

8515 VEHICLE-MOUNT COMPUTER

USER GUIDE

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Revision History

Changes to the original guide are listed below:

Change	Date	Description
-001 Rev A	04/2015	Rebrand for Zebra.

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APPROVALS AND SAFETY SUMMARY

CE Marking

When used in a residential, commercial or light industrial environment the product and its approved UK and European peripherals fulfil all requirements for CE marking.

R&TTE Directive 1999/5/EC

This equipment complies with the essential requirements of EU Directive 1999/5/EC (Declaration available: www.pSION.com).

Cet équipement est conforme aux principales caractéristiques définies dans la Directive européenne RTTE 1999/5/CE. (Déclaration disponible sur le site: www.pSION.com).

Die Geräte erfüllen die grundlegenden Anforderungen der RTTE-Richtlinie (1999/5/EG). (Den Wortlaut der Richtlinie finden Sie unter: www.pSION.com).

Questa apparecchiatura è conforme ai requisiti essenziali della Direttiva Europea R&TTE 1999/5/CE. (Dichiarazione disponibile sul sito: www.pSION.com).

Este equipo cumple los requisitos principales de la Directiva 1995/5/CE de la UE, "Equipos de Terminales de Radio y Telecomunicaciones". (Declaración disponible en: www.pSION.com).

Este equipamento cumpre os requisitos essenciais da Directiva 1999/5/CE do Parlamento Europeu e do Conselho (Directiva RTT). (Declaração disponível no endereço: www.pSION.com).

Ο εξοπλισμός αυτός πληροί τις βασικές απαιτήσεις της κοινοτικής οδηγίας EU R&TTE 1999/5/EK. (Η δήλωση συμμόρφωσης διατίθεται στη διεύθυνση: www.pSION.com)

Deze apparatuur voldoet aan de noodzakelijke vereisten van EU-richtlijn betreffende radioapparatuur en telecommunicatie-eindapparatuur 199/5/EG. (verklaring beschikbaar: www.pSION.com).

Dette udstyr opfylder de Væsentlige krav i EU's direktiv 1999/5/EC om Radio- og teleterminaludstyr. (Erklæring findes på: www.pSION.com).

Dette utstyret er i overensstemmelse med hovedkravene i R&TTE-direktivet (1999/5/EC) fra EU. (Erklæring finnes på: www.pSION.com).

Utrustningen uppfyller kraven för EU-direktivet 1999/5/EC om ansluten teleutrustning och ömsesidigt erkännande av utrustningens överensstämmelse (R&TTE). (Förklaringen finns att läsa på: www.pSION.com).

Tämä laite vastaa EU:n radio- ja telepäätelaitedirektiivin (EU R&TTE Directive 1999/5/EC) vaatimuksia. (Julki-lausuma nähtävillä osoitteessa: www.pSION.com).

Psion tímto prohlašuje, že 8515 Vehicle-Mount Computer je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1995/5/ES (NV č. 426/2000 Sb.) a Prohlášení o shodě je k dispozici na www.pSION.com.

Toto zařízení lze provozovat v České republice na základě generální licence č. GL-12/R/2000.

Psion tímto vyhlasuje, že 8515 Vehicle-Mount Computer spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1995/5/ES (NV č. 443/2001 Z.z.) a Vyhlásenie o zhode je k dispozícii na www.pSION.com.

Toto zariadenie je možné prevádzkovať v Slovenskej republike na základe Všeobecného povolenia č. VPR-01/2001.

FCC Information to Users

Federal Communication Commission Interference Statement

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 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.

FCC Caution:

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

**IMPORTANT** FCC Radiation Exposure Statement

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter., except as noted here:

The condition for the co-location of the **Bluetooth®** and Model RA2040/RA2041 radios is as follows:

The Murata **Bluetooth®** radio must use the Antenova antenna (P/N 3030A5645-01).

The Model RA2040/RA2041 radios must use one of these antennas:

1. Radiall/Larsen Model EPA-016.
2. Integrated Antenna (P/N 1070545).
3. Mobile Mark Model IMAG5-2400.

The use of any other configuration requires its own FCC approval.

Some equipment in hospitals and aircraft are not shielded from radio frequency energy. Do not use the 8515 onboard aircraft, or in hospitals, without first obtaining permission.

Do not use near pacemakers. The product may affect the operation of some medically implanted devices such as pacemakers, causing them to malfunction. Avoid placing your product next to such devices. Keep a minimum distance of 20 cm between the device and the product to reduce the risk of interference. If you have any reason to suspect that interference is taking place, turn off the 8515 and contact your cardiologist for assistance.



NOTE In August 1996 the Federal Communications Commission (FCC) of the US adopted an updated safety standard for human exposure to radio frequency energy emitted by FCC regulated transmitters. The design of this product complies with the FCC guidelines and those standards. To maintain compliance with the FCC RF exposure guidelines, ensure the antenna is at least 20 cm from your body when transmitting.

Emissions Information for Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. When using the 802.11 radio option, to prevent radio interference, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada. En cas d'utilisation du module radio 802.11, afin d'éviter toute interférence radio avec le service autorisé, l'appareil doit être utilisé à l'intérieur, tout en tant éloigné de toute fenêtre afin de garantir le maximum de protection. Si cet équipement (ou son antenne émettrice) est installé à l'extérieur, il est alors soumis à licence.

Warnings to Users



IMPORTANT For your own safety, it is critical that you comply with the following warnings.

RF Exposure

To satisfy FCC RF exposure requirements for vehicle mount transmitting devices, a separation distance of 20 centimeters should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

Do Not Remove Covers or Open Enclosures

To avoid injury, the equipment covers and enclosures should only be removed by qualified service personnel. Do not operate the equipment without the covers and enclosures properly installed.

Batteries

- Risk of explosion if battery is replaced by an incorrect type.
- Dispose of used batteries according to the instructions.

Cautions

- Use of the Vehicle Mount Computer while charging the fork truck battery is prohibited.
- Use of additional wiring and attachments not recommended or sold by the manufacturer may result in fire, electric shock or personal injury.
- If using an AC adaptor, use only the AC adaptor recommended by manufacturer.
- Do not operate the vehicle-mount computer with a damaged cord or plug. Replace immediately.
- Make sure the cord is positioned so that it is not stepped on, tripped over or otherwise subjected to damage or stress.
- An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in fire or electric shock.
- To reduce risk of electric shock, unplug the vehicle-mount computer from the DC source before attempting any maintenance or cleaning.



WARNING! Physically disconnect the 8515 from the vehicle battery during battery charging (into AC outlet).

Country Roaming

This device incorporates the International Roaming feature (IEEE802.11d) which will ensure the product operates on the correct channels for the particular country of use.

Ad-Hoc Operation (2.4 GHz band)

Ad-Hoc operation is limited to Channels 1-11 (2412-2462 MHz).

China Regulatory Information

通过访问以下网址可下载当地语言支持的产品说明书

http://www.zebra.com/CN-ZH/Pages/Contact_Us#support_tab



ABOUT THIS GUIDE

About This Guide

This guide describes how to configure, operate and maintain the 8515 Vehicle-Mount Computer.

Chapter : Approvals and Safety Summary. provides a summary of the approvals and safety for the 8515.

Chapter : About This Guide. provides a basic overview of the 8515 Vehicle-Mount Computer User Guide.

Chapter 1: Basic Checkout. describes the steps required to get the 8515 ready for operation.

Chapter 2: Getting to Know the 8515. describes the 8515 features and provides a description of the keyboard, display, indicators, etc

Chapter 3: Windows Embedded CE 5.0. describes the Microsoft® Windows® Embedded CE 5.0 desktop and how to use it. This chapter also outlines the basics of moving around a Windows Embedded CE 5.0 window, selecting and opening icons and files, and working with a dialog box.

Chapter 4: Configuration. provides a description of the Windows Embedded CE 5.0 Control Panel and how to use it to configure the 8515, along with the scanners attached to the unit.

Chapter 5: Peripheral Devices & 8515 Installations. describes the peripherals and accessories available for your 8515.

Chapter 6: Specifications. details the 8515 Vehicle-Mount Computer, radio, and battery specifications.

Appendix A: Port Pinouts. provides the 8515 Vehicle-Mount Computer pinouts.

Appendix B: SCU for 802.11b/g Radio. provides details on the Summit Client Utility (SCU), which is used to configure the Summit RA2041 802.11b/g Compact Flash radio module.

Appendix C: USB Setup Application. describes the USB setup application.

Text Conventions



NOTE Notes highlight additional helpful information.



IMPORTANT These statements provide particularly important instructions or additional information that is critical to the operation of the equipment.

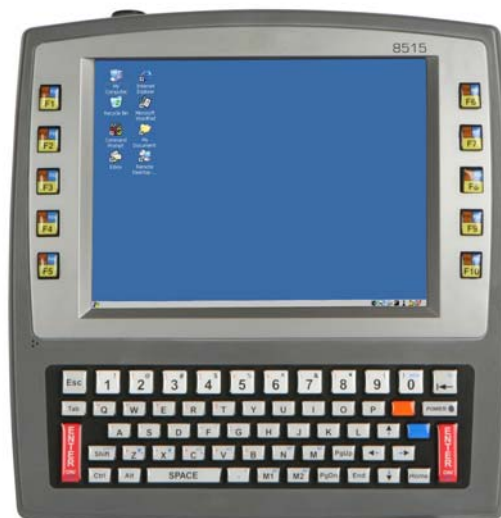


WARNING! These statements provide critical information that may prevent physical injury, equipment damage or data loss.

About the 8515 Vehicle-Mount Computer

The 8515 is a ruggedized vehicle-mount computer, running the Microsoft Windows Embedded CE 5.0 operating system. It is intended for use in commercial and industrial applications with a focus on real time wireless data transactions. A wide range of data input capabilities are supported through a variety of imager, RFID and bar code scanner options.

Figure 1 8515 with Qwerty Keyboard



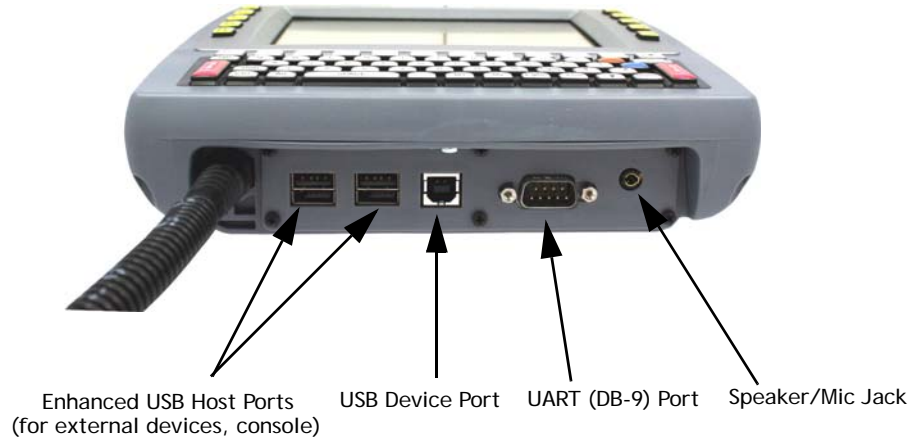
CHAPTER 1 BASIC CHECKOUT

Features of the 8515

Figure 1-1 *Front of the 8515 Vehicle-Mount Computer*



Figure 1-2 8515 Ports



Preparing the 8515 for Operation

Typically the 8515 Vehicle-Mount Computer is configured at the factory and arrives ready for use. Although the 8515 is equipped with an internal Compact Flash slot and a Micro-SD I/O slot, these slots are not intended for user modification. If a device needs to be changed or added in these slots, contact qualified personnel.

8515 Safety Instructions

- The cord should be installed in the vehicle so that it is not subjected to damage or stress.
- Use of a power cord that is not recommended or sold by the manufacturer may result in fire, electric shock, or personal injury.
- An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in fire or electric shock. If an extension cord must be used, make sure:
 - The plug pins on the extension cord are the same number, size, and shape as those on the adaptor.
 - The extension cord is properly wired and in good electrical condition and that the wire size is larger than 16 AWG.
- When the unit is connected to the battery or AC adaptor, the mains power cord shall comply with National safety regulations of the country where the equipment is to be used.
- Do not use the AC adaptor with a damaged cord or plug. Replace it immediately.
- Do not operate the AC adaptor if it has received a sharp blow, been dropped, or otherwise damaged in any way; it should be inspected by qualified service personnel.
- Do not disassemble the AC adaptor; it should be repaired by qualified service personnel. Incorrect reassembly may result in electric shock or fire.
- To reduce risk of electric shock, unplug the battery or AC adaptor from the outlet before attempting any maintenance or cleaning.
- Do not expose the battery or AC adaptor to rain or snow.

Important Operating Instructions



WARNING! IT IS CRITICAL that this information be reviewed and that any guidelines applicable to your 8515 be strictly followed.

Backup Battery

The computer backup battery provides one hour of memory backup. The capacity is reduced as the operating temperature cools. The table below provides a general outline of battery capacity based on the operating temperature. Charging of the backup battery will occur between 0° C and 40° C.



NOTE If the backup battery temperature is less than 10° C and a brown-out occurs, the display backlight will switch off in order to maintain computer operations. The backlight will switch back on when external power is restored or the battery temperature is above 10° C.



WARNING! Do not install the 8515 in such a way that the power cable is bent 90 degrees as this may damage the power cable and power cable strain relief.

Switching the 8515 On and Off

- To switch on the 8515, press the [ENTER/ON] key.



NOTE If the 8515 is in suspend state, pressing [ENTER/ON] 'wakes' the unit from this state. The screen in which you were working before the computer entered suspend state is displayed.

To switch off the 8515:

- Press the [BLUE] key, and then press the [ENTER/ON] key.

Turning off the 8515 does *not* result in a complete reboot; rather, the unit enters a power-saving, "suspend" state. When the 8515 is turned on from suspend state, operation resumes within a few seconds.



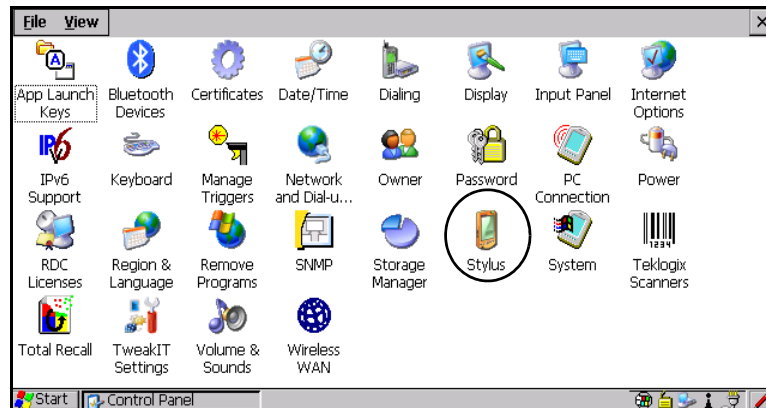
IMPORTANT If the word *BLUE* is displayed in *uppercase* in the taskbar at the bottom of the screen, this key is locked *on* — the 8515 will not switch off. Press the [BLUE] key again to unlock it; then press [BLUE] [ENTER/ON] to switch the 8515 off.

If, however, you've disabled the *Blue Key* in the *One Shot* dialog box, the 8515 can be turned off even when the [BLUE] key is locked *on*.

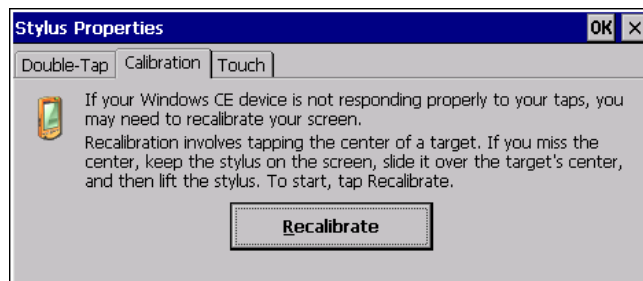
Calibrating the Touchscreen

If your 8515 touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, use the **Stylus Properties** dialog box in the *Control Panel* to recalibrate the screen.

- In the *Control Panel*, choose the **Stylus** icon to display the *Stylus Properties* window.



- Choose the **Calibration** tab, and then tap on the **Recalibrate** button.



- Follow the directions on the calibration screen to calibrate the screen.

Data Transfer Between the 8515 and a PC

Data transfer options vary slightly depending on the type of operating system installed in your PC.

For Windows XP SP2 operating systems or earlier, Microsoft® ActiveSync® is PC connectivity software that can be used to connect your 8515 to PCs running this software.

If the Windows Vista® operating system is installed in your PC, ActiveSync is not required to transfer data between your 8515 and your PC.

By connecting the 8515 to a PC with a cable you can:

- View 8515 files from Windows Explorer.
- Drag and drop files between the 8515 and the PC in the same way that you would between PC drives.
- Back up 8515 files to the PC, then restore them from the PC to the hand-held again, if needed, and so on.

Using Microsoft ActiveSync

To install ActiveSync, follow the step-by-step instructions provided with the program's setup wizard. Go to the Microsoft Download Center for information about downloading ActiveSync.



NOTE When you use an RS-232 serial port to connect devices like the 8515 to your desktop computer, the connection may not succeed because ActiveSync has trouble connecting at non-default baud rates.

To workaround this problem, set the ActiveSync baud rate on the desktop to use the same baud rate as the device. You can set the baud rate by editing the registry on the desktop host computer, as detailed in the steps outlined at the following website:

<http://support.microsoft.com/kb/324466>

Using Windows Vista

If you have Windows Vista, your 8515 data transfers do not require ActiveSync. To transfer data between your PC and your 8515:

- Tap on **Start>Computer** to display the drives. Your 8515 will be visible here.
- Open drives, files and folders as you would on your PC.

Summit Client Utility (SCU) for 802.11b/g Radio

This section describes the Summit Client Utility (SCU). The SCU provides the utilities you will need to configure the 802.11b/g Compact Flash radio module so that it can communicate through a wireless LAN effectively and securely.

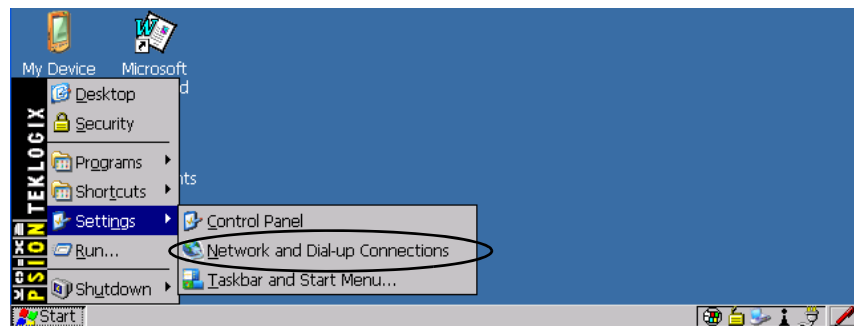


NOTE You do not need to reset your 8515 after configuring the Summit DC 802.11 SC (Model RA2041) CF radio.

Assigning the IP Address

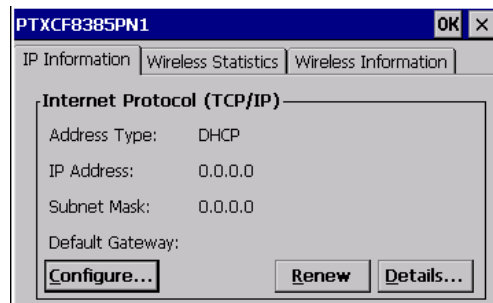
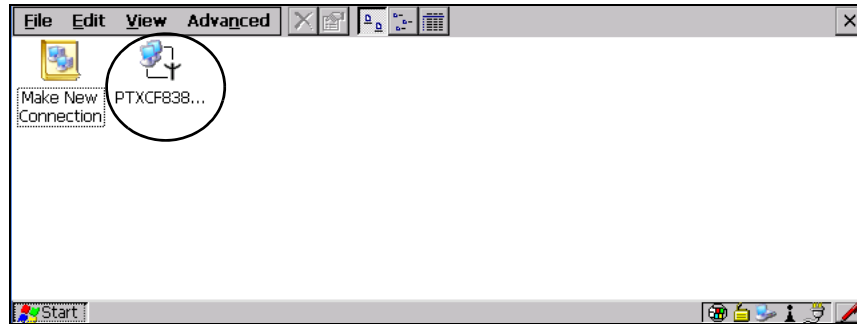
Before launching the SCU, follow the steps below to determine how the IP address will be obtained — either via DHCP or by specifying an address.

1. Tap on **Start>Settings>Network and Dial-up Connections**.



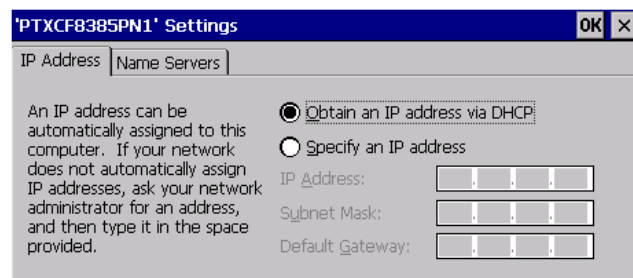
NOTE You can press [CTRL] [ESC] to display the Start Menu.

2. Choose the **Summit WLAN Adapter** icon to open the 802.11 *Wireless LAN Settings* window — in the sample screen below, this is labelled “PTXCF838...”.



NOTE Choosing the **Renew** button forces the 8515 to renew or find a new IP address. This is useful if, for example, you are out of communication range for a longer period of time and your 8515 is dropped from the network.

3. Tap on the **IP Information** tab
4. To define a static IP address, tap the **Configure** button. The Summit WLAN Adapter Settings menu provides two options:
 - Tap on **Obtain an IP address via DHCP** to have an address assigned automatically, or
 - If you want to use a particular IP address, tap on **Specify an IP address**, and type the preferred address as well as the *IP*, *Subnet Mask* and *Default Gateway* addresses in the appropriate fields. Tap **OK** to save your information.

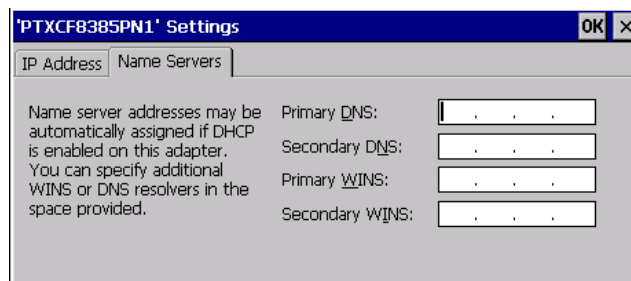


Name Servers Tab



NOTE If DHCP is enabled, name server addresses are assigned automatically.

- In the *IP Information* tab, tap on the **Configure** button.
- Tap on the **Name Servers** tab.



The DNS and WINS fields in the *Name Servers* tab allow you to specify additional WINS and DNS resolvers. The format for these fields is ###.###.###.###.

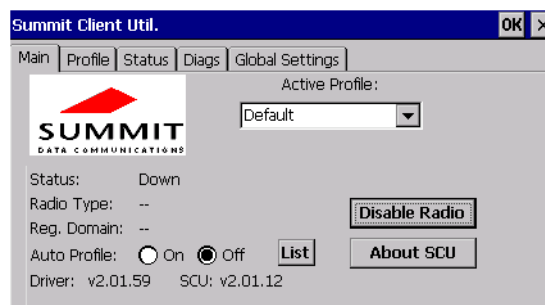
Using the SCU to Connect to the WLAN



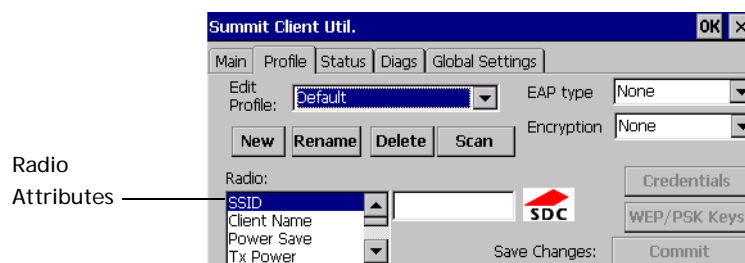
This section provides a quick set of steps to create a profile (referred to as a *config*). Detailed information about each of the SCU tabs — *Main*, *Config*, *Status*, *Diags* and *Global Settings* — is provided in [Appendix B: SCU for 802.11b/g Radio](#).

To launch the SCU so that your computer can connect to a wireless LAN:

1. Tap on **Start>Programs>Summit>SCU**.



2. Tap on the **Profile** tab.



3. Tap on the **New** button to define a new profile.
4. Type a name for your configuration using any alpha-numeric combination to uniquely identify this profile.
5. Tap on **OK** to return to the *Profile* tab.
6. Tap on **Commit** to save the profile name.
7. When a pop-up message indicates that your configuration will be saved, tap on **OK**.

SSID

To configure the *SSID* for the network to which you want to associate:

- Type an **SSID** in the text box to the right of *SSID*. This field is limited to 32 characters.

- Tap on **Commit** and then, in the pop-up message, tap on **OK** to save your SSID setting.



IMPORTANT To learn more about the other options available in the radio attributes list, refer to [Profile on page B-2](#).

EAP Type

- Tap on the **EAP type** drop-down menu, and choose the appropriate type of authentication — *LEAP*, *EAP-FAST*, *PEAP-MSCHAP*, and *PEAP-GTC*.
- Next, tap on the **Credentials** button, and type credentials for IEEE 802.1X EAP types.



IMPORTANT Refer to [SCU Security Capabilities on page B-3](#) for details about security settings. Additional EAP details are described in [EAP Credentials on page B-4](#).

Encryption

- Tap on the **Encryption** drop-down menu, and choose the appropriate type of encryption — *Manual WEP*, *Auto WEP*, *WPA PSK*, *WPA TKIP*, *WAP2 PSK*, *WAP2 AES*, *CKKM TKIP*, *CKIP Manual*, or *CKIP Auto*.

If you choose *Manual WEP*, *WPA PSK* or *WPA PSK*:

- Tap on the **WEP/PSK** Keys button. For *Manual WEP*, choose up to four static WEP keys. For *PSK*, type an ASCII passphrase or hex PSK.
- Configure any other settings that are supplied by the network administrator for the *SSID* to which you will associate.
- Make certain that you tap on **Commit** *following each change*.

Once you've completed the configuration:

- Tap the **Main** tab. Tap on the **Active Profile** button – your new profile will be listed in the drop-down menu.

When you tap on the profile you created, the 802.11a/b/g radio module attempts to connect to the network using the following steps:

- Associate to the SSID.
- Authenticate to the network.
- If EAP authentication is being used, derive dynamic encryption keys.
- If DHCP is being used by the network, obtain an IP address.

If the radio is not connecting properly:

- Tap on the **Status** tab.

The *Status* dialog box lists the IP and MAC addresses, and indicates the current state of the radio, the signal strength, channel and so on.

You can go to the *Diagnostics* tab for DHCP renewal, ICMP Echo Requests (Pings), and diagnostics.

