CipherLab

User Guide

MIRROR VT/TN Terminal Emulation

For Windows Embedded Compact 6.0 9700 CP60

Windows Embedded Compact 7.0 CP55

Version 1.62

CIPHERLAB

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RELEASE NOTES

Version	Date	Notes
1.62e (v3.07)	Sep.29, 2016	• Modified: **1.1.2** – added installation folder path • Removed: **1.2 Install Folder** • Modified: **4.1.1 -** Updated **"Auto Full Screen on Connection"** description • Modified: **4.1.1** –Updated Beeper related description • Modified: **4.2** – Add config file location • Modified: **Appendix VIII** – Update **Key Sequences** section • 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 VT or TN Tab Page -** Update TN tab page options • Modified: 4.1.1 Settings for VT Emulation – Update options • Modified: 4.1.1 Settings for TN Emulation – Update options • Modified: 4.1.1 Key Mapping Tab Page – Update options • Added 4.1.1 Assign Function Key • Removed 4.1.1 Function Key Table and Quick Setting • Modified: 4.1.1 Preferences Tab Page – Update options • Modified: **4.1.1 Setting for TN Emulation** –Add browse file function • Added 4.1.1 Security Tab Page for VT • Modified: **4.2 Config File** – change config file format from *.ini to *.json
1.62a	Aug. 18, 2016	• Modified: 9300/9600 removed from the cover page and related descriptions • Modified: **1.2 Install Folder** - "develop_reader.ini" removed • Modified: **Appendix I** - 9300/9600 removed from the symbology table, RFID TAG table for 9600 removed • Modified: **Appendix II** - Reader Settings for 9600, Symbology Settings for 9600 removed • Modified: **Appendix III** - Reader Settings for 9300, Symbology Settings for 9300 removed • Modified: **Appendix V** - Reader Settings for 9300/9600, Symbology Settings for 9300/9600 removed
1.61	Jul. 20, 2015	• Modified Appendix VIII: Key Sequences

1.60	Jun. 20, 2014	▸ Supports CP55, 9700 ▸ Modified: 1.1 Install — Add note: Terminal application comes within OS on CP60 and 9700 ▸ Modified: 1.2 Install Folder — Change configuration file name to "TE_Settings.ini" ▸ Modified: 1.4 Enter Activation Key — all devices require activation except CP60 and 9700 ▸ Modified: Remove "Status" option from 2.2 Menu. ▸ New: Add SIP button to 2.3 Toolbar ▸ 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 ▸ Update reader types and supported symbologies in Appendix I: Scan Engine Settings ▸ Add Appendix IV: Laser (SE1524) and Appendix VI: 2D Imager (EX25) ▸ Add Appendix VIII: Key Sequences
1.50	Oct 25, 2013	▸ Supports CP60 (CE) ▸ Modified: 1.1 Install — Installation available from PC or mobile computer ▸ Add: 1.2 Install Folder — Add description for files in program folder ▸ Add: 1.3 Launch Terminal Emulation — Launch by tapping Start | Programs | Terminal Emulation ▸ New: 1.4 Enter activation key — Required for 9300/9600 ▸ Modified: UI updated for terminal screen and menu; restructure Chapters 2-4 to fit new UI and update screenshots ▸ New: 4.1.1 Settings — Quick settings for function key table ▸ New: 4.1.1 Settings — Macro operation ▸ New: 4.1.1 Settings — Add Message alarm and Error alarm for TN 5250 ▸ New: 4.3 Config File — Import/export as configuration file ▸ New: 4.4 Access Control — Access control by setting up password ▸ New: 4.5 Host Session — Multiple host sessions after activation ▸ Modified: Update Appendix I — Supported symbologies & RFID tags ▸ New: Add CP60 settings to Appendix III, IV ▸ Modified: Update Appendix V — Supported RFID reader start page
1.22	Aug 03, 2011	▸ Add Login & Password limitation ▸ Add Full Screen check box item when Auto Connect is enabled ▸ Add TaskBar On Full Screen check box item in Settings configuration.

1.21	Apr 08, 2011	Mirror VT/5250 Terminal Emulation User Guide split into separate files for 9300/9600 and 9400/9500 • Modified: Features — Add new feature "Full Screen" and update screenshots • Modified: 1.2 Toolbar — Add "Full Screen" icon • Modified: 3.1.1 Host Settings & Others (5250) — Add font size "10x20" • Modified: 3.1.2 Telnet (VT) — Add font size "10x20" • New: 3.4 Scrollbar Setting
1.20	Nov 30, 2010	• Modified: 2.1.2 Using VT Keypad — Add "F13" ~ "F20" function keys • Modified: 3.3.1 Key Mapping (5250) — Add "F10" ~ "F20" function keys • Modified: 3.3.2 Key Mapping (VT) — Add "F10" ~ "F20" function keys • Modified: Appendix I~V — Add more GS1 DataBar symbologies
1.19	Aug 26, 2010	• Modified: 3.1.1 Host Settings & Others (5250) — Add "Auto Connect" • Modified: 3.1.2 Telnet (VT) — Add "Auto Connect"
1.18	July 12, 2010	• Modified: 3.1.1 Host Settings & Others (5250) — Add "Device Name" • Modified: Appendix V — Add "Intercharacter Gap Size" for 4407 and move the setting under Codabar and Code 39, and add "ISBT Concatenation" and "ISBT Concatenation Redundancy" for 4507
1.17	Mar 23, 2010	• Modified: 3.3 Function Key Mapping — Screenshots updated
1.16	Mar 19, 2010	• Modified: 1.1.1 File Menu — TN5250 configuration filename changed to *.netn • Modified: 3.2.2 RFID Reader — UI updated • Modified: 3.2.3 Advanced Barcode Settings — Add "Check Code Length" for TN5250 • Modified: 3.3.1 Key Mapping (5250) — Add "Send" and "End" function keys for 9600 • Modified: 3.3.2 Key Mapping (VT) — Add "Send" and "End" function keys for 9600 • Modified: Appendix I, II — Support ISBT 128 and UPC-E1 for CCD/Laser • Modified: Appendix II — Add "Redundancy Level" and "GTIN for EAN-13" settings for CCD/Laser • Modified: Appendix III — GS1 DataBar (RSS) default setting • Modified: Appendix V — Move "Inter-Character Gap" setting under Codabar and Code 39
1.15	Jan 04, 2010	• Modified: Appendix III — Redundancy Level default setting • Modified: Appendix III — Add "Replace Field Separator" setting for GS1-128 and "UPC/EAN Security Level" for SE955 • Modified: Appendix II~IV — "Read Redundancy" changed to "Redundancy Level"
1.14	Dec 21, 2009	• Modified: Appendix I — ID_MOD_MP_RFID table updated
1.13	Dec 11, 2009	• Update screenshots

1.12	Oct 21, 2009	▸ Support 9300 and 9600 ▸ Modified: Appendix III — Add "Timeout between Same Barcode" for SE955 ▸ Modified: Appendix V — Add "Intercharacter Gap Size" for 4507
1.11	Mar 03, 2009	▸ Modified: 9500PPC removed ▸ New: 3.1.2 Macro Frame ▸ Modified: Appendix II — support "Field Separator" setting for EAN-128 with CCD/Laser scan engine ▸ Modified: Appendixes I~III — GS1-128 (EAN-128), GS1 DataBar Omnidirectional (RSS-14), GS1 DataBar Limited (RSS Limited), GS1 DataBar Expanded (RSS Expanded)
1.10	Jul 21, 2008	▸ New Word template applied ▸ New: support 9400 ▸ Modified: Chapter 3 Configuring MIRROR Terminal Emulation
1.00	Oct 02, 2007	▸ Initial release

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INTRODUCTION

Seeing the need to combine wireless connectivity and telnet terminal emulation, MIRROR VT/TN Terminal Emulation is designed to provide telnet terminal emulation on CipherLab 9700, CP55 and CP60 Series Mobile Computers.

The software supports TN 5250 emulation and VT100/220 emulation, in both cases acting as a telnet client that allows the user to connect to a host computer of the same emulation type and make use of the applications running on it. Thus, the mobile computer works as an input device to a host computer that supports either VT100/VT220 or 5250 emulation. The data collected or input will be sent back to the host computer. The mobile computer also works as an output device as it can display data coming in from the host.

This user guide details the setup and usage of MIRROR VT/5250 Terminal Emulation, hereinafter addressed as "Terminal Emulation". We recommend that you read the document thoroughly before starting using this tool. It is also recommended that you keep it 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 into an input field in the host application via reading printed barcodes or RFID tags
- Password control for accessing settings and exiting the application
- Easy reproduction of settings using a configuration file
- Supports control for barcode reader as well as RFID reader
- 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 installation.

This chapter also describes the 1st launch of the application and where it 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.

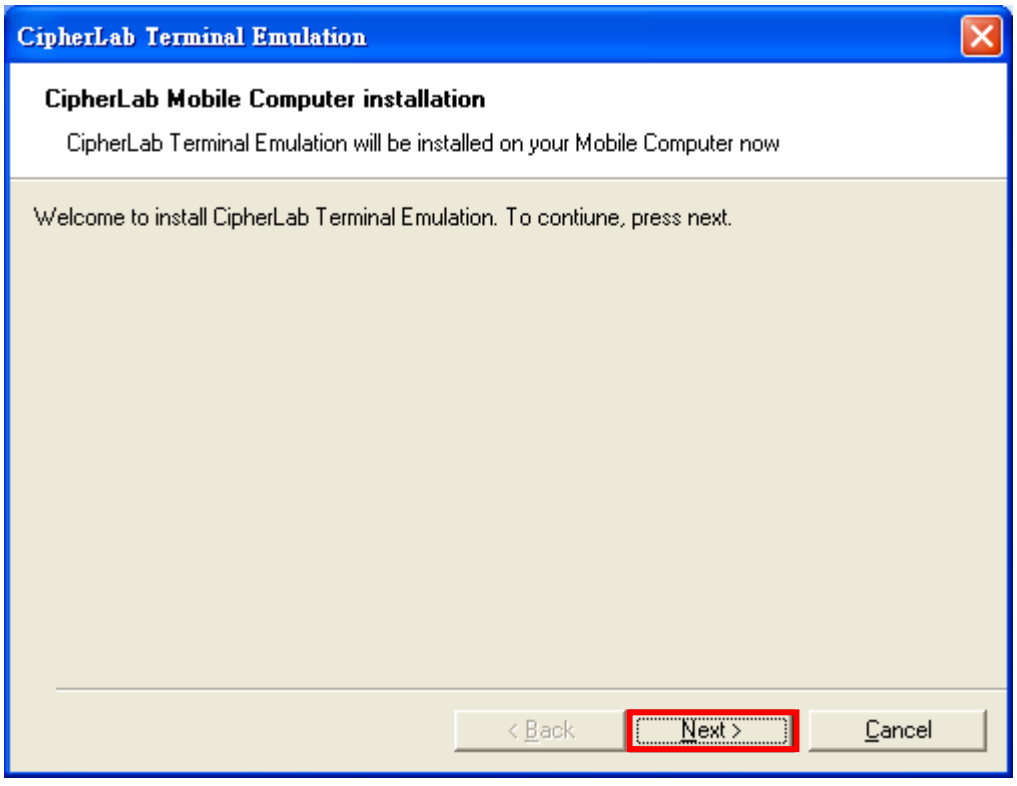
Note: On CP60 and 9700 mobile computers, Terminal Emulation is included in the OS, therefore no installation of the application is required. Please proceed directly to Launch Terminal Emulation.

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.

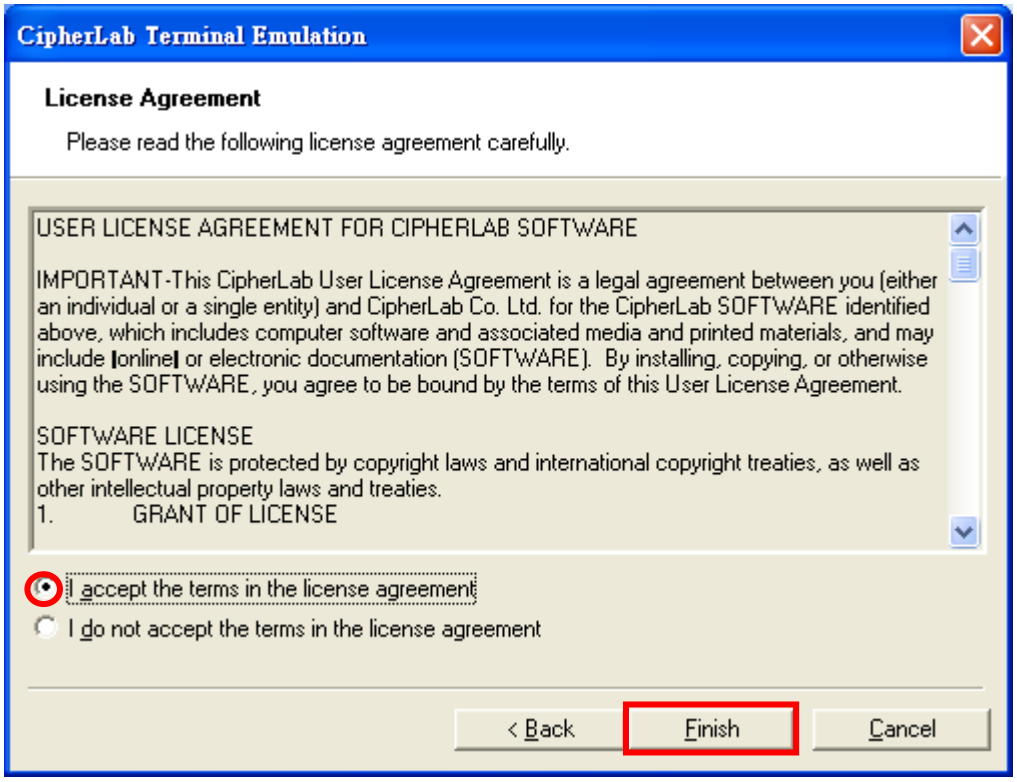
To install Terminal Emulation from your PC:

1) Set up USB connection between the PC and mobile computer.
2) Run ActiveSync on the PC.
3) On your PC, run the executable file **TerminalEmulation_X.XXXX.exe** (X specifies the version).
4) As installation wizard opens. Click **Next** to proceed.



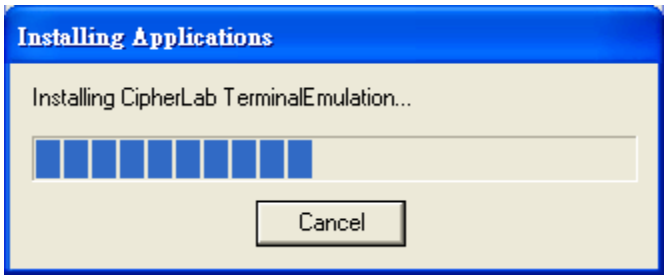
5) You are led to a **License Agreement** window.

   Select **I accept the terms in the license agreement**. Click **Finish** to proceed.

