REFERENCE MANUAL

9500PPC
MOBILE COMPUTER

DOC Version 2.02

CIPHER LAB

IMPORTANT NOTICES

FOR USA

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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FOR CANADA

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Cet appareil numerique respecte les limites de bruits radioelectriques applicables aux appareils numeriques de Classe B prescrites dans la norme sur le material brouilleur: "Appareils Numeriques," NMB-003 edictee par l'Industrie.

FOR HAND-HELD PRODUCT WITH RF FUNCTIONS

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. It only operated in hand-held used. If you only transfer data to Host by WLAN/Bluetooth, please keep the minimum distance 20cm between machine & your body.

FOR PRODUCT WITH LASER

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.

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.

▶ DO NOT disassemble, incinerate or short circuit the battery.

▶ DO NOT expose the scanner or the battery to any flammable sources.

▶ For green-environment issue, it's important that batteries should be recycled in a proper way.

▶ Under no circumstances, internal components are self-serviceable.

▶ The charging and communication cradle uses an AC power adaptor. A socket outlet shall be installed near the equipment and shall be easily accessible. Make sure there is stable power supply for the mobile computer or its peripherals to operate properly.

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.

▶ 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
2.02	Nov. 22, 2007	▸ Modified: section 4.4 – UI of ReaderCfg.exe changed
		▸ Modified: Appendix II~IV – default values updated
2.01	Oct. 03, 2007	Minor changes
2.00	July 10, 2007	New Word template applied
1.08	Feb. 26, 2007	▸ Modified: sections 5.1.2~4 – General tab > Data Output > Windows Message & Event
1.07	Oct. 27, 2006	▸ Modified: section 1.5.9 List by standards for RFID tags
1.06	Sep. 27, 2006	▸ Modified: section 1.5.4, 1.5.5, and 1.5.7 regarding combination keys with [Func]
		▸ Modified: section 1.5.9 add Symbologies Enabled
1.05	July 27, 2006	▸ New: section 2.4 CF/SD Card illustrating installation procedure
		▸ Corrected: section 1.3.9 Reader – IParam instead of IParam
1.04	June 22, 2006	▸ Modified: section 1.3.9 Reader – RFID
1.03	June 16, 2006	▸ Modified: section 1.3.1 Battery
		▸ Modified: section 2.1 Main & Backup Batteries
		▸ Modified: Specifications re. Backup Battery
1.02	June 06, 2006	▸ Modified: section 1.3.9 Reader
		▸ Modified: section 5.1 ReaderConfig
1.01	May 23, 2006	Company name changed to CIPHERLAB CO., LTD. since April 2006
		▸ Modified: section 1.2.3 Dimensions & Specifications
		▸ Modified: sections 1.3.4 & 1.3.5 – usage of [Func]
1.00	Mar. 22, 2006	Initial release

CONTENTS

INTRODUCTION

The 9500PPC Mobile Computer is the first in the line of CipherLab's Windows Mobile-based products that runs Windows Mobile 2003; it integrates built-in wireless modules for Bluetooth and 802.11b technologies, as well as powerful utilities for data collection, processing, and transmission. Its large color transflective TFT display guarantees ease in reading in all lighting conditions.

The 9500PPC Series is robust in construction to meet industry grade requirements, and has been found durable and resistant to shock, water, and dust. It is specifically designed for all-day, everyday use as well as for data-intensive applications in harsh environments.

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 9500PPC

Color Touch Screen Display

Stylus

LED Status Light

ENTER keys

SCAN button

POWER key

Side contacts for charging
Central contacts for data transmission

Reset button

Pistol Grip, optional
to be screwed
after removal of this cover

Hand Strap
to be screwed (up)
and hooked (down)

Battery Latch

Li-ion Battery
fit to compartment
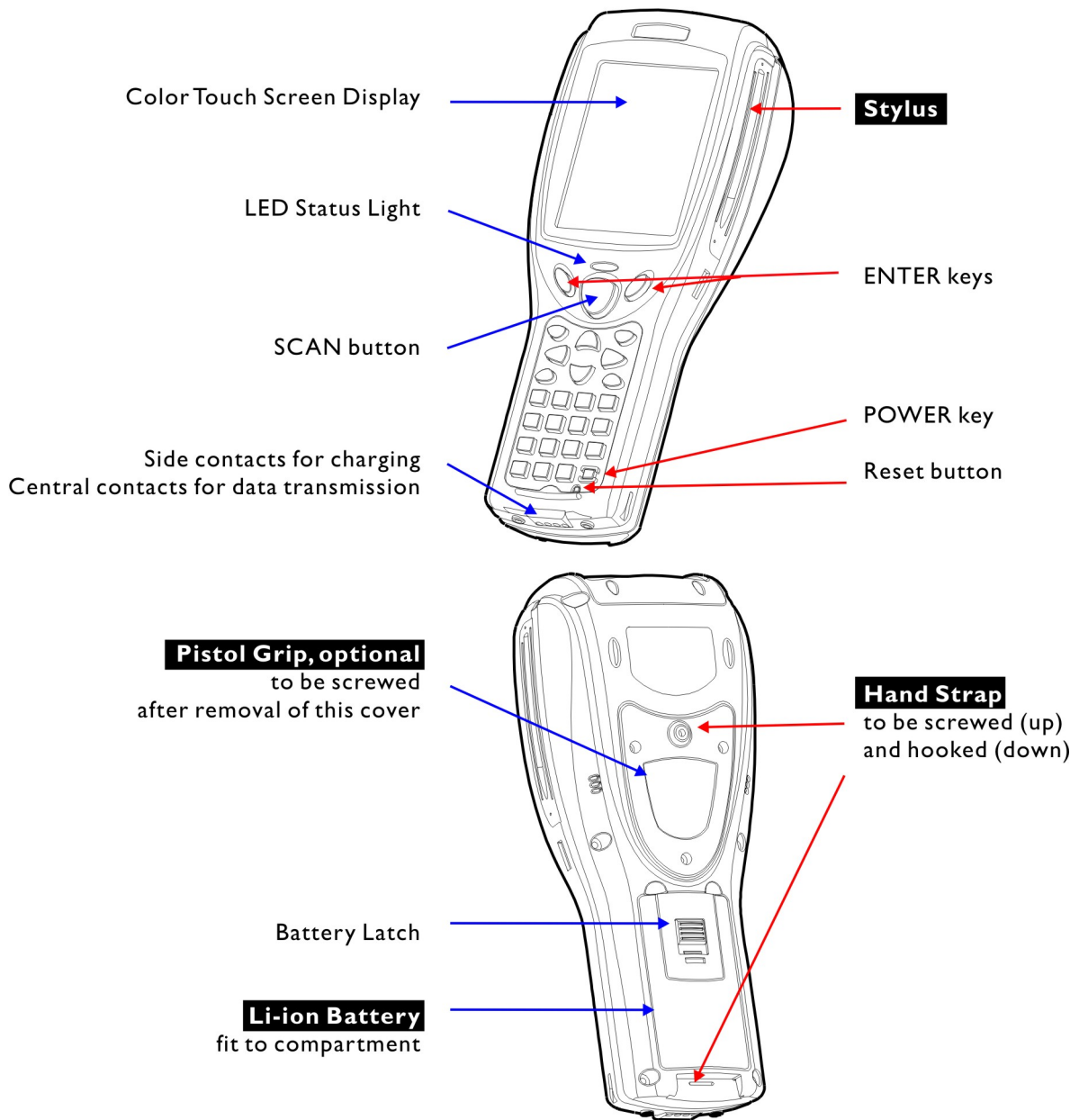
Figure 1: Front / Back View

INSTALLING THE HAND STRAP

The hand strap is ideal for one-handed operation, which requires safe and convenient hold of the mobile computer. Always make sure the hand strap is well hooked and screwed to the back of the mobile computer. 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 shield-like cover on 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.
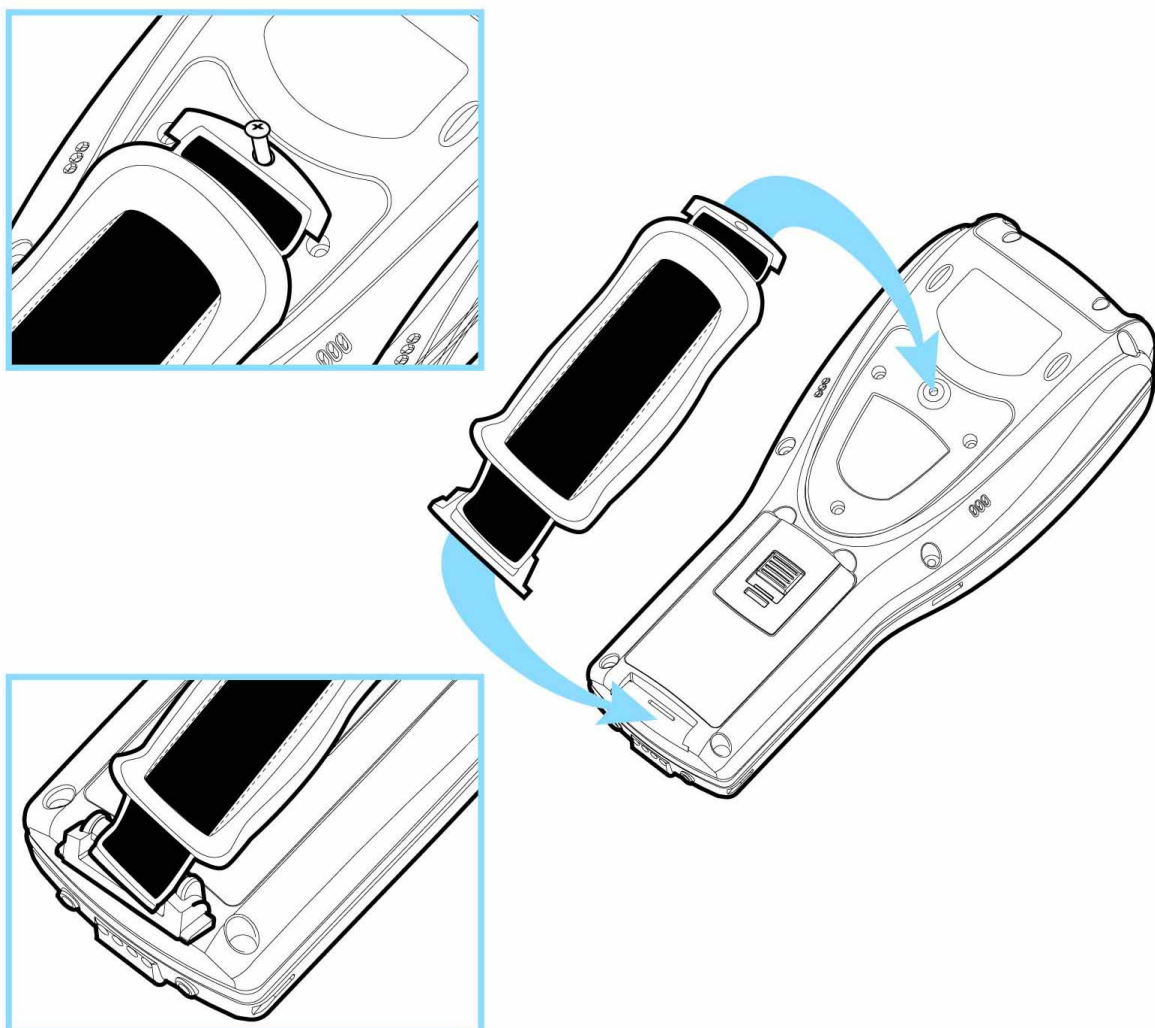
Figure 2: Installing the Hand Strap

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) Place the mobile computer face down on a flat and clean surface.

2) Remove the shield-like cover on the back of the mobile computer by unscrewing.

    If the hand strap is installed, remove it first. Keep the cover and screws for future use when the pistol grip is not desired.

3) Connect the power connector from the pistol grip to the receptacle on the mobile computer.

4) Screw the pistol grip to the shield-like cover.

5) Make sure all screws are tightened up.

6) Turn on the mobile computer and test the trigger.

Round Head Screws

Storage

Flat Head Screw

Scanning Window
SCAN Trigger
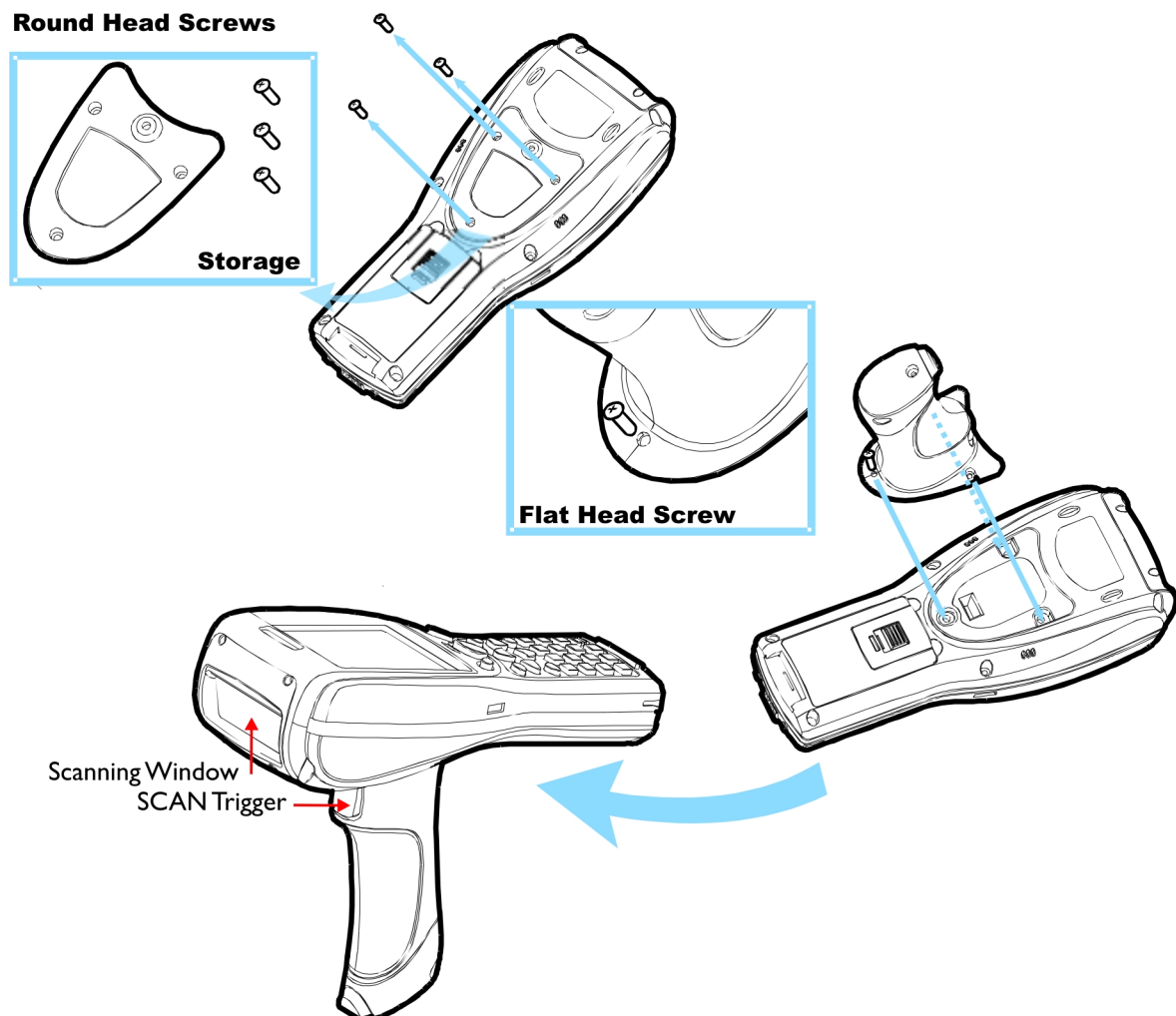
Figure 3: Installing the Pistol Grip

4
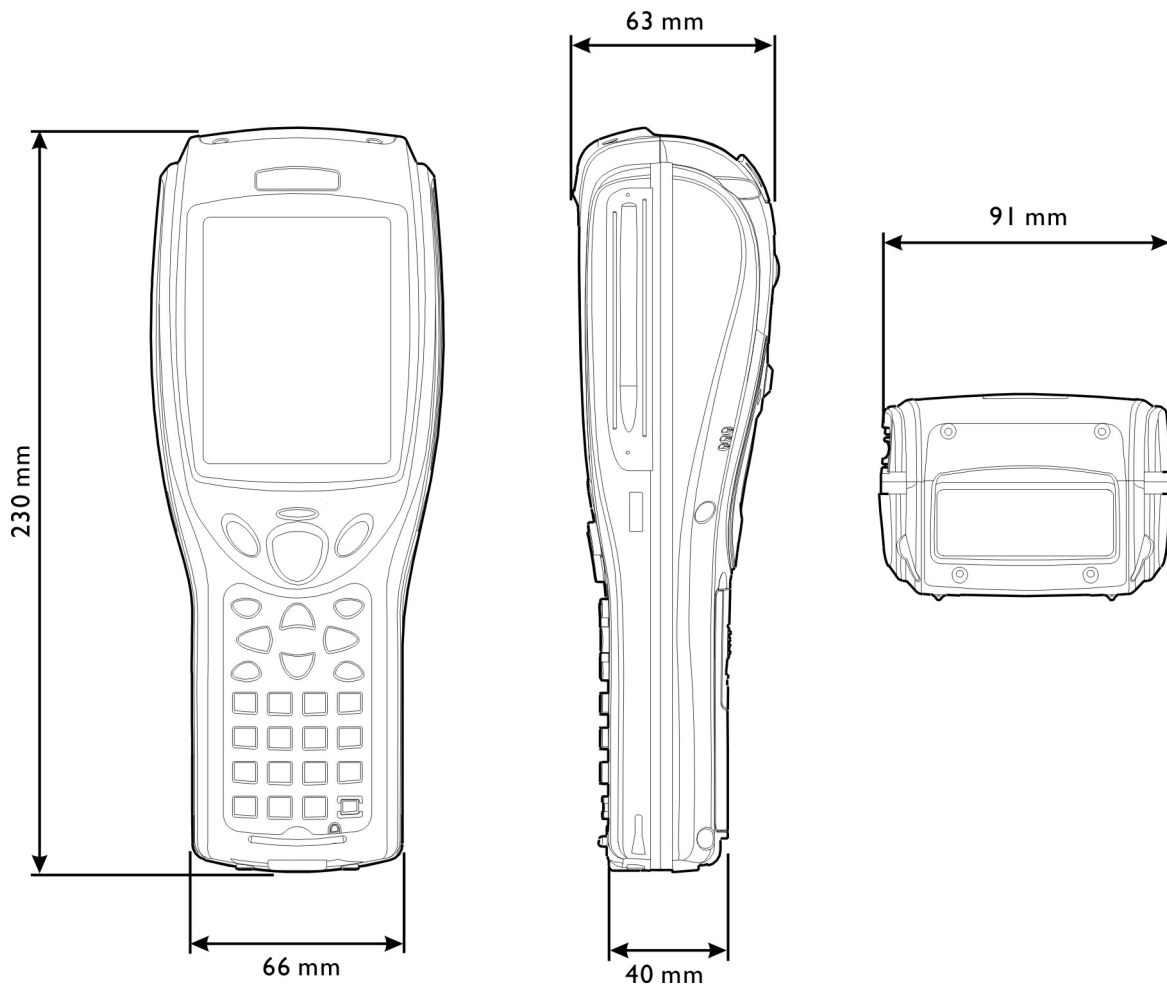
DIMENSIONS

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 Mobile 2003 Second Edition operating system, 400 MHz Intel PXA255 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 SDRAM to store and run programs, as well as store program data

▶ Expansion slots for memory card and peripherals - One for CompactFlash (CF) Type II and the other for Secure Digital (SD)

▶ Dual mode support - One scan engine (integrated barcode scanner/imager) plus one RFID reader

▶ Combo wireless solution - connectivity includes Bluetooth and 802.11b.

