CipherLab
User Guide

MIRROR VT/TN Terminal Emulation

For Windows Embedded Handheld 6.5 CP50
CP55
CP60
9200
9700

Version 2.00

CIPHERLAB

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RELEASE NOTES

Version	Date	Notes
2.00d (v3.07)	Sep 29, 2016	• Modified: **1.1.2** – added installation folder path • Removed: **1.2 Install Folder** • Modified: **1.2** Change "TE_Settings.ini" to "TE_Settings.json" • Modified: **2.2** Add Com port and Language to Menu Options • Modified: **2.2** Change configuration file name to .json • Modified: **4.1.1 -** Updated "**Auto Full Screen on Connection**" description • Added **4.1.1 Assign Function Key** • Removed **4.1.1 Function Key Table** • Modified: **4.1.1** –Updated Beeper related description • Modified: **4.1.1 Setting for TN Emulation** –Add browse file function • Added **4.1.1 Security Tab Page for VT** • Modified: **4.2** – Add config file location • Modified: **4.2 Config File** – change config file format from *.ini to *.json

2.00b	Feb 04, 2016	▸ Supports 9700 and CP55 ▸ New: 4.1.1 Settings — Add fonts Courier New, Lucida Console, Excalibur Monospace, NetTerm ANSI, and NetTerm OEM ▸ New: 4.1.1 Settings — Add a function "Enable Ext. Scanner" to transmit data via RS232 com port ▸ Modified: 4.1.1 Settings — Move the setting "Auto Full Screen on connection" from "Auto Connect" to manual connection ▸ New: 4.1.1 Settings — Add settings "Network Keep Alive," "Data Input Uppercase," "Check Network," "Auto Full Screen on Connection," and "Detect out of Range" ▸ New: 4.1.1 Settings — Add a function of adding chosen wave files to beep alarm configurations ▸ Modified: 4.1.1 Settings — Change the setting name "Always Show Scrollbars" to "Enable Scrollbars" ▸ Modified: 4.1.1 Settings — Change the setting name "Cursor Tracking" to "Auto Scrolling," and add "Center Cursor" option. There are two functions, Visible and Locked, under "Auto Scrolling" ▸ New: 4.4 Connect/ Disconnect — Add hot keys for 9700 series ▸ New: 4.3. Access Control — Add "Exit Full Screen" ▸ New: 4.1.1 Settings — Add "Show Resize Icon" ▸ New: 4.1.3. Full Screen — Add "Icon Size" ▸ New: 4.1.1 Settings — Add "Com Port Tab page" ▸ Modified: 4.5 Host Session ▸ Modified: 4.1.1 Settings — "Control feedback by Cmd/ Text" ▸ New: 4.1.1 Settings — Add "Term.Login" ▸ New: 4.1.1 Settings — Key Mapping new UI ▸ Modified: 4.1.1 Settings — Change Screen tab page to Preferences tab page ▸ New: 4.1.1 Settings — Add "Set HW key (SHIFT+RIGHT) to exit the app" to Preferences tab page ▸ New: 4.1.1 Settings — Add "Auto reset" to General (TN) tab page ▸ New: Add Appendix 5 Key Sequences ▸ Modified: 4.1.2 Key
1.50	Aug 14, 2014	▸ Modified: 1.1 Install — Add note: Terminal application comes within OS on CP60 ▸ Modified: 1.2 Install Folder — Change configuration file name to "TE_Settings.ini" ▸ Modified: Remove "Status" option from 2.2 Menu. ▸ New: Add 2.5 Using On-screen Keyboard ▸ New: Add TN IBM3270 terminal to Menu | Option | TN Settings. ▸ Modified: 4.1.1 Settings — Add font size 8x14 to General tab page for VT/TN emulation ▸ Modified: 4.1.1 Settings — Add "Cursor", "Set HW key (Shift+Esc) to control SIP", "Show SIP" to Screen tab page ▸ New: Add "RFID Settings for CP55" to 4.1.1 Settings ▸ New: Add "Open On-screen Keyboard" to 4.1.3 Full Screen ▸ Modified: Revise 4.2 Status to 4.4 Connect/Disconnect

1.13	Nov 4, 2013	▸ Revise 4.1.1 Settings: Remove "Alarm on ENTER" on TN General Tab page ▸ Update 4.1.1 Settings: Add Alarm tab page for TN5250 emulation ▸ Update 4.1.1 Settings: Add "Last Field Suffix/Other Field Suffix" to Advanced Output Settings ▸ Update 4.1.2 Key: Add table of host function keys
1.12	Aug 16, 2013	▸ Supports 9200 ▸ Update 1.2 Install Folder: remove Clone ▸ Add 1.4 Enter Activation Key (for CP50/9200) ▸ Update 2.2 Menu: Add Activation and Access Control ▸ Update 2.4 Session Information: Session IP display ▸ Update 4.1.1 Settings – General Tab page: Add Alarm on ENTER for TN emulation, revise description for Linebuffer/Local Echo ▸ Add 4.4 Access Control ▸ Update 4.5 Host Session: Enter activation key to enable multiple sessions on CP50/9200 ▸ Update Appendix I~IV: Add 9200 symbologies
1.10	Mar 20, 2013	▸ Supports CP60 ▸ Revise Features ▸ Revise 2.2 Menu: CP60 supports 5 host sessions ▸ Revise 2.4 Terminal Screen: CP60 allows scrolling screen by swiping ▸ Add 2.4 Terminal Screen: Session Information ▸ Revise 4.1.1 Settings – VT or TN Tab page: Warning message ▸ Revise 4.1.1 Settings – General Tab page: CP60 supports changing font color/background color ▸ Add 4.1.1 Settings – General Tab page: Error Message Relocation ▸ Restructure 4.1.1 Settings – Key Mapping Tab page: Add Quick Setting for CP60 ▸ Restructure 4.1.1 Settings – Screen Tab page: Add Fn key bar, Macro operation, Session icon for CP60
1.10	Mar 20, 2013	▸ Restructure 4.1.1 Settings – Reader Settings: Add CP60 Settings ▸ Restructure 4.1.3 Full Screen ▸ Add 4.4 Host Session ▸ Update Appendix I: Symbologies Supported ▸ Update Appendix II/III: Add CP60 symbologies
1.00	June 27, 2012	Initial release

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INTRODUCTION

MIRROR VT/5250 Terminal Emulation is brought to support CP50, CP55, CP60, 9200 and 9700 Series, all of which are high performance products powered by Windows Embedded Handheld 6.5. The application is developed for industries which make extensive use of terminal emulators. It enables your mobile computer to act as a terminal emulator while communicating with a host of the same environment.

MIRROR VT/5250 Terminal Emulation is a telnet client with extended ability to launch and configure reader module(s). It links to available reader module(s) when a physical scan button is pressed, to collect decoded data and submit data to the host afar.

This manual details the setup and usage of MIRROR VT/5250 Terminal Emulation. The application is simply addressed as "Terminal Emulation" hereinafter. We recommend that you keep one copy of this manual at hand for quick reference.

Thank you for choosing CipherLab products!

FEATURES

- Supports IBM5250, IBM3270 terminal emulation
- Supports VT100, VT102, VT220, ANSI terminal emulation
- Full-screen maximization in one tap
- Control over reader module(s)
- Data auto-insertion by reading printed barcodes or RFID tags
- Data submission to a remote host
- Password control for accessing settings and exiting the application
- Easy reproduction of settings by means of a configuration file
- Supports auto sign on, cursor tracking, etc.
- Supports key mapping
- Audio/tactile feedback control
- Font size configuration
- Font and background color configuration (for activated devices only)
- Multi-language support for IBM 5250 and 3270 emulation
- Supports multiple host sessions and Macro operation (for activated devices only)

SETUP

This chapter guides to the setup of Terminal Emulation, which is a simple task that takes just a few clicks to activate the installer and go through the installation.

This chapter also describes the 1st launch of the application and where the application is installed to.

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1.1. INSTALL

Terminal Emulation presents a compressed archive that yields two installation files, an .exe and .cab file. They allow installation by two approaches.

Each installation file is able to set up Terminal Emulation independently. Users can handle the setup either on the mobile computer or from the comfort of their Windows-based PC.

The two approaches are explicated in the following sections.

Note: On the CP60 and 9700 mobile computers, Terminal Emulation is included in the OS, therefore no installation of the application is required. Please proceed directly to Launch Terminal Emulation.

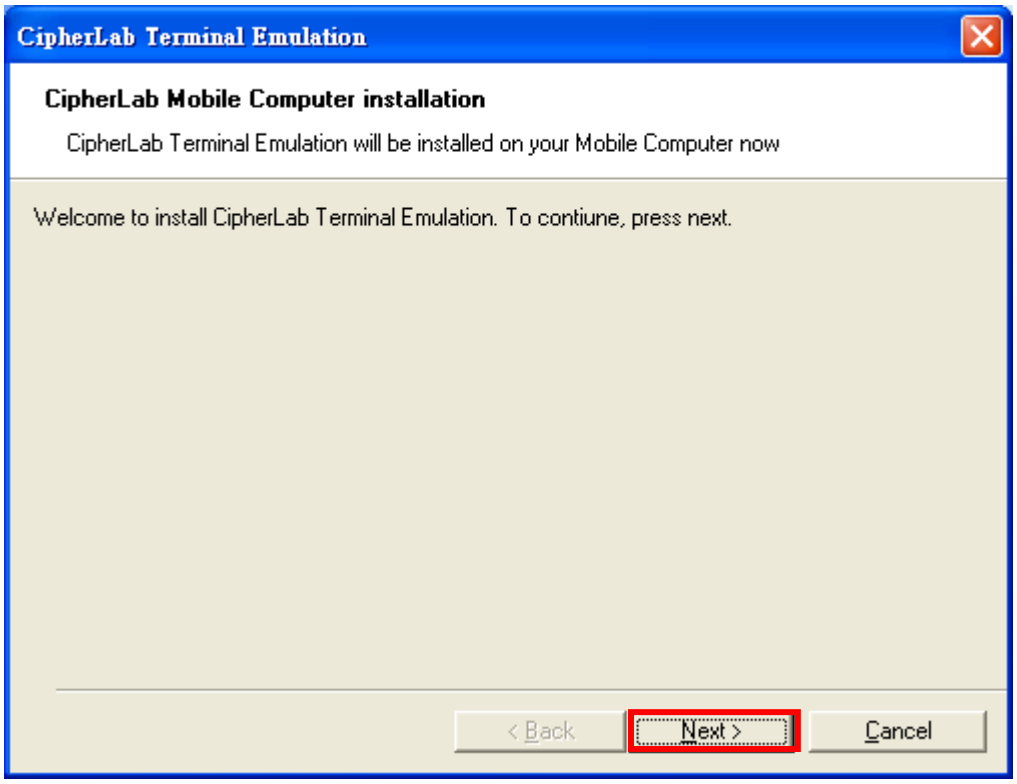
1.1.1. INSTALL FROM PC

Installation from a PC relies hardware-wise on the USB connection and software-wise on the ActiveSync synchronization partnership between the PC and mobile computer.

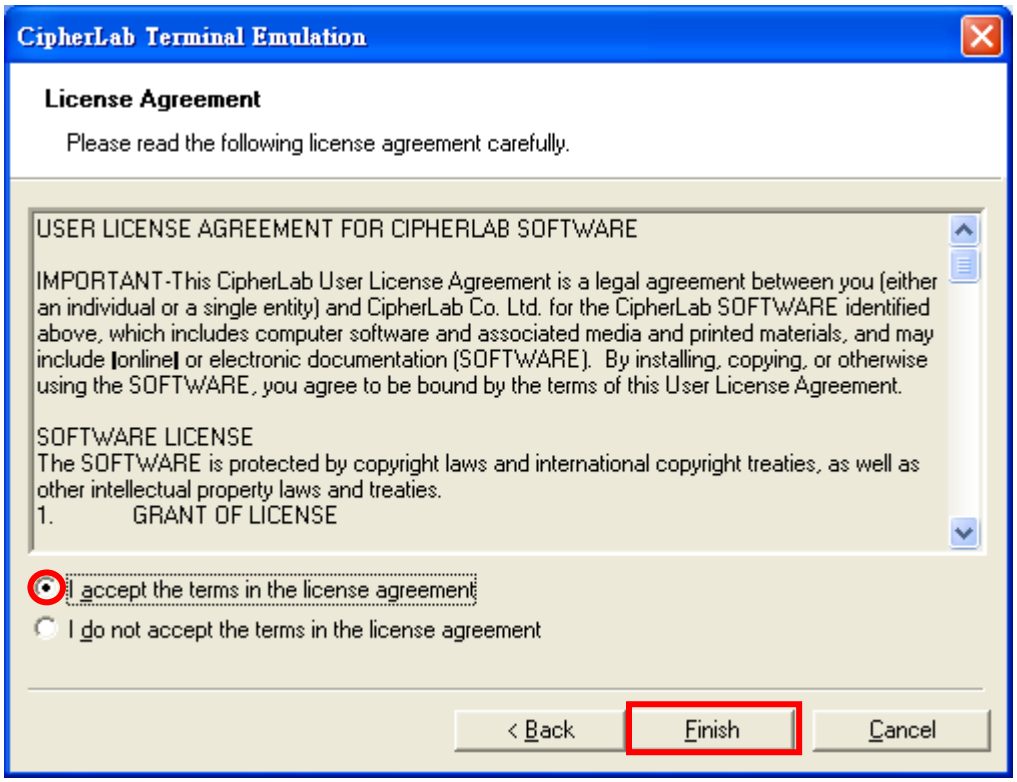
To install Terminal Emulation from your PC:

1) Set up USB connection between the PC and mobile computer.
2) Run ActiveSync on your PC.
3) Establish sync partnership between the two.

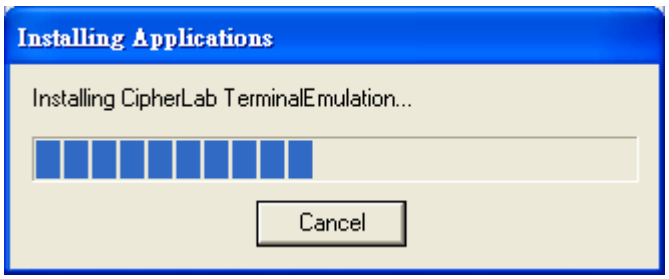
   For details about establishing sync partnership, see the Reference Manual of the mobile computer.
4) On PC, run the executable file **TerminalEmulation_X.XXXX.exe**. (X specifies the version).
5) As the installation wizard opens, click "**Next**".

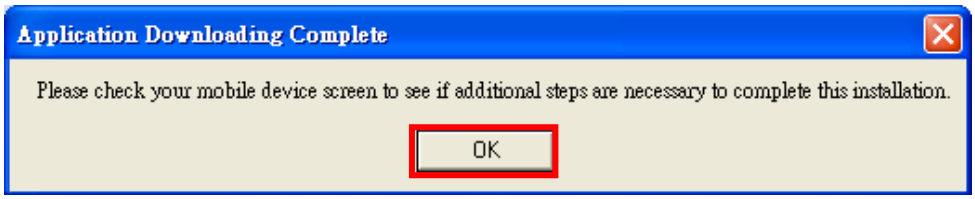


6) You are led to a **License Agreement** window. Select **I accept the terms in the license agreement**. Click "**Finish**" to proceed.

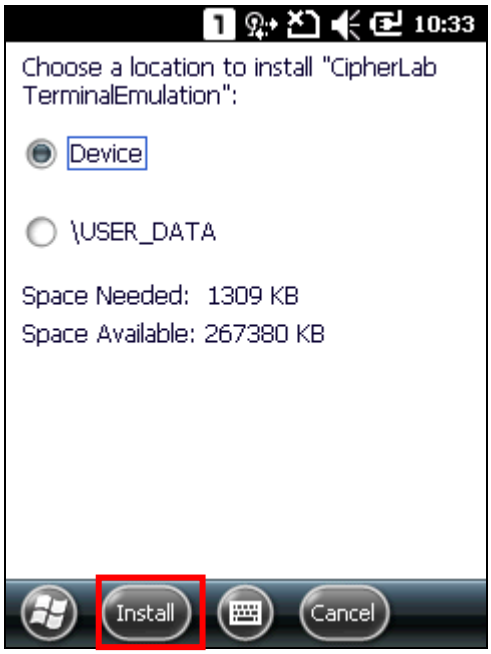


7) The wizard proceeds to offload Terminal Emulation to the synced mobile computer. Once offloading finishes, a dialog opens prompting you to check the mobile computer. Click "**OK**".

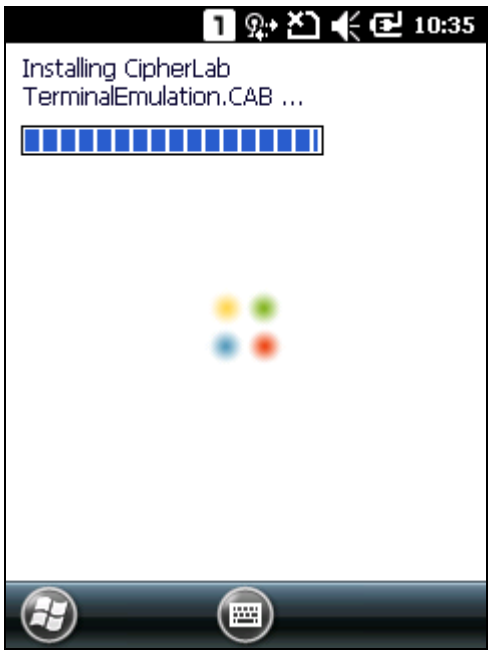




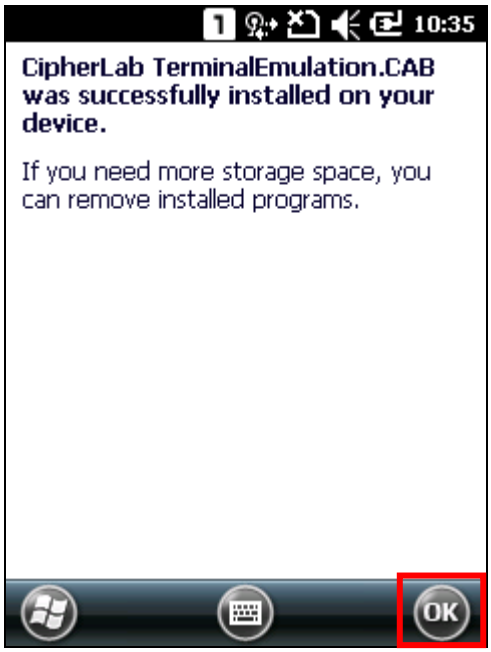
8) Check the mobile computer screen, a window will prompt you to choose the location to install Terminal Emulation. If the mobile computer doesn't have an SD card on board, the software is installed to the internal storage. Select the desired storage. Tap "**Install**" on Softkey bar.



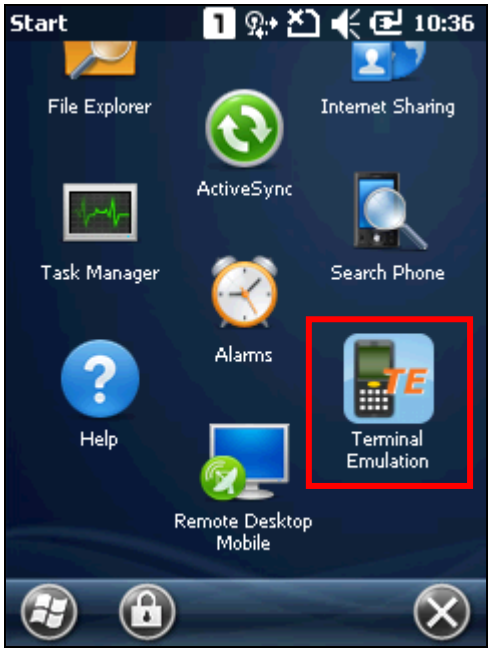
Terminal Emulation proceeds to install on the mobile computer.



9) The installation is completed in a few seconds. Once through, a screen shows a notice of successful installation. Tap "**OK**" to finish and quit installation.



10) Terminal Emulation icon will be added to **Start** screen. You can proceed to launch Terminal Emulation as described in Launch Terminal Emulation.



1.1.2. INSTALL FROM MOBILE COMPUTER

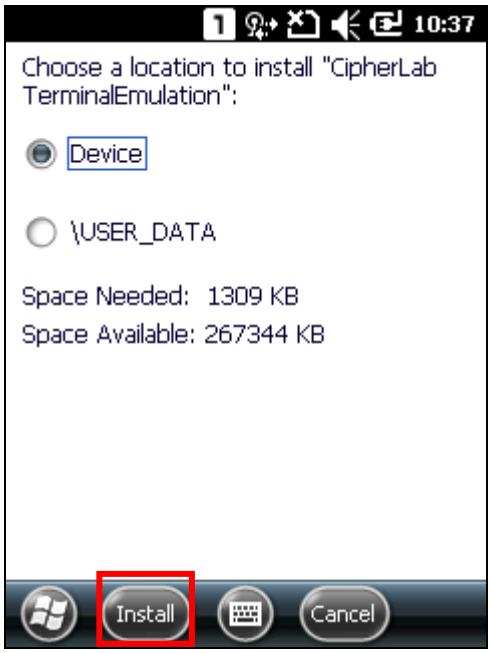
Installation from the mobile computer relies on the .cab file extracted from the compressed archive. The mobile computer needs a copy of this .cab file in its storage, either internal or external storage will do.

To install:

1) Copy **TerminalEmulation_X.XXXX.cab** (X for the version) to the mobile computer, either internal or external storage.
2) On the mobile computer, open **Start** screen.
3) Tap **File Explorer** .
4) Browse to the .cab file.
5) Tap the .cab file.

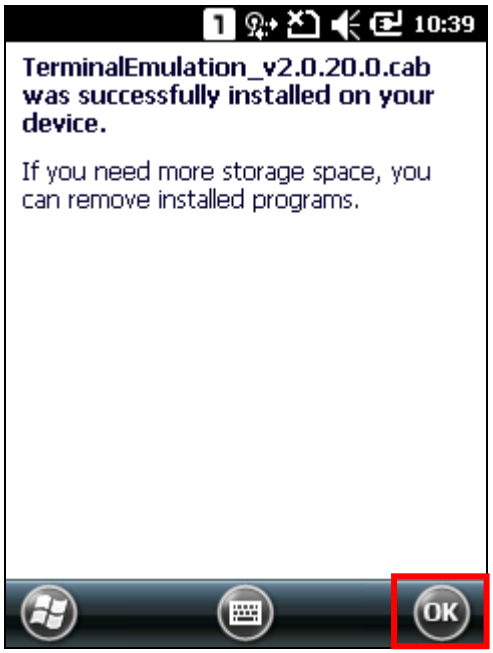
The installer screen opens prompting you to choose the storage to install Terminal Emulation to, internal or external. If you haven't selected an alternate, Terminal Emulation is installed to the internal storage at **My Device\Program Files\TerminalEmulation**.

If there isn't an SD card on board the mobile computer, the application directly installs to the internal storage without asking.

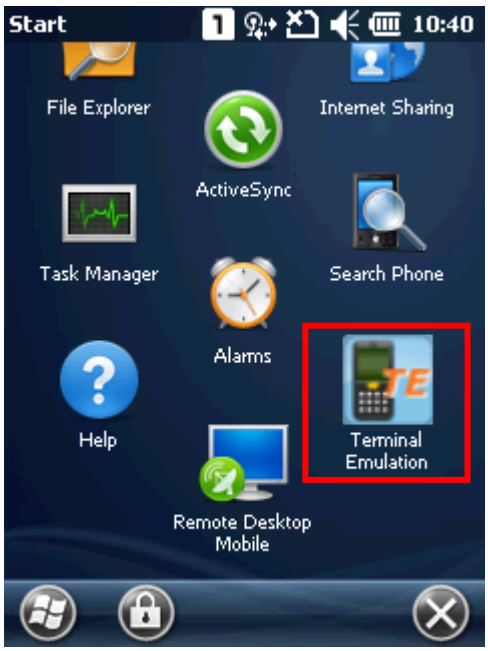


6) Follow on-screen instructions to proceed.

7) The installation is completed in a few seconds. Once through, a screen shows a notice of successful installation. Tap **OK** to finish and quit installation.



8) Terminal Emulation icon will be added to **Start** screen. You can proceed to launch Terminal Emulation as described in Launch Terminal Emulation.



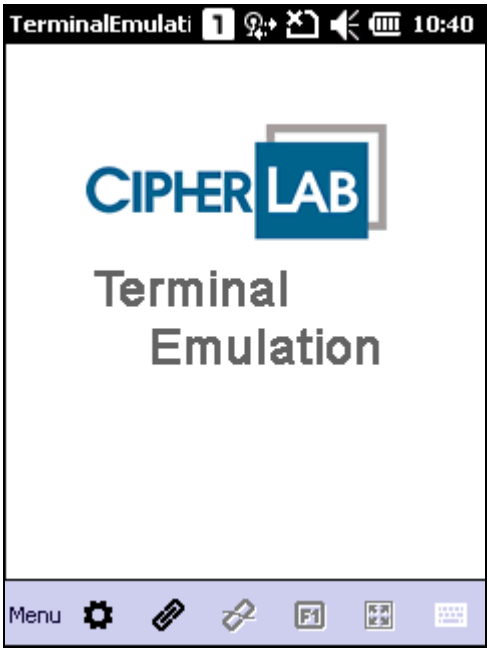
1.2. LAUNCH TERMINAL EMULATION

Once installation finishes, proceed to launch Terminal Emulation:

1) Open **Start** screen.

2) Tap **Terminal Emulation** icon .

   Terminal Emulation opens showing CipherLab logo and the application title.



NOTEWORTHY LAUNCHING FACTS

On CP50, before launching Terminal Emulation, close any other application that has control over reader module(s) such as MIRROR Browser and Reader Configuration; otherwise Terminal Emulation won't be able to launch and system prompts "Cannot find readers!" Since each of the COM ports assigned to stream decoded data can only be occupied by one application on the mobile computer, it is essential to run only one reader-controlling application at a time.

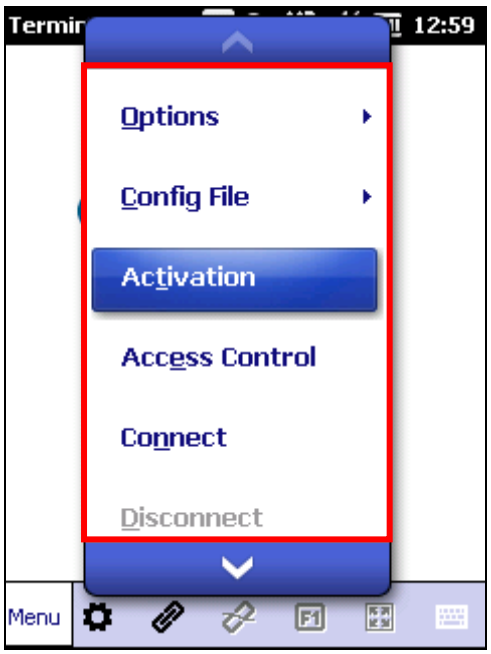
1.3. ENTER ACTIVATION KEY (FOR CP50/9200 ONLY)

If an activation key is available for CP50 and 9200, activate Terminal Emulation following the steps below:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.

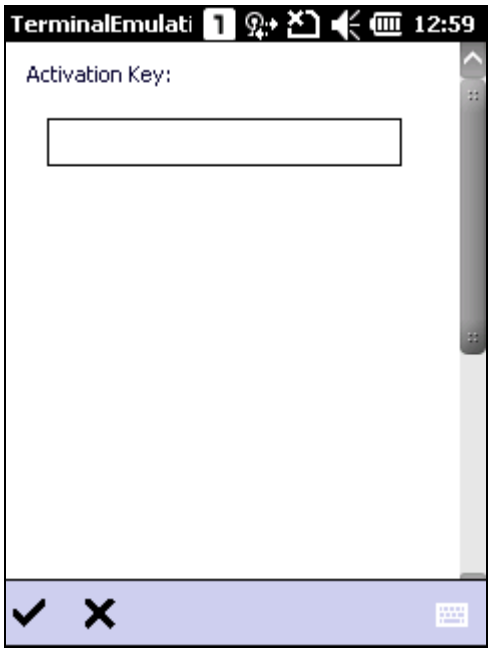


2) Tap the **Menu** label to the left of the toolbar.