Resetting the 8515 Vehicle-Mount Computer

Warm Reset

To execute a warm reset:

- Press and hold down the [BLUE] key and the [ENTER/ON] key simultaneously for a minimum of six seconds.

A warm reset closes open applications; any unsaved data is lost. Installed programs and saved data are preserved.



NOTE You do not need to reset your 8515 after configuring the radio.

Cold Reset

There are two options when executing a cold reset: reset to BootLoader, or reset directly to Windows Embedded CE 5.0 operating system.

To execute a cold reset and access the BooSt menu:

- Press and hold down the [BLUE] key, the [ENTER] key and the [SPACE] key simultaneously for a minimum of six seconds.

After a cold reset, the BooSt menu appears.

- If you want to load the *Windows Embedded CE 5.0* operating system, type **1**.
- If you want a clean start, press ! (that is, [SHIFT] [1]). All data and settings are lost. Files and data stored in flash are preserved.

Once the OS loads, any executables and cab files in the startup folders are run. The cab files are deleted by the cab file installer unless they are marked read-only.

CHAPTER 2 GETTING TO KNOW THE 8515

The Internal Backup Battery

The 8515 Vehicle-Mount Computer is equipped with an internal battery that will provide backup power to the unit for up to 30 seconds of normal operation. The display will be blank during this time. After 30 seconds, the unit will shut off to preserve the contents of RAM. The backup battery provides one hour of memory backup. For configuration information, please see [Power Properties on page 4-20](#); for specifications, see [Internal Lithium-Polymer Battery on page 6-3](#).

The backup battery is **not** user accessible. It must be replaced by authorized personnel.

The Stylus

The stylus is supplied with a holder with double-sided adhesive tape so that it can be attached wherever is most convenient for you.

The Keyboard

The 8515 provides a 58-key QWERTY or ABC alphanumeric keyboard layout.



Most of the keys on these keyboards operate much like a desktop computer. If a key or key function is not consistent with the PC keyboard, the differences are noted.



NOTE A soft keyboard that is a replica of the external keyboard is available. Refer to [Input Panel on page 4-3](#) for details.

Modifier Keys

The [SHIFT], [CTRL], [ALT], [BLUE] and [ORANGE] keys are *modifier* keys. Pressing a modifier key changes the function of the next key pressed. For example, a square bracket is printed in *orange* print above the [4] key. Pressing the [ORANGE] key followed by the [4] key displays a square bracket rather than the number 4.

The [SHIFT], [CTRL] and [ALT] keys operate much like a desktop keyboard except that they are not chorded (two keys held down simultaneously). The modifier key must be pressed first followed by the key whose function you want modified.

Activating Modifier Keys

When a modifier key is pressed once, it is displayed in lowercase letters in the taskbar at the bottom of the 8515 screen. For example, if the [CTRL] key is pressed, ctrl key is displayed at the bottom of the unit screen. Once another key is pressed, the modifier key becomes inactive and disappears from the taskbar.

Locking Modifier Keys

When a modifier key is pressed twice, it is 'locked' on. A 'locked' modifier key is displayed in uppercase letters in the taskbar. For example, pressing the [BLUE] key twice locks it on — it is displayed as BLUE KEY in the taskbar at the bottom of the computer screen.

The locked modifier key will remain active until it is pressed a third time to unlock or turn it off. Once a modifier key is unlocked (pressed a third time), the uppercase representation at the bottom of the screen is no longer displayed.



NOTE The locking function of modifier keys can be disabled so that pressing a modifier key *once* will lock the key 'on'. If you disable the 'One Shot' function of these keys, pressing a modifier key once will lock it 'on'. Pressing the same key a second time will unlock or turn it 'off'. Refer to [One Shots on page 4-12](#) for details.

The Keys

The [BLUE] and [ORANGE] Keys

The [BLUE] and [ORANGE] modifier keys provide access to additional symbols and keys. These additional symbols and keys are colour coded in *blue* and *orange* print above the keyboard keys.

Press the [BLUE] key to access functions or characters displayed in *blue* print on the keyboard. Press the [ORANGE] key to access functions or characters displayed in *orange* print on the keyboard.

The [SHIFT/CAPS] Key

The [SHIFT/CAPS] key is used to display uppercase alpha characters. Pressing [BLUE][SHIFT] turns the [CAPS] key on so that all alpha characters are printed in uppercase until the [BLUE][SHIFT] sequence is pressed again.

The Arrow Keys

The Arrow keys move the cursor around the screen in the direction of the arrow — up, down, left and right. The cursor is the flashing box or underline character that indicates where the next character you type will appear.

The [INS] Key

The [INS] key inserts a character at the cursor position.

The [DEL] Key

The [DEL] key erases the character at the cursor position.

The [BKSP] Key

The [BKSP] key (sometimes referred to as destructive backspace) moves the cursor one character to the left, erasing the incorrectly entered key stroke.

The [CTRL] and [ALT] Key

The [CTRL] and [ALT] keys modify the function of the next key pressed and are application dependent.

The [TAB] Key

Typically, the [TAB] key moves the cursor to the next field to the right or downward.

The [ESC] Key

Generally, this key is used as a keyboard shortcut to close the current menu, dialog box or activity and return to the previous one.

The [SPACE] Key

Pressing this key inserts a blank space between characters. In a Windows dialog box, pressing the [SPACE] key enables or disables a checkbox.

The [HOME] Key

The [HOME] key moves the cursor to the top of the form or page.

The [END] Key

The [END] key moves the cursor to the bottom of the form or page.

The [PgUp] and [PgDn] Keys

The [PgUp] key displays the previous screen of information. The [PgDn] key displays the next screen of information.

Function Keys and Macro Keys

In addition to the standard keyboard functions (see [The Keyboard on page 2-1](#)), 8515 Vehicle-Mount Computers are equipped with function keys and macro keys.

Function Keys

The 8515 is equipped with a series of 30 function keys divided amongst 10 physical keys, each of which is defined in the application software. There are five keys located on each side of the display.

Accessing Function Keys [F1] to [F10]

Function keys [F1] to [F10] can be directly accessed by pressing the function keys labelled in *yellow* along the sides of the display. No key combination is required. Function keys [F1] to [F5] are located to the left of the display, [F6] to [F10] on the right.

Accessing Function Keys [F11] to [F20]

These keys are labelled in *orange* in the top-left corner of the function keys. To access these keys, press the [ORANGE] key followed by [F1] to [F10].

- To access function key [F11], press the [ORANGE] key followed by [F1].

- Press [ORANGE] [F2] to access function key [F12], etc.

Accessing Function Keys [F21] to [F30]

These keys are labelled in *blue* in the top-right corner of the function keys. To access these keys, press the [BLUE] key followed by [F1] to [F10].

- To access function key [F21], press the [BLUE] key followed by [F1].
- Press [BLUE] [F2] to access Function key [F22], etc.

Macro Keys



IMPORTANT Refer to [Macro Keys on page 4-13](#) for details about creating macros.

8515 Vehicle-Mount Computers are equipped with six macro keys that can be programmed to replace frequently used keystrokes, along with the *function* of executable keys such as the [ENTER] key, the [BKSP] key, any function key and arrow key, etc.

Macro Keys [M1] and [M2]

These keys are displayed in *black* print on the bottom row of executable keys on the keyboard. These macro keys are accessed by simply pressing the key.

Macro Keys [M3] to [M6]

These keys are displayed in *blue* print on the [M1] and [M2] keys in the bottom row of executable keys, and on the [N] and [M] keys in the first row of alpha keys on the keyboard. To access these macro keys, press the [BLUE] key followed by the appropriate executable or alpha key. For example, on a Qwerty keyboard:

- Press [BLUE] [N] to access macro key [M5].
- To access [M3], press [BLUE] [M1], etc.

The Keypad Backlight

The intensity of the keypad backlight and the conditions under which this backlight is activated can be configured using the *Keyboard* icon in the *Control Panel*. The behaviour of the keypad backlight is tailored in the *Keyboard Properties* dialog box.



NOTE Keep in mind that this option may be restricted to supervisory use only.

The Display

The 8515 is equipped with display backlighting to improve character visibility in low light conditions. The backlight switches on when a key is pressed or the touchscreen is tapped. The backlight intensity and the duration of time that the backlight will remain at full intensity can be specified in the *Display Properties* dialog box in the *Control Panel*.



NOTE Refer to [Backlight on page 4-8](#) for details about the Display Properties dialog box.

8515 Indicators

The 8515 Vehicle-Mount Computer uses onscreen messages and audio tones as indicators. The computer is also equipped with a power indicator LED.

Power Indicator LED

A power indicator LED is located in the keyboard on the front of the unit. When the computer is receiving power from an external source, the green power indicator LED is illuminated. When the unit is in suspend, the LED remains on but is flashing.

Onscreen Indicators

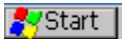
The taskbar at the bottom of the screen displays a variety of system status indicators.

Figure 2-1 Taskbar



The taskbar changes dynamically, and only those icons that are applicable are displayed. For example, if a radio is not installed in your 8515, the radio signal icon is not displayed in the taskbar.

Windows Start Button



You can display the *Start Menu* by tapping on the *Start* button in the taskbar.

Modifier Key Indicators



[SHIFT], [CTRL], [ALT], [BLUE] and [ORANGE] are modifier keys that have onscreen indicators to show when a key is active or locked. If a modifier key is pressed once to activate it, the key is displayed in the taskbar in *lowercase* characters — for example, pressing the [BLUE] key once displays *blue key* in the taskbar. If a modifier key is pressed twice, it is 'locked on' and the onscreen indicator is displayed in uppercase letters in the taskbar — for example, pressing [BLUE] twice displays **BLUE KEY** in the taskbar.

802.11 Radio Signal Quality



Increasing radio signal quality is represented by longer, filled bars within this icon.



Good
Reception



Weak
Reception



No Radio
Link

The radio signal is determined when the 8515 receives a message. If the unit receives no messages within a second, the "no signal" icon is displayed. The signal strength icon shows the following cases: No signal, 1% to 25% bar, 26% to 50% bar, 51% to 75% bar and 75% to 100% bar.

Bluetooth Radio



This icon represents the **Bluetooth** radio installed in your 8515.

Security Level



Security levels can be set to limit user access to 8515 settings. In addition, applications can be restricted to prevent inadvertent changes.

External Power



This is the external power icon displayed in the taskbar.

External Devices



When a peripheral is attached to the USB or serial ports and activated, an associated icon appears in the taskbar.



Audio Indicators

The 8515 beeper provides a variety of sounds and can be configured to emit a sound when a key is pressed, a keyboard character is rejected, scan input is accepted or rejected or an operator's entry does not match in a match field.



NOTE Refer to [Scanner Settings on page 4-30](#) for details about the Volume & Sound Properties dialog box.

Scanning

Decoded scanners must be configured by scanning special configuration bar codes. In these cases, the scanner manufacturer provides programming manuals for configuration purposes. The 8515 supports a variety of one dimensional (1D) scanners and two dimensional (2D) laser and imager scanners. [Scanning Techniques on page 2-6](#) outlines the mechanics of a successful scan. In addition, [Troubleshooting on page 2-7](#) provides some helpful suggestions should the scan fail.

Scanning Techniques



NOTE External scanners can be connected to the 8515 serial or USB device port.

- Hold the scanner at an angle. Do not hold it perpendicular to the bar code.
- Do **not** hold the scanner directly over the bar code. In this position, light can reflect back into the scanner's exit window and prevent a successful decode.
- Scan the entire bar code. If you are using a 1D or 2D scanner, make certain that the scan beam crosses every bar and space on the bar code, including the margins on either end of the symbol.
- If you are using a 2D imaging scanner, make certain the red, oval-shaped framing mark is centered within the bar code you want to scan.
- When using imaging scanners, do not move the scanner while decoding the bar code. Movement blurs the image.
- Hold the scanner farther away for larger bar codes.

- Hold the scanner closer for bar codes with bars that are close together.

Scan LED Indicators

External scanners have integrated LED indicators that are not controlled by the 8515.

Troubleshooting

If the scanner is not working, investigate the following:

- Is the 8515 on?
- Check that the scanner settings are correctly configured (see [Scanner Settings on page 4-30](#)).
- Check the bar code to make sure it is not damaged. Try scanning a different bar code to verify that the problem is not with the bar code.
- Check that the bar code is within the proper range.
- Does the computer display the warning without scanning? This suggests a hardware problem in the 8515.
- Is the laser beam scanning across the bar code?
- Once the scan beam has stopped, check the scanner window for dirt or fogging.

Operating One Dimensional (1D) Laser Scanners

- Turn the 8515 on. Wait until the unit has booted up completely.
- Aim at the bar code and press the trigger. A scan beam and a warning indicator appear until a successful decode is achieved or six seconds have elapsed.

Operating PDF Laser Scanners

This scanner decodes PDF417 two-dimensional bar codes.

- Turn the computer on. Wait until the unit has booted up completely.
- Aim at the bar code and press the trigger. The beam expands into a rectangle covering the bar code to properly scan it. The scan beam and a warning indicator are visible until a successful decode is achieved or three seconds have elapsed.

Monitoring the Network Connection

If your computer is equipped with a wireless LAN radio, it will typically associate with the nearest access point. The radio signal quality meter in the taskbar indicates the relative strength of the communication link. To access the radio signal icon from the keyboard:

- Tap on the **radio icon** in the taskbar to display the *Wireless Statistics* dialog box.



NOTE Moving in and out of the radio coverage area can have varying effects on a network session. At times, you may need to renew your connection by logging in again.

General Maintenance

Ports

Remember to always install the dust caps on unused ports.

Caring for the Touchscreen

The top of the touchscreen is a thin, flexible polyester plastic sheet with a conductive coating on the inside. The polyester can be permanently damaged by harsh chemicals and is susceptible to abrasions and scratches. Using sharp objects on the touchscreen can scratch or cut the plastic, or crack the internal conductive coating.

If the touchscreen is used in harsh environments, consider applying a disposable screen protector. These covers reduce the clarity of the display slightly but will dramatically extend the useful life of the touchscreen. When they become scratched and abraded, they are easily removed and replaced.

The chemicals listed below must not come into contact with the touchscreen:

- mustard, ketchup,
- sodium hydroxide,
- concentrated caustic solutions,
- benzyl alcohol, and
- concentrated acids.

Cleaning the 8515



IMPORTANT Do not immerse the unit in water. Dampen a soft cloth with mild detergent to wipe the unit clean.

- Use *only* mild detergent or soapy water to clean the computer.
- Avoid abrasive cleaners, solvents or strong chemicals for cleaning.
- To clean ink marks from the keypad and touchscreen, use isopropyl alcohol.

CHAPTER 3 WINDOWS EMBEDDED CE 5.0

Navigating In Windows Embedded CE 5.0 and Applications

- ✓ **NOTE** In order to access many of the menus discussed in this chapter, the security level must be set to “Supervisor” (see [Security Level on page 3-6](#)).

Graphic user interfaces like Windows Embedded CE 5.0 for portable devices and desktop Windows operating systems (Windows 2000, Windows XP, Windows Vista™, etc.) utilize ‘point and click’ navigation. An equivalent keyboard shortcut is also available for every ‘point and click’ action.

Windows Embedded CE 5.0 supports the same ‘point and click’ user interface and keyboard shortcuts as desktop Windows with one difference — the ‘point and click’ action is accomplished using a touchscreen rather than a mouse. Actions can be performed using any combination of keyboard shortcuts or touchscreen tapping.

Navigating Using a Touchscreen and Stylus

- ✓ **NOTE** If the touchscreen is not registering your screen taps accurately, it may need recalibration. Refer to [8515 Indicators on page 2-5](#).

Each 8515 Vehicle-Mount Computer is equipped with a *stylus* — a pointing tool that looks like a pen — that is used to select objects on the touchscreen.

- ✓ **NOTE** To prevent damage to the touchscreen, use only the stylus (pen) supplied with your 8515.

To open a file, launch an applet, or open a folder:

- Double-tap the stylus on the appropriate icon.

To navigate through a dialog box — for example, display the information in a tab, choose a radio button, check a checkbox, etc.:

- Tap the stylus on the tab, radio button, checkbox, etc.

Navigating Using the Keyboard

If your touchscreen has been disabled, you can use the keyboard rather than a stylus to choose icons and navigate dialog boxes, display the desktop, etc. If your unit has already been fully configured and your application is launched at startup, you'll have little need for keyboard navigation.

Operation	Key or Key Combination
Switch between active applications	[ALT] [TAB]
Open task manager	[ALT] [ESC]
Move the cursor	Arrow keys
Open file, folder or icon	[ENTER]
Exit & Save	[ENTER]
Close/Exit & Do Not Save	[ESC]
Navigate Dialog Boxes	[TAB]
	Move cursor up [SHIFT] [TAB]
	Display the contents of the next tab in a dialog box [CTRL] [TAB]
Select Radio Button/Press Button	[SPACE]
Go to Start Menu	[BLUE][0]

Keep in mind that unlike a desktop computer, the 8515 does not support key chording (pressing two keys at the same time). You must press one key followed by the next in sequence. Refer to the information below for additional details about keyboard navigation.

Working With Files, Folders, and Programs

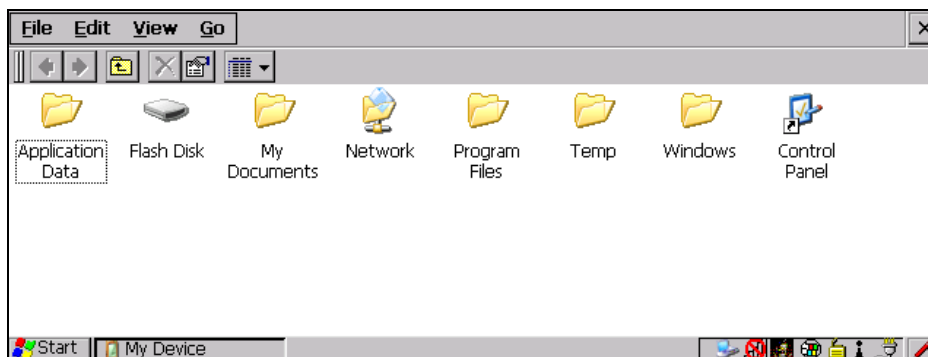


Figure 3-1 Windows Explorer Screen

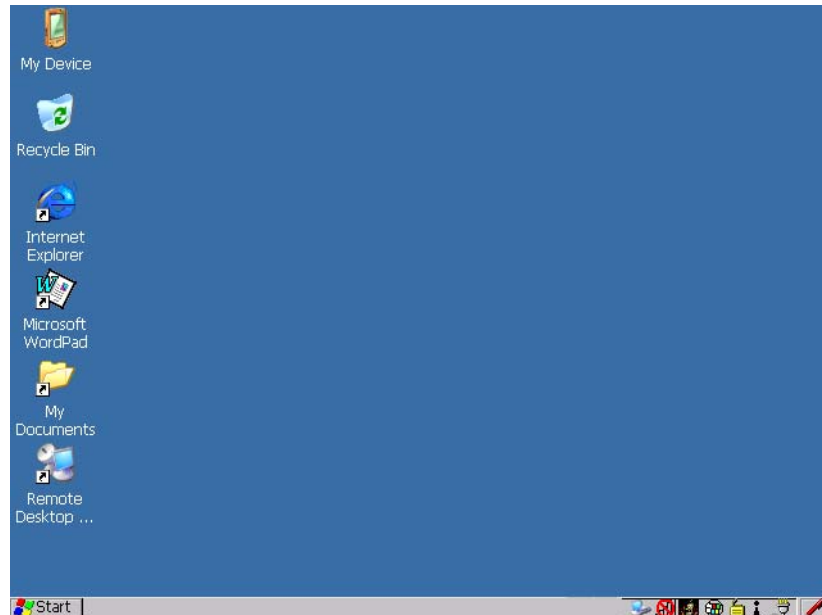
- Double-tap on the appropriate icon — either a folder icon, an application icon or a file icon — to open or launch your selection.

If you're using the keyboard:

- Use the arrow keys to highlight the icon you want to open or launch.
- Press **[ENTER]**.

The Startup Desktop

When the 8515 boots up, the startup desktop (shell) is displayed. Any applications stored in the Startup folder start up immediately.



NOTE The startup folder is located in >Windows Explorer>StartUp and >Flash Disk> StartUp.

Figure 3-2 Startup Screen

- Double-tap on the icon to open a window or, in the case of an application icon, launch an application.

The Desktop Icons

The icons displayed in the startup desktop operate in much the same way as those displayed on any standard PC desktop that is running Windows.

My Device

Choosing this icon displays the contents of your 8515 computer. If you're not sure how to work with the files, folders and programs displayed, refer to [Working With Files, Folders, and Programs on page 3-2](#).

Recycle Bin

The Recycle Bin temporarily contains items that were deleted, allowing you to either permanently delete or restore these items.

Internet Explorer

Choosing this icon launches Internet Explorer — a standard Windows Embedded CE 5.0 version. Keep in mind that your supervisor will need to set up access using the *Internet Options* and the *Network and Dial-up Connections* icons in the *Control Panel*.

Microsoft WordPad

Choosing this option launches Microsoft WordPad, a trimmed version of the Microsoft Word application.

Remote Desktop Connection

This option allows your 8515 to communicate with a remote desktop PC. [Remote Desktop Connection on page 4-1](#) provides a website with step-by-step instructions.

The Taskbar

Figure 3-3 *The Taskbar*



The 8515 is equipped with a taskbar at the bottom of the screen. It displays icons through which you can view the internal battery status, the radio signal quality of your unit, etc. If the computer is attached to a peripheral device, an associated icon is displayed. In addition, the taskbar displays the application(s) currently running on your unit and the security level assigned to your 8515.

The taskbar also displays active modifier keys — [SHIFT], [ALT], [CTRL], [BLUE] and [ORANGE]. Keys that have been locked “on” are displayed in *uppercase* letters. For example, if you press the [CTRL] key twice to lock it “on”, it is displayed as CTRL KEY in the taskbar.

Using the Taskbar

A taskbar icon allows you to display a *tooltip* — a short description of the status of the icon, or to display the *Control Panel* dialog box associated with the icon.

If you're using the touchscreen:

- To display a *tooltip*, tap and hold the stylus on an icon.
- To display the *Control Panel* dialog box associated with an icon, double-tap on the icon.

On the keyboard:

- Press **[BLUE] [0]** (zero) to display the *Start Menu*.
- Choose **Shortcuts** from the Start Menu, and then press the **[RIGHT]** arrow key to display the sub-menu.
- Choose **System Tray** in the sub-menu.
- Use the arrow keys to highlight the icon in the taskbar about which you'd like more information.
- Press **[ENTER]** to display the appropriate dialog box.

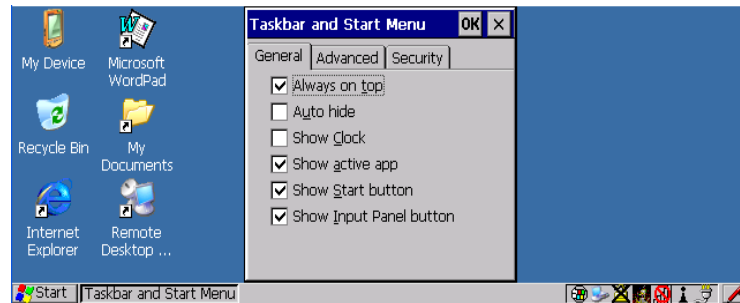
Customizing the Taskbar

To customize the taskbar so that it displays only those icons you require:

- From the *Start Menu*, tap on the **Settings>Taskbar and Start Menu**.

The *Taskbar and Start Menu* dialog box is displayed.

Figure 3-4 Taskbar and Start Menu Settings



- Tap the stylus on the items you want to activate or deactivate. A check mark indicates active items.



NOTE The *Advanced* tab allows you to tap on a *Clear* button to delete the contents of the Documents folder.

The Start Menu



NOTE Some of the *Start Menu* items may be disabled based on the current 8515 security settings.

The *Start Menu* lists the operations you can access and work with. It is available from the startup desktop or from within any application.

If you're using the touchscreen:

- Tap on the *Start Menu*.
- Tap on the item in the menu with which you want to work.

Figure 3-5 Start Menu Items



If you're using the keyboard:

- Press **[BLUE] [0]** (zero) to open the *Start Menu*.
- Use the arrow keys to highlight a menu item, and press **[ENTER]**, or
- if the menu item has an underlined character, type the underlined alpha character. For example, to display the *Security* dialog box, type the letter **s**.

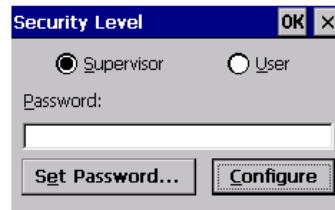
The Desktop

Choosing the *Desktop* option from the *Start Menu* displays the 8515 desktop.

Security Level

Choosing the **Security** option from the *Start Menu* displays a dialog box in which you can define the access level for the 8515 — *Supervisor* or *User*.

Figure 3-6 Security Level Menu



Assigning the Supervisor Security Level

The security level is represented by an icon in the shape of a lock in the taskbar. The security levels define the options accessible to the operator in the *Start Menu* and the taskbar. By default, the security level is set to *User*, restricting access to only the most basic *Start Menu* items.

To allow access to all the *Start Menu* and taskbar options:

- Tap on the radio button next to **Supervisor**.
- Tap in the **Password** field, and type the Supervisor level password — the default password is 123456.
- Tap on **OK** — you can now access all menu items in the *Start Menu* along with the icons in the taskbar.

Changing a Password



NOTE Keep in mind that this is the same password as that assigned through the Password Control Panel applet.

- To assign a password, choose a **security level**, and enter the **existing password** in the *Password* field.
- Tap on the **Set Password** button.

A dialog box labelled *Password Properties* is displayed.

- Type the new password in the *Password*.text box.
- In the *Confirm Password*: text box, retype the new password.

Configuring Security

In the *Security Level* dialog box (see [Figure 3-6 Security Level Menu](#)):

- Tap on the **Configure** button.

The *Configure Security* dialog box allows you to determine which security levels will have an associated icon displayed in the taskbar. By default, a security icon is not displayed for user-level security.

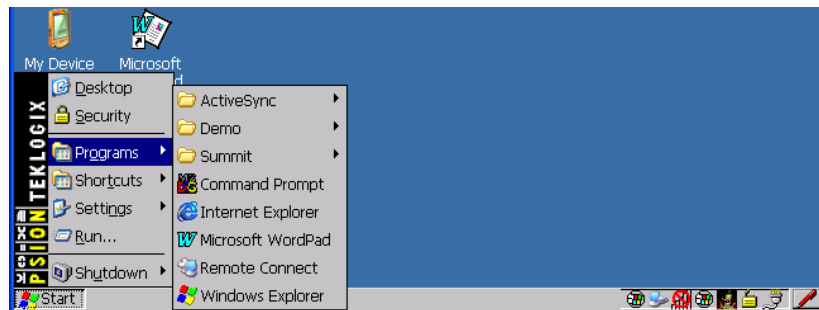


NOTE It is recommended that you enable *Allow Zebra Solutions Security Level* so that authorized service personnel can access your unit should it require maintenance.