▶ 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, Bluetooth Manager, 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.

▶ 9500PPC 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

▶ Memory Card, SD or CF card

▶ Spare rechargeable Li-ion battery

▶ 4-slot Battery Charger

▶ Charging & Communication Cradle

USING THE 9500PPC MOBILE COMPUTER

This chapter explains the features and usage of the 9500PPC Mobile Computer.

IN THIS CHAPTER

1.1 BATTERY

▶ Main Battery

The 9500PPC Mobile Computer is powered by a rechargeable 3.7 V/4000 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 16 hours in batch mode. For non-stop power on the road, you may purchase a spare battery pack.

▶ 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/110 mAh rechargeable Lithium button cell helps retain data in SRAM and maintain the system running in suspend mode for at least 6 hours without the main battery. In the meantime, you have to replace the main battery as soon as possible.

1.1.1 INSTALLING 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 slide the DIP switch to the OFF position (to your right). This will keep both batteries in good condition for future use.

Note: Any improper handling may reduce the battery life.

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

2) Slide the battery pack into the battery compartment at a proper angle (30°~45°) so that the tabs on the bottom of the battery are hooked in the grooves of the compartment. Make sure that the battery is snugly fit into the compartment.

3) Hold the mobile computer still and slide the battery latch to lock the battery in the compartment.
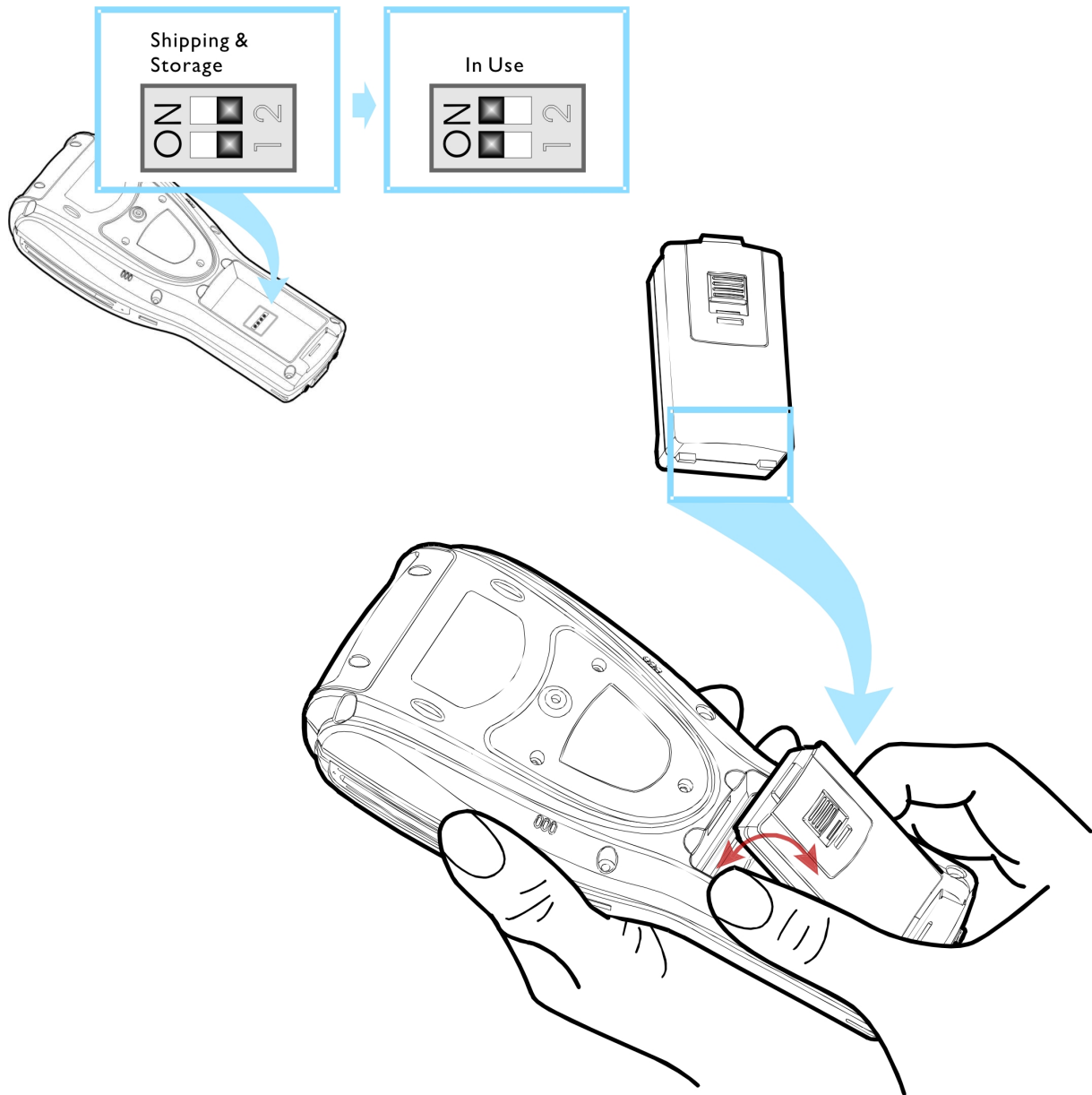
Figure 5: Adjusting DIP Switch & Installing the Main Battery

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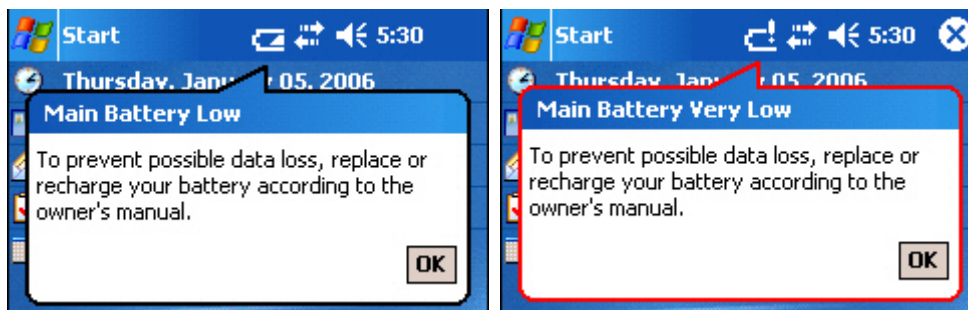
Warning: Data loss may occur with SRAM during low battery condition. Always save data before running out of power or keep a fresh battery for replacement.

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 or 802.11b that is not in use. Refer to the Wireless Power Manager.

▶ To save power, go to **Start** > **Settings** > **System** tab and select **Backlight / Backlight Control** (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 > SYSTEM TAB AND TAP THE POWER ICON

▶ In the Battery tab, you can always monitor the charging status. Watch out for a low battery charge or discharged battery before you receive a warning message indicating a low battery condition. A battery bar will show the progress of charging.

▶ In the Wireless tab, you may configure these settings (Flight mode) to save battery power or avoid causing radio interference, especially when on an airplane or in a hospital. The wireless signals may come from Bluetooth, or 802.11b, or even both. Here you can select to turn off the wireless signals from either of them or both. If both the check boxes are selected, it results in the same behavior when you turn on/off the flight mode from the **Connectivity** button.

Note: The power to the wireless module is controlled by **Wireless Power Manager**. The wireless power settings here are provided only when the wireless power is turned on through **Wireless Power Manager**.

▶ In the Advanced tab, you may specify automatic turn-off times for the mobile computer to conserve power. When the mobile computer is turned off, it means the system is in Suspend mode, which is ready for use but not in use.

START > SETTINGS > SYSTEM TAB AND TAP THE BACKLIGHT OR BACKLIGHT CONTROL ICON

To conserve more power, you may go to **Start** > **Settings** > **System** tab and select **Backlight** or **Backlight Control** 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 Mobile 2003SE) 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 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 two card slots, one SD and one CompactFlash Type II. You may upgrade memory by inserting an optional SD or CF 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 6 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 > SYSTEM TAB AND TAP THE MEMORY ICON

▶ In the Main tab, it displays the current capacity and usage of the onboard SDRAM, 64 MB.

You may tap, hold, and drag the slider to re-allocate the memory.

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

▶ In the Storage Card tab, it displays the current capacity and usage of the selected memory type, DiskOnChip, SD or CF card. 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.

▶ In the Running Programs tab, it displays the programs that are currently using the Program memory as indicated in the Main tab. If you receive program errors or find the mobile computer running slowly, you may need to free memory. Select from the list and stop any or all of the running programs.

Warning: Always remember to save data before you stop a running program.

START > SETTINGS > SYSTEM TAB AND TAP THE SYSTEM CONSOLE ICON

In the Autorun tab, you may select whether to enable the autorun feature or not when a SD/MMC card is present. When enabled, executable files stored on the memory card will be executed automatically once the card is installed.

▶ SD refers to Secure Digital, memory card format based on MMC.
▶ MMC refers to Multi-Media Card, older memory card format.

1.2.3 INSERTING THE SD OR CF CARD

When you need to expand memory or add a peripheral, take the following steps to install the CF or SD card to the mobile computer:

Warning: If not factory-installed, the Ingress Protection rating of enclosures may not be the same as claimed.

1) Press the [Power] key to turn off the mobile computer.

2) Remove the top enclosure of the mobile computer by unscrewing the four screws.

3) Insert your card properly.

4) Replace the top enclosure and tighten the screws.

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

Remove the top enclosure to insert the CF/SD card
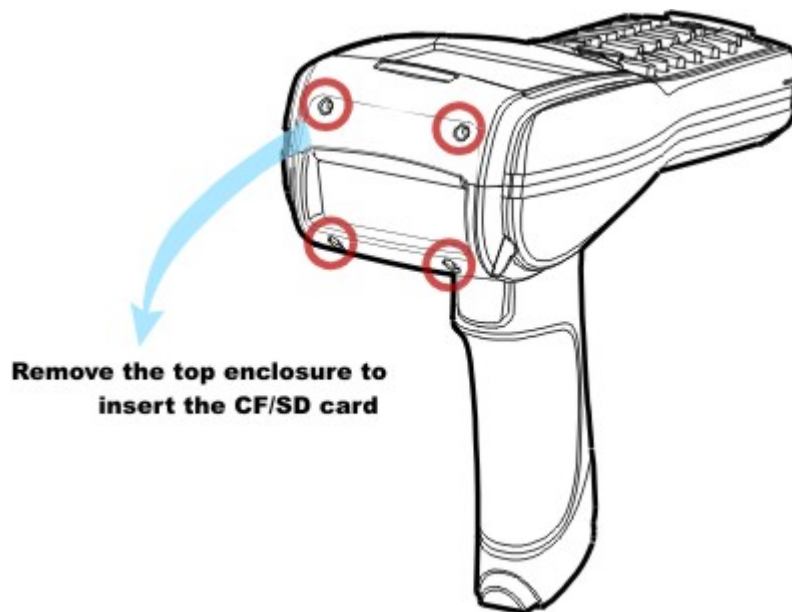
Figure 6: Inserting the SD or CF Card

1.3 KEYPAD

The mobile computer is equipped with a physical keypad that consists of 27 keys. Silicon rubber has been chosen for their durability and prompt feedback.

Figure 7: 27-key Layout

1.3.1 USING THE KEYPAD

The 27-key keypad includes alphanumeric, assorted characters, etc. This keypad is set to numeric mode by default.

Note: Functionality of keys is application-dependent.

PRESS [Func] FIRST, AND THEN [TAB]

The LED backlight of LCD as well as keypad can be controlled at the same time. It can be toggled ON/OFF by the key combination: [Func] + [TAB].

PRESS [Func] 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 > PERSONAL TAB AND TAP THE SOUND & NOTIFICATIONS ICON

In the Sounds tab, select the Hardware buttons to enable the key click.

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 navigation bar in a sequence as shown below.

ALPHA KEY	INPUT MODE	RESULT
N/A	Numbers	Pocket Word ⇄ ◀€ 2:52 ok
Press [Alpha] one time	Small letters	Pocket Word a ⇄ ◀€ 2:53 ok
Press [Alpha] two times	Capital letters	Pocket Word A ⇄ ◀€ 2:53 ok

---

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 [Func] on the keypad.

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

Pocket Word   F ⇄ ◀€ 3:11 ok

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 [Func] 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
[Func], ▲	PgUp (red-coded): move text up one screenful
[Func], ▼	PgDn (red-coded): move text down one screenful
[Func], ◀	Home (red-coded): move to the beginning of screen or document
[Func], ▶	End (red-coded): move to the end of screen or document
[Func], TAB	Toggle ON/OFF the backlight of LCD as well as keypad
[Func], 0 #\@	Toggle ON/OFF the backlight of keypad only
[Func], - */+	Turn ON the backlight of LCD and decrease its luminosity
[Func], . :.:	Turn ON the backlight of LCD and increase its luminosity
[Func], 6 MNO	Increase volume
[Func], 7 PQRS	Decrease volume

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

1.3.4 TASK KEY

The [Task] key, identified as "Button 1", can be programmed as a shortcut key for a specific program or action. By default, it is set to trigger **File Explorer**.

1) Tap **Start** > **Settings** > **Personal** tab and select **Buttons**.

2) In the **Program Buttons** tab, select Button 1 and assign it to trigger a different program, action, or <None>.
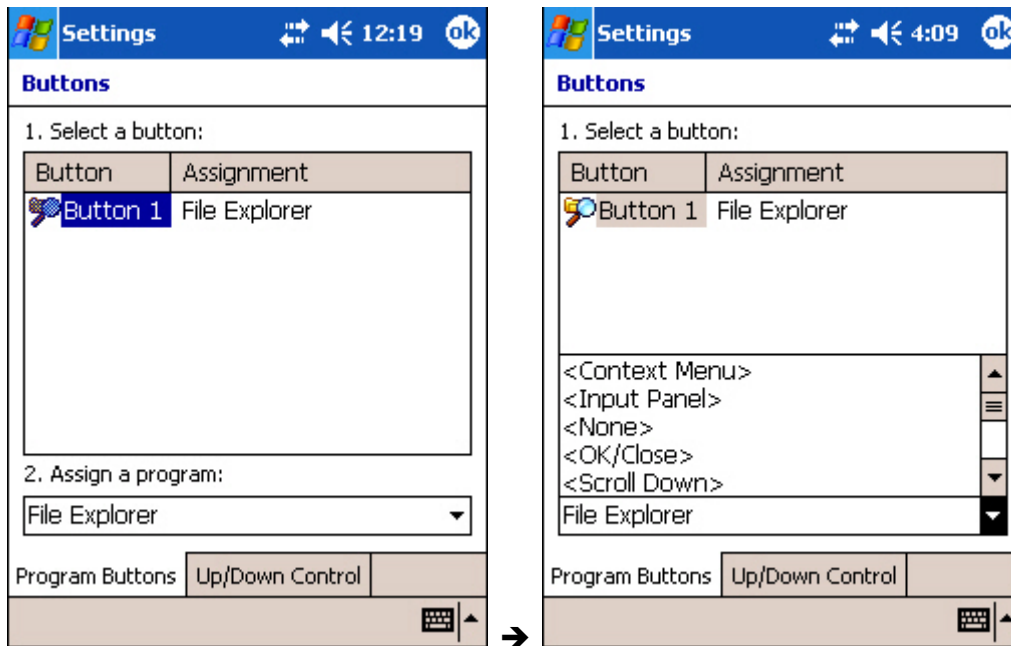
1.4 TOUCH SCREEN

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 [Func] FIRST, AND THEN (TAB)

The LED backlight of LCD as well as keypad can be controlled at the same time. It can be toggled ON/OFF by the key combination: [Func] + [TAB].

PRESS [Func] 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 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 > SYSTEM TAB AND TAP THE BACKLIGHT ICON

The backlight can be toggled on and off automatically, either on battery or AC power. To conserve more power, you may go to **Start** > **Settings** > **System** tab > **Power** to configure the auto turn-off setting.

START > SETTINGS > SYSTEM TAB AND TAP THE BACKLIGHT CONTROL ICON

Tap, hold, and drag the slider to manually adjust the luminosity of backlight. Alternatively, you may select to auto adjust backlight by the battery's capacity.

1.4.2 RE-CALIBRATING THE SCREEN

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

START > SETTINGS > SYSTEM TAB AND TAP THE SCREEN ICON

▶ In the Alignment tab, tap [Align Screen] to start with screen alignment if necessary.
▶ In the Clear Type tab, you may select Clear Type for fonts.
▶ In the Text Size tab, you may tap, hold, and drag the slider to configure text size.

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

TASKS	GREEN LED	RED LED	GREEN & RED
Low battery charge	---	Flashing	---
Charging 9500PPC	---	On	---
Charging done	On	---	---
Charging error	---	---	Flashing
Wireless signal searching	Flashing	---	---

1.5.2 AUDIO

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, .MP3 files. In addition, it can be programmed for status feedback.

PRESS [Func] FIRST, AND THEN [6 MNO]

The volume of the speaker can be turned on and adjusted increasingly by the key combination: [Func] + [6]. Keep pressing the key combination ([Func] first, and then [6]) until the volume is increased to a desired level.

