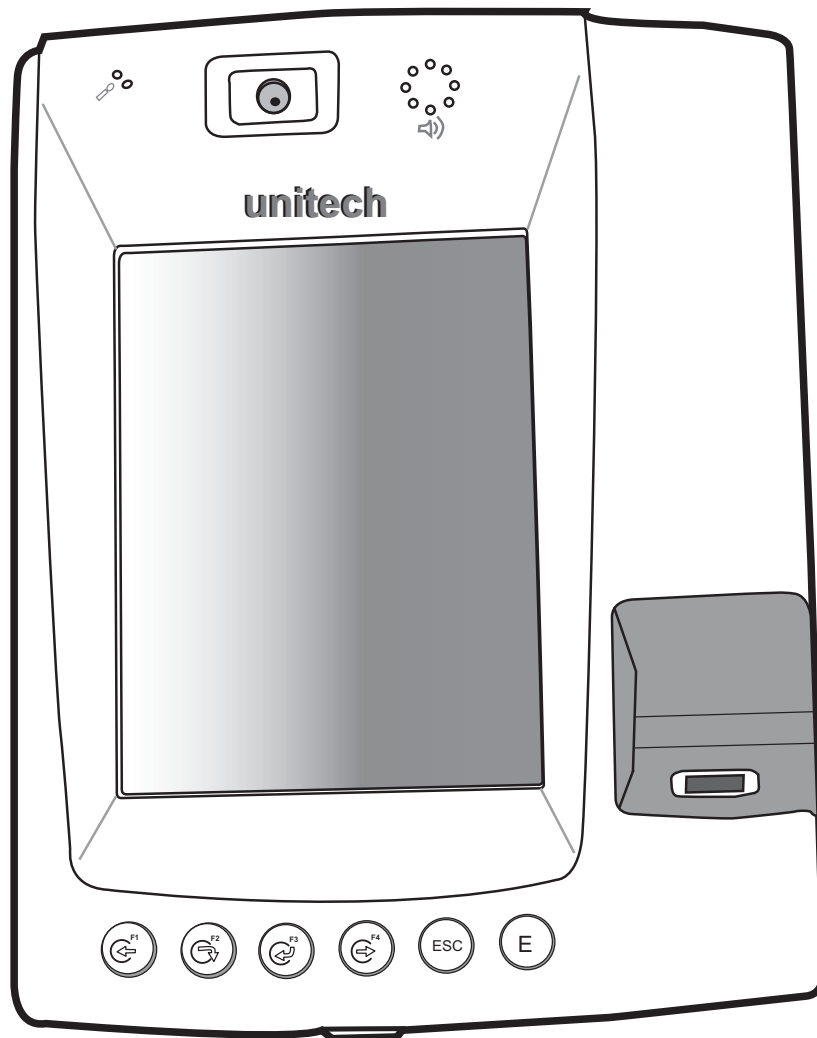


MR650 Video TAS Terminal



User's Manual

400513G Rev. C



About This Manual

This manual explains how to install, operate and maintain the MR650 Video TAS Terminal. No part of this publication may be reproduced or used in any form, or by any electrical or mechanical means, without permission in writing from the manufacturer. This includes electronic or mechanical means, such as photocopying, recording, or information storage and retrieval systems. The material in this manual is subject to change without notice.

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Regulatory Compliance Statements

FCC Statement

This is a FCC Part 15 Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Canadian Compliance Statement

This Class A Digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte les exigences du Règlement sur le matériel brouilleur du Canada.

European Conformity Statement

Declaration of Conformity with Regard to the R&TTE 1999/5/EC and EMC 89/336/ EEC directives.

RoHS Statement



This device conforms to RoHS (Restriction of Hazardous Substances) European Union regulations that set maximum concentration limits on hazardous materials used in electrical and electronic equipment.

Notices

The unit is equipped with a Lithium-Ion battery pack. After extended storage periods, however, the unit may not power-on without external power due to battery discharge. In this case connect the unit to the power cable and recharge the unit for about 22 hours to charge the battery to full capacity.

The battery supplies operational power to the unit for approximately two hours (depending on hardware configuration and with limited backlight use) or provides backup data for three days when there is no external power connected.

Battery Charge Notice

It is important to consider the environmental temperature whenever the Lithium-Ion battery pack is charged. Charging is most efficient at normal room temperature or in a slightly cooler environment. It is essential that batteries are charged within the stated range of -5°C to 50°C. Charging batteries outside of the specified range could damage the batteries and shorten their charging life cycle.

Storage and Safety Notice

Although charged Lithium-Ion batteries may be left unused for several months, their capacity may be depleted due to build up of internal resistance. If this happens they will require recharging prior to use. Lithium-Ion batteries may be stored at temperatures between -20°C to 60°C, however they may be depleted more rapidly at the high end of this range. It is recommended to store batteries within normal room temperature ranges.

Warranty

Under Unitech limited Warranty, the following items are covered:

- The MR650 Video TAS Terminal is covered by one-year limited warranty.
- Cables are covered by one-year limited warranty.
- The backup battery is covered by a three-month warranty.

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Getting Started

Introducing the MR650

Thank you for purchasing the MR650 Video TAS Terminal. Your MR650 was designed for users needing a compact and durable portable computer for data collection and real time transactions.

The MR650 is a TAS (Time management, access control and security) terminal with a large 240 x 320 pixel color touch screen and the Windows CE operating system. The MR650 was designed to meet the requirements of Time & Attendance, Loyalty Programs, and Work-In-Process applications.

The MR650 communicates with central host security and T&A systems through standard Ethernet or WLAN networks. The built-in CMOS digital camera, microphone, and audio speaker provides complete area security with a small footprint.

The MR650 features a variety of built-in readers including proximity and finger print identification. Powered by Windows CE.NET 5.0, the MR650 package includes programming tools and support software for developing custom security and provides cost-efficient solution for TAS applications.

Features

Powerful system

- Microsoft Windows CE 5.0 Professional Plus operating system
- Intel PXA270 processor with speeds up to 520Mhz

System memory

- 128 MB SDRAM
- 64 MB Flash ROM

Display

- 5.6inch QVGA LCD touch-sensitive screen
- 240 x 320 resolution

Multimedia

- 1.3 megapixel CMOS camera
- Audio output via 0.8 watt speaker
- Built-in microphone

Expansion slot

- CF type II card slot for wireless 802.11 b/g
- SD memory slot

Magnetic stripe reader

- Triple-track MSR reader

Fingerprint reader

- Sensor: Authentec AFS8500
- Verification time: 2 seconds (average)
- Equal Error Rate: 0.1% at max security
- Number of templates: 4000

Proximity reader

- EM, 125kHz
- HID, 125kHz
- Mifare, 13.56MHz

Wireless connectivity

- 802.11b/g (optional)

Communication

- RS232
- USB host
- Output relays x 3
- TTL digital inputs x 4
- Ethernet connection
- Power over Ethernet (optional)

Battery life

- Normal usage: 2 hours
- Charging time: 22 hours
- Embedded backup battery cell

User interface

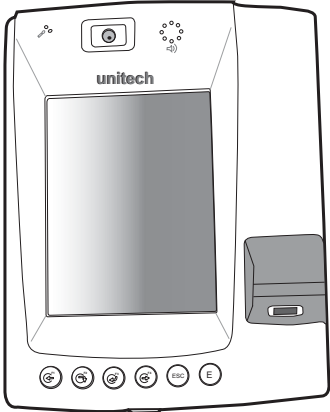
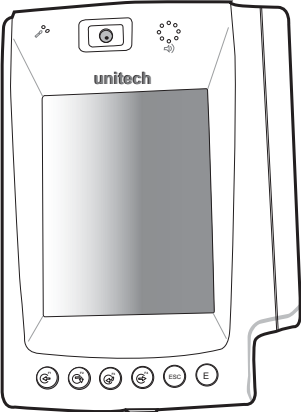
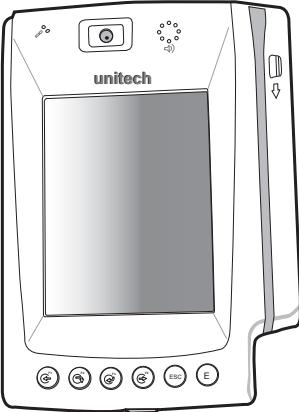
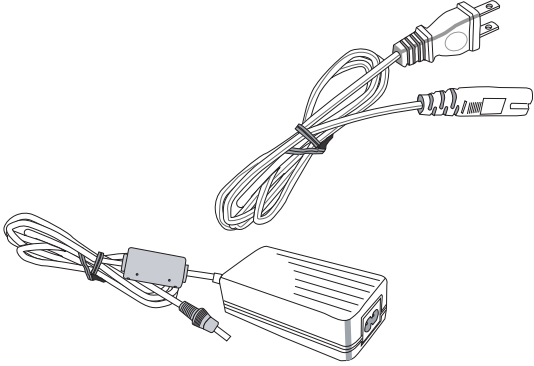
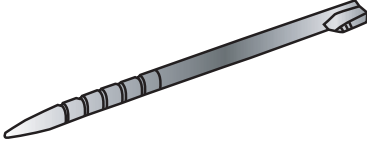
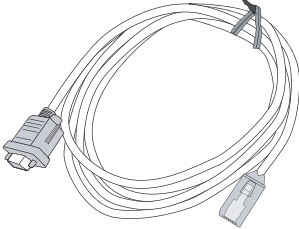
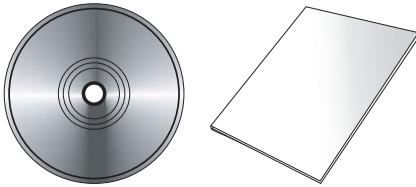
- Six hard keys
- Touch-sensitive screen with stylus

Software programming tools

- Embedded Visual Basic terminal program for T&A
- Embedded Visual C++ terminal program for T&A

Package Contents

After opening the box, ensure the following items are present:

		
<p>MR650 Proximity + Finger Print Model</p>	<p>MR650 Proximity Model</p>	<p>MR650 with 3-Track MSR</p>
		