3) Tap **Activation**.

"Activation key" screen opens presenting a single input field.



4) Enter an activation key by scanning the activation barcode.

OR

Manually type the activation key with the on-screen keyboard or physical keypad.

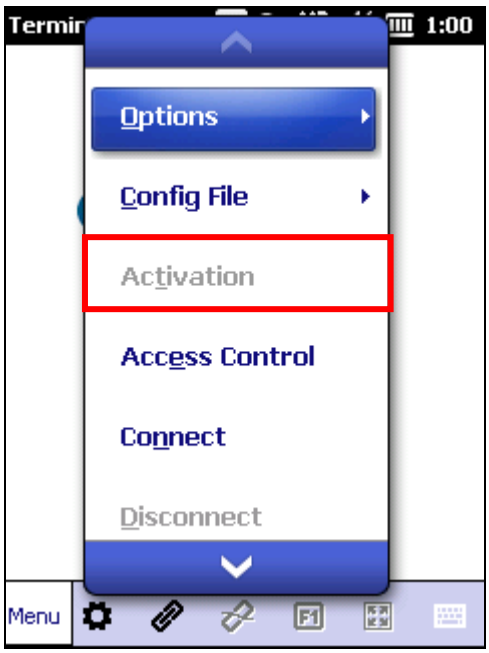
1) Tap ✔ to enter the activation key.

   A dialog opens notifying activation success.

2) Tap **ok** at the upper-right of the dialog.

   The dialog closes and Terminal Emulation is activated.

   The "Activation" option in the Menu will become greyed out to indicate activation is completed.



Note:

(1) After activation, all menu functions become available.

(2) On the CP60 and 9700 mobile computer, Terminal Emulation is activated by default; users do not need to enter an activation key to access full menu options.

USER INTERFACE

This chapter goes through the user interface of Terminal Emulation. Understanding user interface helps escape confusion and jump seamlessly within the application.

Note: For different Windows Embedded Handheld devices, screen sizes and layout might differ according to the device model.

This chapter is grouped thematically into the following sections:

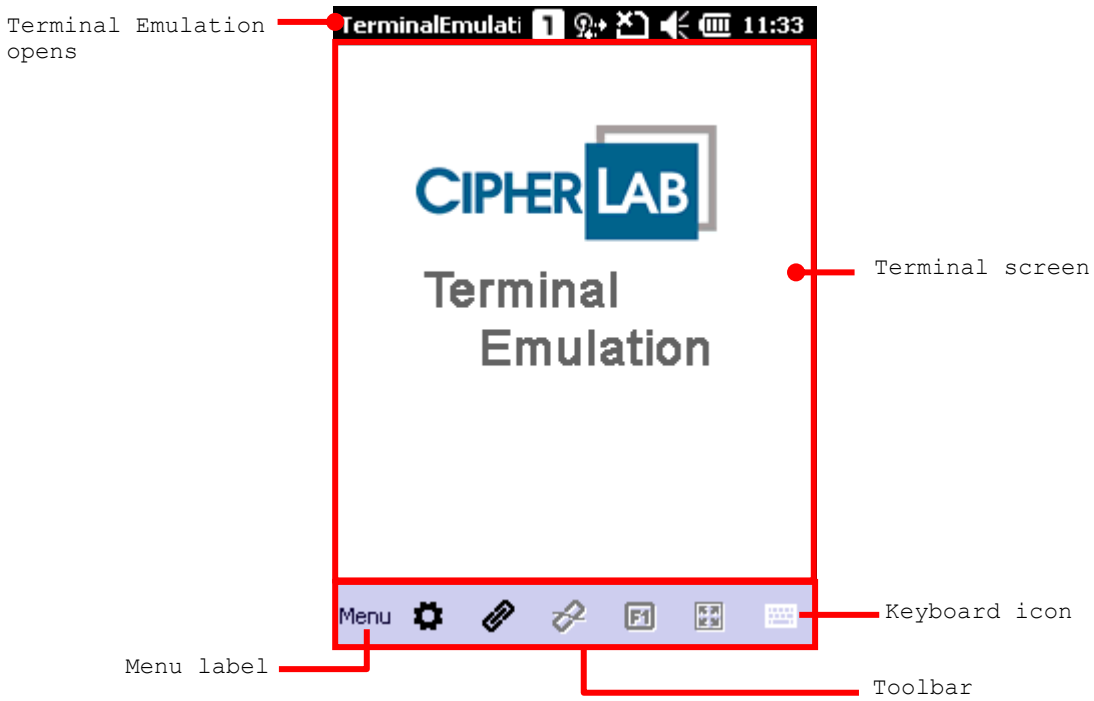
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2.1. SCREEN TERMINOLOGY

The screenshot below shows Terminal Emulation opened on the mobile computer. The application opens presenting its title and developer's logo.

On-screen elements include the following:



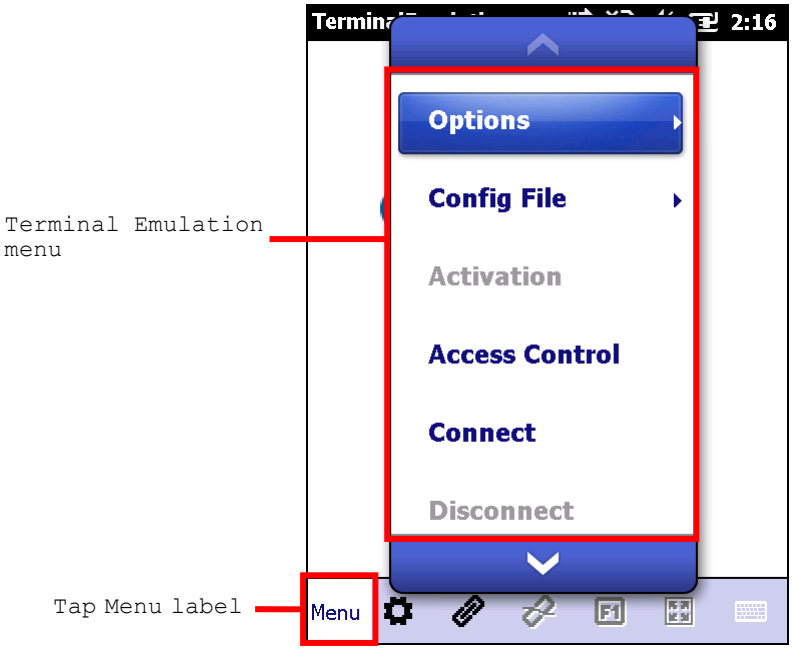
Term	Description
Terminal screen	Displays what the emulated terminal would display.
Menu label	Opens Terminal Emulation menu. ▸ See Menu for details.
Toolbar	Presents a few icons that quick launch some actions from Terminal Emulation. ▸ See Toolbar for details.
Keyboard icon	Opens on-screen keyboard to input text.

2.2. MENU

Terminal Emulation features a menu, which manifests itself as a list of options for accessing Terminal Emulation settings.

To open Terminal Emulation menu:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap the bottom-left **Menu** label.



The following table demonstrates Terminal Emulation's menu:

Menu Item	Brief Description
Option	Configures Terminal Emulation, maximizes Terminal Screen, and opens the emulated terminals' featured function keys. ▸ See Settings, Key and Full Screen for more details.
Config File	Sets where to load and save configuration files. ▸ A configuration file comes in .json format. ▸ See Config File.
Activation	Enter an activation key to activate Terminal Emulation on the CP50 and 9200 mobile computer. After this is done, a complete set of menu options will be available. See Enter Activation Key (For CP50/9200 Only). ▸ On the CP60 mobile computer, Terminal Emulation is already activated by default.
Access Control	Prevents unauthorized access of Terminal Emulation settings or unauthorized exiting of the application by setting up a password.
Connect	Connect to the selected session. See Connect/Disconnect.
Disconnect	Disconnect to the active session. See Connect/Disconnect.
Com Port	You can enable data transmission via RS232 com port by choosing "Enable Ext. Scanner".

Host Sessions: S1~S5	Use these menu options to switch between different host sessions. Each of these sessions can be individually connected to the same or different servers. ✓ indicates the active session which is currently displayed on-screen. ▸ On non-activated devices, only one host session is allowed. To enable multiple host sessions, an activation key is required. See Enter Activation Key (For CP50/9200 Only) and Host Session.
Language	You can select the desired UI language.
About	Delivers developer info and version info.
Exit	Closes Terminal Emulation.

2.3. TOOLBAR

Different from the menu, the toolbar bears a few icons. Each can be tapped on-screen to directly launch a specific action in Terminal Emulation.

The toolbar is presented along the bottom of the application window as long as Terminal Screen isn't expanded to full-screen.

The following shows the toolbar in a telnet session:



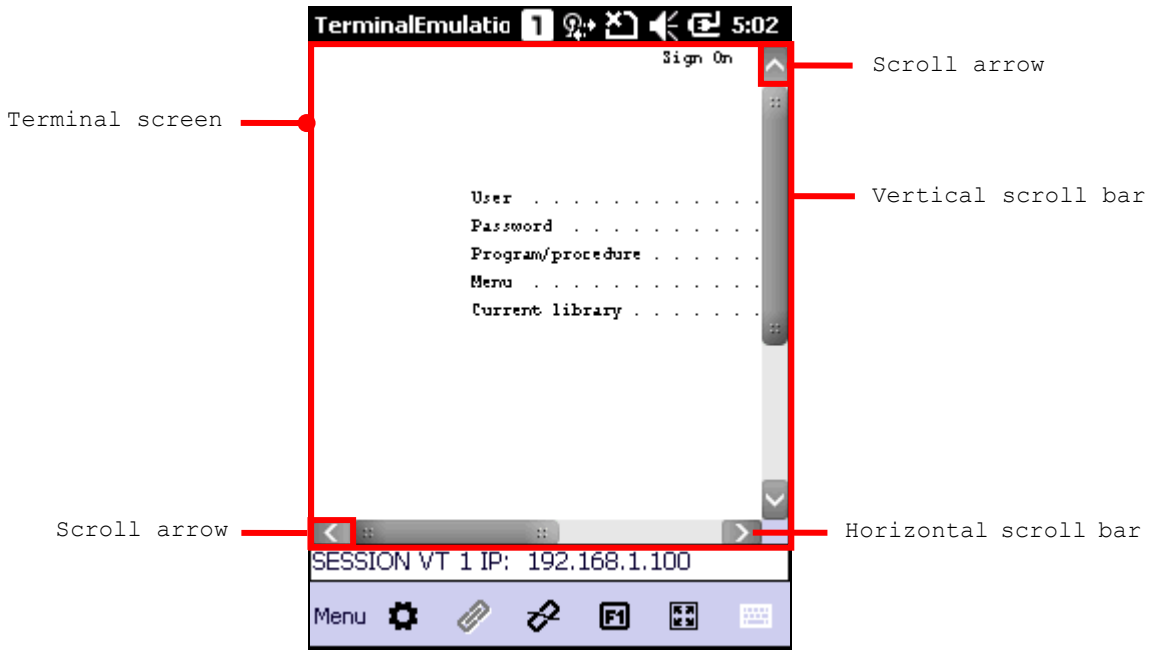
Toolbar delivers the following functions:

Icon	Description
Menu	Opens Terminal Emulation menu. See Menu for details.
	Opens Terminal Emulation settings ▸ Delivers the same action as **Menu** | **Option** | **Settings**.
	Starts a telnet session. ▸ Delivers the same action as **Menu** | **Status** | **Connect**. ▸ Available only when no telnet session is active.
	Ends a telnet session. ▸ Delivers the same action as **Menu** | **Status** | **Disconnect**. ▸ Available only when a telnet session is active.
F1	Opens the function keys featured on the emulated terminal. ▸ Delivers the same action as **Menu** | **Option** | **Key**. ▸ Available only when a telnet session is active.
	Enlarges the Terminal Screen to full-screen. ▸ Delivers the same action as **Menu** | **Option** | **Full-screen**. ▸ Available only when a telnet session is active.
	Opens on-screen keyboard to input text.

2.4. TERMINAL SCREEN

This is the area to display the text-based information streamed from host service. Users work on this screen to collect data and submit it to the host service.

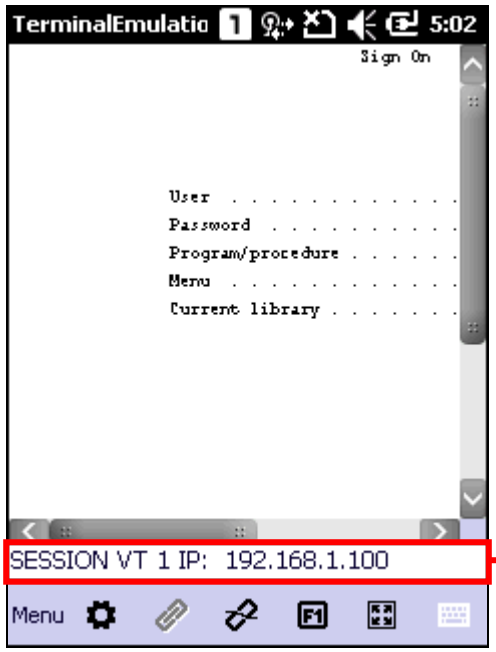
In default state, terminal screen comes with a vertical and a horizontal bar at the right and bottom that can be used to move the screen to the desired portion to view. Scroll bars and scroll arrows can be disabled at **Menu** | **Options** | **Settings** | **Preferences** tab page | **Enable Scrollbars**.



- On CP60, instead of using the scroll bars to shift screen position, users can also tap and drag the screen in a single motion to adjust the screen view.

SESSION INFORMATION

Once a Host Session is set up and the device is successfully connected to the host service, information about the current session such as session number, host type and IP address will display below the Terminal Screen, right above the toolbar.



Information about the currently connected session shows below the terminal screen

2.5. USING ON-SCREEN KEYBOARD

There are several ways to use the on-screen keyboard in Browser view:

Open On-screen Keyboard	Close On-screen Keyboard
Tap the keyboard icon on the toolbar. This icon is available only when a session is connected.	Tap the keyboard icon once more.
If Set HW key (SHIFT+ESC) to control SIP is selected under **Screen** Settings, press Shift + Esc to open the on-screen keyboard.	If Set HW key (SHIFT+ESC) to control SIP is selected under **Screen** Settings, press Shift + Esc to close the on-screen keyboard.
When Browser view is switched to full screen mode, double tap the SIP icon  to open the on-screen keyboard. ▸ Show SIP must be selected for the SIP icon to be displayed on the maximized screen.	When Browser view is switched to full screen mode, double tap the SIP icon  to close the on-screen keyboard. ▸ Show SIP must be selected for the SIP icon to be displayed on the maximized screen.

USE AND COLLECT DATA

3.1. START A TELNET SESSION

To start a telnet session:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **Options** | **Settings**.

   OR

   Tap  icon on toolbar.

   Settings open showing **VT** (or **TN**) tab page.

1) In **Host** group box, select the type of host to connect, **VT** or **TN** (short for "telnet 5250").

   The tab page changes over to **TN** or **VT**.

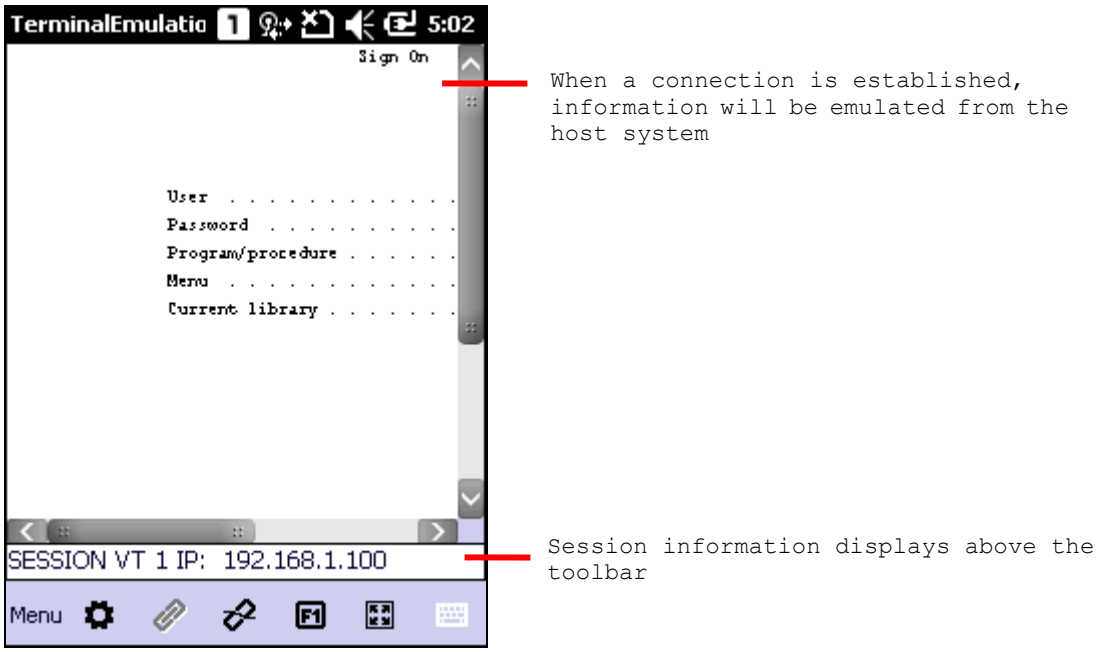
2) Set the connection profile, and tap  to save changes and quit settings, or tap  to discard changes and exit.
3) Tap **Menu** | **Connect**.

   OR

   Tap  icon on toolbar.

   Terminal Emulation tries to connect to the assigned host.

   Once connection is set up, Terminal Emulation shows the information streamed from the host system. Session Information will display below the Terminal Screen, right above the toolbar.



See VT or TN Tab page for more details.

3.2. COLLECT DATA

Once the application is connected to host and Terminal Screen shows the information rendered by the host service, proceed to collect data:

Aim the scanning window at the printed barcode to read.

OR

Tap (slightly contact) the scanning window with the RFID tag to read.

1) Press the physical scan button (or either side triggers).

   Data is auto-entered.

2) Submit data.

   Data is sent to the host service.

3.3. END A TELNET SESSION

To end a telnet session:

1) Tap  icon on toolbar.

OR

Tap **Menu** | **Disconnect**.

Terminal Emulation disconnects from the host service.

SETTINGS

Modify Terminal Emulation by its featured settings to optimize your field applications. This chapter goes through all settings accessed by tapping the **Menu** label. It also covers the handling of the configuration file, which is critical for reproducing Terminal Emulation settings.

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4.4 Host Session 72
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4.7 Exit.....75

4.1. OPTION

Option is a menu item which features all the settings needed to tune the telnet communication, data collection and application preferences. It contains three submenus **Settings**, **Key** and **Full Screen**, which are detailed in this section.

4.1.1. SETTINGS

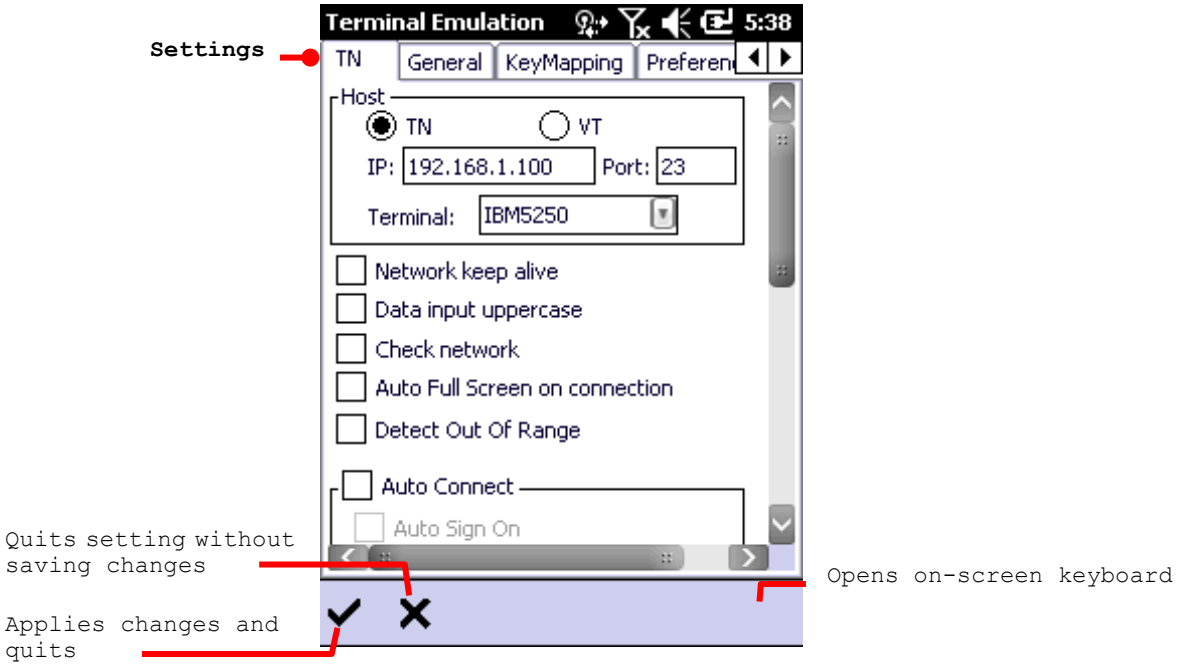
To access the **Settings** submenu:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **Option** | **Settings**.

   Settings screen opens showing **TN** (or **VT**) tab page.

OR

Tap  on the toolbar to open the **Settings** screen showing **TN** (or **VT**) tab page.



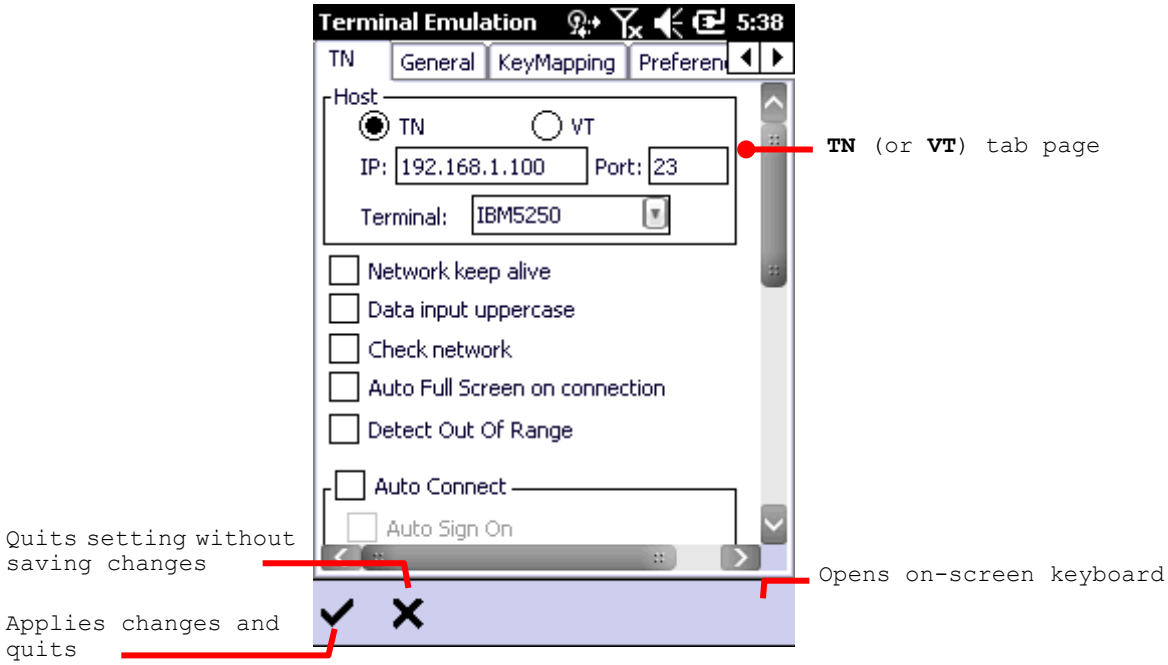
VT OR TN TAB PAGE

This tab page sets the profile to connect to the prospective host, VT or TN type.

To open **TN** (or **VT**) tab page:

I) Open **Settings** submenu as described in Settings.

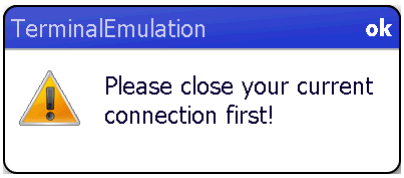
Settings opens showing **TN** (or **VT**) tab page.



This tab page opens in context with the prospective host type to connect, TN or VT, which can be set in the Host group box.

As TN is the default host type to connect, **TN** tab page opens by default. If the terminal type to connect to is IBM 5250 or 3270, select **TN** in Host setting. Settings in the tab page then changes over to **TN** tab page.

- Before switching host type or changing Host information, disconnect the current session first. Otherwise a warning message will appear on-screen notifying that the connection should be closed before making any changes.



Whether VT or TN is selected, this tab page includes the following connection profile options:

<table>
<tr><th>Item</th><th>Description</th><th>Default</th></tr>
<tr><td>Host</td><td>Sets the type of the host to connect. Options are:
VT
TN
Following settings are inside the group box of Host.<table><tr><th>Item</th><th>Description</th><th>Default</th></tr><tr><td>IP</td><td>Assigns the IP address of the host to connect.</td><td>192.168.1.100</td></tr><tr><td>Port</td><td>Assigns the port to connect to the host.</td><td>23
(telnet port)</td></tr><tr><td>Terminal</td><td>Sets which TN or VT terminal to emulate. Options are:
For TN: IBM5250, IBM3270
For VT: vt100, vt102, vt220, ansi</td><td>IBM5250 for TN /vt100 for VT</td></tr></table></td><td>TN</td></tr>
<tr><td>Network keep alive</td><td>Keeps connected to the server.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Data input uppercase</td><td>Capitalizes all the letters of input data.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Check network</td><td>Detects whether there is network available. If not, a dialogue box will pop up.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Auto Full Screen on connection</td><td>Applies full screen mode automatically when connected to the server.
Available only when Auto Connect is enabled.
Applicable only upon application relaunch.
With Terminal Screen maximized, both the OS taskbar and the application’s toolbar are covered up. To change the displayed items during full screen, see Optimize Maximization.
For more details about the OS taskbar, see the Reference Manual of the specific mobile computer.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Detect Out of Range</td><td>A dialogue box pops up when wireless signals are not detected.</td><td>Deselected (Disabled)</td></tr>
</table>

<table>
<tr>
<td>Auto Connect</td>
<td>Enables Terminal Emulation to auto-connect to the assigned host upon its launch.

