &lt;Roll Down&gt;</td>
<td>F17</td>
<td>[Func1] &lt;F17&gt;</td>
</tr>
<tr>
<td>System Request</td>
<td>[Func2] &lt;SysRq&gt;</td>
<td>F18</td>
<td>[Func1] &lt;F18&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>[Alpha] &lt;Tab&gt;</td>
<td>F19</td>
<td>[Func1] &lt;F19&gt;</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>[Num] &lt;Left&gt;</td>
<td>F20</td>
<td>[Func1] &lt;F20&gt;</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>[Num] &lt;Right&gt;</td>
<td>F21</td>
<td>[Func1] &lt;F21&gt;</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>[Num] &lt;Up&gt;</td>
<td>F22</td>
<td>[Func1] &lt;F22&gt;</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>[Num] &lt;Down&gt;</td>
<td>F23</td>
<td>[Func1] &lt;F23&gt;</td>
</tr>
</tbody>
</table>

**Table B-7: TelnetCE Client Virtual Keyboard 5250 Emulation Keys**

<table>
<thead>
<tr>
<th>3270 Key</th>
<th>Key Sequence</th>
<th>3270 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>[Func2] &lt;Attn&gt;</td>
<td>F1</td>
<td>[Func1] &lt;F1&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>[Alpha] &lt;Back Arrow&gt;</td>
<td>F2</td>
<td>[Func1] &lt;F2&gt;</td>
</tr>
<tr>
<td>Back Tab</td>
<td>[Alpha] &lt;SHFT&gt; &lt;</td>
<td>&lt;&gt;&gt;</td>
<td>F3</td>
</tr>
<tr>
<td>Clear</td>
<td>[Func2] &lt;Clear&gt;</td>
<td>F4</td>
<td>[Func1] &lt;F4&gt;</td>
</tr>
<tr>
<td>Clear EOF</td>
<td>[Func2] &lt;ErEOF&gt;</td>
<td>F5</td>
<td>[Func1] &lt;F5&gt;</td>
</tr>
<tr>
<td>Delete</td>
<td>[Func2] &lt;Delete&gt;</td>
<td>F6</td>
<td>[Func1] &lt;F6&gt;</td>
</tr>
</tbody>
</table>

**Table B-8: TelnetCE Client Virtual Keyboard 3270 Emulation Keys**
Table B-9 shows the TelnetCE Client virtual keyboard character map for 5250/3270 emulation.

<table>
<thead>
<tr>
<th>3270 Key</th>
<th>Key Sequence</th>
<th>3270 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dup</td>
<td>[Func2] &lt;Dup&gt;</td>
<td>F7</td>
<td>[Func1] &lt;F7&gt;</td>
</tr>
<tr>
<td>Enter</td>
<td>[Func2] &lt;Enter&gt;</td>
<td>F8</td>
<td>[Func1] &lt;F8&gt;</td>
</tr>
<tr>
<td>Erase Input</td>
<td>[Func2] &lt;Erlnp&gt;</td>
<td>F9</td>
<td>[Func1] &lt;F9&gt;</td>
</tr>
<tr>
<td>Field Mark</td>
<td>[Func2] &lt;FldMrk&gt;</td>
<td>F10</td>
<td>[Func1] &lt;F10&gt;</td>
</tr>
<tr>
<td>Insert</td>
<td>[Func2] &lt;Insert&gt;</td>
<td>F12</td>
<td>[Func1] &lt;F12&gt;</td>
</tr>
<tr>
<td>Reset</td>
<td>[Func2] &lt;Reset&gt;</td>
<td>F13</td>
<td>[Func1] &lt;F13&gt;</td>
</tr>
<tr>
<td>System Request</td>
<td>[Func2] &lt;SysRq&gt;</td>
<td>F14</td>
<td>[Func1] &lt;F14&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>[Alph] &lt;Tab&gt;</td>
<td>F15</td>
<td>[Func1] &lt;F15&gt;</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>[Num] &lt;Left&gt;</td>
<td>F16</td>
<td>[Func1] &lt;F16&gt;</td>
</tr>
<tr>
<td>Right Arrow</td>
<td>[Num] &lt;Right&gt;</td>
<td>F17</td>
<td>[Func1] &lt;F17&gt;</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>[Num] &lt;Up&gt;</td>
<td>F18</td>
<td>[Func1] &lt;F18&gt;</td>
</tr>
<tr>
<td>Down Arrow</td>
<td>[Num] &lt;Down&gt;</td>
<td>F19</td>
<td>[Func1] &lt;F19&gt;</td>
</tr>
<tr>
<td>PA1</td>
<td>[Func2] &lt;PA1&gt;</td>
<td>F20</td>
<td>[Func1] &lt;F20&gt;</td>
</tr>
<tr>
<td>PA2</td>
<td>[Func2] &lt;PA2&gt;</td>
<td>F21</td>
<td>[Func1] &lt;F21&gt;</td>
</tr>
<tr>
<td>PA3</td>
<td>[Func2] &lt;PA3&gt;</td>
<td>F22</td>
<td>[Func1] &lt;F22&gt;</td>
</tr>
</tbody>
</table>

Table B-8: TelnetCE Client Virtual Keyboard 3270 Emulation Keys

Virtual Keyboard 5250/3270 Emulation Character Map

Table B-9 shows the TelnetCE Client virtual keyboard character map for 5250/3270 emulation.