Programs

- Tap on **Programs** to display a sub-menu of options.

Figure 3-7 Programs List



This sub-menu allows you to choose *ActiveSync*, *Demo* and *Command Prompt*, and you can access *Internet Explorer*, along with installed applications (e.g., *Microsoft WordPad*), *Remote Desktop Connection* and *Windows Explorer*.

ActiveSync®

ActiveSync is used to connect your 8515 to your PC.

Demo

The *Demo* folder contains demo programs available on the 8515. Some demo programs such as *Sound* and *Imager* require hardware support not available.

Summit

The *Summit* folder provides access to the *SCU* (Summit Client Utility). The *SCU* is the utility you will need to configure the Summit 802.11b/g Compact Flash radio module so that it can communicate through a wireless LAN effectively and securely.

Command Prompt

Command Prompt is used to access the DOS command prompt. At the prompt, you can type DOS commands such as *dir* to display all the directories in the drive.

Internet Explorer

The 8515 is shipped with the Microsoft Internet Explorer for Windows Embedded CE 5.0. You can access the *Internet Options* icon through the *Start Menu* under *Settings>Control Panel* or by double-tapping on the desktop icon labelled *My Device* and then, double-tapping on the *Control Panel* icon.

Remote Desktop Connection

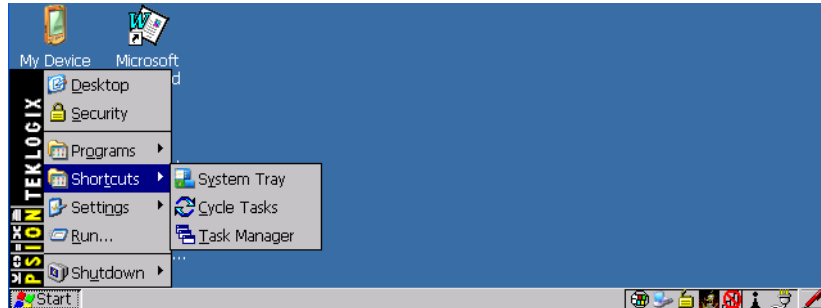
Remote Desktop Connection is an 8515 application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine using the 8515 (Windows Embedded CE 5.0 device). [Remote Desktop Connection on page 4-1](#) provides a website with details about this option.

Windows Explorer

The *Windows Explorer* installed on your 8515 is consistent with all Windows Embedded CE 5.0 devices. You can access this option either from the *Start Menu* under *Programs>Windows Explorer* or from your device desktop.

Shortcuts

Figure 3-8 *Shortcuts List*



The System Tray

If your touchscreen is not enabled, you can use the *System Tray* option to access the icons in the taskbar at the bottom of the screen. The taskbar displays indicators such as a radio signal icon and the security level. Highlighting a taskbar icon allows you to display a *tooltip* — a short description of the status of the icon, or to display the *Control Panel* dialog box associated with the icon.

- Choose **System Tray** from the *Shortcuts Start Menu*.

When *System Tray* is chosen, you can access the taskbar icons using the arrow keys.

- Press the [LEFT] and [RIGHT] arrow keys to highlight the icon in the taskbar about which you'd like more information — a *tooltip* is displayed as each taskbar icon is highlighted.
- To display the *Control Panel* dialog box associated with the highlighted icon, press [ENTER].

Cycle Tasks

When *Cycle Tasks* is selected (and the Task Manager is not open), you can cycle through active applications. To choose this option:

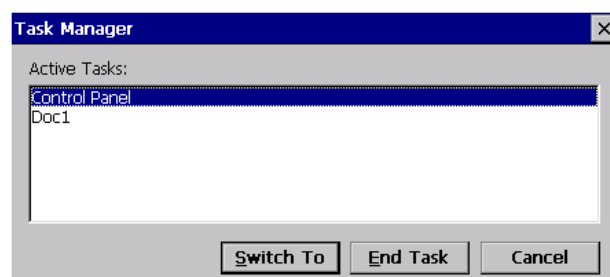
- Choose **Cycle Tasks** from the *Shortcuts* menu, or press [ALT] [TAB].

The Task Manager

The *Task Manager* option allows you to switch to another task or to end an active task. To display the task manager window:

- Choose **Task Manager** in the *Start Menu*, or press [ALT] [ESC].

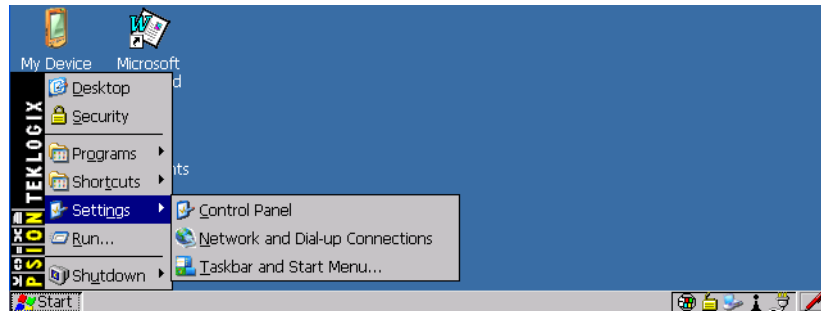
Figure 3-9 *Task Manager*



Settings

- Tap on **Settings** to display a sub-menu of options.

Figure 3-10 *Settings List*



Control Panel

The *Control Panel* contains applets used to configure hardware, the operating system and the shell. If your 8515 is running with the Tekterm application or another application, additional configuration applets may appear in the *Control Panel*.

Network and Dial-Up Connections

The *Network and Dial-up Connections* window allows you to configure an 802.11 radio or execute an existing configuration. Refer to [Summit Client Utility \(SCU\) for 802.11b/g Radio on page 1-5](#) for radio setup details.

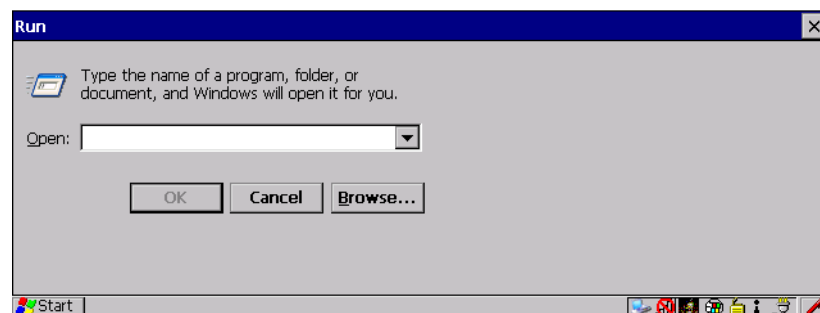
Taskbar and Start Menu

The *Taskbar and Start Menu* option displays a dialog box in which you can customize the taskbar, selecting the icons that will be displayed. Refer to [Customizing the Taskbar on page 3-4](#) for additional details about this option.

Run

Choosing the *Run* option from the *Start Menu* displays a dialog box in which you can enter the name of the program, folder or document you want to open or launch.

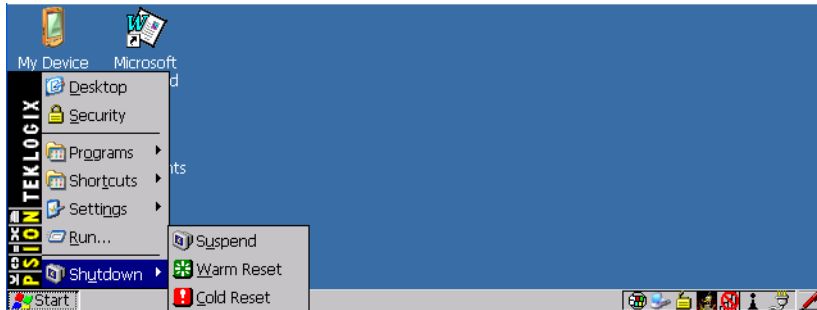
Figure 3-11 *Run Dialog*



Shutdown

Choosing *Shutdown* displays a sub-menu of options, including *Suspend*, *Warm Reset* and *Cold Reset*.

Figure 3-12 *Shutdown Menu*



NOTE This menu varies slightly depending on the security level chosen. When the 8515 is set to User level, the *Shutdown* option is replaced by *Suspend*. A sub-menu is not available.

At Administrator security level, an additional option is available in the sub-menu — *Bootloader*. This option behaves like cold-reset, except that the 8515 starts Bootloader rather than Windows Embedded CE 5.0.

Suspend

The *Suspend* option suspends the 8515 immediately — this is equivalent to turning the computer off.

Warm Reset

The *Warm Reset* option resets the 8515, leaving all saved files and (registry) settings intact. Any unsaved data is lost.

Cold Reset

The *Cold Reset* option resets the 8515. Any files not stored in permanent memory are lost. However, the registry settings are saved.

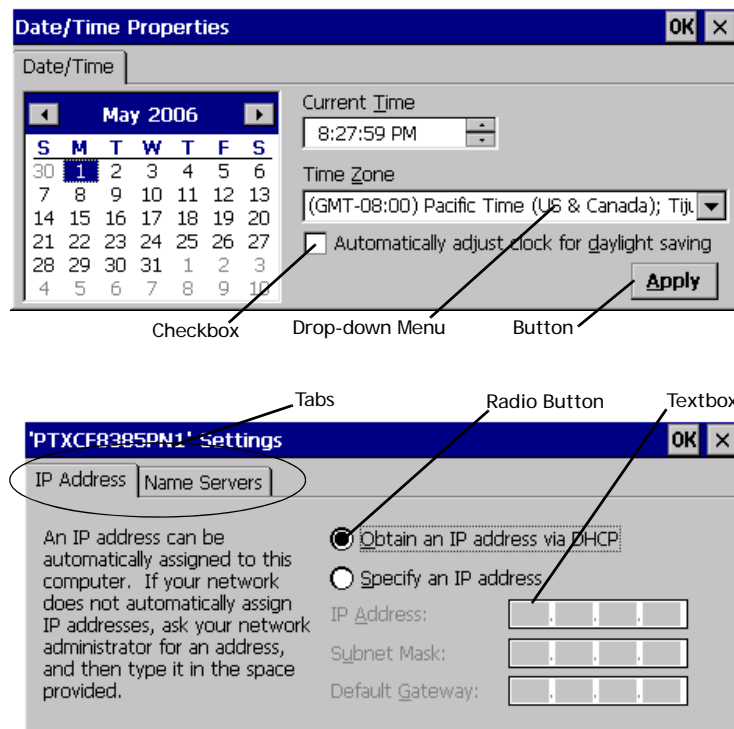
Using a Dialog Box

A dialog box (like those in the sample screens in [Figure 3-13 Navigating Dialog Boxes](#)) appears when you need to make selections and enter further information.



NOTE A dialog box item that is displayed in grey text indicates that it is not currently available.

Figure 3-13 Navigating Dialog Boxes



NOTE If you're using the touchscreen, use the stylus to tap on an element in a dialog box to select or deselect it, display dropdown menus, save your selections, etc. If you're using a keyboard, follow the directions below.

Dialog boxes contain one or more of the following elements:

Tab: A tab separates different elements of a dialog box. Tap on a tab to display the associated information.

Textbox: A textbox requires that you type information. Highlight the textbox with the stylus and then type the appropriate information.

Dropdown: This type of menu is identified by up and down arrows next to the dropdown menu to indicate that additional options are available. Tap the stylus on the arrow to display the options in the menu.

Checkbox: This box allows you to select or deselect an option. To select or deselect a checkbox, tap the stylus on the checkbox to select or deselect it.

Radio buttons: These buttons allow you to choose from a number of options. For example, in the second sample screen in [Figure 3-13 Navigating Dialog Boxes on page 3-11](#) you can choose to 'Obtain an IP address via DHCP' or 'Specify an IP address'. Tap the stylus on the button to select or deselect it.

Buttons: This type of button allows you to 'Save', 'Delete', etc., the options you've chosen in a dialog box. Tap the stylus on the button to activate it.

Saving Your Choices: Once you've made all your changes, tap on **OK** to save your changes and exit the window.

CHAPTER 4 CONFIGURATION

Remote Desktop Connection

Remote Desktop Connection is an 8515 application used to connect to a Windows Terminal Server so that you can run a “session” on the Server machine, using the 8515 (Windows Embedded CE 5.0 device).

Refer to the following website for step-by-step information about setting up this connection:

<http://windows.microsoft.com/en-us/windows/connect-using-remote-desktop-connection#connect-using-remote-desktop-connection=windows-7>

Pocket PC Compatibility

The 8515 Vehicle-Mount Computer supports the AYGShell API set that allows PocketPC-compatible applications to run on the computer. Microsoft Windows Embedded CE 5.0 is designed to include application programming interface (API) compatibility support for the Microsoft Windows Powered Pocket PC 2002 shell in an 8515 running Windows Embedded CE 5.0.

The Control Panel

The Windows Embedded CE 5.0 Control Panel provides a group of icons through which you can set a variety of system-wide properties, such as mouse sensitivity, network configuration and the desktop colour scheme.



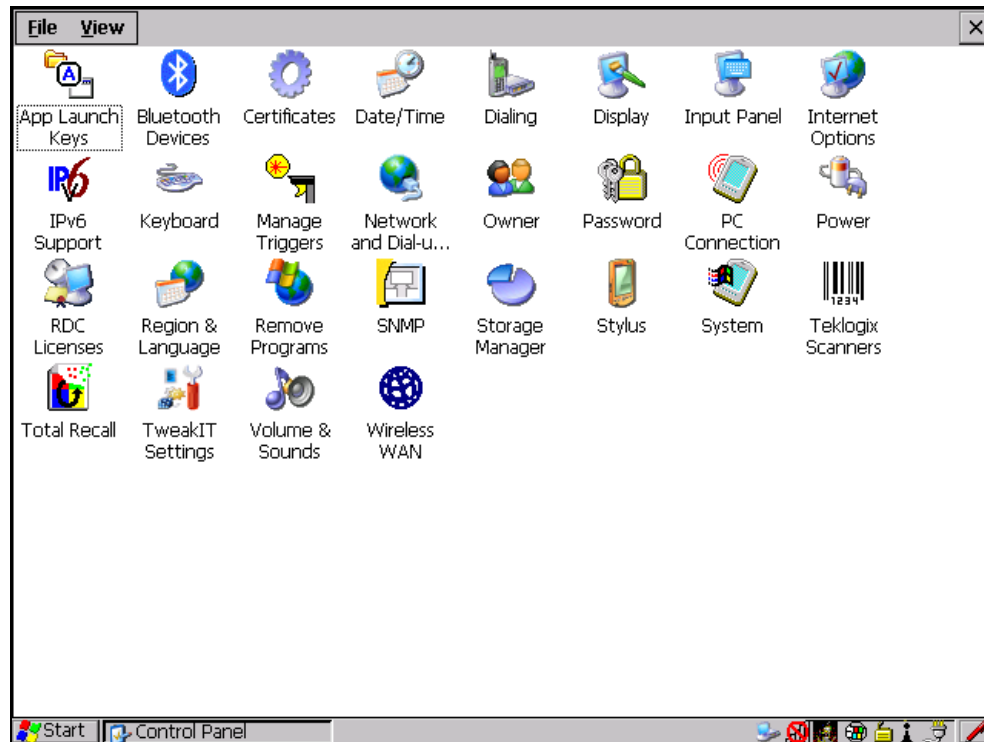
NOTE If you are uncertain how to move around a dialog box and make selections, review [Using a Dialog Box on page 3-10](#).

When the 8515 boots up, the startup desktop (shell) is displayed, and any applications stored in the Startup folder start up immediately.

- Press **[BLUE][0]**, or
- Tap on the **Start** button in the taskbar to display the **Start Menu**.
- Tap on **Settings>Control Panel**.

The **Control Panel** folder contains icons used in the setup of your 8515.

Figure 4-1 *Control Panel*



Control Panel Icons

The *Control Panel* provides a group of applications that allow you to customize and adjust settings on your 8515. This section shows the related icons in the Control Panel and gives a brief description of each. [Control Panel Applications: Basic Setup on page 4-5](#) describes the basic configuration for these applications.



App Launch
Keys

App Launch Keys

Allows you to map keys to applications, so that you can launch those applications from a single key-press.



Bluetooth
Devices

Bluetooth

A short-range wireless technology that enables data communication between devices. It also provides the capability to use a *Bluetooth*-enabled cellular phone as a data modem, exchanging information with other *Bluetooth* devices (such as a headset), and providing network access.



Certificates

Certificates

A public key is transmitted as part of a certificate. The certificate assigned through this icon is used to ensure that the submitted public key is, in fact, the public key that belongs to the submitter. The client checks that the certificate has been digitally signed by a certification authority that the client explicitly trusts.



Date/Time

Date/Time

Allows you to set the current Month, Date, Time, and Time Zone on your unit.



Dialing

Dialing

Specifies dialing settings, including area code, country code, dial type and the code to disable call waiting. You can store multiple patterns — for example, 'Work', 'Home', etc.—using this dialog box.



Display

Display

Changes the appearance (window colour scheme) on the unit desktop. This applet can also be used to adjust the backlight level.



Input Panel

Input Panel

The 8515 is equipped with the framework for a Soft Input Panel (SIP) should you need to design your own SIP.



Internet Options

Internet Options

Used to configure your Internet browser including options such as identifying the default and search page that the browser applies when connecting to the Internet, setting the cache size, specifying the Internet connection options, and defining the security level that is applied when browsing.



IPv6 Support

IPv6 Support

Refers to Internet Protocol specification version 6 that uses 128-bit IP addresses.



Keyboard

Keyboard

Toggles character repeat on and off and specifies delay and rate for repeated characters. It also allows you to adjust the keyboard backlight threshold and intensity. Additional tabs also allow the configuration of macros and scanner key remapping.



Manage Triggers

Manage Triggers

Allows multiple-scanner triggering, including the ability to configure each of the trigger buttons. You can configure the trigger ID for each trigger button for both single- and double-click, the double-click time and the double-click data.



Network and Dial-u...

Network and Dial-up Connections

Displays a network window from which the 8515 radio can be configured and an existing configuration can be executed.



Owner

Owner

Provides fields in which you can specify owner information. A Notes tab allows additional information to be entered and displayed when the unit is powered up. Network ID tab information is used to access network resources. (This information should be provided by your System Administrator.)



Password

Password

Allows you to assign a password to restrict access to elements of the unit. Once assigned, password access cannot be circumvented so it is important that you write down your password and keep it in a safe place.



PC Connection

Enables direct connections to a desktop computer. Selecting the Change Connection button allows you to change the type of direct connect to your PC.



Power

Power

Allows you to define if and when the unit will automatically switch to Suspend state. It also allows you to turn power for the CF card slot on and off. This dialog box also allows you to enable and disable the built-in *Bluetooth* radio.



RDC
Licenses

RDC Licenses

The Terminal Services license server stores all license tokens that have been installed for a group of terminal servers and tracks licenses issued. The Remote Desktop Licenses (RDC) application displays license 'tokens' for devices that connect to a Terminal Server.



Region &
Language

Region & Language

Allows you to specify the local language the display text will use along with the format of numbers, currency, time, and date for your region.



Remove
Programs

Remove Programs

Lists the programs that can be removed from your unit. To remove a program, choose it and then tap on the Remove button.



SNMP

SNMP

SNMP (Simple Network Management Protocol) is the protocol used to monitor and manage devices attached to a TCP/IP network.



Storage
Manager

Storage Manager

Allows the user to view information about the storage devices that are present, such as the CF card.



Stylus

Stylus

Adjusts how Windows Embedded CE 5.0 recognizes your double-tap (as slow or rapid successive taps).

Under the Calibration tab, you can recalibrate your touchscreen by tapping on the *Recalibrate* button and following the directions on the calibration screen.



System

System

Displays system and memory properties. Under the Memory tab, you can allocate memory between storage memory and program memory.



Scanners

Scanners

Used to set up some scanner parameters. However, the 8515 supports decoded scanners, which must be configured by scanning special configuration bar codes.



Total Recall

Total Recall

This is a proprietary utility developed to maintain applications and settings over cold boots. This utility is based on a backup and restore concept and is extended to incorporate powerful advanced features.



TweakIT
Settings

TweakIT Settings

Allows you to change Advanced System Settings (interface, network, and servers), User System Settings (display font size), and provides the Registry Editor.



Volume &
Sounds

Volume & Sounds

Allows you to adjust the volume of the beep that is emitted to indicate events like warnings, key clicks and screen taps. Sounds (wave files) cannot be played on 8515 units. The beeper volume and the conditions under which it sounds are tailored from within the application installed on your unit.



Wireless
WAN

Wireless WAN

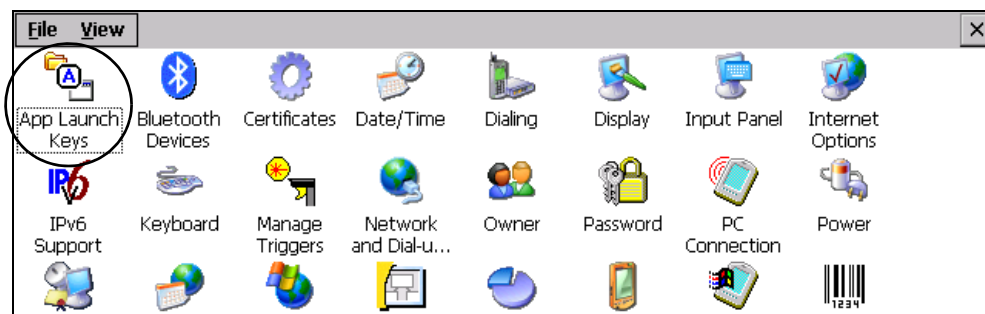
Provides access to technology like GSM/GPRS and CDMA which allows wide area networking capability such as internet browsing via GSM/GPRS.

Control Panel Applications: Basic Setup

App Launch Keys

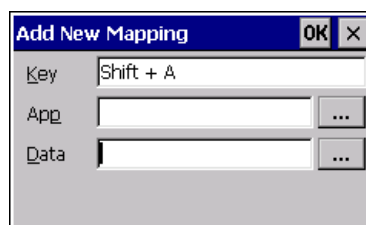
The *App Launch Keys* icon allows you to map a key to an application so that you can then launch the application from a single key-press.

- In the *Control Panel*, choose the **App Launch Keys** icon.



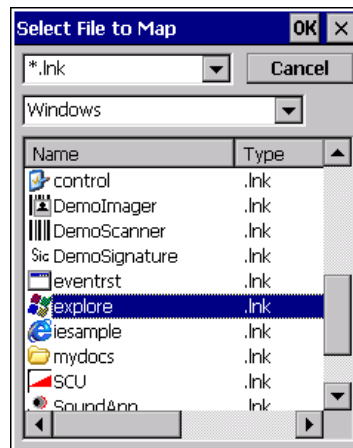
To assign an application key:

- Tap the **Add** button.



- Press the key you want to use to launch an application. (If an unsupported key is pressed, a message appears on this screen letting you know.)

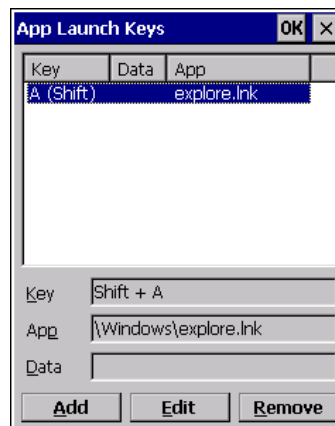
The cursor moves to the *App* field and a new screen is displayed where you can choose the application to which you want to assign the application key. If you need to, you can *Browse* through the information in your 8515 until you locate the application you want to launch.



- Once you've selected the file you want to map, tap on **OK**.

The cursor moves to the *Data* field. You can use this field if you need to define special parameters to your application launch key. If you don't want to assign any parameters, you can leave the *Data* field blank. If, for example, you want to assign an application launch key to launch the *WordPad* application, you can leave this field blank. If you want to assign an application launch key that will open a specific document in the *WordPad* application, you need to browse to and choose that document while the cursor is in the *Data* field.

- Tap on **OK**.



- If you need to Edit, Remove or Add another *App Launch Key*, you can do it from this final screen. Otherwise, tap on **OK** to save your *Application Launch Key*.
- To launch the application you chose, press the application key you assigned.

Certificates

- In the **Control Panel**, choose the **Certificates** icon.

Figure 4-2 Certificates Icon



This dialog box is used in conjunction with 802.1X authentication to enhance 8515 security.

Figure 4-3 Certificates Menu



For a detailed description about **Certificate** setup for both the server and client-side devices (8515), refer to the following website:

www.microsoft.com/windows2000/techinfo/planning/walkthroughs/default.asp - "Security Services"



NOTE When importing certificates, the 8515 only recognizes .cer files.

Display Properties

- In the **Control Panel**, choose the **Display** icon.

Figure 4-4 Display Icon

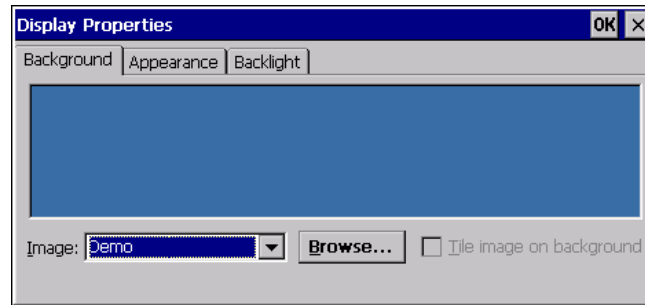


Background

The **Background** tab allows you to adjust the 8515 display background.

- In the **Display Properties** dialog box, open the **Background** tab.

Figure 4-5 Background Tab

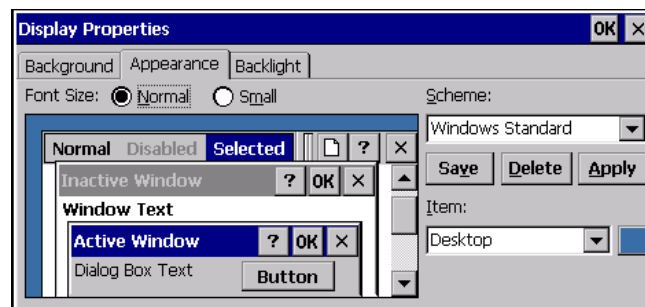


This option allows you to change the background colour or add an image.

Appearance

- In the **Display Properties** dialog box, open the **Appearance** tab.

Figure 4-6 Appearance Tab



This dialog box allows you to customize the display colour scheme and font size.

Backlight

The backlight is activated for a configurable amount of time when the 8515 is in use (key press, scanner trigger or data received from the host).

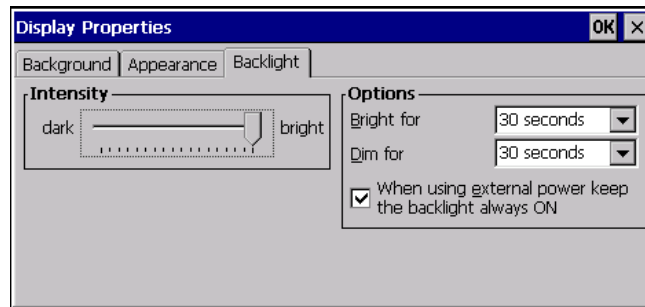
The **Display Properties** dialog box in the **Control Panel** allows you to specify the intensity of the backlight along with how long the display will maintain the specified intensity.



