REFERENCE MANUAL

9400CE
MOBILE COMPUTER

DOC Version 1.02

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IMPORTANT NOTICES

FCC REGULATIONS

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

SAFETY PRECAUTIONS

- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE
- DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS
- The use of any batteries or charging devices, which are not originally sold or manufactured by CipherLab, will void your warranty and may cause damage to human body or the product itself.
- The charging and communication cradle uses an AC power adaptor. A socket outlet shall be installed near the equipment and shall be easily accessible. The power adaptor should comply with L.P.S test. Make sure there is stable power supply for the mobile computer or its peripherals to operate properly.
- DO NOT disassemble, incinerate or short circuit the battery pack.
- DO NOT expose the mobile computer or the battery pack to any flammable sources.
- Under no circumstances, internal components are self-serviceable.
- Per FDA and IEC standards, the scan engines described in this manual are not given a laser classification. However, the following precautions should be observed:

CAUTION

This laser component emits FDA / IEC Class 2 laser light at the exit port. Do not stare into beam.

CARE & MAINTENANCE

- This mobile computer is intended for industrial use. The mobile computer is rated IP 64, however, it may do damage to the mobile computer when being exposed to extreme temperatures or soaked wet.
- When the body of the mobile computer gets dirty, use a clean and wet cloth to wipe off the dust. DO NOT use/mix any bleach or cleaner. Always keep the LCD dry.
- For a liquid crystal display (LCD) or touch screen, use a clean, non-abrasive, lint-free cloth to wipe dust off the screen. DO NOT use any pointed or sharp object to move against the surface.
- Battery disposal - For green-environment issue, it is important that batteries should be recycled in a proper way.
- If you want to put away the mobile computer for a period of time, download the collected data to a host computer, and then take out the battery pack. Store the mobile computer and battery pack separately.
- When the mobile computer resumes its work, the main and backup batteries will take a certain time to become fully charged.
- If you shall find the mobile computer malfunctioning, write down the specific scenario and consult your local sales representative.

RELEASE NOTES

VERSION	DATE	NOTES
1.02	Oct. 05, 2007	▸ Modified: Appendix I – RFID Tag Supported: table corrected (TI_RFID Module 1.0.A)
1.01	Oct. 03, 2007	▸ Modified: Installing the Pistol Grip – No power connector required.
1.00	Aug. 10, 2007	Initial release

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INTRODUCTION

The 9400CE Mobile Computer, running Windows CE 5.0 in palm size, is our first product line of rugged PDA-style Mobile Computer. Light-weight, streamlined and ergonomic, it adds even more powerful and handy tools to delivering the flexibility in customization.

Specifically designed to work as an industrial PDA, the 9400CE Mobile Computer provides rich options of data collection, voice and data communications, long-lasting working hours, and so on. Its large color transflective TFT display guarantees ease in reading in all lighting conditions. Integrated with Bluetooth and 802.11b/g technologies, you may choose to add the GSM/GPRS module to gain greater speeds and optimal mobility.

This manual serves to guide you through how to install, configure, and operate the mobile computer. The Care & Maintenance section is specifically prepared for those who are in charge of taking care of the mobile computer.

We recommend you to keep one copy of the manual at hand for quick reference or maintenance purposes. To avoid any improper disposal or operation, please read the manual thoroughly before use.

Thank you for choosing CipherLab products!

GETTING FAMILIARIZED WITH 9400CE

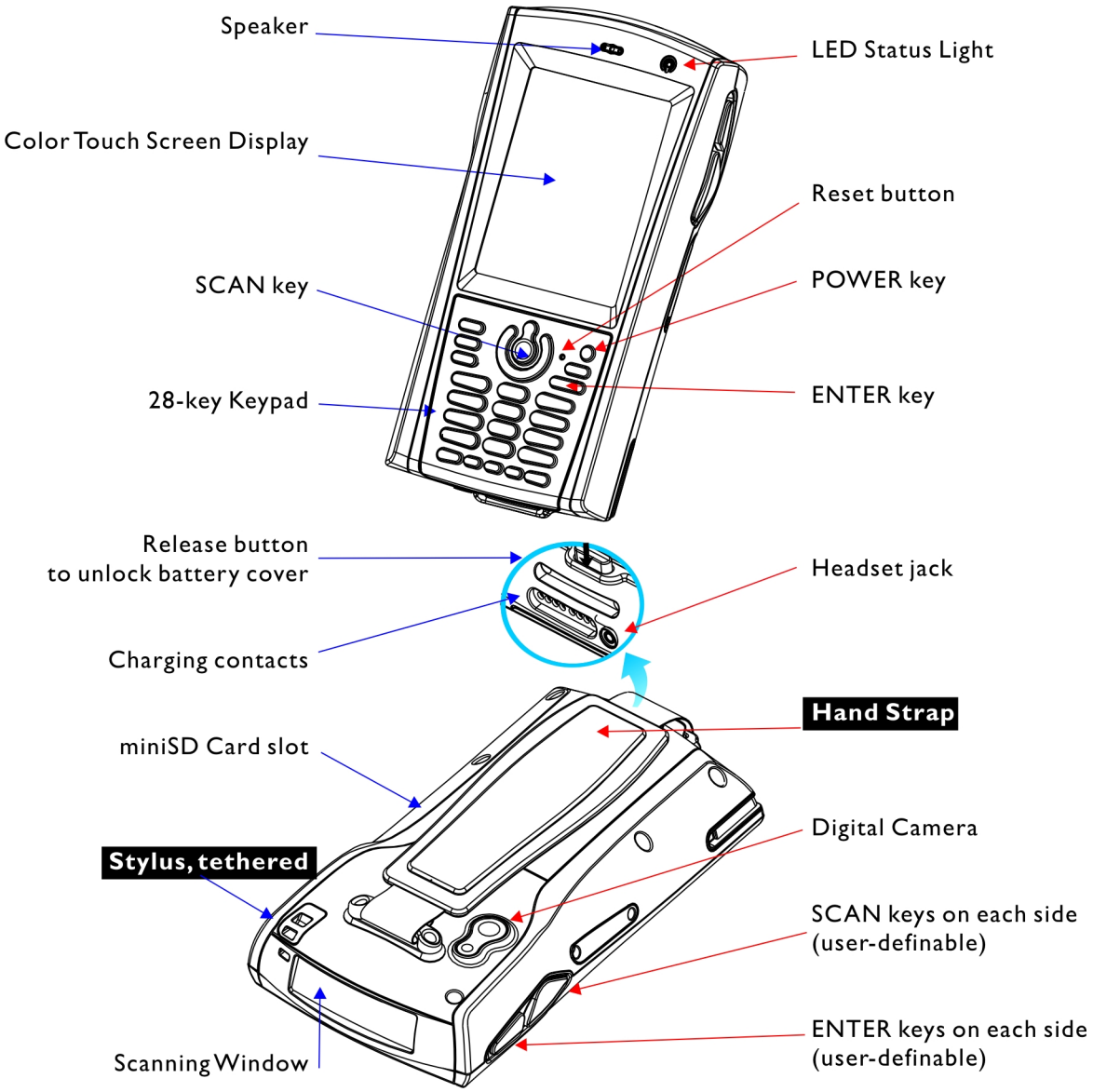

Figure 1: Front / Back View

INSTALLING THE HAND STRAP

The hand strap is ideal for one-handed operation, which requires safe and convenient hold of the mobile computer.

Warning:	Always make sure the hand strap is well hooked and screwed to the back of the mobile computer before use.

When the hand strap is desired, install it to the mobile computer by following these steps:

1) Place the mobile computer face down on a flat and clean surface.
2) Screw one end of the hand strap to the back of the mobile computer.
3) Insert and hook the other end of the hand strap to the bottom of the mobile computer.
4) Make sure the hand strap is securely attached to the mobile computer.
5) Adjust the length of the hand strap to suit your handbreadth.

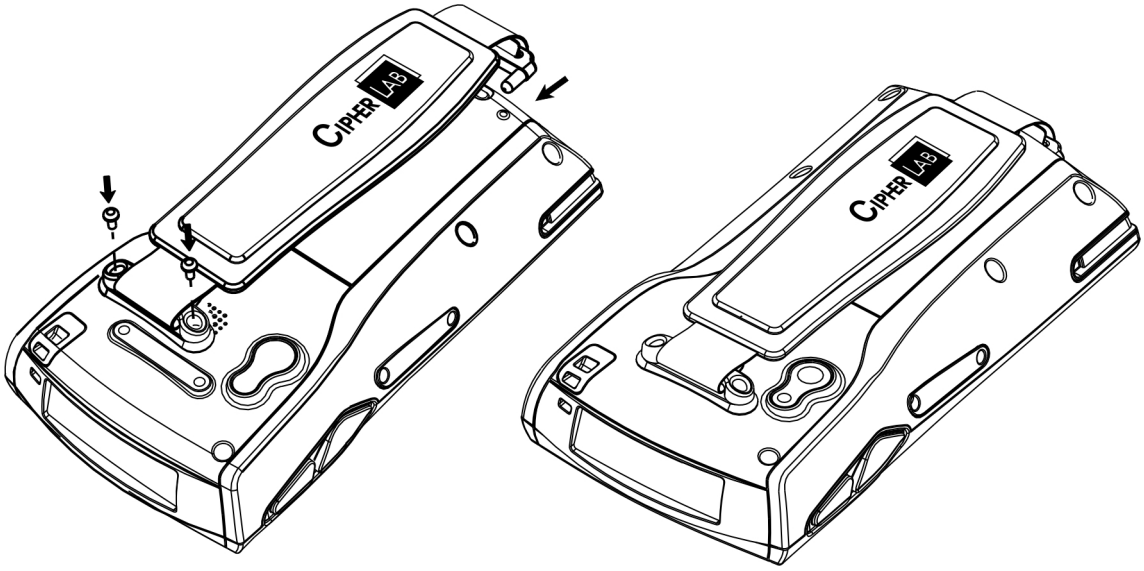

Figure 2: Installing the Hand Strap

INSTALLING THE PISTOL GRIP

This contoured pistol grip enables intuitive trigger-and-scan operation, which is very helpful in scan intensive applications.

When a pistol grip is necessary, install it to the mobile computer by following these steps:

1) Press for the mobile computer to enter suspend mode.
2) Place the mobile computer face down on a flat and clean surface.
3) Remove the hand strap as well as the side plates as shown below.
4) Screw the pistol grip to the back of the mobile computer.
5) Make sure all screws are tightened up.
6) Turn on the mobile computer to test the trigger.

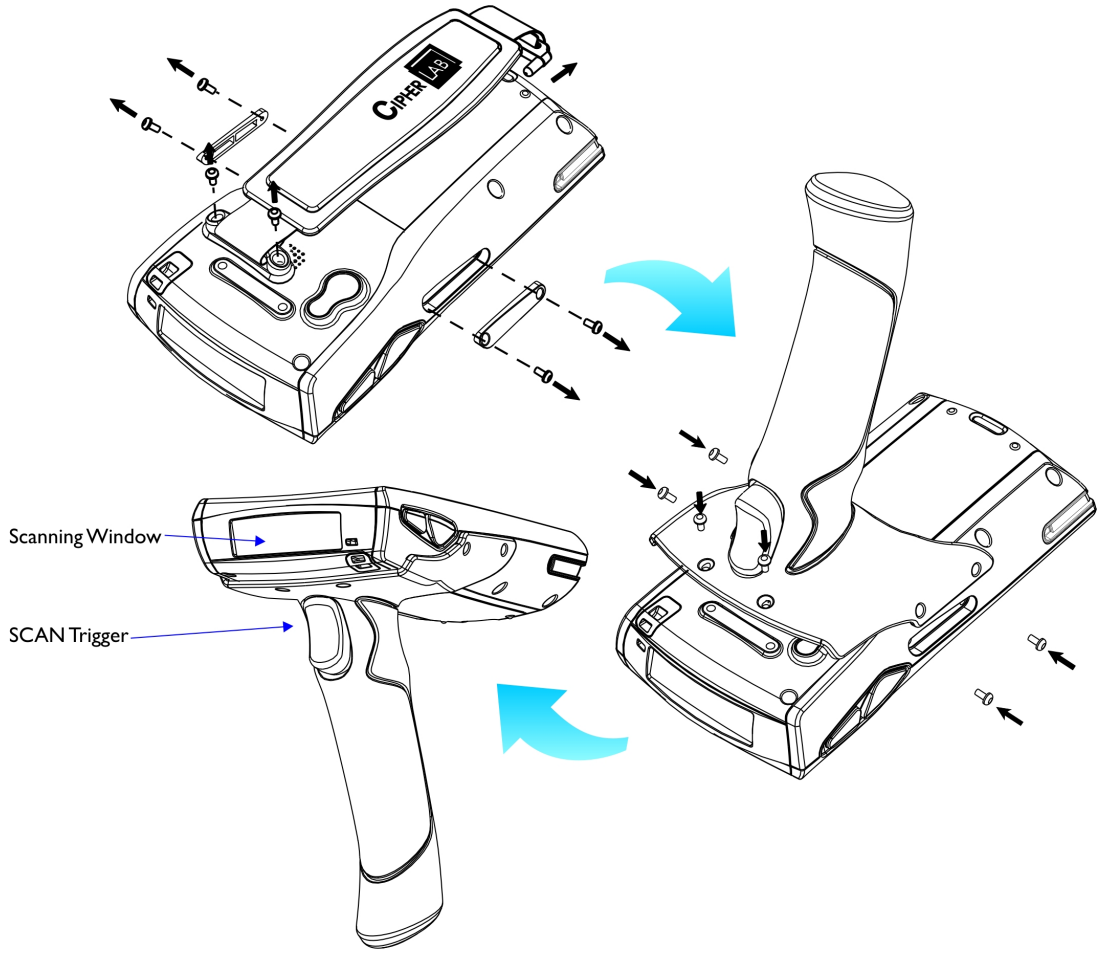

Figure 3: Installing the Pistol Grip

DIMENSIONS

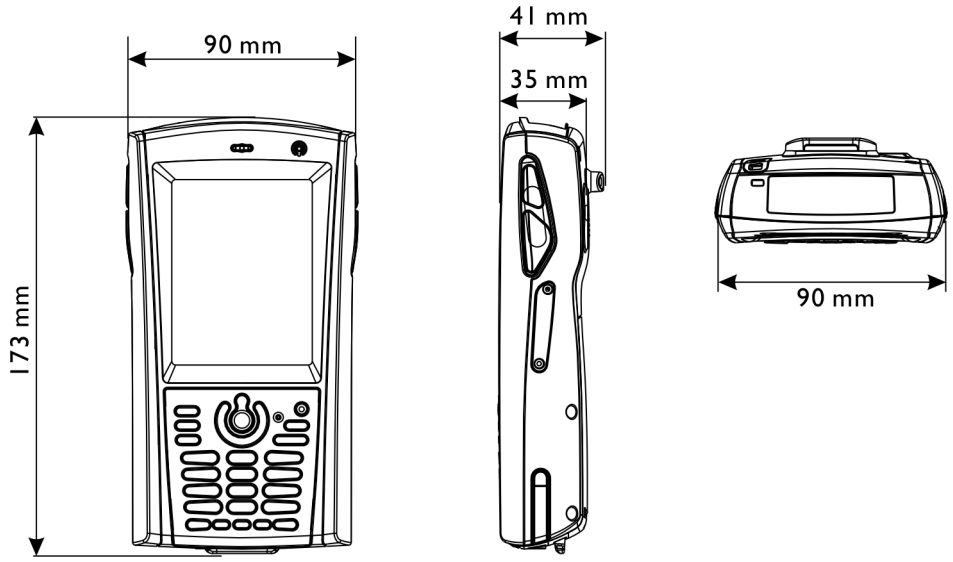

Figure 4: Dimensions

FEATURES

- Ergonomic design - ruggedized yet streamlined, with hand strap for secure hold.
- Built tough to survive drop test and sealed against moisture/dust to industrial standard IP 64.
- Microsoft Windows CE 5.0 operating system, 520 MHz Intel PXA270 processor
- 128 MB non-volatile NAND flash memory to store OS and software programs
  (part of the free space is used as a storage card called DiskOnChip)
- 64 MB / 128 MB SDRAM to store and run programs, as well as store program data
- One miniSD expansion slot for memory card
- Dual mode support - One scan engine (integrated barcode scanner/imager) plus one RFID reader
- Ambidextrous side triggers
- Total wireless solution - connectivity includes Bluetooth, 802.11b/g and GSM/EDGE/GPRS.
- A 3.5" color transflective TFT display delivers excellent visibility in all lighting conditions.
- Programmable feedback includes speaker and vibrator.
- Built-in power tools include Reader Configuration Utility, Backup Utility, etc.
- Terminal Emulation client for VT100/220 and IBM 5250 enables a quick link to any backend database.

- Application Generator (AG*.exe for desktop PC) enables easy customization of data collection applications.
- Programming support includes Reader DLL and System API.
- Accessories and peripherals include pistol grip, international AC charging cradle, etc.

INSIDE THE PACKAGE

The following items are included in the package. Save the box and packaging material for future use in case you need to store or ship the mobile computer.

- 9400CE Mobile Computer
- Rechargeable Li-ion battery pack
- Stylus
- Hand Strap
- Software & Manual CD

Note: For battery charging, you will need to purchase a charging cradle separately.

ACCESSORIES

Rich choices of optional accessories are available for you to enhance the total performance of the mobile computer.

- Pistol Grip (detachable)
- Belt Holster
- Protective Cover
- miniSD Memory Card
- Spare rechargeable Li-ion battery, standard or high capacity pack
- 4-slot Battery Charger
- Charging & Communication Cradle
- Vehicle Cradle

Chapter 1

USING THE 9400CE MOBILE COMPUTER

This chapter explains the features and usage of the 9400CE Mobile Computer.

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1.2 Memory 11
1.3 Keypad 13
1.4 Touch Screen 15
1.5 Notifications 17
1.6 Data Capture 18
1.7 Communications 19

1.1 BATTERY

- Main Battery

  The 9400CE Mobile Computer is powered by a rechargeable 3.7 V/1800 mAh Li-ion battery pack, and it takes approximately 4 hours to fully charge it. However, the charging time may vary by working condition. During normal operation, the mobile computer can work for up to 10 hours.

- Backup Battery

  The backup battery on the main board takes charge when the main battery is removed or drained out. When fully charged, the 3.7 V/70 mAh rechargeable Lithium button cell helps retain data in SRAM and maintain the system running in suspend mode for at least 20 hours without the main battery. In the meantime, you have to replace the main battery as soon as possible.

1.1.1 INSERTING THE BATTERY

When you first receive the package, the rechargeable functionality of the backup battery is turned off. It is controlled by a DIP switch inside the battery compartment as shown below.

For shipping and storage purposes, save the mobile computer and the main battery in separate packages, and adjust the DIP switch to the OFF position (bottom). This will keep both batteries in good condition for future use.

Note: Any improper handling may reduce the battery life.

1) Press for the mobile computer to enter suspend mode.
2) Remove the hand strap.

3) Hold the mobile computer still and press the release button to unlock the battery cover.

4) Slide off the battery cover.

5) Use the stylus (or a sharp-pointed object, such as a pencil) to adjust the DIP switch to the ON position (top). Now the internal backup battery can be charged by the main battery.

6) Insert the battery pack into the battery compartment at a proper angle (30°~45°) so that the metal contacts on the battery are met with the charging contacts inside the compartment. Make sure that the battery is snugly fit into the compartment.

7) Slide the battery cover back onto the mobile computer until it clicks into place.

8) If the battery is charged, the mobile computer turns on.

   If the mobile computer does not turn on, charge the battery.

Note: For a new battery, make sure it is fully charged before use. Always prepare a spare battery pack, especially when you are on the road.

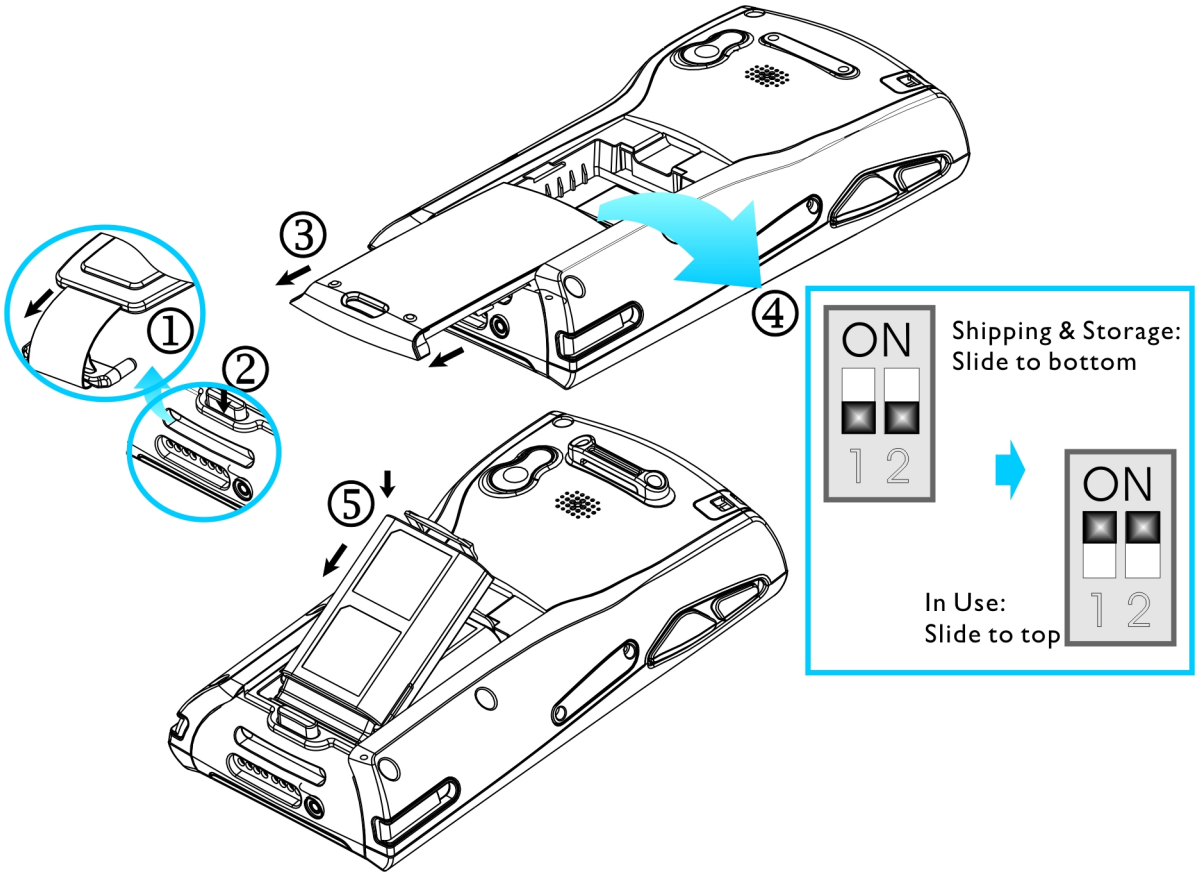


Figure 5: Installing the Main Battery

1.1.2 CHARGING THE BATTERY

The main and backup batteries may not be charged to full for shipment. When you first receive the package, you will need to charge batteries to full before using the mobile computer.