Following settings are inside the group box
<table>
<tr><th>Item</th><th>Description</th><th>Default</th></tr>
<tr><td>Auto Sign On</td><td>Enables Terminal Emulation to auto-login to the (host) service to access; or the service asks for user name and password each time Terminal Emulation attempts to access. Available only when Auto Connect is enabled. For VT emulation, this feature requires Terminal Emulation to set the login name prompt and password prompt exactly as the host service displays, which is definable at Menu | Options | Settings | General tab page. See General Tab page for details.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Login Name</td><td>Assigns the user name to auto-login to the (host) service to access.
Needed when Auto Sign On is applied.
Maximum 20 characters are allowed.</td><td>guest</td></tr>
<tr><td>Login Password</td><td>Assigns the password to auto-login to the (host) service to access.
Needed when Auto Sign On is applied.
Maximum 20 characters are allowed.</td><td>--</td></tr>
</table>
</td>
<td>Deselected (Disabled)</td>
</tr>
<tr>
<td>Generate Log</td>
<td>Keeps the data-streaming record between host service and Terminal Emulation and saves it to a log file on the mobile computer’s storage at:
\Program Files\TerminalEmulation.
The log file comes with .log extension.</td>
<td>Deselected (Disabled)</td>
</tr>
</table>

GENERAL TAB PAGE

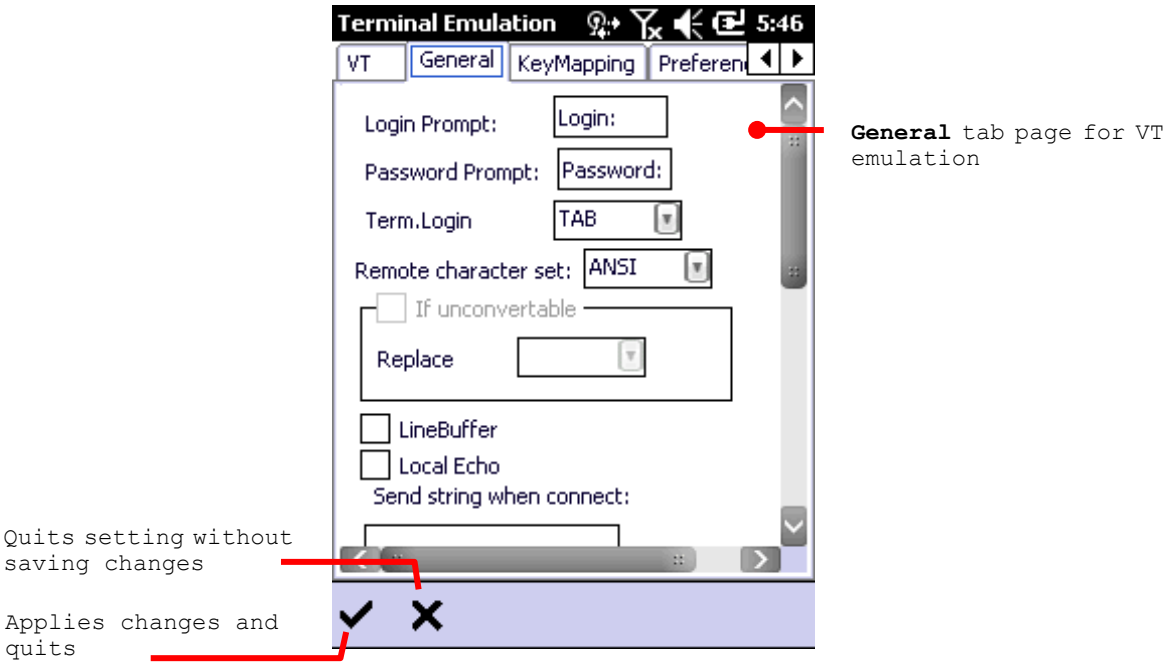
General tab page sets the general preferences using Terminal Emulation.

To open **General** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **General** tab.

   General tab page opens presenting different settings for VT and TN emulation:

SETTINGS FOR VT EMULATION

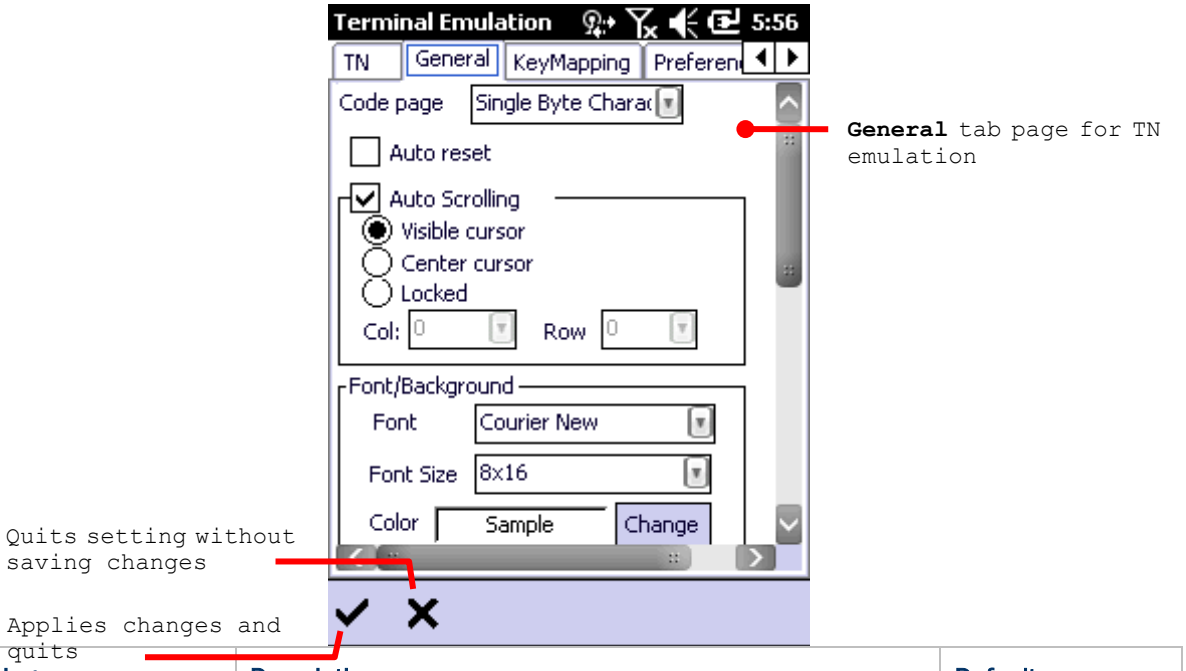


Setting	Description	Default
Login Prompt	Defines the text exactly displayed by the host service to prompt for user name. ▸ This setting is mandatory for VT emulation to Auto Sign On.	Login:
Password Prompt	Defines the text exactly displayed by the host service to prompt for password. ▸ This setting is mandatory for VT emulation to Auto Sign On.	Password:
Term.Login	Assigns the key to switch over Login Name and Login Password when Auto Connect and Auto Sign On are enabled. Options are: ▸ TAB ▸ ENTER	TAB
Remote character set	Assigns the character code for displaying the characters received from the server. Options are: ▸ ANSI ▸ UTF-8	ANSI

<table>
<tr><td>If unconvertable</td><td>When UTF-8 is assigned, the checkbox of If unconvertable is able to be selected.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Replace</td><td>If the characters received from the server are unconvertable, a replacement will be displayed on the terminal. Options are:
(Blank)
X
%
&
≠
-
_</td><td>(Blank)</td></tr>
<tr><td>LineBuffer</td><td>Shows typed text and commands locally on Terminal Emulation, and transmits them to host service only after Enter key is hit to confirm the input.
By default and by characteristic of VT emulation, Terminal Emulation sends entered text to host service character by character without hitting Enter key.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Local Echo</td><td>Shows typed text locally on Terminal Emulation just as it is being transmitted to host service.
Typed commands will not be shown locally.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Send string when connect</td><td>Defines the command that Terminal Emulation sends to host service upon connection. Tap the text field to open a screen for entering the desired command.</td><td>--</td></tr>
<tr><td>Auto Scrolling</td><td>Auto-positions Terminal Screen to bring cursor into view. Options are:
Visible cursor
The cursor constantly shows at the upper-right of the screen.
Center cursor
The cursor constantly shows in the center of the screen.
Locked(Col:0~79; Row:0~23)
The screen is locked to the position set by column and row.</td><td>Selected (Enabled), Visible cursor</td></tr>
<tr><td>Font</td><td colspan="2">Adjusts the font type, font size, and color.<table><tr><th>Setting</th><th>Description</th><th>Default</th></tr><tr><td>Font Type</td><td>Assigns the font to show characters in Terminal Screen. Options are:
Courier New
Lucida Console
Excalibur Monospace
NetTerm ANSI
NetTerm OEM</td><td>Courier New</td></tr><tr><td>Font Size</td><td>Assigns the size to show characters in Terminal Screen. Options are:
5x10
6x12
8x10
8x14
8x16</td><td>8x16</td></tr></table></td></tr>
</table>

		▸ 10x20	
	Color (On activated devices only)	Changes the font color and background color in the Terminal Screen to suit users' preferences.	Sample

SETTINGS FOR TN EMULATION



Setting	Description	Default
Code page	Sets the language used by the (host) service. Options are: ▸ Single Byte Character (languages which use single bytes) ▸ Traditional Chinese ▸ Simplified Chinese ▸ Korean ▸ Japanese ▸ Greek ▸ French	Single Byte Character
Auto reset	Enables the mobile computer not to be locked or give out an alarm sound when pressing any keys.	Deselected (Disabled)
Auto Scrolling	Auto-positions Terminal Screen to bring cursor into view. Options are: ▸ Visible cursor The cursor constantly shows at the upper-right of the screen. ▸ Center cursor The cursor constantly shows in the center of the screen. ▸ Locked(Col:0~79; Row:0~23) The screen is locked to the position set by column and row.	Selected (Enabled), Visible cursor

<table>
<tr><td>Font/Background</td><td>Adjusts the font, font size, font color and background color:
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Font</td><td>Assigns the font to show characters in Terminal Screen. Options are:
Courier New
Lucida Console
Excalibur Monospace
NetTerm ANSI
NetTerm OEM</td><td>Courier New</td></tr>
<tr><td>Font Size</td><td>Assigns the size to show characters in Terminal Screen. Options are:
5x10
6x12
8x10
8x14
8x16
10x20</td><td>8x16</td></tr>
<tr><td>Color (On activated devices only)</td><td>Changes the font color and background color in the Terminal Screen to suit users' preferences.</td><td>Sample</td></tr>
</table></td></tr>
<tr><td>Field Length if Exceed</td><td>Defines how to handle a data when it exceeds 5250's specified field length. Options are:
Reject
Truncate
Split to Next Field</td><td>Reject</td></tr>
<tr><td>Device Name</td><td>Assigns a name to the mobile computer or selects System Device Name.</td><td>(Blank)</td></tr>
<tr><td>Error Message Relocation</td><td>Adjusts the location and form of an error message for display on the terminal.
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Display error in ROW</td><td>Selects the location (row number) to display an error message if an error occurs</td><td>24</td></tr>
<tr><td>Pop-up Window</td><td>Shows the error message in the form of a pop-up window.</td><td>Deselected (Disabled)</td></tr>
</table>
This can only be adjusted when a session is disconnected. Otherwise, a warning message will pop-up notifying to close the current connection.</td><td></td></tr>
</table>

KEY MAPPING TAB PAGE

The mobile computer's physical keypad features a set of functions keys. Functions keys are particularly helpful for telnet communication such as to give up an operation, quit a menu or log out of service.

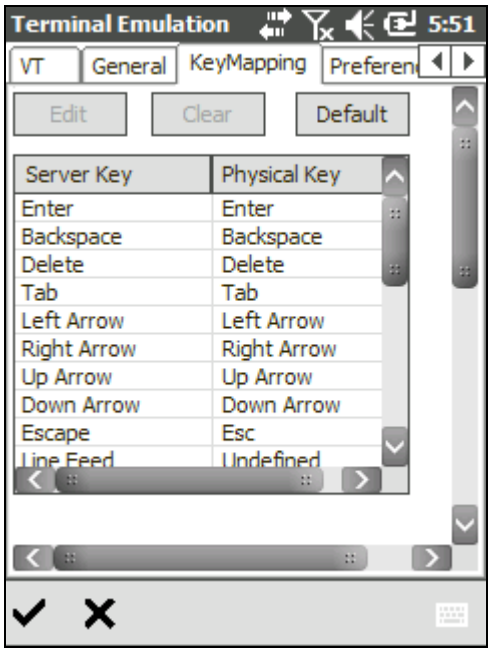
Terminal Emulation supports "Key Mapping", which means to empower a physical function key (and some others) to perform the function originally performed by one of the emulated terminal's physical keys.

To open Key Mapping tab page:

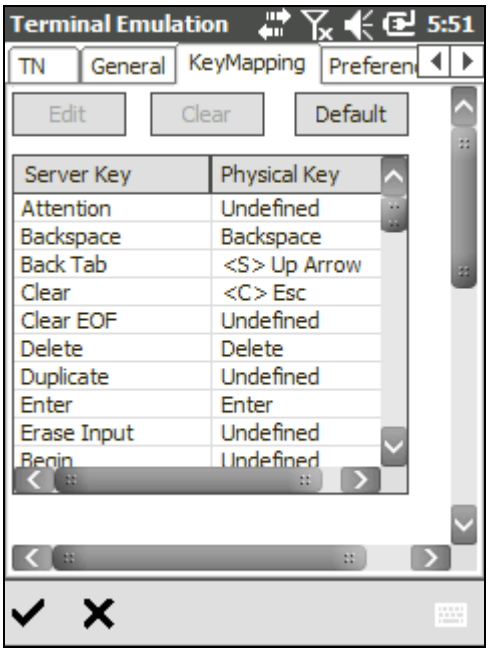
1) Open **Settings** submenu as described in Settings.
2) Tap **KeyMapping** tab.

KeyMapping tab page opens showing different featured settings for **VT** and **TN** emulation:

VT KeyMapping settings



TN KeyMapping settings



The settings available on the Key Mapping tab page are demonstrated as follows:

Setting	Description
Edit	Configures the selected Server Key through a group box named Mapped Physical Key.

Setting	Description
Category	Lists the categories of Physical Keys. Options are: ▸ Undefined ▸ Alphabets ▸ Numbers ▸ Punctuations ▸ Function Keys ▸ Navigation Keys ▸ Editing Keys

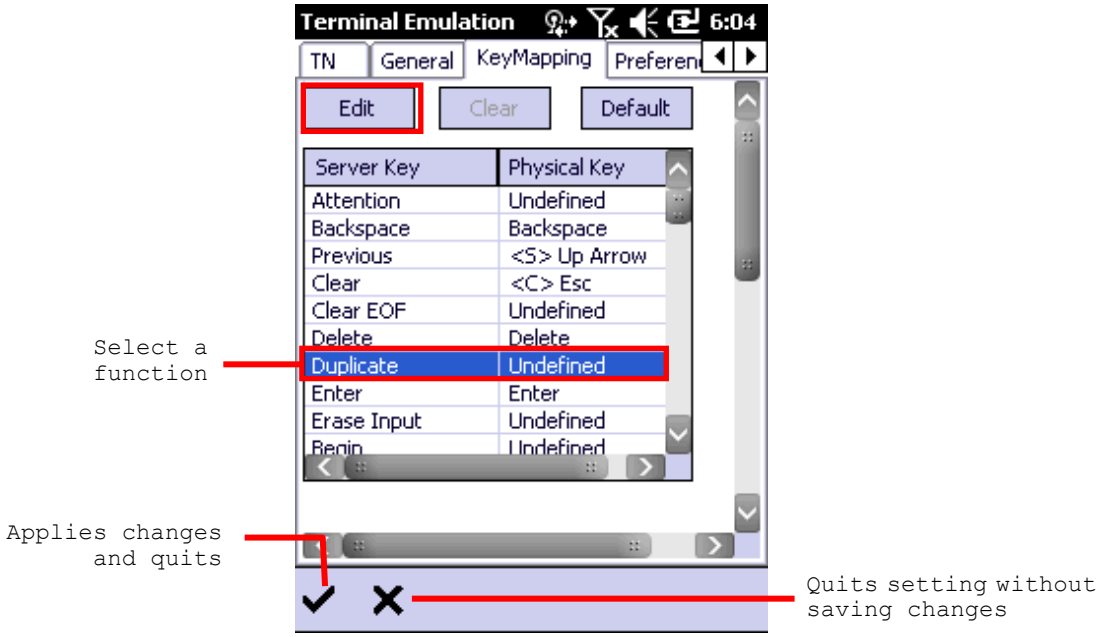
	Physical Key	Serves the function of the Server Key.
	Trap	Assigns the command of a Server Key to a Physical Key by directly pressing the latter one on the mobile computer.
	Shift/ Ctrl/ Alt	Functions with the physical key if selected.
Clear	Makes the selected Physical Key Undefined.	
Default	Returns to default Physical Keys.	

ASSIGN FUNCTION KEY

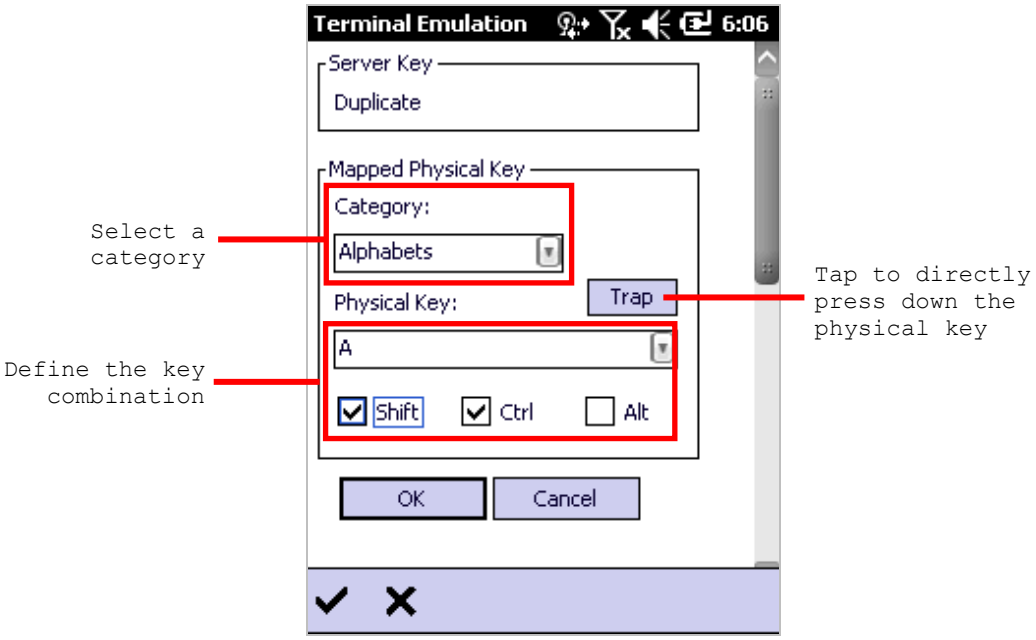
Using function keys, you may transmit control codes, which do not produce displayable characters but are instead codes for functions. If these codes are received by the mobile computer, it will perform the associated function as defined.

To define keys:

1) Open **KeyMapping** tab as described in Key Mapping Tab page.
2) In Server Key list, select a function and tap "**Edit**" to enter Select Physical Key page. Please note that VT and TN provide different sets of keys available for key-assigning.

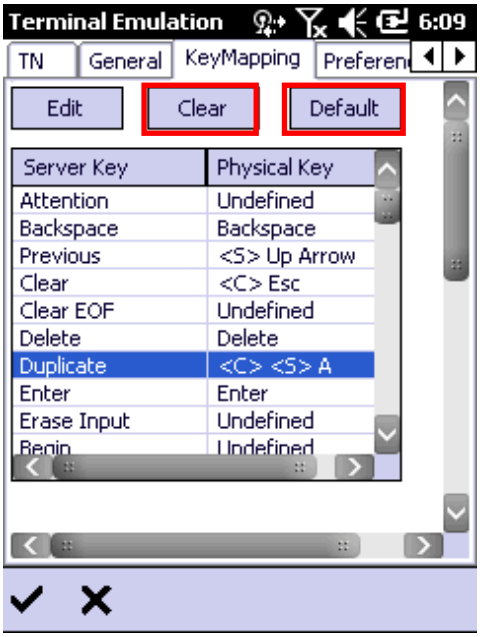


3) On Select Physical Key page, select the key category from Category drop-down list and then select the key from Physical Key. For example, if you select the Alphabets category, you get to choose an alphabet letter from the Physical Key list. You can add more variations to the key combination with the additional choice of Shift, Ctrl and Alt keys. By tapping on "**Trap**" button, you can directly press a key on the physical keypad, or open the on-screen keyboard to type a key.



4) Tap "**OK**" at the bottom to apply changes.

5) Returning to the KeyMapping table, you can select a defined function, tap "**Clear**" to clear the setting or tap "**Default**" to restore all default mapping key settings.



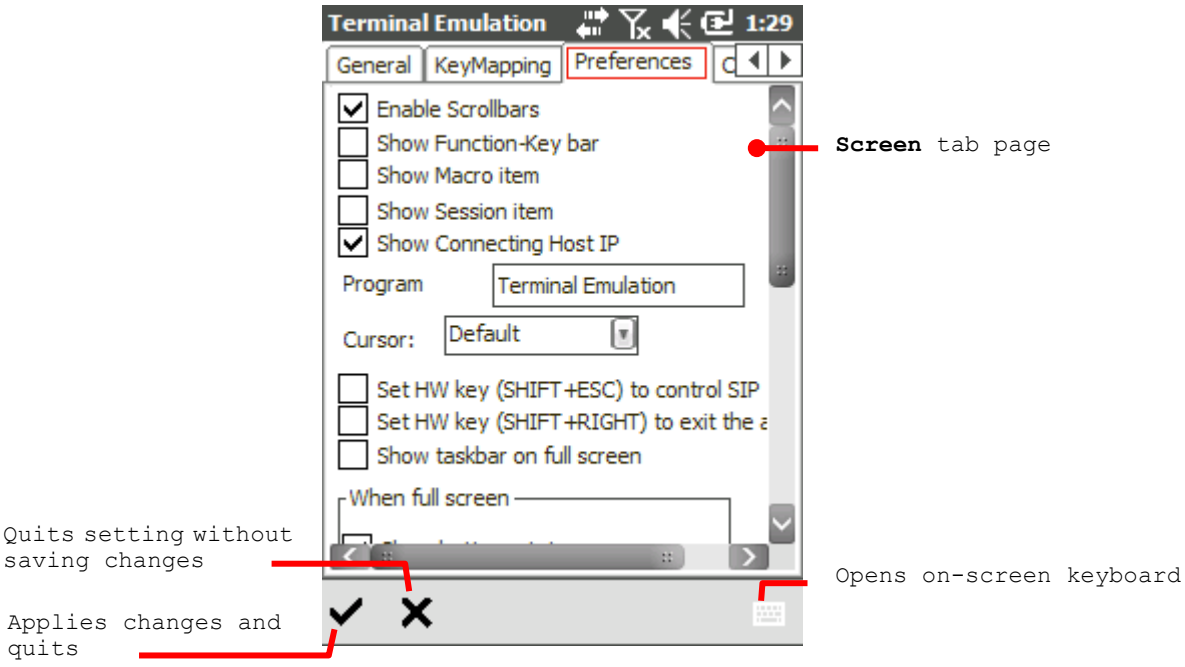
6) Tap ✔ to save changes and quit settings, or tap ✖ to discard changes and exit.

PREFERENCES TAB PAGE

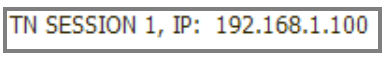
Preferences tab page sets the viewing preferences for Terminal Emulation.

To open **Preferences** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **Preferences** tab.



Featured settings on **Preferences** tab page:

Setting	Description	Default
Enable Scrollbars	Enables a vertical and a horizontal bar at the side and bottom of Terminal Screen that moves the screen to the desired portion to view.	Selected (Enabled)
Show Function Key Bar (On activated devices only)	Displays a fixed bar  right above the toolbar which lists all function keys for easy operation on the emulated terminal screen.	Deselected (Disabled)
Show Macro Item (On activated devices only)	Once selected, a Macro toolbar will pop-up on the screen once the session is connected. See Macro Operation (Activated Devices Only) for details.	Deselected (Disabled)
Show Session Item (On activated devices only)	Displays a session icon  on the screen to allow quick switching to other sessions. ▸ Switching between different sessions can also be done by tapping **Menu** | labels **S1~S5**. ▸ Once enabled, this icon will appear on all session screens.	Deselected (Disabled)
Show Connecting Host IP	 Displays connecting host IP right above the toolbar which lists all function keys for easy operation on the emulated terminal screen.	Selected (Enabled)

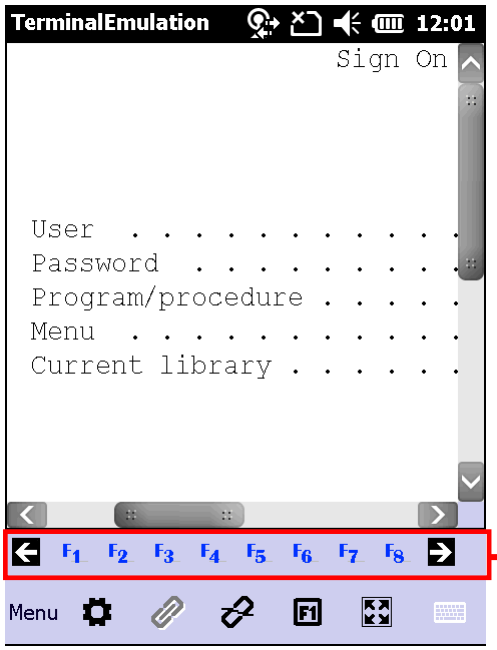
<table>
<tr><td>Program</td><td>Shows the program name Terminal Emulation.</td><td>Default</td></tr>
<tr><td>Cursor</td><td>Changes the cursor type between three different modes:
Default (half block cursor)
Underline (underline cursor)
Block (full block cursor)</td><td>Default</td></tr>
<tr><td>Set HW key (SHIFT+ESC) to control SIP</td><td>Sets whether to enable SHIFT+ESC as the hotkey for opening the onscreen keyboard. See Open On-screen Keyboard.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Set HW key (SHIFT+RIGHT) to exit the app</td><td>Sets whether to enable SHIFT+ RIGHT as the hotkey for exiting the app.</td><td>Deselected (Disabled)</td></tr>
<tr><td>Show taskbar on full screen</td><td>Shows the OS Title bar even when Terminal Screen is maximized.
When this is selected, the “When full screen” group box is automatically disabled and greyed out.
OS Title bar is a narrow horizontal bar atop almost every screen within the OS which deliver system notifications and statuses. For more details about the title bar, see the corresponding Reference Manual.
See Optimize Maximization for details.</td><td>Deselected (Disabled)</td></tr>
<tr><td>“When full screen” group box</td><td>Sets the items to display under Full Screen, either the battery level icon or Wi-Fi signal strength icon, on condition that the title bar is not enabled. The SIP icon can be enabled regardless of whether the taskbar is shown on full screen.
<table>
<tr><th>Setting</th><th>Description</th><th>Default</th></tr>
<tr><td>Show battery status</td><td>Select to enable the battery status icon. 
Update Interval (min): Select to define frequency to update battery level. Options are: 1, 3, 5, 15, 30, 60 minutes.
Alert Level (%): Select to define threshold for low battery alert to appear (by a pop-up dialog indicating the remaining battery level). Options are: 10, 20, 30, 40, 50, 60, 70, 80, 90%.</td><td>Selected (Enabled)</td></tr>
<tr><td>Show Wi-Fi status</td><td>Select to enable the Wi-Fi status icon. 
Update Interval (min): Select to define frequency to update battery level. Options are: 1, 3, 5, 15, 30, 60 minutes.
Alert Level (%): Select to define threshold for low Wi-Fi signal alert to appear (by a pop-up dialog indicating the remaining Wi-Fi signal strength). Options are: 10, 20, 30, 40, 50, 60, 70, 80, 90%.</td><td>Selected (Enabled)</td></tr>
<tr><td>Show printer icon</td><td>Select to enable the printer icon. </td><td>Deselected (Disabled)</td></tr>
</table>
</td></tr>
</table>

	Show resize icon	Select to enable the resize icon.	Selected (Enabled)
	Show SIP	Select to enable the SIP icon.	Deselected (Disabled)
	Icon size	Select Small, Medium or Large.	Medium

FUNCTION KEY BAR (ACTIVATED DEVICES ONLY)

On activated devices, you may display a Function Key Bar on the Terminal Screen for easy application of function keys. To display the function key bar, tap **Menu** | **Option** | **Settings** | **Preferences** tab page | **Show Function Key Bar**. A horizontal bar will appear atop the toolbar listing function keys F1 to F20. Tap any of these keys to deliver the desired action on the terminal screen.

Note: The delivered key functions will match those assigned on Key Mapping Tab page.