NOTE Keep in mind that this option may be restricted to supervisory use only.

- In the *Display Properties* dialog box, open the **Backlight** tab.

Figure 4-7 Backlight Tab



NOTE Backlight changes take effect immediately. You do not need to reset the 8515.

Intensity

This parameter is used to adjust the light intensity of the backlight. Sliding the bar to the left lowers the light intensity, and sliding it to the right raises the intensity.

Bright For

The value chosen from this dropdown menu determines the duration of time that the backlight stays on at the configured intensity when a unit is not in use.

Dim For

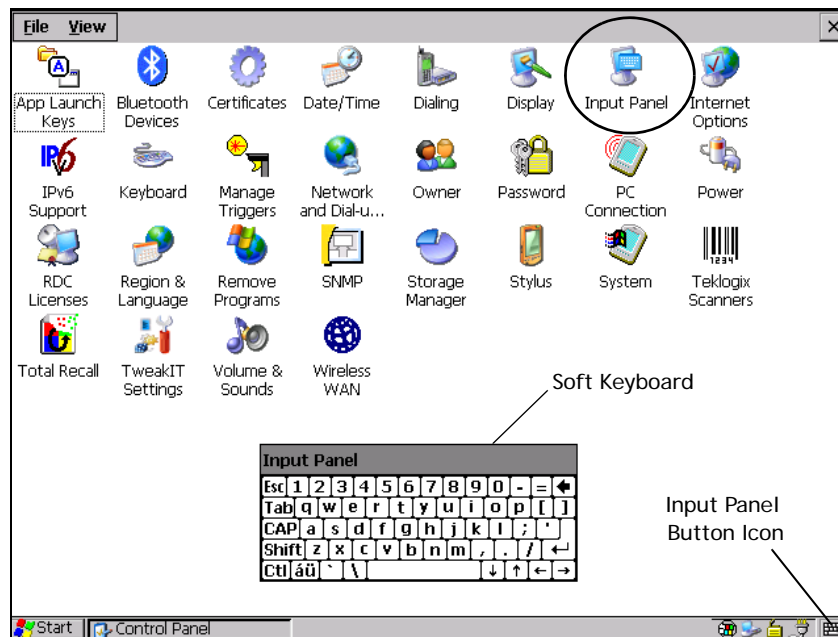
The value chosen from this dropdown menu determines the duration of time that the backlight stays on at half the configured intensity (dimmed backlight) when a unit is not in use.

External Power Checkbox

When you select the checkbox next to '**When using external power keep the backlight always ON.**', the backlight remains ON at the configured intensity.

Input Panel

The 8515 is equipped with at Soft Input Panel (SIP).



Tapping on the *Input Panel* button displays a soft input panel (soft keyboard) that can be customized using the *Input Panel* dialog box.



IMPORTANT

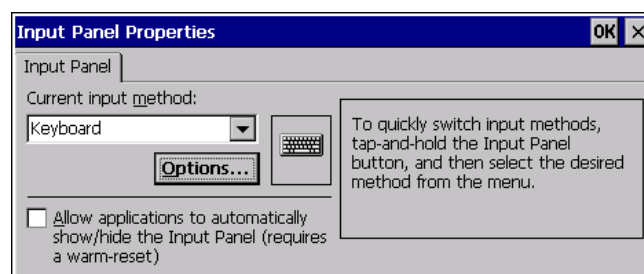
If the Input Panel button icon is not visible in the taskbar, from the *Start* menu, tap on *Settings>Taskbar and Start Menu*. Tap the checkbox next to *Show Input Panel Button*. To remove this icon from the taskbar, tap in the checkbox to erase the check mark.

The soft keyboard operates just like a standard keyboard except that rather than pressing a key, you tap on letters, numbers, modifier keys, etc. on the 8515 screen.

To customize the appearance and behaviour of the soft keyboard:

- Tap on the *Input Panel* icon in the *Control Panel*.

Figure 4-8 *Input Panel Properties*

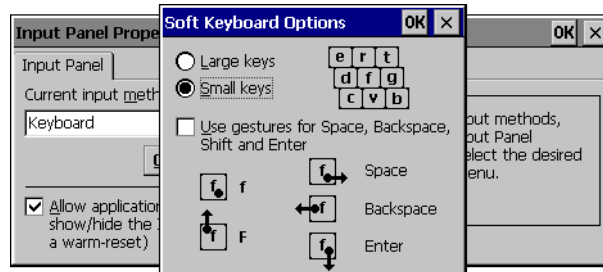


- Tap on the **Options** button to change the appearance of your soft keyboard.



NOTE You can also display this dialog box by double-tapping on the Input icon in the far-right corner of the taskbar.

Figure 4-9 *Soft Keyboard Options*



Keyboard Properties

This icon displays the **Keyboard Properties** dialog box in which you can adjust the repeat rate of the keys, the intensity of the keyboard backlight and the behaviour of the [BLUE] and [ORANGE] modifier keys. This dialog box also allows you to define macro keys and remap the keyboard.

- In the *Control Panel*, choose the **Keyboard** icon.

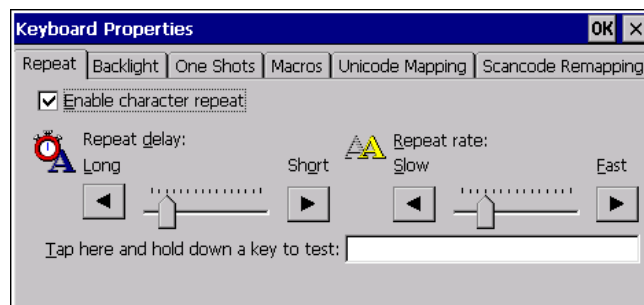
Figure 4-10 *Keyboard Icon*



Key Repeat

- In the *Keyboard Properties* dialog box, open the **Repeat** tab.

Figure 4-11 *Repeat Tab*



Enable Character Repeat

Tapping in the checkbox next to this option enables the key behaviour you specify in this dialog box.

Repeat Delay

The position of the slider determines how long a key must be held down before it begins to autorepeat.

Repeat Rate

The value assigned for the **Repeat Rate** parameter determines how quickly the key you press repeats and is measured in characters per second (cps). Sliding the bar to the left slows the repeat rate, and sliding the bar to the right increases the repeat rate.

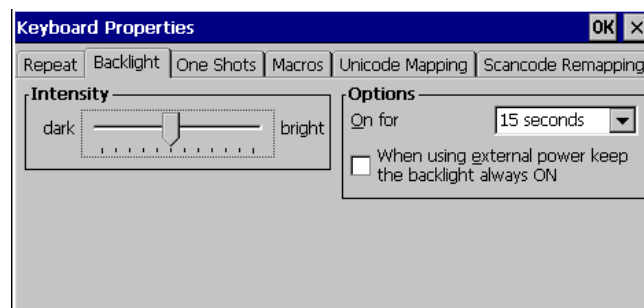


NOTE Use the field at the bottom of this dialog box to test the repeat delay and rate settings you've chosen.

Backlight

- In the **Keyboard Properties** dialog box, open the **Backlight** tab.

Figure 4-12 *Backlight Tab*



Intensity

This parameter is used to adjust the light intensity of the 8515 keyboard backlight. Sliding the bar to the left darkens the keyboard backlight intensity, and sliding it to the right lightens the intensity.

Options – ON For

The value chosen from this dropdown menu determines the duration of time that the keyboard backlight stays on when a unit is not in use.

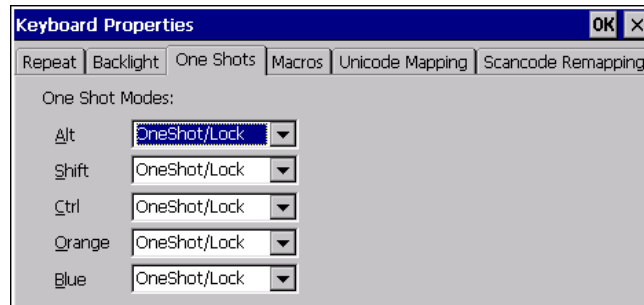


NOTE Tapping in the checkbox next to **When using external power, keep the backlight always ON** forces the keypad backlight to remain on when the unit is operating with external power such as vehicle battery or A/C adaptor.

One Shots

- In the *Keyboard Properties* dialog box, open the **One Shots** tab.

Figure 4-13 One Shots Tab



The options in this tab allows you to determine how modifier keys on your 8515 behave. For each modifier key – [ALT], [SHIFT], [CTRL], [ORANGE] and [BLUE] – you have the following options in the drop-down menu: *Lock*, *OneShot*, and *OneShot/Lock*.



NOTE Keep in mind that checking the taskbar lets you know whether or not these keys are locked on. For example, if the [ORANGE] key is locked 'on', the taskbar at the bottom of the screen displays it in *uppercase* characters — **ORANGE KEY**. If this key is displayed in *lowercase* characters in the taskbar, you'll know that the **orange key** is *not* locked. It will become inactive following a key press.



IMPORTANT Once you've assigned a One Shot mode to a modifier key, you need to tap on the OK button at the top of the tab to activate your selection.

Lock

If you choose *Lock* from the drop-down menu, pressing a modifier key *once* locks it 'on' until you press the modifier key a second time to unlock or turn it off.

OneShot

If you choose *OneShot*, the modifier key remains active only until the next key is pressed.

OneShot/Lock

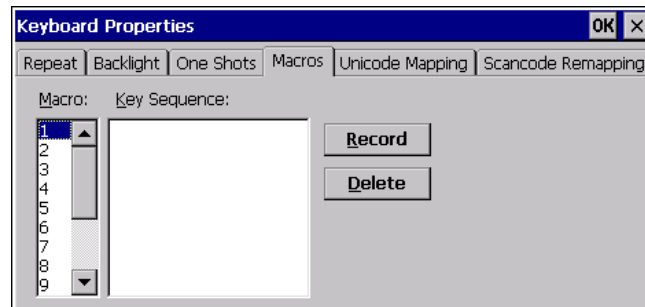
OneShot/Lock allows you to combine these functions. When you choose this option and you press the modifier key *once*, it remains active only until the next key is pressed.

If you press the modifier key *twice*, it is locked 'on', remaining active until the modifier key is pressed a third time to turn it 'off'.

Macro Keys

- In the **Keyboard Properties** dialog box, open the **Macros** tab.

Figure 4-14 Macros Tab



A macro has 200 programmable characters (or “positions”). The macro keys can be programmed to replace frequently used keystrokes, along with the function of executable keys including [ENTER], [BKSP] and [DEL] ([BLUE]-[BKSP]), function keys and arrow keys.

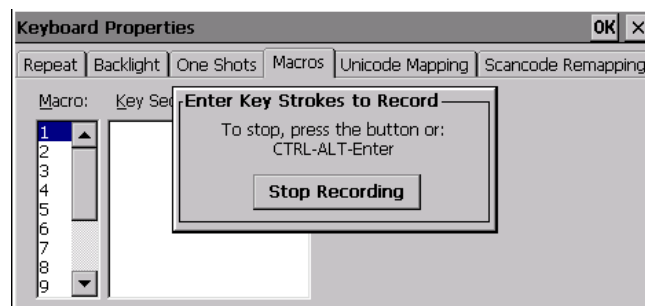
Recording and Saving A Macro

You can program up to six macro keys.

- In the **Macro** menu, highlight a macro key number — for example, Macro 1 to assign a macro to macro key [M1]. Tap on the **Record** button.

A message screen is displayed instructing you to **Enter Key Strokes to Record**.

Figure 4-15 Macros Key Strokes



- Type the macro sequence you want to assign to the Macro key. You can type text and numbers, and you can program the function of special keys into a macro.



NOTE Tap on the ‘Stop Recording’ button at any time to suspend the process.

- When you’ve finished recording your macro sequence, press the **Stop Recording** button, or type the key sequence — [CTRL] [ALT] [ENTER].

A new screen — Verify Macro — displays the macro sequence you created. The **Save** button is highlighted.

- Tap on the **Save** button.



NOTE If you want to discard the macro you’ve just created, tap on the **Discard** button.

Executing A Macro

To execute a macro:

- Press the macro key to which you've assigned the macro. For example, if you created a macro for macro key '1', press [M1] to execute the macro.

Macro Keys [M1] and [M2]

These keys are displayed in *black* print on the bottom row of executable keys on the keyboard. These macro keys are accessed by simply pressing the key.

Macro Keys [M3] To [M6]

These keys are displayed in *blue* print on the [M1] and [M2] keys in the bottom row of executable keys, and on the [N] and [M] keys in the first row of alpha keys on the keyboard. To access these macro keys, press the [BLUE] key followed by the appropriate executable or alpha key. For example, on a *Qwerty* keyboard:

- Press [BLUE] [N] to access macro key [M5].
- To access [M3], press [BLUE] [M1], etc.

Deleting A Macro

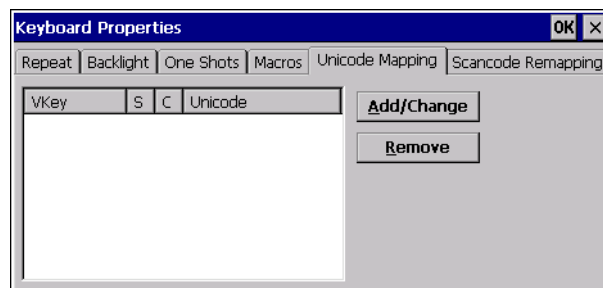
To delete a macro:

- In the **Macros** tab, tap on the macro number you want to delete.
- Tap on the **Delete** button.

Unicode Mapping

- In the **Keyboard Properties** dialog box, open the **Unicode Mapping** tab.

Figure 4-16 *Unicode Mapping Tab*



The **Unicode Mapping** tab is used to map combinations of virtual key values and [CTRL] and [SHIFT] states to Unicode™ values. This tab shows the configured Unicode character along with the Unicode value. Keep in mind that Unicode configurations are represented as hexadecimal rather than decimal values.

All user-defined Unicode mappings are listed in the **Unicode Mapping** tab in order of virtual key value, and then by order of the shift state. If a Unicode mapping is not listed, the Unicode mapping is mapped to the default Unicode value.

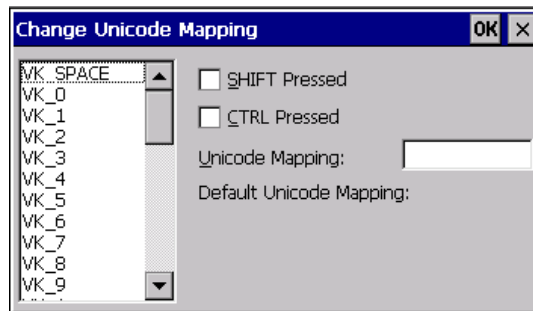
Adding and Changing Unicode Values



IMPORTANT Changes to Unicode mappings are not saved until you exit the Keyboard Properties dialog box.

- Tap on the **Add/Change** button.

Figure 4-17 Change Unicode Mapping



- Tap on a value in the Unicode mapping list — in the sample screen above, a value will be assigned to virtual key 0 (VK 0).
- Tap the stylus in the **Unicode Mapping** field, and type a Unicode value for the highlighted key.



NOTE To add a shifted state —[SHIFT] and/or [CTRL], tap the checkbox next to 'SHIFT Pressed' and/or 'CTRL Pressed'. to select the shift state you want to assign.

Removing Unicode Values

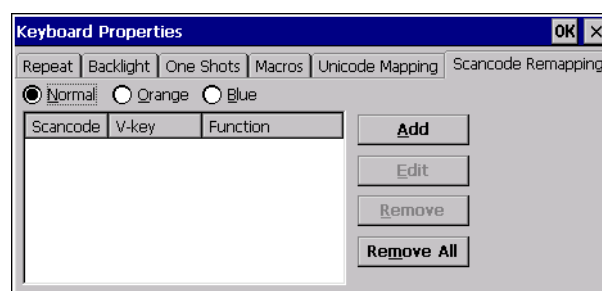
- In the **Unicode Mapping** tab, highlight the item you want to delete, and tap the stylus on the **Remove** button.

Scancode Remapping

A scancode is a number that is associated with a physical key on a keyboard. Every key has a unique scancode that is mapped to a virtual key, a function or a macro. Scancode Remapping allows you to change the functionality of any key on the keyboard. A key can be remapped to send a virtual key (e.g. VK_F represents the 'F' key; VK_RETURN represents the [ENTER/ON] key, etc.), perform a function (e.g. turn the scanner on, change volume/contrast, etc.) or run a macro.

There are three different tables of scancode mappings: the **Normal** table, the *Orange* table and the **Blue** table. The **Normal** table defines unmodified key presses; the **Orange** table defines key presses that occur when the [ORANGE] modifier is on; the **Blue** table defines key presses that occur when the [BLUE] modifier is on. The default mappings of these scancodes can be overwritten for each of these three tables using the **Scancode Remapping** tab accessed from the **Keyboard Properties** dialog box.

Figure 4-18 Scancode Remapping Tab



The first column in the **Scancode Remapping** tab displays the Scancodes in hexadecimal. If the scancode is remapped to a virtual key, that virtual key is displayed in the next column labelled 'V-Key'. A virtual key that is 'Shifted' or 'Unshifted' is displayed in the third column labelled 'Function'.

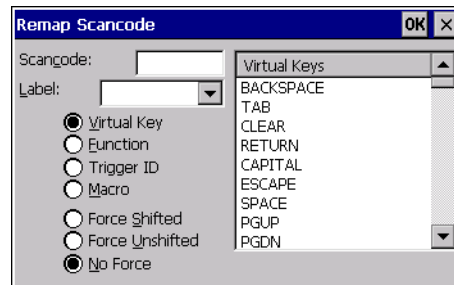
If the scancode is remapped to a function or a macro, the first and second columns remain blank while the third column contains the function name or macro key number (for example, Macro 2).

Adding A Remap

To add a new remapping:

- Tap the stylus on the **Add** button at the bottom of the dialog box.

The **Remap Scancode** dialog box is displayed.



- Type the scan code in hexadecimal in the field labelled **Scancode**:



NOTE *Label:* field displays the default function of the scancode you are remapping.

Virtual Key, Function, and Macro

The radio buttons along the side of the dialog box allow you to define to what the scan code will be remapped: **Virtual Key**, **Function**, or **Macro**.

When **Virtual Key** is selected, you can choose to force [SHIFT] to be *on* or *off* when the virtual key is sent. If **No Force** is selected, the shift state is dependent on whether the shift state is on or off at the time the virtual key is sent.

When **Function** is selected, a list of valid functions appears in the dialog box.

When **Macro** is selected, the macro keys available on your unit are listed in the dialog box.

- Choose **Virtual Key**, **Function** or **Macro**.
- Choose a function from the **Function** list in the dialog box, and tap on **OK**.

Editing A Scancode Remap

To edit a scancode:

- In the **Scancode Remapping** tab, tap on the remap you want to edit.
- Tap on the **Edit** button, and make the appropriate changes.
- Tap on **OK** to save your changes.

Removing A Remap

To delete a remap:

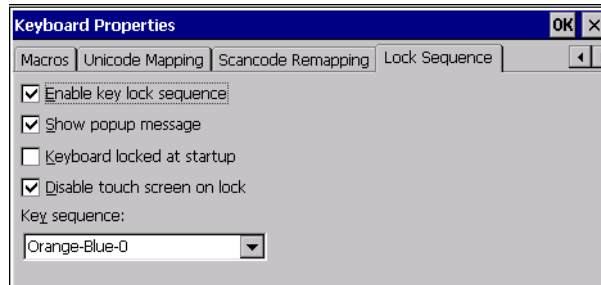
- In the **Scancode Remapping** tab, highlight the scancode you want to delete, and tap on the **Remove** button.
- Tap on **OK**.

Lock Sequence

This function uses a selected key sequence to lock the keyboard if required to prevent accidental key presses.

- In the **Keyboard Properties** dialog box, open the **Lock Sequence** tab.

Figure 4-19 *Lock Sequence Tab*



Enable Key Lock Sequence

Once the key lock sequence is enabled, the following options become available:

- A popup message can be displayed when the keyboard is locked and a key is pressed.



- The keyboard can be in lock mode when the computer is started.
- The touchscreen can be disabled when the keyboard is locked.

Key Sequence

The available key sequences to lock the keyboard are: `[ORANGE][BLUE][0]`, `[ORANGE][BLUE][8]`, or `[ORANGE][BLUE][Bksp]`.

Manage Triggers

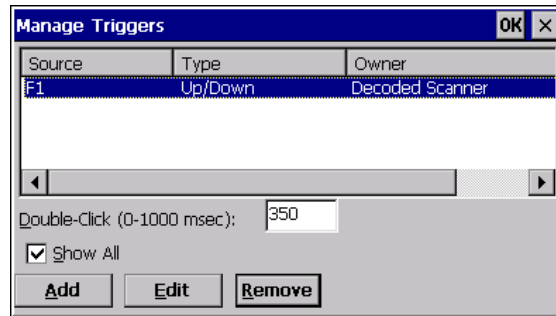
This applet allows you to configure how bar code scanners are triggered. You can configure the trigger ID for each trigger button for both single- and double-click, and the double-click time.

- In the *Control Panel*, choose the **Manage Triggers** icon.

Figure 4-20 *Manage Triggers Icon*



The *Manage Triggers* screen lists any trigger mappings.

Figure 4-21 *Manage Triggers Menu*

Trigger Mappings

A trigger mapping is an association between a particular key on the keyboard and a driver or application, the “owner(s)” of the trigger source. When the specified key is pressed, the owner (for example, a decoded scanner) is sent a message.



IMPORTANT

It is not possible to have two or more identical mappings — for example [F1] cannot be mapped to the Decoded Scanner twice — even if the trigger type is different.

A keyboard key that is used as a trigger source will no longer generate key data, or perform its normal function. For example, if the space button is used as a trigger source, it will not be able to send space characters to applications.

Double-Click

When a key is pressed and released, then pressed again within the configured time (between 0 to 1000 milliseconds), a double-click occurs. See also [Trigger Type on page 4-20](#).

Show All

By default, the trigger mapping list only shows active mappings. Mappings for drivers or applications that are not currently active are not normally displayed. By checking this checkbox, all mappings, both active and inactive, are displayed.

Add

Tapping this button brings up the *Add Mapping* dialog box, so that you can add new trigger mappings.

Edit

Tapping this button brings up the *Edit* mapping dialog box, so that you can edit existing trigger mappings.

Remove

Tapping this button removes an existing mapping.

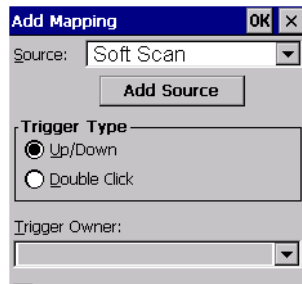
OK

The *OK* button in the top right of the *Manage Triggers* screen saves all changes made. If the cancel button *X* is tapped instead, or the [ESC] key is pressed, all changes made will be discarded.

Add and Edit Trigger Mapping

This dialog box is used to add trigger mappings.

Figure 4-22 Add Mapping Menu



Source

This dropdown list allows you to specify the source of the trigger events, such as a keyboard key [F1], for the *Trigger Owner* selected.



NOTE It is possible to map the same source to different owners—for example, [F1] can be mapped to both the Imager and RFID. If so, both devices/operations will occur simultaneously. This is not recommended in most cases, especially with devices that draw a great deal of current, such as imagers.

It is also possible to map different sources to the same owner.

Add Source

Only existing trigger sources are shown in the *Source* combo-box. To add a new source to this list, tap on the *Add Source* button. A dialog box pops up, allowing you to select the keyboard key to use as a trigger source.

Trigger Type

You can enable either an *Up/Down* or *Double Click* response to a trigger press. Normally, when a trigger (keyboard key, etc.) is pressed and released, a “trigger down” event is sent to the “owner” — that is, the application receiving the trigger press information followed by a “trigger up”. If *Double Click* is chosen in this menu, when the trigger is pressed, released, and then pressed again, a “double-click” event is generated. If a mapping with the type *Up/down* has also been configured for the same source, it will only receive the first set of trigger events.

Trigger Owner

This identifies the driver or application receiving the trigger presses.

Show All

By default, inactive owners are not shown. By checking this checkbox, all owners, both active and inactive, are displayed.

Power Properties

This icon allows you to define the **Suspend** state of your unit and to turn power on and off for the CF card slot. *Power Properties* also allows you to enable and disable the built-in *Bluetooth* radio.

- In the **Control Panel**, choose the **Power** icon.

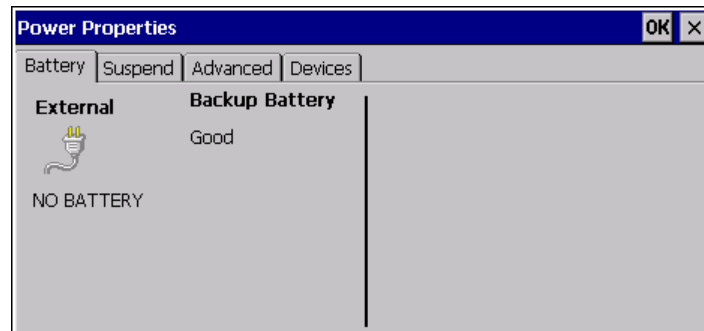
Figure 4-23 Power Icon



Battery

The *Battery* tab displays the status of the internal battery in your unit.

Figure 4-24 Internal Battery Status

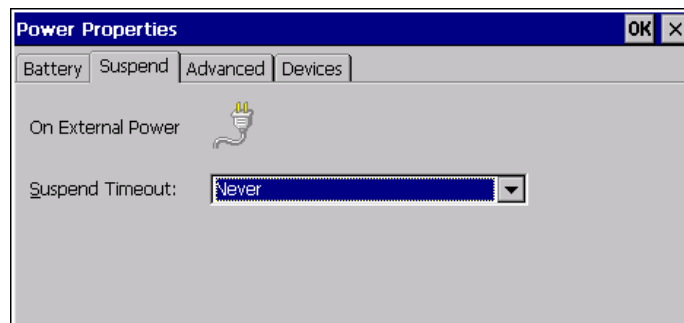


If external power is removed, the battery will supply enough power to the computer to allow it to shut down gradually with up to 30 seconds of run time to do this. The display will be blank during this time. The computer will save any sessions, and the state of the computer is maintained. There is also a one hour backup of the state of the computer from when the external power was removed. All of the activities that were occurring when external power was removed will be stored in memory. When external power is applied again within the one-hour window, the computer will resume from suspend mode and you can continue working from where you left off. The battery will also keep the RTC running for 7 days.

Suspend

- In the **Power Properties** dialog box, open the **Suspend** tab.