<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Space</td>
<td>[Alpha] &lt;Space&gt;</td>
</tr>
<tr>
<td>!</td>
<td>[Punc] &lt;!&gt;</td>
</tr>
<tr>
<td>&quot;</td>
<td>[Punc] &lt;&gt;</td>
</tr>
<tr>
<td>#</td>
<td>[Punc] &lt;#&gt;</td>
</tr>
<tr>
<td>$</td>
<td>[Punc] &lt;$&gt;</td>
</tr>
<tr>
<td>%</td>
<td>[Punc] &lt;%=</td>
</tr>
<tr>
<td>&amp;</td>
<td>[Punc] &lt;&amp;&gt;</td>
</tr>
<tr>
<td>'</td>
<td>[Punc] &lt;&gt;</td>
</tr>
<tr>
<td>(</td>
<td>[Punc] &lt;(&gt;</td>
</tr>
</tbody>
</table>

Table B-9: TelnetCE Client Virtual Keyboard 5250/3270 Emulation Character Map
<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>)</td>
<td>[Punc] &lt;}&gt;</td>
<td>Y</td>
<td>[Alpha] [SHFT] &lt;Y&gt;</td>
</tr>
<tr>
<td>*</td>
<td>[Punc] &lt;*&gt;</td>
<td>Z</td>
<td>[Alpha] [SHFT] &lt;Z&gt;</td>
</tr>
<tr>
<td>+</td>
<td>[Punc] &lt;+&gt;</td>
<td>[ ]</td>
<td>[Punc] &lt;]&gt;</td>
</tr>
<tr>
<td>,</td>
<td>[Punc] &lt;,&gt;</td>
<td>\</td>
<td>[Punc] &lt;&gt;</td>
</tr>
<tr>
<td>-</td>
<td>[Punc] &lt;-&gt;</td>
<td>]</td>
<td>[Punc] &lt;]&gt;</td>
</tr>
<tr>
<td>.</td>
<td>[Punc] &lt;x&gt;</td>
<td>^</td>
<td>[Punc] &lt;*&gt;</td>
</tr>
<tr>
<td>/</td>
<td>[Punc] &lt;&gt;/</td>
<td>_</td>
<td>[Punc] &lt;_/&gt;</td>
</tr>
<tr>
<td>0</td>
<td>[Num] &lt;0&gt;</td>
<td>'</td>
<td>[Punc] &lt;'&gt;</td>
</tr>
<tr>
<td>1</td>
<td>[Num] &lt;1&gt;</td>
<td>a</td>
<td>[Alpha] &lt;a&gt;</td>
</tr>
<tr>
<td>2</td>
<td>[Num] &lt;2&gt;</td>
<td>b</td>
<td>[Alpha] &lt;b&gt;</td>
</tr>
<tr>
<td>3</td>
<td>[Num] &lt;3&gt;</td>
<td>c</td>
<td>[Alpha] &lt;c&gt;</td>
</tr>
<tr>
<td>4</td>
<td>[Num] &lt;4&gt;</td>
<td>d</td>
<td>[Alpha] &lt;d&gt;</td>
</tr>
<tr>
<td>5</td>
<td>[Num] &lt;5&gt;</td>
<td>e</td>
<td>[Alpha] &lt;e&gt;</td>
</tr>
<tr>
<td>6</td>
<td>[Num] &lt;6&gt;</td>
<td>f</td>
<td>[Alpha] &lt;f&gt;</td>
</tr>
<tr>
<td>7</td>
<td>[Num] &lt;7&gt;</td>
<td>g</td>
<td>[Alpha] &lt;g&gt;</td>
</tr>
<tr>
<td>8</td>
<td>[Num] &lt;8&gt;</td>
<td>h</td>
<td>[Alpha] &lt;h&gt;</td>
</tr>
<tr>
<td>9</td>
<td>[Num] &lt;9&gt;</td>
<td>i</td>
<td>[Alpha] &lt;i&gt;</td>
</tr>
<tr>
<td>;</td>
<td>[Punc] &lt;;&gt;</td>
<td>k</td>
<td>[Alpha] &lt;k&gt;</td>
</tr>
<tr>
<td>&lt;</td>
<td>[Punc] &lt;&lt;&gt;</td>
<td>l</td>
<td>[Alpha] &lt;l&gt;</td>
</tr>
<tr>
<td>=</td>
<td>[Punc] &lt;&lt;=</td>
<td>m</td>
<td>[Alpha] &lt;m&gt;</td>
</tr>
<tr>
<td>&gt;</td>
<td>[Punc] &gt;&gt;&gt;</td>
<td>n</td>
<td>[Alpha] &lt;n&gt;</td>
</tr>
<tr>
<td>?</td>
<td>[Punc] &lt;@&gt;</td>
<td>o</td>
<td>[Alpha] &lt;o&gt;</td>
</tr>
<tr>
<td>@</td>
<td>[Punc] &lt;@&gt;</td>
<td>p</td>
<td>[Alpha] &lt;p&gt;</td>
</tr>
<tr>
<td>A</td>
<td>[Alpha] [SHFT] &lt;A&gt;</td>
<td>q</td>
<td>[Alpha] &lt;q&gt;</td>
</tr>
<tr>
<td>B</td>
<td>[Alpha] [SHFT] &lt;B&gt;</td>
<td>r</td>
<td>[Alpha] &lt;r&gt;</td>
</tr>
<tr>
<td>C</td>
<td>[Alpha] [SHFT] &lt;C&gt;</td>
<td>s</td>
<td>[Alpha] &lt;s&gt;</td>
</tr>
<tr>
<td>D</td>
<td>[Alpha] [SHFT] &lt;D&gt;</td>
<td>t</td>
<td>[Alpha] &lt;t&gt;</td>
</tr>
<tr>
<td>E</td>
<td>[Alpha] [SHFT] &lt;E&gt;</td>
<td>u</td>
<td>[Alpha] &lt;u&gt;</td>
</tr>
<tr>
<td>F</td>
<td>[Alpha] [SHFT] &lt;F&gt;</td>
<td>v</td>
<td>[Alpha] &lt;v&gt;</td>
</tr>
<tr>
<td>G</td>
<td>[Alpha] [SHFT] &lt;G&gt;</td>
<td>w</td>
<td>[Alpha] &lt;w&gt;</td>
</tr>
<tr>
<td>H</td>
<td>[Alpha] [SHFT] &lt;H&gt;</td>
<td>x</td>
<td>[Alpha] &lt;x&gt;</td>
</tr>
<tr>
<td>I</td>
<td>[Alpha] [SHFT] &lt;I&gt;</td>
<td>y</td>
<td>[Alpha] &lt;y&gt;</td>
</tr>
<tr>
<td>J</td>
<td>[Alpha] [SHFT] &lt;J&gt;</td>
<td>z</td>
<td>[Alpha] &lt;z&gt;</td>
</tr>
</tbody>
</table>

