

Allegro Cx



OWNER'S MANUAL

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Chapter 1



Introduction

Welcome
Allegro CX Overview
Quick Start Guide

Welcome

We would like to welcome you as a user of the Allegro CX, a rugged, handheld field PC for data collection. Developed with the input of data collection professionals worldwide, the Allegro CX is adaptable and versatile for use in a wide variety of data collection environments.

The Allegro CX continues to utilize our ergonomic, lightweight design that is standard in our line of Allegro Field PCs. This design makes your Allegro easy to use for extended periods while moving to and from data collection sites in the field.

The Intel XScale 400 MHz processor is integrated into the Allegro CX, providing outstanding speed and performance. Solid state data storage keeps your data secure, even without power backup.

The Allegro CX offers the option of a color or monochrome display that provides excellent visibility in all lighting conditions. Both displays use a non-glare touchscreen with optimal sensitivity.

Bluetooth connectivity gives additional functionality to the Allegro CX. Bluetooth connects to many other Bluetooth devices without the use of wires.

If you have any questions or comments about the Allegro CX after reviewing this manual, please feel free to contact our Sales Department.

Allegro CX Overview

▲ Features

The standard features of the Allegro CX are listed below. These features are described in detail throughout this manual. A complete list of specifications is in the Technical Reference section.

- ❑ Operating System: Microsoft® Windows® CE .NET V4.2
- ❑ Processor: Intel® XScale® processor, 400 MHz
- ❑ Memory: 64 M or 128 M RAM
- ❑ Data and Program Storage: 128 M, 256M, 512 M, or 1 G internal Solid State Storage
- ❑ PC Card Slot: User-accessible for ATA, Compact Flash and other Type I or II 3V/5V PC cards, modems, wireless networking cards, or other accessory cards
- ❑ Built-in Bluetooth (optional): Internal Class 2 Bluetooth transceiver, for wireless capabilities
- ❑ Case: Rugged, waterproof, floats, and easy to hold
- ❑ Display (Monochrome): Large 4.1" diagonal, 1/4 VGA display, 320 wide x 240 high pixels (landscape view), equipped with a backlight (brightness adjustable) and heater for cold weather operation
- ❑ Display (Color): Large 3.8" diagonal, 1/4 VGA TFT Active Matrix display, 320 wide x 240 high pixels (landscape view), equipped with a backlight (brightness adjustable), the TFT display does not require a heater for cold temperature operation
- ❑ Touchscreen: Anti-reflective coating and pressure sensitive with keyboard accessible disable touchscreen function
- ❑ Keyboard: Includes all printable ASCII characters, 12 function keys, centrally located number keys, and special coatings to prevent the characters from rubbing off
- ❑ Keyboard Bezel: Protects keys from tearing; removable for cleaning keyboard
- ❑ Power: NiMH battery pack lasts an average of 12 to 20 hours, depending on the application
- ❑ Communication Ports: Two sealed 9-pin D serial ports, one infrared IrDA port, and pins for connection to the USB/Power Dock
- ❑ Software: PTab® Spreadsheet, Calculator, and Microsoft programs

Windows Explorer®, InBox® Email, Pocket Internet Explorer®, WordPad®, and Media 9 Series® media player.

- Sound: Screen taps and key beeps, programmable to associate beeps with events. Volume is adjustable
- System Tray Indicators: Remaining battery status, charging status, data storage activity, PC card activity, caps lock on, touchscreen disable, external power input, ActiveSync/Network connection, and Bluetooth
- File Synchronization between the Allegro and desktop PC

▲ **Standard Accessories**

The Allegro comes with the following accessories:

- Allegro CX Distribution CD-ROM with the desktop PC Setup Programs, Software Suite programs, Microsoft ActiveSync® file transfer program, and the Owner's Manual
- NiMH Battery Pack
- Universal AC Adapter
- Communication Cable
- Two Mini and One Full Size Stylus
- Carrying Straps
- Hand Straps
- Screen Protectors

▲ **Optional Accessories**

The accessories listed below are optional. Contact our Sales Department if you are interested in any of the following items.

- USB/Power Dock
- Hard copy of Owner's Manual
- Alkaline Battery Holder
- Vehicle Power Adapter
- External Battery Charger
- Expansion Pods
- ATA Flash Cards or Compact Flash Cards
- Application Development Software
- Replacement Accessories
- Screen Protector Replacement Packs

Quick Start Guide

A Quick Start Guide is included with the Allegro. It offers basic and initial steps to get the Allegro charged and ready to take out into the field. The instructions on the guide should be done first, before you begin using the Allegro.

If the Quick Start Guide is discarded or misplaced after setting up the Allegro and you discover you need the guide again, you can access a copy of it from the Allegro Distribution CD.

To access the Quick Start Guide from the Allegro CD complete the following steps:

- 1) Place the Allegro Distribution CD into the desktop PC's CD-ROM drive. The following splash page appears:



- 2) Click on the *Browse CD* option. The CD opens up in a Windows Explorer program displaying the contents of the CD.
- 3) Double-click on the *Quick Start Guide* file to open it in Acrobat Reader.
- 4) Read and/or print the Quick Start Guide.

Chapter 2



Hardware Components

- Case Design
- Keyboard
- Display
- System Tray Indicators
- Batteries
- Communication Ports
- USB/Power Dock
- PC Card
- Expansion Pods

Case Design

▲ Case Features

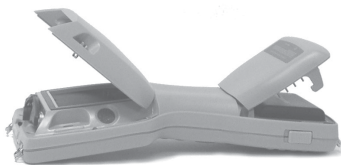
The case has the following features:

- ❑ The polycarbonate PBT material is rugged, shock resistant, and formulated to resist damage from chemicals.
- ❑ The ergonomic shape and smooth edges make it easy to hold, maximizing comfort and usability in the field.
- ❑ The weight distribution is balanced.
- ❑ There are three gaskets used to seal the case from water and dust:
 - between the top and bottom case halves
 - around the battery compartment
 - around the PC card slot compartment

The gaskets are not field replaceable. Contact our Service Department if a gasket needs to be replaced.

- ❑ There are two doors: one for the battery compartment and one for the PC card slot. These doors are user-replaceable. Contact our Sales Department for ordering information.

PC Card Slot



Battery Compartment

▲ Cleaning the Case

To clean the Allegro, we commonly recommend that you use warm water, mild detergent, and a toothbrush to clean the case.

❑ *Note: This method can also be used when cleaning the keyboard. Do not use the brush on the display, it could be scratched.*

In some environments, the Allegro is exposed to substances, such as pitch or tar, which require stronger cleaning supplies for removal. Some of the available cleaning supplies/chemicals on the market will damage the case, so use caution. To see a current list of cleaning supplies we have test and recommend for cleaning the Allegro, visit our Web site at, www.junipersys.com. Go to the Support section and do a search for “cleaning supplies.

Hand Strap and Shoulder Strap

There are four metal cleats, one on each corner of the Allegro CX case. Each cleat has two metal rings that are used to attach the hand strap and shoulder strap onto the Allegro.

The straps can be attached for right or left handed operation. The tension on the hand strap is adjustable. The shoulder strap can be used as a neck strap for hands-free operation.



Keyboard

▲ Keyboard Features

The keyboard on the Allegro CX is designed to maximize data entry efficiency and to withstand rugged, wet conditions.

- ❑ Careful planning went into the placement, size, and space between keys to increase efficiency and ease of use.
- ❑ The number keys are large and placed in the center of the Allegro CX for easy access from either side.
- ❑ Some keys have standard functions as well as special functions accessed with the GOLD and BLUE shift keys.
- ❑ Five function keys are located below the display. With the use of the GOLD and BLUE shift keys, twelve function keys are available.
- ❑ Two special coatings prevent the key labels from rubbing off after extended use.
- ❑ The keyboard bezel helps protect the keys from tearing. It is removable for cleaning purposes.



▲ Special Keys and Key Sequences

The standard keyboard letters, numbers, and functions are printed in two ways:

- 1) In dark brown on the off-white keys
- 2) In off-white on the dark brown keys

These standard options are operational unless a GOLD or BLUE shift key is pressed.



Blue Shift Key Usage

To access a single blue printed keyboard characters:

Press and release the *BLUE* shift key followed by the key with the desired blue-lettered character.

To activate several blue-lettered keys before returning to standard mode:

Press and hold the *BLUE* shift key down while you press all the desired *BLUE* keys. Once the *BLUE* shift key is released, the keyboard reverts back to the standard mode.

Gold Shift Key Usage

To access a single gold shift key option:

Press and release the *GOLD* shift key followed by the key with the desired gold symbol.

To activate several gold-lettered options before returning to standard mode:

Press and hold the *GOLD* shift key down while you press all the desired *GOLD* keys. Once the *GOLD* shift key is released, the keyboard reverts back to the standard mode.

Circular Key Usage

The circular key located in the center of the keyboard has two functions:

- 1) Standard (no shift keys): Up, Down, Right, and Left arrow keys
- 2) BLUE shifted functions: Page Up, Page Down, Home, and End



▲ Shifted Options

The shifted options and the associated key sequences are listed below.

<u>Option</u>	<u>Key Sequence</u>
Function keys F6, F7, F8, F9 and F10	BLUE key + desired function key
Function keys F11 and F12	GOLD key + desired function key
Enable/Disable touchscreen	BLUE key + TS
View Windows CE Start Menu	BLUE key + Start
Page up	BLUE key + PgUp
Page down	BLUE key + PgDn
End	BLUE key + End
Home	BLUE key + Home
Toggle caps lock on and off	BLUE key + CapLk
Toggle display backlight	GOLD key + F3 (see gold light bulb symbol above function key)
Display Contrast Lighten (monochrome display only)	GOLD key + F4 (see gold symbol above function key)
Display Contrast Darker (monochrome display only)	GOLD key + F5 (see gold symbol above function key)
Perform a reset	On/Off (hold down for eight seconds)

Keyboard Options

The following keys and key sequences are functional in Windows .NET.

On/Off (Warm and Hard Reset)



This key is used to turn the Allegro on and off. The ridge around the key helps prevent the Allegro from being accidentally turned on without your knowledge.

A warm reset is performed by holding down the *On/Off* key for about eight seconds. Release the key when the reset process begins.

A hard reset is performed by holding down the *On/Off* key for about eight seconds. When the reset process begins, continue holding the *On/Off* key down for an additional eight seconds. A hard reset does erase the RAM memory.

Contrast (monochrome display only)



To make the display darker, press the *GOLD* key and the *F5* key.

To make the display lighter, press the *GOLD* key and the *F4* key.

Backlight On/Off



The backlight is toggled on and off by pressing the *GOLD* key and the *F3* key.

Tab, Forward and Backward



The tab keys are used primarily for cursor movement between fields.

Touchscreen Disable/Enable



The touchscreen key allows you to disable and enable the touchscreen. This feature allows you to wipe off the screen without inadvertently making selections on the screen.

Press the *BLUE* shift key and the *TS* key to disable the touchscreen. A system tray icon appears showing that the touch screen has been disabled. Once the screen has been cleaned, use the same key sequence to enable the touchscreen. (For instructions on how to clean the screen, refer to *Display, Touchscreen* later in this section.)



Task Manager

Press the *Task Manager (Start)* key to view all of the programs that are currently running. Select which program you want to be in by using the up and down arrow keys to highlight the desired program and pressing *ENTER*.

Start Menu



Press the *BLUE* shift key and the *Start* key to view the Windows CE Start Menu. Use the arrow keys to move up and down the menu. Press the *ENTER* key to make your selection.

The Task Manager and Start Menu functions have been provided to speed up operation. You do not have to use the touchscreen and stylus to bring up the Start Menu or to change tasks. These keys are also handy when the Taskbar has been hidden.


Right Mouse Click

There are two ways to achieve a right mouse click, you can press the *Alt* key and touch the screen with a stylus, or touch and hold the stylus in one spot on the touchscreen. In many Windows CE programs, when you right click on an item a menu is displayed listing functions and options that pertain to the item.

▲ Cleaning the Keyboard


Dirt and debris can get underneath the keyboard bezel. To clean, use a coin (do not use a screwdriver) to pull the bezel up at the recess located at the bottom of the keyboard and remove it.

We recommend that you use warm water, mild detergent, and a toothbrush to clean the keyboard or simply brush it out. The Allegro remains sealed during this process.

 *Note: Do not direct a high pressure stream of water at the keyboard to clean it. This action could break the seal, causing water to get inside the Allegro.*



Reattach the bezel by carefully inserting the top ridge under the function keys and lowering the bezel down flat onto the case. Press down along the sides while aligning the keys through the holes.

 *Note: After you reattach the bezel, check each key to make sure it is completely free from the bezel. If any part of a key is caught underneath the bezel, you may not be able to turn the Allegro on or you may hear a continuous string of beeps.*

In some environments, the Allegro is exposed to substances, such as pitch or tar, which require stronger cleaning supplies for removal. Some of the available cleaning supplies/chemicals on the market will damage the case, so use caution. To see a current list of cleaning supplies we have test and recommend for cleaning the Allegro, visit our Web site at, www.junipersys.com. Go to the Support section and do a search for “cleaning supplies.”

Display

The Allegro CX offers the choice of either a monochrome or color display. Both displays are a 1/4 VGA, 320 wide x 240 high pixels (landscape view), high-contrast liquid crystal displays, shock-mounted and sealed, and are equipped with a brightness adjustable backlight.



The monochrome display has a 4.1" diagonal viewing area and is equipped with a heater for cold weather operation.

The color display has a 3.8" diagonal viewing area.

▲ Display Features

- ❑ Contrast: Do not attempt to adjust the contrast for a color display model; it is not adjustable. Doing so may affect the visibility of the display.

The contrast for the monochrome display model can be manually adjusted by using the yellow shift key and pressing F4 to lighten or F5 to darken. The display automatically adjusts the contrast to compensate for temperature.

- ❑ Video Quality: With the color display, the video quality is adjusted manually by using the Yellow shift key and pressing F4 or F5. This adjusts display flickering or shaking on the color display.
- ❑ Heater: The monochrome display heater allows you to use the

Allegro in temperatures below freezing. The technology used to create the color display does not require a display heater to use the Allegro in temperatures below freezing.

- ❑ **Backlight:** The backlight enhances visibility in low-light conditions. The brightness of the backlight is adjustable.
- ❑ **Position:** The display is slightly tilted up to reduce glare and enhance visibility.
- ❑ **Touchscreen:** A 1/4 VGA display touchscreen with an anti-reflective coating to eliminate reflective glare and is used to make selections and enter data.

▲ **Adjusting the Display**

The display features can be enabled, disabled, or controlled through the Control Panel (see Chapter 4). Some display features can be adjusted using the special key sequences shown below:

<u>Display Function</u>	<u>Key Sequence</u>
Increase Contrast/Display Quality Adjustment	GOLD + F5
Decrease Contrast/Display Quality Adjustment	GOLD + F4
Backlight Toggle On and Off	GOLD + F3

Backlight

The display backlight is used to enhance visibility in low-light conditions in the field or indoors.

The brightness of the display backlight is adjustable from dim to bright. This adjustment is made by selecting *Start | Settings | Control Panel*, double tapping on the Display icon and tapping on the Controls tab. Choose *Brightness Adjustment* to adjust the brightness level. (The default of the monochrome display is set at 100% brightness; the default of the color display is set at 75% brightness.)

The run time of the battery pack is reduced when the backlight is operated. To get longer battery life, use the backlight only when needed.

Contrast and Automatic Temperature Compensation

Once you have set the contrast, you seldom need to readjust it. The contrast adjusts automatically for temperature.

▲ **Touchscreen**

The Allegro display has a touchscreen used to activate programs and functions. The touchscreen can be operated with a stylus, finger, or

Three styli are provided: two mini styli, one of which snaps into a holding bay built into the top of the case, and a pen-size stylus. For more details on how to use the touchscreen, refer to the *Display Touchscreen* in *Chapter 4, Windows CE Operating System*.

Touchscreen Disable/Enable Key



The Allegro offers a touchscreen key option that allows you to disable and/or enable the touchscreen. The function is optimal when cleaning the touchscreen. Once disabled you can wipe off the screen and avoid accidentally activating programs, or moving icons or entire screens around on the Allegro.

Press the *BLUE* shift key and the *TS (BkSp)* key to disable the screen. Use the same key sequence to enable the touchscreen.

Cleaning the Touchscreen

To clean the touchscreen of the Allegro, complete the following steps:

- 1) Press the *BLUE* shift key + *TS (BkSp)* key to disable the touchscreen.
- 2) Use a clean cotton cloth to wipe off the screen.

Note: Do not use anything abrasive that could scratch the screen (including tissues and paper towels).

- 3) Press the *BLUE* shift key + *TS (BkSp)* key to enable the touchscreen.













Note: Petroleum-based cleaners and solvents should not be used. They can damage the touchscreen surface.

In some environments, the Allegro is exposed to substances, such as pitch or tar, which require stronger cleaning supplies for removal. Some of the available cleaning supplies/chemicals on the market will damage the case, so use caution. To see a current list of cleaning supplies we have test and recommend for cleaning the Allegro, visit our Web site at, www.junipersys.com. Go to the Support section and do a search for "cleaning supplies."

System Tray Indicators

System tray indicators specify applications that are running on your Allegro. The indicators are located in the bottom right corner system tray.

These system tray indicators are active while the Allegro is running specific tasks. These indicators provide you with the following information:

<u>System Tray Indicators</u>	<u>Indicator Description</u>
	Remaining Battery Charge Status: shows the percent of charge remaining in the batteries.
	External Power Input: indicates that you are connected to an external power source and not drawing power from the internal batteries.
	Charging Indicator: appears in the system tray while the rechargeable batteries are being charged.
	Data Storage Idle: outlined when the solid state disk is idle and not being read from or written to.
	Data Storage Active: darkens when data are being read from or written to the solid state disk.
	PC Card: indicates that a PC card is installed in your Allegro.
	PC Card Activity: darkens to indicate that the application program is accessing the PC card (do not remove the card when this icon is darker).
	Caps Lock On: appears when the all capital letters option is activated.
	Touchscreen Disable: appears when the touchscreen is disabled.
	PC Connection: appears when there is an active connection between the Allegro and the desktop PC.
	Bluetooth Connection: appears when Bluetooth is being actively used on your Allegro.
	Heater: appears when the touchscreen heater turns on (this is applicable with monochrome screen only).

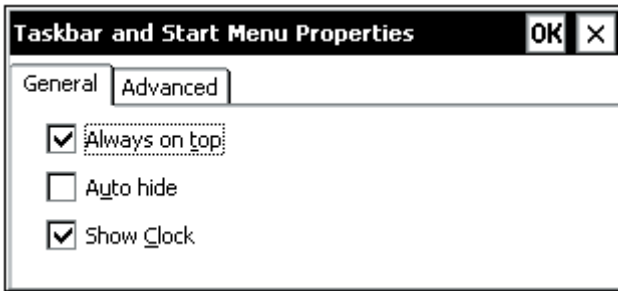
▲ Making Space in the System Tray

The system tray only has a certain amount of space to display the icons that show which features are currently active on the Allegro. You can remove the clock and the AM/PM icons if you want to make room for the other icons.

Clock Removal

To remove the clock from the system tray, complete the following steps:

- 1) Select *Start | Settings | Taskbar and Start Menu...* on the Allegro to access the following screen:



- 2) Tap on the check mark next to the *Show Clock* option to deselect this option and tap on *OK*. The clock is now removed from the system tray.

System tray with clock:



System Tray without clock:

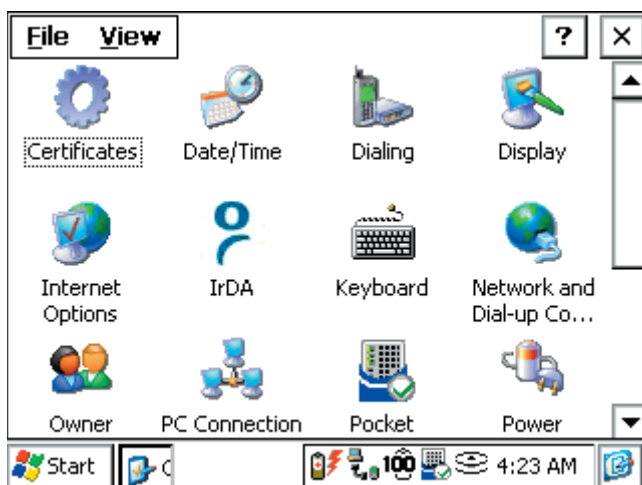


AM / PM Removal

You may want to show the clock on the Allegro desktop, but to conserve on the amount of space it takes up in the system tray you can remove the AM/PM setting shown after the clock. This function shifts the time into military time (2:00 PM = 14:00), to do this, complete the following steps:

- 1) Select *Start | Settings | Control Panel*.

The following screen appears:

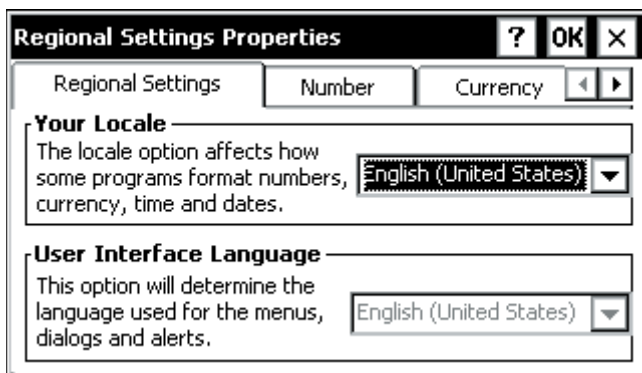


- 2) Double tap on the *Regional Settings* icon:

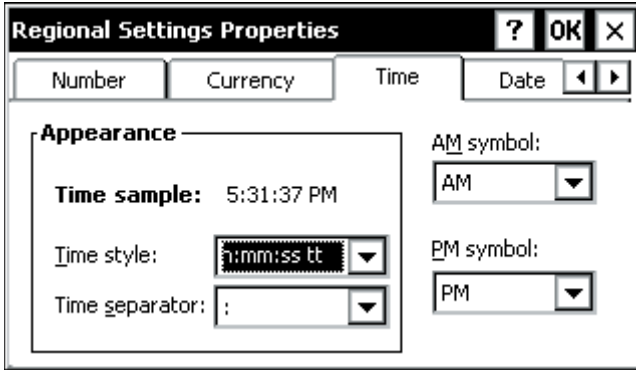


Regional
Settings

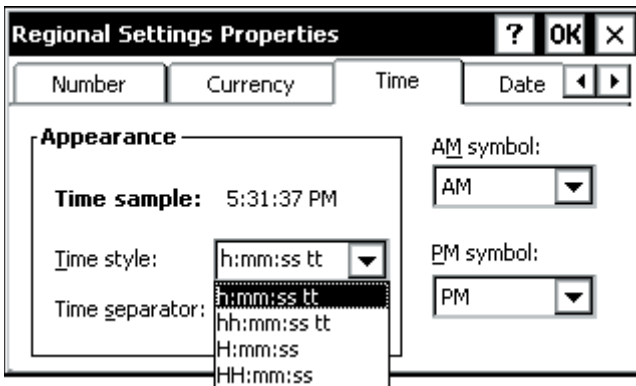
- 3) The following screen appears:



- 4) Tap on the arrow next to the tabs to get them to scroll over until the *Time* tab appears and tap on that, the following screen appears:



- 5) Tap on the down arrow in the *Time style* in the *Appearance* box and select the *hh:mm:ss* or *HH:mm:ss* option:



- 6) Tap on *OK*.

The clock in the system tray no longer has the AM/PM next to the clock and military time is shown:



Batteries

Batteries are the key power source the Allegro uses while you are in the field collecting data. When collecting data, the Allegro performs with efficient power consumption.

The Allegro CX uses an Auto Suspend power management feature to help conserve power. A battery status icon is displayed in the task bar of the Allegro indicating the amount of power (as a percentage) that is left in the battery pack. This battery status icon helps you maintain the battery pack by keeping you informed of the charge level and warning you when the charge is getting low and needs to be charged or replaced.

There are three types of batteries and a backup capacitor associated with the Allegro power supply:

- NiMH battery pack
- Alkaline battery holder (an optional accessory using three alkaline cells)
- Lithium CMOS battery to power the real time clock
- Super capacitor designed to maintain the RAM while you change the battery pack

▲ Main Power Source

The Allegro is powered by a rechargeable nickel metal hydride (NiMH) battery pack. The battery compartment is accessed through a door in the back of the case. The NiMH battery pack is shipped with the Allegro but it is not installed at the factory.

In this section we the following battery related information:

- Battery pack installation
- Setting the charge status on the Battery Detected screen
- Charging the battery pack
- Battery gauging
- Charging accessories
- Storing the Battery Pack during inactive periods
- Backup batteries

▲ Installing the NiMH Battery Pack

When you receive the Allegro, you must install and then charge the NiMH battery pack. To do this, complete the following steps:

- 1) Push up on the sliding latches on the sides of the Allegro to open the battery compartment door.
- 2) Place the NiMH battery pack in the left side of the battery compartment, push down, and slide it all the way to the right. There is a small arrow on the bottom right corner of the battery pack, make sure the arrow is pointing to the right when it is placed in the Allegro.



- 3) Push the battery door closed until each slide latch clicks into place.
- 4) Slide the latches downward until they cannot slide any further to securely close the battery door.



Do not turn on the Allegro yet.

- 5) Plug the AC wall charger that came with the Allegro into the wall socket. A small green light on the wall charger turns on when it is plugged in and receiving power.
- 6) Remove the rubber protector from the Allegro's external power input jack.
- 7) Plug the power connector end of the wall charger into the Allegro power jack, which turns on the Allegro. The *New Battery Detected* screen pops up requesting you to set the charge percentage. Set the battery charge to 10%. (See the *New Battery Detected Screen* section of this chapter for details.)

- 8) Check the *System Tray* for the following icon:

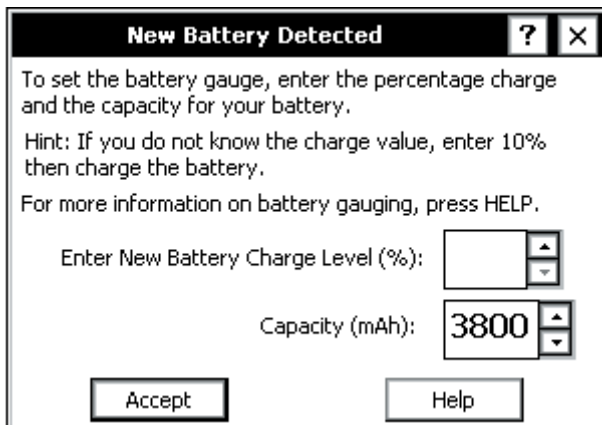



This battery icon with the small lightning bolt next to it indicates the Allegro is being charged.

- 9) Charge the battery pack at room temperature until the charge indicator on the Allegro turns off. This can take three to five hours the first time you charge the battery.

▲ New Battery Detected Screen


The charge status of the battery pack is unknown to the Allegro when the pack is first installed. Therefore, you must set the battery charge percentage. When the battery pack is first installed the *New Battery Detected* screen appears requiring you to set the charge status of the battery pack.



 *Note: You must set the battery charge level at this time. The Allegro is programmed to not allow the user out of the New Battery Detected screen until the battery charge level is set.*

When the *New Battery Detected* screen appears, complete the following steps to set the charge status of the battery pack:

- 1) Set the *Enter New Battery Charge Level (%)* to 10 by tapping on the small up or down arrows next to the percentage box.

 *Note: If the battery you are installing into the Allegro has been charging on an external charger and it is charged to full capacity, set the Enter New Battery Charge Level (%) to 100. Otherwise always set the battery charge level to 10 if there is any uncertainty to the exact charge level.*

If a zero is entered in the *Enter New Battery Charge Level* box, the charge level defaults to 10% when you tap on the *Enter* button.

If no percentage is entered in the *Enter New Battery Charge Level* box, a pop-up screen appears asking you to enter a value in the *Specify Battery Charge*. Tap on *OK* to return to the *New Battery Detected* screen.

If the *Enter New Battery Charge Level* value entered is less than 50% a warning message appears reminding you to charge the battery pack.

The capacity of the NiMH battery pack, provided by the factory to use with the Allegro, is 3800 mAh. If you are using a different battery pack, go to the Battery Capacity section of this chapter before proceeding to the next step.

- 2) Tap on *Accept* to save the setting and proceed to the desktop of the Allegro.

The *New Battery Detected* screen closes and the charge status is set. Once the battery pack is fully charged, the gauging is automatically set to 100%. The battery status icon in the systems tray (in the bottom right of the Allegro screen) accurately reflects the battery charge.

Understanding the New Battery Detected Screen

The following are situations that cause the *New Battery Detected* screen to appear on your Allegro:

- The battery pack is changed.
- The Restore utility function is used.
- The Set Factory Defaults utility function is used.
- The battery pack's charge is fully drained while in the Allegro, and the unit is then plugged into an AC wall charger or USB/Power Dock and turns on.

Each time the *New Battery Detected* screen appears, the percent of the battery pack needs to be entered.

New Battery Detected Options


The *New Battery Detected* screen has the following settable options:

- Enter New Battery Charge Level
- Battery Capacity

Enter New Battery Charge Level

The *Enter New Battery Charge Level* is the ratio of the present charge level to total charge capacity. This option sets the battery charge to the percent you enter.

The *Enter New Battery Charge Level* option allows you to set the charge percentage of the battery pack in the Allegro. If you are unsure of the exact charge percentage on your battery pack, we recommend setting it to 10% and charge the battery pack.

 *Note: The NiMH battery is not damaged if it is charged frequently, so setting the charge to 10% and fully charging the battery is recommended when the charge status is unknown.*

Battery Capacity

The capacity of a battery pack is the amount of energy a fully charged battery can supply in milliamp-hours (mAh). The *Capacity* option is set to the mAh of the battery pack. The battery capacity is set by default to 3800 mAh, the same mAh rating of the battery pack shipped with your Allegro.


If you are using a different battery pack, check for its mAh rating. This rating is commonly listed on the label of the battery. For optimum performance, it is best to use battery packs with a 3000 to 4000 mAh capacity. The higher the capacity of the battery pack, the longer the charge is held. However, battery packs with a capacity over 4000 mAh do not charge fully if using the Allegro CX internal charger due to the maximum time limit built into the unit.

Accept Button

The *Accept* button saves the charge percent and battery capacity you have entered and then open to the desktop of the Allegro.

Help Button

Pressing the *Help* button opens the Battery online help screen. The *Help* screen describes in detail the battery gauging feature and how to use it.

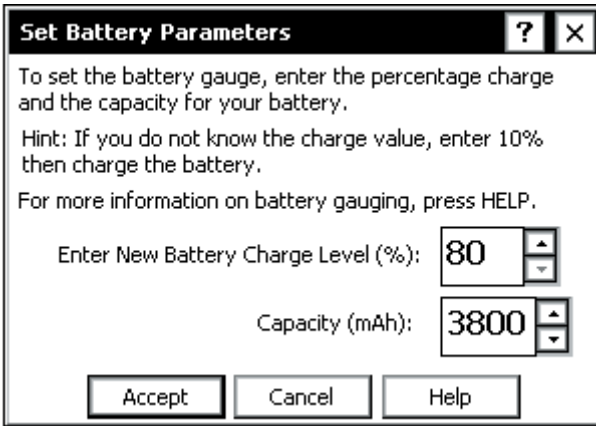
 *Note: As a battery pack ages, it does not operate as long on a charge as it did when it was new. The capacity could be reduced by as much as 50% at the end of its useful life. Over time, the capacity setting for an individual battery pack can be adjusted downward to account for its age.*

▲ Set Battery Parameters Screen

In the event that you are unsure what the battery packs charge is at, for example the Allegro was left over the weekend without being plugged into a charger, it is possible to reset battery charge level without having to remove and reinstall the battery pack. To open the *Set Battery Parameters* screen, complete the following steps:

- 1) Turn on your Allegro.

- 2) Tap on *Start | Programs | Utilities | Set Battery* to open the *Set Battery Parameters* screen.



- 3) Set the *Enter New Battery Charge Level* to 10% and tap on *Accept*.
 4) Charge your battery pack to full capacity.

Note: We recommend setting the Enter New Battery Charge Level to 10% and charging the battery pack to full capacity anytime your Allegro is left unused for more than a day without being plugged into an external power source and you are unsure to the charge level of the battery pack.

The *Set Battery Parameters* screen functions the exact same way the *New Battery Detected* screen works, with only one exception, the *Set Battery Parameters* screen has a *Cancel* button. The *Cancel* button allows you to close the screen without setting the battery charge level.

Battery Life

The chart below shows the typical life of a battery pack. These figures depend on the type of battery pack being used, the capacity of the battery in milliamp-hours (mAh), and the application(s) being used.


<u>Battery Pack</u>	<u>Capacity</u>	<u>Typical Operating Time</u>
NiMH	3,800 mAh	12 to 20 hours
Alkaline	1,600 mAh	5 to 10 hours

The operating times stated above are based on a typical application including: the data are being entered manually on the keyboard, no external devices are powered by the Allegro, the backlight is used 10% of the time, and processing time is 20%.

▲ Battery Gauging

The purpose of the battery gauging on the Allegro is to provide you with a constant display of the approximate charge status of the battery pack. This tool helps you to effectively maintain and manage the batteries while using them in the field. The gauging works for both NiMH rechargeable batteries and alkaline batteries, although the mechanism is different, as outlined in the section.

The Allegro uses an intelligent battery gauging circuit to efficiently read the remaining charge of the battery pack. This charge is displayed in the system tray via a battery status icon.

 *Note: Because the charge of the battery pack is uncertain when it is first installed, the battery must be charged before the battery gauging is accurate.*

Battery Status Icons

The battery status icon shows the remaining charge of the battery pack as a percentage, using increments of 10 up to 90, then 95 and 100. The system tray icon is meant to give only an approximate indication of battery charge remaining, not an exact reading. If the battery status icon displays 80, this means the battery packs charge has between a 71 to 80% of the battery pack's full charge capacity.




Once the battery gauging is set, a battery status indicator in the system tray shows the charge percentage you set for the battery pack. As the battery pack reaches full charge capacity, the charge percent icon changes to reflect the correct charge percentage.

As the charge level of a battery pack reaches 10%, the voltage begins to drop. The Allegro detects this low battery condition. The battery status icon begins to flash on and off. This signal lets you know it is time to recharge or replace the batteries.

When the Battery Voltage Drops

When the battery pack voltage drops to about 3.1V (under load), the Allegro automatically goes into suspend mode. Charge or replace the batteries as soon as possible. The battery pack should have enough charge left to retain the system RAM for 1 to 2 hours, after which the Allegro completely powers down to prevent damage to the batteries. If this happens, data not saved to the C_Drive, are lost.

 *Note: When you remove your battery pack, the super capacitor has enough charge left to retain the system RAM for five minutes before the Allegro completely powers down and resets, losing all contents in RAM.*

▲ How NiMH Battery Gauging Works

As batteries discharge, the power available from the battery follows a voltage discharge curve. This means that if you plotted out the power of a battery on a graph there is a discharge curve as batteries lose power.

The voltage discharge curve of NiMH batteries differs from the discharge curve of other batteries. When the battery is fully charged, the battery charge registers at 100%. As the battery drains, the voltage drops off a little and levels out from 90% to 20% of the battery's charge.

As the charge on the battery falls to 10%, the voltage drops rapidly. Therefore, the charge percent cannot be read directly from the voltage as with other battery types, like alkaline batteries.

This is why it is important to set the battery charge capacity when the battery is first installed and then charge the battery pack to 100% capacity. The battery status icon automatically changes to 100 when the battery registers to the Allegro that it is fully charged.

If the gauging circuitry is not properly synchronized with the actual charge on the NiMH battery, the battery status icon shows an incorrect battery charge. If this happens, your Allegro battery charge level can actually be lower than the gauge indicates. You can go into the field to collect data without the awareness of the actual battery charge.

To better assist you in understanding the battery functions of your Allegro, we highly recommend reading the section on battery gauging so you understand the proper setup, functionality, and limitations of battery gauging. Setting the battery charge percent and capacity are both described earlier in this chapter in the New Battery Detected options section.

The battery gauging is an estimate. It works well in applications where the Allegro is used heavily and charged every day. When it is not used much and goes several days between charges, the gauging may not be as accurate in reflecting the true charge of the battery pack.

Keep the Allegro attached to the AC charging adapter or in the USB/Power Dock when you are not using the Allegro. This practice prevents the battery pack from self-discharging. The battery stays fully charged and the battery gauging reflects the correct status of the battery pack.

▲ How Alkaline Battery Gauging Works

Alkaline batteries have a more predictable linear slope to the voltage discharge curve than NiMH batteries. Therefore, the voltage can be read directly to gauge the battery charge percent. The gauging may vary depending on the grade and brand of the batteries being used. For best results, we recommend that you use the Duracell Ultra and Energizer Titanium alkaline batteries.

Temperature and loading affect alkaline battery voltage, causing the gauging to behave differently in changing environmental conditions. When moving from a cold environment to a warm one, the battery status icon may increase slightly. In cold temperatures the alkaline batteries have less capacity than in warm temperatures, thus the voltage output is higher.

▲ Recharging the NiMH Battery Pack


It is recommended to charge the Allegro battery pack when it is not in use. You can do this by leaving the battery in the Allegro and plugging the unit into the AC wall charger, or by placing the unit in the USB/Power Dock powered by the AC wall charger. The Allegro features a built-in intelligent charging circuit that manages the charging of the batteries and prevents them from being overcharged.

Temperature Ranges for Charging the NiMH Battery Pack

The Allegro's NiMH batteries are charged most efficiently at temperatures ranging between 10° to 20° C (50° to 68° F) when the AC power adapter is used. The Allegro batteries must be charged when the battery temperature is between 0° to 40° C (32° to 104° F) due to the nature of NiMH batteries.

The chart below describes the Allegro battery charging behavior at different temperatures.

	<u>Temp. Range</u> <u>Degrees C</u>	<u>Temp. Range</u> <u>Degrees F</u>	<u>Charging Behavior</u>
Recommended Charge Range	10° to 20°	50° to 68°	Most efficient; batteries charge within three hours.
Acceptable Charge Range	0° to 30°	32° to 86°	Batteries are charged within four hours.
Too Cold Range	< 0°	< 32°	The batteries must reach 0 C (14 F) before they begin to charge.
Too Hot Range	> 30°	>86°	Battery charge cycle is complete in four to five hours. If the batteries become too warm, they may only reach 90 to 95% charge capacity.

 *Note: It commonly takes 2.5 to 3 hours to fully charge a battery pack, however in warmer temperatures, or when using accessories for the Allegro, it can take up to 5+ hours.*

▲ Power Connector

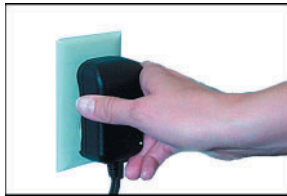
A standard external DC power input connector is located on the top of the Allegro. The connector is 5.5 x 2.1 mm, 12 to 20 V DC. The AC power adapter and optional vehicle power adapter are inserted into this connector.

▲ Charging Accessories for NiMH Battery Packs

There are several charging options available for the Allegro. The most common is the AC power adapter that is shipped with your Allegro. The USB/Power Dock, vehicle power adapter, and external battery charger are all optional ways of charging the Allegro and can be purchased separately.


AC Power Adapter

Using the AC power adapter, the battery pack is recharged without removing it from the Allegro. Please note you must use the adapter included with the Allegro or one that is capable of supplying adequate current (12 V at 1 Amp). Otherwise, the battery pack could be damaged.



You can run the Allegro from the adapter while batteries are being charged. To charge the battery, complete the following steps:


- 1) Plug the AC charging adapter into an AC outlet.
- 2) Insert the connector into the external power input jack located on the top of the Allegro case.
- 3) When the batteries are fully charged, the charging circuit switches into trickle charge mode. You can leave the Allegro connected to the adapter continuously without overcharging or damaging the batteries as long as the power is not interrupted.

 *Note: If power is interrupted frequently (for example when installed in a vehicle), use vehicle mode to prevent battery damage from overcharging. Refer to the Using Vehicle Power section of this manual.*

USB/Power Dock (Optional Hardware)

Using the USB/Power Dock, you can charge the battery pack while it sits in the Power Dock (the Power Dock must be connected to the AC wall charger). To charge the battery, complete the following steps:

- 1) Plug the AC charging adapter into an AC outlet.
- 2) Insert the connector into the external power input jack located on the back of the Power Dock.
- 3) Place the Allegro into the Power Dock. Check that the amber charging light on the Power Dock turns on, indicating that the battery pack is charging.
- 4) When the batteries are fully charged, the amber charging light on the USB/Power Dock turns off and the charging circuit switches into trickle charge mode. You can leave the Allegro in the Power Dock continuously without overcharging or damaging the batteries.

 *Note: A new charge cycle is started each time the Allegro is placed in the USB/Power Dock. If the Allegro is frequently removed or replaced from the USB/Power Dock, use vehicle mode to prevent battery damage from overcharging. Refer to the Using Vehicle Power section of this manual.*

External Battery Charger

The external battery charger is a separate hardware device that charges the NiMH battery pack. The battery pack is removed from the Allegro and placed in to the external battery charger to be charged. This is commonly used to charge a second battery pack that is used as a replacement.

This accessory allows you to charge a battery while it is not in the Allegro. To charge the battery, complete the following steps:

- 1) Place the NiMH battery adapter on the charger.
- 2) Slide the battery onto the charger and leave until fully charged. Refer to the instructions that came with the charger for more details. (Details on how to remove the battery pack from the Allegro are located later in this chapter.)

Vehicle Power Adapter

With the vehicle power adapter, you can charge battery packs via 12V accessory power. To charge the battery, complete the following steps:

- 1) Plug the adapter into the accessory power outlet.

- 2) Insert the connector into the external power input jack located on the top of the Allegro case. It can take up to five hours to fully charge a pack. You can operate the Allegro with this adapter as well as charge the batteries (see the Using Vehicle Power section of this chapter).

▲ Using Vehicle Power

It is important to have the Allegro in *Vehicle Mode* when it is left connected to vehicle power.

Using *Vehicle Mode* is necessary because every time the key to the vehicle is turned on the Allegro begins a new battery charge cycle. Although the Allegro circuitry detects when a battery pack is fully charged, it takes approximately 20 minutes for this to occur.

Repeatedly attempting to charge a fully charged battery pack causes premature degradation in battery performance, which would happen every time the vehicle is turned on. In *Vehicle Mode*, charging is inhibited if the gauging circuitry indicates that battery pack is above 90% charged.

To turn *Vehicle Mode* on, complete the following steps (the default is for *Vehicle Mode* to be off):

- 1) Tap on *Start | Settings | Control Panel*, and double-tap on the *Power* icon.
- 2) The *Power Properties* screen appears.
- 3) Tap on the box next to the Select the *In-Vehicle Charge Mode* option so a check mark appears. (Refer to the *Control Panel* section of Chapter 4 for details).
- 4) Tap on *OK*.

Your Allegro is now set up for use in vehicle power mode.

▲ Lost Data if Batteries are Removed

If the batteries are removed from the Allegro for longer than five minutes, the Allegro may reset to the Desktop instead of resuming to the screen that was last displayed before the batteries were removed. All programs and data that were stored in RAM are lost. To protect against this, always perform a *Save System* function before you change the battery pack. To perform a *Save System* function, complete the following steps:

- 1) Tap on *Start | Programs | Utilities | Save System*.
- 2) Wait for your system backup to save the registry and files on your Allegro.

For more information about the *Save System* utility go to the *System Save/Restore Utilities* section of Chapter 5.

▲ Power Management Feature

To conserve power, the Allegro uses an Auto Suspend feature. When the Allegro is on, it turns itself off if there is no activity after a specified period of time. This feature is on by default and is set at eight minutes when the Allegro is using battery power. When connected to an external power supply the Allegro is defaulted to stay on until it is manually turned off by pushing the *On/Off* button. To access the *Auto Suspend* settings, complete the following steps:

- 1) Tap on *Start | Settings | Control Panel*, double-tap on the *Power* icon.
- 2) Tap on the *Schemes* tab.

Changing NiMH Battery Pack

The battery compartment is accessed through a door in the back of the Allegro case. Before you remove the battery pack from the Allegro, complete the following steps:

- 1) Exit from all open programs.
- 2) Turn the Allegro off.
- 3) Push up on the sliding latches on the sides of the Allegro to open the battery compartment door.
- 4) Slide the battery pack towards the left side of the battery compartment and pull it out.
- 5) Place the new battery pack in the left side of the battery compartment, with the small arrow on the battery pack in the bottom right corner.

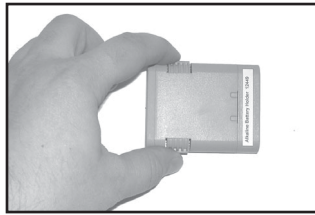


- 6) Push the battery pack down, and slide it all the way to the right.
- 7) Push the battery door closed until each side latch clicks into place.
- 8) Slide the latches downward until they cannot slide any further to securely latch the battery door closed.

▲ Alkaline Battery Holder

The alkaline battery holder enables you to power the Allegro with alkaline batteries. To properly use the alkaline battery holder, complete the following steps:

- 1) Turn the Allegro off before changing the batteries.
- 2) The Allegro battery compartment is accessed through a door in the back of the case. To open the compartment door, push up on the release latches on the sides of the case. The door pops open. Remove the alkaline holder or NiMH pack by sliding it to the left and pulling it out.
- 3) Open the door to the alkaline battery holder by pressing in on both tabs with your index finger and thumb (shown below).



- 4) Insert three fresh AA alkaline batteries, while taking care to orient them correctly (only use alkaline batteries). Always replace all three batteries at once (one weak battery greatly affects performance).

 *Note: For best results, we recommend that you use Duracell Ultra or Energizer Titanium alkaline batteries.*

- 5) Slide the door to the alkaline holder back into place, while making sure it snaps securely shut.
- 6) Place the alkaline battery holder in the left side of the Allegro battery compartment. Put gentle pressure on the holder while sliding it all the way to the right.
- 7) Push the battery door closed until each side latch clicks into place.
- 8) Slide the latches downward until they cannot slide any further to securely latch the battery door closed.
- 9) Occasionally check the battery task tray indicators on the Allegro display while you are using the Allegro. When the battery power gets low, replace the alkaline batteries or insert a NiMH pack.

Important Alkaline Battery Information

The Allegro is designed to be used with the rechargeable NiMH battery pack that came with the unit. The alkaline battery option should be considered as a backup to the NiMH battery pack, not as the main source of power for an extended period of time.

Alkaline batteries have a lower capacity and a higher resistance than NiMH batteries. The battery life and performance of the Allegro is reduced when alkaline batteries are used. The alkaline batteries have the following limitations:

- ❑ The display heater cannot be enabled.
- ❑ As the batteries reach a low power, the Allegro automatically disables the backlight to reduce power consumption.
- ❑ The battery life ranges between 5 and 10 hours (this range is highly dependent on the temperature).

▲ Storing the Allegro CX During Inactive Periods

When the Allegro is not being charged and is turned off (Suspend mode), it draws a small amount of power from the main battery pack. This power draw is used to maintain the memory (RAM) of the Allegro in the same state it was in when it was shut off. This keeps the Allegro from needing to reboot.


The intelligent battery circuit monitors the charge level on the NiMH battery. When the level reaches a low level, the circuit automatically takes the Allegro out of suspend and shuts down completely so there is no further drain on the battery. This feature protects your battery from damage. When the battery is recharged and the Allegro is turned on, it resets rather than resumes.

The data and programs are secure as long as they have been saved to the C_Drive, even if the batteries become discharged. The Allegro does not depend on the battery to store the data for extended periods.

Storing the Allegro CX for Less Than Two Months

To protect the files on your Allegro and the unit itself during short-term storage periods of two months or less, complete the following steps:

- 1) Close all application programs.
- 2) Tap on *Start | Programs | Utilities | Save System* to save all your settings and data to your internal storage drive.
- 3) Plug your Allegro into your AC wall adapter that was shipped with your Allegro, or place the unit into the USB/Power Dock that is plugged into the AC wall charger.

