

CipherLab Reference Manual

Windows Embedded Compact 7.0

Mobile Computer 9700

Version 0.65



PREFACE

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CIPHERLAB CO., LTD.
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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.

Operations in 5150-5250 MHz band is for indoor use only.

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 numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée 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 20 cm between the radiator & your body.

Caution!

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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 adapter. 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 IP65, however, the mobile computer can get damaged when being exposed to extreme temperatures or soaked wet.
- ▶ When the enclosure 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 touchscreen, use a clean, non-abrasive, lint-free cloth to wipe dust off the screen. DO NOT contact the surface with any pointed or sharp object.
- ▶ 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, it takes some time for the main and backup batteries to become fully charged.
- ▶ If you shall find the mobile computer malfunctioning, write down the specific scenario and consult the sales representative in your local area.
- ▶ Keep the mobile computer away from any magnets and magnetic fields to prevent the laser engine from malfunctioning.

FOR PRODUCT WITH LASER



CAUTION

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

RELEASE NOTES

Version	Date	Notes
0.5	Apr 8, 2014	Draft release

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INTRODUCTION

Thank you for choosing CipherLab products. CipherLab welcomes another Windows Embedded by introducing 9700 Series Mobile Computer. Powered by Windows Embedded Compact 7.0, the mobile computer delivers better user experience and advances enterprise mobile computing.

The mobile computer has transfective LCD to hold up the readability in a wide range of light conditions, courtesy of the supplementary backlight enabled by a built-in ambient light sensor. Also on board is a G-sensor to save power according to the mobile computer's motion and posture. G-sensor also enables screen orientation when the device is posed sideways or upright. Furthermore, the mobile computer has integrated a built-in e-compass and gyroscope, both of which provide useful functions in navigation.

The series sports satisfactory data connections by integrating a communication port for direct data exchange. For wireless data connections it hosts each Bluetooth and 802.11b/g module while a HSPA+ (3.8G) module is provided on option.

Dedicated to data capture, the mobile computer has essential 1D (laser) reader or 2D imager. A high-spec 5 mega-pixel camera also comes inside to take pictures and shoot videos to deliver better documentation for users.

Rated with IP65, the rugged 9700 is light-weighted and easy to cradle in your hand, and will be your good help on field works.

ABOUT THIS DOCUMENT

This guide distills the information about 9700 Series Mobile Computer. Subjects discussed include the mobile computer's physical features, platform basics, software and applications, and part of the accessories to boost the mobile computer's performance.

We recommend that you keep one copy of this manual at hand for the quick reference for necessary maintenance.

FEATURES

- ▶ Rugged yet smoothened outlined, with hand strap for secure hold
- ▶ IP65-rated tough form to survive drop, shock, heat, cold, and impervious to moisture/dust
- ▶ Windows CE 6.0 OS, TI OMAP3730 1GHz CPU
- ▶ 512MB SDRAM to run application programs
- ▶ 4GB NAND flash to store OS, applications, settings and so on
- ▶ Storage expansion: Up to 32GB MicroSDHC
- ▶ Sunlight-readable screen to enhance the viewability of outdoor use
- ▶ Ambient light sensor to enable supplementary backlight for LCD and keypad
- ▶ G-sensor for power management and screen orientation
- ▶ 2 symmetric side-triggers for ambidextrous scanning
- ▶ Total data solution — supporting Bluetooth, 802.11a/b/g/n
- ▶ C++ and .Net programming support

INSIDE THIS PACKAGE

The mobile computer ships with the following items. Save the box and packaging material in case of future need to store or deliver the mobile computer.

- ▶ Mobile Computer
- ▶ Rechargeable Li-ion battery pack (standard/high capacity)
- ▶ Stylus
- ▶ Screen protector
- ▶ Hand strap
- ▶ Product CD
- ▶ Quick Start Guide

ACCESSORIES

Optional accessories to enhance the mobile computer's performance are:

- ▶ Snap-on Charging and Communication Cable (USB or RS-232)
- ▶ Charging & Communication Cradle
- ▶ Pistol Grip
- ▶ Snap-On Car Charger

Chapter 1

USE MOBILE COMPUTER

Before the mobile computer takes part in your work, get to know it first. This chapter includes the basic features of the mobile computer including the power supply, memory, and the units that bridge users with the mobile computer. This chapter helps you set the mobile computer to work at the earliest.

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1.1. TAKE A TOUR

This section shows the major components on the mobile computer and inside battery chamber. You will also learn how to power on/off the mobile computer and how the mobile computer gives information about its status.

1.1.1. OVERVIEW

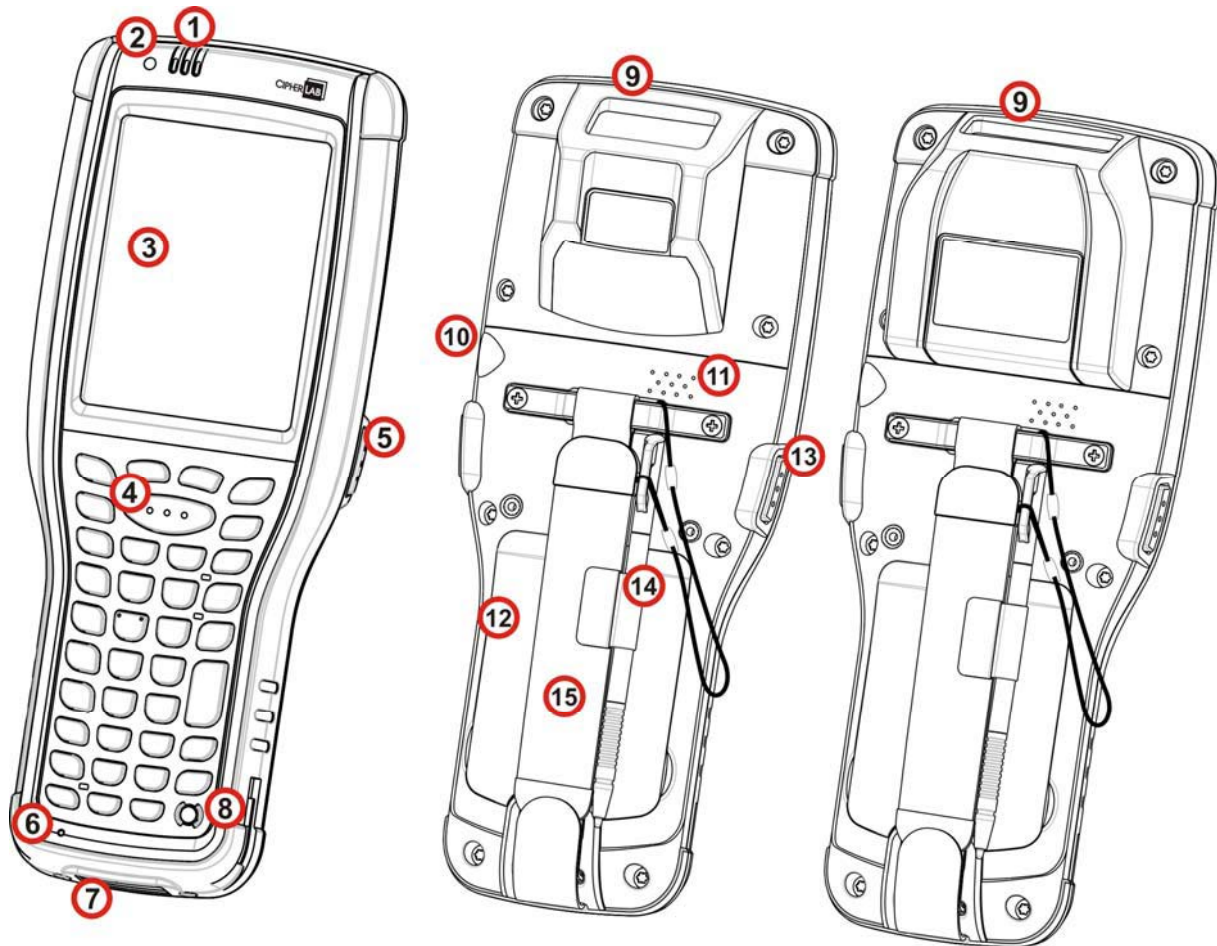


Figure 1: Overview

No.	Description	No.	Description
1	Status LED (refer to)	2	Light sensor
3	Touchscreen	4	Scan key
5	Side-trigger (user definable)	6	Microphone
7	Direct charging & communication port	8	Power key
9	Scan window	10	Headset jack
11	Speaker	12	Battery
13	Side-trigger (user definable)	14	Stylus (with attaching cord)
15	Handstrap		

1.1.2. BEFORE INITIAL USE

Prior to using the mobile computer for the first time, we recommend applying the protective film over the LCD. This will prevent scratching the touchscreen during daily usage, and also help enhance the durability of the touchscreen.

To apply the LCD protective film:

- 1) Upon delivery, the touchscreen of the mobile computer is covered with a thin transparent film. Peel off and discard this film.
- 2) Wipe the touchscreen with a clean, non-abrasive, lint-free cloth.
- 3) Carefully apply the LCD protective film to the touchscreen by aligning its edges with the edges of the touchscreen. Make sure the film adheres tightly to the surface.

The mobile computer is then ready for usage.

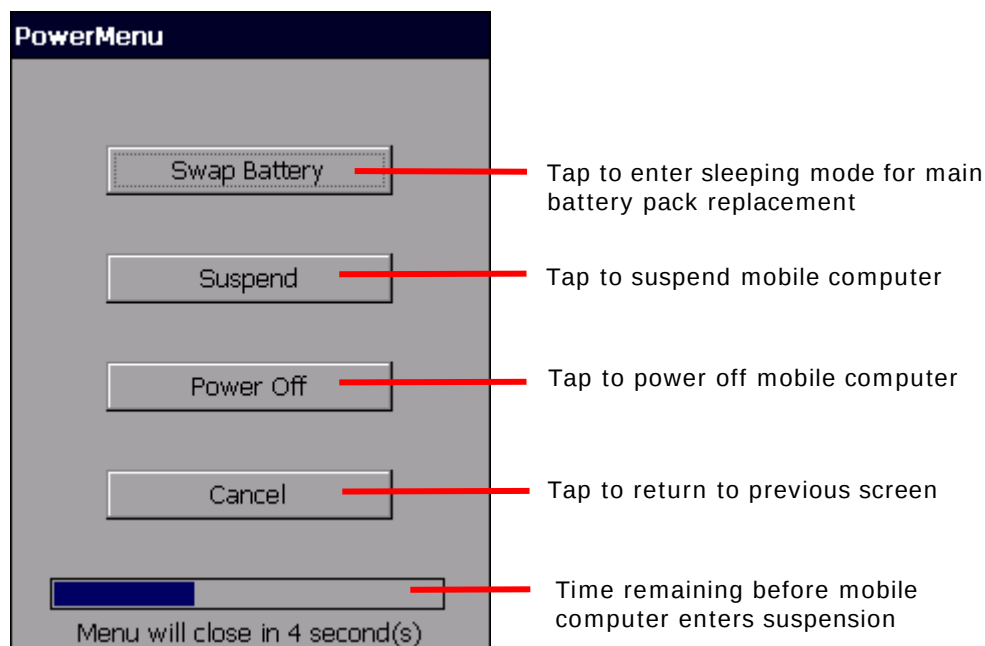
1.2. POWER ON/OFF MOBILE COMPUTER

To power on the mobile computer, press the Power button  sitting at the upper right of the keypad. The mobile computer powers on.

1.1.1. POWER MENU

The 9700 mobile computer features a power menu. This menu allows you to select whether you would like to power off the mobile computer, enter suspension, or enter sleeping mode for main battery replacement.

To enter this power menu, press the power button for more than three seconds. A menu will open on-screen with a countdown bar at the bottom.



Menu options are as follows:

Action to take	Description
Swap Battery	If you would like to replace the main battery pack on the mobile computer, select this option to let the mobile computer enter sleeping mode. After the main battery has been replaced, wake up the mobile computer by pressing the power button. All applications and tasks will remain active.
Suspend (default)	When the mobile computer is not under frequent use, select this option to let the mobile computer enter suspension and save power. This is the default function, and when no option is selected in the power menu, the mobile computer will automatically enter suspension after 5 seconds. When you need to use the mobile computer once more, resume it by pressing the power button or central scan key. All applications and tasks will remain active. See also Suspend & Reset Mobile Computer.

Power Off	Select this option if you would like to power off the mobile computer. This will close all applications and tasks currently running. All unsaved data will be lost. To power on the mobile computer, press the power button.
Cancel	Selecting this option will close the menu and return to the previously active screen. All applications and tasks will remain active.

Note: If you wish to replace the main battery pack on the mobile computer, aside from taking the steps above, please also make sure the following requirements are met. Otherwise, the mobile computer might function abnormally, and will require system restart.

- (1) Make sure the backup battery on the mobile computer is not drained out. Check [Backup Battery Level](#) before taking any actions.
 - (2) After selecting Swap Battery in the power menu, proceed to replacing the battery as soon as possible.
-

1.3. NOTIFICATIONS

The mobile computer features visible, audible, and tactile feedback to draw users' prompt awareness of the mobile computer's contiguous events such as barcode reading, wireless/mobile data connections, and battery charging.

STATUS LED

Three LED lights are located on the upper-right corner of the mobile computer. Their functions are:

Matter	LED Color	Action	Description
Battery Charging (Left)	Green, Red	Green, solid	Battery is fully charged.
		Orange, solid	Battery is being charged, and the battery level is sufficient to power on the mobile computer.
		Red, solid	Battery is being charged, however the battery level is insufficient to power on the mobile computer.
		Red, blinking fast	Battery charging error has occurred, for instance, charging temperature is below 0°C or above 35°C, or adapter is plugged in but no battery is present.
Radios (Middle)	Blue	Blue, blinking	Wi-Fi or Bluetooth in use.
Scanning Good Read (Right)	Green	Green, flashes once	Indicates good reading of the scanned barcode. Enable/Disable this LED light on the Reader Config Notification Settings page. To set the good read LED via API deployment, see the 9700 Programming Guide for details.

SPEAKER

The mobile computer has a speaker on the back for audio signaling and playback.

The speaker sounds for system events, application warnings, on-screen item selection and physical keypad stroke. In noisy environments, the speaker remains efficacious with the help of a Bluetooth headset. To control sound volume, see [Volume Control](#).

The speaker also sounds for successful barcode reading, which can be controlled on the Reader Config Notification Settings page.

VIBRATOR

The mobile computer owes its tactile feedback to the vibrator built inside. Vibration delivered to the mobile computer alerts users of its current status.

Working based on user's sense, the vibrator is particularly helpful when the mobile computer is serving in a noisy environment.

Same as the speaker and LED light, the vibrator also works for good barcode reading. Enable/disable vibration and set its duration on the Reader Config Notification Settings page. Alternatively, program the vibrator through API deployment to have it vibrate when a successful reading occurs. See the 9700 Programming Guide for details.

1.4. BATTERY

The 9700 mobile computer is fed by two batteries, main battery pack and backup battery. The main battery is removable and replaceable from the battery chamber while the backup battery is mounted on the main board inside the mobile computer.

When the mobile computer is shipped, the main battery is stored in a package separated from the mobile computer, which keeps it in good condition for future use.

MAIN BATTERY

The main battery is a Li-ion battery pack which comes in two different capacities, a 3.7V, 3300mAh battery which takes approximately 4 hours to charge to full, and a 3.7V, 5400mAh battery which takes around 6 hours to charge to full. The working time of the mobile computer varies by its working states. A battery icon seated on the taskbar will show the remaining [Main Battery Level](#).

See also [Install/Remove Main Battery](#) for installing the main battery.

BACKUP BATTERY

The backup battery is settled on the main board inside the mobile computer. It is a 3.6V, 15mAh rechargeable Ni-MH battery. When the main battery is absent or depleted, the backup battery takes over to feed the mobile computer. Without the main battery, a fully charged backup battery retains the data in the DRAM and holds the system in suspension for 30 minutes (as long as the wireless modules are inactive).

The backup battery is rechargeable by the main battery pack. It takes about 4 hours to charge it to full. See [Backup Battery Level](#).

Note: When removing the main battery pack, actual data retention time will depend on the backup battery level. Check backup battery level before replacing the main battery to ensure your data is retained.

1.4.1. INSTALL/REMOVE MAIN BATTERY

Follow the steps below to install the main battery:

- 1) The handstrap is installed over the battery chamber. You do not need to remove the handstrap to install the battery; simply lift up the handstrap to allow enough space to insert the battery.
- 2) Place the main battery pack into the battery chamber with the contact pins facing down. Fix the upper end first, and press the lower end down until the battery “clicks” into place.

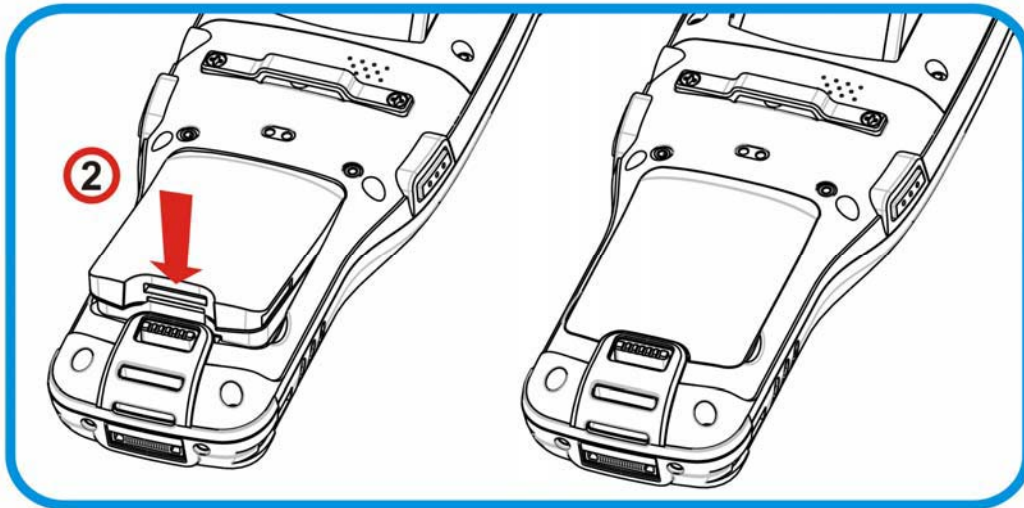


Figure 2: Install main battery

Follow the steps below to remove the main battery:

- 1) A battery located at the lower end of the main battery. Push the latch down and the battery will be released.

Note: (1) When main battery level drops to low level, charge it ASAP or replace it with a charged battery.
(2) Always turn off the mobile computer to replace the main battery pack.
(3) Any improper handling may reduce battery life.

1.4.2. CHARGE BATTERIES

Due to shipment, it is likely that the main battery and backup battery won't be fully charged when you receive the package. Before setting the mobile computer to work, charge the main battery to full by direct charging via a power adapter (with the help of a Snap-on Charging & Communication Cable or Charging & Communication Cradle).

Some key facts about charging batteries:

Charging Time

- ▶ Main battery: It takes approximately 4 hours to charge the 3.3V, 3600mAh main battery, and approximately 6 hours to charge the 3.3V, 5400mAh main battery. The battery charging LED above the touchscreen lights red or orange during charging (depending on the battery level at the moment), and lights green when the mobile computer is completely charged. See [Status LED](#) for details about the LED indicator.
- ▶ Backup battery: The backup battery is rechargeable by both the main battery and power adapter. It takes about 5 hours to charge it to full, however it does not need to be fully charged for the mobile computer to work.

Charging Temperature

- ▶ It is recommended that batteries be charged at room temperature (18°C~25°C) for optimal performance.
- ▶ Charging stops when temperature drops below 0°C or exceeds 35°C. In this case the battery charging LED will be continuously blinking in red.

Power Consumption

- ▶ When all radios (802.11 a/b/g/n, Bluetooth) are active on battery power, main battery level will drop substantially.
- ▶ In order to prevent the system from shutting down due to depletion of the main battery, we suggest that you keep a fully charged battery for replacement or have the mobile computer access the radios on external power.

The following guides how to charge batteries.

DIRECT CHARGING USING SNAP-ON CABLE

Direct charging of the mobile computer relies on the Snap-on Charging & Communication Cable (hereinafter “snap-on cable”). There is a power jack on the connector of this cable to connect external power.

Prior to charging, install the main battery as described in [Install/Remove Main Battery](#). Then follow the steps below:

- 1) Attach the snap-on cable to the mobile computer.
- 2) Plug the head of the power adapter cord into the power jack located on the snap-on cable's connector.
- 3) Connect the power adapter to a power outlet.

To output data to your PC or laptop, connect the snap-on cable (either through USB or RS-232 connection) to it. See [Direct Data Communication](#) for follow-ups.

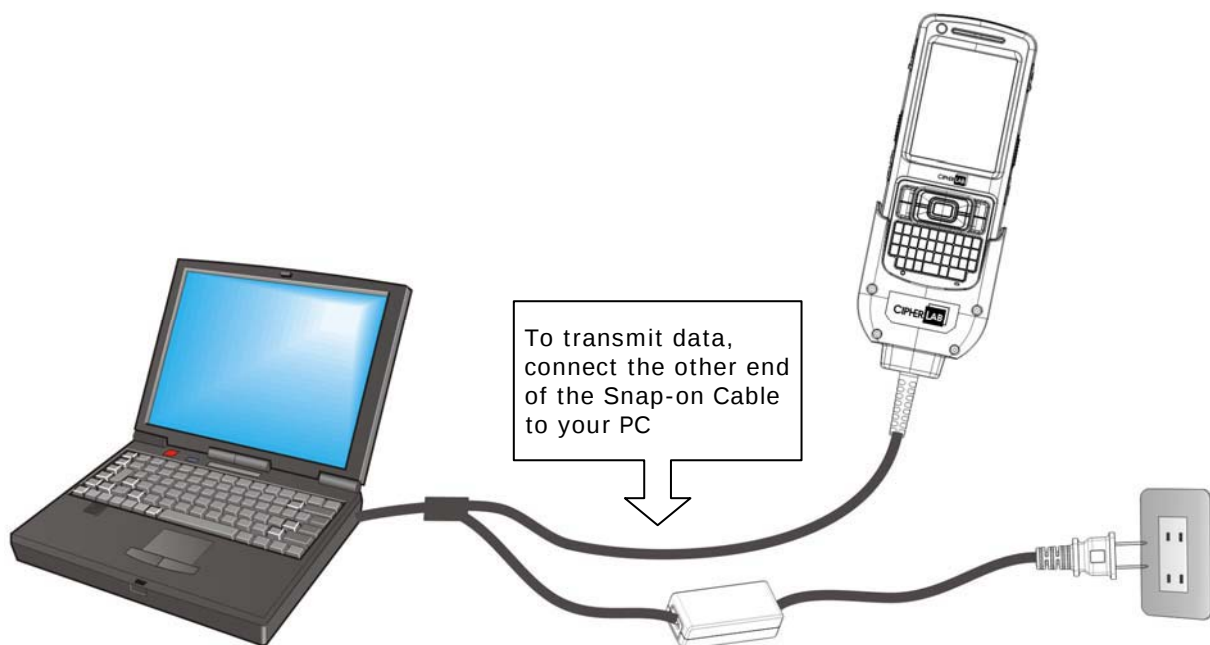


Figure 3: Direct Charging Using Snap-on Cable

DIRECT CHARGING USING CRADLE

Direct cradle charging makes use of a Charging & Communication Cradle (hereinafter “cradle”). The cradle is one of the accessories you can opt for.

Prior to charging, install main battery as described in [Install/Remove Main Battery](#). Then follow the steps below:

- 1) Seat the mobile computer onto the cradle.
- 2) Connect the cradle to an external power source using the power adapter.

To output data to your PC or laptop, connect the mobile computer and your PC with a microUSB cable. See [Direct Data Communication](#) for follow-ups.

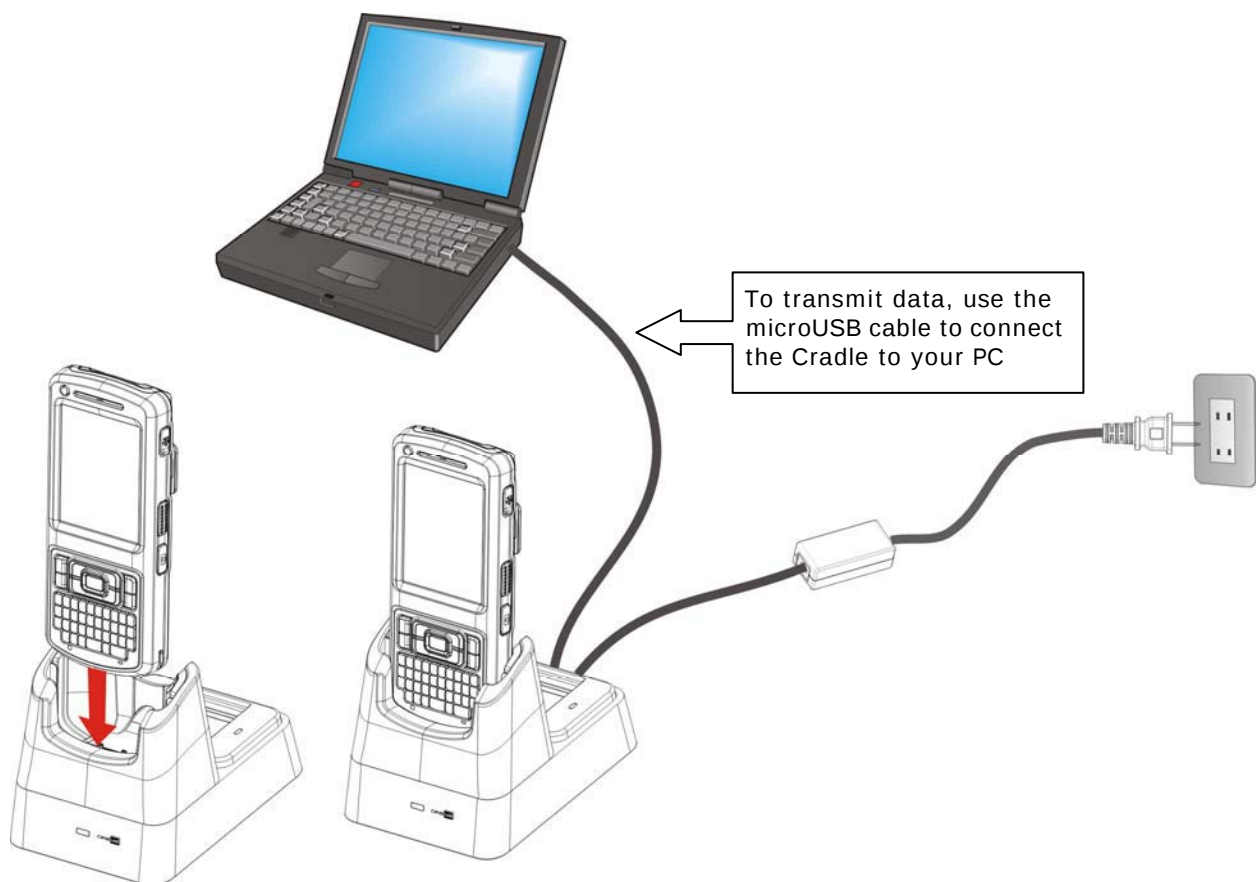


Figure 4: Direct Charging Using Cradle

REPLACE MAIN BATTERY PACK

The Charging and Communication Cradle holds a separate charging compartment for the main battery pack. This allows the mobile computer and a separate main battery pack to be charged either individually or simultaneously. We advise you to keep a fully charged battery at hand at all times.

Before replacing the main battery pack, turn off the mobile computer. Insert a charged main battery pack as shown in [Install/Remove Main Battery](#) and power on the mobile computer.

1.4.3. MONITOR BATTERY LEVEL

The main battery is the only source that feeds the mobile computer to work. It also supplies the backup battery on main board to retain the data stored in DRAM. Hence when main battery level gets low, recharge it or change it as soon as possible. Most critically, back up the important data from time to time to protect your work.

MAIN BATTERY LEVEL

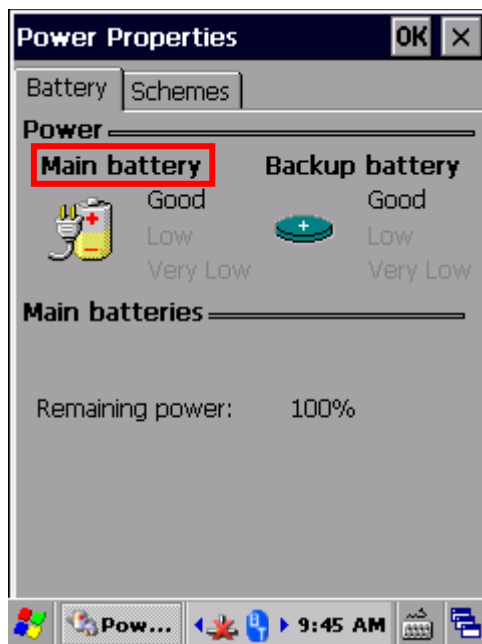
To check the main battery level:

- 1) Tap Start | Settings | Control Panel | Power .

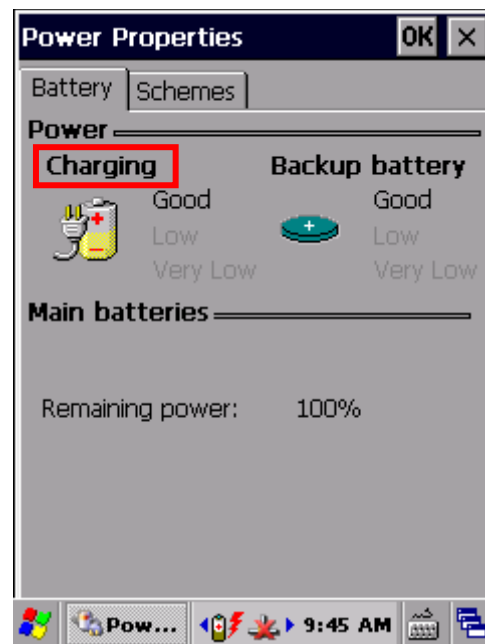
Power Properties window opens showing Battery tabbed page. Main battery level is summarized under Power label as “Good”, “Low” or “Very Low”. Precise battery level is also shown in percentage under the Main batteries label.

Depending on whether the main battery is being charged, charging status will show “Main battery”, meaning the mobile computer is on battery power, or “Charging”, meaning that external power is connected.

Main battery isn't being charged.



Main battery is being charged.

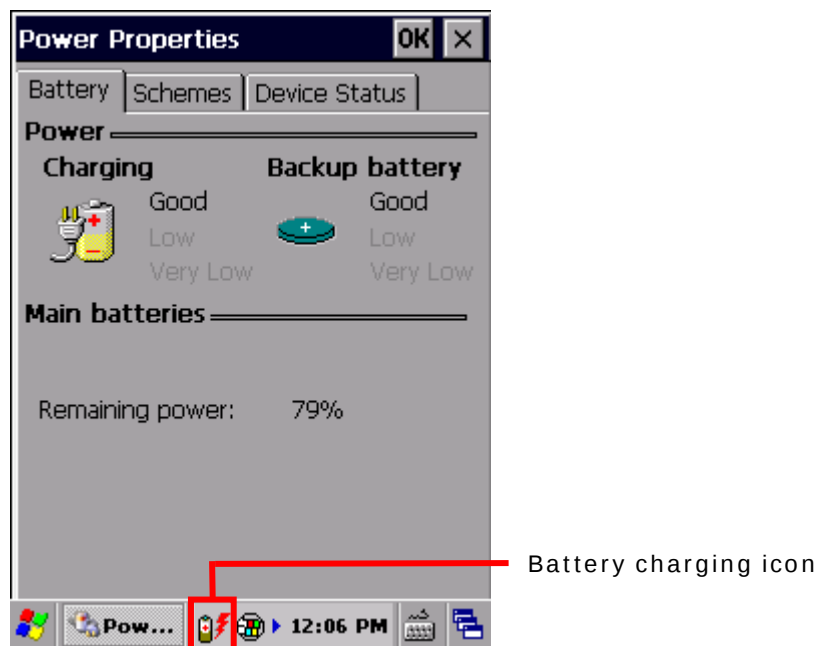


Main battery level is summarized into three levels:

Description	Battery Status
Good	Main battery level is good (40~100%).
Low	Main battery level is low (20~39%). Charging is recommended.
Very Low	Main battery level is very low (<19%) and needs to be charged immediately.

BATTERY STATUS ICONS

The OS features a couple of icons that deliver main battery status. These icons can be found on the taskbar, which is settled at the bottom of every screen.

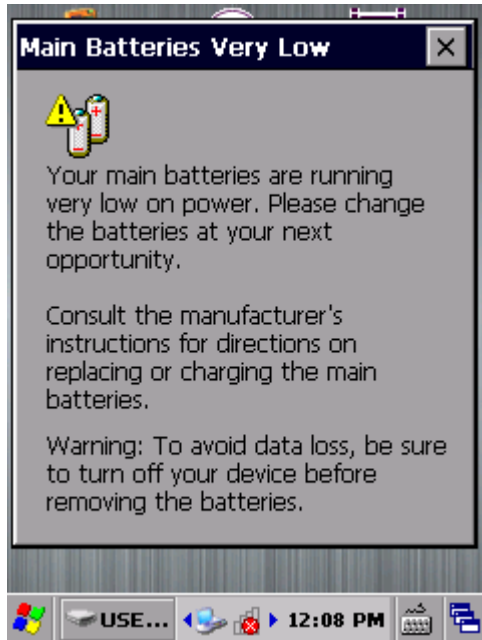


Battery level is illustrated by the following icons :

Icon	Battery Status
	Main battery level is 91% ~ 100%.
	Main battery level is 71% ~ 90%.
	Main battery level is 51% ~ 70%.
	Main battery level is 21% ~ 50%.
	Main battery level is 11% ~ 20%.
	Main battery level is 1% ~ 10%. Charge or replace main battery immediately!
	Main battery is being charged from external power.
	Mobile computer is connected to external power, but main battery level is full and does not need charging.