MACRO OPERATION (ACTIVATED DEVICES ONLY)

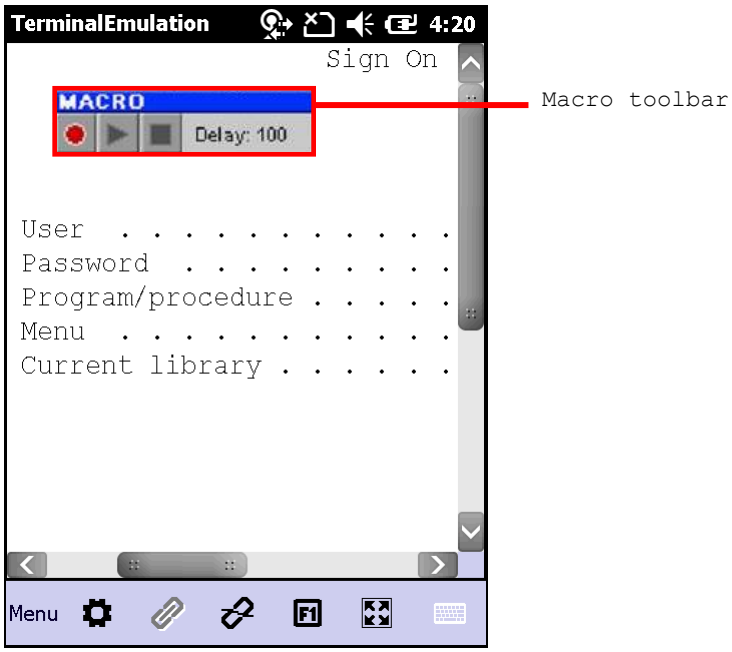
On activated devices, macro operation is available for performing automatic multiple-step navigation on the emulated screen. This is done in a two-step procedure: recording a macro first, followed by macro playback. As macro operation involves user input and host response, a recorded macro is host-specific and can only function when the mobile computer is connected to that specific host. If you have multiple sessions established, you will need to create a macro for each one of these sessions.

For each active session, only one macro can be recorded. Re-recording a macro will overwrite the previously recorded one.

Follow the steps below to create a macro:

1) Connect to the host service as described in Start a Telnet Session.
2) Tap **Settings** submenu | **Preferences** tab page.
3) Select the **Show Macro Item** checkbox.
4) Tap ✔ to apply changes and quit settings.

Macro toolbar appears on-screen.



5) Tap the record button  on the macro toolbar to start recording.

Perform the actions as wished on the Terminal Screen. The macro will record all cursor movement, text input, keystroke, as well as host responses.

6) Tap the record button once more to terminate recording. The macro is saved automatically.

Once a macro starts recording, the playback button  will be available for tapping and can be used to replay a recorded macro. When macro is under playback, the stop button  becomes available for tapping and can be used to stop playback.

Tap the **Delay** text button to change the time interval between each executed action. Adjust this depending on the host responding time during the active session. Available options are: 100, 500, 1000, 3000, 5000 (ms).

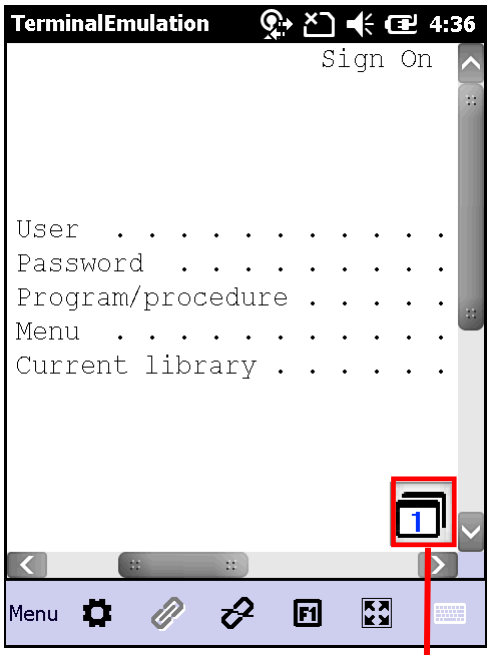


When applying a recorded macro, take notice of the following:

- After recording a macro, play it to make sure all the expected actions have been successfully saved.
- Before playing a recorded macro, make sure the host screen is under the same condition as the point where recording started. During playback of a recorded macro, do not press any additional keys so as to prevent playback failure.

SESSION ICON (ACTIVATED DEVICES ONLY)

On activated devices, a session icon is provided for quick switching between different host connections. Enable the session icon by tapping **Menu** | **Settings** | **Preferences** tab page | **Show Session Item**. After the session icon appears onscreen, simply double-tap the icon to switch to the next session. Once enabled, the session icon remains on–screen throughout all sessions, regardless of the host connection status.



Double-tap the session icon to switch to other sessions



The screen switches to another session

OPTIMIZE MAXIMIZATION

On the maximized Terminal Screen, users can opt to display system information via the OS title bar, or by icons presenting battery level status and Wi-Fi signal strength. By default, when the terminal screen is maximized, the OS title bar will be retained at the top of the screen. This taskbar can also be stripped to provide a larger area for full-screen view. Deselect **Menu** | **Option** | **Settings** | **Preferences** tab page | **Show taskbar on full screen** to disable the taskbar.

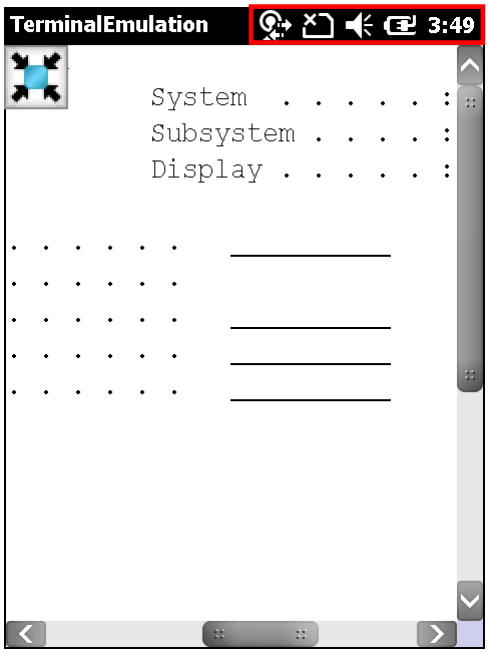
With the OS title bar disabled, two icons Battery Item and Wi-Fi Item can be selected to appear on-screen to help monitor battery level and Wi-Fi signal strength

Resize icon: 

Battery level icons: 

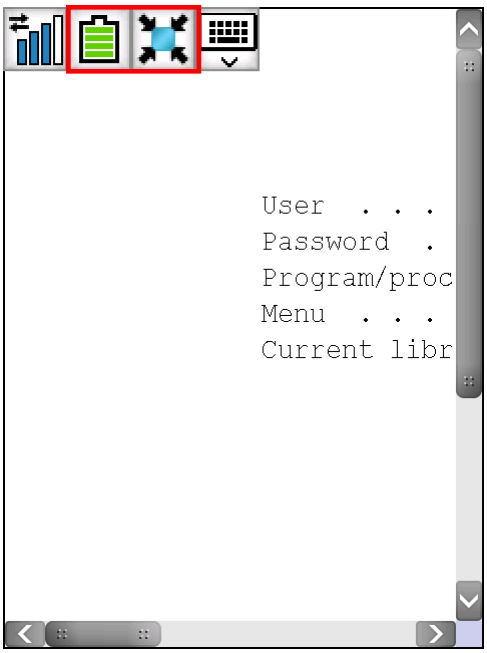
Wi-Fi Signal strength icons: .

SIP icon: 



When "Show taskbar on full screen" is selected, the OS title bar is retained under full screen mode, thus delivering status information for various items.

- See Actions to take on Full Screen for how to operate the icons on the maximized screen.



When "Battery Status Item" and "Wi-Fi Status Item" are selected, status icons for Wi-Fi signal and battery level will appear under full screen mode. Title bar is automatically hidden.

- See Actions to take on Full Screen for how to operate the icons on the maximized screen.

See Full Screen for more actions to take on the maximized Terminal Screen.

ALARM TAB PAGE

SETTINGS FOR VT EMULATION

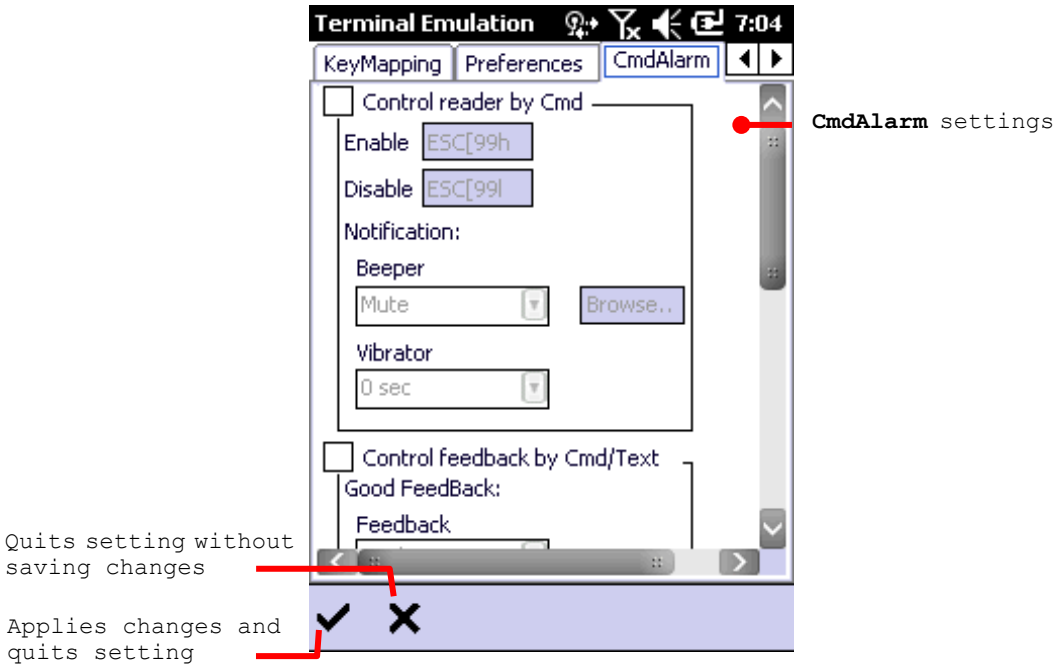
On the **Alarm or CmdAlarm** tab page, **Terminal Emulation** enables the host service to control the mobile computer's reader module(s), and also respond to Terminal Emulation's input, both by sending escape sequences.

Note: For VT emulation, **CmdAlarm** tab page is featured, while for TN emulation, **Alarm** tab page is featured.

To open **CmdAlarm** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **CmdAlarm** tab.

CmdAlarm tab page opens showing two group boxes.



Featured settings on **CmdAlarm** tab page:

Setting	Description
Control reader by Cmd	Enables the host service to send commands in order to turn on/off the reader module. Deselected by default. ▸ **Enable**: Assign a command (escape sequence) for turning on the reader module. ▸ **Disable**: Assign a command (escape sequence) for turning off the reader module. ▸ **Notification**: Use **Beeper**/**Vibrator** settings to make the mobile computer sound or vibrate each time the reader module is enabled/disabled by the given command.

Setting	Description	Default
Beeper	Select the sound to play each time the reader module is enabled/disabled by the given command.	Mute

			▸ **Browse..:** Add a selected wave file to *Beeper* for alarm configuration.	
		Vibrator	Select the amount of time to vibrate each time the reader module is enabled/disabled by the given command.	0 sec

Control feedback by Cmd/ Text

Enables the host service to respond to Terminal Emulation by sending a command (escape sequence) for good or erroneous inputs. Deselected by default.

- **Good Feedback**: Assign the command (escape sequence) for input success. When Terminal Emulation receives the command, the mobile computer will play the specified beeper sound or vibrate for the specified amount of time.

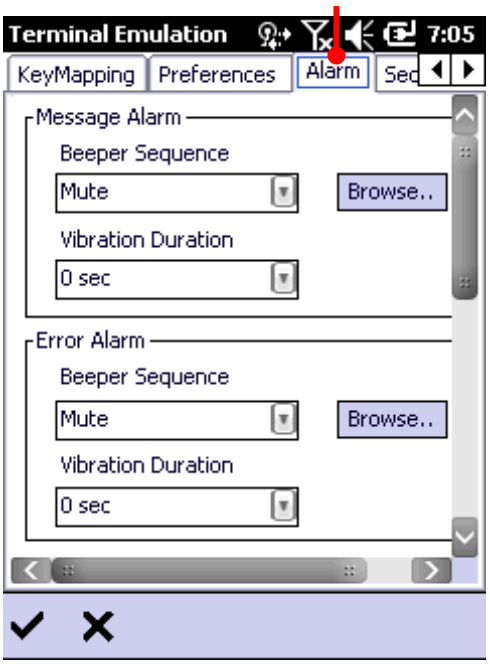
Setting	Description	Default
Feedback	Select Cmd or Text.	Cmd
Cmd/Text	Enter the sequence of interest.	--
Beeper	Mute the sound or click on "**Browse**" to select a wav file from the device.	Mute
Vibrator	Select the amount of time to vibrate. Configure vibration duration between 0 and 5 sec (in increments of 0.5 sec).	0 sec

- **Error Feedback**: Assign the command (escape sequence) for input failure. When Terminal Emulation receives the command, the mobile computer will play the specified beeper sound or vibrate for the specified amount of time.

Setting	Description	Default
Feedback	Select Cmd or Text.	Cmd
Cmd/Text	Enter the sequence of interest.	--
Beeper	Mute the sound or click on "**Browse**" to select a wav file from the device.	Mute
Vibrator	Select the amount of time to vibrate. Configure vibration duration between 0 and 5 sec (in increments of 0.5 sec).	0 sec

SETTINGS FOR TN EMULATION

Alarm settings



To open **Alarm** tab page for TN emulation:

1) Open **Settings** submenu as described in Settings.
2) Tap **Alarm** tab.

   Alarm tab page opens showing two group boxes.

Featured settings on **Alarm** tab page:

Setting	Description
Message Alarm	Sets the mobile computer to sound or vibrate when data is transmitted to the host.

Setting	Description	Default
Beeper Sequence	Select a sound to play. Mute the sound or click on "**Browse**" to select a wav file from the device.	Deselected (Mute)
Vibration Duration	Select the amount of time to vibrate. Configure vibration duration between 0 and 5 sec (in increments of 0.5 sec).	Deselected (0 sec)

Setting	Description
Error Alarm	Sets the mobile computer to sound or vibrate when an error occurs during data input. Errors include incorrect data format, incorrect input field etc. (but not login error).

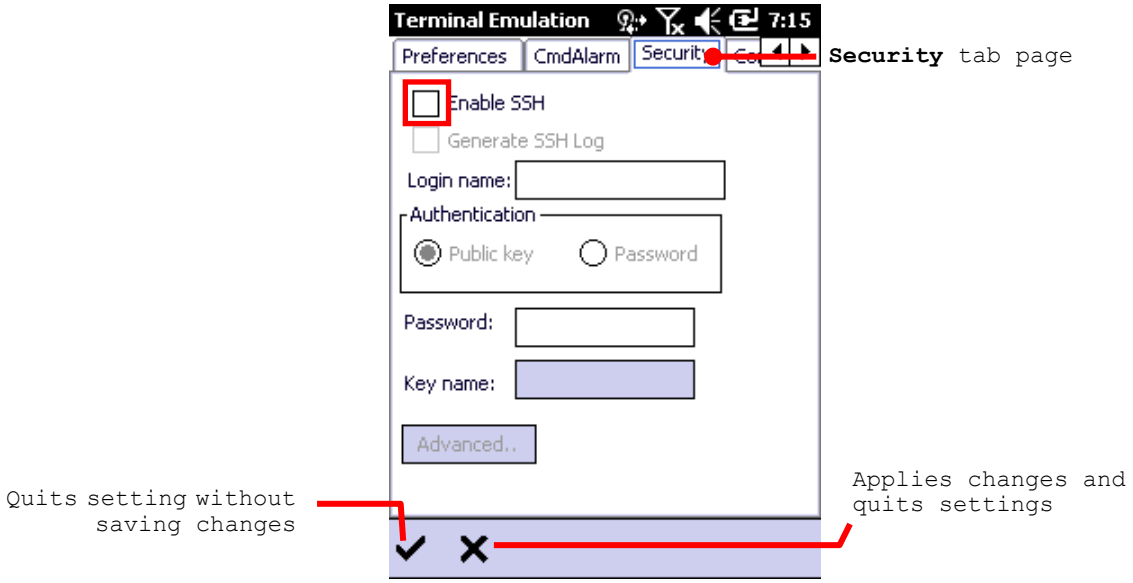
Setting	Description	Default
Beeper Sequence	Select a sound to play. Mute the sound or click on "**Browse**" to select a wav file from the device.	Deselected (Mute)
Vibration Duration	Select the amount of time to vibrate. Configure vibration duration between 0 and 5 sec (in increments of 0.5 sec).	Deselected (0 sec)

SECURITY TAB PAGE FOR VT

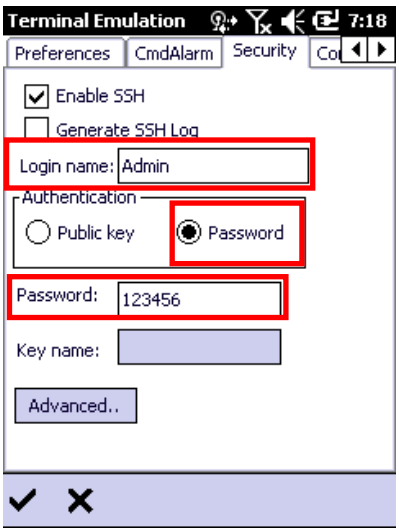
The secured connection protocol Secure Socket Shell (SSH) is available for VT emulation. As it provides strong authentication and secures encrypted data communications, it suits the needs of a solution which requires high security level of data transmission. The **Security** tab page enables the mobile computer to configure the login credentials.

To open **Security** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **Security** tab.
3) Check Enable SSH



4) You can access the remote server using Name and Password:
5) Under Authentication, select **Password**, key in your **Login name** and **Password**.



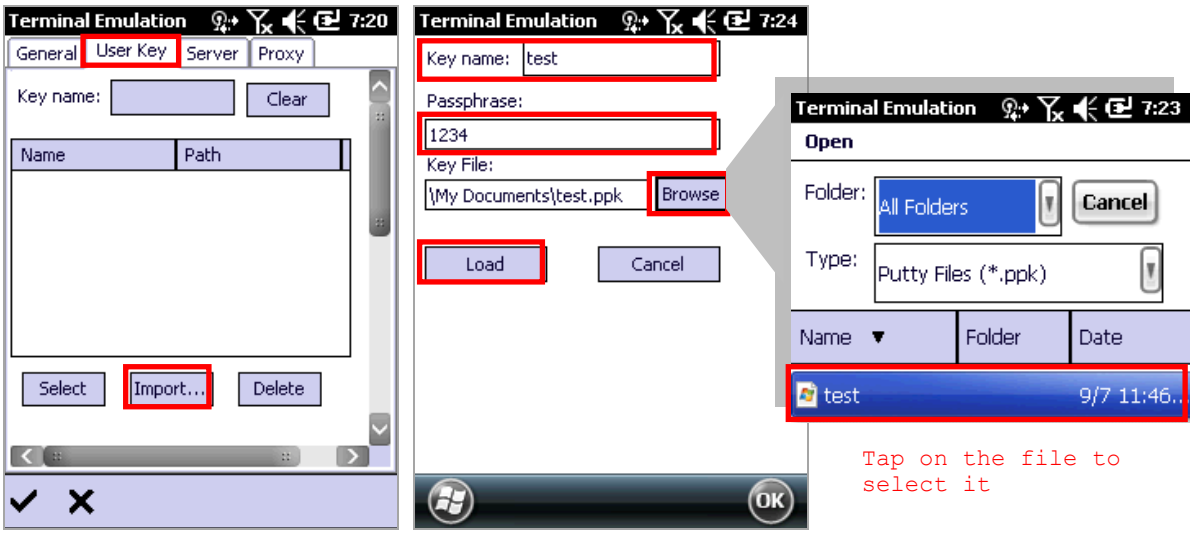
OR

Load a profile key:

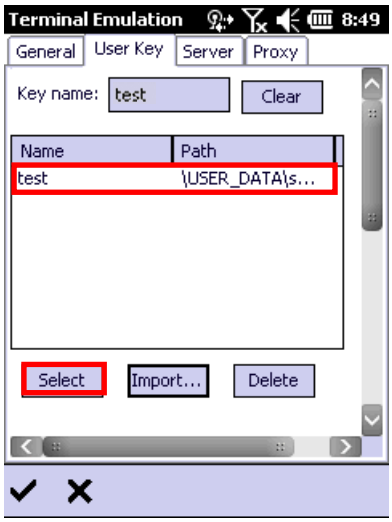
4) Transfer a key file (*.pem or *.ppk) to your mobile computer.
5) Under **Authentication**, select **Public key**, and then tap "**Advanced**".

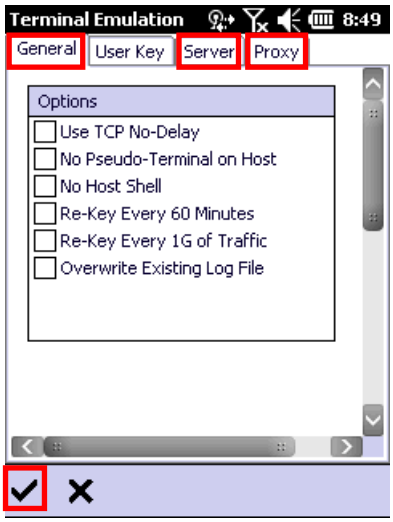


6) Select **User Key** tab, and then tap on "**Import**", key in a new name for this key file in **Key name** field and the password to access this key file in **Passphrase** field (this value can be blank), tap "**Browse**" to select the key file, and then tap "**Load**"

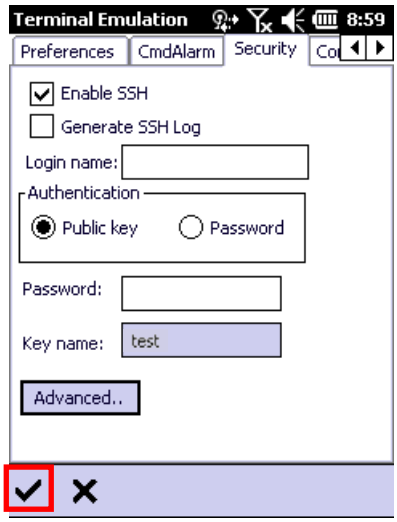


7) Returning to previous page, the key file will appear on the list, tap on it and then "**Select**". You can configure other properties on General, Server and Proxy tabs if needed. After finishing setting, tap on to apply changes and return to Security tab page.





On Security tab page, tap on the title bar of the window to apply changes and quit settings. The configuration will be remembered, and you won't have to set the settings again at next logon.

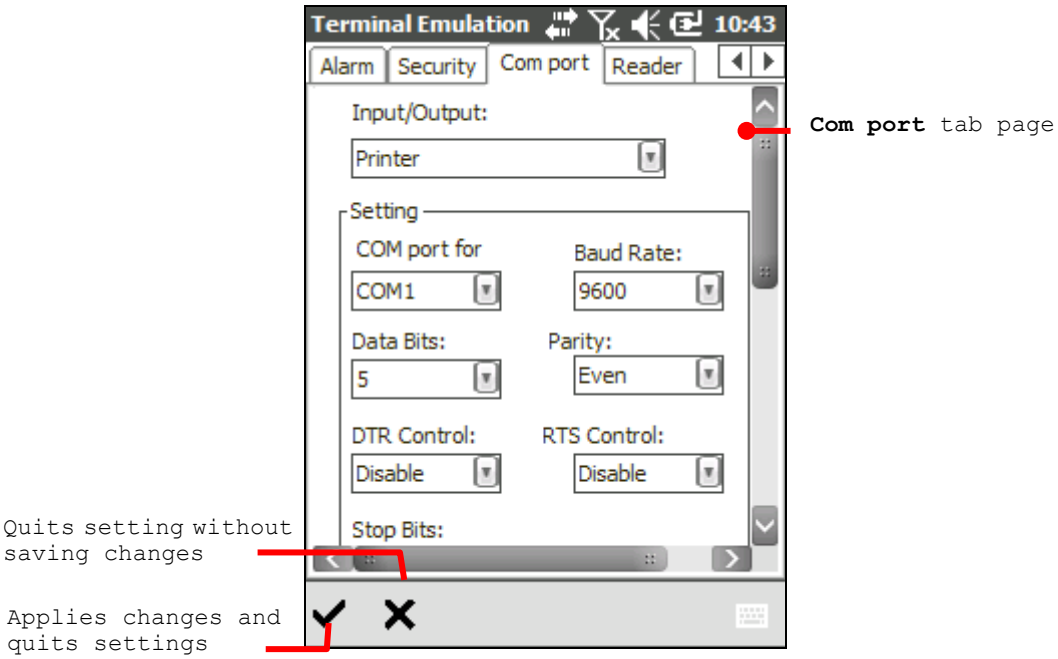


COM PORT TAB PAGE

On the **Com port** tab page, **Terminal Emulation** enables the mobile computer to connect a mobile printer or an external printer.

To open **Com port** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **Com port** tab.



Featured settings on **Com port** tab page:

Setting	Description	Default
Input/ Output	Connects a mobile printer to output data or an external scanner to input data through RS232 connections. Options are: ▸ Printer ▸ Receive data from Ext. Scanner	Printer
Setting	A group box for settings required for serial connections through RS232.	