Figure 4-25 Suspend Tab



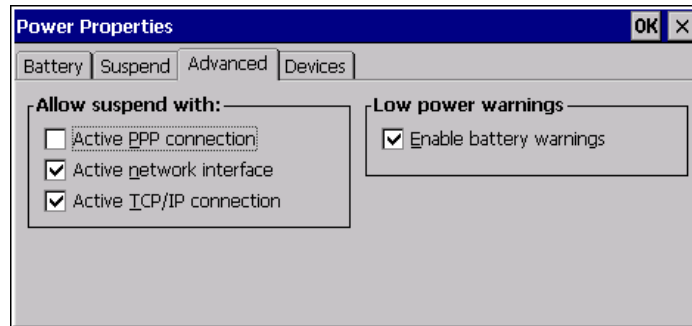
When the 8515 is idle — not receiving any user input (a key touch, a scan, etc.) or system activity (serial data, an activity initiated by an application, etc.)—the value chosen in the **Suspend Timeout** dropdown menu determines when the unit will go to suspend state (appear to be off).

When the time in the **Suspend Timeout** field elapses without any activity, the unit enters **Suspend** state. In **Suspend** state, the 8515 CPU enters a sleep state, and the radio is shut off. The state of the device (RAM

contents) is preserved. Pressing [ENTER] wakes the system from suspend state. When the 8515 is in suspend state, the network connection is broken immediately; therefore you must re-establish the network connection.

Advanced Power Properties

Figure 4-26 Advanced Tab



Allow Suspend With

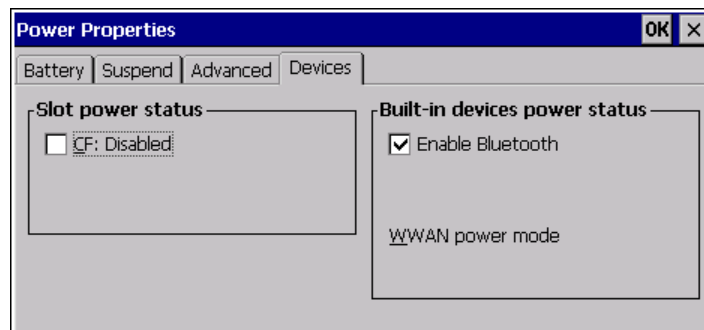
This tab allows you to specify whether or not your unit will enter suspend state while is operating with an active PPP connection, network interface or active TCP/IP connection.

Low Power Warnings

The checkbox under this section of the tab allows you to enable a warning message when the battery becomes low.

Devices

Figure 4-27 Devices Tab



Slot Power Status

This tab allows you to enable or disable power to the CF slot in your unit.

Built-In Devices Power Status

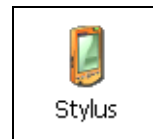
A checkmark next to *Enable Bluetooth* indicates that the unit's built-in, *Bluetooth* radio is enabled.

Stylus Properties

✓ **NOTE** Touchscreen calibration may not be enabled on your unit. If your screen appears to require recalibration, contact your supervisor.

- In the **Control Panel**, choose the **Stylus** icon.

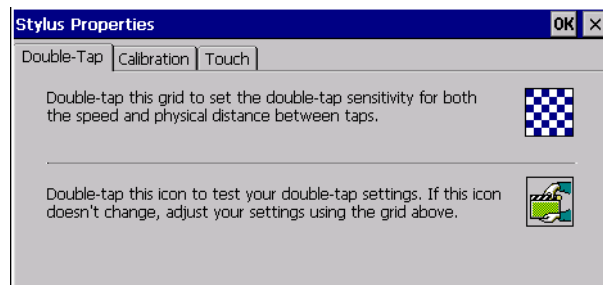
Figure 4-28 *Stylus Icon*



Setting Double-Tap Sensitivity

- In the **Double-Tap** tab, follow the directions to tailor the sensitivity of the stylus when you tap on the touchscreen.

Figure 4-29 *Double-Tap Tab*

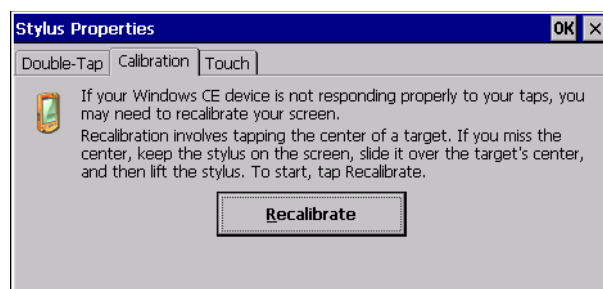


Touchscreen Calibration

Touchscreens rarely require recalibration. However, if your touchscreen has never been calibrated or if you find that the stylus pointer is not accurate when you tap on an item, you can use the **Calibration** tab to recalibrate the touchscreen.

- Choose the **Calibration** tab and then tap on the **Recalibrate** button.

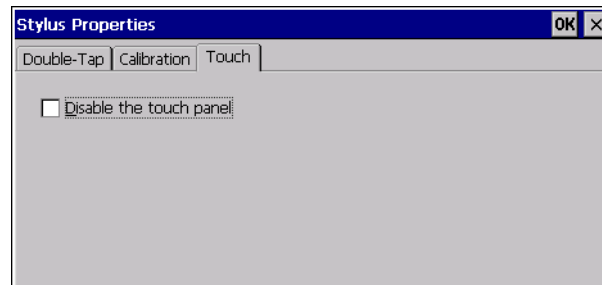
Figure 4-30 *Calibration Tab*



- Follow the directions in the **Calibration** tab to recalibrate the screen.

Disabling the Touchscreen

Figure 4-31 Touch Tab



- Tap on the checkbox next to **Disable the touch panel**. The touchscreen will not accept screen taps.

Volume and Sound Properties

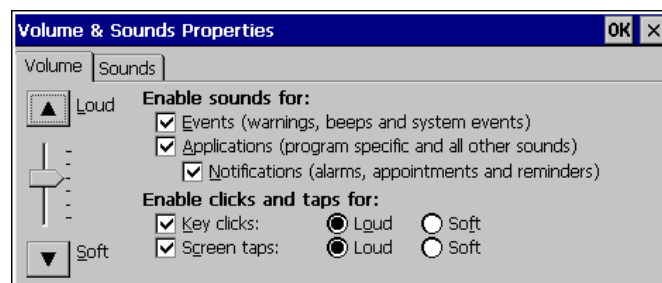
- In the **Control Panel**, choose the **Volume & Sounds** icon.

Figure 4-32 Volume & Sounds Icon



Volume Adjustments

Figure 4-33 Volume Tab



- Slide the volume button upward to increase the beeper volume or downward to decrease the beeper volume.
- Under the heading **Enable sounds for**, enable the conditions under which you want the 8515 to emit a beep.



NOTE Sounds (wave files) cannot be played on 8515 units. The conditions under which the 8515 emits sounds are tailored from within the application installed on your unit. Therefore the options in the Sounds menu are not available.

Bluetooth Setup

Bluetooth is a global standard for wireless connectivity for digital devices and is intended for Personal Area Networks (PAN). The technology is based on a short-range radio link that operates in the ISM band at 2.4 GHz.

When two *Bluetooth*-equipped devices come within a 2 meter range of each other, they can establish a connection. Because *Bluetooth* utilizes a radio-based link, it does not require a line-of-sight connection in order to communicate.



NOTE The *Bluetooth* radio uses an internal antenna.

- In the **Control Panel**, choose the **Bluetooth Devices** icon to display the **Bluetooth Manager** screen.

Figure 4-34 *Bluetooth Icon*



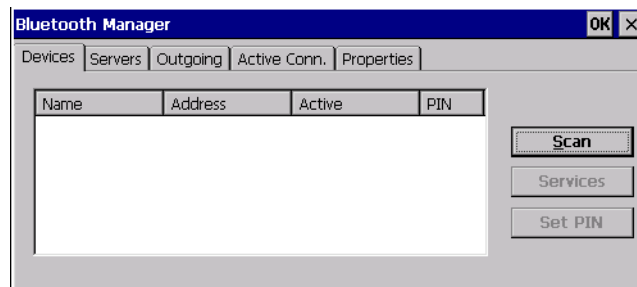
The **Bluetooth Manager** dialog box is used to display the other *Bluetooth* devices with which you can communicate.

The Devices Tab



NOTE If you intend to configure *Bluetooth* communication with specific devices (e.g., a scanner, printer, or headset), turn on the devices and bring them within 5 meters of the 8515 before proceeding with the discovery process described below.

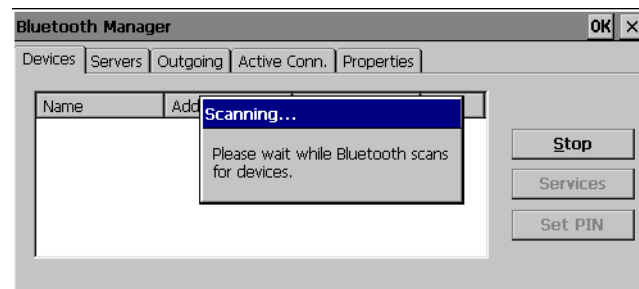
Figure 4-35 *Devices Tab*



Scan

- Tap on the **Scan** button to list available devices.

Figure 4-36 Scan



Wait for the 8515 to complete its scan (approximately 20 seconds). When scanning starts, the **Scan** button will change to **Stop** — if necessary, you can tap on this button to stop the process. Once scanning is complete, all discovered devices will be displayed in the list box, with *Name*, *Address*, *Active* status, and *PIN* information.



NOTE During the scanning process, addresses are located first, followed by names. Only the names of devices that are within the *Bluetooth* radio coverage range will be retrieved.

The *Active* column indicates whether any service is activated for that device. When a service is activated, the device is displayed in the list even when it is not detected during the scan.

The *PIN* column indicates whether you have a PIN (password) set for the device.

At this point you can either query for services or set the PIN for each device. Once you highlight a device in the list box, both the **Services** and **Set PIN** buttons become available.

Services

A discovered device may display several service profiles that it can use to communicate, and you will want to activate the type you need. Supported profiles that can be activated include: DUN (Dial-Up Networking service), Printer (serial service), and LANPPP (LANAccessUsingPPP service). ASync (ActiveSync) is another available profile.

- To start the service scan, highlight a device in the **Devices** tab list, and then click on the **Services** button or double-click on the device entry.



NOTE If the remote device is out of reach or turned off, it can take considerable time for the Services dialog box to appear — it may appear to be frozen.

Once the device's service profiles are displayed in the Services list box:

- Highlight the service to be activated.
- Press [SPACE] or right-click to display the Activation menu.

The Activation menu contains four options — Activate, Authenticate, Outgoing and Encrypt.

Once the service is successfully activated, the assigned port (if applicable) will appear in the **Port** column of the *Services* list box. You can choose to use **BSP** or **COM** as the port name. BSP is the latest Microsoft *Bluetooth* stack standard, but older applications assume serial ports are COM. When using *COM* as the port name, the *Bluetooth* manager will try to find and use a free port between COM7 and COM9. When using *BSP* as the port name, BSP2 to BSP9 are available for use. The port is available as soon as it is activated.



NOTE The **CH** column shows the RFCOMM channel of the service *if* the service is RFCOMM-based. This information is not generally needed except for debugging purposes.

To add a service to the **Outgoing** port, an active service must first be deactivated. Then you can choose the 'Outgoing' option from the Activation menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

The **Authentication** and **Encryption** options can be changed only before activation. To change these after activation, deactivate the service first, then change the options.

Once a service is activated, all the information regarding the service, including the RFCOMM channel number, is saved in the registry. (Some remote devices may change their RFCOMM channel numbers when they reboot, so your saved setting may not work when the remote device is rebooted. In that case, you must deactivate the service and reactivate it to detect the current RFCOMM channel.)

Set PIN

PINs can be set for each device by pressing the **Set PIN** button in the **Devices** tab, or you can skip this step and try to connect to the device first.



IMPORTANT The remote device must have authentication enabled, otherwise the PIN authentication will fail.

- Highlight a device, tap on the **Set Pin** button, and type the **PIN**.

You will receive a message, either that the PIN has been successfully validated or that it has been rejected.

If the PIN has been validated, an asterisk (*) appears in the PIN column in the *Devices* list box, indicating that this device has a PIN set. Once a PIN is entered, it is saved in the registry.

To remove the PIN:

- Choose **Set PIN**, and press [ENTER].

If the 8515 attempts to connect to a remote device that has Authentication enabled and does not have a required PIN set, an *Authentication Request* dialog box is displayed.

- Enter the **PIN**, and tap on **OK** to connect the devices.

The Servers Tab

Figure 4-37 Servers



The *Bluetooth* connection is initiated from your 8515 to the remote device — therefore the 8515 is called the 'client' and the remote is called the 'server'. The **Servers** tab displays the server profiles that can be activated in your 8515. There is currently one server profile available: *Serial*.

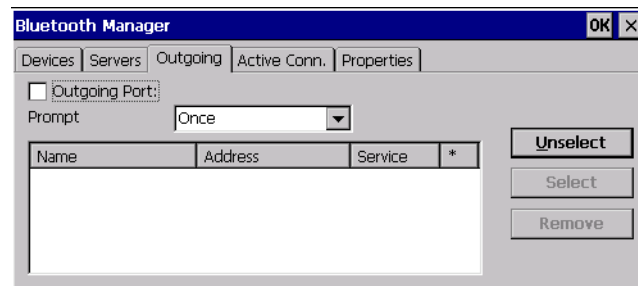
- Tap on the checkbox to activate the server, and it will display the associated port name beside the server name.

Once you activate a server profile, it is recommended that the 8515 be rebooted before you try to bond from a server.

✓ **NOTE** You do not need to reboot if you are deactivating a server.

Outgoing Tab

Figure 4-38 *Outgoing*



Outgoing Port acts as a serial port that can be used to connect to a list of *Bluetooth* devices (one at a time), but you have the freedom to *switch on-the-fly*.

The **Outgoing Port** checkbox allows you to create the Outgoing port. When the port is created, the Outgoing tab lists the port name.

The Outgoing list dialog box displays a list of services marked as 'Outgoing'. The * column indicates the currently selected service. You can tap on **Unselect** to reset the current selection, or you can tap on **Select** to make a selection. The **Remove** button deletes the service from the outgoing list.

The *Prompt* menu determines the behaviour of the pop-up *Selection* menu. Choosing **Everytime** causes the *Selection* menu to be displayed each time an outgoing port is created. If you choose **Once**, the menu is displayed only when a partner service is not selected.

To display the **Selection** menu at any time:

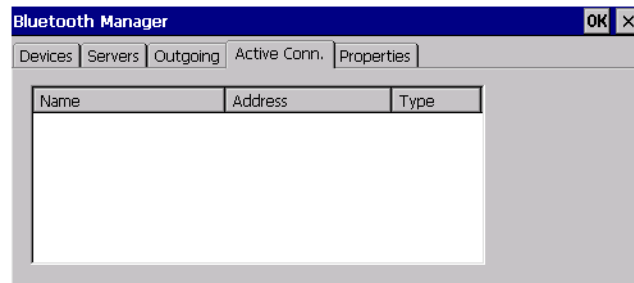
- Press [CTRL] [ALT] [F1], and switch the partner *Bluetooth* device.

If a connection to a partner device already exists, the connection is dropped and another connection to the newly selected device is created instantly without disrupting the application that has opened the outgoing port.

✓ **NOTE** To add a service to the *Outgoing* port, an active service must first be deactivated. Then you can choose the 'Outgoing' option from the Activation menu (highlight a service, right-click or press the [SPACE] bar to display the Activation menu).

Active Connections Tab

Figure 4-39 Active Conn. Tab



The *Active Conn.* tab lists the *Name*, *Address*, and *Type* of the currently active connections. The table is periodically updated while on display, but it can take a few seconds before it reflects the actual list of connections. The *Type* column of the table shows 'ACL' or 'SCO'. The Connection list table shows the connections for scanning and the service connections.



NOTE You can change the device-name and description of your radio by clicking on the **System icon** in Control Panel, which will open the **System Properties** dialog box. Click on the **Device Name** tab to access the menu and change your settings. Then click on **OK**.

Although the name will have changed in the Properties menu in *Bluetooth Controls*, the radio only reads it on boot-up. For the changes to take effect, you must reset the 8515.

Properties Tab

Figure 4-40 Properties



The **Properties** tab displays information about your 8515, and provides some port options.

The *Device Name* field shows the device name of your 8515. This name can be changed (see the *Note* in this section for details).

Device Class shows the Class of Device (e.g. desktop), which is always set to 'Handheld'.

Local Bluetooth Address shows the address of your 8515 radio.

Port Prefix is used to set the port name to either *BSP* or *COM*. When the name is set to *BSP*, BSP2 to BSP9 are available for activated services (including the server). When *COM* is chosen, COM7 to COM9 are available.

Name Query Retry governs the number of times the computer will attempt to query the names of other *Bluetooth* devices if the first attempt fails. (When the unit scans for other devices, it sometimes fails to scan names.)

IPv6 Support

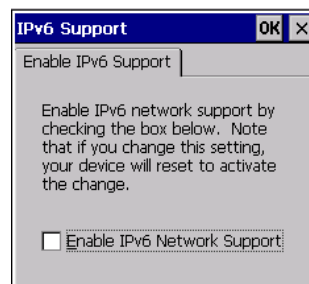
The **IPv6 Support** icon in the **Control Panel** allows you to activate IPv6 network support on your unit. This internet protocol specification (version 6) supports 128-bit IP addresses, replacing version 4.

Figure 4-41 *IPv6 Support Icon*



- Tap on the icon to display the **IPv6 Support** dialog box.

Figure 4-42 *IPv6 Support Dialog Box*



- Tap on the checkbox next to **Enable IPv6 Network Support** to enable this internet protocol.

Scanner Settings

The **Scanners** icon in the **Control Panel** provides dialog boxes in which you can tailor bar code options and change the ports settings. If you wish to recover the factory defaults after making changes, the defaults can be applied by holding the stylus on a parameter, which will pop up a menu allowing you to default that parameter, or all settings. This option cannot be accessed without a touchscreen.

Figure 4-43 *Scanners Icon*



Decoded Scanners

External decoded scanners must be configured by scanning special configuration bar codes. For configuration purposes, please refer to the programming manuals provided by the scanner manufacturer.

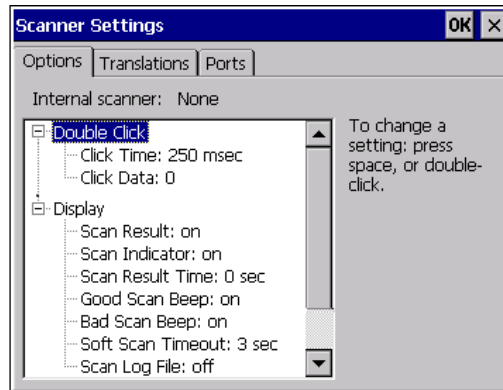


NOTE For port setup information, refer to [Ports Tab on page 4-33](#).

Scanner Settings Options Tab

This tab allows you to tailor the double-click parameters and the display options associated with your scanner.

Figure 4-44 *Scanner Settings Options*



Double Click

Click Time (msec)

This parameter controls the maximum gap time (in milliseconds) for a double-click.

If the time between the first and second clicks of the scanner trigger is within this time, it is considered a double-click. The allowable range is 0 to 1000. A value of zero disables this feature.

A double-click produces different results depending on whether or not a value is assigned in the 'Click Data' parameter. When a value is *not* assigned for the 'Click Data', double-clicking the scanner trigger overrides the target dot delay set in the 'Dot Time' parameter and initiates a normal scan sweep. If a value *is* assigned for the 'Click Data' parameter, double-clicking the scanner trigger inserts the 'Click Data' value rather than initiating a scan.

Click Data

This parameter determines which character is sent to the application installed in your 8515 following a double-click. A dialog box appears, asking that you press the key you want to insert. The ASCII/Unicode key value of the keypress is displayed.

Pressing the [ESC] key in this dialog box resets the data to zero.

Display

Scan Result

When this parameter is enabled, the type of bar code and the result of the scan appear on the screen. Note that this information is only displayed after a successful decode and is visible only while the scanner trigger is pressed. When the trigger is released, this information is cleared from the screen.

Scan Indicator

When this parameter is enabled, the laser warning logo appears on the display whenever the scanner is activated.

Scan Result Time (sec)

The value assigned to the 'Scan Result Time (sec)' parameter determines how long the scan results of a successful scan are displayed on the screen. Time is measured in seconds, and a value of '0' (zero) disables the parameter. When you choose this option, a dialog box appears where you can enter a value.



NOTE To remove the scan result from the screen before the *Result Time* has expired, point the scanner away from the bar code and press the trigger.

Good Scan Beep and Bad Scan Beep

These parameters determine whether or not the computer emits an audible scanner 'beep' when a good (successful) scan or a bad (unsuccessful) scan is performed. Set these parameters to either *on* to enable the beeper or *off* to disable it.

Soft Scan Timeout

This parameter is used by the SDK 'Scan' function (soft-scan: starting a scan session via the SDK function rather than through a physical trigger press). The value assigned to this parameter determines the soft-scan timeout from 1 to 10 sec. (default is 3 sec.).

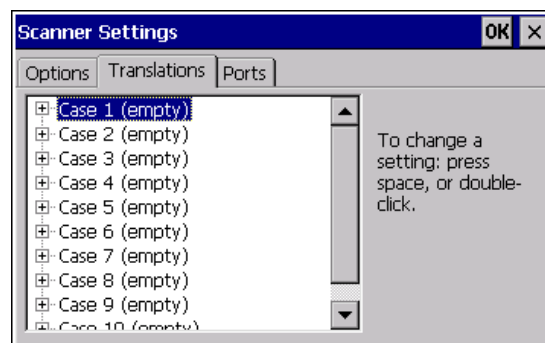
Scan Log File

If this parameter is enabled, the input bar code and the modified/translated output bar code are logged in the file *\Flash Disk\ScanLog.txt*. Keep in mind that if this parameter is enabled, there is a slight performance effect when performing multiple scans because the log file is written to persistent storage.

Translations Tab

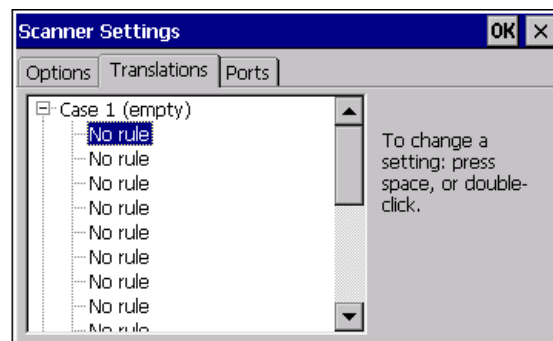
The *Translations* tab allows you to define up to 10 cases, each consisting of up to 10 rules in sequential order. Only one case will be applied to a bar code and a case will only be applied if all rules specified in the case are successful — if a rule within a case fails, the entire case fails.

Figure 4-45 *Translations*



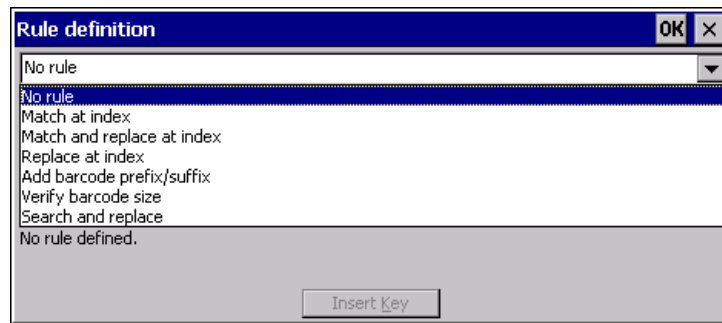
- In the **Translations** tab, choose the **Case #** to create rules.

Figure 4-46 *Cases*



- Double-tap on a **No rule** item in the dropdown list to display the rules.

Figure 4-47 Case Rules



When you choose a rule, an associated screen is displayed in which you can define the rule.

Figure 4-48 Case Rule Definitions



Case Rules

The case rules are defined as follows:

- *No rule*: ignored.
- *Match at index*: matches the match string at a specified index.
- *Match and replace at index*: matches the match string at a specified index and replaces/changes it.
- *Replace at index*: replaces/changes unspecified data in a given range.
- *Add barcode prefix/suffix*: adds a global prefix or suffix.
- *Verify barcode size*: verifies the bar code size. This rule should generally be assigned first, before creating subsequent rules.
- *Search and replace*: replaces all instances of the match string. (Note that this rule cannot fail.)



NOTE Keep in mind that the effects of previously applied rules must be taken into account when creating subsequent rules. For example, if the bar code size is important, it should be checked before any rules that might change the size are applied.

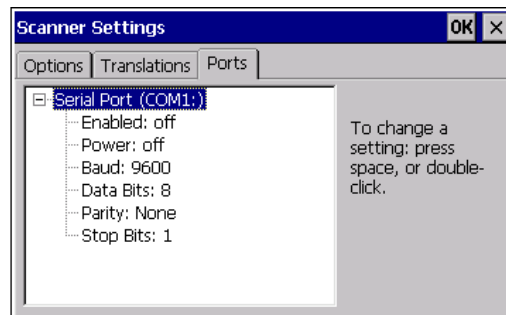
Translation information about the status of each case/rule is displayed in the scan log file, if enabled (see [Scan Log File on page 4-32](#)). This is useful if a case fails, and you are trying to determine why a rule is failing.

Ports Tab

While you cannot configure external decoded scanners, you can configure *communications* with a serial decoded scanner using the options in this tab.

Serial Port (COM 1)

Figure 4-49 *Serial Port Settings*



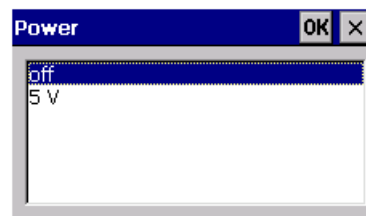
Enabled

This parameter must be set to *on* in order for the 8515 to recognize the device connected to the serial port.

Power

Double-tapping on this parameter displays a dialog box in which you can choose to disable (turn *off*) this port, or you can assign 5V power to the port.

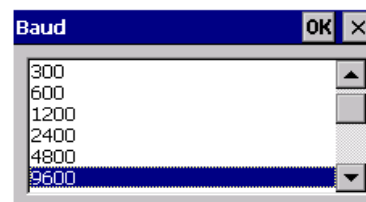
Figure 4-50 *Serial Port Power Options*



Baud

Double-tapping on this parameter displays a pop-up window in which you can choose an appropriate baud rate.

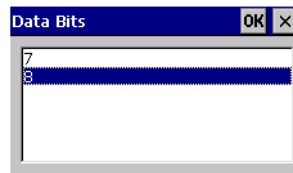
Figure 4-51 *Baud Rate*



Data Bits

This parameter determines the number of bits for the data going through this port. Double-tapping on this option displays a pop-up window in which you can choose either 7 or 8 data bits.