<p>Power Adapter and Cable</p>		<p>Stylus</p>
		
<p>RS232 Cable</p>		<p>Manual CD-ROM and Unitech MR650 Quick Reference Guide</p>

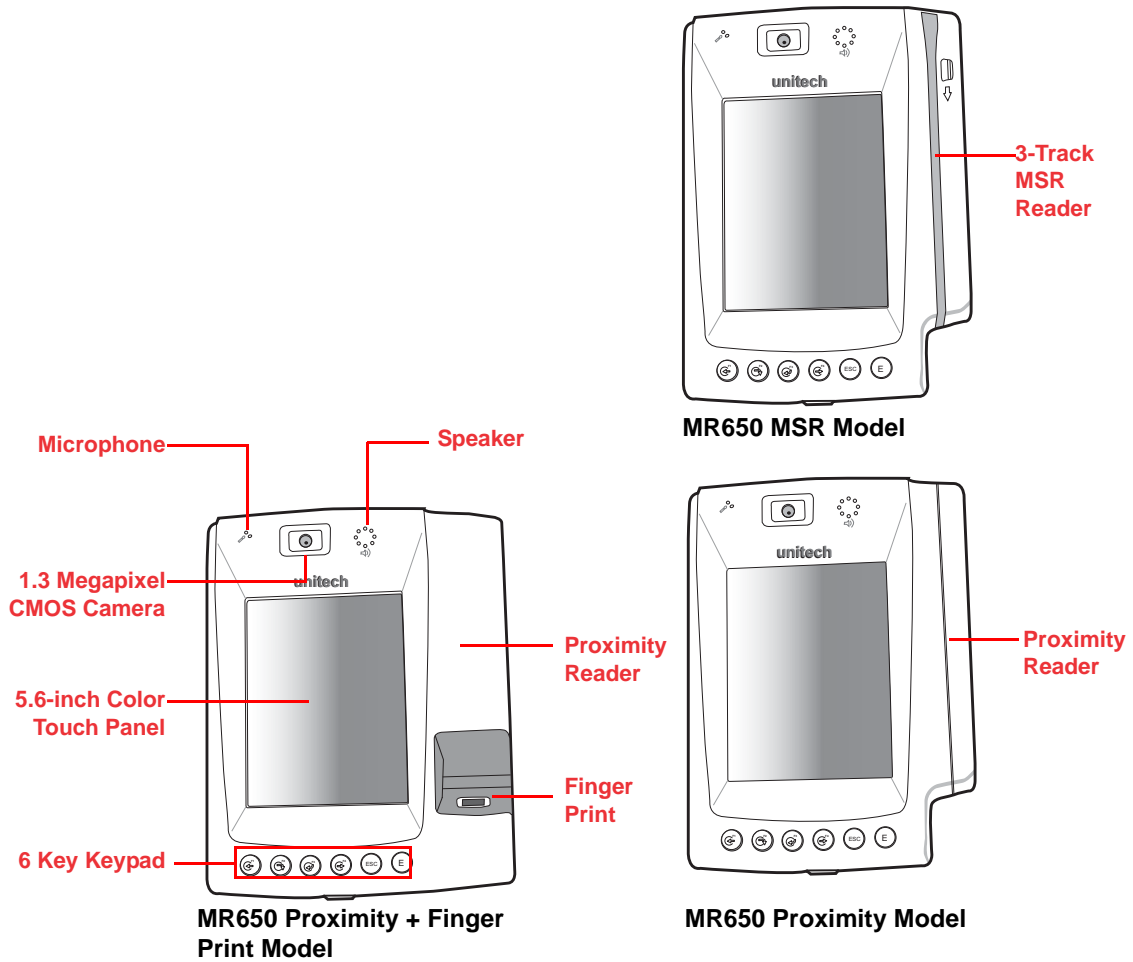
If anything is missing or appears damaged in any way, contact your dealer.

NOTE: The MR650 screen ships with a protective plastic film. You may remove it if desired by peeling from one corner. The screen will be more susceptible to scratching without the film, but will be more readable.

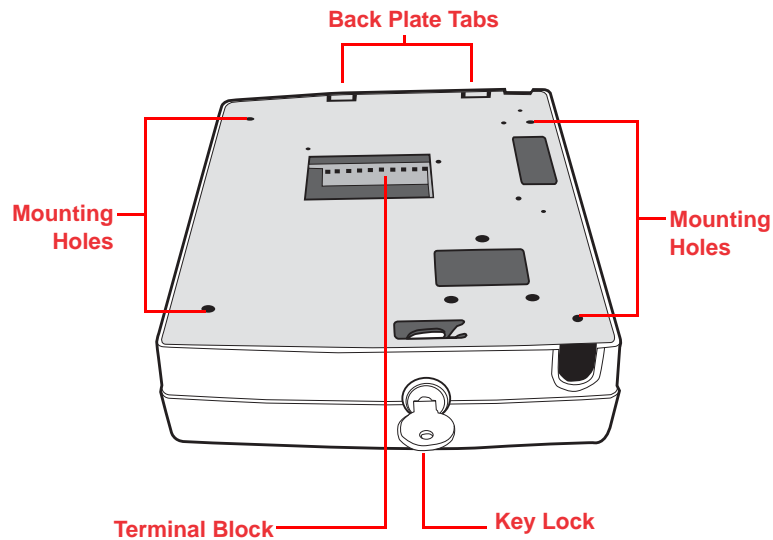
A Tour of the MR650

The following sections describe the main components and features of the MR650.

Front



Rear



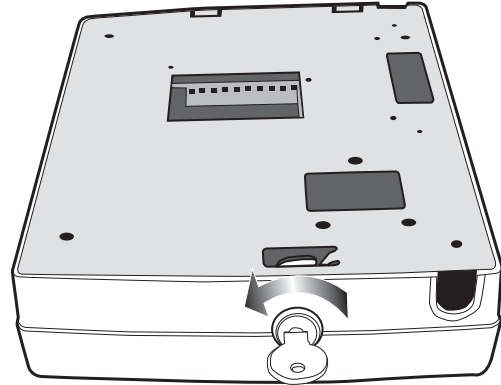
Setting up the MR650

This section explains how to charge the battery and how to turn on the MR650 for the first time

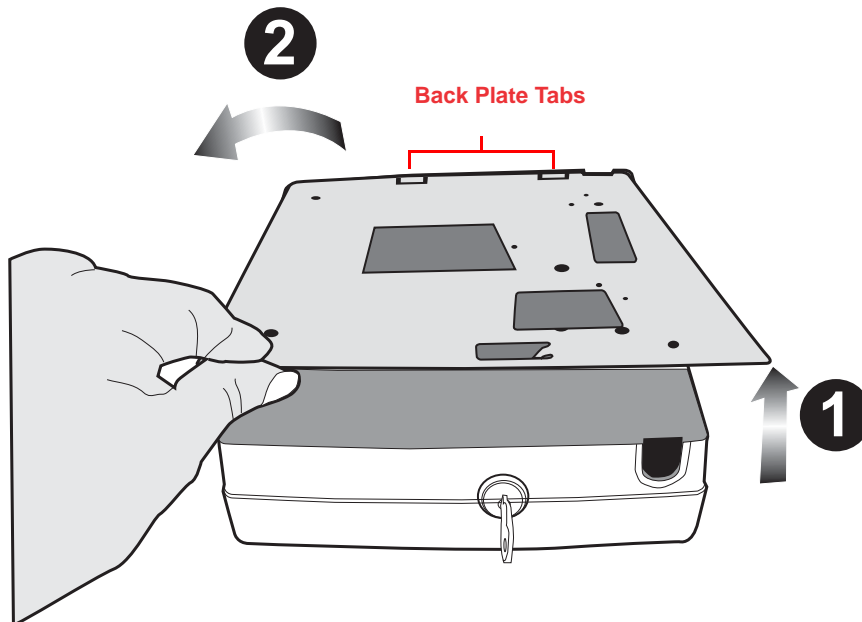
Opening the Back-plate

Follow these instructions to open the back-plate for accessing the MR650's internal components.

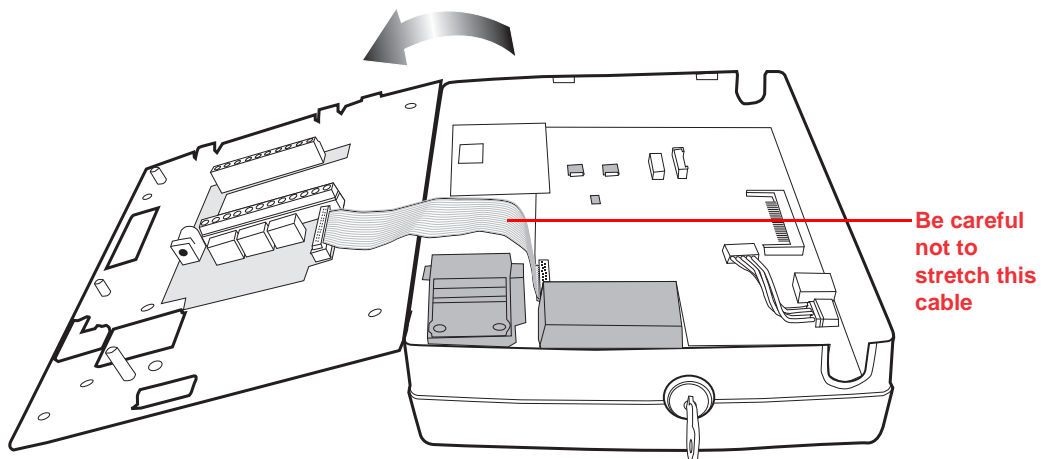
1. Insert the key provided into the security lock and then turn the key counterclockwise.



2. Lift the back-plate up to a 45-degree angle (1) and pull the plate in the direction of the arrow slightly to free the cover from the back plate tabs (2).