Setting	Description	Default
COM port for	COM port stands for Communication port. It might refer not only to physical ports, but also to virtual ports, such as ports created by Bluetooth or USB-to-serial adapters. Options are: ▸ COM1 ▸ COM2 ▸ COM3 ▸ COM4 ▸ COM5	COM1

		▸ COM6 ▸ COM7 ▸ COM8 ▸ COM9	
	Baud Rate	The baud rate is the rate at which information is transferred in a communication channel. In the serial port context, for example, "9600 baud" means that the serial port is capable of transferring a maximum of 9600 bits per second. Options are: ▸ 9600 ▸ 14400 ▸ 19200 ▸ 38400	9600
	Data Bits	You can configure Data Bits to be 5, 6, 7, or 8. Data is transmitted as a series of five, six, seven, or eight bits with the least significant bit sent first. At least seven data bits are required to transmit ASCII characters. Eight bits are required to transmit binary data. Five and six bit data formats are used for specialized communications equipment. Options are: ▸ 5 ▸ 6 ▸ 7 ▸ 8	5
	Parity	Parity is a method of detecting errors in transmission. The parity bit in each character can be set as below. Options are: ▸ Even ▸ Mark ▸ None ▸ Odd ▸ Space	Even
	DTR Control	DTR stands for Data Terminal Ready. DTR is a control signal in RS-232 serial communications. Options are: ▸ Disable ▸ Enable ▸ Handshake	Disable
	RTS Control	RTS stands for Request To Send. RTS is a signal sent by a communications device, such as a modem, to verify if the other device is ready for data reception. Options are: ▸ Disable	Disable

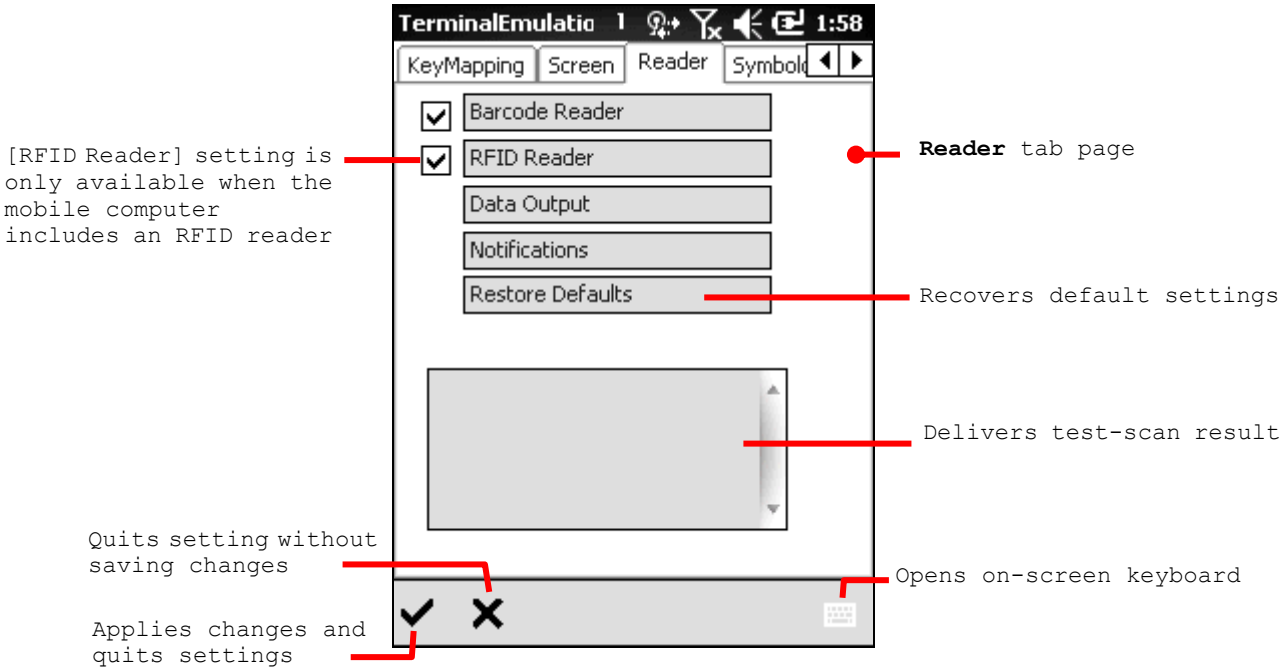
		▸ Enable ▸ Handshake ▸ Toggle	
	Stop Bits	Stop bits are a way for a computer to "catch its breath" while sending or receiving data, while still letting the other end know that the connection is still there and is still valid; they're also used in error detection. Stop bits are rather like parity bits. Options are: ▸ 1 ▸ 1.5 ▸ 2	1
	CTS out	CTS stands for Clear To Send. CTS is the signal between computers that indicates that transmission can proceed.	Deselected
	DSR out	DSR stands for Data Set Ready. DSR is an RS-232 signal sent from the modem to the computer or terminal indicating that it is able to accept data.	Deselected
	XOnOff Xmit	Indicates whether XON/XOFF flow control is used during transmission.	Deselected
	XOnOff Recv	Indicates whether XON/XOFF flow control is used during reception.	Deselected

READER SETTINGS FOR CP50

On CP50, **Reader** tab page tunes reader module(s) to read data exactly the way you wish them to.

To open **Reader** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **Reader** tab.



This page is where all reader settings are accessed from (except symbologies settings). **Reader** tab page presents settings with rectangle GUI buttons and check boxes. The rectangle GUI buttons can be tapped to open their respective setting page. A field is also featured to deliver test-scan results.

Featured settings on **Reader** tab page:

Setting	Facility	Description	Default
Barcode Reader	Check box	Enables/disables 1D (laser) reader or 2D imager.	Selected
	GUI button	Opens a page that sets barcode reading.	--
RFID Reader	Check box	Enables/disables RFID scan engine ▸ Available only when RFID reader is integrated	Selected
	GUI button	Opens a page that sets RFID reading. ▸ Available only when RFID reader is integrated	--
Data Output	GUI button	Opens a page that sets how to output decoded data, i.e. the output format.	--
Notifications	GUI button	Opens a page that sets how to notify users of good read.	--
Restore Defaults	GUI button	Recovers default settings.	--
Test-scan field		Delivers user's test-scanned data including the following:	--

	▸ Printed barcodes: barcode type and barcode data ▸ RFID tags: tag type, UID, user data	

BARCODE READER

Barcode Reader check box is selected by default, which means the printed barcode reader, either 1D (laser) reader or 2D imager, is enabled. Deselect the check box to disable barcode reader. This is occasionally needed when an RFID reader coexists on the mobile computer and you only want RFID tags to be read, lest printed barcodes should be read and decoded.

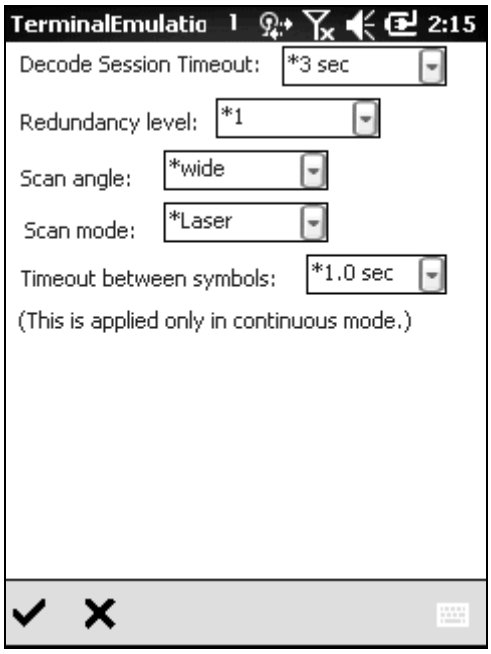
Save for a check box to enable/disable the printed barcode reader, **Barcode Reader** also features a setting page to control the 1D (laser) reader or 2D imager on the mobile computer. Tap **Barcode Reader** button to open **Barcode Reader** setting page.

To open **Barcode Reader** setting page:

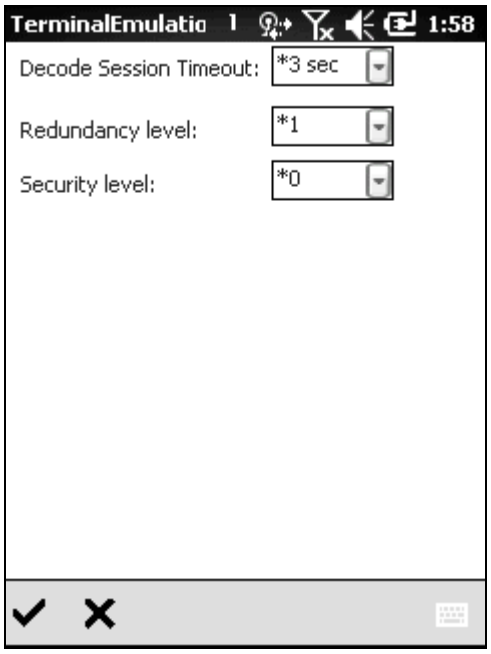
1) Open **Reader** tab page as described in Reader Settings for CP50.
2) Tap **Barcode Reader** button.

   Barcode Reader setting page opens in context with the available barcode reader module on the mobile computer. Featured settings for 1D (laser) reader and 2D imager are different:

Settings for 1D (laser) reader



Settings for 2D imager



The settings are detailed as follows.

1D (LASER) READER SETTINGS

Setting	Description	Default
Decode Session Timeout	Defines the maximum time for a decoding act. 1 through 9 sec configurable.	3 sec
Redundancy level	Sets how many successful readings are required before a barcode can be decoded.	1
Scan angle	Sets the scan angle for 1D laser scan engine.	Wide
Scan mode	Sets the reader's scanning behaviour. Options	Laser

	available are Continuous and Laser modes.	
Timeout between symbols	Sets the time for barcode reader to resurrect its ability to once more decode a barcode it just decoded. ▸ Only available for Continuous mode.	1.0 sec

2D IMAGER SETTING

Setting	Description	Default
Decode Session Timeout	Defines the maximum time for a decoding act. 1 through 9 sec are configurable.	3 sec.
Redundancy level	Sets how many successful readings are required before a printed barcode can be decoded.	Level 1
Security Level	Sets the security level to ensure decoding accuracy considering the printed quality of barcodes such as Code 128, Code 93, and UPC/EAN. The higher the level is, the more security is ensured. Options available are: **Level** / **Description** 0 — With this default, the scan engine is aggressive enough to decode most "in-spec" barcodes. 1 — Select this level if misdecodes have occurred. This level fixes most misdecodes. 2 — Select this level if Level 1 should fail to eliminate misdecodes. 3 — Select this level if Security Level 2 should fail to prevent misdecodes. ▸ As this level actually impairs the decoding ability of a scan engine to reduce misdecoding, it'd be better to improve barcode's print quality than use this level if this level should be needed.	Level 0

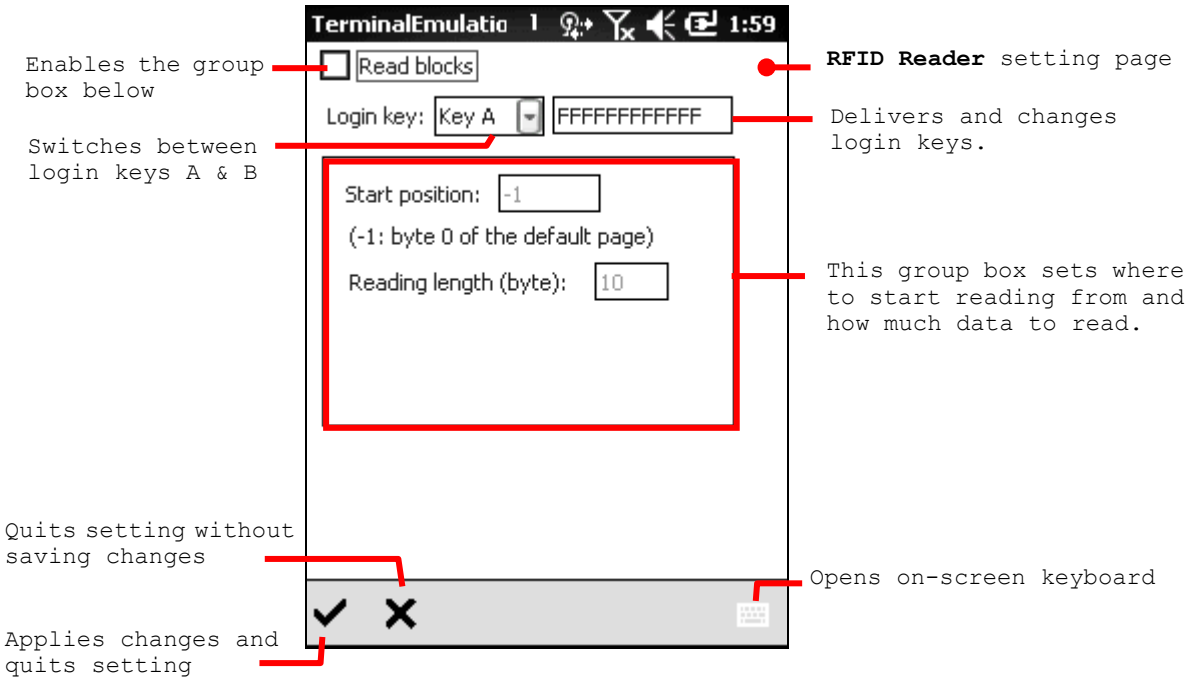
RFID READER

If an RFID reader is detected when Terminal Emulation launches, RFID reader setting becomes available.

RFID reader setting presents a check box and a rectangle button. The check box is selected by default. Deselect it to disable RFID reader. This is occasionally needed when you only want to read printed barcodes, lest RFID tags should be read and decoded. The rectangle button can be tapped to open a setting page that tunes RFID reading.

To open **RFID Reader** setting page:

1) Open **Reader** tab page as described in Reader Settings for CP50.
2) Tap **RFID Reader** button.



Note Terminal Emulation supports "reading" RFID tags only. To write data to RFID tags, use Reader Configuration instead.

Settings on **RFID Reader** setting page are detailed as follows:

Setting	Description	Default
Read blocks	Enables **Start position** and **Reading length (byte)** settings, which set where to collect and how many data to collect.	Deselected (Disabled)
Login Key	Normally there are two keys to justify an RFID reader to access an RFID tag. This setting includes a drop box and a text field. The drop box switches between keys A and B while the field delivers and changes each key. In default state, both keys are a sequence of twelve "F" characters because these are Mifare tag's factory default for keys A and B. ▸ Change the login key(s) by entering the prospective key(s) in the field. Note each key must be a hex string with 12 bytes.	Key A & FFFFFFFFFFFF
Start Position	Defines where to start reading from.	-1

	▸ The default is -1, which means the RFID reader starts reading from byte 0 of the default block. ▸ **Start position** is only available when **Read blocks** is selected ▸ Different RFID tags may have different default blocks (also "pages"), and different amount of bytes and number of blocks. See Appendix IV: HF RFID Reader to know RFID Tag Default Block.	(default block, byte 0)
Reading length (byte)	Defines how many bytes of data to read. ▸ **Reading length (byte)** is only available when **Read blocks** is selected	10 (bytes).

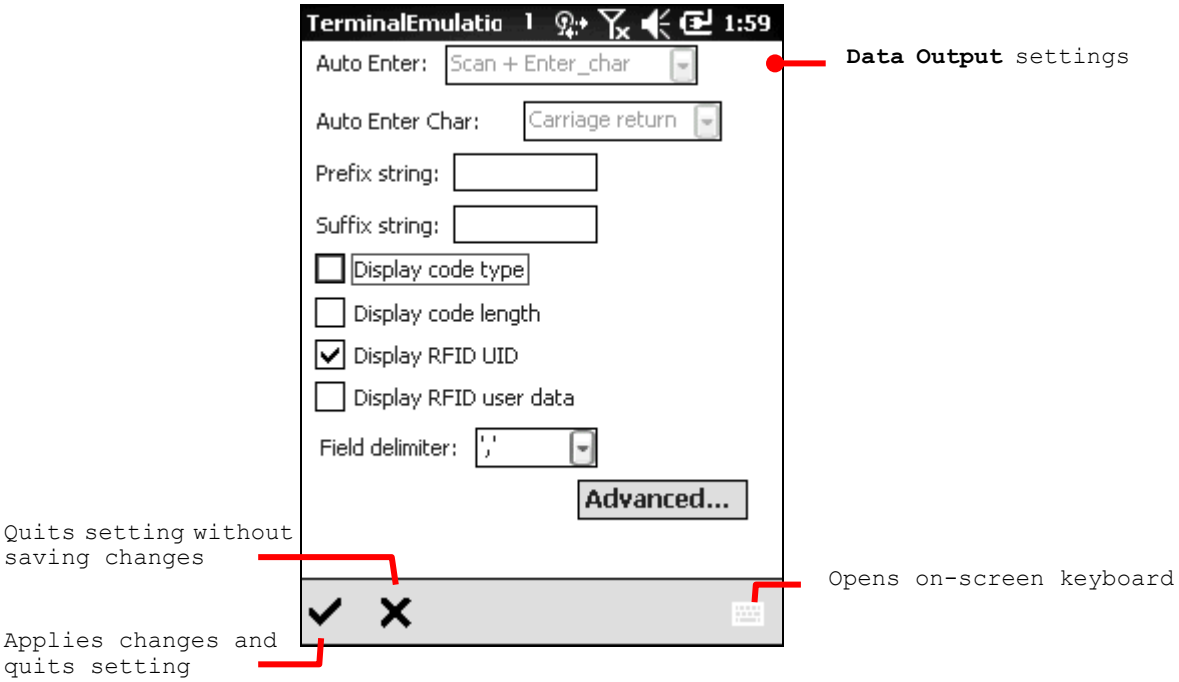
DATA OUTPUT

Data Output sets how to output decoded data. Simply put, it formulates the precise form to present the decoded data.

Data Output is available only when **Barcode Reader** is selected on **Reader** tab page.

To open **Data Output** setting page:

1) Open **Reader** tab page as described in Reader Settings for CP50.
2) Select **Barcode Reader** if you haven't.
3) Tap **Data Output** button.

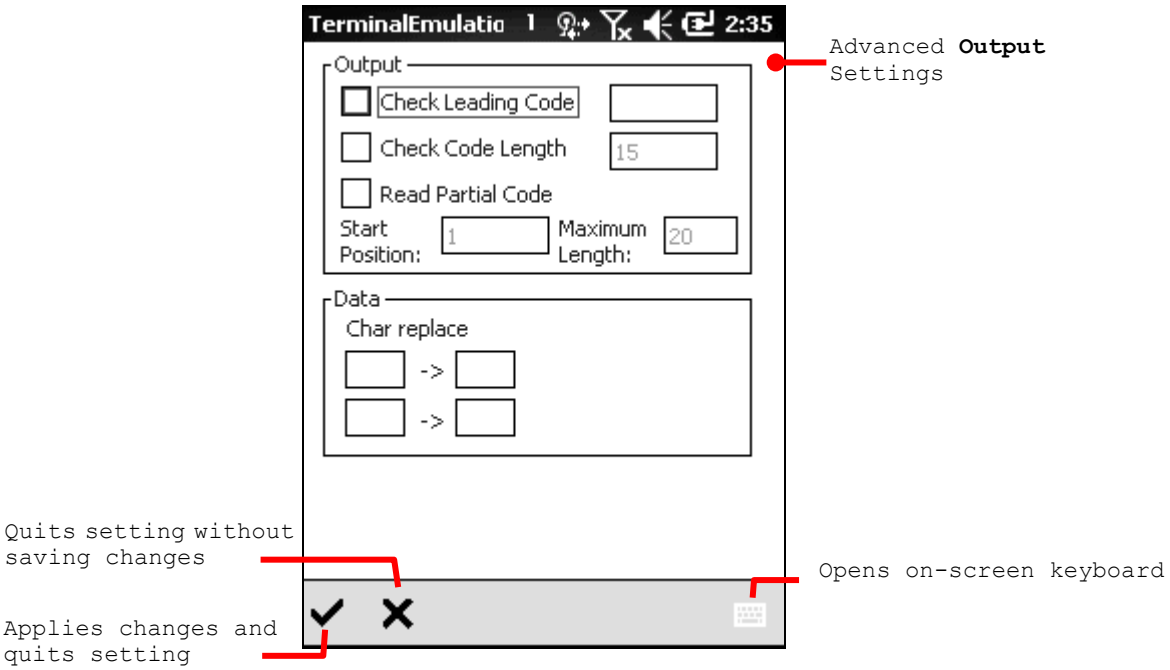


Featured settings are:

Setting	Description	Default
Auto Enter	Auto-adds an ENTER character before or after each scanning act. This function saves the trouble pressing [Enter] key to confirm each scan. Options are: ▸ None ▸ Scan + ENTER ▸ ENTER + Scan	Scan + Enter
Auto Enter Char	Adds a character before or after the decoded data. Options are: ▸ None ▸ Carriage Return ▸ Tab ▸ Space ▸ Comma ▸ Semicolon This setting is only available when **Auto Enter** is enabled.	Carriage Return
Prefix String	Affixes 1 to 9 characters to the left of the output data.	--
Suffix String	Affixes 1 to 9 characters to the right of the output data.	--
Display Code Type	Prefixes the output data with code type data.	Deselected (Disabled)
Display Code Length	Suffixes the output data with code length data.	Deselected (Disabled)
Display RFID UID	Outputs the UID of the RFID tag to read. ▸ Setting available only when RFID reader is available.	Selected (Enabled)
Display RFID User Data	Outputs the user data of the RFID tag to read. ▸ Setting available only when RFID reader is detected	Deselected (Disabled)
Field Delimiter	Sets the delimiter that separate an output data to pieces. ▸ For printed barcodes: This delimiter separates code type, decoded barcode data, and code length (if code type and code length are applicable.) ▸ For RFID tags: This delimiter separates UID and user data if both are applicable.	` , ’ (comma)
Advanced…	Opens advanced output settings. See Advanced Output Setting for details.	--

ADVANCED OUTPUT SETTINGS

More settings are provided to handle decoded data.



Setting	Description	Default
Check Leading Code	Verifies decoded data's "leading code", the character(s) the decoded data starts with. ▸ Define the code to verify against in the text field, which can be tapped to open a Grid Control. ▸ If the "leading code" in question fails verification, the decoded data is rejected.	Deselected (Disabled)
Check Code Length	Verifies decoded data length. ▸ Define the maximum length allowed, 15 characters by default, in the attached field. ▸ Decoded data longer than the assigned maximum is rejected.	Deselected (Disabled)
Read Partial Code	Outputs only part of the decoded data. ▸ If disabled (the default), complete decoded data is output. ▸ The attached fields define which part of the decoded data to output: **Field** / **Description** Start Position — Defines where to start outputting from. Maximum Length — Defines how many characters to output at the most.	Deselected (Disabled)
Char replace (for VT emulation only)	Defines the characters to replace and be replaced in the decoded data.	--
Last Field Suffix	Select to add a suffix code at the end of the decoded data	Undefine

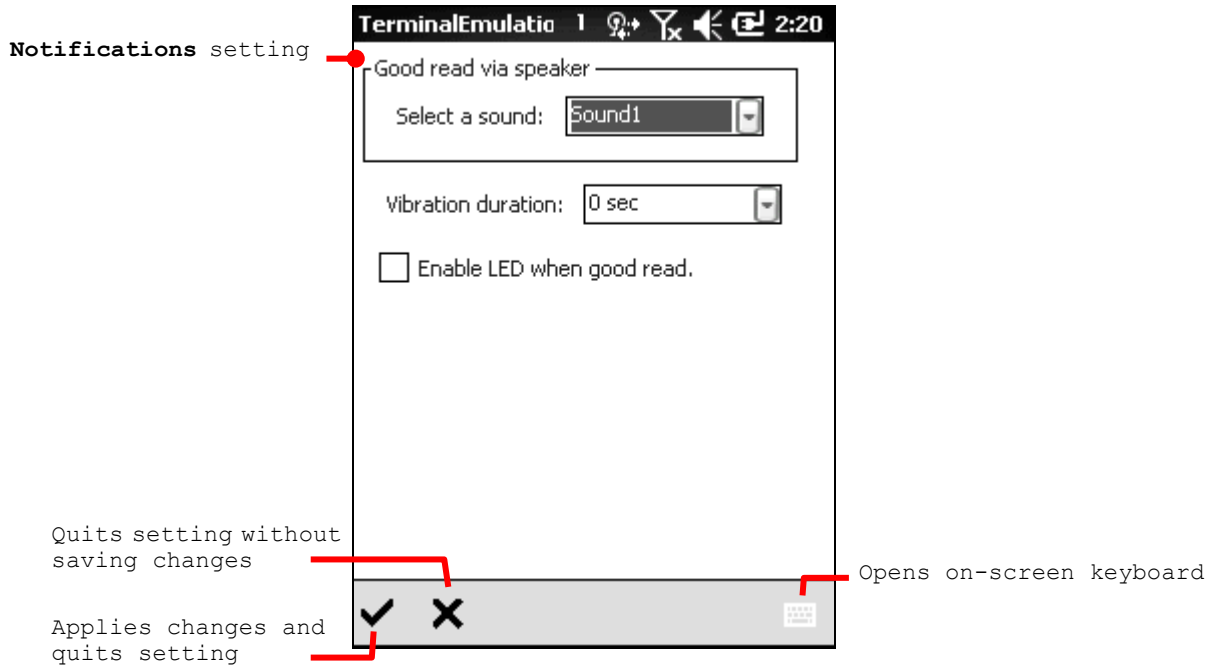
(for TN emulation only)	for the last input field only. For example, you may use this setting to automatically add "ENTER" to the last field.	
Other Field Suffix (for TN emulation only)	Select to add a suffix code at the end of the decoded data for all input fields other than the last. For example, you may use this setting to automatically add "NEXT" to the each of the fields so it can advance to the next field (unless it is already the last).	Undefine

NOTIFICATIONS

Notifications controls if a successful decoding (good read) is made known through audible, visible or tactile feedback.

To open **Notifications** settings:

1) Open **Reader** tab page as described in Reader Settings for CP50.
2) Tap **Notifications** button.



Featured settings on **Notifications** setting page:

Setting	Descriptions	Default
Good read via speaker	Enables/disables the speaker to sound for good read. Sounds 1 to 9 are configurable.	Enabled (Sound 1)
Vibration duration	Enables/disables tactile feedback for good read and sets duration. Configurable duration is 0 to 5 seconds.	Disabled (0 sec)
Enable LED when good read	Enables/disables the mobile computer's Green LED to light for good read.	Deselected (= disabled)

RESTORE DEFAULTS

Restore Defaults restores all settings to default state.

To use **Restore Defaults**:

1) Open **Reader** tab page as described in Reader Settings for CP50.
2) Tap **Restore Defaults** button.

   Defaults are recovered.

TEST-SCAN FIELD

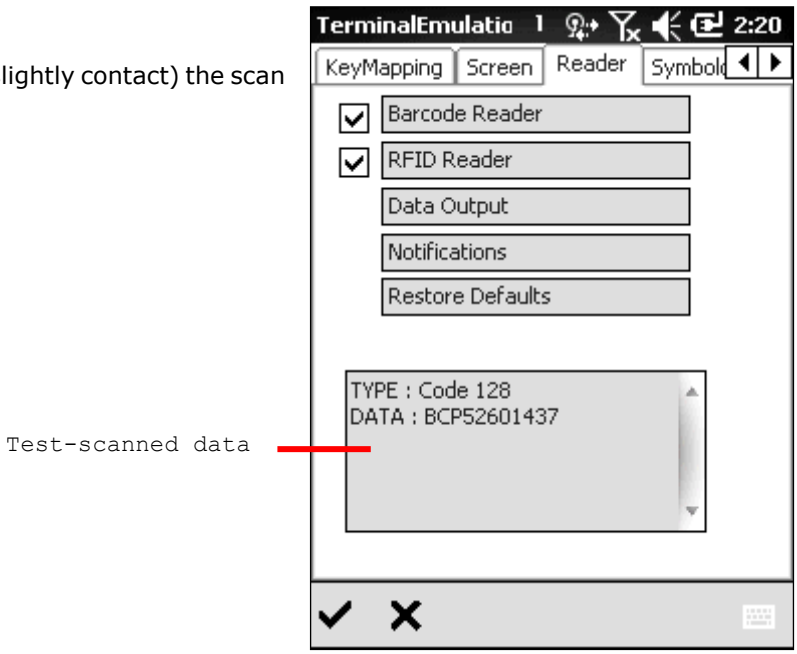
Reader tab page presents a field to deliver user's test-scan result.

To use test-scan field:

1) Open **Reader** tab page as described in Reader Settings for CP50.
2) Test-scan any printed barcode by pointing the scan window at the barcode to read and pressing physical scan button or either side trigger.

   OR

   To test-read an RFID tag, tap (slightly contact) the scan window with the RFID tag.



The test-scan field then delivers the scanning result including decoded data and barcode type for printed barcodes or tag type, UID and user data for RFID tags.

SYMBOLOGIES TAB PAGE

Symbologies tab page sets the symbologies to read, and enables/disables some feature(s) for a symbology to read such as:

- Customize/transmit start/stop characters
- Verify and transmit check digits
- Enable/disable add-on digits
- Convert to another symbology
- Transmit symbology ID

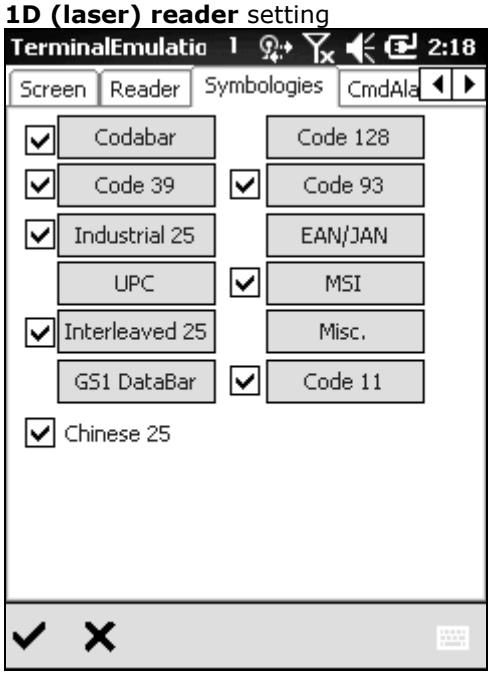
To open **Symbologies** tab page:

1) Open **Settings** submenu as described in Settings.
2) Tap **Symbologies** tab

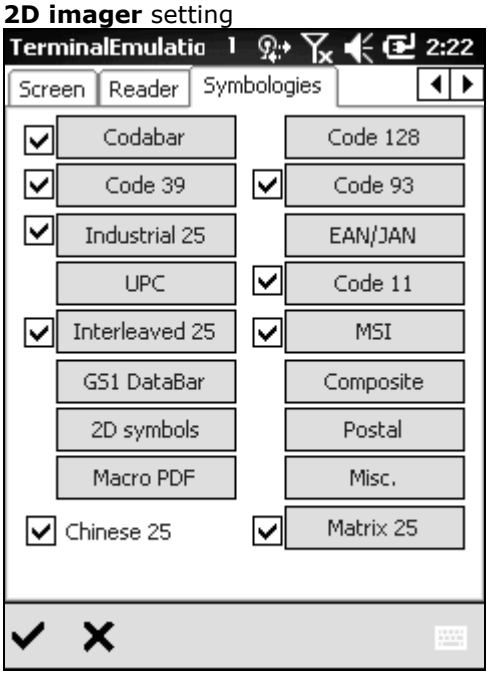
   Symbologies tab page opens in context with the available barcode reader on the mobile computer, a 1D (laser) reader or 2D imager.

