

Date: July 22, 2004
Product: Z-Max & FAST Survey
Subject: Juniper Allegro CE™ Boot Loader Upgrade
Number: Z_Max2004_07

1. Introduction:

Some of our customers have experienced lock-up problem or file corruption with the Juniper Allegro CE™ running Windows CE.NET 4.1.

This could be due to an old Boot Loader installed on the Juniper Allegro CE™ according to Juniper Systems.

All Juniper Allegro CE™ shipped today by Thales Navigation are loaded with the correct boot loader.

2. How to check the Boot Loader version date

Hold down the ON/OFF Button for 7 or 8 seconds.

A "Build" date will be displayed at the bottom of the screen when the Juniper Allegro CE™ reboots.

Any CE.net boot loader with a build prior to *January 23, 2004* should be updated.

3. Reminder:

If you are still using Windows CE 3.0 and FAST Survey V 1.21 (built32), we recommended you to upgrade your Juniper Allegro CE™ with the latest versions of Windows CE, FAST Survey and Bluetooth driver.

The FAST Survey version compatible to the Juniper Allegro CE™ running Windows CE.NET 4.1 is the version 1.50.020.

All files and upgrade documents can be found in the Z_Max System folder on the Thales Navigation FTP site at:

<ftp.thalesnavigation.com>

Note that the FAST Survey registration will be lost if you upgrade the Juniper Allegro CE™ operating system. So you have to contact Thales Navigation to get a new registration at :

sales-administration@thalesnavigation.com

Please provide Thales Navigation with the following information:

- Juniper Allegro serial number
- Fast Survey serial number
- Fast Survey Registration code

The Boot loader upgrade or the FAST Survey upgrade do not change your registration code. Your FAST Survey Serial Number and Change Key can be used with the new versions.

4. How to upgrade Windows CE.NET:

There are two methods to update the Juniper Allegro CE™. Choose the method that fits best with your tools. Detailed instructions for each method are described below.

- *ATA Flash Card Method:* requires ATA Flash Card, and a computer with a PC Card slot. The ATA Flash Card method is faster. If you have a number of units to update, we recommend that you use this method.
- *Serial Communications Method:* requires a computer with a serial port and the Juniper Allegro CE™ serial communications cable.

There are two parts to each method:

1. The first part is to transfer the “NK.bin” and “Calc.exe” to the Allegro.
2. The second step is to update the Boot Loader.

The NK.bin file is the Windows CE .NET 4.1 operating system. The Calc.exe file is the updated Calculator utility program. The Boot Loader is a program that loads into the Flash EPROM on the Allegro. This program is responsible for loading the Windows CE .NET 4.1 (NK.bin) from the internal C_Drive into system RAM when the Allegro is turned on. It also sets certain system parameters that control system performance. It is imperative that both the NK.bin and the Boot Loader get updated together in the installation process.

Preparing the Allegro for the new Operating System

On the Allegro CE, close all active programs and make sure that all of your data files are on the C_Drive or transferred to your desktop computer. During the installation of Windows CE .NET, the registry is reset to its factory default settings and the RAM memory is erased. Everything that is stored on the Allegro’s C_Drive remains intact.

Most application programs modify the registry when they are installed. It is highly recommended that you remove all of the application programs prior to installing the Windows CE .NET 4.1. Use the Start/Settings/Control Panel/ Remove Programs utility to remove the

applications. After the new operating system is installed, then you should re-install all application programs on the Allegro CE.

Note : To completely remove the Socket Bluetooth Drivers for Windows CE you must remove the Socket Bluetooth card from the Allegro.

Turn the Allegro off and place it face-down on a surface.

The card slot is located in the top part of the Allegro behind the display. It is accessed from behind through the PC card slot door. There are two screws holding the door in place. Turn each screw counter-clockwise 1/4 of a turn to release the door.

To remove a card, push the eject button, grasp the card firmly, and pull it out.



Hold down the Allegro On/Off button for until you get the version window.