Note: To charge the batteries to full, it requires approximately 8 hours for the first time. After the initial charging, it takes only 4 hours to charge the batteries to full.

Because the internal backup battery is constantly charged from the main battery, the initial charging requires inserting the battery pack to the mobile computer and then seating the mobile computer in the cradle for charging. This will have both the main and backup batteries charged at the same time. To charge the backup battery, make sure that you slide the DIP switch inside the battery compartment to the ON position.

Note: For a new battery, make sure it is fully charged before use. Always prepare a spare battery pack, especially when you are on the road.

1.1.3 UNDERSTANDING THE BATTERY ICONS

The battery pack is the only power source for the mobile computer to work. It also charges the backup battery on the main board so that the data stored in SRAM can be retained properly. Therefore, when the main battery charge goes low (see below for battery status icon), you need to replace the battery pack with a charged one or charge it as soon as possible. Most of all, always save data before it is too late; you should backup important data on a regular basis.

BATTERY STATUS ICONS	DESCRIPTION	
	Main Battery	Main battery charge becomes low.
		Main battery charge becomes very low.
	Charging	Main battery is ready for charging.

Warning: Data loss may occur with SRAM during low battery condition. Always save data before running out of power or keep a fresh battery for replacement.

1.1.4 POWER MANAGEMENT

For any portable device, power management is a critical issue especially when you are on the road. Below are some tips to help you save battery power.

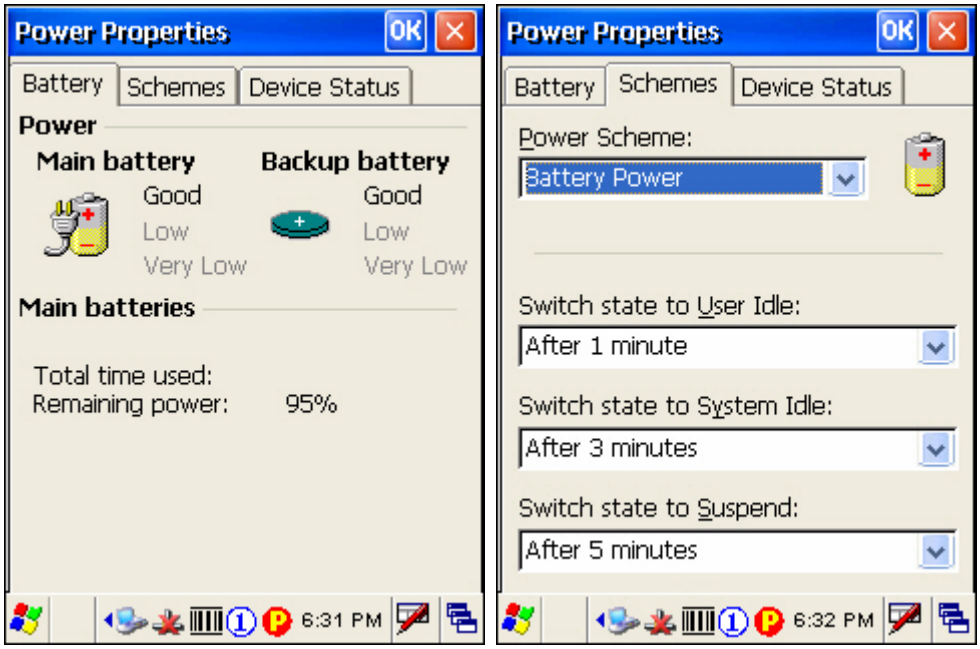
- To speed up charging the mobile computer, turn off the mobile computer and seat it in the cradle.
- Bring a second battery pack on the road.

- Stop wireless connectivity, Bluetooth, 802.11b/g or GSM/GPRS that is not in use. Refer to the Wireless Power Manager.
- To save power, go to **Start** > **Settings** > **Control Panel** and select **Display** (for backlight settings) or select **Power** (for power schemes).

Warning: Using backlight, wireless connectivity, and peripherals while on battery power will substantially reduce battery life.

START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE POWER ICON

1) In the Battery tab (left below), you can always monitor the charging status.



2) Tap the Schemes tab (right above).
3) Select the desired power scheme and options for suspending operation when not in use. The system can be set to three different states to conserve power:
   - User Idle state
   - System Idle state
   - Suspend state

   The time choices represent the amount of time that must pass before the system will switch to the next power conservation state.

START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE DISPLAY ICON

To conserve more power, you may go to **Start** > **Settings** > **Control Panel** and double-tap the **Display** icon to configure the backlight setting. Refer to section 1.4.1 Adjusting the Backlight.

1.2 MEMORY

- Read-only Memory (ROM)

  128 megabytes flash memory for storing OS (Windows CE 5.0) and custom application programs. Yet a small portion of the memory is referred to as DiskOnChip, which can store data and programs that you wish to retain even after a hardware reset.

- Random-access Memory (RAM)

  64 or 128 megabytes SDRAM for storing and running programs, as well as storing program data. Its contents will be retained by the backup battery.

- Expansion Slot

  The mobile computer is equipped with one miniSD card slot, which is user accessible. You may upgrade memory by inserting an optional miniSD memory card.

1.2.1 CAUTION OF DATA LOSS

When the main battery is removed or drained, the backup battery on the main board is to retain the contents of SRAM and maintain the OS in suspend mode for at least 20 hours, on condition that the backup battery has already been fully charged.

If you want to put away the mobile computer for a couple of days, you should be aware that data loss occurs when both the main and backup batteries discharge completely. Therefore, it is necessary to backup data and files before putting away the mobile computer!

1.2.2 CHECKING THE STORAGE SPACE

START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE SYSTEM ICON

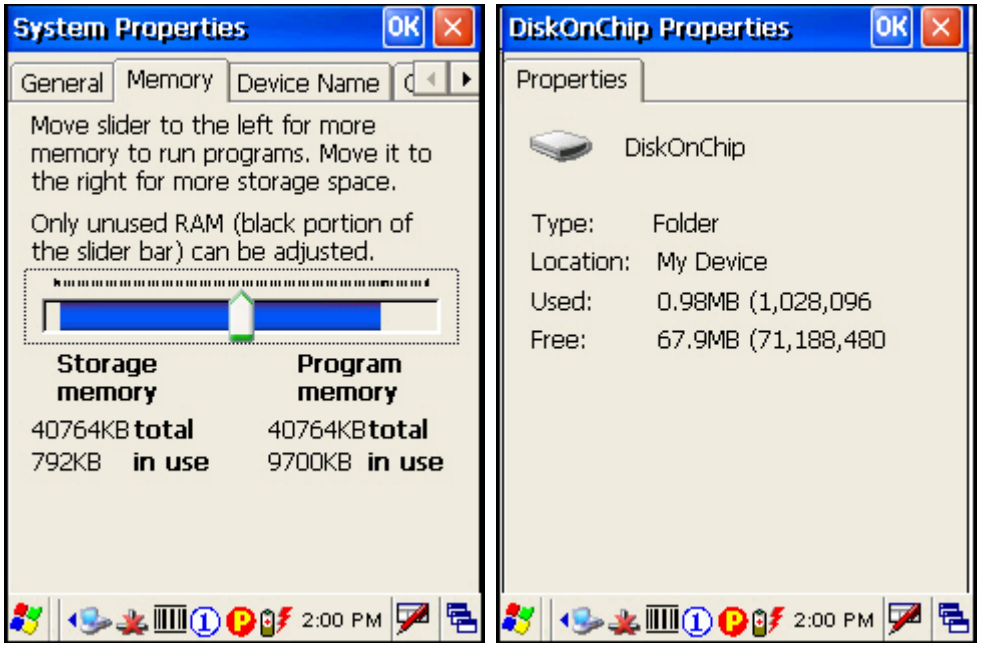
1) In the Memory tab (left below), it displays the current capacity and usage of the onboard SDRAM, 64 MB / 128 MB.
2) You may tap, hold, and drag the slider to re-allocate the memory.

SDRAM	STORAGE MEMORY (LEFT)	PROGRAM MEMORY (RIGHT)
64 MB / 128 MB onboard	It refers to the memory allocated for file and data storage.	It refers to the memory allocated for running programs.

(DESKTOP) MY DEVICE > DISKONCHIP

The DiskOnChip is part of the onboard 128 MB flash memory. Because the flash memory is non-volatile, data or programs stored in DiskOnChip will not be erased after a hardware reset.

Tap and hold the DiskOnChip icon to select Properties from the pop-up menu. In the Properties tab (right below), it displays the current capacity and usage of DiskOnChip.



START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE STORAGE MANAGER ICON

Here provides a tool for administrators to reformat the DiskOnChip folder or storage card (miniSD).

Warning:	This tool is for the use of system administrators only. Everything on the storage device will be permanently erased after reformatting.

1.2.3 INSERTING THE MINISD CARD

If you wish to expand memory, follow these steps to insert a memory card into the miniSD card slot:

1) Press for the mobile computer to enter suspend mode.
2) Place the mobile computer face down on a flat and clean surface.
3) Remove the side plate by unscrewing the two screws (on the right side when you place the mobile computer face down) as shown below.
4) Insert the miniSD card properly.
5) Replace the side plate and tighten the screws.

Warning:	Make sure the mobile computer is set to Suspend mode; otherwise, it may cause damage to the mobile computer.

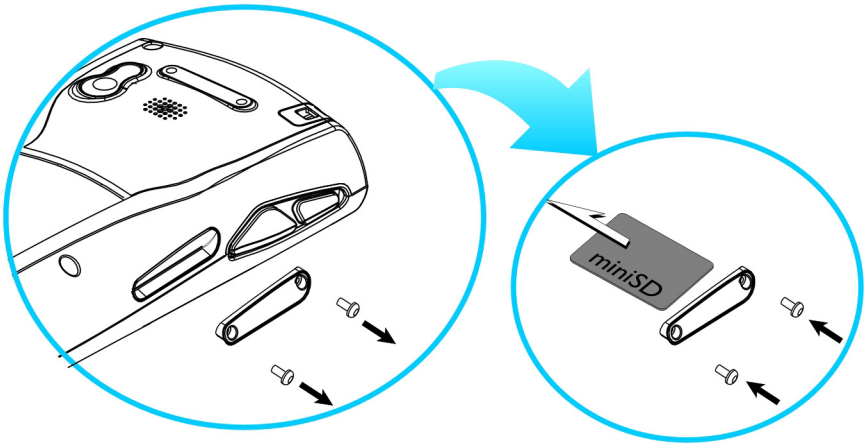


Figure 6: Inserting the miniSD Card

REMOVING THE MINISD CARD

If you wish to remove the miniSD card, simply push the card after removing the side plate. The miniSD card will be rejected automatically.

1.3 KEYPAD

Silicon rubber has been chosen for their durability and prompt feedback. The 28-key keypad includes alphanumeric, navigation, function keys, and so on. This keypad is set to numeric mode by default.

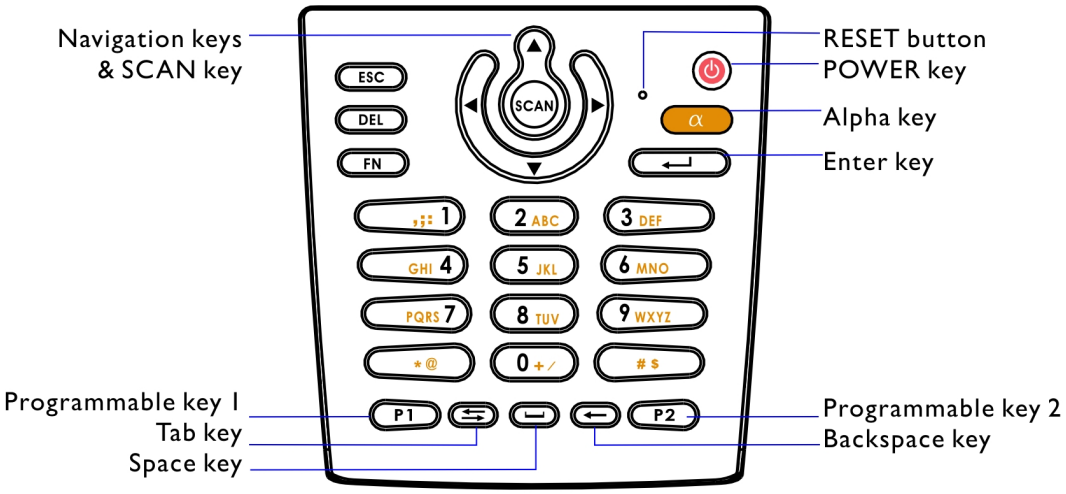


Figure 7: 28-key Layout

Note: Functionality of keys is application-dependent.

1.3.1 USING THE KEYPAD

PRESS FN FIRST, AND THEN 0

The LED backlight of keypad is turned off by default. It can be toggled ON/OFF by the key combination: [Func] + [0].

START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE KEYBOARD ICON

The Character Repeat functionality is enabled by default. You may cancel the check box to disable it. When enabled, tap, hold, and drag the slider for a desired Repeat Delay and Repeat Rate.

Warning: It is suggested to turn on the keypad backlight while working in a dark area; however, using backlight while on battery power will substantially reduce battery life.

1.3.2 ALPHA KEY

This alphanumeric keypad is set to numeric mode by default. The Alpha key serves as a toggle among numeric, alpha (lower-case alphabetic), and ALPHA (upper-case alphabetic) input modes.

Note: It is not necessary to hold down the [Alpha] key.

The alpha icon will appear on the status bar in a sequence as shown below.

STATUS ICON	ALPHA KEY	INPUT MODE
1	N/A	Numbers
a	Press α one time	Small letters
A	Press α two times	Capital letters

Note: If you are using the software keypad via SIP, tap CAP (Caps Lock) to toggle between upper case and lower case alphabetic modes.

1.3.3 FUNCTION KEY

The [Func] (function) key serves as a modifier key.

1) To enable this modifier key, press FN on the keypad.

A circular icon of the letter "F" will appear on the status bar. This modifier key is hold down as long as the icon is displayed.

2) Now press another key to get the value of key combination (say, press [1] to get the value of F1). The icon will go off now.
3) To get the value of another key combination modified by the [Func] key, repeat the above steps.
4) To abort the key modification, press FN again, and the icon will go off.

Note: It is not necessary to hold down the [Func] key.

The functionality of each key combination is application-dependent. Below is a list of the factory setting for a variety of key combinations.

KEY COMBINATION	ACTION
FN, ▲	PgUp (red-coded): move text up one screenful
FN, ▼	PgDn (red-coded): move text down one screenful
FN, ◄	Home (red-coded): move to the beginning of screen or document
FN, ►	End (red-coded): move to the end of screen or document
FN, 0 +/	Toggle ON/OFF the backlight of keypad only
FN, * @	Turn ON the backlight of LCD and decrease its luminosity
FN, # $	Turn ON the backlight of LCD and increase its luminosity

Note: Press the [Func] key first, and then press the second key for a specific function.

1.3.4 PROGRAMMABLE KEYS

Two user-definable keys, named P1 and P2, are provided on the keypad. Together with the SCAN key as well as the four side triggers on each side of the touch screen, they can be re-defined as another key or to serve as a shortcut key for launching a specific program.

Refer to the Button Assignment Utility.

Note: By default, the four side triggers are programmed to serve as ENTER keys (upper ones) as well as SCAN keys (lower ones).

1.4 TOUCH SCREEN

The mobile computer comes with a 3.5" TFT graphic LCD, 320 by 240 pixels resolution (QVGA).

The LED backlight of screen, which helps ease reading under dim environments, can be controlled manually and automatically.

Warning:	Using backlight while on battery power will substantially reduce battery life. It is suggested to dim the backlight while working in a well-lit area or automatically turn off the mobile computer when not in use.

1.4.1 ADJUSTING THE BACKLIGHT

PRESS FN FIRST, AND THEN *@

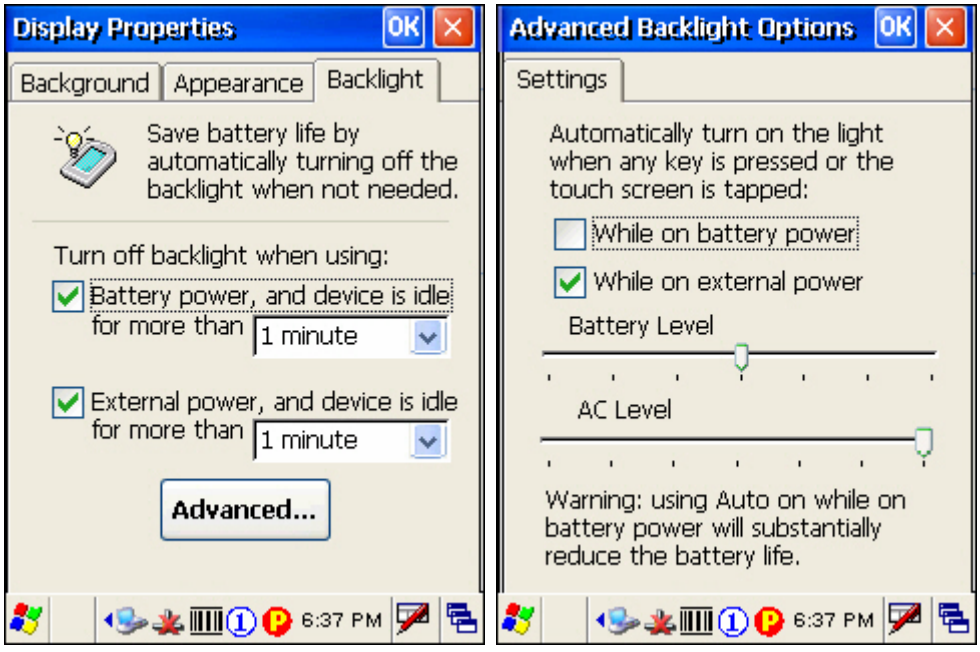
The LED backlight of the screen can be turned on and adjusted decreasingly by the key combination: [Func] + [-]. Keep pressing the key combination ([Func] first, and then [-]) until the luminosity is decreased to a desired level.

PRESS FN FIRST, AND THEN #$

The LED backlight of the screen can be turned on and adjusted increasingly by the key combination: [Func] + [.]. Keep pressing the key combination ([Func] first, and then [.]) until the luminosity is increased to a desired level.

START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE DISPLAY ICON

1) Tap the Backlight tab (left below).
2) Select one or both of the check boxes to automatically turn off the LCD backlight when using batteries or external power. From the appropriate list, select the amount of time the device should be idle before the backlight is turned off.



3) Tap the [Advanced] button (right above).

4) In the Settings tab, you can select the luminosity of backlight when it is set to be automatically turned on by pressing any key or tapping the screen. Tap, hold, and drag the slider for AC and battery powered respectively. For more luminosity, move the slider to the right.

1.4.2 RE-CALIBRATING THE SCREEN

This LCD is also a touch screen that can be calibrated through screen alignment.

START > SETTINGS > CONTROL PANEL AND DOUBLE-TAP THE STYLUS ICON

Tap the Calibration tab, and then tap the [Recalibrate] button.

Warning: DO NOT use any pointed or sharp objects to move against the surface of the screen.

1.5 NOTIFICATIONS

1.5.1 STATUS LED

The tri-color LED on top is used to provide information on the charging status or wireless power status.

TASKS	GREEN LED	RED LED	BLUE
Charging 9400CE	---	On	---

Charging done	On	---	---
Good Read	On	---	---
Bluetooth enabled	---	---	On

Note: The green LED is also used for "Good Read" while collecting data.

1.5.2 AUDIO

- Speaker

  The mobile computer is integrated with a mono speaker, a low power transducer type, used for playing sounds applied to events in Windows and programs, as well as playing audio files such as .WAV files. In addition, it can be programmed for status feedback.

- Headset

  A headset jack is provided, which is a 2.5 mm DIA stereo earphone jack with microphone input. Bluetooth headset is also supported.

1.5.3 VIBRATOR

The mobile computer is integrated with a vibrator, which is software programmable for feedback. This can be helpful when working in noisy environments.

1.6 DATA CAPTURE

1.6.1 BARCODE & RFID READER

A wide variety of scan engines is available for delivering flexibility to meet different requirements. Depending on the scan engine integrated (check the "Active Device" setting in ReaderConfig), the mobile computer is capable of scanning barcodes of a number of symbologies that are enabled by default. If you need to scan barcodes that are encoded in a different symbology, use the Reader Configuration Utility to enable the symbology first.

Refer to Appendixes for details on scan engine settings.

- Appendix I – Scan Engine Settings lists the symbologies and RFID tags supported.
- Appendix II – CCD/Laser Scan Engine provides information on the reader settings as well as symbology settings for the CCD or Laser scan engine.
- Appendix III – 2D Scan Engine provides information on the reader settings as well as symbology settings for the 2D scan engine.

Note: The mobile computer allows the co-existence of one integrated scan engine and the RFID reader.

1.6.2 DIGITAL CAMERA

An integrated 2 mega-pixel CMOS camera inside the computer is specifically designed for collecting image data. Refer to the Image Capture Utility.

1.7 COMMUNICATIONS

1.7.1 USING THE CRADLE

The cradle is designed for charging and communications at the same time.

1) Place the cradle on a flat and clean surface.
2) Connect the line of the power adaptor to the power jack on the back of the cradle.
3) Connect the power adaptor to a suitable power outlet.
4) The cradle is ready for charging.
5) Seat the mobile computer in the cradle.

   If data communications are desired at the same time, you can establish a proper connection with a computer or remote host. For example, you may establish a USB connection for ActiveSync.

   Make sure that you have Microsoft ActiveSync installed on your computer before you connect the USB cable from the cradle's USB device port ( ) to your computer.

Refer to section 2.3 Using ActiveSync.