LOW BATTERY ALERT

When main battery level drops below 40%, the mobile computer prompts “Main Battery Low” for a recharge. When further reduced to under 20%, the mobile computer prompts “Main Battery Very low” to solicit your immediate action.



Low battery may incur shutdown to the mobile computer and cause DRAM data damage. Always save data before running short of power or keep a fully charged battery at hand for replacement.

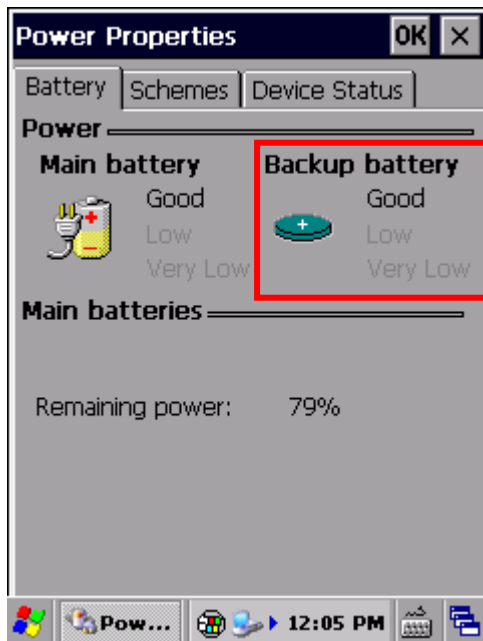
Note: Constant usage of the mobile computer at low battery level can affect battery life. For maximum performance, recharge the battery periodically to avoid battery drain out and maintain good battery health.

When main battery drains out, the mobile computer shuts down automatically. Backup battery takes over to hold DRAM data for 30 minutes if it is fully charged. When this occurs, replace main battery pack immediately to avoid data loss.

BACKUP BATTERY LEVEL

- 1) To check backup battery level, tap Start | Settings | Control Panel | Power .

On Battery tabbed page of Power Properties window, backup battery level is summarized as “Good”, “Low” or “Very Low” under the Power label.



Backup battery level descriptions are as follows:

Description	Battery Status
Good	Backup battery level is good.
Low	Backup battery level is low. Charging is recommended.
Very Low	Backup battery level is very low and needs to be charged immediately.

BATTERY STATUS ICONS

When backup battery level is low, an icon pops-up on the taskbar as a sign of notification.



Battery level is summarized into three levels:

Icon	Battery Status
	Backup battery level is low.
	Backup battery level is extremely low and requires charging immediately.

LOW BATTERY ALERT

When backup battery level drops to “Very Low”, the mobile computer prompts a “Backup Battery Very Low” warning to alert users that backup battery level is almost drained out.



Backup battery is rechargeable by the main battery pack or the power adapter. Low backup battery puts DRAM data in great danger. Remember to save data from time to time or keep a fully charged battery at hand for replacement.

Once backup battery drains out completely, the data in DRAM is gone. Any data that has not been saved will be lost!

1.4.4. POWER MANAGEMENT

Power issues are critical for portable devices. Always turn off the features you don't need on the mobile computer in order to save power. To extend battery life as long as possible, always take the following actions:

- ▶ Suspend the mobile computer when it isn't actively in use. See [Suspend Mobile Computer](#)
- ▶ Turn down LCD backlight brightness as described in [Adjust Backlight](#), and set a shorter LCD timeout as described in [Auto-Suspension](#)
- ▶ Auto Sync the mobile computer with your PC less frequently. See [Direct Data Communication](#)
- ▶ If you are using any “push e-mail” or any automatic syncing service on the mobile computer, change the syncing schedule to manually check updates
- ▶ When Wi-Fi, Bluetooth, mobile data (HSPA+), or GPS isn't in use, turn it off. See [Radios](#)

1.5. KEYPAD

The mobile computer has a physical keypad and a touchscreen to receive user's input. Among the two, the touchscreen provides more intuitiveness in interacting with the device.

This section shows how to input text using physical keypad and on-screen keyboard. To know how to operate the mobile computer using the touchscreen, see [Touch Control](#).

1.5.1. PHYSICAL KEYPAD

The physical keypad on the front of the mobile computer bears much resemblance to laptop or PC keyboards. It is either a numeric type or a QWERTY one, each wedging a set of “enhanced keys” along the top and a set of character keys at the lower half. Both keypads support multi-key operation, which normally requires two keys hit simultaneously, one of which is a modifier key.

As for entering text, the numeric and QWERTY keypad are equally capable of entering numbers, letters, symbols and punctuation marks. Both also receive supplementary backlight along with the screen.



Figure 5: 30-key numeric keypad



Figure 6: 38-key numeric & alpha keypad



Figure 7: 53-key alphanumeric keypad

NUMERIC KEYPAD (30-KEY)

The numeric keypad possesses 30 keys, including the number keys 0-9, and Esc, Ctrl, Space, Backspace, Enter and period key (.). Also featured are function keys F1 to F4. The power key is seated at the lower right corner of the keypad.

The modifier keys Fn key  and Alpha key  are located under the Basic keys, and can be used to change the keypad input mode. Alpha key  can be used to enter numbers 2-9 or letters A-Z, or trigger Shift key, and Fn key , with accompanied use of other keys (F5 to F12), can be used to increase the number of function keys (F5 to F12), adjust volume and touchscreen backlight, or lock the keypad.



NUMERIC & FUNCTION KEYPAD (38-KEY)

The numeric and function keypad possesses function keys (F1 to F10) which can assist usage in special applications. The keypad provides number keys 0-9, as well as Esc, Ctrl, Space, Backspace, Enter key, period key (.) and comma key (,). The power key is also seated at the lower right corner of the keypad.

The numeric and function keypad also features an Alpha key , Shift key  and Fn key . When triggered, the Alpha key  can be used to enter letters A-Z. The Shift key  is located right below the Alpha key, and is used to change alphabetic input to uppercase. The Fn key  is seated on the lower end of the keypad, and extends the number of Fn keys to F14. It can also be used with other keys to increase the number of function keys (F5 to F12), adjust volume and touchscreen backlight, or lock the keypad.



ALPHANUMERIC KEYPAD (53-KEY)

The 53-key alphanumeric keypad features not only letter keys A-Z and number keys 0-9, but also many other keys for extensive application when connected to a terminal. Also included are an Esc key, Ctrl key, Backspace key, Shift key, Enter key, period key (.) and comma key (,). Unlike the other two keypads, the power key is located near the upper right corner of the keypad.

As for modifier keys, the alphanumeric keypad features an Alpha key  and Shift key . The alpha key combined with other keys on the keypad can enter a variety of symbols, or adjust volume and touchscreen backlight. It can also be used to trigger the Alt key, function keys F1-F10, and enter other text editing keys (tab leftward and rightward). As for the Shift key, it allows entering of Shift+1, 2, 3....10. In addition, it locks the keypad when used with the Backspace key. The alphanumeric keypad is the most comprehensive in text input, and is perfect for working with terminal emulation applications.



BASIC KEYS

These are a set of keys kept at the top of the keypad throughout all three keypad types.



Figure 8: Basic keys

Basic keys deliver the following functions:

Key	Description
SCAN KEY 	Press the scan key to read a barcode in place.
ARROW KEYS 	The arrow keys are circled around the center scan key. These can be used to move the cursor up, down, left or right during text input, or move between items in certain applications.
SEND /END KEY 	By default, these two keys input the functions F14 and F15. You may also define their new key functions using CipherLab's Button Assignment.

MODIFIER KEYS

The keypads have five different modifier keys integrated on it. The key trigger and recovery methods differ slightly according to keypad type.

Key	Keypad	Key Location	How to enter	How to resume
Alpha	Numeric keypad (30-key)	Available on keypad 	Press Alpha key once to enter Alpha Lock mode	Press Alpha key once more to return to normal input mode
	Numeric and function keypad (38-key)	Available on keypad 		
	Alphanumeric keypad (53-key)	Available on keypad 		
Fn	Numeric keypad (30-key)	Available on keypad 	Press Fn key once to enter Fn mode	Keypad returns to normal input mode upon pressing any button ▶ If Alpha key is pressed, Alpha mode is triggered until Alpha key is pressed once more
	Numeric and function keypad (38-key)	Available on keypad 		
	Alphanumeric keypad (53-key)	Not available	--	--
Shift	Numeric keypad (30-key)	Available under Alpha mode 	Under Alpha mode, press the period key (.) once to enter Shift mode Under Alpha mode, press the period key (.) twice to enter Shift Lock mode	Under Shift mode, keypad returns to normal input mode upon pressing any button Under Shift Lock mode, keypad returns to normal input mode upon pressing Shift key once more, or upon pressing Ctrl or Alt key
	Numeric and function keypad (38-key)	Available on keypad 	Press Shift key once to enter Shift mode	
	Alphanumeric keypad (53-key)	Available on keypad 	Press Shift key twice to enter Shift Lock mode	
Ctrl	Numeric keypad (30-key)	Available on keypad	Press Ctrl key once to enter Ctrl mode ▶ Press Ctrl key first, and then press the key to deliver the Ctrl function to. For instance, press Ctrl and then A to deliver Ctrl+A	Keypad returns to normal input mode upon pressing any button
	Numeric and function keypad (38-key)	Available on keypad		
	Alphanumeric keypad (53-key)	Available on keypad		
Alt	Numeric keypad (30-key)	Available under Alpha mode	Press Alt key once to enter Alt mode	Keypad returns to normal input mode

	Numeric and function keypad (38-key)	Available under Fn mode	▶ Press Alt key first, and then press the key to deliver the Alt function to. For instance, press Alt and then Enter to deliver Alt+Enter	upon pressing any button
	Alphanumeric keypad (53-key)	Available under Alpha mode		

ALPHA KEY

The Alpha key is equipped with an LED indicator. When the Alpha key is pressed, the LED will light up in blue to indicate that Alpha key is activated. When Alpha key is pressed once more, the LED will go off and the keypad will return to normal input mode.

The Alpha key delivers the following functions on each of the keypads:

Keypad	Alpha key	Key Function
Numeric keypad (30-key)		▶ Under Alpha mode, press number keys 2-9 to enter lowercase letters a-z ▶ Under Alpha mode, press number keys 0 and 1 to enter punctuation marks ▶ Under Alpha mode, press period key to enter Shift mode, in which pressing number keys 2-9 enters uppercase letters A-Z, and pressing arrow keys moves the cursor up, down, left and right
Numeric & Function keypad (38-key)		▶ Under Alpha mode, press arrow keys, number keys 0-9, Function keys F1-F10 and punctuation keys to enter lowercase letters a-z ▶ Under Alpha mode, press Shift key to enter Shift mode, in which pressing arrow keys, number keys 0-9, Function keys F1-F10 and punctuation keys enters uppercase letters A-Z
Alphanumeric keypad (53-key)		▶ Under Alpha mode, press letter keys A-Z to enter symbols, adjust volume or touchscreen backlight ▶ Under Alpha mode, press Ctrl key to trigger Alt mode ▶ Under Alpha mode, press Space/Backspace key to enter Insert/Delete ▶ Under Alpha mode, press number keys 0-9 to trigger function keys F1-F10 ▶ Under Alpha mode, press period key (.) or asterisk key (*) to move to the previous or next tab spot

SHIFT KEY

The Shift key is equipped with an LED indicator. When the Shift key is pressed once, the LED will light up in green to indicate that Shift key is activated. The LED goes off after another key is pressed and the keypad returns to normal input mode. When the Shift key is pressed twice, the LED will stay lit until Shift key is pressed once more.

The Shift key delivers the following functions on each of the keypads:

Keypad	Shift key	Key Function
Numeric keypad (30-key)	 (Alpha mode)	▶ Under Alpha mode, press Shift key to enter Shift mode, and press number keys 2-9 to enter uppercase letters A-Z ▶ Under Alpha mode, press Shift key to enter Shift mode, and press arrow keys to move the cursor up, down, right or left ▶ Under Alpha mode, press Shift key to enter Shift mode, and press F1 to F4 to enter Shift+F1 to F4

Numeric & Function keypad (38-key)		▶ Under Shift mode, press number keys 0-9 to enter Shift+0-9 ▶ Under Shift mode, press arrow keys to move the cursor up, down, right or left ▶ Under Shift mode, press Backspace key to lock the keypad ▶ Under Shift mode, press End/Send key to enter Shift+F14/F15 ▶ Under Shift mode, press F1 to F10 to enter Shift+F1 to F10 ▶ Under Shift mode, press arrow keys, number keys 0-9, function keys F1 to F10, period key and comma key to enter uppercase letters A-Z
Alphanumeric keypad (53-key)		▶ Under Shift mode, press letter keys a-z to enter uppercase keys A-Z ▶ Under Shift mode, press 0-9 to trigger function keys F11 to F20

Note: If you are using the on-screen keyboard, tap CAP (Caps Lock) to switch between uppercase and lowercase alphabetic modes.

FUNCTION KEY

The Function key is equipped with an LED indicator. When the Function key is pressed, the LED will light up in orange to indicate that Function key is activated. When Function key is pressed once more, the LED will go off and the keypad will return to normal input mode.

The Function key delivers the following functions on each of the keypads:

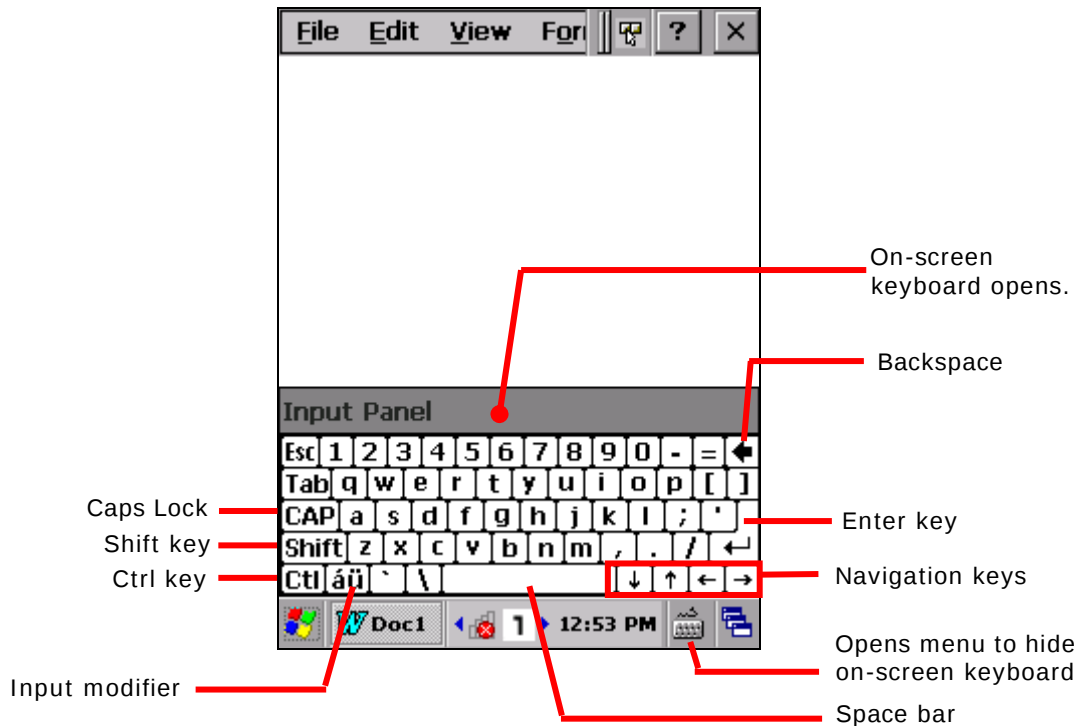
Keypad	Fn key	Key Function
Numeric keypad (30-key)		▶ Under Function mode, press number keys 1-4 and function keys F1-F4 to enter function keys F5-F12 ▶ Under Function mode, press other number keys to adjust volume, touchscreen backlight or enter a hyphen (-) ▶ Under Function mode, press arrow keys to deliver Home, End, Page Up, Page Down ▶ Under Function mode, press Ctrl key to activate Alt key ▶ Under Function mode, press Backspace to lock the touchscreen ▶ Under Function mode, press space key to open the Start menu
Numeric & Function keypad (38-key)		▶ Under Function mode, press number keys 1-4 and function keys F1-F4 to enter function keys F11-F14 ▶ Under Function mode, press other Fn keys to adjust volume, touchscreen backlight ▶ Under Function mode, press arrow keys to deliver Home, End, Page Up, Page Down ▶ Under Function mode, press Ctrl key to activate Alt key ▶ Under Function mode, press Backspace to lock the touchscreen ▶ Under Function mode, press space key to open the Start menu
Alphanumeric keypad (53-key)	Not available	None

1.5.2. ON-SCREEN KEYBOARD

The OS provides users with an on-screen keyboard. The on-screen keyboard supports entering a series of diacritics for European languages by tapping a modifier key.

The on-screen keyboard auto-opens in some applications when a text input field is selected.

In case the on-screen keyboard doesn't open automatically, tap the keyboard icon  on the taskbar and select Keyboard to open it. When opened, the on-screen keypad is ready to enter lowercase letters, numbers, and a few frequently used symbols.



MODIFIER KEYS

Although the touchscreen is a resistive single-touch type, use of modifier keys, which normally involves hitting two keys, are still available on the on-screen keyboard.

On the on-screen keyboard there are four modifier keys, which are seated at the left edge. These keys work as follows:

- 1) Press a modifier key on on-screen keyboard.

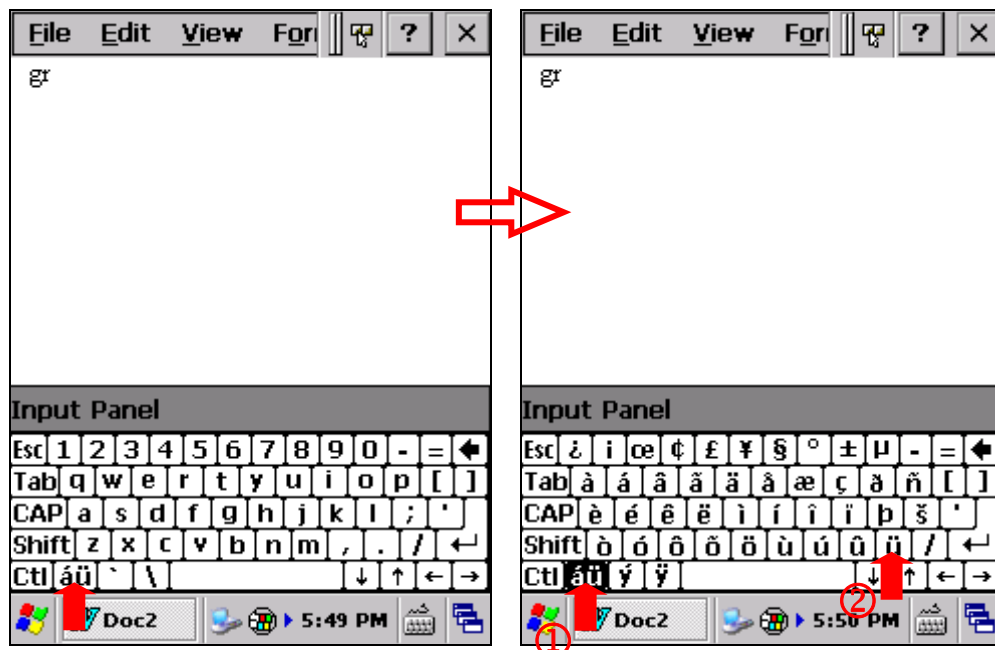
The on-screen keyboard enters modifier state.

- 2) Press the second key.

The desired performance will be produced in the active application or on the screen open at the moment.

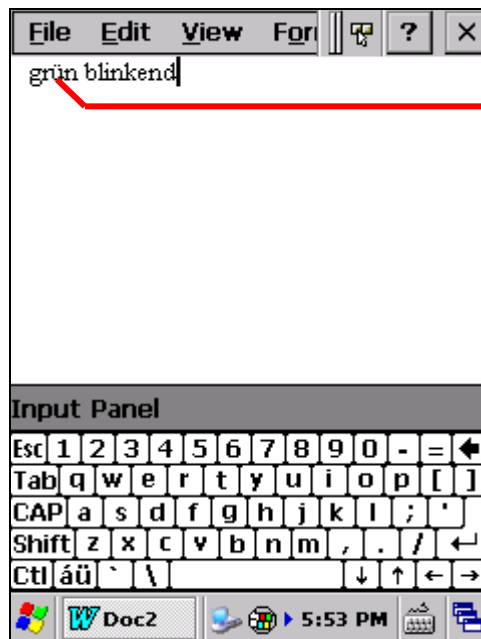
Modifier keys are explicated as following

Key	Description
Ctrl key Ctl	Once tapped, it becomes color-inverted Ctl and causes a special action from OS or the active application when a character key is tapped. It quits once the said action is triggered or when it is tapped again. For example: Tap Ctl key and then tap key "A" to produce Ctrl+A function, which in Windows environment usually selects all content on the active screen. Once "A" is tapped, the on-screen keyboard quits Ctrl state.
Shift key Shift	Once tapped, it becomes color-inverted Shift and capitalizes the letter typed. It quits once a character key is tapped or it is tapped again. To enter all caps, use Caps Lock CAP .
Caps Lock CAP	Once tapped, it becomes color-inverted CAP and capitalizes all the alphabetic characters typed. It doesn't quit until it is tapped again. This key does not affect numbers, punctuation marks, or symbols.
Input modifier áü	Once tapped, it becomes color-inverted áü and presents a series of accented vowels such as ä, æ, ë, ï, ö, ú or letter variants such as ß and ç which are needed for European languages. It quits once a character key is tapped.



Tap **áü** key on on-screen keyboard.

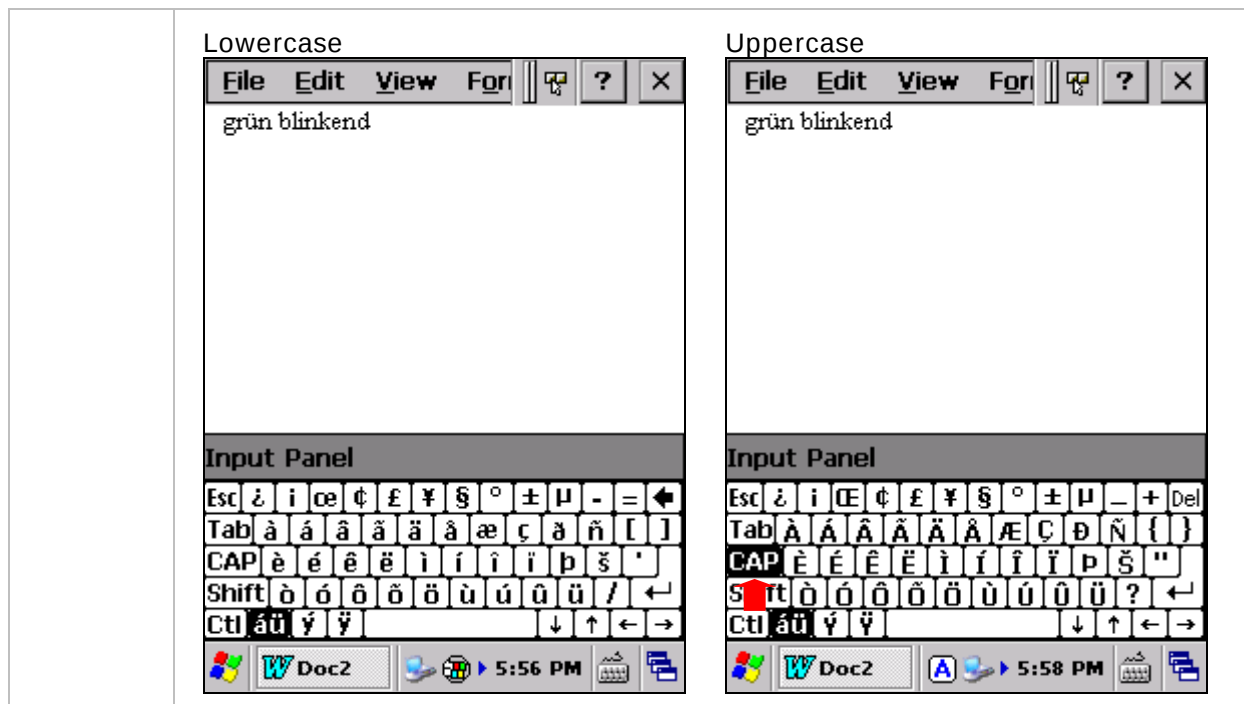
áü key becomes color-inverted **áü**. Then tap a character key.



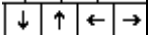
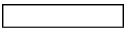
Letter variant "ü" is entered

After the letter variant "ü" is entered, the on-screen keyboard restores to normal English alphanumeric layout.

Diacritical letters and letter variants are presented both in lowercase and uppercase.

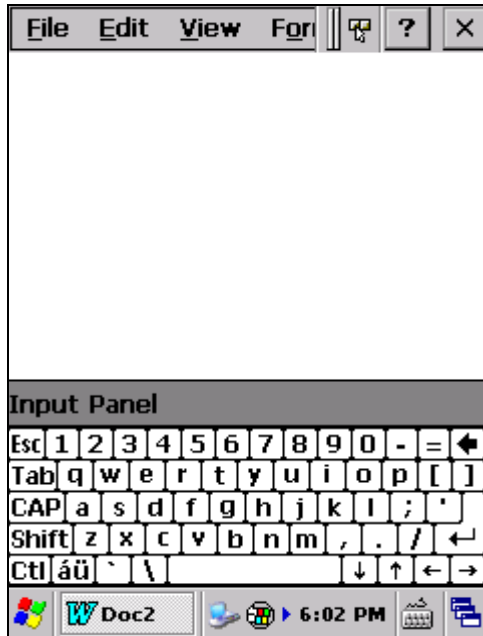


OTHER KEYS

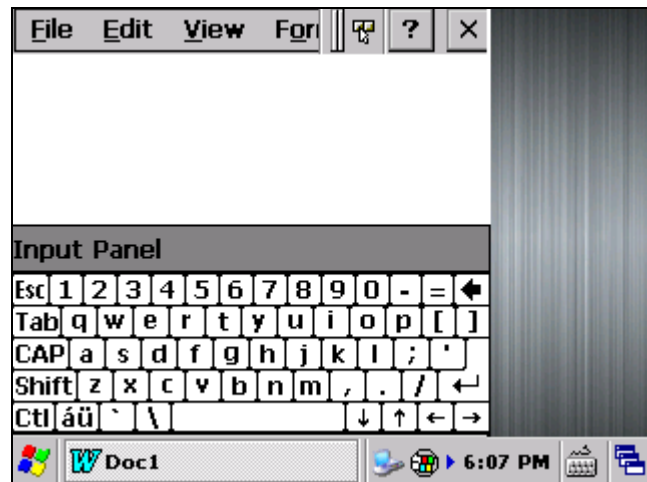
Key	Description
Tab key 	Navigates among the highlight items in some applications. For text input, it inserts Tab character, which means it moves caret to the next tab stop.
Backspace 	Erases the characters to the left of caret.
Enter key 	Executes a command or confirms input. When text input, it inserts a break between paragraphs.
Navigation keys 	Move caret in an input field. In certain applications, they navigate vertically or horizontally among highlight items.
Spacebar 	Inserts a blank space where caret is.

CHANGE KEYBOARD ORIENTATION

The mobile computer is built-in with a G-sensor and supports screen orientation, which is enabled by default. So when the mobile computer turns sideways or upright, the screen changes its orientation, and on-screen keyboard also readjusts itself to the new orientation.



Upright (Portrait Mode)



Sideways (Landscape Mode)

To disable automatic screen rotation, see [Screen Orientation](#).

1.5.3. EDIT TEXT

On the mobile computer, cut, copy, and paste text within an application or across applications by the menu commands. Some applications don't support editing some or all of the text they display while others may offer their own way to edit text.

EDIT TEXT IN INPUT FIELDS

To edit text in a text input field:

- 1) Tap where you want to edit text.

Caret moves to the desired place and manifests itself as a vertical bar that blinks to indicate where the typed or pasted text will be inserted.

- 2) Type, paste or delete text.

To paste text, see [Paste Text](#).

SELECT TEXT

When you see some text on a page you want to copy, select it first by tapping and dragging the caret so the desired text is highlighted.

CUT OR COPY TEXT

After a text is selected, tap the Edit menu on the title bar of the active window to open an option menu that includes Copy/Cut commands. Tap them to copy/cut the selected text.

PASTE TEXT

Within the OS, texts can be copied to and from certain applications.

To paste text:

- 1) Tap the text field where you want to paste the text.
- 2) Tap the Edit menu on the title bar of the active window and select the Paste command.

1.6. TOUCH CONTROL

The mobile computer's LCD is overlaid by a resistive touch panel and thus forms a resistive touchscreen. Since a resistive touchscreen locates the user's touch by the force applied on it, by operating with the stylus one can apply minimum force to trigger actions from the touchscreen.

Touch control is one of the main ways to interact with the mobile computer. It provides the ability to manipulate icons, buttons, menu commands, the on-screen keyboard, or any on-screen items.

1.6.1. USE TOUCHSCREEN

The mobile computer comes with a stylus. Use it to touch-operate the mobile computer. Apply the gestures below to work on the touchscreen:

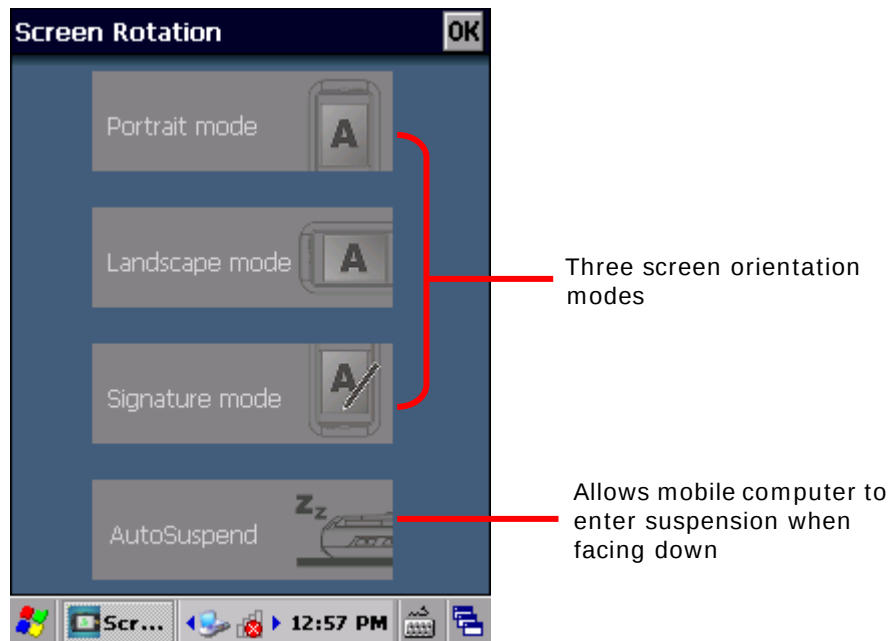
- ▶ Tap – Touch any item on the screen such as an application icon or a setting icon to work on it, or touch any key on the on-screen keyboard to type it.
- ▶ Tap and hold – Touch an item on the screen and do not release until an action occurs.
- ▶ Drag – Touch and hold an item for a moment and then, without release, move the item on-screen until you reach the target.
- ▶ Double-tap – Touch quickly twice on certain screens to zoom. For example, double-tap a section of a webpage in a web browser to zoom that section so it fits the width of the screen. Some applications such as map-info applications support picture zooming with double-tap.
- ▶ Rotate screen – On most screens, the screen rotates as the mobile computer changes its orientations between upright and sideways.

1.6.2. SCREEN ORIENTATION

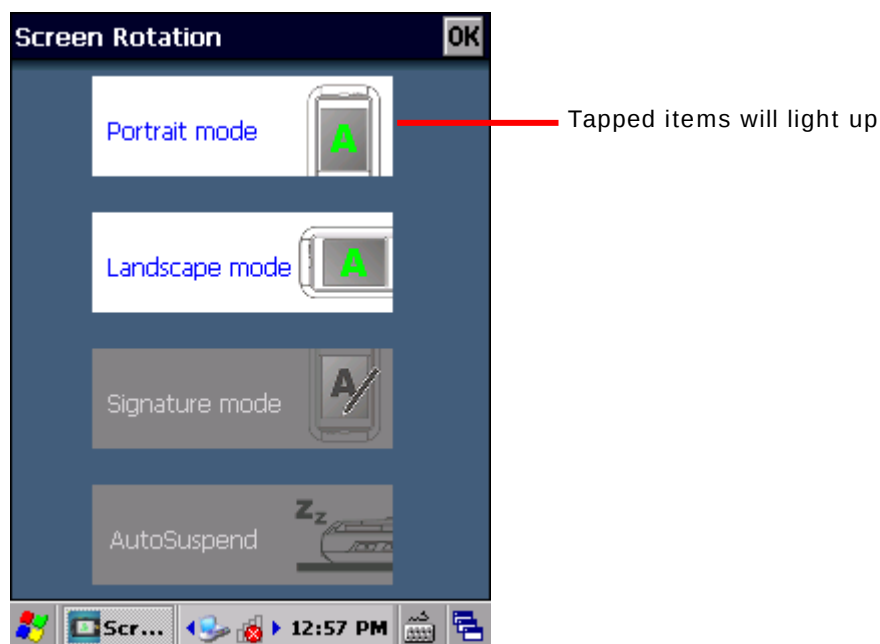
The mobile computer has a built-in G-sensor for screen orientation. In order to enable automatic screen orientation:

- 1) Tap Start | Settings | Control Panel | Screen Rotation .