Then go to Start/Settings/Control Panel/ Remove Programs. Click on Socket Bluetooth Drivers for Windows CE and tap on 'Remove' button

You need at least 14 Megabytes of free space on your C_Drive to update the Allegro's operating system. Make sure that your battery is fully charged or plug the Allegro into the charger during the update process to ensure that the unit does not power off during the update.

Step-by-Step Instructions using the ATA flash card

- Insert the ATA Flash PC Card into your computer. Using a file explorer utility on your desktop computer, browse to the folder containing the new "NK.bin" file and the new Calc.exe file. Copy the "NK.bin" file and the Calc.exe file the from your computer to the root folder on the PC card.
- Turn the Juniper Allegro CE™ off. Remove the PC Card from your computer and insert it into the Juniper Allegro CE™. Turn the Juniper Allegro CE™ on.
- With the Allegro Windows Explorer, Copy the NK.bin file to **My Computer/C_Drive**. Windows Explorer will detect a file with the same name and will ask you if you want to replace it. Click 'Yes'.
- Set the properties attribute for the NK.bin file to read only and hidden. It is highly recommended that this step be completed so that a user does not accidentally delete the NK.bin file. Click on the "NK" icon to highlight it. Click on File/Properties and

select Attributes Read-only, Archive, and Hidden so that all three are checked. click on OK. The NK icon no longer shows in the C_Drive folder.

- copy the Calc.exe file to **My Computer/C_Drive/C_Program Files**. Explorer will detect a file with the same name and will ask you if you want to replace it. Click 'Yes'.

Step by Step Instructions using the serial communication cable

- **Connection.**

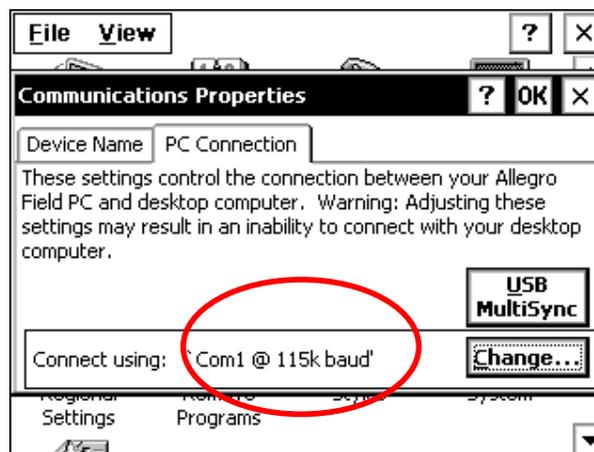
On the field terminal, go to Start/Settings/Control Panel/ and click Communicat...



Communication menu on Allegro running Windows CE 3.0

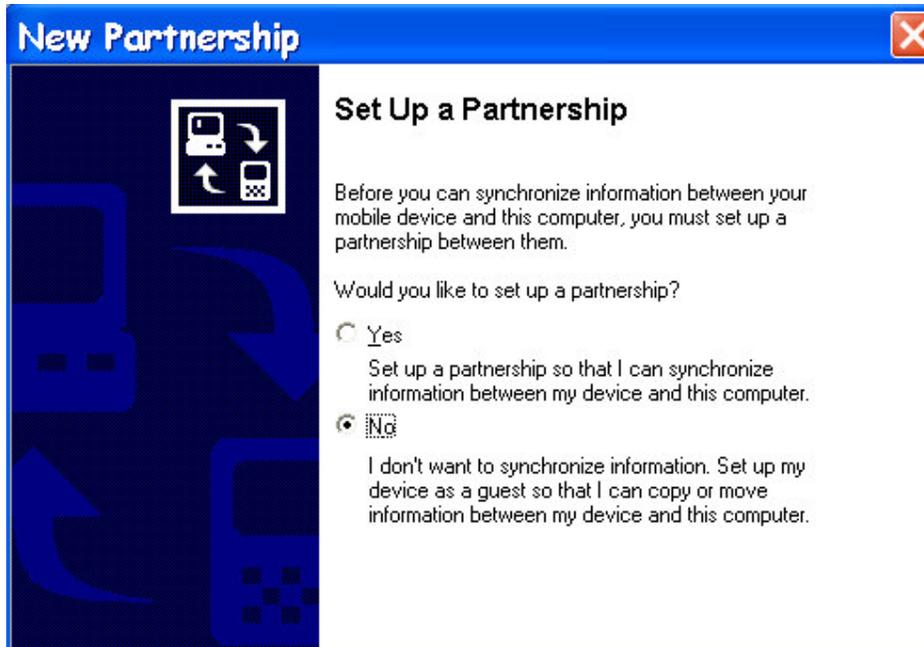
Select the PC Connection tab.