 *Note: After plugging your Allegro into the wall adapter, check the system tray icons and make sure the charge icon appears as a small lightning bolt next to it or a plug icon appears if the battery is already fully charged, verifying that the Allegro is charging.*

Charging the Allegro when it is not in use helps the Allegro to avoid inaccurate battery monitoring and having the battery discharge to low levels.

Storing the Allegro CX for More Than Two Months


To protect the files on your Allegro and the unit itself during storage periods of two months or more, complete the following steps:

- 1) Charge the battery to full capacity (100%).
- 2) Turn on your Allegro.
- 3) Tap on *Start | Programs | Utilities | Save System* to save all your settings and data to your internal storage drive.
- 4) Turn off your Allegro.
- 5) Open the battery door on the back of the Allegro.
- 6) Remove the battery pack and close the battery door on the Allegro.
- 7) Place the battery back in dry location with the open metal conductors facing up.

Taking your Allegro out of Extended Storage

While storing the battery pack, it naturally discharges slightly while being inactive. When you are ready to use your Allegro after storing it for an extended period of time, complete the following steps:

- 1) Open the battery door on your Allegro and insert the battery pack.
- 2) Close the battery door.
- 3) Turn on your Allegro.
- 4) Enter a 10 for the *Specify Charge (%)* option on the *New Battery Detected* pop up screen.
- 5) Tap on the *Accept* button to save the new setting.
- 6) Plug your Allegro into the external AC wall charger and begin charging the battery pack in your Allegro. Charge until the lightning bolt indicator turns off and the battery status reads 100% charged.

 *Note: After plugging your Allegro into the wall charger, check the system tray icons and make sure the charge icon shows a small lightning bolt next to it, verifying that the Allegro is charging.*

▲ Useful Life of a NiMH Battery Pack

Battery packs can be recharged approximately 600 times before they need to be replaced. This number is dependent on the temperatures they have been exposed to, operating conditions, and charging and discharging practices. If the battery does not hold a charge for an acceptable period of time, it needs to be replaced.

Recycling the NiMH Batteries

The NiMH batteries inside the Allegro battery packs are recyclable. We are voluntarily participating in an industry program to collect and recycle these batteries when they are taken out of service in the United States and Canada.

The recycling program provides a convenient alternative to placing used NiMH batteries into the trash or the municipal waste system. Our involvement in this program is part of our commitment to preserving our environment and conserving our natural resources. If battery recycling is not available in your area, contact our customer service to return spent batteries for recycling.

Spare NiMH Battery Packs

Spare battery packs should be stored in a cool location. Avoid placing battery packs *contact side* down on a metal surface. Also, do not stack packs so that their contacts touch one another. These practices cause the batteries to drain. The shelf-life of a charged battery pack is about three to five years. Before using a spare pack, you should fully charge it.

▲ Short-Term Backup Supply

The Allegro has a super capacitor that behaves like a backup battery. When the main batteries are removed, the capacitor maintains the RAM for up to five minutes. You need to change batteries within this time period. The capacitor cannot operate the Allegro. The capacitor is charged by the batteries. It holds a charge as long as the batteries or external power are supplied. When a battery pack is replaced, the capacitor charges up to full capacity in about two minutes.

If power is not supplied to the Allegro for more than five minutes, the Allegro resets when the battery pack is replaced or charged. All the programs, data, and applications saved to the disk are safe. Information that was not saved to the C_Drive is lost.

The super capacitor should not need replacement through the life of the Allegro.

▲ Real Time Clock

The Allegro CX has a real time clock powered by a lithium battery. This battery should last the lifetime of the Allegro CX. The clock continues running regardless of whether or not the Allegro is turned on or off, or if the main battery goes completely dead or is removed.

Communication Ports

The Allegro CX has the following communication ports:

- ❑ Two 9 pin serial ports (located on the top of the case)
- ❑ One infrared port (on top of the case)
- ❑ One USB port (available through the optional USB/Power Dock for ActiveSync connections only)



▲ 9 Pin Serial Communication Ports

The standard 9 pin serial communication ports (COM1 and COM2) allow for the simultaneous operation of two serial devices such as printers, modems, and bar code wands. Additional power is provided on COM1 to power bar code wands, external GPS receivers, and other sensors. The data transfer rate on these ports ranges from 300 baud to 115 Kbaud. The ports are sealed without the protectors. Rubber connector protectors keep dirt and moisture out of the ports.

Be sure to use the serial communication cable (9 pin to 9 pin) included with the Allegro to connect the Allegro to a desktop PC. A wiring diagram of the cable is shown in *Chapter 5, Technical Reference*.

9 Pin D Connector Pinouts

<u>Pin #</u>	<u>Description</u>
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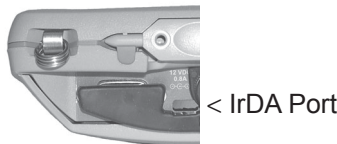
1	Data Carrier Detect (DCD) Input
2	Receive Data (RCD) Input
3	Transmit Data (TXD) Output
4	Data Terminal Ready (DTR) Output
5	Ground (GND)
6	Data Set Ready (DSR) Input
7	Request To Send (RTS) Output
8	Clear To Send (CTS) Input
9	Ring Indicator (RI) Input

Connecting Sensors to COM1

Pin 4 (DTR) on COM1 supplies up to 200 mA at +5 volts to power bar code scanners, external GPS receivers, and other sensors. This signal (DTR) must be set high by the application to take advantage of this feature. When the DTR signal goes low, the output is -5 volts. Insure that the device connected to the DTR line can accept negative voltages or is protected against them (standard RS-232 signal levels).

▲ Infrared Communication Port

The infrared wireless communication port (IrDA) located on the top of the Allegro case allows you to send data to a printer or another computer with an IrDA port without the need for a cable. The IrDA port adheres to the Infrared Data Association Standards. The infrared COM port runs at the speed of 115 kbps.



The IrDA port is used to connect the Allegro and a desktop or laptop computer together to run ActiveSync, which allows you to transfer and copy files between the computers and manage the Allegro files remotely. Files can be sent from the Allegro directly to a printer with an IrDA port from programs that have printing capabilities built-in, such as Pocket Word.

The Allegro and the other device communicating with it via an IrDA port need to be placed less than half a meter apart with their infrared ports aimed directly at each other (within 15 degrees in any direction).

▲ USB Communication Port

The USB communication port located on the base of the Allegro case allows you to send data to a desktop PC with a USB connection. The USB port runs at standard USB speed (12 mbps) and is used for ActiveSync connections only.

USB/Power Dock (Optional Hardware)

Using the USB/Power Dock, you can quickly transfer and synchronize files between the Allegro CX and a PC. The Allegro is charged while it is docked, preparing it for tomorrow's work day.

The USB/Power Dock is an optional two function component designed for the Allegro CX. It is a charging base and a communication base. The Power Dock is ordered separately for the Allegro CX. The Power Dock has three LED (light) indicators on it, with the function of each LED represented below:


<u>Function</u>	<u>LED Color</u>
Power Supply	Green
USB Communication	Red
Charging	Amber

▲ Power Supply

The USB/Power Dock uses the AC wall adapter that comes with the Allegro CX. Looking at the back of the USB/Power Dock is a 12 VDC adapter connector on the right. Plug the Allegro power adapter into the Power Dock and then into the wall. When the green LED indicator turns on, the Power Dock has power.

▲ Charging

The USB/Power Dock is a charging device for the Allegro. By placing the Allegro into the USB/Power Dock, the Allegro automatically turns on and begins charging. When the amber LED indicator turns off, the Allegro is finished charging. The amber LED indicator turns on indicating the Allegro is properly seated in the USB/Power Dock and that the unit is charging. The charging time is the same whether the Allegro is turned on or off.

 *Note: Never operate the Allegro in the USB/Power Dock without a battery installed. The Power Dock does not supply adequate power to the Allegro for normal operation.*

▲ USB Communication

The USB/Power Dock also serves as a USB connection from the Allegro to the desktop PC. The red LED indicator turns on when the USB connection between the Allegro and desktop PC is active. The connection and communication between the desktop PC and the Allegro is achieved through ActiveSync. The USB port is used for connecting single units.

USB/Power Dock Connector Pins

The interaction between the Power Dock and Allegro happens through the connection of the six connectors on the bottom of the Allegro. There are six pins in the Power Dock that touch the Allegro connectors as the Allegro is placed into the Power Dock. The six pins can be replaced if damaged or bent.

▲ USB Connection

To establish an ActiveSync connection between the Allegro and desktop PC while using a USB port, follow the directions in the *Establishing a First Time ActiveSync Connection* section in Chapter 5 of this manual.

Once you have set up and successfully connected to ActiveSync for the first time, you only need to place the Allegro into the USB/Power Dock to have it automatically begin the ActiveSync connection sequence.

PC Cards

▲ Types of PC Cards Accepted

The PC card slot accepts Type I or Type II cards. These cards include ATA Flash cards, Compact Flash cards, SRAM (Static Random Access Memory), or Input/Output cards. All types have a 68 pin connector for attachment to the Allegro. The cards must be 5 V or 5 V/3 V (PC cards that are 3 V only are not supported). The PC card slot is a 16 bit card slot. It is not a “card bus” slot. To use a Compact Flash card, a Compact Flash card adapter is required.

Memory Cards

A memory card is a solid state, self-contained memory board housed in a credit card-sized package. There are several types and brands of cards on the market. These cards behave like hard disks. Refer to *Chapter 3, Program and Data Storage Options*, for more details.

Input/Output Device Cards

Input/Output Device cards can provide additional communication capabilities to the Allegro. Common I/O cards include fax/modem and network cards. Refer to the manufacturer’s instructions for information on how to use these cards and for information about hardware or software accessories that may be required. Contact our sales department for information on compatible cards and technical information about the installation and operation of the cards.

▲ Inserting Cards

The card slot is located under the PC card door. There are two, $\frac{1}{4}$ turn screws holding the door in place.

If you are using ATA cards, it should be ready to use. If you are using an SRAM card, make sure the battery is installed (if required). To insert a card into your Allegro, complete the following steps:

- 1) Turn the Allegro off and place it face-down on a surface.
- 2) Turn each screw counter-clockwise $\frac{1}{4}$ turn to release the door, using a flat-head screwdriver.

- 3) Insert the card socket-first with the front of the card facing the door. Gently push it in until it stops.



Note: Be careful when inserting and removing cards. Excess force could damage the card and the card drive. If the system tray indicator for the PC card activity is on, the computer is writing to the card. Do not turn off the Allegro and remove the card until the indicator stops blinking. Incomplete files can corrupt the data already stored on the card.

- 4) Close the door to the PC card slot.
- 5) Turn each screw clockwise $\frac{1}{4}$ turn to seal the compartment.

▲ Changing Cards

Because of the versatility of the Allegro, you can save your data to one PC card and remove it to take to the office while replacing the card with a new one to continue collecting data. To remove a card from the card slot in your Allegro, complete the following steps:

- 1) Open the card door as previously outlined.
- 2) Push the eject button.
- 3) Grasp the card firmly and pull it out.

To install a new card after removing one, follow steps 3 – 5 in the Inserting Cards section.

▲ Displaying Information about the PC Card

To display information about the installed PC card such as the card type and the name of the manufacturer, complete the following steps:

- 1) Tap on *Start* | *Settings* | *Control Panel* | *System*.
- 2) Tap on the *General* tab to view this information.

Expansion Pods

Custom expansion pods allow you to add additional integrated components. Our current available expansion pods include the following:

- GPS
- Bar Code
- 802.11b
- Bar Code/802.11b

Each of these expansion pods replaces the PC card door with an extended expansion pod door which contains the integrated technology.

Chapter 9 of this manual describes each expansion pod currently available and the instructions for using each pod.

Chapter 3



Memory Configuration and Data Storage Options

Internal Memory
Program and Data Storage Options

Internal Memory

The internal memory of the Allegro CX is configured much like the memory in laptop computers. It consists of ROM (Read Only Memory) and RAM (Random Access Memory).

▲ Read Only Memory (ROM)

ROM is used to store the Operating System and Utility programs. Information in the ROM is electronically “burned” into a chip before the chip is installed at the factory. Information stored in ROM can be read or copied. It can only be altered with a special utility program provided by the factory. The information stored in ROM remains intact whether the system power is on or off.

▲ Random Access Memory (RAM)

The Allegro has various sizes of internal RAM. Often referred to as the computer’s workspace, RAM is where programs are executed or run. RAM can be written to, read from, erased, etc. Its storage ability is temporary in nature, only holding information while the system has power (although the Allegro does not have to be turned on).

If the battery pack is drained or power is interrupted for any reason, everything stored in RAM is lost. The backup capacitor saves the contents of RAM for a limited time while you change the battery pack (see Chapter 2, Batteries, for details). You can use the Save System utility to save the RAM file system and registry. Refer to *Chapter 4, Windows CE, System Save/Restore Utilities*.

To see how much RAM is available for your use, complete the following steps:

- 1) Tap on Start and select *Settings | Control Panel | System | Memory*.
- 2) Subtract the In Use figures from the Allocated figures.
- 3) Adjust the amount of RAM allocated for storage memory versus program memory according to your needs.

A message appears if you try to save a file that is too large for the amount of RAM that has been allocated to storage memory or run a program that requires more execution space than you have allocated to program memory.

Program and Data Storage Options

The Allegro CX has two options for storing programs and data: internal non-volatile data storage and a PC card slot for memory cards.

▲ Storage Labels

To view the different storage locations by their name, complete the following steps:

- 1) Turn on the Allegro.
- 2) Double-tap on the My Computer icon on the desktop of your Allegro. The data storage options are designated as follows:

<u>Folder</u>	<u>Type of Storage</u>
C_Drive	Internal non-volatile data storage
Storage Card (shown only if a card is installed)	PC Card
My Document	RAM
Program Files	RAM

We recommend you use the internal non-volatile data storage as your primary storage area. This is because the information is retained without power. (ATA Flash and Compact Flash cards are also non-volatile.)

▲ Internal Non-Volatile Data Storage

The Allegro CX has a solid state storage drive used to store programs and data. It can be read from and written to just like the hard drive on a PC. The solid state internal storage is non-volatile so information stored on it is retained even when no power is supplied to the Allegro. The solid state storage is an internal drive and is not user accessible.

▲ PC Cards

The Allegro CX has a user-accessible PC card slot (PCMCIA 2.0 Type II) that allows you to add mass data storage to you Allegro with PC cards.

PCMCIA stands for the *Personal Computer Memory Card International Association*. This association has developed standards for PC cards. PC cards are about the size of a credit card and come in three types or thickness.



The PC card slot accepts Type I or Type II cards. These cards include ATA Flash Cards, SRAM (Static Random Access Memory), and Compact Flash cards. All types of cards have a 68 pin connector for attachment to the Allegro. The cards must be 5 V or 5 V / 3 V (PC cards that are 3 V only are not supported). This is a 16 bit card slot. It is not a “card bus” slot.

A PC memory card is a solid state, self-contained memory board housed in a credit card-sized package. These cards behave like hard drives. You can read from them, write to them, and erase single files from them. There are several types and brands of cards available.

ATA Flash Cards

ATA Flash cards provide solid state data storage. Power is not required to maintain the data. The Allegro accepts cards ranging in size from 64 M to 100+ M, with larger cards available.

Compact Flash Adapter Cards

Compact Flash cards provide solid state data storage. Power is not required to maintain the data. The Allegro accepts cards ranging in size from 64 M to 100+ M, with larger cards available.

An adapter is required to use a Compact Flash card. Slide the compact flash card into the adapter then insert the adapter card into the card slot behind the display of the Allegro as described under the Inserting Cards heading in the PC Cards section of Chapter 2.

SRAM Cards

SRAM cards provide solid state data storage. Power is required to maintain the data. The Allegro accepts cards ranging in size from 1 M to 64 M.

SRAM Card Battery

SRAM cards are powered by the Allegro while installed in the PC card slot. An on-board card battery retains data when the card is not being powered by the Allegro. If you have this type, make sure that the battery is installed before attempting to use the card. Other brands have a rechargeable battery that is automatically recharged while it is inside the Allegro. The rechargeable batteries are not replaceable.

The life of these batteries varies greatly depending on usage and the memory size of the card. If the lithium battery is drained, the information stored on the card is lost. When a new battery is installed, the card needs to be formatted. The manufacturer's instructions that came with the card include information on battery life and recommended changing intervals.

Replacing SRAM Card Batteries

SRAM card batteries are readily available at most stores. Unless the manufacturer's instructions state otherwise, we recommend that you change the battery every six months.

Formatting Cards

The ATA Flash cards and Compact Flash cards come pre-formatted. Files and directories can be copied onto it just like a standard disk drive.

Inserting and Removing Cards

For details on how to access the PC card slot and insert and remove cards, refer the *PC Cards* section of Chapter 2.

Chapter 4



Windows CE Operating System

Windows CE Overview
Windows Explorer
Storing Files and Programs
Application Command Bars

Windows CE Overview

This chapter describes the operation of the Allegro CX Microsoft™ Windows™ CE .NET version 4.2. The operating system has a similar look and feel to a desktop PC Windows operating system. Windows CE is designed for small, portable hand-held computers like the Allegro. Windows CE .NET gives the Allegro the ability to communicate and share information with Windows-based computers and the Internet by using ActiveSync.

Windows CE .NET offers the following features:

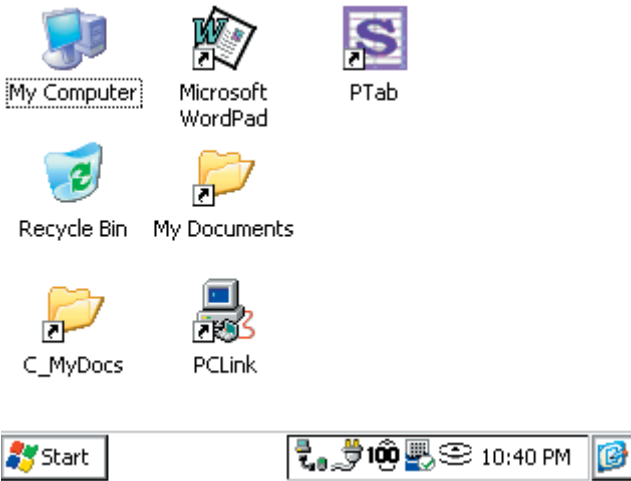
- Compact operating system and application file sizes
- Advanced power management
- Communication flexibility
- Graphic user interface similar to Windows 98/2000
- Packaged programs, including PTab Spreadsheet, WordPad, and Internet Explorer
- Multiple applications can run simultaneously

Windows CE .NET has the same Windows interface you are familiar with if you have used Windows on your desktop PC. You will find that you already have much of the knowledge you need to use Windows CE .NET effectively. This chapter is written with the assumption that you have a working knowledge of Windows.

▲ Starting Windows CE .NET

The first time you insert the battery pack into the Allegro you must fully charge the batteries (see the Quick Start Guide). While the Allegro is charging, you can turn it on. The Allegro loads and opens to Windows CE. It takes a moment for the desktop to appear and remain on the display. Various screens appear during the loading process, which do not require any action.

The Windows CE .NET Desktop appears on the screen:



Suspend/Resume Mode

If you press the *On/Off* key, the Allegro goes into suspend mode. When you turn it back on, it resumes in the same place it was at before you turned it off. For example, if a PTab spreadsheet file was on the screen when you turned the Allegro off, the same spreadsheet screen appears when you turn the Allegro back on. (If the batteries are drained or left out of the Allegro for more than five minutes, the Allegro restarts instead of resuming. Refer to the *Chapter 2, Batteries* section for details.)

▲ Display Touchscreen

The display has a touchscreen used to activate programs in Windows CE and to make selections. The touchscreen works similarly to a mouse.



Three styli are provided: two small on-board styli and a full size pen-type stylus. One small on-board stylus snaps into a holding bay built into the top of the Allegro. Other pointed objects can be used, including your finger. Be sure to use a device that does not scratch the screen.



Calibration

To calibrate the touchscreen and set up the screen-tap sensitivity, refer to the Stylus portion of the *Windows CE Control Panel* section of this chapter. If you have trouble selecting an item when you tap on it, the touchscreen may need to be calibrated.

Touchscreen Operation

Use the following techniques to operate the touchscreen:

- Touch the screen at the desired location, just as you would point and click with a mouse.
- Tap on the screen once to achieve a single click or twice to achieve a double-click.
- A right mouse click is accomplished by holding down the Alt key and tapping the screen.
- Drag and drop items by touching and holding the item on the screen, dragging the stylus to the desired location, and removing the pointing device from the screen.

Wiping Off the Touchscreen

When the touchscreen gets wet or dirty, a natural inclination may be to wipe across the display with a shirt sleeve or your hand. If you do this while the Allegro is running, you may inadvertently press items on the screen. To avoid this problem, the Allegro is equipped with a special *Touchscreen Disable/Enable* key described below.



The unique *Touchscreen Disable/Enable* key allows you to temporarily disable the touchscreen and wipe it off without inadvertently making selections on the screen. Press the *BLUE* shift key and the *TS* key to disable the screen. The contents of the display are still shown, but nothing happens if you press on the touchscreen.

Ideally, use a soft, clean cotton cloth to gently wipe off the screen. Do not use anything abrasive that could scratch the screen, including tissues and paper towels. Once the screen has been cleaned, use the same key sequence to enable the touchscreen. Refer to the *Chapter 2, Display* section for more details.

▲ Windows CE Programs

Desktop PC Programs

The Allegro CX Distribution CD includes the following programs for your PC:

- Microsoft ActiveSync®
- Software Development Kits for Visual Basic® and Visual C++®

Software Suite

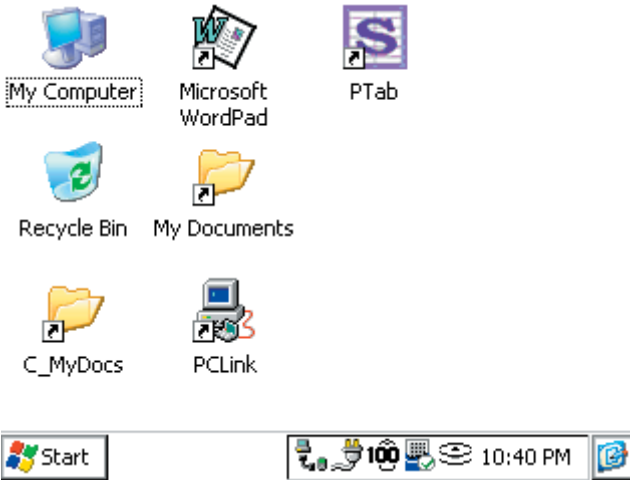
A set of Windows CE programs are factory installed on the Allegro. The following programs are included:

- PTab™ Spreadsheet Program
- WordPad™ for Windows CE .NET
- Windows Media 9 Series™ Player
- Pocket Internet Explorer™
- Inbox™ E-mail Utility
- Calculator
- Terminal Program
- Explorer™ File Manager

Copies of the Windows CE programs are included on the Allegro Distribution CD-ROM. Each program is described in detail in this chapter of the manual.

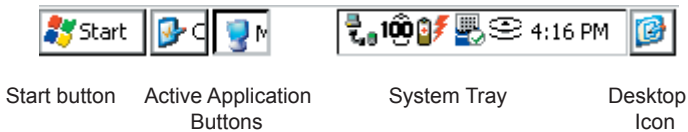
▲ Desktop

When you turn the Allegro CX on, a Desktop similar to the example shown below appears on the screen. The Desktop looks and operates much like the Windows 2000/XP Desktop. Program icons and shortcuts are displayed. Tap on an icon twice to execute it.



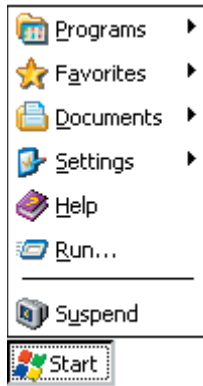
Desktop Taskbar

At the bottom of the screen is the Taskbar, it includes: the Start button, buttons for all the active applications, the system tray, and the Desktop icon.



Start Menu

Tap the *Start* button to view the menu as shown below:







From the menu, tap on the category you want to select. You can also use the up and down arrow keys to make a selection and press Enter. A secondary menu or dialog box appears.

Application Buttons

The Taskbar shows which applications are currently running and can be used to select an active application. Tap an application's button on the Taskbar to maximize it. Tap it a second time to minimize it.

System Tray Indicators

The system tray uses icons to show which specific applications are running. There are a number of icons common to the Allegro, but more may appear due to the installation and running of additional programs. The following system tray icons are common to the Allegro:

<u>System Tray Indicators</u>	<u>Indicator</u>	<u>Description</u>
	Remaining Battery Charge Status: shows the percent of charge remaining in the batteries.	
	External Power Input: indicates that you are connected to an external power source and not drawing power from the internal batteries.	
	Charging Indicator: appears in the system tray while the rechargeable batteries are being charged.	
	Data Storage Idle: outlined when the solid state disk is idle and not being read from or written to.	



Data Storage Active: darkens when data are being read from or written to the solid state disk.



PC Card: indicates that a PC card is installed in your Allegro.



PC Card Activity: darkens to indicate that the application program is accessing the PC card (do not remove the card when this icon is darker).



Caps Lock On: appears when the all capital letters option is activated.



Touchscreen Disable: appears when the touchscreen is disabled.



PC Connection: appears when there is an active connection between the Allegro and the desktop PC.



Bluetooth Connection: appears when Bluetooth is being actively used on your Allegro.



Heater: appears when the touchscreen heater turns on (this is applicable with monochrome screen only).

Double-tapping on an icon in the system tray brings up the related *Control Panel* setup screen. For example, if you double-tap on the time, the *Control Panel, Date/Time Properties* screen is shown.

Desktop Icon

Tap the Desktop icon to minimize all running applications and display the Desktop. Tap it again to return to the screen you were previously viewing.

▲ Special Functions

Keyboard functions have been provided that allow you to bring up the Start menu and change applications without using the touchscreen. These functions can speed up operation in some situations and come in handy when the taskbar has been minimized.

Start Menu



Press the *BLUE* shift key and the *Start* key to view the Windows CE Start menu. Use the arrow keys to move up and down the menu. Press the *Enter* key to make your selection.

Task Manager



Press the *Start* key to view the Task Manager. All of the programs that are currently running are shown. Select which program you want to run by using the up and down arrow keys to highlight the desired program and pressing *Enter*. You can also close applications from the Task Manager.

▲ On-line Help

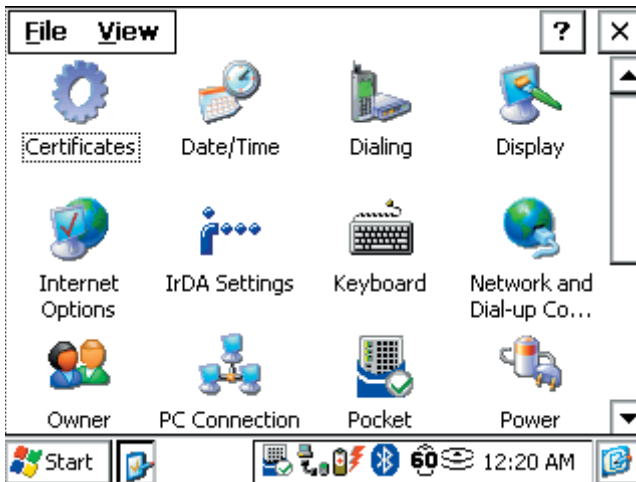
For on-line help with Windows CE basics or with a specific application, tap the *Start* button and select *Help*. Select a topic from the Help Contents list. You can also tap the [?] button from within an application to obtain program specific or Windows CE help.


▲ Control Panel

The Control Panel consists of a group of windows called applets that control the different aspects of Windows CE .NET operating system. Each applet has settings you can change, allowing you to customize your Allegro. To access the *Control Panel*, complete the following steps:

- 1) Turn on your Allegro.
- 2) Tap *Start* | *Settings* | *Control Panel*.

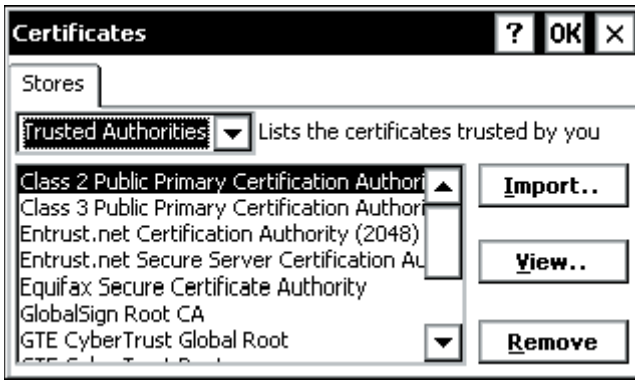
A *Control Panel* screen, similar to the one shown below, appears. Double-tap on the application you want to view.




 *Note: You must press the OK button when settings in a Control Panel applet are changed in order for the settings to be saved. Once the Control Panel applets are set up the way you want, run the Save System utility to save all settings (described later in this chapter).*

Certificates

The *Certificates* applet is used to create secure communication with specific programs you select on your Allegro. This feature allows only the users you have certified the ability to access the program.



 *Note: The CE .NET operating systems provides a list of preset certificates that can be viewed and selected in the larger text box on the Certificates screen.*

Below the Stores tab is a drop-down box with options to view and/or modify following certificates:

- Trusted Authorities
- My Certificates
- Other Authorities

Trusted Authorities

The *Trusted Authorities* option lists the top-level certificates for authorities you trust. This option allows you to view the main users of the Allegro and see what programs they have access to.

My Certificates

The *My Certificates* option contains all the personal certificates you use to identify yourself. This option allows you to view all the programs on the Allegro you have access to.

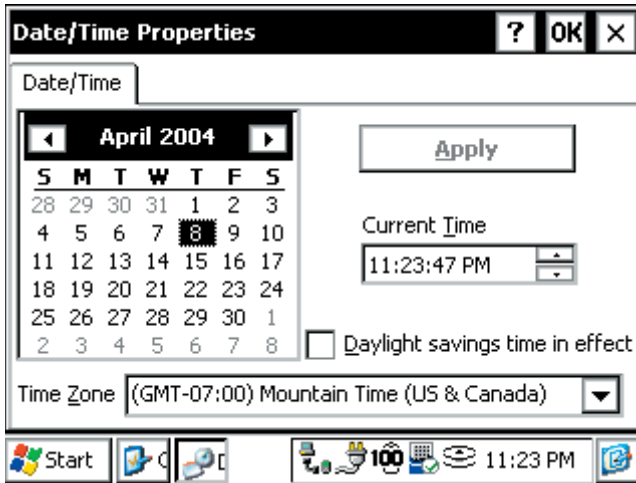
Other Authorities


The *Other Authorities* option is for intermediate certificate authorities that assist with establishing a chain of trust. This option allows you to view all the users who have access to the Allegro and what programs they have access to.

With the *Certificates* applet, you can Import (or add) new certificates to programs on your Allegro. You can view the certificates to see details about them, such as the expanded name or expiration date. You can Remove (or delete) certificates from your Allegro as needed.

Date/Time

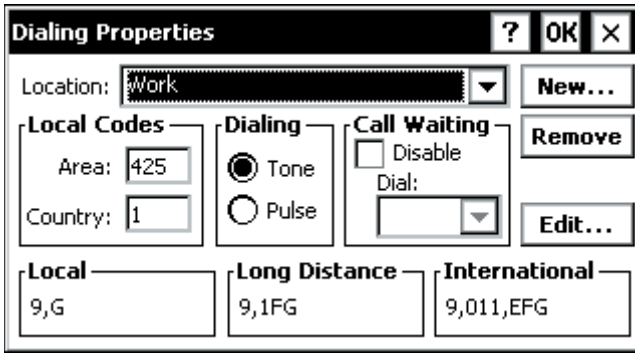
The *Date/Time Properties* applet is used to set the current date, time, and time zone. The *Date/Time* tab displays a calendar, allowing you to select the correct month, day, and year. The *Current Time* option allows you to set the correct hour and minute during the day. The *Time Zone* option allows you to select which time zone you are in.



 *Note: The "Daylight savings time in effect" option does not affect the Current Time when this option is selected/deselected and applied. If you are in a time zone that is affected by daylight savings, select the "Daylight savings time in effect" function and tap on Apply. When daylight saving comes into effect on your calendar, the time automatically changes. Your Allegro receives a pop-up notification that your clock has changed.*

Dialing

The *Dialing Properties* applet is used to create dialing locations and set dialing options to connect to a service provider or remote computer.

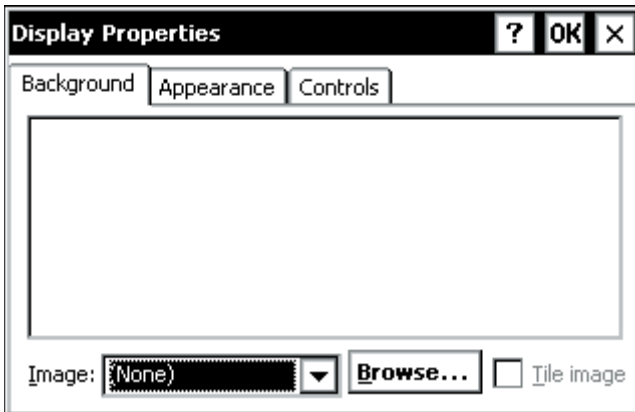


Display

The *Display Properties* applet has several tabs controlling different display features. Each tab has features allowing you to change different appearance options of your Windows CE desktop.

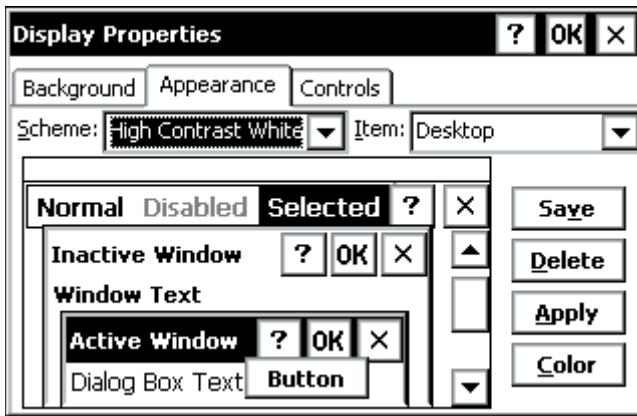
Background

The *Background* tab gives you options for the desktop background image (the default is *None*).



Appearance

Use the *Appearance* tab to change the color scheme of the display contents (the default is High Contrast White). Windows Standard and High Contrast Black are also recommended.

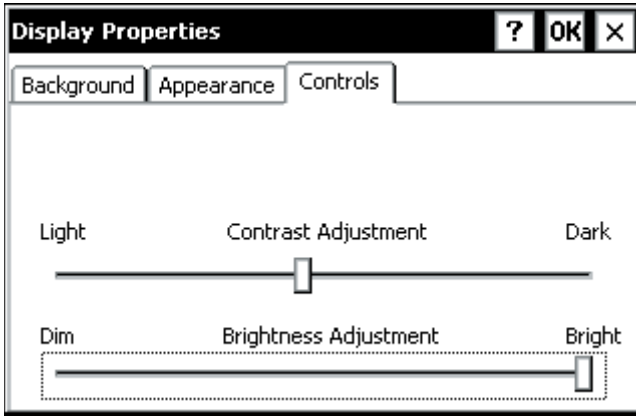


When using a monochrome display, options such as Eggplant appear as various shades of gray. When using a color display you can see the selectable color schemes in their true colors. As you make an appearance selection, the change is shown on the left side of the screen, allowing you to view it before you apply your selection.

Customize the display by clicking on an element shown on the left, Window Text for example, or selecting it from the pull down list shown in the upper right. Tap on the *Color* button below the Item box and a palette with available shades of gray appears if using the monochrome display or a palette with available colors appears if using the color display.

Controls

The *Controls* tab allows you to select the *Contrast* and *Brightness* of the backlight.



If you are using a monochrome screen the heater options appear. The *Display Heater* options are *Auto* and *Off*. *Auto* is the default setting, which turns on the heater automatically. Adjust the display contrast by moving the slide bar left or right.

Note: The display heater cannot be used if you are using alkaline batteries. The Auto option is not available.

Internet Options

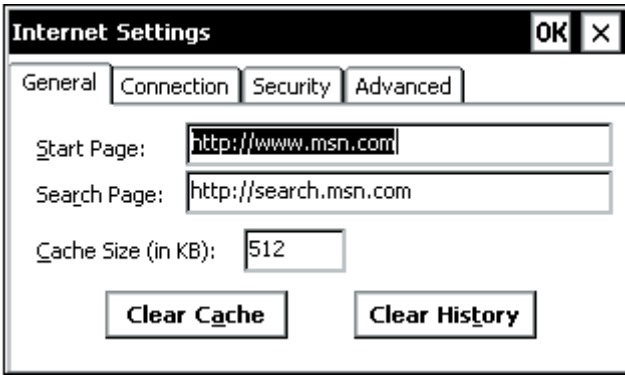
The *Internet Settings* applet allows you to set up the following Internet functions on your Allegro when it is connected to the Internet. Tapping on *OK* saves all the settings you have selected and closes the Internet Settings screen. Tapping on the *X* closes *Internet Settings* screen without saving any settings.

General

The *General* tab allows you to set and control the following options:

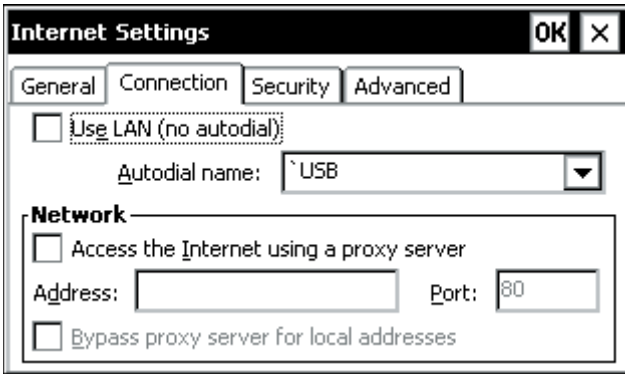
- Start Page:** The Web page your Allegro always opens when the unit connects to the Internet.
- Search Page:** The search engine Web page that opens when the search option is selected on the Internet Explorer.
- Cache Size (in KB):** The amount of cache held in your Allegro before it is deleted, the default it 512 kilobits (KB).
- Clear Cache:** Removes all Internet cache files from your Allegro.

- ❑ **Clear History:** Removes all the Web addresses that have stored in your Internet Explorer address box.



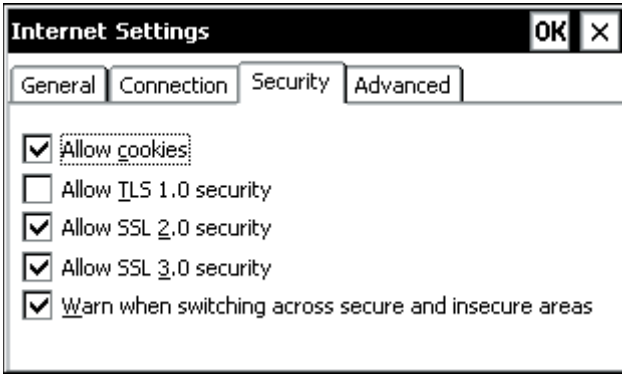
Connection

The *Connection* tab allows you to set up the type of Internet connection you are using on your Allegro. If the Allegro is connected to a Network, those settings are available on this tab.



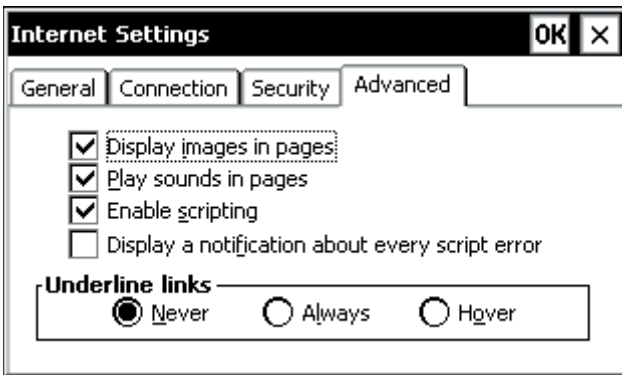
Security

The *Security* tab allows you to set up Internet security levels that are applied when the Allegro is connected to the Internet. These settings are activated and deactivated by tapping in the small box next to the security option, a checkmark confirms the security setting is active.



Advanced

The *Advanced* tab allows you to set up the some additional Internet settings connected to additional Web page options, such as displaying images, playing sounds, enabling scripting and how links are presented.

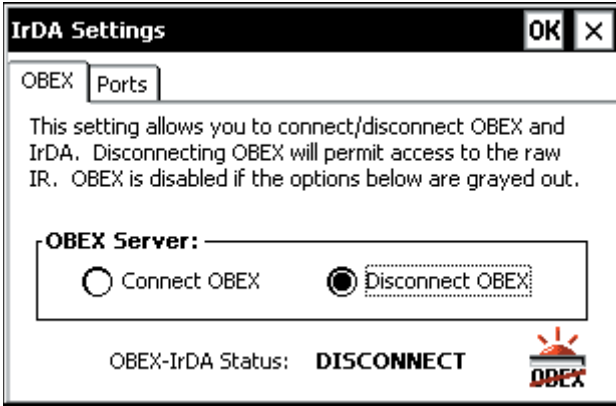



IrDA

The *IrDA Settings* applet is used when using infrared or Bluetooth on your Allegro CX. The *IrDA* tab allows you to enable or disable object exchange (OBEX) and/or the IrDA ports.

OBEX

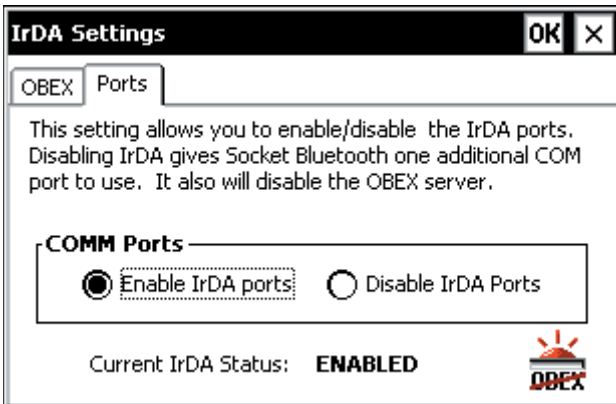
The OBEX tab offers a setting that allows you to connect or disconnect OBEX and IrDA. The OBEX function is disconnected by default. This default setting permits access to the raw IR, and helps extend the battery life of your Allegro.




 *Note: If the OBEX Server options box is grayed out, the COMM Ports option to Disable IrDA Port found on the Ports tab has been activated.*

Ports

The Ports tab allows you to enable or disable the IrDA ports on your Allegro. Disabling the ports allows you access to one more additional Bluetooth port when using Bluetooth on your Allegro.

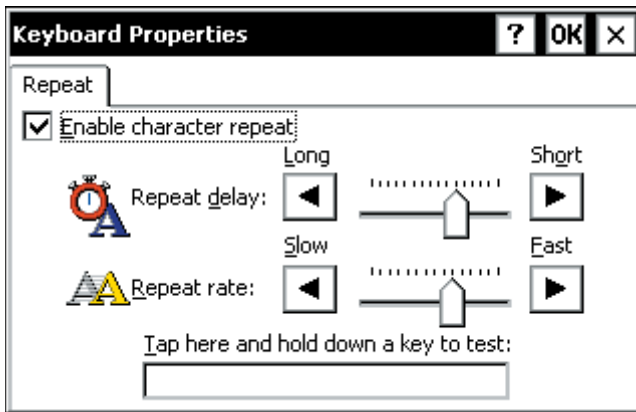


If you disable the IrDA Ports option, a pop-up message appears informing you to perform a System Reset on your Allegro to save and activate this option.

 *Note: A System Reset is required to save and activate the selected setting whether you enable or disable the IrDA ports.*

Keyboard

The *Keyboard Properties* has a *Repeat* tab used to enable or disable character repeat when you hold down a key on your Allegro keyboard. If the *Enable character repeat* is selected, you can set the repeat delay and repeat rate.



Network and Dial-up Connections

The *Network and Dial-up Connections* applet allows you to create a connection for your Allegro to access the Internet. You can choose from a dial-up connection or a direct connection.

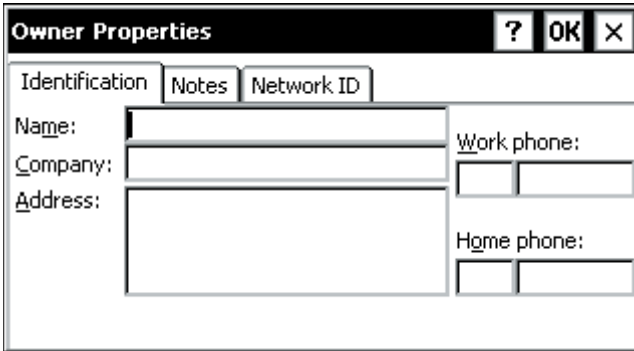


Owner

The *Owner Properties* applet allows you to set up identifications and networks ID's on your Allegro.

Identification

The *Identification* tab is used to specify personal information, such as your name, address, and phone number.

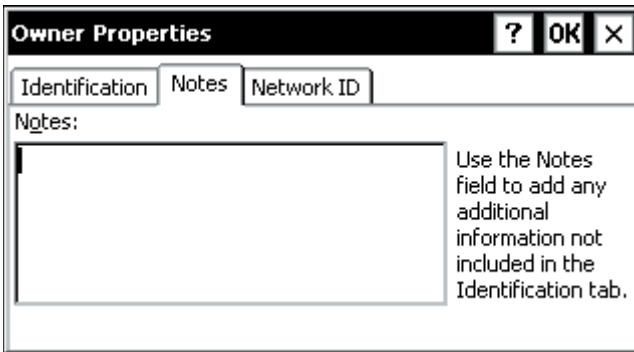


The screenshot shows the 'Owner Properties' window with the 'Identification' tab selected. The window title bar includes a help icon, 'OK', and 'X' buttons. The 'Identification' tab is active, and the 'Notes' and 'Network ID' tabs are visible but inactive. The form contains the following fields:

- Name:** A single-line text input field.
- Company:** A single-line text input field.
- Address:** A multi-line text input area.
- Work phone:** Two single-line text input fields.
- Home phone:** Two single-line text input fields.

Notes

The *Notes* tab provides a place to add any additional information that is not included in the *Identification* tab.

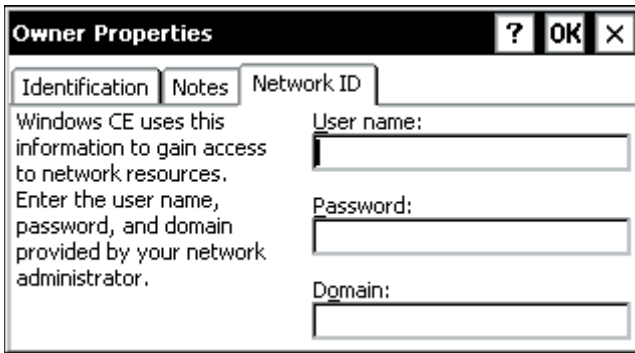


The screenshot shows the 'Owner Properties' window with the 'Notes' tab selected. The window title bar includes a help icon, 'OK', and 'X' buttons. The 'Notes' tab is active, and the 'Identification' and 'Network ID' tabs are visible but inactive. The form contains the following elements:

- Notes:** A large multi-line text input area.
- Instructional text:** A text box on the right side of the window that reads: "Use the Notes field to add any additional information not included in the Identification tab."

Network ID

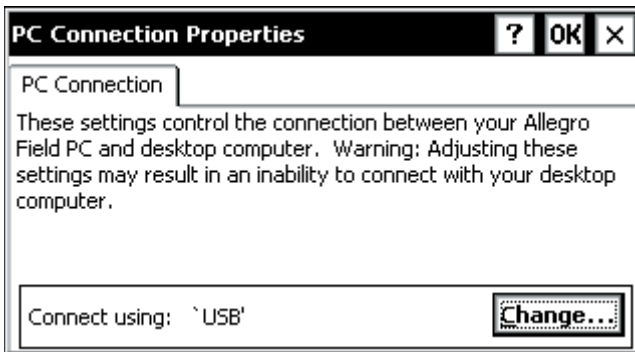
The *Network ID* tab is used to create a personal, unique identifier you receive for accessing a remote network. In the *Network ID* tab, enter the same user name, password, and domain name you use to log onto the remote network at the office. This ID allows you to access the remote network with your Allegro.