3. Flip the back plate over to the left.

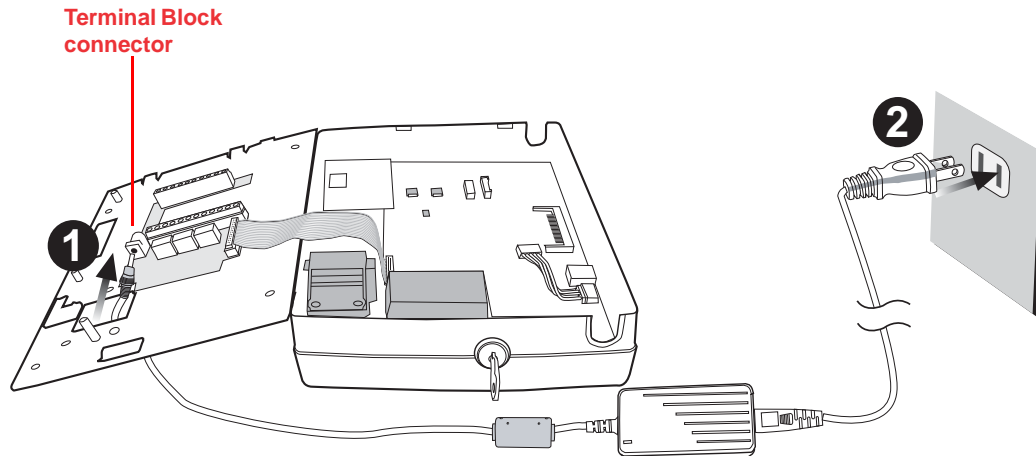


Connecting Power

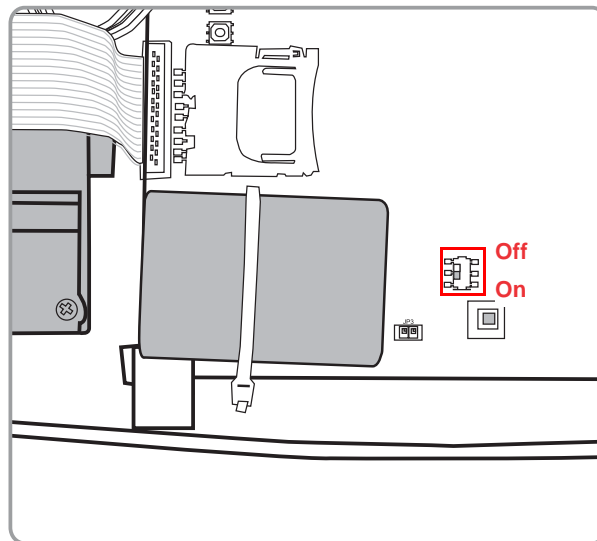
Follow these instructions to connect power to the MR650.

NOTE: A UPS battery is used for normal operation when there is no main power. The battery also functions as a data backup battery. Therefore, data you enter may not be properly stored until the built-in backup battery has been adequately recharged.

1. Plug the 12V DC connector into the terminal block (1).



2. Plug the adapter into a power socket (2).
3. Switch on the battery switch to charge the battery.



Charging the Battery

Before using the MR650 for the first time, you need to charge it for about 22 hours. The battery begins charging as soon as you connect the power cable.

Turning the MR650 on for the First Time

After you have initially charged your device for about 22 hours, the device is ready to be used. You can now start up your device where you'll calibrate the display, and set up the system time zone, date and time.

Powering On

The MR650 automatically powers-on when the 12V DC power adapter is plugged-in. The MR650 welcome screen appears followed by the Windows CE screen.

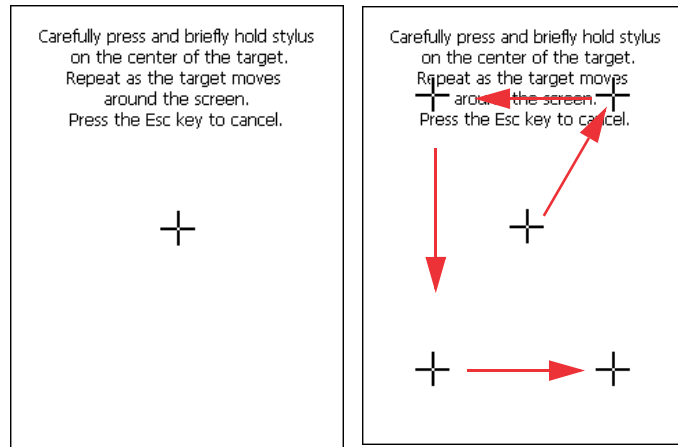
Calibrating the MR650 Screen

The calibrate screen automatically appears when the unit is powered-on for the first time or after the system is reset.

The MR650 prompts you to calibrate the unit by tapping a sequence of screen locations. Tap gently but firmly with the stylus.

When you have completed the series of taps, press the [E] key to confirm calibration or press the [ESC] key to cancel it.


After confirming calibration, the Date/Time Properties screen appears prompting you to set the date and time.

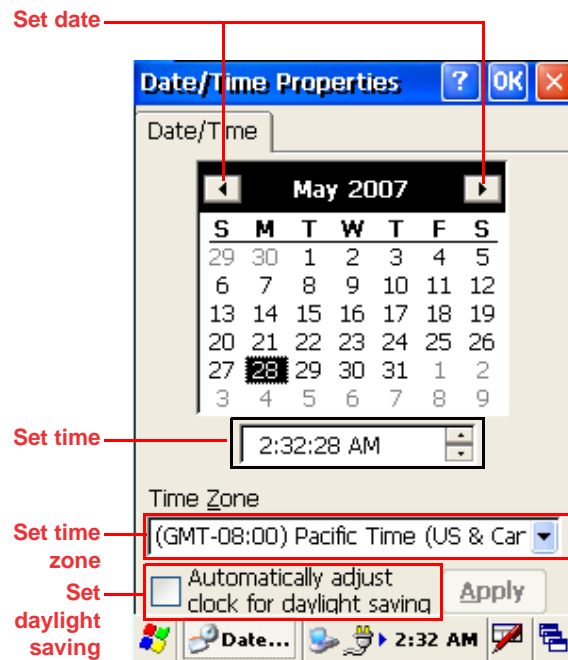


Setting the Date and Time

In the Date/Time Properties window, use the stylus to select the current date and time, time zone, and daylight saving time option.

- Tap the Left or Right arrows to scroll the year and month you desire or directly tap location of year or month to change the year or month setting.
- Tap on the Hr/Min/Sec AM/PM to input the Hr/Min/Sec to set the time.
- Tap the arrow and set the correct time zone from the drop-down list.
- Check the box to enable Windows to automatically adjust for daylight saving.
- Tap **OK** to save the settings and exit the Date/Time Properties dialog or tap **X** to exit without saving.

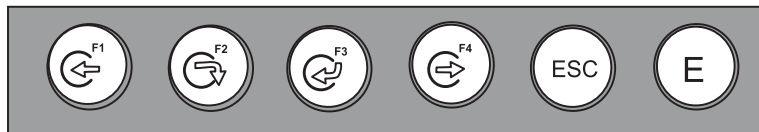
NOTE: To change the time and date at any time tap  → **Settings** → **Control Panel** → **Date/Time**.










Using the Hardware

Using the Keypad

The MR650 features contains six keys.



The following table describes the keys.

Key	Main Function
	Clock-in [F1]: Function Key
	Break-out [F2]: Function Key
	Break-in [F3]: Function Key
	Clock-out [F4]: Function Key
	[ESC] Performs the same function as tapping the  button on the touch screen.
	[ENTER] Enters a carriage return or executes a command.

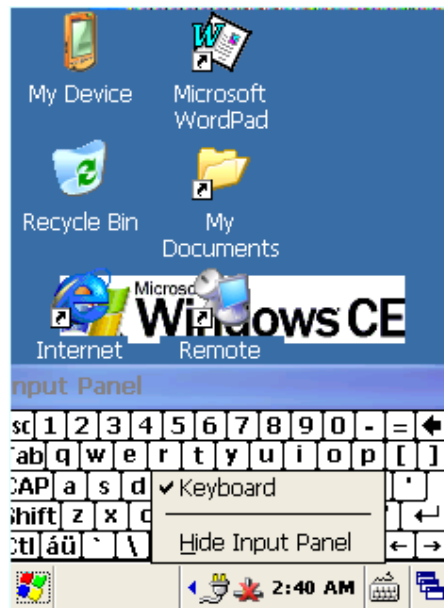
Using Windows CE Keyboard

The Windows CE Software provides a touch screen keyboard for alphanumeric input. The Windows based keyboard replicates the layout of a standard PC keyboard.

Open the Windows CE keyboard by tapping the “keyboard” icon on the task bar and tapping Keyboard.



Keyboard icon



Entering Characters

Character input is the same as on a standard PC keyboard. Tap the on-screen button corresponding to the character you want to input.

International Character Support:

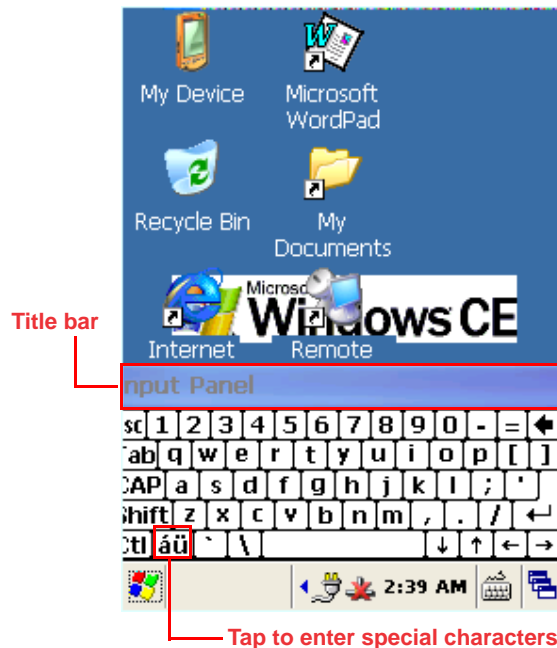
Tap the [áü] button to switch from the Standard English keyboard to the European keyboard or switch from the standard keyboard to perform the desired special characters.

Moving the Keyboard

Tap the title bar and drag the keyboard to the desired location.

Closing the Keyboard

Tap the keyboard icon and tap Hide Input Panel to close Windows CE keyboard.



Title bar

Tap to enter special characters

Using the Stylus

CAUTION! Never use anything other than the MR650 stylus on the screen. Using an object other than the stylus could cause permanent damage.

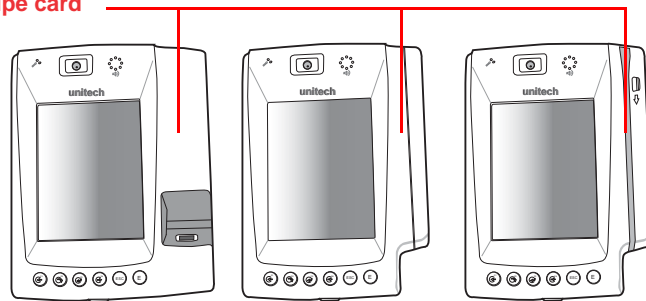
1. Hold the stylus as you would hold a pencil.
2. To make a choice from a menu, lightly tap the tip of the stylus on that choice.
3. Double-tap to open programs.
4. To write data into a field on a form, use the stylus to print the letters or numbers.

Using Proximity, MSR, or the Barcode Reader

The MR650 features an integrated proximity reader (EM125KHz, HID 125KHz and 13.56MHz Mifare), MSR, and barcode reader which can read proximity cards, magnetic stripe cards, and barcode labels respectively.