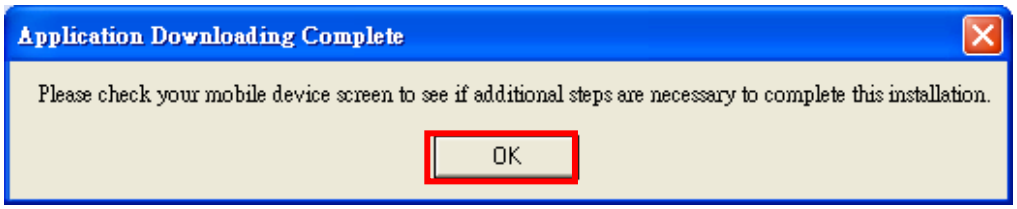


6) A prompt appears asking whether to install the application to the default directory **My Device\Program Files\Terminal Emulation**.

The wizard then offloads Terminal Emulation to the mobile computer.

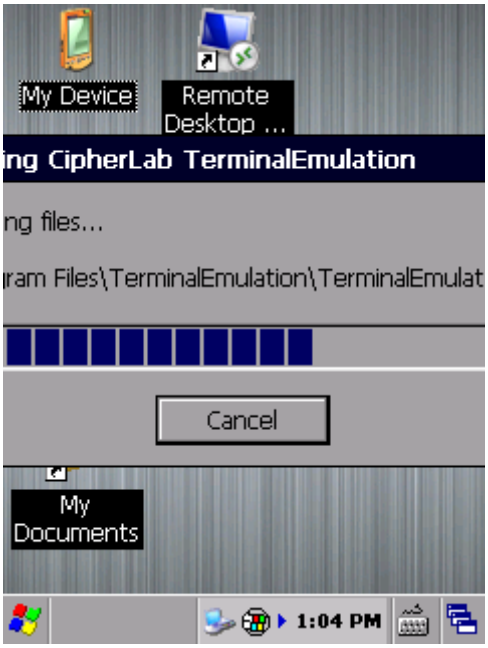


Once offload finishes, a dialog opens prompting you to check on the mobile computer.



7) Click **OK**.

8) Check the mobile computer, which shows a dialog indicating installation is in progress.



9) The installation is completed in a few seconds. Once through, an icon for Terminal Emulation will be added to the Programs menu under **Start** | **Programs**.



10) Proceed to launch Terminal Emulation as described in Launch Terminal Emulation.

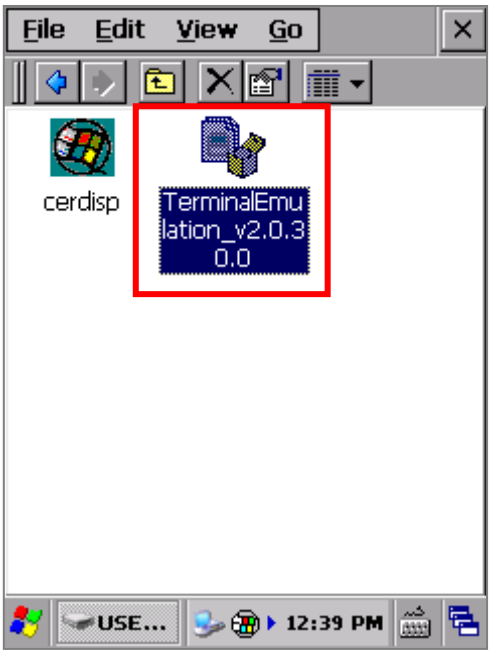
1.1.2. INSTALL FROM MOBILE COMPUTER

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 from the mobile computer:

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 **My Device** (file explorer) on the desktop.
3) Browse to the .cab file.
4) Double-tap the .cab file.

   Installer starts. A screen opens prompting you to choose the location to install Terminal Emulation. Browse to the desired location and tap **OK** on the title bar of the dialog box. If you haven't selected an alternate, Terminal Emulation is installed to the internal storage at **My Device\Program Files\TerminalEmulation**.



5) A dialog opens indicating the installation is in progress.

   The installation is completed in a few seconds. Once through, an icon for Terminal Emulation will be added to the Programs menu under **Start** | **Programs**.

6) Proceed to launch Terminal Emulation as described in Launch Terminal Emulation.



1.2. LAUNCH TERMINAL EMULATION

Once installation finishes, proceed to launch Terminal Emulation:

Tap **Start** | **Programs** | **Terminal Emulation** .

Terminal Emulation opens showing CipherLab logo and the application title.



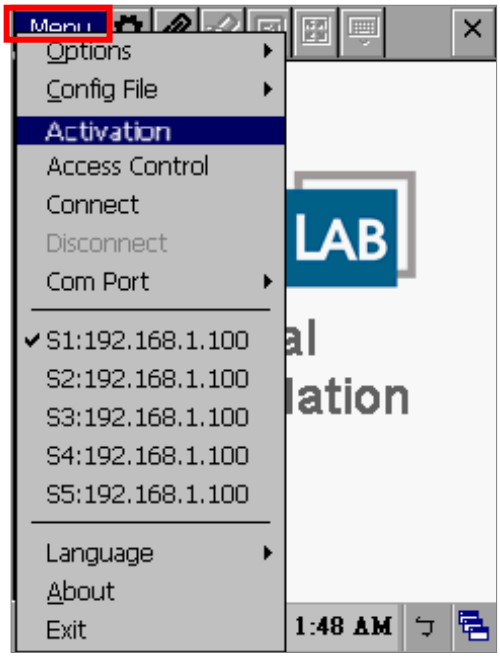
1.3. ENTER ACTIVATION KEY

If an activation key is available, activate Terminal Emulation following the steps below:

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

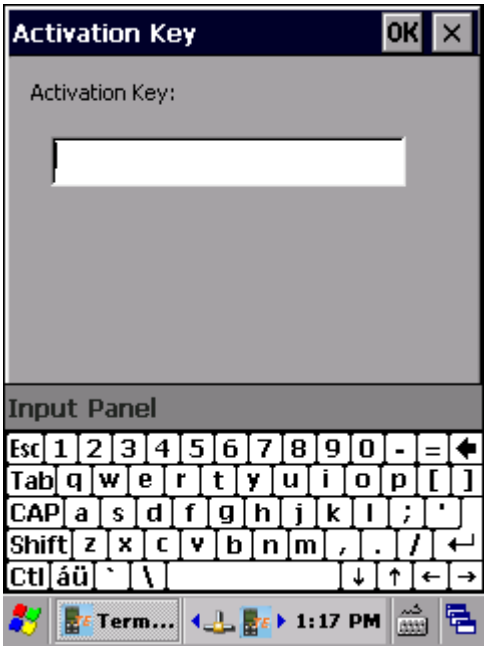


2) Tap the **Menu** label in the upper left corner.



3) Tap **Activation** in the menu.

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



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

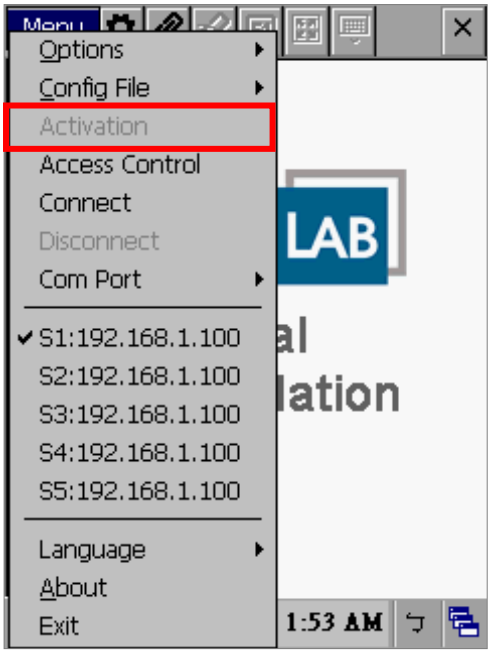
OR

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

5) Tap OK to confirm the activation key.

A dialog opens notifying activation success. Terminal Emulation is now 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. For more details on menu options that require activation, see General Tab page, Assign Function Key, Function Key Bar (Activated Device Only), Macro Operation (Activated Devices Only) and Session Icon (Activated Devices Only) and Host Session.

(2) On CP60 and 9700 mobile computers, 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 Compact devices, screen sizes and layout might differ according to the device model.

This chapter is grouped thematically into the following sections:

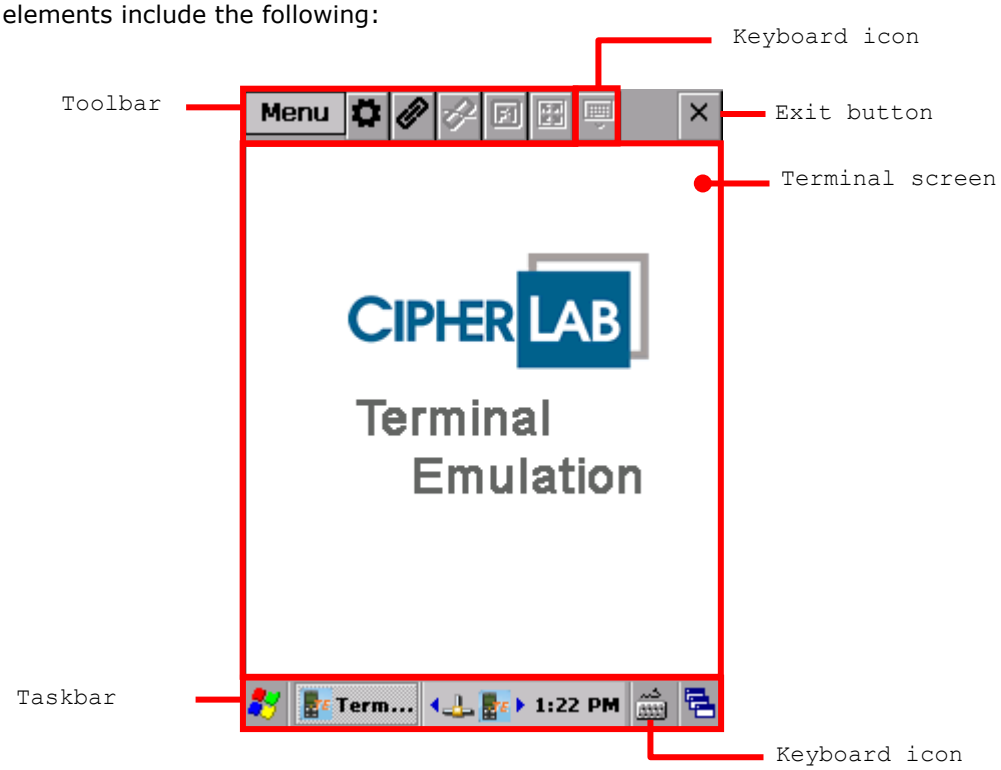
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2.1. SCREEN TERMINOLOGY

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:



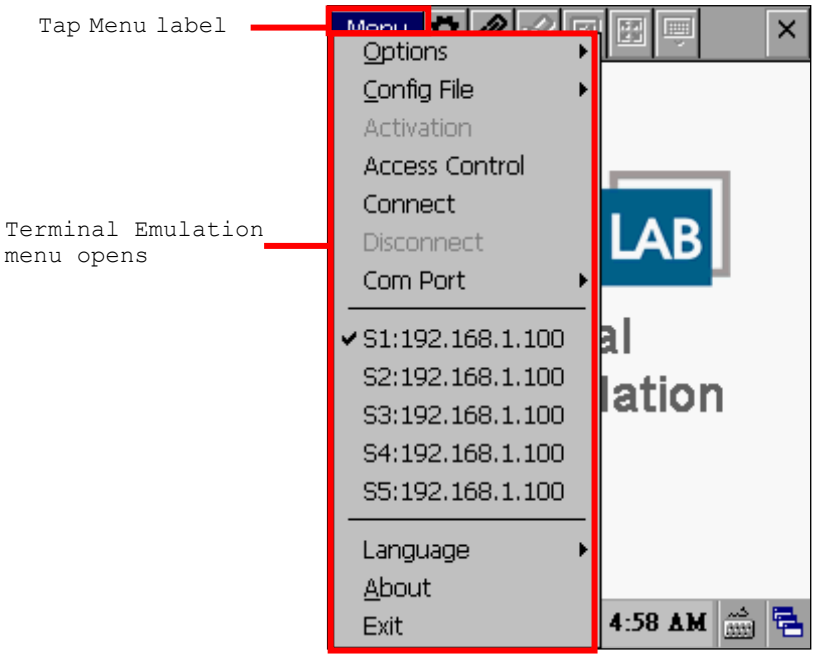
Term	Description
Toolbar	Presents a few icons that quick launch some actions from Terminal Emulation. ▸ See Toolbar for details.
"Menu" button	Opens Terminal Emulation menu. ▸ See Menu for details.
Exit button	Closes the application.
Terminal screen	Displays what the emulated terminal would display.
Taskbar	The OS taskbar
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 upper-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 mobile computer. After this is done, a complete set of menu options will be available. See Enter Activation Key.
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 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 top of the application window as long as Terminal Screen isn't expanded to full-screen.

The following shows the toolbar in a telnet session:



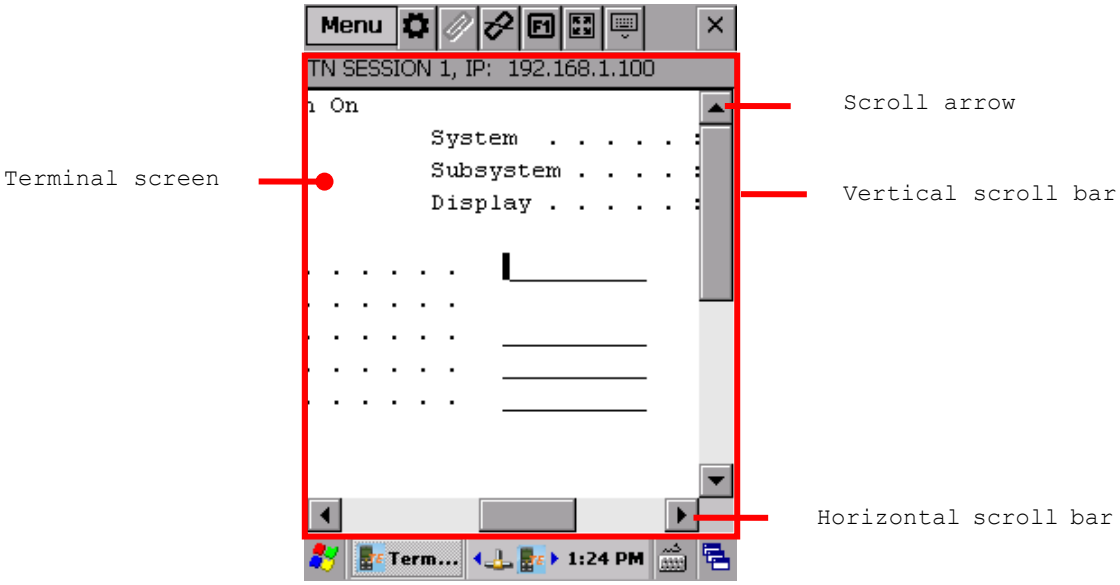
Toolbar delivers the following functions:

Icon	Description
Menu	Tap to open Menu items.
	Opens Terminal Emulation settings ▸ Delivers the same action as **Menu** | **Options** | **Settings**.
	Starts a telnet session. ▸ Delivers the same action as **Menu** | **Connect**. ▸ Available only when no telnet session is active.
	Ends a telnet session. ▸ Delivers the same action as **Menu** | **Disconnect**. ▸ Available only when a telnet session is active.
	Opens emulated terminals' featured function keys. ▸ Delivers the same action as **Menu** | **Options** | **Key**. ▸ Available only when a telnet session is active.
	Enlarges the Terminal Screen to full-screen. ▸ Delivers the same action as **Menu** | **Options** | **Full-screen**. ▸ Available only when a telnet session is active.
	SIP button; tap this to open or close the on-screen keyboard.