The screenshot shows the "Owner Properties" dialog box with the "Network ID" tab selected. The dialog has a title bar with a question mark, "OK", and "X" buttons. Below the title bar are three tabs: "Identification", "Notes", and "Network ID". The "Notes" tab is active, displaying the text: "Windows CE uses this information to gain access to network resources. Enter the user name, password, and domain provided by your network administrator." To the right of the notes are three input fields labeled "User name:", "Password:", and "Domain:", each with a corresponding text box.

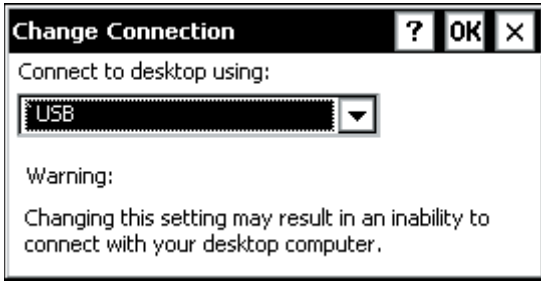
PC Connection

The *PC Connection Properties* applet allows you to change the port and baud rate used for communicating with your Allegro and PC through ActiveSync on the *PC Connection* tab. The *USB* port is the default setting.

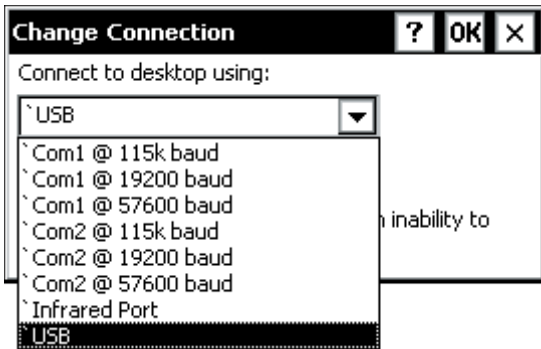


The screenshot shows the "PC Connection Properties" dialog box with the "PC Connection" tab selected. The dialog has a title bar with a question mark, "OK", and "X" buttons. Below the title bar is the "PC Connection" tab. The main area contains the text: "These settings control the connection between your Allegro Field PC and desktop computer. Warning: Adjusting these settings may result in an inability to connect with your desktop computer." At the bottom, there is a label "Connect using: `USB'" and a "Change..." button.

If you are not using a USB/Power Dock to connect your Allegro to your PC, tap on the *Change* button to access the *Change Connection* screen.



Tapping on the down arrow accesses the drop-down list of available connection options. Tap on the COM type your Allegro is using and tap on *OK* to save the new setting. If you do not want to change the COM port, tap on *X* to cancel out of the *Change Connection* screen and return to the *PC Connection Properties* screen.

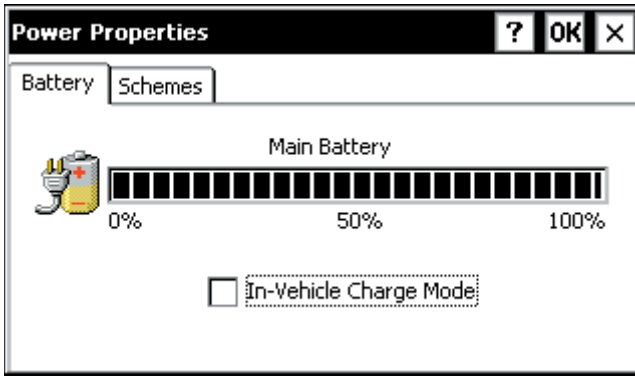


Power

The *Power Properties* applet shows information about the power level of the batteries in your Allegro.

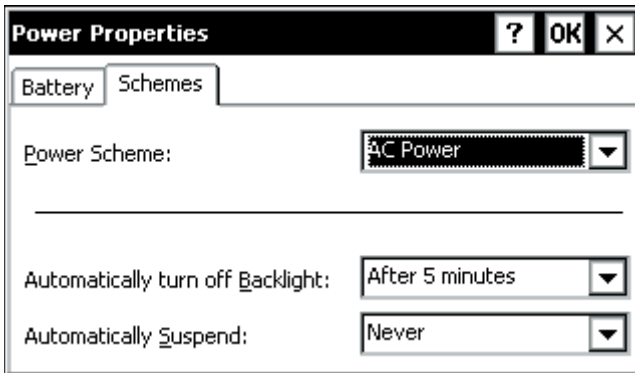
Battery

The *Battery* tab shows the status of the main battery.



Schemes

The *Schemes* tab allows you to specify the amount of time that passes before the Allegro turns off the backlight, and the amount of time that passes before the Allegro goes into suspend mode. These times are set twice, once for each power type the Allegro is using.



The *Power Scheme* option allows you to choose one of the following power supplies and set the suspend times:

- Battery Power:** The Allegro is powered by a NiHM battery pack.
- AC Power:** The Allegro is powered by an AC wall adapter or setting in a USB/Power Dock.

The *Power Scheme* sets itself automatically depending on the power source the Allegro is using.

The *Automatically turn off Backlight* option sets the amount of time that the Allegro sits idle before the backlight on the Allegro shuts off.

The *Automatically Suspend* option sets the amount of time the Allegro sits idle, after the backlight turns off, before the Allegro goes into suspend mode.

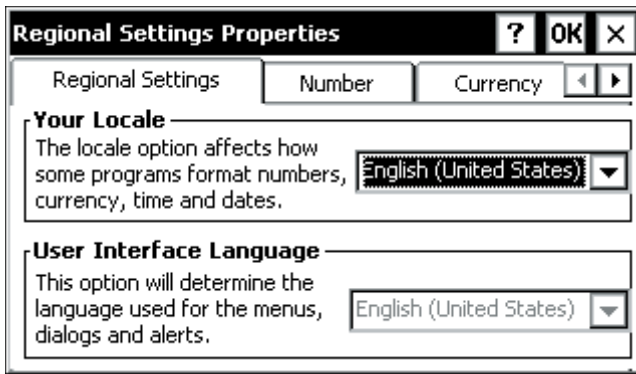
Note: Remember that when setting these times the suspend time starts to countdown to suspend after the backlight has turned off. If the Switch state to System Idle is set to three minutes (the default for Battery Power) and the Switch State to Suspend option is set to five minutes (the default for Battery Power) it takes eight minutes of sitting idle before the Allegro goes into suspend mode.

Regional Settings

Changes made in the *Regional Settings Properties* applet mainly affect programs that support international settings. In this applet, you can change how these programs are displayed and how the numbers, currency, time, and dates are sorted.

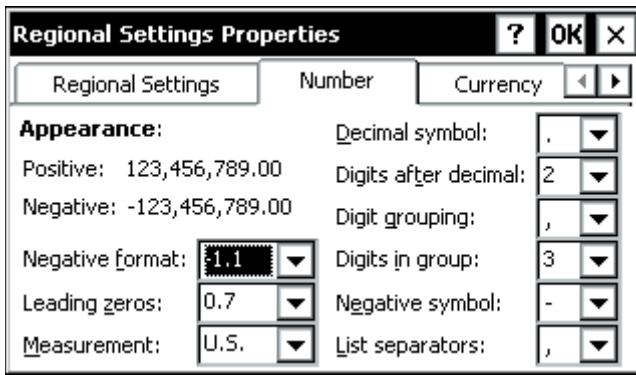
Regional Settings

The *Regional Settings* tab is used to set the location on the earth that you are using the Allegro, and allows you to set the language of the Allegro's interface.



Numbers

The *Numbers* tab is used to set up numbering on your Allegro, including the measurements (U.S. or Metric) and symbologies, such as the decimal symbol, negative symbol, etc.

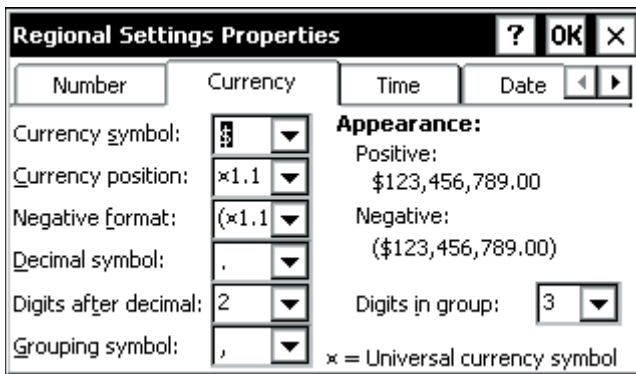


The image shows the 'Regional Settings Properties' dialog box with the 'Number' tab selected. The dialog has a title bar with a question mark, 'OK', and 'X' buttons. Below the title bar are three tabs: 'Regional Settings', 'Number', and 'Currency'. The 'Number' tab is active. The 'Appearance:' section contains the following settings:

Positive:	123,456,789.00	Decimal symbol:	.
Negative:	-123,456,789.00	Digits after decimal:	2
Negative format:	1.1	Digit grouping:	,
Leading zeros:	0.7	Digits in group:	3
Measurement:	U.S.	Negative symbol:	-
		List separators:	,

Currency

The *Currency* tab is used to set up currency symbologies, such as the currency symbol, decimal symbol, etc.



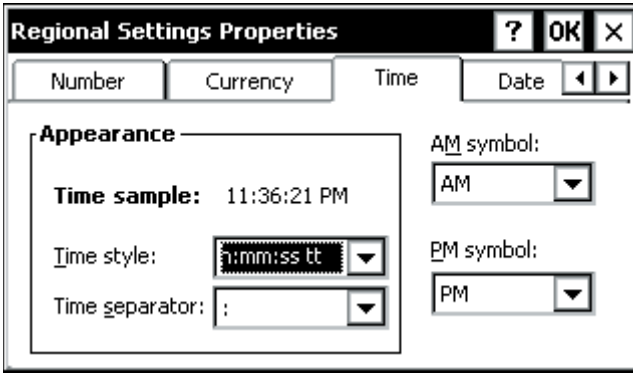
The image shows the 'Regional Settings Properties' dialog box with the 'Currency' tab selected. The dialog has a title bar with a question mark, 'OK', and 'X' buttons. Below the title bar are four tabs: 'Number', 'Currency', 'Time', and 'Date'. The 'Currency' tab is active. The 'Appearance:' section contains the following settings:

Currency symbol:	\$	Positive:	\$123,456,789.00
Currency position:	×1.1	Negative:	(\$123,456,789.00)
Negative format:	(×1.1)	Digits in group:	3
Decimal symbol:	.		
Digits after decimal:	2		
Grouping symbol:	,		

× = Universal currency symbol

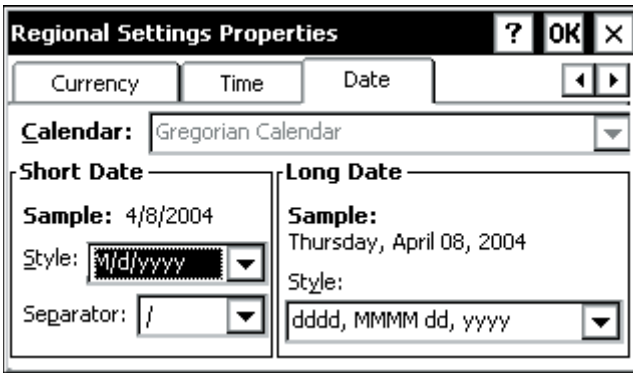
Time

The *Time* tab is used to set up the way the time is displayed in the system tray of the Allegro.



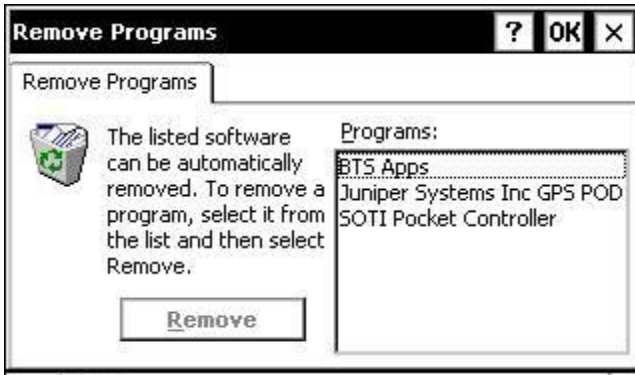
Date

The *Date* tab is used to set up the way the date is displayed on the Allegro.



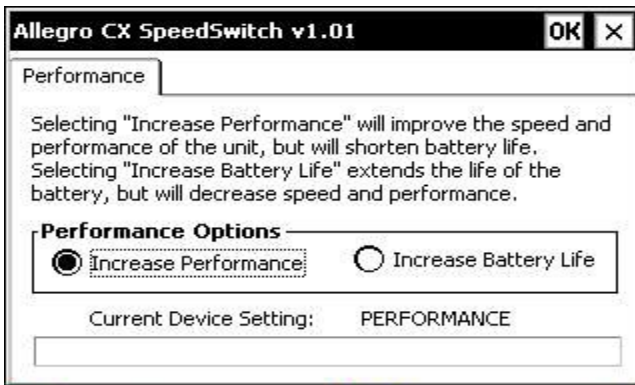
Remove Programs


The *Remove Programs* applet allows you to remove programs that you have installed on the Allegro. You cannot remove programs that were factory installed, such as *WordPad*.



SpeedSwitch

The *SpeedSwitch* applet allows you set the performance of the Allegro CX. There are two settings on this applet, one increases the speed of the Allegro, the other increases the battery life.



 *Note:* To enable the performance option once it is changed, the Allegro must be turned off and then back on.

Increase Performance

The *Increase Performance* setting is the default setting when the Allegro is shipped. This setting increases the speed performance of the unit. This setting causes the Allegro to consume more power resulting in a shorter battery life.

Increase Battery Life

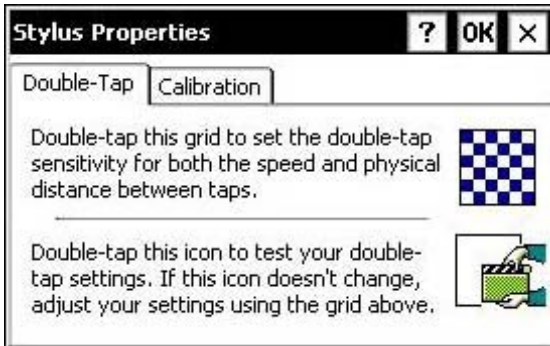
The *Increase Battery Life* setting increases the battery life of the Allegro CX, but results in a reduced performance speed.

Stylus

The *Stylus Properties* applet allows you to set up the sensitivity of the touchscreen. You can also recalibrate the touchscreen if needed.

Double-Tap

The *Double-Tap* tab is used to set up and test the double-tap sensitivity of the touchscreen for speed and distance between taps.



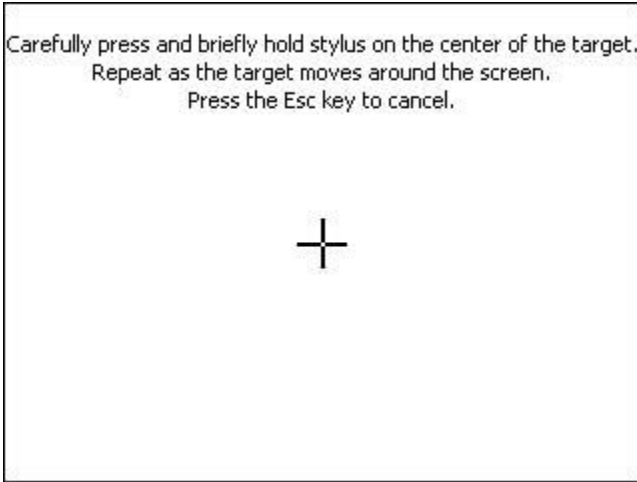
Calibration

From the *Calibration* tab, the touchscreen is recalibrated. If you have trouble selecting an item when you tap on it, the touchscreen may need to be recalibrated.



The *Recalibrate* option can be accessed from the *Recalibrate* button and may be accessed if the Allegro has been without any batteries for longer than 15 minutes and without saving the system.

When calibrating the touchscreen, hold the stylus down on the plus mark (+) for two seconds. Complete this procedure for each + mark shown on the touchscreen. Press *Enter* when prompted.

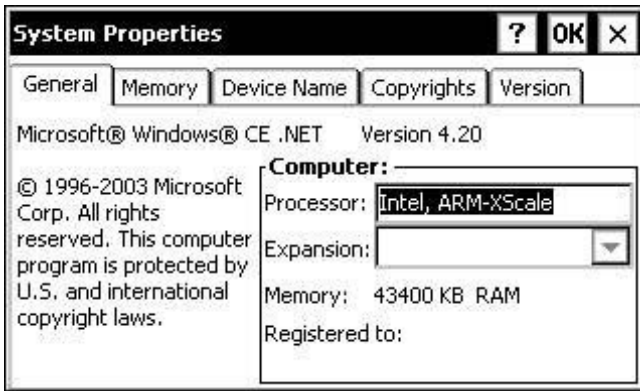


System

The *System Properties* applet displays general information about the hardware and software configurations for your Allegro.

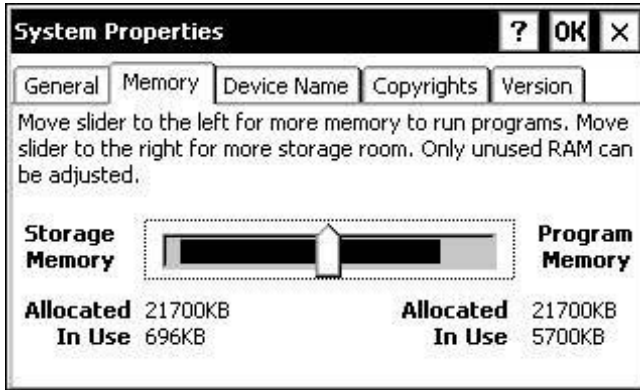
General

The *General* tab gives you system information including the processor type, etc.



Memory

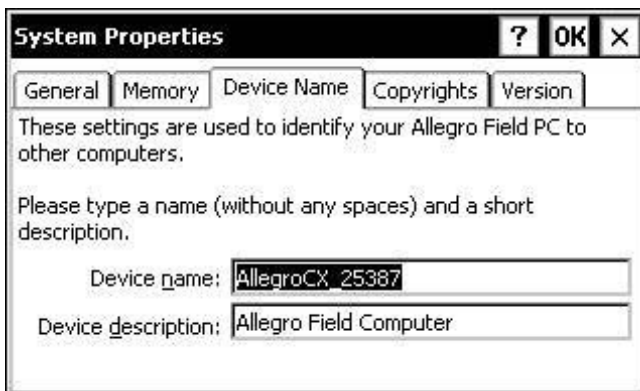
The *Memory* tab allows you to adjust the allocation of RAM between program memory and storage memory.



The majority of RAM should be allocated to program memory so the applications have plenty of execution space. Define the amount of usable RAM by subtracting the In Use figure from the Allocated figure.

Device Name

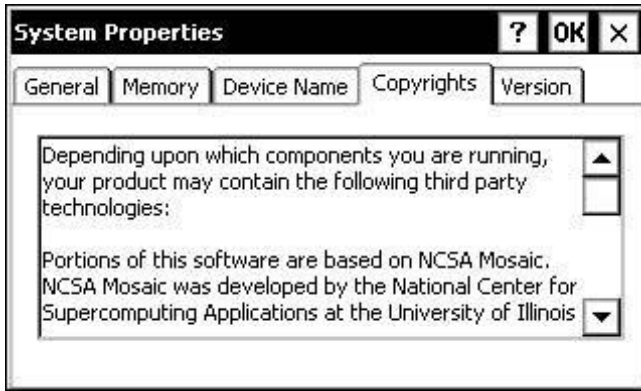
The *Device Name* tab allows you to view or change the name of your Allegro. In the *Device name* box, AllegroCX_##### (##### = serial number) is entered automatically. This unique identification makes it possible for individual Allegros to be identified by other computers, and in situations where multiple Allegros are connected together.



To change the name of your Allegro, highlight the name in the *Device description* box and type in the new name of your Allegro.

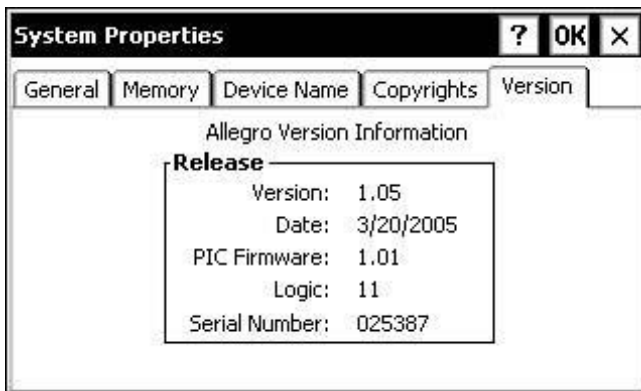
Copyrights

The *Copyrights* tab contains copyright information for specific programs on your Allegro.



Version

The *Version* tab displays the Allegro system version number and release date.

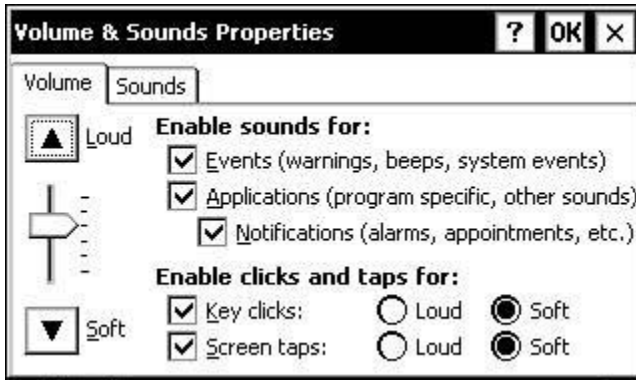


Volume and Sounds

The *Volume & Sounds Properties* applet is used to set the volume level, enable or disable the Allegro to make noises when buttons are pressed and set the type of noise that is made.

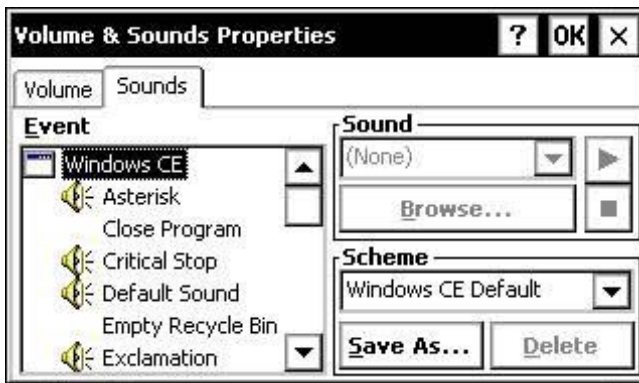
Volume

The *Volume* tab is used to adjust the speaker volume and turn on and off the sounds associated with different system events.



Sounds

From the *Sounds* tab, you can associate a sound with an action. The actions are listed on the left. The actions that have sounds associated with them have a speaker icon next to them (like an Asterisk in the screen shown below).



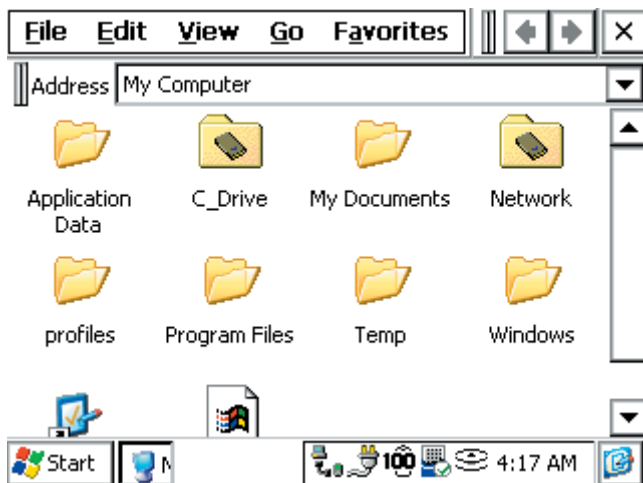
To edit, add, or listen to a sound, make a selection from the list on the left. The name of your selection is shown in the *Sound* box if a sound is already associated with it. Otherwise, it says *None*.

Select *Browse* to find and select the desired sound WAV file that you want associated with the selected action. To listen to the new sound (or existing sound), press the right arrow button next to the *Sound* box. Changes you make can be saved as a new sound *Scheme* or you can choose an existing sound scheme from the drop down list.

Windows Explorer

Windows Explorer allows you to browse the files and folders on the Allegro CX. To launch your Allegro's Windows Explorer, complete the following steps:

- 1) Turn your Allegro on.
- 2) Double-tap the *My Computer* icon on the desktop. When *Windows Explorer* opens, *My Computer* folder contents are displayed:



The menu options and buttons available on the Allegro are similar to the options in Windows Explorer on the desktop PC. The buttons on the toolbar are only partially visible when Explorer is first opened. To see the extended toolbar, tap on the double bar that appears to the right of the menu options. To hide the buttons, tap the double bar that appears at the far left of the toolbar. Many of the options that can be accessed using the buttons also can be accessed through one of the menus.

▲ Moving and Copying Files

Using the Edit Menu Options

You can use the cut, copy, and paste commands to move and copy files, by completing the following steps:

- 1) Select the file you want to act on.
- 2) Tap on *Edit | Cut* or *Edit | Copy*.
- 3) Go to the location you want to move or copy the file to.
- 4) Tap on *Edit | Paste*.

▲ Opening Two Explorer Screens

You can open two Windows Explorer screens. One opens to the source folder or file, and the other opens the destination folder.

Both Explorer screens are shown as active application buttons in the Taskbar as shown below:



↑ ↑
Both of these active application buttons represent Explorer screens

Open the Explorer screen with the source file or folder in it. Select the file you wish to move or copy and drag it to the destination folder's button on the taskbar. Continue to hold down the stylus on the button until the destination window opens, then drag the file or folder to the desired location in the window.

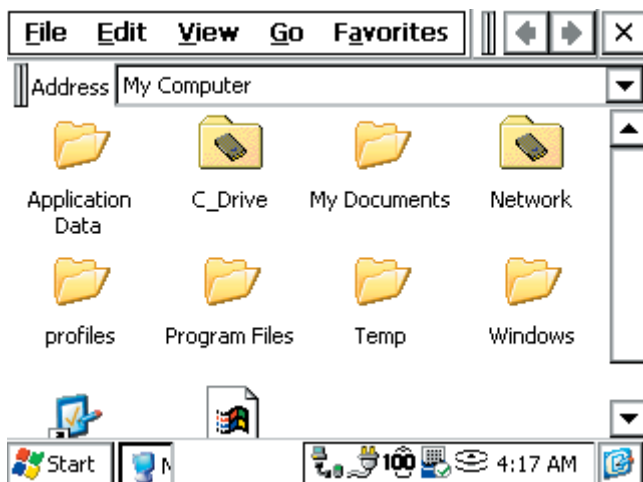
Note: When you are dragging a file or folder, it may not appear to be moving, even though it is. You may need to experiment with this procedure.

▲ Help

Use the on-line Help [?] for more details about the Windows Explorer program.

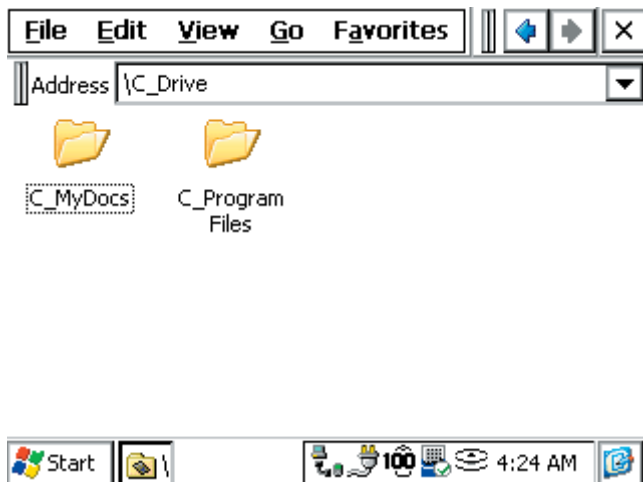
Storing Files and Programs

It is important that you understand the difference between storing data on the internal non-volatile storage versus RAM. From the Desktop of your Allegro, double-tap on the *My Computer* icon. The following folders are standard folder on the Allegro:



▲ C_Drive, Solid State Storage

The solid state storage is non-volatile. Information is retained even when no power is supplied to the Allegro. We recommend that you use the internal solid state storage as your primary storage area. In the My Computer on your Allegro, double-tap on *C_Drive* icon. The following folders are shown:



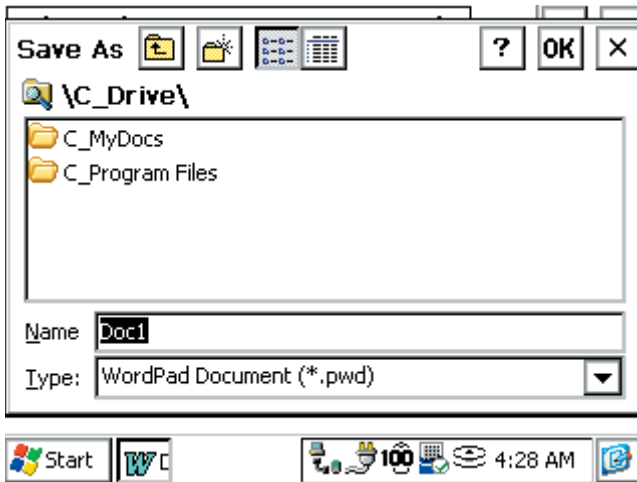
The *C_MyDocs* and *C_Program Files* folders were created for you to use in place of the *My Documents* and *Program Files* folders that are in the RAM file system. The C reminds you that these files are on the C_Drive, which is a safe area to store data.

▲ RAM File System

The storage ability of RAM may be temporary. If the batteries are drained or removed, or a Restore System utility is performed on the Allegro, information stored in RAM can be lost. (The super capacitor behaves like a backup battery and can maintain the RAM for up to five minutes while you change the batteries.) All of the folders are stored in RAM except for C_Drive and PC Card.

Some applications automatically bring up the *My Documents* folder when you save a file as shown in the example below. My Documents is stored in RAM, not on the internal non-volatile storage.

To save files to the internal non-volatile storage, switch the drive to the C_Drive before you save the file:



For more information about data storage options, refer to *Memory Configuration and Data Storage Options* in Chapter 3 of this manual.

Application Command Bars

Active applications display a command bar across the top of the screen. The command bar for *WordPad* is shown below:



This command bar contains drop-down menus, a help button [?] and an exit button [X] on the first line and a slider [||] and a toolbar on the second line.

Use the menus and toolbar buttons as you would on the desktop or notebook PC. Refer to the information about a particular program later in this chapter for more specific details.

▲ Gaining More Viewing Area on the Screen

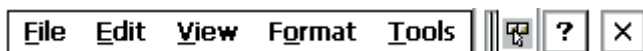
You can gain additional viewing area on the screen by hiding the menu bar, toolbar, and taskbar.

Moving the Menu Bar and Toolbar

The slider [||] is used to adjust how much of the menu bar or toolbar is displayed. Touch the slider with the stylus and drag it directly into the upper left-hand corner to combine the menu bar and the toolbar into one line. Part of the toolbar is shown:



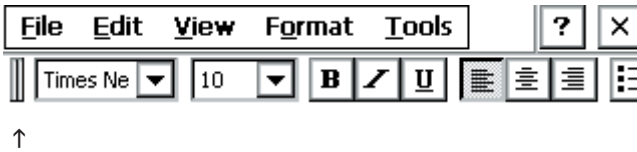
Once you have combined them, tap once on the slider to move the toolbar completely to the right and display the menu bar:



Tap the slider again to move it back to the left, displaying the toolbar again. You can also manually slide it to the right or left to view the entire menu bar, toolbar, or part of each:

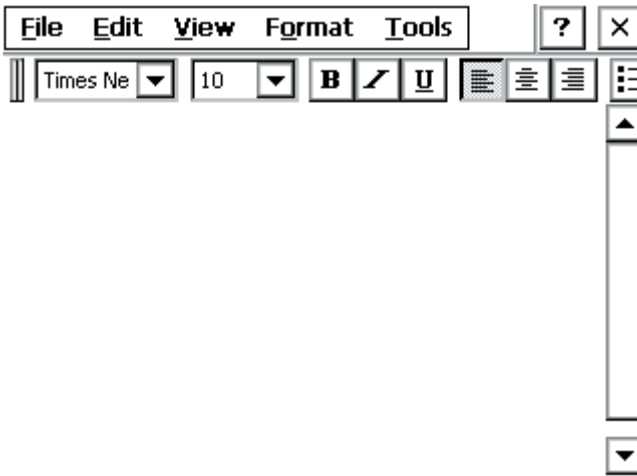


To view both bars on separate lines again, move the slider down where the toolbar was located originally:



Hiding the Taskbar




You can hide the Taskbar, freeing up room on the display for applications, to do this, tap the Start button and select *Settings* | *Taskbar*. Under *Taskbar* options tap the box next to Auto hide.



↑ Press the stylus along the edge to view the Taskbar

When the Taskbar is hidden, you can get it to appear if you press a stylus along the very bottom of the Allegro screen.

When the Taskbar is hidden you can press the *Start* button on the keyboard to bring up the *Start* menu. Press the *Task Manager* button to bring up the Task Manager and move between active applications and tasks.

Press  +  for Start menu, press  for Task Manager.

Chapter 5



Allegro CX Applications and Utilities

ActiveSync File Transfer Program
System Utilities
PTab Spreadsheet Program
WordPad
Windows Media 9 Series Player
Internet Explorer and InBox
Calculator Program
Terminal Program
Bluetooth

ActiveSync Transfer Program

Instructions on establishing communication between the Allegro and a desktop PC using ActiveSync, and synchronizing files are described in this section.

Microsoft's ActiveSync program runs on your desktop PC, allowing you to:

- ❑ Transfer and copy files between your desktop PC and the Allegro
- ❑ Manage the files on the Allegro remotely from your desktop PC
- ❑ Synchronize saved files between your desktop PC and Allegro

Obtain ActiveSync in one of the following ways:

- 1) Download it from the Allegro CX Distribution CD that was shipped with your Allegro.
- 2) Download the program from Microsoft's Web site free of charge.

☐ *Note: If you have a more recent version of ActiveSync installed on your computer, you do not need to install the older version of ActiveSync.*

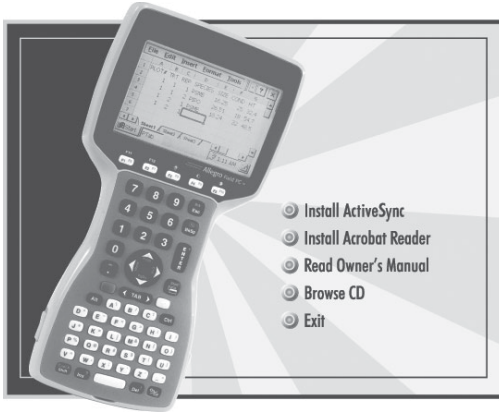
Install ActiveSync on your desktop PC before installing any of the programs on the Allegro CX Distribution CD-ROM. The installation process is the same regardless of whether you download it from the Internet or install it from the CD-ROM.

☐ *Note: Depending on which Microsoft applications you have installed on your desktop PC and whether or not you have previously downloaded ActiveSync, the screens you see during installation could vary from those described in this section. Carefully read and follow the directions given to you from the ActiveSync installation program.*

▲ Downloading ActiveSync from the Allegro CX Distribution CD

To download ActiveSync from the distribution CD shipped with your Allegro, complete the following steps:

- 1) Open the CD-ROM drive on your desktop PC, insert the Allegro CX Distribution CD, and close the drive. The following screen appears:



- 2) Click on the *Install ActiveSync* button.
- 3) Select a language the download instructions appear in. Once you select a language, the *Microsoft End-User's License Agreement* is shown.
- 4) Click on the *I Accept >>* button located at the end of the agreement if you agree to the terms of the agreement. You must agree to these terms to continue the download process.
- 5) Read the instructions when the *Download ActiveSync* screen appears. You must have Internet Explorer 4.01 or later to install.
- 6) Press the *Download Now* button.
- 7) Follow the instructions outlined in the *Installing ActiveSync* section of this chapter.

▲ Downloading ActiveSync from the Internet

You can visit Microsoft's Web site and type ActiveSync in the search engine to find the most recent version of ActiveSync available. If you download ActiveSync from the Web site, you must have Internet Explorer 4.01 or later to install it. This is a large file and a minimum of a DSL or cable modem Internet connection is highly recommended.

To download ActiveSync from Microsoft's Web site, start with the Web address below and complete the following steps:

<http://www.microsoft.com/mobile/pocketpc/downloads>

- 1) Select *ActiveSync* from the *Microsoft Downloads* list.
- 2) Select a language the download instructions appear in. Once you select a language, the *Microsoft End-User's License Agreement* is shown.
- 3) Click on the *I Accept >>* button located at the end of the agreement if you agree to the terms of the agreement. You must agree to these terms to continue the download process.
- 4) Read the instructions when the *Download ActiveSync* screen appears.
- 5) Press the *Download Now* button.
- 6) Follow the instructions outlined in the *Installing ActiveSync* section of this chapter.

 *Note: Periodically check with Microsoft's Web site for updates to ActiveSync.*

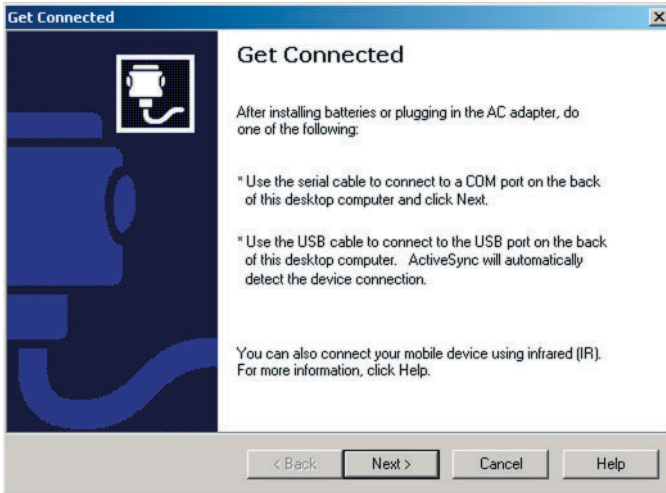
▲ Installing ActiveSync

To install ActiveSync on your PC, complete the following steps:

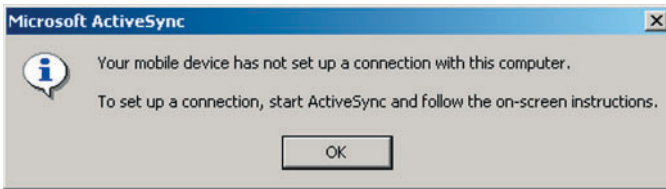
- 1) Open ActiveSync and select the *Install ActiveSync* option. The following screen is shown:




- 2) Click on the *Next* button and follow the instructions given to you by the ActiveSync Setup program. When ActiveSync is installed the following screen appears:



- 3) Click on the *Cancel* button on the *Get Connected* screen so you can continue to set up the communication settings. The following screen appears:



- 4) Click on the *OK* button.

 *Note: Depending on the operating system you are using on your desktop PC, you may be instructed to restart your desktop PC before completing the connection process.*

▲ Establishing a First Time ActiveSync Connection

There are two procedures for establishing a connection between the Allegro and your PC. The first is the first-time ActiveSync connection, and the second is for all connections after the first one.

If you already have ActiveSync installed on your desktop PC, proceed to the *Establishing Additional ActiveSync Connections* section of this chapter. If you have just downloaded and installed ActiveSync for the first time, complete the steps outlined in this section.

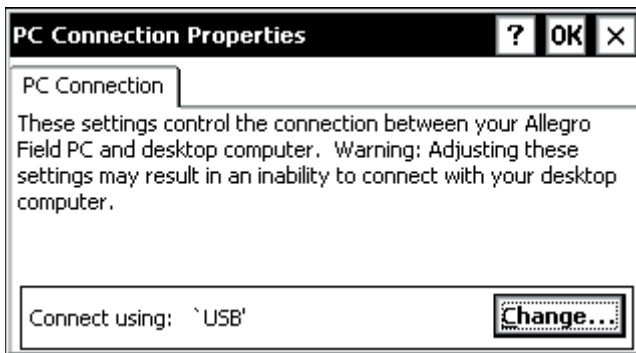
The Allegro CX has the following communication ports available for establishing an ActiveSync connection between the Allegro and desktop PC. You need to select which communication port to use for the ActiveSync connection between the Allegro and desktop PC and proceed to that section. The available communication ports are:

- COM 1 and 2
- Infrared
- USB

ActiveSync COM 1 or COM 2 Connection

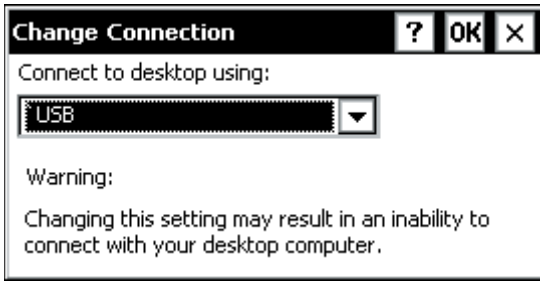
When establishing a *COM 1* or *COM 2* connection between the Allegro and your desktop PC for the first time, complete the following steps (all additional connections can be made by following the steps in the *ActiveSync Connection Process* section found later in this chapter):

- 1) Attach one end of the serial communication cable that was included with your Allegro (part number 12446) to the COM 1 or COM 2 port on your desktop PC.
- 2) Plug the other end of the communication cable into COM 1 or 2 on the Allegro.
- 3) Turn on the Allegro.
- 4) Tap the Start button and select *Settings | Control Panel | PC Connection*.

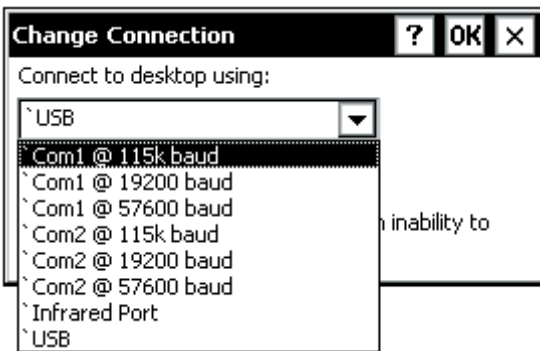


At the bottom of the screen next to *Connect using:* is the COM port the Allegro is set on for an ActiveSync connection.

- 5) Tap the *Change* button to access the *Change Connection* screen if you are using a different communication port than the *Connect using:* port lists.



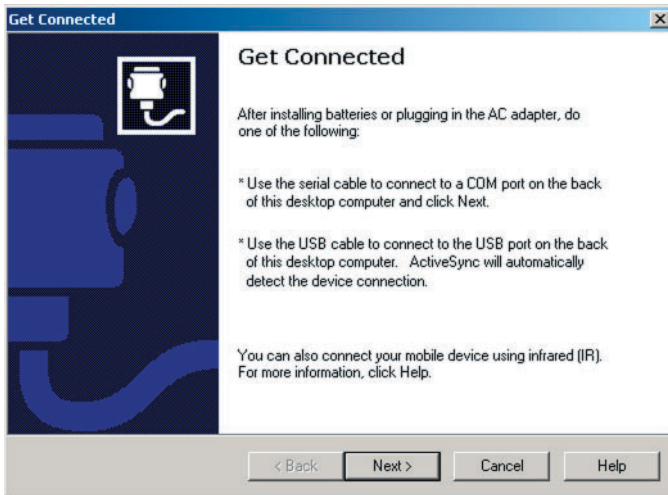
- 6) Tap on the arrow next to the *Connect to desktop using:* box to access a drop-down list



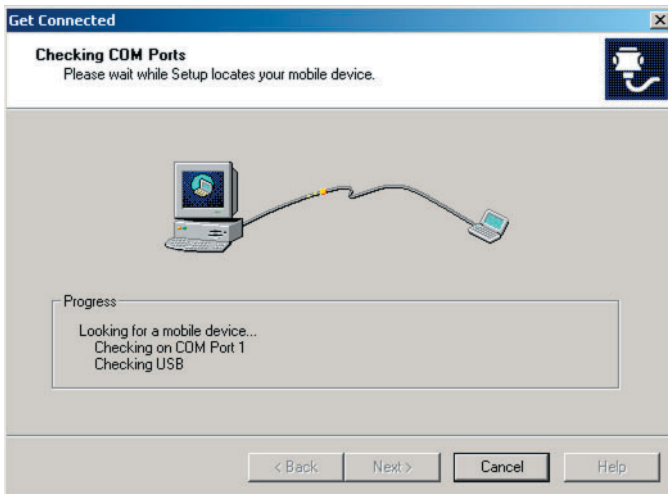
- 7) Tap on the desired communication port and baud rate in the drop-down box, and tap on the *OK* button.
- 8) Double-click on the *ActiveSync* icon on the desktop PC and the *Get Connected* screen appears.



- 9) Click on the *Next* button and the *Get Connected: Checking COM Ports* screen appears.




- 10) If using COM 1, the *Progress* box of the *Checking COM Ports* screen says *Looking for a Mobile device... Checking on COM Port 1*, double-tap on the *PC Link* icon on your Allegro desktop.



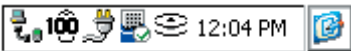
After tapping the *PC Link* icon on the Allegro desktop, a screen that says *Connecting to Host* is shown. After a connection is made, the following screen briefly shows on the Allegro:



If you are unsuccessful in your connection, go to the *An Unsuccessful Connection* section found later in this chapter.

 *Note: If the Progress box changes its message from Looking for a Mobile device... Checking on COM Port 1 to Checking on COM Port 2, ActiveSync has checked finished checking COM 1 on your desktop PC and advanced to check COM 2 (if your computer has two COM ports) for a connection.*

Once connected, this screen is automatically minimized and placed in the status box on the Taskbar.



If the Allegro disconnects from the desktop PC, by choice or inadvertently, this symbol disappears, letting you know the Allegro is not connected to the computer.

When the Allegro has successfully connected to the desktop PC a *New Partnership: Set Up a New Partnership* screen appears. Proceed to the *Setting Up a Partnership* section of this chapter.

ActiveSync IrDA Infrared Connection

When establishing an infrared connection between the Allegro and your desktop PC for the first time, complete the following steps: All additional connections can be made through the *ActiveSync Connection Process* section, follow the steps there.

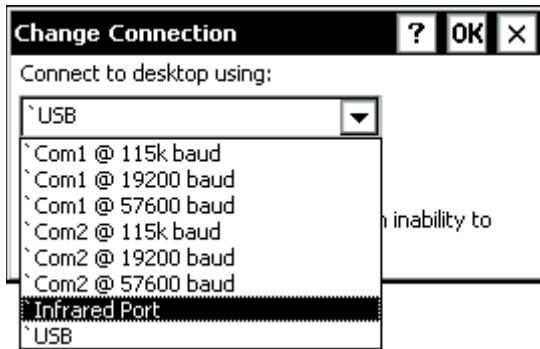
Complete the installation instructions that came with your IrDA infrared adapter. Depending on your desktop's Windows operating system you may need to access your desktop PC's wireless communications setup by selecting *Settings | Control Panel* and the wireless option (the name varies between operating systems). After the infrared settings are set, follow the same connection process as COM1 or COM2.

To select the infrared COM port as the COM port you are using, complete the following steps:

- 1) Turn on the Allegro.
- 2) Tap the *Start | Settings | Control Panel | PC Connection*.

At the bottom of the dialog box under *Connect to desktop using:* you see which COM port the Allegro is set on for the connecting process.

- 3) Tap the *Change* button to access the *Change Connection* screen if you are using a different communication port than the listed *Connect using:* port.
- 4) Select the *IrDA* port from the drop-down list.



- 5) Tap the *OK* button.