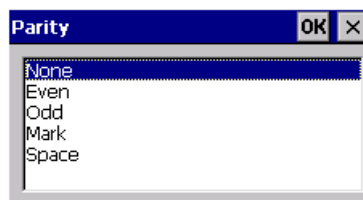
Figure 4-52 Data Bits Options



Parity

This parameter determines the type of parity checking used on the data going through the tether port. Double-tapping on this option displays a pop-up window in which you can choose the appropriate Parity.

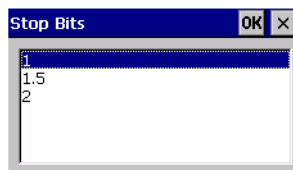
Figure 4-53 Parity Options



Stop Bits

This parameter specifies the number of stop bits — 1, 1.5 or 2 — used for asynchronous communication.

Figure 4-54 Stop Bits Options



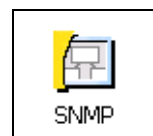
SNMP (Simple Network Management Protocol) Setup

Simple Network Management Protocol (SNMP) is the protocol used to monitor and manage devices attached to a TCP/IP network (providing they support SNMP). SNMP uses Management Information Bases (MIBs) that define the variables an SNMP Network Management Station can access. Each product has a defined set of MIBs that determine how SNMP operates, the type of access allowed etc.

All our products support the Zebra-GENERIC-MIB — a MIB that defines some common features across our products. All devices also support MIB-II, a management information base that defines the common features of TCP/IP networks. The SNMP Agent software embedded in the 8515 supports SNMPv1 (RFC 1157).

- In the **Control Panel**, choose the **SNMP** icon.

Figure 4-55 SNMP Icon



The **SNMP** dialog box is displayed.

Contacts Tab

Figure 4-56 *Contact Information*



The dialog box titled 'SNMP' has three tabs: 'Contact', 'Communities', and 'Trap Desti'. The 'Contact' tab is selected. It contains two text input fields. The first is labeled 'Contact:' and contains the text 'Your System Contact Here'. The second is labeled 'Location:' and contains the text 'Your Location Here'.

Contact

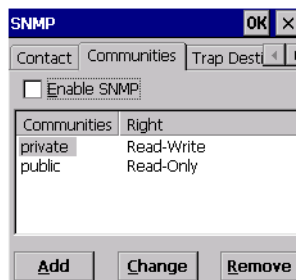
This field identifies the contact person for this managed node along with information about how to get in touch with this person. The content of this parameter is accessible through the MIB-II sysContact object.

Location

This parameter is used to identify the physical location of this node (e.g., Warehouse A: Pillar 32B). The content of this parameter is accessible through the MIB-II sysLocation object.

Communities Tab

Figure 4-57 *Communities Options*



The dialog box titled 'SNMP' has three tabs: 'Contact', 'Communities', and 'Trap Desti'. The 'Communities' tab is selected. It features a checkbox labeled 'Enable SNMP' which is currently unchecked. Below the checkbox is a table with two columns: 'Communities' and 'Right'. The table contains two rows: 'private' with 'Read-Write' and 'public' with 'Read-Only'. At the bottom of the dialog are three buttons: 'Add', 'Change', and 'Remove'.

Communities	Right
private	Read-Write
public	Read-Only

The *Communities* tab provides a means of limiting access to SNMP managed devices to those SNMP Managers with matching “community names”, as specified by RFC 1157.

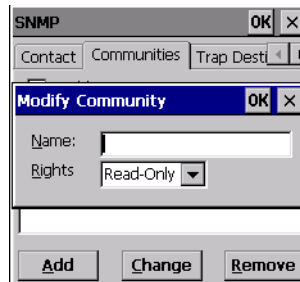
Enable SNMP

Enabling **Enable SNMP** allows the device to respond to SNMP queries and to send Traps. After enabling this option and rebooting the device, the SNMP Agent will automatically start up. To disable this feature, remove the check mark from the check box.

Adding a Community

- Tap on **Add** to add a new ‘community’.

Figure 4-58 Add Community Dialog

**Name**

The value assigned here is the name assigned by the network administrator to the set of devices to which this managed node belongs.

Rights

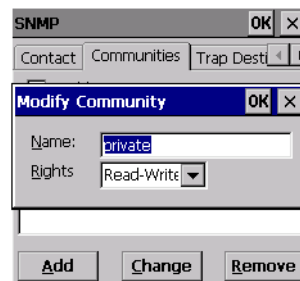
This menu allows you to specify access — that is, *Read-Only* or *Read-Write*.

Modifying a Community Setting

To modify an existing community:

- Highlight the community you want to alter.
- Tap on **Change**.

Figure 4-59 Modify Community Dialog



A **Modify Community** dialog box is displayed, listing the community you highlighted.

- Edit the **Name** and/or **Rights**, and press [ENTER] to save your changes.

Removing an Existing Community

- Highlight the community you want to remove in the **Communities** tab and then tap on the **Remove** button.

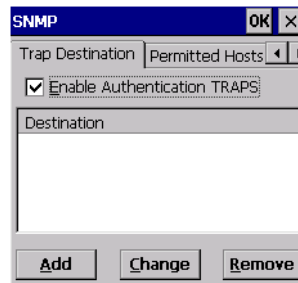
A **Delete Confirmation** screen is displayed.

- To remove a community, tap on **Yes**, or
- If you decide not to remove the community, tap on **No**.

Trap Destination Tab

A trap is an unsolicited report sent to SNMP Managers by the SNMP Agent running on the managed node. This option allows you to define where the report will be sent.

Figure 4-60 Trap Destination Options



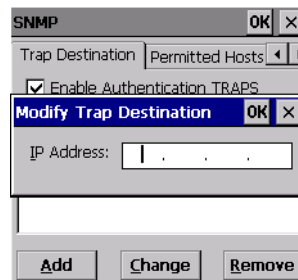
Enabling Authentication TRAPS

Checking **Enable Authentication TRAPS** allows authorization traps to be sent when a failure is detected (e.g., an SNMP message received with a bad community name).

Adding a Destination

- To add a new destination, tap on the **Add** button.

Figure 4-61 Add IP Address Dialog



- Type a destination in the text box provided, and press [ENTER].

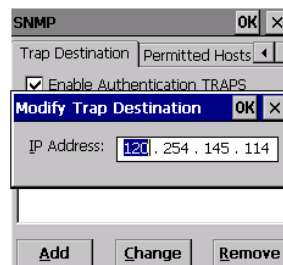
Changing a Destination

To change an existing trap destination:

- Highlight the destination you want to alter in the **Trap Destination** tab, and then tap on the **Change** button.

A dialog box like the one displayed when you *add* a destination is displayed.

Figure 4-62 Change IP Address Dialog



- Make the changes to the destination, and tap on **OK** to save the changes.

Removing a Trap Destination

To remove a trap destination:

- In the **Trap Destination** tab, highlight the destination you want to delete.

- Tap on the **Remove** button.

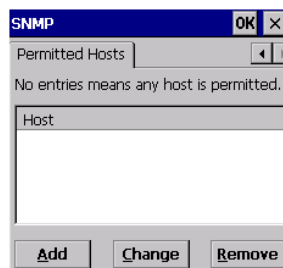
A **Delete Confirmation** screen is displayed.

- To remove a destination, tap on **Yes**, or
- If you decide not to remove the destination, tap on **No**.

Permitted Hosts Tab

For security reasons, the Network Administrator may want to restrict SNMP-node access to a known sub-set of SNMP Managers. This tab lists the IP addresses of all the SNMP Managers which are allowed to monitor and manage this device. If no entries are listed, the device will accept SNMP queries from any host.

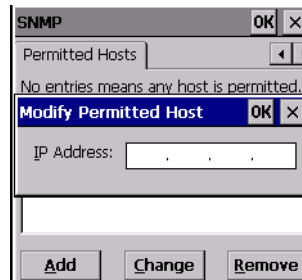
Figure 4-63 *Permitted Hosts Options*



Adding a Host

- To add a new host, tap on the **Add** button.

Figure 4-64 *Add IP Address Dialog*



- Type a new host IP address in the text box provided, and press [ENTER].

Changing a Host

To change an existing host IP address:

- Highlight the IP address you want to alter in the **Permitted Hosts** tab, and then tap on the **Change** button.
- A dialog box like the one displayed when you *add* a host is displayed.
- Make the necessary changes, and press [ENTER].

Storage Manager

The *Storage Manager* allows the user to view information about the storage devices that are present in the 8515, such as the Compact Flash card.

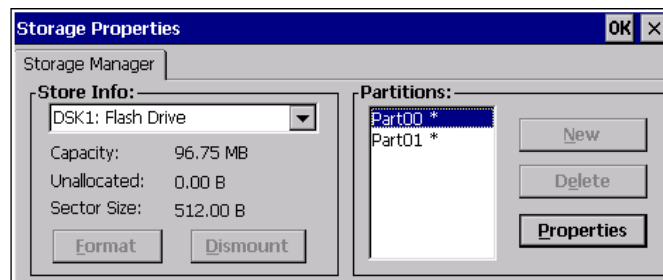
Formatting a Memory Card

Formatting a memory card bulk-erases it. Once a card is erased, partitions may be created in it, similarly to those on a hard drive. Memory-card devices are normally 'mounted' (made available to the system) automatically when they are inserted. They must be dismounted before they can be formatted.

To format an entire memory card:

1. Select **Start> Settings>Control Panel**.
2. In *Control Panel*, double-click on the **Storage Manager** icon. The *Storage Manager* menu opens.

Figure 4-65 *Storage Properties Menu*



1. Select the memory card from the drop-down list.
2. Press the **Dismount** button to dismount the memory card. All partitions on the card will be dismounted.
3. Press the **Format** button to format the memory card.



WARNING! All partitions and information on the card will be erased during the formatting process.

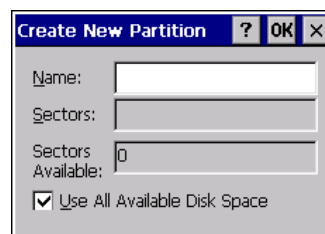
Creating Partitions

Once the card is formatted, new partitions can be created in it. The default is to create one partition that occupies the whole card, but a card can be divided into more than one partition if desired. Each partition appears as a separate folder in Windows Explorer.

To create new partitions:

1. Press the **New** button next to the Partitions list box. The *New Partition* dialog appears:

Figure 4-66 *New Partition Dialog*



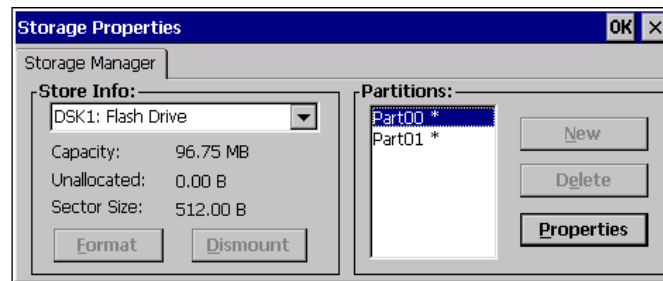
1. Enter a name for the partition.
2. If more than one partition is desired, uncheck the **Use All Available Diskspace** checkbox, then specify the desired number of sectors to be used by the partition:



NOTE The sector size of the card is given on the left-hand side of the Storage Properties dialog.

1. Press **OK**. The new partition appears in the Partitions list:

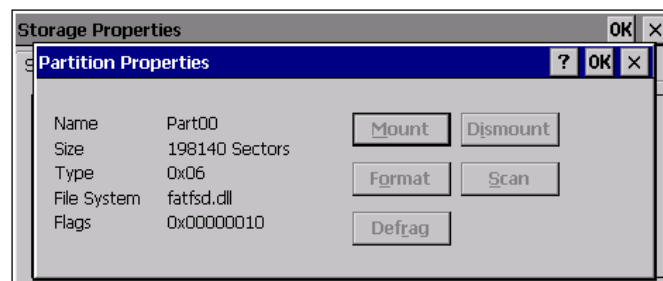
Figure 4-67 *Partitions List*



The new partition is automatically mounted. This is indicated by an asterisk (*) next to its name in the partition list. Any unallocated space on the card is indicated at the left, and additional partitions can be created in it.

Partition Management

Partitions can be individually dismounted, mounted, deleted, or formatted as well. These and additional tasks are available from the *Partition Properties* dialog:



Dismounting a Partition

1. Select the desired partition.
2. Press the **Properties** button. The *Partition Properties* dialog appears.
3. Press the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.

Deleting a Partition

1. Select the desired partition.
2. Press the **Delete** button. A warning dialog appears.
3. Press the **OK** button. The partition is deleted.

Formatting a Partition

1. Select the desired partition.
2. Press the **Properties** button. The *Partition Properties* dialog appears.

3. Press the **Dismount** button. The partition is dismounted. The asterisk disappears next to its name in the partitions list.
4. Press the **Format** button. The *Format* dialog appears:

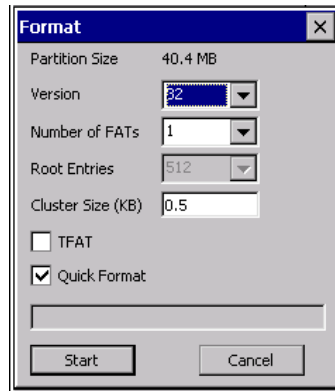
Figure 4-68 *Format Dialog*

Figure 4-69

1. Choose your format options. These options include:
 - Version of file system (FAT-16, for devices holding up to 4 GB; or FAT-32, for devices containing up to 32 GB).
 - Number of FATs (File-Allocation Tables).
 - Number of entries allowed in the root directory.
 - Cluster size (.5 KB to 64 KB).

There are also two checkboxes, which govern:

- Whether to use the transaction-safe FAT file system (TFAT). This file system keeps multiple copies of the file-allocation table, changing one while maintaining another as a backup.
- Whether to perform a quick format. Quick formatting removes all reference to data in the partition without erasing the actual partition. The partition will be treated as empty, and new data will overwrite it.

1. Press **Start**. The partition is formatted.

Mounting a Partition

1. Select the desired partition.
2. Press the **Properties** button. The *Partition Properties* dialog appears.
3. Press the **Mount** button. The partition is mounted. The asterisk appears next to its name in the partitions list.

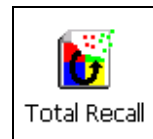
The *Partition Properties* dialog has buttons for additional functions. Partitions can be defragmented, and their file structure can be scanned.

Total Recall

Total Recall is a proprietary utility developed to maintain applications and setting over cold boots. This utility is based on a backup and restore concept.

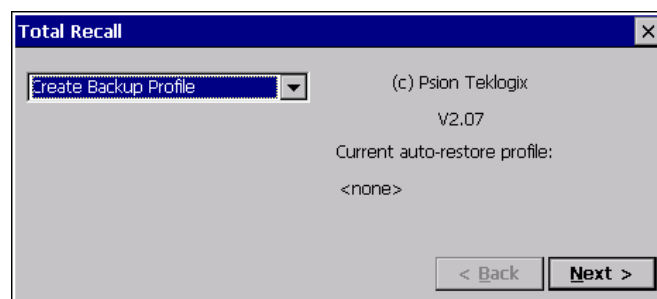
- In the **Control Panel**, choose the **Total Recall** icon.

Figure 4-70 *Total Recall Icon*



Creating a Backup Profile

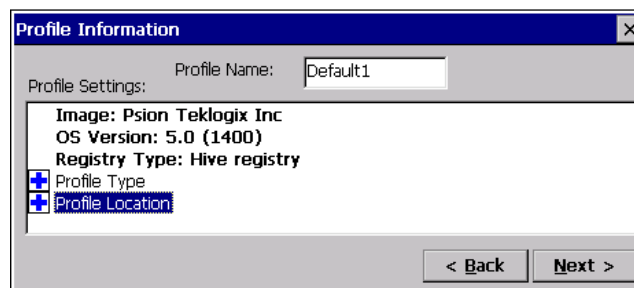
Figure 4-71 *Total Recall*



In the dropdown menu, you can choose from four options: **Create Backup Profile**, **View Selected Profile**, **Restore Selected Profile** and **Delete Selected Profile**. Keep in mind however that until a profile is created, the only available option is **Create Backup Profile**.

Profile Information

Figure 4-72 *Profile Information Dialog*



This dialog box lists the possible storage destinations for the profile file.

- To begin, type a name for the profile in the field labelled **Profile Name**.

The image type — **OS Version** and **Registry Type** — for the 8515 is displayed at the top of the dialog box.

- Tap on the  icon to expand the settings for **Profile Type** and **Profile Location**.

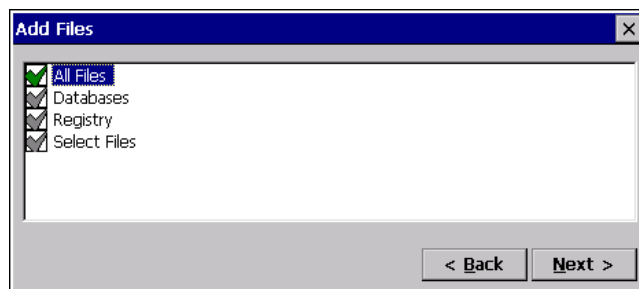
Figure 4-73 Profile Information Settings



- **For this device only** — creates a backup that is manually restored by the operator.
- **AutoRestore for this device only** — creates a profile that automatically restores itself following a cold boot.
- **AutoRestore for this and other devices** — creates a profile that automatically restores after resuming from a cold boot, but it will not contain the touchscreen calibration coordinates or the Wireless radio settings.
- **Profile Location** — allows the operator to specify where the profile is to be saved. The location for the profile is either *\Flash Disk* or *\SD-MMC Card*.
- Tap on **Next** to display the next dialog box — **Add Files**.

Add Files

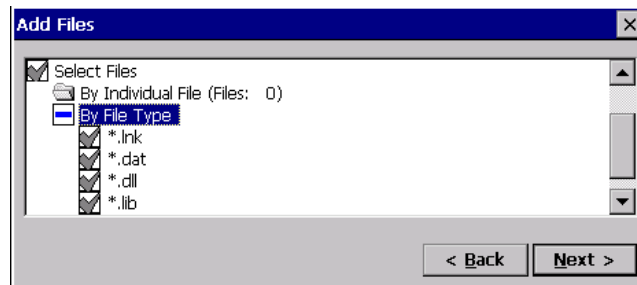
Figure 4-74 Add Files Options



By default, **All Files:** is selected so that all installed or copied files, database entries, and the Registry will be saved. You can, however, limit the backup to database, and/or the registry only.

The **Select Files** option allows choose to limit the backup *By Individual File*, or you can choose to define which files will be backed up *By File Type*.

Figure 4-75 Select File Types

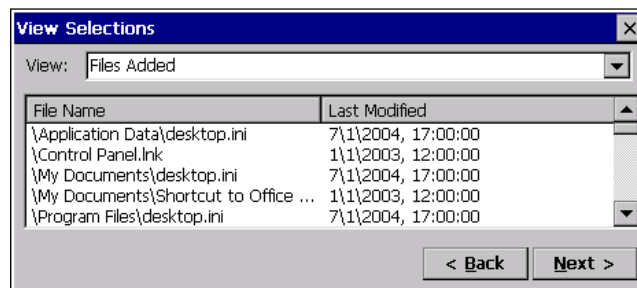


- Tap on **Next** to view your selections

View Selections

Depending on what you have selected for inclusion in your profile, you can view a list of the selected files, databases and/or registry.

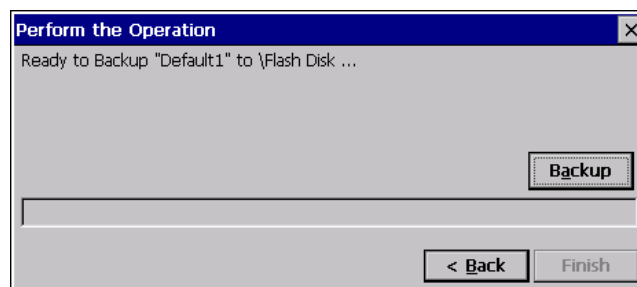
Figure 4-76 View Selections



- Tap on **Next** to perform the operation.

Performing the Backup

Figure 4-77 Backup Dialog



- Tap on **Backup** to start the process and create a profile.

Restoring a Profile

To manually restore a profile:

- Tap on the **Total Recall** icon.
- Choose **Restore Selected Profile** from the dropdown menu.

- Choose the **Profile Name** you want to restore from the *Profile Name* dropdown menu.



NOTE You can also manually restore an auto restore profile located in flash or a storage device.

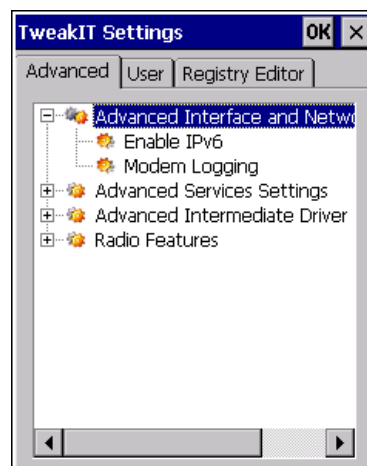
TweakIT Settings



This utility allows you to 'tweak' or adjust *Advanced* system settings (interface, network, servers, driver, and radio), *User* settings (Internet Explorer settings, font size, and docking port message), and provides a *Registry Editor*.

Advanced

Advanced Interface and Network



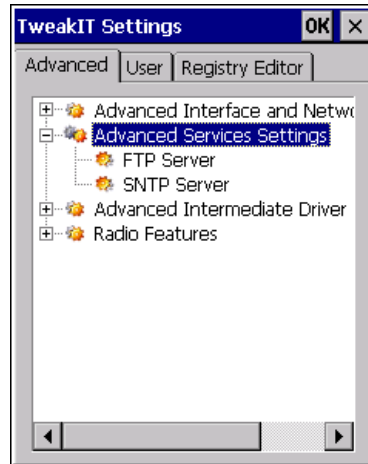
Enable IPv6

This option allows you to enable Internet Protocol specification, version 6, that has been published to use 128-bit IP address (replacing version 4).

Modem Logging

When this option is enabled, the 8515 logs AT commands (e.g., dial-out information, password string, etc.) that the administrator can monitor for debugging purposes. Modem commands are stored in: \MdmLog.txt.

Advanced Services Settings



FTP Server

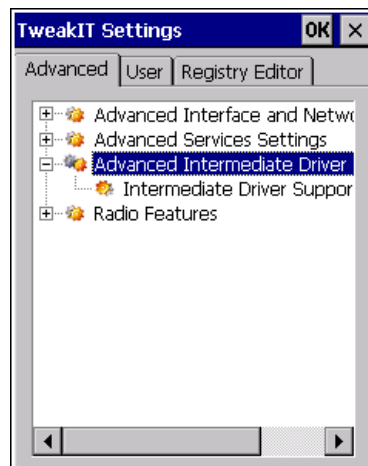
This option is enabled by default to allow file transfers. Keep in mind that data transfer in either direction is restricted to the Temp folder — that is, data are always loaded from the *FTP Server* to the *Temp* folder and from the *Temp* folder to the *FTP Server*.

If this option is disabled, a warm reset must be performed to accept the change.

SNTP (Simple Network Time Protocol) Server

The *SNTP Server Name* typed in this dialog box is used to synchronize 8515 time with the time server time. A warm reset must be performed once the server name as been entered.

Advanced Intermediate Driver



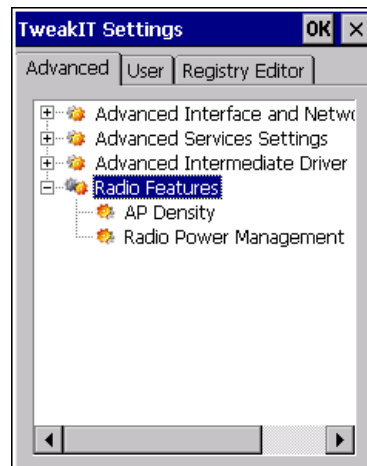
Intermediate Driver Support

The 8515 employs a custom intermediate driver that is used to indicate radio transmission and reception on its LEDs. As well, the intermediate driver is employed to support the 802.IQ v1 protocol. This TweakIt option is included to allow the driver to be disabled in cases where it interferes with third party drivers or security suppliers. By disabling the intermediate driver the Rx/Tx LEDs will no longer illuminate.



IMPORTANT If 802.IQ v1 is required, this driver must not be disabled.

Radio Features



AP Density

This option allows you to determine the signal strength at which the 8515 radio will begin searching for a new Access Point (AP): High, Medium or Low. If, for example, this option is set to *High*, the radio will begin searching for a new Access Point while still at a fairly strong signal strength. Setting AP Density to *Low* will cause the radio to wait until the signal strength is significantly low before attempting to connect to another Access Point.

Depending on your site configuration — for example, the shelving, the Access Point coverage, etc.—a higher setting may improve through-put, increase and maintain signal strength, and reduce missed transmissions.

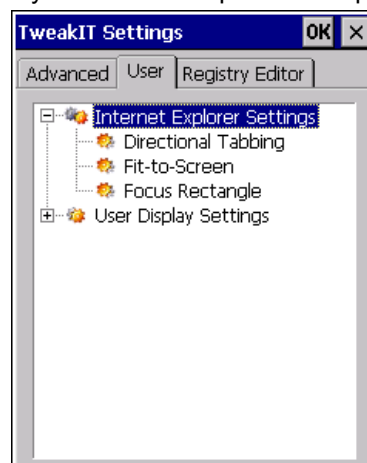
Radio Power Management

When this option is enabled, access points that support it will use *Radio Power Management* guidelines to control the client (8515) radio. Access points determine how often the 8515 radio enters sleep mode when no activity is detected to reduce power consumption on the client side. Another benefit is that when *Radio Power Management* is enabled, even when no activity is detected, the access point does not disassociate the 8515 (client).

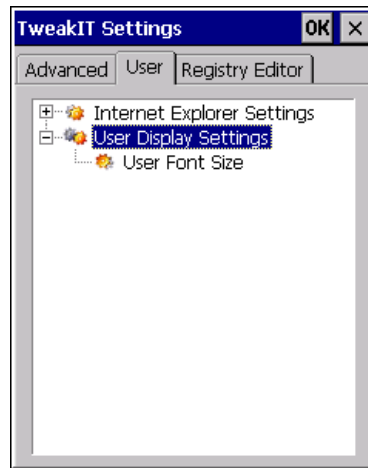
User

Internet Explorer Settings

This option allows you to customize how your Internet Explorer is displayed and how the tabbing functions.



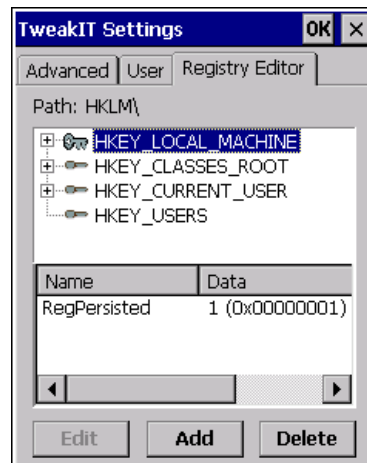
User Display Settings



User Font Size

This option allows you to adjust the size of the font used the 8515 display: Large, Normal or Small.