   Featured settings for 1D (laser) reader and 2D imager are different:

1D (laser) reader setting



2D imager setting



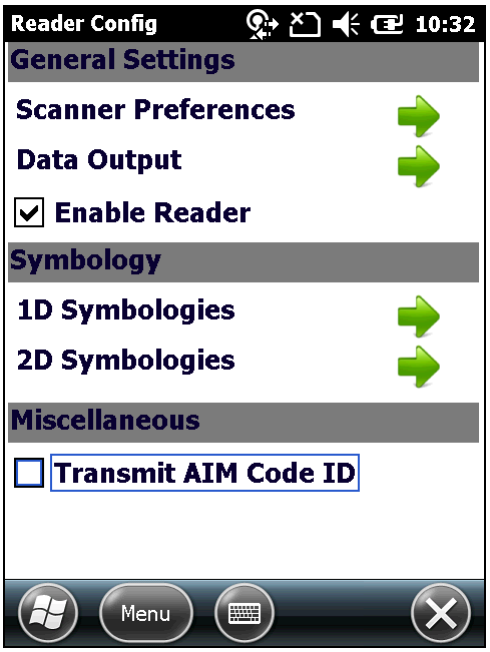
For details about the featured symbologies:

- See Appendix II: 1D (Laser) Reader Symbology Settings For CP50/9200.
- See Appendix III: 2D Imager Symbology Settings For CP50.

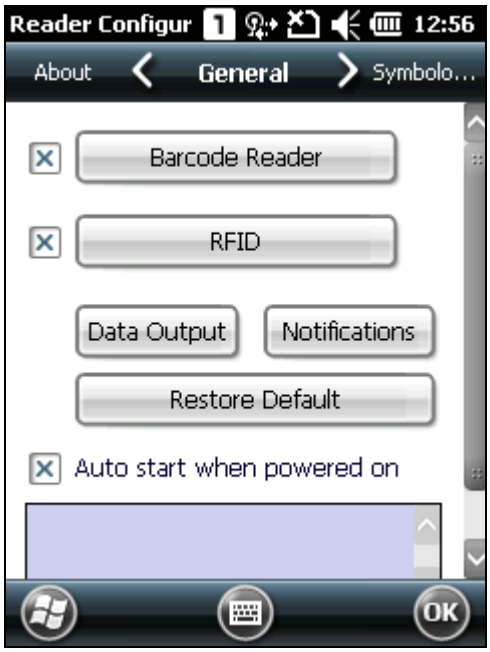
READER SETTINGS FOR CP60/9200

On CP60 and 9200, tapping the **Menu** | **Option** | **Settings** | **Reader** tab page will open the Reader Configuration utility on the mobile computer (same as tapping **Start Screen** | **Settings** | **System** | **Reader Configuration**). For the settings provided, see the Reference Manual of the specific mobile computer.

Reader settings for CP60 mobile computer



Reader settings for 9200 mobile computer

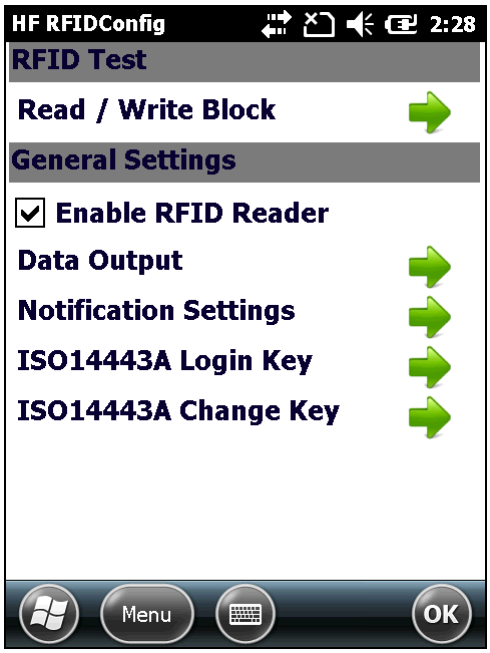


For details about the featured symbologies:

- See Appendix I: CCD Reader Symbology Settings for 9200
- See Appendix II: 1D (Laser) Reader Symbology Settings For CP50/9200 and Symbology Settings For CP60
- See Appendix III: 2D Imager Symbology Settings For CP50 and Symbology Settings for CP60/9200

RFID SETTINGS FOR CP60

If your CP60 mobile computer is equipped with an RFID reader, an **RFID** tab page will be available in the **Settings** window. Tapping the **Menu** | **Options** | **Settings** | **RFID** tab page will open the HF RFID Configuration utility on the mobile computer (same as tapping **Start Screen** | **Settings** | **System** | **HF RFID Configuration**). For details on the provided settings, see the CP60 Reference Manual.



Featured settings are:

Setting	Description
Read/Write Block	Read data from or write data to an RFID tag.
Data Output	Opens a page that sets how to output decoded data, i.e. the output format.
Enable RFID Reader	Check to enable/disable the RFID reader.
Notification Settings	Sets how to give notice of a good read.
ISO14443A Login Key	Enter the security keys A and B in order to access data blocks on a Mifare tag.
ISO14443A Change Key	Change the security keys A and B for a Mifare tag.

4.1.2. KEY

Key submenu opens a screen with emulation-specific keys corresponding to the active session type. These keys can be tapped on-screen to deliver particular performances in case users need them during a telnet session. Hence **Key** submenu is only available when a telnet session is active.

When a telnet session is active, to use one of the emulated terminal's function keys:

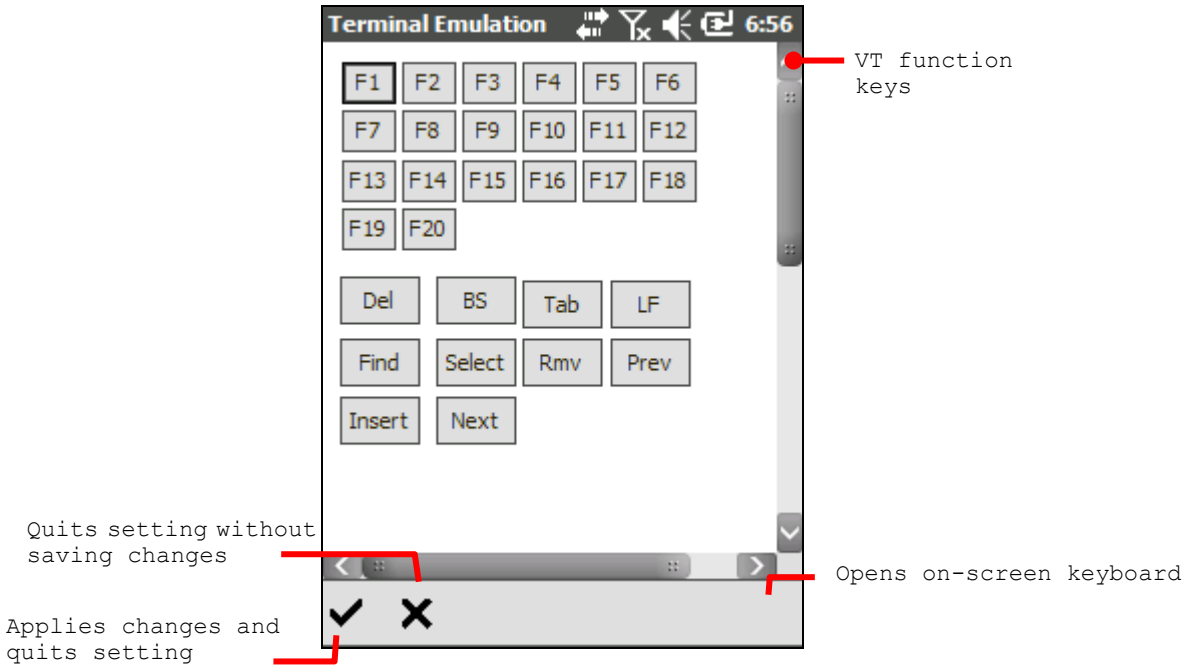
1) Tap **Menu** | **Option** | **Key.**

   An on-screen keypad opens.

2) Tap any one of the displayed keys.

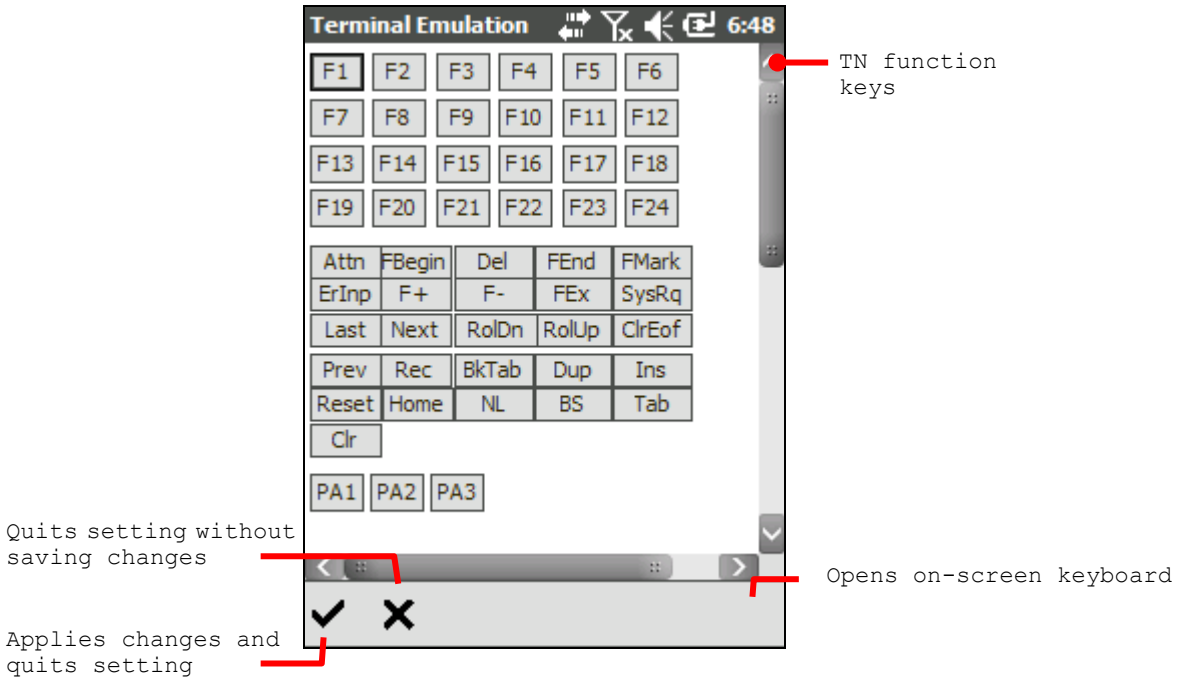
   Featured keys are different for VT and TN:

VT ON-SCREEN FUNCTION KEYS



VT Host Keys	
F1~F20	VT function keys
Del	Delete
BS	Backspace
Tab	Tab
LF	Line Feed
Find	Find
Select	Select
Rmv	Remove
Prev	Jump to Previous field
Insert	Insert
Next	Jump to next field

TN ON-SCREEN FUNCTION KEYS



5250 Host Keys	
F1~F24	TN Function keys
ATTN	Attention key
FBegin	Go to the beginning of a field
Del	Delete character at cursor, and keep the cursor position
FEnd	Go to the end of a field
FMark	Field Mark
ErInp	Erase all input fields
Field+	Field+ key
Field-	Field- key
FExit	Field Exit key
SysRq	System Request
Last	Position cursor after the last character in a field
Next	Jump to next field
RolDn	Send Page Down (roll up) key to IBM Host
RolUp	Send Page Up (roll down) key to IBM Host
ClrEof	Clear End of Field

Prev	Jump to the beginning of the current field, or jump to the previous field if already at the beginning of a field
Rec	Record Backspace (home)
BkTab	Back Tab
Dup	Duplicate
Ins	Insert
Reset	Reset
Home	Home
NL	New Line
BS	Backspace
Tab	Tab
Clr	Clear
PA1	TN3270 Function key
PA2	TN3270 Function key
PA3	TN3270 Function key

4.1.3. FULL SCREEN

Use the full screen icon  on the toolbar to switch the Terminal Screen to a maximized scale, in which the toolbar is stripped from the screen.

During full screen view, a resize icon  shows by default to quit maximization and bring Terminal Screen back to its original scale.

To further enlarge the screen display area, disable the OS title bar on the maximized screen. Alternatively, users can select whether to display icons to indicate battery level and Wi-Fi signal strength.

Resize icon: 

Battery level icons: 

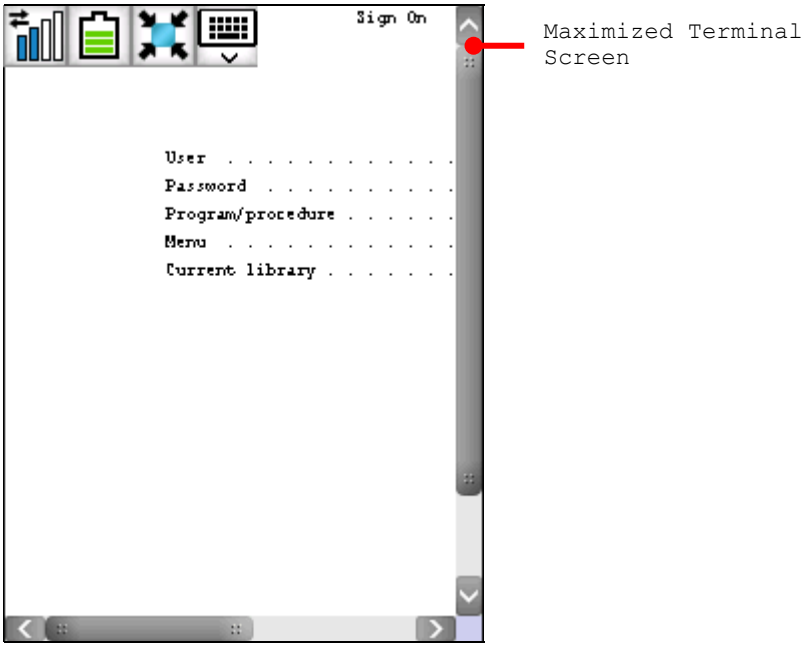
Wi-Fi signal strength icons: 

SIP icon: 

Icon size: Small, Medium, and Large.

ACTIONS TO TAKE ON FULL SCREEN

There are some actions to take on maximized Terminal Screen. These actions help improve Terminal Emulation's performance during Terminal Screen maximization.

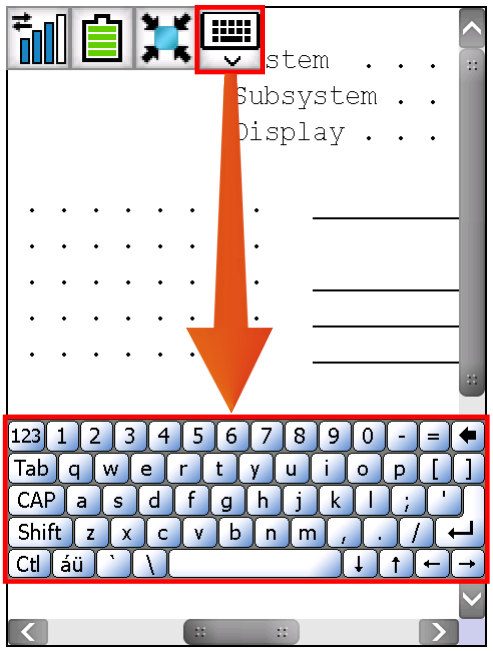


QUIT MAXIMIZATION

To quit full screen mode, double-tap the resize icon . The Terminal Screen will reappear on the screen in its normal scale.

OPEN ON-SCREEN KEYBOARD

Double-tap the SIP icon to open the onscreen keyboard for text input. Double-tap the icon once more to close the onscreen keyboard.



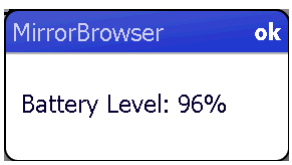
If Set HW key (SHIFT+ESC) to control SIP is selected under **Screen** tab page, you may also press Shift+Esc on the physical keypad to open or close the on-screen keyboard.

RELOCATE ICONS

By default, the resize icon, battery level icon and Wi-Fi signal strength icon will appear in the upper-left corner of the screen. These icons are movable and can be individually relocated to a better position on-screen. Simply drag and drop the icon to move it to the desired position.

VIEW BATTERY LEVEL & WI-FI SIGNAL

The graphical icons for battery and Wi-Fi only roughly sketch the battery level and Wi-Fi signal strength. To view the precise percentage of the battery level or Wi-Fi signal strength, double-tap the icon in order to pop up a dialog which delivers the precise percentage.



See also Optimize Maximization.

4.2. CONFIG FILE

Terminal Emulation settings can be saved in a configuration file (.json format). This config file stores application settings, saved as **TE_Settings.json** in the mobile computer's internal storage under: **My Device\Windows\CipherLabSettings\TerminalEmulation**

To handle configuration files:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **Config File**.

Config File features four menu items as follows:

Submenu	Description
Load	Loads configuration files (.json format) from internal storage of the mobile computer.
Save	Updates current settings to the loaded configuration file.
Save As…	Saves current settings as a new configuration file. ▸ Enter a name for the file to save, and select the storage location and folder to put the file in.
Set Config File…	Changes the path to load configuration files.

Note: **All Folders** directory refers to all folders under **My Device\My Documents**. If no subfolder is selected upon export, the exported file will be stored directly under this directory.

4.3. ACCESS CONTROL

Terminal Emulation allows setting up a password mechanism to prevent unauthorized access of application settings, or leaving the application without authorization.

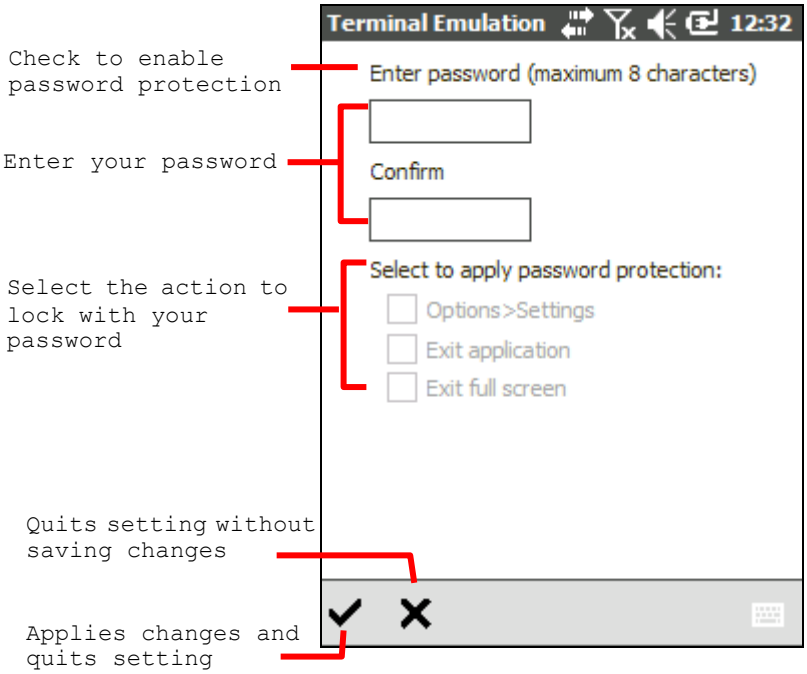
To enable access control:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **Access Control**.

   Access Control page opens providing the following items:

Item	Description
Enter password/ Confirm password	Enter the password in the two text fields.
Select to apply password protection	Select the action for which you would like to set up password protection: ▸ Option > Settings (unauthorized users will be unable to access the Settings submenu) ▸ Exit application (unauthorized users will be unable to exit the application) ▸ Exit full screen (unauthorized users will be unable to exit the full screen)

3) After setting up password protection as desired, tap ✔ to apply changes and quit settings.



4.4. CONNECT/DISCONNECT

The items **Connect**/**Disconnect** in the Menu can connect/disconnect the session to/from the host service. They deliver the exact same functions as the buttons  on the toolbar.

To connect to a host service:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **Connect**.

   Terminal Emulation proceeds to connect to the prospective service.

   Menu item **Connect** delivers the same function as the  icon on the toolbar.
3) Hot key for 9700 series only: Shift+ Green key

To disconnect from a host service:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **Disconnect**.

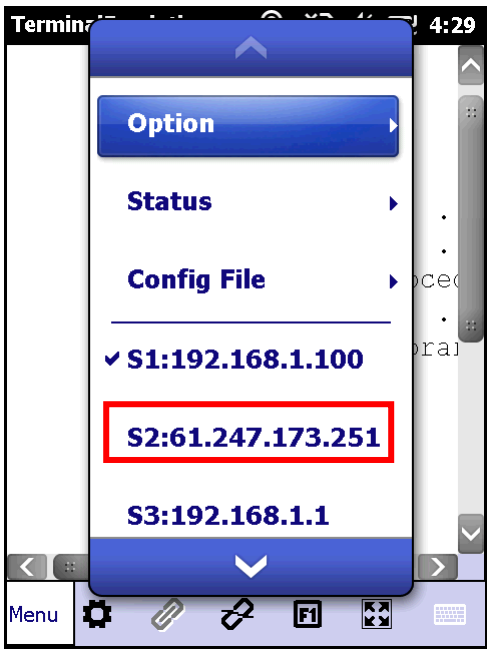
   Terminal Emulation proceeds to disconnect from the service.

   Menu item **Disconnect** delivers the same function as the  icon on the toolbar.
3) Hot key for 9700 series only: Shift+ Red key

4.5. HOST SESSION

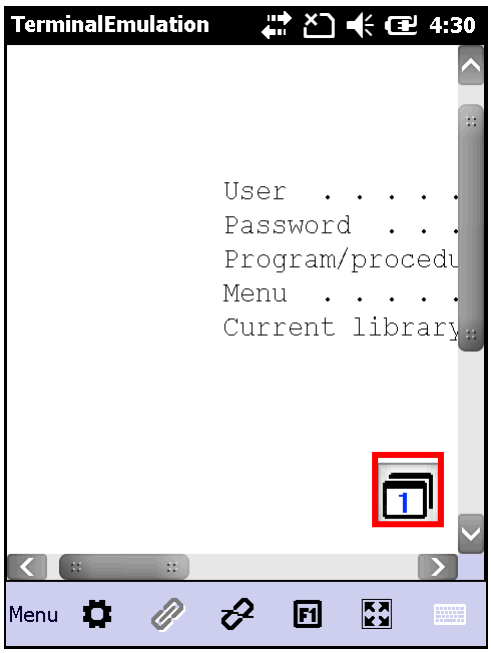
On activated devices, you may create up to five host connections, named terminal emulation "sessions". Each of these sessions can be connected to the same or different host services at the same time.

Only one session can be displayed in the emulation screen. To switch the screen to another session, open **Menu** label and tap the menu item corresponding to the session of interest (marked as S1 to S5). Alternatively, enable the Session Icon (Activated Devices Only) by selecting **Menu** | **Settings** | **Screen** tab page | **Show Session Item**, and double-tap the icon on each session screen to jump to the next session. The session icon on-screen is respectively set for each session.



In the **Menu** list, the session currently open on-screen is indicated by a ✓. Tap another session item to switch to that session view.

OR



With **Show Session Item** enabled, double-tap the session icon on-screen to jump to the next session. The session icon on-screen is respectively set for each session.

Note:

(1) If your device has not been activated, only one session is available for setup. All four other sessions are disabled. However, if an is entered, up to five host connections (S1 to S5) will then be allowed, and you may proceed to connect and manage multiple host sessions.

(2) After each session switch, when restart TE, the active session from last time should be restored.

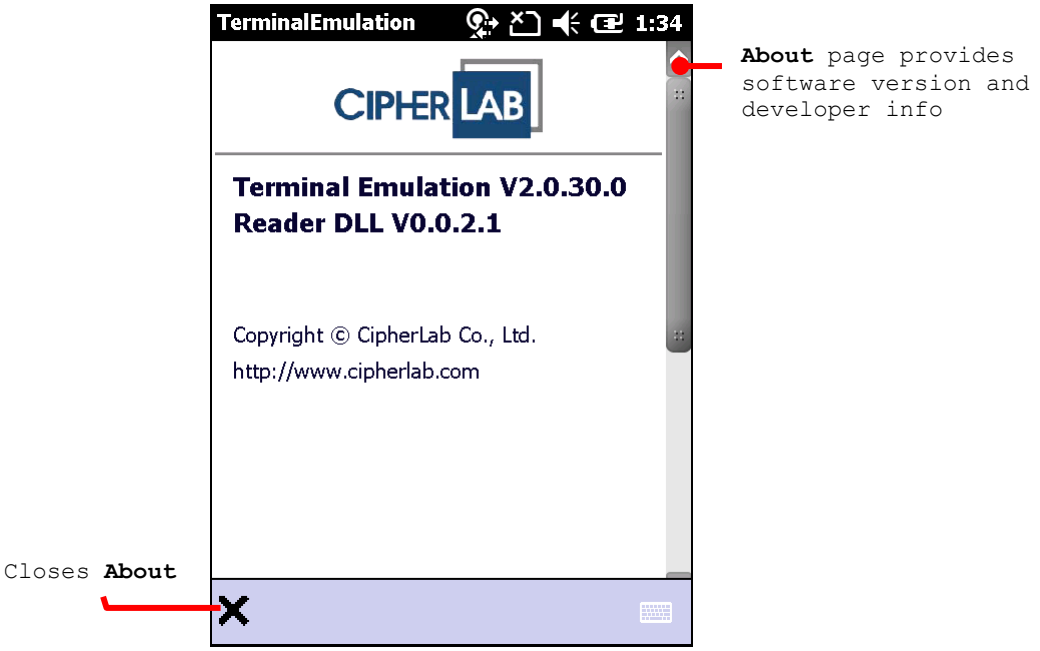
(3) On CP60, no activation key is required, as the mobile computer is activated by default.

4.6. ABOUT

About is a menu item to deliver developer info and version of Terminal Emulation and Reader DLL.

To view the said info:

1) Launch Terminal Emulation as described in Launch Terminal Emulation.
2) Tap **Menu** | **About**.