ActiveSync USB/Power Dock Connection

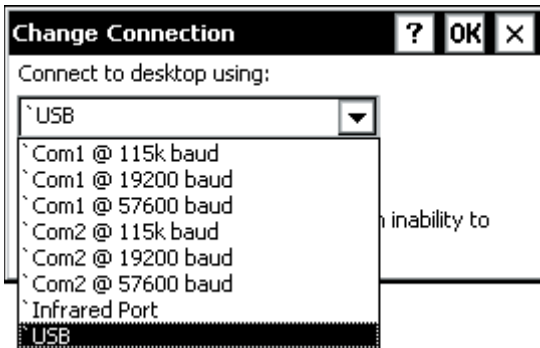
If you already have ActiveSync installed and for all additional connections, go to the *ActiveSync Connection Process* section found later in this chapter. When establishing a USB connection between the Allegro and the desktop PC for the first time, complete the following steps:

- 1) Plug in the USB cable into the desktop PC and then into USB/Power Dock.
- 2) Double-click on the *ActiveSync* icon on the desktop PC.

- 3) Place the Allegro into the USB/Power Dock. The Allegro automatically turns on and the *Getting Connected* screen disappears.

The USB is the default port and should already be selected. To double check the setting, complete the following steps:

- 1) Turn on the Allegro.
- 2) Tap the *Start | Settings | Control Panel | PC Connection*.
At the bottom of the dialog box under *Connect to desktop using:* you see the COM port the Allegro is set on for the connection process.
- 3) Tap the *Change* button to access the *Change Connection* screen if you are using a different communication port than the listed *Connect using:* port.
- 4) Select the *USB* port from the drop-down list.



- 5) Tap the *OK* button.

If the communication port you are using is not listed in the bottom dialog box under *Connect using*, tap the *Change* button.

If the USB default is not selected, select the USB port from the drop-down list. Tap the *OK* button.

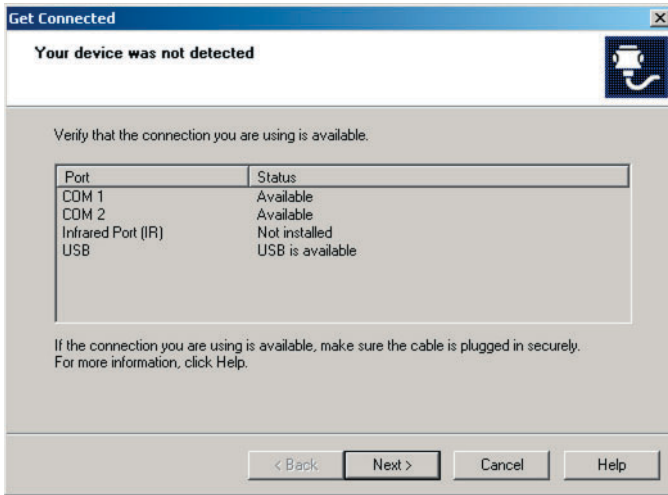
To connect, remove the Allegro from the USB/Power Dock then place it back into the USB/Power Dock. This automatically starts the connection process.

A screen on the desktop PC that says *Connecting* is shown. The *New Partnership: Set Up a New Partnership* appears. Proceed to the *Setting Up a Partnership* section of this chapter.

☐ *Note: If you are having problems with the Allegro connecting to the desktop PC while using the USB connection, perform a reset on the Allegro and repeat the USB connection process.*

Unsuccessful Connection


If the connection was not successful, the following screen appears on the PC:



From here, click on the *Next* button on the *Your device was not detected* screen and the *Getting Connected* screen appears again. Repeat the connection instructions for the COM port you are using until a successful connection is made.

▲ Establishing Additional ActiveSync Connections

If you already have ActiveSync installed on your desktop PC and have successfully connected your Allegro to your desktop PC, complete the following steps:

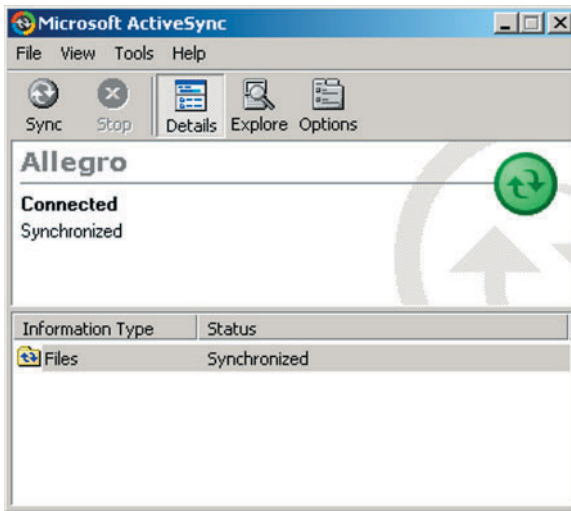
 *Note: These instructions are also designed for all additional connections between the Allegro and desktop PC using ActiveSync. You do not need to set up the communication settings each time, as described in Establishing a First Time Connection Using ActiveSync.*

- 1) Turn on your Allegro and your desktop PC.
- 2) Connect the communication cable to the ports you set up on each computer during the file transfer program installation process.

- 3) Press the *PC Link* icon on the Allegro's desktop, or if you are using the USB/Power Dock, place your Allegro into the Power Dock to initiate an ActiveSync connection. The following screen is briefly shown on the Allegro display:



If you set up a partnership between the Allegro and desktop PC, the connection is made automatically. When the connection is complete the following screen is shown:



- 4) Press the *Explore* button to view the contents of the Allegro from the desktop PC.



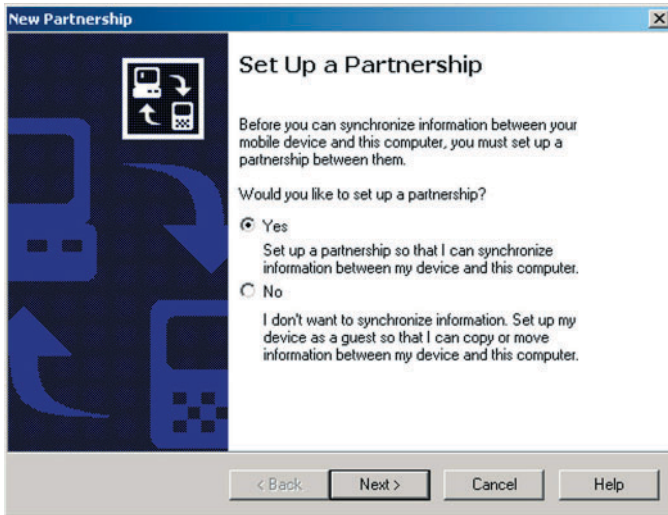
If you did not initially set up a partnership, you are shown the *Set Up a Partnership* screen. Select *Yes* to set up a partnership now or *No* to connect as a guest.

Troubleshooting

If you have any problems establishing communication between the Allegro and the desktop PC, check the communication settings on both computers and make sure the communication cable is firmly connected to the correct ports. Refer to the installation instructions for ideas on settings to review.

▲ New Partnership Setup

After you have successfully connected the Allegro to the desktop PC the following screen appears:



You can select *Yes* to set up a partnership or *No* to connect as a guest. The advantage to setting up a partnership is that each time you connect the Allegro to the desktop PC you are not asked which type of connection you want. The Allegro automatically connects as a partner.

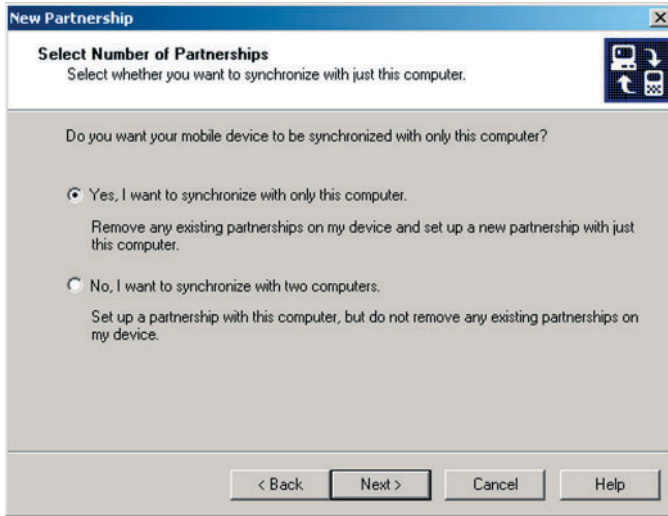
If you select *Yes*, continue on to the *Setting Up a Partnership* section.

If you select *No*, the Allegro automatically connects to the desktop PC as a guest, read the *Connecting as a Guest* section later in this chapter for additional information.

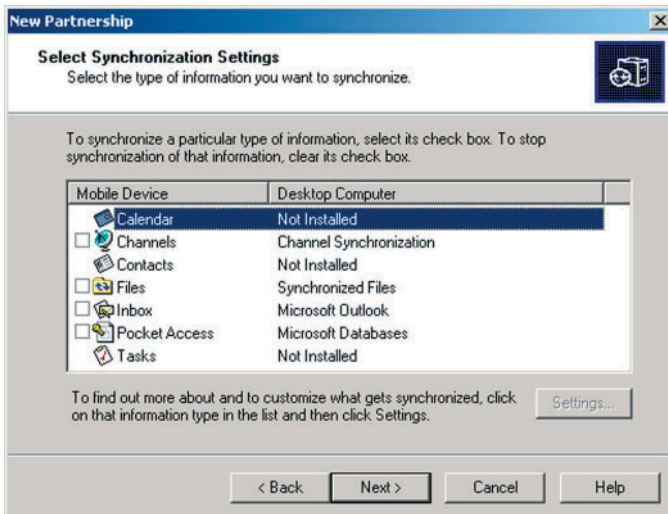
Setting Up a Partnership

To set up a partnership between the Allegro and desktop PC, complete the following steps:

- 1) Select the *Yes* option and press the *Next* button on the *Setting up a Partnership* screen. The following screen appears:

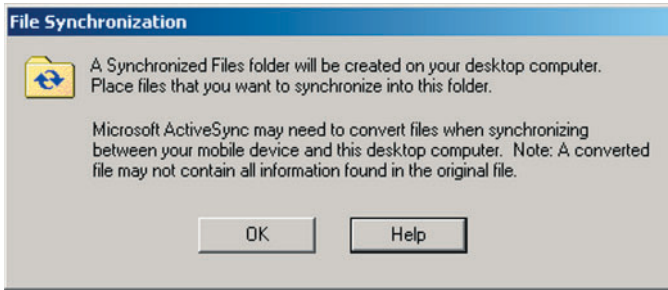


- 2) Select *Yes* if you want the Allegro to share a partnership with the desktop you are connected to, or *No* if you want to connect to more than one computer. Press the *Next* button. The following screen appears:

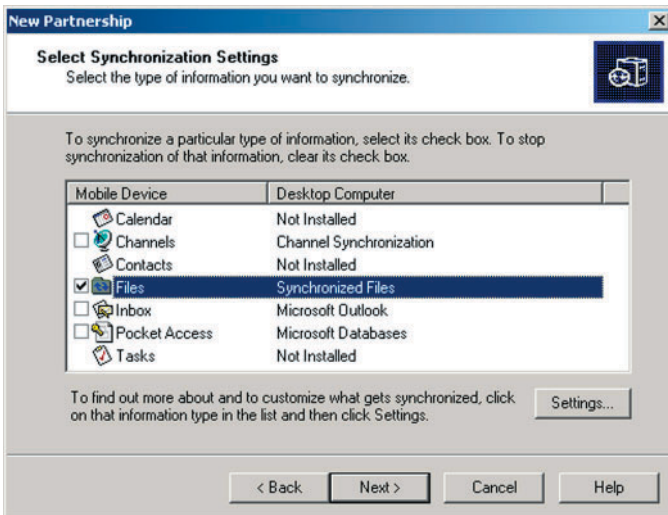


The *Synchronized Files* option is the only synchronization function currently operational with the Allegro. Additional options are not available.

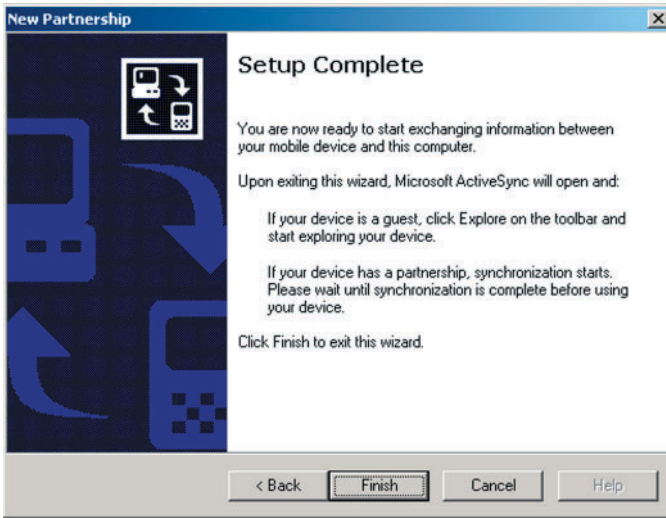
- 3) Select the *Files Synchronized Files* option. The following screen appears:



- 4) Press *OK* to return to the *Select Synchronization Settings* screen. The *Files | Synchronized Files* option is now selected.



5) Press the *Next* button. The *Setup Complete* screen appears:



6) Press the *Finish* button to complete the new partnership setup and begin the synchronization process.

A shortcut to a new folder created in the AllegroCX_#### My Documents (#### = serial number) folder appears on the PC's desktop. This is the file synchronization folder which holds all of the files which are automatically transferred from the Allegro to PC or vice versa.

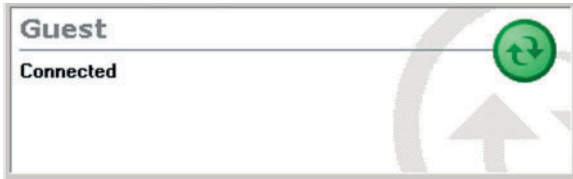
After a Partnership is set up, perform the *Save System* utility on the Allegro before taking it into the field. This is necessary in case a restart is required where RAM is lost on the Allegro, you are able to restore the system and perform an ActiveSync connection.

If the system is not saved and RAM is lost, the *Synchronize* function is not set up and stops the connection between the Allegro and desktop PC.

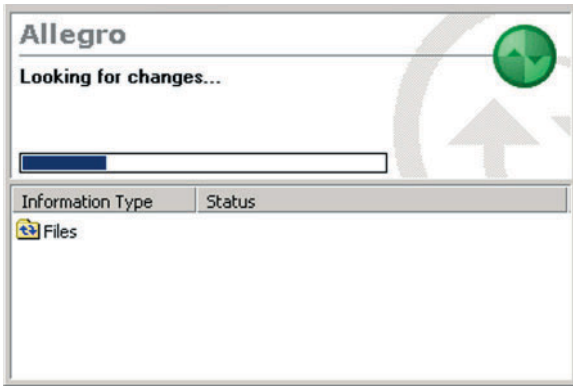
ActiveSync begins connecting the Allegro to the desktop PC. The following screen appears:



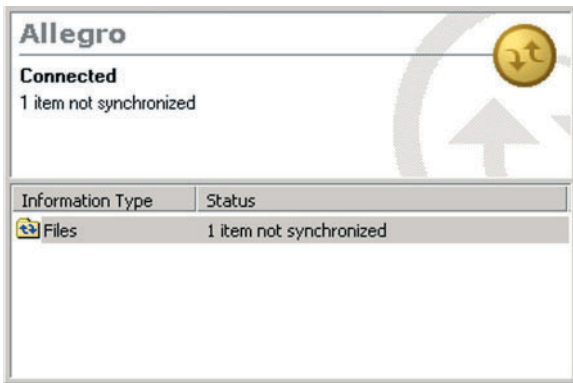
The Allegro and the desktop PC are connected to each other through ActiveSync. The following screen appears:



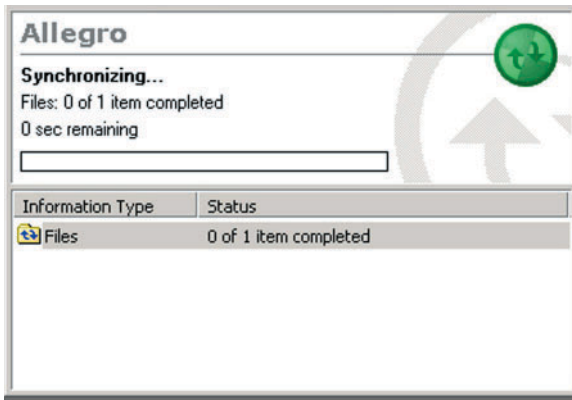
The synchronization program looks for changes between the folder on the Allegro and desktop PC. The following screen appears:



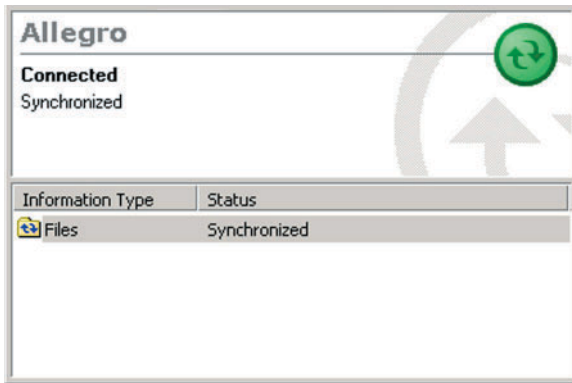
ActiveSync informs you if there are files that are not synchronized with the Allegro and desktop PC. The following screen appears:



ActiveSync automatically synchronizes files between the Allegro and the desktop PC. The following screen appears:



The Allegro and desktop PC are now connected and the files synchronized.



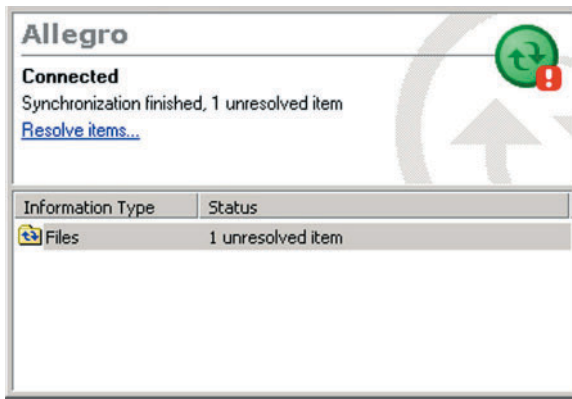
Note: If the connection message on the Allegro does not disappear, press Cancel and double-tap on PCLink again.

Unresolved Files through File Synchronization

It is very important to note that the synchronize files option always replaces all old files with the most recent file. If you have saved a document on the Allegro in the *My Documents* folder, it automatically transfers to the *Allegro My Documents synchronization folder* on the desktop PC with the same name.

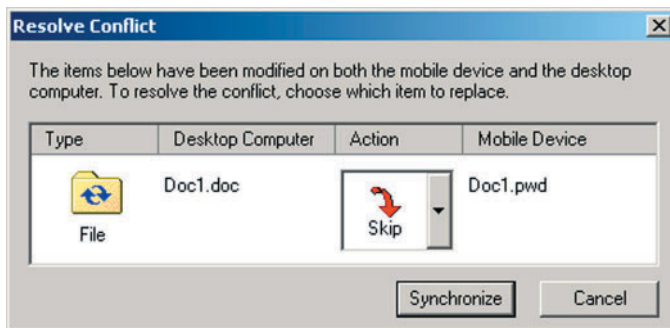
After disconnecting communication between the Allegro and desktop PC, the synchronized file can be altered. When reconnecting the Allegro to the desktop PC, ActiveSync's file synchronization replaces the unaltered document with the master updated file.

The synchronization process stops when both documents, the one on the Allegro and the one on the desktop PC, are altered and ActiveSync is unsure which one is the master document. The following screen appears:

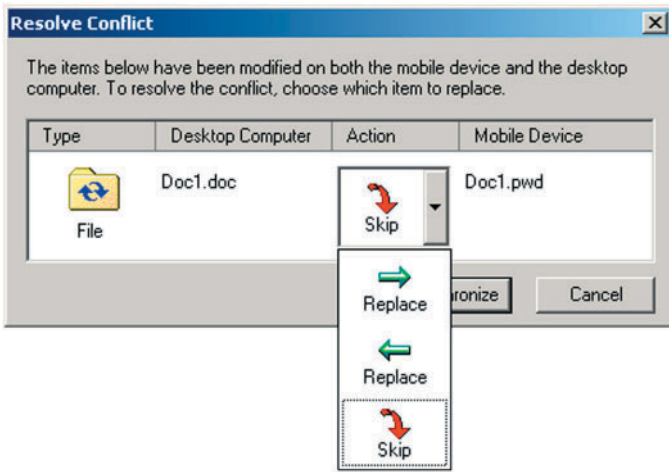


To specify which file is the master file, complete the following steps:

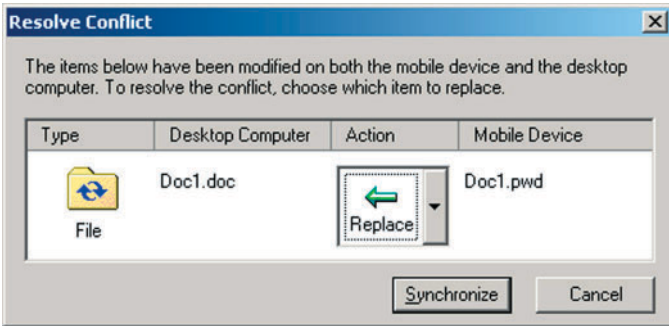
- 1) Click on the *Resolve items...* option to continue the file synchronization process. The following screen appears:



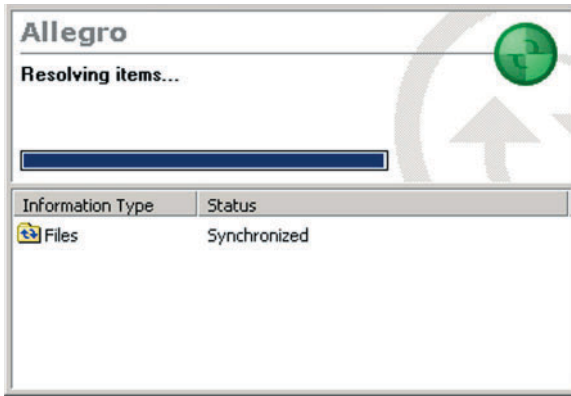
- 2) Click on the drop-down box next to *Skip* in the *Action* section of the *Resolve Conflict* screen. The following options appear:



- 3) Select the computer you want to synchronize with the master file. The right arrow synchronizes the file on the desktop PC to the Allegro. The left arrow synchronizes the file on the Allegro to the desktop PC. The selection appears in the action box, shown in the following example:

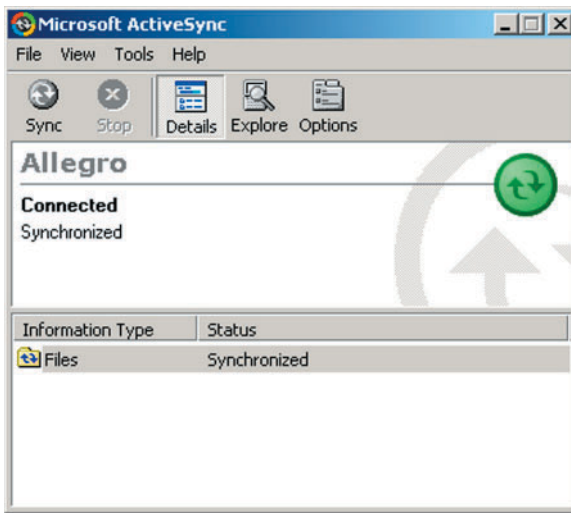


4) Click on the *Synchronize* button. The following appears:



The file you select to be synchronized now replaces the existing file with the file chosen as the master file. In this example, the left arrow is selected and the file on the Allegro is transferred to the desktop PC, replacing the file on the desktop PC with the master file on the Allegro.

The files are now synchronized. The following screen appears:



Renaming Files

Renaming the files helps to avoid the unresolved notification. Renaming is also an option available for keeping both altered files when the unresolved file notice appears, to do this complete the following steps:

- 1) Disconnect the Allegro from the desktop PC.
- 2) Rename one of the altered files.
- 3) Reconnect the Allegro to the desktop PC.

Both files can now synchronize.

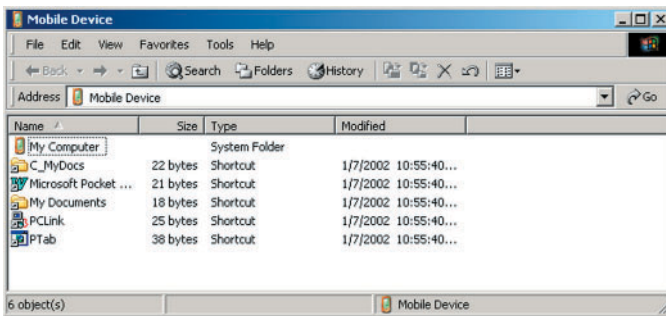
Connecting as a Guest

ActiveSync allows you to connect as a guest and interact between both computers without setting up a partnership. To connect as a guest, complete the following steps:

- 1) Select the *No* option on the *Set Up a Partnership* screen, and click on the *Next* button. ActiveSync goes through the connection process. When connected, the following screen appears:



- 2) Click on the *Explore* option on the *Microsoft ActiveSync* screen.
- 3) Begin viewing the contents of the Allegro.



Transferring Files between the Allegro CX and the Desktop PC

Once the Allegro and the desktop PC are communicating, files can be transferred between the two computers. On the desktop PC, use My Computer, Windows Explorer, or another file management program to view and navigate through the contents of the desktop PC.

To view and navigate through the folders and stored files on the Allegro, complete the following steps:

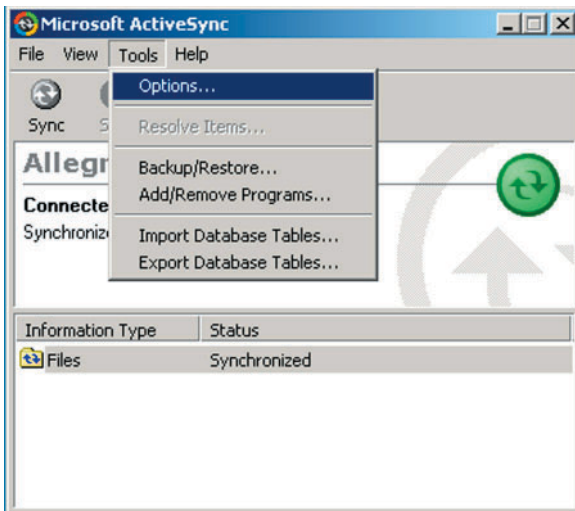
- 1) Double-tap on the *My Computer* icon.
- 2) Use the drag and drop, cut, copy, and paste functions to move files between the Allegro and the desktop PC.

On the Allegro, we recommend that you use the internal non-volatile storage, C_Drive, as the primary storage area. Refer to the Storing Files and Programs section later in this chapter for details.

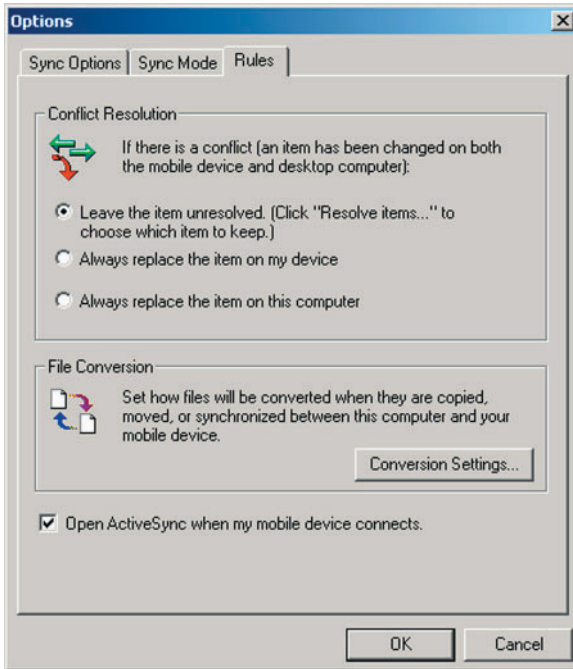
File Conversion

When transferring files between the Allegro and the desktop PC, file conversion may be necessary. From the ActiveSync program on the desktop PC, you can set up the file conversion options up as desired. Complete the following steps:

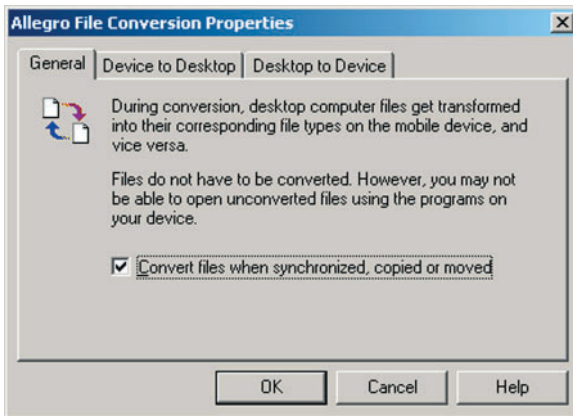
- 1) Select *Tools | Options*.



- 2) Click on the *Rules* tab on the *Options* screen.



- 3) Click on the *Conversion Settings...* button in the *File Conversion* box.
- 4) Select the *Convert files when synchronized, copied or moved* to enable all file conversions are handled automatically, and click on the *OK* button.



Remote Allegro File Maintenance


You can perform many convenient Allegro file maintenance operations remotely from the desktop PC using ActiveSync. Move, copy, and delete files from the Allegro window simply by dragging and dropping them or by using the cut and paste functions. You cannot start programs remotely. If you double-click on an executable file, the properties of that file are shown.

Disconnecting

When you are finished transferring files between the Allegro and the desktop PC, disconnect the Allegro by double-tapping on the *Connected* symbol located in the status box on the Taskbar.



The *Connected to 'USB* (this varies depending on the COM port you are using for your ActiveSync connection) window pops up. Tap on the *Disconnect* button. If you are using a serial port, you can now disconnect the communication cable.

 *Note: In addition to the steps outlined previously, the following actions cause the Allegro to disconnect from the desktop PC:*

- *Turning the Allegro or the desktop PC off*
- *Disconnecting the communication cable*
- *Misaligning the IrDA ports while using infrared communication*
- *Removing the Allegro from the USB/Power Dock*

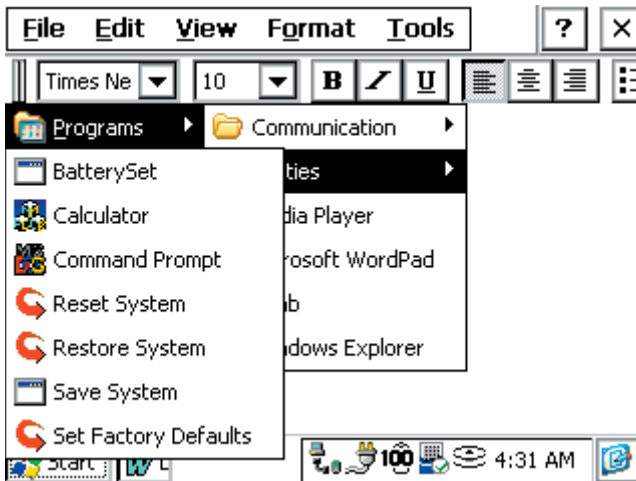
System Save/Restore Utilities

The Utilities Menu has multiple restart/save system options designed for the Allegro. The following are the restart/save options available to you:

- Save System
- Reset System
- Restore System
- Set Factory Defaults

▲ Save System

The *Save System* option creates a copy of RAM and saves it to a location on the C_Drive. This saved RAM image is used when a Restore System is either executed by the menu selection, or when the operating system is loaded and an automatic restore is performed. It is located at *Start | Programs | Utilities | Save System*.



When *Save System* utility is selected, the following message is shown:



▲ **Reset System**

Reset System causes all running applications to close when selected. If programs are not close and files are not saved, data may be lost. After *Reset System* is selected, the system reloads data drivers and programs that run at start-up time. A reset leaves all stored in RAM intact.

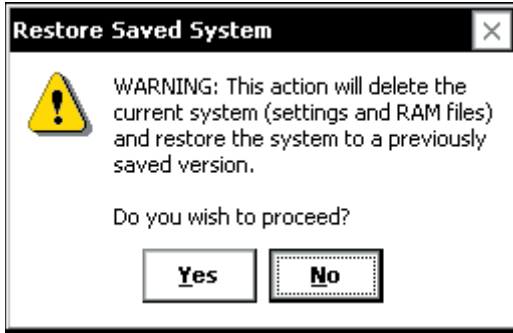
Installation programs often request a reset so that the changes the program made to the registry can be honored by system components as they reload. A reset is also useful when applications misbehave and render the system unusable.

You can execute a reset by selecting *Start | Programs | Utilities | Reset System*, or by holding down the *On/Off* key for more than eight seconds.

▲ **Restore System**

Restore System erases RAM, including all running programs and settings, and reloads the operating system. When the operating system reloads, it automatically restores the *Saved System Backup* from the *C_Drive*.

Make sure you save all valuable data to the internal non-volatile storage before executing this menu option. You can execute a *Restore System* by selecting *Start | Programs | Utilities | Restore System*. You receive the following *Warning* screen, explaining what happens if you proceed with this function you have the option of completing or canceling the process.



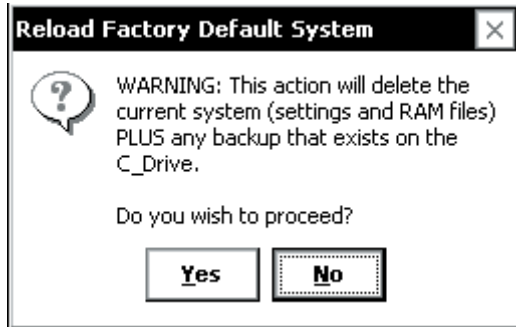
If you tap on yes to proceed but have not previously performed a *Save System*, the following screen pops up. This screen tells you that a system backup does not exist, and gives you the option to cancel the *Restore System*.



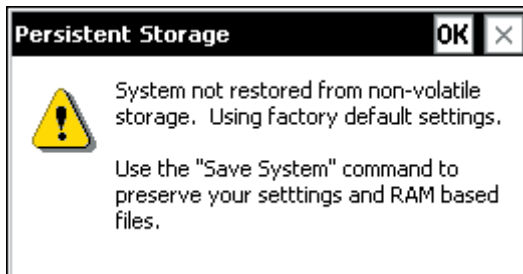
▲ Set Factory Defaults

Set Factory Defaults deletes the existing *Saved System* that is on the C_Drive, erases RAM, and reloads the operating system. When the operating system is reloaded, the automatic restoration does not find a backup, and the system loads up in the factory default condition.

Before this selection is executed, the following message pops up describing what is about to happen with the function and asks if you wish to continue with or cancel the operation.

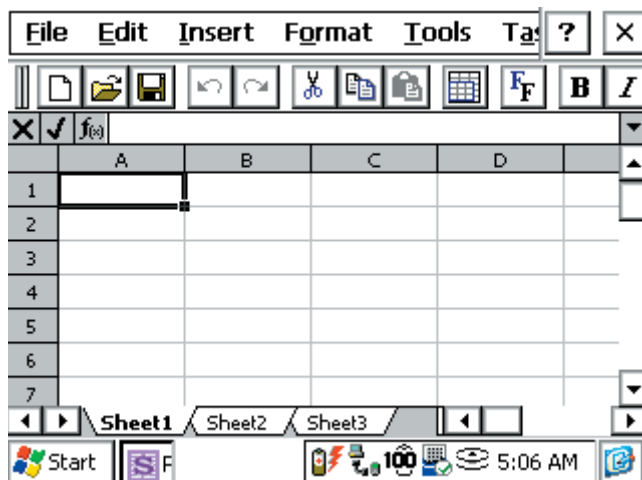


After performing this option, you need to recalibrate the Allegro's touchscreen. After recalibrating the touchscreen the following screen is a system notification that the Allegro is loading from the factory defaults. The message appears when the Allegro is restarted for the first time or after you perform the *Load Factory Default System* function.



PTab Spreadsheet Program

PTab™ is a fully functional spreadsheet program designed to run on Microsoft CE devices. It has the key features of common desktop spreadsheet programs. It is fully compatible with Microsoft Excel on the PC.



You can easily create spreadsheets on the field computer or download an existing Excel® spreadsheet from the desktop PC. Using ActiveSync, files created in PTab are automatically converted to Excel files on the desktop PC and Excel files are converted back to PTab files on the Allegro.

▲ On-line Help

The on-line help is available on your Allegro. To access the PTab on-line help, complete one of the following steps:

- Start the PTab application so it is running on your Allegro, and tap on *Start | Help*.
- Tap on the ? button in the top right corner of the PTab application.

This opens directly to the *PTab 3.0 Spreadsheet Help* directory.

▲ Excel Considerations

Follow these guidelines when you set up and save an Excel file that is going to be opened and used in PTab on the Allegro:

- Do not use macros in the file.
- Save the file as an Excel file for best results.

- ❑ If the Excel file has graphics incorporated into it, the spreadsheet cannot be converted to a PTab file. We recommend that you make a copy of the Excel spreadsheet, remove the graphics, and then convert the modified copy.

Items Converted to / from Excel

PTab 3.0 can load/save MS Excel files (this includes Excel version 5.0/95/97/200/XP/2003). The following are the items that are converted to and from Excel files when opened in PTab:

- ❑ Cell values: numbers (incl. date/time values), texts, Boolean values, error values
- ❑ Formulas containing: numbers, date/time values, texts, Boolean values, errors, +, -, *, /, ^, %, cell references, names, functions supported by PTab
- ❑ Formats: font (font style, size, color), background color, simple borders, alignment (left, right, center, center across selection; top, center, bottom), wrap text, merge cells, cell protection, basic number formats (number of decimals, thousand separator, currency symbol, text before and after the number), basic date/time formats
- ❑ Row height, column width, sheet names, titles freezing, zoom
- ❑ Group and outline, data validation

▲ Saving PTab Files

When you select *File | Save* or *File | Save As*, PTab automatically sets the path to `\C_Drive\C_MyDocs\`. Your file is saved to the non-volatile solid state storage. We recommend that you use the C_Drive as the primary storage area.

▲ Summary of PTab Features

The features of PTab version 3.0 are listed below.

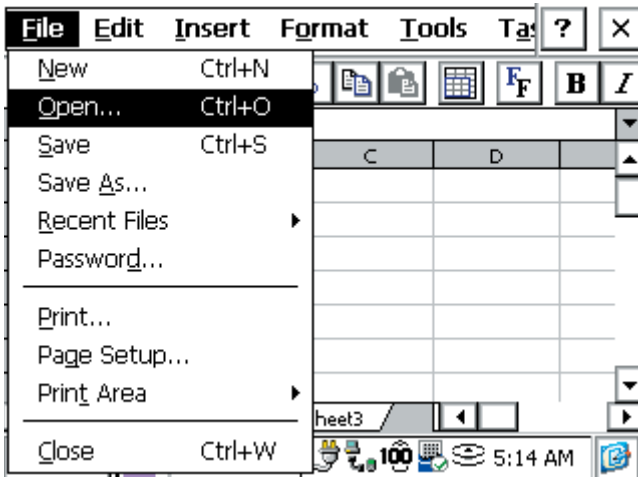
- ❑ Load/Save Microsoft Excel (.xls, Excel v. 5.0/95/97/2000/XP/2003) files directly
- ❑ Load/Save Microsoft Pocket Excel (.pxl) files directly
- ❑ Import/Export TXT, CSV (Comma Separated Values), DBF (dBase)
- ❑ 256 sheets x 65536 rows x 256 columns
- ❑ Numeric, Text, Date/Time, Boolean values
- ❑ 249 built-in scientific, statistical, financial, date/time, logical, database, text and macro functions
- ❑ Multiple Undo/Redo

- Cut, Copy, Paste, Paste Special, Clear (All, Content, Formats), Fill (Right, Down, Series) cells, Insert/Delete Rows/Columns
- Set row height and column width, hide/unhide rows and columns, autofit row heights and column widths.
- Insert function, Quick sum, Pointing
- Format: Number format (General, Financial, Percentages, date/time, user defined), Alignment (General, Left, Center, Right, Center across selection, Top, Center, Bottom, Wrap Text, Merge Cells), Font, Size, Color, Background Color, Bold, Italic, Underline, Borders (Left, Right, Top, Bottom, Outline), Protection (Locked, Hidden) Zoom (25% - 200%) and full screen mode
- Freeze Titles (row and column freezing)
- Formula bar or in place editing
- Show/hide: Column and row titles, Gridlines, Zero values
- Sheets: New, Rename, Delete
- Sort (Ascending, Descending, up to 3 keys), Go to cell, Find/Replace
- Simple charts (Bar, Line, Pie, XY)
- Names (define and insert)
- Protection (Protect/Unprotect Sheet, Protect/Unprotect Workbook)
- Custom lists (e.g. Monday, Thursday, Wednesday...)
- Auto filter
- Automating Tasks - user defined tasks (simple macros)
- Insert sound or hyperlink (cell reference, Web page or E-mail address) in a cell
- Password protection
- Group and outline
- Data validation
- Goal seek
- Data validation, dropdown boxes
- Group and outline
- External references (example: [BOOK.XLS]Sheet1!A5)
- Merge cells
- Goal seek

- ❑ Max. rows: 65536
- ❑ Wildcards (*,?) in search
- ❑ Auto save
- ❑ Load/save TXT, CSV, DBF (dBase) files
- ❑ New worksheet functions: Indirect, Concatenate, Fixed, Lookup, Offset, Mirr, Type, Trim, Clean, Rank, Median, Address, Sumproduct, Avedev, Betadist, Gammaln, Betainv, Binomdist, Chidist, Chiinv, Confidence, Critbinom, Expondist, FInv, FDist, Fisher, Fisherinv, Gammaln, Hypgeomdist, Gammadist, Lognormdist, Loginv, Negbinomdist, Normdist, Normsdist, Norminv, Normsinv, Standardize, Poisson, TDist, Weibull, Sumxmy2, Sumx2my2, Sumx2py2, Chitest, Correl, Covar, Forecast, Ftest, Intercept, Pearson, Rsq, Steyx, Slope, Prob, Devsq, Geomean, Harmean, Sumsq, Kurt, Skew, Ztest, Large, Small, Percentile, Percentrank, Mode, True, False, Trimmean, Tinv, MaxA, MinA, AverageA, StdevPA, VarPA, StdevA, Subtotal, VarA
- ❑ Automating tasks for...next cycle, comments
- ❑ New automating tasks functions: InsertSheet, DeleteSheet, GoalSeek, Save, Beep, ComboBox, ClearValidation, TickCount, CellRefR, WorkbookName

▲ Opening a PTab File

When you double-tap the PTab icon on the desktop, PTab opens and automatically brings up a new workbook, as shown below. If you would like to open an existing workbook, choose *File | Open* and then specify the location of the file you wish to open.

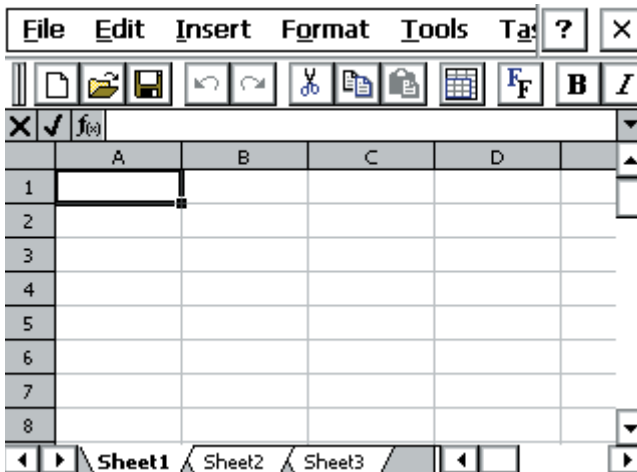


Adjusting the Viewing Area on the Display

A standard PTab screen is shown above with the menu bar, toolbar, formula bar, and taskbar showing. You can view seven lines of the spreadsheet on the screen.

When the menu bar, toolbar, formula bar, and taskbar are hidden, as shown below, you can view eight lines of the spreadsheet. Refer to the *Application Command Bars* section found earlier in this chapter for details on how to adjust the viewing area.

It is possible to view nine lines when using a monochrome display, or eight lines using a color display, if you move the tool bar up to a line to share with the File, Edit, etc line. Refer to the *Application Command Bars* section found earlier in this chapter for details



▲ Entering Data/Editing Cells

A cell can contain: a number, text, date/time, Boolean value or formula. Tap on the formula bar (or double-tap the cell if the formula bar is off) to edit the cell's value/formula. If the number or date begins with a single quote ('), it is treated as text.

- Number (examples: 123.45, -1.2e55)
- Text
- Date/Time: The format is taken from the FPC regional settings.

Go to *Start | Settings | Regional Settings*, and then choose the *Number* tab and the *List separators* combo box. You must specify a year in the date. (Examples: 8/22/03 in the U.S.A. vs. 22.8.03 in Germany, 10:44, 12/30/2003 14:25:30.)

- Boolean: True or false
- Formula: Formulas begin with an equal sign (=). PTab evaluates the value. (Example: =A5+2, =Sum(B2:C7)).

Formulas can contain:

Number, text, date/time, Boolean values

Cell references (examples: A4, \$B7, \$C\$3, Sheet1!A3, '2ndSheet'!\$C\$7)

Cell ranges (examples: A1:B4, 'Year 2003'!C5:D7)

Arithmetic operations: +, -, /, *, %, ^ (examples: A1*B5%, C7*100-5)

Comparative operators: =, <, <>, >, <=, >= (example: if(A1>B1, A1, B1))

Text joining operators: & (example: A1 & "years")

Functions

▲ PTab Menu Options

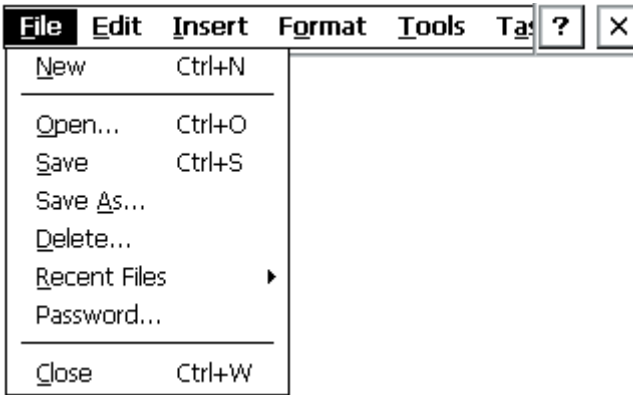
The PTab pull-down menu options include:

- File
- Edit
- Insert
- Format
- Tools
- Task

Each menu option is described in detail on the following pages. On-line help is accessed by pressing the [?] in the upper right-hand corner of the screen.

File Menu Options

The following functions are available from the *File* menu option.



New

The *New* option creates a new workbook.

Open

The *Open* option opens an existing workbook. You can open a PTab file (.pt), a Microsoft Pocket Excel file (.pxl) or a CSV file (.csv). Microsoft Excel files (.xls) are converted to PTab files during the desktop PC to Allegro file transfer. CSV files are ASCII text files containing values separated by a separator taken from the Allegro's regional settings.

Select *Start | Settings | Control Panel | Regional Settings*, then choose the Number tab and the *List separators* combo box. To open a CSV file select *Text Files (*.csv)* from the *Type* combo box.

Save

The *Save* option saves the current workbook. If you have not previously saved the workbook, *Save* works the same as *Save As*.

Save As

The *Save As* option saves the current workbook with a specified name.

Delete

The *Delete* option deletes the specified file.

Recent Files

The *Recent Files* option displays a list of recently opened files.

Password

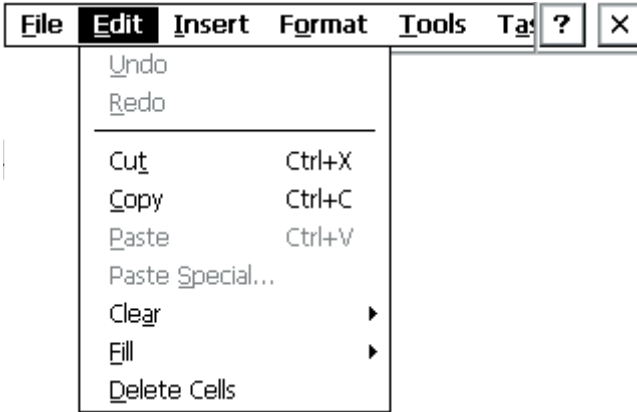
The *Password* option sets or changes the password.