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.

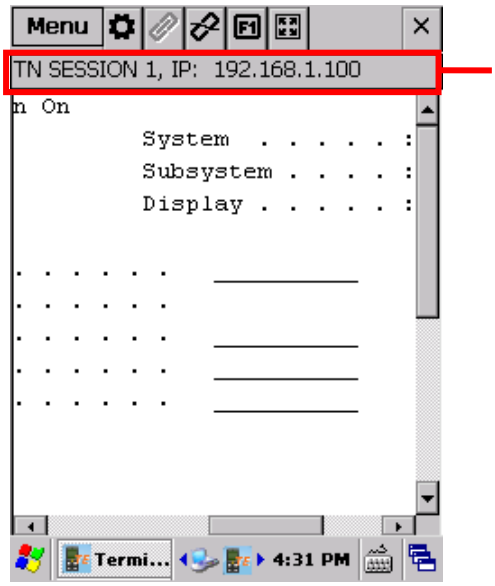
In default state, terminal screen comes with a vertical and a horizontal bar at the right and bottom that can be used to move the screen to the desired portion to view. Scroll bars and scroll arrows can be disabled at **Menu** | **Options** | **Settings** | **Preferences** tab page | **Enable Scrollbars**.



- On CP55, CP60 and 9700 mobile computers, 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 at the top of the Terminal Screen, right below the toolbar.



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 OS keyboard icon  on the taskbar (seated at the bottom of the screen), and select **Keyboard** in the pop-up menu.	Tap the OS keyboard icon  once more, and select **Hide Input Panel** in the pop-up menu.
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 the toolbar.

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

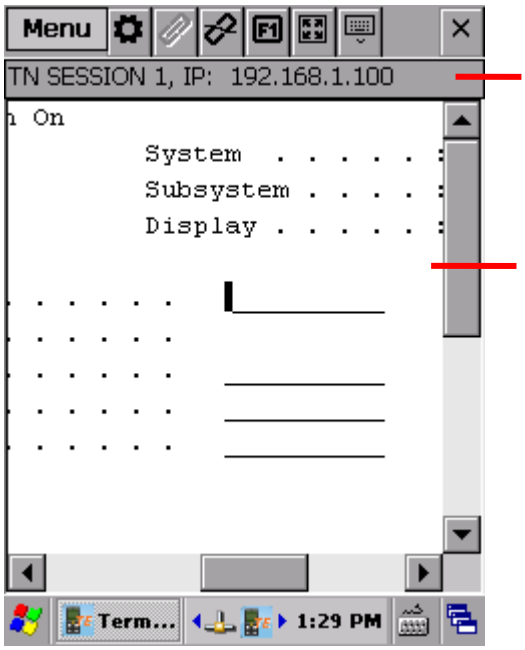
1) In **Host** group box, select the type of host to connect, **VT** or **TN**.
2) Set the connection profile, and tap  to save changes and quit settings, or tap  to discard changes and exit.
3) Tap **Menu** | **Connect**.

OR

Tap  icon on the toolbar.

Terminal Emulation tries to connect to the assigned host. Once connection is set up, Terminal Emulation shows the information streamed from the host service.

Session Information will display at the top of the screen, right below 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:

Tap  icon on the 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.

IN THIS CHAPTER

4.1 Option 22
4.2 Config File.....56
4.3 Access Control.....57
4.4 Connect/Disconnect 58
4.5 Host Session 59
4.6 About 60
4.7 Exit 61

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 submenu items **Settings**, **Key** and **Full Screen**, which are detailed in this section.

4.1.1. SETTINGS

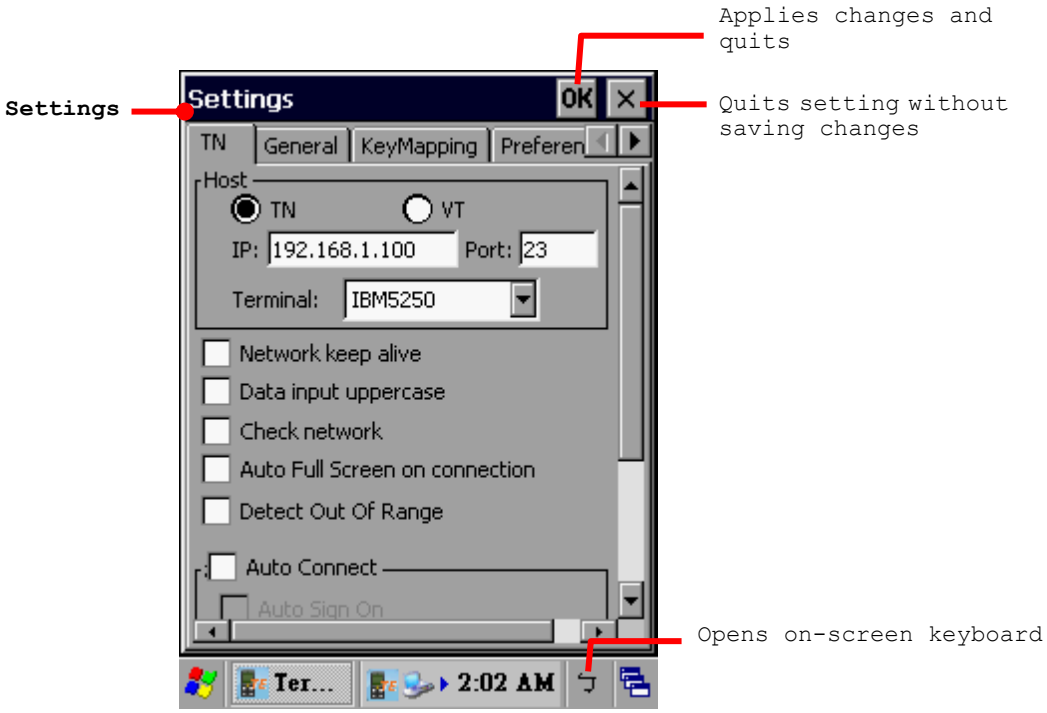
To access the **Settings** window:

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

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

OR

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



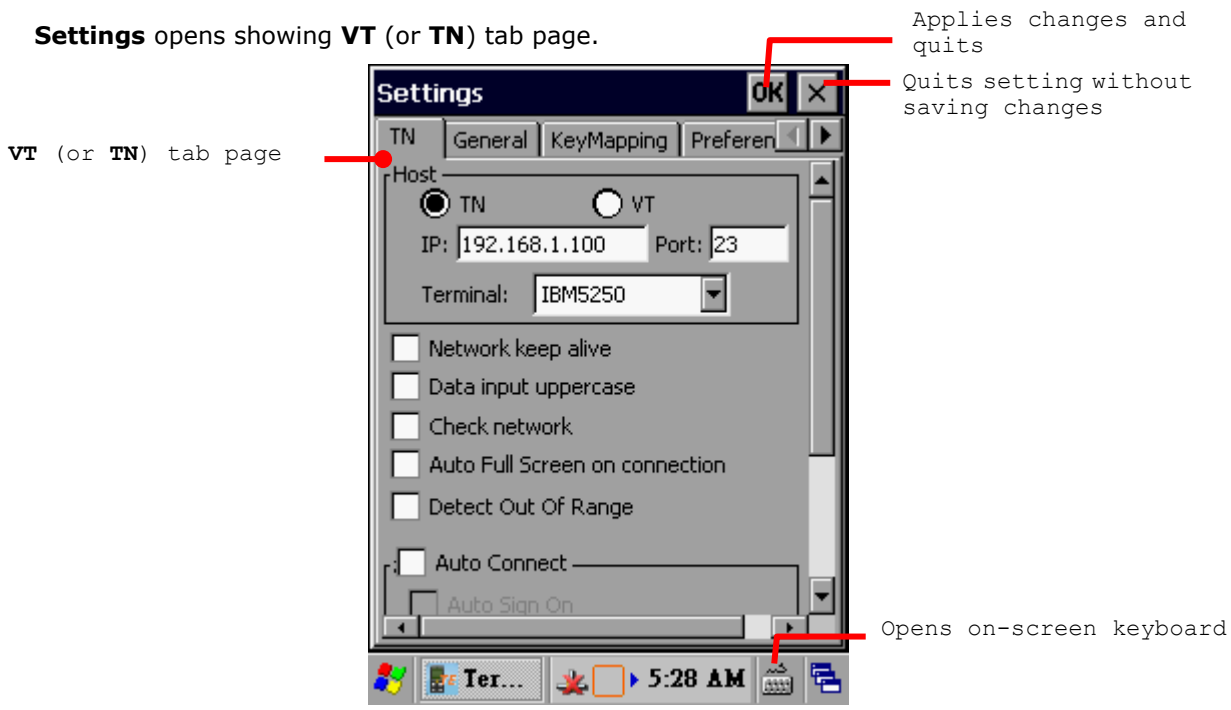
VT OR TN TAB PAGE

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

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

Open the **Settings** window as described in Settings.

Settings opens showing **VT** (or **TN**) 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 VT is the default host type to connect, **VT** 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:

Item	Description	Default
Host	Sets the type of the host to connect. Options are: ▸ VT ▸ TN	TN

IP	Assigns the IP address of the host to connect.	192.168.1.100
Port	Assigns the port to connect to the host.	23 (telnet port)
Terminal	Sets which TN or VT terminal to emulate. Options are: ▸ For TN: IBM5250, IBM3270 ▸ For VT: vt100, vt102, vt220, ansi	IBM5250 for TN /vt100 for VT
Network keep alive	Keeps connected to the server.	Deselected (Disabled)
Data input uppercase	Capitalizes all the letters of input data.	Deselected (Disabled)
Check network	Detects whether there is network available. If not, a dialogue box will pop up.	Deselected (Disabled)
Auto Full Screen on connection	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.	Deselected (Disabled)
Detect Out of Range	A dialogue box pops up when wireless signals are not detected.	Deselected (Disabled)
Auto Connect	Enables Terminal Emulation to auto-connect to the assigned host upon its launch.	Deselected (Disabled)
Auto Sign On	Enables Terminal Emulation to auto-login to the host service. If disabled, the host will request user name and password each time Terminal Emulation attempts to access. ▸ Available only when **Auto Connect** is enabled. ▸ When the login name and password are displayed on the same page of the emulated screen, Terminal Emulation will automatically input a Tab key after the login name is entered, followed by entering of the password. ▸ 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.	Deselected (Disabled)
Login Name	Assigns the user name to auto-login to the host service. ▸ Required when **Auto Sign On** is enabled. ▸ Maximum 20 characters are allowed.	guest
Login Password	Assigns the password to auto-login to the host service to access. ▸ Required when **Auto Sign On** is enabled. ▸ Maximum 20 characters are allowed.	--
Generate Log	Keeps the data-streaming record between host service	Deselected

	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.	(Disabled)

GENERAL TAB PAGE

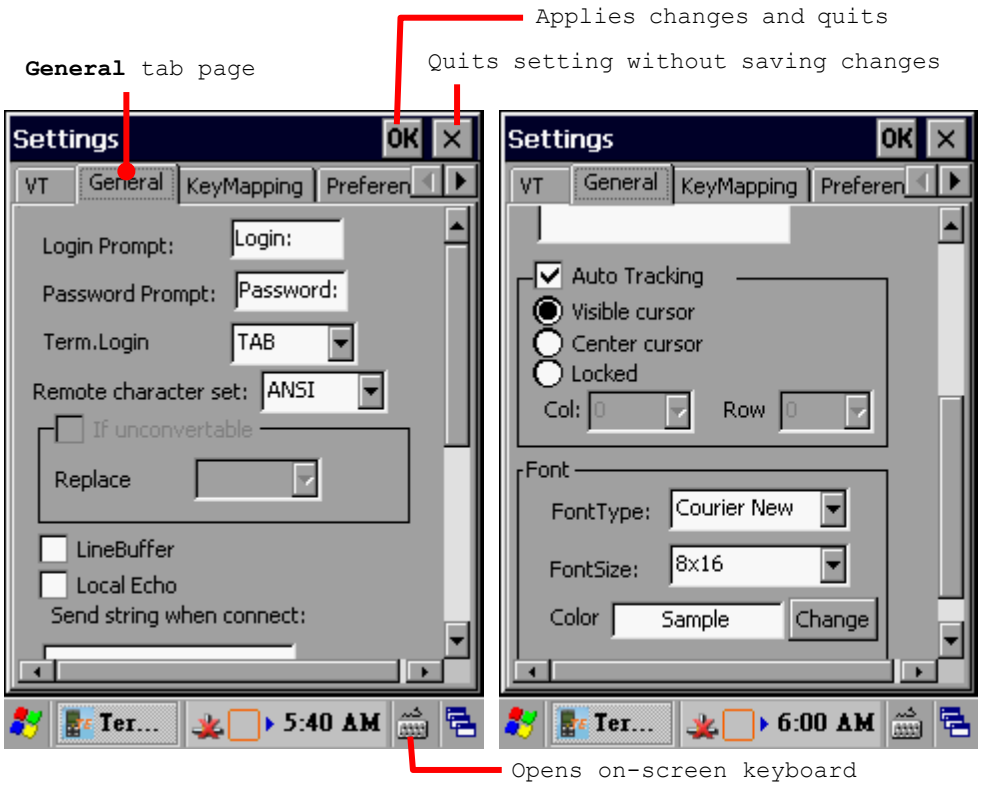
General tab page sets the general preferences using Terminal Emulation.