UNDERSTANDING THE STATUS INDICATORS

TASKS	GREEN LED	RED LED	BLUE
Power ON	---	---	On
Charging Spare Battery	---	On	---
Charging Done	On	---	---

UNDERSTANDING THE COMMUNICATION PORTS

PORTS	PURPOSE
USB Device Port	This port is provided for connecting to your computer for establishing a connection for ActiveSync.
USB Host Port	This port is provided for connecting a USB device: ▸ Keyboard ▸ Mouse ▸ Card reader ▸ Storage device, such as a memory stick

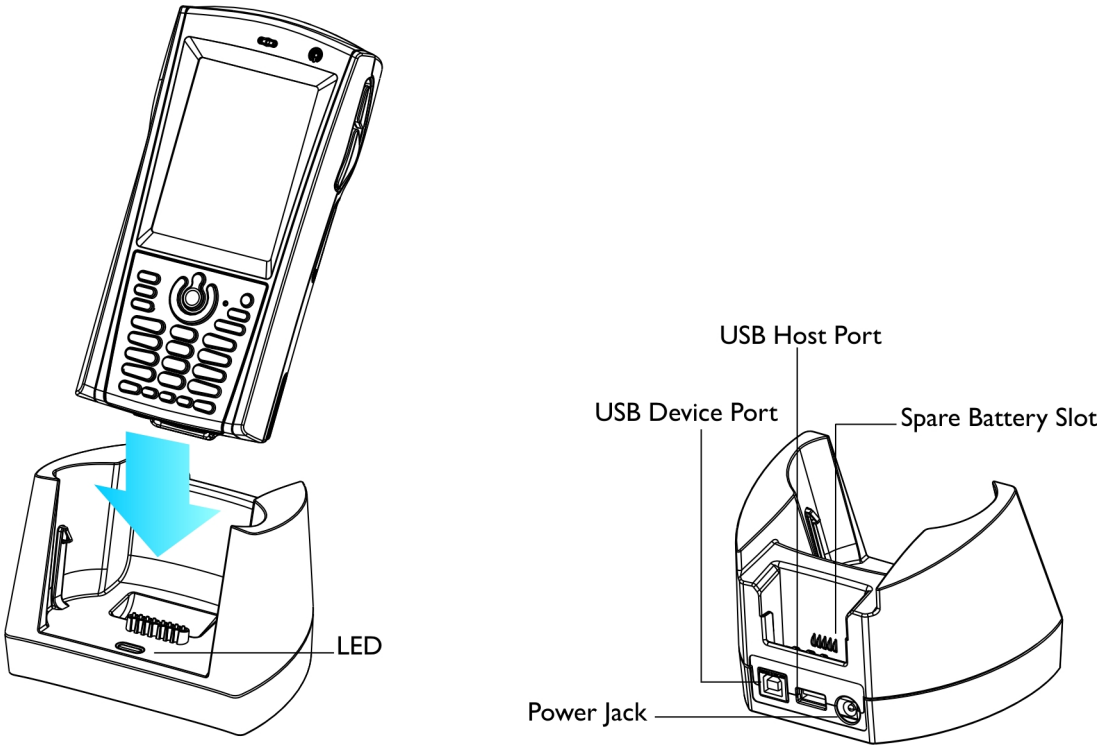


Figure 8: Understanding the Cradle

1.7.2 INSERTING THE SIM CARD

1) Press for the mobile computer to enter suspend mode.
2) Hold the mobile computer still and remove the hand strap as well as the battery.
3) Use your finger to slide the locking plate towards its hinge to unlock the SIM card holder.

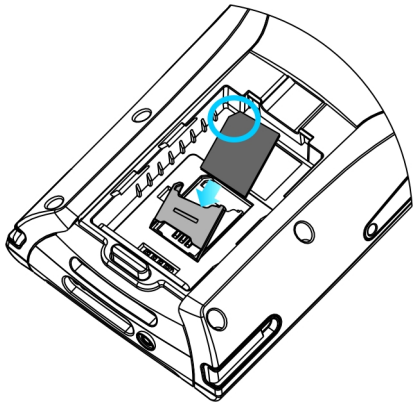


Figure 9: Inserting the SIM Card

4) Flip up the SIM card holder.
5) Insert the SIM card to the SIM card holder, using the card orientation shown below.
6) Push the SIM card holder down.
7) Slide the locking plate away from its hinge to secure the SIM card holder.

1.7.3 TURN OFF THE WIRELESS NETWORKS

The mobile computer supports state-of-the-art wireless technologies, Bluetooth and 802.11b/g, so that it is able to send/receive data in real time in an efficient way.

You may choose to have the GSM/GPRS module embedded for a total wireless solution for data and voice communications.

Refer to the associated utilities.

1.7.4 USING THE HEADSET

Connect the headset to the headset jack (2.5 mm DIA) at the bottom of the mobile computer. You can use the headset for audio playback or communication via Voice over IP (VoIP).

- Bluetooth headset is supported, bringing you the freedom of cordless mobility.

Chapter 2

LEARNING WINDOWS CE BASICS

This chapter mainly describes the basic skills to work with the 9400CE Mobile Computer. The add-on utilities for applications regarding data collection, processing, and transmission, are introduced in the following chapters.

The 9400CE Mobile Computer is specifically designed for real-time data collection in the Windows CE 5.0 environment. It won't take long for any Windows user to get familiarized with it. Keep these basic skills in mind and explore this Windows CE device at ease.

- Double-tap an item to select it.
- Tap and hold an item to see a menu that enables tasks, such as cut, copy, rename, delete, etc.
- Tap and drag to select multiple items.
- Tap or on the toolbar to close an active window, a dialog box, or a running application.

  If the button is not displayed, press on the physical keypad.
- Tap on the toolbar to save the current settings and exit the application (or minimize the window in some applications).

  If the button is not displayed, press on the physical keypad.

IN THIS CHAPTER

2.1 Getting Started 23
2.2 Finding out the Capabilities of Your Mobile Computer 28
2.3 Using ActiveSync 29
2.4 Managing Programs 31
2.5 System Reset & Auto Run 35
2.6 Updating OS Image 36

2.1 GETTING STARTED

When the 9400CE Mobile Computer is fully charged, you may remove it from the cradle. Then, press to turn on the mobile computer and wait for the Windows CE desktop to come up. If you are using the mobile computer for the first time, there are a couple of things to do after the desktop comes up.

- To select your time zone and set the local time: **Start** > **Settings** > **Control Panel** and select **Date/Time**.
- To align the touch screen: **Start** > **Settings** > **Control Panel** and select **Stylus**.

SUSPEND MODE

Like your PDA, Pocket PC and most handheld devices, the 9400CE Mobile Computer functions when it is turned on. This is because the Windows CE operating system eliminates the booting process and runs continuously.

- Turn On (= Resume from Suspend)

  To turn on the mobile computer, simply press .

- Turn Off (= Suspend)

  To turn off the mobile computer, press again, or select Suspend from the Start Menu.

  The system is now ready for use but not in use. This is referred to as Suspend mode or Standby mode. It means the system is in power-saving status and waiting for user interference.

Warning: To save battery power, it is suggested that the mobile computer is set to be automatically turned off when not in use. Refer to section 1.1.4 Power Management for more information about saving power.

2.1.1 DESKTOP

The desktop appears when the mobile computer is turned on (left below). Tap and hold anywhere blank on the screen to manage or configure the desktop (right below).

Alternatively, you may tap to the right of the taskbar, and then select **Desktop**.

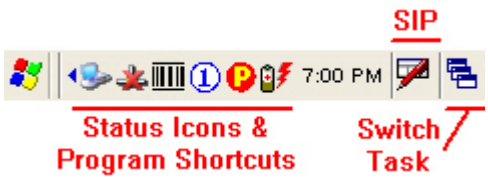
Note: To customize the desktop, tap anywhere blank on the desktop and select **Properties**.

When you turn on the mobile computer and seat it in the cradle for the first time, you will find these icons displayed on the taskbar. Refer to section 2.1.2 Taskbar for more information on the icons.

ICON	DESCRIPTION	SEE ALSO
	This icon shows that your cradle is directly connected to a computer via USB port. ▸ Make sure you have Microsoft ActiveSync installed on your computer.	1.7.1 Using the Cradle 2.3 Using ActiveSync
	This icon shows that BTPAN1 is disabled.	3.1 Changing System Settings
	This icon is a shortcut to the Wireless Power Manager that controls the power to GSM/GPRS and 802.11b/g modules.	4.1 Wireless Power Manager
	This icon shows that the main battery is ready for charging. For information on charging status, refer to the LEDs on the mobile computer as well as on the cradle.	1.1.3 Understanding the Battery Icons
	This icon shows that numeric mode is in use for data input via keypad.	1.3.4 Alpha Key

2.1.2 TASKBAR

The taskbar is at the bottom of the screen for displaying the **Start** button, status icons for various connections or programs, **SIP** button, **Switch Task** button, etc.



Note: To configure different connections, go to **Start** > **Settings** and select **Network and Dial-up Connections**.

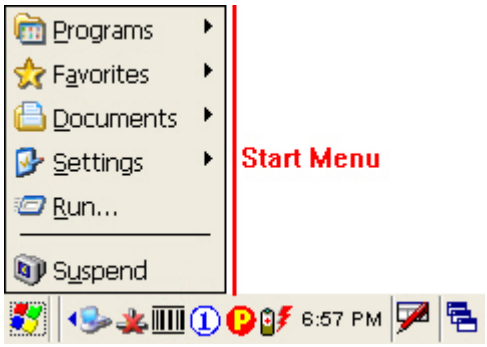
UNDERSTANDING THE ICONS ON THE TASKBAR

ICON	DESCRIPTION	SEE ALSO
	The USB connection for ActiveSync operation is successfully established. ▸ Double-tap it to view status. Tap [Disconnect] if necessary.	3.2.1 USB Connection (via cradle)
	The Bluetooth PAN connection fails. (= disconnected)	3.2.4 BTPAN
	The Bluetooth PAN connection is successfully established through the Bluetooth Manager utility. ▸ Double-tap it to view or renew IP Information.	
	It provides control of the power to the 802.11b/g and GSM/GPRS modules. ▸ Double-tap any of these icons to configure the power setting.	4.1 Wireless Power Manager
	It indicates the GPRS module is enabled. ▸ See GPRS status icon below.	
	It indicates the Wi-Fi module (802.11b/g) is enabled. ▸ See WLAN1 status icons below.	
	The GPRS connection has been opened. If it fails, the icon will be gone. If the icon persists, it means the GPRS connection is successfully established. ▸ Double-tap it to view status. Tap [Disconnect] if necessary.	3.2.2 GPRS
	The Wi-Fi connection fails. (= disconnected) ▸ Double-tap it to access the Wireless Information tab for establishing a new connection.	3.2.3 WLAN
	The Wi-Fi connection is successfully established. ▸ Double-tap it to view or renew IP & Wireless Information.	
	It provides access to the Bluetooth services. ▸ Initially, you need to go to Start > Programs > BTManager to open the Bluetooth Manager so that this icon will appear on the taskbar.	4.2 Bluetooth Manager
	It provides access to the Reader Configuration Utility. ▸ Initially, you need to double -tap the ReaderConfig shortcut on the desktop so that this icon will appear on the taskbar.	
	Tap it to change the input method.	**Software Input Panel (SIP)**
	Tap it to switch to desktop or any task, such as a running program or window.	**Switch Task**

	It indicates the battery status. The other icons are .	1.1.3 Understanding the Battery icons
	It indicates the current input mode of keypad. The other icons are .	1.3.4 Alpha Key
	It indicates the modifier key is enabled. (= function mode)	1.3.5 Function Key

2.1.3 START MENU

Tap the **Start** button on the taskbar to open the **Start Menu**.



OPTIONS	DESCRIPTION
Programs	Provides access to available programs in the directory: \Windows\Programs
Favorites	Provides access to your favorites in the directory: \Windows\Favorites
Documents	Provides access to recent opened documents in the directory: \Windows\Recent
Settings	Provides access to ▸ Control Panel ▸ Network and Dial-up Connections ▸ Taskbar and Start Menu
Run...	Runs a program or application.
Suspend	Enters the Suspend mode.

Note: To configure the Start menu and taskbar, go to **Start** > **Settings** and select **Taskbar and Start Menu**.

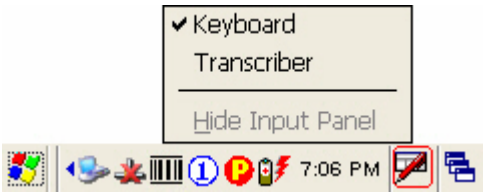
2.1.4 INPUT METHODS

Data entry can be performed by the following methods:

- Type with the physical keypad.
- Scan barcode or RFID tag in applications, e.g. WordPad, CipherLab's Application Generator, etc.
- Tap or write using SIP (Soft Input Panel)

USING THE SOFT INPUT PANEL (SIP)

Tap the SIP button on the taskbar to select a SIP mode or hide the input panel.



In each mode, the characters appear as typed text on the screen.

OPTIONS	DESCRIPTION
Keyboard	To type using the virtual keyboard.
Transcriber	To write freely on the screen in applications, such as WordPad, Inbox, etc.

2.2 FINDING OUT THE CAPABILITIES OF YOUR MOBILE COMPUTER

1) Go to **Start** > **Settings** > **Control Panel** and select **System** to obtain essential system information.
2) Select the Device Name tab to change the identification for the mobile computer.

DEVICE CONFIGURATION CODE

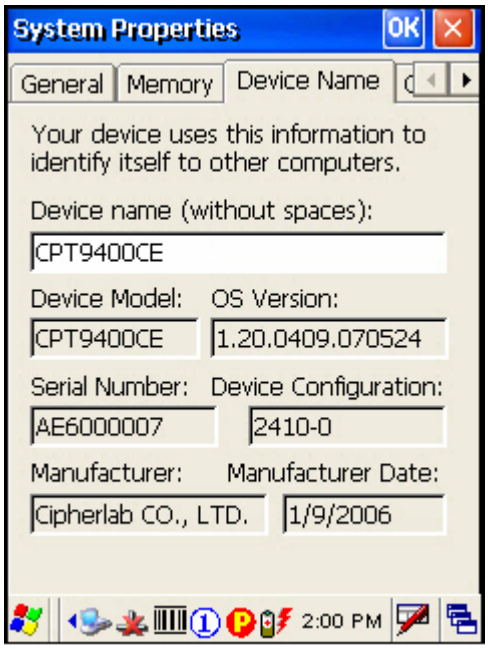
The device configuration of the 9400CE Mobile Computer is displayed in 5 digits: xxxx-x

Take the screenshot of System Properties below for example. Its device configuration is "2410-0", which means the 28-key mobile computer has equipped with the following parts:

- A scan engine that employs Laser scan engine
- Integrated Bluetooth and Wi-Fi modules
- An RFID reader

DEVICE CODE	MODULAR COMPONENT	TYPES
1st digit	Reader module	0= none 1= CCD scan engine 2= Laser scan engine 3= 2D scan engine
2nd digit	Wireless module	3= Bluetooth + GSM/GPRS 4= Bluetooth + 802.11b/g 5= Bluetooth only 7= Bluetooth + GSM/GPRS + 802.11b/g

3rd digit	RFID module	0= none 1= RFID reader
4th digit	Reserved	---
5th digit	Keypad module	0= 28-key



2.3 USING ACTIVESYNC

ActiveSync is used to synchronize information between the 9400CE Mobile Computer and your desktop computer, to install programs on the mobile computer, and to backup and restore the mobile computer.

The Microsoft ActiveSync program has to be installed on your desktop computer first.

- To download the up-to-date version of the program, you may need to go to Microsoft's official web site for Windows Mobile devices as shown below.

  http://www.microsoft.com/windowsmobile/default.mspx

- After downloading and installation, run the program. For detailed information on the program, you may click the Help menu, and then select the Microsoft ActiveSync Help.

2.3.1 SYNCHRONIZATION WITH YOUR COMPUTER

1) Follow these instructions for initial ActiveSync operation:

   - Connect the USB cable from the cradle's USB device port ( ) to your computer.
   - Connect the power cable from the cradle to a nearby power outlet.
   - Turn on the mobile computer and seat it in the cradle.

2) Your computer will automatically detect the USB device. Click [OK] when the connection is established.

3) Select which partnership to set up. If you want to synchronize data between the mobile computer and your personal computer, select Standard Partnership; otherwise, select Guest Partnership.

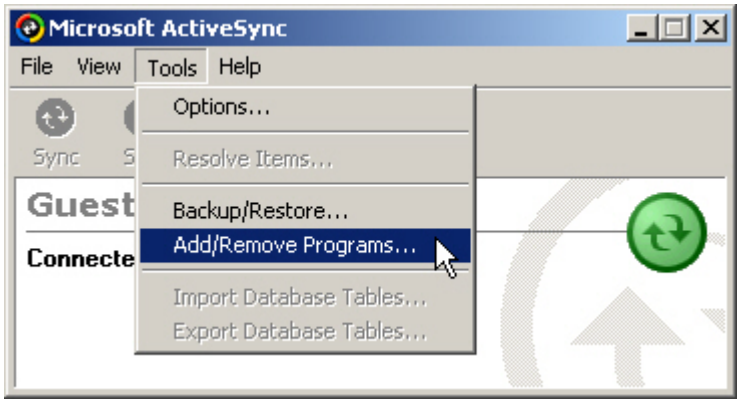
4) Wait a few seconds for the mobile computer to get connected (and synchronized if a Standard Partnership is selected).

Note: (1) For ActiveSync via Bluetooth, refer to the Bluetooth Manager.
(2) We recommend that you have ActiveSync 3.7.1 installed on your computer because ActiveSync 4.x does not officially support Windows CE 5.0 devices.

2.3.2 ADD/REMOVE PROGRAMS

Click [Add/Remove Programs] from the Tools Menu so that you can proceed to install a program that is designed to be used on a mobile device running Windows CE.

If a user program is no longer desired, you may remove it from the system. Click [Add/Remove Programs] from the Tools Menu so that you can proceed to un-install a program that is designed to be used on a mobile device running Windows CE.



ALTERNATIVE TO INSTALL NEW PROGRAMS (COPY & PASTE)

Alternatively, you may install a new program manually.

1) When connected, open the Microsoft ActiveSync window on your desktop computer.

2) Click the Explorer button from the toolbar.

3) Navigate to the target folder, e.g. the Programs folder, depending on where you wish to access the program.

4) Navigate through file folders on your computer to find the new program (.CAB, .EXE, etc.)

5) Right-click the program and select [copy] from the pop-up menu.

6) Back to the target folder in step 3.

Right-click anywhere blank and select [Paste] from the pop-up menu.

7) On the mobile computer, go to **Start** > **Programs** and the new program will appear.

ALTERNATIVE TO REMOVE PROGRAMS (CONTROL PANEL)

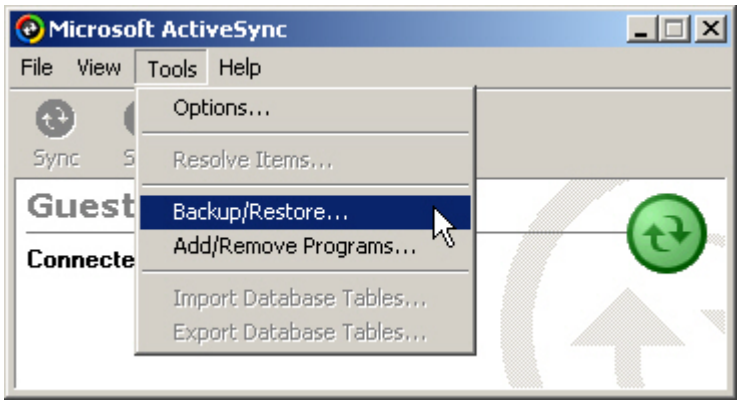
Alternatively, you may un-install a new program manually.

1) Go to **Start** > **Settings** > **Control Panel** and select **Remove Programs**.
2) Tap the name of the program that you want to delete.
3) Tap [Remove].
4) Tap [Yes] to un-install the program.

Note: If the program does not appear in the list of installed programs, you may use Windows Explorer to locate it. Tap and hold the program to select [Delete] from the pop-up menu.

2.3.3 BACKUP/RESTORE

To best protect your work, you should regularly back up information on your mobile computer. You can perform a backup by during the ActiveSync operation. The backup file is stored on your desktop computer.

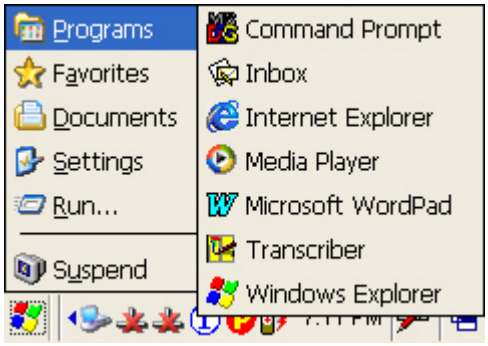


2.4 MANAGING PROGRAMS

2.4.1 QUICK LAUNCH A PROGRAM

Tap the **Start** button to view the **Start Menu**. To quick launch a program, tap it from the Programs folder.

Note: Alternatively, you may tap **Start** and select **Run** to run a specific program or open a document.



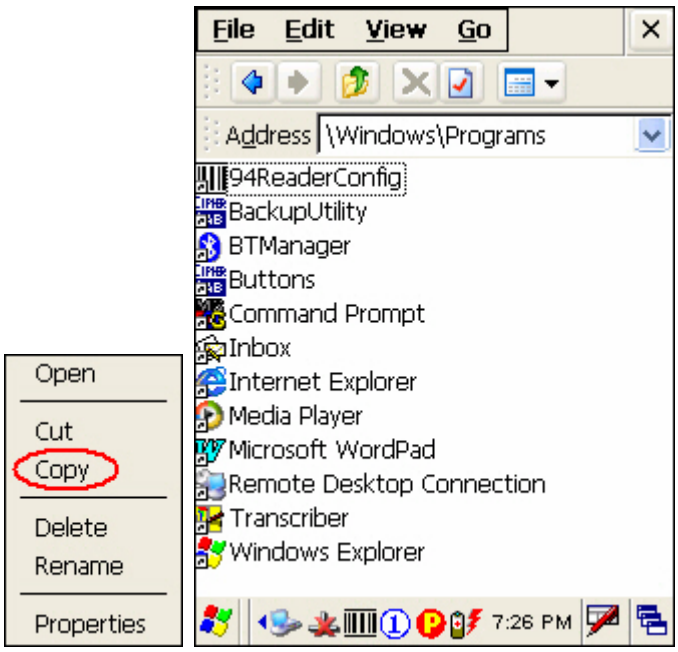
If you wish to quick launch a new program, add it to the Programs folder: **My Device\Windows\Programs**. The program will become available in the **Start Menu**. To add a new program or subfolder to the Programs folder, you can either use **Windows Explorer** or **ActiveSync**.

- Windows Explorer: to move the program by [Copy] and [Paste Shortcut].
- ActiveSync on the desktop computer: to create a shortcut to the program, and place the shortcut in the Programs folder.

Warning: To avoid making any changes to the program configurations by accident, we recommend you to use [Copy] and [Paste Shortcut] rather than [Cut] and [Paste].