Table B-9: TelnetCE Client Virtual Keyboard 5250/3270 Emulation Character Map
This section contains virtual and external keyboard maps for VT emulation on 53-key MC9000 devices.

### 53-Key MC9000 External Keyboard VT Emulation Local Terminal Functions

Table B-10 shows VT emulation key sequences for local terminal functions using the external keyboard of 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>Local Function</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Information</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;P&gt;</td>
</tr>
<tr>
<td>Keyclicks On/Off</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;D&gt;</td>
</tr>
<tr>
<td>Quiet Mode</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;K&gt;</td>
</tr>
<tr>
<td>Terminal Configuration</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Q&gt;</td>
</tr>
<tr>
<td>Host Configuration</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;C&gt;</td>
</tr>
<tr>
<td>VT Terminal Setup</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;R&gt;</td>
</tr>
<tr>
<td>Close Session</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;T&gt;</td>
</tr>
<tr>
<td>Previous Session</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Shift&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>Next Session</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Shift&gt; &lt;3&gt;</td>
</tr>
<tr>
<td>Caps Loc</td>
<td>&lt;Func&gt; &lt;Shift&gt;</td>
</tr>
<tr>
<td>View Mode On/Off</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Z&gt;</td>
</tr>
<tr>
<td>Scroll Left</td>
<td>&lt;Ctrl&gt; &lt;Left&gt;</td>
</tr>
<tr>
<td>Scroll Right</td>
<td>&lt;Ctrl&gt; &lt;Right&gt;</td>
</tr>
<tr>
<td>Scroll Up</td>
<td>&lt;Ctrl&gt; &lt;Up&gt;</td>
</tr>
<tr>
<td>Scroll Down</td>
<td>&lt;Ctrl&gt; &lt;Down&gt;</td>
</tr>
</tbody>
</table>

**Table B-10: 53-Key MC9000 External Keyboard VT Emulation Local Terminal Functions**
<table>
<thead>
<tr>
<th>Local Function</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Backlight On/Off</td>
<td>&lt;Func&gt; &lt;Z&gt;</td>
</tr>
<tr>
<td>Keypad Backlight On/Off</td>
<td>&lt;Func&gt; &lt;X&gt;</td>
</tr>
</tbody>
</table>

**Table B-10: 53-Key MC9000 External Keyboard VT Emulation Local Terminal Functions**

### 53-Key MC9000 External Keyboard VT-100 Emulation Keys

Table B-11 shows VT-100 emulation keys for the external keyboard on 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>VT-100 Key</th>
<th>Key Sequences</th>
<th>VT-100 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>&lt;Return&gt;</td>
<td>Enter</td>
<td>&lt;Return&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>&lt;Bksp&gt;</td>
<td>Backspace (Delete)</td>
<td>&lt;Bksp&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>&lt;Func&gt; &lt;Space&gt;</td>
<td>Back Tab</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;Space&gt;</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>&lt;Up Arrow&gt;</td>
<td>Down Arrow</td>
<td>&lt;Down Arrow&gt;</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>&lt;Left Arrow&gt;</td>
<td>Right Arrow</td>
<td>&lt;Up Arrow&gt;</td>
</tr>
<tr>
<td>ESC</td>
<td>&lt;Esc&gt;</td>
<td>PF1</td>
<td>&lt;Func&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>BS</td>
<td>&lt;Bksp&gt;</td>
<td>PF2</td>
<td>&lt;Func&gt; &lt;2&gt;</td>
</tr>
<tr>
<td>LF</td>
<td>&lt;Ctrl&gt; &lt;J&gt;</td>
<td>PF3</td>
<td>&lt;Func&gt; &lt;3&gt;</td>
</tr>
<tr>
<td>Hard Terminal Reset</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;H&gt;</td>
<td>PF4</td>
<td>&lt;Func&gt; &lt;4&gt;</td>
</tr>
</tbody>
</table>

**Table B-11: 53-Key MC9000 External Keyboard VT-100 Emulation Keys**

### 53-Key MC9000 External Keyboard VT-220 Emulation Keys

Table B-12 shows VT-220 emulation key sequences for the external keyboard on MC9000 devices.