NOTE: Reading software must be enabled in order to operate the scanner. This can be a user-loaded application or a pre-loaded utility such as Scanner Setting.

Place or
swipe card



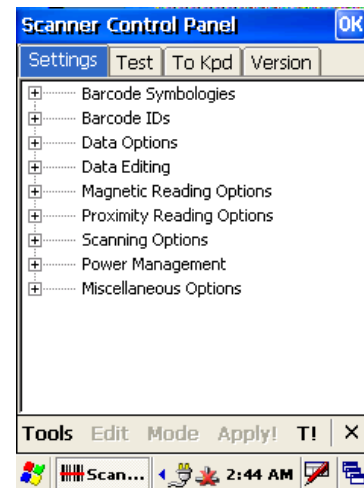
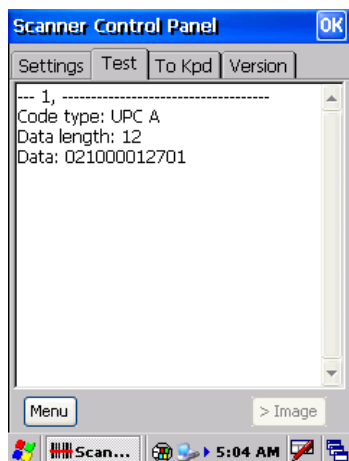
Testing Reader Data

The MR650 has a built-in Scanner Control Panel that enables you to test the device's barcode scan function.

1. To launch Scanner Control Panel, tap → **Settings** → **System** → **Scanner**.
2. The Scanner Control Panel opens.

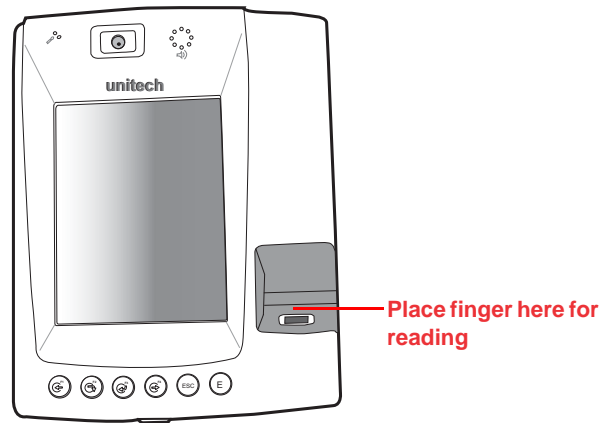
From here you can configure barcode scanner parameters such as enabling or disabling barcode symbologies, setting data transmission options, configuring magnetic and proximity reading options, and setting power management options.

3. To test the barcode scanner, tap the **Test** tab and then perform a scan. The screen will display the results of the scan.



Using the Finger Print Reader

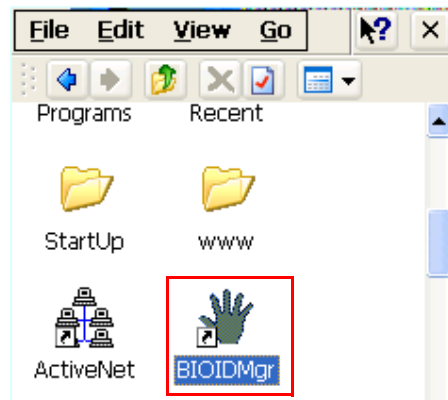
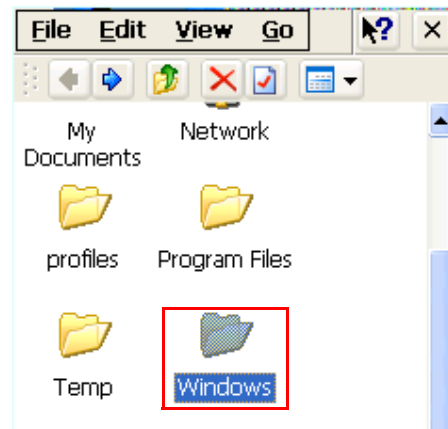
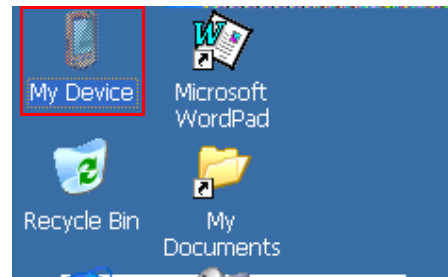
The MR650 has an optional integrated Finger Print reader that has a verification of less than 2 seconds. The Finger Print Reader comes with 4000 templates.



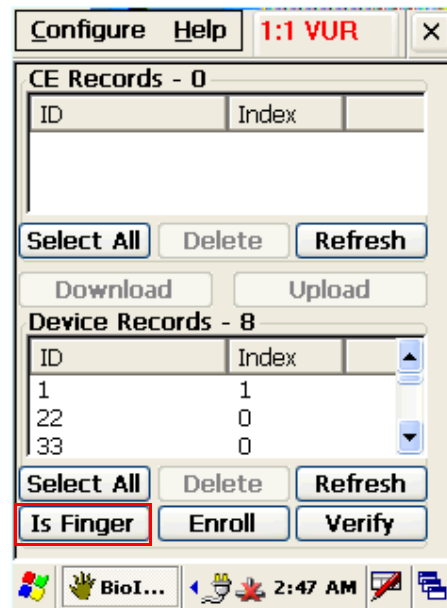
Testing Finger Print Verification

The MR650 has a built-in BIO ID Manager program that enables the user to test finger print verification. To test finger print verification.

1. Double-tap the **My Device** icon on the Windows CE desktop.
2. Double-tap the Windows folder.
3. Double-tap **BIOIDMgr** to open the program.



- Place the finger on the sensor and tap **Is Finger**.
The message “Finger detected!” appears, indicating that the finger print function is working properly.

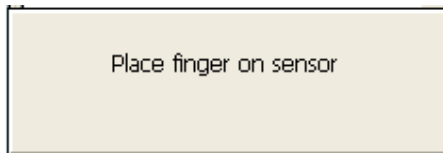


Enrolling a Finger Print Stamp

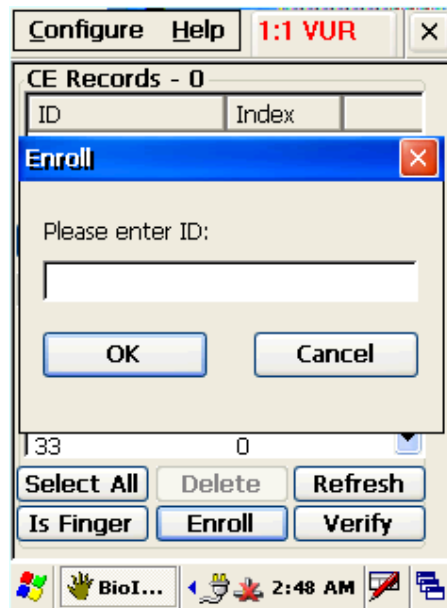
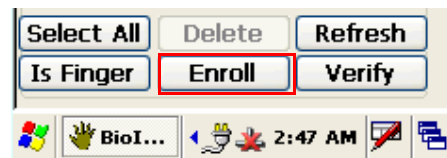
To enroll a finger print.

- Tap **Enroll**.
- Enter an ID number for the finger print and then tap **OK**.

The following message appears:



After placing the finger on the sensor, a stamp with the quality percentage and ID number is entered into the program record.



Verifying the Finger Print Stamp

To verify the finger print stamp.

- Tap **Verify**.
- Enter the ID number for a finger print stamp to be verified
- Tap **OK**
- The message “Place finger on sensor” appears.
- Placing the finger on the sensor to verify if the finger is correct.
The quality percentage number is displayed on the screen for “Pass” or “Fail”.

Using the Camera

The MR650 has a built-in 1.3 megapixel camera which provides the following extra functionality:

- Enables users to capture still pictures when a card is being read
- Checks attendant time with a photo image
- Records video continuously
- Functions as an audio/video intercom

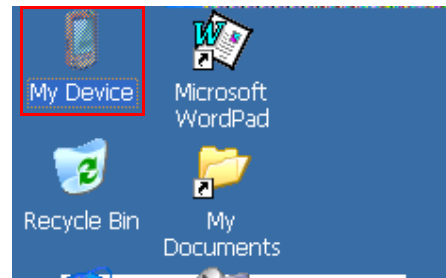
Additionally, facial recognition can be incorporated using third party software.

The MR650 has a demo program that enables users to capture a still picture with a card number and time stamp when an EM proximity card is read.

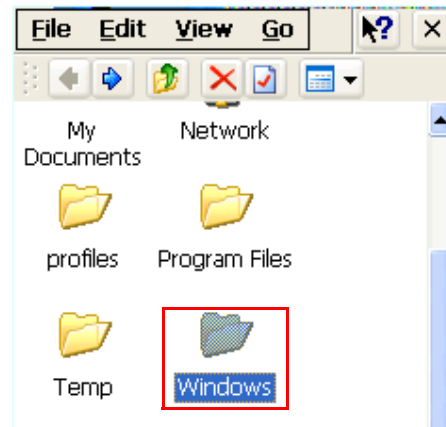
Testing Imager

To open the camera demo.

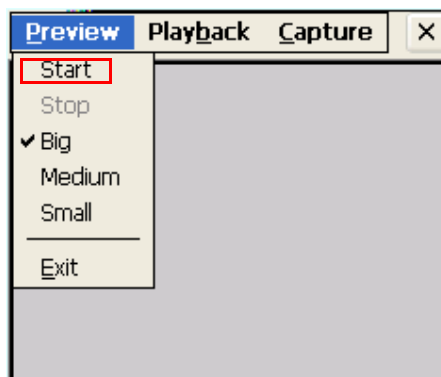
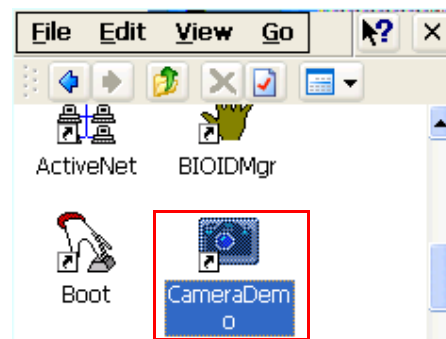
1. Double-tap the **My Device** icon on the Windows CE desktop.