PRESS [Func] FIRST, AND THEN [7 PQRS]

The volume of the speaker can be turned on and adjusted decreasingly by the key combination: [Func] + [7]. Keep pressing the key combination ([Func] first, and then [7]) until the volume is decreased to a desired level.

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

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.

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

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 USB connection for ActiveSync with your computer.

   Make sure that you have Microsoft ActiveSync installed on your computer before you connect the USB cable from the cradle to your computer.

   Refer to section 2.3 Using ActiveSync.

UNDERSTANDING THE STATUS INDICATORS
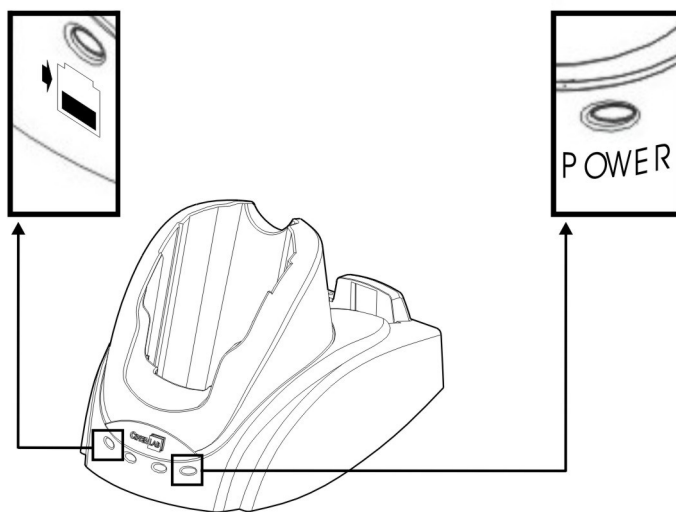
FRONT PANEL LEDS		INDICATION OF CONNECTION STATUS	
	Charging Status of Spare Battery	Solid red	Charging spare battery
		Solid green	Charging done
		Flashing (red/green)	Error occurs
		Off	Battery not ready
POWER	Cradle Power	Solid green	Power on
		Off	Power off

1.7.2 USING WIRELESS NETWORKS

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

LEARNING POCKET PC BASICS

This chapter mainly describes the basic skills to work with the 9500PPC Mobile Computer. The add-on utilities for applications regarding data collection, processing, and transmission, are introduced in the following chapters.

The 9500PPC Mobile Computer is specifically designed for real-time data collection in the Windows Mobile 2003 Second Edition 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 Mobile device at ease.

▶ Single-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.

To learn more about 9500PPC, go to **Start** > **Help**.

IN THIS CHAPTER

2.1 GETTING STARTED

When the 9500PPC Mobile Computer is fully charged, you may remove it from the cradle. Then, press the [Power] key to turn on the mobile computer and wait for the Today screen to come up after calibrating the screen with the stylus.

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

▶ To align the touch screen

Note: With a focus on delivering data collection and industrial requirements on a portable device, the 9500PPC Mobile Computer is currently not equipped with an internal microphone and the IrDA port. Therefore, voice recording and file transfer via infrared (Start > Settings > Connections tab > Beam) are not supported.

SUSPEND MODE

The 9500PPC Mobile Computer functions when it is turned on. This is because the Windows Mobile 2003 Second Edition operating system eliminates the booting process and runs continuously.

▶ Turn On (= Resume from Suspend)

    To turn on the mobile computer, simply press the [Power] key.

▶ Turn Off (= Suspend)

    To turn off the mobile computer, press the [Power] key 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: In order 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 TODAY SCREEN

The Today screen (desktop) appears when the mobile computer is turned on.
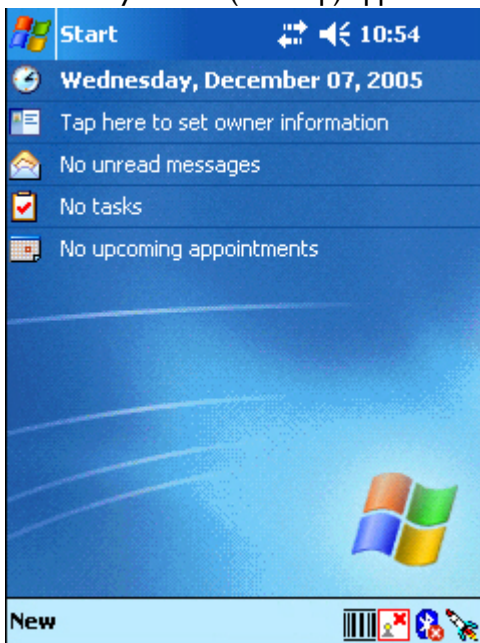
Alternatively, you may tap the Windows logo or the **Start** button on the top-left corner of the screen, and then select **Today**.

Note: To customize the Today screen, go to Start > Settings > Personal tab > Today. In the Items tab, [Today timeout] refers to the amount of hours of inactivity for the Today screen to show up automatically.

2.1.2 NAVIGATION BAR

The navigation bar is at the top of the **Today** screen, which consists of the **Start** button and a number of status icons.

OPTIONS	DESCRIPTION	
Start button	Tap to run a program or configure settings. ▸ Start menu: list up to 7 programs ▸ Recent programs: list up to 5 programs ▸ Provides access to available programs in the directory: My Device\ Windows\Start Menu\Programs ▸ Provides access to system settings	
Status icons	▸ Connectivity	Tap to access settings of connections. Turn on flight mode/Turn off flight mode when wireless power is enabled
	▸ Volume	Tap to adjust volume or mute the mobile computer.
	▸ Time and Next Appointment	Tap to view next appointment and battery status.
Close button	Tap to close an active window.	

Note: To configure the Start menu, go to Start > Settings > Personal tab and select Menus.

2.1.3 TASKBAR

The taskbar is at the bottom of the **Today** screen, where the **New** button allows the creation of different jobs.
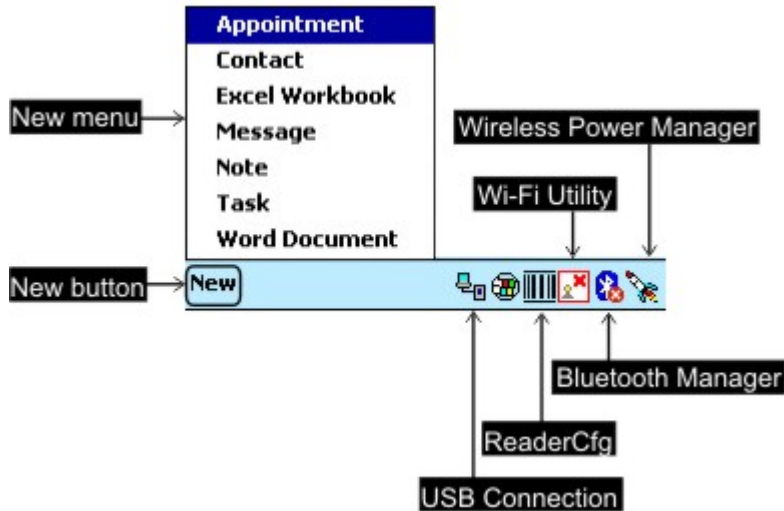
When in an application, part of the taskbar will become the Command Bar which contains buttons and menus for performing tasks in the program.
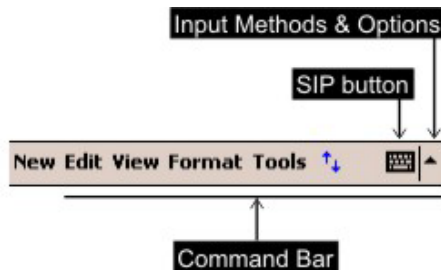
Note: To configure the New menu, go to Start > Settings > Personal tab and select Menus.

UNDERSTANDING THE BUTTONS OR ICONS ON THE TASKBAR

From the **Today** screen, the taskbar also displays shortcuts to the following items.

BUTTON	SHORTCUT TO	MEANING
NEW	**New menu**	Tap to create a job
	Wireless Power Manager	Tap to run Wireless Power Manager. Options include WLAN Power and Bluetooth Power.

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	Bluetooth Manager	Bluetooth Power is turned off.
		Bluetooth Power is turned on. Tap to run Bluetooth Manager.
	Wi-Fi Utility	WLAN Power is turned off (driver not loaded).
		WLAN Power is turned on. Tap to run Wi-Fi Utility.
		WLAN connected.
	Reader Cfg	Tap to configure the barcode or RFID reader. Options include BC Reader and RFID Reader (if installed).
	Connected to USB	The mobile computer is connected to a computer via its USB cradle. Tap to configure USB connection.

Note: If no Wi-Fi button, go to Start > Programs and run the program Swluce. If no barcode button, go to Start > Programs and run the program ReaderCfg.

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. Pocket Word, Pocket Excel, CipherLab's Application Generator, etc.
▶ Tap or write using SIP (Soft Input Panel)
▶ Draw in some applications, e.g. Note and Pocket Word

USING THE SOFT INPUT PANEL (SIP)

Tap the SIP button on the Command Bar to select a SIP mode or hide the input panel. To select a SIP mode, tap the arrow next to the SIP button.
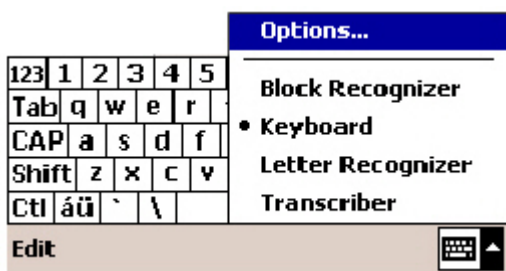
In each mode, the characters appear as typed text on the screen.

OPTIONS	DESCRIPTION
Block Recognizer	To write in the input box.
Keyboard	To type using the virtual keyboard.
Letter Recognizer	To write in the input box.
Transcriber	To write freely on the screen in applications, such as Notes, Pocket Word, etc.

2.2 FINDING OUT THE CAPABILITIES OF YOUR MOBILE COMPUTER

1) Go to **Start** > **Settings** > **System** tab and select **System Console** to obtain essential system information.

2) In the System Information tab, select an item to view from the drop-down menu.

Note: Not all the Bluetooth services listed in the system information are supported currently.

DEVICE CONFIGURATION CODE

The device configuration of 9500PPC Mobile Computer is displayed in 4 digits: xxxx

Take the screenshot of System Properties above for example. Its device configuration is "3410", which means the 27-key mobile computer has equipped with the following parts:

▸ A scan engine that employs 2D imager
▸ 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 4= Long Range Laser scan engine 5= Extra Long Range Laser scan engine
2nd digit	Wireless module	4= Bluetooth + 802.11b 5= Bluetooth only
3rd digit	RFID module	0= none 1= RFID reader
4th digit	Reserved	---

2.3 USING ACTIVESYNC

ActiveSync is used to synchronize information between the 9500PPC Mobile Computer and your desktop computer, to install programs on the mobile computer, and to backup and restore the mobile computer.

▶   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.

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

1)   Run the Microsoft ActiveSync program on your desktop computer.

2)   On the File menu, click [Connection Settings]. If you want to skip settings, click [Get Connected] instead.
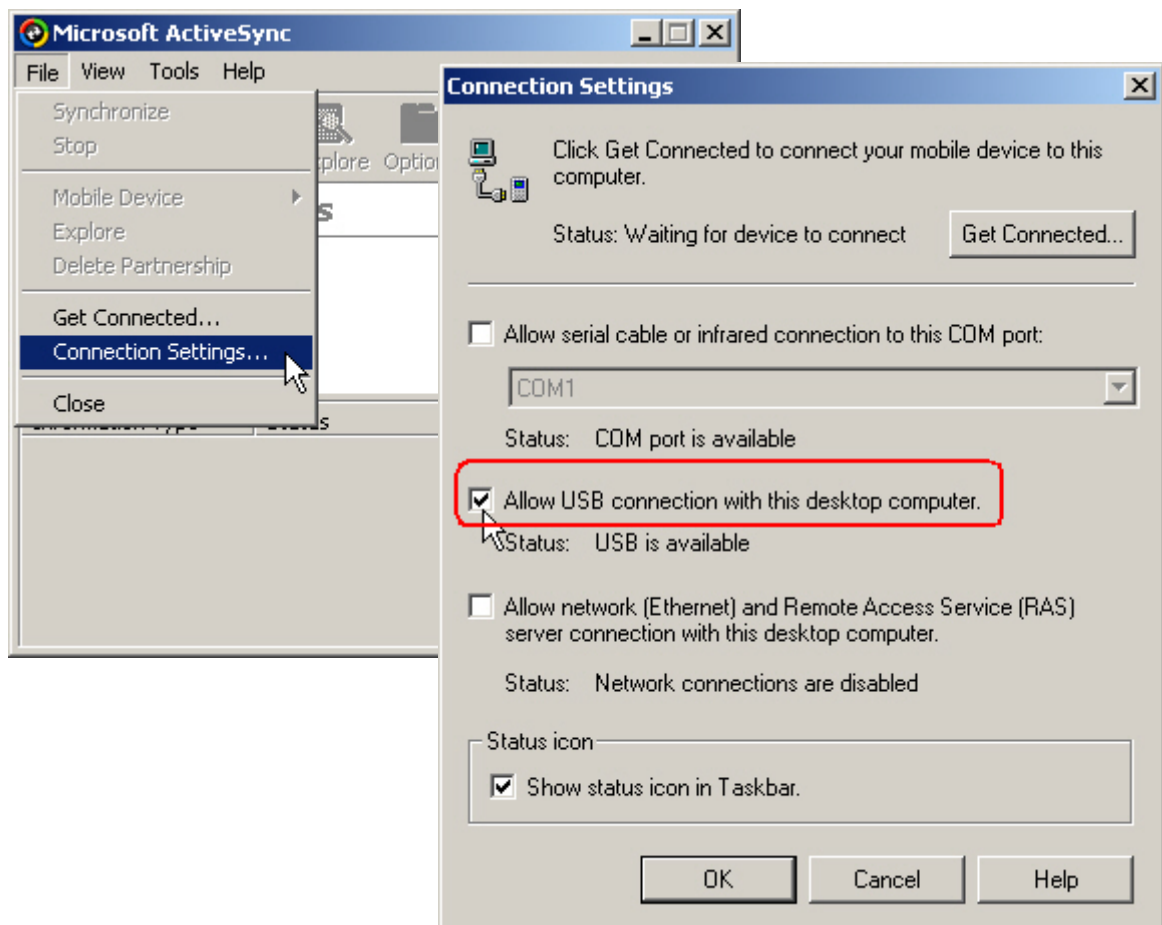
3)   Click to select the USB connection check box as shown above.

4)   Click [OK] to go back to step 2. Click [Get Connected] now.

2.3.1 SYNCHRONIZATION WITH YOUR COMPUTER

1) Follow these instructions for initial ActiveSync operation:

   ▶ Connect the USB cable from the cradle 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: For ActiveSync via Bluetooth, refer to the Bluetooth Manager.

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. 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 un-install a program that is designed to be used on a mobile device.
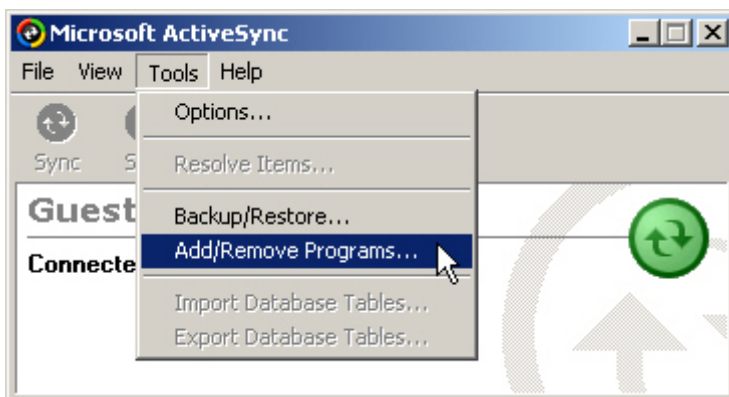
ALTERNATIVE TO INSTALL NEW PROGRAMS (COPY & PASTE)

Alternatively, you may install a new program manually.

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

6) Click the Explorer button from the toolbar.

7) Navigate to the target folder, e.g. the Programs folder (**My Device\Windows\Start Menu\Programs**), depending on where you wish to access the program.

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

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

10) Back to the target folder in step 3. Right-click anywhere blank and select [Paste] from the pop-up menu.

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

ALTERNATIVE TO REMOVE PROGRAMS

When you install a program, it will appear in the list of installed programs as shown below. If a user program is no longer desired, you may remove it from the system.

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

1) Go to **Start** > **Settings** > **System** tab 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.

   If the program files are still in use, you need to stop the program first.

   Go to **Start** > **Settings** > **System** tab and select **Memory**. Check the list in the **Running Programs** tab.

Note: You may need to remove programs in order to free the storage memory.

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.

The backup file contains all files, databases, personal information manager (PIM) information as well as SDRAM-based programs.
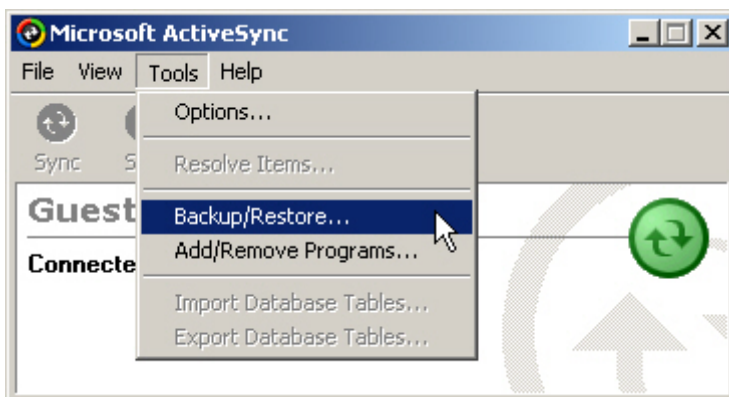
Note: Alternatively, you can restore data using the **Backup Utility** program if a backup job is carried out periodically.

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.

If you wish to quick launch a new program, add it to the **Start Menu** directly or add it to the directory **My Device\Windows\Start Menu**. To add a new program or subfolder to the Start menu or Programs folder, you can either use **File Explorer** or **ActiveSync**.

▸ File 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].