<table>
<thead>
<tr>
<th>VT-220 Key</th>
<th>Key Sequence</th>
<th>VT-220 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>&lt;Return&gt;</td>
<td>Enter</td>
<td>&lt;Return&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>&lt;Bksp&gt;</td>
<td>Backspace (Delete)</td>
<td>&lt;Ctrl&gt; &lt;Bksp&gt;</td>
</tr>
<tr>
<td>Tab</td>
<td>&lt;Func&gt; &lt;Space&gt;</td>
<td>Back Tab</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;Space&gt;</td>
</tr>
<tr>
<td>Up Arrow</td>
<td>&lt;Up Arrow&gt;</td>
<td>Down Arrow</td>
<td>&lt;Down Arrow&gt;</td>
</tr>
<tr>
<td>Left Arrow</td>
<td>&lt;Left Arrow&gt;</td>
<td>Right Arrow</td>
<td>&lt;Right Arrow&gt;</td>
</tr>
<tr>
<td>Hard Terminal Reset</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;H&gt;</td>
<td>Soft Terminal Reset</td>
<td>Func&gt; &lt;Ctrl&gt; &lt;S&gt;</td>
</tr>
<tr>
<td>Find</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;5&gt;</td>
<td>Select</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Shift&gt; &lt;5&gt;</td>
</tr>
</tbody>
</table>

**Table B-12: 53-Key MC9000 External Keyboard VT-220 Emulation Keys**
Table B-13 shows VT character key sequences for the external keyboard on 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>VT-220 Key</th>
<th>Key Sequence</th>
<th>VT-220 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert Here</td>
<td>&lt;Shift&gt; &lt;Func&gt; &lt;8&gt;</td>
<td>Remove</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Shift&gt; &lt;7&gt;</td>
</tr>
<tr>
<td>Prev Screen</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Shift&gt; &lt;4&gt;</td>
<td>Next Screen</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;Shift&gt; &lt;6&gt;</td>
</tr>
<tr>
<td>PF1</td>
<td>&lt;Func&gt; &lt;1&gt;</td>
<td>F11</td>
<td>&lt;Shift&gt; &lt;1&gt;</td>
</tr>
<tr>
<td>PF2</td>
<td>&lt;Func&gt; &lt;2&gt;</td>
<td>F12</td>
<td>&lt;Shift&gt; &lt;2&gt;</td>
</tr>
<tr>
<td>PF3</td>
<td>&lt;Func&gt; &lt;3&gt;</td>
<td>F13</td>
<td>&lt;Shift&gt; &lt;3&gt;</td>
</tr>
<tr>
<td>PF4</td>
<td>&lt;Func&gt; &lt;4&gt;</td>
<td>F14</td>
<td>&lt;Shift&gt; &lt;4&gt;</td>
</tr>
<tr>
<td>BREAK*</td>
<td>&lt;Func&gt; &lt;5&gt;</td>
<td>F15//Help</td>
<td>&lt;Shift&gt; &lt;5&gt;</td>
</tr>
<tr>
<td>F6</td>
<td>&lt;Func&gt; &lt;6&gt;</td>
<td>F16/Do</td>
<td>&lt;Shift&gt; &lt;6&gt;</td>
</tr>
<tr>
<td>F7</td>
<td>&lt;Func&gt; &lt;7&gt;</td>
<td>F17</td>
<td>&lt;Shift&gt; &lt;7&gt;</td>
</tr>
<tr>
<td>F8</td>
<td>&lt;Func&gt; &lt;8&gt;</td>
<td>F18</td>
<td>&lt;Shift&gt; &lt;8&gt;</td>
</tr>
<tr>
<td>F9</td>
<td>&lt;Func&gt; &lt;9&gt;</td>
<td>F19</td>
<td>&lt;Shift&gt; &lt;9&gt;</td>
</tr>
<tr>
<td>F10</td>
<td>&lt;Func&gt; &lt;0&gt;</td>
<td>F20</td>
<td>&lt;Shift&gt; &lt;0&gt;</td>
</tr>
</tbody>
</table>

* currently unavailable

**Table B-12: 53-Key MC9000 External Keyboard VT-220 Emulation Keys**

**53-Key MC9000 External Keyboard VT Character Map**

Table B-13 shows VT character key sequences for the external keyboard on 53-key MC9000 devices.