Screen Rotation window opens with three orientation modes to select from and an option to suspend the mobile computer when the screen is facing down.



- 2) Tap the modes that you wish to enable. The tapped item will light up to indicate it is currently enabled.



- 3) Tap OK on the title bar to apply the changes.

The mobile computer will then automatically switch between the enabled modes according to its physical orientation. For instance, if Portrait and Landscape modes are enabled, the touchscreen will switch between upright and sideways view according to the user's holding position. However, if only Portrait (upright) mode is enabled, the touchscreen will stay in upright mode regardless of the mobile computer's orientation.

SIGNATURE MODE

The signature mode is for combined usage with the CipherLab application Signature. With this mode enabled, the screen will immediately rotate 180° when the front of the mobile computer is tilted outwards, which is convenient for signing by a second party.

Note: If no modes are selected in Screen Rotation, the mobile computer's touchscreen will be fixed in portrait mode.

1.6.3. ADJUST BACKLIGHT

Screen backlight can be adjusted manually or automatically. Upon shipping, the mobile computer is set to automatic adjustment, which helps save power. Alternatively you can set the backlight manually according to your preferences.

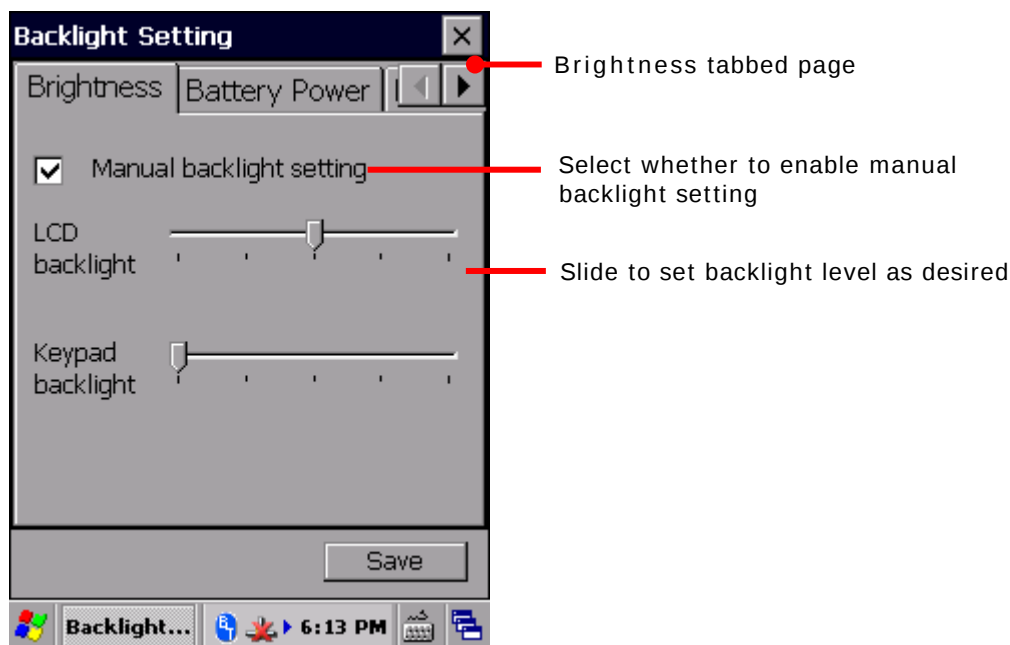
MANUAL BACKLIGHT ADJUSTMENT

To adjust screen backlight:

- 1) Tap Start | Settings | Control Panel | Backlight Setting .

Brightness tabbed page opens with a checkbox to enable manual backlight setting, and a slider bar for setting screen backlight level.

By default, Manual backlight setting is checked, and screen and keypad backlights will stay at the set level and will not adjust automatically. When Manual backlight setting is unchecked, the light sensor embedded on the front of the mobile computer will detect current lighting environments, and screen and keypad backlights will adjust automatically according to the backlight profiles set under the Profile tabbed page.



- 2) Tap Save in the lower right corner to apply the settings.

AUTOMATIC BACKLIGHT PROFILES

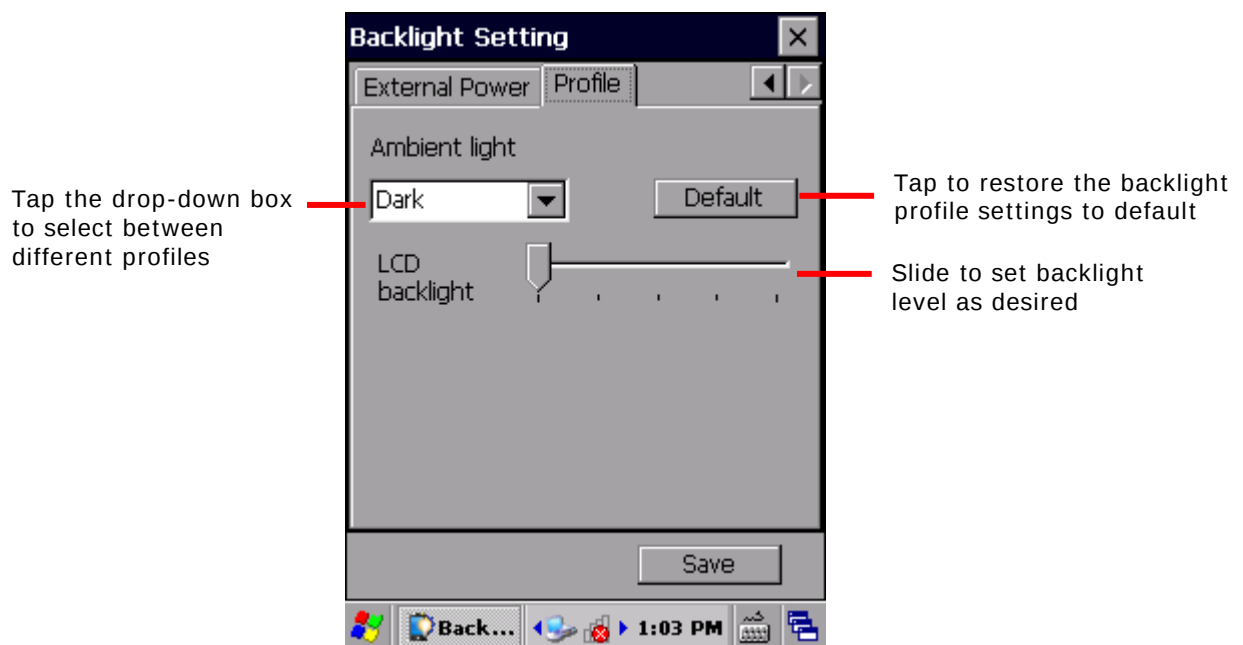
The mobile computer stores three backlight profiles to represent backlight level under different environments. These can be configured according to user's likings.

To set backlight profiles:

- 1) Tap Start | Settings | Control Panel | Backlight Setting .
- 2) Uncheck Manual backlight setting to enable profile function.
- 3) Switch to the Profile tabbed page.

Three profiles, Dark, Bright, and Brightest are available in the drop-down box. Select the profile you would like to modify and use the slider bar below to set the backlight levels to your preferences. The screen backlight will change temporarily to show the effect.

To restore profile settings to default, tap the Default button at the top right corner.



- 4) Tap Save in the lower right corner to apply the settings.

1.6.4. CALIBRATION

A resistive touchscreen needs calibration to work accurately after serving for a period of time. Calibration aligns the coordinates of the touch panel and the LCD underneath to improve touch accuracy.

To calibrate the touchscreen:

- 1) Tap Start | Settings | Control Panel | Stylus .
- 2) Tap Calibration tabbed page.

Calibration tabbed page opens. Tap Recalibrate button to open the calibration screen.



Carefully press and briefly hold stylus on the center of the target. Repeat as the target moves around the screen. Press the Esc key to cancel.



- 3) Using the stylus, tap firmly at the center of the cross that appears on-screen. Five crosses will appear in sequence.

Follow the on-screen instructions to save the new calibration settings or restore the old settings. Once completed, the screen returns to Calibration tabbed page.

1.7. MEMORY

The mobile computer packs the following memory units to retain data and instructions from users:

- ▶ Internal Storage: Random-access Memory (RAM) and Flash memory

512 MB SDRAM for temporary storage and fast access of active applications. When the main battery pack is absent, SDRAM is fed by backup battery to retain data.

4GB flash memory to store OS (Windows Embedded Compact 7.0), application files, settings, and other data used by applications.

- ▶ External Storage

Insert a storage card to increase the mobile computer's storage capacity. Supported are MicroSDHC cards up to 32GB.

1.7.1. DATA LOSS CAUTION

When main battery is absent or used up, backup battery on the main board takes over to supply power to the mobile computer. A fully charged backup battery retains SDRAM data and suspends the mobile computer for 30 minutes.

Note if you are leaving the mobile computer to sit for a couple of days, data loss will occur when both main and backup batteries drain out. Consider backing up data before putting away the mobile computer.

1.7.2. CHECK STORAGE

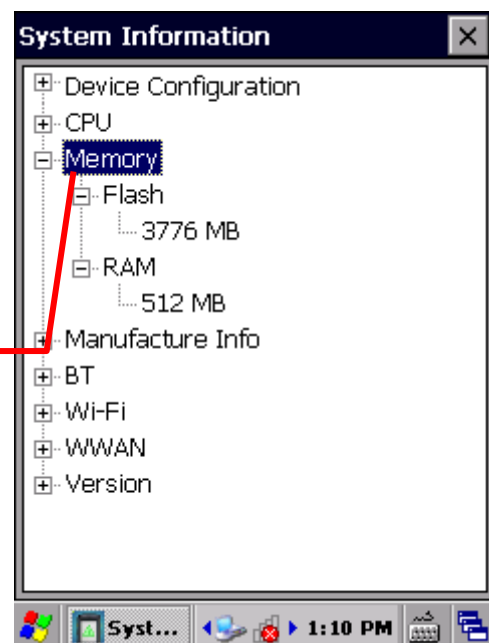
INTERNAL STORAGE

To check internal storage size:

- 1) Tap Start | Settings | Control Panel | System

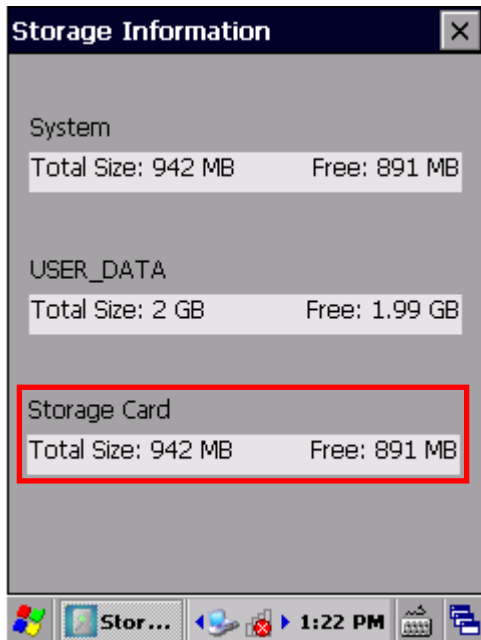
Information  . The application opens revealing information about the mobile computer's assemblage and hardware/firmware components, including device manufacturer, device ID, memory size, and firmware/software version. RAM and Flash size are also listed among this info.

Expand to view information on memory size



EXTERNAL STORAGE

Tap Start | Settings | Control Panel | Storage Information . The Storage Card label shows the available space on the storage card (if no storage card is installed on the mobile computer, the available size will be displayed as 0).



1.7.3. INSERT SD CARD

Day-to-day use of the mobile computer might cause the available internal storage to run short. Equip the mobile computer with an external memory unit to expand storage capacity.

Follow the steps below to install a SD card:

- 1) Power off the mobile computer.
- 2) Place the mobile computer face-down on a flat and soft surface.
- 3) Lift up the handstrap slightly to remove the main battery pack as described in [Install/Remove Main Battery](#).
- 4) The SD card socket located inside the battery chamber is concealed with a rubber cover. Lift the rubber cover to reveal the card socket.
- 5) The SD card socket is equipped with a hinged cover. Push the hinged cover right and lift the cover up to open the card socket. Insert your SD card in the indicated direction .
- 6) Close the hinged cover and push the cover left to have it locked.
- 7) Replace the main battery pack.

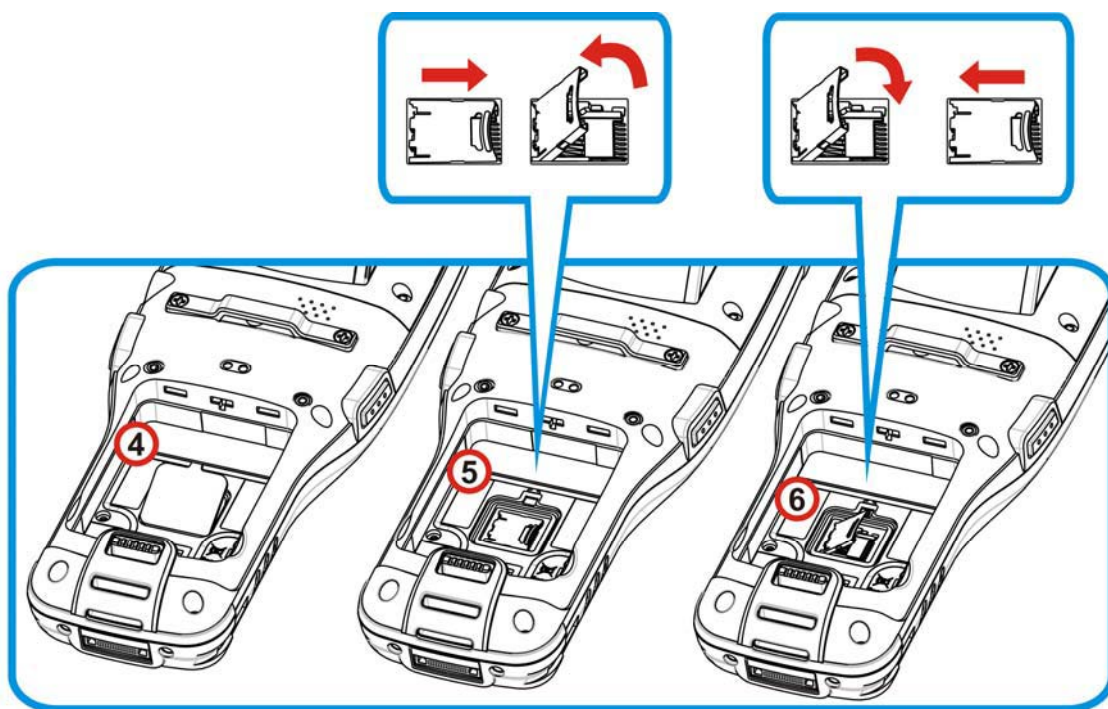


Figure 9: Inserting SD Card

1.8. DIRECT DATA COMMUNICATION

“Direct” data connection means “hardwired” data connection between the mobile computer and a Windows-based PC as opposed to wireless connection. Direct data connection relies on a RS-232 cable or a USB cable (sometimes plus an auxiliary cradle) between the two mentioned devices. Once the mobile computer and PC are “directly” connected with each other by a RS-232 or USB-cable, they can sync data with each other.

1.8.1. USE SNAP-ON CABLE

Direct data communication using a cable:

- 1) Connect the mobile computer to your PC with a Snap-on Charging and Communication Cable (either USB or RS-232 type) .
- 2) On the mobile computer, tap Start | Settings | Control Panel | USB Connection



- 3) To connect the mobile computer and PC via ActiveSync, select ActiveSync Serial Mode.

To treat the mobile computer as an external storage device, select Mass Storage – SD Card.

- 4) Tap OK on the title bar to apply the settings.

If one of the first two options are selected, ActiveSync will automatically detect connection between the two and prompt for data synchronization.

See [Syncing Tools](#) and subsequent sections to know how to use ActiveSync.

Note: The 9700 mobile computer uses COM9 for serial transmission via RS-232.



Figure 10: Direct Data Communication Using Snap-on Cable

1.8.2. USE CRADLE

Direct cradle charging makes use of a Charging & Communication Cradle (hereinafter “cradle”). The cradle is one of the accessories you can opt for.

Prior to charging, install main battery as described in [Install/Remove Main Battery](#). Then follow the steps below:

- 1) Seat the mobile computer into the cradle. Connect one end of the USB cable to the Cradle and the other end to the PC.
- 2) To charge the mobile computer, connect the cradle to an external power source using the power adapter.

- 3) Tap Start | Settings | Control Panel | USB Connection .

- 4) To connect to the PC via ActiveSync, chose ActiveSync Serial Mode or ActiveSync Serial Mode.

To treat the mobile computer as an external storage device, chose Mass Storage – SD Card. Note that Mass Storage is only supported when as SD card is installed on the mobile computer.

- 5) Tap OK on the title bar to apply the settings.

If ActiveSync Serial Mode is selected, see [Syncing Tools](#) and subsequent sections to know how to use ActiveSync.

Note: The cradle supports USB Host Mode via a USB OTG cable.

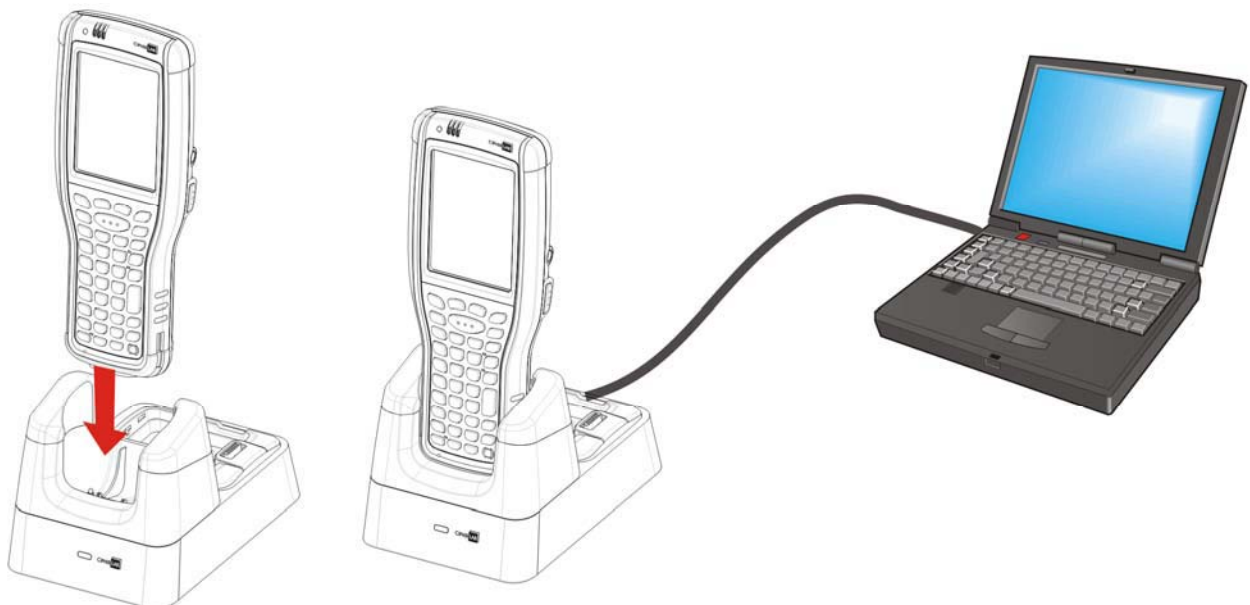


Figure 11: Direct Data Communication Using Cradle

1.8.3. SYNCING TOOLS

Microsoft's syncing tools enables users to update or back up the data on their mobile computers to desktop computers.

Two syncing tools are featured by Microsoft - ActiveSync and Windows Mobile Device Center ("WMDC"). Which tool to use depends on which OS is running on your PC. See the rule below:

OS	Syncing Program
Windows Vista or Windows 7	WMDC 
Windows XP SP3 and earlier	ActiveSync 

ActiveSync and WMDC can be downloaded from Microsoft's website. Download and install the right one on your PC.

Hereafter in this manual, we will focus on ActiveSync only. For WMDC usage, see its documentation or help file.

1.8.4. SYNC PARTNERSHIP

Once a direct connection is established between the mobile computer and your PC as described in [Use Snap-on Cable](#), they are able to form the following ties:

Sync Partnership	Services
Synchronization Relationship	▶ Allows the mobile computer and PC to sync data with each other. ▶ Allows PC to add and remove programs to/from the mobile computer. ▶ Allows PC to browse files on the mobile computer. ▶ Allows PC to copy files to/from the mobile computer. ▶ Allows PC to back up the files on the mobile computer.
Temporary Relationship (Mobile computer works as a "guest" to PC)	▶ Allows PC to add and remove programs to/from the mobile computer. ▶ Allows PC to browse files on the mobile computer. ▶ Allows PC to copy files to/from the mobile computer. ▶ Allows PC to back up the files on the mobile computer.

Note that data stored on external storage (the SD card) cannot be synchronized.

See [ActiveSync Actions to Take](#) for details about the mentioned services.

1.8.5. 1ST USB SYNC

This section will guide you through USB syncing. To connect ActiveSync using USB:

- 1) Download the right syncing tool as described in [Syncing Tools](#) and install it on your PC.
- 2) Connect the mobile computer and your PC as described in [Use Snap-on Cable](#).
- 3) On your PC, run the syncing program.

ActiveSync should detect the mobile computer. Sync Setup Wizard launches and prompts to set up [Sync Partnership](#) between two computers.

- 4) Press Next for “Synchronization Relationship”, or press Cancel for “Temporary Relationship” if you don't plan to connect to the PC on a regular basis.

If you have pressed Next, follow the on-screen instructions and select the data categories you would like to synchronize. Once confirmed, synchronization will begin shortly, and when the process is finished, ActiveSync window will show “Synchronized” to indicate that the data on the mobile computer and PC are identical.



A “Synchronization Relationship” is established between the mobile computer and the PC

OR

If you have pressed Cancel, Microsoft ActiveSync opens showing “Guest” and “Connected”. The mobile computer and the PC are connected but the data is not synchronized.



A "Temporary Relationship" is established between the mobile computer and the PC

Note: If you encounter trouble during USB ActiveSync connection, tap Start | Settings | Control Panel | USB Connection and make sure "ActiveSync Serial Mode" is selected.

1.8.6. DISCONNECT USB ACTIVESYNC

To disconnect USB ActiveSync:

- 1) On your PC, open ActiveSync by double-clicking its icon  in the notification area. ActiveSync opens.
- 2) From the menu bar, click File | Connection Settings.
[Connection Settings] window opens.
- 3) Deselect Allow USB connections.
- 4) Press the OK button to apply the change and quit setting.

This way when you plug your mobile computer the next time, ActiveSync won't attempt to connect to it.

1.8.7. ACTIVESYNC ACTIONS TO TAKE

Once “Synchronization Relationship” or “Temporary Relationship” is established between two computers, a variety of actions can be taken to enhance resource sharing between them as previously mentioned in [Sync Partnership](#).

In summary, “Synchronization Relationship” outshines “Temporary Relationship” by being capable of syncing Microsoft Office Outlook data. However “Temporary Relationship” provides satisfactory file sharing if you don’t want to synchronize information.

See the following to know what actions to take with ActiveSync:

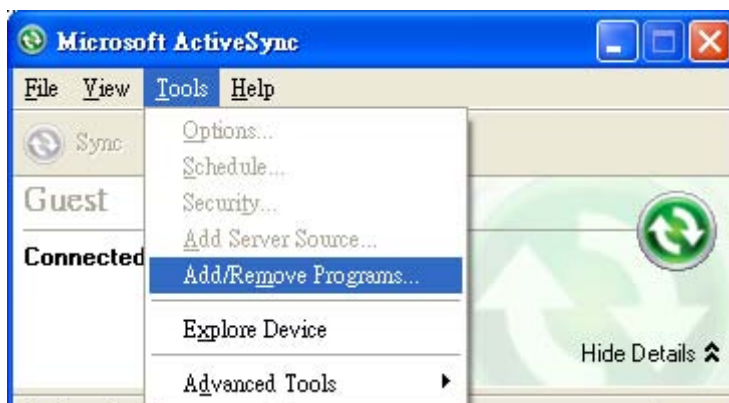
ADD/REMOVE PROGRAMS

Note basically the applications to be installed to the mobile computer need to be installed on your PC first. So download the application programs to your PC first and install them on your PC so they can be installed onto the mobile computer later.

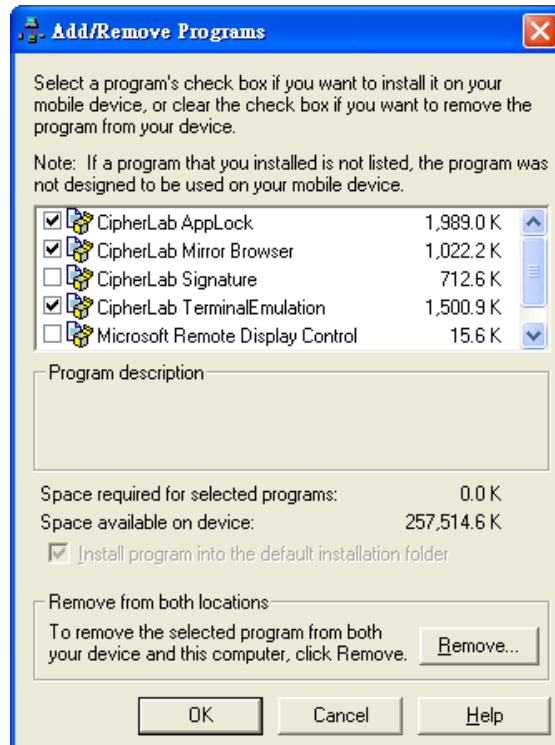
Many application programs are installed in different ways. Read their installation guides or documentation to know how they are installed. If you are installing an application that cannot be installed on your PC first, try to install it right from the mobile computer. See [Install Applications](#) for more details.

To install an application on the mobile computer:

- 1) Connect two computers as described in [Use Snap-on Cable](#).
- 2) Sync two computers as described in [1st USB Sync](#).
- 3) On the PC, from the menu bar of ActiveSync, select Tools | Add / Remove Programs.



ActiveSync starts to search for the application programs installed on your PC and opens its [Add / Remove Programs] dialog which lists those found. Each entry comes with a check box on the left. An unchecked box means the program is yet to install to the mobile computer while a checked one means an installed program.



- 4) Select the application program(s) to install to the mobile computer, and deselect the application program(s) to uninstall from the mobile computer.
- 5) Press the OK button.

ActiveSync proceeds to install programs and/or remove programs to/from the mobile computer.

- 6) Follow the on-screen instructions on both your PC and the mobile computer to proceed.

Noteworthy facts:

- ▶ Normally the application program(s) downloaded from external resources are installed to the mobile computer's directory at My Device\Program Files. However sometimes there are exceptions and the actual situation depends on the application.
- ▶ You can also uninstall applications directly on the mobile computer rather than on the PC. See [Uninstall Applications](#) for more details.
- ▶ If you would like to uninstall a program that isn't listed in the [Add / Remove Programs]

dialog, browse to it on the mobile computer by tapping My Device  on the desktop. Tap and hold it, and select Delete from the context menu that pops up.

ADD APPLICATION SHORTCUTS TO START MENU

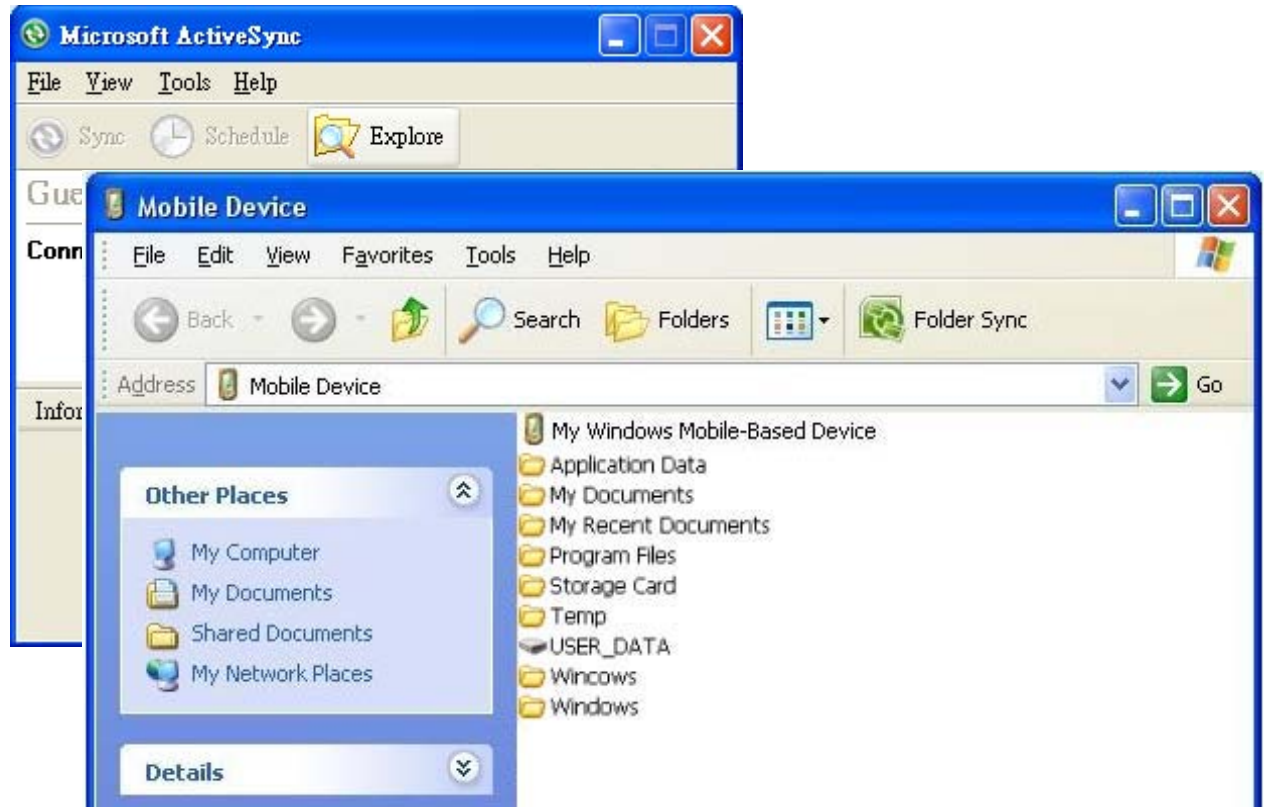
ActiveSync features "Explore" to add an application shortcut to Start menu where it is easier to launch the application.

To add an application shortcut to Start menu:

- 1) Connect two computers as described in [Use Snap-on Cable](#).
- 2) Sync two computers as described in [1st USB Sync](#).

- 3) On the PC, from ActiveSync's menu bar, select Tools | Explore Device, or from its toolbar, press Explore  button.

The mobile computer's internal storage root directory "Mobile Device" opens presenting a few folders (and files).



- 4) Add File Shortcuts to Desktop Double-click My Windows Mobile-Based Device .

- 5) Double-click Program Files.

Program Files folder opens. This is where the downloaded applications are normally installed on the mobile computer's local storage.

In the folder, each sub-folder stores an application.

- 6) Open the folder of the application to create shortcut for.
 7) Find the executable file of that application. Right-click on it and select Copy from the context menu that comes up.
 8) Browse to My Device\Windows\Programs.
 9) Right-click any vacant spot in the folder and select Paste shortcut from the context menu that comes up.

A shortcut to the application is added to the mobile computer's Start menu.

Note: You can also copy & paste by the sequence Create Shortcut -> Cut -> Paste.

You can also add an application shortcut to Start menu directly on the mobile computer. See [Add Items to Start Menu](#) for more details.

REMOVE ITEMS FROM START MENU

To remove an added shortcut from Start menu, simply use ActiveSync's Explore  to delete the shortcut from My Device\Windows\Programs folder.

You can also remove an added shortcut from Start menu directly on the mobile computer. See [Add Items to Start Menu](#) for more details.

ADD ITEM SHORTCUTS TO DESKTOP

To add a shortcut of an application or file to the mobile computer's desktop:

- 1) Connect two computers as described in [Use Snap-on Cable](#).
- 2) Sync two computers as described in [1st USB Sync](#)
- 3) On the PC, from ActiveSync menu bar, select Tools | Explore Pocket PC, or from its toolbar, press Explore  button.

The mobile computer's internal storage root directory "My Device" opens presenting a few folders.

- 4) Browse to the file to create shortcut for.
- 5) Right-click on the file and select Copy from the context menu that comes up.
- 6) Browse to My Device\Windows\Desktop.
- 7) Right-click any vacant spot in the folder and select Paste shortcut from the pop-up menu that comes up.

A shortcut to the file is added to the mobile computer's desktop.