Close

The *Close* option closes the current workbook.

Edit Menu Options

The following functions are available from the *Edit* menu option.



Undo

The *Undo* option undoes the last action.

Redo

The *Redo* option redoes the last action.

Cut

The *Cut* option cuts the selected cells to the clipboard.

Copy

The *Copy* option copies the selected cells to the clipboard. If you paste the copied contents of the clipboard into another application, cell texts separated by tabs are pasted.

Paste

The *Paste* option pastes the clipboard contents to the sheet. You can paste text separated by tabs from another application.

Paste Special

The *Paste Special* option pastes the clipboard contents to the sheet using special options (paste contents, paste formats, paste only the results of formulas, skip empty cells).

Clear > All/Contents Del/Format/Validation

The *Clear* option clears contents+format/contents/format of selected cells.

Fill > Right/Down/Series

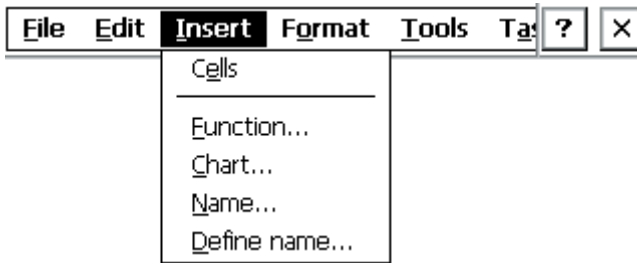
The *Fill* option fills the selected cells by the leftmost/topmost cell contents or fill series: linear, growth, date (date unit: day, weekday, month, year) or autofill (e.g. January, February, March).

Delete Cells

The *Delete* option removes the selected rows/columns.

Insert Menu Options

The following functions are available from the *Insert* menu option.



Cells

The *Cells* option inserts the same number of rows/columns as selected.

Function

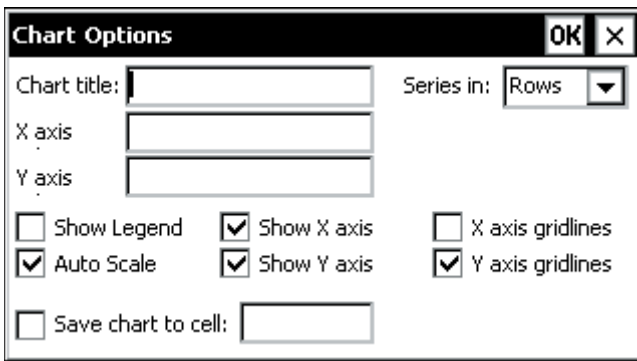
The *Function* option inserts a function to the current cell.

Chart

The *Chart* option creates a simple chart (bar, line, pie, Y) from selected cells. Select the cells that contain the data and labels you want in the chart. Then tap *Insert* | *Chart*.



Tap on the *Options* button for additional chart setup options.



Name

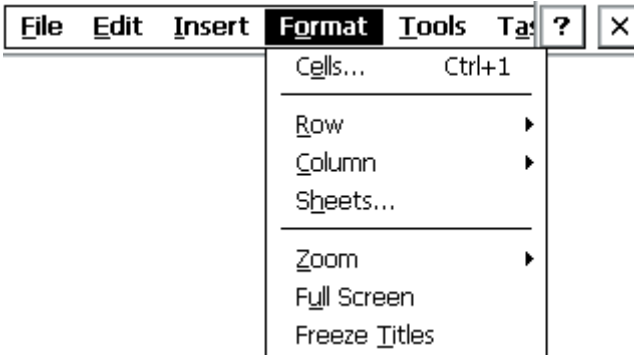
The *Name* option inserts a name in a formula.

Define Name

The *Define Name* option defines a name.

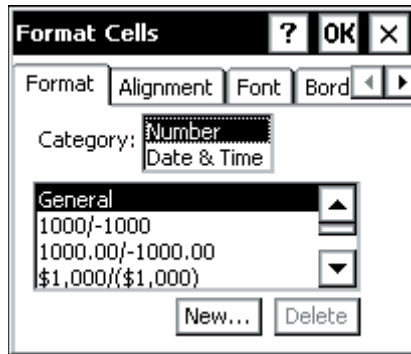
Format Menu Options

The following functions are available from the Format Menu option.



Cells

The *Cells* option opens the follow screen:

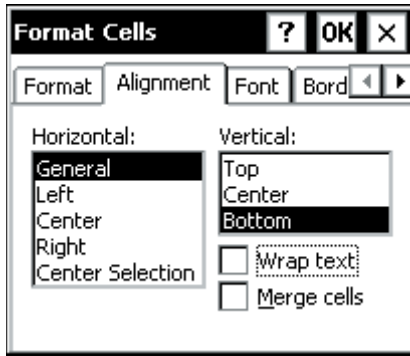


Format Tab

The *Format* tab lets you select the numeric format or date & time format for a cell(s).

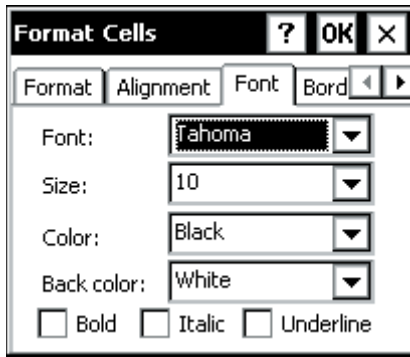
Alignment Tab

The *Alignment* tab sets the horizontal and vertical cell alignment.



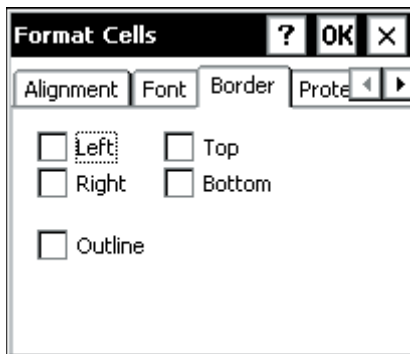
Font Tab

The *Font* tab allows you to select the font, size, color, background color, and style.



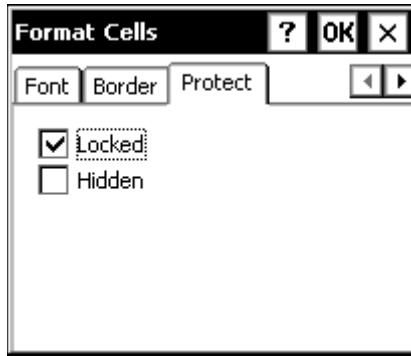
Border Tab

The *Border* tab formats the borders in PTab documents.



Protect Tab

The *Protect* tab protects locked or hidden cells.



Row > Height/AutoFit/Hide/Unhide

The *Row* option sets row height and hides or unhides rows.

Column > Width/AutoFit/Hide/Unhide

The *Column* option sets column width and hides or unhides columns.

Sheets

The *Sheets* options allows you to add, rename, or delete sheets.

Zoom > 70%/80%/90%/100%/150%/Custom

The *Zoom* option allows you to change the magnification of the sheet. You can specify between 25 - 200 percent.

Full Screen

The *Full Screen* option toggles the full screen mode on and off.

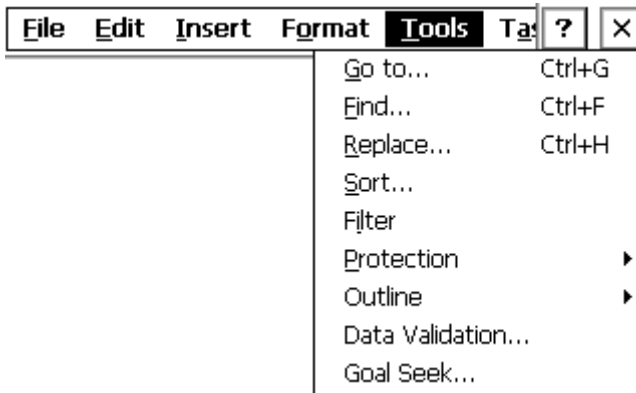
Freeze Titles

The *Freeze Titles* option allows row and/or column titles to stay visible as you scroll the sheet. To freeze the vertical titles, select the column to the right of where you want the split to appear.

To freeze the horizontal titles, select the row below where you want the split to appear. To freeze both titles, select the cell below and to the right of where you want the split to appear.

Tools Menu Options

The following functions are available from the *Tools* menu option.



Go to

The *Go to* option selects specified cell or range.

Find

The *Find* option finds a cell in the current sheet containing the specified text. You can search by rows or columns, look in values or formulas, search case sensitive/insensitive, and search entire cells.

Replace

The *Replace* option finds a cell as outlined above and replaces the text as specified.

Sort

The *Sort* option sorts a selected range of cells: ascending or descending, case sensitive/insensitive, sorts rows or columns, exclude header row from sort.

Filter

The *Filter* option toggles the auto filter on and off.

Protection > Protect/Unprotect Sheet/Workbook

The *Protection* option allows you to turn the *Protect Sheet* and *Protect Workbook* feature on and off.

Go to *Format | Cells | Protection* to lock/unlock and hide/unhide cells. Use *Protect Sheet* or *Protect Workbook* to activate these settings.

Outline > Group/Ungroup/Clear/Auto

The *Outline* option displays only the rows or columns with headings and summaries or to display detail data adjacent to a summary row or column.

Data Validation

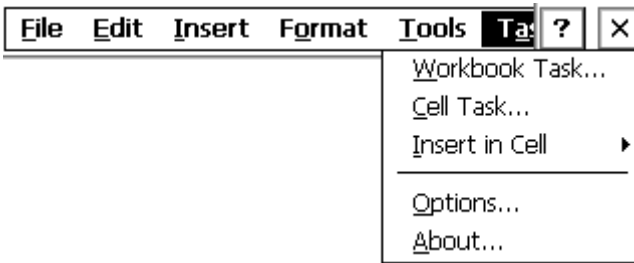
The *Data Validation* option is used to restrict cell entries within specified limits or to the data from a list.

Goal Seek

The *Goal Seek* option is used when you know the result of a formula but not the input value.

Task Menu Options

The following functions are available from the Task Menu option.



Workbook Task

The *Workbook Task* option creates and runs automating tasks. Go to the *Workbook Task Dialog Box* heading in the *Automating Tasks* section of this chapter for instructions on how to use this function.

Cell Task

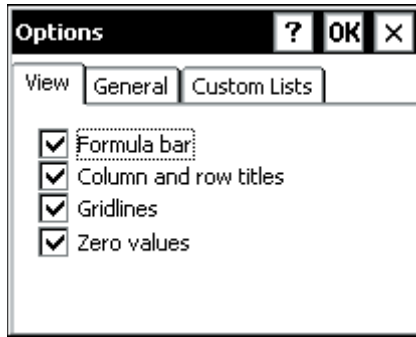
The *Cell Task* option defines or modifies automating tasks stored in a cell. Go to the *Cell Task Dialog Box* heading in *Automating Tasks* section of this chapter for instructions on how to use this function.

Insert in > Cell Picture/Sound/Hyperlink

The *Insert in* option inserts picture reference, sound reference or hyperlink (cell reference, Web page, or E-mail address) in a cell.

Options

The *Options* option opens the following screen:



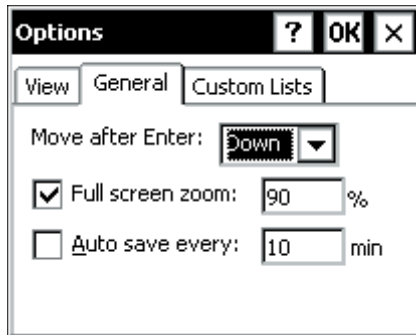
View Tab

The *View* tab enables/disables the following:

- Formula Bar
- Column and row titles (showing them)
- Gridlines
- Zero values

General Tab

The *General* tab allows you to set the following options:



- Move after Enter (none/right/down)
- Full screen zoom
- Auto save

Custom Tab

The *Custom* tab allows you to set lists from the following:



- Import from selection
- Delete list

About

The About option displays the following information about the Z4Soft PTab spreadsheet program:

- Version number of the program
- Copyright information
- Web site address

▲ Converting Microsoft Excel Files (.xls)

To convert PTab files to Microsoft Excel files or Microsoft Excel files to PTab files, follow these steps:

- 1) Check conversion properties:
 - If you are using ActiveSync: Open ActiveSync. From the menu Tools/Options open the Options dialog box. Select the Rules tab and press the Conversion Settings... button.
 - Select (or confirm you have selected) Conversion from Excel(*.xls) to PTab(*.pt) in the Desktop-Device tab. Select "Microsoft Excel Worksheet in the list box, press the Edit button, and select "PTab filter (*.pt)" in the combo box.
 - Select Conversion from PTab(*.pt) to Excel(*.xls) in the Device-Desktop tab. Select "PTab file" in the list box, press the Edit button, and select "PTab filter (*.xls)" in the combo box.
- 2) Convert your files: Conversion is done by dragging the files from/to the desktop computer to/from the document folder on the Allegro.

▲ Spreadsheet Functions

The following sections are the available spreadsheet functions available in PTab.

Math & Trig Functions

Abs(number)

Returns the absolute value of a number.

Example: Abs(-3) equals 3.

Acos(number)

Returns the arccosine of a number. The number must be from -1 to 1.

Example: Acos(-0.5) equals 2.094395.

Acosh(number)

Returns the inverse hyperbolic cosine of a number. The number must be greater or equal to 1.

Example: Acosh(1) equals 0.04613.

Asin(number)

Returns the arcsine of a number. The number must be from -1 to 1.

Example: Asin(-0.5) equals -0.5236.

Asinh(number)

Returns the inverse hyperbolic sine of a number.

Example: Asinh(8) equals 2.77647.

Atan(number)

Returns the arctangent of a number.

Example: Atan(0.5) equals 0.46365.

Atan2(x,y)

Returns the arctangent of the specified x and y coordinates.

Example: Atan2(1, 1) equals 0.785398.

Atanh(number)

Returns the inverse hyperbolic tangent of a number. The number must be between -1 and 1 (excluding -1 and 1).

Example: Atanh(-0.1) equals -0.10034.

Ceiling(number, significance)

Returns the number rounded up to the nearest multiple of the significance.

Example: Ceiling(10.43, 0.1) equals 10.5.

Combin(number, numberChosen)

Returns the number of combinations. Number is the number of items, numberChosen is the number of items in each combination.

Example: Combin(10, 2) equals 45.

Cos(number)

Returns the cosine of the given angle.

Example: Cos(0.5) equals 0.87758.

Cosh(number)

Returns the hyperbolic cosine of a number.

Example: Cosh(5) equals 74.20995.

Degrees(number)

Converts radians into degrees.

Example: Degrees(Pi()/2) equals 90.

Even(number)

Returns the number rounded up to the nearest even integer.

Example: Even(1.3) equals 2.

Exp(number)

Returns e raised to the power of the number.

Example: Exp(Ln(2)) equals 2.

Fact(number)

Returns the factorial of a number. The number must be nonnegative number.

Example: Fact(5) equals 120.

Floor(number, significance)

Rounds the number down, toward zero, to the nearest multiple of the significance.

Example: Floor(3.5, 1) equals 3.

Int(number)

Rounds a number down to the nearest integer.

Example: Int(1.7) equals 1.

Ln(number)

Returns the natural logarithm of a number.

Example: Ln(Exp(2)) equals 2.

Log(number, base)

Returns the logarithm of a number to the base you specify. If the base is omitted, it is assumed to be 10.

Example: Log(100, 10) equals 2.

Log10(number)

Returns the logarithm (base 10) of a number.

Example: Log10(100) equals 2.

Mod(number, divisor)

Returns the remainder after the number is divided by the divisor.

Example: Mod(5, 2) equals 1.

Odd(number)

Returns the number rounded up to the nearest odd integer.

Example: Odd(2) equals 3.

Pi()

Returns the number 3.14159265358979, the mathematical constant PI.

Power(number, power)

It raises the number to the power. You can also use the “^” operator (e.g. 4^2).

Example: Power(4,2) equals 16.

Product(number, number, ...)

Multiplies all the numbers given as arguments and returns the product.

Example: A1 contains 2, Product(A1, 5) equals 10.

Radians(number)

Converts degrees to radians.

Example: Radians(180) equals 3.14159.

Rand()

Returns a random number greater than or equal to 0 and less than 1. A new number is returned every time the workbook is recalculated.

Round(number, number)

Rounds a number to the specified number of digits.

Example: Round(5.46, 1) equals 5.5.

RoundDown(number, numDigits)

Rounds the number down, toward zero, to the specified number of digits.

Example: RoundDown(40.8, 0) equals 40.

RoundUp(number, numDigits)

Rounds the number up, away from zero, to the specified number of digits.

Example: RoundUp(39.1, 0) equals 40.

Sign(number)

Returns 1 if the number is positive, 0 if the number is 0, and -1 if the number is negative.

Example: Sign(-5) equals -1.

Sin(number)

Returns the sine of the given angle.

Example: Sin(Pi()/2) equals 1.

Sinh(number)

Returns the hyperbolic sine of the number.

Example: Sinh(3) equals 10.01787.

Sqrt(number)

Returns the square root.

Example: Sqrt(4) equals 2.

Subtotal(functionNumber, ref1, ref2, ...)

Returns a subtotal. Nested subtotals and filtered hidden rows are ignored. FunctionNumber specifies which function to use in calculation subtotals (1-Average, 2-Count, 3-Counta, 4-Max, 5-Min, 6-Product, 7-Stdev, 8-Stdevp, 9-Sum, 10-Var, 11-Varp).

Example: Subtotal(9,A1:A3) will calculate a subtotal of the cells A1:A3 using the Sum function.

Sum(number, number, ...)

Return the sum of all the numbers in the list of arguments.

Example: Sum(10, 20) equals 30.

SumIf(range, criteria, sumRange)

It sums up the values of only those cells from the sumRange for which the corresponding cells in the range satisfy the criteria.

Example: Sumif(A1:A5, ">100000", B1:B5).

Sumproduct(reference1, reference2, ...)

Multiplies corresponding numeric components in given ranges and returns the sum of those products.

Sumsq(number, number, ...)

Returns the sum of squares of the arguments.

Sumx2my2(reference1, reference2)

Calculates the difference between the squares of corresponding numbers in two ranges and then returns the sum of squares of the differences.

Sumx2py2(reference1, reference2)

Calculates the sum of the squares of corresponding numbers in two ranges and then returns the sum total of the sums.

Sumxmy2(reference1, reference2)

Calculates the differences of corresponding values in two ranges and returns the sum of squares of the differences.

Tan(number)

Returns the tangent of the given angle.

Example: Tan(5) equals -3.38051.

Tanh(number)

Returns the hyperbolic tangent of the number.

Example: Tanh(1) equals 0.76159.

Trunc(number, numDigits)

Truncates the number to an integer. The argument numDigits is the precision of the truncation. The default value for the numDigits is 0.

Example: Trunc(-7.8) equals -7.

Statistical Functions

Avedev(number, number, ...)

Returns the average of the absolute deviations of data points from their mean.

Average(number, number, ...)

Returns the average of the arguments. Example: Average(1, 2, 3) equals 2

AverageA(number, number, ...)

Returns the average of all values in a set of values (TRUE is 1, FALSE and texts are 0).

Betadist(x, alfa, beta, A, B)

Returns the cumulative beta probability density function.

Beatainv(probability, alfa, beta, A, B)

Returns the inverse of the cumulative beta probability density function.

Binomdist(numOfSuccess, trials, probability, cumulative)

Returns the individual term binomial distribution probability.

Confidence(alfa, standardDeviation, size)

Returns the confidence interval for a population mean.

Correl(reference1, reference2)

Returns the correlation coefficient between two data sets.

Count(number, number, ...)

Counts how many numbers are in the list of arguments.

Example: B1 contains 5, B2 contains 3, Count(B1:B2) equals 2

CountA(number, number, ...)

Counts the number of nonblank values in the list of arguments.

Example: A1 contains 2, A2 is blank, CountA(A1:A2) equals 1

CountBlank(range)

Counts empty cells in the specified range of cells.

CountIf(range, criteria)

Counts the number of cells within the range that meets the given criteria.

Example: A1 contains 6, A2 contains 3, CountIf(A1:A2, ">5") equals 1

Covar(reference1, reference2)

Returns covariance.

Critbinom(trials, probability, alfa)

Returns the smallest value for which the cumulative binomial distribution is greater than or equal to a criterion value.

Devsq(number, number, ...)

Returns the sum of squares of deviations of data points from their sample mean.

Expondist(x, lambda, cumulative)

Returns the exponential distribution value.

Fdist(x, degOfFreedom1, degOfFreedom2)

Returns the F probability distribution for two data sets.

Finv(probability, degOfFreedom1, degOfFreedom2)

Returns the inverse of the F probability distribution.

Fisher(number)

Returns the Fisher transformation value.

Fisherinv(number)

Returns the inverse of the Fisher transformation.

Forecast(x, seriesY, seriesX)

Predicts a future value along a linear trend.

Ftest(reference1, reference2)

Returns the result of a F-test.

Gammadist(x, alfa, beta, cumulative)

Returns the gamma distribution value.

Gammainv(probability, alfa, beta)

Returns the inverse of the gamma cumulative distribution.

Gammaln(number)

Returns the natural logarithm of the gamma function.

Geomean(number, number, ...)

Returns the geometric mean of a range of positive numeric data.

Harmean(number, number, ...)

Returns the harmonic mean of a data set of positive numbers.

Hypgeomdist(numSuccInSample, size, numSuccInPop, popSize)

Returns the hypergeometric distribution.

Chidist(x, degOfFreedom)

Returns the one-tailed probability of the chi-squared distribution.

Chiinv(x, degOfFreedom)

Returns the inverse of the one-tailed probability of the chi-squared distribution.

Chitest(reference1, reference2)

Returns the test for independence (the value from the chi-squared distribution for the statistic and the appropriate degrees of freedom).

Intercept(seriesY, seriesX)

Calculates the point at which a line will intersect the y-axis by using a best-fit regression line plotted through the known x-values and y-values.

Kurt(number, number, ...)

Returns the kurtosis of a data set.

Large(reference, n)

Returns the n-th largest value in a data set.

Loginv(probability, mean, standardDeviation)

Returns the inverse of the lognormal cumulative distribution function of x.

Lognormdist(x, mean, standardDeviation)

Returns the cumulative lognormal distribution of x.

Max(number, number, ...)

Returns the maximum value in the list of arguments. Example: Max(1, 2, 3) equals 3

MaxA(number, number, ...)

Returns the largest value in a set of values (TRUE is 1, FALSE and texts are 0).

Median(number, number, ...)

Returns the median, or the number in the middle of the set of given numbers.

Min(number, number, ...)

Returns the minimum value in the list of arguments. Example:

Min(1, 2, 3) equals 1

MinA(number, number, ...)

Returns the smallest value in a set of values (TRUE is 1, FALSE and texts are 0).

Mode(number, number, ...)

Returns the most frequently occurring, or repetitive, value in a range of data.

Negbinomdist(numOfSuccess, numOfFailure, probability)

Returns the negative binomial distribution.

Normdist(x, mean, standardDeviation, cumulative)

Returns the normal cumulative distribution for the specified mean and standard deviation.

Norminv(probability, mean, standardDeviation)

Returns the inverse of the normal cumulative distribution function (Normdist).

Normsdist(z)

Returns the standard normal cumulative distribution (has a mean of zero and standard deviation of one).

Normsinv(probability)

Returns the inverse of the standard normal cumulative distribution function (Normsdist).

Pearson(reference1, reference2)

Returns the Pearson product moment correlation coefficient r.

Percentile(reference, n)

Returns the n-th percentile.

Percentrank(reference, x, decimal)

Returns the rank of a value in a data set as a percentage of the data set.

Permut(number, numberChosen)

Returns the number of permutations. Number is the number of objects, numberChosen is the number of objects in each permutation.

Example: Permut(10, 2) equals 90

Poisson(x, mean, cumulative)

Returns the Poisson distribution.

Prob(values, probabilities, lowLimit, upLimit) Returns the probability that values in a range are between two limits [lowerLimit..upperLimit].

Rank(number, reference, order)

Returns the rank of a number in a list of numbers. Its size relative to other values in the list.

Rsq(seriesY, seriesX)

Returns the square of the Pearson product moment correlation coefficient through the given data points.

Skew(number, number, ...)

Returns the skewness of a distribution.

Slope(seriesY, seriesX)

Returns the slope of the linear regression line through the given data points.

Small(reference, n)

Returns the n-th smallest value in a data set.

Standardize(x, mean, standardDeviation)

Returns a normalized value from a distribution characterized by mean and standard deviation.

Stdev(number, number, ...)

Estimates the standard deviation based on a sample.

StdevA(number, number, ...)

Estimates standard deviation based on a sample (TRUE is 1, FALSE and texts are 0).

StdevP(number, number, ...)

Calculates the standard deviation of the entire population.

StdevpA(number, number, ...)

Calculates standard deviation based on an entire population (TRUE is 1, FALSE and texts are 0).

Steyx(seriesY, seriesX)

Returns the standard error of the predicted y-value for each x in a regression.

Tdist(x, degOfFreedom, type)

Returns the Student's t-distribution.

Tinv(probability, degOfFreedom) Returns the inverse of the Student's t-distribution.

Trimmean(reference, percentage)

Returns the mean of the interior portion of a set of data values.

Var(number, number, ...)

Estimates the variance based on a sample.

VarA(number, number, ...)

Estimates variance based on a sample (TRUE is 1, FALSE and texts are 0).

VarP(number, number, ...)

Calculates variance of the entire population.

VarpA(number, number, ...)

Calculates variance based on an entire population (TRUE is 1, FALSE and texts are 0).

Weibull(x, alfa, beta, cumulative)

Returns the Weibull distribution.

Ztest(reference, x, standardDeviation)

Returns a value of a z-test.

Financial Functions

Ddb(cost, salvage, life, period, factor)

Returns the depreciation of an asset for a specified period using the double-declining balance method (you can specify another method). Cost is the initial cost of the asset. Salvage is the value at the end of the depreciation. Life is the number of periods over which the asset is being depreciated. Period is the period for which you want to calculate the depreciation. Period must use the same units as life. Factor is the rate at which the balance declines. If factor is omitted, it is assumed to be 2. All the arguments must be positive numbers.

Example: Ddb(30000, 500, 3650, 10) equals 16.357.

Fv(rate, nper, pmt, pv, type)

Returns the future value of an investment. Rate is the interest rate per period. Nper is the total number of payment periods in an annuity. Pmt is the payment made each period. Pv is the present value. Type can be 0 or 1 (0 - payments at the end of the period, 1 - at the beginning). If type is omitted, it is assumed to be 0.

Example: Fv(0.01, 12, -500) equals 6341.25.

IPmt(rate, per, nper, pv, fv, type)

Returns the interest payment for an investment. Per is the period for which you want to find the interest (must be $1 \leq \text{per} \leq \text{nper}$). For more information see Pmt.

Example: Ipmt(0.01, 1, 24, 5000) equals -50.

Irr(values, guess)

Returns the internal rate of return. Values is a reference to cells that contain the numbers for which you want to calculate the internal rate of return. Guess is your guess of the result. If guess is omitted, it is assumed to be 0.1.

Example: A1:A6 contain the following values: \$-100,000, \$10,000, \$16,000, \$20,000, \$22,000 and \$24,000 Irr(A1:A6) equals -2.43%.

Mirr(reference, interestRate, interestRateReinvested)

Returns the internal rate of return for a series of periodic cash flows.

Nper(rate, pmt, pv, fv, type)

Returns the number of periods for an investment. For more information see Pmt.

Example: Nper(0.01, -100, -1000, 20000) equals 101.

Npv(rate, value1, value2...)

Returns the net present value of an investment. Rate is the rate of discount over the length of one period. Value1, value2, are arguments representing the payments (negative values) and income (positive values).

Example: Npv(10%, -10000, 4000, 5000, 6000) equals 2069.53.

Pmt(rate, nper, pv, fv, type)

Returns the periodical payment for an annuity. Rate is the interest rate per period, nper is the number of payment periods in an annuity, pv is the present value, fv is the future value, type see Fv.

Example: Pmt(0.01, 10, 10000) equals -1055.82.

PPmt(rate, per, nper, pv, fv, type)

Returns the payment on the principal for a given period of an investment. For more information see Pmt.

Example: Ppmt(0.01, 1, 36, 1000) equals -23.21.

Pv(rate, nper, pmt, fv, type)

Returns the present value of an investment. For more information see Pmt.

Example: Pv(0.01, 5*12, 1000, 0) equals -44955.04.

Rate(nper, pmt, pv, fv, type, guess)

Returns the interest rate per period of an annuity. For more information see Pmt. Guess is your guess for what the rate will be.

Example: Rate(36, -300, 10000, 0) equals 0.42%.

Sln(cost, salvage, life)

Returns the straight-line depreciation of an asset for one period. Cost is the initial cost of the asset. Salvage is the value at the end of the depreciation. Life is the number of periods.

Example: Sln(40000, 5000, 8) equals 4375.

Syd(cost, salvage, life, period)

Returns the sum-of-years' digits depreciation of an asset for a specified period. Cost is the initial cost of the asset. Salvage is the value at the end of the depreciation. Life is the number of periods. Period is the period.

Example: Syd(40000, 5000, 8, 8) equals 972.22.

Date & Time Functions**Date(year, month, day)**

Returns a particular date.

Example: Year(Date(2003, 1, 1)) equals 2003.

DateValue(dateText)

Converts a date in the form of text to a serial number.

Example: DateValue("1/1/03") equals 36161.

Day(date)

Returns the day of a date.

Example: Day(1/1/03) equals 1.

Hour(time)

Returns the hour of a time.

Example: Hour(2:45) equals 2.

Minute(time)

Returns the minutes of a time.

Example: Minute(2:45) equals 45.

Month(date)

Returns the month of a date.

Example: Month(1/1/03) equals 1.

Now()

Returns the current date and time.

Second(time)

Returns the seconds of a time.

Example: Second(Time(1, 45, 20)) equals 20.

Time(hour, min, sec)

Returns a particular time. Time(1,45,0) equals 1:45.

TimeValue(timeText)

Converts a time in the form of text to a serial number.

TimeValue("1:45") equals 0.072917.

Today()

Returns the current date.

Weekday(date, type)

Returns the day of the week corresponding to a date. If type = 1 or omitted returns: 1 (Sunday) through 7 (Saturday).

Example: Weekday(Date(2003,8,15)) equals 1.

Year(date)

Returns the year of a date.

Example: Year(Date(2003, 1, 1)) equals 2003.

Logical Functions

And(logical1, logical2, ...)

Returns TRUE if all its arguments are TRUE, otherwise returns FALSE.

Example: And(FALSE, TRUE) equals FALSE.

False()

Returns the logical value FALSE.

If(condition, trueValue, falseValue)

Returns trueValue if condition evaluates to TRUE or falseValue if condition evaluates to FALSE. Example: If(A1>A2, "OK", "Cancel").

Not(logical)

Reverses logical value.

Example: Not(TRUE) equals FALSE.

Or(logical1, logical2, ...)

Returns TRUE if any argument is TRUE, otherwise return FALSE.

Example: Or(FALSE, TRUE) equals TRUE.

True()

Returns the logical value TRUE.

Text Functions

Char(number)

Returns the character specified by a number.

Example: Char(66) equals B.

Clean(text)

Removes all nonprintable characters from a text string.

Code(text)

Returns a numeric code for the first character in a text string.

Example: Code("ABC") equals 65.

Concatenate(text1, text2, ...)

Joins several text strings into one text string.

Exact(text1, text2)

Returns TRUE if two text strings are identical (case sensitive).

Example: Exact("palm", "PALM") equals FALSE.

Find(findText, withinText, start)

Finds string (findText) within another text string (withinText), and returns its starting position.

Example: Find("A", "CBA", 1) equals 3.

Fixed(number, numDecPlaces, unDelimiter1000)

Rounds a number to the specified number of decimals and returns the result as text with or without commas.

Left(text, num_chars)

Returns the leftmost characters from a text string. Example: Left("Allegro", 2) equals "Al".

Len(text)

Returns the number of characters in a text string.

Example: Len("Allegro") equals 7.

Lower(text)

Converts text to lowercase.

Example: Lower("Allegro FPC") equals "allegro fpc".

Mid(text, start, count)

Returns a specific number of characters from a text string, starting at the position start.

Example: Mid("Allegro", 3, 2) equals "le".

Proper(text)

Capitalizes the first letter of all words. Converts all the other letters to lowercase.

Example: Proper("this CHAPTER") equals "This Chapter".

Replace(oldText, start, count, newText)

Replaces part of a text string oldText, based on the number of characters you specify (start, count), with a newText.

Example: Replace("Allegro", 5, 1, "-Size") equals "Alle-sizero".

Rept(text, nTimes)

Repeats text the given number of times.

Example: Rept("-", 5) equals "-----".

Right(text, num_chars)

Returns the rightmost characters from a text string.

Example: Right("Allegro", 2) equals "ro".

Substitute(text, oldText, newText, n)

Substitutes newText for oldText in a text string. N specifies which occurrence of the oldText you want to replace.

Example: Substitute("1/1/2003", "1", "2", 2) equals "1/2/2003".

T(value)

Returns the text referred to by value.

Example: A1 contains "AAA" then T(A1) equals "AAA".

Trim(text)

Removes all spaces from a text string except for single spaces between words.

Upper(text)

Converts text to uppercase.

Example: Upper("Allegro FPC") equals ALLEGRO FPC.

Value(text)

Converts a text that represents a number to the number.

Example: Value("1000") equals 1000.

Information & Lookup Functions

Address(row, col, refType, A1, sheetName)

Creates a cell reference from specified row and column numbers.

Column(reference)

Returns the column number of the given reference.

Columns(range)

Returns the number of columns in an array or reference.

Example: Columns(A1:D1) equals 4.

HLookup(lookupValue, data, row)

Searches for a value in the top row of a data table and then returns a value in the same column from a row you specify. LookupValue is the value to be found in the first row of the data table. Data is the table of data. Row is the row number in the data table from which the matching value is returned.

Index(range, rowNum, colNum)

Returns a reference to a specified cell within range.

Indirect(text)

Returns the reference specified by a text.

IsBlank(value)

Returns TRUE if the value is blank.

IsErr(value)

Returns TRUE if the value is any error value except !!NA.

IsError(value)

Returns TRUE if the value is any error value.

IsLogical(value)

Returns TRUE if the value is a logical value.

IsNA(value)

Returns TRUE if the value is error value !!NA.

IsNonText(value)

Returns TRUE if value is any value that is not text.

IsNumber(value)

Returns TRUE if the value is a number.

IsRef(value)

Returns TRUE if the value refers to a reference.

IsText(value)

Returns TRUE if the value is text.

Lookup(value, vector1, vector2)

Finds the value in a row or column (vector1) and returns the corresponding value from a row or column (vector2).

Match(lookupValue, lookupRange, matchType)

Returns the position of an item in a range that matches a specified value in a specified order. LookupValue is the value you want to match in the range.

N(value)

Returns a value converted to a number.

NA()

Returns the error value !!NA (no value is available).

Offset(reference, rows, cols, height, width)

Returns a reference to a range shifted by specified number of rows and columns.

Row(reference)

Returns the row number of the given reference.

Rows(range)

Returns the number of rows in a reference or array.

Example: Rows(A1:A5) equals 5.

Type(value)

Returns a number indicating the data type of a value (number = 1, text = 2, logical value = 4, error value = 16).

VLookup(lookupValue, data, column)

Searches for a value in the leftmost column of a data table, and then returns a value in the same row from a column you specify. LookupValue is the value to be found in the first column of the data table. Data is the table of data. Column is the column number in the data table from which the matching value is returned.

Database Functions

Daverage(database, field, criteria)

Averages the values in the specified database column matching the conditions.

Dcount(database, field, criteria)

Counts the cells containing numbers in the specified database column matching the conditions.

Dcounta(database, field, criteria)

Counts nonblank cells in the specified database column matching the conditions.

Dget(database, field, criteria)

Extracts a single value from the specified database column matching the conditions.

Dmax(database, field, criteria)

Returns the largest number in the specified database column matching the conditions.

Dmin(database, field, criteria)

Returns the smallest number in the specified database column matching the conditions.

Dproduct(database, field, criteria)

Multiplies the values in the specified database column matching the conditions.

Dstdev(database, field, criteria)

Estimates the standard deviation based on a sample, using the numbers in the specified database column matching the conditions.

Dstdevp(database, field, criteria)

Calculates the standard deviation of a population based on the entire population, using the numbers in the specified database column matching the conditions.

Dsum(database, field, criteria)

Adds the numbers in the specified database column matching the conditions.

Dvar(database, field, criteria)

Estimates variance based on a sample, using the numbers in the specified database column matching the conditions.

Dvarp(database, field, criteria)

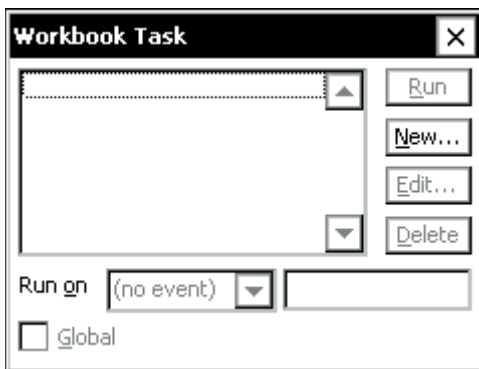
Calculates the variance of a population based on the entire population, using the numbers in the specified database column matching the conditions.

▲ Automating Tasks

The Tasks function allows you to create simple spreadsheet applications (macros) to automate tasks.

Workbook Task Dialog Box

Use the Tasks function to define, modify, and run automating tasks, to open the *Workbook Task* dialog box, tap on *Task* | *Workbook Task* in PTab.



The Task options are described below:

- Run: Runs the selected task
- New: Creates a new task

- Edit: Edits or renames the selected task
- Delete: Permanently deletes the selected task

Run on

To start a task, select one of the following events:

- (no event): Selecting this option runs the task only from this dialog using the Run button.
- Menu Item: Selecting this option adds a new item to the menu task. In the following edit line, enter the label of the menu item you are using.
- Tap On Cell: Selecting this option executes a task by tapping on a cell or cell range. In the following edit line enter the cell or cell range reference.

Example: Task body: Zoom(80), select Tap on Cell: A1. Now by tapping on A1 your workbook zooms to 80%.
- New Value In: Selecting this option to execute this task when a cell value is entered. In the following edit line enter a cell or cell range reference.

Global

Check the *Global* check box if you want to use this task in any workbook. Normal tasks are stored in workbook file. Global tasks are stored in Windows registry.

Tutorial for First Task

To create a simple task, follow these steps:

- 1) Select *Task* | *Task Workbook* to open the *Workbook Task* dialog box.
- 2) Tap the *New...* button to open *Define Task* dialog box.
- 3) Type in the word *Hello* to name your task (*Task Name* is highlighted and is overwritten with the word hello)
- 4) Tap on the *fn()* button to open the *Insert Function* dialog box.
- 5) Set the *Category* option to *Task*.
- 6) Select the function *MsgBox (text)* from the list and tap on *OK*.
- 7) Type "Hello World" between the parentheses (the cursor should already be between the parentheses):

MsgBox("Hello World")

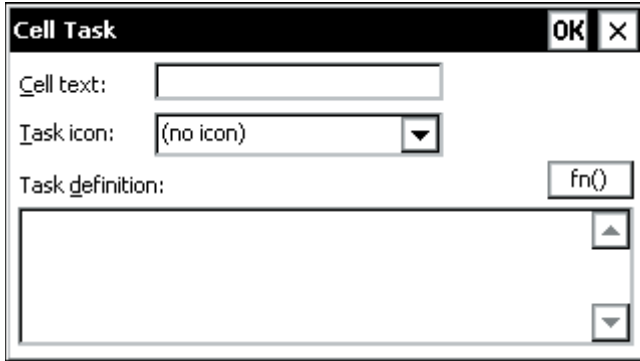
Note: You must include the quotation marks.

- 8) Tap on *OK* to close the *Define Task* dialog box and return to the *Workbook Task* dialog box. Hello is now listed.

- 9) Select *Hello* so it is highlighted.
- 10) Tap on the *Run* button and a dialog box pops up displaying *Hello World*.
- 11) Tap on the *OK* button to close the pop-up dialog box and return you to the PTab spreadsheet.

Cell Task Dialog Box

Use *Cell Task* option found at *Task | Cell Task* is used to define or modify automating tasks stored in a cell.



Cell Text

Text to display in a cell.

Task Icon

Choose an icon you want to display in a cell. You can run the task by tapping on this icon. Choose (no icon) if you want to execute this task by tapping on the cell.

Task Definition

Task source. Example: ShowPicture("myBMW.jpg").

fn()

Tap on this button to open Insert function dialog box.

PTab uses cell tasks to insert pictures, sounds or hyperlinks into cells (see *Insert in Cell > Picture/Sound/ Hyperlink* heading earlier in this chapter). To save charts (see *Chart* heading earlier in this chapter). You can use cell tasks for short "macros" that you can execute by tapping on a cell or cell icon.

Variables

You can use variables in tasks.

Example:

```
ok = YesNoBox("Finish task?")
if ok then
  Return()
end
```

There are no global variables. Use a workbook to store global data.

How to Set and Get Cell Values

Use Set(reference, value) function to set cell value.

Example:

```
Set(A1,1000)
```

If you need to create a cell reference using row and column numbers (column A has number 1), use function CellRef(col, row [, sheetIndex]). Parameter sheetIndex is optional.

Example:

```
i = 1
while i < 100
  Set(CellRef(1,i), i)
  i = i+1
end
```

If Command

```
if condition1 then
  commands
elseif condition2 then
  commands
else
  commands
end
```

Examples:

```
if a1<>0 then Set(c1, b1/a1) end
```

```
if a1=0 then
```

```
  Set(c1, "Sorry...")
```

```
else
```

```
  Set(c1, b1/a1)
```

```
end
```

While Statement

```
while condition
```

```
  commands
```

```
end
```

Executes *commands* as long as a *condition* is True.

Example:

```
while a1>0
```

```
  Set(CellRef(2, a1), a1*100)
```

```
  Set(a1, a1-1)
```

```
end
```

For Statement

```
for counterVariable = startValue to endValue [step stepValue]
```

```
  commands
```

```
end
```

Repeats *commands* a specified number of times.

Example:

```
for i = 1 to 10
```

```
  Set(CellRef(1, i), i)
```

```
end
```

```
for j = 1 to 100 step 10
```

```
  Set(a1, a1*j)
```

```
end
```

Calling a Procedure

You can structure your code into more simple tasks and then you can call previously defined task from within a task using its name.

Example:

```
Set(a1,100)
while a1>0
  Hello
  Set(a1, a1-1)
end
```

Comments

```
Set(a1,100) 'Note: set cell A1 to value 100
```

Automating Tasks Functions Reference

Parameters in [] are optional.

ActiveCell()

Returns the active (highlighted) cell.

Example:

```
Set(ActiveCell(), "Hello World!")
```

ActiveSheet([index])

Returns the number of the active sheet (1-based) and selects the new one if *index* is specified. Returns "!!Val" if index is less than 1 or greater than number of sheets.

Example: ActiveSheet(2)

Beep([soundType])

Plays a waveform sound. *SoundType* specifies the system sound type (64 – asterisk, 48 – exclamation, 32 – question, 16 – hand, no parameter – default sound).

Example:

```
Beep()
Beep(32)
```

CellRef(col, row [, sheetIndex])

Returns the cell reference.

Example:

```
Set(CellRef(a1,2), 123)
```

CellRefR(dcol , drow, [, sheetIndex])

Returns the cell reference relative to the current cell.

Example:

Sel(a1)

Sel(CellRefR(1,0))

MsgBox("the current cell is now B1")

Sel(CellRefR(0,5))

MsgBox("the current cell is now B6")

CellTask(text, task [, icon])

Creates cell task in the current cell. Text is cell label visible in sheet, task is task source and icon is number of icon (see Cell Task dialog for more info). If icon=0 (or if this parameter is omitted) cell task is executed by tapping on cell. If icon>0 then cell task is executed by tapping on icon.

Example:

CellTask("Picture", "ShowPicture('pic.jpg')", 3)

Chart(["Type:Bar/Line/LineMarkers/Pie/XY/XYLines/XYLinesMarkers",

"Title:ChartTitle",

"XTitle:XaxisTitle",

"YTitle:YaxisTitle",

"Series:Rows" or "Series:Columns",

"Legend" or "Legend:No",

"Xaxis" or "Xaxis:No",

"Yaxis" or "Yaxis:No",

"Xgrid" or "Xgrid:No",

"Ygrid" or "Ygrid:No",

"AutoScale" or "AutoScale:No"])

Shows the chart of the selection. All parameters are optional and their order is not important.

Default values of parameters: Chart("Type:Bar", "Series:Rows", "Legend", "Xaxis", "Yaxis", "Xgrid:No", "Ygrid:Yes", "AutoScale").

Example:

Sel(a1:c20)

Chart("Type:XY", "Title:Sin(x)", "Xgrid", "Ygrid")

Sel(b2:f5)

Chart("Series:Columns", "AutoScale:No")

Clear()

Clears contents in the current selection.

Example:

Clear()

ClearFormat()

Clears format in the current selection.

Example:

ClearFormat()

ClearValidation()

Clears validation settings in the current selection.

Example:

ClearValidation()

ColHide([hideUnhide])

Returns whether the first column of current selection is hidden and hides (true) or unhides (false) selected columns if hideUnhide is specified.

Example:

Sel(B1:B1)

ColHide(true)

ColWidth([width])

Returns column width of the first column of current selection and sets width of selected columns if width is specified.

Example:

Sel(B1:C1)

ColWidth(100)

ComboBox("list")

Creates combo box in the current cell. See also *Tools | Data Validation* menu item for more info. Use function `ClearValidation()` to clear combo boxes in the current selection. Use *Run on "New value in"* workbook task event to run a task every time value in a cell is changed.

Example:

```
Sel(A1)
```

```
ComboBox("BMW,Jaguar,Volvo")
```

Copy()

Copies the current selection to the clipboard.

Example:

```
Sel(A1:A5)
```

```
Copy()
```

```
Sel(B1)
```

```
Paste()
```

DeleteCells(colsRows)

Deletes cells (true - columns, false - rows).

Example:

```
DeleteCells(true)
```

DeleteSheet(worksheet)

Removes worksheet.

Example:

```
DeleteSheet("Sheet2")
```

FileBox(title [,filter])

Opens a file dialog box with the title and the file type filter.

Example:

```
picture=FileBox("Pictures",*.jpg,*.gif,*.bmp,*.2bp,*.xbr")
```

```
ShowPicture(picture)
```

Filter(onOff)

Sets auto filter (true = autofilter on, false = autofilter off). Auto filter range is the current selection.

Example:

```
Filter(true)
```

FindDialog()

Shows Find dialog box.

Example: FindDialog()

FormatPainter(cellRef)

Formats the current selection using the format from the specified cell (*cellRef*).

Example:

FormatPainter(f2)

FreezeTitles(onOff)

Freeze/unfreeze titles.

Example:

Sel(a2)

FreezeTitles(true)

FullScreen(onOff)

Returns the current screen mode and sets it if *onOff* is specified (true = full screen, false = normal).

Example:

FullScreen(true)

GoalSeek(setCell, toValue, chngCell)

Runs a goal seek. When goal seeking PTab varies the value in *chngCell* until a formula in *setCell* returns the result to *toValue*. See also Tools > Goal Seek menu item.

Example:

GoalSeek(A1, 1000.0, C1)

IBrowser([Webpage])

Runs Internet browser.

Example:

IBrowser("www.z4soft.com")

InputBox(title)

Shows input dialog box with the title.

Example:

age = InputBox("Enter your age")

InsertCells(colsRows)

Inserts cells (true - columns, false - rows).

Example:

```
InsertCells(false)
```

InsertSheet(worksheet)

Inserts new worksheet.

Example:

```
InsertSheet("Cars")
```

LastCol([rowNumber])

Returns the last nonblank cell in the whole sheet (if *rowNumber* is not specified) or in the specified row.