To open **General** tab page:

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

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

SETTINGS FOR VT EMULATION

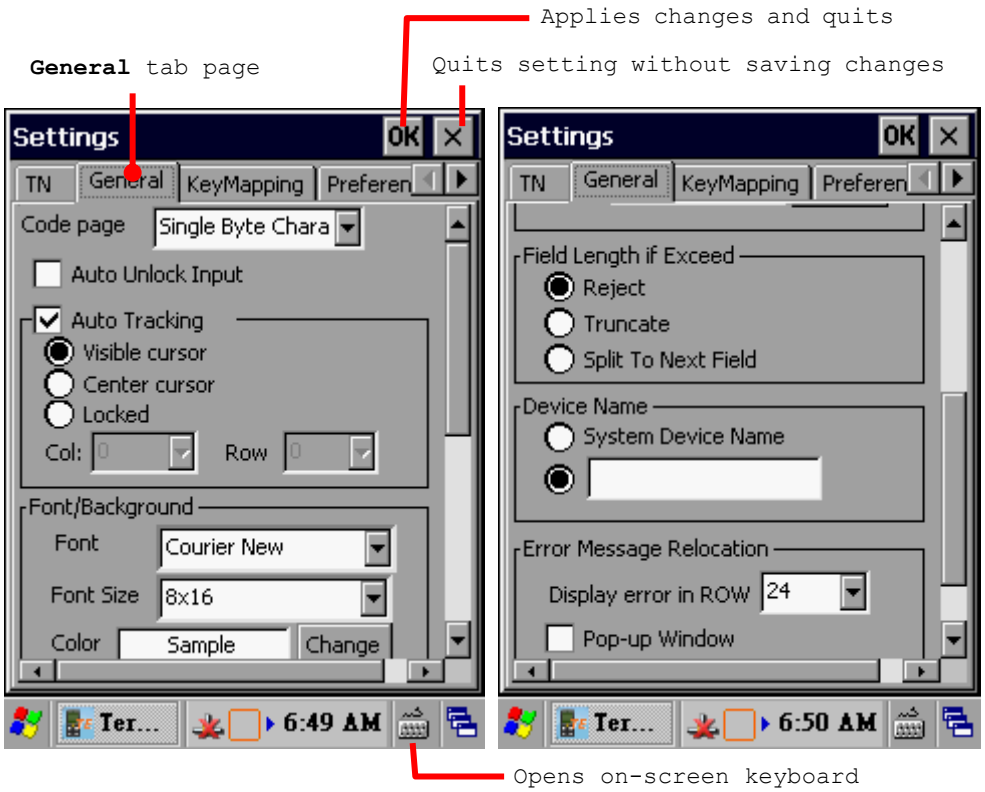


Setting	Description	Default
Login Prompt	Defines the text exactly displayed by the host service to prompt for user name. ▸ This setting is mandatory for VT emulation to Auto Sign On.	login:
Password Prompt	Defines the text exactly displayed by the host service to prompt for password. ▸ This setting is 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
If unconvertable	When UTF-8 is assigned, the checkbox of If unconvertable is able to be selected. If the characters received from the server are unconvertable, a replacement will be displayed on the terminal. Options are available in **Replace** drop-down list: ▸ (Blank) ▸ X ▸ % ▸ & ▸ ≠ ▸ - ▸ _	Deselected (Disabled)
LineBuffer	Shows typed text and commands locally on Terminal Emulation, and transmits them to host service only after Enter key is pressed to confirm the input. ▸ By default and by characteristic of VT emulation, Terminal Emulation sends entered text to host service character by character without pressing Enter key.	Deselected (Disabled)
Local Echo	Shows typed text locally on Terminal Emulation just as it is being transmitted to host service. ▸ Typed commands will not be shown locally.	Selected (Enabled)
Send string when connect	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.	--
Auto Tracking	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)
Font	Adjusts the font type, font size, and color.	
Font Type	Assigns the font to show characters in Terminal Screen. Options are: ▸ Courier New ▸ Lucida Console ▸ Excalibur Monospace	Courier New

	• NetTerm ANSI • NetTerm OEM	
Font Size	Assigns the size of characters displayed in Terminal Screen. Options are: • 5x10 • 6x12 • 8x10 • 8x14 • 8x16 • 10x20	8x16
Color (On activated devices only)	Changes the font color and background color in the Terminal Screen to suit your 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 Unlock Input	Enables the mobile computer not to be locked or give out an alarm sound when pressing any keys.	Deselected (Disabled)
Auto Tracking	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 colspan="2">Adjusts the font, font size, font color and background color.</td></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>
<tr><td>Field Length if Exceed</td><td>Defines how to handle a data when it exceeds a TN terminal'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 colspan="2">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></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 the 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:

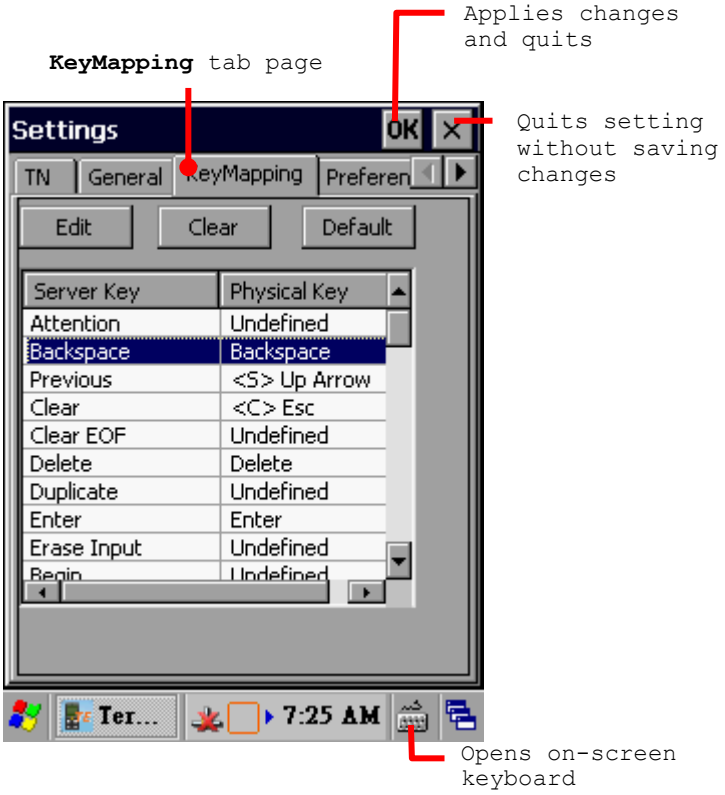
1) Open the **Settings** window as described in Settings.
2) Tap KeyMapping tab.

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

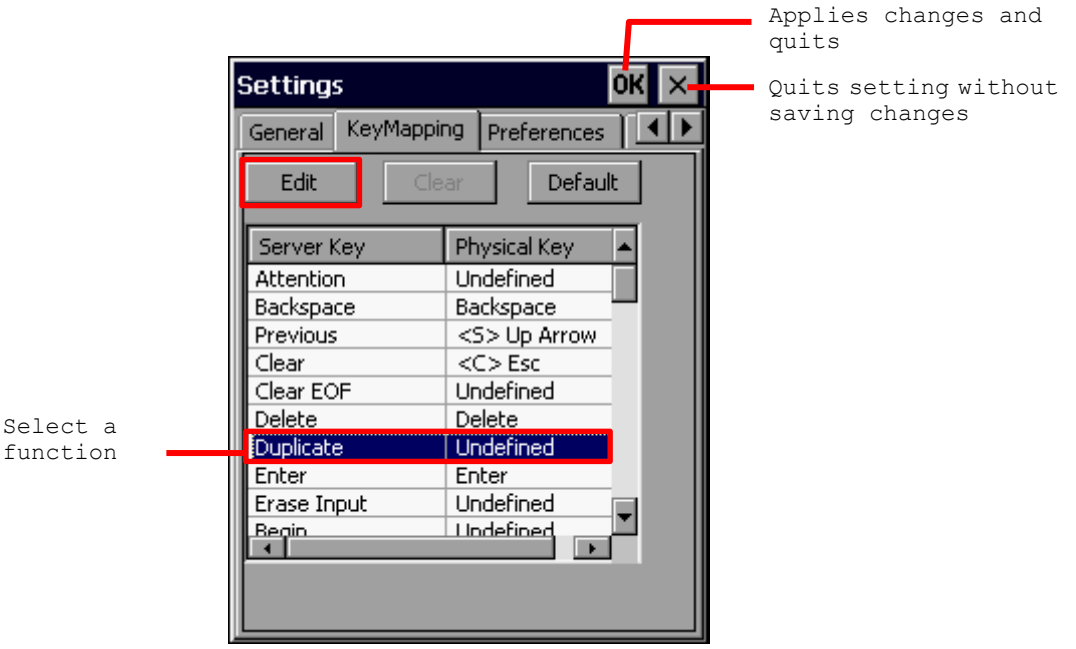
		▸ Numbers ▸ Punctuations ▸ Function Keys ▸ Navigation Keys ▸ Editing Keys
	Physical Key	▸ Serves the function of the Server Key.
	Trap	▸ Assigns the command of a Server Key to a Physical Key by directly pressing the latter one on the mobile computer.
	Shift/ Ctrl/ Alt	▸ Functions with the physical key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

ASSIGN FUNCTION KEY

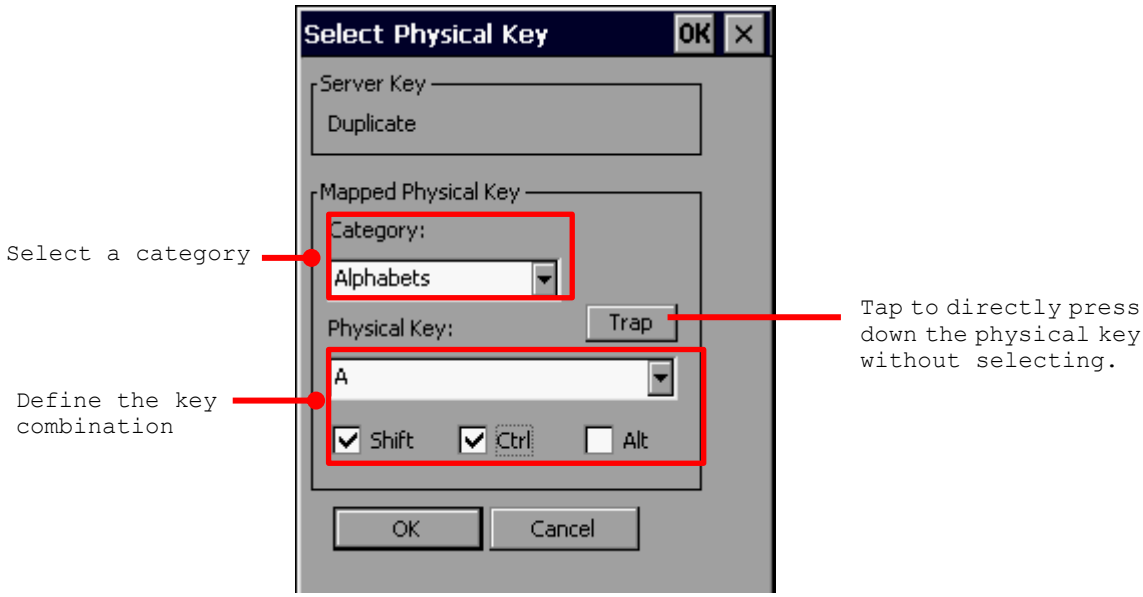
Using function keys, you may transmit control codes, which do not produce displayable characters but are instead codes for functions. If these codes are received by the mobile computer, it will perform the associated function as defined.

To define keys:

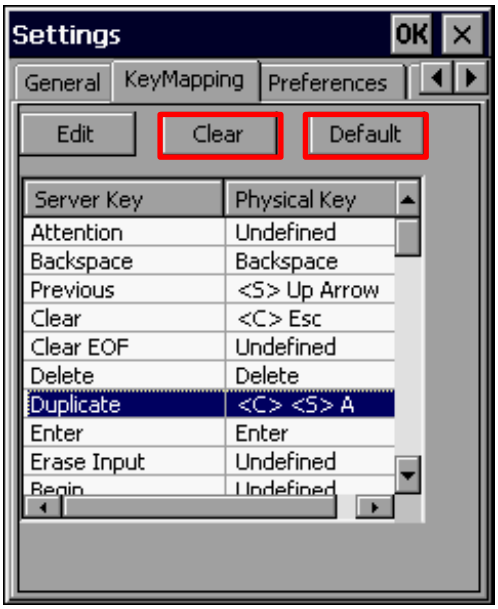
1) Open **KeyMapping** tab as described in Key Mapping Tab page.
2) In Server Key list, select a function and tap "**Edit**" to enter Select Physical Key page. Please note that VT and TN provide different sets of keys available for key-assigning.



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.



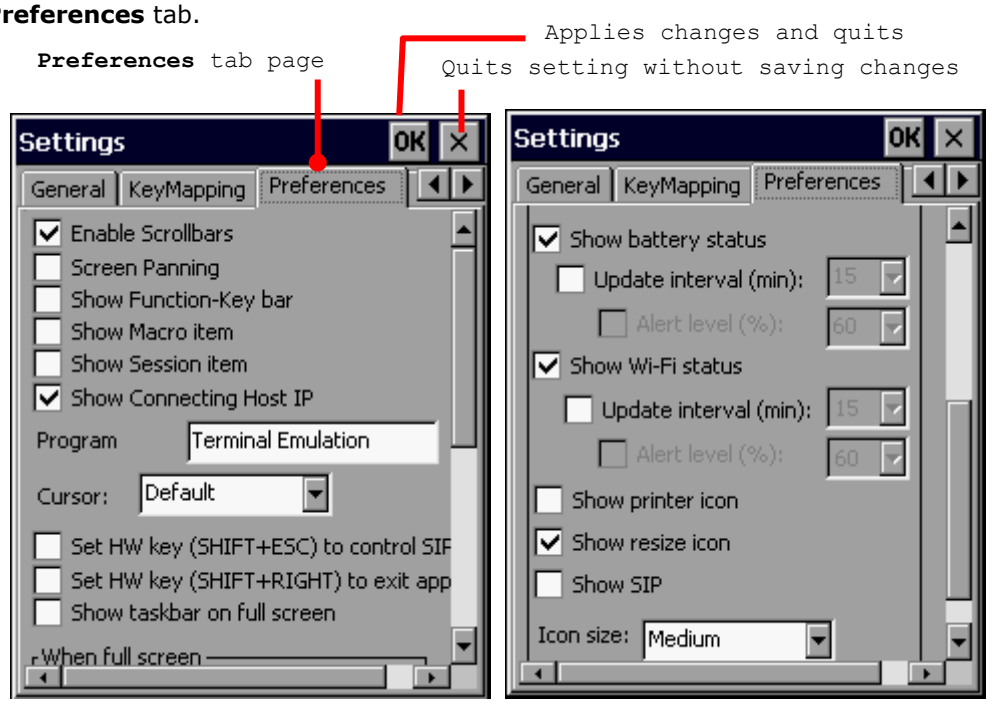
6) Tap OK to save changes and quit settings, or tap ✕ to discard changes and exit.

PREFERENCES TAB PAGE

Preferences tab page sets the viewing preferences for Terminal Emulation.