Registry Editor



This option is reserved for senior administrators who have a strong understanding of registry keys and values. Careless registry editing can cause irreversible damage to the 8515.

CHAPTER 5 PERIPHERAL DEVICES & 8515 INSTALLATIONS

External Bar Code Readers

The 8515 supports these external decoded scanner types:

- 1D Scanner.
- 2D Standard Range Raster Laser Scanner (PDF417).
- 2D Imager.
- RFID Scanner.

To connect a scanner to the 8515, attach the device to either the UART or USB port. Please refer to the scanner-specific programming manual provided by the manufacturer before you begin.

Entering Data with the Bar Code Reader



NOTE For helpful scanning tips, refer to [Scanning Techniques on page 2-6](#).

When a label is scanned successfully, the 8515 will beep if configured appropriately and the scan icon will be displayed on the screen. Occasionally, the bar code labels are poorly printed or damaged and cannot be read properly. In this case, use the keyboard to enter data from the label.

Bluetooth Peripherals

All 8515 Vehicle-Mount Computers are equipped with **Bluetooth** radios, making it is possible to communicate with a variety of **Bluetooth** peripherals, including scanners, printers, etc. The range of the **Bluetooth** radio in the 8515 is limited to between 2 – 5 meters.

Keep in mind that **Bluetooth** and IEEE 802.11g radios both operate in the 2.4GHz band. Although the 8515 includes features to minimize interference, performance of the system will not be optimal if you use both radios simultaneously. Typically, when both radios operate in the 8515 at the same time, they cannot transmit simultaneously — this has a negative impact on overall system throughput. To minimize the impact on the backbone 802.11g network, We recommends using **Bluetooth** peripherals that have low transaction rates (such as printers and scanners).

Bluetooth peripherals are configured using the **Bluetooth** control panel applet. Refer to [Scanner Settings on page 4-30](#) for information about setting up your **Bluetooth** devices for communication. In addition, review the manual shipped with your **Bluetooth** device to determine the method used to associate with the 8515 host.

Linking an 8515 to an Ethernet Network

A USB-Ethernet adaptor cable — model number WA4010-G1 — is used to connect the 8515 to an Ethernet network.

Figure 5-1 *USB-Ethernet Adaptor Cable*



- Insert the adaptor's USB connector into the Host USB port on the 8515.
- Connect your network Ethernet cable to the Ethernet port on the adaptor cable.

Network Access

The 8515 automatically loads the appropriate drivers to communicate with the USB-Ethernet converters.

Network Addressing

The host application uses standard TCP/IP protocol to name, locate, and communicate with a specific 8515 on the network.

If a link is established between an 8515 and a host, the application on the host and on the computer must have a recovery mechanism in the event that the 8515 is disconnected, interrupting the link.

8515 Mounting Accessories: Installing the RAM Mounting Kit

The 8515 is installed using an articulating RAM Mount (Model MT34XX – 4 in. or 12 in. arm) secured to either a Vesa or circular base.



WARNING! Failure to install the mount correctly, or modifications to the mount, may result in serious injury or damage to property. Contact Zebra Technical Support or your Zebra representative if you have problems installing this mount. To ensure operator safety, you must use a calibrated torque wrench and the supplied mounting hardware when fastening the cradle and mount. Use of this mount in vehicles driven on public roads or highways is prohibited. Contact Zebra for further details.

WARNING! Before mounting an 8515 in a vehicle, there are a number of operator safety issues that require careful attention. When mounting an 8515 use only approved Zebra mounting

hardware and mounting parts which are specific to the 8515 model purchased. An improperly mounted 8515 or use of non-approved parts may result in one or more of the following: operator injury, property damage, operator visibility obstruction, operator distraction, and/or poor ease of egress for the operator. Zebra strongly recommends that you seek professional mounting advice from the vehicle manufacturer.

If it is necessary to mount the 8515 overhead, or in any position that could cause injury to the operator should the unit fall, it is critical that a secondary tether or other failsafe device be installed.

The following restrictions must be strictly enforced:

Do not use the mount and/or the 8515 as a hand-hold. Using the mount in this manner may cause the person to fall or dislodge the mounting hardware and/or mounts.

Do not add weight or attach any other items to the mount or 8515. Additional elements may fall causing injury, or may increase the chance of failure and/or damage in mounting hardware and/or mounts.

WARNING! Mounts used in industrial or vibration generating environments may be subjected to fatigue, stress, and/or part wear. A periodic inspection of the mounting hardware and mounts should be performed to ensure parts are retightened to the correct torque, free of fractures, excessive wear, and/or other environmental damage. Any parts found to be unsafe should be removed and replaced immediately. After inspection or replacement of parts, readjust the mount as outlined in step 4 below and tighten with the approved tightening tool (P/N 9000594).

Cable routing within a vehicle cab also requires careful consideration, especially for separately connected scanners and other devices with loose cables. If you are unable to obtain suitable advice, contact Zebra for assistance. Note also that for better protection, the equipment should be mounted inside the vehicle roll cage.

Use of the Powered Fork Lift Cradle while charging the fork truck battery is prohibited.



IMPORTANT Safeguards

To avoid possible injury, this device must be properly secured when in a moving vehicle.

Keep this device away from magnetic fields.

Do not place the computer near a television or radio receiver.

Do not disassemble your 8515 computer — there are no user-serviceable parts inside.

Component Part Numbers

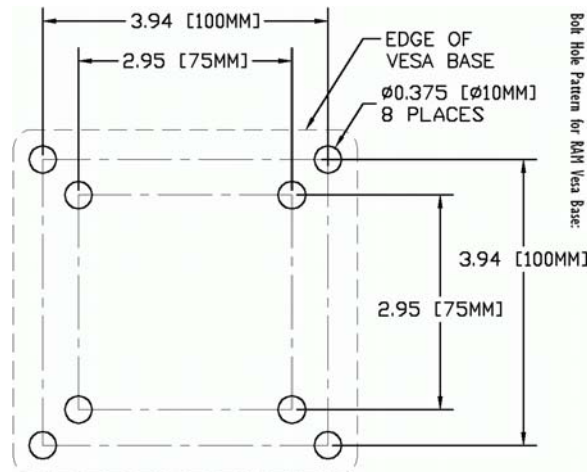
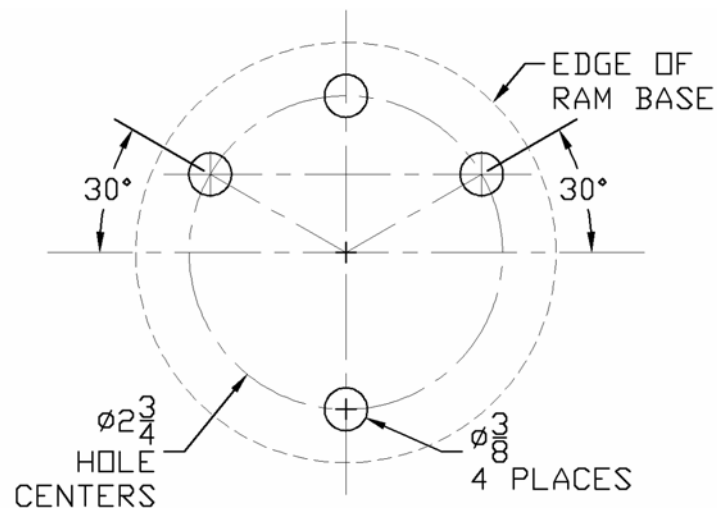
The table below lists the mounting component part numbers.

Figure Legend	Description	Part Number
A	8515 Vehicle-Mount Computer	
B	RAM Vesa Base	9001934
C	Washer M8 Internal Tooth	9008800
D	Screw M8 x 12 Pan Head	9004517
E	RAM Standard Arm	9001805
F	RAM Circular Base	9001804
G	Screw M8 x 25 Pan Head	9004518

Figure Legend	Description	Part Number
H	Screw M8 x 25 Flat Head	9004522
J	Nut M8 x 1.25	9008801
L	Mounting Kit MT3505 (Clamp base (for 4" or 12" RAM arm, 2" max. width)	9007505
M	Mounting Kit MT3507 (Clamp base (for 4" or 12" RAM arm, 3" max. width)	9007507
N	Mounting Kit MT3509 (Rail base (for 4" or 12" RAM arm, 1¼" to 1 7/8")	9007509
P	Mounting Kit MT3510 (Rail base (for 4" or 12" RAM arm, 2" to 2 ½")	9007510

MT33XX RAM Mounting Kit Specifications

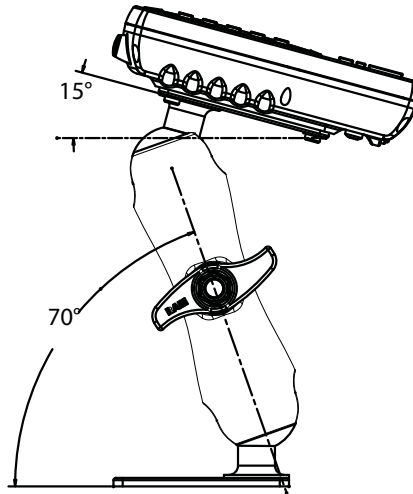
- Max. Load: 15kg
- Articulating Range: Spherical through 180 degrees.
- Shock Rating: Meets IEC60721-3-5 CLASS 5M2
Test Method IEC60068-2-64 Fh
- Vibration Rating: Meets IEC60721-3-5 CLASS 5M2
Test Method IEC60068-2-27 Ea

Figure 5-2 Bolt Hole Pattern For RAM Vesa Base**Figure 5-3** Bolt Hole Pattern For RAM Circular Base

Preparation

The RAM articulating mount can be installed in a variety of orientations (see [Figure 5-9 Circular Base and Vesa Base Mount Orientations](#)). Select the best orientation for your specific application. Preferred orientations maintain the centre of mass of the computer assembly, directly over the centre of the base (see [Figure 5-4 Orientation Of Vehicle-Mount Assembly](#)).

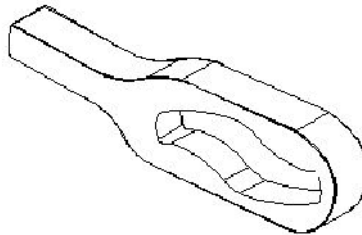
Figure 5-4 *Orientation Of Vehicle-Mount Assembly*



IMPORTANT

The tilt and rotation of the cradle can be easily adjusted by the operator. Ensure that if the hands crew is loosened and the cradle slips, the operator and any equipment cannot be damaged by it. Also note that under extreme vibration, the mount may slowly 'settle', requiring readjustment and tightening of the hands crew. Zebra offers a tightening tool (P/N 9000594) which can be used to minimize settling.

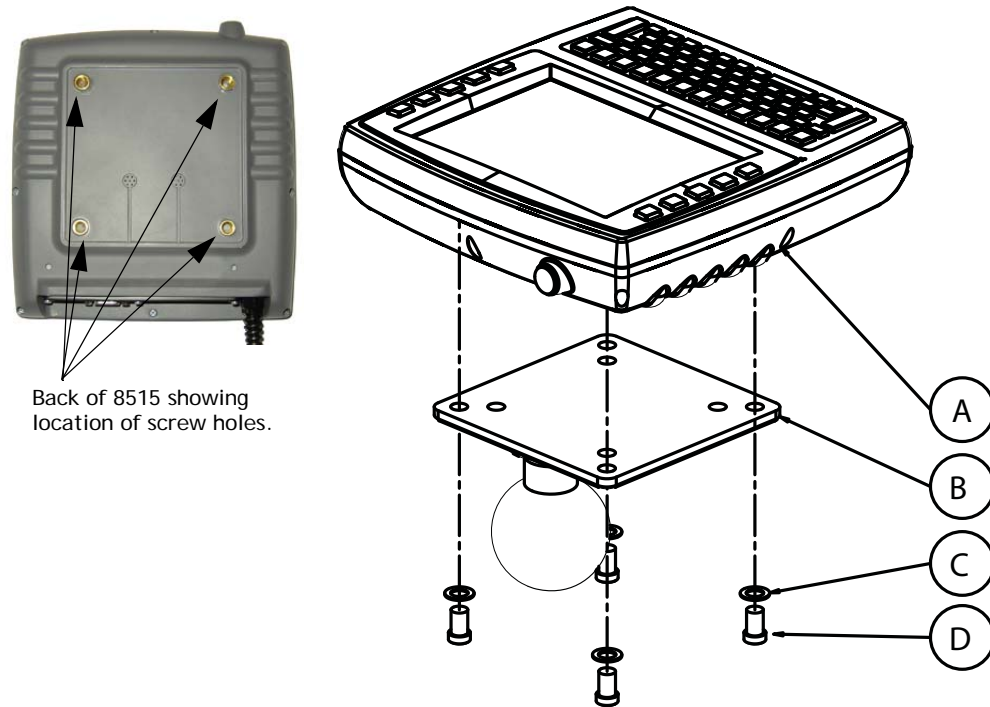
Figure 5-5 *Tightening Tool P/N 9000594*



The mounting platform on which you secure the computer must be strong enough to support 25 kg. Never attach the mount to a plastic dash or a wooden platform without the appropriate backing plate and bracing. When selecting a mounting location, you must provide the operator access at the top, bottom, and sides.

Installation

Figure 5-6 8515 Vehicle-Mount Computer With Mounting Bracket



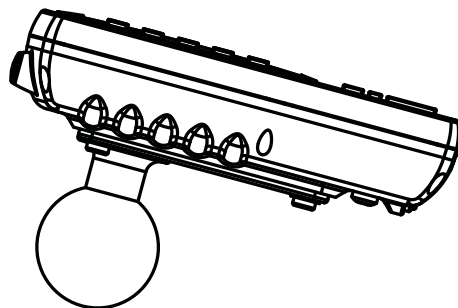
Attaching the Mounting Bracket and RAM Base to the Computer

The kit provides four screws and washers that are used to secure the mounting bracket to the computer.

[Figure 5-6 8515 Vehicle-Mount Computer With Mounting Bracket](#) provides a diagram and a legend to help you attach the mounting bracket and the RAM Vesa Base to the computer. To do this:

- Apply Loctite 243 to the screw threads (Note: Loctite is not supplied by Zebra). Match the four screw holes on the back of the 8515 with the appropriate pairs of holes on the bracket and screw them together by placing the Screw (D) through the Washer (C) and the RAM Vesa Base (B), and then affixing it to the 8515 (A).
- Torque to 26 in-lbs.

Figure 5-7 Mounting Bracket Attached To The 8515



Secure the RAM Base to the Local Platform and Attach RAM Standard Arm

- If you are assembling with the RAM Vesa Base, see [RAM Vesa Base on page 5-8](#).

- If you are assembling with the RAM Circular Base, see [RAM Circular Base on page 5-8](#).

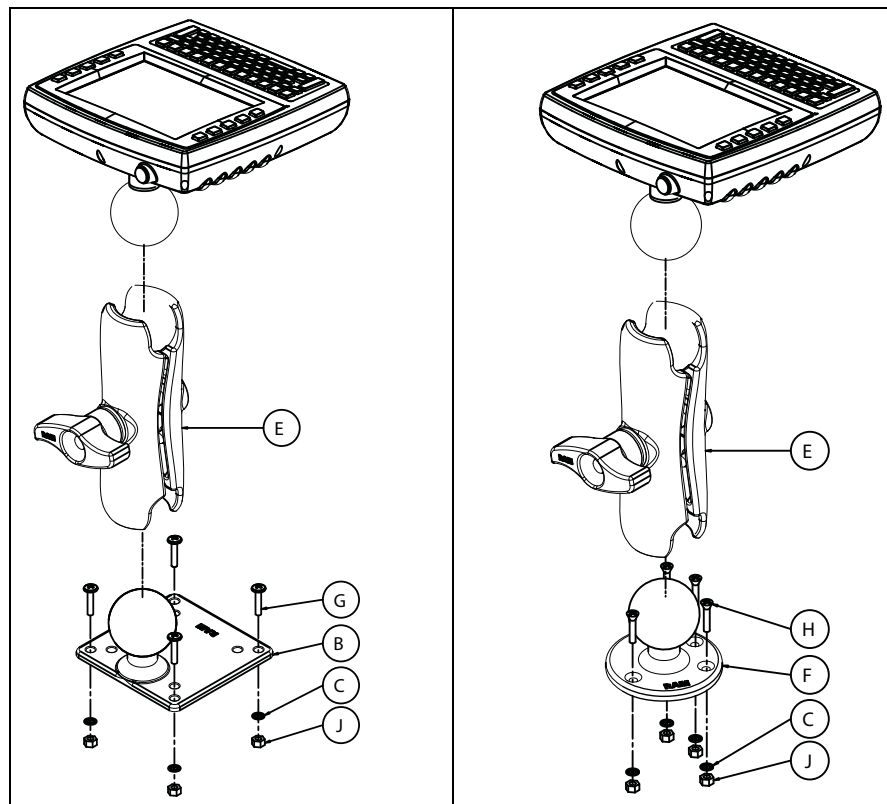
RAM Vesa Base

See [Figure 5-8 RAM Vesa Base and RAM Circular Base](#). In four places, insert screw (G) through the RAM Vesa Base (B), the local platform and the washer (C). Affix with nut (J). Torque to 26 in-lbs. Secure RAM Standard Arm (E) by inserting RAM Balls into both ends of arm sockets.

RAM Circular Base

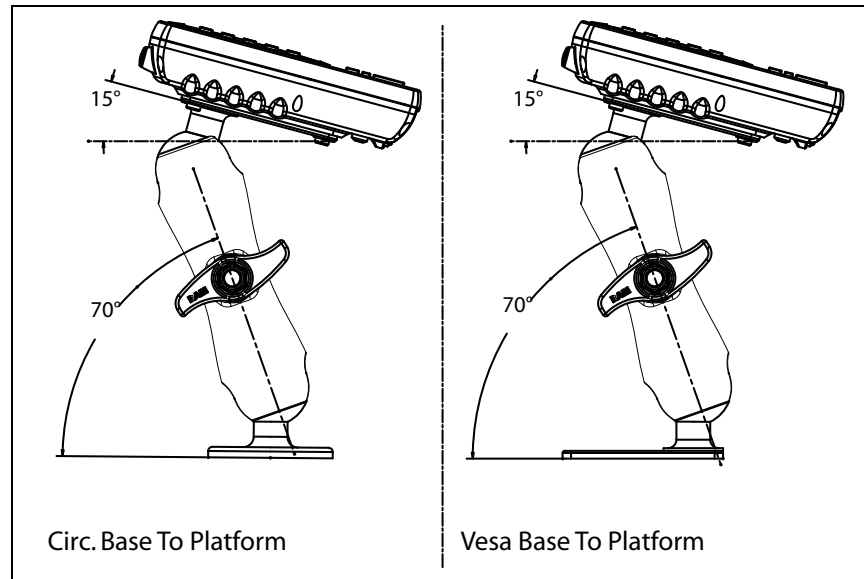
See [Figure 5-8 RAM Vesa Base and RAM Circular Base](#). In four places, insert screw (H) through the RAM Circular Base (F), the local platform and the washer (C). Affix with nut (J). Torque to 26 in-lbs. Secure RAM Standard Arm (E) by inserting RAM Balls into both ends of sockets.

Figure 5-8 RAM Vesa Base and RAM Circular Base



Positioning the 8515

Place the 8515 into the position best corresponding to the RAM hardware used and tighten by hand until secure. Refer to [8515 Mounting Accessories: Installing the RAM Mounting Kit on page 5-2](#) for warnings and proper tightening technique. Mount orientations shown in [Figure 5-9 Circular Base and Vesa Base Mount Orientations](#) are considered the preferred configurations for the Circular Base to Platform and the Vesa Base to Platform.

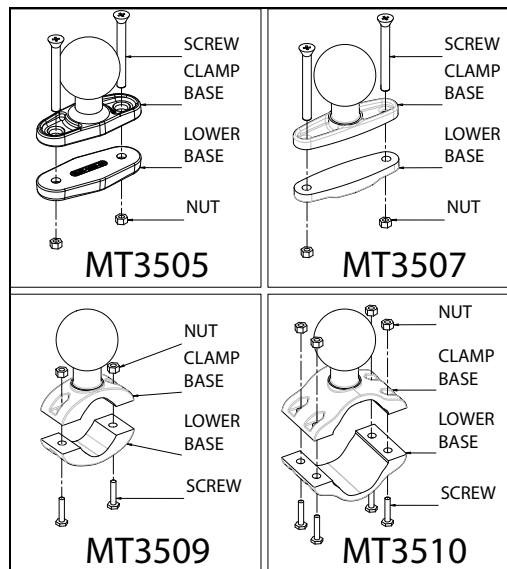
Figure 5-9 *Circular Base and Vesa Base Mount Orientations*

Optional Mount Kits

One of the mounting kits shown in [Figure 5-10 Optional Mount Kits](#) may be substituted for the Vesa Base (B) or the circular base (F) when mounting to a post or forklift roll cage.

To Install: Mount the Clamp Base and Lower Base around the shaft. Place the Screw through the Clamp and the Lower Base, and affix with the Nut. Torque to 26 in-lbs. Secure the RAM Standard Arm (E) by inserting the RAM Balls into both ends of the arm sockets.

Figure 5-10 *Optional Mount Kits*



MT3250 Quick Release Mount “Turn & Lock”

The Quick Release Mount “Turn & Lock” option allows a dismount with a quick flick of the wrist and without the need of tools. It can be used alone or in combination with the RAM mounts. The Quick Release Mount can be used direct with the 8515 without the need for an adaptor plate.

Figure 5-11 *MT3250 Quick Release Mount “Turn & Lock”*



8515 Vehicle-Mount Computer Installations

Wiring Guidelines

Before installing cables between the computer and other devices, consider the following:

- Ensure the vehicle body and underlying wiring is not damaged while drilling mounting holes.
- Protect cable runs from pinching, overheating, and physical damage.
- Use grommets to protect cables that pass through metal.

- Use plastic straps and tie-downs to secure cables and connectors in their desired location, away from areas where they may get snagged or pulled.
- Keep the cables away from heat sources, grease, battery acid, and other potential hazards.
- Keep the cables away from control pedals and other moving parts that may pull on the cables or interfere with the operation of the vehicle.
- Leave enough slack on the cables so that the computer can be removed easily for maintenance.



NOTE Make sure the cables run inside the roll cage of the vehicle.

Non-Vehicle Installations

Using AC power, the 8515 Vehicle-Mount Computer can be mounted at fixed locations adjacent to cross-dock doors, manufacturing stations, or in offices.

The 110/220V Zebra AC adaptor Model PS1400 should be used to power the computer from an AC source.

Wiring Vehicle Power to the 8515



WARNING! The 8515 accepts DC power sources between a minimum of 10VDC and a maximum of 30VDC. A Power Pre-regulator is required for voltages above 30VDC.

Applying a voltage above 30VDC without the pre-regulator or reversing polarity may result in *permanent damage* to the 8515 and will void the product warranty.

A 1.8 meter (6 ft.) extension power cable (P/N 13985-302 or P/N 13985-303 with screen-blanking sensor) is supplied with your 8515. This cable should be wired to a filtered, fused (maximum 6A) accessory supply on the vehicle. When connecting a power pre-regulator to a vehicle, please follow the instructions in the installation sheet (P/N 16435) supplied with the extension cable.

The 8515 draws no more than 6A (less if the accessory supply is greater than 12V). Any additional wiring (minimum 18 gauge), connectors or disconnects used should be rated for at least 90 VDC, 10A.

The red lead of the power cable attaches to the positive vehicle supply. The black lead connects to the negative supply — this should be connected to a proper terminal block and not to the vehicle body. The 8515 is fully isolated and can be used with both negative and positive chassis vehicles.

You may have the option of connecting power before or after the 'key' switch. It is preferable to wire the 8515 after the key switch — that is, the 8515 cannot be switched on without turning the vehicle key on.

If an unfused power source must be used, a fuse assembly (P/N 19440-300) must be added to the extension power cable (the fuse and instructions are supplied with the cable). Use only a 6A slow blow UL approved fuse in the fuse assembly. The fuse assembly must be located as close as practical to the DC supply, and shall connect to the positive side of the DC supply.

Installing the Power Pre-regulator

1. Attach the pre-regulator cable with *male* connector to the Zebra extension power cable P/N 13985-302, which has been installed on the vehicle.

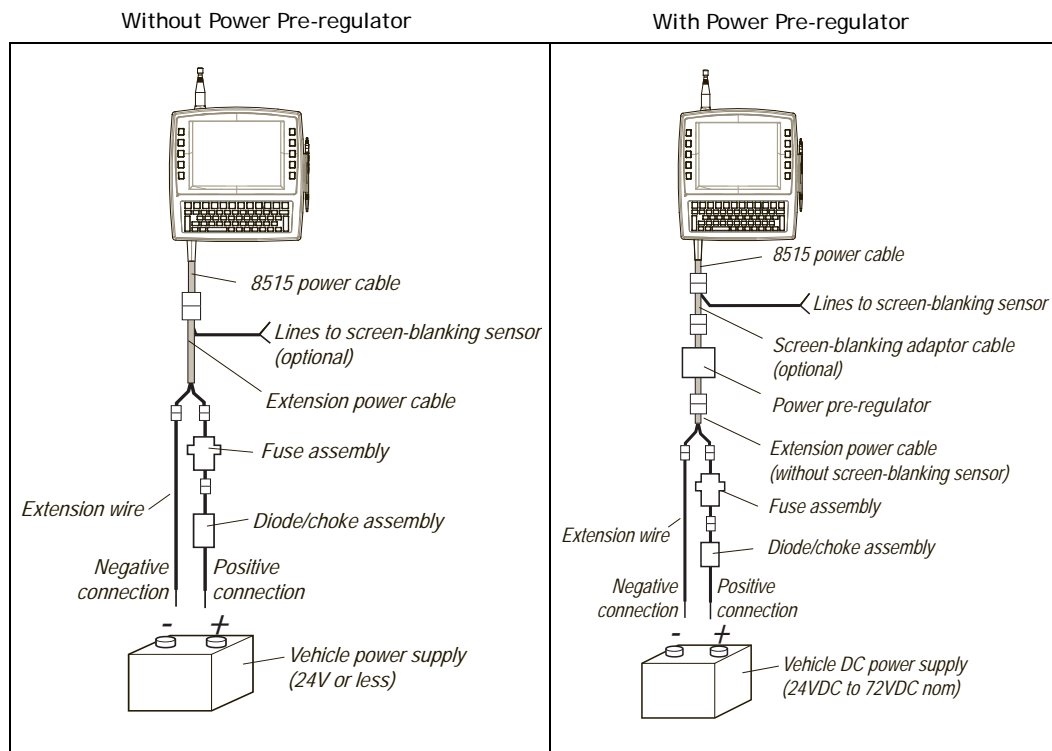


IMPORTANT The extension power cable P/N 13985-302 positive lead is red and the negative lead is black.

It is recommended that all connections be secured with electrical tape or heat shrink to prevent contaminants from degrading the connection.