Example:

```
last = LastCol()
```

```
last = LastCol(15)
```

LastRow([columnNumber])

Returns the last nonblank cell in the whole sheet (if *columnNumber* is not specified) or in the specified column.

Example:

```
last = LastRow()
```

```
last = LastRow(15)
```

ListBox(title, range)

Shows list box dialog with items from range and with the *title* and returns the index of the selected item or its value (if *retValue* is TRUE).

Example:

```
med = ListBox("Choose medicine", Medicines!a1:a50, TRUE)
```

ListBox2(title, item, item2, item3... item29)

Shows list box dialog with items: item1, item2, item3... and with the *title* and returns the text of the selected item.

Example:

```
car = ListBox("Choose car", "BMW", "Jaguar", "Ferrari")
```


Modified([onOff])

Returns true if the Modified flag is true (workbook was modified) and sets the Modified flag to *onOff* (true or false).

Example:

```
Modified(false)
```

MsgBox(text)

Shows the Message Box with the text.

Example:

```
MsgBox("Hello")
```

Paste([contents, format, skipBlanks, onlyResults])

Pastes the clipboard to the current selection.

Example:

```
Sel(A1:A5)
```

```
Copy()
```

```
Sel(B1)
```

```
Paste()
```

All arguments are optional. Paste() function without arguments works as *Edit | Paste* menu command. The Paste() function with arguments works as *Edit | Paste Special* menu comment. The Default values for arguments are Paste(true, true, false, false).

Example for paste contents, preserve previous format:

```
Paste(true, false)
```

PlaySound([filename])

Plays a sound (file of type *.wav). If you use this function without parameter, any currently playing sound is stopped.

Example:

```
PlaySound("Song1.wav")
```

RangeRef(col1, row1, col2, row2 [, sheetIndex])

Returns the range reference.

Example:

```
MsgBox(Sum(RangeRef(a1,2,20,2)))
```

Return()

Stops task execution.

Example:

```
if a1=0
  MsgBox("A1 must not be 0")
  Return()
end
```

RowHeight([height])

Returns row height of the first row of current selection and sets height of selected rows if *height* is specified.

Example:

```
Sel(A2:A7)
RowHeight(10)
```

RowHide([hideUnhide])

Returns whether the first row of current selection is hidden and hides (true) or unhides (false) selected rows if *hideUnhide* is specified.

Example:

```
Sel(A2:A5)
RowHide(true)
```

RunApp(application [,parameters])

Runs and application (program) with optional parameters.

Example:

```
RunApp("iexplore.exe", "http://z4soft.com")
```

Save(fileName)

Saves the current workbook.

Example:

```
Save("data.xls")
```

Sel([range])

Returns the current selection and select the new one if *range* is specified.

Example:

```
Sel(a2:c12)
```

Set(reference, value)

Sets cell specified by *reference* to the value.

Example:

```
Set(a1, 12.34)
```

SheetName(sheetNum)

Returns name of the specified sheet.

Example:

```
name = SheetName(1)
```

SheetsCount()

Returns a number of sheets in workbook.

Example:

```
MsgBox("Sheets count is "&SheetsCount())
```

ShowPicture(pictureFile [,Time])

Shows a picture (file of types: *.jpg, *.gif, *.bmp, *.2bp, *.xbm). Use the second (optional) parameter to close a picture window after *time* seconds. Without specifying the *time* parameter a picture can be closed by tapping on it.

Example:

```
ShowPicture("car.bmp")
```

Sort(firstBy[, ascending, secondBy, ascending, thirdBy, ascending, headerRow, caseSensitive, sortRows])

Sorts the current selection. *FirstBy*, *secondBy*, *thirdBy* - column numbers (or row numbers if *sortRows* is true). Sorts ascending (*ascending* = true) or descending (*ascending* = false). For more info see *Sort* dialog in *Tools* menu.

Example:

```
Sel(a1:c20)
```

```
Sort(1)
```

TickCount()

Returns the number of seconds that have elapsed since the system was started. This function has microsecond precision.

Example:

```
tm = TickCount()
```

TopLeftCell(reference)

Returns the top left cell on the screen and sets it if *reference* is specified.

Example:

```
TopLeftCell(A1)
```

WorkbookName()

Returns name of the opened workbook.

Example:

```
Save(WorkbookName())
```

YesNoBox(text)

Shows the box giving the choice yes or no and returns true if user selects Yes.

Example:

```
if YesNoBox("Stop") then
```

```
    Return()
```

```
end
```

Zoom([magnification])

Returns current value of zoom *magnification* and sets it to magnification if specified.

Example:

```
Zoom(65)
```

```
Zoom(Zoom()-10)
```

Automating Task Examples

Selecting cells from a2 to the last cell

```
Sel(RangeRef(1, 2, LastCol(), LastRow()))
```

Selecting column by tapping the cell in the first row (onTap:

```
$A$1:$A$255)
```

```
curCol = Column(ActiveCell())
```

```
Sel(RangeRef(curCol, 1, curCol, LastRow()))
```

Entering a product name to the tapped cell in column B from product table in Sheet2 (onTap:\$B\$1:\$B\$16384)

```
choice = ListBox("Select a product", Sheet2!a1:a16384)
```

```
Set(ActiveCell(), CellRef(1, choice, 2))
```

Get current selection coordinates:

c = Column(Sel())

r = Row(Sel())

numCols = Cols(Sel())

numRows = Rows(Sel())

▲ PTab Keyboard Shortcuts

Format Cells	Ctrl+1	Fill Right	Ctrl+R
Select All	Ctrl+A	File Save	Ctrl+S
Copy	Ctrl+C	Paste	Ctrl+V
Fill Down	Ctrl+D	Close	Ctrl+W
Find	Ctrl+F	Cut	Ctrl+X
Goto	Ctrl+G	Redo	Ctrl+Y
Replace	Ctrl+H	Undo	Ctrl+Z
File New	Ctrl+N	Clear Contents	Del
File Open	Ctrl+O		

WordPad

Microsoft WordPad allows you to create and edit documents similar to the way you do using Microsoft Word on the desktop PC. To open WordPad, double-tap the Microsoft WordPad icon on the desktop or go to *Start* | *Programs* and tap on *WordPad*. A new document is automatically opened. To open existing documents, choose *File* | *Open* and specify the files location.



WordPad allows you to open WordPad documents (.pwr) and ASCII text files (.txt). If you have more than one document opened, cycle through them by pressing *CTRL*+< or *CTRL*+>.

▲ Command Bar


The buttons on the command bar give you quick access to many of the same options that are available in the Format menu such as font attributes and alignment. You can choose whether you would like the command bar to be below the menu bar or to the right of the menus to allow for more viewing space. Refer to the *Application Command Bars* section found earlier in this chapter for details. Use the on-line Help [?] for more details about WordPad.

▲ Saving WordPad Files

When you select *File* | *Save* or *File* | *Save As*, the path is automatically set to: \My Documents\, which stores the file in RAM. We recommend that you change the path to: \C_Drive\C_MyDocs\ so that the file is saved to the non-volatile solid state storage.

Windows Media 9 Series Player

Windows Media 9 Series player comes installed on your Allegro CX. This program runs movie and audio files. These files can be located on the Internet or on the Allegro.

 *Note: Running the Windows Media player increases the rate the battery is drained. Playing video files on the media player drains the battery faster than playing audio only files.*

To access the Windows Media 9 Series player, complete the following steps:

- 1) Turn on your Allegro.
- 2) Tap on *Start | Programs | Media Player*.



The Windows Media 9 Series player has the following options:

- File
- View
- Playback
- Web

Tapping on each of these options (except the Web button) accesses a drop-down box with available functions in the media player.

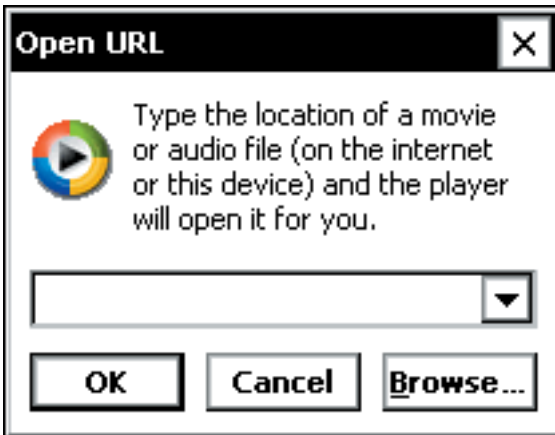
▲ File

The *File* option is used to locate audio or video files on your Allegro or the Internet. Tapping on the *File* option accesses a drop-down box with the following available functions:

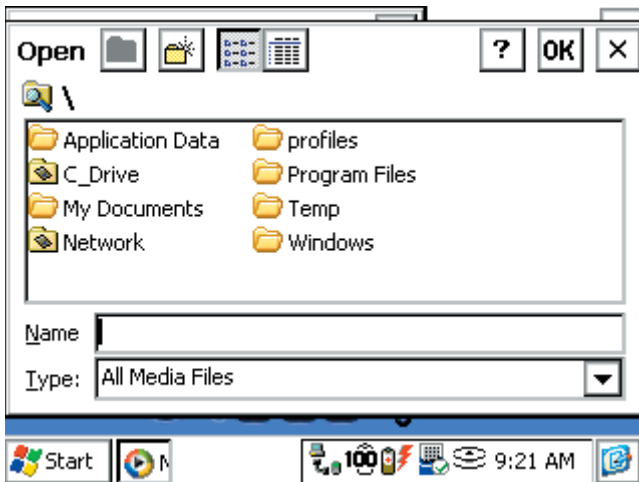
- Open
- Close
- Playlists
- Favorites
- Exit

Open

Selecting the *Open* option access the following screen:



The *Open URL* screen allows you to type in the location of a movie or audio file on the Internet or the Allegro that you want the media player to open, or use the *Browse* button to navigate through your Allegro to locate the files.



The text box on the *Open URL* screen displays the location of the selected audio/video or the location of the last file that was played in the media player. Tapping on the down arrow next to the text box opens a drop-down box showing all the files that have been recently played on your Allegro. These files can be accessed by tapping on a file in the drop-down list and tapping on the *OK* button.



The *OK* button confirms your file selection and opens the file in the media player. Tapping on the *Cancel* button closes the *Open URL* screen and returns you to the media player main screen.

Close

The *Close* option is only available when a file is open in the media player. When a file is being played or has ended, it is still loaded in the media player and will begin playing again when the *Play* button is tapped. Selecting the *Close* option closes that file so it is no longer able to be played by tapping on the *Play* button. The file must be reopened to be played.

Playlists

Playlists are a compilation of audio/video files that can be stored in a single folder or in multiple locations on your Allegro. When a playlist is selected, the media automatically accesses the files you want played in the order you have programmed them to be played.

The *Playlists* option allows you to view local content, favorites, and created playlists of audio/video files located on your Allegro. You can also organize the playlists on your Allegro or create new ones.

Favorites

The *Favorites* option allows you to add a file to your *Favorites* folder, to organize your favorites in the order you want, and lists the files you have selected as favorites. Favorites are not playlists with multiple files but single audio/video files.

Exit

Selecting the *Exit* option exits you out of the Windows Media 9 Series player and returns you to the desktop of the Allegro.

▲ View

The *View* option is used to select the visual size of the file you are viewing on your Allegro. Tapping on the *View* option accesses a drop-down box with the following available functions:

- Zoom
- Full Screen
- Statistics
- Properties
- Options

Zoom

The *Zoom* option is used for adjusting the viewable area when watching video files. There are three selectable percentages from the *Zoom* option, 50%, 100%, and 200%.

Full Screen

The *Full Screen* option is only available while a video file is loaded into the media player. Selecting this option fills the entire screen with the video file.



Tapping on the screen will pause and play the file. To resize the file you are viewing to fit into the file player and so you have access to the media player options, press the *Esc* key on your Allegro.

Statistics

Selecting the *Statistics* option opens to a screen that displays the following information about the file being played in the media player:

- Filename
- Source Protocol
- Memory Usage

Properties

Selecting the *Properties* option opens to a screen that displays the following information about the file being played in the media player:

- Clip Title
- Clip Artist
- Clip Album
- File Name
- Duration

- Audio Frequency
- Stereo
- Protected

Options

Selecting the *Options* option opens to the *Options* screen. This screen allows you to set the following media player options:

- Windows Media Buffering (time): Allows you to set the buffering time for the media player from 1 – 5 seconds.
- Playback: Allows you to set the file to Play once or to Repeat forever (or until you close the file). You can also set the Zoom default.

▲ Playback

The *Playback* option shows the player controls of the media player. The following are the Playback functions with their key shortcut:

<u>Function</u>	<u>Key(s)</u>
Play	Enter
Pause	Ctrl+P
Stop	Ctrl+S
Mute	Ctrl+M
Repeat	Ctrl+R
Shuffle	Ctrl+H

▲ Web

The *Web* option is only functional when the Allegro is able to connect to the Internet. Tapping on the *Web* button opens to the Windows Media Web page. If the Allegro is not connected to the Internet, the Internet Explorer opens but you receive a *The page cannot be displayed* message.

Internet Explorer and Inbox

Allegro CX includes Microsoft Pocket Internet Explorer for accessing the World Wide Web and Microsoft Inbox for sending and receiving e-mail.



▲ Setting up an Internet Connection

The procedure for accessing the Internet depends on your specific requirements and network environment. For example, you may wish to use a phone line to dial into an Internet Service Provider (ISP). In this case, you need a PC card modem and an established ISP account. Or you may wish to connect the Allegro directly to your office Internet, in which case you need an Ethernet PC card and assistance from your network administrator.

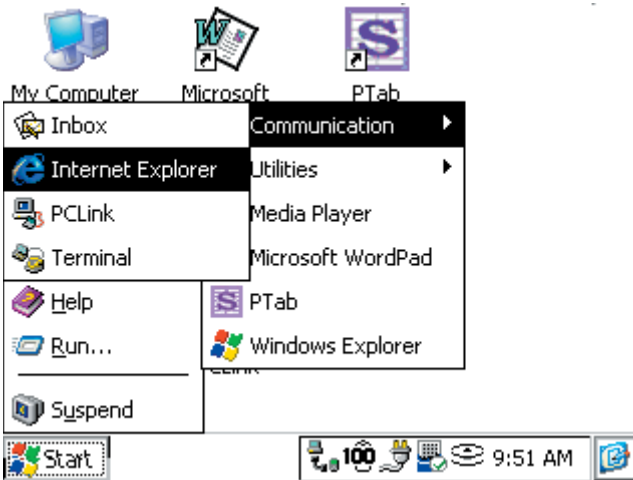
These are just a few of the possibilities. Regardless of how you decide to make the connection, the following information assists you in getting the Allegro configured properly.

If you plan to use a dial-up connection for Internet access, you need to configure a new connection as follows:

- 1) Install and configure a PC card modem according to the manufacturer's instructions.
- 2) Turn on the Allegro and go to *Start | Programs | Communication | Remote Networking*.
- 3) Double-tap the *Make New Connection* icon.
- 4) Enter a name for the connection and select *Dial-Up Connection*.
- 5) Tap the *Next* button.

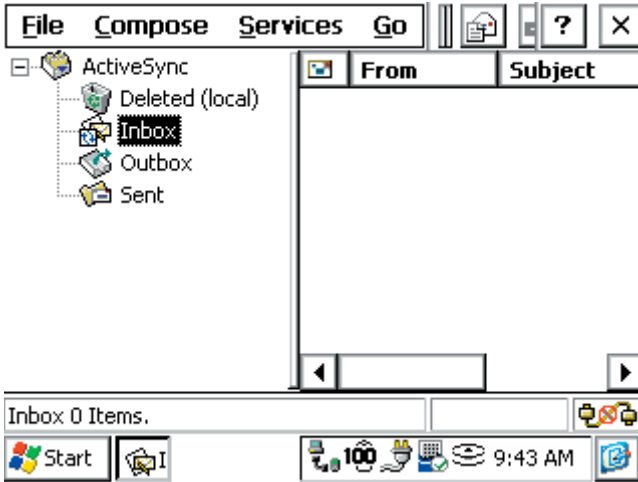
- 6) Select the modem you are using in the drop-down box. In most cases, you do not need to make changes under the *Configure* or *TCP/IP Settings* dialogs. Consult with your network administrator if you need to change these settings.
- 7) Tap the *Next* button and enter the dialing information. Tap the *Finish* button.
- 8) Double-tap the connection icon, enter your user name and password, and tap the *Connect* button. Once the connection is established, you have complete access to the Internet.

To open the Internet browser on your Allegro, tap on *Start* | *Programs* | *Communication* | *Internet Explorer*. Or follow the instructions below to set up Inbox for sending and receiving e-mail.



▲ Using Inbox

Inbox allows you to send and receive e-mail as well as compose outgoing messages and view incoming messages.



Set up a service first so that *Inbox* knows how you are accessing the Internet by following these steps:

- 1) Start *Inbox* from the desktop icon or from the *Start* menu.
- 2) Go to *Services* | *Options* on the main menu. On the *Services* tab, tap *Add*. Choose *IMAP4 Mail* or *POP3 Mail* and enter a service name. Tap the *OK* button.
- 3) The *Mail Service Definition* dialog is displayed. If you are using a dial-up connection, select the connection that you created earlier (see previous) from the drop-down list. If you are using a network connection, select *Network Connection*. Enter your ISP or network information in the remaining edit boxes.
- 4) Tap the *Next* button to access the *Mail General Preferences* and *Mail Inbox Preferences* dialog boxes. Configure the settings in these dialogs according to your needs. For additional information on these settings consult the on-line help. When you are finished, tap the *Finish* button.
- 5) You can establish a connection using *Inbox* by tapping *Services* | *Connect* from the main menu.

Sending E-mail

To send an e-mail, complete the following steps:

- 1) Tap *Compose* | *New Message*.
- 2) Enter the address, subject, and message.
- 3) Tap the *Send* button on the toolbar.

Receiving E-mail

To read your incoming e-mail, complete the following steps:

- 1) Tap on *Inbox* in the tree view at the left of the screen to display a list of your messages in the list view on the right.
- 2) Double-tap on a message in this list to open it, allowing you to view its content.

Help

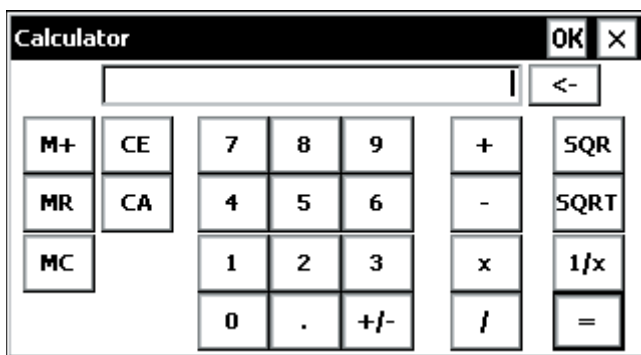
Use the on-line Help [?] for more details about the Internet Explorer and Inbox programs.

Calculator Program

The six-function Calculator program functions like a desktop calculator. Open the Calculator by tapping on *Start* | *Programs* | *Utilities* | *Calculator*.

Tap on the numbers and mathematical functions required to perform the desired calculation. The numbers appear in the horizontal box at the top of the screen as you type them in. The answer to the calculation also appears in this box. You can enter the numbers from the keyboard if you wish.

The box in the upper-left corner displays an M if there is information stored in the memory of the calculator.



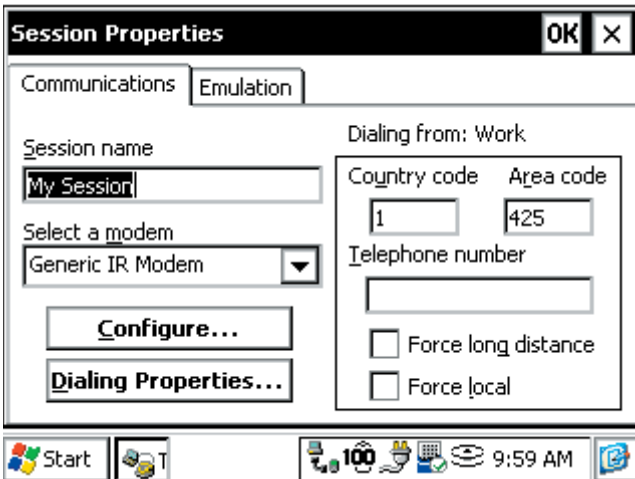
Terminal Program

The Terminal® Emulation program is used to connect the Allegro to an on-line service.



▲ Creating a New Session

- 1) Double-tap on the *Make New Session* icon shown above. A screen called *Session Properties* is shown.



- 2) Enter a name in the *Session Name* box.
- 3) Select the name of your modem from the pull-down list.
- 4) Enter the telephone number for the remote computer.

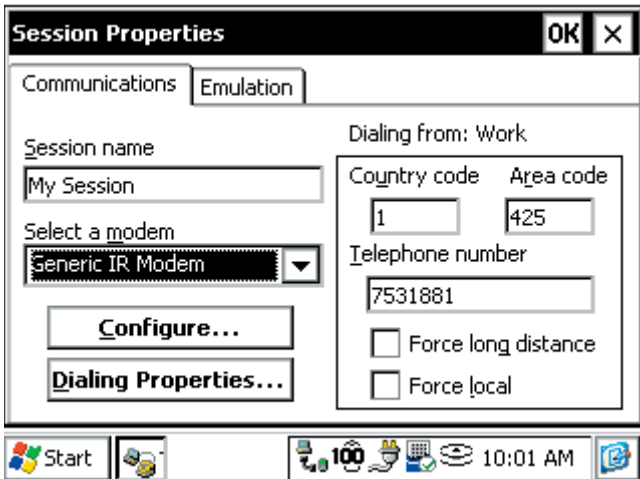
- 5) Select *OK* to connect.
- 6) An icon for the new session appears in the *Terminal* folder.
- 7) To disconnect, select *File | Close*.



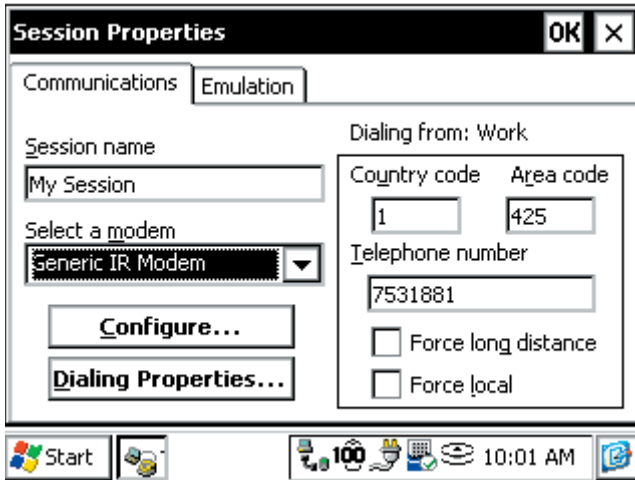
▲ Adjusting the Properties

To adjust the properties, follow these steps:

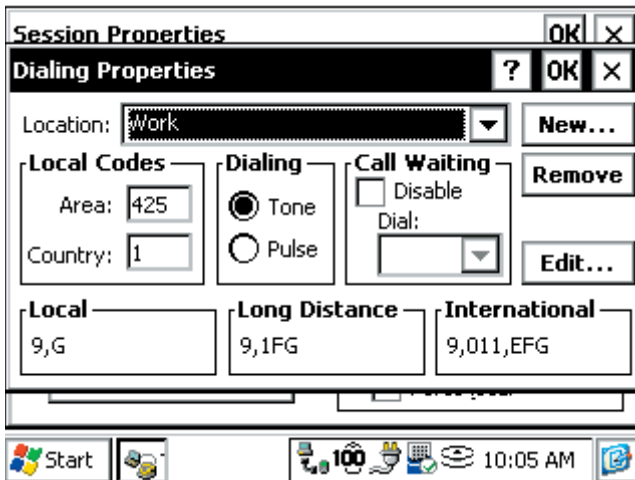
- 1) Select the icon for the session you want to adjust.
- 2) Tap on *File | Properties* to bring up the *Session Properties* screen.



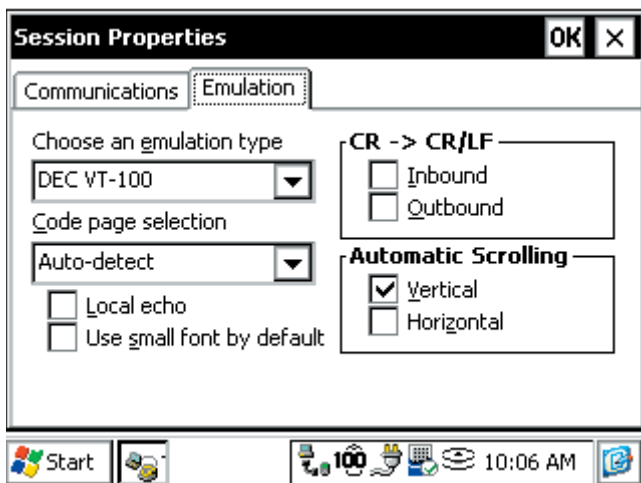
- 3) Make any necessary adjustments on the *Communications* tab. Call options and port settings are adjusted by pressing the *Configure...* button.



- 4) Press the *Dialing Properties* button to make dialing property adjustments. Press *OK* when you are finished.



- 5) Select the *Emulation* tab to modify the emulation settings. Press *OK* when you are finished.



▲ Help

Use the on-line Help [?] for more details about the Terminal program.

Bluetooth

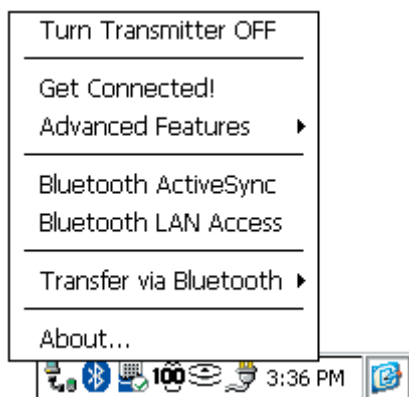
Bluetooth is a technology that wirelessly connects electronic devices to each other or to the Internet within short distances using very low power. Laptop computers, handheld computers, cell phones, and GPS receivers equipped with Bluetooth technology can communicate within a range of approximately 30 feet.

If you order an Allegro with the integrated Bluetooth option, it is factory installed on your Allegro CX prior to shipment. When the Allegro is turned on, a Bluetooth icon appears in the system tray.

▲ Bluetooth Options

To access the *Bluetooth* options on your Allegro, complete the following steps:

- 1) Tap on the *Bluetooth* icon in the system tray. The following pop-up screen appears:



- 2) Tap on one of the options to access additional settings.

The Allegro must first run the *Device Discovery* function to locate available Bluetooth devices. Go to the *Tools - Device Discover* section of this chapter and follow the Device Discovery instructions.

Turn Transmitter OFF/ON

The *Turn Transmitter OFF/ON* option is used to turn the Bluetooth transmitter on your Allegro on or off. You need to turn on the Bluetooth transmitter to use Bluetooth devices on your Allegro. To turn the transmitter on or off, tap on the Bluetooth system tray icon, then tap on *Turn Transmitter OFF/ON*.

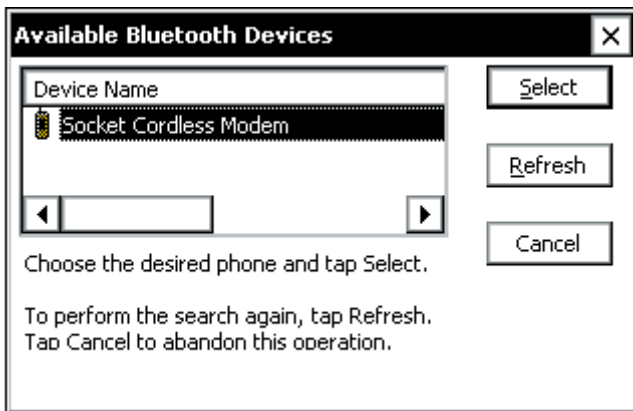
Get Connected!

The *Get Connected!* option enables you to connect your Allegro to another Bluetooth device through the phone port. To connect to a Bluetooth device, complete the following steps:

- 1) Tap on the *Get Connected!* option.
- 2) Follow the instructions presented in the *Get Connected! Wizard*.



- 3) Highlight the Bluetooth device you want to connect to in the *Device Name* box on the *Available Bluetooth Devices* screen by single tapping on it.



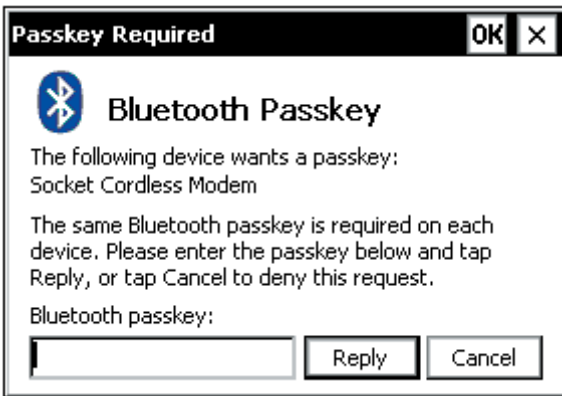
- 4) Tap on one of the following buttons on the *Available Bluetooth Devices* screen:
Select: Selects the highlighted Device Name you are connecting to and advances to the next Bluetooth connection step.

Refresh: Enables the Bluetooth Device Search to locate and display all available Bluetooth devices that can connect to your Allegro.


Cancel: Closes the *Available Bluetooth Devices* screen and returns you to the *Get Connected! Wizard* displaying that the Bluetooth connection is Unsuccessful!



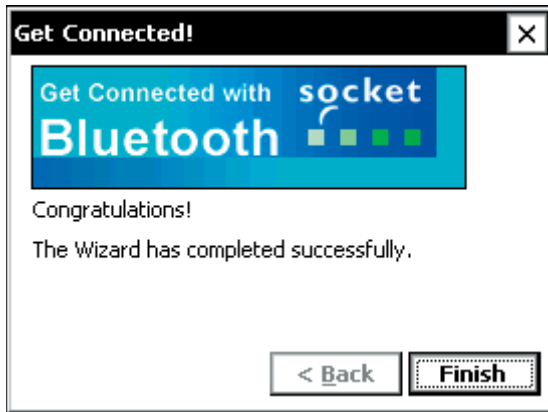
After tapping on the *Select* button, the *Passkey Required* screen appears requesting the *Bluetooth passkey*: for the Bluetooth device.



The passkey is like a PIN number that only the two Bluetooth devices know. On some devices, such as devices that do not have a display, the passkey is set at that factory. The passkey is provided in the documentation that comes with the device.

 *Note: Entering the passkey enables you to connect to your device while preventing other Bluetooth users from connecting to your device.*

- 5) Enter the passkey, located on your Bluetooth device, and tap on the *Reply* button.



- 6) Tap on the *Finish* button.

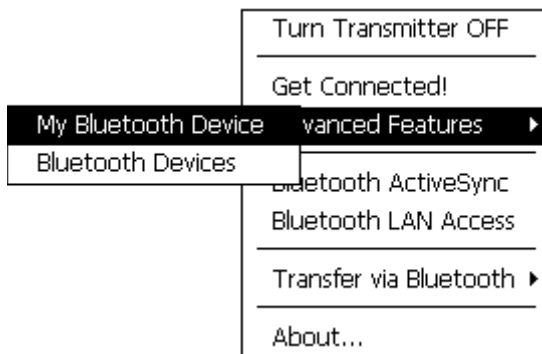
▲ **Advanced Features**

Bluetooth offers the following Advanced Features:

- My Bluetooth Device
- Bluetooth Devices

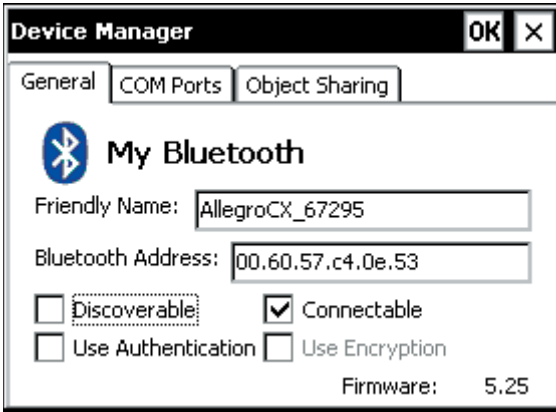
My Bluetooth Device

The *My Bluetooth Device* option accesses additional settings for your Bluetooth connection. To access the *My Bluetooth Device* option, tap on the *Bluetooth* icon in the system tray, then tap on *Advanced Features* | *My Bluetooth Device*.



General

The *General* tab displays the following *My Bluetooth Device Manager* settings:



Friendly Name: The name that is made available to other devices, such as My CX.

Bluetooth Address: The unique 48-bit electronic address of your Allegro CX.

Discoverable: Makes your Allegro CX visible to other Bluetooth devices.

Connectable: Toggles whether or not your Allegro is able to accept incoming connections.

Use Authentication: Requires a passkey from the remote device trying to bond (pair) with the Allegro.

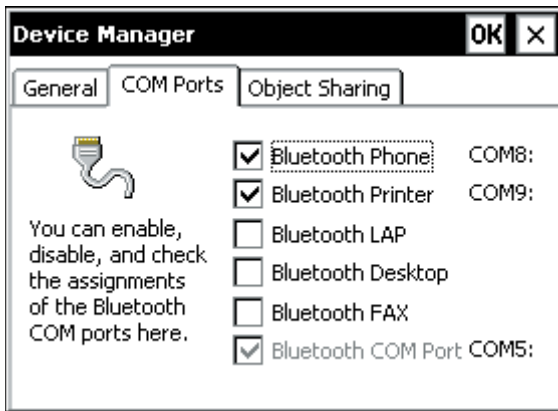
Use Encryption: Causes the Bluetooth connection to be encrypted to enhance security.


Firmware: Shows the firmware version of your Bluetooth hardware. Select the *Discoverable* and *Connectable* options so a checkmark appears in each box. These settings allow other Bluetooth enabled devices, which have the capability to do a device discovery (such as a computer or another field computer), to find your Allegro.

Uncheck the *Discoverable* box if you only need the Allegro to find other Bluetooth devices and do not need the Allegro to be found by another computer when they do a device discovery. This setting may conserve battery life.

COM Ports

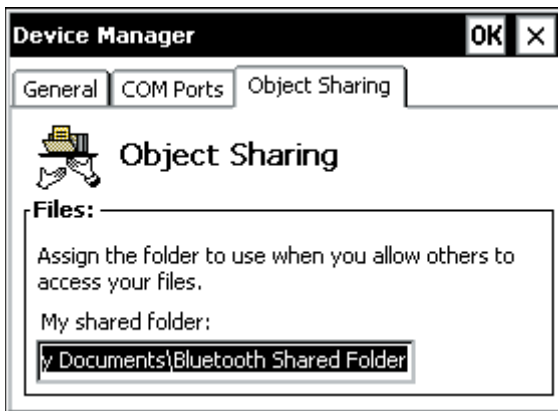
The *COM Ports* tab displays the available Bluetooth COM ports. On the *COM Ports* tab you can enable, disable, and check the assignments of the Bluetooth COM ports of your Allegro.



 *Note: Make sure that you set COM port assignments for the various connection types that are available on the Allegro. If you disable the infrared ports, you have more ports available to use for Bluetooth devices. The infrared uses COM ports 4 and 5. These two ports become available for Bluetooth devices if the infrared ports are disabled. COM port 7 is used for USB communications, and it is not accessible as a Bluetooth port.*

Object Sharing

The *Object Sharing* tab allows you to assign a *Bluetooth Shared Folder*. This is the folder used when you allow others to access your files using Bluetooth.

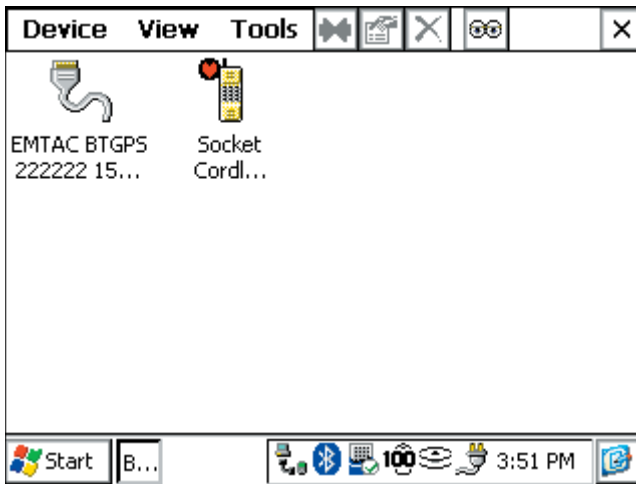


Bluetooth Devices

The *Bluetooth Device Manager* manages all Bluetooth devices that are within range of the Allegro after performing a device discovery. The Device Manager also controls the device pairing or bonding, so that a program on the Allegro using a communication (COM) port automatically knows what Bluetooth device is connected to that specific COM port.

The *Bluetooth Device* screen accesses multiple Bluetooth options. To open the *Bluetooth Device* screen, complete one of the following steps:

- Tap on the Bluetooth icon in the system tray, then tap on *Advanced Features* | *Bluetooth Devices*.
- Double-tap on the *Bluetooth Devices* folder on the desktop of the Allegro.



The *Bluetooth Device* screen offers the following options:

- Device
- View
- Tools

Device

The *Device* option offers the following options:

- Bond
- Properties
- Delete
- My Bluetooth Device...

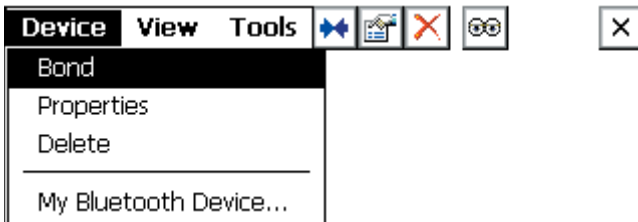
 *Note: The Bond, Properties, and Delete options are only accessible when a Bluetooth device is highlighted. To highlight a Bluetooth device, single tap on the device icon on the Bluetooth Devices screen.*

Bond

The *Bond* option activates a Wizard that helps you bond Bluetooth devices. Bonding is the process of setting up a permanent recognition between two Bluetooth devices that lets you automatically create secure connections between your Allegro and the remote device.


The two devices create secret codes called passkeys used to uniquely identify each other. They use these secret codes for both security, and establishing a unique connection to the bonded (paired) device, even if another of the same type of device is within range. To set up a bond between your Allegro and remote device, complete the following steps:

- 1) Tap on the device you want to create a bond with so it is highlighted.
- 2) Tap on *Device* | *Bond*.



- 3) Follow the instructions presented in the *Bonding Wizard*.



 *Note: To set up a bond between the Allegro and another Bluetooth device, the device must appear in the Bluetooth device manager screen. If it does not, a device discovery must be performed to locate the device you want to bond to.*

The *Bonding Wizard* requires a Bluetooth passkey to establish verification and security features embedded within the Bluetooth protocol. Some devices allow you to choose your own passkey. If this is the case, then the passkey you enter in the bonding process must be the same as the passkey entered in the device discovery process.

Example of a passkey: The Socket GPS receiver sold by Socket Communications has the factory set passkey of 0183. Through the bonding process, this receiver is uniquely bonded to the Bluetooth enabled computer.

After entering the correct passkey, tap on the *Reply* button to advance to the screen on the Allegro indicating the device is successfully bonded.

Properties

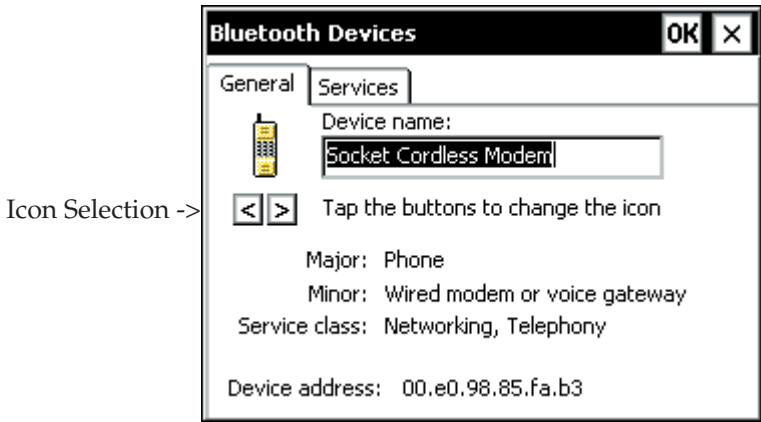
The *Properties* option displays the Bluetooth properties on your Allegro. To access the *Properties* screen from the Device Manager, complete the following steps:

- 1) Tap on the device you want to view the properties of, so the icon is highlighted.
- 2) Tap on *Device | Properties*.



General

The *General* tab displays the following screen and properties:



Device name: The friendly name of the remote device.

Icon selection buttons: Allows you to select the icon displayed for the remote device.

Major: Lists the major class of the remote device, such as phone device.

Minor: Lists the minor class of the remote device, such as modem.

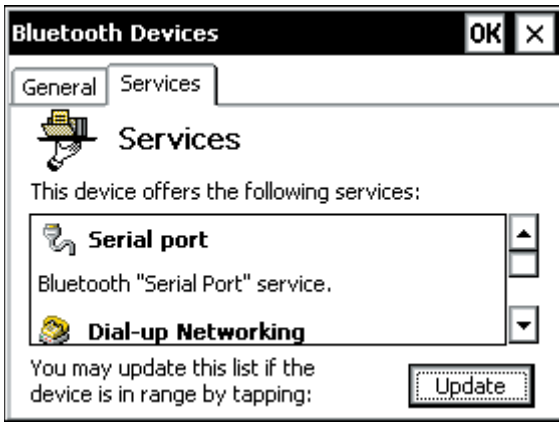
Service class: Lists the service class of the remote device, such as telephony.

Device address: The unique 48-bit electronic address of the remote device.

Services

The *Services* tab allows you to view the Bluetooth services available on the remote device.

Tap on the up or down arrow, located next to the *Services* box to view the active services available on the remote device.



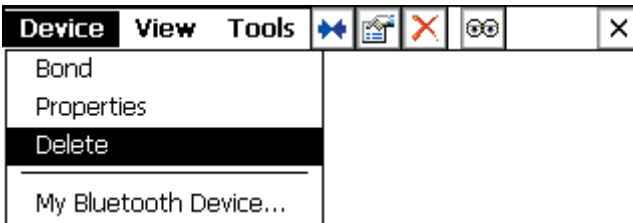
Tap on the *Update* button to enable a search for any new Bluetooth services that have been activated on the remote device. When the search ends, your Allegro returns to the services screen and displays all available Bluetooth services in the *Services* box.

Tapping on *OK* saves any changes made. Tapping on the *X* closes the *Properties* screen and returns to the *Bluetooth Devices* screen.

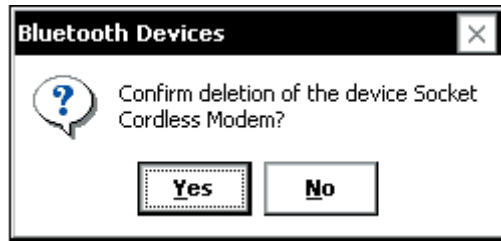
Delete

The *Delete* option allows you to delete the highlighted Bluetooth device. To delete a device from the Device Manager, complete the following steps:

- 1) Tap on the device you want to delete so it is highlighted.
- 2) Tap on *Device | Delete*.



- 3) Tap on *Yes* to proceed with the deletion process, or tap on *No* to cancel.



My Bluetooth Device...

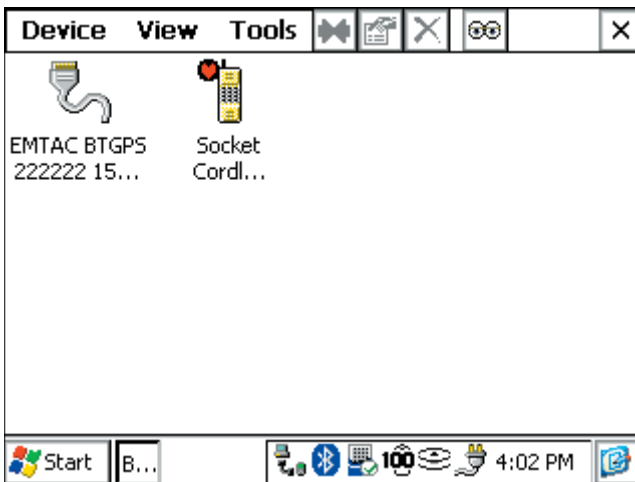
Selecting the *My Bluetooth Device...* option opens the *My Bluetooth Device Manager* as discussed previously in this chapter.

View

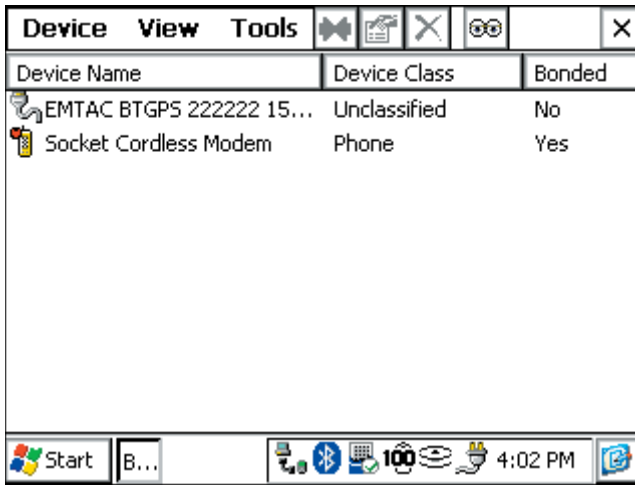
The *View* option offers you two ways that icons are presented in the *Bluetooth Devices* screen. To change the way a device is viewed in the Device Manager, complete the following steps:

- 1) Tap on *View*.
- 2) Tap on *Large Icons* or *Details*.

Large Icons: Shows the icons in a large format.



Details: Displays the Device Name, Device Class and if the device is Bonded or not.



Tools

The Tools option offers the following options:


- Device Discovery
- My Favorites...

Device Discovery

Before any device can be used, the Allegro must search for and identify all Bluetooth devices. This process is called *Device Discovery*.

The *Device Discovery* option accesses a Wizard that guides you through the process of locating nearby Bluetooth devices and instructs you on how to add the devices you want to work with to the *Bluetooth Devices* folder.

Run *Device Discovery* whenever you need to add a Bluetooth device. This program can be run as many times as necessary, and must be performed for all Bluetooth devices before the Allegro can access them.

 *Note: Many programs, such as Browse Remote Device or Trimble TerraSync, automatically run the Device Discovery Wizard when the program detects that Bluetooth is installed.*

To add Bluetooth devices through the *Device Discovery* program, complete the following steps:

- 1) Tap on *Tools* | *Device Discovery* or tap on the *eyes* icon in the tool bar of the *Bluetooth Devices* screen to access the *Device Discovery Wizard*.



- 2) Tap on the *Next* Button, the following screen appears:

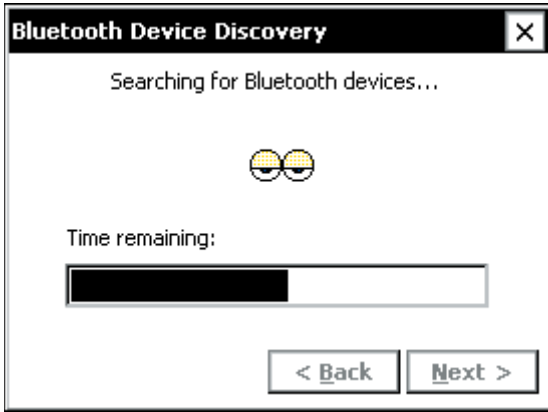


This screen enables you to limit the type of Bluetooth devices that the discovery process searches for. You can also specify the length of time the Allegro searches for devices. One of the following *Device types*: must be selected to proceed with the *Discovery Wizard*:

- Any Bluetooth Device
- Data-capable phone
- LAN access point
- Another PDA/computer

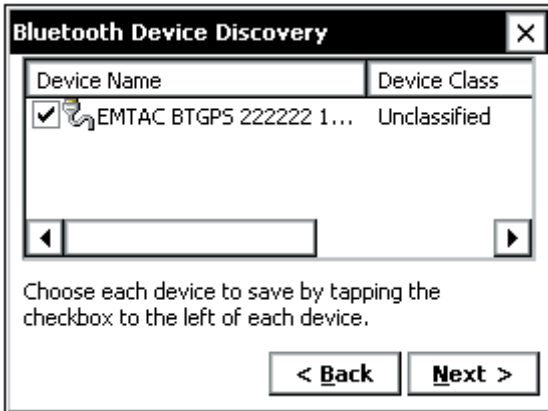
Tap on the up or down arrows next to the *second(s)* box to set the *Search duration*. This duration is the length of time the Allegro searches for Bluetooth devices.