USING WINDOWS EXPLORER TO ADD A PROGRAM TO START MENU

1) Go to **Start** > **Programs** and select **Windows Explorer**.
2) Navigate through file folders to find the program you desire.
3) Tap and hold the program to select [Copy] from the pop-up menu (left below).



4) Navigate to the Programs folder – **My Device\Windows\Programs** (right above).

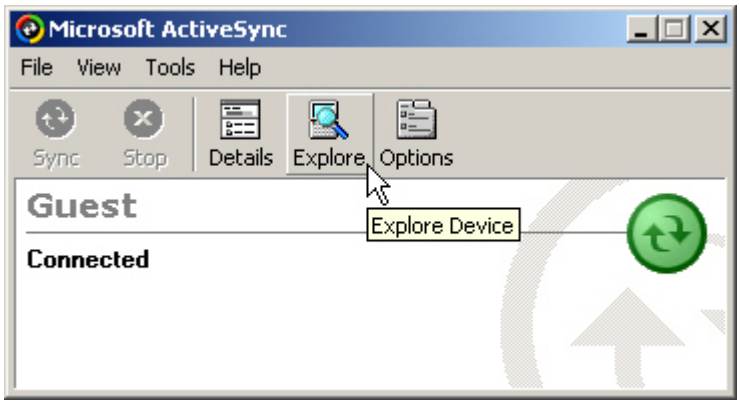
5) Tap and hold anywhere blank on the screen to select [Paste Shortcut] from the pop-up menu. The new program will be added to the Programs folder.

6) Go to **Start** > **Programs** and the new program will appear now.

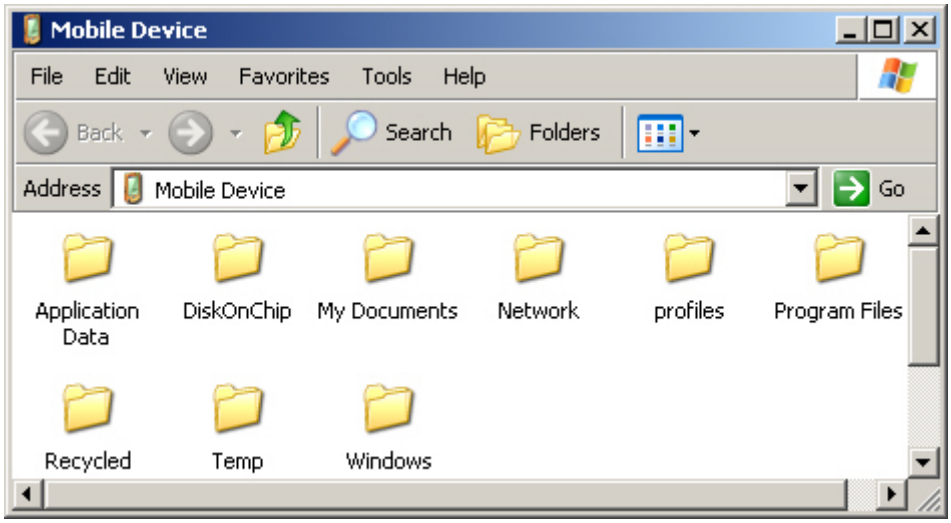
USING ACTIVESYNC TO ADD A PROGRAM TO START MENU

1) When connected, open the Microsoft ActiveSync window on your desktop computer.

2) Click the Explorer button from the toolbar.



3) Navigate through file folders to find the program you desire.



4) Right-click the program and select [Create Shortcut] from the pop-up menu.

5) Right-click the shortcut and select [Cut] from the pop-up menu.
6) Navigate to the Programs folder – **My Device\Windows\Programs**.
7) Right-click anywhere blank on the window and select [Paste] from the pop-up menu. The new program will be added to the Programs folder.
8) On the mobile computer, go to **Start** > **Programs** and the new program will appear now.

Note: [Create Shortcut], [Cut], and [Paste]: The same result can be performed by [Copy] and [Paste Shortcut].

2.4.2 CREATE A FOLDER

USING WINDOWS EXPLORER TO ADD A NEW FOLDER

1) Go to **Start** > **Programs** and select **Windows Explorer**.
2) Navigate through file folders to find where you wish to create a new folder.
3) Right-click anywhere blank on the window and select [New Folder] from the pop-up menu.

   A subfolder will be created.

USING ACTIVESYNC TO ADD A NEW FOLDER

1) When connected, open the Microsoft ActiveSync window on your desktop computer.
2) Click the Explorer button from the toolbar.
3) Navigate to the target folder where you wish to create a new folder.
4) Right-click anywhere blank on the window and select [New Folder] from the pop-up menu.

   A subfolder will be created.

2.4.3 SWITCH AMONG PROGRAMS AND DESKTOP

Tap to the right of the taskbar and select a running program.

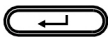
2.4.4 EXIT A PROGRAM

In general, the system manages memory automatically, and there is no need to exit a program in order to open another or to conserve memory. However, random access memory (SDRAM) may be used up when running too many programs. As a result, it will slow down the operation or cause program errors. In that case, you should stop one or more running programs to free memory.

In order to use memory in a more efficient way, you are recommended to exit a program when it is not desired any longer.

Warning: Always remember to save data or settings before you exit a program.

Tap or to close an active window, a dialog box, or a running application. If the button is not displayed on the toolbar, press on the physical keypad.

Tap to save the current settings and exit the application (or minimize the window in some applications). If the button is not displayed on the toolbar, press  on the physical keypad.

Note: Some programs, such as the Reader Configuration Utility (94ReaderCfg.exe), may create an associated icon on the taskbar. You may tap the icon and select [Exit] from the pop-up menu.

2.5 SYSTEM RESET & AUTO RUN

Reset the mobile computer when it stops responding to input.

- Software Reset: Simply press the [Reset] button.
- Hardware Reset: Press the [Reset] button and at the same time.

Warning: Never perform a hardware reset unless a software reset cannot solve your problems.

2.5.1 SOFTWARE RESET (WARM REBOOT)

A software reset, also known as a warm boot, will restart the mobile computer and keep all the saved files. To perform a software reset, use the stylus to press the [Reset] button.

During operation, the removal of main battery will start a software reset too.

Warning: Data loss may occur when files are not properly closed before a software reset.

2.5.2 HARDWARE RESET (COLD REBOOT)

A hardware reset, also known as a cold boot, will restart the mobile computer too. However, it performs a full restore of the mobile computer to its factory settings and initializes SDRAM. To perform a hardware reset, press and [Reset] button at the same time. Data and program files stored in SDRAM will be erased after a hardware reset. But you can restore data that is previously synchronized with your computer by performing an ActiveSync operation.

Warning: Only the files stored in the Flash File System are retained during a hardware reset.

2.5.3 AUTO RUN

Upon a hardware or software reset, the OS shall automatically execute **AutoRun.exe** and/or **AutoRun.ini** if any of the two files can be found in the "\DiskOnChip" folder or on miniSD card.

IF AUTORUN.EXE EXISTS

- Upon cold boot, the OS shall automatically execute **AutoRun.exe**
- Upon warm boot, the OS shall automatically execute **AutoRun.exe**

IF AUTORUN.INI EXISTS

- Upon cold boot, the OS shall automatically check the contents of **AutoRun.ini** and execute them (if there is any).

  Any line prefixed with a semicolon ";" is supposed to be a comment line only; otherwise it is an executable file or command and shall be executed (line by line).
- Upon warm boot, the OS shall automatically check the contents of **AutoRun.ini** and execute any line that is prefixed with a colon ":".

  Any line prefixed with a semicolon ";" is supposed to be a comment line only.

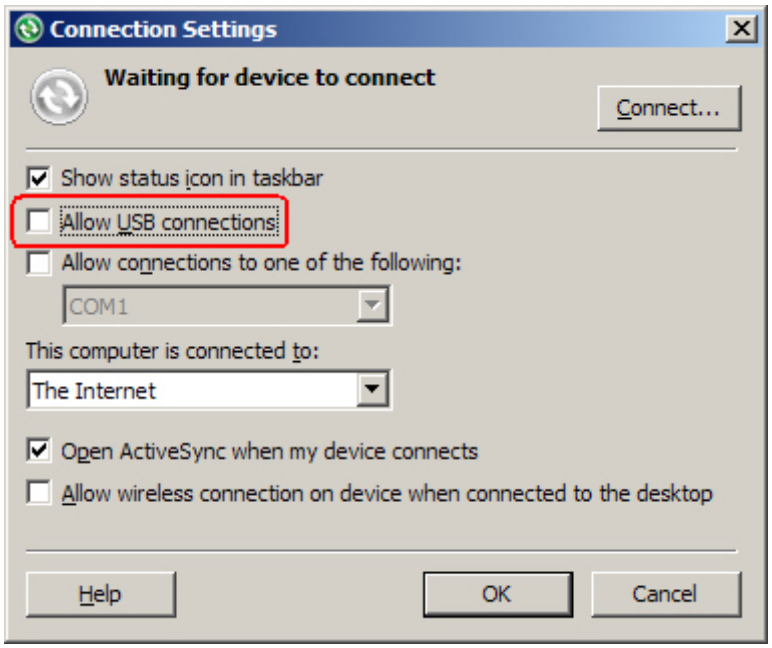
2.6 UPDATING OS IMAGE

The OS update utility is available on the CD-ROM. To re-install or update the OS image on your mobile computer, run the program "DLDR.exe" on the desktop of your computer.

Warning:	The OS update should be performed with great caution because everything on the mobile computer will be erased. Backup user-installed applications and files to your computer first only.

1) Install Microsoft ActiveSync on your computer. For initial ActiveSync operation, refer to section 2.3 Using ActiveSync for details.

   Now, you must disable the ActiveSync operation as shown below.



2) Run DLDR.exe on your computer.

3) Press [Reset] + to perform a hardware reset on 9400CE.

4) Press + simultaneously in three seconds so that 9400CE can enter the "Download" mode.

5) Seat 9400CE in the cradle.

6) Press on 9400CE to start image update.

   It will take approximately 5 minutes to update the image. A message will be displayed on the mobile computer to indicate the OS update is completed successfully.

7) Wait a few seconds for a software reset that will be performed automatically.

8) Press [Reset] + to perform a hardware reset on 9400CE again.

Warning:	Do not press any key on the mobile computer while updating OS image. Once the OS update is completed, you cannot reload any older image.

Chapter 3
PERSONALIZING THE 9400CE MOBILE COMPUTER

In this chapter, a brief on the system settings is provided for your reference.

Note: User settings are stored in SDRAM and will be overwritten by the system defaults after a hardware reset. However, you can use the CipherLab Backup Utility to backup the current registry for restore purpose.

IN THIS CHAPTER

3.1 Changing System Settings 39
3.2 Changing Connection Settings 42

3.1 CHANGING SYSTEM SETTINGS

Go to **Start** > **Settings** > **Control Panel**.

ITEMS	DESCRIPTION
Accessibility	In the [Accessibility] dialog box, you may use these options to customize the way an external keyboard, display, or mouse functions. Many of these features are useful to people without disabilities.

	▸ Keyboard tab: Select StickyKeys to enable simultaneous keystrokes while pressing one key at a time; select ToggleKeys to emit sounds when certain locking keys are pressed. ▸ Sound tab: Select SoundSentry to provide visual warnings for system sounds. ▸ Display tab: Select High Contrast to improve screen contrast with alternative colors. ▸ Mouse tab: Select MouseKeys to enable the keyboard to perform mouse functions ▸ General tab: Select Automatic Reset if you wish to turn off accessibility features after a specific period of time; select Notification if you wish to hear a sound when turning a feature on or off.
 Certificates	In the [Certificates] dialog box, you may view or modify digital certificates that some application use to establish trust for secure connections.
 Date/Time	In the [Date/Time] dialog box, you may change date, time, and time zone settings.
 Dialing	In the [Dialing Properties] dialog box, you may configure settings for modem communications, such as the GPRS modem.
 Display	In the [Display Properties] dialog box, ▸ Background tab: Select an image for the background. ▸ Appearance tab: Select a desired color scheme for windows, dialog boxes, and items. ▸ Backlight tab: Specify for how long the mobile computer is idle and then the backlight will be automatically turned off while on battery power and external power (in the charging cradle) respectively. Tap the [Advanced] button to move the slider and adjust the brightness of the LCD backlight when it is set to be automatically turned on once a key is pressed or you tap the touch screen.
 Input Panel	In the [Input Panel Properties] dialog box, you may configure how the Soft Input Panel (SIP) works.
 Internet Options	In the [Internet Options] dialog box, you may configure how the mobile computer connects to the Internet.
 Keyboard	Connect an external keyboard to the cradle via the USB Host port. In the [Keyboard Properties] dialog box, you may configure settings for character repeat.
 Mouse	Connect a mouse to the cradle via the USB Host port. In the [Mouse Properties] dialog box, you may configure and test your double-click settings.

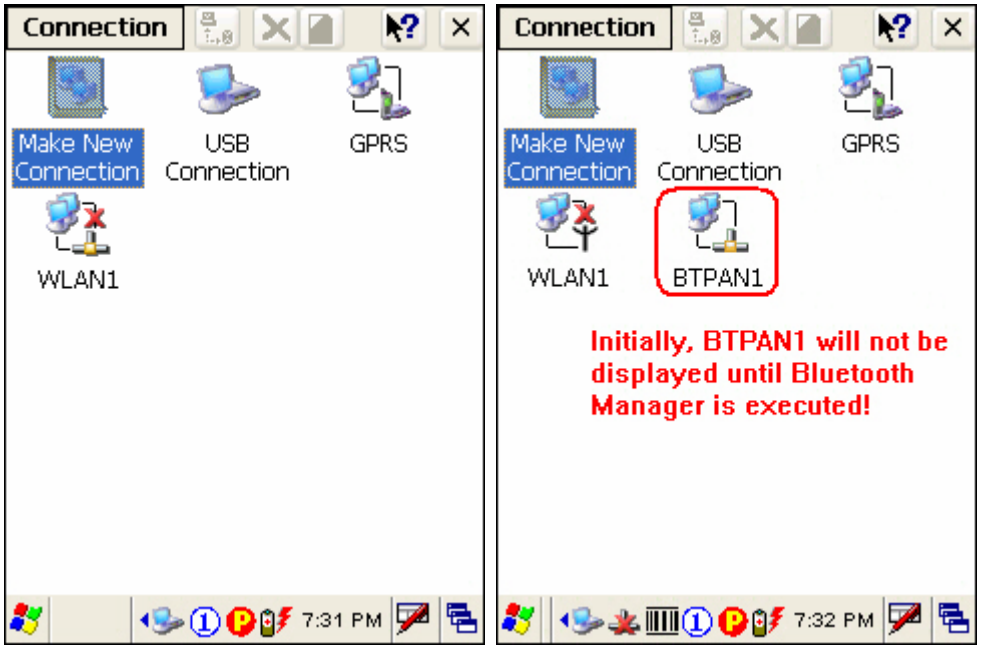
Network and Dial-up Co...	In the [Network and Dial-up Connections] window, you may configure settings for the mobile computer connects to a network directly or through a modem. Alternatively, you may tap Start > Settings > Network and Dial-up Connections. ▸ USB Connection (via USB device port on the cradle) ▸ GPRS (through a GPRS modem) ▸ WLAN (via 802.11b/g) ▸ BTPAN (via Bluetooth)
Owner	In the [Owner Properties] dialog box, ▸ Identification/Notes tab: Type your contact information or notes. ▸ Network ID tab: Type the user name, password, and domain name used to log on to the remote network.
Password	In the [Password Properties] dialog box, you may apply password protection to limit access to the mobile computer.
PC Connection	In the [PC Connection Properties] dialog box, you may disable the direct connection between the mobile computer and a desktop computer. ▸ By default, the mobile computer is enabled to directly connect to a desktop computer via the cradle's USB port. Alternatively, you may tap Start > Settings > Network and Dial-up Connections and select USB Connection. ▸ You may change to use Bluetooth if ActiveSync via Bluetooth has been enabled in the Bluetooth Manager
Power	In the [Power Properties] dialog box, ▸ Battery tab: You may view the current status of main and backup batteries. ▸ Schemes tab: You may configure the power scheme and switching. ▸ Device Status tab: You may view the devices that are consuming power.
Regional Settings	In the [Regional and Language Settings] dialog box, ▸ Region tab: You may customize the appearance and formatting to your geographic region. ▸ Language tab: By default, it is set to English (United States). ▸ Input tab: By default, it is set to English (United States)-US.
Remove Programs	In the [Remove Programs] dialog box, you may remove any program that is installed earlier.
Storage Manager	In the [Storage Properties] dialog box, ▸ Storage Manager tab: You may reformat the available storage device, either the DiskOnChip folder or storage card. Actions include "Dismount the storage device", "Format the storage device", and "Set up disk partitions". The Storage Manager is for the use of system administrators only.

Stylus	In the [Stylus Properties] dialog box, ▸ Double-Tap tab: You may configure and test your double-tap settings. ▸ Calibration tab: You may need to re-calibrate the touch screen if it is not responding properly to your taps.
System	In the [System Properties] dialog box, ▸ General tab: You may view the system information. ▸ Memory tab: You may move the slider and adjust the SDRAM allocation. ▸ Device Name tab: You may type a name and description for identifying the mobile computer. ▸ Copyrights tab: You may view the important statements on copyrights.
Terminal Server Clie…	Client access licenses (CALs) issued by the Terminal Server license server allow clients to connect to the terminal server. Use Remote Desktop Connection to log onto a Windows Terminal Server or a computer remotely. You may access all of the programs, files, and network resources on the remote host or terminal server.
Volume & Sounds	In the [Volume & Sounds Properties] dialog box, ▸ Volume tab: You may move the slider and adjust the volume and select to play sounds for Events, Applications or Notifications. ▸ Sounds tab: You may configure sounds for different Windows events.

3.2 CHANGING CONNECTION SETTINGS

There are two ways to access the connections settings:

- Go to **Start** > **Settings** > **Control Panel** and select **Network and Dial-up Connections**.
- Go to **Start** > **Settings** > **Network and Dial-up Connections**.



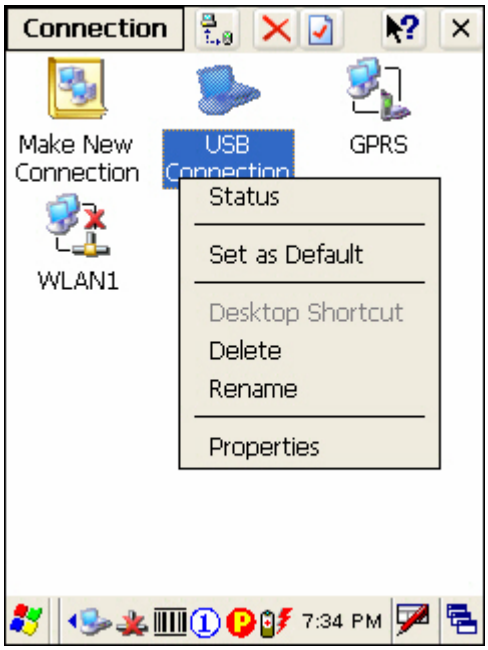
CONNECTIONS	DESCRIPTION	SEE ALSO
USB Connection	This is a shortcut to USB Connection, and the selected interface is USB for factory setting. This connection is reflected in the control panel for direct PC connection.	**Start** > **Settings** > **Control** **Panel** > PC Connection /
GPRS	This is a shortcut to GPRS connection. Note that the power to the GPRS module must be turned on through the **Wireless Power Manager** for establishing a connection.	
WLAN1	This is the control of 802.11b/g module for wireless local area networking (WLAN) connection, which is disabled by default.	
BTPAN1	This is the control of Bluetooth module for wireless personal area networking (WPAN) connection, which is not available until the **Bluetooth Manager** is executed.	

CONNECTIONS	DESCRIPTION	SEE ALSO
Connection	Tap this button to open the Connection menu. The available options depend on the connection you select.	Tap and hold the icon of a desired connection type. Then, select an option from its associated menu.
	Tap this button to toggle on/off the connection you select. The toggle is used for Enable/Disable or Connect/Disconnect.	
	Tap this button to delete the connection you select.	
	Tap this button to view the properties of the connection you select.	

3.2.1 USB CONNECTION

The USB connection is specifically for performing the ActiveSync operation via the cradle. Generally, it will automatically establish the connection and start the ActiveSync operation when you seat the mobile computer in the cradle. To stop the ActiveSync operation, simply remove the mobile computer.

Tap and hold "USB Connection". The pop-up menu provides a number of options.



Note: Please ignore [Properties] as the associated settings will not take effect.

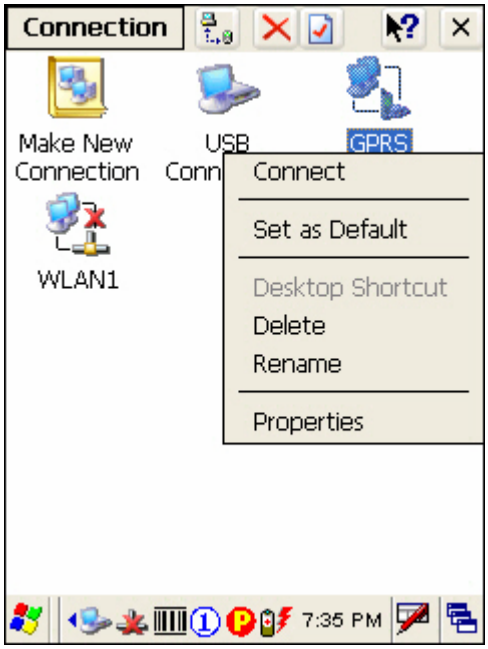
STATUS - DISCONNECT

If you want to stop the ActiveSync operation without removing the mobile computer from the cradle, select [Status] and tap [Disconnect]. Alternatively, you may double-tap from the taskbar and tap [Disconnect].

- When connected, the status icon will appear on the taskbar.
- When disconnected, this icon will disappear.

3.2.2 GPRS

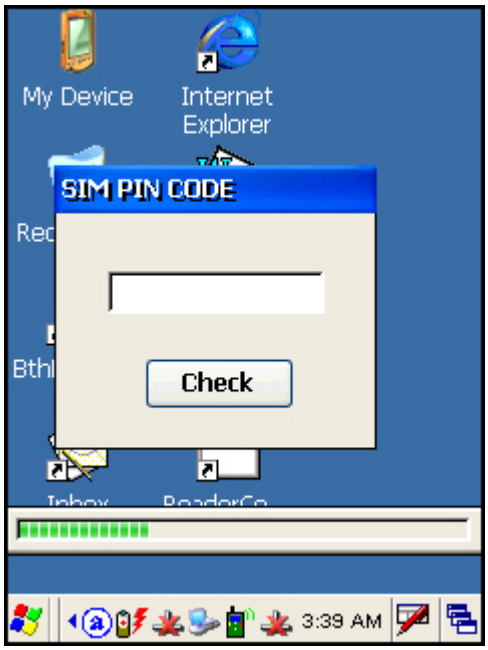
Tap and hold "GPRS". The pop-up menu provides a number of options.