Note: You can also copy & paste by the sequence Create Shortcut -> Cut -> Paste.

You can also add a file shortcut to the desktop directly on the mobile computer. See [Add Items to Start Menu](#) or more details.

CREATE NEW FOLDERS

To create a new folder on the mobile computer:

- 1) Connect two computers as described in [Use Snap-on Cable](#).
- 2) Sync two computers as described in [1st USB Sync](#).

On the PC, from ActiveSync menu bar, select Tools | Explore Pocket PC, or from its toolbar, press Explore  button.

The mobile computer's internal storage root directory "My Device" opens presenting a few folders (and some files).

- 3) Browse where you want to create a folder.
- 4) Right-click any vacant spot there.

Context menu opens

- 5) Select New Folder.

A new folder is created.

BACKUP DATA

To best protect your work, back up the data on your mobile computer regularly. You may choose to manually back up using ActiveSync to copy & paste the files to your PC.

USB PASS-THROUGH NETWORKING

ActiveSync supports “Pass-Through Networking” whereby the mobile computer networks using your PC’s data connection.

For security, disable network bridging on the PC, especially the bridging to a Remote NDIS adapter. For more information on network bridging, see Windows Help on the PC.

After sync partnership is set up between the mobile computer and your PC:

- 1) On your PC, from the menu bar of ActiveSync, select File | Connection Settings.
[Connection Settings] window opens.
- 2) For This computer is connected to, select a network which your PC should connect to when passing through ActiveSync. Options are:

Option	Description
Automatic	Auto-detects proxy ▶ This option detects if a proxy should be used when passing connections through the PC. If yes, configure the proxy on the mobile computer. ▶ This option best suits connecting to a PC (laptop) that may be used at home (with no proxy), as well as to a corporate network (with proxy).
Work Network	Always uses proxy ▶ This option assumes a proxy should be used when passing connections through the PC, and uses whatever proxy is already configured on the mobile computer. ▶ This option best suits connecting to a PC that is always on corporate network.
The Internet	Never uses proxy ▶ This option assumes no proxy is necessary when passing connections through the PC. ▶ This option best suits connecting to a PC connected directly to the Internet through ISP (at home)

- 3) Select Open ActiveSync when my device connects.
- 4) Press OK button to apply the change and quit settings.

1.9. VOLUME AND AUDIO

1.9.1. AUDIO PLAYBACK

Use a headset for audio playback and hands-free telephone communication.

The headset jack (3.5 mm DIA) is built up on one side of the mobile computer and sealed with a hinged rubber. Open the rubber to reveal the headset jack. Plug the connector of your headset to the jack.

Bluetooth headsets are also supported to deliver better mobility. See [Use Bluetooth](#).

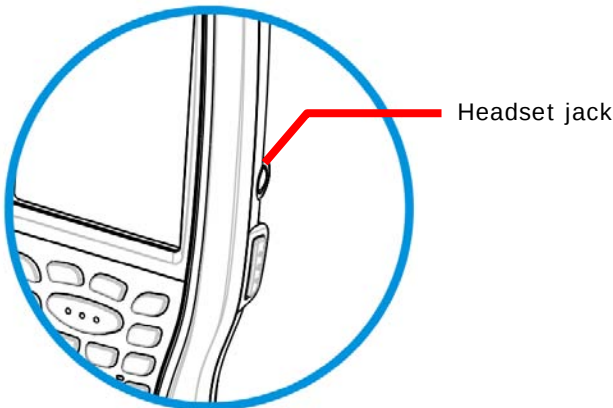


Figure 12: Audio Playback

1.9.2. VOLUME CONTROL

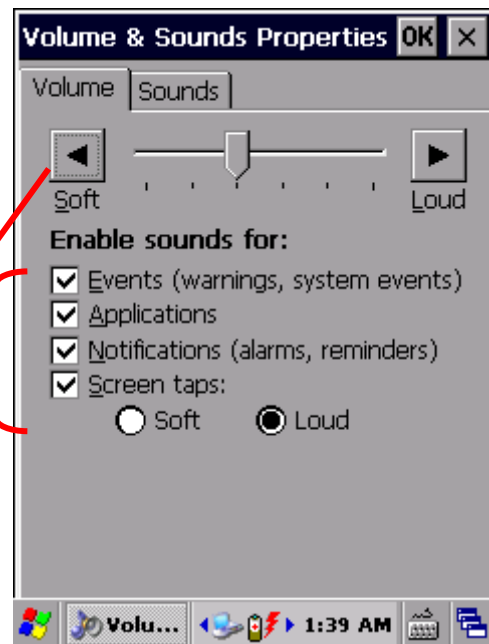
The mobile computer features an on-screen volume gauge to control the system volume, including event sounds, notifications and media playback.

- 1) Tap Start | Settings | Control Panel | Volume & Sounds.

Volume & Sounds Properties window opens showing a slider to adjust system volume and a few checkboxes to select the occasions to play system sounds for.

Slider bar and buttons to adjust system volume

Checkboxes to select when to play system sounds



- 2) Adjust the settings to meet your needs.

When finished, tap OK on the title bar to apply the settings.

OPERATING SYSTEM

The mobile computer is powered by Windows Embedded Compact 7.0, a member of Windows Embedded family. Windows Embedded Compact 7.0 bears much similarity to desktop OS, and users rely only on a few basic gestures such as tap, double-tap and drag to navigate within the OS.

2. IN THIS CHAPTER

2.1 Desktop 54

2.2 Managing Programs 61

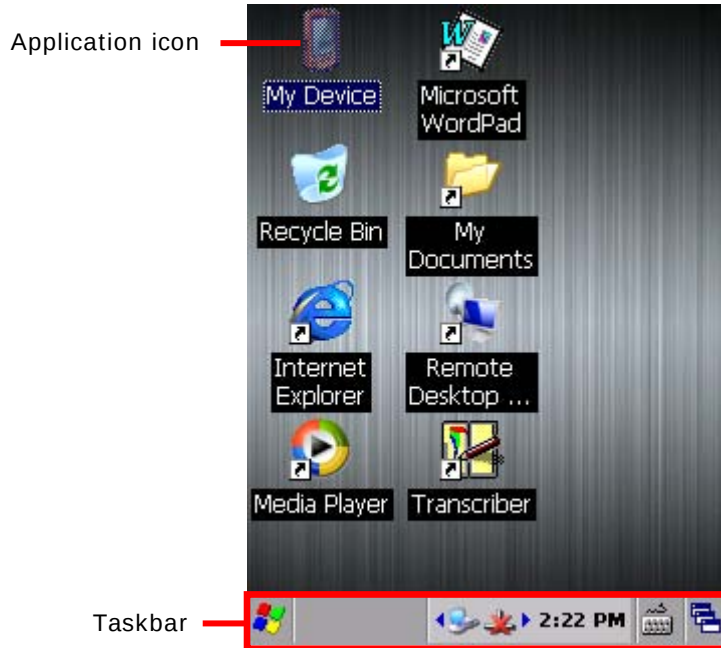
2.3 Suspend & Reset Mobile Computer 66

2.1. DESKTOP

Desktop is where all features on the mobile computer are accessed from.

Basic operations on the desktop:

- ▶ Tap the Start button  to open the Start menu.
- ▶ Double-tap an application icon on the desktop to open it.
- ▶ Tap a blank spot on the desktop to open an option menu for customizing the wallpaper and the items to display. See [Customize Desktop and Start Menu](#) for more details.



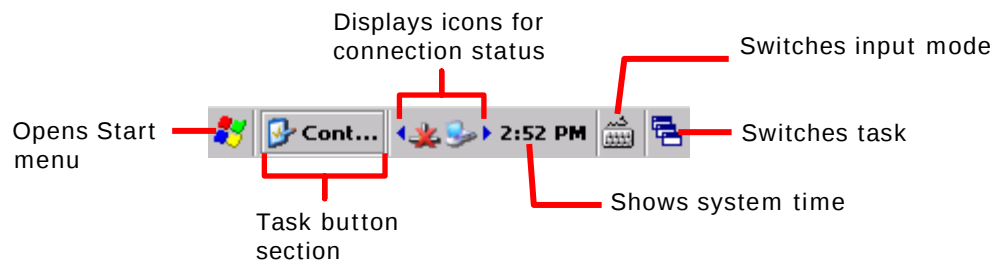
Items on the desktop include:

Icon	Description
	File explorer for the mobile computer's internal storage.
	Recycle bin.
	Shortcut for Internet Explorer.
	Shortcut for Windows Media Player.
	Shortcut for Microsoft WordPad.
	Shortcut which opens \My Device\My Documents directory.
	Shortcut for Remote Desktop Connection.
	Shortcut which enables Transcriber as the active input mode.

2.1.1. TASKBAR

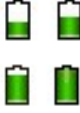
At the bottom of the screen is the taskbar, which is divided into the following sections:

- ▶ Start button: opens Start menu
- ▶ Task button section that shows a button of the current application open on-screen
- ▶ Notification area which displays icons for connection status of the mobile computer, as well as system time
- ▶ A keyboard icon for switching input mode
- ▶ A task icon to switch between active applications or re-open the desktop



STATUS ICONS

The OS presents the following icons for users. Note there may be application-specific icons not included here.

Options	Description
	External power source connected and charging.
	Battery icons indicate the amount of power remaining in the main battery. The higher the green level, the more power in the main battery.
	When the battery icon changes to red, main battery level is low and needs charging immediately.
	Backup battery level is low; check if main battery level is full, or connect the mobile computer to external power to avoid battery depletion and data loss.
	Shift mode: 30-key/38-key keypad enters numbers and symbols, and 53-key keypad enters uppercase letters and symbols. Enters numbers and symbols. ▶ Press Alpha key to convert to alphabetic input.
	Alpha mode: 30-key/38-key keypad enters numbers and symbols, and 53-key keypad enters uppercase letters and symbols. ▶ Press Shift key to switch between uppercase and lowercase letters. ▶ Press Alpha key to convert to numeric/symbolic input.
	Keypad Function mode is on.
	PC connection icon that appears when ActiveSync connection is established.



A specific wireless connection is terminated or has failed. Double-tap the icon to open a window to check IP information. Included connections are:

- ▶ Bluetooth PAN
- ▶ 802.11a/b/g/n
- ▶ WWAN



A specific wireless connection has been established successfully.

Double-tap the icon to open a dialog to check IP information. Included connections are:

- ▶ Bluetooth PAN
- ▶ 802.11a/b/g/n
- ▶ WWAN connection



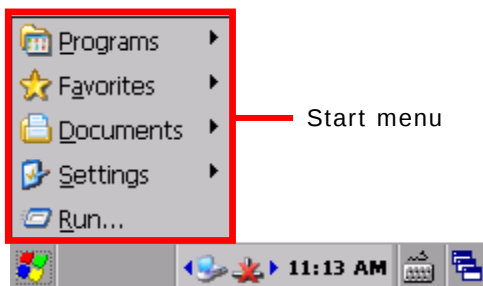
Indicates the Wi-Fi module is enabled. The more the green bars, the stronger the signal.



Indicates cellular data connection status. Red means no connection is established, yellow means the mobile computer is connecting to the WWAN network, and white means a connection is successfully established.

2.1.2. START MENU

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



Options	Description
Programs	Accesses programs stored in the directory My Device\Windows\Programs.
Favorites	Accesses favorite links to webpages that are stored under the directory My Device\Windows\Favorites.
Documents	Accesses recently opened documents stored under the directory My Device\Windows\Recent.
Settings	Provides access to the following: ▶ Control Panel ▶ Network and Dial-up Connections ▶ Taskbar and Start Menu
Run	Opens a program, folder or document as specified.

2.1.3. CUSTOMIZE DESKTOP AND START MENU

Customize the desktop by changing the background, application shortcuts, and so on. Rearrange the application shortcuts to make the applications that you use most often easy to access.

CHANGE BACKGROUND

You may change the background of the desktop to a picture of your own choice.

- 1) Tap and hold any blank space on the desktop.

A pop-up menu shows with actions to take to the desktop.



- 2) Tap Properties in the pop-up menu.

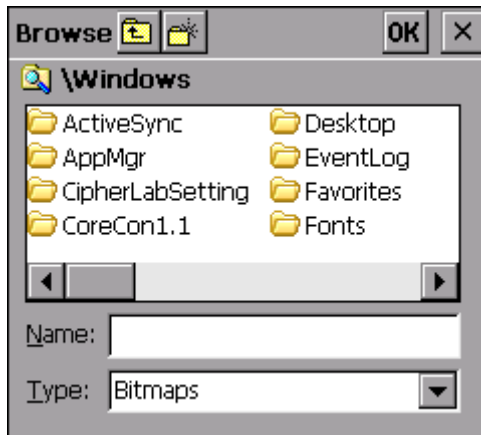
Display Properties window opens showing two tabbed pages for changing desktop background and OS appearance.

- 3) Tap Browse button on the Background tabbed page.



- 4) In the Browse window that pops up, select the image file you would like to apply as the desktop background.

Supported file formats are .bmp, .gif and .jpg files.



The selected file will appear on the desktop as the background image.

CHANGE APPEARANCE

You may change the overall scheme, color of title bars, dialog boxes, menu text, selected items and so on to suit your preferences.

- 1) Tap and hold any blank space on the desktop.

A pop-up menu shows with actions to take to the desktop.



- 2) Tap Properties in the pop-up menu.
- 3) Tap Appearance tab to open a page for changing the scheme style and item color.



ADD ITEMS TO DESKTOP

ADD APPLICATION SHORTCUTS

- 1) On the mobile computer, tap My Device on the desktop.
- 2) Browse to the executable file of the program you would like to create a shortcut for.
- 3) Tap and hold the file. A pop-up menu will show on the screen.
- 4) Tap Copy in the pop-up menu.

Browse to My Device\Windows\Desktop.

- 5) Tap and hold any blank space on the screen and select Paste shortcut from the pop-up menu that comes up.

A shortcut to the program is added to the mobile computer's desktop.

ADD BOOKMARKED WEBPAGE SHORTCUTS

- 1) On the mobile computer, tap My Device on the desktop.
- 2) Browse to My Device\Windows\Favorites.
- 3) Tap and hold the bookmark to create a shortcut for. A pop-up menu will show on the screen.
- 4) Tap Copy in the pop-up menu.
- 5) Browse to My Device\Windows\Desktop.
- 6) Tap and hold any blank space on the screen and select Paste shortcut from the pop-up menu that comes up.

A shortcut to the bookmarked webpage is added to the mobile computer's desktop.

ADD FILE SHORTCUTS

- 1) On the mobile computer, tap My Device on the desktop.
- 2) Browse to the file to create a shortcut for.
- 3) Tap and hold the file. A pop-up menu will show on the screen.
- 4) Tap Copy in the pop-up menu.
- 5) Browse to My Device\Windows\Desktop.
- 6) Tap and hold any blank space on the screen and select Paste shortcut from the pop-up menu that comes up.

A shortcut to the bookmarked webpage is added to the mobile computer's desktop.

ADD ITEMS TO START MENU

ADD APPLICATION SHORTCUTS

- 7) On the mobile computer, tap My Device on the desktop.
- 8) Browse to the executable file of the program you would like to create a shortcut for.
- 9) Tap and hold the file. A pop-up menu will show on the screen.
- 10) Tap Copy in the pop-up menu.
- 11) Browse to My Device\Windows\Programs.
- 12) Tap and hold any blank space on the screen and select Paste shortcut from the pop-up menu that comes up.

A shortcut to the program is added to the Start Menu.

REMOVE ITEMS FROM START MENU

13) On the mobile computer, tap My Device on the desktop.

14) Browse to My Device \ Windows \ Programs.

Programs folder opens. All applications available in the Start menu can be found here.

15) Tap and hold the application to remove. A pop-up menu shows on the screen.

16) Tap Delete.

The application is removed from Start Menu.

2.2. MANAGING PROGRAMS

2.2.1. LAUNCH PROGRAM

- 1) Tap Start | Programs to display a menu listing all the programs installed on the mobile computer.

Note: Use this menu to launch any programs newly installed on the mobile computer. Alternatively, you may add a shortcut of the program on the desktop. See [Add Items to Desktop](#).

- 2) Tap the desired program to launch it on-screen.



The programs pre-installed on the mobile computer include:

Icon	Description
	CIPHERLAB UTILITIES (Reserved folder.)
	APLOCK AppLock limits access to programs and settings on the mobile computer through an authorization mechanism. See the AppLock User Guide for details.
	CAMERA CAPTURE Camera application which also serves as an image viewer.
	COMMAND PROMPT Command line interpreter program which can be used to execute commands.
	GPS VIEWER Program for viewing GPS positioning results and streamed GPS data.
	INTERNET EXPLORER Browser for the world wide web.

**MEDIA PLAYER**

Audio/video file player.

**MICROSOFT WORDPAD**

Wordpad for entering text.

**REMOTE DESKTOP CONNECTION**

Program for connection to a remote computer.

**SIGNATURE**

Signature application which is available for C++ programming via API deployment. See the CP60 C++ Programming Guide for details.

**SIGNATUREDOTNET**

Signature application which is available for .NET programming via API deployment. See the CP60 .NET Programming Guide for details.

**SUMMIT CLIENT UTILITY**

Utility which controls Wi-Fi connection, adjusts settings and performs diagnostic tests.

**TERMINAL EMULATION**

Terminal emulation application allows the mobile computer to act as a telnet client and connect to a host computer to use the applications running on it. See the Terminal Emulation User Guide for details.

**TRANSCRIBER**

Application for handwriting recognition.

**WINDOWS EXPLORER**

Browser for the mobile computer's internal storage.

2.2.2. SWITCH BETWEEN ACTIVE TASKS

To switch between the active tasks currently running on the mobile computer, tap  on the [Taskbar](#). In the pop-up menu that shows up, tap the program or task button to open, or tap Desktop to minimize the active window and display the desktop.

2.2.3. EXIT A PROGRAM

To ensure efficient use of the memory, you should exit a program when it is no longer in use

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

Tap  to close an active window, dialog box, or running program. You may alternatively press ESC on the physical keypad to close a dialog box or running program.

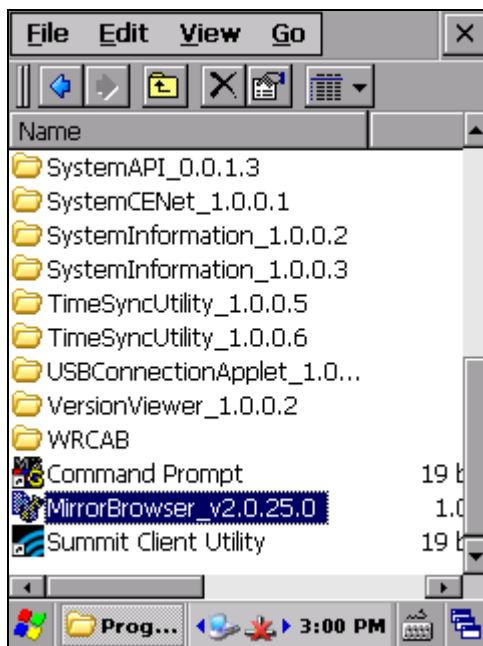
Tap  to save the current settings and close a dialog, program, or minimize the window for certain programs. You may alternatively press Enter on the physical keypad to save settings and close a dialog or program.

2.2.4. INSTALL APPLICATIONS

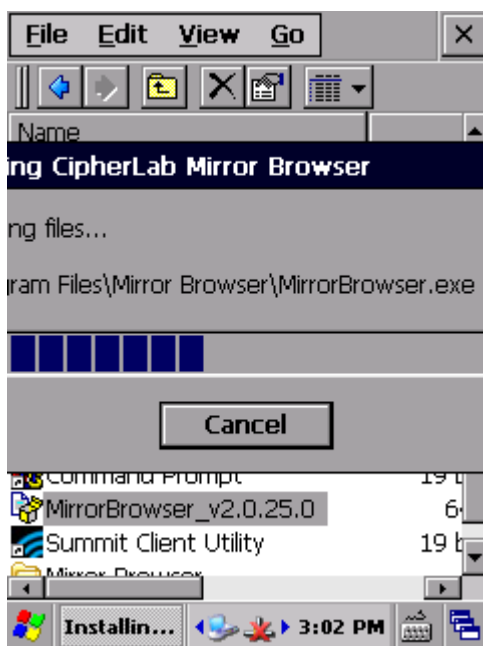
As mentioned in [Add/Remove Programs](#), you can download and install an application on your PC first and offload it to the mobile computer later using Microsoft ActiveSync.

Alternatively, the OS allows you to install an application right from the mobile computer. Follow the steps below to complete installation:

- 1) Using your PC, copy the installation file (.CAB) to the mobile computer's internal storage via ActiveSync.
- 2) On the mobile computer, use My Device (File Explorer) to browse to the installation file.



- 3) Tap the file to begin the installation process. Confirm the location to install the program if necessary. The program proceeds to install to the specified location.



- 4) When installation is finished, launch it by tapping Start | Programs and locating it in the Programs menu.



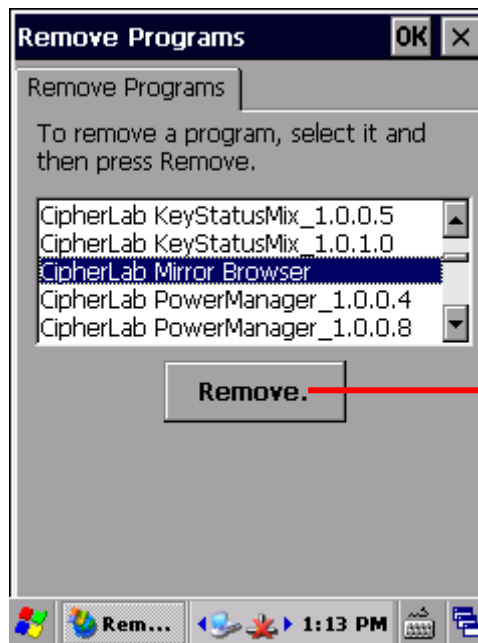
Alternatively, you may download an application to install from the Internet. See [Use Wi-Fi](#) for how to connect the mobile computer to the Internet.

Note: To ensure protection of your mobile computer, download applications from trusted sources only.

UNINSTALL APPLICATIONS

On the mobile computer, the acquired (non-inherent) applications can be depleted from the OS through manual removal (uninstallation). To uninstall an application:

- 1) Tap Start | Settings | Control Panel | Remove Programs .
Remove Programs opens showing the applications downloaded and installed from external sources.
- 2) Tap the application to remove.
The Remove button becomes available.
- 3) Tap Remove to uninstall the application.
- 4) Follow on-screen instructions to complete through the uninstallation process.



Tap to remove the selected application

2.3. SUSPEND & RESET MOBILE COMPUTER

To save from repeatedly charging and replacing batteries, suspend the mobile computer when you are not actively using it. Suspending (or “turning off”) the mobile computer holds the device from running without cutting off power. It is a “soft-off” state which enables less power consumption, and also a state which the device can quickly awake from since there is no need to restart the OS and applications.

2.3.1. SUSPEND MOBILE COMPUTER

The mobile computer is suspendable both manually and automatically.

MANUAL SUSPENSION

- 1) Press the power button. The [Power Menu](#) opens.

Note: There is no need to press and hold the power button.

- 2) Select Suspend in the power menu.

The mobile computer enters suspension mode.

OR

Do not select any item, and the mobile computer will automatically enter suspension in five seconds.

AUTO-SUSPENSION

Set up a power plan to suspend the mobile computer in apt timing. This helps preserve battery life.

- 1) Tap Start | Settings | Control Panel | Power



| Schemes tabbed page.

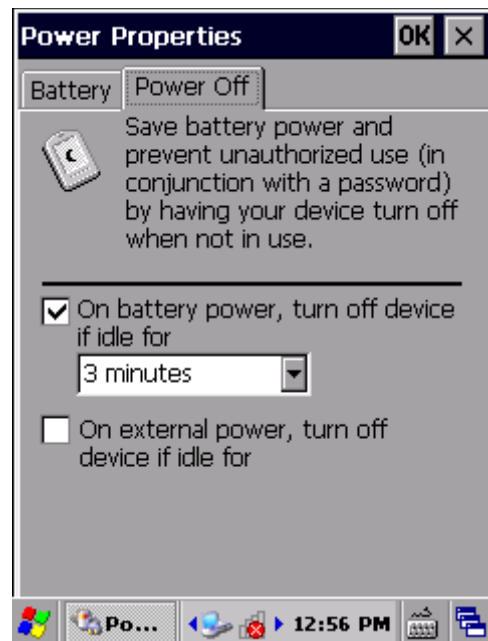
- 2) Under Switch state to Suspend, set a time limit to suspend the mobile computer as long as it has been in idle state for the indicated period of time. Power plans are available for both battery power and external power.

- 3) Tap  to save the settings and close the application, or  to exit the application directly.

Note the following cases will also cause the mobile computer to enter suspension:

- ▶ Battery fails
- ▶ When the touchscreen of the mobile computer is facing down

To get the most from the battery power, see [Power Management](#).



2.3.2. WAKE UP MOBILE COMPUTER

“Waking up” refers to restoring the suspended device to its previous working state. The mobile computer can be awoken both manually and automatically.

MANUAL AWAKENING

Press (without holding) the power button or central scan key to wake up the mobile computer.

AUTO-AWAKENING

The mobile computer wakes up by itself when either of the following happens:

- ▶ USB or serial cable is plugged in
- ▶ AC power cord is plugged in
- ▶ WWAN ringing signal occurs
- ▶ RTC alarm occurs

Note: There are certain cases when the mobile computer cannot be awoken:

- (1) When battery door isn't installed in place.
 - (2) Imperfect contact exists between main battery and battery chamber contact pins.
-

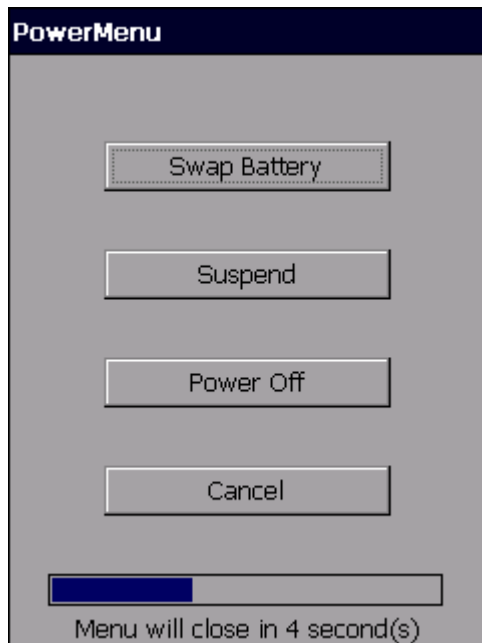
2.3.3. RESTART MOBILE COMPTUER

When the system becomes erroneous and applications fail to respond properly, proceed to restart the mobile computer. After the mobile computer is restarted, DRAM will be initialized, and all data cached in DRAM and any unsaved tasks will be erased. However all user data, system settings and clock/calendar time will be preserved.

To restart the mobile computer:

- 1) Press and hold the power button for around three seconds.

A [Power Menu](#) shows onscreen.



- 2) Tap Power off in the menu. The mobile computer shuts down.
- 3) Press the power button once more. The mobile computer powers on to show the desktop.

RADIOS

The mobile computer is a versatile networker. It integrates Wi-Fi and Bluetooth for wireless data. With the help of these radios, the mobile computer keeps users online all the time.

In this chapter, you will learn how these radios can work for you.

3. IN THIS CHAPTER

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3.1. USE WI-FI

The mobile computer is capable of Wi-Fi, a wireless networking technology making use of an access point, also known as “hotspot”, to connect to a wireless local area network.

To use Wi-Fi, the mobile computer has to connect to a hotspot. Some hotspots are open for connection while others request a key to authenticate access. If this is the case, the authentication key must be included in the mobile computer's Wi-Fi settings.

For authentications based on secure certificates, see Certificates.

Wi-Fi settings and power are controlled via Summit Client Utility (SCU). When Wi-Fi is not in use, turn it off to extend battery life. See [Power On/Off Wi-Fi](#).

Summit Client Utility functions by the use of Wi-Fi profiles. Profiles are a set of radio and security settings that are stored in the registry. You may create, rename, edit and delete profiles, as well as alter global settings that apply to every profile or to Summit Client Utility (SCU) itself. For more details on profile settings, please visit the following websites:

<http://www.summitdata.com/documentation.html>

http://www.summitdata.com/Documents/summit_users_guide_3_03.html

http://www.summitdata.com/Documents/summit_quick_start_v3_03.html

3.1.1. POWER ON/OFF WI-FI

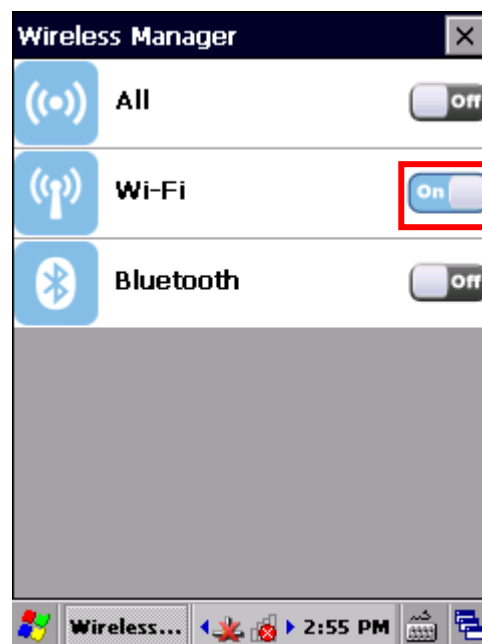
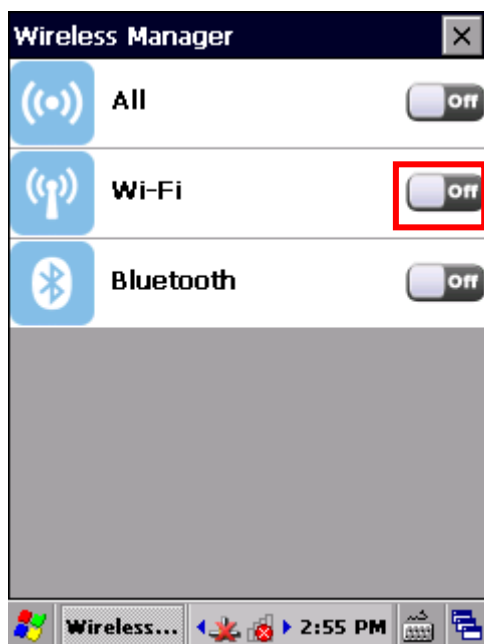
Before configuring any Wi-Fi connection settings, check if Wi-Fi power is turned on.

To turn on Wi-Fi:

4) Tap Start | Settings | Control Panel | Wireless Manager .

5) Make sure the Wi-Fi label is turned “on” .

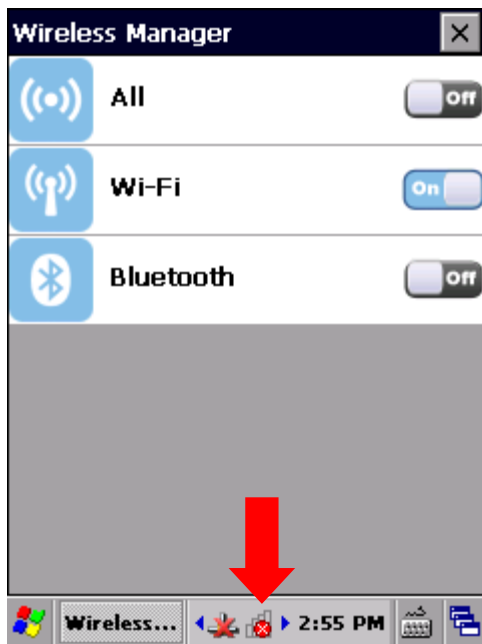
If the Wi-Fi label is turned “off”, tap the “Off” icon . Wi-Fi power is switched on in a few seconds.



Note: Wi-Fi power settings under Wireless Manager will be kept through suspension and warm boot/cold boot. After the mobile computer resumes from suspension or restarts, Wi-Fi power status will be maintained and the mobile computer will attempt to reconnect the previous connection.

SYSTEM TRAY ICON

The taskbar features a system tray icon to show Wi-Fi status.



The icons available for Wi-Fi connection are as follows:

Icon	Description
	Indicates no Wi-Fi connection is established.
	Indicates poor Wi-Fi signal (RSSI value is -90 dBm or weaker).
	Indicates relatively low Wi-Fi signal (RSSI value is stronger than -90 dBm but does not exceed -70 dBm).
	Indicates good Wi-Fi signal (RSSI value is stronger than -70 dBm but does not exceed -50 dBm).
	Indicates high Wi-Fi signal (RSSI value is stronger than -50 dBm).

3.1.2. LAUNCH SCU

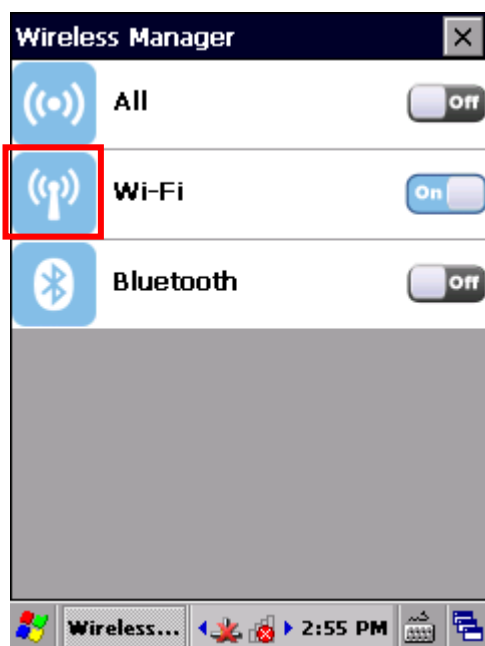
Wi-Fi settings can be adjusted with Summit Client Utility. Within this application are three tabbed pages which allow users to select the access point for connection, create profiles for better management, perform diagnostics on connectivity, and fine-tune property settings to meet their individual requirements.