4.7. EXIT

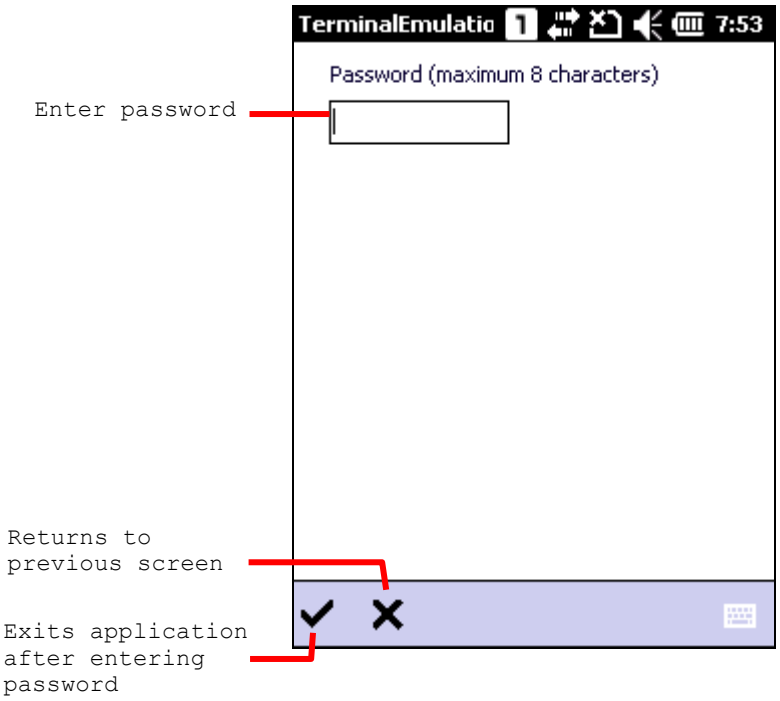
Exit is a menu item to close Terminal Emulation.

To close Terminal Emulation:

1) On Terminal Emulation, tap **Menu** | **Exit**.

   A warning dialog appears confirming whether to exit Terminal Emulation. Tap **OK** to exit, or tap tap **Cancel** to abort.

2) If a password is set up for exiting the application in Access Control, a password inquiry page will open showing a blank field to enter the password. Tap ✔ after you have entered the password to exit the application, or tap ✖ to cancel and return to the previous screen.



Appendix I

SCAN ENGINE SETTINGS

Terminal Emulation supports the following reader module(s). Reader availability depends on the hardware integrated on the mobile computer.

Scan Engine		ID	CP50	CP60	9200
1D	*CCD*	*SM1*			✓
1D	*Laser*	*SE955*	✓	✓	✓
2D	*2D Imager*	*PL4507*	✓	✓	✓
2D	*2D Imager*	*SE4500 Software Decode SDK*		✓	✓
RFID	*ID_MOD_MP_RFID*		✓		✓

Reader combination allowed is either 1D+RFID or 2D+RFID. For each combination, both readers can be initialized for scanning at the same time (dual mode operation). For example, if you press a physical scan key with Terminal Emulation active on the mobile computer, a barcode in position or an RFID tag in proximity is read depending on which comes first.

Note:

(1) 1D and 2D scan engines don't coexist on the mobile computer because they are both barcode readers and only one barcode reader is allowed on board the mobile computer.

(2) Close any other reader-controlling application before launching Terminal Emulation. For example, close MIRROR Browser or Reader Configuration, or any other application that accesses ReaderDLL before launching Terminal Emulation.

IN THIS CHAPTER

Symbologies Supported 77
RFID Tags Supported.....79

SYMBOLOGIES SUPPORTED

Depending on the integrated scan engine, the supported symbologies are different as listed below. For details on symbology configuration, refer to Appendix II and III.

		9200 CCD	9200 Laser CP30 Laser CP50 Laser CP60 Laser	9200 2D CP30 2D CP50 2D CP60 2D
Codabar		✓	✓	✓
Code 11		✗	✓	✓
Code 39	Code 39	✓	✓	✓
	Trioptic Code 39	✗	✓	✓
	Italian Pharmacode (Code 32)	✓	✓	✓
Code 93		✓	✓	✓
Code 128	Code 128	✓	✓	✓
	GS1-128 (EAN-128)	✓	✓	✓
	ISBT 128	✓	✓	✓
Code 2 of 5	Chinese 25	✗	✓	✓
	Industrial 25 (Discrete 25)	✓	✓	✓
	Interleaved 25	✓	✓	✓
	Convert Interleaved 25 to EAN-13	✗	✓	✓
	Matrix 25	✗	✗	✓
Composite Code	Composite CC-A/B	✗	✗	✓
	Composite CC-C	✗	✗	✓
	Compostie TLC 39	✗	✗	✓
GS1 ataBar (RSS)	GS1 DataBar-14 (RSS-14)	✓	✓	✓
	GS1 DataBar Limited (RSS Limited)	✓	✓	✓
	GS1 DataBar Expanded (RSS Expanded)	✓	✓	✓
	Convert to UPC/EAN	✗	✓	✓
MSI	Australian Postal	✓	✓	✓
Postal Codes	Japan Postal	✗	✗	✓
	Netherlands KIX Code	✗	✗	✓
	US Postnet	✗	✗	✓
	US Planet	✗	✗	✓
	UK Postal	✗	✗	✓

EAN/UPC	EAN-8	✓	✓	✓
	EAN-8 Extend	✓	✓	✓
	EAN-13	✓	✓	✓
	Bookland EAN (ISBN)	✓	✓	✓
	ISSN EAN	✗	✗	✓
	UPC-A	✓	✓	✓
	UPC-E	✓	✓	✓
	Convert to UPC-A	✓	✓	✓
	UPC-E1	✓	✓	✓
	Convert to UPC-A	✓	✓	✓
2D Symbologies	Aztec	✗	✗	✓
	Data Matrix	✗	✗	✓
	Maxicode	✗	✗	✓
	MacroPDF	✗	✗	✓
	MicroPDF417	✗	✗	✓
	MicroQR	✗	✗	✓
	PDF417	✗	✗	✓
	QR Code	✗	✗	✓

RFID TAGS SUPPORTED

Supported labels include ISO 15693, ISO 14443A, ISO 14443B and ISO 18092.

RFID TAGS SUPPORTED ON CP50

		UID Only	Read Page	Write Page
ISO 14443A	Mifare Standard 1K	✓	✓	✓
	Mifare Standard 4K	✓	✓	✓
	Mifare Ultralight	✓	✓	✓
	Mifare DESFire	✓	---	---
	Mifare S50	✓	✓	✓
	SLE44R35	✓	✓	✓
	SLE66R35	✓	✓	✓
ISO 14443B	SR176	✓	✓	✓
ISO 15693	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	✓	✓
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI512	✓	✓	✓

RFID TAGS SUPPORTED ON CP60

		UID Only	Read Page	Write Page
ISO 14443A	Mifare Standard 1K S50	✓	✓	✓
	Mifare Standard 4K S70	✓	✓	✓
	Jcop 41 (Mifare 1K & 4K compatible)	✓	✓	✓
	Mifare Ultralight (UL/ULC)	✓	✓	✓
	Mifare ProX	✓	✓	✓
	Mifare DESFire	✓	---	---
	Mifare Plus	✓	---	---
	Mifare S20 Mini	✓	✓	✓
	SLE 66CLX320P	✓	---	---
	SLE 55R04/08	✓	---	---
	Smart MX	✓	---	---
	Jewel	✓	✓	✓
	Topaz	✓	✓	✓

	Dual interface – ISO 14443A compliant	✓	---	---
ISO 14443B	SLE 6666CL160S	✓	---	---
	SR176	✓	✓	✓
	SRIX 4K	✓	✓	✓
	SLIX 4K	✓	✓	✓
	Dual interface – ISO 14443B compliant	✓	---	---
ISO 15693	EM 4135	✓	✓	✓
	ICode SLI	✓	✓	✓
	LRI12	✓	✓	✓
	LRI64	✓	✓	✓
	LRI128	✓	✓	✓
	LRI2K	✓	✓	✓
	SRF55VxxP	✓	✓	✓
	SRF55VxxS	✓	---	---
	Tag-it HF-I Std	✓	✓	✓
	TempSense	✓	---	---
	ICode1 with EAS & AFI	✓	✓	✓
	ICode	✓	✓	✓
FeliCa	Sony FeliCa	✓	---	---

RFID TAGS SUPPORTED ON 9200

		UID Only	Read Page	Write Page
ISO 14443A	Mifare Classic S50 1K	✓	✓	✓
	Mifare S50 1K UID 7 Bytes	✓	✓	✓
	Mifare Classic S70 4K	✓	✓	✓
	Mifare Ultralight (UL/ULC)	✓	✓	✓
	Mifare S20 Mini	✓	✓	✓
	Mifare DESFire V0.6 4K	✓	✓ Note	✓ Note
	Mifare DESFire EV1 2K/4K/8K	✓	✓ Note	✓ Note
	Mifare PLUS S 2K/4K	✓	✓ Note	✓ Note
	SLE 66R35	✓	✓	✓
ISO 14443B	SR176	✓	✓	✓
	SRI512	✓	✓	✓
	SRIX4K	✓	✓	✓

ISO 15693	I-CODE SLI-S/L	✓	✓	✓
	I-CODE SLIX	✓	✓	✓
	SRF 55V10P	✓	✓	✓
	SRF 55V02P	✓	✓	✓
	Tag-it HF-I Pro/Plus	✓	✓	✓

Note: To read/write data or support additional functions, users must obtain permission from the RFID chip manufacturer.

Appendix II

CCD (SM1)

IN THIS CHAPTER

Symbology Settings for 9200.....83

The tables below list the symbology settings for CCD barcode reader (SM1).

SYMBOLOGY SETTINGS FOR 9200

Laser Engine	Description	Default
Codabar		**Enable**
CLSI editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS editing	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	No
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 128		**Enable**
Code 128	Read standard Code 128 barcodes (= without leading FNC1 character).	Enable
GS1-128 (UCC/EAN-128)	Read GS1-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable
Code 39		**Enable**
Convert Code 39 to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. ▸ "Convert to Code 32" must be enabled for this to function properly.	No
Check digit verification	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit check digit	Decide whether to include the check digit in the data being transmitted. ▸ "Check digit verification" must be enabled.	No

Full ASCII conversion	Code 39 Full ASCII includes all alphanumeric and special characters (full ASCII character set).	No
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 93		**Enable**
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Industrial 25 (Discrete 25)		**Enable**
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
EN/JAN		**---**
Enable EAN-8		Enable
Enable EAN-13		Enable
Bookland EAN (ISBN)	EAN-13 barcodes starting with 978 will be converted to ISBN.	Enable
Enable Addons	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore Addons
Addons redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding of the same barcode that makes a valid reading.	10 times
EAN-8 extend	Convert EAN-8 to EAN-13 format.	No
UPC		**---**
UPC-A/UPC-E/UPC-E1	For the default value, the UPC-A and UPC-E are enabled.	Enable
Enable Addons	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore Addons
Addons redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
Transmit check digit	Decide whether to include the UPC-A/UPC-E/UPC-E1 check digit in the data being transmitted.	Yes
Convert UPC-E0/ UPC-E1 to UPC-A	The UPC-E0/UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
Transmit preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted.	System Character

MSI		**Enable**
Check digit verification	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digit is incorrect, the barcode will not be accepted. If Two Check Digits option is selected, select one of the algorithms below. ▸ Mod 10/Mod 11 ▸ Mod 10/Mod 10	Mod 10/Mod 10
Transmit check digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Interleaved 25		**Enable**
Check digit verification	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ Disable ▸ USS check digit ▸ OPCC check digit	Disable
Transmit check digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
GS1 DataBar (RSS)		**---**
GS1 DataBar-14	GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.	Enable
GS1 DataBar Limited		Enable
GS1 DataBar Expanded	This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.	Enable

Appendix III

LASER (SE955)

IN THIS CHAPTER

Symbology Settings For CP50/9200 86
Symbology Settings For CP60 91

The tables below list the symbology settings for 1D (laser) barcode reader (SE955).

SYMBOLOGY SETTINGS FOR CP50/9200

Laser Engine	Description	Default
CodaBar		**Enable**
CLSI editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS editing	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	No
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 128		**Enable**
GS1-128 (UCC/EAN-128)	Read GS1-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable
Code 39		**Enable**
Trioptic	Decide whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	No
Convert Code 39 to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. ▸ "Convert to Code 32" must be enabled for this to function properly.	No
Check digit verification	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No

Transmit check digit	Decide whether to include the check digit in the data being transmitted. ▸ "Check digit verification" must be enabled.	No
Full ASCII conversion	Code 39 Full ASCII includes all alphanumeric and special characters (full ASCII character set).	No
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 93		**Enable**
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Industrial 25 (Discrete 25)		**Enable**
Select Length (min/max)	▸ One or two fixed lengths ▸ Range (1~55)	4~55
EAN/JAN		**---**
Enable EAN-8		Enable
Enable EAN-13		Enable
Bookland EAN (ISBN)	The EAN-13 barcode starting with 978 will be converted to ISBN.	Enable
Enable Addons	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore Addons
Addons redundancy	When "Auto-discriminate" is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.	10 times
EAN-8 extend	Convert EAN-8 to EAN-13 format.	No
UCC coupon extended code	Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/GS1-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use "Addon Redundancy" to control auto-discrimination of the GS1-128 (right half) of a coupon code.	No

<table>
<tr><td>EAN security level</td><td>Sets the security level to ensure decoding accuracy considering the printed quality of the barcodes such as Code 128, Code 93, and UPC/EAN. The higher the level is, the more security is ensured. Options are:<table><tr><th>Level</th><th>Description</th></tr><tr><td>0</td><td>With this default, the scan engine is aggressive enough to decode most “in-spec” barcodes.</td></tr><tr><td>1</td><td>Select this level if misdecodes have occurred. It fixes most misdecodes.</td></tr><tr><td>2</td><td>Select this level if Level 1 should fail to eliminate misdecodes.</td></tr><tr><td>3</td><td>Select this level if Security Level 2 should fail to prevent misdecodes. However, as this level actually impairs the decoding ability of scan engine, it would be better to improve the barcode’s print quality if this level should be needed.</td></tr></table></td><td>2</td></tr>
<tr><td colspan="2">UPC</td><td>---</td></tr>
<tr><td>UPC-A/UPC-E/UPC-E1</td><td>For the default value, the UPC-A and UPC-E are enabled.</td><td>Enable</td></tr>
<tr><td>Enable Addons</td><td>Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5).
Ignore Addons
Decode Only With Addons
Auto-discriminate</td><td>Ignore Addons</td></tr>
<tr><td>Addons redundancy</td><td>When “Auto-discriminate” is applied, decide the number of times (2~30) of supplementary decoding the same barcode that makes a valid reading.</td><td>10 times</td></tr>
<tr><td>Transmit check digit</td><td>Decide whether to include the UPC-A/UPC-E/UPC-E1 check digit in the data being transmitted.</td><td>Yes</td></tr>
<tr><td>Convert UPC-E0/ UPC-E1 to UPC-A</td><td>The UPC-E0/UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.</td><td>No</td></tr>
<tr><td>UCC coupon extended code</td><td>Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/GS1-128 Coupon Codes.
UPC-A, EAN-13, and GS1-128 must be enabled first!
Use “Addon Redundancy” to control auto-discrimination of the GS1-128 (right half) of a coupon code.</td><td>No</td></tr>
<tr><td>Transmit preamble</td><td>Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted.</td><td>System Character</td></tr>
</table>

<table>
<tr><td>UPC security level</td><td>Sets the security level to ensure decoding accuracy considering the printed quality of the barcodes such as Code 128, Code 93, and UPC/EAN. The higher the level is, the more security is ensured. Options are:<table><tr><th>Level</th><th>Description</th></tr><tr><td>0</td><td>With this default, the scan engine is aggressive enough to decode most “in-spec” barcodes.</td></tr><tr><td>1</td><td>Select this level if misdecodes have occurred. It fixes most misdecodes.</td></tr><tr><td>2</td><td>Select this level if Level 1 should fail to eliminate misdecodes.</td></tr><tr><td>3</td><td>Select this level if Security Level 2 should fail to prevent misdecodes. However, as this level actually impairs the decoding ability of scan engine, it’d be better to improve the barcode’s print quality if this level should be needed.</td></tr></table></td><td>2</td></tr>
<tr><td>MSI</td><td></td><td>Enable</td></tr>
<tr><td>Check digit verification</td><td>One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digit is incorrect, the barcode will not be accepted.
If Two Check Digits option is selected, select one of the algorithms below.
▸ Mod 10/Mod 11
▸ Mod 10/Mod 10</td><td>Mod 10/Mod 10</td></tr>
<tr><td>Transmit check digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length (min/max)</td><td>▸ One or two fixed lengths
▸ Range (1~55)</td><td>4~55</td></tr>
<tr><td>Interleaved 25</td><td></td><td>Enable</td></tr>
<tr><td>Check digit verification</td><td>Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.
▸ Disable
▸ USS check digit
▸ OPCC check digit</td><td>Disable</td></tr>
<tr><td>Transmit check digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Convert Interleaved 25 to EAN-13</td><td>Convert a 14-character barcode into EAN-13 if the following requirements are met:
▸ The barcode must have a leading 0 and a valid EAN-13 check digit.</td><td>No</td></tr>
<tr><td>Select Length (min/max)</td><td>▸ One or two fixed lengths
▸ Range (1~55)</td><td>4~55</td></tr>
</table>

GS1 DataBar (RSS)		**---**
GS1 DataBar-14	GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.	Enable
GS1 DataBar Limited		Enable
GS1 DataBar Expanded	This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.	Enable
Convert GS1 DataBar To UPC/EAN	Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strip the leading "010" from barcodes. ▸ "01" is the Application ID and must be followed by a single zero (the first digit encoded) **Convert to UPC-A** Strip the leading "0100" from barcodes. ▸ "01" is the Application ID and must be followed by two or more zeros (but not six zeros)	No
Code 11		**Enable**
Check digit verification	Decide whether to verify check digits. If the check digit is incorrect, the barcode will not be accepted. ▸ Disable ▸ One Check Digit ▸ Two Check Digits	Disable
Transmit check digit	Decide whether to include check digits in the transmitted data. ▸ "Check digit verification" must be enabled.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Chinese 25		**Enable**

MISCELLANEOUS

Laser Engine	Description	Default
Miscellaneous Options		**---**
Transmit Code ID	Decide whether to include AIM Code ID in the beginning of data. ▸ none ▸ AIM code ID character Each AIM Code ID contains the three-character string "**]cm**" – ▸] = Flag Character (ASCII 93) ▸ c = Code Character (see below) ▸ m = Modifier Character (see below)	none

SYMBOLOGY SETTINGS FOR CP60

Symbology	Description	Default
CODABAR		
CodaBar		
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CLSI	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 11		
Code 11		
Code 11	Checkbox to enable Code 11 decoding.	Enable
Check Digit Option	Sets whether to verify check digits according to the selected option. If the check digits are incorrect, the barcode will not be accepted. ▸ Disable ▸ One Check Digit ▸ Two Check Digits	Disable
Transmit Check Digit	Selects whether to include check digits in the transmitted data. ▸ Check Digit Option" must be enabled.	Disable
Length option	Sets the length of the Code 11 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 39		
Code 39		
Code 39	Checkbox to enable Code 39 decoding.	Enable
Trioptic Code 39	Selects whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable

AIM CODE ID – CODE CHARACTERS

Code Character	Code Type
A	Code 39, Code 39 Full ASCII, Code 32
C	Code 128, Coupon (Code 128 portion)
D	Data Matrix
E	UPC/EAN, Coupon (UPC portion)
e	GS1 DataBar (RSS)
F	Codabar
G	Code 93
H	Code 11
I	Interleaved 25
L	PDF417, Macro PDF417, Micro PDF417
M	MSI
Q	QR Code
S	Industrial 25 (Discrete 25), IATA 2 of 5
U	Maxicode
X	Code 39 Trioptic, Bookland EAN, US Postnet, US Planet, UK Postal, Japan

AIM CODE ID – MODIFIER CHARACTERS

Code Type	Option Value	Option
Code 39	0	No check character or Full ASCII processing.
	1	Check digit has been verified.
	3	Check digit has been verified and stripped.
	4	Full ASCII conversion has been performed.
	5	Result of option values 1 and 4.
	7	Result of option values 3 and 4.
Code 128	0	Standard data packet. No Function Code 1"FNC1" in the first character position.
	1	Function Code 1"FNC1" in the first character position.
	2	Function Code 1"FNC1" in the second character position.
Interleaved 25	0	No check digit processing.
	1	Check digit has been verified.
	3	Check digit has been verified and stripped.
Codabar	0	No check digit processing.
Code 93	0	Always transmit 0.
MSI	0	Modulo 10 check digit verified and transmitted.
	1	Modulo 10 check digit verified but not transmitted.
Industrial 25	0	Always transmit 0.

(Discrete 25)		
UPC/EAN	0	Standard data packet in full EAN country code format, which is 13 digits for UPC-A and UPC-E (not including addons).
	3	Standard data packet with two-digit or five-digit addons.
	4	EAN-8 data packet.
	A UPC-A with Addon 2 barcode, 012345678905-10, is transmitted to the host as a 18-character string, `]E3`001234567890510.	
Bookland EAN	0	Always transmit 0.
Trioptic Code 39	0	Always transmit 0.
Code 11	0	Single check digit (has been verified.)
	1	Two check digits (has been verified.)
	3	Check digit has been verified but not transmitted.
GS1 DataBar (RSS)	0	Always transmit 0.
	RSS-14 and RSS Limited will be transmitted with an Application Identifier "01". For example, an RSS-14 barcode, 10012345678902, is transmitted as `]e0`10012345678902.	

Note: In GS1-128 emulation mode, RSS is transmitted using Code 128 rules (= "`]C1`").

EAN.UCC Composites (RSS, GS1-128, 2D portion of UPC composite)	Native mode transmission	
	0	Standard data packet
	1	Data packet containing the data following an encoded symbol separator character.
	2	Data packet containing the data following an escape mechanism character. The data packet does not support the ECI protocol.
	3	Data packet containing the data following an escape mechanism character. The data packet supports the ECI protocol.
	GS1-128 emulation	
	1	Data packet is a GS1-128 barcode (= data is preceded with "`]JC1`").

Note: UPC portion of composite is transmitted using UPC rules.

PDF417, Micro PDF417	0	Scan engine is set to conform to protocol defined in 1994 PDF417 symbology specifications. ▸ When this option is transmitted, the receiver cannot reliably determine whether ECIs have been invoked or whether data byte 92_{DEC} has been doubled in transmission.
	1	Scan engine is set to follow the ECI protocol (Extended Channel Interpretation). All data characters 92_{DEC} are doubled.

	2	Scan engine is set for Basic Channel operation (no escape character transmission protocol). Data characters 92_{DEC} are not doubled. ▸ When decoders are set to this mode, unbuffered Macro symbols and symbols requiring the decoder to convey ECI escape sequences cannot be transmitted.
	3	The barcode contains a GS1-128 symbol, and the first codeword is 903-907, 912, 914, 915.
	4	The barcode contains a GS1-128 symbol, and the first codeword is in the range 908-909.
	5	The barcode contains a GS1-128 symbol, and the first codeword is in the range 910-911.
	A PDF417 barcode, ABCD, with no transmission protocol enabled, is transmitted as `]L2`ABCD.	
Data Matrix	0	ECC 000-140, not supported.
	1	ECC 200.
	2	ECC 200, `FNC1` in first or fifth position.
	3	ECC 200, `FNC1` in second or sixth position.
	4	ECC 200, ECI protocol implemented.
	5	ECC 200, `FNC1` in first or fifth position, ECI protocol implemented.
	6	ECC 200, `FNC1` in second or sixth position, ECI protocol implemented.
Maxicode	0	Mode 4 or 5
	1	Mode 2 or 3
	2	Mode 4 or 5, ECI protocol implemented.
	3	Mode 2 or 3, ECI protocol implemented in secondary message.
QR Code	0	Model 1
	1	Model 2, ECI protocol not implemented.
	2	Model 2, ECI protocol implemented.
	3	Model 2, ECI protocol not implemented, `FNC1` implied in first position.
	4	Model 2, ECI protocol implemented, `FNC1` implied in first position.
	5	Model 2, ECI protocol not implemented, `FNC1` implied in second position.
	6	Model 2, ECI protocol implemented, `FNC1` implied in second position

Note: For JPEG files, these BPP settings are ignored for it always uses 8 bits per pixel!

Appendix IV

2D IMAGER (SE4500DL)

IN THIS CHAPTER

Symbology Settings For CP50 95
Symbology Settings for CP60/9200 103

The tables below list the symbology settings for 2D (laser) barcode reader (SE4500DL).