Check that the "com 1 @ 115 k baud" option is selected in the "Connect using" window or else click on "Change" and select this "com1 @ 115 k baud" option. Click OK and the X on the top of the Control Panel window to close it.



Connect the field terminal com1 to your PC com1 using the Allegro Serial cable.

On the field terminal, double click on PCLink in order to link the field terminal with your PC through Microsoft ActiveSync.
Do not set up a partnership between the Allegro and your computer.



➤ Files Transfer

Once the link has been established between your computer and the field terminal, open Explorer on your computer.

If you are using the Allegro CDROM, the NK.bin and Calc.exe files are located in following folder:

x: \WINDOWS CE.NET 4.1\

Where x: stands for the CD drive (depending on your computer) Insert the Allegro CD Rom in your computer's CD drive.

Copy the NK.bin file to **Mobile Device/My Computer/C_Drive** on the field terminal.

Press OK in the File Conversion window.

Explorer will then detect a file with the same name and will ask you if you want to replace it. Click 'Yes'.

In the next step, you will have to copy the Calc.exe file to **Mobile Device/My Computer/C_Drive/C_Program Files** on the field terminal.

Explorer will detect a file with the same name and will ask you if you want to replace it. Click 'Yes'.

On the Allegro CE, set the properties attribute for the NK.bin file to read only and hidden. It is highly recommended that this step is completed so that a user does not accidentally delete the NK.bin file. From the Allegro CE desktop, double click on My Computer, double click on C_Drive and click on the "NK" icon to highlight it. click on File/Properties and select Attributes Read-only, Archive, and Hidden so that all three are checked. click on OK. The NK icon no longer shows in the C_Drive folder.

5. How to update Boot Loader:

There are two methods to update the boot loader on the Allegro CE. Choose the method that fits best with your tools. Detailed instructions for each method are described below.

- *ATA Flash Card Method:* requires ATA Flash Card, and a computer with a PC Card slot. The ATA Flash Card method is faster. If you have a number of units to update, we recommend that you use this method.
- *Serial Communications Method:* requires a computer with a serial port and a serial communications cable.

Preparing the Allegro for the new Boot Loader

On the Juniper Allegro CE™, close all active programs and make sure that all of your data files are on the C_Drive or transferred to your desktop computer. During the installation the registry is reset to its factory default settings and the RAM memory is erased. Everything that is stored on the Allegro's C_Drive remains intact.

Most application programs modify the registry when they are installed. It is highly recommended that you remove all of the application programs prior to installing the new boot loader. Use the Start/Settings/Control Panel/ Remove Programs utility to remove the applications. To completely remove the Bluetooth driver, you must remove the bluetooth Socket card out of the Juniper Allegro CE™ first.

After the new boot loader is installed, then you should re-install all application programs on the Allegro CE.

Plug the Allegro into the charger during the update process to ensure that the unit does not power off during the update.