COSTOMIZING THE START MENU

1) Go to **Start** > **Settings** > **Personal** tab and select **Menus**. In the **Start Menu** tab, select from the program list to add any desired program to the Start menu. Because the Start menu allows seven programs at maximum, you may need to clear some check boxes before you can select new programs.
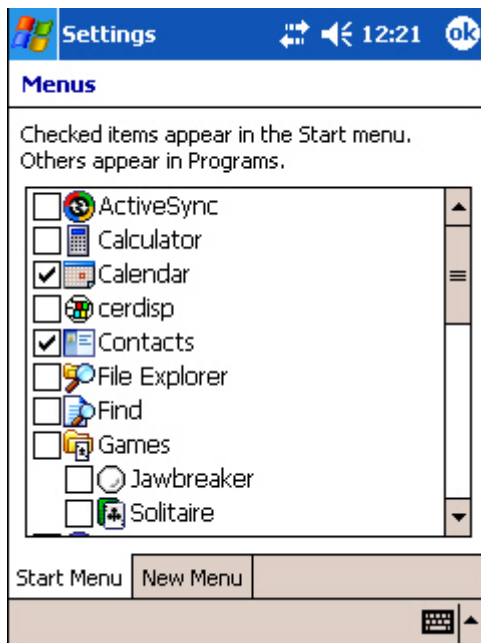
2) Tap OK to save new settings. The rest on the list will appear in **Start** > **Programs**.

3)   Tap the **Start** button to verify if the program appears in the Start menu.

Note: The Start menu can list seven programs at most.

USING FILE EXPLORER TO ADD A PROGRAM TO START MENU

1)   Go to **Start** > **Programs** and select **File Explorer**. Alternatively, you can press the [Task] key on the keypad to launch **File Explorer**.
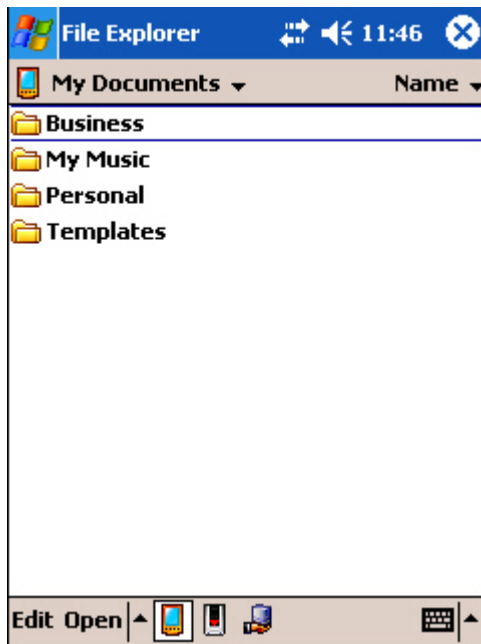
2)   Navigate through file folders to find the program you desire.

3)   Tap and hold the program to select [Copy] from the pop-up menu. (right below)
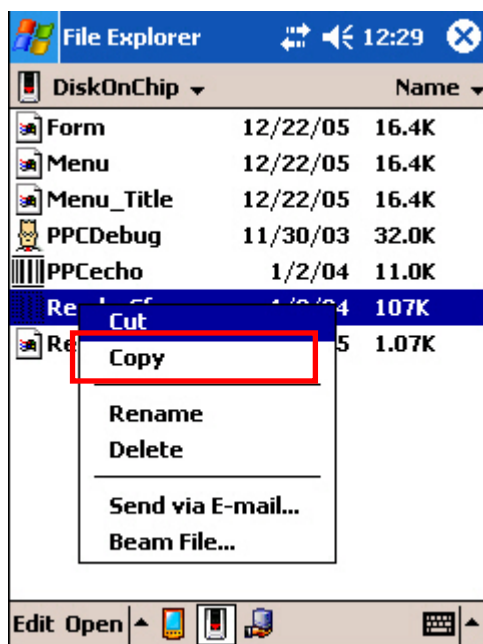
4) Navigate to the Programs folder (**My Device\Windows\Start Menu\Programs**).
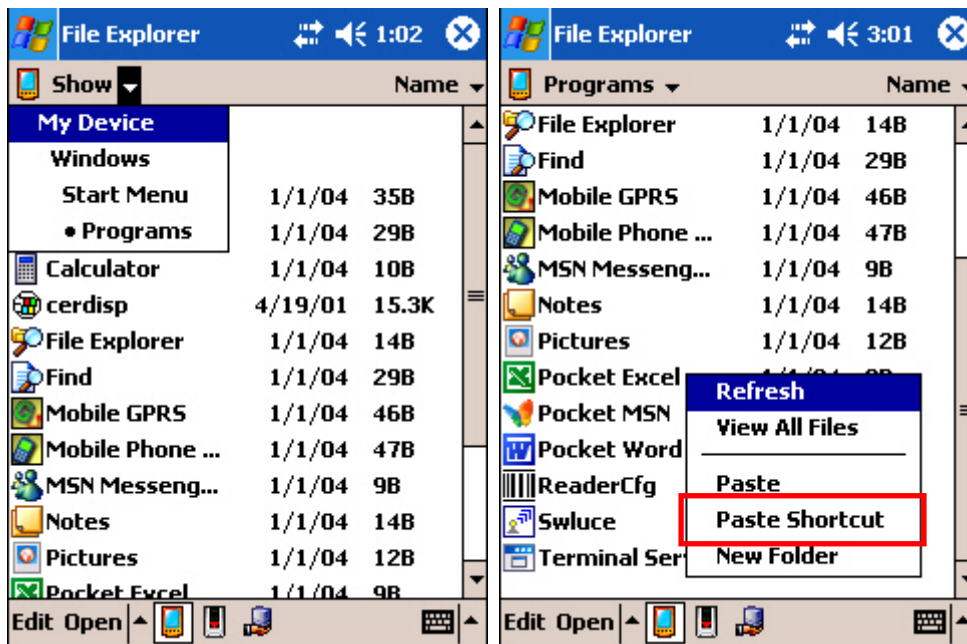
5) Tap and hold anywhere blank on the screen to select [Paste Shortcut] from the pop-up menu. (right above) The new program will be added to the Programs folder.

6) Go to **Start** > **Settings** > **Personal** tab and select **Menus**. 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.
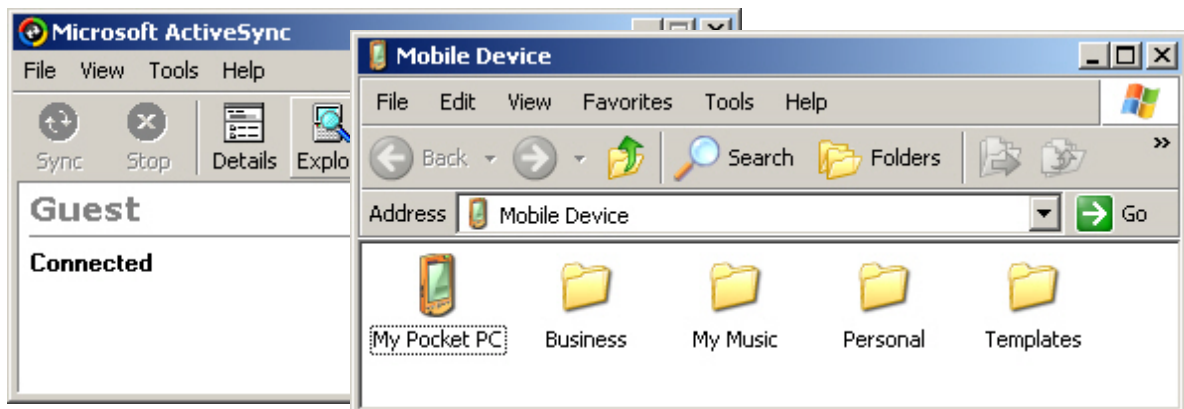
3) Navigate through file folders to find the program you desire. (right above)

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 Pocket PC\Windows\Start Menu\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** > **Settings** > **Personal** tab and select **Menus**. 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 FILE EXPLORER TO ADD A NEW FOLDER

1) Go to **Start** > **Programs** and select **File Explorer**. Alternatively, you can press the [Task] key on the keypad to launch **File 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 LOCATE A FILE

START > PROGRAMS AND TAP THE FIND ICON

1) Go to **Start** > **Programs** and select **Find** to locate a file or an item.

2) In the Find box, enter the file name, word, or other information you want to search for.

   If you have looked for this item before, tap the drop-down menu and select it.

3) In the Type box, select a data type to help narrow your search.

   If the data type of your file is other than listed, you may try [Larger than 64 KB].

   However, if such file is less than 64 KB, it will not be searchable.

4) Tap [Go]. It will start to search through My Documents folder and its subfolders, as well as DiskOnChip.

5) In the Results list, tap the item you want to open.

   In the sample screen below, the first file is stored in My Documents folder, and the second one is in DiskOnChip as indicated by its icon.
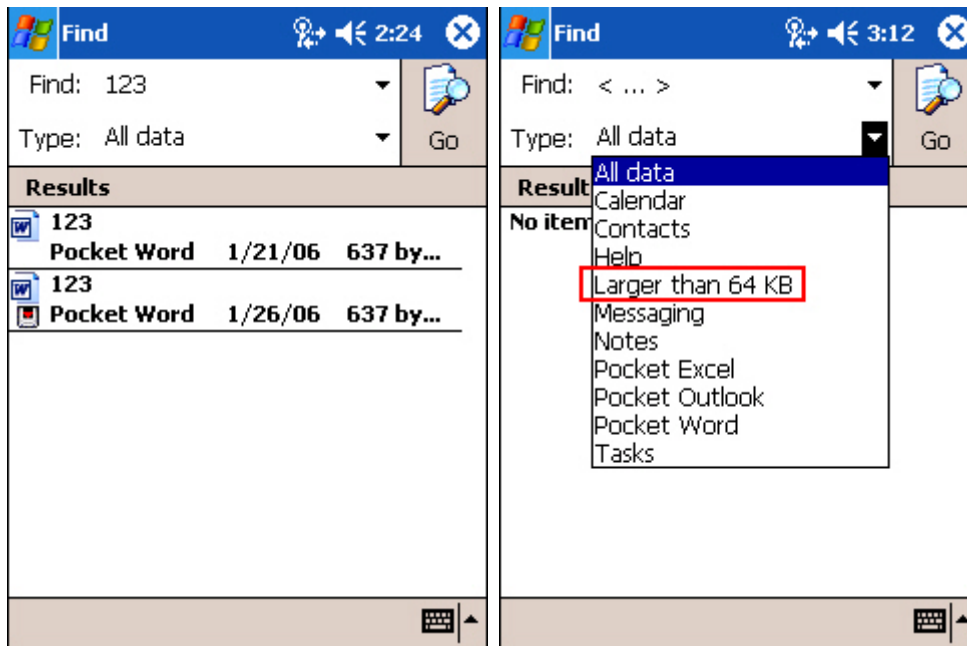
## USING FILE EXPLORER TO LOCATE A FILE OR AN ITEM

1) Go to **Start** > **Programs** and select **File Explorer**. Alternatively, you can press the Task key on the keypad to quick launch **File Explorer**.
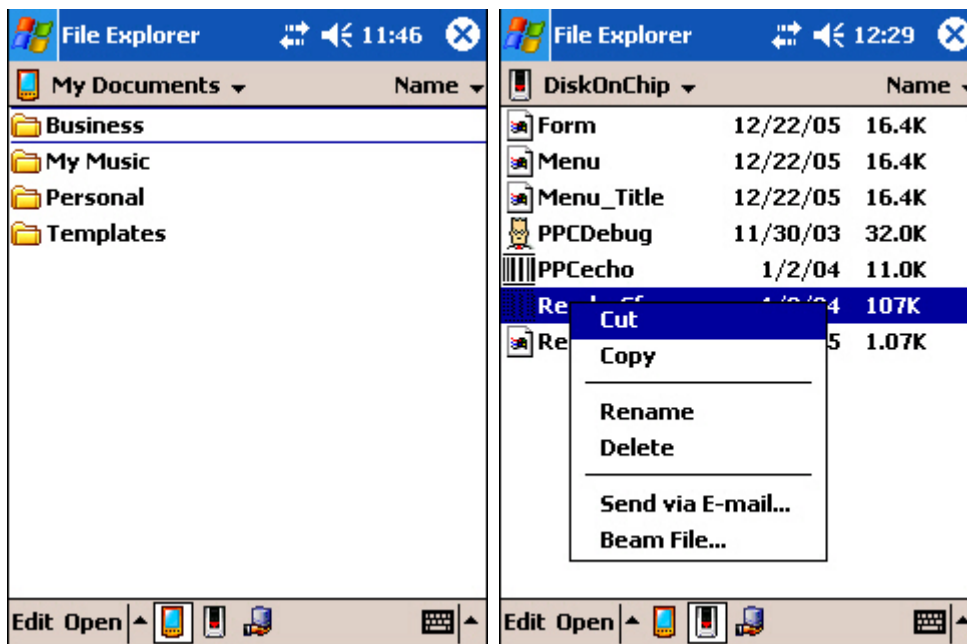
2) Tap the folder list, which is labeled My Documents by default, and then the folder that you want to view, for example, DiskOnChip. (right above)

3) To open an item, tap it.

   To quickly cut, copy, rename, delete, or move an item, tap and hold (right above).

   To select multiple items, tap and drag.

2.4.4 SWITCH AMONG PROGRAMS

To run a desired program or switch among programs, tap **Start** and select a program. Alternatively, you may go to **Start** > **Settings** > **System** tab and select **Memory**. In the Running Programs tab, select a program that you want to use and tap [Activate] now.

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

2.4.5 CLOSE OR 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.

▶ Tap ⊗ on the navigation bar to close an active window, a dialog box, or a running application.

   Be aware that every time when you tap Close, it actually does not exit the program. The program is still running on the background, and therefore, the memory is not freed.

▶ Tap 🆗 on the navigation bar to save the current settings and exit the application (or minimize the window in some applications).

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

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.

START > SETTINGS > SYSTEM TAB AND TAP THE MEMORY ICON

Go to **Start** > **Settings** > **System** tab and select **Memory**. In the Running Programs tab, select a program that you do not want to use any more and tap [Stop]. Alternatively, you may select to stop all the programs that are running.

2.5 SYSTEM RESET

Reset the mobile computer when it stops responding to input.

▶ Software Reset: Simply press the [Reset] button.
▶ Hardware Reset: Press the [Reset] button and the [Power] key 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 the [Power] key 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. Alternatively, you can restore data using the **Backup Utility** program if a backup job is carried out periodically.

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

PERSONALIZING THE 9500PPC 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.

IN THIS CHAPTER

3.1 CHANGING PERSONAL SETTINGS
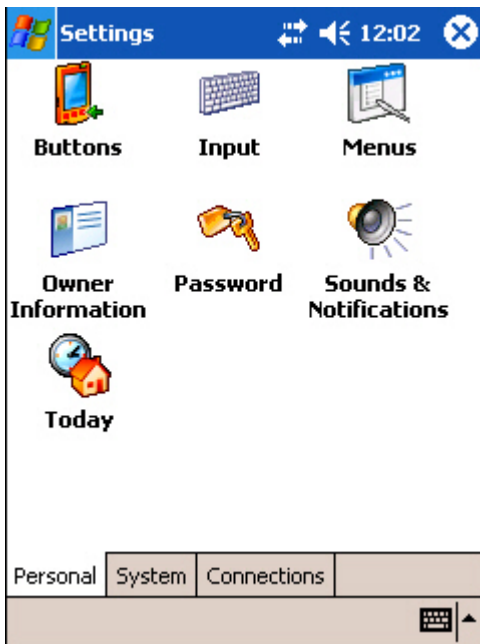
Go to **Start** > **Settings** > **Personal** tab. Here you may set up your personal profile that includes personal information, preferred configuration settings, etc.

ITEMS	DESCRIPTION
Buttons	▶ Program Buttons tab: Customize [Button 1], the [Task] key on the physical keypad of your mobile computer, to open your most used program. By default, pressing the [Task] key will invoke File Explorer.

	▸ Up/Down Control tab: Adjust the delay and repeat rates of the Up/Down control scrolls.
Input	▸ Input Method tab: Customize the input method via soft input panel (SIP). The same options can be accessed by tapping the arrow next to the SIP button and then Options. ▸ Word Completion tab: Make use of this feature to facilitate input. ▸ Options tab: More general features. Voice recording is not applicable.
Menus	▸ Start Menu tab: Select program shortcuts that will appear on the Start menu. ▸ New Menu tab: Select items that will appear on the New button menu when it is turned on.
Owner Information	▸ Identification/Notes tab: Enter your contact information or notes. ▸ Options tab: Select to display your identification information or notes when it is turned on.
Password	▸ Password tab: Apply password protection to limit access to the mobile computer. ▸ Hint tab: Enter a password hint as a reminder.
Sounds & Notifications	▸ Sounds tab: Configure sounds for specific actions, events, programs, etc. ▸ Notifications tab: Select to play sounds as notifications for some events.
Today	▸ Appearance tab: Customize the theme and background of the Today screen. ▸ Items tab: Select items that will appear on the Today screen, and configure Today timeout.

3.2 CHANGING SYSTEM SETTINGS

Go to **Start** > **Settings** > **System** tab. Here you may verify, and sometimes make changes to, system parameters. Tap an icon to configure system settings by category.

ITEMS	DESCRIPTION
About	▶ Version tab: It displays information of OS software, processor, etc. ▶ Device ID tab: You may enter a name and description for identifying the mobile computer. ▶ Copyrights tab: It displays important statements on copyrights.
Backlight	▶ Battery Power tab: You may configure when to turn on/off the backlight when on battery power. ▶ External Power tab: You may configure when to turn on/off the backlight when on external power (the mobile computer being seated in the cradle for charging).
BackLight Control	▶ You may use the slider to adjust the brightness of the LCD backlight. In addition, you may select to auto adjust it by the battery's capacity.
Certificates	▶ Personal tab: You may use personal certificates to establish your identity when logging onto a secured network. ▶ Root tab: You may use root certificates to establish the identity of other computers such as servers.
Clock & Alarms	▶ Time tab: You may have at most two time zones, one is Home-based system time, and the other can be the place you visit often. ▶ Alarms tab: You may set up at most three alarms to wake you up or as a reminder.
Memory	▶ Main tab: You may use the slider to adjust the SDRAM allocation. ▶ Storage Card tab: You may view the memory occupation of DiskOnChip (flash-based) or any storage card. ▶ Running Programs tab: You may activate or stop any program from the list.
Power	▶ Battery tab: You may view the current charge of main and backup batteries. ▶ Wireless tab: You may configure to turn on/off the wireless signals individually. ▶ Advanced tab: You may configure to turn off the device when it is idle for a specific period of time, either on battery or external power.
Regional Settings	▶ Region tab: You may customize the appearance and formatting to your geographic region. ▶ Number tab: You may further customize the number formats. ▶ Currency tab: You may further customize the currency formats. ▶ Time tab: You may further customize the time format. ▶ Date tab: You may further customize the date format.
Remove Programs	▶ You may remove programs that are stored in SDRAM.