<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>^@</td>
<td>&lt;Ctrl&gt; &lt;Upper Left&gt;</td>
<td>@</td>
<td>&lt;Func&gt; &lt;Ctrl&gt; &lt;B&gt;</td>
</tr>
<tr>
<td>^A</td>
<td>&lt;Ctrl&gt; &lt;A&gt;</td>
<td>A</td>
<td>&lt;Shift&gt; &lt;A&gt;</td>
</tr>
<tr>
<td>^B</td>
<td>&lt;Ctrl&gt; &lt;B&gt;</td>
<td>B</td>
<td>&lt;Shift&gt; &lt;B&gt;</td>
</tr>
<tr>
<td>^C</td>
<td>&lt;Ctrl&gt; &lt;C&gt;</td>
<td>C</td>
<td>&lt;Shift&gt; &lt;C&gt;</td>
</tr>
<tr>
<td>^D</td>
<td>&lt;Ctrl&gt; &lt;D&gt;</td>
<td>D</td>
<td>&lt;Shift&gt; &lt;D&gt;</td>
</tr>
<tr>
<td>^E</td>
<td>&lt;Ctrl&gt; &lt;E&gt;</td>
<td>E</td>
<td>&lt;Shift&gt; &lt;E&gt;</td>
</tr>
<tr>
<td>^F</td>
<td>&lt;Ctrl&gt; &lt;F&gt;</td>
<td>F</td>
<td>&lt;Shift&gt; &lt;F&gt;</td>
</tr>
<tr>
<td>^G</td>
<td>&lt;Ctrl&gt; &lt;G&gt;</td>
<td>G</td>
<td>&lt;Shift&gt; &lt;G&gt;</td>
</tr>
<tr>
<td>^H</td>
<td>&lt;Ctrl&gt; &lt;H&gt;</td>
<td>H</td>
<td>&lt;Shift&gt; &lt;H&gt;</td>
</tr>
<tr>
<td>^I</td>
<td>&lt;Ctrl&gt; &lt;I&gt;</td>
<td>I</td>
<td>&lt;Shift&gt; &lt;I&gt;</td>
</tr>
<tr>
<td>^J</td>
<td>&lt;Ctrl&gt; &lt;J&gt;</td>
<td>J</td>
<td>&lt;Shift&gt; &lt;J&gt;</td>
</tr>
<tr>
<td>^K</td>
<td>&lt;Ctrl&gt; &lt;K&gt;</td>
<td>K</td>
<td>&lt;Shift&gt; &lt;K&gt;</td>
</tr>
<tr>
<td>^L</td>
<td>&lt;Ctrl&gt; &lt;L&gt;</td>
<td>L</td>
<td>&lt;Shift&gt; &lt;L&gt;</td>
</tr>
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**Table B-13: 53-Key MC9000 External Keyboard VT Character Map**
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<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
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<td>^M</td>
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<td>Q</td>
<td>^Q</td>
</tr>
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<td>^T</td>
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<td>^U</td>
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<tr>
<td>^V</td>
<td>^V</td>
<td>V</td>
<td>^V</td>
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<td>^Y</td>
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<td>^Z</td>
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<td>^&lt;G&gt;</td>
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<td>]</td>
<td>^&lt;F&gt;</td>
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<td>^&lt;Ctrl&gt;&lt;A&gt;</td>
<td>i</td>
<td>^&lt;I&gt;</td>
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Table B-13: 53-Key MC9000 External Keyboard VT Character Map
Virtual Keyboard VT Emulation Local Terminal Functions

Table B-14 shows TelnetCE Client virtual keyboard key sequences for VT emulation local terminal functions.

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<tr>
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<th>Key Sequence</th>
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<td>&lt;0&gt;</td>
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<td>&lt;1&gt;</td>
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<tr>
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<td>=</td>
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</tr>
<tr>
<td>?</td>
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</tr>
</tbody>
</table>

Table B-13: 53-Key MC9000 External Keyboard VT Character Map

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<tr>
<th>Local Function</th>
<th>Key Sequence</th>
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<td>[Cfg] &lt;Prog Info&gt;</td>
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<tr>
<td>Keyclicks On/Off</td>
<td>[Cfg] &lt;KeyClks&gt;</td>
</tr>
<tr>
<td>Quiet Mode</td>
<td>[Cfg] &lt;Quiet&gt;</td>
</tr>
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<td>[Cfg] &lt;TermConfig&gt;</td>
</tr>
<tr>
<td>Terminal Diagnostic</td>
<td>[Cfg] &lt;Diags&gt;</td>
</tr>
<tr>
<td>VT Terminal Setup</td>
<td>[Cfg] &lt;VTTHP Cfg&gt;</td>
</tr>
<tr>
<td>Host Configuration</td>
<td>[Cfg] &lt;HostConfig&gt;</td>
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<td>Previous Session</td>
<td>[Cfg] &lt;Prev Sess&gt;</td>
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<tr>
<td>Next Session</td>
<td>[Cfg] &lt;Next Sess&gt;</td>
</tr>
<tr>
<td>Caps Lock</td>
<td>[Cfg] &lt;Caps&gt;</td>
</tr>
</tbody>
</table>

Table B-14: Virtual Keyboard VT Emulation Local Terminal Functions
### Virtual Keyboard VT-100 Emulation Keys

Table B-15 shows TelnetCE Client virtual keyboard key sequences for VT-100 emulation.

<table>
<thead>
<tr>
<th>VT-100 Key</th>
<th>Key Sequence</th>
<th>VT-100 Key</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>[Alpha] &lt;Enter&gt;</td>
<td>Enter</td>
<td>[Alpha] &lt;Enter&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>[Alpha] &lt;Back Arrow&gt;</td>
<td>Backspace (Delete)</td>
<td>[Alpha] [Alt] &lt;Del&gt;</td>
</tr>
</tbody>
</table>
| Tab               | [Alpha] <Tab>                 | Back Tab          | [Alpha] [Shift] <|<->|>
| Left Arrow        | [Alpha] <Left>                | Right Arrow       | [Alpha] <Right>                |
| ESC               | [Func] <Esc>                  | PF1               | [Func] <F1>                    |
| BS                | [Alpha] <Back Arrow>          | PF2               | [Func] <F2>                    |
| LF                | [Alpha] [Ctrl] <Enter>        | PF3               | [Func] <F3>                    |
| Hard Terminal Reset | N/A                           | PF4               | [Func] <F4>                    |

Table B-15: TelnetCE Client Virtual Keyboard VT-100 Emulation Keys

### Virtual Keyboard VT-220 Emulation Keys

Table B-16 shows TelnetCE Client virtual keyboard key sequences for VT-220 emulation.