- 3) Tap on the *Next* button to begin the *Device Discovery* search function.



Once the Allegro is finished searching, it displays all of the located devices.

- 4) Select each Bluetooth connectable device you want to save to your Allegro by tapping in the checkbox to the left of each device and tap on the *Next* button.



The Allegro queries each of the selected devices to determine the services that are available on each device. When the process is complete, the following screen appears.



Note: If no Bluetooth devices are available, the Bluetooth Device Discovery screen does not appear and you automatically advance to the Finish screen of the Device Discovery Wizard with a note that no devices were located.

- 5) Tap on the *Finish* button to complete and close the *Device Discovery Wizard* application.

My Favorites

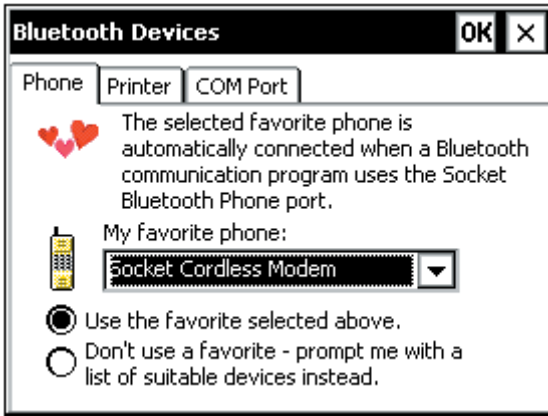
The *My Favorites* option enables you to set up device favorites for the various COM ports and communications connections. The *My Favorites...* options configures your Allegro to use the same Bluetooth device each time a particular COM port is opened. To access the *My Favorites* options, complete the following steps:

- 1) Tap on *Tools | My Favorites*.



Phone

The *Phone* tab enables you to select the phone port device that is automatically connected to when the Bluetooth communication program uses a Bluetooth phone port device.



Tap on the down arrow next to the *My favorite phone:* box to access a drop-down box of all available phone port options. Tap on the phone port device you are using as your favorite.

Select one of the following two options that work best for your Bluetooth phone port needs:

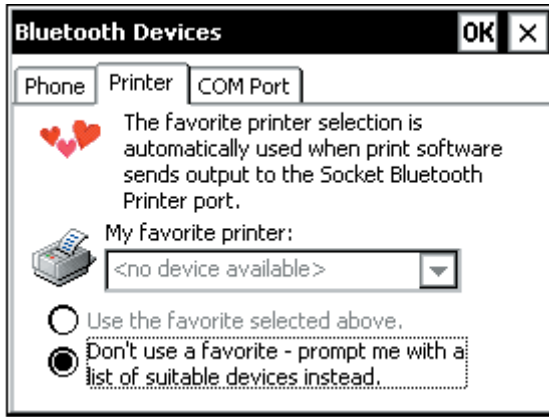
- Use the favorite selected above. This option automatically uses the *My favorite phone:* port device that you selected.
- Don't use a favorite – prompt me with a list of suitable devices instead. This option searches all accessible phone ports around you and gives you a list that you must select from before a phone port connection is made.

Note: If no phone port is available the phone option defaults to Don't use a favorite – prompt me with a list of suitable devices instead.

Tapping on *OK* saves any changes made. Tapping on the *X* closes the *Properties* screen and returns you to the *Bluetooth Devices* screen.

Printer

The *Printer* tab enables you to select the printer that is automatically used when print software sends output to the Bluetooth printer port.



Tap on the down arrow next to the *My favorite printer:* box to access a drop-down box of all available printers. Tap on the printer you are using as your favorite.

Select one of the following two options that work best for your printer needs:

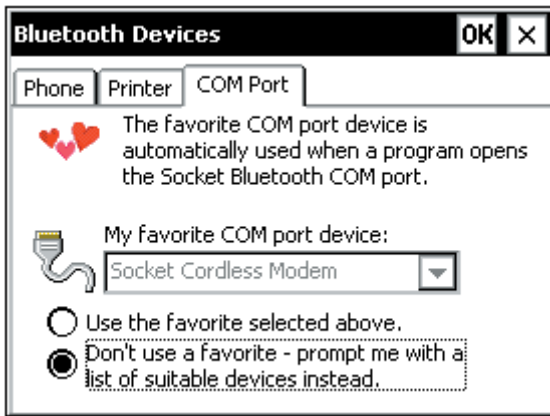
- Use the favorite selected above. This option automatically uses the *My favorite printer:* that you selected.
- Don't use a favorite – prompt me with a list of suitable devices instead. This option searches all accessible printers around you and gives you a list that you must select from before a printer output connection is made.

Note: If no printer is available the printer option defaults to Don't use a favorite – prompt me with a list of suitable devices instead.

Tapping on *OK* saves any changes made. Tapping on the *X* closes the *Properties* screen and returns you to the *Bluetooth Devices* screen.

COM Port

The *COM Port* tab enables you to select the COM port device that is automatically used when the a program opens the Bluetooth COM port.



Tap on the down arrow next to the *My favorite COM port device:* box to access a drop-down box of all available COM port options. Tap on the COM port device you are using as your favorite.

Select one of the following two options that work best for your Bluetooth COM port device needs:

- Use the favorite selected above. This option automatically uses the My favorite COM port device: port device that you selected.
- Don't use a favorite – prompt me with a list of suitable devices instead. This option searches all accessible COM ports around you and gives you a list that you must select from before a COM port connection is made.

Note: If no COM port is available the COM port device option defaults to Don't use a favorite – prompt me with a list of suitable devices instead.

Tapping on *OK* saves any changes made. Tapping on the *X* closes the *Properties* screen and returns you to the *Bluetooth Devices* screen.

▲ Bluetooth ActiveSync

The *Bluetooth ActiveSync* option allows you to establish an ActiveSync connection between your Allegro and your PC through Bluetooth.

To establish an ActiveSync connection through Bluetooth, you must first refer to the setup instructions for the Bluetooth adapter for your desktop PC that is required for a Bluetooth connection between your Allegro and desktop PC. Once the Bluetooth adapter is enabled, complete the following steps:

- 1) Tap on the *Bluetooth* icon in the system tray to access the Bluetooth option screen.
- 2) Tap on *Bluetooth ActiveSync* option.

▲ **Bluetooth LAN Access**

The *Bluetooth LAN Access* option allows you to establish a LAN connection between your Allegro and a LAN network.

To establish a LAN access connection through Bluetooth, you must first refer to the setup instructions for the Bluetooth LAN adapter for the LAN network that is required for a Bluetooth LAN connection. Once the Bluetooth LAN adapter is enabled, complete the following steps:

- 1) Tap on the *Bluetooth* icon in the system tray to access the Bluetooth option screen.
- 2) Tap on *Bluetooth LAN Access* option.

▲ **Transfer via Bluetooth**

The *Transfer via Bluetooth* option accesses the following file transfer functions:

- Send a File
- Browse Remote Device
- Receive Contact or File
- Enable File Sharing

Send a File

Transfers files between your Allegro and another device.

Browse Remote Device

Opens a browse window to look through a Bluetooth remote device.

Receive Contact or File

Searches surrounding Bluetooth devices attempting to send a file to your Allegro.

Enable File Sharing

Enables your Allegro and Bluetooth connected devices to share files.

For more information of transferring files using Bluetooth, go to the Bluetooth File Transfer section found later in this chapter.


▲ About...

The *About* option opens the *About Device Manager* screen that displays the version, Copyright, and Internet information of the Bluetooth card installed in your Allegro.



▲ Bluetooth File Transfer

There are two procedures for transferring files between Bluetooth devices. The first way is to use the Browse Remote Device utility, and the second is to use the Send a File and Receive a Contact or File utilities. Each procedure requires the Object Exchange (OBEX) add-on program to be installed on the Allegro.

 *Note: The Allegro CX with built-in Bluetooth has this extension pre-installed.*

▲ Installing the OBEX Add-On Program

If you are using a Bluetooth compact flash card adapter in the Allegro, the OBEX needs to be installed separately, if you have not installed it already. To confirm if the OBEX add-on is installed on your Allegro, complete the following steps:

- 1) Tap once on the Bluetooth icon in the system tray of the Allegro (located in the bottom-right corner of the Allegro display). A menu should appear.
- 2) Tap on the *Transfer via Bluetooth* option in the Bluetooth menu. If this option is not selectable, the OBEX add-on is not installed.

OBEX for Allegro CX

If you are using the Allegro CX, download the OBEX add-on program from Socket Communication's Web site at:

<ftp://ftp.socketcom.com/bluetooth/BTCEobexENG120H.exe>.

OBEX for Allegro CE using Windows CE .NET 4.1

If you are using an Allegro CE with Windows CE .NET 4.1, the OBEX add-on program is included with the custom Bluetooth drivers. These drivers are available for download from Juniper System's Web site at:

<http://www.junipersys.com/files/AllegroBluetoothCE41.exe>.

Bonding Bluetooth Devices

Once the OBEX add-on program is installed on the Allegro, create a bond between the Allegro and the other Bluetooth device. If you have not previously created a bond, refer to the *Creating a Bond* section in this document for instructions.

Selecting Bluetooth Shared Folder

The Bluetooth Shared Folder is the root directory that a Bluetooth device sees when using the Browse Remote Device utility. Transferred and synchronized files on your Allegro appear in the *Bluetooth Shared Folder*. This folder is located at *My Documents | Bluetooth Shared Folder* by default.

The Bluetooth Shared Folder can be changed by following these steps:

- 1) Tap once on the Bluetooth icon in the Allegro's system tray (in the bottom-right corner of the Allegro display). A pop-up menu appears.
- 2) Select the *Advanced Features* menu selection, and then *My Bluetooth Device*.
- 3) Tap on the *Object Sharing* tab in the *Device Manager* window.
- 4) Tap in the *My shared folder:* box, and then type in the directory you would like to have as the Bluetooth Shared Folder. For the Allegro, it is suggested to use *C_Drive* or *C_Drive\C_MyDocs*. Then tap on *OK* or press *ENTER*.

Once OBEX is installed, and you have selected the Bluetooth Shared Folder location, and bonded with the other Bluetooth device, you can now transfer files between the devices.

▲ Transferring Files using Browse Remote Device

The Browse Remote Device utility is the first transfer method discussed. This utility uses *Local* and *Remote* to define each Allegro. To transfer files between two Allegros using the *Browse Remote Device* utility, please complete the following steps:

1) Tap once on the Bluetooth icon in the system tray of the Allegro (Local Allegro) that you would like to browse (explore). A pop-up menu appears.

2) Tap on *Transfer via Bluetooth | Enable File Sharing*.

Note: A window appears counting down from two minutes. You can restart this window if you do not complete the next two steps below within this time. This window gives permission for the other Allegro to view the contents of this device.

3) Use the second Allegro (Remote Allegro) and tap on the Bluetooth icon in the system tray of the Allegro that you would like to browse. A pop-up menu appears.

4) Tap on *Transfer via Bluetooth | Browse Remote Device*.

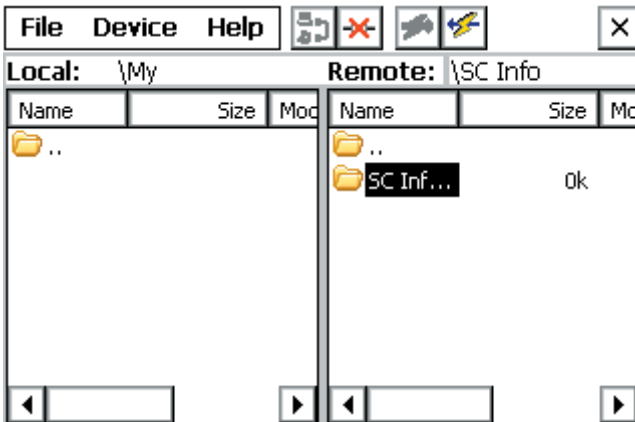
5) Tap on the first Allegro from the Bluetooth device list so it is highlighted.

6) Tap on the *Select* button.

You are now allowed to browse the contents of the *Bluetooth Shared Folder* and all subfolders of the first Allegro in the right *Remote* screen.

7) Tap on the file you want to transfer so it is highlighted.

8) Tap on the lightning bolt button with the arrow pointing in the direction of the Bluetooth device the file is transferring to.



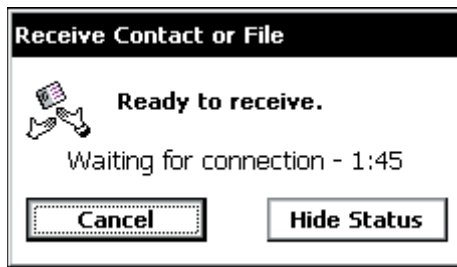
In the example above the SC Info folder is highlighted and the lightning bolt button with the arrow pointing to the left is selectable. Tapping on that lightning bolt button transfers the SC Info folder and its contents to the Bluetooth Shared Folder on the Allegro (Local Device).

▲ Transferring Files using Sending and Receiving a File

The second method for transferring files between two Bluetooth devices, such as two Allegros, is to use the Send a File and Receive a Contact or File utilities. For transferring a file between two Allegros using these utilities, follow the steps below:

- 1) Tap once on the Bluetooth icon in the system tray of the Allegro that is receiving a file. A pop-up menu appears.
- 2) Tap on *Transfer via Bluetooth | Receive Contact or File*.

A window appears counting down from two minutes while waiting to receive the file.



This window signals to the sending Allegro that this unit is ready to receive the file. You can restart this window if you do not complete the steps below within the two minutes.

- 3) Tap once on the Bluetooth icon in the system tray of the Allegro that is sending the file. A pop-up menu appears.
- 4) Tap on *Transfer via Bluetooth | Send a File*. An explorer window appears.
- 5) Browse the explorer window for the file that you would like to send.
- 6) Tap on the file once so it is highlighted.
- 7) Tap on *OK* to send the file.

The file transfers to the receiving Allegro, and appears in the *Bluetooth Shared Folder* that you specified earlier. If you did not specify a folder, the default folder is *My Documents | Bluetooth Shared Folder*.

Chapter 6



Technical Reference

Specifications
Communication Cable Schematic

Specifications

▲ Processor

- ❑ Intel® XScale® processor, 400 MHz

▲ Operating System

- ❑ Microsoft® Windows CE® .NET V4.2, loaded into RAM for the highest execution speed possible

▲ Utility Programs Included on Allegro CX

- ❑ PTab™ Spreadsheet, Calculator, Microsoft Windows Explorer® File Manager, Microsoft InBox® E-mail, Microsoft Pocket Internet Explorer®, Microsoft WordPad®.

▲ Physical Specifications

- ❑ Size: 10" high x 5.25" wide at display x 3.1" wide at narrowest point x 1.5" deep (256 mm x 133 mm x 79 mm x 38 mm)
- ❑ Weight: 1.84 lbs or 29.5 oz (836 grams), weight includes installed battery pack
- ❑ Operating Temperature: -22 to 130° F (-30 to 54° C)
- ❑ Storage Temperature: -22 to 140° F (-30 to 60° C)
- ❑ Waterproof and Dustproof: Passes MIL-STD 810F and IP67 leak (immersion) tests. To pass these tests, the Allegro CX is submerged under the equivalent of .5 meters of water for 30 minutes.
- ❑ Air tight: Causing the Allegro to float in water
- ❑ Shockproof: Passes MIL-STD 810F shock (drop) test. To pass this test, the Allegro CX is dropped on each face and corner from 5 feet (1.52 m) onto a hard surface.

▲ Communication Ports

- ❑ USB Port: connection on base of unit to be used with USB/Power Dock™, multiple docks can be chained through communication hubs
- ❑ COM1: Sealed 9-pin D; full modem control signals; 5V @ 200 mA available on DTR pin 4; controlled by DTR signal
- ❑ COM2: Sealed 9-pin D; full modem control
- ❑ Infrared Port: Operates IrDA mode (115 K bits/sec); located between the COM ports on the top of the Allegro

▲ Internal Bluetooth Transceiver (Optional)

- ❑ Profiles: Include serial; printer; phone; LAN

- ❑ Transceiver: Class 2 Bluetooth
- ❑ Range: 30 foot (10 meter) radius
- ❑ Integrated: Built into the Allegro; does not occupy the PC Card slot

▲ Internal Expansion Ports

- ❑ COM 3: Internal expansion bus connections, full modem control signals, signal levels 0 to 3.3V straight from UART, no buffering, ring signal causes unit to resume from a suspend state
- ❑ Expansion Port: Contains low 3 address bus signals, low 8 bit data bus, bus control signals, COM 3 signals, and general purpose input/output (GPIO) signals

▲ Color Display

- ❑ High visibility color TFT active matrix transreflective LCD, .24 mm dot pitch, .23 mm dot size
- ❑ 1/4 VGA, 320 x 240 pixels, landscape view
- ❑ Transflective technology for brilliant contrast, including use in direct sunlight
- ❑ Includes MX1178 graphic accelerator for high performance operation
- ❑ LCD has an LED backlight with adjustable brightness capability for visibility in low lighting or changing light conditions
- ❑ Color TFT technology allows operation in cold temperatures without a heater
- ❑ Active viewing area: 3.0" wide x 2.3" high (3.8" diagonal)
- ❑ Two onboard mini stylus and a full size stylus
- ❑ Touchscreen disable button allows you to clean the screen or operate unit in heavy rain
- ❑ Touchscreen transmissivity of 84%, non-reflective

▲ Monochrome Display

- ❑ High visibility LCD with paper white-like background, black on white, high contrast, .26 mm dot pitch, .25 mm dot size
- ❑ 1/4 VGA, 320 x 240 pixels, landscape view
- ❑ Transflective technology for brilliant contrast, including sunlight
- ❑ LCD has an LED backlight with adjustable brightness capability for visibility in low lighting or changing light conditions
- ❑ LCD has extended temperature rating for operation in cold or hot environments

- Automatic contrast adjustment with temperature compensation
- Display heater for operation in cold environments; can be set to turn on automatically when temperature is less than -3° C
- Active viewing area: 3.3" wide x 2.5" high (4.1" diagonal), 18% larger than comparable units
- Two onboard mini stylus and a full size stylus
- Touchscreen disable button allows you to clean the screen or operate unit in heavy rain
- Touchscreen transmissivity of 84%, non-reflective

▲ **System Tray Indicators**

Indicators shown in the lower right corner of the Allegro CX screen in the status tray include:

- Data storage activity
- PC card activity
- Caps lock on
- External power input
- Charging indicator
- Remaining battery life
- Touchscreen disable
- ActiveSync connection
- Bluetooth
- Heater on (monochrome only)

▲ **Keyboard**

- 62 large keys, advantageous for use with gloved hands; left or right-handed operation
- 12 Function keys: Located directly under the display; convenient for use in applications as soft keys
- Special keys include: Windows Start, Task Manager, Contrast Adjustment, Touchscreen Disable, Display backlight on/off
- Large round cursor control button
- Forward and backward tab keys without shifting
- Numeric keys are large and centrally located
- All printable ASCII characters are on the keyboard
- Keys have a snappy tactile feel
- Removable keyboard bezel for cleaning and customization

▲ Case Design

- Ergonomic with balanced weight distribution
- Rugged, 100% sealed against water and dust
- Designed for one-handed operation (right or left)
- Rings at all four corners of the case for straps
- Adjustable hand strap and shoulder strap
- Multiple strap orientations possible

▲ Memory/Storage

- 128 M SDRAM
- Internal Solid State Storage 256 M, 512 M, or 1 G

▲ PC Card Slot

- User-accessible
- 16 bit PC Card, user removable (32 bit Card Bus type cards not supported)
- Accepts Type I or II 3V/5V PC cards (does not accept 3V only cards)
- Compatible with ATA, Compact Flash with adapter, micro hard disk, SRAM, modems, wireless networking cards, and other I/O cards

▲ Power

- Rechargeable 3.6V 3800 mAh NiMH high capacity battery pack (Sharp camcorder battery)
- NiMH batteries last 12 to 20 hours depending on the application (maximum continuous use is 30 hours)
- Alkaline battery holder uses three AA alkaline cells (optional accessory)
- Power manager automatically switches unit into low power mode for optimum efficiency
- Separate power input connector for charging and direct power input, 10-20 V DC, 5.5 x 2.1 mm DC power jack
- Vehicle charge cable is available
- Rapid internal smart-charging in three to five hours (temperature dependant, charges faster in cool temperatures; automatic switch to trickle charge mode to preserve charge and protect battery)

▲ Sound

- Screen taps, key beeps

- Sounds can be customized and associated with events
- Volume is adjustable
- Audio/Video playing capabilities with Windows Media 9 Series player

▲ **Clock**

- Internal real time clock with lithium backup battery, restores correct time and date after a system reset or restore
- +/- three minutes per month accuracy

▲ **Certifications**

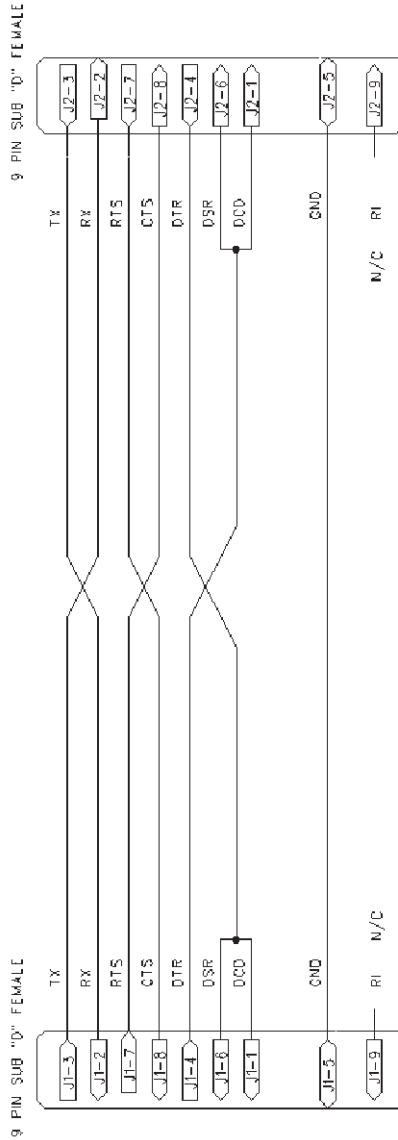
- FCC Class A
- European CE Mark Class B

▲ **Expandability**

- Expansion Pods: Allow you to integrate additional components with the Allegro CX; Pods replace the PC card door and remain fully sealed
- Pods Include: GPS, Wireless Network, Bar Code
- Note: Specifications are subject to change without notice.*

Communication Cable Schematic

A wiring diagram for the serial communication cable is shown below.



Chapter 7



Software Developer's Guide

CE .NET Software Development Tools
Software Development Programming Tips
Installing Applications
Options for Program and File Storage
Power Management
Windows CX Reference

CE .NET Software Development Tools


This section discusses the available software development tools for Allegro CX's that are running CE .NET. Windows CE .NET gives developers the option to use the following software development tools:

- Visual Studio .NET 2003
- Visual Basic .NET (VB .NET) 2003
- C# (C sharp)
- Microsoft eMbedded Visual C++ 4.0

▲ Visual Studio .NET 2003

Visual Studio .NET is a purchased software development program available through Microsoft, Inc. It comes with both Visual Basic .NET and C#. The following features are included in Visual Studio .NET:

- Enhanced Visual Studio .NET IDE
- Improved Debugging with IntelliSense
- Build Applications for Mobile Web and Smart Devices
- Trouble-free Deployment of Windows-based Applications
- Enhanced Upgrade Technology
- Powerful, Flexible Data Access
- Native Support for XML Web Services
- Service Pack 3 (or higher) is recommended

 *Note: Visual Studio .NET 2002 does not work on the Allegro CX. You must use Visual Studio .NET 2003 software to develop for the Allegro CX.*

Visual Studio .NET 2003 System Requirements

Requirements vary for different combinations of components within Visual Studio .NET 2003. Go to the following Web site to view a table to help determine the minimum system requirements needed for running Visual Studio .NET 2003:

<http://msdn.microsoft.com/vbasic/productinfo/sysreqs/default.aspx>

Ordering Visual Studio .NET

To order Visual Studio .NET, go to Microsoft's Web site at:

<http://msdn.microsoft.com/vstudio/howtobuy/default.aspx#2>

You have the option of upgrading your 2002 Visual Studio .NET to 2003 or purchasing the 2003 Visual Studio .NET.

▲ **Microsoft eMbedded Visual C++ 4.0**

Microsoft eMbedded Visual C++ 4.0 is a developer program available from Microsoft. The following are some of the options available through eMbedded Visual C++:

- C++ Exception Handling
- Run Time Type Information (RTTI).
- Standard Template Library (STL)
- Attach to Process
- Debugger Can Halt All Threads in a Process
- Out of Process Application Wizard
- Just-in-Time Debugging

eMbedded Visual C++ 4.0 System Requirements

Requirements vary for different combinations of components within eMbedded Visual C++ 4.0. Go to the following Web site an overview of eMbedded Visual C++ 4.0 and to determine the minimum system requirements needed:

<http://msdn.microsoft.com/vstudio/device/embedded/datasheet.aspx>

Downloading eMbedded Visual C++ 4.0

This program is available as a free download from Microsoft or can be purchased if you want the program sent to you on a CD.

<http://msdn.microsoft.com/vstudio/device/embedded/download.aspx>

This download size is over 300MB. The download time varies depending on the type of Internet connection you have. We recommend using a minimum of DSL or Cable Internet connection for downloading.

Allegro Software Development Kits of eMbedded Visual C++

The Allegro SDK is located on the Allegro CX Distribution CD-ROM. There is not an SDK for eMbedded Visual Basic users.

Allegro CE .NET SDK Installation

Select Browse from the Allegro CX Distribution CD-ROM and locate the SDK folder. Double-click on the SDK file available: ALLEGRO_CX_SDK.exe.

Software Development Programming Tips

To help programmers developing software for the Allegro CX, we have included the following programming tips. We recommend that you refer to Windows CE .NET programming reference books to assist you in your software development.

▲ Allegro CX Identification

When installing your applications, you need to determine if certain peripherals are available. There could be reasons you need to know the following specific information about your Allegro CX device:

Platform name	Allegro CX
Windows CE version and Build Number	Version 4.20 (Major 4, Minor 20) Build 0
Internal storage device name	C_Drive
PC card storage device name (English version)	Storage Card

To uniquely identify an Allegro CX device by serial number, refer to the section Allegro Specific APIs.

Platform Name

The combination of Windows CE .NET operating system and the hardware that it runs on is called a platform. Common platform names are Pocket PC, HPC, HPC Pro, etc. The Allegro's platform name is Allegro CX.

To discover the platform name in an application program, call `SystemParametersInfo(uiAction, uiParam, pvParam, 0)` with `uiAction` equal to `SPI_GETPLATFORMTYPE`. The `uiParam` parameter specifies the length of the buffer in `pvParam`, which on successful return contains the platform name in Unicode characters.

Windows CE Version

There are two numbers used to identify the operating system, the version number and the build number. An Allegro running Windows CE .NET uses Windows CE version 4.20, Build 0. To locate the version number, complete the following steps:

- 1) Tap on *Start* | *Settings* | *Control Panel* on your Allegro's desktop.
- 2) Double-tap on the *System* icon.
- 3) Tap on the *General* tab. This tab displays the version of the Windows CE operating system.

If you create an installation package (cab file), you need to consider the build number. In general, you should use as wide a range as practical when specifying installation constraints, or consider imposing no limitations at all.

Internal Storage Device Name

Allegro CX's internal (non-removable) non-volatile storage is named C_Drive.

PC Card Storage Device Name

In the English version of the Allegro CX operation system, the PC Card Storage area is named Storage Card. This is the default name for ATA PC Cards in Windows CE .NET.

It is recommended to avoid hard-coding this name, as it has changed over time, and differs from one language to another. For Allegro cross platform compatibility, look for the name of the PC storage card in the registry at:

(HKEY_LOCAL_MACHINE\Drivers\PCMCIA\ATADisk\Folder).

If this folder does not exist, or has no value, the default name is Storage Card.

Allegro Specific APIs

There are a number of Application Program Interfaces (APIs) that are only available on the Allegro CX. These APIs are used for accessing special or unique features of the Allegro CX platform. These API's include accessing the serial number, or getting information from the Allegro expansion pod.

To use these APIs, include AllegroAPI.h in the source code and instruct your linker to use AllegroAPI.lib. For Visual Studio .NET you need to p/invoke (platform invoke) these functions for the Allegro CX eVC++ SDK, which contains a file named AllegroAPI.h that describes these APIs.

▲ Selecting the Platform

Select ALLEGRO_CX as your platform when using development tools for Windows CE .NET.

Options for Program and File Storage

For program and data storage, the Allegro CX has the following options:

- RAM
- Internal storage device
- PC Card storage

The internal storage is referred to as C_Drive. The PC card is referred to as Storage Card. The data and programs stored on these two devices are secure without battery backup.

When designing a program for the Allegro CX, give the user a choice of where to store the application, and where to store the application program's old data.

Note: Always save data to the C_Drive for maximum safety and security.

Power Management

Windows CE .NET was designed for efficient battery operation. Windows CE .NET puts the processor to sleep when there are no active threads using the processor. When writing applications, be careful not to use any functions that keep the threads active when not in use.

Power Management Tips:

- 1) Do not spin a loop
- 2) Use the Wait APIs such as `WaitForSingleObject()`
- 3) `Sleep()` may also be used effectively

Windows CE .NET References

▲ Windows CE .NET Reference Books

The following books about program development for Microsoft CE .NET are available:

Mastering Visual Studio .Net, Ian Griffiths, Jon Flanders, and Chris Sells, O'Reilly & Associates, Incorporated, 2003

Microsoft® Visual C# .NET Step by Step, Version 2003, John Sharp and Jon Jagger, Microsoft Press, 2003

Microsoft® Visual Basic .NET Step by Step Version 2003, Michael Halvorson, Microsoft Press, 2003

Programming Microsoft Windows CE .NET, Third Edition, Douglas Boling, Author, Microsoft Press, 2003

The Windows CE Technology Tutorial, Chris Muench, Author, Addison Wesley, 2000

These books can be ordered from local book stores or at various online book stores.

The books from Microsoft Press can also be ordered at:

www.mspress.microsoft.com

Microsoft Press
A Division of Microsoft Corporation
One Microsoft Way
Redmond, WA 98052-6299

▲ Web sites

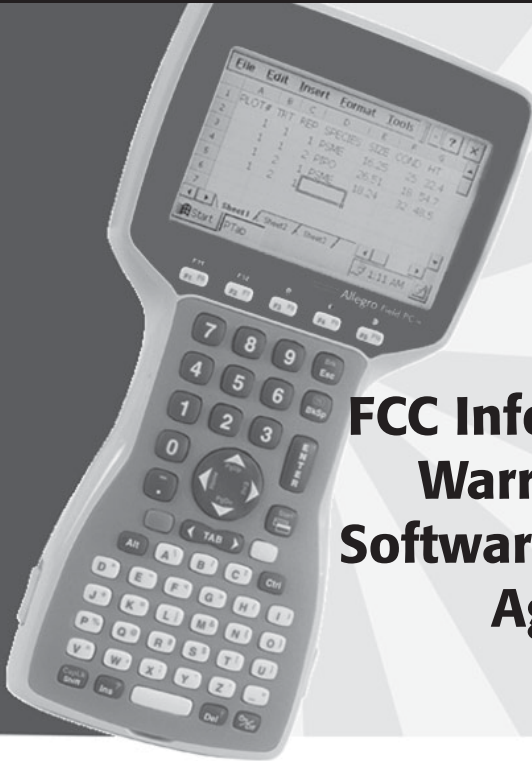
www.microsoft.com/windowsce

www.microsoft.com/embedded

www.vbce.com

www.vcce.com

Chapter 8



FCC Information, Warranty, and Software License Agreement

FCC Information
Warranty and Repair Information
Software License Agreement

FCC Information

The Allegro CX is a Class A device. The FCC defines a Class A device as a device that may be operated in business or industrial environments only.

▲ FCC Class A Statement

Class A equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warranty and Repair Information

▲ Limited Product Warranties

Juniper Systems, Inc. (“Juniper”) warrants that this Allegro CX Field PC shall be free from defects in materials and workmanship, under normal intended use, for a period of 12 months from the date of shipment, excepting that this warranty shall not apply to battery packs, media containing Allegro CX and desktop PC programs and the Owner’s Manual, and any accessories. Juniper warrants that the following shall be free from defects in materials and workmanship, under normal intended use, for a period of ninety (90) days from the date of shipment: battery packs, media containing the Allegro and desktop PC programs and Owner’s Manual, and any accessories.

▲ Warranty Exclusions

This warranty shall not apply if: (i) the product has been set up improperly or has been improperly installed or calibrated, (ii) the product is operated in a manner that is not in accordance with the instruction manual(s) and/or user guide, (iii) the product is used for a purpose other than for which it was designed, (iv) the product has been used in environmental conditions outside of those specified for the product, (v) the product has been subject to any modification, alteration, or change by or on behalf of customer (except and unless modified, changed or altered by Juniper or under Juniper’s direct supervision), (vi) the defect or malfunction results from misuse or accident, (vii) the serial number on the product has been tampered with or removed, or (viii) the product has been opened or tampered with in any way. Parts that are excessively worn are not covered under warranty. These may include, but are not limited to, the keyboard elastomer and switch matrix, hand straps, and the touchscreen.

This warranty is exclusive and Juniper will not assume and hereby expressly disclaims any further warranties, whether express or implied, including, without limitation, any warranty as to merchantability, fitness for a particular purpose, non-infringement or any warranties arising from the course of performance, dealing, or usage of trade. Juniper specifically makes no warranties as to the suitability of its products for any particular application. Juniper makes no warranties that its products will meet your requirements or will work in combination with any hardware or applications software products provided by third parties, that the operation of its products will be uninterrupted or error free, or that all defects in the product will be corrected. Juniper shall not be responsible for software, firmware, information, or memory data contained in,

stored on, or integrated with any products returned to Juniper for repair, whether under warranty or not.

▲ **Remedy**

In the event a defect in materials or workmanship is discovered and reported to Juniper within the specified warranty period, Juniper will, at its option, repair the defect or replace the defective product. Replacement products may be new or reconditioned. Juniper warrants any replaced or repaired product for a period of ninety (90) days from the date of return shipment, or through the end of the original warranty period, whichever is longer.

▲ **Limitation of Liability**

To the fullest extent allowed by law, Juniper's obligation shall be limited to the repair or replacement of the product. Juniper shall in no event be liable for special, incidental, or consequential, indirect, special or punitive damages of any kind, or for loss of revenue or profits, loss of business, loss of information or data, or other financial loss arising out of or in connection with the sale, installation, maintenance, use performance, failure, or interruption of any product. Any responsibility and/or liability of Juniper shall, in connection with a warranted product, be limited in maximum amount to the original purchase price.

▲ **Warranty Repairs**

In order to obtain repair or servicing, contact our Customer Service Department within the applicable warranty period. The customer must prepay all shipping costs under a warranty repair or replacement.

▲ **Governing Law**

This warranty will be governed by the laws of Utah, and excluding the United Nations Convention on Contracts for the International Sale of Goods. The courts of Utah shall have exclusive personal jurisdiction in case of any disputes arising out of or in connection with this warranty.

▲ **Extended Warranties**

Juniper Systems, Inc. offers a variety of warranty options to extend coverage beyond the standard warranty. Contact us for details.

▲ **Repairs**

If your Allegro CX is in need of repair or servicing, contact our Customer Service Department for an RMA (Return Materials Authorization) number.

Please have this information ready when you contact us:

- Allegro CX serial number
- Your name
- Name and shipping address of company/university/agency
- Phone and fax number
- Clear description of the problem encountered
- Purchase order number and billing address (for equipment that is not under standard or extended warranty)

The customer has the responsibility to ship the equipment to Juniper Systems, Inc. with all shipping costs prepaid. After repairing or replacing the equipment, Juniper Systems, Inc. will ship the equipment, at its cost, back to the customer by the same type of carrier used by the customer to ship the equipment to our facility. Repairs are normally completed within ten working days unless special circumstances exist.

Software License Agreements

▲ Manufacturer Agreement

This Software License Agreement is between the end-user and the manufacture (Juniper Systems, Inc.) Please read the following terms and conditions before using the Allegro CX Field PC and the software created by Juniper Systems, Inc. for use with the Allegro. This agreement supersedes any prior agreement, written or oral. Programs created by another company and distributed with the Allegro are subject to the license agreements created by these companies for their products. See Microsoft's license agreement on the following page.

Granting of License

The manufacture grants, under the following terms and conditions, a non-exclusive license to use the Allegro CX and the software.

Ownership

Juniper Systems, Inc. retains the title to and ownership of the software plus any copies made of the software.

Software Use

The software is authorized for use on the Allegro CX Field PC. It may only be used on a Field PC provided by Juniper Systems, Inc. You can use the software on one Field PC at a time per licensed copy. You may make one copy of the software to be stored as a backup.

Copyright

The Allegro CX software is copyrighted by Juniper Systems, Inc. You may not rent, lease, lend, sub-license, modify, or disassemble these programs. The associated documentation may not be copied without written permission.

Term

This License is in effect until terminated. It will be terminated under the following conditions:

- You destroy all copies of the software and documentation.
- You return all copies of the software and documentation to us.
- You fail to comply with any provisions of the License Agreement.

Acceptance or Disagreement

Use of the software in any manner indicates your acceptance and acknowledgment of the terms and conditions of this agreement. If you do not agree with any of the terms and conditions, do not use the software. Return the disk and documentation to the manufacture. If the software was installed on the Field PCs at the factory, you must delete it.

▲ Microsoft End User License Agreement (EULA)

The Allegro CX Field PC that includes software licensed by the manufacture from Microsoft Licensing Inc. or its affiliates (“MS”). Those installed software products of MS origin, as well as associated media, printed materials, and “online” or electronic documentation (“SOFTWARE”) are protected by international intellectual property laws and treaties. The SOFTWARE is licensed, not sold. All rights reserved.

IF YOU DO NOT AGREE TO THIS END USER LICENSE AGREEMENT (“EULA”), DO NOT USE THE DEVICE OR COPY THE SOFTWARE. INSTEAD, PROMPTLY CONTACT Juniper Systems, Inc. FOR INSTRUCTIONS ON RETURN OF THE UNUSED DEVICE(S) FOR A REFUND. ANY USE OF THE SOFTWARE, INCLUDING BUT NOT LIMITED TO USE ON THE DEVICE, WILL CONSTITUTE YOUR AGREEMENT TO THIS EULA (OR RATIFICATION OF ANY PREVIOUS CONSENT).

GRANT OF LICENSE. This EULA grants you the following rights to the SOFTWARE:

You may use the SOFTWARE only on the Allegro CX.

NOT FAULT TOLERANT. THE SOFTWARE IS NOT FAULT TOLERANT. Juniper Systems, Inc. HAS INDEPENDENTLY DETERMINED HOW TO USE THE SOFTWARE IN THE DEVICE, AND MS HAS RELIED UPON Juniper Systems, Inc. TO CONDUCT SUFFICIENT TESTING TO DETERMINE THAT THE SOFTWARE IS SUITABLE FOR SUCH USE.

NO WARRANTIES FOR THE SOFTWARE. THE SOFTWARE is provided “AS IS” and with all faults. THE ENTIRE RISK AS TO SATISFACTORY QUALITY, PERFORMANCE, ACCURACY, AND EFFORT (INCLUDING LACK OF NEGLIGENCE) IS WITH YOU. ALSO, THERE IS NO WARRANTY AGAINST INTERFERENCE WITH YOUR ENJOYMENT OF THE SOFTWARE OR AGAINST INFRINGEMENT. IF YOU HAVE RECEIVED ANY WARRANTIES REGARDING THE DEVICE OR THE SOFTWARE THOSE WARRANTIES DO NOT ORIGINATE FROM, AND ARE NOT BINDING ON, MS.

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SOFTWARE TRANSFER ALLOWED BUT WITH RESTRICTIONS. You may permanently transfer rights under this EULA only as part of a permanent sale or transfer of the Device, and only if the recipient agrees to this EULA. If the SOFTWARE is an upgrade, any transfer must also include all prior versions of the SOFTWARE.

EXPORT RESTRICTIONS. You acknowledge that SOFTWARE is of US-origin. You agree to comply with all applicable international and national laws that apply to the SOFTWARE, including the U.S. Export Administration Regulations, as well as end-user, end-use and country destination restrictions issued by U.S. and other governments. For additional information on exporting the SOFTWARE, see <http://www.microsoft.com/exporting/>.

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USE OF THIS PRODUCT IN ANY MANNER THAT COMPLIES WITH THE MPEG 4 VISUAL STANDARD IS PROHIBITED, EXCEPT FOR USE DIRECTLY RELATED TO (A) DATA OR INFORMATION (i) GENERATED BY AND OBTAINED WITHOUT CHARGE FROM A CONSUMER NOT THEREBY ENGAGED IN A BUSINESS ENTERPRISE, AND (ii) FOR PERSONAL USE ONLY; AND (B) OTHER USES SPECIFICALLY AND SEPARATELY LICENSED BY MPEG LA, L.L.C.

If you have questions regarding this Notice, please contact MPEG LA, L.L.C., 250 Steele Street, Suite 300, Denver, Colorado 80206; Telephone 303 331.1880; FAX 303 331.1879

Chapter 9



Expansion Pods
GPS Expansion Pod
Bar Code Expansion Pod
802.11b Expansion Pod
Bar Code/ 802.11b Expansion Pod

Expansion Pods (Optional Accessory)

An Allegro CX Expansion Pod adds capability to the field computer while maintaining the waterproof and dustproof integrity of the rugged unit. Expansion pod capabilities include:

- 1) Automatically logging the identification of an inventoried asset using the integrated bar code scanner.
- 2) Wirelessly sending or receiving information from the action point to your local area network via the Allegro with the Wi-Fi 802.11b receiver.
- 3) Mapping your position or navigating to a known location using the integrated GPS receiver.

Custom expansion pods can be designed to meet the specialty needs of system integrators or OEMs. An expansion pod can be installed on the Allegro after purchase if you find that you want to add this capability to the product in the future. Contact your sales representative for details.

The following expansion pods are available:

▲ GPS Pod

The GPS expansion pod integrates the Trimble Lassen LP™ receiver with the Allegro placing GPS technology in the palm of your hand.

▲ Bar Code Pod

The bar code expansion pod integrates a high performance Symbol™ bar code scanner with the rugged reliability of the Allegro CX. This pod eliminates the need for an external bar code scanner with cables that can get in the way.

▲ 802.11b Pod

The 802.11b expansion pod integrates wireless LAN technology with the Allegro CX. This combination allows you to collect data outside and transfer it wirelessly into a computer in a nearby building.

▲ Bar Code/802.11b Pod

This integrates both the bar code and 802.11b technology into one expansion pod for the Allegro CX.

GPS Expansion Pod

The GPS expansion pod integrates the Trimble Lassen LP GPS receiver with the Allegro. A compact 3.3 V active micropatch antenna is mounted to the top of the Allegro.



The Lassen LP module is a high-performance, low power, micro GPS receiver that supports both TSIP and NMEA protocols with autonomous accuracy of 5 –10 meters, or 2 – 5 meters after differential correction. The GPS expansion pod is used in conjunction with the following programs:

- GIS/GPS programs for Windows CE including ESRI ArcPad™, TerraSync®, Starpal HGIS™, and others
- LandMark CE™ utility incorporates real-time GPS data into custom and third party applications
- DataPlus™ Professional or EASYDC™ generated applications for data collection

▲ Attaching the Antenna

Before you can use the GPS expansion pod, you must attach the antenna and configure the GPS receiver using the GPS Pod Setup program. To do this, complete the following steps:

Note: We have more than one GPS expansion pod model. The one attached to your Allegro may look slightly different than the model used in the pictures shown in this document. These instructions apply to all models.

- 1) Remove the antenna assembly from the bag and loosen the two thumbscrews located at the bottom of the mount.
- 2) Remove the stylus from the Allegro.

- 3) Insert the stylus that is attached to the antenna mount in place of the stylus you removed. As you place the stylus in its slot on the Allegro, slide the metal cover up into the stylus slot so that the stylus fits into place.
- 4) Use two fingers, one on each prong of the stylus, and press it securely into place.
- 5) Make sure the rubber stylus holders are not pressed inward or they may pop the antenna out of the stylus holder. Removing the rubber covers to the COM ports can help make this step easier.
- 6) Place the two knobs on the end of the antenna clamp into the screw holes located above the COM ports of the Allegro.
- 7) Tighten the thumbscrews on the antenna so that the antenna is securely fastened into place. You want the thumbscrews to be snug, but do not over tighten them.
- 8) Remove the protective cap from the connector labeled GPS ANT (save the cap for future use). Screw the antenna cable into the connector.

You have completed the steps to attach the antenna to the Allegro GPS Expansion pod.

▲ **GPS Pod Setup Program**

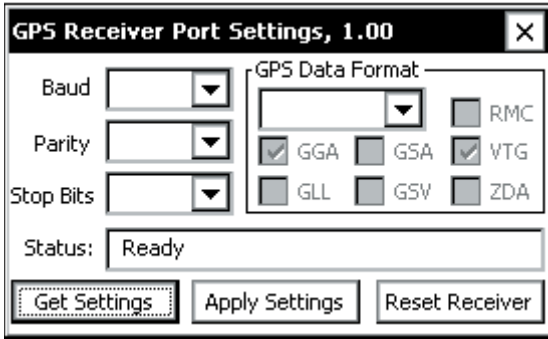
The GPS Pod Setup program is factory installed on your Allegro. The program allows you to configure the parameters of the internal GPS receiver to accommodate the various GIS/GPS programs that run on the Allegro.

The Allegro communicates with the internal GPS receiver via COM 3. The GPS Pod Setup program allows you to change the serial port settings being used (i.e. baud rate, parity, stop bits), and to select between TSIP and NMEA data output formats.

Specifying GPS Receiver Port Settings

To set up the parameters on the GPS Receiver Port Settings, complete the following steps:

- 1) Go to *Start | Programs | Utilities | GPS Pod Setup*, and the *GPS Receiver Port Settings* screen pops up.



At the bottom of the screen, there are three function buttons:

- Get Settings
- Apply Settings
- Reset Receiver

Get Settings

The *Get Settings* button is used to see the receiver's current settings without changing the settings. Pressing *Get Settings* does a search for the GPS receiver, which can take up to one minute to find the settings. Once the search is complete, the current settings for the GPS receiver are shown.

Apply Setting

Tap on the *Apply Settings* button to save and apply new settings. To make sure that your settings are applied correctly, press *Get Settings* to check the parameters.

Reset Receiver

The *Reset Receiver* button returns the settings to their default setting. This function enables you to start over in the event that an error was made.

- 2) Tap on the *Get Settings* button and wait approximately one minute for the settings to appear.

- 3) Record the settings for the following:

COM Port: COM3 – not changeable

Protocol:

Baud:

Parity:

Data Bit: (Note: Data Bit is always set at 8 and is not shown in the set up)

Stop Bit:

The following are the default GPS pod settings:

COM Port: COM3 – not changeable

Protocol: TSIP

Baud: 9600

Data Bit: 8 – not changeable

Parity: None

Stop Bit: 1


- 4) Access the setup or configuration menu in the GPS program.
- 5) Change the parameters on the GIS/GPS program's configuration menu to match the default GPS pod settings or change the parameters on your Allegro to match your program. If you change the settings on your Allegro, tap on *Apply Settings*.

The COM Port and Data Bit are set and not changeable on the Allegro. All GPS programs that offer these settings to be changed must be set to the following Allegro settings:

COM Port: 3

Data Bits: 8

- 6) Connect the GPS. The Allegro must be outside in clear sky conditions (this means free from tree foliage, buildings, power lines, etc.) to receive a new GPS almanac. The receiver can take up to 20 minutes to establish and receive the almanac.