Screen	▶ Alignment tab: You may perform screen alignment. ▶ Clear Type tab: You may apply Clear Type fonts. ▶ Text Size tab: You may use the slider to adjust the text size.
System Console	▶ System Information tab: It displays important system information, such as software version, supported Bluetooth profiles, etc. ▶ Power Manager tab: You may change the CPU speed and apply Key Lock to prevent unintended operation. ▶ Autorun tab: You may configure the autorun feature of SD/MMC card.

3.3 CHANGING CONNECTION SETTINGS
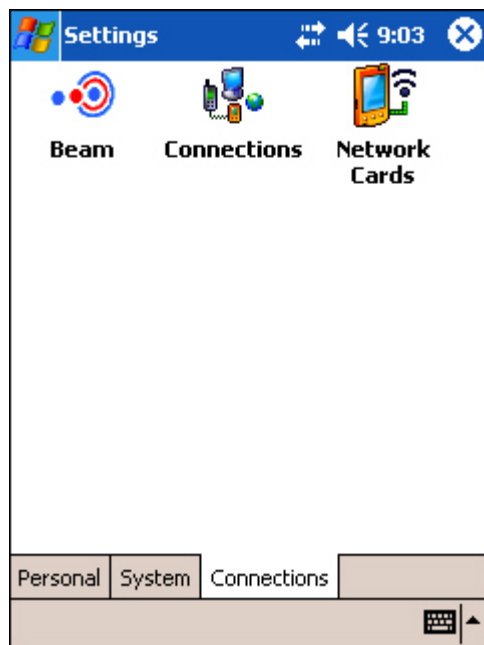
Go to **Start** > **Settings** > **Connections** tab. Here you may verify or manually set up connections. Tap an icon to configure network settings by category.

ITEMS	DESCRIPTION
Beam	▶ It is not applicable because the mobile computer is not equipped with any IrDA port.
Connections	▶ Tasks tab: You may configure two groups of connections settings, My ISP and My Work Network. ▶ Advanced tab: More options.
Network Cards	▶ Wireless tab (if Wi-Fi power is enabled): You may configure wireless networks. ▶ Network Adapters tab: You may configure network adapters.

Chapter 4

USING APPLICATIONS

The 9500PPC Mobile Computer provides several utilities and key applications which are made accessible from the **Today** screen or the taskbar.

▸ **Wireless Power Manager** lets you determine whether the power is supplied to the Bluetooth 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.

▸ **Wi-Fi Utility** lets you configure WLAN settings and perform a site survey.

▸ **ReaderCfg** lets you manage the barcode or RFID reader.

▸ **Backup Utility** lets you manipulate the way to backup programs and data.

IN THIS CHAPTER

4.1 WIRELESS POWER MANAGER

Wireless Power Manager is a control panel applet, which allows you to choose and enable the wireless connectivity, WLAN (802.11b) and/or Bluetooth. That is, the power to the wireless module is turned on and the software driver is installed. After the initialization process, run **Bluetooth Manager** or **Wi-Fi Utility** for the use of Bluetooth services and 802.11b connectivity respectively. However, when both Bluetooth and 802.11b are enabled on battery power, the main battery charge will drop down substantially.

For up-to-date status information on connections, tap the Connectivity button at the top of the **Today** screen.

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.

Tap on the taskbar and select [WLAN Power] or [Bluetooth Power]. If it is ticked, the specific wireless connectivity is enabled. Otherwise, it is disabled.
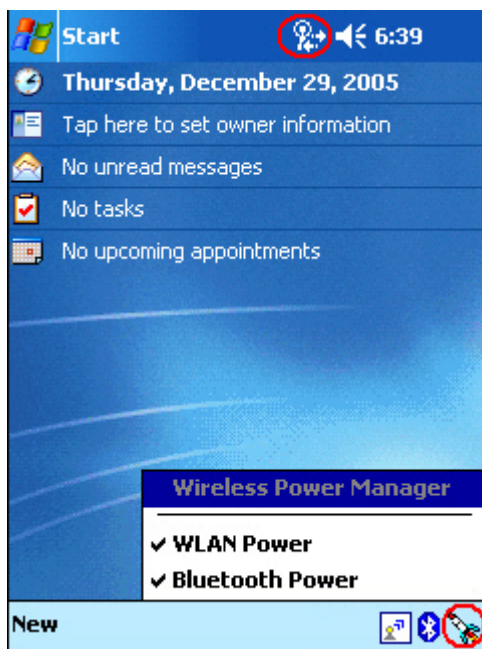
START > SETTINGS > SYSTEM TAB AND TAP THE POWER ICON

It results in the same behavior as you go to **Start** > **Settings** > **System** tab and select **Power**.

In the Wireless tab, you may clear the check box of Bluetooth and/or 802.11b to disable the wireless connectivity. To enable it again, select any of the check boxes and turn on the wireless signals.

Note: The wireless power settings are provided only when the wireless power is turned on through the Wireless Power Manager.

4.2.1 CONNECTIVITY STATUS

For the **Connectivity** button, its icon may change to indicate different status. However, no specific icon is used to indicate whether Bluetooth is enabled or not. Instead, you will need to check the **Bluetooth** button on the taskbar.

ICON	MEANING		
	USB Connected	**Bluetooth enabled**	**Wi-Fi enabled**
	Yes	N/A	No
	No	N/A	No
	Depends	N/A	Yes

4.2.2 FLIGHT MODE

This flight mode setting is provided only when the wireless power is turned on through **Wireless Power Manager**.

TURN ON FLIGHT MODE

When the flight mode is turned on, it immediately stops the use any wireless connections, Bluetooth and Wi-Fi, which could possibly interfere with other equipment especially when on an airplane or in a hospital. However, you will find that the wireless power is still enabled (ticked) in **Wireless Power Manager**.

Tap the **Connectivity** button, and then tap **Turn on flight mode**. Wireless signals will be stopped temporarily and can be recovered later by tapping **Turn off flight mode**.
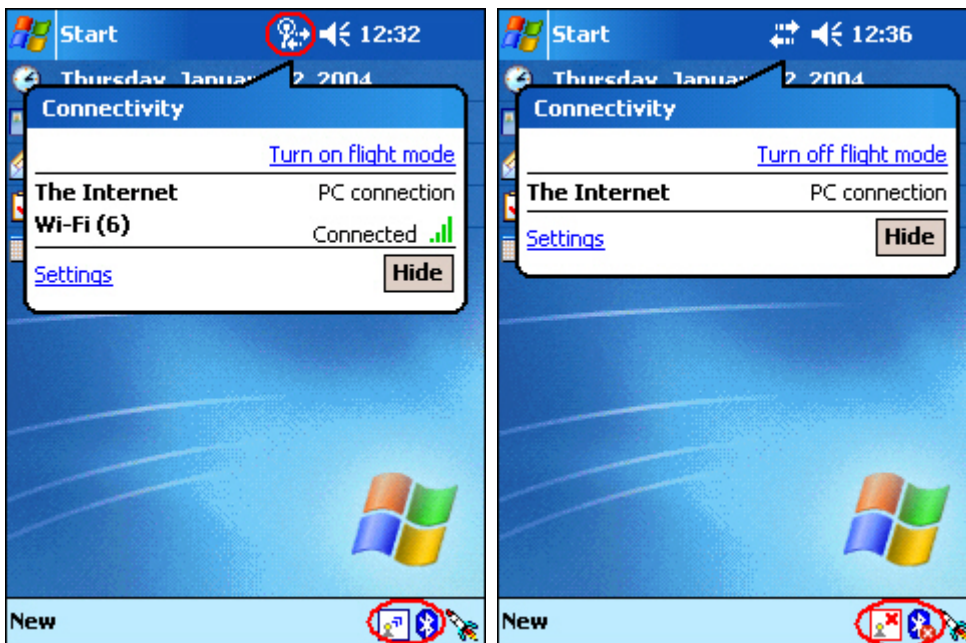
It results in the same behavior as you go to **Start** > **Settings** > **System** tab, select **Power**, and in the Wireless tab select **Wireless signals off (Flight mode)**.

TURN OFF FLIGHT MODE

Tap the **Connectivity** button, and then tap **Turn off flight mode** to restart the wireless connection.

It results in the same behavior as you go to **Start** > **Settings** > **System** tab, select **Power**, and in the Wireless tab select **Wireless signals on**.

4.2 BLUETOOTH MANAGER

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

When connecting two Bluetooth-enabled devices, one must discover the other first, and then a passkey (or link key) is requested for pairing (or bonding). After pairing, a relationship is created for quick connect in the future. Unless you unpair these two devices, there is no need to enter a passkey every time they connect.

In order to successfully set up the Bluetooth connection between a Bluetooth device and the mobile computer, you must make sure that:

▶ The matching Bluetooth services are configured correctly on the Bluetooth device, such as availability (Startup Automatically or Manually) and Secure Connection.
▶ The Bluetooth power is enabled both on both devices.
▶ The Bluetooth connection is initiated either by the Bluetooth device or the mobile computer itself. For some Bluetooth Serial Port application, such as ActiveSync, the connection must be initiated from the mobile computer.

4.2.1 BLUETOOTH PROFILES SUPPORTED

The supported Bluetooth profiles are:

▶ Generic Object Exchange Profile (GOEP)
▶ Serial Port Profile (SPP)
▶ Object Push Profile (OPP)
▶ File Transfer Profile (FTP)
▶ Dial-Up Networking Profile (DUN)
▶ Synchronization Profile (SP)

Note: The "Serial Port on COM8" is registered as a server port on the mobile computer by default, and can be accessed only when the connection is initiated by the computer.

9500PPC AS A CLIENT

The mobile computer acts as a Client and connects to another Bluetooth device, e.g. your computer, for available services.

The mobile computer is capable of the following tasks:

▶ Synchronize with your computer by using ActiveSync via Bluetooth.
▶ Send a PIM item, such as a contact, to your computer by using Beam Contact.
▶ Send a file to your computer by using Beam File.
▶ Receive a PIM item from your computer and store it in associated folder.
▶ Receive a file or message from your computer and store it in My Documents folder.

9500PPC AS A SERVER

The mobile computer acts as a Server that provides services to another Bluetooth device.

For example, your computer is capable of the following tasks after having established a connection with the mobile computer:

▸ Connect to COM8 on the mobile computer for a serial link. (Serial Port on COM8)

▸ Send a PIM item to the mobile computer. (OBEX Object Push service)

▸ Send a file to the mobile computer. (FTP service)

▸ Receive a PIM item from the mobile computer where Beam Contact is used.

▸ Receive a file from the mobile computer where Beam File is used.

Note: A file or message received on the mobile computer will be stored in My Documents folder, while a contact will be stored in the Contacts folder.

DISCOVERING BLUETOOTH SERVICES

You may discover the services by clicking **My Bluetooth Places** on the desktop of your computer. Choose the following Bluetooth tasks: "Search for devices in range" or simply "View devices in range". Click **Entire Bluetooth Neighborhood** and select the device name representing the mobile computer. The services supported on the mobile computer will be displayed on the right pane of the window.
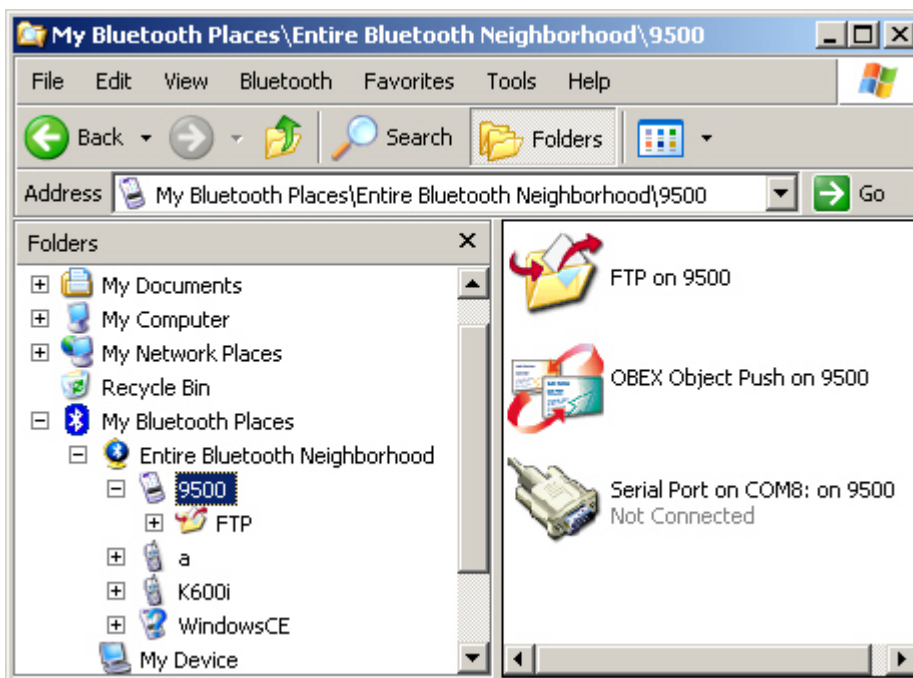
Note: For ActiveSync operation, make sure the Bluetooth Serial Port service is provided on your computer.

4.2.2 STARTING BLUETOOTH SERVICES

1) Tap the rocket button on the taskbar and select [Bluetooth Power].

2) When the Bluetooth button becomes , it indicates the Bluetooth power is turned on.

Note: In **Wireless Power Manager**, Bluetooth is enabled if it is ticked; otherwise, it is disabled. However, it may be interfered by the flight mode switching of Connectivity status.

3) Tap it to configure the Bluetooth settings.
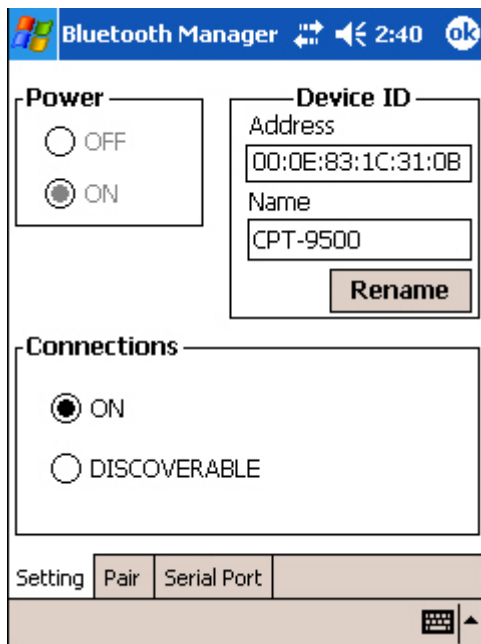
POWER
This option is unavailable for it is controlled by **Wireless Power Manager**. It simply indicates the Bluetooth power status.
DEVICE ID
You may rename the mobile computer. Usually a friendly Bluetooth name.
CONNECTIONS
▶   [ON] is selected by default, for making connection to a remote device. (9500PPC as Client)   ▶   [DISCOVERABLE] must be selected if you wish the mobile computer to be discovered by other devices. (9500PPC as Server)

Note: Select [DISCOVERABLE] if you want the mobile computer to provide the Bluetooth services to a remote device at the same time. Any Bluetooth-enabled devices will be able to discover the mobile computer within range.

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 **Wireless Power Manager** and turn off the power to the Bluetooth module.

▶ Tap the Connectivity button on the navigation bar and turn on Flight Mode to stop the Bluetooth signals.

4.2.3 DISCOVERING BLUETOOTH DEVICES

Here is the Bluetooth paired device list. It shows any previously paired devices.

SEARCH NEW DEVICES

If it is blank, tap [Search New Device] to discover any Bluetooth-enabled devices within range. It will generate a list of discovered devices. Select one device from the list. It will start the pairing procedure to establish a trusted relationship between the device and the mobile computer.

1) In the Pair tab (left below), tap [Search New Device] to discover your computer.

2) It then displays discovered devices (right below). Tap your computer.
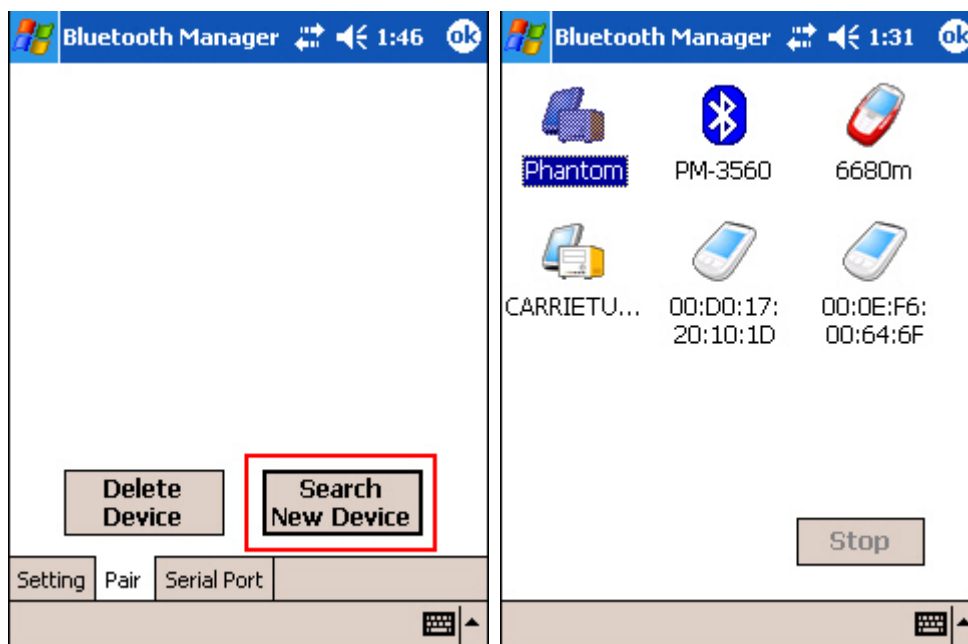
3) A Bluetooth status icon appears on the navigation bar, and a balloon pops up to ask permission.