To launch SCU:

Tap Start | Settings | Control Panel | SCU .

OR

Tap the Wi-Fi icon  on the Wireless Manager settings page.

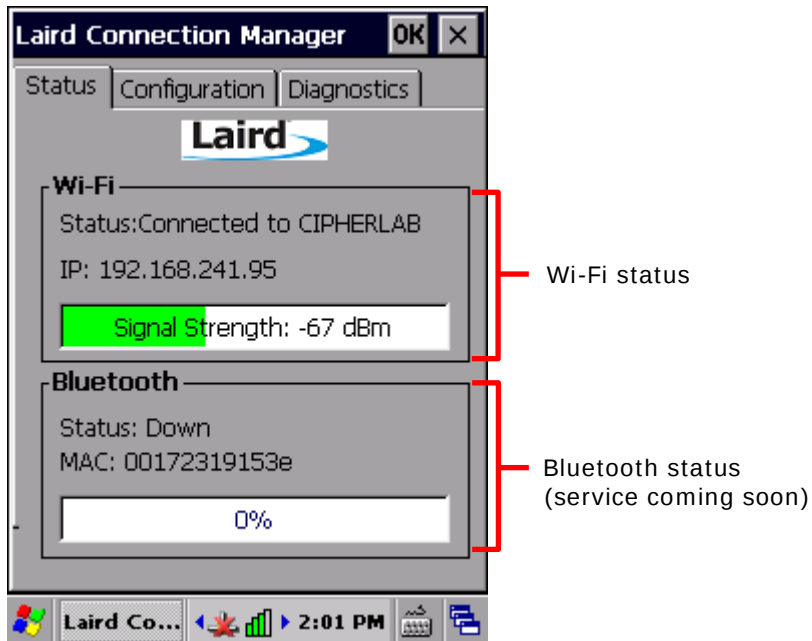


SCU opens showing three tabbed pages: Status, Configuration and Diagnostics.

The following sections explicate in detail the settings on each of these pages.

3.1.3. STATUS TABBED PAGE

The Status tabbed page provides basic information on WLAN connection and Bluetooth status. Wi-Fi settings can be configured on [Configuration Tabbed Page](#).



Note: SCU does not currently support viewing or configuring Bluetooth settings.

3.1.4. CONFIGURATION TABBED PAGE

TURN ON/OFF WI-FI MODULE

Select the Wi-Fi checkbox to turn on Wi-Fi. Deselect it to shut down Wi-Fi.



Note: SCU does not allow configuration of Bluetooth settings. To establish and manage Bluetooth connections, tap Start | Settings | Control Panel | BT Manager .

ACTIVE PROFILE

A profile is a set of parameters that define the manner which a device associates to a wireless LAN (WLAN) infrastructure. A profile contains information including the System Set Identifier (SSID, the "name" of the WLAN infrastructure), means of data encryption, authentication type, and security credentials.

Select an active profile in the drop-down box on the Configuration tabbed page. To add a profile other than the "Default" profile, see [Create Wi-Fi Profile](#).

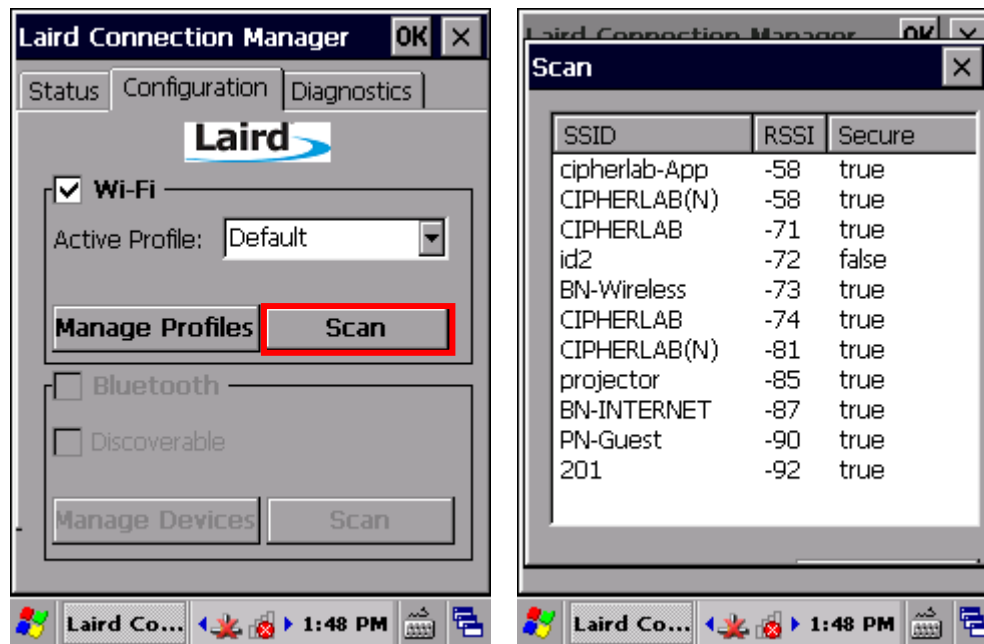


CREATE WI-FI PROFILE

To create a Wi-Fi Profile:

- 1) Open SCU as described in [Launch SCU](#).
- 2) Tap the Configuration tab to show the Configuration tabbed page.
- 3) Tap Scan to view a list of access points that are broadcasting their SSIDs. You may sort the list by tapping the column headers.

Tap Refresh to update the list of available access points.

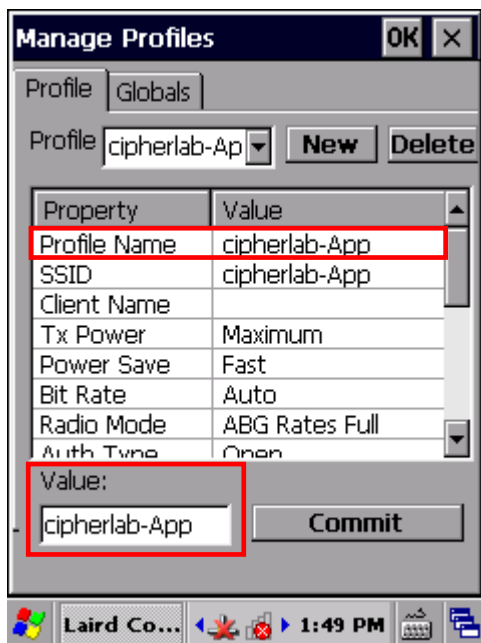


Item	Description
SSID	Service Set Identifier (SSID)
RSSI	Received Signal Strength Indication (RSSI)
Secure	Indicates whether data encryption is enabled: true or false

- 4) Tap twice on any of the access points to create a new profile for it. A prompt shows confirming whether to create a profile with the identified SSID, encryption and EAP type. Tap Yes to continue.



- 5) A profile settings page opens showing detailed radio settings. Tap each item and adjust its Value to suit your needs.



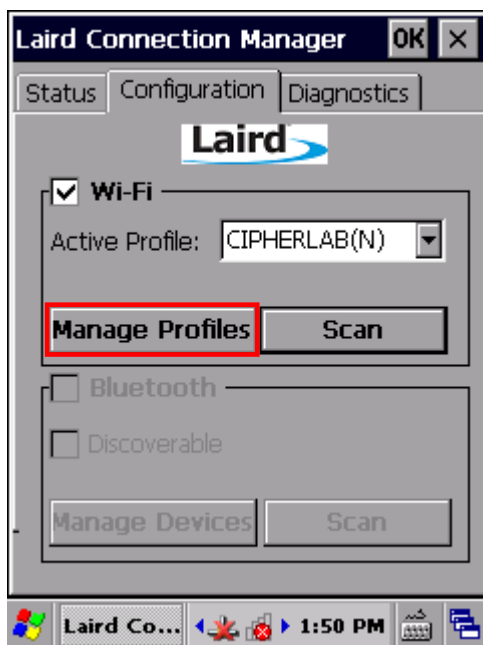
- 6) When finished fine-tuning all settings, tap Commit to save the profile.
- 7) Tap OK on the title bar to close the Profile Settings page and return to Configuration settings.

If you would like to directly activate the newly created profile, select it as the [Active Profile](#) on the Configuration settings page.

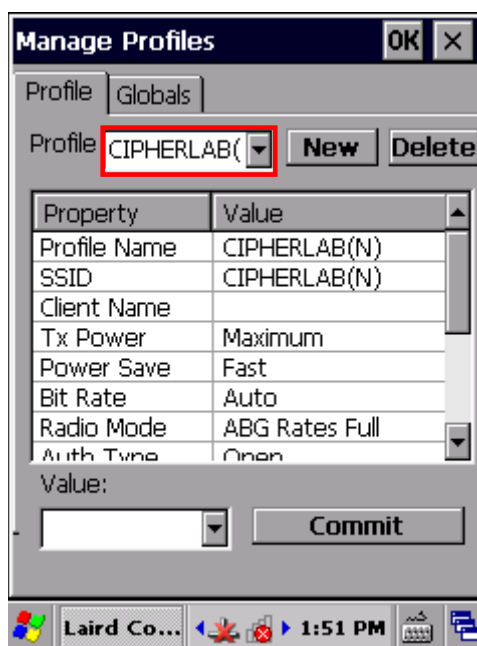
MANAGE WI-FI PROFILE

To manage your profiles:

- 1) Open SCU's Configuration tabbed page as described in [Create Wi-Fi Profile](#).
- 2) Tap Manage Profiles to open the Profile settings page.



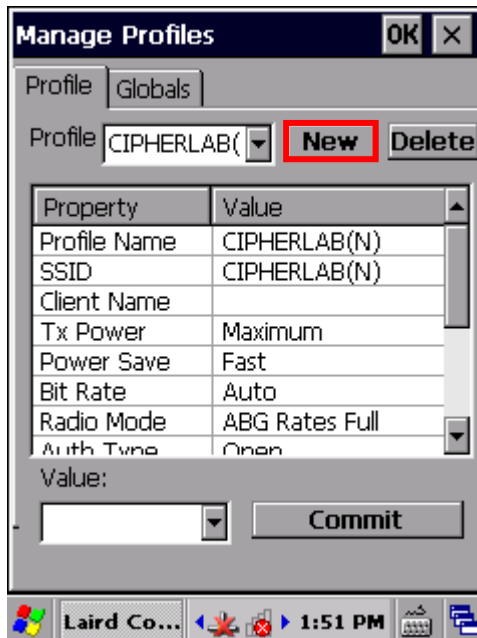
Item	Description
Profile	When SCU is first launched, "Default" is the active profile. Unless it is modified, this profile does not specify an SSID, EAP type or encryption method. You can chose to do the following: ▶ Modify the default profile ▶ Tap New to add a new profile ▶ Select an existing profile from the drop-down menu and configure



New

Tap New and enter a unique name for the profile. Configure the Radio settings, Encryption, EAP Type, and other settings for this new profile.

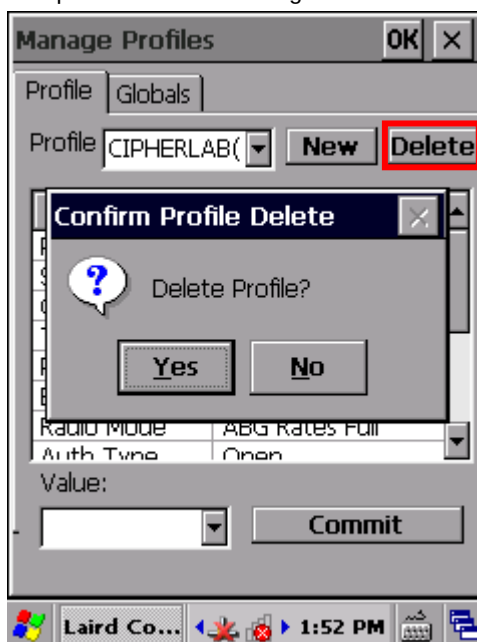
- ▶ The name for each profile must be unique
- ▶ You can define up to 20 profiles



Delete

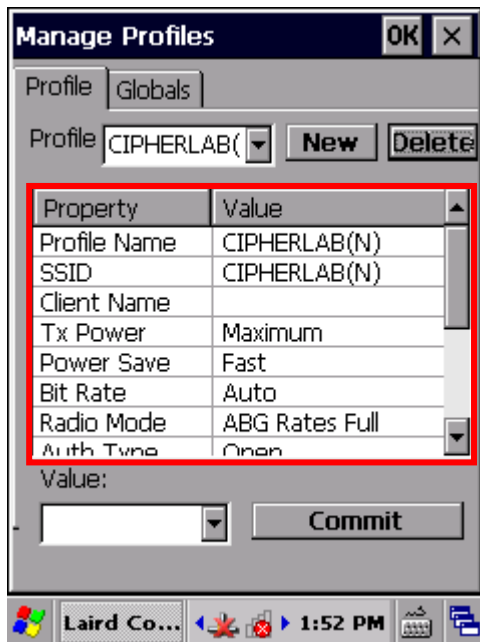
Select a profile from the drop-down menu and tap Delete.

- ▶ You cannot delete the [Active Profile](#). Make sure the selected profile is not the active profile under Configuration tabbed page.



Radio
Settings

After selecting a profile in the Profile drop-down bar, configure radio settings in the scrollable menu below.



Property	Description		
Profile Name	Tap to rename the selected profile. Up to 32 characters allowed.		
SSID	Service Set Identifier (SSID) for the WLAN infrastructure to which the radio will connect. If no SSID is specified, the radio will only associate to an access point that broadcasts its SSID. ▶ Value: A string of up to 32 characters ▶ Default: None		
Client Name	Name assigned to the mobile computer with Summit radio installed. ▶ Value: A string of up to 16 characters ▶ Default: None		
Tx Power	The power of the radio in milliwatts (mW). In certain cases this value will be overwritten by the access point, which will dictate to the radio which power to use. ▶ Value: Maximum (Maximum power defined for the current regulatory domain) or a specified percentage 75%, 50%, 25%, 10% ▶ Default: Maximum		
Power Save	Power save mode for the radio. Set the radio to its optimum power-consumption setting. ▶ Value: <table border="1"> <tr> <td>CAM</td><td>Constantly Awake Mode (CAM) keeps the radio powered up continuously so there is minimal lag in message response time. This mode consumes the most power but offers the highest throughput. It is recommended when AC power is in use.</td></tr> </table>	CAM	Constantly Awake Mode (CAM) keeps the radio powered up continuously so there is minimal lag in message response time. This mode consumes the most power but offers the highest throughput. It is recommended when AC power is in use.
CAM	Constantly Awake Mode (CAM) keeps the radio powered up continuously so there is minimal lag in message response time. This mode consumes the most power but offers the highest throughput. It is recommended when AC power is in use.		

		<table><tr><td>Maximum</td><td>In Max Power Savings (Max PSP) mode, the access point buffers incoming messages for the radio, which wakes up periodically and connects to the access point to see if any buffered messages are waiting. The radio requests buffered messages and then goes back to sleep. It conserves the most power but offers the lowest throughput. It is recommended when battery power is in use.</td></tr><tr><td>Fast</td><td>Power Save Mode (Fast PSP) switches between the two modes described above, depending on network traffic. This mode switches to CAM when retrieving a large number of packets and switches back to PSP (= Power Save Polling) after the packets have been retrieved. It is recommended when power consumption is a concern but you need greater throughput than that allowed by Max PSP.</td></tr></table> ► Default: Fast	Maximum	In Max Power Savings (Max PSP) mode, the access point buffers incoming messages for the radio, which wakes up periodically and connects to the access point to see if any buffered messages are waiting. The radio requests buffered messages and then goes back to sleep. It conserves the most power but offers the lowest throughput. It is recommended when battery power is in use.	Fast	Power Save Mode (Fast PSP) switches between the two modes described above, depending on network traffic. This mode switches to CAM when retrieving a large number of packets and switches back to PSP (= Power Save Polling) after the packets have been retrieved. It is recommended when power consumption is a concern but you need greater throughput than that allowed by Max PSP.											
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Bit Rate	The measurement of how much data is transmitted in a given amount of time from one location to another. ► Value: Auto (rate is negotiated automatically with the AP) ► Default: Auto																
Radio Mode	Use of 802.11a/b/g/n frequencies and data rates when interacting with an AP, or the use of ad hoc to associate to a station radio. ► Value: B rates only, BG rates full, G rates only, BG LRS, A rates only, ABG rates full, BGA rates full, Ad Hoc <table><tr><td>B rates only</td><td>1, 2, 5.5, and 11 Mbps.</td></tr><tr><td>BG rates full</td><td>All B and G rates, plus N rates if supported.</td></tr><tr><td>G rates only</td><td>6, 9, 12, 18, 24, 36, 48, and 54 Mbps.</td></tr><tr><td>BG LRS</td><td>1, 2, 5.5, 6, 11, 24, 36, and 54 Mbps. This should only be used with Cisco APs running IOS in autonomous mode (without controllers).</td></tr><tr><td>A rates only</td><td>6, 9, 12, 18, 24, 36, 48, and 54 Mbps, plus N rates if supported.</td></tr><tr><td>ABG rates full</td><td>All A rates and all B and G rates, with A rates (the 802.11a radio) preferred, plus N if supported.</td></tr><tr><td>BGA rates full</td><td>All B and G rates and all A rates, with B and G rates (the .11g radio) preferred, plus N rates if supported.</td></tr></table>	B rates only	1, 2, 5.5, and 11 Mbps.	BG rates full	All B and G rates, plus N rates if supported.	G rates only	6, 9, 12, 18, 24, 36, 48, and 54 Mbps.	BG LRS	1, 2, 5.5, 6, 11, 24, 36, and 54 Mbps. This should only be used with Cisco APs running IOS in autonomous mode (without controllers).	A rates only	6, 9, 12, 18, 24, 36, 48, and 54 Mbps, plus N rates if supported.	ABG rates full	All A rates and all B and G rates, with A rates (the 802.11a radio) preferred, plus N if supported.	BGA rates full	All B and G rates and all A rates, with B and G rates (the .11g radio) preferred, plus N rates if supported.		
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ABG rates full	All A rates and all B and G rates, with A rates (the 802.11a radio) preferred, plus N if supported.																
BGA rates full	All B and G rates and all A rates, with B and G rates (the .11g radio) preferred, plus N rates if supported.																

		<table><tr><td>Ad Hoc</td><td>When selected, the Summit radio associates to another station radio that is in ad hoc mode and has the same SSID and, if configured, static WEP key.</td></tr></table> ► Default: ABG rates full	Ad Hoc	When selected, the Summit radio associates to another station radio that is in ad hoc mode and has the same SSID and, if configured, static WEP key.											
Ad Hoc	When selected, the Summit radio associates to another station radio that is in ad hoc mode and has the same SSID and, if configured, static WEP key.														
	Auth Type	802.11 authentication type used when associating to an AP. ► Value: Open, Shared (shared-key), LEAP (Network-EAP) ► Default: Open ► It is recommended that the default setting Open is selected.													
	WPA	WPA and WPA2 support the same authentication methods and similar key management methods; the difference is mainly in area of encryption. WPA defines TKIP as the primary encryption method, while WPA2 defines AES-CCMP as the primary encryption method. ► Value: None, WPA, WPA2 ► Default: None													
	Encryption	This specifies the type of key used to encrypt and decrypt transmitted data, and how that key is specified or derived. Select Encryption type in the Value drop-down box. <table><tr><th>Item</th><th>Description</th></tr><tr><td>None</td><td>N/A</td></tr><tr><td>TKIP</td><td>The encryption method defined with WPA. TKIP uses RC4 encryption as does WEP.</td></tr><tr><td>AES-CCMP</td><td>The encryption method defined with IEEE 802.11i and certified with WPA2. AES-CCMP is stronger than RC4</td></tr><tr><td>WEP</td><td>The encryption method defined with the original IEEE 802.11 standards; encrypts transmitted data using 64-bit or 128-bit encryption.</td></tr><tr><td>CKIP</td><td>CKIP is supported for use only with static WEP. For CKIP, encryption keys need to be defined in SCU; for CKIP-EAP, encryption keys are derived dynamically from an EAP authentication.</td></tr></table>	Item	Description	None	N/A	TKIP	The encryption method defined with WPA. TKIP uses RC4 encryption as does WEP.	AES-CCMP	The encryption method defined with IEEE 802.11i and certified with WPA2. AES-CCMP is stronger than RC4	WEP	The encryption method defined with the original IEEE 802.11 standards; encrypts transmitted data using 64-bit or 128-bit encryption.	CKIP	CKIP is supported for use only with static WEP. For CKIP, encryption keys need to be defined in SCU; for CKIP-EAP, encryption keys are derived dynamically from an EAP authentication.	
Item	Description														
None	N/A														
TKIP	The encryption method defined with WPA. TKIP uses RC4 encryption as does WEP.														
AES-CCMP	The encryption method defined with IEEE 802.11i and certified with WPA2. AES-CCMP is stronger than RC4														
WEP	The encryption method defined with the original IEEE 802.11 standards; encrypts transmitted data using 64-bit or 128-bit encryption.														
CKIP	CKIP is supported for use only with static WEP. For CKIP, encryption keys need to be defined in SCU; for CKIP-EAP, encryption keys are derived dynamically from an EAP authentication.														
	Authentication	This is the protocol used to authenticate the device and its user if the WLAN uses the Enterprise version of Wi-Fi Protected Access (WPA) and WPA2. Select Authentication type in the Value drop-down box, then enter the credentials necessary for each type in the appeared fields. <table><tr><th>Item</th><th>Description</th></tr><tr><td>None</td><td>N/A</td></tr><tr><td>LEAP</td><td>Credentials values for LEAP: ► User Name (up to 64 characters) ► Password (up to 32 characters) </td></tr><tr><td>EAP-FAST</td><td>Credentials values for EAP-FAST ► User Name (up to 64 characters) </td></tr></table>	Item	Description	None	N/A	LEAP	Credentials values for LEAP: ► User Name (up to 64 characters) ► Password (up to 32 characters)	EAP-FAST	Credentials values for EAP-FAST ► User Name (up to 64 characters)					
Item	Description														
None	N/A														
LEAP	Credentials values for LEAP: ► User Name (up to 64 characters) ► Password (up to 32 characters)														
EAP-FAST	Credentials values for EAP-FAST ► User Name (up to 64 characters)														

			▶ Password (up to 32 characters) ▶ PAC Filename (up to 32 characters): You may create a protected access credential (PAC) for each client device. When creating a PAC manually, you must store it in the directory identified in Certs Path on the Globals settings page. To use automatic provisioning, leave this field blank. ▶ PAC Password (up to 32 characters)
		PEAP-MSCHAP	Credentials values for PEAP-MSCHAP, PEAP-GTC, EAP-TTLS:
		PEAP-GTC	▶ User Name (up to 64 characters) ▶ Password (up to 32 characters) ▶ CA Cert: Filename and extension of root certificate authority (CA) digital certificate (up to 32 characters). Specify the Certs Path in Globals settings page > Certs Path.
		EAP-TTLS	
		EAP-TLS	Credentials values for EAP-TLS and PEAP-TLS:
		PEAP-TLS	▶ User: Username or Domain/Username (up to 64 characters) ▶ User Cert: Filename and extension of user certificate residing in the Microsoft certificate store. See Certificates. ▶ CA Cert: Filename and extension of root certificate authority (CA) digital certificate (up to 32 characters). Specify the Certs Path in Globals settings page > Certs Path.
		PSK	Pre-shared keys (PSK) consist of up to 256 bits entered as a string of up to 64 hexadecimal digits.
	Fast Reauth	The expedited WPA key handshake used to reduce roaming time to 125 msec or less. Available for WPA TKIP and WPA2 AES-CCMP. ▶ Value: None, CCKM ▶ Default: None	
Value	Use this box to change the value of a selected item. Depending on the item property, this can be done by choosing a value from a drop-down list, or entering the desired value with the on-screen or physical keypad. Value: CIPHERLAB(N) Commit Laird Co... 1:53 PM		

Commit

After making any changes on the Profile tabbed page, the Commit button must be tapped in order for the settings to take effect.

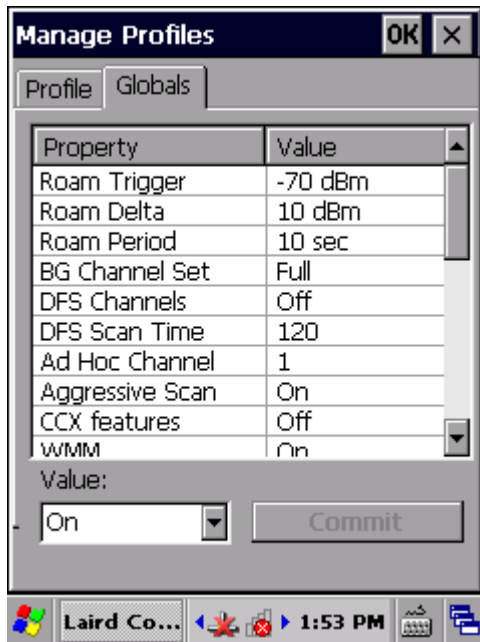


MANAGE GLOBAL SETTINGS

Global settings include radio and security settings that apply to all profiles in SCU.

To open the Global settings page:

- 1) Open SCU's Configuration tabbed page as described in [Create Wi-Fi Profile](#).
- 2) Tap Manage Profiles to open the Profile settings page.
- 3) Tap the Globals tab to open the Global settings page.



Property	Value						
Roam Trigger	When the moving average RSSI from the current AP is weaker than Roam Trigger, radio does a roam scan where it probes for an AP with a signal that is at least Roam Delta dBm stronger. ▶ Value (dBm): -50, -55, -60, -65, -70, -75, -80, -85, -90, Custom ▶ Default: -70 dBm						
Roam Delta	When Roam Trigger is met, a second AP's signal strength (RSSI) must be Roam Delta dBm stronger than the moving average RSSI for the current AP before radio will attempt to roam to the second AP. ▶ Value (dBm): 5, 10, 15, 20, 25, 30, 35 ▶ Default: 10 dBm						
Roam Period	After association or roam scan (with no roam), radio will collect RSSI scan data from Roam Period seconds before considering roaming. ▶ Value (sec): 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, Custom ▶ Default: 10 (seconds)						
BG Channel Set	Defines the 2.4 GHz channels to be scanned when the radio is contemplating a roam and needs to determine what APs are available. <table border="1"> <thead> <tr> <th>Item</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Full</td><td>All channels</td></tr> <tr> <td>1, 6, 11</td><td>The most commonly used 2.4 GHz channels</td></tr> </tbody> </table>	Item	Description	Full	All channels	1, 6, 11	The most commonly used 2.4 GHz channels
Item	Description						
Full	All channels						
1, 6, 11	The most commonly used 2.4 GHz channels						

	<table> <tr> <td>1, 7, 13</td><td>For ETSI and TELEC radios only</td></tr> <tr> <td>Custom</td><td>Indicates the system registry has been edited to include a value other than those available in the drop-down value</td></tr> </table> ► Default: Full	1, 7, 13	For ETSI and TELEC radios only	Custom	Indicates the system registry has been edited to include a value other than those available in the drop-down value
1, 7, 13	For ETSI and TELEC radios only				
Custom	Indicates the system registry has been edited to include a value other than those available in the drop-down value				
DFS Channels	Indicates whether to support 5 GHz (802.11a) channels where dynamic frequency selection (DFS) is required. ► Value: On, Off ► Default: Off				
DFS Scan Time	Enables determining the dwell (listen) time when passively scanning on a DFS channel. ► Valid range of 20-500 ms configurable ► Default: 120 ► When the DFS Scan Time is changed to a value lower than default, it is recommended that the beacon period in the WLAN infrastructure is changed as well. Ideally, the dwell time should be 1.5 times than that of the beacon period.				
Ad Hoc Channel	The channel to be used for an ad hoc connection if the active profile has a Radio Mode value of "Ad Hoc". ► Value: <table> <tr> <td>1~14</td><td>One of the 2.4 GHz channels</td></tr> <tr> <td>36, 40, 44, 48</td><td>UNII-1 channels</td></tr> </table> ► Default: 1 ► If a channel that is not supported is selected, then SCU will automatically apply the default channel setting (1).	1~14	One of the 2.4 GHz channels	36, 40, 44, 48	UNII-1 channels
1~14	One of the 2.4 GHz channels				
36, 40, 44, 48	UNII-1 channels				
Aggressive Scan	Aggressive scanning complements and works in conjunction with the standard scanning that is configured through the Roam Trigger, Roam Delta, and Roam Period settings. It is recommended that aggressive scanning is enabled unless there is significant co-channel interference because of overlapping coverage from APs that are on the same channel. ► Value: On, Off ► Default: On				
CCX features	Whether to allow the use of Cisco information element (IE) and CCX version number to authorize support for CCX features. ► Value: Full, Off Full mode uses Cisco IE and CCX version number and enables support for all CCX features. Off mode disables all support for Cisco IE and CCX version number. ► Default: N/A ► If the radio fails to connect to an 802.11n wireless network, set CCX features as "Off" and try again.				
WMM	Whether to allow the use of Wi-Fi Multimedia (WMM) Extensions or not. ► Value: On, Off ► Default: Off ► Changing this setting requires suspend/resume of the mobile computer to take effect.				

Auth Server	Type of authentication server being used for EAP authentication. ▶ Value: <table> <tr> <td>Type 1</td><td>Cisco Secure ACS or another server that uses PEAPv1 for PEAP with EAP-MSCHAPV2 (PEAP-MSCHAP)</td></tr> <tr> <td>Type 2</td><td>A different authentication server, such as Juniper Networks Steel Belted RADIUS, that uses PEAPv0 for PEAP-MSCHAP</td></tr> </table> ▶ Default: Type 1	Type 1	Cisco Secure ACS or another server that uses PEAPv1 for PEAP with EAP-MSCHAPV2 (PEAP-MSCHAP)	Type 2	A different authentication server, such as Juniper Networks Steel Belted RADIUS, that uses PEAPv0 for PEAP-MSCHAP								
Type 1	Cisco Secure ACS or another server that uses PEAPv1 for PEAP with EAP-MSCHAPV2 (PEAP-MSCHAP)												
Type 2	A different authentication server, such as Juniper Networks Steel Belted RADIUS, that uses PEAPv0 for PEAP-MSCHAP												
TTLS Inner Method	Authentication method used within secure tunnel created by EAP-TTLS. ▶ Value: <table> <tr> <td>Auto-EAP</td><td>Any available EAP method</td></tr> <tr> <td>MSCHAPV2</td><td></td></tr> <tr> <td>MSCHAP</td><td></td></tr> <tr> <td>PAP</td><td></td></tr> <tr> <td>CHAP</td><td></td></tr> <tr> <td>EAP-MSCHAPV2</td><td></td></tr> </table> ▶ Default: Auto-EAP	Auto-EAP	Any available EAP method	MSCHAPV2		MSCHAP		PAP		CHAP		EAP-MSCHAPV2	
Auto-EAP	Any available EAP method												
MSCHAPV2													
MSCHAP													
PAP													
CHAP													
EAP-MSCHAPV2													
PMK Caching	The type of Pairwise Master Key (PMK) caching to use with a WPA2 encryption type (alternative to WPA2 CCKM). ▶ Value: Standard or OPMK (opportunistic PMK) ▶ Default: Standard												
TX Diversity	How to handle antenna diversity when transmitting data to AP. ▶ Value: <table> <tr> <td>Main Only</td><td>Use main antenna only</td></tr> <tr> <td>Aux Only</td><td>Use auxiliary antenna only</td></tr> <tr> <td>On</td><td>Use diversity</td></tr> </table> ▶ Default: On	Main Only	Use main antenna only	Aux Only	Use auxiliary antenna only	On	Use diversity						
Main Only	Use main antenna only												
Aux Only	Use auxiliary antenna only												
On	Use diversity												
RX Diversity	How to handle antenna diversity when receiving data from AP. ▶ Default: On-start on Main ▶ This is a fixed setting; on startup, the main antenna is always used												
Frag Thresh	When packet size exceeds the set threshold, it becomes fragmented. ▶ Value: 256 ~ 2346 ▶ Default: 2346 (bytes)												
RTS Thresh	When packet size exceeds the set threshold, RTS/CTS is required on link. ▶ Value: 0 ~ 2347 ▶ Default: 2347 (bytes)												
LED	Indicates whether or not an LED is used. ▶ Value: On, Off ▶ Default: Off												
Tray Icon	Whether to enable the system tray icon or not. ▶ Value: On, Off ▶ Default: On												

Admin Password	N/A
Auth Timeout (s)	Specifies how long it will wait for an EAP authentication request to succeed or fail. If authentication credentials are specified in the active profile and the authentication times out, then association will fail. If authentication credentials are not specified in the active profile and the authentication times out, then the user will be required to enter credentials again. ▶ Value: 3 ~ 60 ▶ Default: 8 (seconds)
Certs path	File path where the certificate for EAP authentication is stored. ▶ Value: A valid directory path of up to 64 characters ▶ Default: Depends on device
Supplicant	The user (client) making a request to gain access to system resources through the authentication server. ▶ Value: Summit, Third Party ▶ Default: Summit
Auto Profile	Activate or deactivate automatic profile selection. ▶ Value: On, Off ▶ Default: Off ▶ When On is selected, proceed to the Profile settings page and select from the existing profiles those which you would like to add to the Auto Profile list. The number of profiles in this list is limited to 19. When Auto Profile is activated, the Summit radio will attempt to associate to an access point after a device startup or resume, and it will try out each listed profile in order until the radio associates to an access point. The successful profile becomes the active profile and remains active until one of the following occurs: ▶ The device goes through suspension and resume, power-cycling, or restart, which causes the radio to go through the automatic profile selection process once more. ▶ Auto Profile is turned off and an active profile is manually selected on the SCU Configuration tab.