2. Double-tap the Windows folder.



3. Double-tap **CameraDemo** to open the program. The testing program is displayed.
4. Tap **Preview** → **Start**.



A continuous image is displayed enabling users to capture and playback video

Data Communication

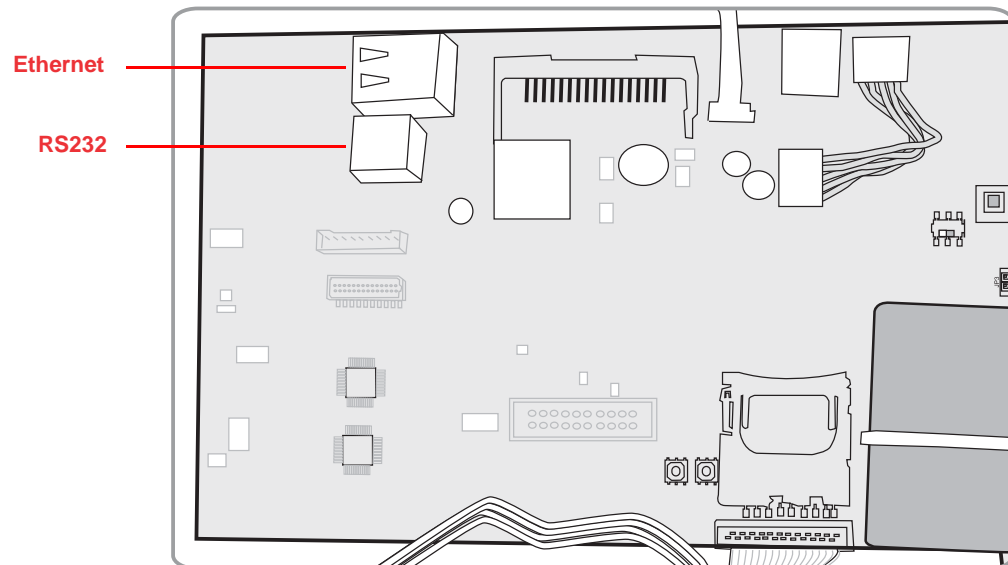
The MR650 enables users to link to a host computer via RS-232, Ethernet or an RF connection for data communication.

Establishing Device-PC Connection

The following connection methods are provided.

Serial Cable

1. Plug the provided RS232 communication cable into the PC's 9-pin COM port.
2. Connect the other end to the MR650 RS232 interface Port.




Ethernet Cable

1. Plug an Ethernet cable into the PC's RJ-45 Ethernet Port.
2. Connect the other end of the cable to the MR650 Ethernet Port.

NOTE: In order for the optional power over Ethernet module to support power over the RJ-45 Ethernet cable, the client side must have a POE Hub.

RF Communication

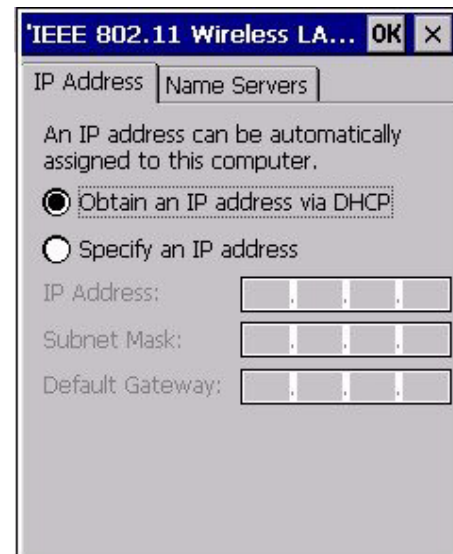
With Windows CE support of the TCP/IP protocol, users can use the MR650 to link to the Internet.

1. Tap  → Settings → Network and Dial-Up Connections.



2. Double-tap PRISM1 to set up the IP to connect to Internet.

NOTE: Contact your system administrator for the IP settings for this dialog window.



Using ActiveSync

Using Microsoft ActiveSync, you can synchronize and transfer information between your desktop computer and terminal.

Additional Capabilities

With ActiveSync, you can also:

- Back up and restore your device data.
- Copy (rather than synchronize) files between your device and desktop computer.
- Control when synchronization occurs by selecting a synchronization mode. For example, you can synchronize continually while connected to your desktop computer or only when you choose the synchronize command.
- Select which information types are synchronized and control how much data is synchronized. For example, you can choose how many weeks of past appointments you want to synchronize.

Requirements

To synchronize, ActiveSync version 4.1 or higher must be installed on both your desktop computer and the MR650 terminal. The MR650 terminal ships with ActiveSync already installed. You can download and install the most current version of ActiveSync from www.microsoft.com.

Installing Microsoft ActiveSync

In order to exchange data between your computer and the MR650, Microsoft ActiveSync must be installed on your computer.


NOTE: If you have a previous version of the Microsoft ActiveSync installed in your computer, uninstall it first before installing the latest version of Microsoft ActiveSync. The MR650 Video TAS Terminal requires ActiveSync version 4.2 or higher.

To install Microsoft ActiveSync on your computer:

1. Close any open programs, including those that run at startup, and disable any virus-scanning software.
2. Download the ActiveSync software from the Microsoft ActiveSync Download page at <http://www.microsoft.com/windowsmobile/downloads/activesync42.msp>.
3. Browse to the location of the downloaded file, and double-click it. The installation wizard begins.
4. Follow the instructions on the screen to install Microsoft ActiveSync.

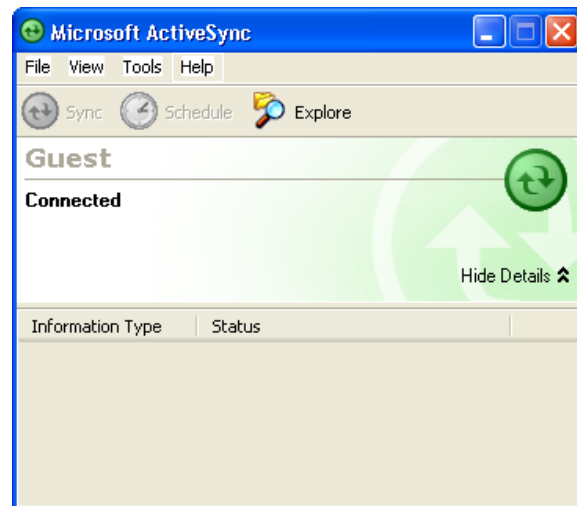
Connecting the Device to Your Computer

1. After ActiveSync has been installed, connect the MR650 to your PC.
2. Turn the MR650 on.
3. ActiveSync starts automatically and configure the communication port to work with the MR650. The New Partnership setup wizard automatically starts.

NOTE: If ActiveSync doesn't start automatically, click  → **Programs** → **Microsoft ActiveSync**.


If a message appears indicating that it is unable to detect a connection, click the **Cancel** button and manually configure the communication settings.

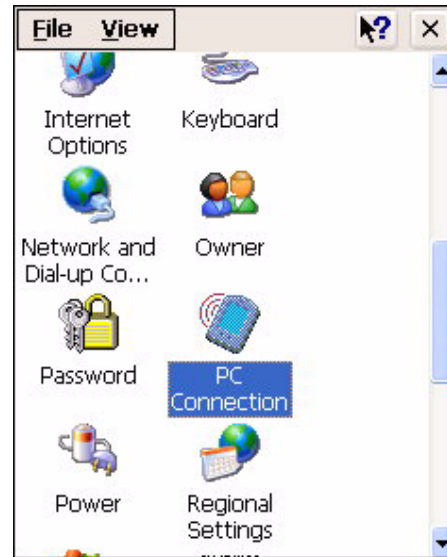
4. Follow the onscreen instructions.
5. When the configuration process is complete, the ActiveSync window appears.



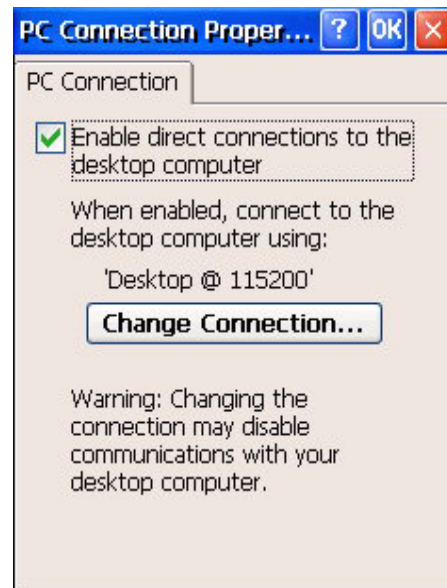
6. Synchronization will be initialized and will take place if you've chosen to synchronize periodically or upon connection.


NOTE: Your computer can create a partnership with multiple MR650s. Also, a MR650 can create a partnership with up to two computers.

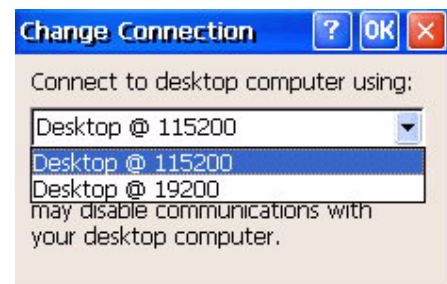
7. On MR650, tap  → **Settings** → **Control Panel** → **PC Connection**.



8. Check "Enable direct connections to the desktop computer". Tap "Change Connection".



9. Select the type of connection you want to use.
10. Tap  → **Programs** → **Communications** → **PC Link**.




Setting up the Wireless Local Area Network Card

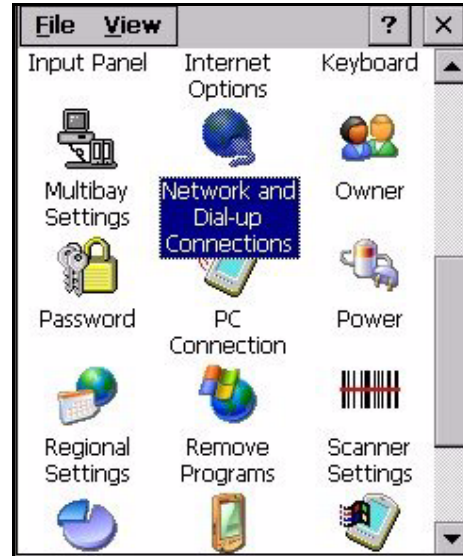
The MR650 automatically detects RF cards during the first-time installation. Note that you can use one of the following two ways to set the IP address:

- Obtaining an IP Address via DHCP Server
- Specifying an IP Address

Obtaining an IP Address via DHCP Server

To obtain the IP address via DHCP server, make sure a DHCP server is available in your LAN environment.