Tap [Yes] to add your computer to the frequent device list.
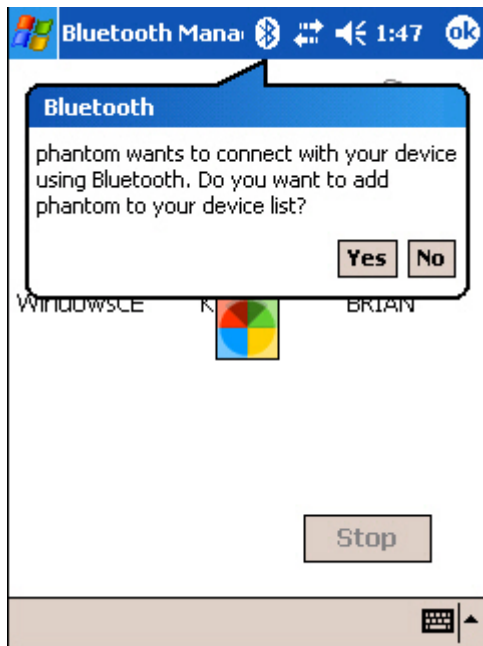
PAIR DEVICES

1) In the Passkey box, enter your pass key for pairing with your computer. Tap [Next].
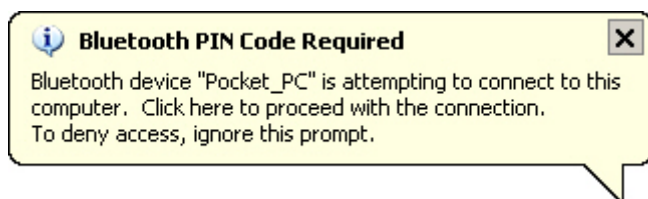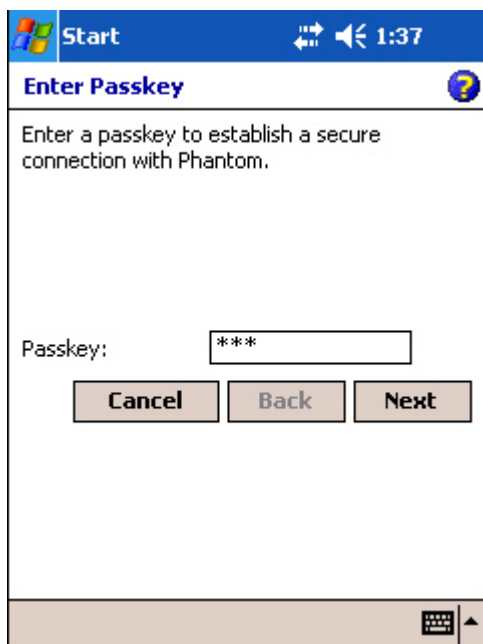
2) On your computer: a Bluetooth PIN Code Required balloon (right above) is displayed over the notification area when a connection is attempted if Secure Connection is enabled. Click the balloon to proceed.

3) On your computer: a Bluetooth PIN Code Request Dialog box is displayed. In the Bluetooth PIN Code box, enter your passkey as in Step 4. Tap [OK].
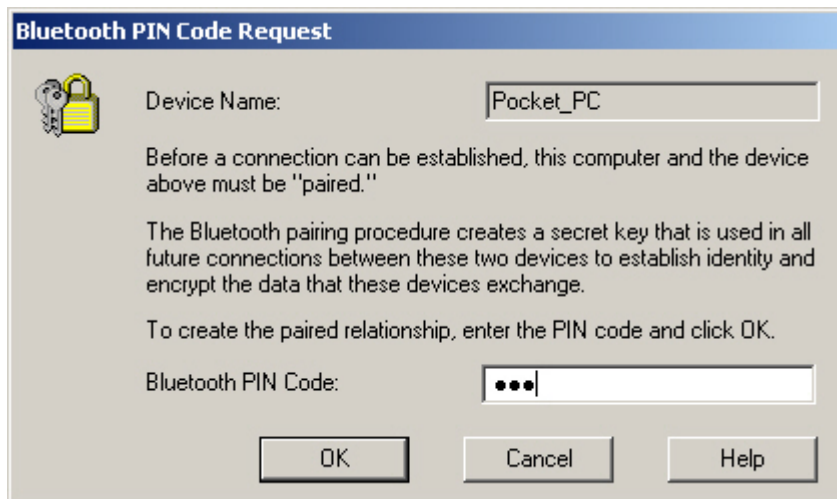
4) After pairing successfully, a dialog box (left below) prompts whether you want to register a new Bluetooth serial port for your computer. Tap [No] if you do not want to use the Bluetooth Serial Port service.

If you do not want to change the name of your computer, tap [Finish]. (right below)
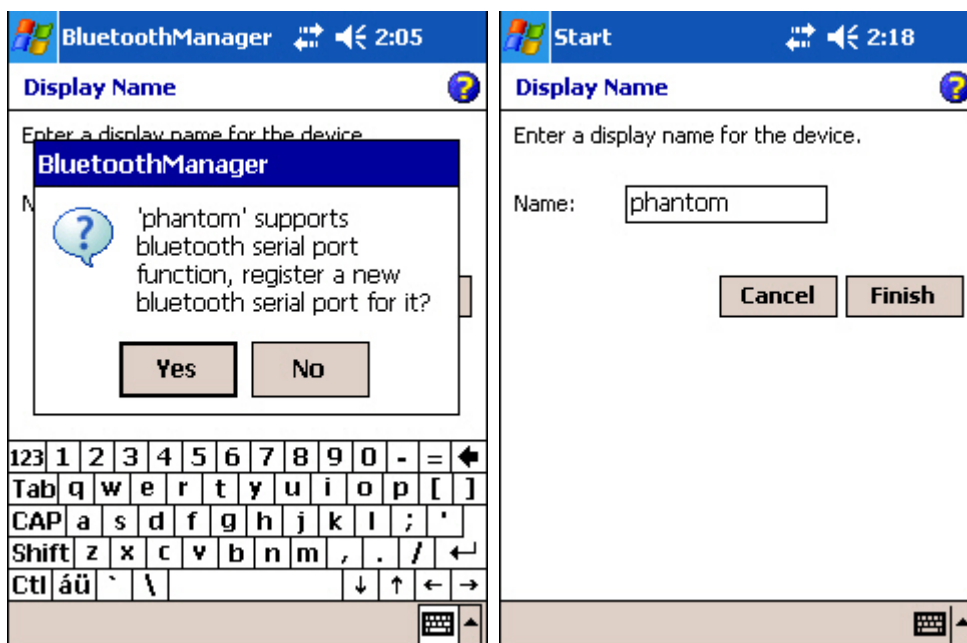
5) The Bluetooth connection has been set up successfully. Tap [ok] to close the window displaying the discovered devices. (left below)

6) The paired device will be displayed on the frequent device list. Tap [ok] to close the window. (right below)
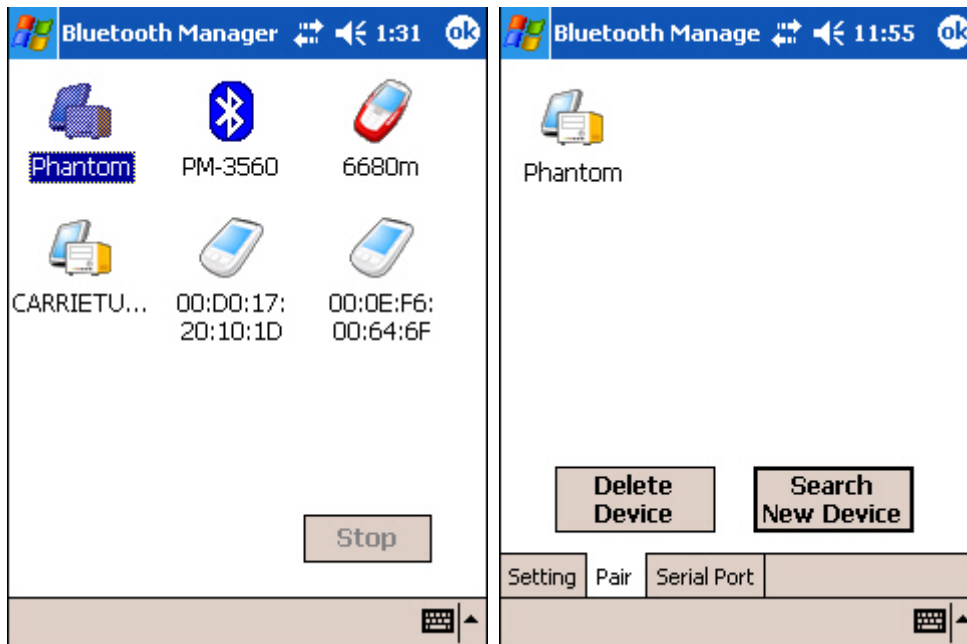
7) You may proceed to run the application program, e.g. ActiveSync that wishes to use the Bluetooth Serial Port service. If you want to use ActiveSync via Bluetooth, you must not register a COM port in step 4.

Note: In case timeout occurs during pairing, try again.

REGISTERED BLUETOOTH SERIAL PORT

At the last stage of establishing a Bluetooth connection, a dialog box prompts to ask whether you want to register a COM port for the Bluetooth Serial Port service. If you tap [No] to close that dialog box, you may still register a serial port in this tab.

▶ COM8 is registered as Server Port by default. The connection will be initiated by a remote device.

▶ Tap [Register New Client Port] for a connection initiated by the mobile computer.

▶ If you want to delete the registry of a server or client port, select a Port Name from the list and tap [Deregister Serial Port].

UNPAIR DEVICES

To unpair with a device from the paired device list, select the device and tap [Delete Device].

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

4.2.4 BLUETOOTH ACTIVESYNC

The connection of ActiveSync via Bluetooth must be initiated from the mobile computer.

Note: Microsoft ActiveSync must be installed on your computer.

1) Tap **Start** > **Programs** and select **ActiveSync**.

2) Tap [Tools] on the lower left corner and select [Connect via Bluetooth].
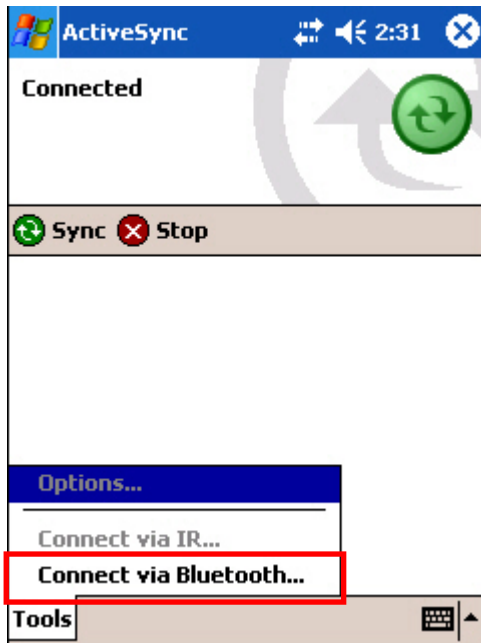
3) The [Options] command will be available now. Tap [Options]. (left below)
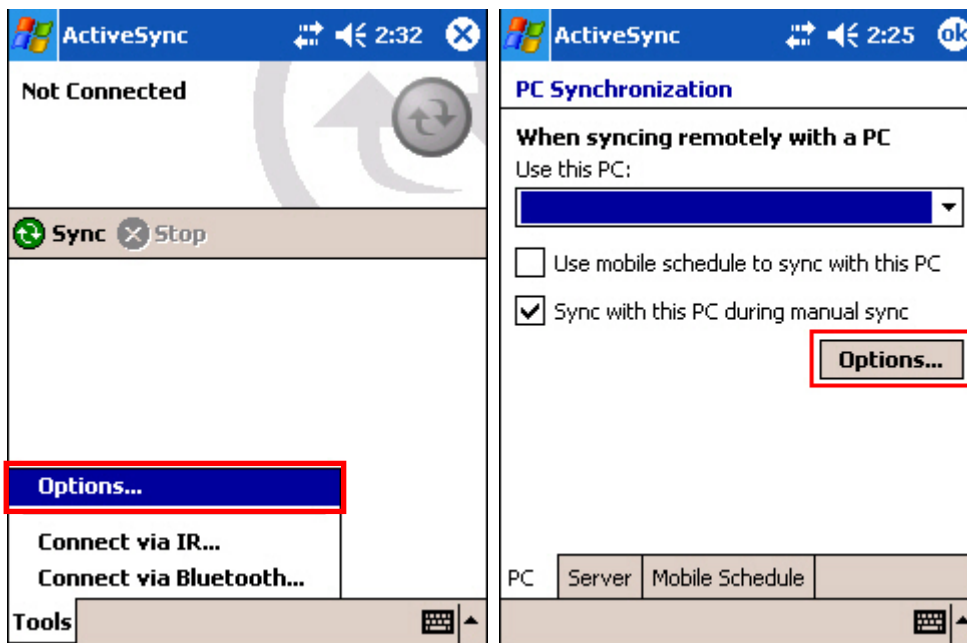
4) In the PC tab, tap [Options]. (right above)

5) Tap the drop-down menu to select [Bluetooth Sync] for PC synchronization. (left below)

6) Tap [ok].
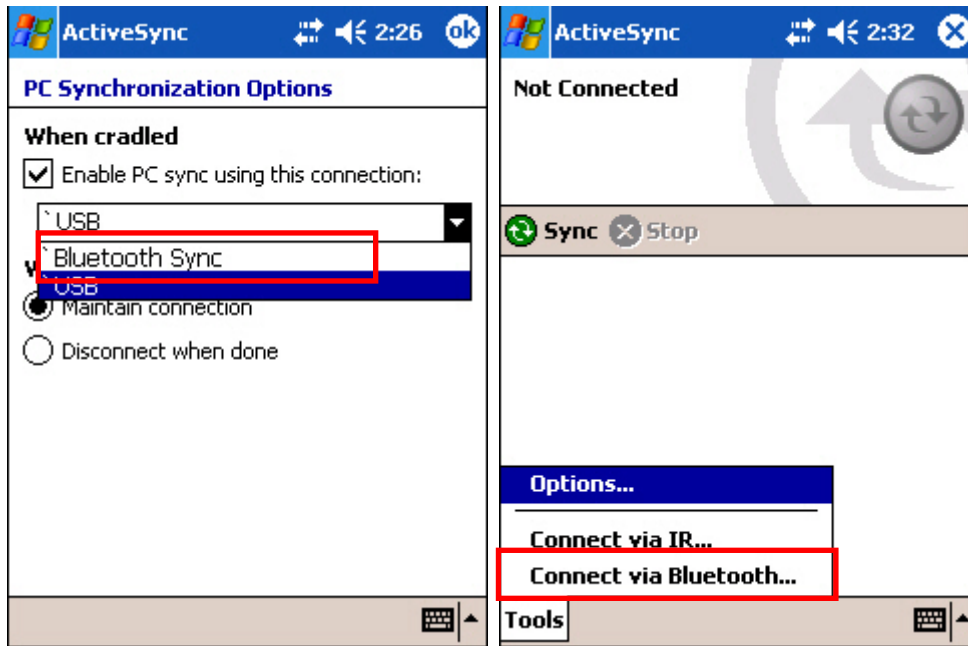
7) Tap [Connect via Bluetooth]. (right above)

8) Tap a remote device, for example your computer, as the selected device to connect. On your computer, click the Bluetooth Authorization Requested balloon when it pops up.

9) On your computer, the Bluetooth Service Authorization dialog box pops up. Click OK to allow this action.

10) It will display "Connected" when the Bluetooth connection with your computer is set up successfully.

COM PORT IN USE

In Microsoft ActiveSync, make sure the COM port it uses matches the one assigned to your Bluetooth serial port. Otherwise, the connection will fail.

▸ Microsoft ActiveSync on your computer (left below): **File** > **Connection Settings**

▸ Bluetooth software installed on your computer (right below): **Advanced Configuration** > **Local Services** tab
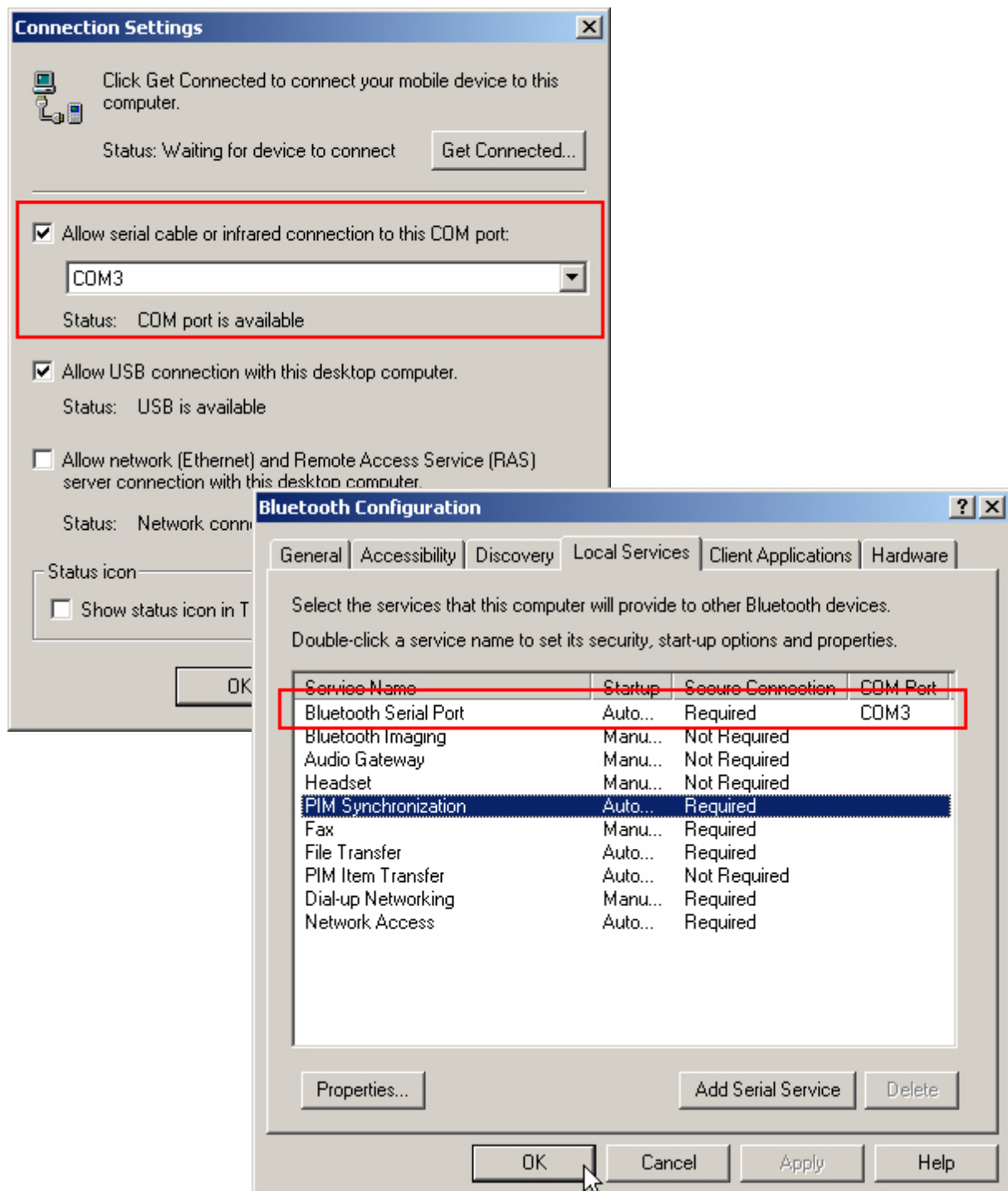
4.2.5 PIM ITEM TRANSFER

The mobile computer can send a PIM item to your desktop computer, such as a business card, contact, email, etc., and vice versa.