<table>
<thead>
<tr>
<th>VT-220 Key</th>
<th>Key Sequence</th>
<th>VT-220 Key</th>
<th>Key Sequence</th>
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<tbody>
<tr>
<td>Return</td>
<td>[Alpha] &lt;Enter&gt;</td>
<td>Enter</td>
<td>[Alpha] &lt;Enter&gt;</td>
</tr>
<tr>
<td>Backspace</td>
<td>[Alpha] [Ctrl] &lt;Back Arrow&gt;</td>
<td>Backspace (Delete)</td>
<td>[Alpha] [Alt] &lt;Del&gt;</td>
</tr>
</tbody>
</table>

Table B-16: TelnetCE Client Virtual Keyboard VT-220 Emulation Keys
Virtual Keyboard VT Emulation Character Map

Table B-16: TelnetCE Client Virtual Keyboard VT-220 Emulation Keys

Table B-17: TelnetCE Client Virtual Keyboard VT Emulation Character Map
<table>
<thead>
<tr>
<th>Character</th>
<th>Key Sequence</th>
<th>Character</th>
<th>Key Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>^B</td>
<td>[Alpha] [Ctrl] &lt;B&gt;</td>
<td>B</td>
<td>[Alpha] [SHFT] &lt;B&gt;</td>
</tr>
<tr>
<td>^C</td>
<td>[Alpha] [Ctrl] &lt;C&gt;</td>
<td>C</td>
<td>[Alpha] [SHFT] &lt;C&gt;</td>
</tr>
<tr>
<td>^D</td>
<td>[Alpha] [Ctrl] &lt;D&gt;</td>
<td>D</td>
<td>[Alpha] [SHFT] &lt;D&gt;</td>
</tr>
<tr>
<td>^E</td>
<td>[Alpha] [Ctrl] &lt;E&gt;</td>
<td>E</td>
<td>[Alpha] [SHFT] &lt;E&gt;</td>
</tr>
<tr>
<td>^F</td>
<td>[Alpha] [Ctrl] &lt;F&gt;</td>
<td>F</td>
<td>[Alpha] [SHFT] &lt;F&gt;</td>
</tr>
<tr>
<td>^G</td>
<td>[Alpha] [Ctrl] &lt;G&gt;</td>
<td>G</td>
<td>[Alpha] [SHFT] &lt;G&gt;</td>
</tr>
<tr>
<td>^H</td>
<td>[Alpha] [Ctrl] &lt;H&gt;</td>
<td>H</td>
<td>[Alpha] [SHFT] &lt;H&gt;</td>
</tr>
<tr>
<td>^I</td>
<td>[Alpha] [Ctrl] &lt;I&gt;</td>
<td>I</td>
<td>[Alpha] [SHFT] &lt;I&gt;</td>
</tr>
<tr>
<td>^J</td>
<td>[Alpha] [Ctrl] &lt;J&gt;</td>
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<tr>
<td>^K</td>
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Table B-17: TelnetCE Client Virtual Keyboard VT Emulation Character Map
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<th>Character</th>
<th>Key Sequence</th>
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<tr>
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**Table B-17**: TelnetCE Client Virtual Keyboard VT Emulation Character Map
### Glossary