To open **Preferences** tab page:

1) Open the **Settings** window 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 on Terminal Screen that moves the screen to the desired portion to view.	Selected (Enabled)
Screen Panning	Enables user to drag and pan on terminal screen.	Deselected (Disabled)
Show Function Key Bar (On activated devices only)	Displays a fixed bar  right below 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 below the toolbar which lists all function keys for easy operation on the emulated terminal screen. 	Selected (Enabled)
Program	Shows the program name Terminal Emulation.	Default
Cursor	Changes the cursor type between three different modes: ▸ Default (half block cursor) ▸ Underline (underline cursor) ▸ Block (full block cursor)	Default
Set HW key (SHIFT+ESC) to control SIP	Sets whether to enable SHIFT+ESC as the hotkey for opening the onscreen keyboard. See Open On-screen Keyboard.	Deselected (Disabled)
Set HW key (SHIFT+RIGHT) to exit the app	Sets whether to enable SHIFT+ RIGHT as the hotkey for exiting the app.	Deselected (Disabled)
Show taskbar on full screen	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.	Deselected (Disabled)
"When full screen" group box	▸ 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	

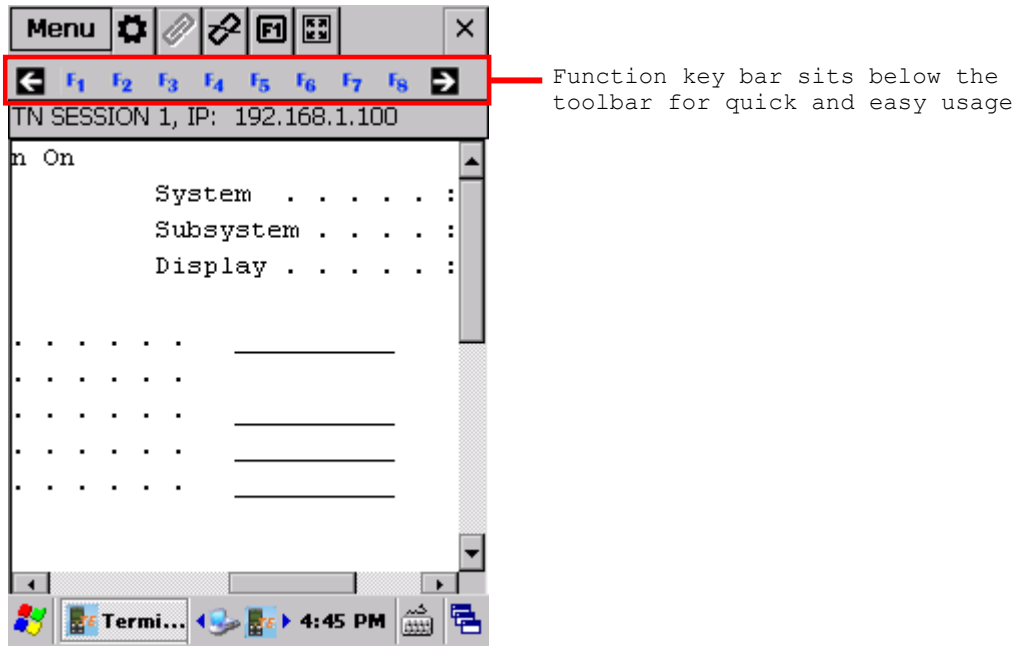
is shown on full screen.

Setting	Description	Default
Show battery status	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%.	Selected (Enabled)
Show Wi-Fi status	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%.	Selected (Enabled)
Show printer icon	Select to enable the printer icon. 	Deselected (Disabled)
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** | **Options** | **Settings** | **Preferences** tab page | **Show Function Key Bar**. A horizontal bar will appear just below 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)

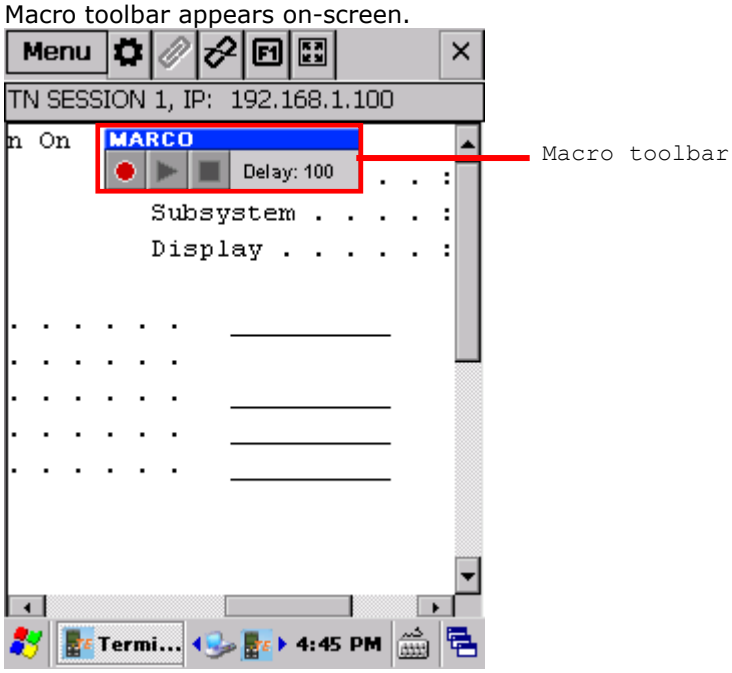
On activated devices, macro operation is available for performing automatic multiple-step navigation on the emulated screen. This is done in a two-step procedure: recording a macro first, followed by macro playback. As macro operation involves user input and host response, a recorded macro is host-specific 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 **Menu** | **Settings** | **Preferences** tab page.
3) Select the **Show Macro Item** checkbox.

4) Tap OK to apply changes and quit settings.
Macro toolbar appears on-screen.



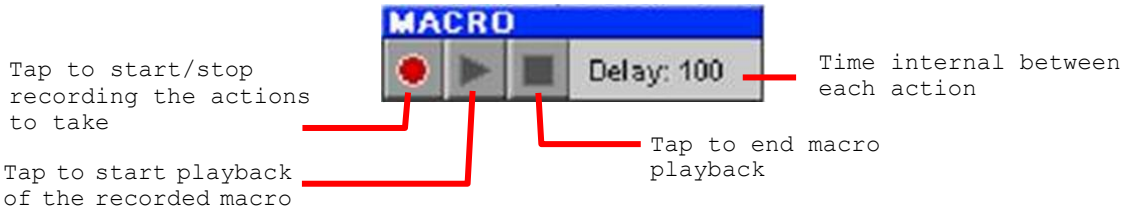
5) Tap the record button on the macro toolbar to start recording.

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).

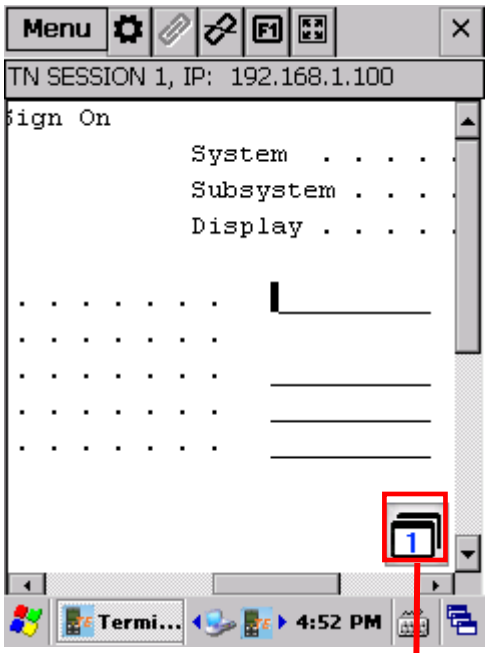


When applying a recorded macro, take notice of the following:

- 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.





OPTIMIZE MAXIMIZATION

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

With the OS taskbar 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. Also, the SIP icon can be used to open or close the on-screen keyboard.

Resize icon:



Battery level icons:

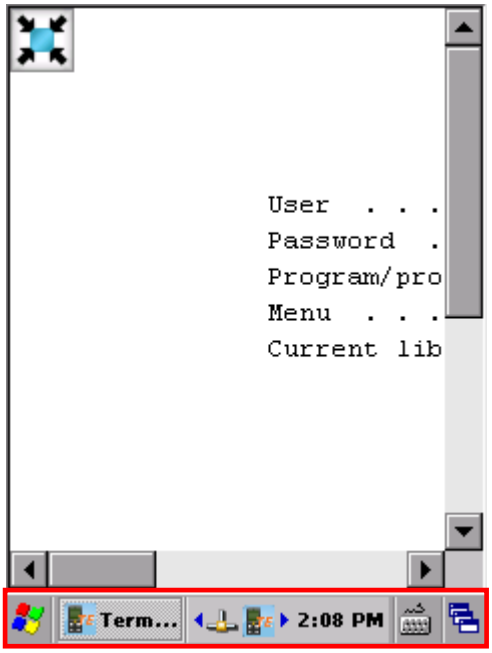


Wi-Fi Signal strength icons:



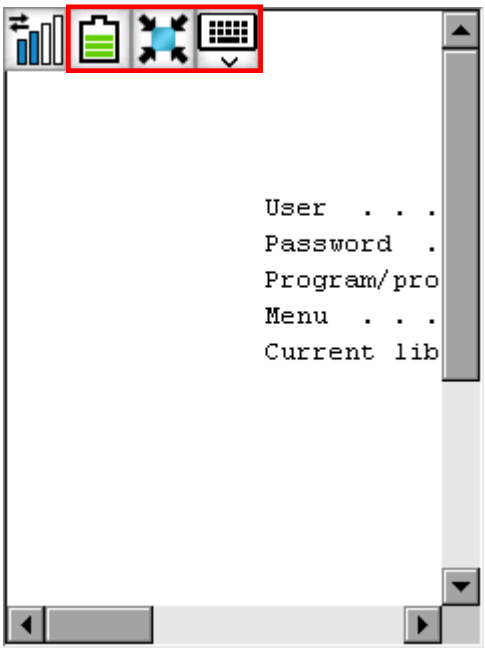
SIP icon:





When "Show taskbar on full screen" is selected, the OS taskbar 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 "Show battery status", "Show Wi-Fi status" and "Show SIP" are selected, icons for Wi-Fi signal, battery level and the on-screen keyboard will appear under full screen mode. The taskbar 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 SETTING PAGE

SETTINGS FOR VT EMULATION

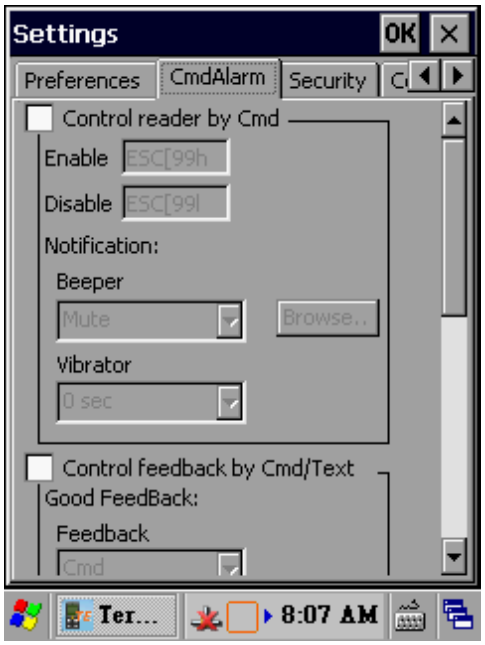
On the **Alarm** or **CmdAlarm** tab page, **Terminal Emulation** enables the host service to control the mobile computer's reader module(s), and also respond to Terminal Emulation's input, both by sending escape sequences.

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

To open **CmdAlarm** tab page for VT emulation:

1) Open the **Settings** window 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	▸ Mute

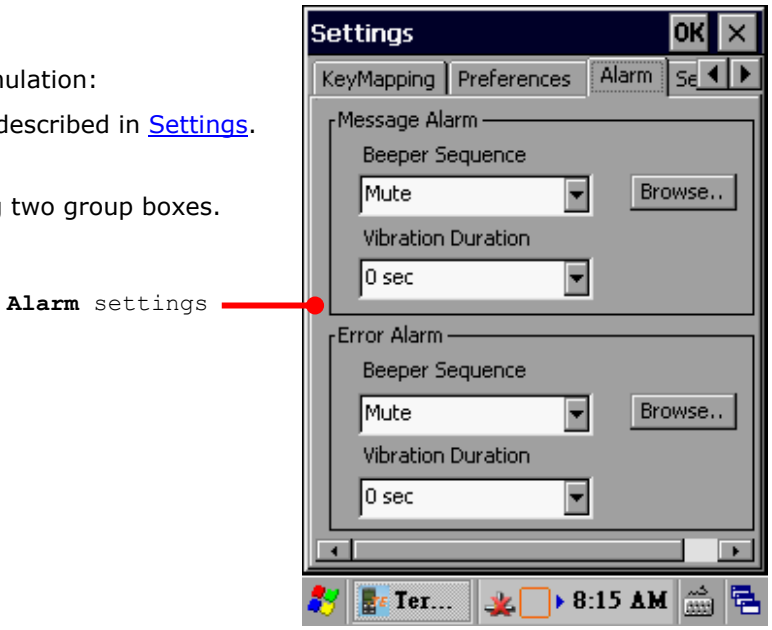
			command.	
		▸ Vibrator	▸ Select the amount of time to vibrate each time the reader module is enabled/disabled by the given command.	▸ 0 sec
Control feedback by Cmd	Enables the host service to respond to Terminal Emulation by sending a command (escape sequence) for good or erroneous inputs. Deselected 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**
		▸ Cmd	▸ 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**
		▸ Cmd	▸ 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

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

1) Open the **Settings** window 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).

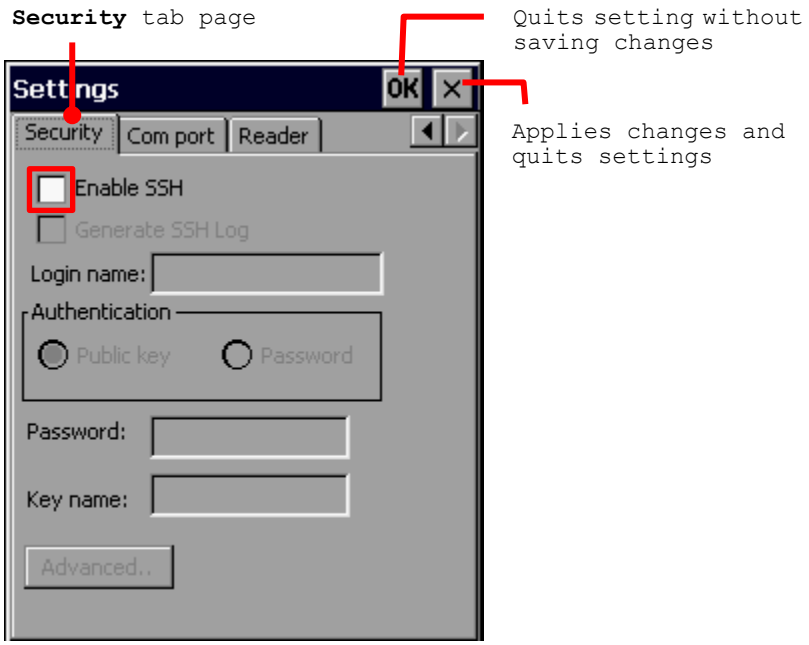
Setting	Description	Default
Beeper Sequence	Select a sound to play each time an error occurs. Mute the sound or click on "**Browse**" to select a wav file from the device.	Deselected (Mute)
Vibration Duration	Select the amount of time to vibrate. Configure vibration duration between 0 and 5 sec (in increments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



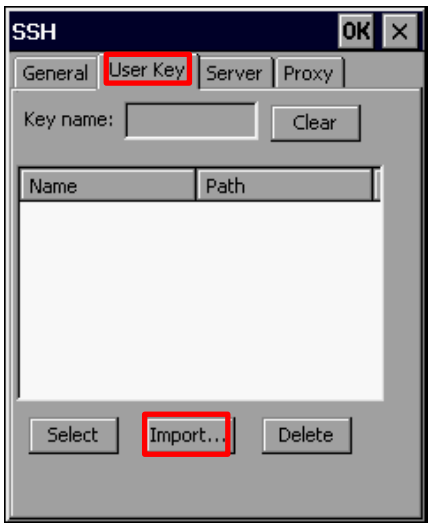
OR

Load a profile key:

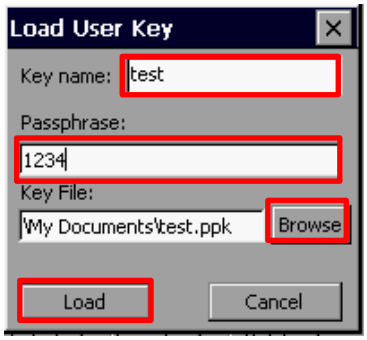
4) Transfer a key file (*.pem or *.ppk) to your mobile computer.
5) Under **Authentication**, select **Public key**, and then tap "**Advanced**".