BEAM FILE ON 9500PPC

1) Tap **Wireless Power Manager** and select **Bluetooth Power** from the pop-up menu.

2) Tap the [Task] key to launch File Explorer. Navigate to a desired file.

3) Tap the file and select [Beam File] from the pop-up menu. (left below)
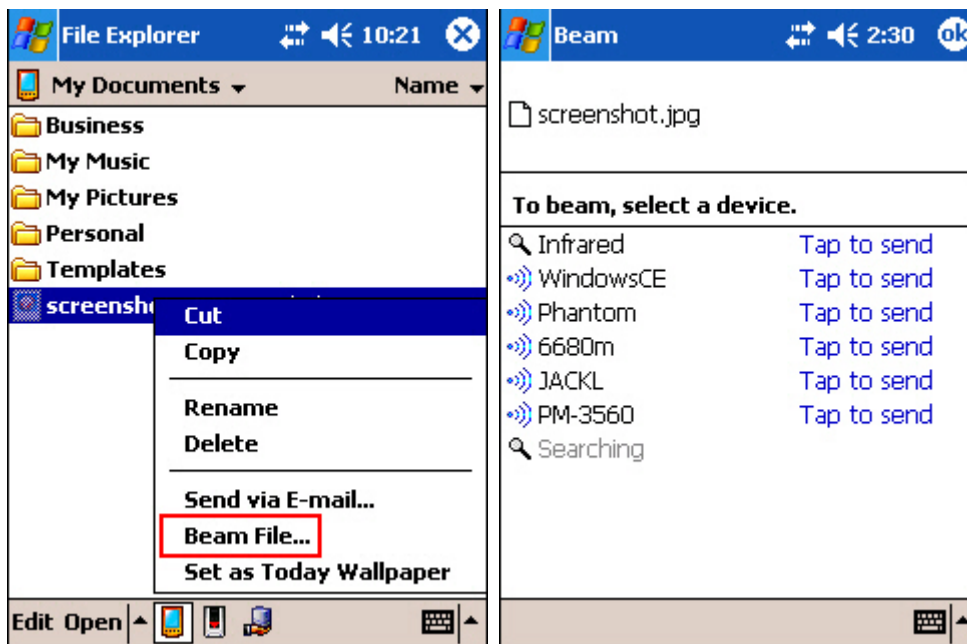
4) Tap your computer as the device to connect. (right above)

5) On your computer, a message indicated the data has been received successfully.

SEND A PIM ITEM FROM COMPUTER

1) In Microsoft Outlook on your computer, you can send a PIM item by selecting [Send To Bluetooth] > [CPT-9500] from the File menu.

2) This screen varies with the Bluetooth software installed on your computer. For example, some may refer to a functionality called [Push] or [Pull] from the toolbar of Microsoft Outlook.
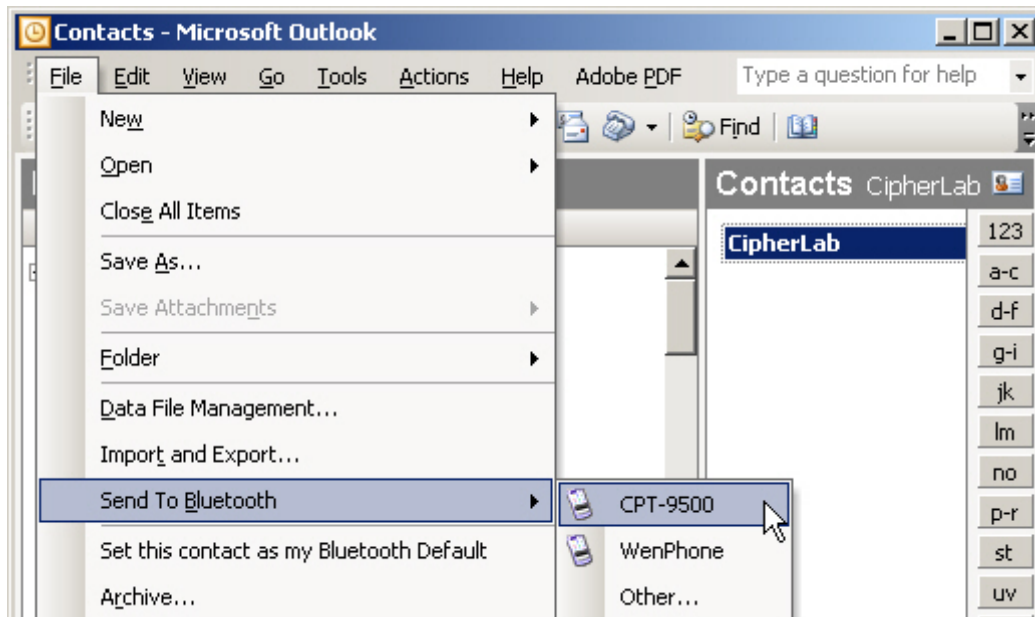
3) On 9500PPC, a Receiving Data balloon pops up to ask for your authorization. Tap [Yes] to save data.

▸ If the PIM item is an e-mail message, it will be saved in My Documents folder (**My Device** > **My Documents**). Tap the [Task] key to launch File Explorer and view data.

▸ If the PIM item is a contact, it will be saved in the Contacts folder.

SEND A FILE FROM COMPUTER

1) Navigate to a desired file on your computer.

2) Right-click the file and select [Send To] > [Bluetooth] > [CPT-9500] from the shortcut menu.
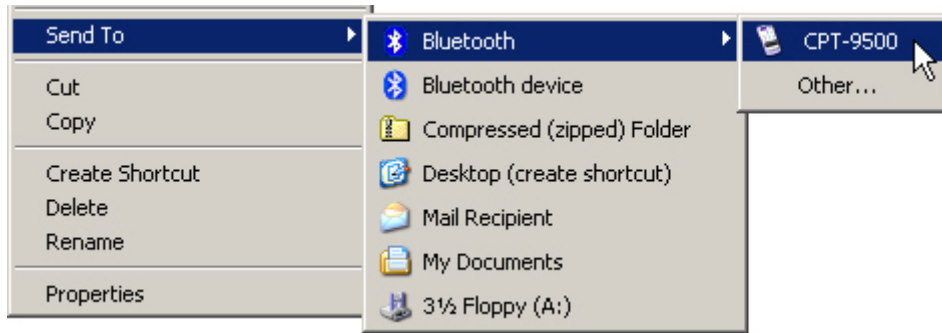
3) On 9500PPC, a Receiving Data balloon pops up to ask for your authorization. Tap [Yes] to save data.

The file will be saved in My Documents (**My Device** > **My Documents**). Tap the [Task] key to launch File Explorer and view data.

CONNECT TO SERIAL PORT (SERVER) FROM COMPUTER

By default, the mobile computer has COM 8 registered as a server port. It provides Bluetooth Serial Port service for a connection initiated by a remote device, such as your computer.

Note: The Bluetooth settings on your computer must have the Bluetooth Serial Port service listed on the Client Applications tab. Otherwise, the [Serial Port on COM8] on the mobile computer will not be found.

▸ Application programs on this computer that will use this service must be configured to use the Bluetooth Serial Port COM port.

▸ Determine the communications port used by this computer.

4.3 WI-FI UTILITY

Wi-Fi Utility is a simple tool that helps you configure WLAN settings and perform a site survey.

4.3.1 STARTING WI-FI NETWORKING

1) Tap the rocket button ![icon] on the taskbar and select [WLAN Power].

Note: In **Wireless Power Manager**, WLAN is enabled if it is ticked; otherwise, it is disabled. However, it may be interfered by the flight mode switching of Connectivity status.

2) When the Wi-Fi button ![icon] becomes ![icon], it indicates the WLAN power is turned on.

Note: If no Wi-Fi button, go to Start > Programs and run the program Swluce. The associated icon will appear on the taskbar again.

If you are connecting for the first time, wait for an antenna ![icon] to appear and show the WLAN (802.11b) networks detected. Otherwise, it will automatically connect to the network last time you connected to.

3) Tap the Wi-Fi button and select from the pop-up menu:

OPTIONS	DESCRIPTION
Utility	Select [Utility] to launch **Wi-Fi Utility** for configuring WLAN settings. Different approaches are available to access the WLAN configuration: ▸ Go to **Start** > **Settings** > **Connections** tab > **Network Cards**. ▸ Tap the **Connectivity** button and select [Settings]. Tap **Network Cards**.

Exit	If the Wi-Fi button is not desired to be displayed in the Taskbar any more, you may select [Exit] to remove the program shortcut. To create this button again, go to **Start** > **Programs** and select **Swluce**.

CONNECTING TO DETECTED NETWORK

If you have configured WLAN settings before, you may select a network to connect now. When the antenna and Connectivity icons get mixed as , it indicates a successful connection. Meanwhile, the Wi-Fi button becomes .

1) Select an available network you want to connect.

2) Select the network you will be connected to through the access point.

 ▶ Work: when connecting to a private network, such as a corporate network at work

 ▶ The Internet: when connecting to your ISP at home

3) Tap [Connect].

 Tap [Hide] if you do not want to be connected now.

4) After having established a connection successfully, you may proceed to run the application program, e.g. Pocket Internet Explorer, Terminal Services Client, etc.

CONNECTED TO NEW NETWORK

If you want to connect to a new network, tap [Settings] in the balloon brought up by the antenna icon . It results in the same behavior when you go to **Start** > **Settings** > **Connections** tab > **Network Cards**. In the Wireless tab, you may configure the following settings:
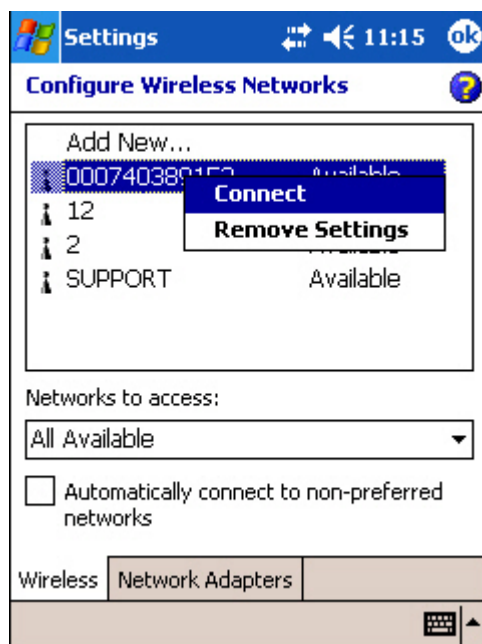
▸ To add a new network: Tap [Add New].

▸ To connect to an existing network: Tap and hold an available network to see a menu. Tap [Connect].

▸ To stop a connection: Tap and hold an available network to see a menu. Tap [Remove Settings].

STOPPING WI-FI NETWORKING

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

▸ Tap **Wireless Power Manager** and turn off the power to the WLAN module.

▸ Tap the Connectivity button on the navigation bar and turn on Flight Mode to stop the wireless signals.

4.3.2 MONITORING WIRELESS NETWORK STATUS
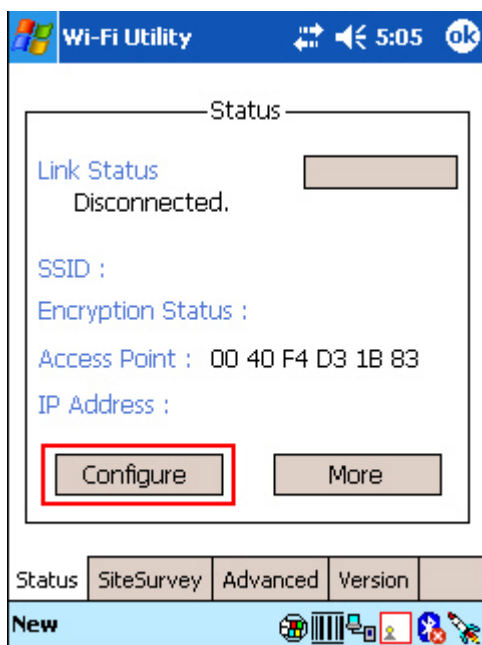
For network configuration, tap [Configure]. You may tap [More] to examine signal strength and network information.

It results in the same behavior when you take one of the following approaches:

▸ Go to **Start** > **Settings** > **Connections** tab > **Network Cards**.

▸ Tap the **Connectivity** button and select [Settings]. Tap **Network Cards**.

CONFIGURE WIRELESS NETWORKS

In the Wireless tab (left below), tap and hold a connected item to see a menu. To disconnect a WLAN connection, select [Remove Settings].

CONFIGURE NETWORK ADAPTERS

In the Network Adapters tab (right below), you may tap an adapter to modify settings, such as IP address and name servers. The adapter used for the 802.11b connection is [SAMSUNG WLAN CF CARD (SWL-2455)].

MY NETWORK CARD CONNECTS TO:
▸ Work: when connecting to a private network, such as a corporate network at work. ▸ The Internet: when connecting to a web site.
TAP AN ADAPTER TO MODIFY SETTINGS:
Because most networks use DHCP, you should not change these settings unless your network administrator instructs you to do so.
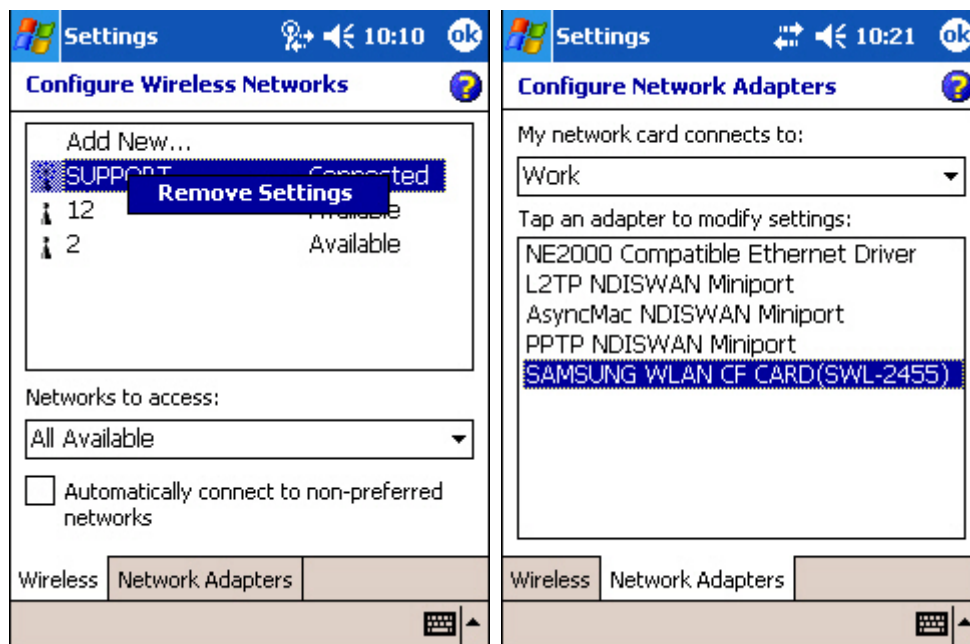
Note: If you select a wrong adapter, it will fail to make any connection.

4.3.3 PERFORMING A SITE SURVEY

Here lists available networks. For site survey, tap [Refresh]. See the screenshot below.

4.3.4 CONFIGURING ROAMING & POWER-SAVING

ROAMING TRIGGER

You may decide the time of roaming, whether when the signal gets poor or no signal at all.

POWER SAVE MODE

The Power Save Mode may be required to be disabled when connecting to a certain access point that doesn't support any power-saving mode.
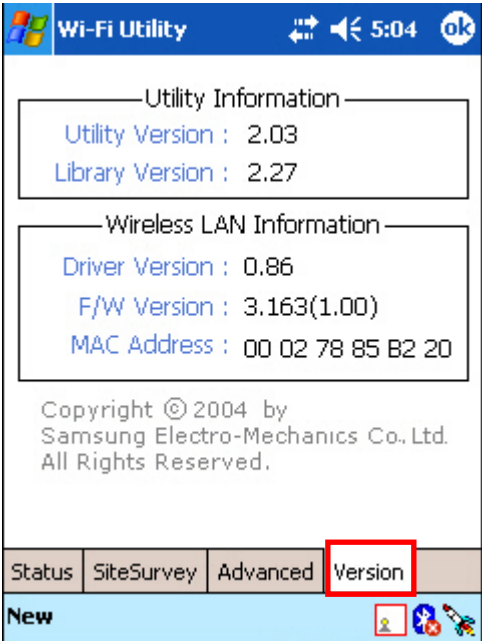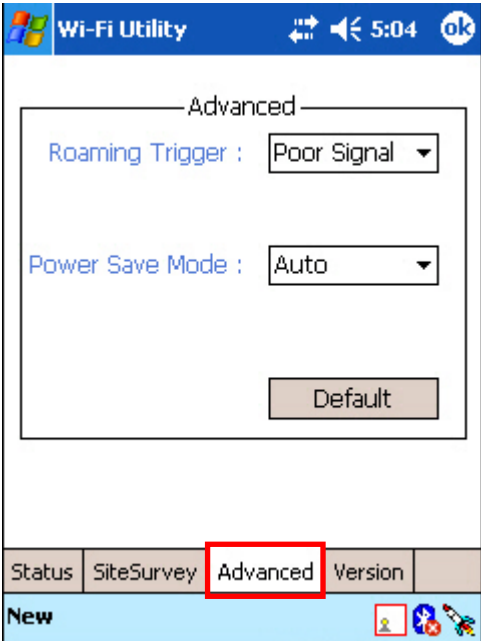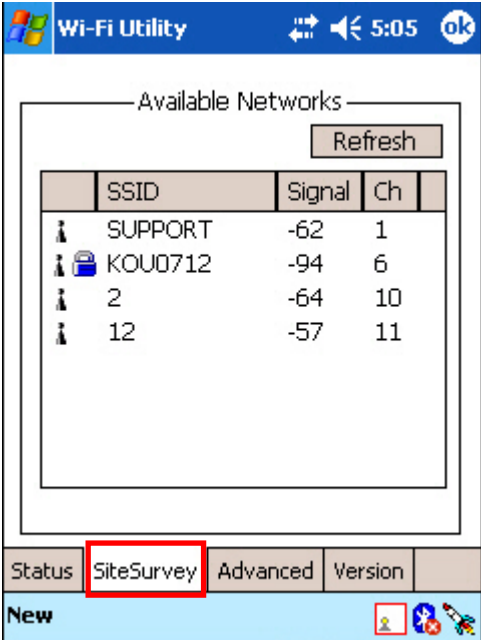
4.3.5 INFORMATION REQUIRED FOR REPORTING A PROBLEM

Here provides information of the Wi-Fi module (right above). The information is required when you report a problem.