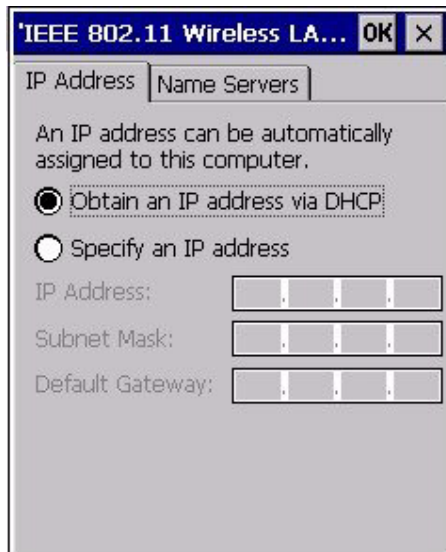
1. Tap  → **Settings** → **Control Panel** and then double-tap **Network and Dial-up Connections**.



2. Tap **PRISM1**.
3. Tap the **IP Address** tab.




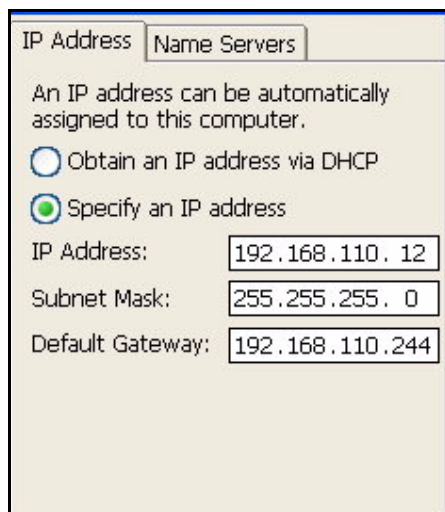
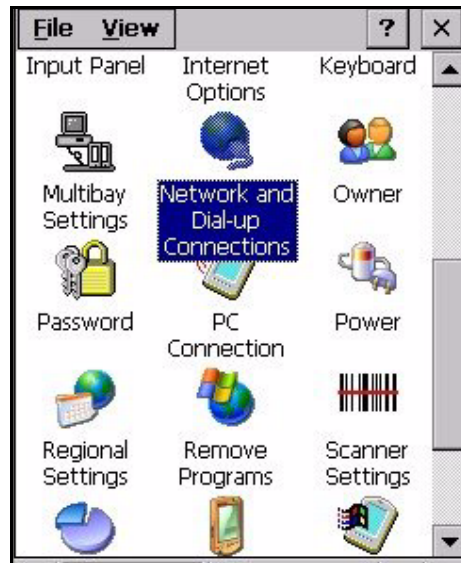
4. Tap the radio button next to **Obtain an IP address via DHCP** and then tap the **OK** button.



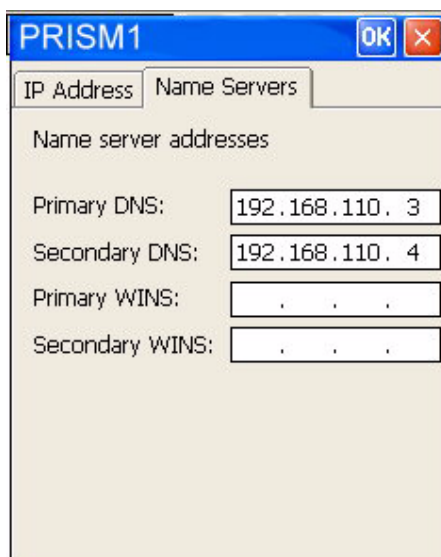
Specifying an IP Address

If there is no DHCP server available/if you want to specify an IP address, assign IP address to each MR650 as follows:

1. Tap  → **Settings** → **Control Panel** and then double-tap **Network and Dial-up Connections**.
2. Tap **PRISM1**.
3. Tap the radio button next to **Specify IP Address**.
4. Input the proper IP address, Subnet Mask, and Default Gateway.



5. Tap the **Name Servers** tab, and then input the proper Primary DNS, Secondary DNS, Primary WINS, and Secondary WINS.



To avoid conflict with your LAN environment, consult with your MIS department for the correct TCP/IP setting.

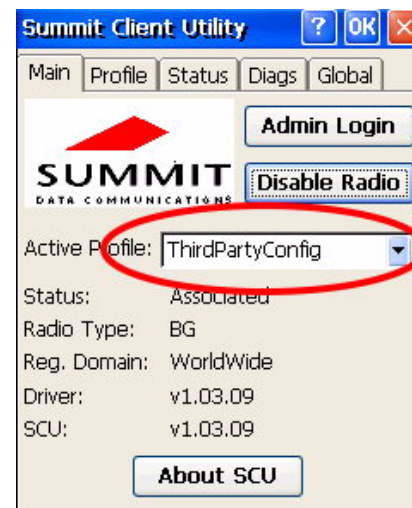
WiFi Connection

Unitech terminals come with built-in RF facility. This chapter guides the user on how to setup the RF setting.

1. Double tap the **Summit Client Utility**.



2. Under "Main" tab, for **Active Profile**, select "**ThirdPartyConfig**".



3. A Power Cycle is required to make settings activate properly. Tap "**OK**".



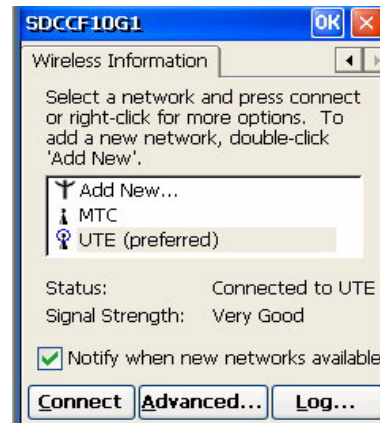
4. Tap "OK".



5. Warm Start the terminal.

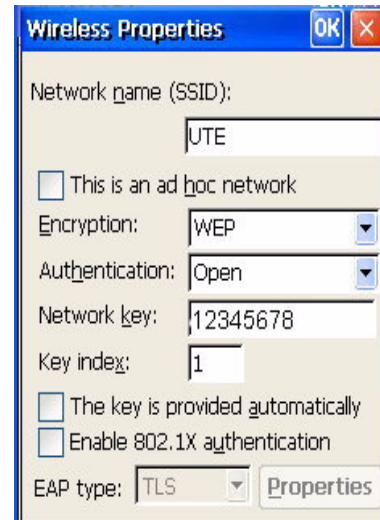


6. Once the RF card is detected, you will see the RF setting window pop up.



7. Tap "Add New"(Or double tap your preferred network) to add a new SSID.

8. Enter the SSID. Uncheck "The key is provided automatically".Enter the network key.




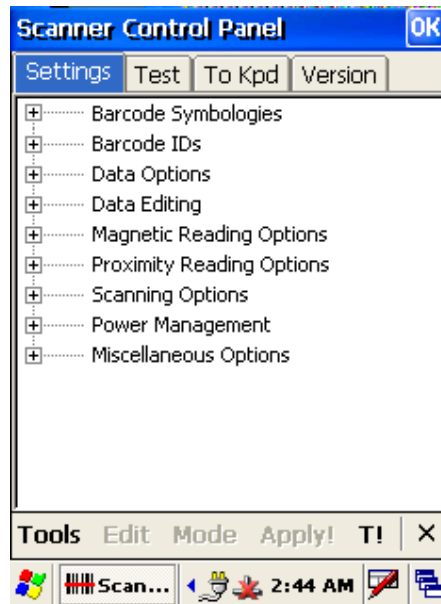
9. Tap OK. Start to search for RF signal and the RF is connected.

Barcode Scanner Programs

Scanner Settings


When it is necessary for the user to change the default barcode symbology for different application, the Scanner Control Panel provides the ability to change default symbology, place delimiter characters behind scanned data, and save the settings.

Tap  → **Settings** → **Control Panel** → **Scanner Settings** to display the Scanner Control Panel.

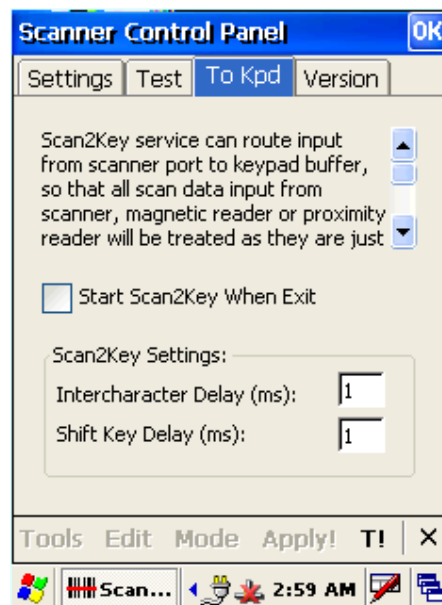


Scan2Key

The Scan2Key application routes input from a scanner port to a keypad buffer, making all input from the scanner emulate input from the keypad. Using Scan2Key, scanned data can be directly input into a scanner port aware application such as MS Pocket Word.

Tap  → **Settings** → **Control Panel** → **Scanner Settings** to display the Scanner Control Panel, then tap **To Kpd** to access Scan2Key settings.


NOTE: For details of using scanner settings, please refer to the Scan2Key Utility Manual.

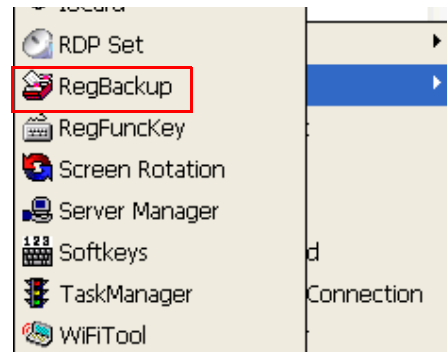


Registry Backup/Restore

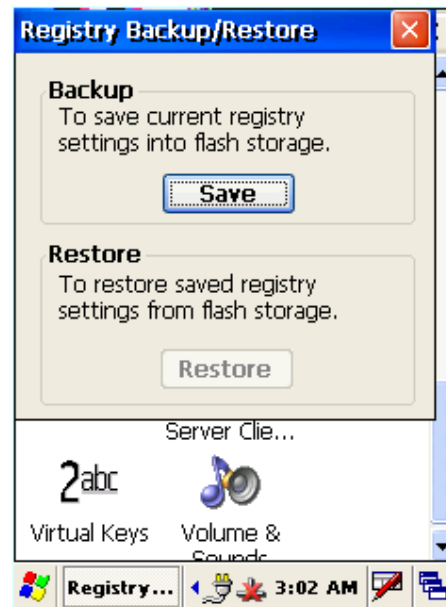
Registry Backup enables users to save current registry settings. If the system malfunctions or settings are lost, the user can go to Registry Restore to retrieve the settings.