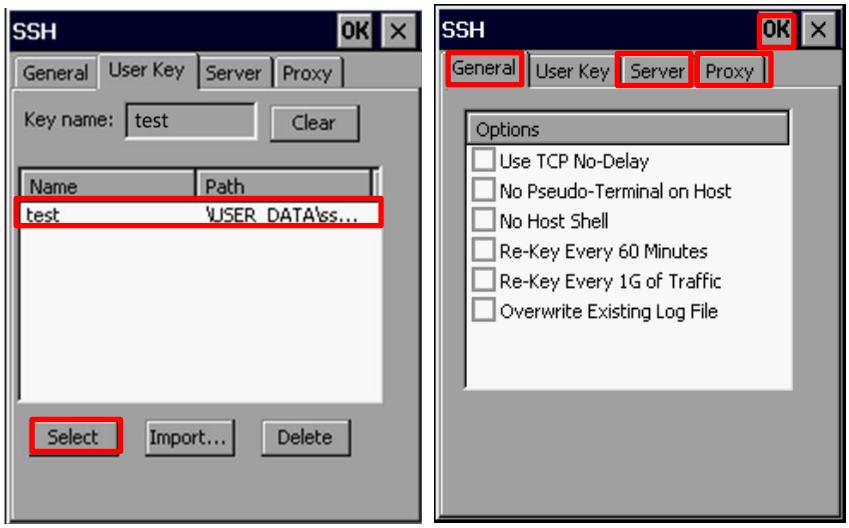
6) On SSH page, Select **User Key** tab, and then tap on "**Import**"



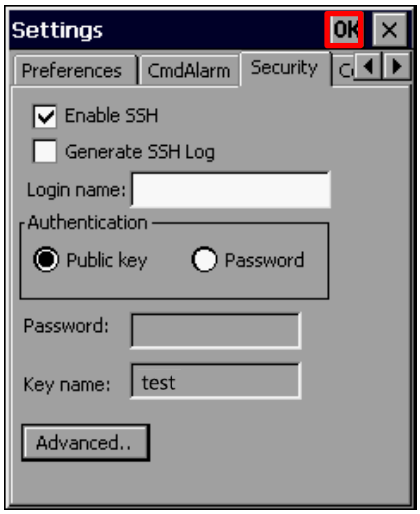
7) On Load User Key page, key in a new name for this key file in **Key name** field and the password to access this key file in **Passphrase** field (this value can be blank), tap "**Browse**" to select the key file, and then tap "**Load**"



8) Returning to SSH 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 OK on the title bar of the window to apply changes and return to Security tab page.



On Security tab page, tap OK 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.

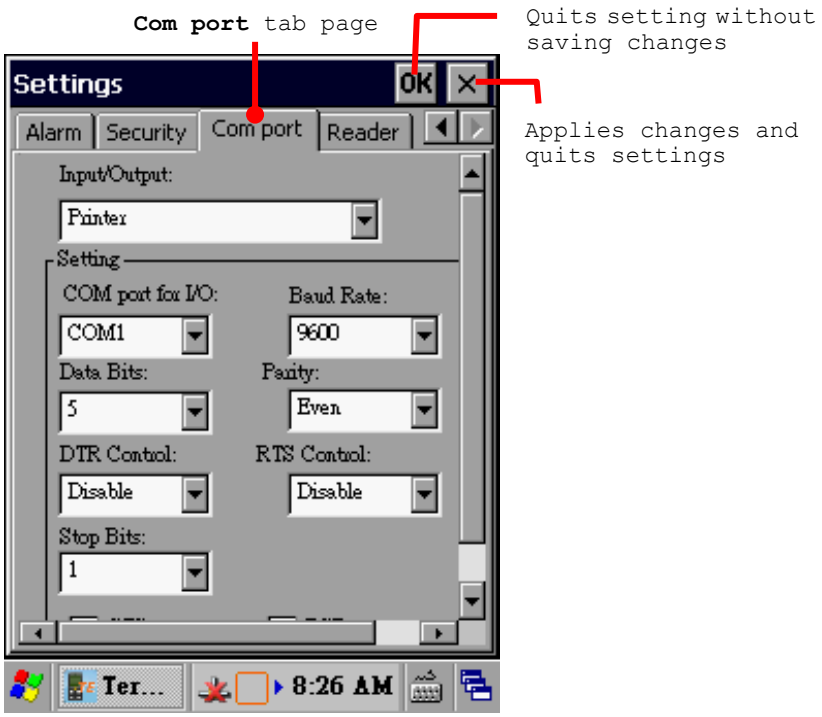


COM PORT TAB PAGE

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.	

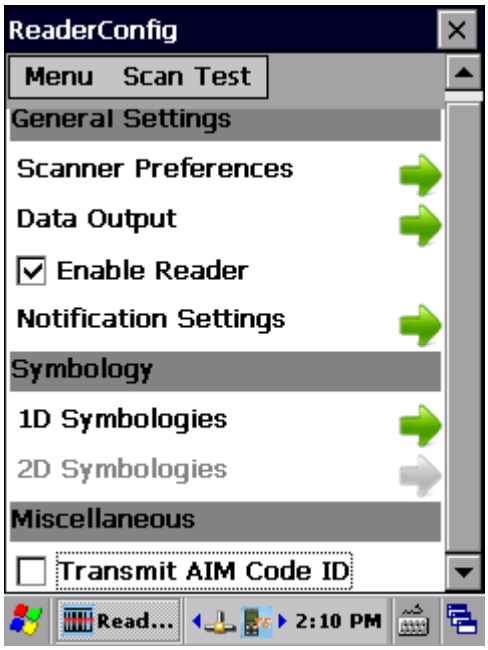
Setting	Description	Default
COM port for	COM port stands for Communication port. It might refer not only to physical ports, but also to virtual ports, such as ports created by Bluetooth or USB-to-serial adapters. Options are: ▸ COM1 ▸ COM2 ▸ COM3	COM1

		▸ COM4 ▸ COM5 ▸ 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.	Disable

		Options are: ▸ 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 CP55, CP60, 9700

On CP55, CP60 and 9700 mobile computers, tapping the **Menu** | **Options** | **Settings** | **Reader** tab page will open the Reader Configuration utility on the mobile computer (same as tapping **Start** | **Settings** | **Control Panel** | **Reader Configuration**). For the settings provided, see the Reference Manual of the specific mobile computer.



Featured settings are:

Setting	Description
Scanner Preferences	Adjusts reader settings for conditions on scanning barcodes.
Data Output	Opens a page that sets how to output decoded data, i.e. the output format.
Enable Reader	Check to enable/disable the 1D (laser) reader or 2D imager.
Notification Settings	Sets how to give notice of a good read.
1D Symbologies	Opens a list of 1D symbologies supported by the reader engine (either 1D or 2D).
2D Symbologies	Opens a list of 1D symbologies supported by the 2D imager.
Transmit AIM Code	Sets whether to include AIM code ID character in the decoded data. See AIM Code ID character.

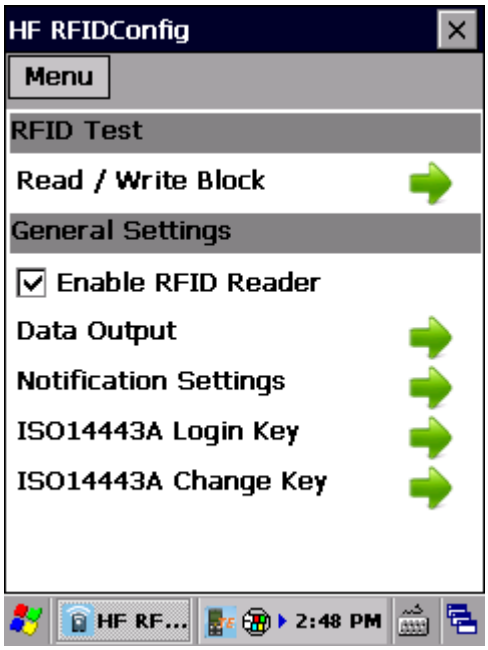
SYMBOLOGY SETTINGS

For details about the featured symbologies, see the following pages:

Device	Refer to
CP55	Appendix II: CCD Linear Imager (SM1) & Laser (950) Symbology Settings for CP55
	Appendix III: 1D Laser & LR Laser Reader Symbology Settings for CP55, CP60, 9700
	Appendix IV: 2D Imager Symbology Settings for CP55, CP60, 9700
CP60	Appendix III: 1D Laser & LR Laser Reader Symbology Settings for CP55, CP60, 9700
	Appendix IV: 2D Imager Symbology Settings for CP55, CP60, 9700
9700	Appendix III: 1D Laser & LR Laser Reader Symbology Settings for CP55, CP60, 9700
	Appendix III: 1D Extended Range Laser Reader Symbology Settings for 9700
	Appendix IV: 2D Imager Symbology Settings for CP55, CP60, 9700
	Appendix IV: Near/Far 2D Imager Symbology Settings for 9700

RFID SETTINGS FOR CP55

If your CP55 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** | **Settings** | **Control Panel** | **HF RFID Configuration**). For details on the provided settings, see the CP55 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. Therefore **Key** submenu is only available when a telnet session is active.

You may perform key mapping on each of the function keys using KeyMapping so they deliver the desired functions on the emulated terminal.

To use one of the emulated terminal's function keys during a telnet session:

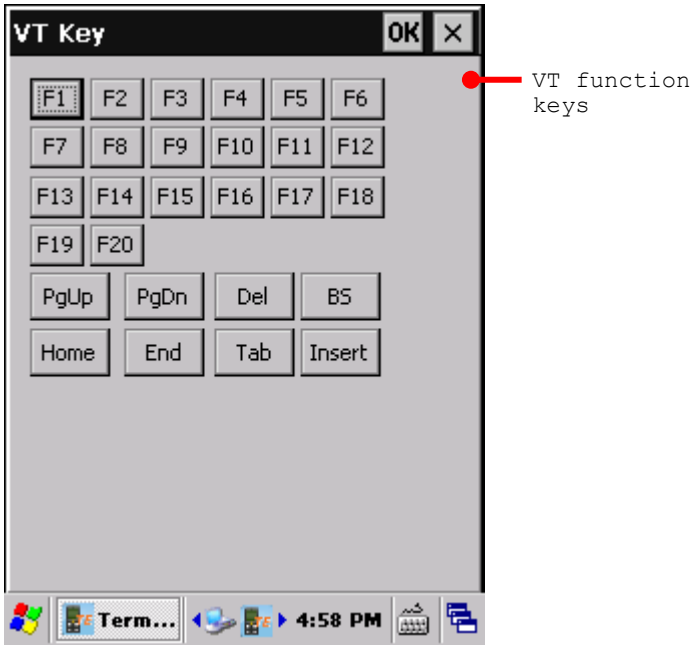
1) Tap **Menu** | **Options** | **Key**.

   An on-screen keypad opens.

2) Tap any one of the displayed host keys to apply.

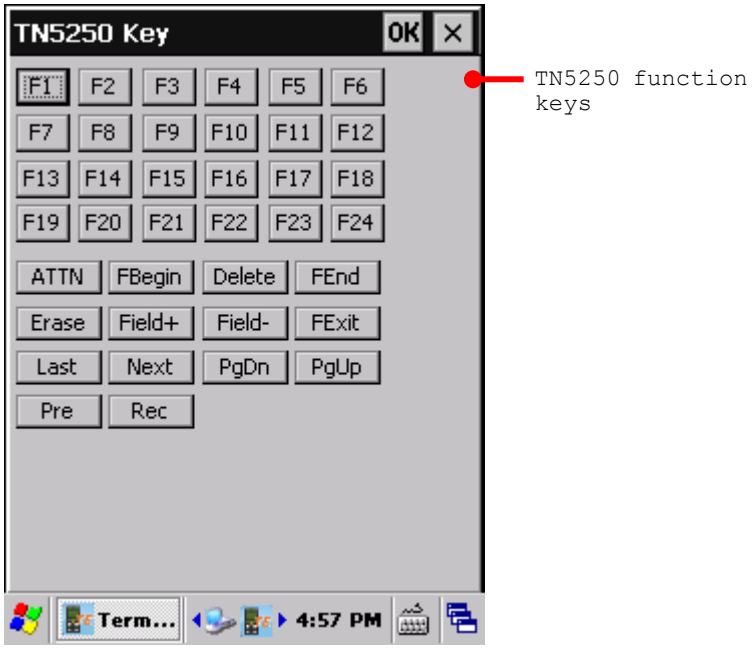
Featured keys are different for VT and TN:

VT ON-SCREEN FUNCTION KEYS



VT Host Keys	
F1~F20	VT function keys
PgDn	Page Down
PgUp	Page Up
Del	Delete
BS	Backspace
Home	Home
End	End
Tab	Tab
Insert	Insert

TN ON-SCREEN FUNCTION KEYS



5250 Host Keys	
F1~F24	5250 function keys
ATTN	Attention key
FBegin	Go to the beginning of a field
Delete	Delete character at cursor, and keep the cursor position
FEnd	Go to the end of a field
Erase	Erase all input fields
Field+	Field+ key
Field-	Field- key
FExit	Field Exit key
Last	Position cursor after the last character in a field
Next	Jump to next field
PgDn	Send Page Down (roll up) key to IBM Host
PgUp	Send Page Up (roll down) key to IBM Host
Pre	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)

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 taskbar on the maximized screen. Alternatively, users can select whether to display icons to indicate battery level and Wi-Fi signal strength. See Preferences Tab page for whether to display the taskbar or the two said icons.