Refer to section 1.7.2 Inserting the SIM Card.

CONNECT/DISCONNECT

1) Turn on the power to the GPRS module through the **Wireless Power Manager**. Its associated icon on the taskbar will become .

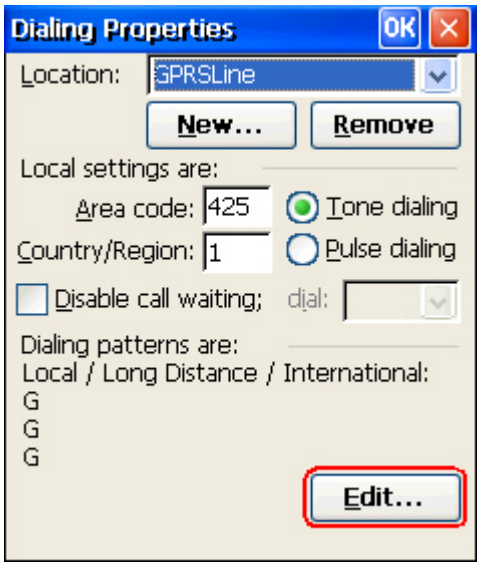


2) If the default PIN code does not match the one of your SIM card, the SIM PIN CODE dialog box (above) will appear to request the correct PIN code. You will have two chances to enter the correct PIN code.

Note: The PIN verification on the mobile computer only allows two attempts because the system will always process the default number first ("1234" for factory setting). Unless it matches the PIN code of your SIM card, you will have to manually input the correct PIN code. If you succeed, the PIN code you input will overwrite the factory setting and become the default PIN code. If you fail two times, the PIN will be blocked.

3) Go to **Start** > **Settings** > **Network and Dial-up Connections**. Tap and hold "GPRS" to select [Connect] from the pop-up menu. If your dial-up configuration is correct, simply tap the [Connect] button in the Dial-Up Connection dialog box. If you need to configure the dial-up settings, tap the [Dial Properties] button.

Alternatively, you may go to **Start** > **Settings** > **Control Panel** and select **Dialing**.

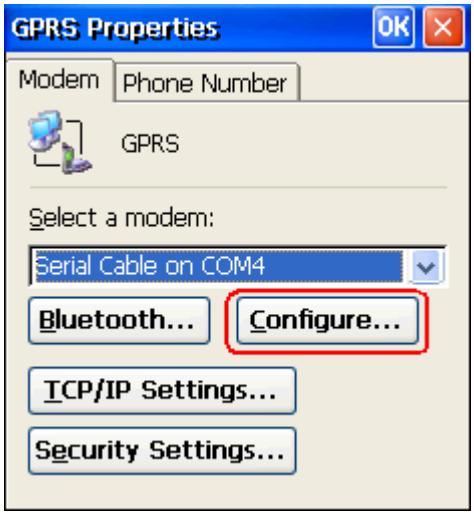


4) After you tap the [Connect] button, the GPRS status will go through opening port, user authenticated, device connected until it is connected finally.

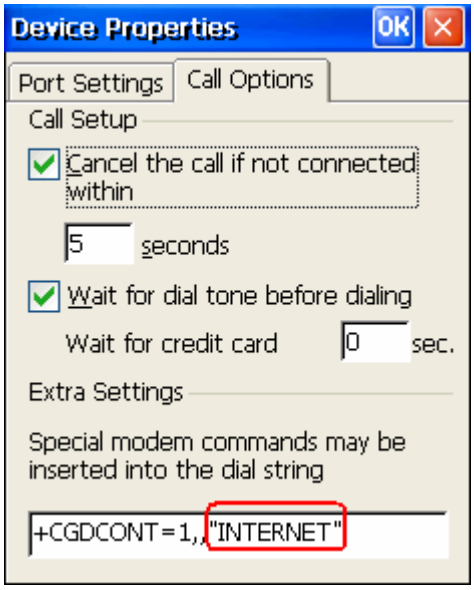
The status icon will appear on the taskbar to indicate the GPRS connection is established successfully. If you want to disconnect, double-tap the icon and tap the [Disconnect] button.

GPRS PROPERTIES

When selected, you can configure the GPRS properties. Once the SIM card is inserted, the default GPRS modem will appear as shown below. Tap [Configure].

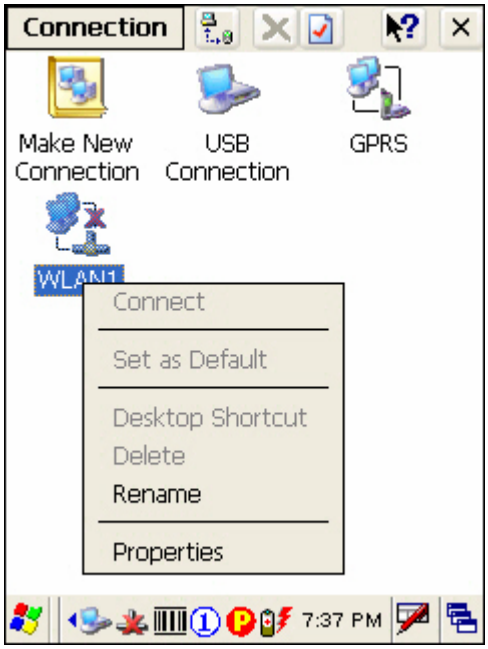


Select the Call Options tab. The special modem commands inserted into the dial string must be [+CGDCONT=1,,"AP name"]. For example, change "INTERNET" below to the name of your GPRS AP.



3.2.3 WLAN

Tap and hold "WLAN1". The pop-up menu provides a number of options.



CONNECT/DISCONNECT

Turn on the power to the 802.11b/g module through the **Wireless Power Manager**. Wait a few seconds for the mobile computer to automatically connect to the preferred network you have configured.

CONNECTION ICONS	DESCRIPTION
WLAN1	By default, the 802.11b/g module is disabled. No status icon.
WLAN1	Enable the 802.11b/g module through the Wireless Power Manager. The icon on the taskbar will become , and the status icon will appear. When successfully connecting to an access point or other Wi-Fi enabled device, the status icon will become .

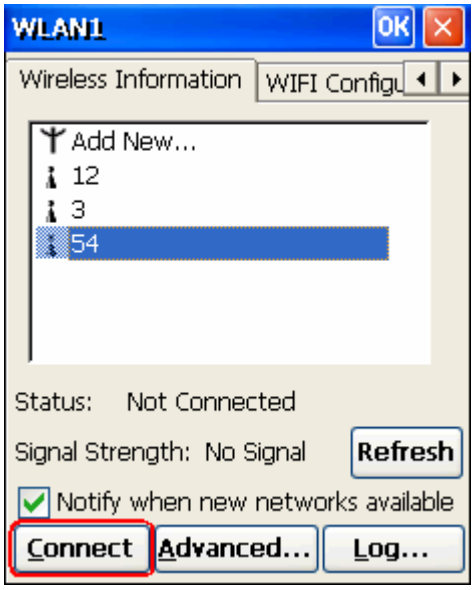
Note: By default, DHCP is enabled. Instead of using DHCP, select [Properties] and specify a static IP address to the mobile computer. Only change these settings according to your network administrator's instructions.

INITIAL CONNECTION

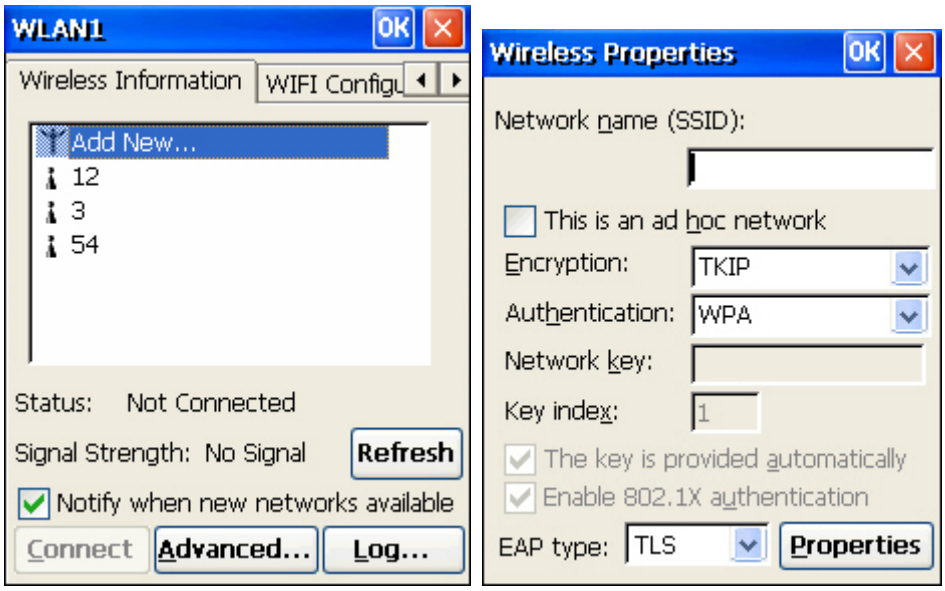
1) For initial connection, turn on the power to the 802.11b/g module through the **Wireless Power Manager** first.

2) Double-tap on the taskbar.

3) Select an available network and tap [Connect].



Otherwise, you may double-tap [Add New...] and add a new network option.

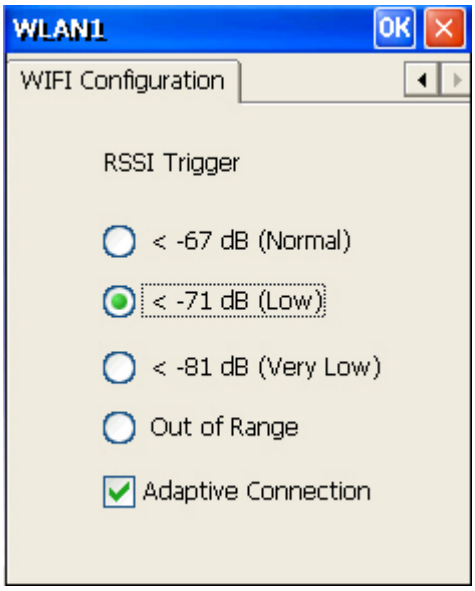


- For more network settings, tap [Advanced] on the Wireless Information tab.
- If you need to change the network settings, double-tap the selected network, and the Wireless Properties dialog box appears for configuration.

RSSI TRIGGER

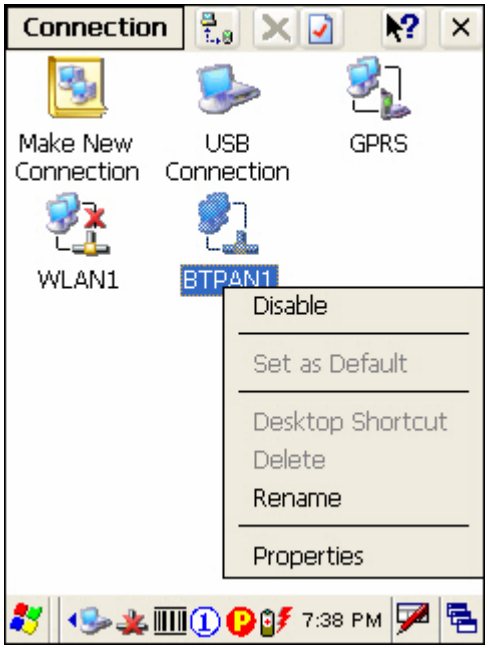
RSSI stands for Received Signal Strength Indication. Use an RSSI value to determine when it comes below a certain threshold at which point the mobile computer will seamlessly switch the network connection, for example, while moving in and out of range between different access points. Select [Adaptive Connection] and pick up a suitable value.

Cancel the selection of [Adaptive Connection] when you are using a third-party application capable of configuring the switching itself in order to maintain a constant connection to the network.



3.2.4 BTPAN

Tap and hold "BTPAN1". The pop-up menu provides a number of options.



ENABLE/DISABLE

CONNECTION ICONS	DESCRIPTION
BTPAN1	This is the control of Bluetooth module for wireless personal area networking (WPAN) connection, which is not available until the Bluetooth Manager is executed. When enabled, the status icon will become .
BTPAN1	Tap and hold "BTPAN1" to select [Disable] from the pop-up menu. The status icon will disappear.

Note: By default, DHCP is enabled. Instead of using DHCP, select [Properties] and specify a static IP address to the mobile computer. Only change these settings according to your network administrator's instructions.

Chapter 4

USING APPLICATIONS

The 9400CE Mobile Computer provides several utilities and key applications which are made accessible from the desktop or the taskbar.

- **Wireless Power Manager** lets you determine whether the power is supplied to the GPRS or WLAN module, along with its associated driver installed.
- **Bluetooth Manager** lets you configure the Bluetooth settings and use the Bluetooth services provided on the remote devices.
- **94ReaderCfg** lets you manage the barcode or RFID reader.
- **Inbox** lets you send and receive e-mail by connecting to a POP3 or IMAP4 server.
- **Backup Utility** lets you manipulate the way to backup programs and data.
- **Button Assignment Utility** lets you assign a specific button as a hot key for launching a program or performing a certain action.

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4.2 Bluetooth Manager 55
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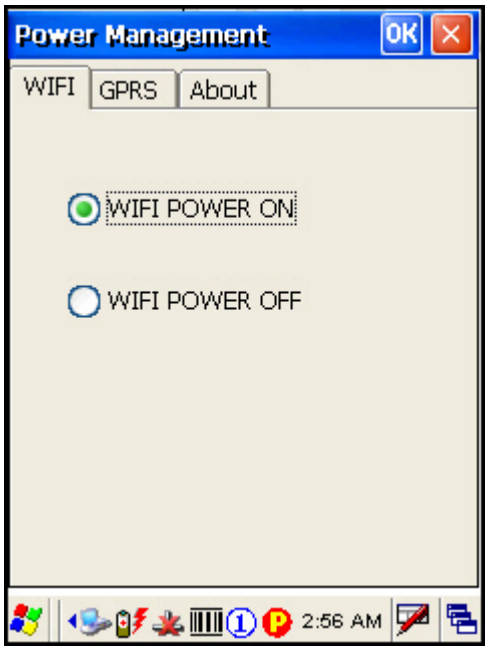
4.5 Backup Utility 72
4.6 Button Assignment Utility 76

4.1 WIRELESS POWER MANAGER

Wireless Power Manager is a control panel applet, which allows you to choose and enable 802.11b/g or GPRS card.

Note: Meanwhile, you may enable Bluetooth connectivity through the Bluetooth Manager.

1) Double-tap the associated icon on the taskbar to run **Wireless Power Manager**.



2) Select the wireless connectivity you desire, and then tap OK.

It takes several seconds to turn on the power to the wireless module and install the driver. When both GPRS and 802.11b/g are enabled on battery power, the main battery charge will drop down substantially.

Double-tap any of the following icons to access power management.

	The icon indicates that GPRS Power is turned on.
	The icon indicates that 802.11b/g Power is turned on.

Note: You may need to turn off the wireless power or simply stop the wireless signals at times, in order to conserve battery power, or in situations where the use of radio is prohibited, such as on airplanes, in hospitals, etc.

4.2 BLUETOOTH MANAGER

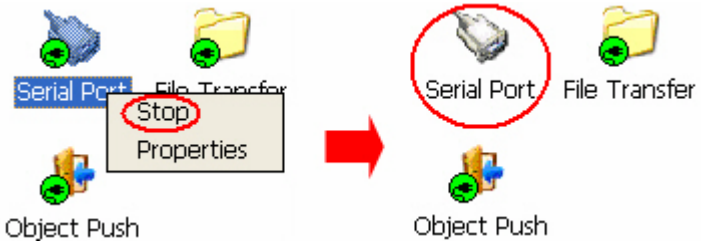
Bluetooth Manager is a utility that helps you access and manage the available Bluetooth services efficiently.

4.2.1 BLUETOOTH PROFILES SUPPORTED

The supported Bluetooth profiles are:

- Serial Port Profile (SPP)
- Object Push Profile (OPP)
- File Transfer Profile (FTP)
- Dial-Up Networking Profile (DUN)
- Synchronization Profile (SP)
- PAN Service Profile (PAN)
- Human Interface Device Profile (HID)

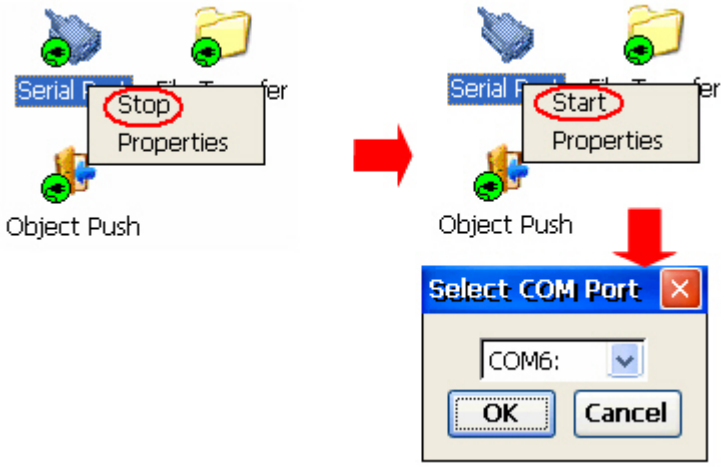
4.2.2 BLUETOOTH TOOLBAR

BUTTONS	DESCRIPTION	SEE ALSO
	Tap this button to view shortcuts to preferred Bluetooth services, which may be provided on different Bluetooth devices. Then tap a desired Bluetooth service to establish a quick link. You will have to make a connection and created a shortcut to a specific Bluetooth service first.	
	Tap this button to view the Bluetooth devices discovered during this session. ▸ If you tap the button for the first time, it will start the inquiry process to discover nearby Bluetooth devices.	
	Tap this button to view the Bluetooth services provided. ▸ By default, these services are all available, and therefore, displayed along with a plug icon " ". ▸ To view properties of a service, tap and hold it to select [Properties] from the pop-up menu. ▸ To disable a service, tap and hold it to select [Stop]. 	

Serial Port Properties

If "Auto Server COM Port" is enabled, the COM port providing Serial Port service will be assigned automatically (COM6 by default).

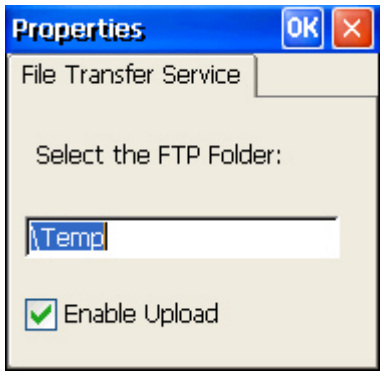
If "Auto Server COM Port" is disabled, you can select a COM port by following these steps:



File Transfer Properties

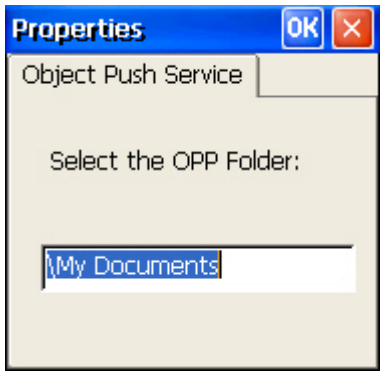
You can change the FTP folder.

- By default, uploading files to the mobile computer is allowed. You can cancel the check box to prohibit uploading.



Object Push Properties

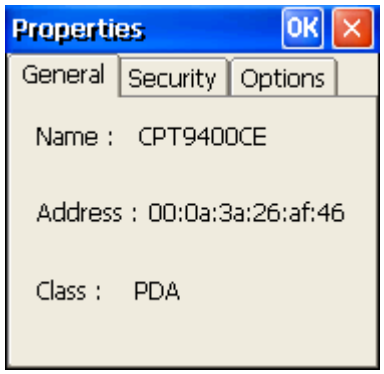
You can change the Bluetooth exchange folder.



Tap this button to view Bluetooth properties.

General tab

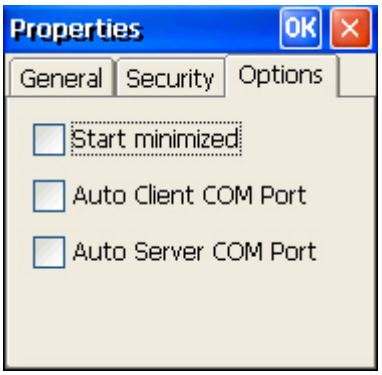
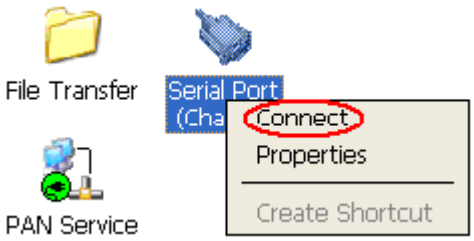
It displays device name, MAC address, as well as the device type.



If you wish to change the device name of the mobile computer, go to **Start** > **Settings** > **Control Panel** and select **System**.

Security tab

- Authentication Setting: It is disabled by default. When enabled, PIN code is required.
- Discoverability: It is set discoverable by default. If you do not wish to provide Bluetooth services to other remote devices, cancel the check box.
- Default PIN: It is disabled by default. You may set a link key to skip the PIN code input.

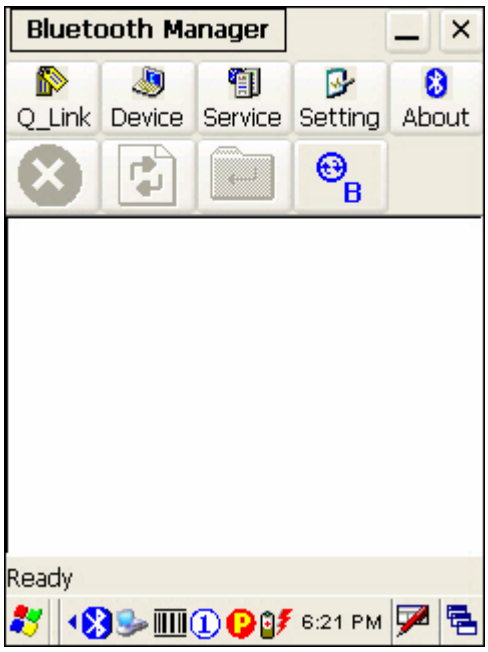
Options tab	 ▸ Start minimized: When selected, once you run the **Bluetooth Manager** program, its window will be minimized to an icon on the taskbar, which serves as a toggle to open or close the Bluetooth Manager window. It works the same as the "Minimized" button below. ▸ Auto Client COM Port: When enabled, the default COM port for remote Serial Port service will be assigned automatically. When disabled, you can select a COM port.  ▸ Auto Server COM Port: When enabled, the COM port for local Serial Port service will be assigned automatically.	
	Tap this button and tap [Connect via Cradle] to stop ActiveSync via Bluetooth.	
	Tap this button to minimize the **Bluetooth Manager** window.	
	Tap this button to exit the **Bluetooth Manager**.	
	Tap this button to stop inquiring.	
	Tap this button to refresh the device list.	
	When using the File Transfer service on a remote device, you can tap this button to move up one level if a subfolder exists.	
	Tap this button to view the Bluetooth profiles supported - ▸ SPP for Serial Port Profile ▸ OPP for Object Push Profile ▸ FTP for File Transfer Profile	

	▸ DUN for Dial-Up Networking Profile (supports Client only) Note that the mobile computer also supports the following profiles - ▸ PAN Service Profile ▸ Human Interface Device (HID) Profile	

4.2.3 STARTING BLUETOOTH SERVICES

1) Go to **Start** > **Programs** > **BTManager** to open the **Bluetooth Manager**.