SYMBOLOGY SETTINGS FOR CP50

1D SYMBOLOGIES

2D Engine	Description	Default
Codabar		**Enable**
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. ▸ NOTIS Editing is to strip the start/stop characters, which equals to "Disable Transmit Start/Stop Characters".	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Intercharacter Gap Size	*The Code 39 and Codabar symbologies have an* intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to "Large Intercharacter Gaps" to tolerate these out-of-specification barcodes. ▸ Normal intercharacter gaps ▸ Large intercharacter gaps	Normal
Code 128		**---**
Code 128	Read standard Code 128 barcodes (= without leading FNC1 character).	Enable
GS1-128 (UCC/EAN-128)	Read GS1-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable

ISBT Concatenation	▸ Decide whether to decode and concatenate pairs of ISBT barcodes. ▸ Disable ▸ Enable – When this option is selected, there must be two ISBT barcodes for the reader to decode and perform concatenation.. ▸ Auto-discriminate – When this option is selected, the reader decodes and concatenates pairs of ISBT barcodes immediately. If only a single ISBT barcode is present, the reader must decode 10 times before transmitting its data to confirm that there is no additional ISBT barcode	Disable
ISBT Concatenation Redundancy	When "Auto-discriminate" is applied, decide the concatenation redundancy (2~20 times).	10 times
Industrial 25 (Discrete 25)		**Enable**
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Interleaved 25		**Enable**
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: ▸ The barcode must have a leading 0 and a valid EAN-13 check digit. ▸ "Verify Check Digit" must be disabled.	No
Verify Check Digit	Decide whether to verify the check digit. If desired, select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted. ▸ No ▸ USS algorithm ▸ OPCC algorithm	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Matrix 25		**Enable**
Redundancy	Decide whether to enable decode redundancy.	Disable
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Chinese 25		**Enable**
Code 39		**Enable**
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes.	No
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted.	No

<table>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.
"Verify Check Digit" must be enabled.</td><td>No</td></tr>
<tr><td>Code 39 Full ASCII</td><td>Code 39 Full ASCII includes all the alphanumeric and special characters.</td><td>Disable</td></tr>
<tr><td>Trioptic Code 39</td><td>Decide whether to decode Trioptic Code 39.
Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.</td><td>Disable</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td>Intercharacter Gap Size</td><td>The Code 39 and Codabar symbologies have an intercharacter gap that is typically quite small. Due to various barcode printing technologies, this gap can grow larger than the maximum size allowed, preventing the scan engine from decoding a barcode. If this problem occurs, set it to “Large Intercharacter Gaps” to tolerate these out-of-specification barcodes.
Normal intercharacter gaps
Large intercharacter gaps</td><td>Normal</td></tr>
<tr><td>Code 93</td><td></td><td>Enable</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td>MSI</td><td></td><td>Enable</td></tr>
<tr><td>Verify Check Digit</td><td>If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the check digit is incorrect, the barcode will not be accepted.<table><tr><th>Check Digit</th><th>Algorithm</th></tr><tr><td>One Check Digit</td><td>Single Modulo 10</td></tr><tr><td>Two Check Digits</td><td>Mod 10/Mod 11
Mod 10/Mod 10</td></tr></table></td><td>Single Modulo 10</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the check digit in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length</td><td>One or two fixed lengths
Range (1~55)</td><td>4~55</td></tr>
<tr><td>GS1 DataBar (RSS)</td><td></td><td>---</td></tr>
<tr><td>GS1 Databar-14</td><td>GS1 DataBar-14 is short for GS1 DataBar Omnidirectional. This group consists of (1) GS1 DataBar Omnidirectional, (2) GS1 DataBar Truncated, (3) GS1 DataBar Stacked, and (4) GS1 DataBar Stacked Omnidirectional.</td><td>Enable</td></tr>
<tr><td>GS1 Databar Limited</td><td></td><td>Enable</td></tr>
<tr><td>GS1 Databar Expanded</td><td>This group consists of (1) GS1 DataBar Expanded, and (2) GS1 DataBar Expanded Stacked.</td><td>Enable</td></tr>
</table>

Convert RSS to UPC/EAN	"Convert to UPC/EAN" only applies to GS1 Databar-14 and GS1 Databar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strip the leading "010" from barcodes. ▸ "01" is the Application ID and must be followed by a single zero (the first digit encoded) **Convert to UPC-A** Strip the leading "0100" from barcodes. ▸ "01" is the Application ID and must be followed by two or more zeros (but not six zeros)	No
EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
EAN-13		**Enable**
Bookland EAN (ISBN)	The EAN-13 barcode starting with 978 will be converted to ISBN.	Yes
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-A		**Enable**
Transmit Check Digit	Decide whether to include the UPC-A check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-E0		**Enable**
Transmit Check Digit	Decide whether to include the UPC-E0 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E0 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		**Disable**
Transmit Check Digit	Decide whether to include the UPC-E1 check digit in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E1 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No

UCC Coupon Extended Code		**Disable**
Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/GS1-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use "Addon Redundancy" to control auto-discrimination of the GS1-128 (right half) of a coupon code.		
UPC/EAN Addon		**---**
Addon 2 / Addon 5	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with addons. ▸ Ignore Addons ▸ Decode Only With Addons ▸ Auto-discriminate	Ignore...
Addon Redundancy	When "Auto-discriminate" is applied, decide the number of times of supplementary decoding for the same barcode to make a valid reading.	10 times
Code 11		**Enable**
Verify Check Digit	Decide whether to verify the check digit. If the check digit is incorrect, the barcode will not be accepted. ▸ No verification ▸ One Check Digit ▸ Two Check Digits	No
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted. ▸ "Verify Check Digit" must be enabled.	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Postal Codes		**---**
US Postnet		Enable
US Planet		Enable
Transmit US Postal Check Digit	US Postnet or US Planet must be enabled first!	Enable
UK Postal		Enable
Transmit UK Postal Check Digit	UK Postal must be enabled first!	Enable
Japan Postal		Enable
Australian Postal		Enable
Dutch Postal		Enable
Composite Codes		**---**
Composite CC-C		Enable
Composite CC-A/B		Disable
Composite TLC-39		Disable
GS1-128 Emulation Mode for UCC/EAN Composite Codes	Transmit UCC/EAN Composite Code data as if it was encoded in GS1-128 barcodes.	Disable

UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. **UPC Never Linked** Transmit UPC barcodes regardless of whether a 2D barcode is detected. **UPC Always Linked** Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. ▸ CC-A/B or CC-C must be enabled! **Auto-discriminate UPC Composites** Transmit UPC barcodes as well as the 2D portion if present.	UPC Always Linked

2D SYMBOLOGIES

2D Engine	Description	Default
2D Symbologies		**---**
PDF417		Enable
MicroPDF417		Disable
MicroPDF417 Code 128 Emulation	Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM Code Identifier in **Miscellaneous Options** must be enabled first! When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **The first codeword of MicroPDF417 is 903-907, 912, 914, 915:** The original Code ID "]L3" will be changed to "]C1". **The first codeword of MicroPDF417 is 908 or 909:** The original Code ID "]L4" will be changed to "]C2". **The first codeword of MicroPDF417 is 910 or 911:** The original Code ID "]L5" will be changed to "]C0".	Disable
Data Matrix		Enable

Data Matrix Inverse	Decide whether to decode Data Matrix Inverse. **Regular Only** Decode regular Data Matrix barcodes only. **Inverse Only** Decode inverse Data Matrix barcodes only. **Autodetect** Decode both regular and inverse Data Matrix barcodes.	Regular Only
Maxicode		Enable
QR Code		Enable
QR Code Inverse	Decide whether to decode QR Code Inverse. **Regular Only** Decode regular QR Code only. **Inverse Only** Decode inverse QR Code only. **Autodetect** Decode both regular and inverse QR Code.	Regular Only
MicroQR		Enable
Aztec		Enable
Aztec Inverse	Decide whether to decode Aztec Inverse. **Regular Only** Decode regular Aztec barcodes only. **Inverse Only** Decode inverse Aztec barcodes only. **Autodetect** Decode both regular and inverse Aztec barcodes.	Regular Only
2D Symbologies - Macro PDF		**---**
Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.		

Transmit/Decode Mode	Decide how to handle Macro PDF decoding. **Buffer All Symbols / Transmit Macro PDF When Complete** Transmit all decoded data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decoded data exceeds the limit of 50 symbols, no transmission because the entire sequence was not scanned! **Transmit Any Symbol in Set / No Particular Order** Transmit data from each Macro PDF symbol as decoded, regardless of the sequence. **Passthrough All Symbols** Transmit and decode all Macro PDF symbols and perform no processing. In this mode, the host is responsible for detecting and parsing the Macro PDF sequences.	Passthrough All Symbols
ESC Characters	When enabled, it uses the backslash "\" as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.	None

Note: When printing barcodes, keep each Macro PDF sequence separate, as each has a unique identifier. Do not mix barcodes from several Macro PDF sequences, even if they encode the same data. When you scan Macro PDF sequences, scan the entire Macro PDF sequence without interruption!

MISCELLANEOUS

2D Engine	Description	Default
Miscellaneous Options		**---**
Transmit Code ID character	Decide whether to include AIM Code ID in the beginning of data. ▸ None ▸ AIM code ID character (Refer to AIM Code ID – Code Characters)	none

SYMBOLOGY SETTINGS FOR CP60/9200

1D SYMBOLOGIES

Symbology	Description	Default
CODABAR		
CodaBar		
Codabar	Checkbox to enable Codabar decoding.	Enable
Length option	Sets the length of the Codabar symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CLSI	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	Disable
NOTIS	Sets whether to include start/stop characters in the transmitted data. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	Disable
CODE 11		
Code 11		
Code 11	Checkbox to enable Code 11 decoding.	Enable
Check Digit Option	Sets whether to verify check digits according to the selected option. If the check digits are incorrect, the barcode will not be accepted. ▸ Disable ▸ One Check Digit ▸ Two Check Digits	Disable
Transmit Check Digit	Selects whether to include check digits in the transmitted data. ▸ Check Digit Option" must be enabled.	Disable
Length option	Sets the length of the Code 11 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 39		
Code 39		
Code 39	Checkbox to enable Code 39 decoding.	Enable

Trioptic Code 39	Selects whether to decode Trioptic Code 39. ▸ Trioptic Code 39 is a variant of Code 39 used in the marking of computer tape cartridges. It always contains six characters.	Disable
Convert to Code 32	Selects whether to convert decoded data to Italian Pharmacode.	Disable
Code 32 Prefix	Prefix character "A" to Code 32 barcodes. ▸ "Convert to Code 32" must be enabled for this to function properly.	Disable
Verify Check Digit	Selects whether to verify the Modulo 43 check digit. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data to transmit. ▸ "Verify Check Digit" must be enabled.	Disable
Support Full ASCII	Selects whether to enable Code 39 Full ASCII decoding. Characters are paired to encode the full ASCII character set.	Disable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 93		
Code 93		
Enable Code 93	Checkbox to enable Code 93 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		
Enable Code 128	Checkbox to enable Code 128 decoding.	Enable
GS1-128		
Enable GS1-128	Checkbox to enable GS1-128 decoding.	Enable
ISBT-128		
ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
Concatenation	▸ Sets whether to enable decoding ISBT-128 by performing concatenation of ISBT data ▸ Disable: Does not perform concatenation ▸ Enable: Performs concatenation on all ISBT-128 barcodes. ▸ Auto-discriminate: Auto-discriminates between the ISBT-128 barcodes which require concatenation and those which do not need concatenation.	Disable
Redundancy	Sets redundancy between 2-20.	10

CODE 2 OF 5		
Chinese 25		
Enable Chinese 25	Checkbox to enable Chinese 25 decoding.	Enable
Discrete 25		
Discrete 25	Checkbox to enable Discrete 25 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Interleaved 25		
Interleaved 25	Checkbox to enable Interleaved 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Verify Check Digit	▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Convert To EAN-13	Convert a 14-character Interleaved 25 barcode into EAN-13 if the following requirements are met: The barcode must have a leading 0 and a valid EAN-13 check digit.	Disable
Matrix 25		
Matrix 25	Checkbox to enable Matrix 2 of 5 decoding.	Enable
Length option	Sets the length of the Code 39 symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Redundancy	▸ Sets read redundancy	Disable
Verify Check Digit	▸ Select whether to verify the check digit, which is the last character of the barcode. If the check digit is incorrect, the barcode will not be accepted.	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
COMPOSITE		
Composite CC-A/B		
Enable Composite CC-A/B	Checkbox to enable Composite CC-A/B decoding.	Disable

Composite CC-C		
Enable Composite CC-C	Checkbox to enable Composite CC-C decoding.	Enable
Composite TLC 39		
Enable Code 128	Checkbox to enable Code 128 decoding.	Disable
General Preference		
UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. **UPC Never Linked** Transmit UPC barcodes regardless of whether a 2D barcode is detected. **UPC Always Linked** Transmit UPC barcodes and the 2D portion. If the 2D portion is not detected, the UPC barcode will not be transmitted. ▸ CC-A/B or CC-C must be enabled. **Auto-discriminate** Transmit UPC barcodes as well as the 2D portion if present.	UPC Always Linked
GS1-128 Emulation Mode	Sets GS1-128 emulation mode for UCC/EAN Composite Codes.	Disable
GS1 DATABAR		
GS1 DataBar-14		
Enable GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding.	Enable
GS1 DataBar Limited		
Enable GS1 DataBar-Limited	Checkbox to enable GS1 DataBar-Limited decoding.	Enable
GS1 DataBar Expanded		
Enable GS1 DataBar-Expanded	Checkbox to enable GS1 DataBar-Expanded decoding.	Enable
Convert to UPC/EAN		
Convert to UPC/EAN	This only applies to GS1 DataBar-14 and GS1 DataBar Limited barcodes not decoded as part of a Composite barcode. **Convert to EAN-13** Strips the leading “010” from barcodes. ▸ The barcode must be composed of a leading “01” as the application identifier (AI) and a first digit of zero. **Convert to UPC-A** Strips the leading “0100” from barcodes. ▸ The barcode must be composed of a leading “01” as the application identifier (AI) and two or more zeros (but not six zeros).	Disable

INVERSE		
Inverse		
Enable Inverse	Checkbox to enable Inverse 1D decoding.	Disable
KOREAN 3 OF 5		
Korean 3 of 5		
Enable Korean 3 of 5	Checkbox to enable Korean 3 of 5 decoding.	Disable
MSI		
MSI		
MSI	Checkbox to enable MSI decoding.	Enable
Length option	Sets the length of the MSI symbols to decode. ▸ One Fixed length (Length 1) ▸ Two Fixed lengths (Length 1>Length 2) ▸ Max / Min Length (range: 0-255; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
Check Digit Option	One check digit is mandatory for decoding MSI barcodes. Select whether a second check digit should be verified. If the check digits are incorrect, the barcode will not be accepted. ▸ One Check Digit ▸ Two Check Digits	One Check Digit
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
Algorithm	▸ When two check digits are set for verification, two choices are available for the pair of check digits. ▸ Modulo10 / Modulo11 ▸ Double Modulo 10	Double Modulo 10
POSTAL CODE		
Australian Postal		
Enable Australian Postal	Checkbox to enable Australian Postal decoding.	Enable
Japan Postal		
Enable Japan Postal	Checkbox to enable Japan Postal decoding.	Enable
Netherlands KIX Code		
Enable Netherlands KIX Code	Checkbox to enable Netherlands KIX Code decoding.	Enable
US Postnet		
Enable US Postnet	Checkbox to enable US Postnet decoding.	Enable
US Planet		
Enable US Planet	Checkbox to enable US Planet decoding.	Enable
UK Postal		
Enable UK Postal	Checkbox to enable UK Postal decoding.	Enable

General Preference		
US Postal Check Digit	Decide whether to transmit check digit for US Postnet or US Planet.	Enable
UK Postal Check Digit	Decide whether to transmit check digit for UK Postal.	Enable
UPC/EAN		
EAN-8		
EAN-8	Checkbox to enable EAN-8 decoding.	Enable
EAN-8 Extend	Checkbox to enable converting EAN-8 to EAN-13 format.	Disable
EAN-13		
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Bookland EAN	Checkbox to enable ISBN decoding. If enabled, select Bookland ISBN Format in the drop-down box below.	Enable
Bookland ISBN Format	Decodes Bookland data starting with 978 in 10-digit format along with the Bookland check digit, or Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
ISSN EAN	Checkbox to enable ISSN EAN decoding.	Disable
UPC-A		
UPC-A	Checkbox to enable UPC-A decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Transmit Check Digit	Decide whether to include the UPC-A check digit (the last character in the barcode) in the data being transmitted.	Enable
UPC-E		
UPC-E	Checkbox to enable UPC-E decoding.	Enable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable

UPC-E1		
UPC-E1	Checkbox to enable UPC-E1 decoding.	Disable
Preamble	Decide whether to include the UPC-A/UPC-E/UPC-E1 preamble System Character (and Country Code) in the data being transmitted. ▸ No transmit: transmits none of the above ▸ Transmit System Character: transmits system number only ▸ Transmit Sys. Character and Country Code: transmits system number and country code	Transmit System Character
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.	Disable
Transmit Check Digit	Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.	Enable
General Preference		
Support Coupon Code	Reads UPC-A barcodes starting with "5", EAN-13 barcodes starting with "99", and UPC-A/EAN-128 Coupon Codes. ▸ UPC-A, EAN-13, and GS1-128 must be enabled first! ▸ Use "Addon Redundancy" to control auto-discrimination of the GS1-128 (right half) of a coupon code.	Disable
EAN Addon Option	Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
EAN Addon Redundancy	When "Auto-discriminate" is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10
UPC Addon Option	Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon
UPC Addon Redundancy	When "Auto-discriminate" is applied, decide the number of times of supplementary decoding the same barcode to count as a valid read. Configurable between 2 and 30.	10

2D SYMBOLOGIES

Symbology	Description	Default
Aztec		
Aztec	Selects whether to enable Aztec decoding.	Enable
Aztec Inverse	Decide whether to decode Aztec Inverse. **Regular only** Decode regular Aztec barcodes only. **Inverse only** Decode inverse Aztec barcodes only. **Inverse Auto-detect** Decode both regular and inverse Aztec barcodes.	Regular only
Data Matrix		
Data Matrix	Selects whether to enable Data Matrix decoding.	Enable
Data Matrix Inverse	Decide whether to decode Data Matrix Inverse. **Regular Only** Decode regular Data Matrix barcodes only. **Inverse Only** Decode inverse Data Matrix barcodes only. **Auto Detect** Decode both regular and inverse Data Matrix barcodes.	Regular Only
Decode Mirror Images	Selects whether to enable PDF 417 decoding. **Never** Does not decode Data Matrix barcodes that are mirror images. **Always** Decodes Data Matrix barcodes that are mirror images. **Auto** Decodes both mirrored and unmirrored Data Matrix barcodes.	Never
Maxicode		
MicroPDF417		

MicroPDF417	Selects whether to enable Maxicode decoding.	Disable
Code 128 Emulation	Transmit data from certain Micro PDF 417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM code ID character in **Miscellaneous** options must be enabled first. When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **The first codeword of MicroPDF417 is 903-905:** The original Code ID "]L3" will be changed to "]C1". **The first codeword of MicroPDF417 is 908 or 909:** The original Code ID "]L4" will be changed to "]C2". **The first codeword of MicroPDF417 is 910 or 911:** The original Code ID "]L5" will be changed to "]C0".	Disable
MicroQR		
PDF417		
QR Code		
QR Code	Selects whether to enable QR Code decoding.	Enable
QR Code Inverse	Decide whether to decode QR Code Inverse. **Regular Only** Decodes regular QR Code only. **Inverse Only** Decodes inverse QR Code only. **Inverse Auto-detect** Decodes both regular and inverse QR Codes.	Regular Only

MISCELLANEOUS

2D Engine	Description	Default
Miscellaneous Options		
AIM Code ID character	Decide whether to include AIM Code ID in the data. Each AIM Code ID contains a three-character string "**]cm**": ▸] = Flag Character (ASCII 93) ▸ c = Code Character ▸ m = Modifier Character ▸ Refer to AIM Code ID – Code Characters.	Disable

Appendix III

HF RFID READER

HF RFID reader supports ISO14443A and B, 15693, and Secure Access Module (SAM) for CP50.

The default pages of supported RFID tags:

RFID TAG DEFAULT BLOCK

Tag Type	Standard	Default Block/Page
Mifare	ISO 14443A	4
SR176	ISO 14443B	4
ICODE SLI	ISO 15693	3
LRI512	ISO 15693	0
SRF55VxxP	ISO 15693	3
EM4135	ISO 15693	0
Tag-it HF-I	ISO 15693	0
Others	ISO 15693	0
ICODE	ICODE® (Phillips)	5
Tag-it	Tag-it® (TI)	0

Appendix VI

KEY SEQUENCES

TERMINAL EMULATION KEY SEQUENCES FOR 9700 MOBILE COMPUTER

LOCAL TERMINAL FUNCTIONS

Description	Key Sequence
Terminal Setting	Ctrl + Shift + S
Close Session	Shift + Red key
Open Session	Shift + Green key
Previous Session	Ctrl + Green key
Next Session	Ctrl + Red key
Caps Lock	Shift + Shift
View Mode On/Off	Shift + Down
Scroll Left	Ctrl + Left
Scroll Right	Ctrl + Right
Scroll Up	Ctrl + Up
Scroll Down	Ctrl + Down
Display Backlight On/Off	Ctrl + Shift + L
Keypad Backlight On/Off	Ctrl + Shift + K
Control SIP (To be configured in the Settings)	Shift + Esc
Exit app (To be configured in the Settings)	Shift + Right

T100/ VT102 KEYPAD EMULATION KEYS (FOR 53 KEY)

Description	Key Sequence
Enter	Enter
Backspace	Backspace
Delete	Blue + Backspace
Tab	Blue + *
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Escape	Esc
Line Feed	Ctrl + N
Find	Shift + Blue + A
Select	Shift + Blue + C
Insert Here	Blue + space
Remove	Shift + Blue + B
Prev Screen	Shift + Blue + E
Next Screen	Shift + Blue + F
Home	[Undefined]
End	[Undefined]
PF1	Blue + 1
PF2	Blue + 2
PF3	Blue + 3
PF4	Blue + 4
PF5	Blue + 5



VT100/ VT102 KEYPAD EMULATION KEYS (FOR NON 53 KEY)

Description	Key Sequence
Enter	Enter
Backspace	Backspace
Delete	Delete
Tab	Tab
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Escape	Esc
Line Feed	[Undefined]
Find	[Undefined]
Select	[Undefined]
Insert Here	[Undefined]
Remove	[Undefined]
Prev Screen	[Undefined]
Next Screen	[Undefined]
Home	[Undefined]
End	[Undefined]
PF1	F1
PF2	F2
PF3	F3
PF4	F4
PF5	F5

T220 KEYPAD EMULATION KEYS (FOR 53 KEY)

Description	Key Sequence
Enter	Enter
Backspace	Backspace
Delete	Blue + Backspace
Tab	Blue + *
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Escape	Esc
Line Feed	Ctrl + N
Find	Shift + Blue + A
Select	Shift + Blue + C
Insert Here	Blue + space
Remove	Shift + Blue + B
Previous Screen	Shift + Blue + E
Next Screen	Shift + Blue + F
Home	[Undefined]
End	[Undefined]
PF1	Blue + 1
PF2	Blue + 2
PF3	Blue + 3
PF4	Blue + 4
F5 /Break*	Blue + 5
F6	Blue + 6
F7	Blue + 7
F8	Blue + 8
F9	Blue + 9
F10	Blue + 0
F11	Shift + 1
F12	Shift + 2
F13	Shift + 3
F14	Shift + 4
F15/Help	Shift + 5
F16/Do	Shift + 6
F17	Shift + 7
F18	Shift + 8
F19	Shift + 9
F20	Shift + 0



VT220 KEYPAD EMULATION KEYS (FOR NON 53 KEY)

Description	Key Sequence
Enter	Return
Backspace	Backspace
Delete	Delete
Tab	Tab
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Escape	Esc
Line Feed	[Undefined]
Find	[Undefined]
Select	[Undefined]
Insert Here	[Undefined]
Remove	[Undefined]
Previous Screen	[Undefined]
Next Screen	[Undefined]
Home	[Undefined]
End	[Undefined]
PF1	F1
PF2	F2
PF3	F3
PF4	F4
F5 /Break*	F5
F6	F6
F7	F7
F8	F8
F9	F9
F10	F10
F11	F11
F12	F12
F13	[Undefined]
F14	[Undefined]
F15/Help	[Undefined]
F16/Do	[Undefined]
F17	[Undefined]
F18	[Undefined]
F19	[Undefined]
F20	[Undefined]

TN5250 KEYPAD EMULATION KEYS (FOR 53 KEY)

Description	Key Sequence
Attention	Blue + G
Backspace	Backspace
Next	Blue + Space
Previous	Shift + Up
Clear	Ctrl + ESC
Clear EOF	Blue + F
Delete	Blue + Backspace
Duplicate	Blue + N
Enter	Enter
Erase Input	Blue + E
Begin	[Undefined]
End	[Undefined]
Print	Blue + B
Field Exit	Ctrl + Enter
Field+	[Undefined]
Field-	Blue + *
Field Mark	[Undefined]
LAST	[Undefined]
Help	Blue + C
Home	Blue + A
Insert	Blue + R
New Line	Ctrl + N
Reset	Esc
Roll Up	Blue + J
Roll Down	Blue + L
System Request	Blue + K
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Record	[Undefined]
Record Backspace	Shift + Left Arrow
F1	Blue + 1



F2	Blue + 2
F3	Blue + 3
F4	Blue + 4
F5	Blue + 5
F6	Blue + 6
F7	Blue + 7
F8	Blue + 8
F9	Blue + 9
F10	Blue + 0
F11	Shift + 1
F12	Shift + 2
F13	Shift + 3
F14	Shift + 4
F15	Shift + 5
F16	Shift + 6
F17	Shift + 7
F18	Shift + 8
F19	Shift + 9
F20	Shift + 0
F21	Blue + Shift + 1
F22	Blue + Shift + 2
F23	Blue + Shift + 3
F24	Blue + Shift + 4

TN5250 KEYPAD EMULATION KEYS (FOR NON 53 KEY)

Description	Key Sequence
Attention	[Undefined]
Backspace	Backspace
Next	Tab
Previous	Shift + Up
Clear	Ctrl + Esc
Clear EOF	[Undefined]
Delete	Delete
Duplicate	[Undefined]
Enter	Enter
Erase Input	[Undefined]
Begin	[Undefined]
End	[Undefined]
Print	[Undefined]
Field Exit	Ctrl + Enter
Field+	[Undefined]
Field-	[Undefined]
Field Mark	[Undefined]
LAST	[Undefined]
Help	[Undefined]
Home	[Undefined]
Insert	[Undefined]
New Line	[Undefined]
Reset	Esc
Roll Up	[Undefined]
Roll Down	[Undefined]
System Request	[Undefined]
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
Record	[Undefined]
Record Backspace	Shift + Left Arrow
F1	F1

F2	F2
F3	F3
F4	F4
F5	F5
F6	F6
F7	F7
F8	F8
F9	F9
F10	F10
F11	F11
F12	F12
F13	[Undefined]
F14	[Undefined]
F15	[Undefined]
F16	[Undefined]
F17	[Undefined]
F18	[Undefined]
F19	[Undefined]
F20	[Undefined]
F21	[Undefined]
F22	[Undefined]
F23	[Undefined]
F24	[Undefined]

TN3270 KEYPAD EMULATION KEYS (FOR 53 KEY)

Description	Key Sequence
Attention	Blue + G
Backspace	Backspace
Next	Blue + Space
Previous	Blue + J
Clear	Ctrl + Esc
Clear EOF	Blue + K
Delete	Blue + Backspace
Duplicate	Blue + N
Enter	Enter
Erase Input	Blue + E
Begin	[Undefined]
End	[Undefined]
Field Mark	Blue + F
LAST	[Undefined]
Home	Blue + *
Insert	Blue + R
New Line	Ctrl + N
Reset	Esc
Roll Up	Shift + Blue + 6
Roll Down	Shift + Blue + 7
System Request	Blue + L
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
PA1	Blue + A
PA2	Blue + B
PA3	Blue + C
F1	Blue + 1
F2	Blue + 2
F3	Blue + 3
F4	Blue + 4
F5	Blue + 5



F6	Blue + 6
F7	Blue + 7
F8	Blue + 8
F9	Blue + 9
F10	Blue + 0
F11	Shift + 1
F12	Shift + 2
F13	Shift + 3
F14	Shift + 4
F15	Shift + 5
F16	Shift + 6
F17	Shift + 7
F18	Shift + 8
F19	Shift + 9
F20	Shift + 0
F21	Blue + Shift + 1
F22	Blue + Shift + 2
F23	Blue + Shift + 3
F24	Blue + Shift + 4

TN3270 KEYPAD EMULATION KEYS (FOR NON 53 KEY)

Description	Key Sequence
Attention	[Undefined]
Backspace	Backspace
Next	Tab
Previous	Shift + Up
Clear	Ctrl + Esc
Clear EOF	[Undefined]
Delete	Delete
Duplicate	[Undefined]
Enter	Enter
Erase Input	[Undefined]
Begin	[Undefined]
End	[Undefined]
Field Mark	[Undefined]
LAST	[Undefined]
Home	[Undefined]
Insert	[Undefined]
New Line	[Undefined]
Reset	Esc
Roll Up	[Undefined]
Roll Down	[Undefined]
System Request	[Undefined]
Left Arrow	Left Arrow
Right Arrow	Right Arrow
Up Arrow	Up Arrow
Down Arrow	Down Arrow
PA1	[Undefined]
PA2	[Undefined]
PA3	[Undefined]
F1	F1
F2	F2
F3	F3
F4	F4
F5	F5

F6	F6
F7	F7
F8	F8
F9	F9
F10	F10
F11	F11
F12	F12
F13	[Undefined]
F14	[Undefined]
F15	[Undefined]
F16	[Undefined]
F17	[Undefined]
F18	[Undefined]
F19	[Undefined]
F20	[Undefined]
F21	[Undefined]
F22	[Undefined]
F23	[Undefined]
F24	[Undefined]

OTHER KEY SEQUENCES

Description	Key Sequence	Description	Key Sequence
@	Ctrl + Shift + B	--	--
A	Shift + A	a	A
B	Shift + B	b	B
C	Shift + C	c	C
D	Shift + D	d	D
E	Shift + E	e	E
F	Shift + F	f	F
G	Shift + G	g	G
H	Shift + H	h	H
I	Shift + I	i	I
J	Shift + J	j	J
K	Shift + K	k	K
L	Shift + L	l	L
M	Shift + M	m	M
N	Shift + N	n	N
O	Shift + O	o	O
P	Shift + P	p	P
Q	Shift + Q	q	Q
R	Shift + R	r	R
S	Shift + S	s	S
T	Shift + T	t	T
U	Shift + U	u	U
V	Shift + V	v	V
W	Shift + W	w	W
X	Shift + X	x	X
Y	Shift + Y	y	Y
Z	Shift + Z	z	Z
Esc	Esc	[	Blue + E
Space	Space	\	Blue + G
!	Ctrl + 5	]	Blue + F
"	Ctrl + 4	^	Ctrl + Shift + E
#	Ctrl + 6	_	Shift + Blue + N
$	Ctrl + 7	`	Blue + J

%	Ctrl + 8	0	0
&	Ctrl + 9	1	1
'	Blue + C	2	2
(	Ctrl + 1	3	3
)	Ctrl + 2	4	4
*	*	5	5
+	Blue + S	6	6
,	Blue + A	7	7
-	Blue + T	8	8
.	.	9	9
/	Blue + V	{	Shift + Blue + E
:	Shift + Blue + R	|	Shift + Blue + G
;	Blue + R	}	Shift + Blue + F
<	Shift + Blue + A	~	Shift + Blue + J
=	Blue + W	--	--
>	Shift + Blue + B	--	--
?	Ctrl + Shift + G	--	--