Resize icon: 

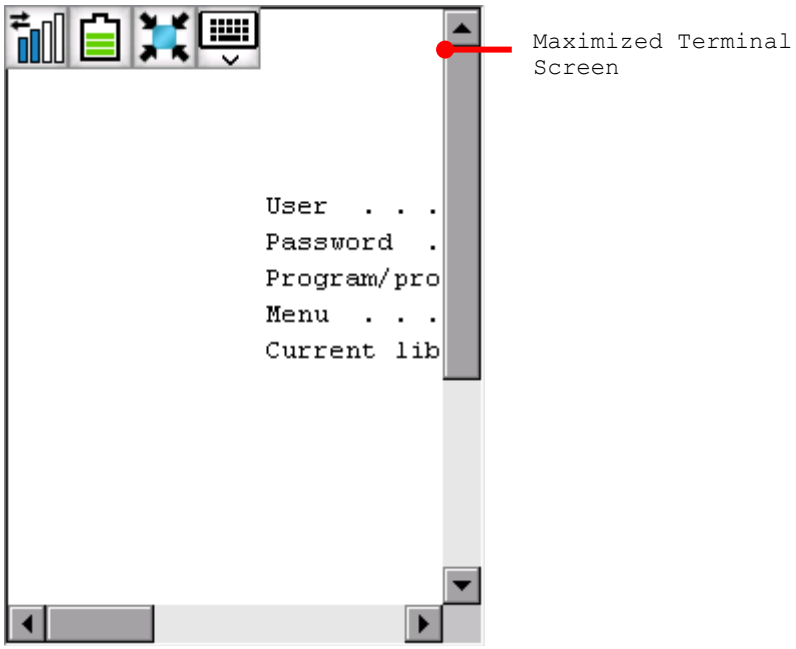
Battery level icons: 

Wi-Fi signal strength icons: 

SIP icon: 

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.

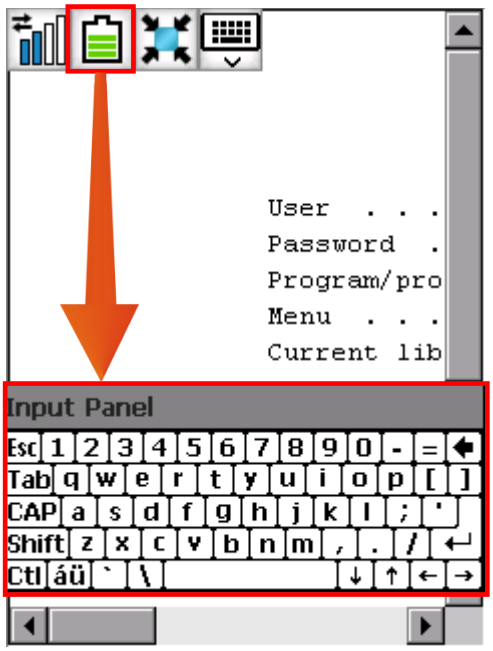


QUIT MAXIMIZATION

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.



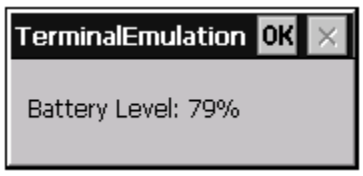
If Set HW key (SHIFT+ESC) to control SIP is selected under **Preferences** tab page, you may also press Shift+Esc on the physical keypad to open or close the on-screen keyboard.

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.

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.

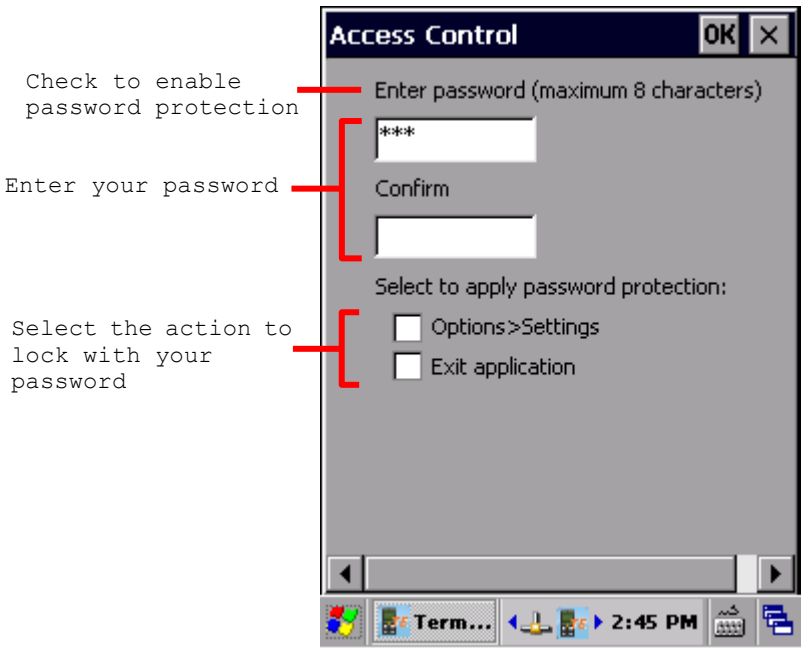
To enable access control:

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 window) ▸ Exit application (unauthorized users will be unable to exit the application)

3) After setting up password protection as desired, tap OK 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.

To disconnect from a host service:

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

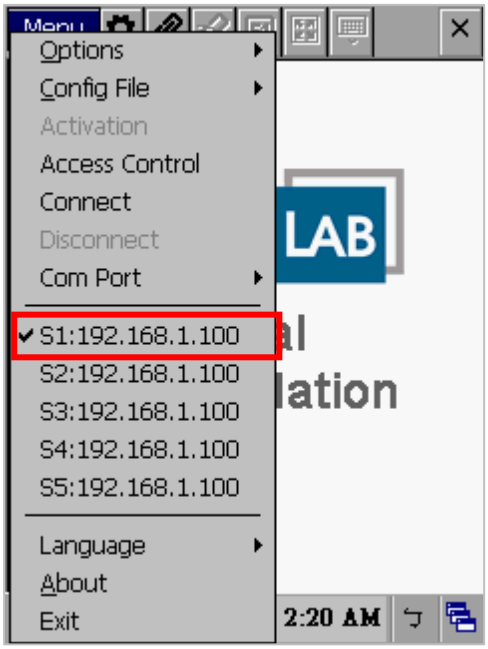
Terminal Emulation proceeds to disconnect from the service.

Menu item **Disconnect** delivers the same function as the  icon on the toolbar.

4.5. HOST SESSION

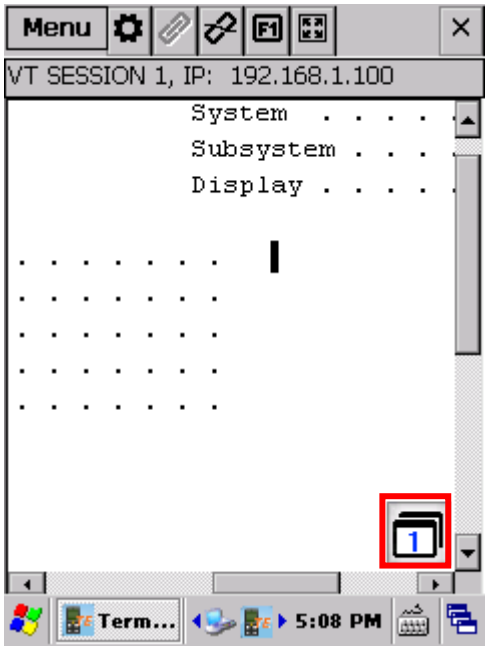
On activated devices, you may create up to five host connections, named terminal emulation "sessions". Each of these sessions can be connected to the same or different host services at the same time.

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** | **Preferences** tab page | **Show Session Item**, and double-tap the icon on each session screen to jump to the next 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 will remain on-screen throughout all sessions.

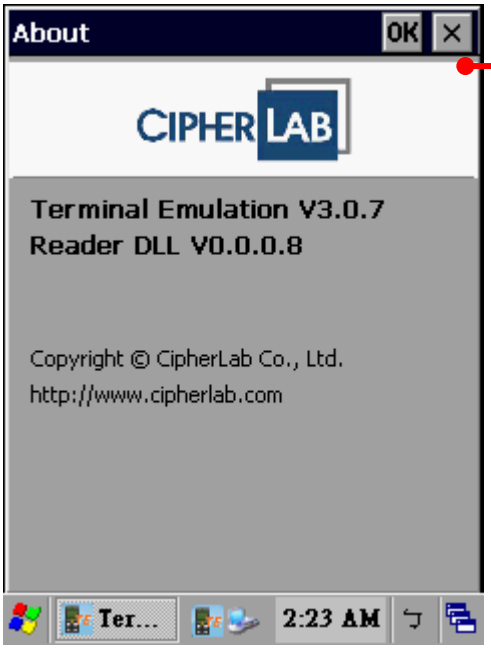
Note: If your device has not been activated, only one session is available for setup. All four other sessions are disabled. However, if an Activation Key is entered, up to five host connections (S1 to S5) will then be allowed, and you may proceed to connect and manage multiple host sessions.

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**.



About page provides software version and developer info

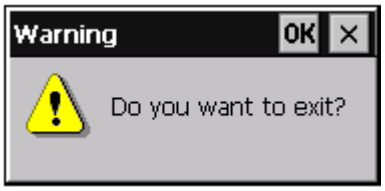
4.7. EXIT

Exit is a menu item to close Terminal Emulation.

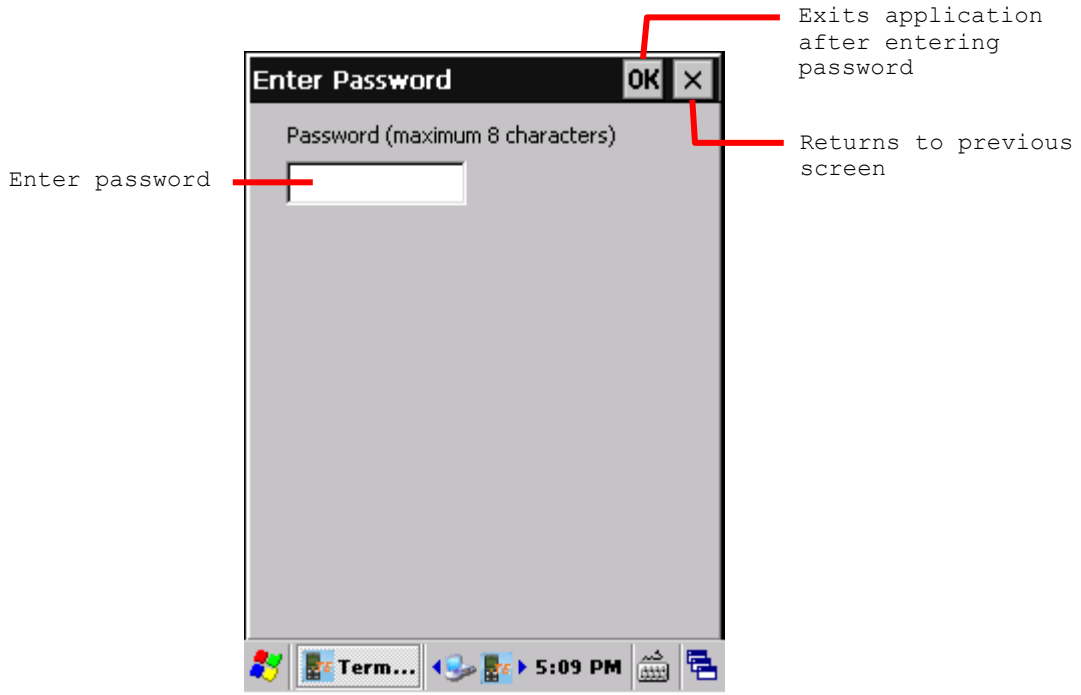
To close Terminal Emulation:

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

A warning dialog appears confirming whether to exit Terminal Emulation. Tap OK to exit, or tap ✕ to cancel.



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 OK 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 types. Reader availability depends on the hardware integrated on the mobile computer.

Scan Engine		ID	9700	CP55	CP60
1D	*Linear Imager (CCD)*	*SM1*		✓	
	Laser	*SE950*			
		SE955	✓	✓	✓
	Long Range Laser	*SE965*		✓	✓
	Extended Range Laser	*SE1524*	✓		
2D	*2D Imager*	*SE4500+PL4507*	✓		
		SE4500 Software Decode SDK	✓	✓	✓
	Near/Far 2D Imager	*EX25*	✓		
RFID	*ID_MOD_MP_RFID*			✓	

Reader combination allowed is either 1D plus RFID or 2D plus RFID. Each combination is able to initialize both readers at the same time (dual mode operation). For example, when you hit a physical scan key with Terminal Emulation active on the mobile computer, it reads a printed barcode in position or an RFID tag in proximity, depending on which comes first.

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.

IN THIS CHAPTER

Symbologies Supported 63
RFID Tags Supported.....66

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.

		CP55 CCD	9700 Laser CP55 Laser CP60 Laser	9700 2D CP55 2D CP60 2D
Codabar		✓	✓	✓
Code 11		✗	✓(1)	✓
Code 39	Code 39	✓	✓	✓
	Trioptic Code 39	✗	✓	✓
	Italian Pharmacode (Code 32)	✓	✓	✓(2)
	French Pharmacode	✗	✗	✗
Code 93		✓	✓	✓
Code 128	Code 128	✓	✓	✓
	GS1-128 (EAN-128)	✓	✓	✓(2)
	ISBT 128	✓	✓	✓
Code 2 of 5	Chinese 25	✗	✓(1)	✓(2)
	Industrial 25 (Discrete 25)	✓	✓	✓
	Interleaved 25	✓	✓	✓
	Convert Interleaved 25 to EAN-13	✗	✓	✓(2)
	Matrix 25	✗	✗	✓
Composite Code	Composite CC-A/B	✗	✗	✓
	Composite CC-C	✗	✗	✓
	Compostie TLC 39	✗	✗	✓(2)
GS1 DataBar (RSS)	GS1 DataBar Omnidirectional (RSS-14)	✓	✓	✓
	GS1 DataBar Truncated	✓	✓	✓
	GS1 DataBar Stacked	✓	✓	✓
	GS1 DataBar Stacked Omnidirectional	✓	✓	✓
	GS1 DataBar Limited (RSS Limited)	✓	✓	✓

	GS1 DataBar Expanded (RSS Expanded)	✓	✓	✓
	GS1 DataBar Expanded Stacked	✓	✓	✓
	Convert to UPC/EAN	✗	✓	✓(2)
Inverse		✗	✗	✓
Korean 3 of 5		✗	✗	✓
MSI		✓	✓	✓
Negative Barcode		✗	✗	✗
Plessey		✗	✗	✗
Telepen		✗	✗	✗
Postal Codes	Australian Postal	✗	✗	✓
	Japan Postal	✗	✗	✓
	Netherlands KIX Code	✗	✗	✓
	US Postnet	✗	✗	✓
	US Planet	✗	✗	✓
	UK Postal	✗	✗	✓(2)
EAN/UPC	EAN-8	✓	✓	✓
	EAN-8 Extend (Convert to EAN-13)	✓	✓	✓(2)
	EAN-13	✓	✓	✓
	Bookland EAN (ISBN)	✓	✓	✓(2)
	UCC Coupon Extended Code	✗	✓	✓
	ISSN EAN	✗	✗	✓
	UPC-A	✓	✓	✓
	UPC-E	✓	✓	✓
	Convert UPC-E to UPC-A	✓	✓	✓
	UPC-E1	✓	✓	✓(2)
	Convert UPC-E1 to UPC-A	✓	✓	✓(2)
2D Symbologies	Aztec	✗	✗	✓
	Data Matrix	✗	✗	✓
	Maxicode	✗	✗	✓

2D Symbologies	MacroPDF	✘	✘	✓
	MicroPDF417	✘	✘	✓
	MicroQR	✘	✘	✓(2)
	PDF417	✘	✘	✓
	QR Code	✘	✘	✓

Note: (1) Not supported on 9700 Extended Range Laser Reader.
(2) Not supported on 9700 Near/Far 2D Imager.