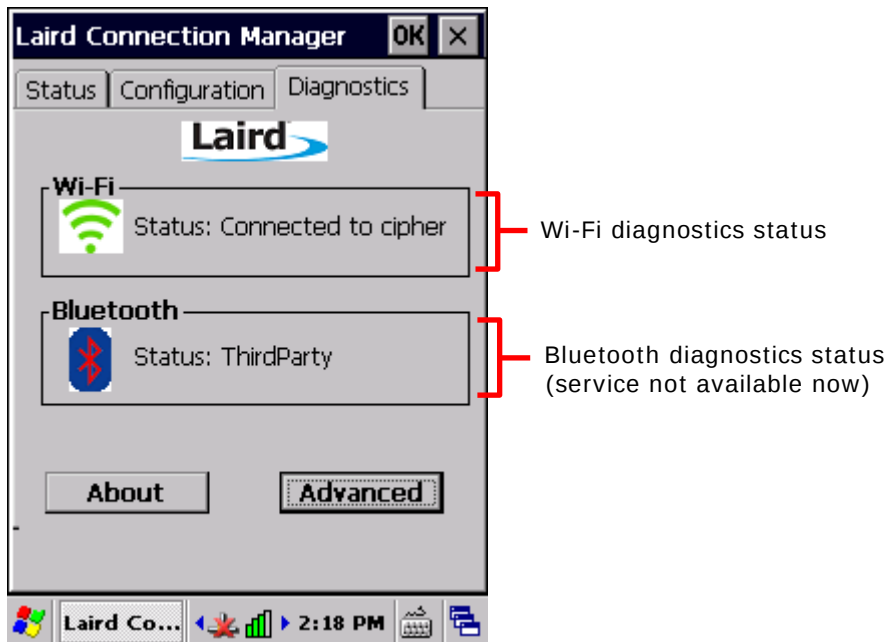
3.1.5. DIAGNOSTICS TABBED PAGE

Perform diagnostic tests to troubleshoot connection issues when necessary.

To open the Diagnostics page:

- 1) Open SCU as described in [Launch SCU](#).
- 2) Tap the Diagnostics tab to show the Diagnostics page.

Diagnostics status for Wi-Fi and Bluetooth shows, along with on-screen buttons to open Advanced settings and view software version information.



ADVANCED DIAGNOSTICS

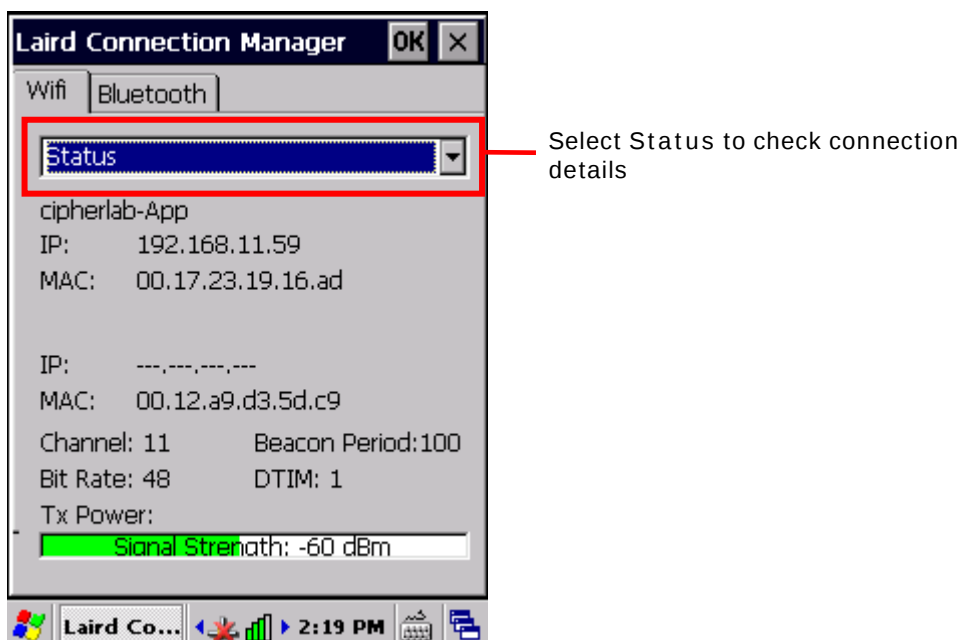
To access Advanced diagnostics settings:

- 1) Open [Diagnostics Tabbed Page](#).
- 2) Tap the Advanced button to open advanced diagnostics settings.



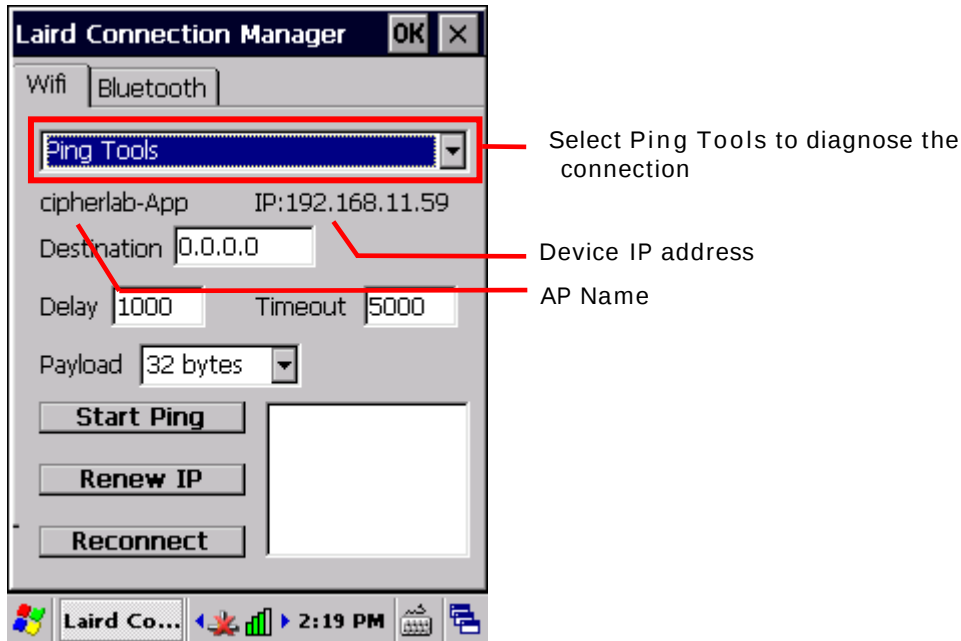
CHECK STATUS

To check diagnostics status, select Status in the drop-down bar.

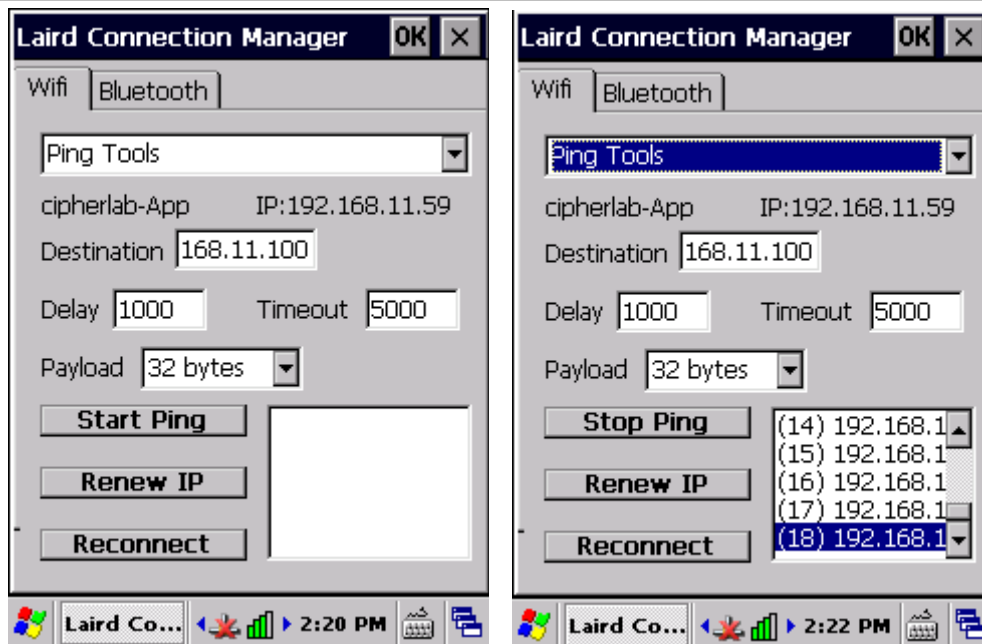


USE PING TOOLS

To perform ping tests, select Ping Tools in the drop-down bar.



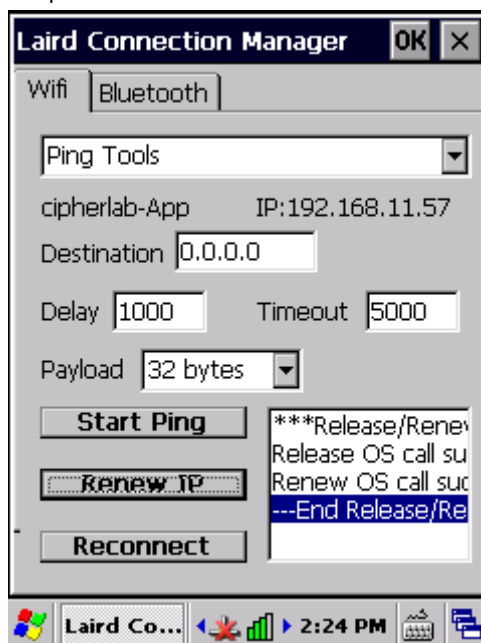
Item	Description
Destination	Enter the address to ping.
Ping Payload	The amount of data to be transmitted on a ping. ▶ Value: 32, 64, 128, 256, 512, 1024 ▶ Default: 32 (bytes)
Ping Delay	The amount of time that elapses between successive ping requests. ▶ Value: 0~7200000 ▶ Default: 1000 (milliseconds)
Timeout ms	The amount of time that elapses without a response before ping request is considered a failure. ▶ Value: 0~30000 ▶ Default: 5000 (milliseconds)
Start Ping	Enter the address to ping to in the Destination field and tap Start Ping. A continuous ping will begin until the following happens: Stop Ping is tapped, the application is exited, or the radio is removed. Activity status will be logged in the output box below.



When an active ping is initiated, the screen displays a ping indicator that blinks in green (for a successful ping) or red (for an unsuccessful ping). The ping indicator is hidden when the screen is switched to a tab other than Diags or Status.

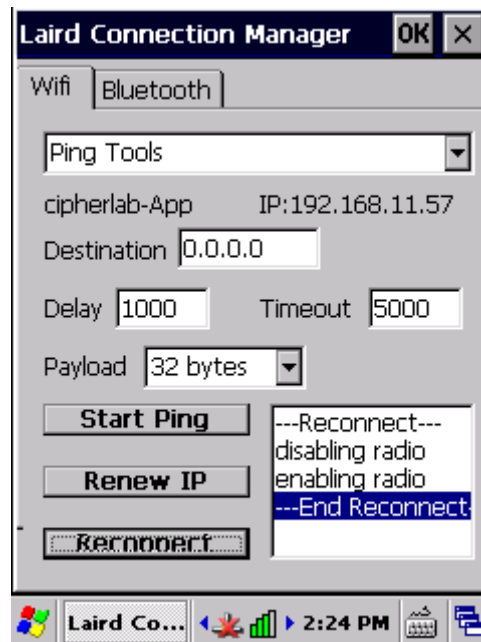
Release/Renew

Obtain a new IP address through DHCP release/renew, and log all activity in the output area at the bottom.



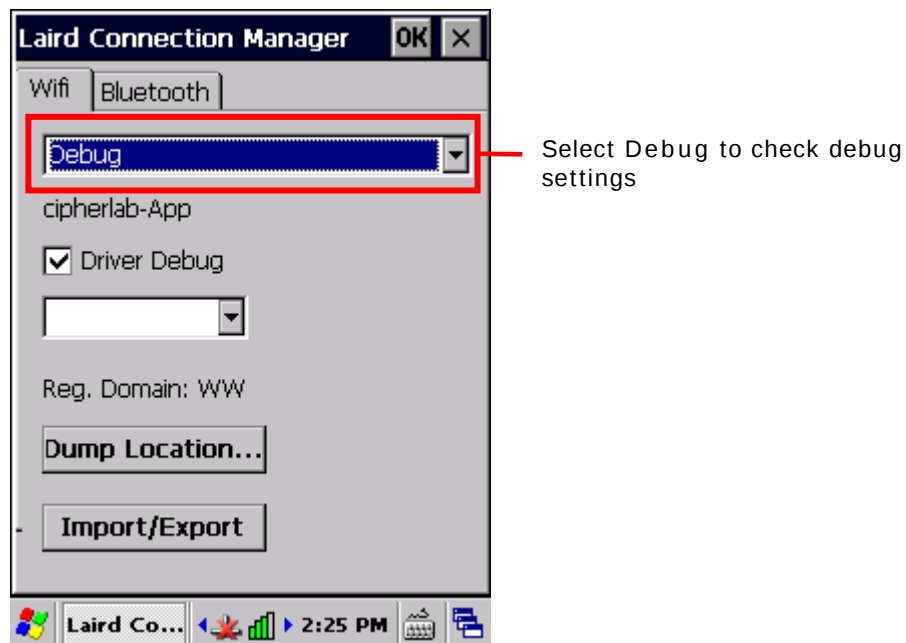
Reconnect

Disable and enable the radio, apply or re-apply the current profile, attempt to associate and authenticate to the wireless network, and log all activity in the output area at the bottom.



USE DEBUG TOOLS

To check debug settings, select Debug in the drop-down bar.



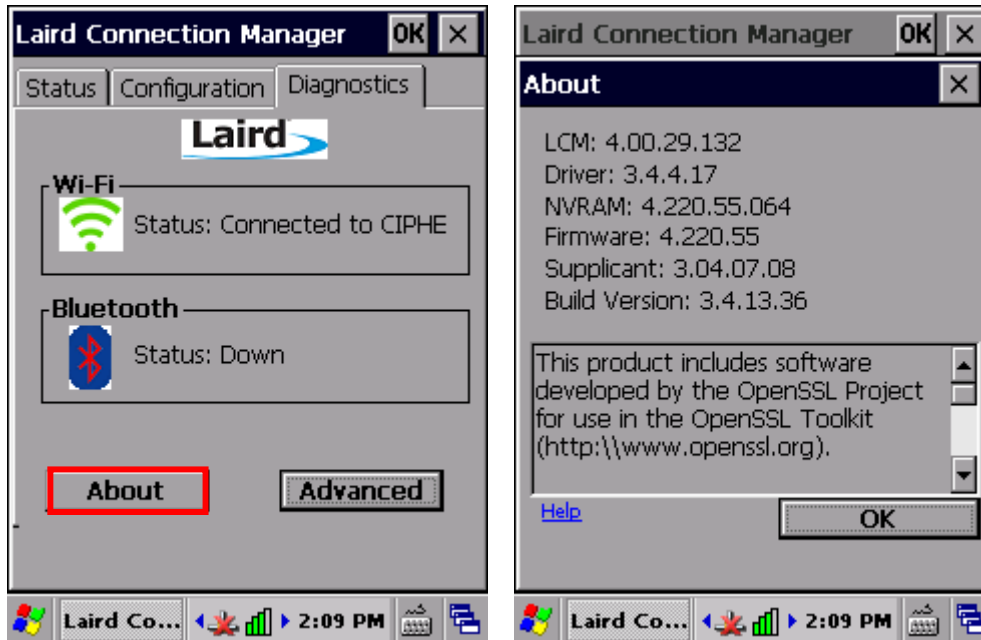
Item	Description
Driver Debug	Select whether to debug the WLAN driver, and the output mode for driver debug. ▶ Value: Not set, 1-Text(Low), 2-Text, 3-Text(High), 4-Serial(Low), 5-Serial, 6-Serial(High) ▶ Default: Not set ▶ When set as 1-Text(Low), 2-Text, or 3-Text(High), SCU will continue to export debug logs to the mobile computer's internal storage. Do not select any of these options unless necessary.
Reg. Domain	Indicates the regulatory domain or domains for which the radio is configured by default. Default setting is "Worldwide", which means that the radio can be used in any domain.
Dump Location...	Dumps the diagnostics results to a desired location in the form of a .txt file.
Import/Export	Imports/exports SCU settings as a profile (.sdc format). When exporting, you may select to include Global Settings, Third Party Config settings or Profile Settings. When importing, you may select to add to existing settings, or replace the set values in Global Settings, Third Party Config and Profiles.

Note: It is recommended that Driver Debug output settings are kept as default and not changed.

SOFTWARE VERSION INFORMATION

To check software version information:

- 1) Open [Diagnostics Tabbed Page](#).
- 2) Tap the About button to view information about SCU version, device driver, and software developer.



3.2. USE BLUETOOTH

The mobile computer is Bluetooth-enabled to synchronize data with other devices such as PCs, car hands-free kits, headsets, printers, PDAs, and cell phones.

Class II Bluetooth devices enable wireless connections over a short distance of around 10 meters. It is specified in IEEE 802.15.1 as a “wireless personal area network” (WPAN).

To connect a Bluetooth device for the first time, the mobile computer needs to “pair” with it. Such “pairing” involves authentication between two devices to justify their accesses to each other. After this initial pairing, the two devices can connect to each other without the need of a second pairing procedure.

3.2.1. BLUETOOTH PROFILES SUPPORTED

Bluetooth Profiles Supported		
Serial Port Profile	(SPP)	supports Server/Client
Object Push Profile	(OPP)	supports Server/Client
File Transfer Profile	(FTP)	supports Server/Client
Personal Area Networking Profile	(PAN)	
Human Interface Device Profile	(HID)	supports keyboard and mouse without cursor
Headset Profile	(HSP)	
Hands-Free Profile	(HFP)	

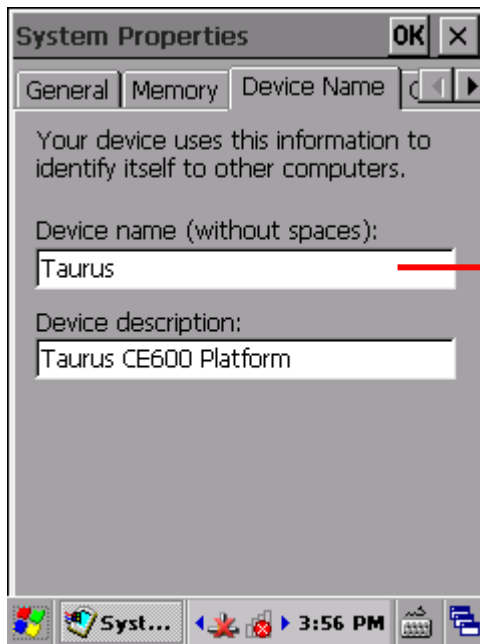
3.2.2. CHANGE BLUETOOTH NAME

By default, the mobile computer uses the device name for its Bluetooth name. Change the device name to make it more recognizable.

To change the mobile computer's device name:

- 1) Tap Start | Settings | Control Panel | System  .
System Properties page opens showing General tabbed page.
- 2) Tap Device Name tab.

Device ID tabbed page opens.



Change device name to make the mobile computer more recognizable.

- 3) Enter a name of your choice.
- 4) Tap OK on the title bar to apply the change.

3.2.3. TURN ON/OFF BLUETOOTH

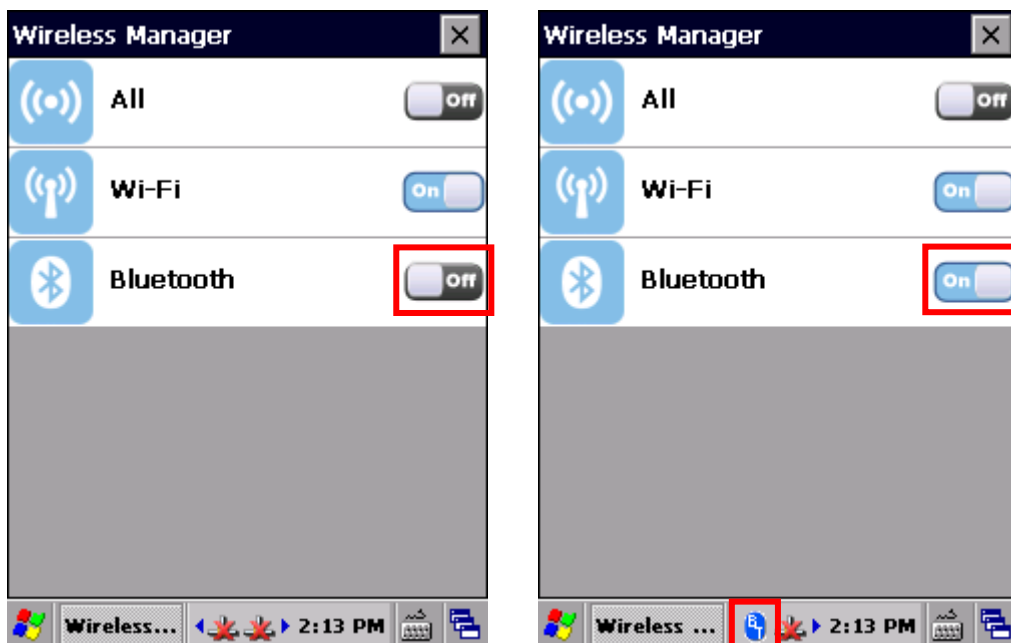
To turn on/off Bluetooth power:

- 1) Tap Start | Settings | Control Panel | Wireless Manager .
Wireless Manager opens.

- 2) Make sure the Bluetooth label is turned “on”  .

If the Bluetooth label is turned “off”, tap the “Off” icon  to switch on Bluetooth power. After a few seconds, Bluetooth power is switched on.

When Bluetooth power is switched on, an associated icon  will appear on the taskbar.



- 3) To turn off Bluetooth, tap the “on” icon  to have it disabled. Once Bluetooth is disabled, the icon  will disappear from the taskbar.

Note: Bluetooth power settings under Wireless Manager will be kept through suspension and warm boot/cold boot. After the mobile computer resumes from suspension or restarts, Bluetooth power status will be maintained.

3.2.4. SET BLUETOOTH VISIBILITY

By opening or closing Bluetooth visibility, you can control whether or not other Bluetooth devices can discover the mobile computer.

To set Bluetooth visibility on the mobile computer:

- 1) Tap the Bluetooth icon on the taskbar  and select Setting in the pop-up menu.



- 2) A Bluetooth Settings window opens on-screen.

To open Bluetooth visibility, select the Yes checkbox for “Let other devices discover.”

To hide the mobile computer from other Bluetooth devices, deselect the checkbox.



- 3) Tap OK on the title bar of the window.

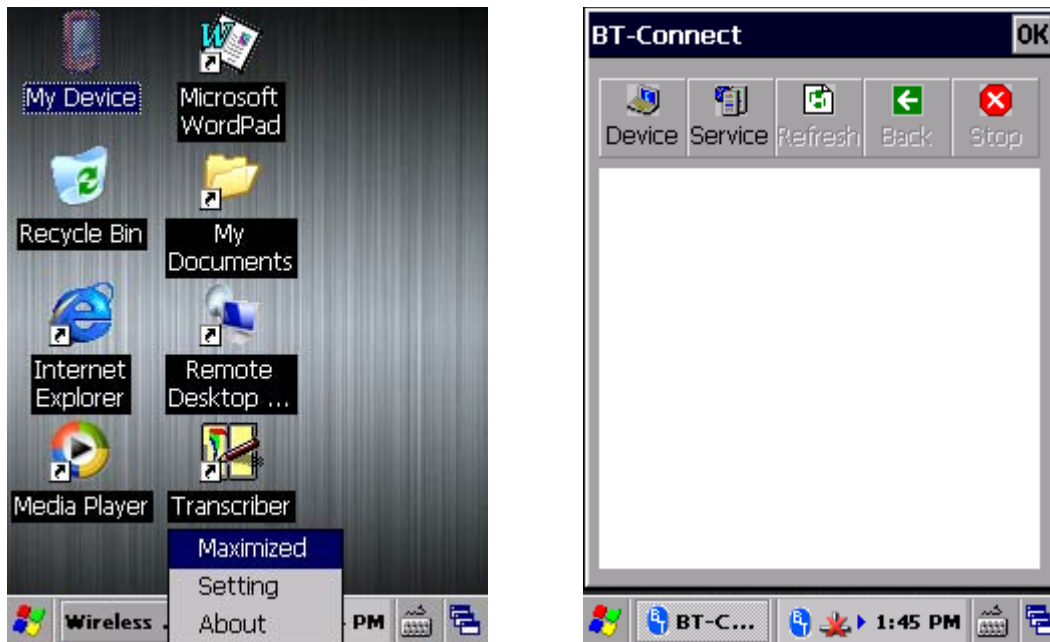
3.2.5. LAUNCH BT CONNECT

BT Connect is a connection tool for establishing Bluetooth partnerships.

To launch BT Connect:

- 1) Tap the Bluetooth icon on the taskbar  and select Maximized in the pop-up menu.

BT Connect launches with a menu bar on top and a blank field for searching devices.



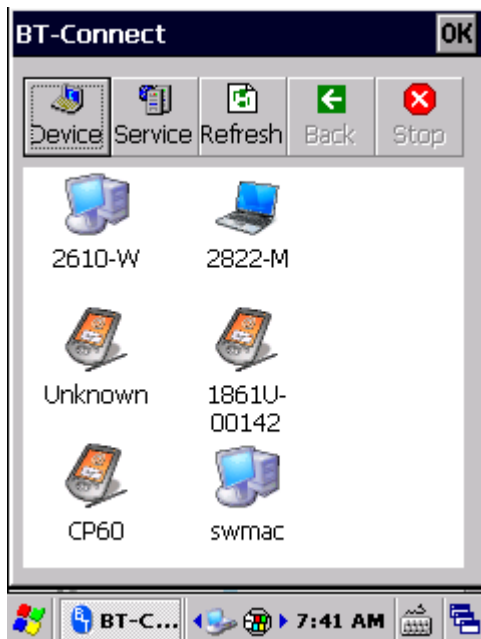
See below for a description of menu bar items and their functions:

Button	Description						
	Tap to list the Bluetooth devices discovered by the mobile computer. If you tap the button for the first time, it will start the inquiry process of discovering nearby Bluetooth devices.						
	Tap to view the Bluetooth services provided on the mobile computer. ▶ File Transfer and Object Push services are available by default. ▶ To change the properties for FTP or OPP services, tap and hold the item and select Change local path from the pop-up menu. <table border="1"> <thead> <tr> <th>Local path</th><th>Description</th></tr> </thead> <tbody> <tr> <td>▶ \Temp\Ftp</td><td>▶ File Transfer (FTP)</td></tr> <tr> <td>▶ \My Documents\DefaultInbox</td><td>▶ Object Push (OPP)</td></tr> </tbody> </table>	Local path	Description	▶ \Temp\Ftp	▶ File Transfer (FTP)	▶ \My Documents\DefaultInbox	▶ Object Push (OPP)
Local path	Description						
▶ \Temp\Ftp	▶ File Transfer (FTP)						
▶ \My Documents\DefaultInbox	▶ Object Push (OPP)						
	Tap to refresh the device list or Bluetooth services provided once a connection has been established.						
	Tap to return to the previous screen.						
	Tap to stop discovering Bluetooth devices, disconnect existing connections or unload services.						

3.2.6. SEARCH FOR BLUETOOTH DEVICES

To search for a Bluetooth device to connect to:

- 1) Tap Device  to discover Bluetooth devices nearby. Wait for a few seconds for the mobile computer to list all the discovered devices.



- 2) If the device that you wish to connect to is not listed, make sure its Bluetooth status is set as discoverable.

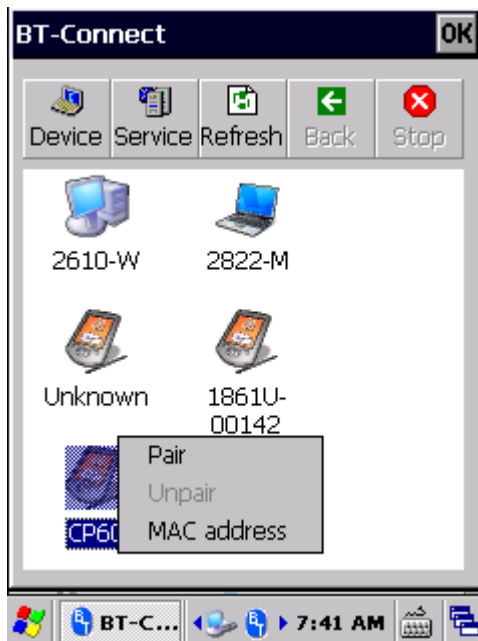
Then tap Refresh  to search for the device again.

3.2.7. PAIR BLUETOOTH DEVICES

IDENTIFY BLUETOOTH DEVICE

To check the identity of a Bluetooth device:

- 1) Open BT-Connect page as described in [Launch BT Connect](#).
- 2) In the device list, tap and hold a device until a pop-up menu appears.



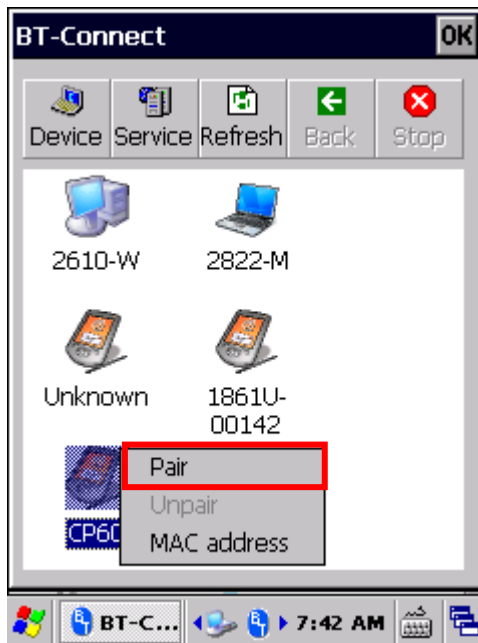
- 3) Tap MAC address in the menu to identify the selected device.



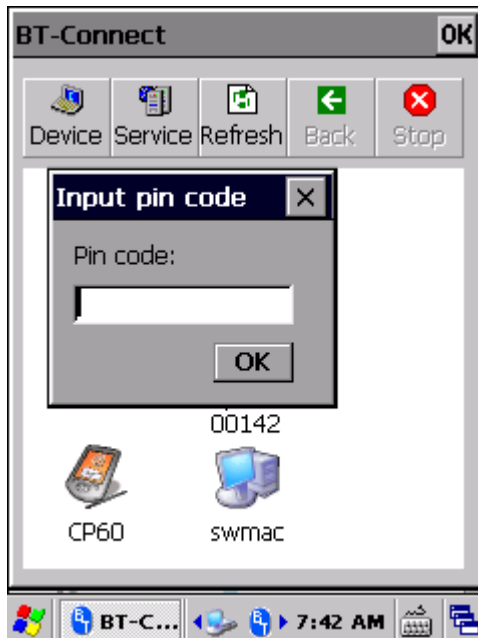
PAIR

If authentication is enabled on the Bluetooth device, pairing will be required to connect to that device. Pairing can be done by using a pin code to ensure secure Bluetooth connection.

- 1) In the device list, tap and hold the device to pair with. Select Pair in the pop-up menu.

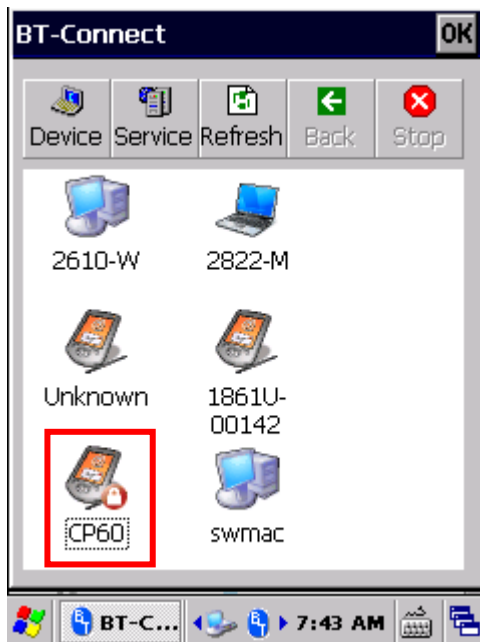


- 2) Enter a pin code in the pop-up window that appears.