- Next, connect the pre-regulator cable with *female* connector either directly to the 8515 power cable, or to the extension power cable P/N 13985-303 (for screen blanking option) (see [Figure 5-12 Connections To Vehicle DC Supply](#) — 'With Power Pre-regulator').

Figure 5-12 *Connections To Vehicle DC Supply*



✓ **NOTE** When installing the 8515 on systems operating on 24 Volts and above, the diode assembly (supplied with the extension power cable 13985) should be used to reduce the AC ripple produced by the system.

To connect the diode, push the male connector on the diode assembly into the female connector on the positive (red) lead of the power cable. If the fuse assembly is already installed, connect the diode assembly to the fuse assembly as described in the previous sentence. Connect the red wire from the diode assembly to a fused power source on the system.

It is recommended that all connections be secured with electrical tape or heat shrink to prevent contaminants from degrading the connection.

CHAPTER 6 SPECIFICATIONS

8515 Vehicle-Mount Computer Specifications



NOTE Performance specifications are nominal and subject to change without notice.

Size

- 203 mm x 209 mm x 50 mm (7.99"x 8.23" x 1.97")

Weight

- Approximately 1.3 kg (2.8 lbs)

Environmental

Standard Temperature Unit

- Operating Temperature: -20° C to 50° C (-4° F to 122° F)
- Storage Temperature: 35° C to 70° C (-31° F to 158° F)
- Rain and Dust Resistance: IEC 529, classification IP65
- Humidity (operating): 5% to 90% RH non-condensing at 40° C (104° F)
- Shock and Vibration testing: IEC 60721-3-5 - Class 5M2

Operating System

- Microsoft® Windows® Embedded CE 5.0

Processor and Memory

- XScale PXA270 @ 312 MHz Processor.
- RAM: 128 MB SDRAM standard.
- Flash ROM: 1 GB micro-SD card standard (not user-accessible).

Communication Ports

- UART (DB-9) port: RS-232 serial port for decoded scanner, printer

- Data rate: 2,400 bps to 115,200 bps
- Power: 1000mA @ 5V
- Two USB V 1.1 host ports: For external devices, console
- Data rate: 12 Mbps
- Power out, +5 VDC @ 500mA nominal
- One USB V 1.1 device port: Allows 8515 to appear as USB peripheral to USB host computer
- Data rate: 12 Mbps; >50 Kbps ActiveSync throughput

Approvals

- Safety: UL 60950-1, CAN/CSA-C22.2 NO. 60950-1 LVD EN 60950-1
- EMC
- North America: FCC Part 15 Class B
- Europe: Complies with R & TTE Directive for Radio approval.
- Complies with EMC Directive 2004/108/EC for EMC approval.
- Compliance with Automotive Directive 95/54/EC for e-marking.
- * Note: this product will carry the CE Mark.

Colour Display

- Transmissive TFT for indoor/sunlight readability
- Resolution: Full VGA, 640 x 480 pixels
- Flash ROM: 1 GB micro-SD card standard (not user-accessible).
- Size: 6.26 cm (6.4") diagonal
- Colour Depth: 64K colours, 16 bit
- Backlight (CCFL x 2): Intensity of 350 cd/m²
- Brightness control adjustable from 5% to 100%
- Touchscreen: 5-wire resistive with anti-reflective, anti-glare coating
- Passive stylus or finger operation; signature capture

Keyboard

- Alphanumeric keyboard: 58-key Qwerty and ABC formats available
- Epoxy-coated elastomeric keys
- Function Keys: 10 dedicated function keys
- Key Illumination: Adjustable backlight

External Power

- Power Input range: 10 VDC to 30 VDC
- Power Output range: 5 VDC, 6A (max 30W)

Internal Lithium-Polymer Battery

Not user accessible.

- Technology: 350 mA @ 3.7 V Lithium-Polymer backup battery with automatic charging
- Charge Duration: One-hour battery life for memory backup
- Charge Time: 2 hours
- Charge Temperature: 0° C to 40° C (32° F to 104° F)
- RTC Backup: 7 x 24 hours

Radio Specifications

Model RA2041: Summit DC 802.11 SC CF radio

Direct Sequence Spread Spectrum (DSSS) radio.

- Form factor: Compact Flash Type I extended
- Antenna port: Two Hirose U.FL connectors for antenna diversity
- Transmit Power: 802.11g: 32 mW maximum (+15 dBm); 802.11b: 80 mW maximum (+19 dBm)
- Frequency Range: 2.400 GHz to 2.4897 GHz; ETSI: 13; TELEC: 13
- RX Sensitivity: -96 dBm @ 1 Mbps, -90 dBm @ 11 Mbps; -94 dBm @ 6 Mbps, -75 dBm @ 54 Mbps
- Data Rates: 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps; 802.11b: 1, 2, 5.5, 11 Mbps

Bluetooth Radio

- Embedded (USB interface)
- Bluetooth Version 1.2 compliant (features Adaptive Frequency Hopping for better co-existence with 802.11 radio)
- Chip Antenna: 2 dBi peak
- Transmit Power: -3 dBm (0.5mW) minimum, +4 dBm (2.5 mW) max
- Frequency Range: 2.400 GHz to 2.4835 GHz (BER<=0.1%)
- Data Rate: 732.2 kbps and 57.6 kbps asymmetric, 433.9 kbps symmetric

External Bar Code Scanners

- Supported Types: Decoded scanners: 1D, 2D Standard Range Raster Laser, 2D Imager, RFID. (Refer to [Ports Tab on page 4-33](#) for details.)
- Interface: Via FF UART DE-9 port or USB port.
- Decoded Codes Supported: Dependent on external scanner choice.
- Code Discrimination: Automatic for all selected codes. Decoded input is external scanner dependent.
- Specifications: Refer to the scanner-specific programming manual provided by the manufacturer.

APPENDIX A PORT PINOUTS

Serial Port Interface Pinout (DB-9 male)

Signal	Function	Signal	Type	Notes
1	RS-232 Serial Port Data Carrier Detect	DCD	RS-232D	Loopback for PCON/CON
2	RS-232 Serial Port Receive Data	RXD	RS-232D	
3	RS-232 Serial Port Transmit Data	TXD	RS-232D	
4	RS-232 Serial Port Data Terminal Ready	DTR	RS-232D	Loopback for PCON/CON
5	Ground	GND	Power	
6	RS-232 Serial Port Data Set Ready	DSR	RS-232D	Loopback for PCON/CON
7	RS-232 Serial Port Ready to Send	RTS	RS-232D	Loopback for Console
8	RS-232 Serial Port Clear to Send	CTS	RS-232D	Loopback for Console
9	Power Output		Power	Switched 5V @ 1000mA max (see Warning below)

*

Signal definitions are with respect to the 8515 Vehicle-Mount Computer side.



WARNING! If enabled (software configurable), 5V power will appear on this line, which may be the Ring Indicator line on some devices such as modems.

1/2 Amp Max.

Enhanced USB1 Port Interface Pinout

Signal	Function	Signal	Type	Notes
1	USB– VBUS	DCD	USB	Switched 5V @ 0.5A max
2	USB– D-	RXD	USB	Standard or enhanced USB port
3	USB – D+	TXD	USB	Standard or enhanced USB port
4	Ground	DTR	USB	
5	RS-232 Serial Port Transmit Data	GND	PCON console	Customized cable to DE-9
6	RS-232 Serial Port Receive Data	DSR	PCON console	Customized cable to DE-9
7	Ground	RTS	PCON console	
8	Port Detection ID	CTS	PCON console	3K0 pull-down resistor for PCON console detection
9	PCON Programming Switch		PCON console	Switch to Ground for programming

*

Signal definitions are with respect to the 8515 Vehicle-Mount Computer side.

Enhanced USB2 Port Interface Pinout

Signal	Function	Signal	Type	Notes
1	USB– VBUS	DCD	USB	Switched 5V @ 0.5A max
2	USB– D-	RXD	USB	Standard or enhanced USB port
3	USB– D+	TXD	USB	Standard or enhanced USB port
4	Ground	DTR	USB	
5	RS-232 Serial Port Transmit Data	GND	PXA console	Customized cable to DE-9
6	RS-232 Serial Port Receive Data	DSR	PXA console	Customized cable to DE-9
7	Ground	RTS	PXA console	
8	Port Detection ID	CTS	PXA console	23K2 pull-down resistor for PXA console detection
9	NC		PXA console	Open for PXA console port

*

Signal definitions are with respect to the 8515 Vehicle-Mount Computer side.

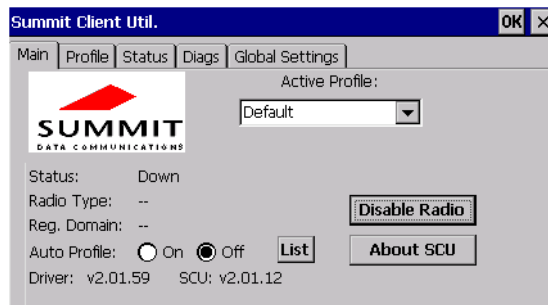
APPENDIX B SCU FOR 802.11B/G RADIO

SCU Tabs

This appendix provides details about each tab in the Summit Client Utility (SCU). For quick, step-by-step setup instructions, refer to [Summit Client Utility \(SCU\) for 802.11b/g Radio on page 1-5](#).

Main

The Main tab is displayed when you tap on the *Start>Programs>SCU* icon.



- **Enable/Disable Radio:** Enables or disables the radio. This is a toggle button; when the radio is enabled, this button reads *Disable Radio*, and when the radio is disabled, the button reads *Enable Radio*.
- **Active Profile:** Lists the name(s) of the active configuration profile(s). When a *profile* is chosen from the *Active Profile* drop-down menu, the settings for that profile become active.

If *ThirdPartyConfig* is selected, after the 8515 goes through a power cycle, WZC is used for configuration of the radio. See [ThirdPartyConfig on page B-5](#) for details.

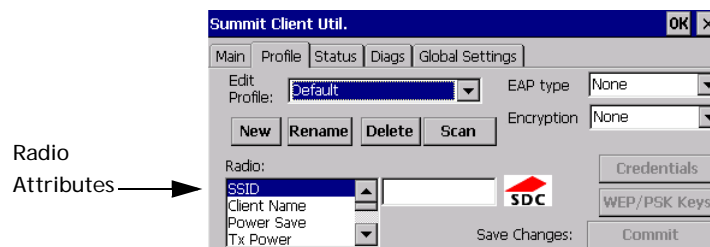
- **Radio Type:** Indicates the type of radio installed in the device, e.g. "BG" when an 802.11b/g radio is installed.
- **Reg. Domain:** Indicates the regulatory domain (e.g. ETSI, FCC or TELEC) for which the radio is configured. "Worldwide" means that the radio can be used in any domain.
- **Status:** Indicates if the radio is associated to an access point. If this is not the case, *Status* indicates the radio status.

- **Driver** and **SCU**: These fields display the version of the device driver and the SCU that are running on the 8515.
- **About SCU**: This box provides details about the SCU software.

Profile

The *Profile* tab allows you to define radio and security settings that are stored in the registry as part of the configuration profile.

The profile you create and save is listed in the *Active Profile* drop-down menu in the *Main* tab. You can define up to 20 profiles.



- **Edit Profile**: Used to choose the profile to be viewed or edited. If *ThirdPartyConfig* is chosen, after the 8515 goes through a power cycle, WZC is used for configuration of the radio.
- **New**: Allows you to create a new profile with default settings and assign it a name.
- **Rename**: Allows you to assign a profile name.
- **Delete**: Deletes the profile unless it is currently active.
- **Scan**: Opens a new window which displays a list of available access points with their respective SSIDs, Signal Strength (RSSI value) and Security Status. Selecting an AP returns you to the profile page and populates a new profile with the information available from the scan to simplify setting up a new profile.
- **Radio**: Lists radio attributes. These attributes can be individually chosen from this menu. When an attribute is chosen, an associated list of options is displayed where you can assign new settings or view existing settings.
- **Commit**: Saves all changes.

The following table describes the options in the *Radio* attributes, *Encryption*, and *EAP Type* drop-down menus:

Radio Attribute	Description	Value	Default
SSID	Service set identifier (SSID) for WLAN to which the radio connects.	Maximum of 32 characters.	None
Client Name	Name assigned to radio & 8515 into which it is installed.	Maximum of 16 characters.	None
Power Save	Power save mode for radio.	CAM: Constantly awake. Maximum: Maximum power savings. Fast: Fast power save mode.	Fast

Radio Attribute	Description	Value	Default
Tx Power	Maximum transmit power.	Max: Maximum defined for current regulatory domain. Measured in mW: 50,30,10, 1.	Max
Bit Rate	Used by radio when interacting with WLAN access point.	Auto: Rate automatically negotiated with access point. Rates in Mbps: 1, 2, 5.5, 6.9 11, 12, 18, 24, 36, 48, 54.	Auto
Radio Mode	Used by 802.11g when interacting with access point.	B rates only: 1, 2, 5.5, & 11 Mbps. G rates only: 6, 9, 12, 18, 24, 36, 48, and 54 Mbps. BG rates full: All B and G rates. BG rates optimized: 1, 2, 5.5, 6, 11, 24, 36 & 54 Mbps.	BG rates optimized
Auth Type	802.11 authentication type used when associating with access point.	Open, shared-key, or LEAP (Network-EAP).	Open
EAP Type	Extensible Authentication Protocol type used for 802.1X authentication to access point.	None, LEAP, EAP-FAST, PEAP-MSCHAP – To use EAP-TLS, you must use WZC.	None
Credentials	Authentication credentials for the selected EAP type. Refer to EAP Credentials on page B-4 .	User: Username or Domain/Username (up to 64 characters). Password: up to 64 characters. For PEAP: CA Cert–CA server certificate filename.	None
Encryption	Type of encryption used to protect transmitted data.	None, Manual WEP, Auto WEP (generated during EAP authentication), WPA PSK, WPA TKIP, WPA2 PSK, WPA2 TKIP, WPA2 AES, CCKM TKIP. For Manual WEP: Up to four static WEP keys. For PSK: ASCII passphrase or hex PSK.	None

- **EAP-Type & Encryption:** Security settings. These settings allow you to enhance the security of data across the wireless LAN. Refer to [EAP Credentials on page B-4](#) and [SCU Security Capabilities on page B-3](#) below, for details about these settings.

SCU Security Capabilities

The SCU provides integrated security to protect transmitted data as well as the 8515 and wireless WAN infrastructure that transmit and receive data.

A foundational element of the IEEE 802.11i WLAN security standard is IEEE 802.1X and a critical application on a mobile device is an 802.1X supplicant. This supplicant provides an interface between the radio and the operating system and supports the authentication and encryption elements required for 802.11i, also known as Wi-Fi Protected Access 2 (WPA2), as well as predecessors such as WPA and WEP. Summit software includes an integrated supplicant that supports a broad range of security capabilities, including:

- 802.1X authentication using pre-shared keys or an EAP type, required for WPA2 and WPA.
- Data encryption and decryption using WPA2 AES, WPA TKIP or WEP.

Common EAP types include:

- **EAP-TLS:** Uses the same technology as a follow-on to Secure Socket Layer (SSL). It provides strong security, but relies on client certificates for user authentication.
- **PEAP:** Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. Two different inner methods are used with PEAP:
 - EAP-MSCHAPV2, resulting in PEAP-MSCHAP: This is appropriate for use against Windows Active Directory and domains.
 - EAP-GTC, resulting in PEAP-GTC: This is for authentication with one-time passwords (OTPs) against OTP databases such as SecureID.
- **LEAP:** Is an authentication method for use with Cisco WLAN access points. LEAP does not require the use of server or client certificates. LEAP supports Windows Active Directory and domains but requires the use of strong passwords to avoid vulnerability to offline dictionary attacks.
- **EAP-FAST:** Is a successor to LEAP and does not require strong passwords to protect against offline dictionary attacks. Like LEAP, EAP-FAST does not require the use of server or client certificates and supports Windows Active Directory and domains.



NOTE PEAP and EAP-TLS require the use of Windows facilities for the configuration of digital certificates.

SCU EAP Types

The following EAP types are supported by the integrated supplicant and can be configured in SCU: *LEAP*, *EAP-FAST*, *PEAP-MSCHAP*, *PEAP-GTC*, and *EAP_TLS*. With each of these types, if authentication credentials are not stored in the profile, you will be prompted to enter credentials the first time the radio attempts to associate to an access point that supports 802.1X (EAP).

LEAP: Strong passwords are recommended.

EAP-FAST: SCU supports automatic, not manual, PAC provisioning.

PEAP-MSCHAP: Provides secure user authentication by using a TLS tunnel to encrypt EAP traffic. MSCHAP is used as the inner authentication method. This is appropriate for use against Windows Active Directory and domains.

PEAP-GTC: SCU supports static (login) passwords only.

EAP-TLS: Provides strong security via the use of client certificates for user authentication.

EAP-TLS will work with an 802.11b/g radio module when *Windows Zero Config* (WZC) rather than the SCU is used to configure the type. With WZC, the native *Windows supplicant* instead of the *SCU integrated supplicant* is used.

EAP Credentials

Keep the following in mind when defining security settings:

- If the credentials specified in the profile are incorrect and that profile is used, the authentication fails without an error message; you will not be prompted to enter correct credentials.
- If the credentials are not specified in the profile, when the radio tries to associate using that profile, you will be prompted to enter the credentials.
- When prompted, you can enter valid credentials, enter invalid credentials, or cancel the operation.
 - If you enter valid credentials and tap **OK**, the radio will associate and authenticate.
 - If you enter invalid credentials and tap on **OK**, the radio will associate but will not authenticate; you will be prompted again to enter credentials.
 - If you tap on **Cancel** or clear the credentials fields and tap on **OK**, the radio will not attempt to associate with that profile until you perform one of the following actions (while the profile is the active profile):
 - Cause the 8515 to go through a power cycle or suspend/resume.
 - Disable and enable the radio, or tap the **Reconnect** button on the *Diags* windows.
 - Modify the *Profile*, and tap on **Commit**.

Alternatively, you can choose another profile as the active profile and then switch back to the profile for which EAP authentication was cancelled.

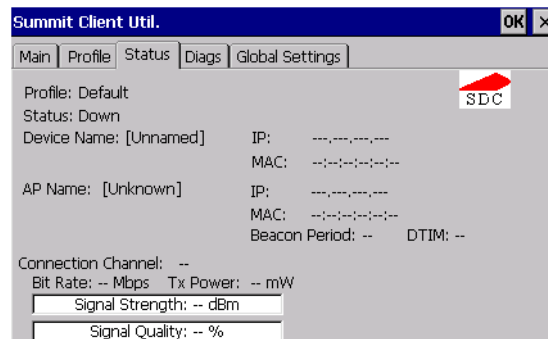
ThirdPartyConfig

If you choose to configure *ThirdPartyConfig*, the SCU will work with the operating system's *Windows Zero Config* (WZC) to configure radio and security settings for the CF radio installed in the unit.

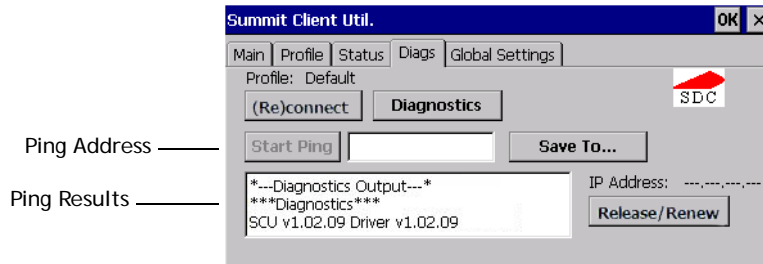
Choosing this profile means that *WZC* must be used to define the following radio and security options: *SSID*, *Auth Type*, *EAP Type*, and *Encryption*. The SCU settings for *ThirdPartyConfig* include: *Client Name*, *Power Save*, *Tx Power*, *Bit Rate*, and *Radio Mode*. These SCU settings along with SCU global settings and the *WZC* settings will be applied to the radio module.

Status

The *Status* tab provides status information including IP address and MAC address for the client radio, IP address and MAC address for the AP, signal strength, channel, transmit power and data rate.



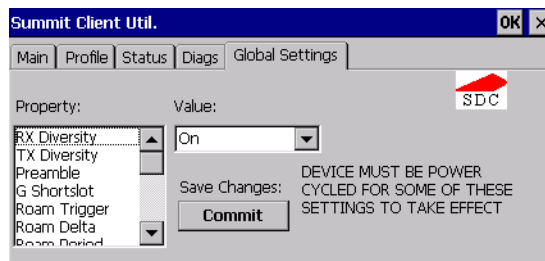
Diags



Use the *Diags* tab as a troubleshooting tool. The functions are as follows:

- **(Re)Connect:** Enables/Disables the radio, applies/reapplies current profile and tries to associate and authenticate to the wireless LAN, logging all activity in the output area at bottom of the dialog box.
- **Release/Renew:** Obtains a new IP address through DHCP and logs all activity in the output area.
- **Start Ping:** Starts a continuous ping to the address in the text box next to this button. This is a toggle button so when you tap on it, it changes to *Stop Ping*. Closing this window or tapping on another button also stops the ping.
- **Diagnostics:** Attempts to connect or reconnect to an AP, and provides a more detailed dump of data than if you used *(Re)connect*. The dump includes the radio state, profile settings, global settings and BSSID list of APs. The SCU is saved to a file called *_sdc_diag.txt* in the Windows directory.

Global



The *Global* settings tab allows you to define radio and security settings that apply to all profiles, along with settings that apply specifically to the SCU. The *Global* settings in Table B.2 can be edited in SCU.

Global Setting	Description	Value	Default
Roam Trigger	If RSSI from AP is less than roam trigger value, radio performs roam scan or probes for an AP with stronger signal.	dBm: -50, -55, -60, -65, -70, -75, Custom	-75
Roam Delta	Amount by which second AP's RSSI must exceed the moving average RSSI for the current AP before the radio will attempt to roam to a second AP.	dBm: 5, 10, 15, 20, 25, 30, 35, Custom	10

Global Setting	Description	Value	Default
Roam Period	Following an association or roam scan (with no roam), the number of seconds the radio collects RSSI scan data before considering roaming.	Seconds: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, Custom	10
BG Channel Set	Defines the 2.4 GHz channels to be scanned when the radio is set to roam and needs to determine what APs are available.	Full (all channels) 1, 6, 11 1, 7, 13 Custom	Full
DFS Channels	Reserved	Off, On	Off
Aggressive Scan	When this setting is On and the current connection to an AP becomes unreliable, the radio scans for available APs more aggressively. 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 Scan is left On unless there is significant co-channel interference because of overlapping coverage from APs on the same channel.	Off, On	On
CCX features	Activates three CCX features: AP-assisted roaming, AP-specified maximum transmit power and radio management.	Optimized, Full, Off	Optimized
WMM	Use Wi-Fi Multimedia Extensions, also known as WMM.	On, Off	Off
Auth Server	Type of authentication server being used for EAP authentication.	Type 1: Cisco Secure ACS or another server that uses PEAPv1 for PEAP with EAPMSCHAPV2 (PEAPMSCHAP). Type 2: A different authentication server, such as Juniper Networks Steel Belted RADIUS, that uses PEAPv0 for PEAPM-SCHAP.	Type 1
TX Diversity	Defines how to handle antenna diversity when transmitting data to AP.	-Main only: Use main antenna only. -Aux only: Use auxiliary antenna only. -On: Use diversity.	Main only

Global Setting	Description	Value	Default
RX Diversity	Defines how to handle antenna diversity when receiving data from AP.	-On-Start on Main: On startup, use main antenna. -On-Start on Aux: On startup, use auxiliary antenna. -Main only: Use main antenna only. -Aux only: Use auxiliary antenna only.	On-Start on Main
Frag Thresh	Packet is fragmented when packet size (in bytes) exceeds threshold.	Integer from 256 to 2346.	2346
RTS Thresh	Packet size above which RTS/CTS is required on link.	An integer from 0 to 2347.	2347
LED	Available only with MCF10G.	On, Off	Off
Tray Icon	Enables the System Tray icon.	Off, On	Off
Hide Passwords	On - SCU as well as EAP authentication dialog boxes hide passwords, WEP keys and other sensitive information.	On, Off	Off
Admin Password	Password that must be specified when Admin Login button is pressed.	A string of up to 64 characters.	SUMMIT
Auth Timeout	Specifies the number of seconds that the software 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 re-prompted to enter authentication credentials.	An integer from 3 to 60.	8
Certs Path	Directory where certificates for EAP authentication are stored.	Valid directory path up to 64 characters.	Dependent on device.
Ping Payload	Amount of data to be transmitted on a ping.	Bytes: 32, 64, 128, 256, 512, 1024	32
Ping Timeout ms	Amount of time in milliseconds that passes without a response before ping request is considered a failure.	Integer from 0 to 30000.	5000
Ping Delay ms	Amount of time in milliseconds between successive ping requests.	Integer from 0 to 7200000.	1000

APPENDIX C USB SETUP APPLICATION

USB Setup

The USB Setup application is used to update a Windows 2000 or XP PC so that it can connect to an 8515 Vehicle-Mount Computer.



NOTE For details on connecting devices to Windows Vista™ PCs, see [Using Windows Vista on page 1-5](#).

To get help with the USB Setup application, contact support at:

http://www.zebra.com/US-EN/Support/Psion+Services+and+Support?WT.mc_id=psion_us_support_

System Requirements

- Windows 2000 or XP.
- ActiveSync 3.5 or later.

The install program:

- updates copies of the device installation scripts *usbstor.inf* and *wceusbsh.inf* with Zebra-specific information, and sets up a USB connection between the PC and the 8515.

Launching the Application

Before running the USB Setup application:

1. Unplug the 8515 from your PC, and exit all running applications.
2. Double-click on the USB Setup executable in the directory to which you copied it.

A *Welcome* dialog box is displayed. If you check the *Install as a generic device* checkbox, the Hardware Manager on your PC will not prompt you to install every new device you connect to your PC. A generic configuration will be used for the Zebra devices.

1. Tap on the **Install** button to configure your PC or the **Cancel** button to exit the USB Setup program.

The program checks that ActiveSync is installed and that it is a supported version — 3.5 or later. If the version installed on your PC is not supported, you'll need to exit the USB Setup application, and install a later version of ActiveSync. ActiveSync can be downloaded from Microsoft at: <http://www.microsoft.com/downloads>.

In some cases, you may see an additional Installation dialog box.

Usually, this dialog is shown when more than one version of ActiveSync is installed. You can either select the correct inf file for the USB Setup program to work with, or you can cancel the installation, and uninstall the extra copies of ActiveSync.

Installation Complete

When the installation is completed, a final Installation Complete dialog box states *Installation Successful! You can now connect your device to this computer.*

1. Tap on **Exit** to exit the application.

If you need to view the log file, tap on **View Log**.

Once the USB Setup program is exited, you can connect the computer to your PC using a USB cable, and turn the unit on. If the USB Setup process was successful, the "Found new hardware" wizard may start. If this occurs, choose the recommended defaults. ActiveSync will detect your 8515.

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