4.4 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** > **ReaderConfig** to open the **Reader Configuration Utility**.

   The associated icon [IIII] will appear on the taskbar.

2) Tap and hold the icon [IIII] 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.
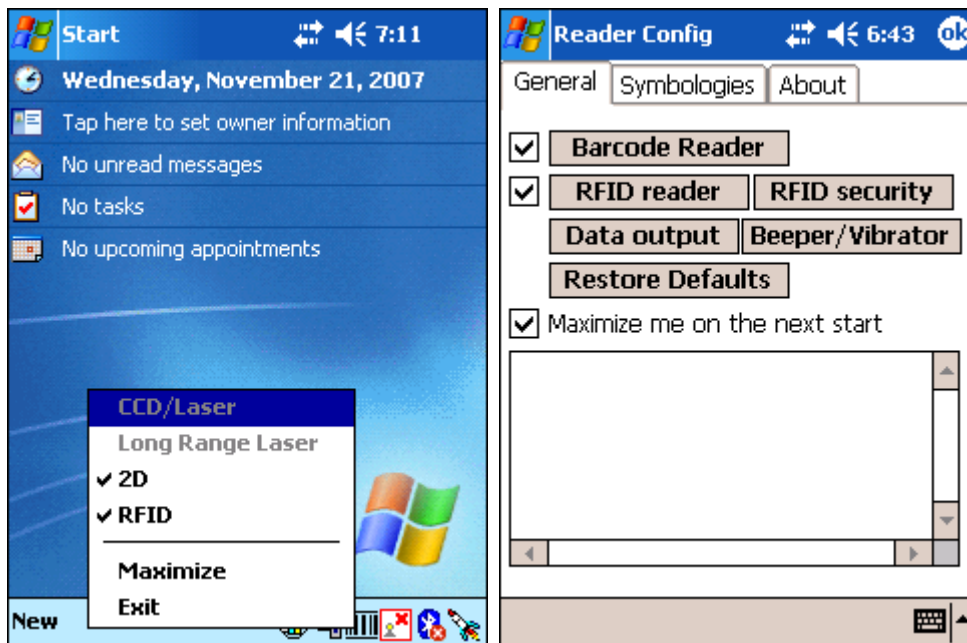
3) To meet your application requirements, proceed to configure associated reader settings as well as barcode settings.

Note: (1) The ReaderCfg 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 or tap [Restore Defaults] on the General tab.

4.4.1 CHECKING THE READER STATUS

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 <u>Appendix II – CCD/Laser Scan Engine</u>.
(Extra) Long Range Laser Reader	If enabled, tap the [Barcode Reader] button to configure the reader settings for Long Range Laser or Extra Long Range laser scan engine. ▶ Refer to the Reader Settings Table in <u>Appendix III – LR/ELR Laser Scan Engine</u>.
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 <u>Appendix IV – 2D Scan Engine</u>.

4.4.2 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".

4.4.3 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 9400/9500 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 ReaderCfg, 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

4.4.4 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)

4.4.5 SYMBOLOGY SETTINGS

For barcode settings, tap the Symbologies tab.

▶ Refer to <u>Appendix I – Scan Engine Settings</u> for the symbologies or RFID tags supported by a scan engine.

▶ Refer to the Symbology Settings Table in <u>Appendix II – CCD/Laser Scan Engine</u>.

▶ Refer to the Symbology Settings Table in <u>Appendix III – LR/ELR Laser Scan Engine</u>.

▶ Refer to the Symbology Settings Table in <u>Appendix IV – 2D Scan Engine</u>.

4.5 BACKUP UTILITY

The **Backup Utility** is provided for performing a backup on the mobile computer. You may backup your data and/or files to a specific location.
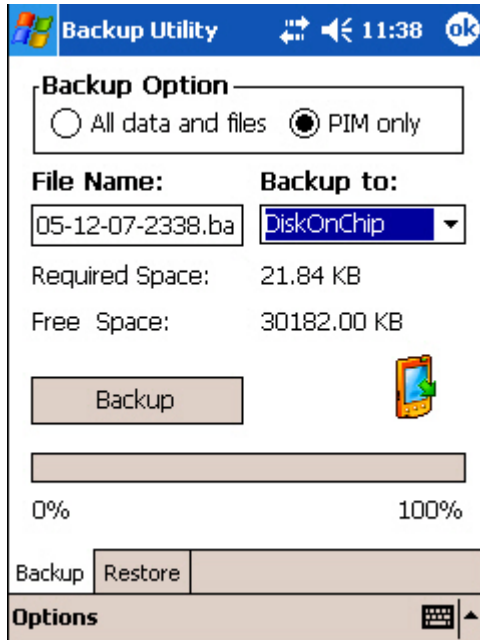
4.5.1 BACKING UP FILES

BACKUP OPTION

▶ All data and files
▶ PIM only

When you select to backup all data and files, it means the backup will cover all non-system files and system registries as well as PIM (i.e. Personal Information Management database, containing information such as appointments, contacts, and tasks.).

FILE NAME

The default file name is made up by year-month-day-hour&minute for the day.

For example, 06-01-05-1113.bak is a backup file created at 11:13 AM on Jan. 5th, 2006.

BACKUP TO

You may backup your work to one of the following folders.
▶ DiskOnChip (Flash)
▶ My Documents folder (SDRAM)
▶ Memory card if installed (SD or CF)

Warning:	If you select to backup to My Documents folder, you may risk having data erased after a hard reset. It is suggested that you backup critical data to DiskOnChip.

1) Go to **Start** > **Programs** > **Utilities** folder and select **Backup Utility**.

2) Select to backup all or PIM only.

3) Give a new file name if necessary.

4) Select a destination folder for backup.

5) Tap the Backup button.

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.

4.5.2 USING BACKUPS FOR RESTORE

If you ever backup your data and/or files, you are able to restore them to the mobile computer. This is helpful when you find data or file damaged, or a hard reset is performed by accident.

1) Go to **Start** > **Programs** > **Utilities** folder and select **Backup Utility**.

2) Select to backup all or PIM only.

3) Give a new file name if necessary.

4) Select a destination folder for backup.

4.6 TERMINAL SERVICE CLIENT

The Terminal Services Client is a "thin client" that delivers 32-bit Windows 2000 functionality to a wide range of legacy desktop hardware devices. The client displays as a window within the local desktop environment and contains only the minimum amount of software necessary to establish a connection to the server and present the user interface. All other operating system functions, as well as applications, run on the server. The client can be run on a range of desktop hardware:

▶ Windows-based Terminal devices (embedded).

▶ Intel computers running Windows 95, Windows 98, Windows NT 3.51, Windows NT 4.0, and Intel-based computers running Windows 2000.

▶ Computers running Windows for Workgroups 3.11.

SPECIFICATIONS

PLATFORM, PROCESSOR & MEMORY

OPERATING SYSTEM

Microsoft Windows Mobile 2003 Second Edition

CENTRAL PROCESSOR UNIT

Intel PXA255, up to 400 MHz

MEMORY

ROM	128 MB non-volatile NAND flash memory
RAM	64 MB on-board SDRAM memory, upgradeable

▶ Ordering Option - Memory card, SD or CF Type II

COMMUNICATIONS & DATA CAPTURE

COMMUNICATIONS

USB via Cradle	USB 1.1 Specification, Device port (type-B)
WPAN	Built-in module for Bluetooth Class 2 connectivity
WLAN	Built-in module for 802.11b networking

DATA & IMAGE CAPTURE

Barcode Reader	Ordering options include	▶ CCD (linear imager)
		▶ Standard Laser
		▶ Long Range Laser
		▶ Extra Long Range Laser
		▶ 2D Imager
RFID Reader	Frequency 13.56 MHz	

ELECTRICAL CHARACTERISTICS

BATTERIES

Standard Battery Pack	Rechargeable Li-ion battery - 3.7 V, 4000 mAh
Backup Battery	Rechargeable Lithium battery - 3.7 V, 110 mAh

Data retention for at least 6 hours

For Cradle	AC 110/220 V (Input) to DC 6 V, 3.3 A (Output)

WORKING TIME (LASER, ONE SCAN PER 5 SECONDS)

Batch Mode with backlight	16 hours
Wi-Fi Mode with backlight	10 hours

PHYSICAL CHARACTERISTICS

COLOR TOUCH SCREEN DISPLAY

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

KEYPAD

Layout	27 keys for alphanumeric layout, LED backlit

NOTIFICATIONS

Status LED	Dual-color LED - Red / Green
Audio	Mono speaker integrated
Vibrator	9000 ± 2000 RPM, Max. 50 dB

EXPANSION SLOTS

Secure Digital	One SD card slot, supports SDIO card
Compact Flash	One CF Type II slot for inserting a memory card or peripheral card

ENCLOSURES

Materials	Rubber & ABS plastic
Dimensions	230 mm (L) 91 mm (W) 63 mm (H)
Weight	Approx. 600 g (including battery, Laser scan engine)

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
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 SP3
Software Development Kit	SDK for Windows Mobile 2003-based Pocket PCs
	ReaderDLL for reader configuration

SOFTWARE & UTILITIES

	Reader Configuration Utility
	Terminal Emulation for VT100/220 or IBM 5250
	Application Generator
	STREAM Wireless Studio
	Web Browser

ACCESSORIES

ACCESSORY OPTIONS

	Memory Card, SD or CF
	Pistol Grip
	Belt Holster
	Protective Cover
	Spare rechargeable battery pack
	4-slot Battery Charger
	Charging & Communication Cradle
	Vehicle Cradle

Appendix I

SCAN ENGINE SETTINGS

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

▸ 1D CCD scan engine
▸ 1D Laser scan engine
▸ 1D Long Range Laser scan engine
▸ 1D Extra Long Range 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 ReaderCfg 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.

SYMBOLOGY		CCD, LASER	LR, ELR	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. The results found with RFID module version 1.0 are different from those found with version 0.9 or older versions.

Note: You should study the specifications of RFID tags before use. The "Write Page" functionality is not supported in the ReaderCfg applet.

RFID MODULE VERSION 1.0		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	✓	✓	✓
ICODE® (Phillips)	ICODE	✓	✓	✓

RFID MODULE VERSION 0.9		UID ONLY	READ PAGE	WRITE PAGE*
ISO 14443A	Mifare Standard 1K	✓	---	---
	Mifare Standard 4K	✓	---	---
	Mifare DESFire	✓	---	---
	Mifare S50	✓	---	---
	SLE44R35	✓	---	---
	SLE66R35	✓	---	---

ISO 15693	ICODE SLI	✓	✓	✓
	SRF55V02P	✓	✓	✓
	SRF55V02S	✓	---	---
	SRF55V10P	✓	✓	✓
	TI Tag-it HF-I	✓	✓	✓
	ST LRI64	✓	✓	✓
	ST LRI512	✓	✓	✓
Tagit®	Tagit	✓	✓	✓
ICODE® (Phillips)	ICODE	✓	✓	✓

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
Time-out		**3 sec.**
1~9 (second) for ReaderCfg.exe 1~255 (second) for programming	It applies to the following scan modes only: ▸ Aiming mode ▸ Laser mode ▸ Auto Off mode ▸ Auto Power Off mode	
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
None	No redundancy means one successful decoding will make the reading valid and induce the "READER Event".	
One time, Two times, or 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.	

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
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	1~126
Matrix 25		**Enable**
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
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	0~127
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!		

LR/ELR LASER SCAN ENGINE

The tables below list reader settings as well as symbology settings for the Long Range Laser (LR) or Extra Long Range Laser (ELR) scan engine.

READER SETTINGS TABLE

LR/ELR	DESCRIPTION	DEFAULT
Decode Time-out	Set the maximum time for decoding to continue during a scan attempt. ▶ 1~9 (second) for ReaderCfg.exe – default to 3 ▶ 5~99 (0.1 second) for programming – default to 30	**3 sec.**
AIM Pattern	Decide whether to have the aiming dot. ▶ When you press the [SCAN] button, the scan engine will emit a red dot for aiming. It will stay on until you press the [SCAN] button again to emit a scan beam.	**Off**
Read Redundancy		**Level 1**
Level 1	The following barcodes must be successfully read twice before being decoded: | BARCODE TYPES	CODE LENGTH | |---|---| | Codabar | All | | MSI | 4 characters of less | | Discrete 25 (=Industrial 25) | 8 characters of less | | Interleaved 25 | 8 characters of less |	
Level 2	All barcodes must be successfully read twice before being decoded.	
Level 3	All barcodes except for the following barcodes must be successfully read twice before being decoded. The following barcodes must be read three times: | BARCODE TYPES "EXCLUDED"	CODE LENGTH | |---|---| | MSI | 4 characters of less | | 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.	

Scan Angle	Select the scan angle for the Long Range Laser scan engine. ▸ "narrow" 30° ▸ "wide" for 42°	**Narrow**

SYMBOLOGY SETTINGS TABLE

LR/ELR/2D	DESCRIPTION	DEFAULT
Codabar		**Disable**
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**
Code 93		**Enable**
Select Length	▶ One or two fixed lengths ▶ Range (1~55)	4~55
MSI		**Enable**
Verify Checksum	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><td>CHECK DIGIT</td><td>ALGORITHM</td></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>	Single Modulo 10
Transmit Checksum	Decide whether to include the checksum in the data being transmitted.	No
Select Length	▶ One or two fixed lengths ▶ Range (1~55)	4~55

RSS		**---**
RSS-14	"Convert to UPC/EAN" only applies to RSS-14 and RSS Limited barcodes not decoded as part of a Composite barcode.	See below.
RSS Limited		See below.
RSS Expanded		See below.
Covnert RSS to UPC/EAN	**CONVERT TO EAN-13** Strip the leading "010" from barcodes. ▸ "01" is the Application ID and must be followed by a single zero (the first digit encoded) **CONVERT TO UPC-A** Strip the leading "0100" from barcodes. ▸ "01" is the Application ID and must be followed by two or more zeros (but not six zeros)	No

Note: (1) RSS-14, RSS Limited, RSS Expanded are all disabled for LR/ELR Laser scan engine.
(2) RSS-14, RSS Limited, RSS Expanded are all enabled for 2D scan engine.

EAN-8		**Enable**
Convert to EAN-13	The EAN-8 barcode will be expanded into EAN-13, and the next processing will follow the settings configured for EAN-13.	No
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
EAN-13		**Enable**
Bookland EAN (= ISBN)	The EAN-13 barcode starting with 978 will be converted to ISBN.	No
Addon 2 / Addon 5	Refer to UPC/EAN Addon setting.	
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

2D SCAN ENGINE

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

READER SETTINGS TABLE

2D	DESCRIPTION	DEFAULT
Decode Time-out	Set the maximum time for decoding to continue during a scan attempt. ▶ 1~9 (second) for ReaderCfg.exe – default to 3 ▶ 5~99 (0.1 second) for programming – default to 99	**3 sec.**
Focus Mode	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	**Far Focus**
Decode Illumination	Decide whether to flash illumination on every barcode capture to aid decoding. ▶ Turn On (Internal LED) ▶ Turn Off	**On**
AIM Pattern	Decide whether to project the aim pattern during barcode capture. ▶ Turn On ▶ Turn Off	**On**
Read Redundancy		**Level 1**
Level 1	The following barcodes must be successfully read twice before being decoded: | BARCODE TYPES	CODE LENGTH
---	---
Codabar	8 characters of less
MSI	4 characters of less
Discrete 25 (=Industrial 25)	8 characters of less
Interleaved 25	8 characters of less		
Level 2	All barcodes must be successfully read twice before being decoded.	
Level 3	All barcodes except for the following barcodes must be successfully read twice before being decoded.	

	The following barcodes must be read three times:

BARCODE TYPES "EXCLUDED"	CODE LENGTH
Codabar	8 characters of less
MSI	4 characters of less
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 0**

SYMBOLOGY SETTINGS TABLE

The symbology settings for the LR/ELR scan engine are all supported on the 2D scan engine. In addition, the 2D scan engine supports the following symbology settings:

2D	DESCRIPTION	DEFAULT
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		---
Composite CC-C		Enable
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. If the 2D portion is not detected, the UPC barcode will not be transmitted. ‣ CC-A/B or CC-C must be enabled! **AUTO-DISCRIMINATE UPC COMPOSITES** Transmit UPC barcodes as well as the 2D portion if present.	UPC Always Linked
2D Symbologies		---
PDF417		Enable
MicroPDF417		Disable

MicroPDF417 Code 128 Emulation	Transmit data from certain MicroPDF417 barcodes as if it was encoded in Code 128 barcodes.	Disable
	▶ 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".	
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.	Passthrough All Symbols
	BUFFER ALL SYMBOLS / TRANSMIT MACRO PDF WHEN COMPLETE	
	Transmit all decoded data from an entire Macro PDF sequence only when the entire sequence is scanned and decoded. If the decoded data exceeds the limit of 50 symbols, no transmission because the entire sequence was not scanned!	
	TRANSMIT ANY SYMBOL IN SET / NO PARTICULAR ORDER	
	Transmit data from each Macro PDF symbol as decoded, regardless of the sequence.	
	PASSTHROUGH ALL SYMBOLS	
	Transmit and decode all Macro PDF symbols and perform no processing.	
	In this mode, the host is responsible for detecting and parsing the Macro PDF sequences.	

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