RFID TAGS SUPPORTED

Terminal Emulation supports reading RFID data only. Supported labels include ISO 15693, ISO 14443A and ISO 14443B.

SUPPORTED RFID TAGS ON CP55

ID_MOD_RFID		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	✓	✓(2)	✓(2)
	Mifare DESFire EV1 2K/4K/8K	✓	✓(2)	✓(2)
	Mifare PLUS S 2K/4K	✓	✓(2)	✓(2)
	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:
(1) For more information, refer to the specifications of the RFID tags to read.

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

Appendix II

CCD LINEAR IMAGER (SM1) & LASER (SE950)

IN THIS CHAPTER

Reader Settings for CP55 67
Symbology Settings for CP55.....69

Reader and symbology settings for the CP55 linear imager and 1D laser engine are:

READER SETTINGS FOR CP55

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">▸ All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “Narrow angle” for 35°
▸ “Wide angle” for 47°</td><td>Wide angle</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Level mode</td></tr>
<tr><td>Continuous Mode</td><td colspan="2">Non-stop scanning
▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</td></tr>
</table>

Level Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.	
Timeout Between Symbols	Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded. ▸ Only applied in **Continuous** mode.	1 sec

SYMBOLOGY SETTINGS FOR CP55

CCD Engine	Description	Default
CODABAR		
Codabar		**Enable**
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: 0-55; 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 39		
Code 39		**Enable**
Code 39	Checkbox to enable Code 39 decoding.	Enable
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: 0-55; 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: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
CODE 128		
Code 128		
Code 128	Checkbox to enable Code 128 decoding.	Enable
ISBT 128		
ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
GS1-128		
GS1-128	Checkbox to enable GS1-128 decoding.	Enable
CODE 2 OF 5		
Industrial 25 (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: 0-55; 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: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
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. ▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	Disable
GS1 DATABAR		
GS1 DataBar-14		
GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding.	Enable
GS1 DataBar Limited		
GS1 DataBar Limited	Checkbox to enable GS1 DataBar Limited decoding.	Enable
GS1 DataBar Expanded		
GS1 DataBar Expanded	Checkbox to enable GS1 DataBar Expanded decoding.	Enable

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: 0-55; 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
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	Select to decode Bookland data starting with 978 as 10-digit format along with the Bookland check digit, or decode Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
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		
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 UPC-E0, UPC-E1, UPC-A 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

Appendix III

LASER (SE955 & SE965)

IN THIS CHAPTER

Reader Settings for CP55, CP60, 9700 73
Symbology Settings for CP55, CP60, 9700.....75

Reader and symbology settings for the 9700, CP55 and CP60 laser engines are:

READER SETTINGS FOR CP55, CP60, 9700

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>▸ 3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">▸ All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “Narrow angle” for 35°
▸ “Wide angle” for 47°</td><td>Wide angle</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Laser mode</td></tr>
<tr><td>Continuous Mode</td><td colspan="2">Non-stop scanning
▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</td></tr>
</table>

Laser Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.	
Timeout Between Symbols	Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded. ▸ Only applied in **Continuous** mode.	1 sec

SYMBOLOGY SETTINGS FOR CP55, CP60, 9700

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
ISBT 128		
Enable ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
GS1-128		
Enable GS1-128	Checkbox to enable GS1-128 decoding.	Enable
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
GS1 DATABAR		
GS1 DataBar-14		
Enable GS1 DataBar-14	Checkbox to enable GS1 DataBar-14 decoding. ▸ 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 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
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
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
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
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 UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5). ▸ Ignore Addon ▸ Decode only with addons ▸ Auto-discriminate	Ignore Addon

<table>
<tr><td>UPC Addon Redundancy</td><td>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.</td><td>10</td></tr>
<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>Level 2</td></tr>
</table>

MISCELLANEOUS

Laser 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 (see below) ▸ m = Modifier Character (see below)	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 Postal, Australian Postal, Dutch Postal

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 (Discrete 25)	0	Always transmit 0.
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,]E3001234567890510.	
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`0110012345678902.	

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

EXTENDED RANGE LASER (SE1524)

IN THIS CHAPTER

Reader Settings for 9700.....84
Symbology Settings for 9700.....86

READER SETTINGS FOR 9700

<table>
<tr><th>Laser Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Time-out</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>▸ 3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">Following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>All</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded. Following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">▸ All barcodes must be successfully read three times before being decoded.</td></tr>
<tr><td>Scan Angle</td><td>Select the scan angle for Long Range Laser scan engine.
▸ “Narrow angle” for 35°
▸ “Wide angle” for 47°</td><td>Wide angle</td></tr>
<tr><td colspan="2">Scan Mode</td><td>Level mode</td></tr>
<tr><td>Continuous Mode</td><td colspan="2">Non-stop scanning
▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.</td></tr>
</table>

Level Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read, (b) the preset timeout expires, or (c) you release the trigger.	
Timeout Between Symbols	Sets the time for the barcode reader to resurrect its ability to once more decode a barcode it just decoded. ▸ Only applied in **Continuous** mode.	1 sec

SYMBOLOGY SETTINGS FOR 9700

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: 0-55; 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 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: 0-55; 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: 0-55; 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
ISBT 128		
Enable ISBT 128	Checkbox to enable ISBT 128 decoding.	Enable
GS1-128		
Enable GS1-128	Checkbox to enable GS1-128 decoding.	Enable
CODE 2 OF 5		
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: 0-55; 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: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
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. ▸ 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

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
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: 0-55; 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
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	Select to decode Bookland data starting with 978 as 10-digit format along with the Bookland check digit, or decode Bookland data starting with 978/979 as EAN-13 format.	Bookland ISBN-10
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
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

<table>
<tr><td>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.
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</td><td>Transmit System Character</td></tr>
<tr><td>Convert to UPC-A</td><td>The UPC-E1 barcode will be expanded into UPC-A format, and the next process will follow the settings configured for UPC-A.</td><td>Disable</td></tr>
<tr><td>Transmit Check Digit</td><td>Decide whether to include the UPC-E1 check digit (the last character in the barcode) in the data being transmitted.</td><td>Enable</td></tr>
<tr><td colspan="2">General Preference</td><td></td></tr>
<tr><td>Support Coupon Code</td><td>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.</td><td>Disable</td></tr>
<tr><td>EAN Addon Option</td><td>Decide whether to decode EAN-8, EAN-13 with addons (including Addon 2 and 5).
Ignore Addon
Decode only with addons
Auto-discriminate</td><td>Ignore Addon</td></tr>
<tr><td>EAN Addon Redundancy</td><td>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.</td><td>10</td></tr>
<tr><td>UPC Addon Option</td><td>Decide whether to decode UPC-E0, UPC-E1, UPC-A with addons (including Addon 2 and 5).
Ignore Addon
Decode only with addons
Auto-discriminate</td><td>Ignore Addon</td></tr>
<tr><td>UPC Addon Redundancy</td><td>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.</td><td>10</td></tr>
<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>
</table></td><td>Level 0</td></tr>
</table>

	3	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.	

MISCELLANEOUS

Laser Engine	Description	Default
Miscellaneous Options		
Transmit AIM Code ID	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 (see below) ▸ m = Modifier Character (see below)	Disable

Appendix V

2D IMAGER (SE4500DL)

IN THIS CHAPTER

Reader Settings for CP55, CP60, 9700 93
Symbology Settings for CP55, CP60, 9700.....95

Reader and symbology settings for the CP55, CP60 and 9700 2D imagers are:

READER SETTINGS FOR CP55, CP60, 9700

<table>
<tr><th>2D Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Timeout</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">The following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded.
The following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">All barcodes must be successfully read three times before being decoded.</td></tr>
</table>

Security Level	Select a decode security level appropriate for the barcode quality when reading delta barcodes such as Code 128, Code 93, UPC/EAN. ▸ Security Level 0 – This default setting allows the scan engine to operate in its most aggressive state, providing sufficient security in decoding most "in-spec" barcodes. ▸ Security Level 1 – Select this option if misdecodes occur. This level should eliminate most misdecodes. ▸ Security Level 2 – Select this option if Security Level 1 fails to eliminate misdecodes. ▸ Security Level 3 – Select this option if Security Level 2 also fails to eliminate misdecodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.	**Level 0**
Inter-Char Gap Size	Sets the intercharacter gap size for Code 39 and Codabar. Switch between **Normal** and **Large**.	Normal
Scan Mode	Sets the reader's scanning behaviour. Options available are **Level**, **Presentation Mode** and **Auto Aim**. ▸ Level: Decoding process is activated by trigger event and continues until trigger event ends, a valid decode happens or decode session time-out is reached. ▸ Presentation Mode: The imager engine attempts to decode when an object appears in its field of view. Sleeping state is not entered when this mode is activated. ▸ Auto Aim: Red aiming pattern is turned on when the imager engine detects motion. A trigger event will then activate decoding. If 2 seconds go by without any activity, the aiming pattern goes off.	Level
Decoding Illumination	Enables an LED light beam to aid barcode reading.	Selected (Enabled)
Decode Aiming Pattern	Projects a crosshair at the center of the laser light beam to facilitate barcode reading.	Selected (Enabled)
Picklist Mode	When selected, only barcodes aligned at the crosshair of the laser light beam will be decoded.	Deselected (Disabled)

SYMBOLOGY SETTINGS FOR CP55, CP60, 9700

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.	Disable
	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).	
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 UPC-E0, UPC-E1, UPC-A 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 VI

NEAR/FAR 2D IMAGER (EX25)

IN THIS CHAPTER

Reader Settings for 9700.....105
Symbology Settings for 9700.....107

READER SETTINGS FOR 9700

<table>
<tr><th>2D Engine</th><th>Description</th><th>Default</th></tr>
<tr><td>Decode Timeout</td><td>Set the maximum time for decoding to continue during a scan attempt.
▸ 1~9 (second)</td><td>3 sec.</td></tr>
<tr><td colspan="2">Redundancy Level</td><td>Level 1</td></tr>
<tr><td>Level 1</td><td colspan="2">The following barcodes must be successfully read twice before being decoded:
<table>
<tr><th>Barcode Types</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 2</td><td colspan="2">All barcodes must be successfully read twice before being decoded.</td></tr>
<tr><td>Level 3</td><td colspan="2">All barcodes except for the following barcodes must be successfully read twice before being decoded.
The following barcodes must be read three times:
<table>
<tr><th>Barcode Types “Excluded”</th><th>Code Length</th></tr>
<tr><td>Codabar</td><td>8 characters or less</td></tr>
<tr><td>MSI</td><td>4 characters or less</td></tr>
<tr><td>Industrial 25 (Discrete 25)</td><td>8 characters or less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters or less</td></tr>
</table></td></tr>
<tr><td>Level 4</td><td colspan="2">All barcodes must be successfully read three times before being decoded.</td></tr>
</table>

Security Level	Select a decode security level appropriate for the barcode quality when reading delta barcodes such as Code 128, Code 93, UPC/EAN. ▸ Security Level 0 – This default setting allows the scan engine to operate in its most aggressive state, providing sufficient security in decoding most "in-spec" barcodes. ▸ Security Level 1 – Select this option if misdecodes occur. This level should eliminate most misdecodes. ▸ Security Level 2 – Select this option if Security Level 1 fails to eliminate misdecodes. ▸ Security Level 3 – Select this option if Security Level 2 also fails to eliminate misdecodes. However, selecting this option impairs the decoding ability of the scan engine. If this level of security is necessary, try to improve the barcode quality.	**Level 0**
Inter-Char Gap Size	Sets the intercharacter gap size for Code 39 and Codabar. Switch between **Normal** and **Large**.	Normal
Scan Mode	Sets the reader's scanning behaviour. Options available are **Level**, **Presentation Mode** and **Auto Aim**. ▸ Level: Decoding process is activated by trigger event and continues until trigger event ends, a valid decode happens or decode session time-out is reached. ▸ Presentation Mode: The imager engine attempts to decode when an object appears in its field of view. Sleeping state is not entered when this mode is activated. ▸ Auto Aim: Red aiming pattern is turned on when the imager engine detects motion. A trigger event will then activate decoding. If 2 seconds go by without any activity, the aiming pattern goes off.	Level
Decoding Illumination	Enables an LED light beam to aid barcode reading.	Selected (Enabled)
Decode Aiming Pattern	Projects a crosshair at the center of the laser light beam to facilitate barcode reading.	Selected (Enabled)
Picklist Mode	When selected, only barcodes aligned at the crosshair of the laser light beam will be decoded.	Deselected (Disabled)

SYMBOLOGY SETTINGS FOR 9700

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: 0-55; 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: 0-55; 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
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: 0-55; 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: 0-55; 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
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		
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: 0-55; 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: 0-55; Length 1<Length 2) ▸ Any Length	Max / Min Length (4-55)
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. ▸ Disable ▸ USS Check Digit ▸ OPCC Check Digit	Disable
Transmit Check Digit	Decide whether to include the check digit in the data being transmitted.	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: 0-55; 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
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
INVERSE		
Inverse		
Enable Inverse	Checkbox to enable Inverse 1D 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: 0-55; 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
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-13		
EAN-13	Checkbox to enable EAN-13 decoding.	Enable
Transmit Check Digit	Decide whether to include the EAN-13 check digit (the last character in the barcode) in the data being transmitted.	Enable
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
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 UPC-E0, UPC-E1, UPC-A 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 decode mirror images. **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 MicroPDF417 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
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		
Transmit AIM Code ID	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 VII

HF RFID READER

The RFID scan engine supports reading tags on a page-by-page basis. You may find it necessary to define your own read operation. For reference only, the table below lists the start page for read operation on a number of RFID tags.

Start Page	Tag Type	
-1	Start from byte 0 of the default page (see below) for all tags	
4	Mifare	(ISO 14443A)
4	SR176	(ISO 14443B)
3	ICODE SLI	(ISO 15693)
0	LRI512	(ISO 15693)
3	SRF55VxxP	(ISO 15693)
0	EM4135	(ISO 15693)
0	Tag-it HF-I	(ISO 15693)
0	Others	(ISO 15693)
5	ICODE	(Phillips)

Note: Please refer to the specifications of your RFID tags for memory organization.

Appendix VIII

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

VT100/ 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

VT220 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	--	--