2) It takes several seconds to enable the Bluetooth services. The associated icon will appear on the taskbar. Meanwhile, the LED on the mobile computer will turn blue.



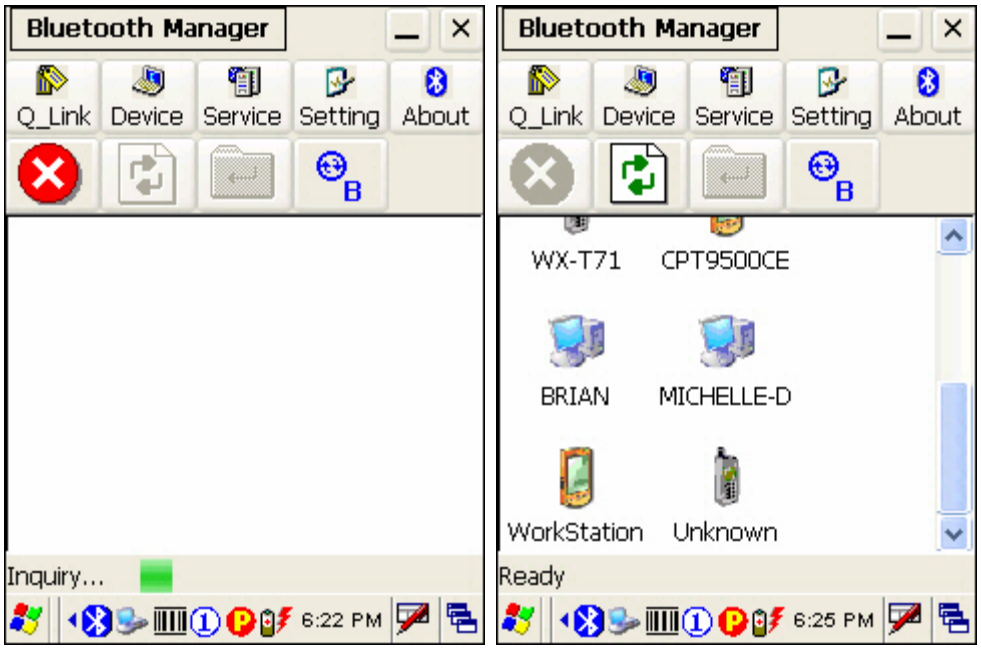
STOPPING BLUETOOTH SERVICES

You may need to stop using the Bluetooth services, in order to conserve battery power, or in situations where the use of radio is prohibited, such as on airplanes, in hospitals, etc.

- Tap ✕ on the toolbar of the window to stop all Bluetooth connections and exit the application. The LED on the mobile computer will go off.
- When the Bluetooth window is minimized, tap on the taskbar to maximize the window.

4.2.4 DISCOVERING BLUETOOTH DEVICES

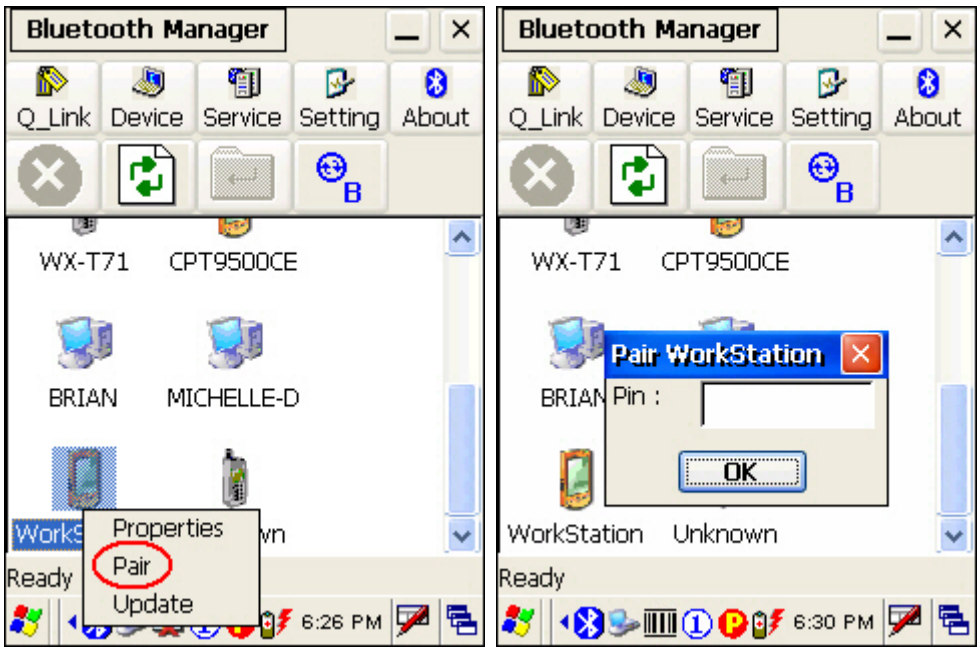
Tap Device to discover nearby Bluetooth devices, and it will list the discovered devices.



4.2.5 PAIRING

When authentication is enabled on the target device, you will have to pair with it before starting a connection.

1) From the device list, tap and hold the desired device to select [Pair] from the pop-up menu. (left below)



2) Enter the PIN code that is specified on the remote device. (right above)

3) Once paired successfully, the paired device will be displayed along with a lock icon "".

UNPAIR DEVICES

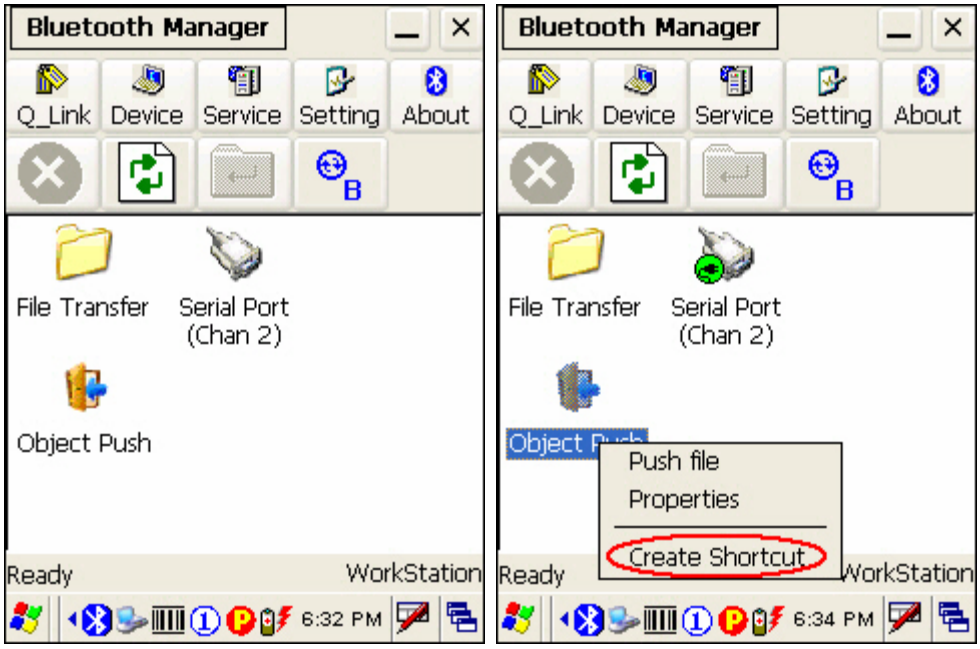
To unpair with a device from the device list, you will have to tap and hold the desired device to select [Unpair] from the pop-up menu.

Note: The mobile computer must be unpaired on the remote device as well. (Both devices must be unpaired!)

4.2.6 CONNECTING

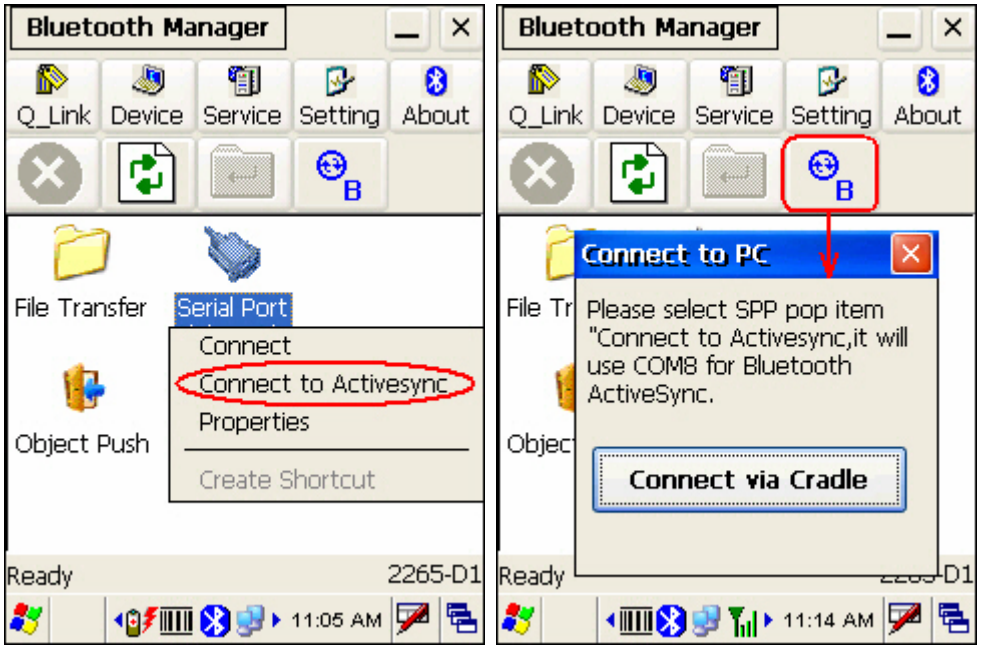
1) From the device list above, double-tap a device to find out the available Bluetooth services.
2) Tap and hold a desired Bluetooth service, e.g. Serial Port Service, to select [Connect] from the pop-up menu. Once the connection has been established, the connected service will be displayed along with a plug icon "".

3) If you wish to add a service to the Q_Link list for establishing a quick connection in the future, tap and hold the service to select [Create Shortcut] from the pop-up menu.



BLUETOOTH ACTIVESYNC

For ActiveSync via Bluetooth, tap and hold Serial Port Service to select [Connect to Activesync] from the pop-up menu. It uses COM8 to connect to your computer by default.



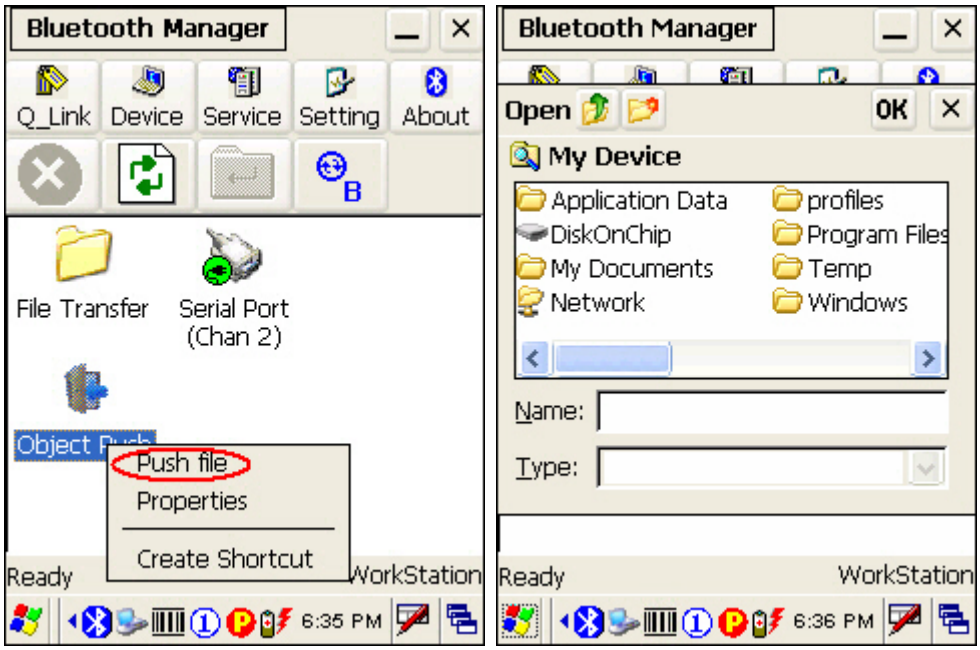
To stop ActiveSync via Bluetooth, tap and then tap [Connect via Cradle].

USING SERIAL PORT SERVICE

Tap and hold Serial Port Service to select [Connect] from the pop-up menu. If "Auto Client COM Port" is disabled in Setting, you will need to select a COM port. Once the connection has been established, the connected service will be displayed along with a plug icon "".

USING OBJECT PUSH SERVICE

1) Tap and hold the Object Push service.
2) Select [Push file] to send a file or PIM item, e.g. a business card. (left below)
3) Choose the file you wish to send. (right below)

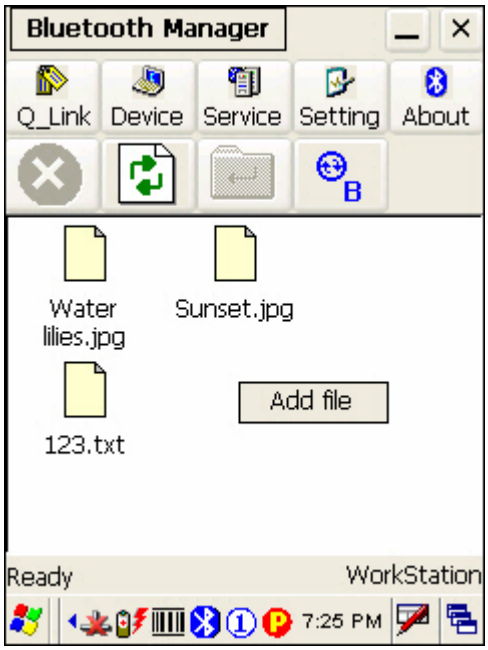


4) The mobile computer will start transferring the file.

USING FILE TRANSFER SERVICE

1) Tap and hold the File Transfer service.
2) Select [Connect] (and assign COM port if necessary).

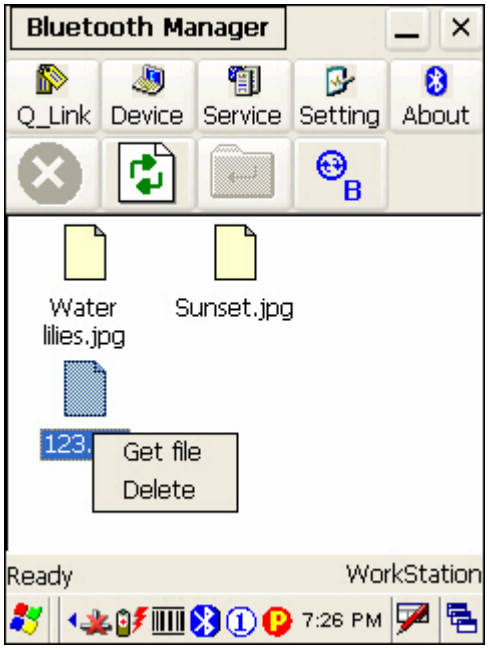
3) Tap and hold anywhere blank to select [Add file] from the pop-up menu.



4) Choose the file you wish to upload to the remote device.

5) The mobile computer will start transferring the file.

6) To download a file from the remote device, tap and hold a desired file to select [Get file] from the pop-up menu.



4.3 READER CONFIGURATION UTILITY

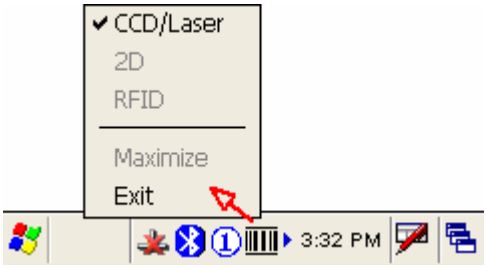
The **Reader Configuration Utility** is the control applet and tool to manage the barcode and RFID readers integrated on the mobile computer.

1) Go to **Start** > **Programs** > **94ReaderConfig** to open the **Reader Configuration Utility**.

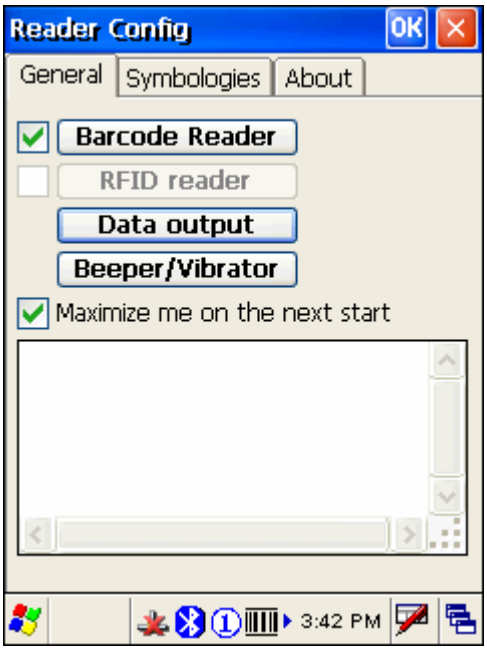
   The associated icon will appear on the taskbar.

2) Tap and hold the icon to access the menu that allows you to choose and enable one or both of the readers. There will be a check mark in front of the reader if it is enabled.

   If the RFID Reader is installed, the option will be available.



3) To meet your application requirements, proceed to configure associated reader settings as well as barcode settings.



Note: (1) The 94ReaderCfg applet will automatically detect the reader module(s) that is currently installed in the mobile computer.
(2) If you wish to reload the default settings, delete the ReaderCfgINI.txt file in DiskOnChip.

4.3.1 BARCODE READER SETTINGS

The barcode reader configurations depend on the scan engine(s) installed. You can tell which reader is currently in use and make necessary changes on the General tab.

BARCODE READER	DESCRIPTION
CCD/Laser Reader	If enabled, tap the [Barcode Reader] button to configure the reader settings for CCD or Laser scan engine. ▸ Refer to the Reader Settings Table in Appendix II – CCD/Laser Scan Engine.
2D Reader	The 2D scan engine is capable of reading linear and 2D barcodes. If enabled, tap the [Barcode Reader] button to configure the reader settings for 2D scan engine. ▸ Refer to the Reader Settings Table in Appendix III – 2D Scan Engine.

4.3.2 RFID READER SETTINGS

If the RFID scan engine is present, configurable options will be displayed.

Note: Because it is possible to read barcode and RFID tag at the same time, it is recommended that only one scan engine is enabled at a time to prevent from misreading.

Some RFID tags support both read/write operations, on a page-by-page basis. You may find it necessary to define your own read/write operation. For reference only, the table below lists the start page for read/write 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	
3	Mifare Ultralight	(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.

READ OPERATION

By default, the RFID tag is read from byte 0 of the default page. However, the default page, amount of bytes and number of pages of each tag may be different. Specify how many bytes of data you want to read from the tag.

Generally, the read data is user data obtained from the user block. If you are sure that the data is to be read from a non-user block, such as the lock block, you need to select the check box of [Display hex values] first.

WRITE OPERATION

Type the string that you want to write to a tag. By default, the string is written to the tag from byte 0 of the default page. However, the default page, amount of bytes and number of pages of each tag may be different. Therefore, the input string will automatically be truncated to fit into pages, and data may be discarded when it comes to the end of pages available.

Generally, it will write the input string to the user block, which is free for custom use. The string will be displayed as "user data". If you wish to write the string to a non-user block, such as the lock block, you need to select the check box of [Use hex values] first.

Once you have selected to use hex values for the string, make sure the string length must be even. For example, if you want to write 0x0A, 0x0B and 0x00 to a tag, the string you input must be "0A0B00" instead of "AB0".

4.3.3 DATA OUTPUT

Tap the [Data Output] button on the General tab to choose from the three options for data output after decoding as well as configure associated settings

DATA OUTPUT		DEFAULT
Keyboard Emulation	Data is emulated as typed text and sent to the active Window. ▸ Simply run your application or Pocket PC built-in program, such as Pocket Excel, to start with data collection.	Enable
Windows Message	When selected, a Windows message will be broadcasted after decoding. ▸ Intercept the decode message in your application. ▸ Call Windows API (ReadMsgQueue) in your application to retrieve the decoded data.	Disable
Windows Event	When selected, a Windows event will be broadcasted after decoding. ▸ Intercept the decode event in your application. ▸ Call Windows API (ReadMsgQueue) in your application to retrieve the decoded data.	Disable

Note: (1) Refer to 9400CE Programming Guide for details on Windows Message and Windows Event. Sample programs are provided by request.
(2) For the use of a different program rather than 94ReaderCfg, a dynamic-link library (DLL) file is provided.

Auto ENTER	This function can spare you the trouble of pressing the [Enter] key on the mobile computer to confirm each scan. It will automatically add an ENTER character in front or to the end of one scan. ▸ No ▸ Scan + ENTER (time-saving) ▸ ENTER + Scan (efficient for continuous scanning)	Scan + ENTER
Auto ENTER Character	*Auto ENTER must be enabled. ▸ None ▸ Carriage Return ▸ Tab ▸ Space ▸ Comma ▸ Semicolon	Carriage Return
Prefix String	0~10 characters	NULL
Suffix String	0~10 characters	NULL
Display Code Type	Select the check box to display the code type after decoding a barcode.	Disabled
Display Code Length	Select the check box to display the code length after decoding a barcode.	Disabled
Display RFID UID	Select the check box to display UID after decoding an RFID tag.	Enabled
Display RFID User Data	Select the check box to display user data after decoding an RFID tag.	Disabled
Use Delimiter to separate UID from data	Decide whether or not to use a delimiter to separate UID from user data when decoding an RFID tag.	Disabled

4.3.4 BEEPER / VIBRATOR

Tap the [Beeper / Vibrator] button on the General tab to configure associated settings.