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<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>802.11/a/b</strong></td>
<td>The IEEE standards for wireless Ethernet. 802.11 provides for wireless networking speeds up to 2 Mbps at 2.4 GHz. 802.11b provides wireless networking speeds up to 11 Mbps at 2.4 GHz. 802.11a provides wireless networking speeds up to 54 Mbps at 5 GHz.</td>
</tr>
<tr>
<td><strong>access point</strong></td>
<td>A device that acts as a bridge between wireless LANs and wired LANs.</td>
</tr>
<tr>
<td><strong>ad hoc mode</strong></td>
<td>A mode of operation in wireless networks wherein wireless devices communicate directly with each other without the use of an access point. Also sometimes refered to as peer-to-peer mode or an independent basic service set (IBSS).</td>
</tr>
<tr>
<td><strong>Agent</strong></td>
<td>In the context of Avalanche Manager, an Avalanche Agent. See <em>Avalanche Agent</em>.</td>
</tr>
<tr>
<td><strong>AP</strong></td>
<td>Access Point. See <em>Access Point</em>.</td>
</tr>
<tr>
<td><strong>automatic WEP</strong></td>
<td>A dynamic implementation of WEP keys, wherein the key used on the wireless network changes periodically. Clients must synchronize their WEP key use with the AP.</td>
</tr>
<tr>
<td><strong>Avalanche Agent</strong></td>
<td>An Avalanche Manager Agent. A software component that provides the core functionality of Avalanche Manager. The Agent facilitates communication with Avalanche clients.</td>
</tr>
<tr>
<td><strong>Avalanche Client</strong></td>
<td>A mobile device with an installed Avalanche Enabler, which allows the client to communicate with an Avalanche Agent and to be configured and managed through Avalanche Manager.</td>
</tr>
<tr>
<td><strong>Avalanche Enabler</strong></td>
<td>A software component that is installed on mobile devices which allows you to configure and manage the device through Avalanche Manager. The Enabler facilitates communication between the mobile device and an Agent.</td>
</tr>
<tr>
<td><strong>Avalanche Management Console</strong></td>
<td>The GUI that allows you to interact with and configure Avalanche Agents.</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Avalanche Manager</strong></td>
<td>Wavelink Corporation’s management application that allows you to configure and manage mobile devices throughout your network infrastructure.</td>
</tr>
<tr>
<td><strong>Avalanche Monitor</strong></td>
<td>A component of the Avalanche Enabler that communicates with the Avalanche Agent and, at certain times, checks for available updates.</td>
</tr>
<tr>
<td><strong>Avalanche Update Utility</strong></td>
<td>A component fo the Avalanche Enabler that provides most of the functionality. You can use the Avalanche Update Utility to configure the network parameters of the mobile device, view the progress of a download, and/or install updates that have been downloaded to the client.</td>
</tr>
<tr>
<td><strong>Avalanche Software Package</strong></td>
<td>A specially bundled piece of software, for example a firmware update to a radio card or a commonly used application, that you can download to a client through Avalanche Manager.</td>
</tr>
<tr>
<td><strong>Avalanche Update</strong></td>
<td>A download (or modification) that is available to a client through Avalanche Manager. Examples of updates include software packages and network profiles. The deletion of orphaned packages from a client through Avalanche Manager is another type of update.</td>
</tr>
<tr>
<td><strong>BOOTP</strong></td>
<td>Bootstrap Protocol. A protocol that allows clients to automatically obtain IP parameters from a BOOTP server. Precursor to DHCP.</td>
</tr>
<tr>
<td><strong>BSS</strong></td>
<td>Basic Service Set. A term used to describe an access point and associated wireless devices that are connected to a wired LAN.</td>
</tr>
<tr>
<td><strong>client</strong></td>
<td>In the context of Avalanche Manager, an Avalanche client. See <em>Avalanche Client</em>. In the context of the TNCE Client, a mobile device that connects via the TNCE Client to a host system.</td>
</tr>
<tr>
<td><strong>DHCP</strong></td>
<td>Dynamic Host Configuration Protocol. An IP service that allows DHCP clients to automatically obtain IP parameters from a DHCP server.</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>DNS</strong></td>
<td>Domain Name System. A service that provides host name-to-IP address mapping.</td>
</tr>
<tr>
<td><strong>Emulation Parameters</strong></td>
<td>A feature of the TNCE Client that allows you to pre-configure and install terminal emulation-related functions to a mobile device.</td>
</tr>
<tr>
<td><strong>Emulation Parameters, global</strong></td>
<td>Terminal emulation-related functions that apply to all host profiles that are configured on a mobile device.</td>
</tr>
<tr>
<td><strong>Emulation Parameters, host specific</strong></td>
<td>Terminal emulation-related functions that apply to only a specific host profile that is configured on a mobile device.</td>
</tr>
<tr>
<td><strong>Enabler</strong></td>
<td>In the context of Avalanche Manager, an Avalanche Enabler. See <em>Avalanche Enabler</em>.</td>
</tr>
<tr>
<td><strong>Enabler Configuration Utility</strong></td>
<td>A software package that allows you to configure the various Avalanche Windows Enabler settings on a client from the Avalanche Management Console.</td>
</tr>
<tr>
<td><strong>ESS ID</strong></td>
<td>Extended Service Set ID. The identifier of an extended service set for devices that are participating in an infrastructure mode wireless LAN.</td>
</tr>
<tr>
<td><strong>FTP</strong></td>
<td>File Transfer Protocol. A TCP-based service that provides connection-oriented file transfers.</td>
</tr>
<tr>
<td><strong>FTP Server</strong></td>
<td>A host system that provides FTP services. Users are required to log into the FTP service to gain access to files that can be downloaded from the server.</td>
</tr>
<tr>
<td><strong>gateway</strong></td>
<td>A device on a local network through which data to other networks is routed. Also called a router.</td>
</tr>
<tr>
<td><strong>GUI</strong></td>
<td>Graphical User Interface</td>
</tr>
<tr>
<td><strong>host</strong></td>
<td>A server or workstation that hosts a specific software or network service.</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>host profile</td>
<td>A service of the TNCE Client that allows you to install pre-configured host information (such as IP address and Telnet service TCP port) on mobile devices.</td>
</tr>
<tr>
<td>IBSS</td>
<td>Independent Basic Service Set. See ad hoc mode.</td>
</tr>
<tr>
<td>ICMP</td>
<td>Internet Control Messaging Protocol. Part of the TCP/IP protocol suite that provides services for testing IP network connections.</td>
</tr>
<tr>
<td>infrastructure mode</td>
<td>A wireless network configuration wherein devices communicate with each other through an access point.</td>
</tr>
<tr>
<td>IP address</td>
<td>Internet Protocol address. A virtual address that uniquely identifies a network connection.</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>lease</td>
<td>A DHCP lease. The parameters surrounding the IP address a client has obtained from a DHCP server.</td>
</tr>
<tr>
<td>localization</td>
<td>A service of the TNCE Client that allows you to configure the TNCE Client to display in a specific language.</td>
</tr>
<tr>
<td>MAC address</td>
<td>Media Access Controller address. The hard-coded layer-2 address of a network connection which consists of a 12-digit hexadecimal number. The first 6 hexadecimal characters identify the manufacturer. The last 6 hexadecimal numbers are unique for each network device produced by the manufacturer. The MAC address is also sometimes called the hardware address.</td>
</tr>
<tr>
<td>management console</td>
<td>In the context of Avalanche Manager, the Avalanche Management Console. See Avalanche Management Console.</td>
</tr>
<tr>
<td>MB</td>
<td>Megabytes</td>
</tr>
<tr>
<td>Mbps</td>
<td>Megabits / Second</td>
</tr>
<tr>
<td>mobile device</td>
<td>A wireless device or a PC with a wireless network connection.</td>
</tr>
</tbody>
</table>
**mobile unit**  A wireless device or a PC with a wireless network connection.