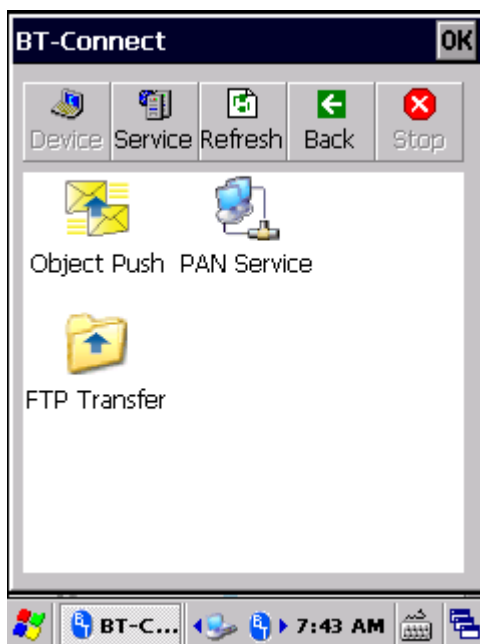


- 3) On the remote Bluetooth device, a prompt will show requesting you to enter the pin code. Enter it in order to confirm the Bluetooth partnership.

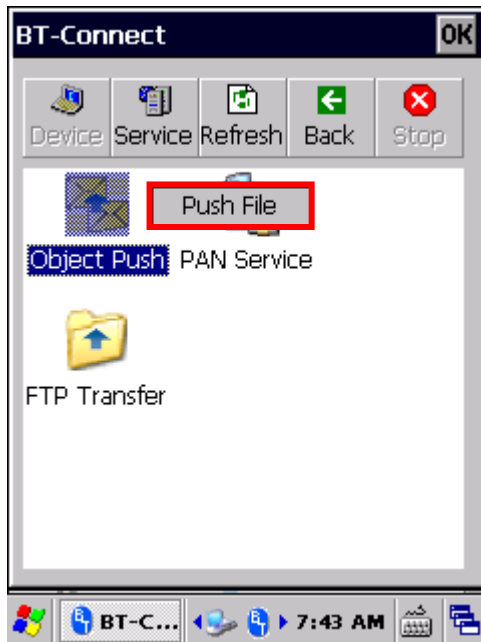
Once the mobile computer and the remote Bluetooth device are paired, a lock icon  will be displayed next to the device.



- 4) Double-tap the device to find out which Bluetooth services are available.



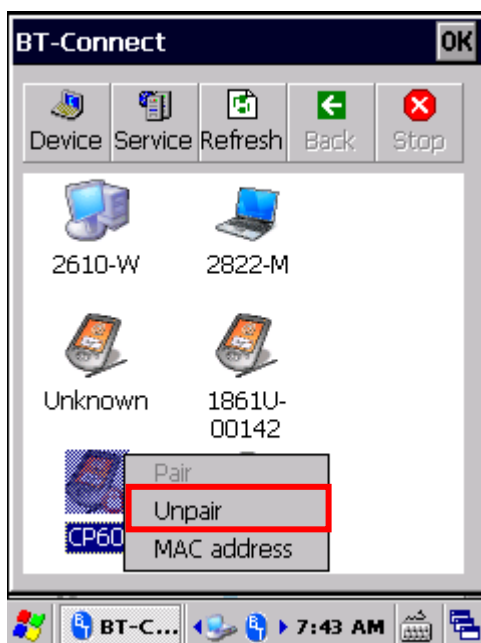
- 5) Tap and hold a desired Bluetooth service to take further actions.



UNPAIR

To unpair a Bluetooth device:

- 1) In the device list, tap and hold the device to unpair. A pop-up menu will appear.
- 2) Select Unpair in the pop-up menu.



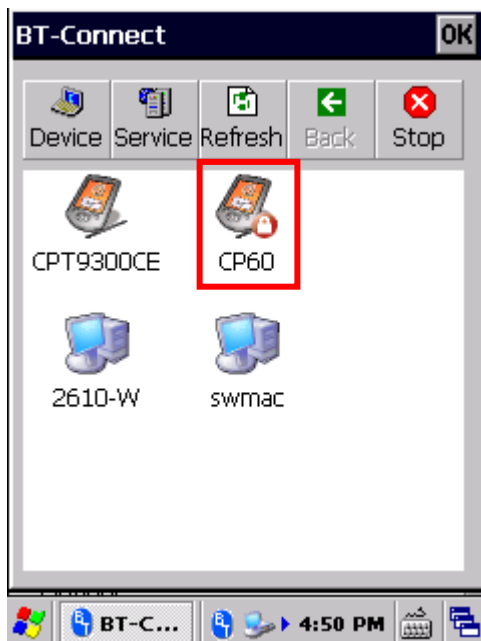
3.2.8. BLUETOOTH DATA TRANSFER

After the mobile computer is paired to a remote Bluetooth Device, it is ready to begin Bluetooth data communication.

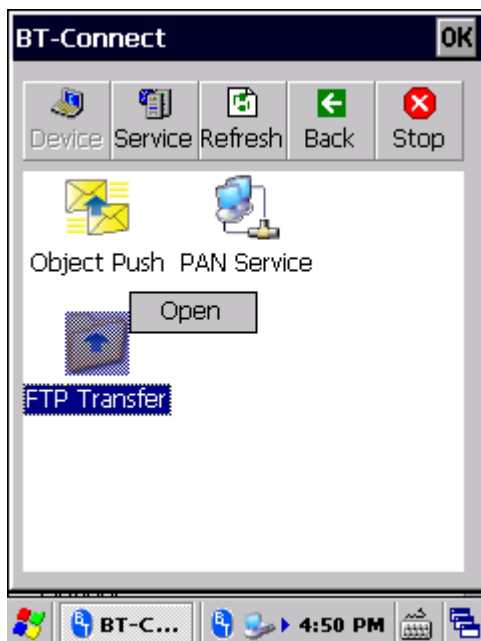
FILE TRANSFER

To exchange files via file transfer (FTP) service:

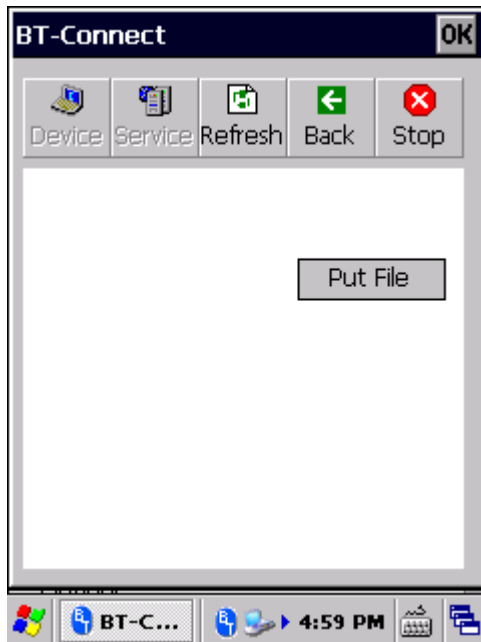
- 1) On the Device page, double-tap the paired Bluetooth device.



- 2) Tap and hold FTP Transfer and select Open in the pop-up menu.

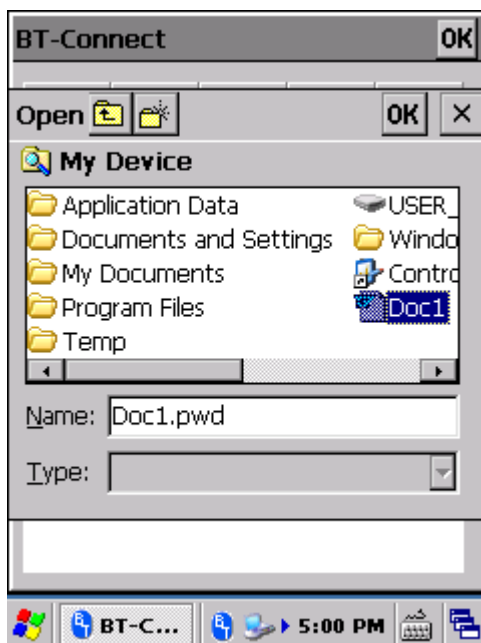


- 3) Tap and hold a blank spot on the page and select Put File in the pop-up menu.

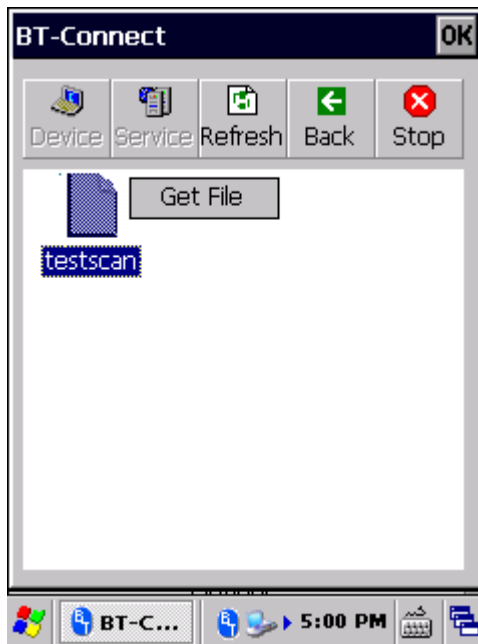


- 4) Select an object to transfer to the paired Bluetooth device.

On the remote Bluetooth device, the object will be stored under the directory specified on Service page | FTP Transfer | Change Local Path.



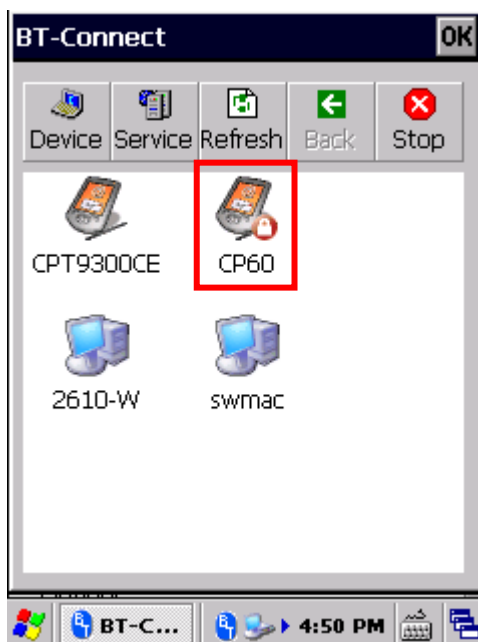
- 5) To store a transferred file to the specified local path on the mobile computer, tap and hold a file and select Get File in the pop-up menu.



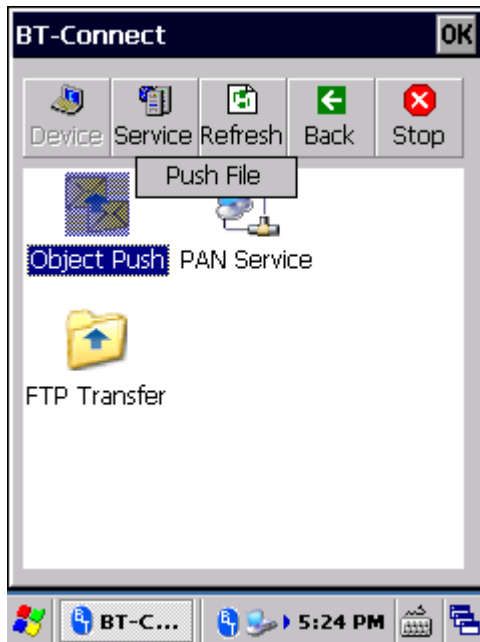
OBJECT PUSH

To use object push (OPP) service to send an object to a remote Bluetooth device:

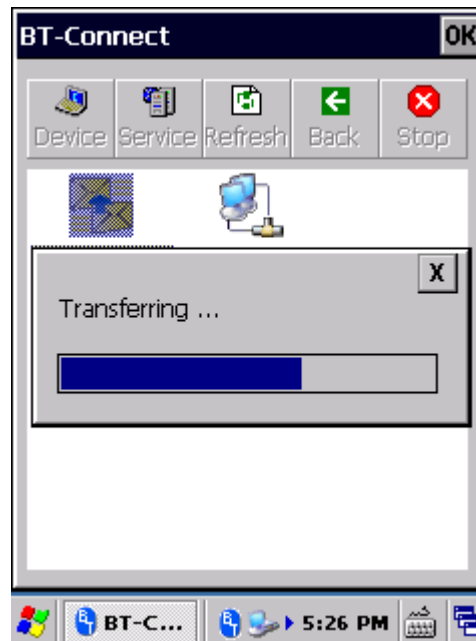
- 1) On the Device page, double-tap the paired Bluetooth device to open a page showing its available services.



- 2) Tap and hold Object Push and select Push File in the pop-up menu.



- 3) Select an object to transfer to the paired Bluetooth device. Wait for a few moments while the file transfers to the remote Bluetooth device.



- 4) On the remote Bluetooth device, the object will be stored under the directory specified on Service page | Object Push | Change Local Path.

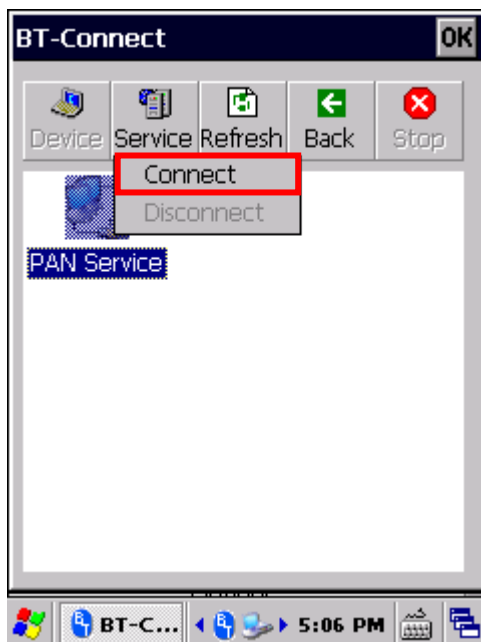
PAN SERVICE

To use personal area network (PAN) service shared by the Bluetooth device to connect to the Internet:

- 1) On the Device page, double-tap the paired Bluetooth device to open a page showing its available services.



- 2) Tap and hold PAN Service and select Connect in the pop-up menu.

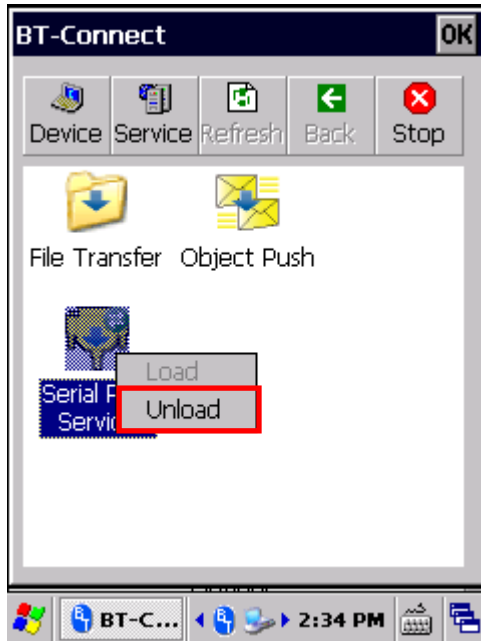


- 3) The paired Bluetooth device is then connected to mobile computer through PAN network.

SERIAL PORT SERVICE

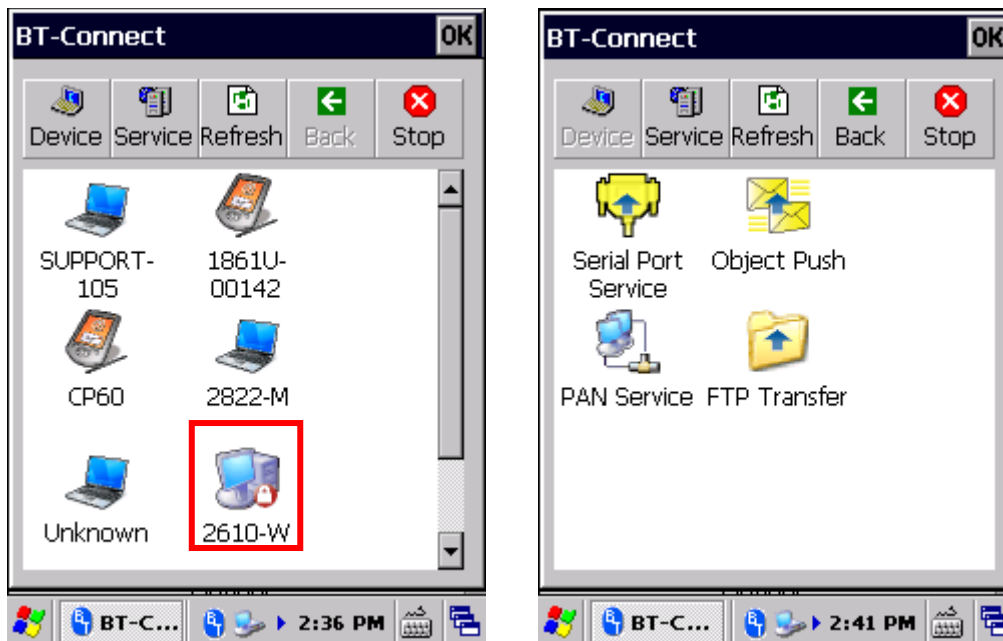
To use Serial Port Service:

- 1) On the Service  page, check if the Bluetooth virtual COM port is occupied by the local SPP service (i.e. whether a green connection icon  is present). If so, tap and hold the service and select Unload in the pop-up menu.

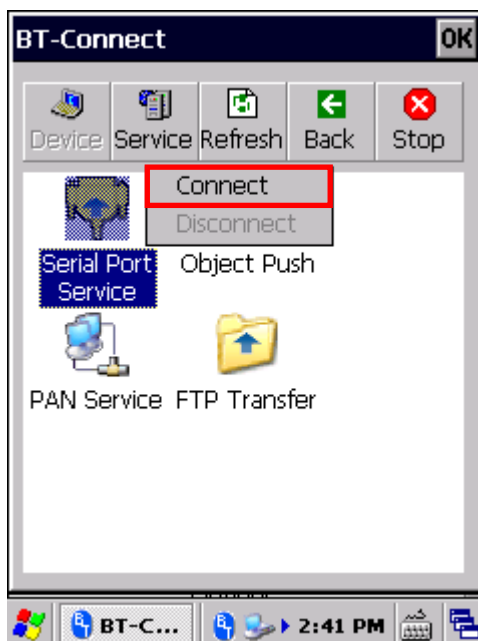


Note: The mobile computer provides one virtual COM port as the output or input port for Bluetooth. Before using the COM port for outgoing serial port (SPP) service, be sure to unload the local SPP service so the COM port is available for outgoing communication.

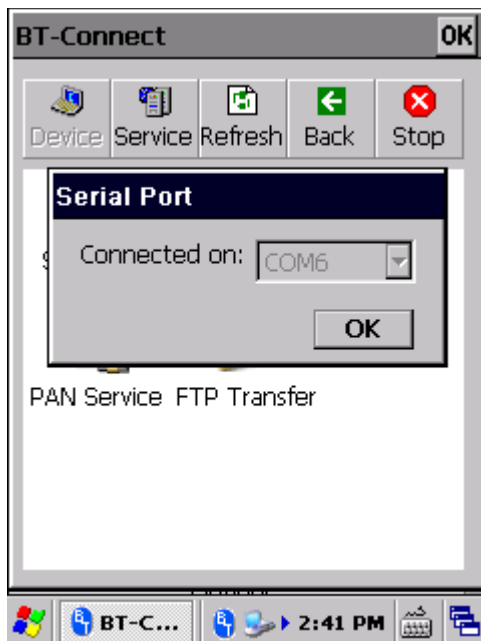
- 2) On the Device tab, double-tap the paired device to open a page showing the available services for that device.



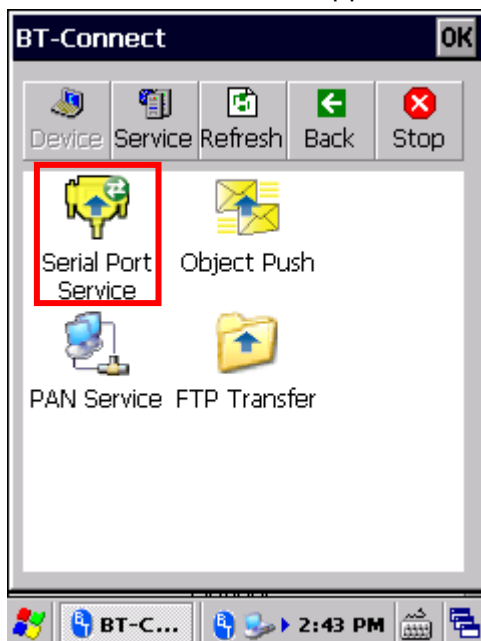
- 3) Tap and hold Serial Port Service and select Connect in the pop-up menu.



- 4) By default, the mobile computer uses COM6 as the Bluetooth SPP COM port. Tap OK in the pop-up window to confirm.



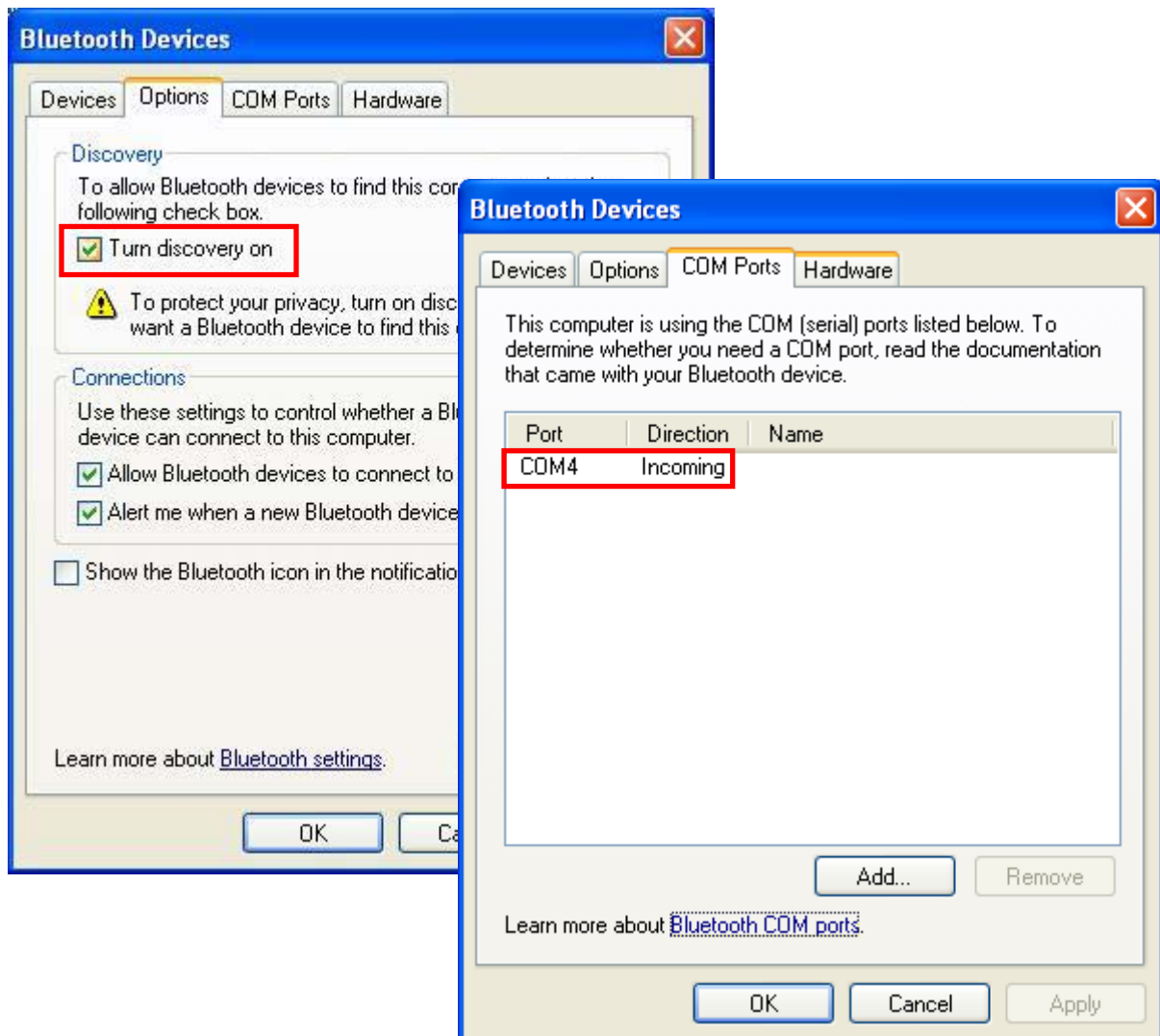
- 5) A connection icon  appears to indicate that serial port service is now active.



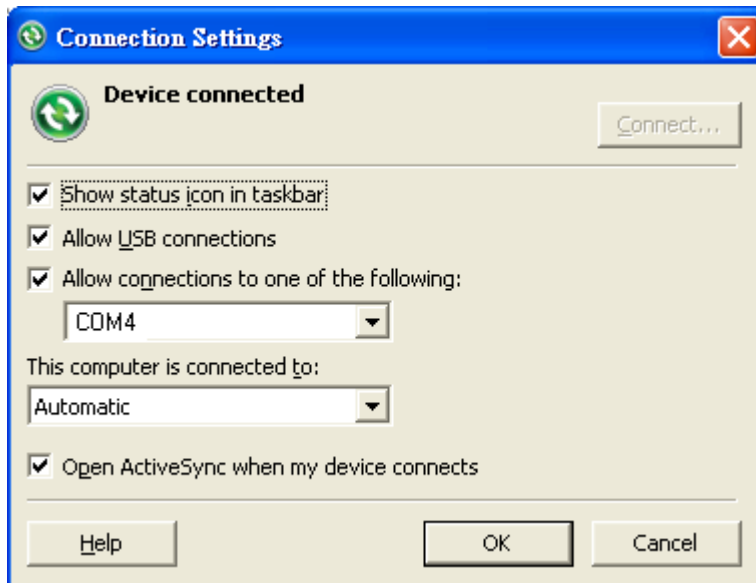
BLUETOOTH ACTIVESYNC

To create ActiveSync connection between your PC and mobile computer via Bluetooth, first you will need to configure Bluetooth settings on your PC.

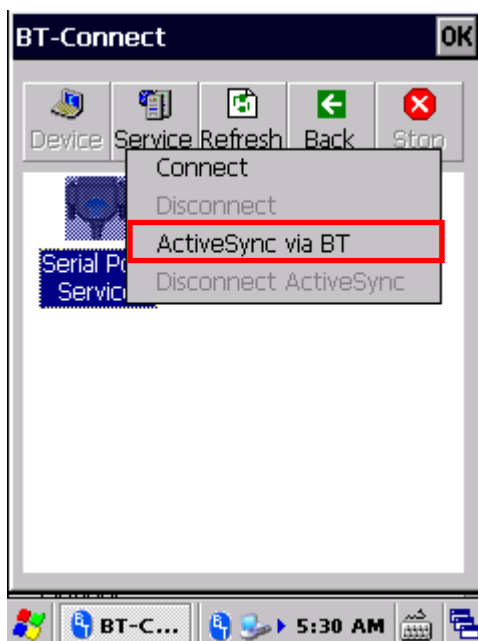
- 1) On your PC, configure necessary Bluetooth settings, such as turn Bluetooth discovery on, allow other Bluetooth devices to connect to the PC, and add a COM port for incoming connection.



- 2) On the PC, open ActiveSync | File | Connection Settings and specify the COM port for incoming connection.



- 3) On the mobile computer, make sure [Serial Port Service](#) is enabled in BT Manager.
 - 4) On the Device page, double-tap your PC to view its available services.
 - 5) Tap and hold Serial Port Services and select ActiveSync via BT in the pop-up menu.
- The mobile computer then connects to your PC via ActiveSync.



3.2.9. RE-CONNECTION

By default, BT-Connect will automatically re-connect to the previous services the next time the mobile computer goes through a Bluetooth power cycle. The preferred devices and services will also be reflected on the Preference tabbed page of [BT Manager](#).

This section explains the statuses of previously connected devices/services and their re-connection settings.

PREFERRED DEVICE LIST

Tap the Device tabbed page in BT-Connect to check the statuses of previously connected devices.

Example	Device Status	Settings in BT-Manager
	The device has been paired with () and at least one service has been re-connected successfully, such as Headset/Handsfree, HID, PAN, or SPP.	Last Connection = Y (on the Preference Tab)
	The device has been paired with () but have the following settings for remote services, such as Headset/Handsfree, HID, PAN, or SPP: (1) Last Connection is set as N, meaning none of the services are required to be re-connected. (2) Last Connection is set as Y, but the device fails to be re-connected.	Last Connection = N or Y (on the Preference Tab)
	The device is not paired, yet it has services which do not require PIN code exchange and are set as not to be re-connected (such as DUN, FTP, or OPP).	Last Connection = N (on the Preference Tab)

Note: The re-connection settings are configurable via [BT Manager](#). If you want to remove a specific device from the device list, you have to manually delete records of all its Bluetooth services on the [Preference Tab](#).

3.2.10. PREFERRED SERVICES

On the Device tabbed page in BT-Connect, double-tap the preferred device to view its available Bluetooth service(s).

Example	Service Status	Settings in BT-Manager
 Serial Port Service	The service is re-connected (🔄).	Last Connection = Y (on the Preference Tab)
 Object Push	The service is available for re-connection.	Last Connection = N (on the Preference Tab)
 PAN Service	A previously connected service becomes disconnected (🔌) since partnership with the remote Bluetooth device has been interrupted.	Last Connection = Y (on the Preference Tab)
 FTP Transfer	The service is manually disconnected, and partnership with the remote Bluetooth device has been interrupted.	Last Connection = N (on the Preference Tab)

To reconnect to a specific service, tap and hold it and select Connect in the pop-up menu.

Or tap  Refresh to update service status for the remote Bluetooth device.

Note: You can select to re-connect to a specific service. Refer to [Preference Tab](#) to configure connection settings for the service.

3.2.11. MANAGE LOCAL SERVICES

LOAD/UNLOAD SERVICE

You may select to load or unload a certain service. When a service is unloaded, it will become unavailable to paired Bluetooth devices. When it is re-loaded, it will become available once more.

- 1) On the Service  page, tap and hold an item to open a pop-up menu.

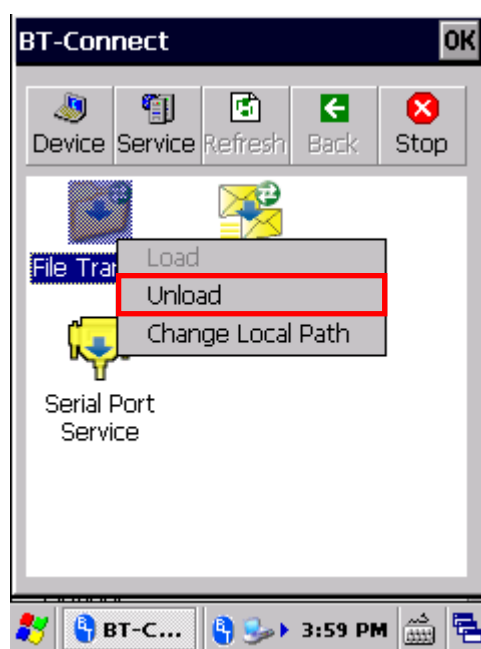
An active service will have a connection icon  next to it. Select to Unload it in the pop-up menu.

OR

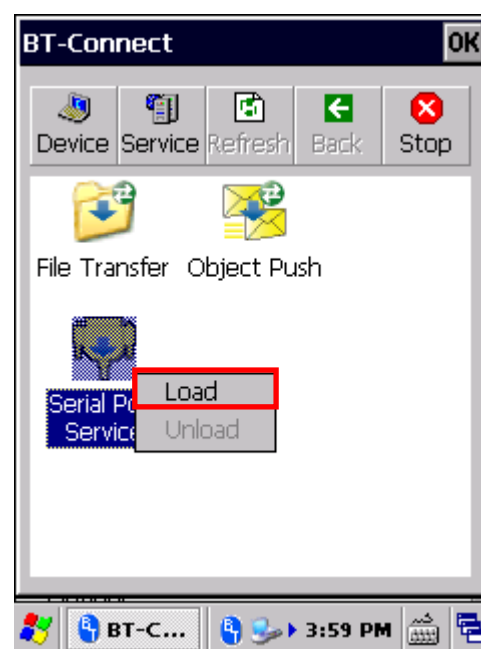
Select an inactive service and Load it in the pop-up menu.

Note: File Transfer (FTP) and Object Push (OPP) services are loaded/unloaded simultaneously.

Select an active service to unload it.



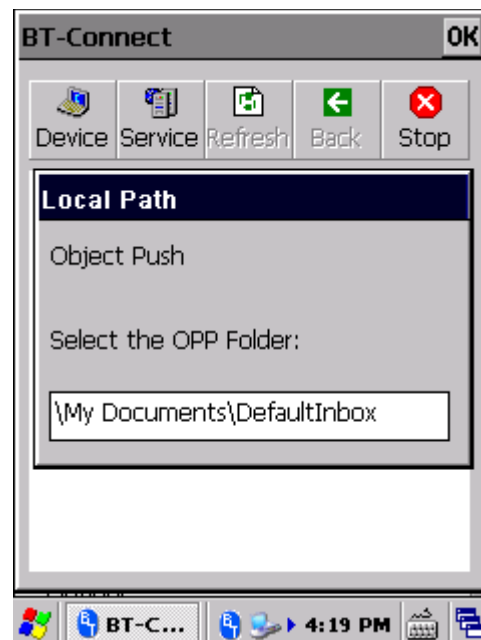
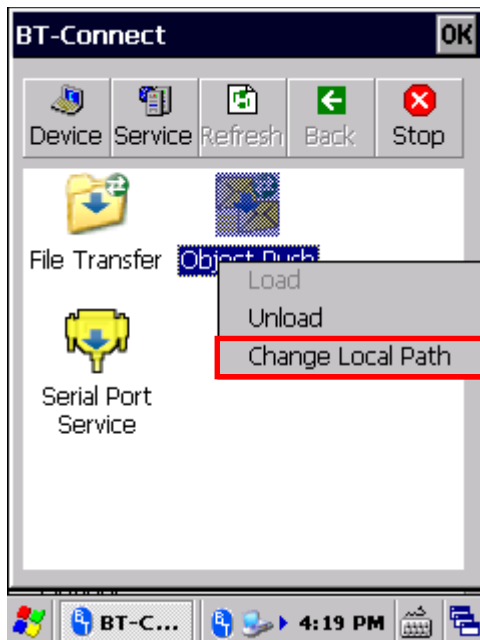
Select an inactive service to load it.