To use Registry Backup.

1. Tap  → **Programs** → **Utilities** → **RegBackup**.
2. Tap **Save** to save the current registry settings.



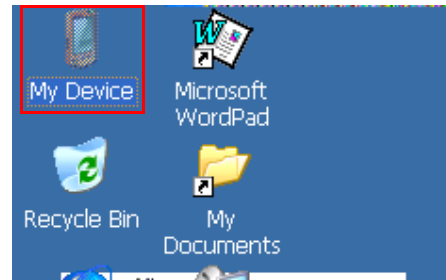
3. To restore saved settings, tap **Restore**.
You are prompted to perform a warm boot.
4. Tap **Yes** to perform the warm boot, or tap **No** to cancel.



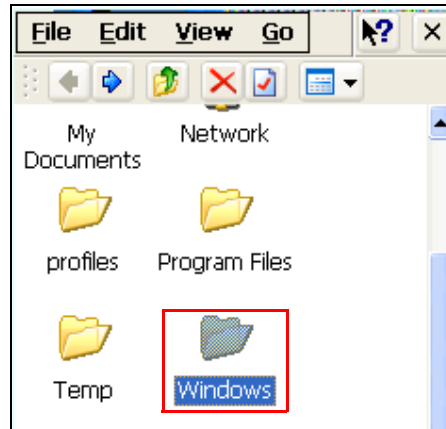
Audio Demo Program

The audio demo program enables you to test audio input (recording) and output (playback).

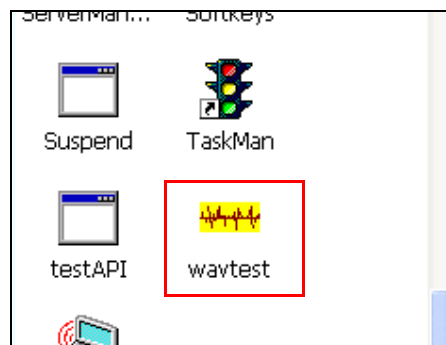
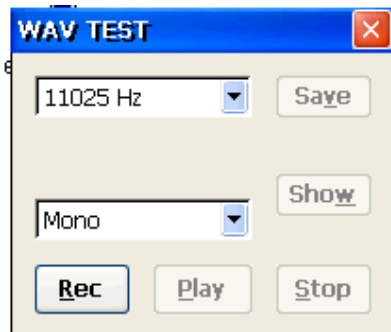
1. Double-tap the **My Device** icon on the Windows CE desktop.



2. Double-tap the Windows folder.




3. Double-tap **wavtest** to open the program.
The testing program is displayed.

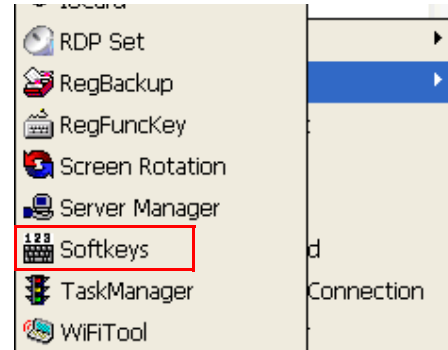
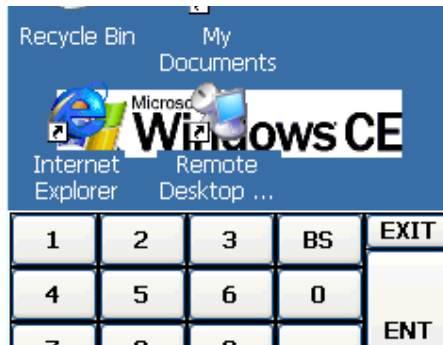


4. Do one of the following:
 - Tap **Rec** to record the voice
 - Tap **Stop** to finish recording
 - Tap **Play** to listen to the recording

Softkeys

Softkeys is a numeric onscreen keypad utility to input numeric keys

1. Tap  → **Programs** → **Utilities** → **Softkeys**.
2. The Softkeys program appears.




Power System


Charging the Backup Battery for the First Time


The MR650 is equipped with a Lithium-Ion battery pack. After long storage periods, the unit may not power-on without an external power adapter due to battery discharge. In this case, connect the MR650 to the power adapter and recharge the unit for about 22 hours to fully charge the battery.


NOTE: The MR650 can operate for approximately two hours (depending on the hardware configuration and backlight usage) or can store data for three days when there is no external power. Operating with the backlight at 100% brightness and using the finger print utility consumes more power. Therefore, when the MR650 is disconnected from external power, the unit will enter sleep mode and turn off the backlight. When you tap the touch panel, the backlight is set to minimum brightness to saving battery power.

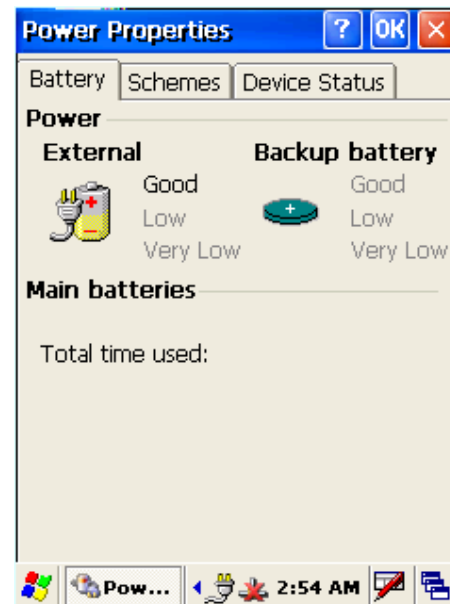
Checking the Battery Status

If the main battery level becomes low in the course of normal use, a status icon  appears on the device taskbar indicating low or very low battery status. If the battery level reaches low status, the device will enter suspend mode; if the battery level reaches very low status, the device will enter deep sleep mode. In this case, you have about 72 hours to recharge your device after which you risk losing all data on your device's internal memory.

When the backup battery is low, an icon  appears in the Taskbar indicating that you should recharge the backup battery as soon as possible.

Check the Power Properties by tapping  → **Settings** → **Control Panel** → **Power**.

CAUTION! When there is no external power and the backup battery icon  appears in the system tray, you should backup the data from MR650 immediately.



Extending Battery Life


You can extend the MR650 battery life by doing either of the following:

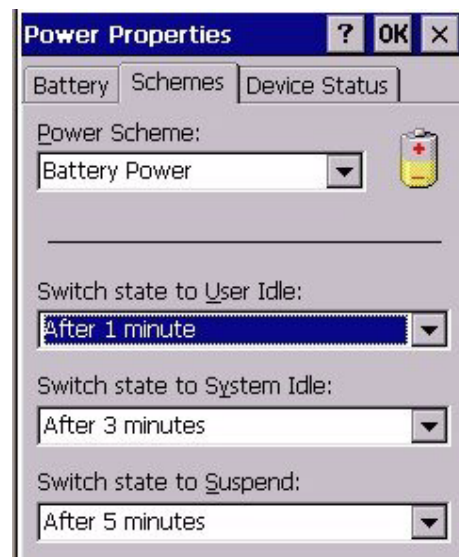
- Changing the automatic power settings
- Reducing CPU speed
- Minimizing the use of backlight

Changing the Automatic Power Settings

The MR650 enters idle mode when there is no task, or all tasks are waiting for input. In the default setting, the MR650 enters User Idle mode when there is no user input after one minute. The remains idle for 3 minutes and when there is no external charging power connected. Pressing the power button returns the MR650 to the previous screen at the time of automatic shutdown.


To change the automatic power settings:

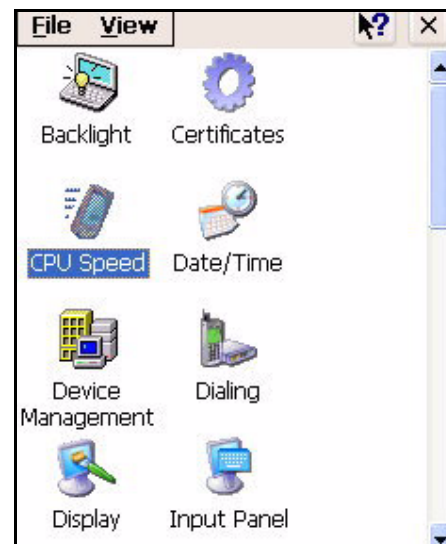
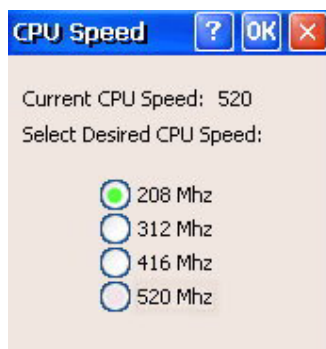
1. Open the Power Properties by tapping  → **Settings** → **Control Panel** → **Power**.
2. Tap the **Schemes** tab.
3. Tap the automatic shut off time arrow to select from a list of time periods for the following modes:
 - **User Idle:** the MR650 switches to User Idle mode when there is no user input after the selected time.
 - **Switch state to System Idle:** the MR650 switches to from User Idle mode to System Idle mode when the system is inactive after the selected time.
 - **Switch state to Suspend:** the MR650 switches from System Idle mode to Suspend mode when the system is inactive after the selected time.The available time periods are 1, 2, 3, 4, 5, 10, 30 minutes and Never.



Reducing CPU Speed

Follow these instructions to reduce the CPU speed.

1. Tap  → **Settings** → **Control Panel** → **CPU Speed**:
2. Select a lower CPU speed to conserve battery power




Adjusting the Backlight

This section describes screen settings and how to conserve battery power by adjusting the backlight.

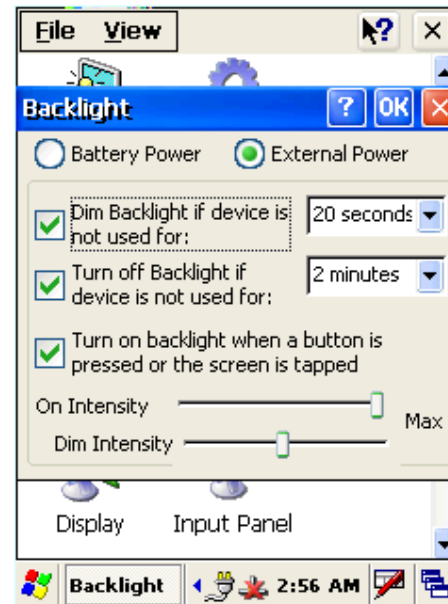
NOTE: The MR650 screen contrast has been preset at the factory for optimum performance

The backlight for the color display is user-defined. There are two tabs – one for Battery Power and the other for External Power.