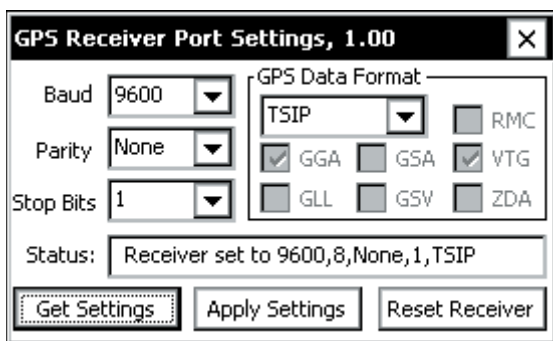
 *Note: If your parameters do not match, some GPS programs (i.e. ArcPad, TerraSync) produce an error message when attempting to activate the GPS pod. This error means the communication parameters in the GPS program do not match the GPS pod. Go back to the GPS programs set up page and check to make sure those settings are the same settings as the settings on your Allegro's GPS Receiver Port Settings screen.*

▲ GPS Data Formats

In the *GPS Pod Setup* program, you can set up the receiver in either the TSIP or NMEA GPS data format.

TSIP Format

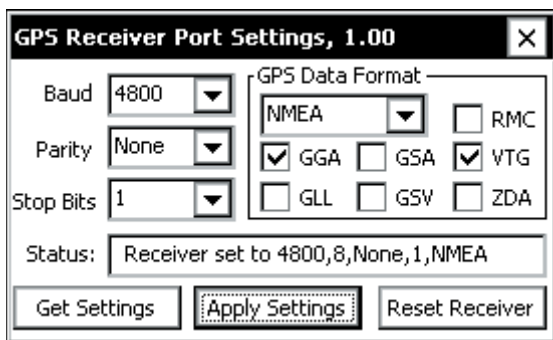
The TSIP is the default setting for the GPS pod. The settings are COM Port: COM3, Protocol: TSIP, Baud: 9600, Parity: None, Data Bit: 8, Stop Bit: 1.



NMEA Format

The NMEA format does not have any default settings and must be selected manually.

When NMEA is selected, you have the ability to enable or disable certain NMEA packet types.



After the settings have been selected, tap on the Apply Settings button to save the new settings. Tap on the Get Settings button to bring up the GPS pod current settings to double check them.

Reviewing and Editing the Receiver Parameters

Once you determine which data format you are going to use, follow these steps to review and edit the parameters as needed:

- 1) Click on the *Get Settings* button to reset the parameters to their default setting.
- 2) Change the parameters, if necessary, by clicking on the down arrow on the right of the *Baud, Parity, Stop Bits*, and/or *GPS Data Format* box to bring up a list of setting options, and click on the setting you want.
- 3) Click on the *Apply Settings* button.
- 4) Click on the X in the top right corner to Exit out of the program.

▲ Tips for Using the GPS Expansion Pod

Keep the following tips in mind while using the Allegro with the GPS expansion pod:

- ❑ When attempting to receive GPS signals, get the clearest view of the sky as possible. Obstructions such as buildings, trees, mountains, and your body can keep signals from reaching the receiver.
- ❑ Do not cover the antenna with anything while you are using the system.
- ❑ The antenna can be mounted on a vehicle or a pole, a longer cable is required to do this. Contact our Sales Department for details.
- ❑ Using the GPS expansion pod, and GIS or GPS software running on the Allegro may cause the Allegro battery to drain at a faster rate. This rate depends on the software and how much processing is taking place.
- ❑ The PC card slot is accessible while the GPS expansion pod is attached to the Allegro. Refer to *Hardware Features, PC Card Slot* in Chapter 2 of this manual, for details on how to use it. There is a flat, brown flex cable that is part of the expansion pod that is visible when you open the pod door. Do not twist, bend, or break this cable while you are using the PC card slot.
- ❑ If you remove the antenna, place the protective cap over the antenna connector to keep dirt and moisture out.

▲ For More Information

Your GPS is now configured correctly to use the GPS pod. If you have any questions or still cannot connect, please contact your reseller or our customer service department at (435) 753-1881, or by email at techsupport@junipersys.com.

▲ GPS Antenna Removal

The GPS antenna can be removed and reattached depending on your needs. To remove the GPS antenna from your Allegro, complete the following steps:

- 1) Unscrew the antenna cable from the Allegro expansion pod.
- 2) Loosen the thumbscrews on the antenna so that the antenna and the two knobs at the end of the antenna clamp are no longer securely fastened.
- 3) Pull the antenna off of the Allegro.

The antenna can be reattached to the Allegro by following the instructions in the Attaching the Antenna section found previously in this chapter.

▲ GPS Installation Program

The GPS Set Up program is installed on your Allegro before it is shipped. In the event that the GPS program gets removed from your Allegro and needs to be reinstalled, complete the following steps:

- 1) Insert the Allegro CX Distribution CD shipped with your Allegro into your PC's CD-ROM drive and wait for the installation screen to load.
- 2) Click on the *Browse CD* button on the installation screen.
- 3) Double-click on the *Utilities Applications* folder.
- 4) Double-click on the *GPS Pod Setup Install* folder.
- 5) Connect the Allegro to your PC through ActiveSync.
- 6) Double-click on the setup icon.
- 7) Follow the instructions given throughout the installation program.

Bar Code Expansion Pod

Using the bar code expansion pod with an Allegro offers the convenience of scanning bar codes and receiving the scanned data, all in a single handheld unit. With the Bar Code Expansion Pod there are no extra cables that could get in the way. The bar code pod is factory installed to the Allegro and includes the COM port connection, the power supply, and the software. The software is used to set up the scanner and to transfer the scanned data to a data collection program.



The bar code expansion pod integrates the laser bar code scanning technology of a Symbol SE 1224 high-performance laser scan engine with the Allegro CX and offers the following features:

- High performance bar code scanning in bright, outdoor light
- Scanning distances of 1 to 3 feet from the Allegro
- Excellent scan capability for poorly printed or low contrast bar codes
- Low power performance
- Compatible with nine different bar code symbologies

▲ Bar Code Reader Program

The bar code expansion pod is shipped with a *Bar Code Reader* program factory installed on your Allegro. This program has two key functions. The first allows you set up the scanner's target/scan button control, scan notification, and styles of bar codes to scan. The second function of the *Bar Code Reader* program is to scan bar codes with the press of a button. This function takes the scanned bar code and transfers it into electronic data automatically entered into a data collection program opened on your Allegro.

The Bar Code Reader has the following four options available:

- Help
- Begin Scan
- Bar Code Setup
- Exit

The *Help* option on the *Bar Code Reader* title bar opens a drop down menu with an *About* option. Tapping on the *About* option accesses a pop up screen showing the *Bar Code Reader* version number and copyright.

The *Begin Scan* button enables the expansion pod to begin scanning bar codes. It takes scanned data and enters it into an opened data collection program on your Allegro. You do not need any other program to read bar code data into your application.

The *Bar Code Setup* button opens the *Bar Code Setup* program. This program contains selectable options to set up the scanner to operate according to your needs.

The *Exit* button at the bottom of the program screen, or the X button in the upper right corner of the screen, closes the *Bar Code Reader* program.

To begin using your Allegro's bar code expansion pod, follow the instructions under the *Getting Started*, *Bar Code Setup*, and *Begin Scan* headings of the *Bar Code Expansion Pod* section.

▲ Getting Started

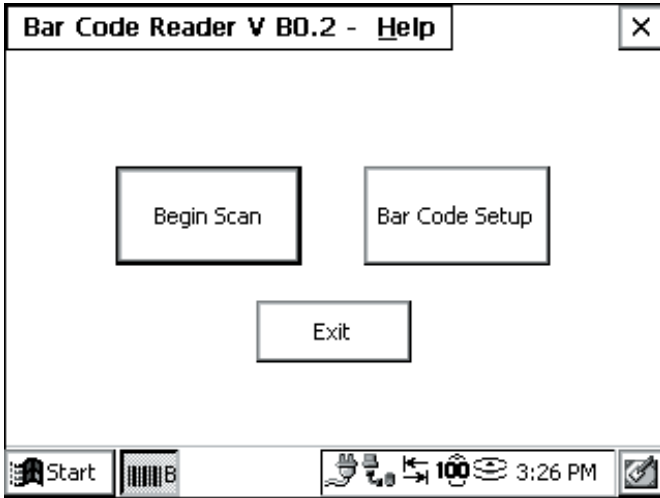
Before you begin using your bar code expansion pod to scan bar codes, open the Bar Code Reader program and set up the scanner's functions. To open the Bar Code Reader program, complete the following steps:

- 1) Turn on your Allegro.
- 2) Double-tap on the *Bar Code Reader* icon located on your Allegro's desktop.



Bar Code
Reader

An *Initializing Bar Code Scanner* message box pops up, as the *Bar Code Reader* program loads and the *Bar Code Reader* program opens.



3) Tap on the *Bar Code Setup* button.

▲ **Bar Code Setup**

Before you begin scanning, use the *Bar Code Setup* program to configure the bar code scanner according to your needs. The Bar Code Setup options are described throughout this section.

The *Bar Code Setup* program has the following five tabs for personalizing your bar code scanning program:

- User
- Scanner
- Data Format
- Code Type
- Defaults

The *Bar Code Setup* program has many options that are enabled and disabled by tapping on small boxes next to the option. When an option is selected, a checkmark appears in the box. When the option is disabled, the checkmark disappears.

To set up and save your bar code scanning options, complete the following steps:

- 1) Read the following set up sections: *User*, *Scanner*, *Data Format*, *Code Type*, and *Defaults*.

These sections describe the functions in the *Bar Code Setup* program informing you of the options that best suit your bar code scanning needs.

- 2) Select the options you want to use for scanning bar codes.
- 3) Tap on the *Exit Setup* button to save your bar code settings and return you to the *Bar Code Reader* screen.
- 4) Go to the *Begin Scan* section of this chapter and follow the directions there to begin scanning bar codes.

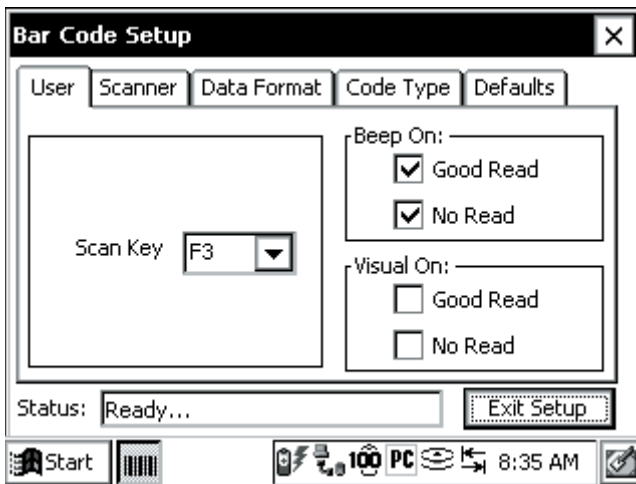
User Setup

The User tab contains the options that effect how you use and interact with the scanning program. These options include targeting and scanning key selections, and audio and visual confirmation if a scan is successful or not.


To target bar codes, the scanner emits a small laser beam showing a red dot where the scan takes place. This target beam allows you to line up the scanner with the bar code.

To scan bar codes, the scanner emits a laser as a thin red line that covers the entire length of a bar code. In the scanning process, the bar code is read, decoded, and then transferred to a data collection program open on your Allegro.

The *User* tab allows you to select which key your Allegro uses to initiate a scan, and if you want audio and/or visual confirmation if a scan is successful or not.



Only one Allegro key is used to both target and scan a bar code. Pressing on the scan key initiates the target beam first. The target beam stays on for a set time ranging from 0.0 to 9.9 seconds. You have the ability to set the target time, see later in this section. As soon as the target beam turns off, the scan beam turns on. The scan beam remains on until a valid scan is completed or until the maximum scan time is reached.

 *Note: Holding the Scan Key down during a scan or pressing it multiple times during the scan does not affect the scan. The key presses are ignored.*

Scan Key Selection

The *Scan Key* box allows the user to select which key is pressed to initiate a scan. To select the *Scan Key* you want to use, tap on the down arrow on the right side of the *Scan Key* box to access a drop-down menu listing all the available scan keys. Tap on the name of the key you want to use for scanning.

Beep on Good Read

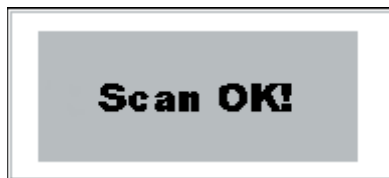
The bar code scanner program provides audio feedback to notify you on a successful scan. To activate the audio feedback, tap in the *Good Read* box in the *Beep On:* section so a checkmark appears. A single beep sounds at the completion of a successful scan.

Beep on No Read

The bar code scanner program provides audio feedback to notify you about an unsuccessful scan. To activate the audio feedback, tap in the *No Read* box in the *Beep On:* section so a checkmark appears. Two beeps sound when a scan is unsuccessful.

Good Read Message

The bar code scanner program provides visual feedback when a scan is successful. To activate this visual feedback, tap in the *Good Read* in the *Visual On:* section so a checkmark appears. A *Scan OK!* pop-up message displays on the screen approximately 1.5 seconds after each successful scan.



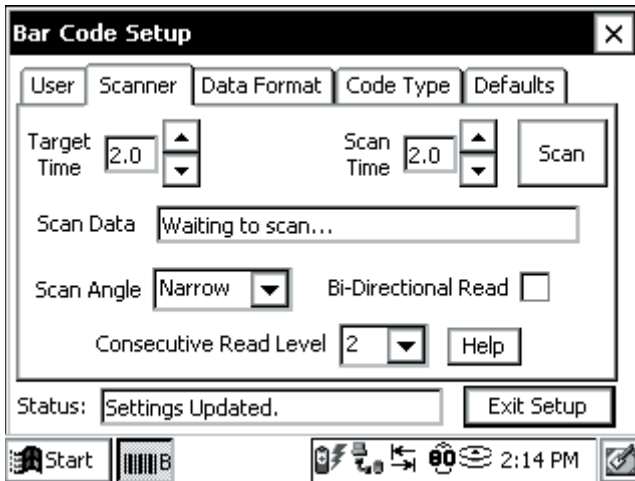
No Read Message

The bar code scanner program provides visual feedback when a scan is unsuccessful. To activate this visual feedback, tap in the *No Read* in the *Visual On:* section so a checkmark appears. A *Scan Failed!* pop-up message displays on the screen approximately 1.5 seconds after each unsuccessful scan.



Scanner Setup

The *Scanner* tab is used to configure the operation of the scan engine.



Target Time

The *Target Time* option allows you to set the amount of time the target beam is on before a scan is initiated.

The *Target Time* box shows the time, in seconds, that the target beam is on. The scroll buttons allow you to set the amount of time the target beam is on before a scan is initiated. The *Target Time* can vary from 0.0 to 9.9 seconds, in 0.1 seconds increments.

If you set the *Target Time* at 2.0, that means the target beam remains on for 2.0 seconds and then turns off as the scan beam turns on. The scanner takes approximately .5 seconds to focus the target beam. Because of this, it is recommended that the minimum target time be set to 0.5 or longer than the desired target time.

Scan Time

The *Scan Time* option allows you to set up the amount of time the scan beam remains on to perform a bar code scan. The *Scan Time* window shows the time, in seconds, that the scan beam is on. The scroll buttons allow the user to set the amount of time the scan beam is on. The *Scan Time* can vary from 0.0 to 9.9 seconds, in 0.1 seconds increments.

A scan terminates as soon as it successfully reads a bar code or when the scan time has reached the maximum scan time specified in Scan Time window.

Scan Button

The *Scan* button allows you to test the functionality of the scanner within the setup program. Pressing the *Scan* button turns the target beam on for the *Target Time* and then performs a scan.

Scan Data

The *Scan Data* field is used to display the results of scans initiated by the *Scan* button.

Scan Angle

The bar code scanner is capable of using two different scan angles. The *Scan Angle* determines the width of the scan beam.

Tap on the down arrow on the right side of the *Scan Angle* box to access a drop-down menu listing two available scan angles. Tap on the size of the angle you want to use for scanning. The wide scan angle is 40° and the narrow angle is 30°.

Bi-Directional Read Select

Selecting the *Bi-Directional Read* option sets up the scanner program to read the bar code in both directions before it is decoded.

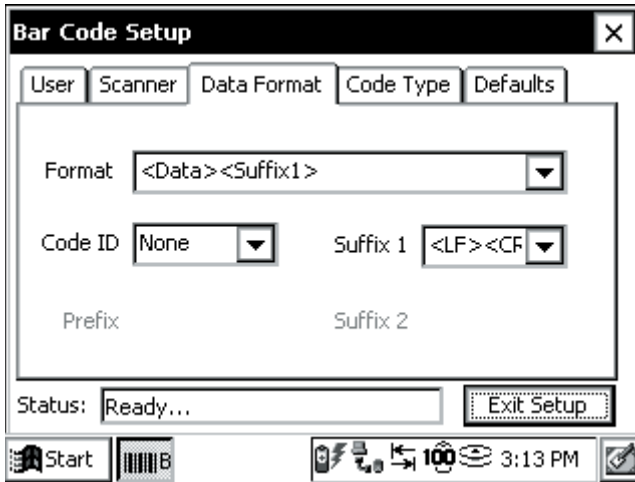
Consecutive Read Level

When the bar code scanner performs a scan, it is performed in two stages. The first stage reads the bar code image and verifies it is a valid bar code. The second stage decodes the raw bar code data into ASCII characters that are sent back to the host application. The user can specify how many times a bar code is to be successfully read before it is decoded.

The scanner has four security levels or successful read levels. A *Help* button is located to the right of the *Consecutive Read Level* box and explains the four security levels.

Data Format Setup

The *Data Format* tab allows the user to specify the format of the data that is returned by the scanner.



Format

The *Format* drop-down box allows you to select if a prefix and/or suffix character are added to the bar code data. The prefix character is added before the bar code data. The *Suffix 1* character is appended to the end bar code data and the *Suffix 2* character is appended after the *Suffix 1* character. If *Suffix 1* is not selected, *Suffix 2* is appended to the end of the bar code.

Tap on the down arrow on the right side of the *Format* box to access a drop-down menu of the available data format. Tap on the format you want to use. The eight *Format* options are:

- Data
- Data, Suffix1
- Data, Suffix2
- Data, Suffix1, Suffix2
- Prefix, Data
- Prefix, Data, Suffix1
- Prefix, Data, Suffix2
- Prefix, Data, Suffix1, Suffix2

Code ID

The scanner is capable of returning a Code ID character(s) for the bar code that is scanned. If a *Code ID* is selected, the Code ID character(s) is placed before the bar code data and the prefix character (if enabled).

There are two types of Bar Code ID's: Symbol and AIM. The Symbol Code ID is a single character code. The AIM Code ID contains three characters, a bracket (“]”) is followed by a code character and a modifier character.

Symbol Code ID

A = UPC-A, UPC-E, UPC-E1, EAN-8, EAN-13

B = Code 39, Code 32

C = Codabar

D = Code 128, ISBT 128

E = Code 93

F = Interleaved 2 of 5

G = Discrete 2 of 5, or Discrete 2 of 5 IATA

J = MISI Plessey

K = UCC/EAN-128

L = Bookland EAN

M = Trioptic Code 39

N = Coupon Code

Prefix and Suffix

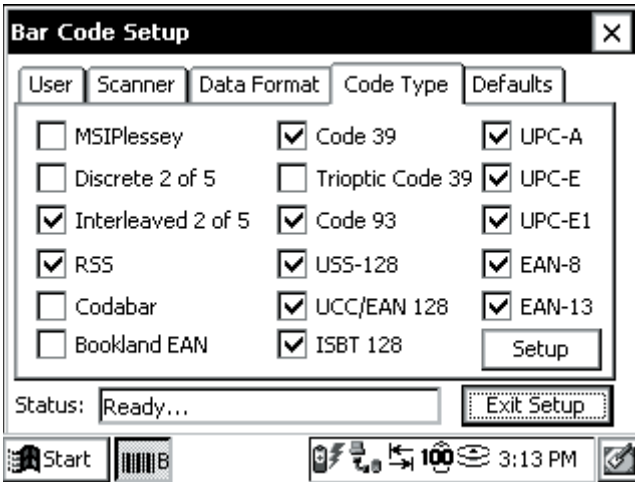
The *Prefix*, *Suffix 1*, and *Suffix 2* character selection pull-down window lists the characters that can be used as a prefix or suffix. Only the prefix or suffix pull-down windows that are enabled are shown. The prefix and suffix options are:

<u>Option</u>	<u>Description</u>
None	No function is performed.
<LF>	<LF> = Line Feed, which moves the cursor down to the same column on the next line.
<CR>	<CR> = Carriage Return, which causes the cursor to move to the left margin, often used with line feed to start a new line of output.
<LF>	<LF> = Line Feed, which moves the cursor down to the same column on the next line.

- # Adds a # sign before or after the scanned bar code (depending on suffix or prefix).
- Tab Performs a Tab key function, which moves the cursor over to the next column.

Code Type Setup

The *Code Type* tab lists the bar code types that the scanner can read. You can enable (box checked) and disable (box not checked) each of these bar code types. The *Setup* button at the bottom right corner of the screen is used to set up more detailed parameters for the bar code types in the *Setup* section below.



Setup

Tapping on the *Setup* button opens the *Additional Parameter Setup* screen, accessing the following seven bar code setup options:

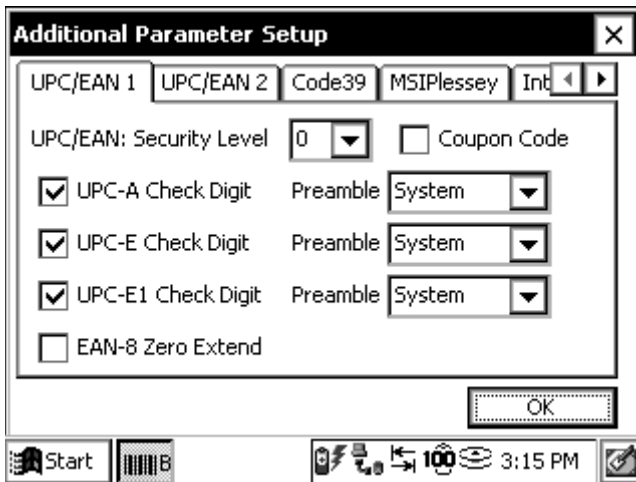
- UPC/EAN 1
- UPC/EAN 2
- Code39
- MSIPLessey
- Interleaved
- RSS/Code93/Discrete
- Codabar

To access one of these options, select the tab with the bar code type you want to enhance. The tabs are located along the top of the setup window. The additional tabs can be accessed using the scroll buttons on the upper right of the screen. For more information about each of the accessible bar code types, go to the following Web site and read the *Symbologies (Bar Code Fonts)* section:

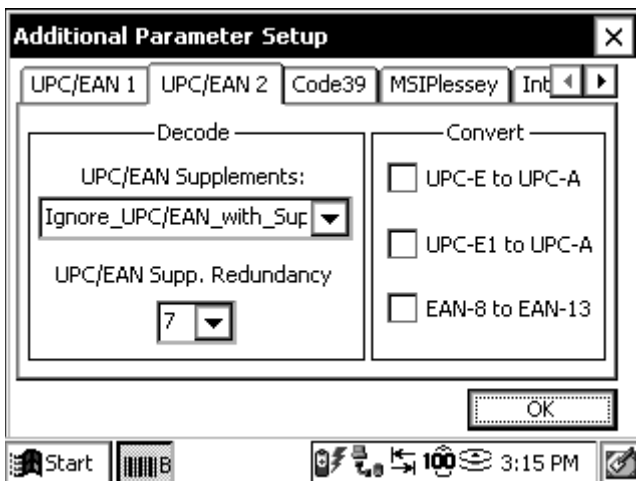
http://www.systemid.com/education/autoid_symbologies.asp

The setup parameters for each bar code type tab are accessed by using checkmark boxes or drop-down menus.

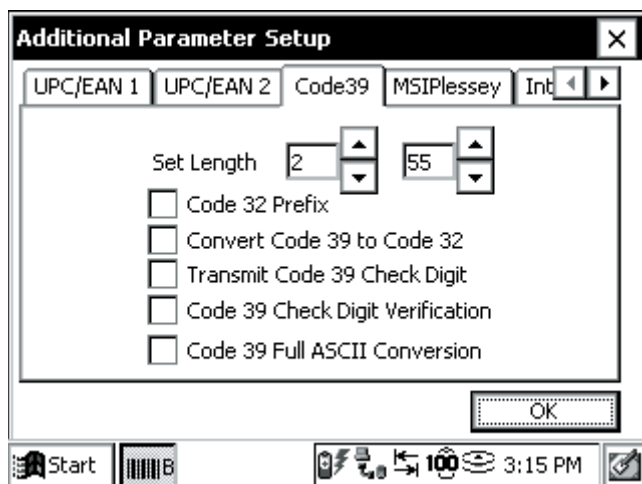
UPC/EAN 1



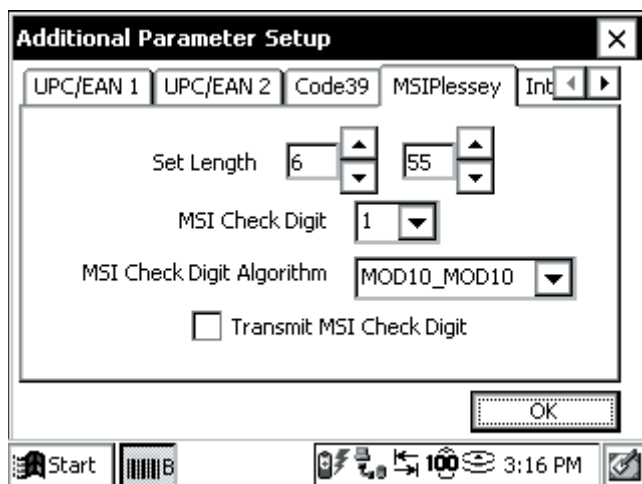
UPC/EAN 2



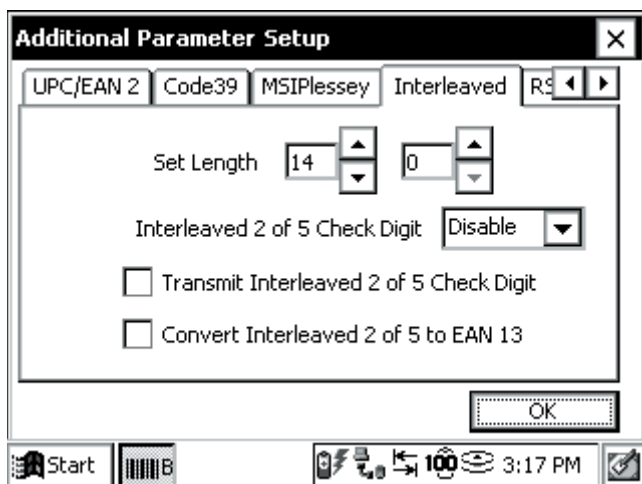
Code39



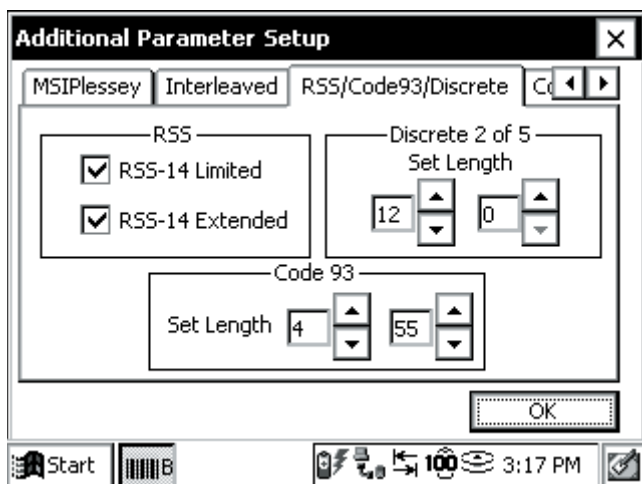
MSIPlessey



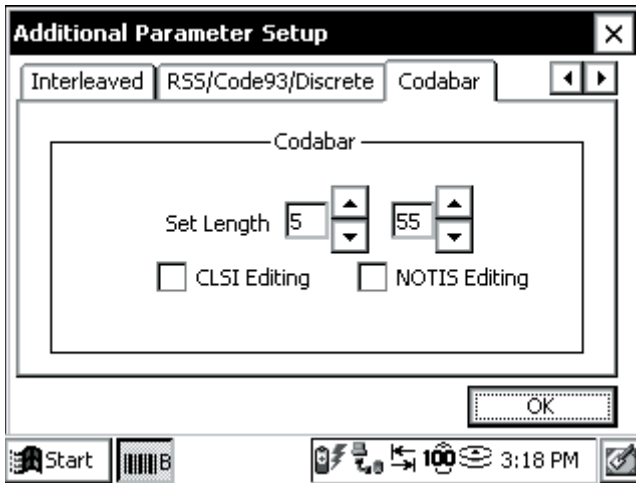
Interleaved



RSS/Code93/Discrete

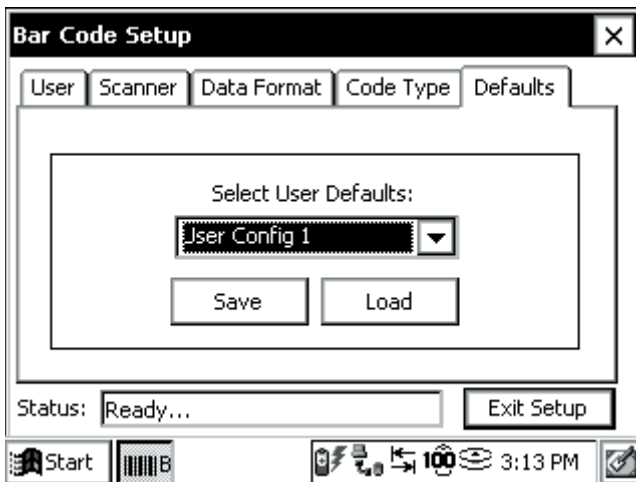


Codabar



Defaults Setup

The *Defaults* tab is used to load either user-defined configuration parameters or factory-default parameters. The users can save and reload four different user configuration files. The defaults are the settings that come installed on your Allegro when it is shipped.



Exit Setup

The *Exit Setup* button is available on every *Bar Code Setup* tab, allowing you to close the *Bar Code Setup* program at any time. Tapping on the *Exit Setup* button saves all options you set up and takes you back to the *Bar Code Reader* screen.


Tap on *Begin Scan* to start the bar code scanning program. Tapping on the *Exit* or *X* button, in the top right corner, exits out of the Bar Code Setup program.

▲ **Begin Scanning**

The bar code scanning program allows bar code data to be directly entered into an application program. The bar code data is entered into the data collection program as electronic data, as if it were typed on the keyboard.

When a scan is initiated, the bar code scanning program transfers the data into the data collection program you have opened. The scanned data enters at the cursor's location in the data collection program. After each scan, place the cursor at the next location for scanned data entry.

To start the bar code scanning program and begin scanning, complete the following steps:

- 1) Tap on the *Bar Code Reader* icon on your Allegro's desktop and set up your scanner as outlined in the *Setup Bar Code* section of this chapter. If this step is already completed, proceed to step 2.
- 2) Tap on the *Begin Scan* button on the *Bar Code Reader* screen.
- 3) Open the data collection program you want to receive and store the scanned bar code data. Example: if you want your bar code scans placed in a PTab file, open your Allegro's PTab program.
 *Note: Keep the data collection program in the foreground of your Allegro when scanning; otherwise the scanned data is not entered.*
- 4) Position the cursor in the data collection program in the field you want the scanned data to enter.
- 5) Press your specified scan button to target, and then scan your bar code.

Sample Bar Codes

The following bar codes are samples for you to test your bar code scanner before taking it into the field. Under each bar code is the datum that should appear on your Allegro after a successful scan.

Code 39 Scan Sample



CODE 39

EAN-13 Scan Sample



0012345678905

EAN-8 Scan Sample



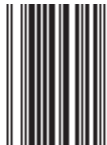
12345670

UPC-A Scan Sample



000000123457

UPC-E Scan Sample



06789019

▲ Bar Code Installation Program

The *Bar Code Setup* program is installed on your Allegro before it is shipped. In the event that the *Bar Code Setup* program gets removed from your Allegro and needs to be reinstalled, complete the following steps:

- 1) Open your CD-ROM drive on your PC.
- 2) Insert the Allegro CX Distribution CD, which is shipped with your Allegro, into your CD-ROM drive, close the CD-ROM drive, and wait for the installation screen to load.
- 3) Click on the *Browse CD* button on the installation screen.
- 4) Double-click on the *Utilities Applications* folder.
- 5) Double-click on the *Bar Code Pod Setup Install* folder.
- 6) Connect your Allegro to your PC through ActiveSync.
- 7) Double-click on the setup icon.
- 8) Follow the instructions given throughout the installation program.

802.11b Expansion Pod

An Allegro using the 802.11b expansion pod offers the flexibility and benefits of being connected to a Wireless Local Area Network (WLAN). The 802.11b (also referred to as Wi-Fi) is a variant to the 802.11 series that applies to WLAN.



A WLAN is a data communication system used to replace or extend a wired LAN system. A WLAN system provides additional functionality by using radio frequency technology to transmit and receive data over the air, through walls, ceilings, and even cement structures, without wire cabling.

A WLAN provides all of the benefits and features of established LAN technologies like Ethernet, but without the limitations of being attached to a cable. An Allegro using 802.11b provides significantly increased freedom and flexibility for both data collection applications and the people collecting the data.

An Allegro using the 802.11b expansion pod with a Cisco Aironet 350 card offers the following features:

- Superior range and throughput
- Indoors: 130 feet (40m) at 11 Mbps and 350 feet (107m) at 1 Mbps
- Outdoors: 800 feet (224m) at 11Mbps and 2000 feet (610m) at 1 Mbps, up to 5000 feet with external antenna on access point
- Secure network communications
- World mode for international roaming and reduced range

The 802.11b provides 11 Mbps data transmission in the 2.4 GHz band under optimal conditions. Depending on the amount of surrounding interference such as trees, walls, people, etc., the transmission rate can fall back to 5.5, 2 or 1 Mbps.

The Allegro with an 802.11b expansion pod is shipped with the

following Cisco items:

- Cisco Aironet 350 802.11b PC card (installed in your Allegro)
- Rubber duck antenna with a 90-degree pivoting joint
- Read Me First – EAP Authentication Requires Matching 802.1x Protocol Drafts
- Release Notes for Cisco Aironet Wireless LAN Adapters
- Cisco Aironet Wireless LAN Client Adapter Quick Start Guide
- Cisco Aironet Wireless LAN Client Adapter CD-ROM

▲ **Getting Started**

To start using 802.11b on your Allegro, do the following:

- 1) Attach the rubber duck antenna.
- 2) Locate, read, and follow the Cisco instructions for setting up an access point for 802.11b, if you have a Cisco access point.
- 3) Locate, read, and follow the Cisco instructions for setting up profiles on your Allegro for 802.11b.
- 4) Locate, read, and follow the Cisco instructions for connecting to the WLAN.

▲ **Antenna Attachment**

The rubber duck antenna shipped with your 802.11b Allegro must be used with the 802.11b expansion pod. No other antennas are accepted or supported. To attach the antenna to the expansion pod, complete the following steps:

- 1) Place the antenna on the mount at the top of the expansion pod.
- 2) Screw the antenna firmly into place.
- 3) Rotate the antenna so that the 90-degree joint is positioned so it can pivot upward to a 90-degree angle.

▲ **Cisco Systems Documentation**

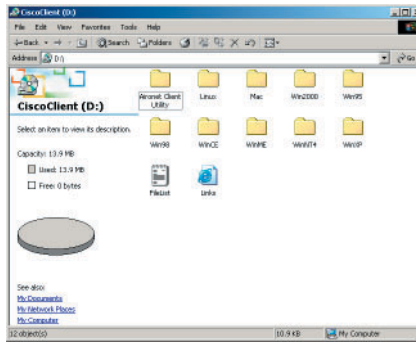
The 802.11b expansion pod uses a Cisco Aironet 350 PC card. The documentation for using this card is provided by Cisco Systems, Inc. Enclosed with the Allegro and 802.11b pod is the following Cisco documentation:

- Read Me First – EAP Authentication Requires Matching 802.1x Protocol Drafts
- Release Notes for Cisco Aironet Wireless LAN Adapters
- Cisco Aironet Wireless LAN Client Adapter Quick Start Guide
- Cisco Aironet Wireless LAN Client Adapter CD-ROM


Accessing the Cisco 802.11b Manual

All of the setup and installation instructions for the Windows CE operating system are addressed in the *Cisco Aironet Wireless LAN Client Adapters Installation and Configuration Guide for Windows CE*. This guide is located on the *Cisco Aironet Wireless LAN Client Adapters Drivers and Utilities CD-ROM*. To access this guide, connect to the Internet then complete the following steps:

- 1) Open your PC's CD-ROM drive and insert the *Cisco Aironet Wireless LAN Client Adapters Drivers and Utilities CD*. Close the CD-ROM drive.
- 2) Double-click on the *My Computer* icon on your PC's desktop.
- 3) Double-click on the CD-ROM icon in the *My Computer* window, the following screen appears:



- 4) Double-click on the *Links* icon to access a Web page with links to the following information:
 - Access Points
 - Bridges
 - Workgroup Bridges
 - Wireless LAN Client Adapters (Windows CE for the Allegro)
 - Software Center Links
 - Warranty Links and Support Links
 - Obtaining Service and Support

 *Note: When accessing any of the links on the link page, you need to be connected to the Internet.*

Setting up an Aironet Access Point

An access point is similar to a base station. It is used as a link from the wireless LAN to the wired network and the Internet. To connect your Allegro to the network via wireless LAN, an access point needs to be installed and configured.

For best connectivity and range between your Allegro and the access point, we recommend Cisco access points. However, you can use other established access points compatible with 802.11b. If you are currently using, or have purchased a compatible access point, follow the setup directions that were shipped with your access point.

▲ Setting Up 802.11b Profiles on your Allegro

The *Aironet Client Utility* is factory installed on your Allegro. This program is called the Aironet Client Utility and allows you to configure the profiles of the internal 802.11b card. A profile accommodates various access points and allows your Allegro access to different LAN systems.

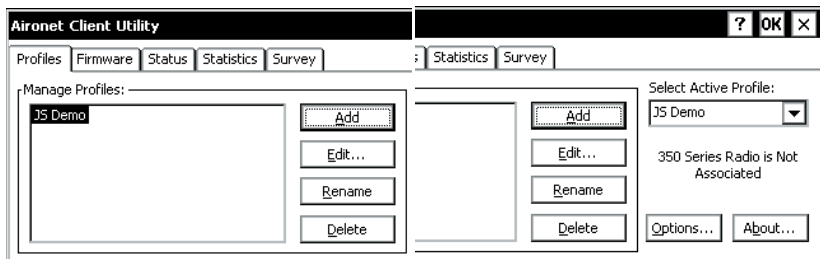
The *Aironet Client Utility* allows you to set up and save profiles for connecting to specific wireless LAN networks. Because different wireless LANs have specific or different security settings, your Allegro needs to be configured to connect to each wireless LAN. These configurations are saved on your Allegro as profiles. The appropriate, specific profile is used when connecting your Allegro to specific wireless LANs.

To open the client utility, tap on the *Aironet Client Utility* icon on your Allegro's desktop.



Aironet Client
Utility

The following screen appears:



Notice that the screens are formatted for a screen that is wider than your Allegro's screen. To view all options on a screen, drag the *Aironet Client Utility* to the left or right, as needed. To perform this drag function, place the stylus on the Allegro screen in the *Aironet Client Utility* title bar. While holding the stylus down, slide it left or right to move the program on the screen.

The Aironet Client Utility has the following five options:

- Profiles
- Firmware
- Status
- Statistics
- Survey

For instructions on using the *Aironet Client Utility* and any of the above options, use the *Cisco Aironet Wireless LAN Client Adapters Installation and Configuration Guide for Windows CE*. The guide's location is described next.

To set up profiles on your Allegro, open the user manual by following the directions under the *Accessing the Cisco 802.11b Manual* section of this chapter. After opening the links page, complete the following steps:

- 1) Click on the following link under the Windows *Windows CE 3.0, 4.0, & 4.1* heading:

http://cisco.com/univercd/cc/td/doc/product/wireless/airo_350/350cards/win_ce/index.htm

The *Wireless LAN Adapter Documents for Windows CE* Web page opens with a list of links to documentation for Aironet Wireless LAN and Client Utilities.

- 2) Click on *Cisco Aironet Wireless LAN Client Adapters Installation and Configuration Guide for Windows CE, OL-1375-03*, and a new Web page opens with links to the entire manual in PDF form, or in separate Web page links to individual chapters in the manual.
- 3) Click on the *Chapter 4 - Using the Profile Manager* link and follow the instructions for creating a new profile.

For additional information on using the *Aironet Access Utility* and the additional option it offers, use the documentation on the *Wireless LAN Adapter Documents for Windows CE* Web page. Refer to step 1 in *Setting Up 802.11b Profiles on your Allegro* to get to this Web page.

▲ Connecting to WLAN

Connecting to WLAN is a very involved process with a number of factors to consider. Because there are so many different access point types, profile set ups, and security setting considerations, seek the assistance of your IT department or WLAN technician.

▲ Safety Information

The FCC with its action in ET Docket 96-8 has adopted a safety standard for human exposure to radio frequency (RF) electromagnetic energy emitted by FCC certified equipment, when used with approved environmental limits found in OET-65 and ANSI C95.1, 1991.

Proper operation of this radio device according to the instructions found in this manual and the Installation and Configuration Guide specific to your computer's operating system can result in user exposure that is substantially below the FCC recommended limits.

- Do not touch or move antenna(s) while the unit is transmitting or receiving.
- Do not hold any component containing a radio such that the antenna is very close to or touching any exposed parts of the body, especially the face and eyes, while transmitting.
- Do not operate the radio or attempt to transmit data unless the antenna is connected; otherwise, the radio may be damaged.
- Use in specific environments
 - The use of wireless devices in hazardous locations is limited to the constraints posed by the safety directions of such environments.
 - The use of wireless devices on airplanes is governed by the Federal Aviation Administration (FAA).
 - The use of wireless devices in hospitals is restricted to the limits set forth by each hospital.
- Antenna use
 - High-gain, wall-mount, or mast-mounted antennas are designed to be professionally installed and should be located at a minimum of 12 inches (30cm) or more from the body of all persons. Cisco recommends that you contact your professional installer, VAR, or antenna manufacturer to obtain proper installation requirements.

Warning 1

Do not operate your wireless network device near unshielded blasting caps or in an explosive environment unless the device has been modified to be especially qualified for such use.

Warning 2

In order to comply with RF exposure limits established in the ANSI C95.1 standards, it is recommended when using a laptop with a PC card client adapter that the adapter's integrated antenna is positioned more than 2 inches (5 cm) from your body or nearby persons during extended periods of transmitting or operating time. If the antenna is positioned less than 2 inches (5 cm) from the user, it is recommended that the user limit exposure time.

Warning 3

In order to comply with FCC RF exposure limits, dipole antennas should be located at a minimum of 7.9 inches (20 cm) or more from the body of all persons.

▲ 802.11b Installation Program

The 802.11b set up program is installed on your Allegro before it is shipped. In the event that the 802.11b program gets removed from your Allegro and needs to be reinstalled, complete the following steps:

- 1) Place the *Cisco Aironet Wireless LAN Client Adapters Drivers and Utilities CD*, which came with your Allegro 802.11b expansion pod, into your PC's CD-ROM drive.
- 2) Double-click on the *My Computer* icon on your PC's desktop.
- 3) Double-click on the *CD-ROM* icon in the *My Computer* window that is open on your screen.
- 4) Double-click on the *Links* icon to access a Web page with links to Access Points, Bridges, Workgroup Bridges, and Wireless LAN Client Adapters (Windows CE for the Allegro).
- 5) Click on the *Windows CE 3.0, 4.0, & 4.1* link under Wireless LAN Client Adapters.
- 6) Click on *Cisco Aironet Wireless LAN Client Adapters Installation and Configuration Guide for Windows CE, OL-1375-03*.
- 7) Click on *Chapter 3 - Installing the Client Adapter*.
- 8) Follow the directions under *Installing the Driver and Client Utilities* to complete the installation.

▲ Cisco 802.11b Drivers

The drivers for the Cisco 802.11b card are installed to your Allegro before it is shipped. In the event that the drivers get removed from your Allegro and need to be reinstalled, please contact your reseller or the technical support department for the Allegro at (435) 753-1881, or by email at techsupport@junipersys.com.

Bar Code/802.11b Expansion Pod

The Bar Code/802.11b Expansion Pod integrates the wireless networking technology and the laser bar code scanning technology with the Allegro CX. Combining these two technologies adds a new level of versatility and usability to the Allegro, which includes the following features:

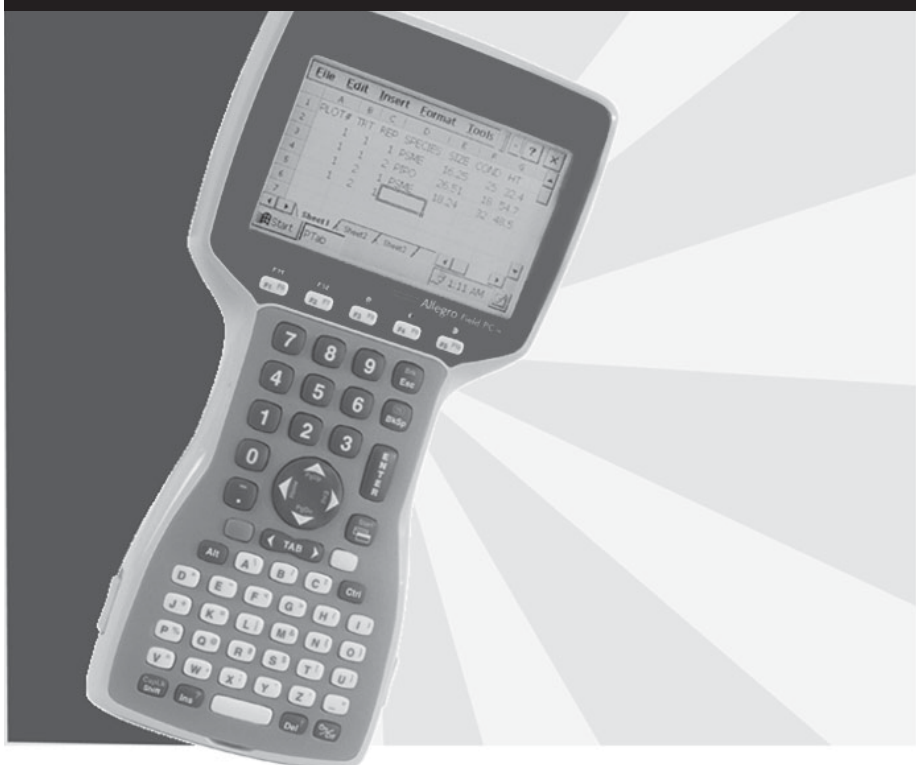
- High performance bar code scanning in bright, outdoor light
- Scanning distances of 1 to 3 feet from the Allegro
- Excellent scan capability for poorly printed or low contrast bar codes
- Low power performance
- Compatible with nine different bar code symbologies
- Superior range and throughput
- Indoors: 130 feet (40m) at 11 Mbps and 350 feet (107m) at 1 Mbps
- Outdoors: 800 feet (224m) at 11Mbps and 2000 feet (610m) at 1 Mbps, up to 5000 feet with external antenna on access point
- Secure network communications
- World mode for international roaming



The following example shows one work environment that could greatly benefit from using an Allegro with the Bar Code and 802.11b expansion pod. This is only one possible scenario. The efficiency and usability of this expansion applies to a wide variety of bar code data collection environments.

Example: A shipment of logs needs to be inventoried and stored in to the company's database at a lumber mill. The logs are identified by using bar codes. An Allegro with a bar code expansion pod is ideal for this situation.

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