**net mask**  See *subnet mask*.

**network profile**  A set of pre-configured network parameters (ESS ID, IP address, and so forth) that can be downloaded to a client through Avalanche Manager.

**orphaned package**  A software package that has been deployed to a client through Avalanche Manager, but has been disabled or is not recognized by the Agent. You must orphan a software package before you can use Avalanche Manager to delete it from the client.

**PDT 8100**  A Windows CE-based Symbol mobile device.

**ping**  An IP service that is used to test IP connectivity. Part of the ICMP service.

**RAM**  Random Access Memory. Volatile memory in a computer system.

**RF**  Radio Frequency. Usually used in the context of a type of network connection.

**router**  See *gateway*.

**selection criteria**  A feature of Avalanche Manager that allows you to configure a set of filters that target specific mobile devices on the network. You can filter by MAC address, IP address, device type, operating system, and so forth. Selection criteria are used to target specific mobile devices on the network for Avalanche Updates.

**silent install**  A feature of the Avalanche Enabler that allows for the installation of software packages on clients without the consent of the user at the client.

**silent mode**  A feature of the Avalanche Enabler that allows the Avalanche Monitor to run in the background on the client in a manner that is transparent to the user at the client.
<table>
<thead>
<tr>
<th><strong>Software Package</strong></th>
<th>In the context of Avalanche Manager, an Avalanche software package. See <em>Avalanche Software Package</em>.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SSID</strong></td>
<td>Service Set Identifier. A unique name, up to 32 characters long, that is used to identify a wireless LAN. The SSID is attached to wireless packets and acts as a password to connect to a specific BSS or ESS.</td>
</tr>
<tr>
<td><strong>Static WEP</strong></td>
<td>Static (or manual) implementation of WEP keys. When the administrator of the network changes the WEP key, users must manually select the correct key.</td>
</tr>
<tr>
<td><strong>Subnet</strong></td>
<td>A logical network wherein each client is participating on the same IP network.</td>
</tr>
<tr>
<td><strong>Subnet Mask</strong></td>
<td>A type of filter that allows IP clients to determine which part of their IP address defines the network and which part defines the host.</td>
</tr>
<tr>
<td><strong>Symbol AirBEAM</strong></td>
<td>An application developed by Symbol that, among other services, provides for the download of software to mobile devices. Symbol AirBEAM uses FTP or TFTP to download software packages to mobile devices, and thus requires an active FTP server on the network. Downloading software packages to mobile devices through Symbol AirBEAM also requires the AirBEAM Package Builder utility.</td>
</tr>
<tr>
<td><strong>TCP/IP</strong></td>
<td>Transmission Control Protocol/Internet Protocol. A suite of protocols that provides virtual addressing, connection-oriented and connectionless communication, and a number of other network services and utilities.</td>
</tr>
<tr>
<td><strong>Telnet</strong></td>
<td>A TCP/IP utility used for terminal emulation, which allows a client to connect and interact with a remote host system.</td>
</tr>
<tr>
<td><strong>TFTP</strong></td>
<td>Trivial File Transfer Protocol. A UDP-based service that provides connectionless file transfers.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------</td>
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</tr>
<tr>
<td><strong>TelnetCE Client</strong></td>
<td>Wavelink Corporation application that provides client-side terminal emulation services for Microsoft Windows CE-based mobile devices.</td>
</tr>
<tr>
<td><strong>update</strong></td>
<td>In the context of Avalanche Manager, an Avalanche update. See <em>Avalanche Update</em>.</td>
</tr>
<tr>
<td><strong>VRC 7900/8900</strong></td>
<td>A Symbol vehicle-mounted mobile device that runs on the Microsoft Windows CE operating system.</td>
</tr>
<tr>
<td><strong>WEP</strong></td>
<td>Wired Equivalent Privacy. An encryption standard for wireless networks that provides the equivalent security of a wired connection for wireless transmissions.</td>
</tr>
<tr>
<td><strong>Windows CE</strong></td>
<td>A Microsoft Windows-based operating system for mobile devices.</td>
</tr>
<tr>
<td><strong>Windows Enabler</strong></td>
<td>An Avalanche Enabler that is designed for Microsoft Windows 9x/ME/NT/2000/XP systems with installed 802.11b wireless cards.</td>
</tr>
<tr>
<td><strong>WINS</strong></td>
<td>Windows Internet Naming Service. A service that provides Windows Name-to-IP address mapping.</td>
</tr>
</tbody>
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