Adjust the screen brightness by tapping  → **Settings** → **Control Panel** → **Backlight**.

Set the backlight behavior and drag the **On Intensity** and **Dim Intensity** sliders to the desired levels.

Field	Description
Dim Backlight if	Select how many minutes you want to elapse before the backlight dims.
Turn Off Backlight if	Select how many minutes you want to elapse before the backlight automatically turns off.
Turn on Backlight	Select this option if you want the backlight to turn on when a button is pressed or the touch screen is tapped.



Performing a Hardware Reset

You may have to perform a reset if the device freezes (i.e., device no longer responds to the buttons on the screen).

Performing a Warm Start

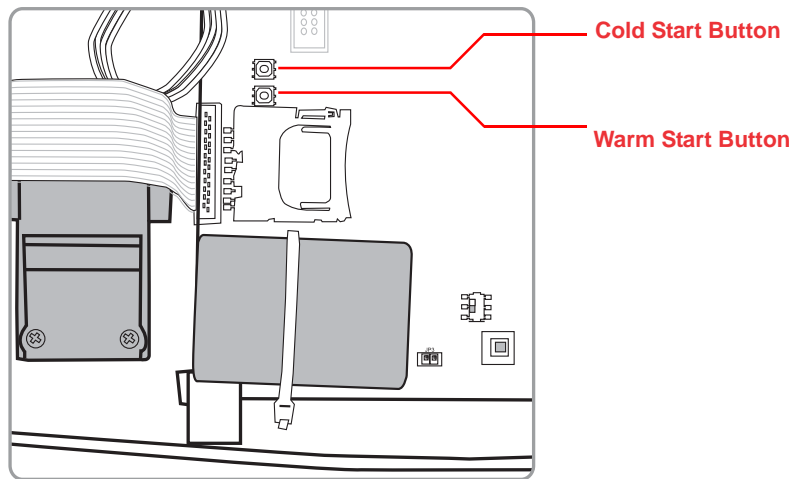
A Warm Start is used to reset or re-boot the device without losing SD RAM data. You would perform a warm start in any of the following situations:

- The terminal fails to respond
- After installing some software applications
- After making changes to certain system settings, such as SD card, CF card

WARNING! A Warm Start will cause unsaved data to be lost.

To perform a warm start.

1. Remove the back-plate as described in *Opening the Back-plate* on page 4.
2. Press the Warm Start button.



Performing a Cold Start

A cold boot will erase all data and all programs you have added and will restore the device to the default factory settings. However, data and application programs stored in the Flash Storage will be not be deleted.

Never perform a cold boot unless a warm boot does not correct your problem. When you perform your next ActiveSync operation, you can restore any data that you previously synchronized to your computer or you can restore data that you backed up to a storage card.

You can perform a cold boot using the Boot Mode utility in the operating system, or by pressing the Cold Boot hardware reset button in the unit.

You would perform a cold start in any of the following situations.

- Reset the operating system
- Restore the terminal back to factory defaults
- Reset the terminal after a boot loader, keyboard and kernel upgrade.

WARNING! A cold start erases all data and installed applications in RAM memory.

To perform a cold start.

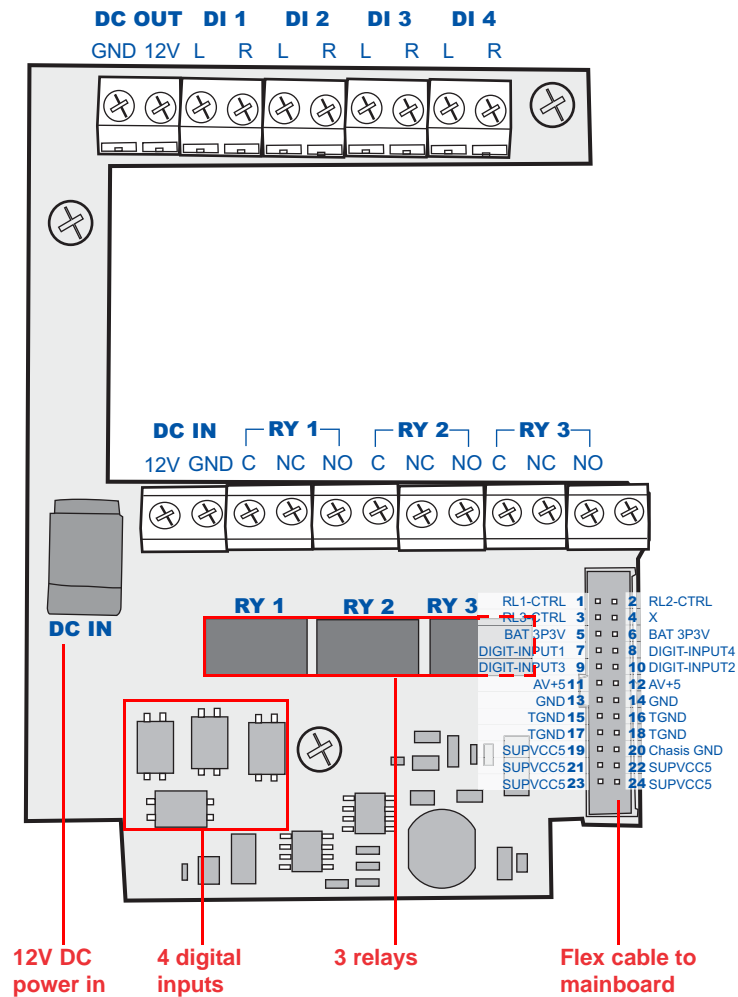
1. Remove the back-plate as described in *Opening the Back-plate* on page 4.
2. Press the Cold Start button.

System Specification

Processing/Memory	CPU	Intel Xscale PXA270 520Mhz
	Memory	SDRAM: 128 MB Flash ROM: 64 MB
OS	Microsoft Windows CE 5.0 Professional Plus	
Keypad	Six-key [Clock In (F1)Clock Out (F2)Break In (F3)Break Out (F4)Enter (Yes) Escape (No)]	
Display	5.6-inch 240x320 QVGA, Color Transflective TFT with Touch Screen & backlight	
Communication and I/O	RS232	Output relays x 3
	USB host 802.11b/g (optional) TTL digital inputs x 4	Ethernet connection Power over Ethernet
Multimedia	Camera: 1.3 megapixel CMOS camera Audio output: 0.8 W speaker Microphone input	
Expansion Slot	CF type II card slot for wireless 802.11 b/g SD slot for memory expansion	
Power Source	Main	Lithium-Ion @ 3.8V 4000mAh main battery pack
	Backup	One rechargeable Li-ion backup battery
Enclosure	Weight	700g
	Dimension	Approximately L221.3 X H177.5 X W99.5mm
Environmental	Operating temperature	-0°C~ 50°C (-32°F~ 122°F)
	Storage temperature	-20°C~ 70°C (-4°F~ 158°F)
	Relative Humidity	5% ~ 95% RH non-condensing
Certification	CE, FCC, BSMI, VCCI, RoHS compliant	
Barcode Input	Symbologies supported	
	China Postal Code	Interleaved 2 of 5
	Codabar	ISBT 128
	Code 11	Label Code IV
	Code 32	Label Code V
	Code 39	MSI
	Code 93	Standard 2 of 5
	Code 128	Toshiba Code
Delta Code	UPC/EAN	
Software	Embedded Visual Basic terminal program for T&A Embedded Visual C++ terminal program for T&A	
Magnetic Stripe Reader	Triple-track MSR reader	
Proximity Reader	EM, 125 kHz HID, 125 kHz Mifare, 13.56MHz	

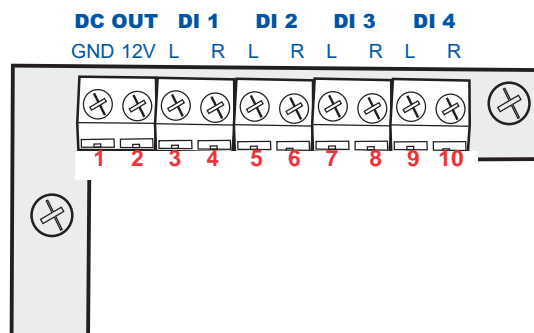
Terminal Block

Overview of the Terminal Block

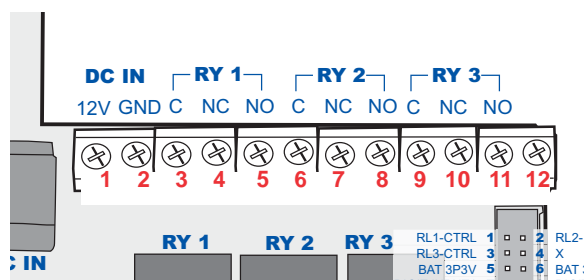


Terminal Block Pin Assignment

Pin	Name	Description
1	GND	GND
2	DC Out	Support +12V, 0.5A
3	DI1-L	Photo-In Anode(-)
4	DI1-H	Photo-In Cathode(+)
5	DI2-L	Photo- In Anode(-)
6	DI2-H	Photo-In Cathode(+)
7	DI3-L	Photo- In Anode(-)
8	DI3-H	Photo-In Cathode(+)
9	DI4-L	Photo- In Anode(-)
10	DI4-H	Photo-In Cathode(+)



Pin	Name	Description
1	DC In	+12V, 2A
2	GND	GND
3	RY1-C	Common
4	RY1-NC	Normal Close
5	RY1-NO	Normal Open
6	RY2-C	Common
7	RY2-NC	Normal Close
8	RY2-NO	Normal Open
9	RY3-C	Common
10	RY3-NC	Normal Close
11	RY3-NO	Normal Open
12	No Use	No Use



Support

At Unitech, we have a professional support team to answer your questions or any related technical issues. If the equipment problem occurs, you may contact our regional services representatives to get the quick response. We have six regional services center, and choose your region to get our quick support and their contact information can be found in our websites provided as below.

UTC (China) <http://www.ute.com.cn>

UTP (Taipei, Taiwan) <http://www.unitech-adc.com>

UTJ (Japan) <http://www.unitech-japan.co.jp>

UTA (L.A., USA) <http://www.unitech-adc.com>

UTI (Netherlands) <http://www.unitech-europe.com>

UTT (Taipei, Taiwan) <http://adc-utt.unitech.com.tw>