BEEPER / VIBRATOR		DEFAULT
Good Read Beep	Mute, or Sound 1~9	Sound 1

Warning Beep	Mute, or Sound 1~9	Sound 2
Vibration Duration	0~30 (sec.) ▸ 0 = Disable the vibrator	0 (= Disable)

4.3.5 SYMBOLOGY SETTINGS

For barcode settings, tap the Symbologies tab.

- Refer to Appendix I – Scan Engine Settings for the symbologies or RFID tags supported by a scan engine.
- Refer to the Symbology Settings Table in Appendix II – CCD/Laser Scan Engine.
- Refer to the Symbology Settings Table in Appendix III – 2D Scan Engine.

4.4 INBOX

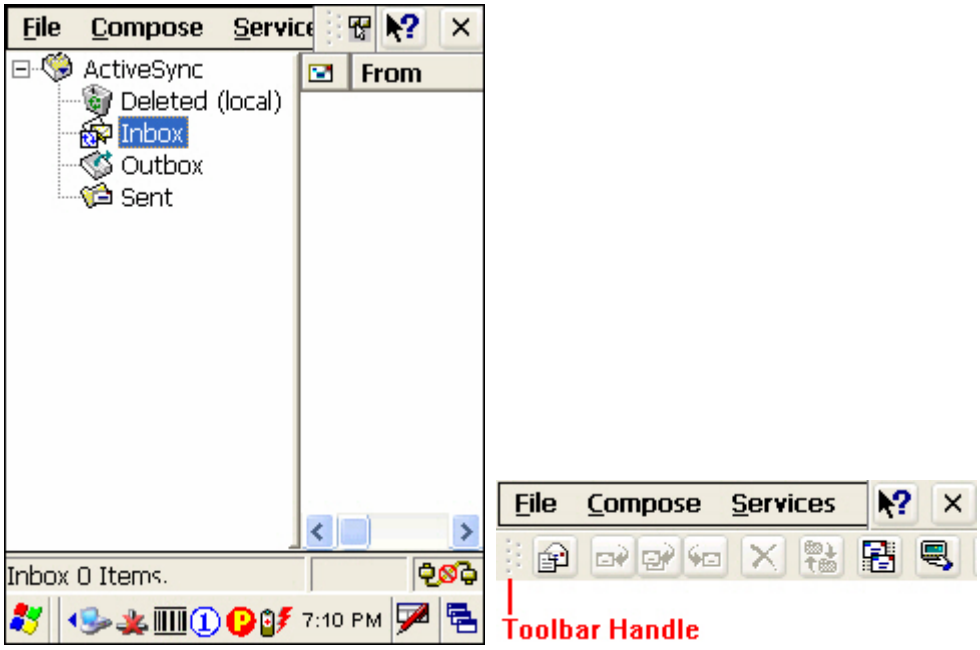
You can send and receive e-mail by connecting to a POP3 or IMAP4 server. **Inbox** provides an e-mail service for each method you use.

In addition, you can synchronize the e-mail messages in Inbox with either Microsoft Outlook or Microsoft Exchange Server on your computer through the default ActiveSync mail service.

4.4.1 CREATING AN E-MAIL BOX

1) Go to **Start** > **Programs** > **Inbox** to open the **Inbox** application.

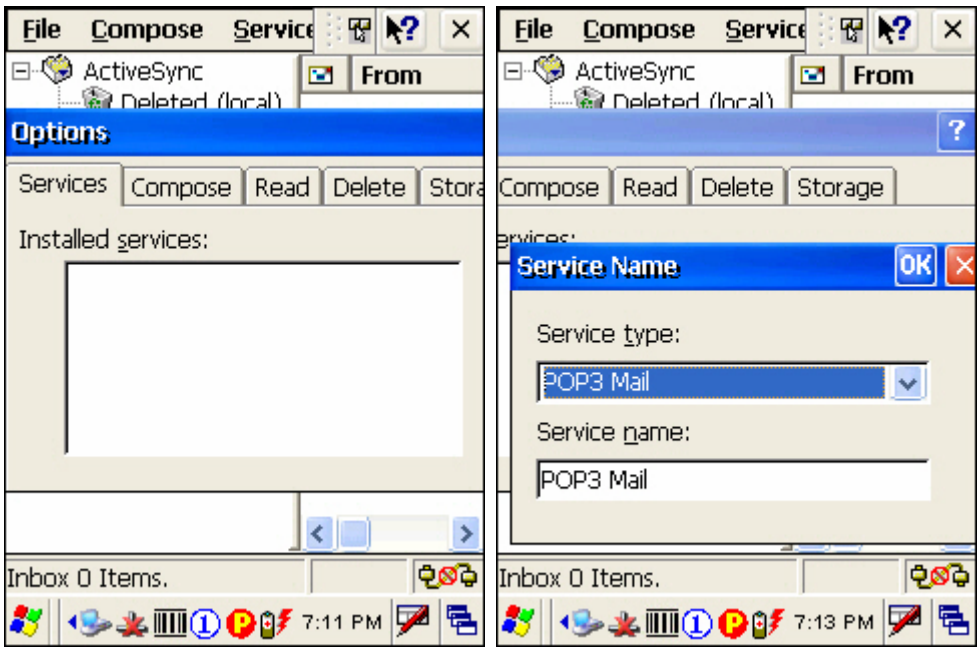
   Tap and drag the toolbar handle to move it under the menu bar.



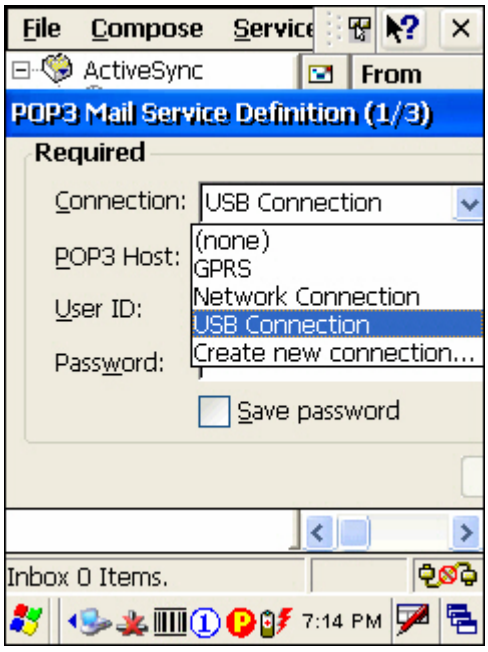
2) Select **Services** > **Options** from the menu bar. (left below)

3) Tap and drag the dialog box to show the right edge. Tap [Add] to create an e-mail service.

4) In the Service Name dialog box, select POP3 Mail or IMAP4 Mail for the service type. (right below) Change the name of e-mail service if necessary. Tap [OK].



5) Proceed with the POP3 or IMAP4 Mail Service Definition (from 1/3 to 3/3).



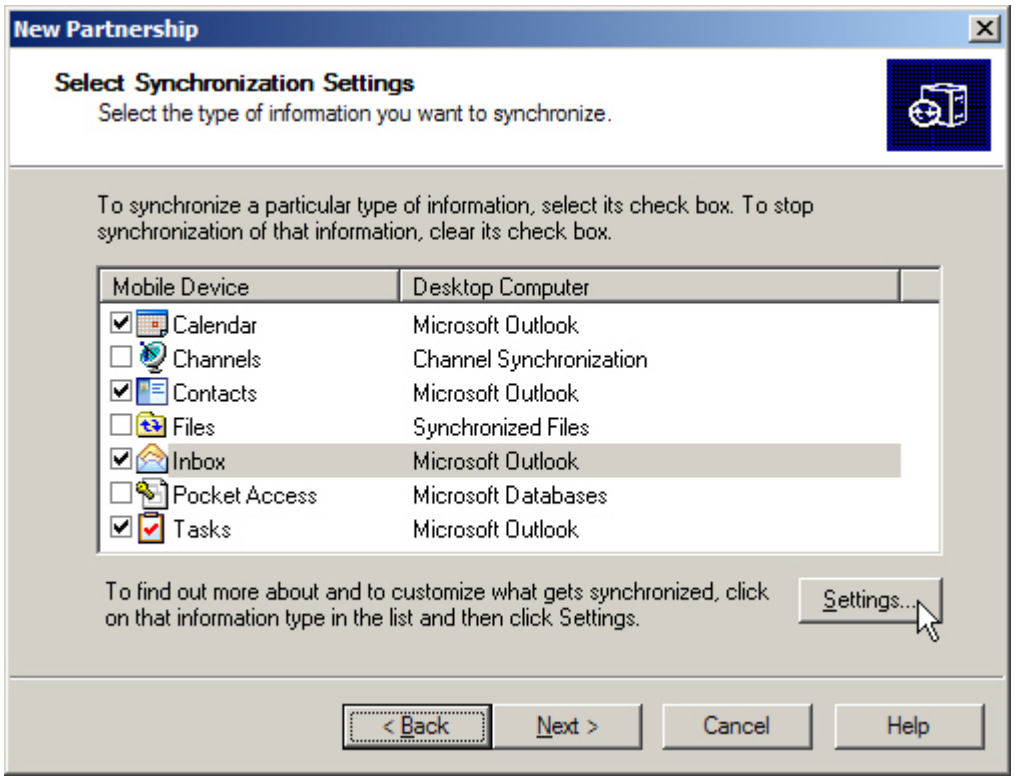
- GPRS: Send and Receive e-mail through GPRS connection.
- Network Connection: Send and Receive e-mail through Ethernet, 802.11b/g or Bluetooth PAN connection.
- USB Connection: Send and Receive e-mail through USB connection via the cradle.

6) After you have successfully created an e-mail service, you may start using it now.

TOOLBAR

BUTTON	DESCRIPTION	SEE ALSO
	Compose a new message	Compose > New Message
	Reply to sender	Compose > Reply to Sender
	Reply to all	Compose > Reply to All
	Forward this message	Compose > Forward
	Delete this message	File > Delete
	Synchronize folders (multiple mailboxes for IMAP4)	Services > Synchronize Folders
	Send and receive mail manually	Services > Send/Receive Mail
	Connect or disconnect ▸ When connected, it will send and receive mail automatically.	Services > Connect

4.4.2 SYNCHRONIZING INBOX



When you seat the mobile computer in the cradle and connect it to your computer for the first time, ActiveSync 3.7.1 will guide you through setting up a partnership between the mobile computer and your desktop computer. Refer to ActiveSync with a Computer.

Select the check box of Inbox as shown above, and click [Settings] to configure it.

Note: ActiveSync 4.x does not support Inbox Synchronization. We recommend that you have ActiveSync 3.7.1 installed on your computer.

4.5 BACKUP UTILITY

The **CipherLab Backup Utility** is provided to help you easily make copies of data and restore your mobile computer's specific registry settings, install applications, user data, etc.

- Find out your OS version: go to **Start** > **Settings** > **Control Panel** and select **System**. Select the Device Name tab.

You may use the backups (.bkp) for these purposes:

- Full Restore Operation

  Backup all necessary files here (you don't have to select "Registry") so that you can restore your mobile computer to an operational state following a disaster.

- Partial Restore Operation

  Backup a few specific files here so that you can restore small numbers of files after you have deleted them by accident or found them corrupted.

- Easy Cloning

  Backup everything (including "Registry") necessary for cloning other 9400CE Mobile Computers.

Now go to **Start** > **Programs** > **BackupUtility** to open the **CipherLab Backup Utility**.

4.5.1 MANAGING THE REGISTRY

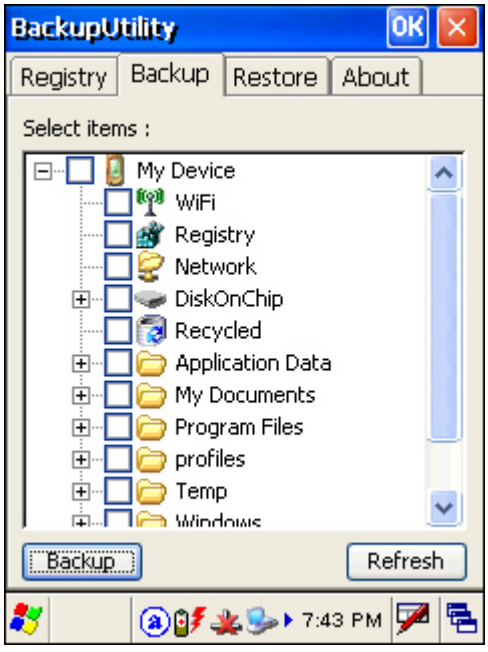
If you are using this backup utility for the first time, you must manually save the system registry to the DiskOnChip folder first! Tap [Save] now to save the current system registry to "\DiskOnChip\Sysbak\Registry.dat".

Warning: As long as you make any changes to the system configurations and settings, you must tap [Save] to update the system registry here. Otherwise, it will reload the old registry values in use after a cold boot.

If you wish to reset the current system configurations and settings to defaults, tap [Reset] to delete the current system registry "\DiskOnChip\Sysbak\Registry.dat". It will then reload the default registry values after a cold boot.

4.5.2 GETTING READY FOR BACKING UP FILES

Tap the Backup tab and it will automatically start scanning the file system. Within a few minutes, it will generate a list for the backup operation.



IF THE ITEMS "WIFI" AND "REGISTRY" ARE NOT LISTED...

This means no Registry.dat and Wifi.dat are found in "\DiskOnChip\Sysbak\". Take necessary steps before you tap [Refresh] to refresh the list of available items.

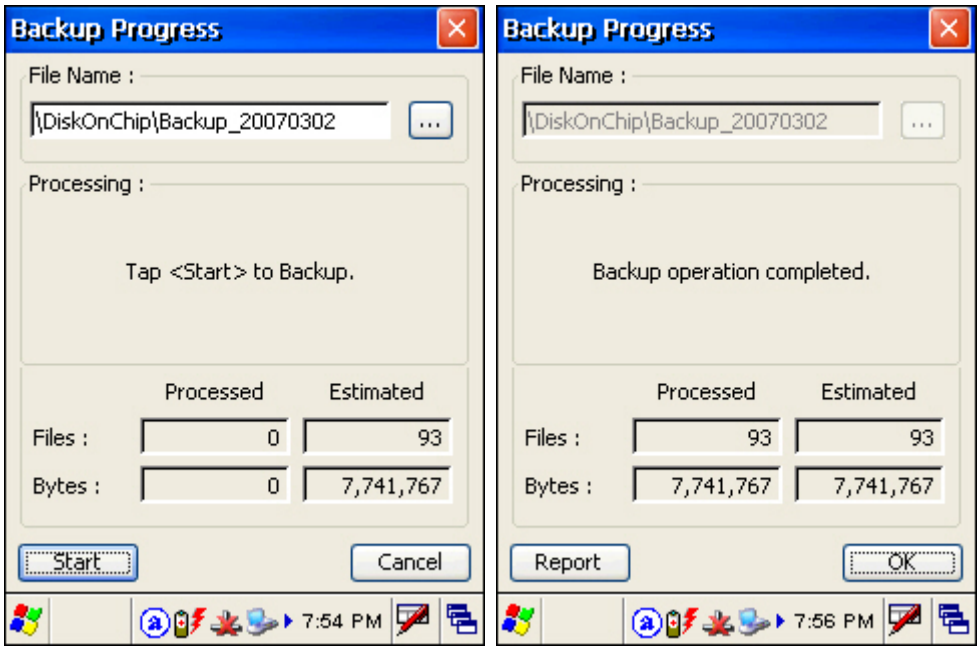
- WiFi - Turn on the power to the 802.11b/g module through the **Wireless Power Manager**, and then select an available network to connect.
- Registry - Go to the Registry tab and tap [Save].

Warning: You may not be able to backup all data when programs are still running! It is suggested that you exit all the applications before backup.

4.5.3 BACKING UP FILES

1) Select the items you wish to backup, and tap [Backup].
2) Tap [...] if you need to save the backup to a different directory or file name (.bkp).

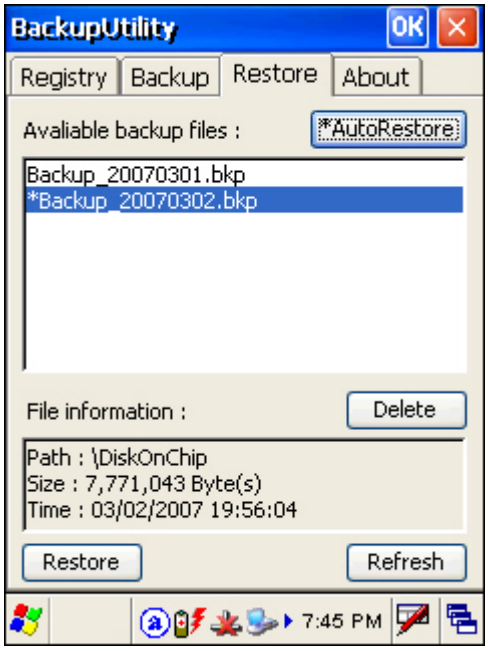
   By default, it will save the selected items to the DiskOnChip folder by the current date - the format of filename is "Backup_(4-digit year)(2-digit month)(2-digit date)".
3) Tap [Start] to pack all the selected items into one .bkp file.
4) Once the backup process is completed, tap [Report] to view the log file if necessary.
5) Tap [OK] to close the current window.



Note: If you wish to backup files to this new directory or file name in future runs, you must tap OK on the toolbar to save the current settings and exit the application.

4.5.4 USING BACKUPS FOR RESTORE

After the backup operation, tap the Restore tab and specify how to use these backups for automatic or manual restore operation.



FILE MANIPULATION

Tap [Refresh] to refresh the list of available backups. If a backup file is not desired any more, select it and tap [Delete].

AUTO RESTORE

Select a desired backup file from the list and tap [AutoRestore]. It will prefix an asterisk to the selected file, indicating the specific file will be used in the restore process that starts automatically right after a cold boot.

Note: For the Auto Restore setting to take effect, you must tap OK on the toolbar to save the current settings and exit the application.

MANUAL RESTORE

- Full Restore Operation
  1. Select a desired backup file from the list.
  2. Tap [Restore].
  3. Tap [Start] to run the restore process.
  4. Once the restore process is completed, you will be asked to perform a warm boot. Tap [No] if you wish to warm boot later. You may tap [Report] to view the log file if necessary.
- Partial Restore Operation
  1. Double-tap a desired backup file from the list.
  2. Select the desired items.

3. Tap [Restore].
4. Tap [Start] to run the restore process.
5. Once the restore process is completed, you will be asked to perform a warm boot. Tap [No] if you wish to warm boot later. You may tap [Report] to view the log file if necessary.

Warning: You must perform a warm boot after the restore operation!

4.6 BUTTON ASSIGNMENT UTILITY

The **CipherLab Button Assignment Utility** allows the following keys to be re-defined as another key or to serve as a shortcut key for launching a specific program.

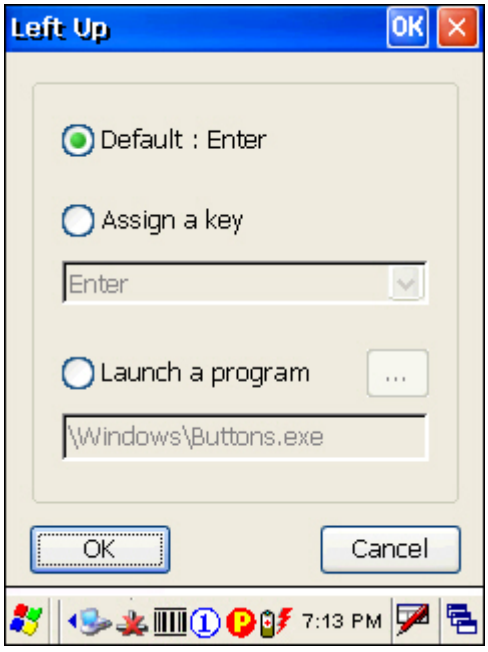
- P1 and P2 on the keypad (Programmable key 1 & key 2)
- SCAN key on the keypad
- Side triggers on each side of the touch screen – Left-Up, Left-Down, Right-Up, and Right-Down keys

Note: By default, the four side triggers are programmed to serve as ENTER keys (upper ones) as well as SCAN keys (lower ones).

Now go to **Start** > **Programs** > **Buttons** to open the **CipherLab Button Assignment Utility**.

1) Tap the label of one of these seven keys.

   For example, tap [Left Up] to configure the upper-left side trigger.



2) You may assign one of the following key values to the upper-left side trigger or have it serve as a shortcut key to launch a specific program.

- Enter
- Scan
- Esc
- Delete
- Backspace
- Space
- Tab
- F1 ~ F12

3) Tap [OK] for the change to take effect.

4) Tap OK on the toolbar to save the current settings and exit the application.

SPECIFICATIONS

PLATFORM, PROCESSOR & MEMORY

OPERATING SYSTEM

Microsoft Windows CE 5.0

CPU

Intel PXA270 at 520 MHz

MEMORY

ROM	128 MB non-volatile NAND flash memory
RAM	128 MB on-board SDRAM memory ▸ Ordering Option - 64 MB on-board SDRAM memory
Expansion Slot	One miniSD card slot for inserting memory card, optional

COMMUNICATIONS & DATA CAPTURE

COMMUNICATIONS

USB via Cradle	USB 1.1 Specification Host port (type-A) / Device port (type-B)
WPAN	Built-in module for Bluetooth Class 2 connectivity
WLAN	Built-in module for 802.11b/g networking
WWAN	▸ Ordering Option - built-in module for GSM/GPRS/EDGE Quad-Band - 900, 1800 MHz (Europe); 850, 1900 MHz (U.S.)