Step-by-Step Instructions using the ATA flash card

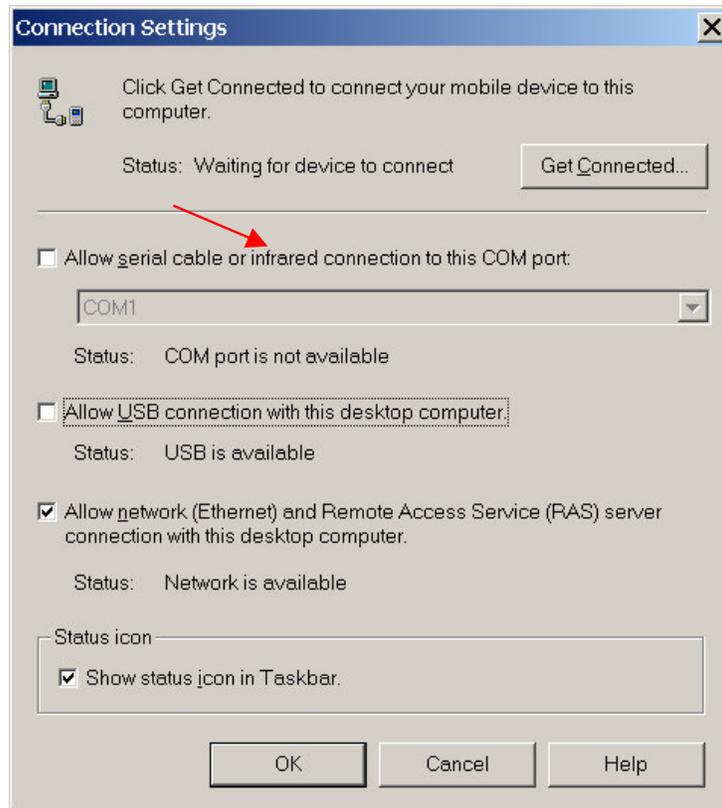
- Insert the ATA Flash PC Card into your computer. Using a file explorer utility on your desktop computer, browse to the folder containing the new "boot.bin" file. Copy the "boot.bin" file from your computer to the root folder on the PC card.
- Turn the Juniper Allegro CE™ on. Remove the PC Card from your computer and insert it into the Juniper Allegro CE™.

- With the PC Card inserted in the Allegro Juniper Allegro CE™, select "Start Menu/Programs/Utilities/Set Factory Defaults. (This selection erases the registry and the RAM file system.).
- Press 'Yes' on the Reload Factory Default System'.
- After the pause, the Allegro Juniper Allegro CE™ automatically reboots and reprograms the flash. The message "Programming Flash" is shown near the bottom of the screen. It is important that you wait patiently.
- Pop out the PC Card when the Boot Loader says "Done, reboot". The Juniper Allegro CE™ reboots again and loads the Windows CE. You are prompted to recalibrate the touch screen.
- In the 'New Battery Detected' window, select 'Specify Charge (%)', set up the charge level at 10% and click on OK.
- The update is now complete. A message is shown that you have reset your factory defaults. Click on OK in the 'Persistent Storage' window.
- You need to reinstall all the application programs (Bluetooth driver and FAST Survey; see below) onto the Juniper Allegro CE™, and then use the Save System utility. The Save System is in Start/Programs/Utilities/Save System.
- You can use this same PC card to update all the Juniper Allegro CE™ that you have repeating steps 2 through 8. Erase "boot.bin" file from the ATA flash card after completing the update on all of your Allegro's.