CHANGE LOCAL PATH

For File Transfer and Object Push services, you may change the path for file exchange.

- 1) On the Service  page, tap and hold an item to open a pop-up menu. Select Change Local Path in the pop-up menu and enter an inbox storage path.



- 2) Tap OK to confirm the change.

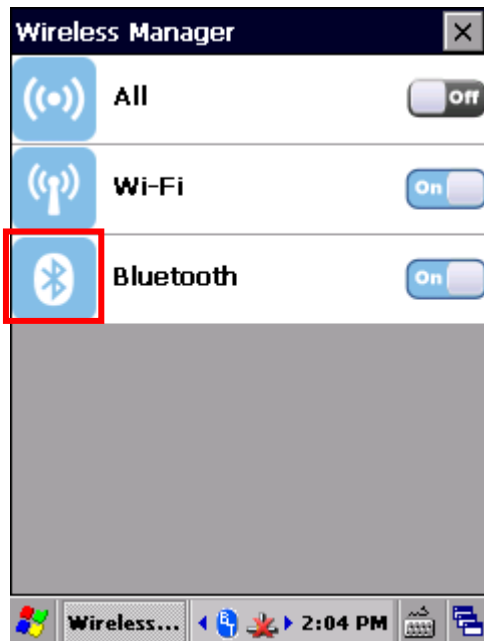
3.2.12. BT MANAGER

Advanced Bluetooth settings regarding Bluetooth reconnection, Bluetooth inquiry time and more can be adjusted using BT Manager.

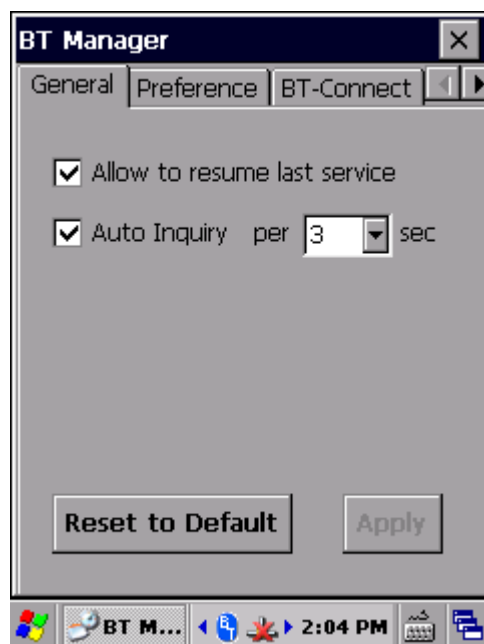
1) Tap Start | Settings | Control Panel | BT Manager .

OR

Tap the Bluetooth icon  on the Wireless Manager settings page.

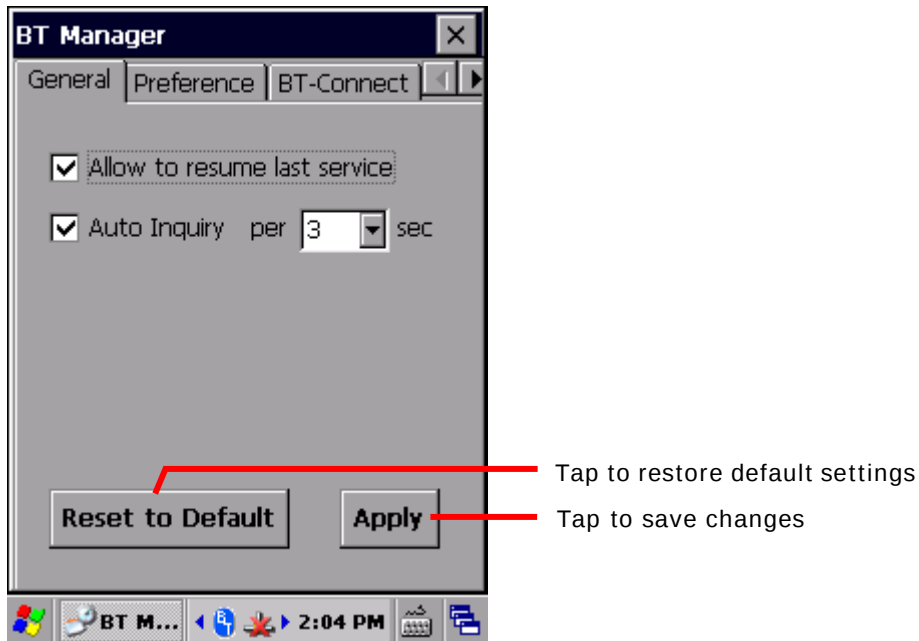


BT Manager window will open showing four tabbed pages: General, Preference, BT-Connect and About.



GENERAL TAB

This page sets whether to allow reconnection of Bluetooth services and auto-inquiry of Bluetooth devices.



Setting	Description
Allow to resume last service	Select to automatically re-connect to all previous Bluetooth services after the mobile computer resumes from warm boot/cold boot, or goes through a Bluetooth power cycle.
Auto Inquiry per [] sec	Select to perform an inquiry on a remote device at a regular interval after the mobile computer resumes from suspension.

- Use [Preference](#) tabbed page to configure “Last Connection” and “Auto Inquiry” settings for a specific service.

Note: Disabling “Auto Inquiry” helps save battery power. Enable this function only when necessary.

PREFERENCE TAB

BT Manager helps sort out preference for all remote services which were previously connected/disconnected. Select a desired service type from the drop-down menu:

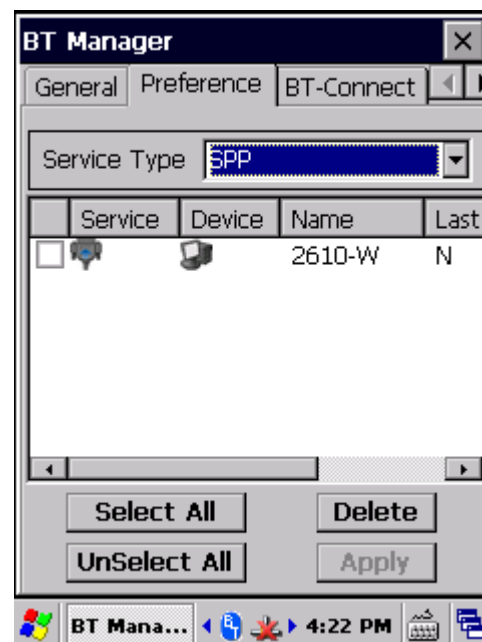
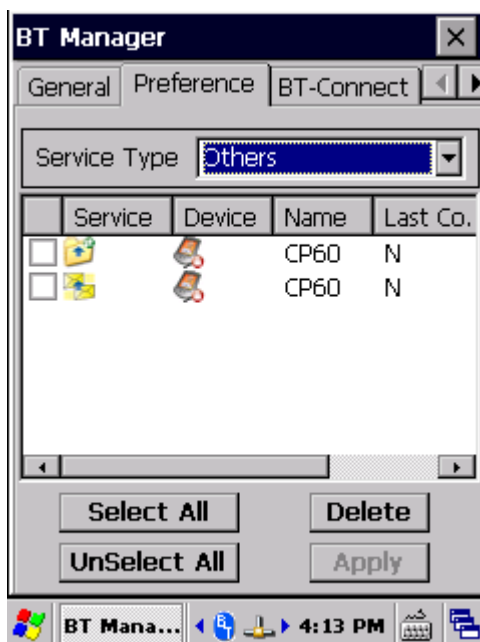
- ▶ Headset/Handsfree
- ▶ HID
- ▶ PAN
- ▶ SPP
- ▶ Others (FTP, OPP, and DUN)

MANAGING BLUETOOTH SERVICES

Bluetooth devices which deliver the selected service type will be shown in the content field, including service/device icons, device names, and default connection settings (Last Connection and Auto Inquiry).

A colored icon indicates the service is available for use

A grayed out icon indicates the service is currently unavailable

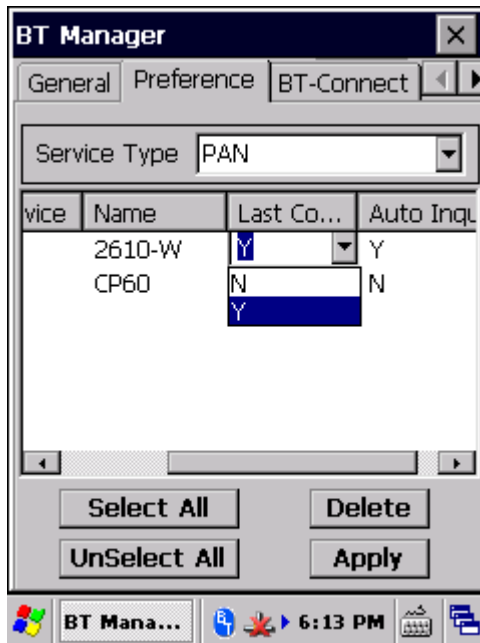


Setting	Description
Select All	Tap to select all the listed service(s).
Unselect All	Tap to deselect all the listed service(s).
Delete	Tap to delete the selected service(s). ▶ If a service is currently active, it cannot be deleted.
Apply	Tap to save any made changes.

CONFIGURING CONNECTION SETTINGS

Change the connection preference for a specific service by enabling (selecting Y) or disabling (selecting N) the last two columns, Last Connection and Auto Inquiry.

- ▶ If you select Y for Last Connection or Auto Inquiry, “Allow to resume last service” and “Auto Inquiry” must be enabled on the General tab. On the other hand, the connection settings will be ignored if the two settings are disabled on the General tab.

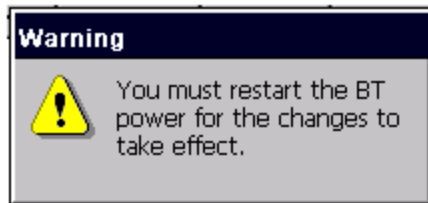


Options	Description
Last Connection	Decide whether to re-connect to the previous services when the mobile computer reboots or goes through a Bluetooth power cycle. Configurable services include: ▶ Headset/Handsfree ▶ HID ▶ PAN ▶ SPP
Auto Inquiry	Based on the settings for “Last Connection”, tap this field to decide whether to detect a device after a specific time interval. For Headset/Handsfree, HID, and PAN services, the value of “Auto Inquiry” will automatically follow the settings for “Last Connection”. For SPP service, when “Last Connection” is enabled (= “Y”), the value of “Auto Inquiry” can be manually set to “Y” or “N”. ▶ If Auto Inquiry is enabled, tap the General Tab to set the interval for the mobile computer to perform an inquiry.

Note: To save the battery power of your mobile computer, we suggest you disable “Auto Inquiry” unless necessary.

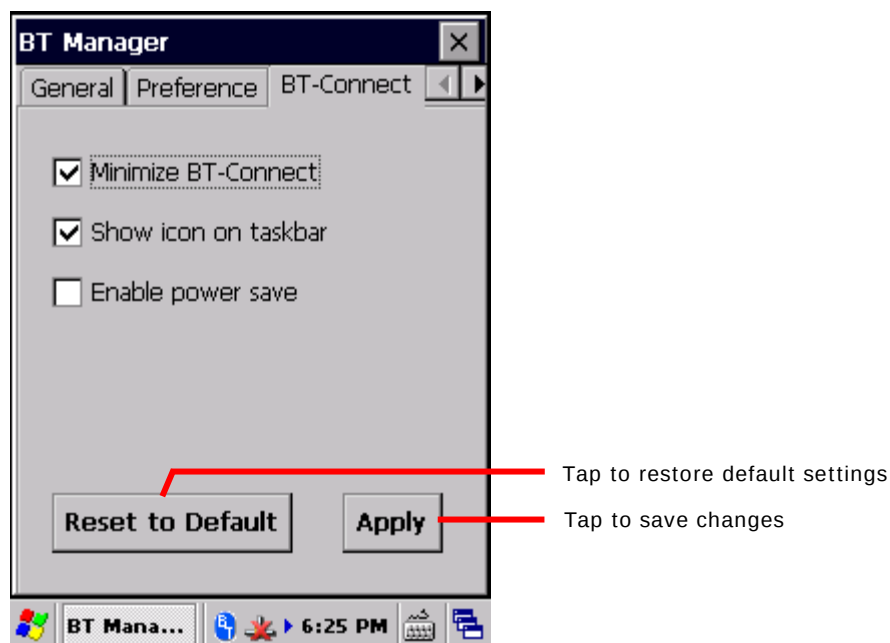
SAVING PREFERENCE CHANGES

After making changes to preference settings, tap **Apply**. A warning dialog will show reminding that for the settings to take effect, you will need to restart Bluetooth power. Proceed to perform a Bluetooth power cycle as in [Turn On/Off Bluetooth](#).



BT-CONNECT TAB

The BT-Connect tab allows configuration of the “BT-Connect window”, which can be opened by tapping the Bluetooth icon  on the taskbar.



Setting	Description
Minimize BT-Connect	Select to have the BT Connect window minimized on the taskbar after it is launched to continue providing Bluetooth services.
Show icon on taskbar	Select whether to display the Bluetooth icon  on the taskbar when BT Connect is running.
Enable power save	Select whether to maintain Bluetooth connections in low power consumption mode until a profile becomes active.

ABOUT TAB

This page delivers version and copyright information about the software.



MANAGE MOBILE COMPUTER

This chapter guides you to the system settings featured by the OS. Access these settings to define how the mobile computer looks, sounds, stores/secures your data, manages the applications, or exchanges data with your networks or other devices.

This chapter also includes the process for updating the OS image.

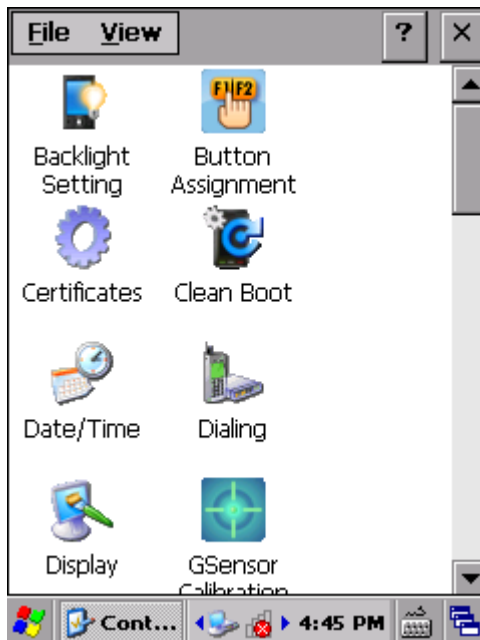
4. IN THIS CHAPTER

4.1 Control Panel	128
4.2 Connection Settings	135
4.3 Taskbar and Start Menu Settings	137

4.1. CONTROL PANEL

To access control panel settings:

- ▶ Tap Start | Settings | Control Panel to display a window listing all the programs installed on the mobile computer.



Icon	Description
------	-------------



BACKLIGHT SETTING

Sets screen and keypad timeout and brightness. Four tabs are featured – Brightness, Battery Power, External Power, and Profile. See also [Power](#) for setting up power plans to save battery consumption.

Tabbed Page	Description								
Brightness	Selects whether to allow manual adjustment of the screen and keypad backlights. ▶ Adjust the screen to the dimmest comfortable brightness to save power. See also Adjust Backlight.								
Battery Power	Sets the screen backlight timeout on battery power and whether to trigger screen/keypad light-up upon pressing a key. <table> <tr> <th>Option</th><th>Default Settings</th></tr> <tr> <td>Turn off LCD backlight if device is not used for:</td><td>Checked; 1 min</td></tr> <tr> <td>Turn off keypad backlight if device is not used for:</td><td>Checked; 5 sec</td></tr> <tr> <td>Turn on LCD backlight when a button is pressed or the screen is tapped</td><td>Checked</td></tr> </table>	Option	Default Settings	Turn off LCD backlight if device is not used for:	Checked; 1 min	Turn off keypad backlight if device is not used for:	Checked; 5 sec	Turn on LCD backlight when a button is pressed or the screen is tapped	Checked
Option	Default Settings								
Turn off LCD backlight if device is not used for:	Checked; 1 min								
Turn off keypad backlight if device is not used for:	Checked; 5 sec								
Turn on LCD backlight when a button is pressed or the screen is tapped	Checked								

	Turn on keypad backlight when a button is pressed	Checked
External Power	Sets the screen backlight timeout on external power and whether to trigger screen/keypad light up upon pressing a key.	
	<u>Option</u>	<u>Default Settings</u>
	Turn off LCD backlight if device is not used for:	Checked; 10 min
	Turn off keypad backlight if device is not used for:	Checked; 10 sec
	Turn on LCD backlight when a button is pressed or the screen is tapped	Checked
	Turn on keypad backlight when a button is pressed	Checked
Profile	Sets backlight profiles or restores them back to default.	



BT MANAGER

Bluetooth settings tool that allows you to select whether to enable device re-connection and auto-inquiry, as well as set preference for re-connection of each service. See [Use Bluetooth](#).



BUTTON ASSIGNMENT

Redefines key functions under keypad's normal and function mode. See Button Assignment for more details.



CERTIFICATES

Imports either your personal digital certificates, certificates from trusted authorities, or intermediate certificates in order to access certain secured networks. Once imported, you may view or remove the installed certificates.



DATE/TIME

Sets RTC time, calendar and time zone.

Note: RTC time can be reserved for approximately 60 days on the mobile computer after the main battery pack has been removed.



DIALING

Dials up the connection and configure settings for modem communication. (Not available for now).



DISPLAY

Changes the desktop background image and system appearance (color of desktop, windows, title bars, dialogs, menus, selected items, etc.).



GSSENSOR CALIBRATION

Shows a round ball which fixes at the center of a set of circles when the mobile computer is on a level surface, and dislocates when the mobile computer is tilted. Place the mobile computer on a flat surface before calibration, and tap GSensor

Calibration.



HF RFID CONFIGURATION

Configures the RFID reader and displays test scan results.
See Use HF RFID Configuration.



INPUT PANEL

- ▶ Select an input method and tap Options to make further adjustments.
- ▶ Set whether to allow applications change input panel state.



INTERNET OPTIONS

Configures how the mobile computer connects to the Internet.



KEYBOARD

Enables and sets character repeat delay and rate.



MOUSE

Tests the double-click sensitivity of the stylus. See also [Stylus](#).



NETWORK AND DIAL-UP CONNECTIONS

Configures whether the mobile computer connects to a network directly or through a modem. Same as tapping Start | Settings | Control Panel | Network and Dial-up Connections.

Available connection types include:

- ▶ 115200 (for dial-up internet access)
- ▶ TIWLNAPI1 (via 802.11 a/b/g/n)
- ▶ BTPAN1 (via Bluetooth)



OWNER

Records information about the mobile computer's owner, owner notes, and network ID.



PASSWORD

Sets a password to secure the mobile computer upon power on or awake from suspension.

- ▶ When password protection is enabled, access to Control Panel settings and Password settings is also protected.



PC CONNECTION

Select between USB serial connection and COM port connection.

Tabbed Page	Description
PC Connection	Select to connect the mobile computer with your PC through USB serial connection or. ▶ Changing connections settings may affect communications with your PC.
COM Port	Select whether to allow the physical UART to act as a COM port, and specify the COM port to map to.



POWER

Displays battery level and sets up power plans. Two tabs are featured – Battery and Power Off.

Tabbed Page	Description
Battery	Delivers a summary of battery level for main & backup batteries, and also denotes the main battery level percentage.
Schemes	Sets a power scheme to switch the mobile computer to suspend after a specified amount of time.



READER CONFIG

Allows users to set scanner preferences, data output format and destination, symbology settings, and perform test scanning of barcodes. See [Use Reader Config](#).



REGIONAL SETTINGS

Controls how to display date, time and numbers, currency as well as interface and input language on the mobile computer. Featured tabs are – Region, Language and Input.

Note: Default interface language and input language are bound to the OS and cannot be changed.



REMOVE PROGRAMS

Views and removes non-inherent applications installed on the mobile computer. See also [Uninstall Applications](#).



SCREEN ROTATION

Selects the modes to enable for screen orientation, and whether to suspend the mobile computer when it is facing down.

Tap each of the following labels to enable/disable the given screen rotation mode.

- ▶ Portrait mode
- ▶ Landscape mode
- ▶ Signature mode

Tap the following label to enable/disable suspension of the mobile computer when it is turned over and the screen is facing downwards.

- ▶ Suspend when face down



SCU

Summit Client Utility (SCU) allows changing Wi-Fi settings on the mobile computer, including radio type, access point, Wi-Fi security and more. Settings are displayed among three tabs:

Tabbed Page	Description
Status	Displays AP information, device IP, connection status and signal strength.
Configuration	Disables/Enables radio and switches the active profile. Also opens profile settings and global settings.
Diagnostics	Performs diagnostic tests to check connection, and shows information about SCU version.



STORAGE INFORMATION

Provides storage status of the internal storage (which is divided into System files and User data) and external storage on the mobile computer.

Label	Description
System	Shows total size and available size of storage under the System directory.
USER_DATA	Shows total size and available size of storage under the USER_DATA directory.
Storage Card	Shows total size and available size of storage on the storage card.



STYLUS

- ▶ Double-tap tab: Configures and tests double-tap sensitivity.
- ▶ Calibration tab: Recalibrates the touch screen when it is no longer responding correctly to stylus movement.



SYSTEM

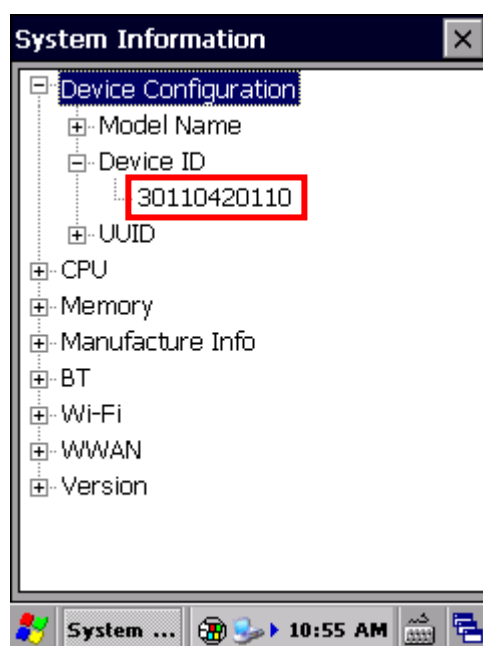
- ▶ General tab: Displays OS and system hardware information.
- ▶ Device Name tab: Tap a name and description for the mobile computer.
- ▶ Copyrights tab: Views copyright statements.



SYSTEM INFORMATION

Displays some of the mobile computer's info such as manufacturer, firmware version, MAC address, memory capacity and so on. Tap each node to expand the tree structure list and view data about the given items.

This page also displays the mobile computer's Device ID, a sequence of digits that deliver information about the hardware integrated on the mobile computer. The coding rule is tabulated as below:



Digit Pair	Hardware	Code
1 st	Barcode Reader	0: None: 1: Laser 2: Laser 3: 2D imager 4: Long range laser 5: 2D imager 7: Extra long range 2D imager 9: Extra long range laser
2 nd	--	N/A
3 rd	Bluetooth	0: None 1: Bluetooth
4 th	Wi-Fi	0: None 1: Wi-Fi
5 th	--	N/A

6 th	Keypad	0: None 3: Numeric (30-key) 4: Numeric & Function (38-key) 5: Alphanumeric (53-key) 6: Alphanumeric (53-key) 7: Alphanumeric (53-key)
7 th	LCD	0: None 3: QVGA
8 th	--	N/A
9 th	--	N/A
10 th	Touch panel	0: None 1: 3.5" QVGA Transflective
11 th	--	N/A



TERMINAL SERVER CLIENT

Logs onto a Windows Terminal Server or a remote computer through remote desktop connection. You may then access all programs, files and network resources on the remote host or terminal server.



TIME SYNC

- ▶ SNTP tabbed page: Synchronizes the mobile computer's time with an NTP server either automatically or manually. Users can also select the time period for auto-synchronization. Synchronized time will be written to RTC and system time will be updated.

Check Internet connection status if the following synchronization status shows: "Cannot get time information through SNTP".

Note: For auto-synchronization to function properly, Time Synchronization application should be shut down. Close the application when you are finished adjusting the settings.



USB CONNECTION

Sets the type of USB connection without re-plugging the USB cable.

- ▶ ActiveSync Serial Mode: Sets up ActiveSync connection with PC through serial protocol. This is the default setting.
- ▶ Mass Storage – SD Card: Presents the mobile computer with an SD card installed as a storage device. If no SD card is installed, the directory on the PC will be blank.

Note: Selection of ActiveSync Advanced Network Mode or ActiveSync Serial Mode will be synchronized with settings under Start | Settings | Control Panel | USB to PC.



VOLUME & SOUNDS

- ▶ Volume tab: Adjusts system sounds and volume for events, applications, notifications and stylus movements.
- ▶ Sounds tab: Changes event sounds to meet your preferences and save them as schemes.



WIRELESS MANAGER

Enables/disables Bluetooth, Wi-Fi and cellular data power status.

4.2. CONNECTION SETTINGS

To access connection settings:

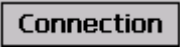
- ▶ Tap Start | Settings | Control Panel | Network and Dial-up Connections.

OR

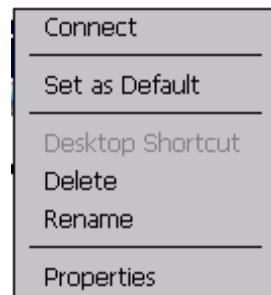
- ▶ Tap Start | Settings | Network and Dial-up Connections.

Icon	Description
	MAKE NEW CONNECTION Tap to create a new connection which is not listed.
	USB SERIAL Sets serial profile for USB connection to a PC via ActiveSync. Settings will be reflected under Start Settings Control Panel PC Connection  . When the mobile computer is connected to a PC, the connection is enabled automatically. ▶ When connected, an icon  will appear on the taskbar. ▶ When disconnected, the icon will disappear. Note: Any changes to the Properties of this item will affect ActiveSync connection.
	USB CABLE Sets USB networking with the PC through RNDIS. This appears automatically when the mobile computer is connected to a PC via the Snap-on Cable or Cradle, and the icon disappears when the mobile computer is disconnected from the PC.
	SDCSD40N1 Refers to the 802.11 a/b/g/n module for connection via wireless local area network (WLAN). To enable this function, turn on Wi-Fi power in Start Settings Control Panel Wireless Manager  . ▶ An icon  is located on the taskbar. ▶ When connected to WLAN, the icon will change to . ▶ When disconnected, the icon will return to .
	BTPAN1 Refers to connection via wireless personal area network (WPAN). This function is not available until Bluetooth power is turned on in Start Settings Control Panel Wireless Manager  . ▶ When Bluetooth power is turned on, an icon  will appear on the taskbar. ▶ When connected to a Bluetooth device, the icon will change to . ▶ When disconnected to a Bluetooth device, the icon will return to . ▶ When Bluetooth power is turned off, the icon will disappear.

The taskbar items deliver the following functions:

Button	Description
	Tap this button to open the Connection menu. The available options depend on the connection you select.
	Tap this button to toggle on/off the connection you select. This can be used for Enable/Disable or Connect/Disconnect.
	Tap this button to delete the connection you select.
	Tap this button to view the properties of the connection you select.

You may also tap and hold a connection item to open an option menu. The available functions differ for each type of connection.



4.3. TASKBAR AND START MENU SETTINGS

To access taskbar and Start Menu settings:

- ▶ Tap Start | Settings | Taskbar and Start Menu.



Tabbed page	Setting	Description
General	Always on top	Select to keep the taskbar at the top of the screen, even when an application is open.
	Auto hide	Select to auto hide the taskbar and reveal it by tapping on the bottom of the screen.
	Show Clock	Select to show clock time at the right side of the taskbar region.
Advanced	Clear	Tap to clear all contents in the Documents menu.
	Expand Control Panel	Select to show Control Panel items in an expanded menu.

SPECIFICATIONS

PLATFORM, PROCESSOR & MEMORY

Operating System & CPU

OS Version	Microsoft Windows Embedded Compact 7.0
CPU	TI OMAP4430 1GHz Processor

Memory

RAM	512MB DDR SDRAM
Flash	4GB Flash ROM
Expansion Slot	One expansion slot, supports MicroSDHC up to 32GB

COMMUNICATIONS & DATA CAPTURE

Communications

USB Host/Client	USB 2.0
WPAN	Built-in module for Bluetooth version 2.1 + EDR Class II connectivity
WLAN	Built-in module for 802.11 a/b/g/n networking

Data & Image Capture

Digital Camera	5 megapixel with auto focus and LED flash
Barcode Reader	Ordering options include STANDARD READER UNIT ▶ Laser (Symbol SE955) ▶ 2D imager (Symbol SE4500) LARGE READER UNIT ▶ 2D imager with decoder board (Symbol SE4500+PL4507) ▶ Extra long range laser (Symbol SE1524) ▶ Extra long range 2D imager (Intermec EX25)

ELECTRICAL CHARACTERISTICS

Batteries

Main Battery Pack	Standard capacity battery: 3.7V, 3300 mAh	
	Large capacity battery: 3.7V, 5400 mAh	
	Rechargeable Li-ion battery	
	Charging time: approximately 4 hours for standard battery / 6 hours for large capacity battery	
Backup Battery	3.6V, 15 mAh	
	Rechargeable NiMH battery (charged via main battery)	
	Data retention for 30 minutes	
	Charging time: approximately 5 hours	

Power Adapter

Power Supply Cord for	Input	AC 100~240V, 50/60 Hz
Snap-on Cable	Output	DC 5V, 4A

PHYSICAL CHARACTERISTICS

Color Tap Screen Display

Display	3.5" Transflective TFT-LCD, 65K colors, sunlight readable
Resolution	QVGA 240 (W) x 320 (H)

Keypad

Layout	Numeric keypad (30-key), Numeric & Function keypad (38-key), or Alphanumeric keypad (53-key)
Backlight	White LED backlight for display and keypad

Notifications

Status LED	Three LEDs for showing scanning good read, radio connection status and battery charging status
Audio	▶ Integrated with speaker and microphone ▶ 2.5mm 4-ring headset jack ▶ Bluetooth headset supported
Vibrator	0.45G force

Sensors

Built-in Sensors	G-sensor, Light Sensor
------------------	------------------------

Enclosures

Materials	Plastic & metal
Dimensions	214 mm (L) x 89 mm (W) x 47 mm (H) with battery
Weight	445g with 3600mAh battery; 474g with 5400mAh battery

ENVIRONMENTAL CHARACTERISTICS

Temperature

Operating ^{Note}	-20 °C to 50 °C / -4°F to 122°F
Storage	-30 °C to 70 °C / -22°F to 158°F (without battery) -30 °C to 60 °C / -22°F to 140°F (with battery)
Charging	0 °C to 35 °C / 32°F to 95°F (with battery)

Humidity

Operating	5% to 95%, non-condensing (Max 60°C / 140°F)
Storage	5% to 95%, non-condensing (Max 60°C / 140°F)

Resistance

Impact Resistance	Multiple 1.8 m (5.9 ft.) drops to concrete, meets and exceeds applicable MIL-STD 810G specifications
Tumble Test	500 tumbles (1,000 drops) at 1 m (1.6 ft) and 1,000 tumbles (2,000 drops) at 0.5 m (0.8 ft.) per applicable IEC tumble specifications
Splash/Dust Resistance	IP65 per applicable IEC 60529 sealing specs
Electrostatic Discharge	± 15 kV air discharge, ± 8 kV contact discharge

Note: CipherLab will not be held responsible for the mobile computer's malfunction incurred by the operation outside operating temperature range.

PROGRAMMING SUPPORT

Development Environment & Tools

Integrated Development Environment	Visual Studio 2008 Visual Studio 2005
Software Development Kit	Microsoft SDK System API (DLL) for system configuration Reader API (DLL) for reader configuration

Software & Utilities

CipherLab software package	▶ Reader Config ▶ Button Assignment ▶ Signature Capture ▶ Push to Talk ▶ AppLock ▶ MIRROR Browser for web application ▶ Terminal Emulation
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Third-party software

- ▶ SOTI MobiControl for remote device control
- ▶ Naurtech CETerm – Terminal emulator (3270, 5250, VT) and industrial web browser
- ▶ SYSDEV Kalipso

ACCESSORIES

Accessory Options

- ▶ Snap-on Charging and Communication Cable (USB or RS-232)
- ▶ Charging & Communication Cradle
- ▶ Pistol Grip
- ▶ Snap-on Car Charger
- ▶ 4-Slot Battery Charger
- ▶ 4-Slot Terminal Cradle