DATA & IMAGE CAPTURE

Digital Camera	2 mega-pixel CMOS type	
Barcode Reader	Ordering options include	▸ CCD (linear imager) ▸ Standard Laser ▸ 2D Imager
RFID Reader	Frequency 13.56 MHz	

ELECTRICAL CHARACTERISTICS

BATTERIES

Main Battery Pack	Rechargeable Li-ion battery – 3.7 V, 1800 mAh
Backup Battery	Rechargeable Lithium battery – 3.7 V, 70 mAh
	Data retention for at least 20 hours

POWER ADAPTER

For Cradle	AC 110/220 V (Input) to DC 6 V, 3.3 A (Output)
For 4-Slot Battery Charger	AC 110/220 V (Input) to DC 6 V, 6 A (Output)

WORKING TIME (LASER, ONE SCAN PER 5 SECONDS)

Batch Mode with backlight	10 hours
Wi-Fi Mode with backlight	8 hours

PHYSICAL CHARACTERISTICS

COLOR TOUCH SCREEN DISPLAY

Display	3.5” Transflective TFT-LCD, 65536 colors
Resolution	QVGA (320 × 240 pixels)

KEYPAD

Layout	28 keys for alphanumeric layout
	▸ Ordering Option –QWERTY keypad
Backlight	White LED backlight for display and keypad

NOTIFICATIONS

Status LED	Triple-color LED – Red / Green / Blue
Audio	Mono speaker integrated
	Headset jack – 2.5 mm DIA stereo earphone jack with microphone input
	▸ Bluetooth headset supported
Vibrator	9000 ± 2000 RPM, Max. 50 dB

ENCLOSURES

Materials	Rubber & ABS plastic
Dimensions	170 mm (L) 90 mm (W) 38 mm (H)
Weight	Approx. 400 g (configuration-dependent)

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE

Operating	-10 °C to 50 °C
Storage	-20 °C to 60 °C

HUMIDITY

Operating	10% to 90%, non-condensing
Storage	5% to 95%, non-condensing

RESISTANCE

Impact Resistance	1.5 m, 5 drops per 6 sides
Tumble Test	50 cm, 2000 drops
Splash/Dust Resistance	IP 64
Electrostatic Discharge	± 15 kV air discharge, ± 8 kV direct discharge

REGULATIONS

EMC Regulations	FCC, CE, C-Tick, TELEC, RSS-210

PROGRAMMING SUPPORT

DEVELOPMENT ENVIRONMENT & TOOLS

Integrated Development Environment	Visual Studio 2005 Visual Studio .NET 2003 eMbedded Visual C++ 4.0 SP4
Software Development Kit	9400CE SDK or Windows CE 5.0 Standard SDK System API (static and DLL) for system configuration ReaderDLL for reader configuration

SOFTWARE & UTILITIES

Reader Configuration Utility

Terminal Emulation for VT100/220 or IBM 5250

Application Generator

STREAM Wireless Studio

Web Browser

Third-party software –

- Wavelink Avalanche Enabler & Telnet Client
- MCL Collection - MCL Client

ACCESSORIES

ACCESSORY OPTIONS

miniSD Memory Card

Pistol Grip

Belt Holster

Protective Cover

Spare rechargeable battery pack, standard or high capacity pack

4-slot Battery Charger

Charging & Communication Cradle

Vehicle Cradle

Appendix I

SCAN ENGINE SETTINGS

The **Reader Configuration Utility** (94ReaderCfg.exe) allows configuring the following reader types, depending on the module equipped on your mobile computer:

- 1D CCD scan engine
- 1D Laser scan engine
- 2D scan engine
- RFID reader

Options of different reader combination are allowed, such as 1D+RFID and 2D+RFID. For each combination, both readers can be initialized and ready for scanning at the same time (dual mode operation). For example, if you press the [Scan] button while running the 94ReaderCfg applet on the mobile computer, it will read a barcode in position or an RFID tag in proximity depending on which one comes first.

Note: You cannot have 1D+2D scan engines installed on the mobile computer because they are both barcode readers!

SYMBOLOGIES SUPPORTED

Varying by the scan engine installed, the supported symbologies or tag types are listed below. For details on configuring associated settings, please refer to each Appendix separately.

		CCD, LASER	2D
Codabar		✓	✓
Code 11		×	✓
Code 93		✓	✓
Composite Code		×	✓
MSI		✓	✓
Plessey		✓	×
Postal Codes		×	✓
Telepen		✓	×
Code 128	Code 128	✓	✓
	EAN-128	✓	✓
	ISBT-128	×	✓

Code 2 of 5	Industrial 25 (i.e. Discrete 25)	✓	✓
	Interleaved 25	✓	✓
	Matrix 25	✓	×
Code 3 of 9	Code 39	✓	✓
	Trioptic Code 39	×	✓
	Italian Pharmacode (i.e. Code 32)	✓	✓
	French Pharmacode	✓	×
EAN/UPC	EAN-8	✓	✓
	EAN-13	✓	✓
	Bookland EAN (i.e. ISBN)	✓	✓
	UPC-E0	✓	✓
	UPC-E1	×	✓
	UPC-A	✓	✓
RSS	RSS-14	✓	✓
	RSS Limited	✓	✓
	RSS Expanded	✓	✓
2D Symbologies	PDF417	×	✓
	MicroPDF417	×	✓
	Data Matrix	×	✓
	Maxicode	×	✓
	QR Code	×	✓

RFID TAGS SUPPORTED

The RFID reader supports read/write operations depending on the tags. The supported labels include ISO 15693, Icode®, ISO 14443A, and ISO 14443B.

Currently, the performance of some tags has been confirmed, and the results are listed below for your reference.

Note: You should study the specifications of RFID tags before use.

TI_RFID MODULE VERSION 1.0.A		UID ONLY	READ PAGE	WRITE PAGE*
ISO 14443A	Mifare Standard 1K	✓	---	---
	Mifare Standard 4K	✓	---	---
	Mifare Ultralight	✓	---	---
	Mifare DESFire	✓	---	---
	Mifare S50	✓	---	---
	SLE44R35	✓	---	---
	SLE66R35	✓	---	---
ISO 14443B	SRIX 4K	---	---	---
	SR176	---	---	---
ISO 15693	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	---	---
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI512	✓	---	---
ICODE® (Phillips)	ICODE	---	---	---

Appendix II

CCD/LASER SCAN ENGINE

The tables below list reader settings as well as symbology settings for the CCD or Laser scan engine.

READER SETTINGS TABLE

CCD/LASER	DESCRIPTION	DEFAULT
Scan Mode		**Laser mode**
Continuous Mode	Non-stop scanning ▸ To decode the same barcode repeatedly, move away the scan beam and target it at the barcode for each scanning.	
Test Mode	Non-stop scanning ▸ Capable of decoding the same barcode repeatedly	
Repeat Mode	Non-stop scanning ▸ Capable of re-transmitting barcode data if triggering within one second after a successful decoding	
Momentary Mode	Hold down the scan trigger to start with scanning. ▸ The scanning won't stop until you release the trigger.	
Alternate Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until you press the trigger again.	
Aiming Mode	Press the scan trigger to aim at a barcode. Within one second, press the trigger again to decode the barcode. ▸ The scanning won't stop until (a) a barcode is decoded or (b) the pre-set timeout expires.	
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.	
Auto Off Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until (a) a barcode is read or (b) the preset timeout expires.	
Auto Power Off Mode	Press the scan trigger to start with scanning. ▸ The scanning won't stop until the preset timeout expires, and, the preset timeout period re-counts after each successful decoding.	

Read Redundancy	**None**
Level 0 = None	No redundancy means one successful decoding will make the reading valid and induce the "READER Event".
Level 1 = One time Level 2 = Two times Level 3 = Three times	The higher the reading security is (that is, the more redundancy the user selects), the slower the reading speed gets. ▸ If "Three Times" is selected, it will take a total of four consecutive successful decodings of the same barcode to make the reading valid.
Time-out	**3 sec.**
1~255 (second)	It applies to the following scan modes only: ▸ Aiming mode ▸ Laser mode ▸ Auto Off mode ▸ Auto Power Off mode

SYMBOLOGY SETTINGS TABLE

CCD/LASER	DESCRIPTION	DEFAULT
Codabar		**Enable**
Select Start/Stop Characters	If "Transmit Start/Stop Characters" is desired, select one set: ▸ abcd / abcd ▸ abcd / tn*e ▸ ABCD / ABCD ▸ ABCD / TN*E	abcd / abcd
Transmit Start/Stop Characters	Decide whether to include the start/stop characters in the data being transmitted.	No
Code 128 / EAN-128		**Enable**
Transmit Code ID (for EAN-128)	Decide whether to include Code ID (“]C1”) will be included in the data being transmitted.	No
Industrial 25 (= Discrete 25)		**Enable**
Start/Stop Selection	This decides the readability of all 2 of 5 symbology variants. For example, flight tickets actually use an Industrial 2 of 5 barcode but with Interleaved 2 of 5 start/stop pattern. In order to read this barcode, the start/stop pattern selection parameter of Industrial 2 of 5 should set to "Interleaved 25".	Industrial 25
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No

Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Select Length	▸ One or two fixed lengths ▸ Range (1~127)	4~127
Interleaved 25		**Enable**
Start/Stop Selection	Refer to Industrial 25.	Interleaved 25
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Select Length	▸ One or two fixed lengths ▸ Range (1~127)	4~127
Matrix 25		**Disable**
Start/Stop Selection	Refer to Industrial 25.	Matrix 25
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Select Length	▸ One or two fixed lengths ▸ Range (1~127)	4~127
French Pharmacode		**Disable**
*Transmit Start/Stop Character	Controlled by the same setting of Code 39.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Italian Pharmacode (= Code 32)		**Disable**
*Transmit Start/Stop Character	Controlled by the same setting of Code 39.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Code 39		**Enable**
Transmit Start/Stop Character	Decide whether to include the start/stop characters "*" in the data being transmitted.	No
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes

Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
Code 93		**Enable**
MSI		**Disable**
Verify Checksum	Select one of the three calculation formulas to verify the checksum. If the checksum is incorrect, the barcode will not be accepted. ▸ Single Modulo 10 ▸ Double Modulo 10 ▸ Modulo 11 & 10	Single Modulo 10
Transmit Checksum	Decide whether to include the checksum in the data being transmitted. ▸ Last digit not transmitted ▸ Both digits transmitted ▸ Both digits not transmitted	Both digits transmitted
Select Length	▸ One or two fixed lengths ▸ Range (1~127)	4~127
Negative Barcode		**Disable**
Plessey		**Disable**
Convert to UK Plessey	When applied, each occurrence of the character "A" in the barcode data will be replaced by the character "X".	No
Transmit Checksum	Decide whether to include the checksum (2 digits) in the data being transmitted.	Yes
Telepen		**Disable**
Original Telepen (Numeric)	The original Telepen includes numeric characters.	Yes
AIM Telepen (Full ASCII)	AIM Telepen (Full ASCII) includes all the alphanumeric and special characters.	No
RSS-14		**Disable**
Transmit Code ID	Decide whether to include Code ID ("]e0") will be included in the data being transmitted.	Yes
Transmit Application ID	Decide whether to include the Application ID ("01") in the data being transmitted.	Yes
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
RSS Limited		**Disable**
Transmit Code ID	Refer to RSS-14.	Yes

Transmit Application ID	Refer to RSS-14.	Yes
Transmit Checksum	Refer to RSS-14.	Yes
RSS Expanded		**Disable**
Transmit Code ID	Refer to RSS-14.	Yes
EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Addon 2 / Addon 5	Decide whether to decode EAN-8 with supplementals.	No
EAN-13 / UPC-A		**Enable**
ISBN Conversion	The EAN-13 barcode starting with 978 and 979 will be converted to ISBN.	No
ISSN Conversion	The EAN-13 barcode starting with 977 will be converted to ISSN.	No
GTIN for EAN-13	The EAN-13 barcode will be expanded into 14-digit Global Trade Item Number (GTIN).	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	Yes
Addon 2 / Addon 5	Decide whether to decode EAN-13/UPC-A with supplementals.	No
(UPC-A) Convert to EAN-13	The UPC-A barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	Yes
(UPC-A) Transmit Checksum	Decide whether to include the UPC-A checksum in the data being transmitted.	Yes
(UPC-A) Transmit System Number	Decide whether to include the UPC-A System Number in the data being transmitted.	Yes
UPC-E		**Enable**
Convert to UPC-A	The UPC-E barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
Transmit Checksum	Decide whether to include the UPC-E checksum in the data being transmitted.	Yes
Transmit System Number	Decide whether to include the UPC-E System Number in the data being transmitted.	No
Addon 2 / Addon 5	Decide whether to decode UPC-E with supplementals.	No

*It cannot read UPC-E1 barcodes!

Appendix III

2D SCAN ENGINE

The tables below list reader settings as well as symbology settings for the 2D scan engine.

READER SETTINGS TABLE

<table>
<tr><th>2D</th><th>DESCRIPTION</th><th>DEFAULT</th></tr>
<tr><td>Focus Mode</td><td>Select the focus mode to control the working range:
Far Focus – optimized to read at its far position
Near Focus – optimized to read at its near position
Smart Focus – toggles the focus position after every frame</td><td>Far Focus</td></tr>
<tr><td>Decode Illumination</td><td>Decide whether to flash illumination on every barcode capture to aid decoding.
Turn On (Internal LED)
Turn Off</td><td>On</td></tr>
<tr><td>AIM Pattern</td><td>Decide whether to project the aim pattern during barcode capture.
Turn On
Turn Off</td><td>On</td></tr>
<tr><td colspan="2">Read Redundancy</td><td>Level 2</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>MSI</td><td>4 characters of less</td></tr>
<tr><td>Codabar</td><td>8 characters of less</td></tr>
<tr><td>Discrete 25 (=Industrial 25)</td><td>8 characters of less</td></tr>
<tr><td>Interleaved 25</td><td>8 characters of 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.
<table>
<tr><th>BARCODE TYPES “EXCLUDED”</th><th>CODE LENGTH</th></tr>
<tr><td>MSI</td><td>4 characters of less</td></tr>
<tr><td>Codabar</td><td>8 characters of less</td></tr>
</table></td></tr>
</table>

	Discrete 25 (=Industrial 25) — 8 characters of less Interleaved 25 — 8 characters of less	
Level 4	All barcodes must be successfully read three times before being decoded.	
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 1**
Decode Time-out	Set the maximum time for decoding to continue during a scan attempt. ▸ 5~99, in units of 0.1 second.	**9.9 sec.**

SYMBOLOGY SETTINGS TABLE

2D	DESCRIPTION	DEFAULT
Codabar		**Enable**
CLSI Editing	When applied, the CLSI editing strips the start/stop characters and inserts a space after the first, fifth, and tenth characters of a 14-character Codabar barcode. ▸ The 14-character barcode length does not include start/stop characters.	No
NOTIS Editing	Decide whether to include the start/stop characters in the data being transmitted. ▸ NOTIS Editing is to strip the start/stop characters, i.e. to disable "Transmit Start/Stop Characters".	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 128		**---**
Code 128	Read standard Code 128 barcodes (=without leading FNC1 character).	Enable

UCC/EAN-128	Read UCC/EAN-128 barcodes with leading FNC1 character.	Enable
ISBT 128	Read ISBT 128 barcodes.	Enable
Industrial 25 (= Discrete 25)		**Enable**
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Interleaved 25		**Enable**
Convert to EAN-13	Convert a 14-character barcode into EAN-13 if the following requirements are met: ▸ The barcode must have a leading 0 and a valid EAN-13 check digit.	No
Verify Checksum	Decide whether to verify the checksum. If desired, select one of the algorithms below. If the checksum is incorrect, the barcode will not be accepted. ▸ No ▸ USS algorithm ▸ OPCC algorithm	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted. ▸ "Verify Checksum" must be enabled so that the checksum can be left out (= "Transmit Checksum" disabled).	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Code 39		**Enable**
Convert to Code 32	Convert to Italian Pharmacode.	No
Code 32 Prefix	Prefix character "A" to Code 32 barcodes.	No
Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted.	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted. ▸ "Verify Checksum" must be enabled so that the checksum can be left out (= "Transmit Checksum" disabled).	No
Code 39 Full ASCII	Code 39 Full ASCII includes all the alphanumeric and special characters.	Disable
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Trioptic Code 39		**Disable**

<table>
<tr><td colspan="2">Code 93</td><td>Disable</td></tr>
<tr><td>Select Length</td><td>▸ One or two fixed lengths
▸ Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">MSI</td><td>Disable</td></tr>
<tr><td>Verify Checksum</td><td>If Two Check Digits option is selected, an additional verification is required to ensure integrity. Select one of the algorithms below. If the checksum is incorrect, the barcode will not be accepted.<table><tr><th>CHECK DIGIT</th><th>ALGORITHM</th></tr><tr><td>One Check Digit</td><td>Single Modulo 10</td></tr><tr><td>Two Check Digits</td><td>▸ Mod 10/Mod 11
▸ Mod 10/Mod 10</td></tr></table></td><td>Single Modulo 10</td></tr>
<tr><td>Transmit Checksum</td><td>Decide whether to include the checksum in the data being transmitted.</td><td>No</td></tr>
<tr><td>Select Length</td><td>▸ One or two fixed lengths
▸ Range (1~55)</td><td>4~55</td></tr>
<tr><td colspan="2">RSS</td><td>---</td></tr>
<tr><td>RSS-14</td><td rowspan="4">"Convert to UPC/EAN" only applies to RSS-14 and RSS Limited barcodes not decoded as part of a Composite barcode.<table><tr><th>CONVERT TO EAN-13</th></tr><tr><td>Strip the leading "010" from barcodes.
▸ "01" is the Application ID and must be followed by a single zero (the first digit encoded)</td></tr><tr><th>CONVERT TO UPC-A</th></tr><tr><td>Strip the leading "0100" from barcodes.
▸ "01" is the Application ID and must be followed by two or more zeros (but not six zeros)</td></tr></table></td><td>Enable</td></tr>
<tr><td>RSS Limited</td><td>Enable</td></tr>
<tr><td>RSS Expanded</td><td>Enable</td></tr>
<tr><td>Covnert RSS to UPC/EAN</td><td>No</td></tr>
<tr><td colspan="2">EAN-8</td><td>Enable</td></tr>
<tr><td>Convert to EAN-13</td><td>The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.</td><td>No</td></tr>
<tr><td>Addon 2 / Addon 5</td><td>Refer to UPC/EAN Addon setting.</td><td></td></tr>
<tr><td colspan="2">EAN-13</td><td>Enable</td></tr>
<tr><td>Bookland EAN (= ISBN)</td><td>The EAN-13 barcode starting with 978 will be converted to ISBN.</td><td>No</td></tr>
<tr><td>Addon 2 / Addon 5</td><td>Refer to UPC/EAN Addon setting.</td><td></td></tr>
</table>

UPC-A		**Enable**
Transmit Checksum	Decide whether to include the UPC-A checksum in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-A preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
UPC-E0		**Enable**
Transmit Checksum	Decide whether to include the UPC-E0 checksum in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E0 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E0 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UPC-E1		**Disable**
Transmit Checksum	Decide whether to include the UPC-E1 checksum in the data being transmitted.	Yes
Transmit Preamble	Decide whether to include the UPC-E1 preamble System Number (and Country Code) in the data being transmitted.	System Number
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
Convert to UPC-A	The UPC-E1 barcode will be expanded into UPC-A, and the next processing will follow the settings configured for UPC-A.	No
UCC Coupon Extended Code		**Disable**
Read UPC-A barcodes starting with digit "5", EAN-13 barcodes starting with digits "99", and UPC-A/EAN-128 Coupon Codes. ▸ UPC-A, EAN-13, and EAN-128 must be enabled first!		
UPC/EAN Addon		**---**
Addon 2 / Addon 5	Decide whether to decode EAN-8, EAN-13, UPC-E0, UPC-E1, UPC-A with supplementals. ▸ Ignore Supplementals ▸ Decode Only With Supplementals ▸ Decode With Supplementals (= Auto-discriminate)	Ignore...
Addon Redundancy	When "Decode with Supplementals" is applied, decide the number of times of supplementary decoding the same barcode that makes a valid reading.	10 times
Code 11		**Enable**

Verify Checksum	Decide whether to verify the checksum. If the checksum is incorrect, the barcode will not be accepted. ▸ No verification ▸ One Check Digit ▸ Two Check Digits	No
Transmit Checksum	Decide whether to include the checksum in the data being transmitted. ▸ "Verify Checksum" must be enabled so that the checksum can be left out (= "Transmit Checksum" disabled).	No
Select Length	▸ One or two fixed lengths ▸ Range (1~55)	4~55
Postal Codes		**---**
US Postnet		Enable
US Planet		Enable
Transmit US Postal Checksum	US Postnet or US Planet must be enabled first!	Enable
UK Postal		Enable
Transmit UK Postal Checksum	UK Postal must be enabled first!	Enable
Japan Postal		Enable
Australian Postal		Enable
Dutch Postal		Enable
Composite Codes		**Disable**
Composite CC-C		Disable
Composite CC-A/B		Disable
Composite TLC-39		Disable
UCC/EAN Code 128 Emulation Mode	Transmit data as if it was encoded in Code 128 barcodes. ▸ Transmit AIM Code Identifier must be enabled first!	Disable
UPC Composite Mode	UPC barcodes can be "linked" with a 2D barcode during transmission as if they were one barcode. **UPC NEVER LINKED** Transmit UPC barcodes regardless of whether a 2D barcode is detected. **UPC ALWAYS LINKED** Transmit UPC barcodes and the 2D portion.	UPC Always Linked

	If the 2D portion is not detected, the UPC barcode will not be transmitted. ▸ CC-A/B or CC-C must be enabled! **AUTO-DISCRIMINATE UPC COMPOSITES** Transmit UPC barcodes as well as the 2D portion if present.	
2D Symbologies		**---**
PDF417		Enable
MicroPDF417		Disable
MicroPDF417 Code 128 Emulation	Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes. ▸ Transmit AIM Code Identifier must be enabled first! When applied, the MicroPDF417 barcodes are transmitted with one of these prefixes: **THE FIRST CODEWORD OF MICROPDF417 IS 903-907, 912, 914, 915:** The original Code ID "]L3" will be changed to "]C1". **THE FIRST CODEWORD OF MICROPDF417 IS 908 OR 909:** The original Code ID "]L4" will be changed to "]C2". **THE FIRST CODEWORD OF MICROPDF417 IS 910 OR 911:** The original Code ID "]L5" will be changed to "]C0".	Disable
Data Matrix		Enable
Maxicode		Enable
QR Code		Enable
2D Symbologies - Macro PDF		**---**
Macro PDF is a special feature for concatenating multiple PDF barcodes into one file, known as Macro PDF417 or Macro MicroPDF417.		
Transmit/Decode Mode	Decide how to handle Macro PDF decoding. **BUFFER ALL SYMBOLS / TRANSMIT MACRO PDF WHEN COMPLETE** Transmit all decoded data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decoded data exceeds the limit of 50 symbols, no transmission because the entire sequence was not scanned!	Passthrough All Symbols

	TRANSMIT ANY SYMBOL IN SET / NO PARTICULAR ORDER Transmit data from each Macro PDF symbol as decoded, regardless of the sequence. **PASSTHROUGH ALL SYMBOLS** Transmit and decode all Macro PDF symbols and perform no processing. In this mode, the host is responsible for detecting and parsing the Macro PDF sequences.	
ESC Characters	When enabled, it uses the backlash "\" as an Escape character for systems that can process transmissions containing special data sequences. It will format special data according to the Global Label Identifier (GLI) protocol, which only affects the data portion of a Macro PDF symbol transmission. The Control Header, if enabled, is always sent with GLI formatting.	None

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

Miscellaneous Options		**---**
Transmit Code ID	Decide whether to apply AIM Code ID character.	None