Step by Step Instructions using the serial communication cable

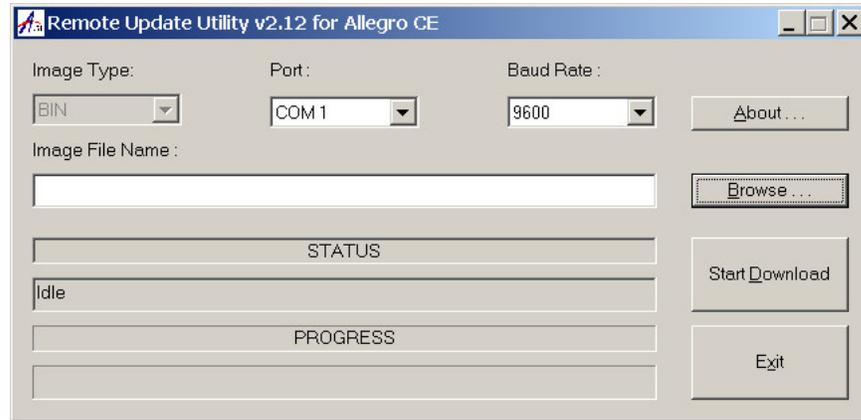
The special utility program, "Remote Update Utility", is provided to load the Boot Loader file onto the Juniper Allegro CE™. This program requires that you use the serial communication cable connection to update the Boot Loader on the Juniper Allegro CE™. *You cannot update the boot loader using the USB/Power Dock.*

- You **MUST** use the serial cable connection with the cable attached to COM1 on the Juniper Allegro CE™. You **MUST** disable ActiveSync from using the serial port on your computer. Go into the ActiveSync window and click the File/Connection Settings menu item and UN-CHECK the "Allow serial cable or infrared connection to this COM port" box.

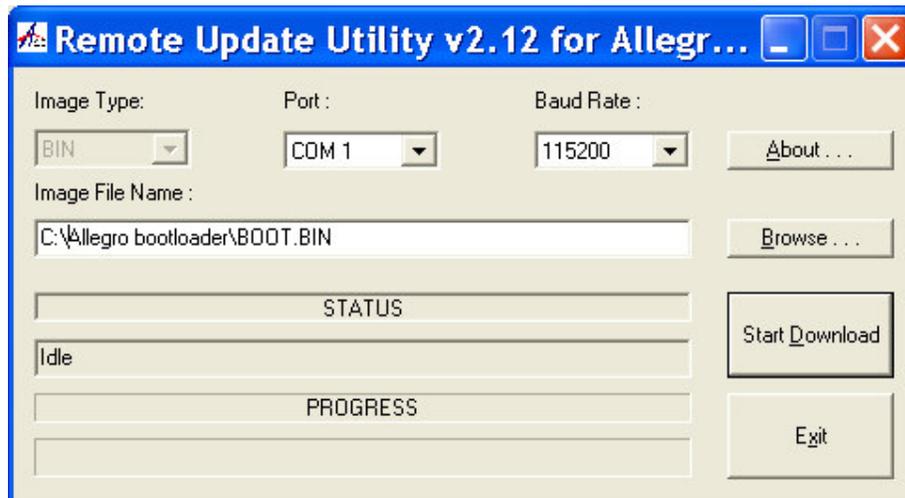


- To prepare the Juniper Allegro CE™ to receive the Boot Loader follow these steps carefully:
 - With the serial cable attached to COM1 of the Juniper Allegro CE™, press and hold down the shift key on the Juniper Allegro CE™.
 - While holding the shift key down, tap on Start menu/Programs/Utilities/Set Factory Defaults.
 - A dialog box asks you if you are sure you want to do this action. Answer YES. (Keep the Shift key depressed).
 - The screen blinks briefly, and then the Boot Loader menu is shown. Release the shift key.
 - Use the down arrow key to move the highlight to the third line: “Update Boot Loader via COM1”.
 - **Do not press the Enter key yet.**

- On your desktop computer, using a file explorer, navigate to the file "RemoteUpdate.exe ". It should be in the folder you extracted the zip file to. Run the Remote update utility following the steps below:
 - Double click on this “RemoteUpdate.exe” to run it.
 - The "Remote Update Utility" screen is shown asking you to set the communication parameters for the computer Com port and the baud rate.



- Set the communication port setting for the port that the serial cable is connected to on your desktop computer. (This setting is NOT referring to the Juniper Allegro CE™ COM port; it is referring to the serial port on your computer).
- Set the Baud Rate to **115,200**.
- Click the Browse button and locate the Boot.bin file. Click on the file name "Boot.bin" and then on the Open button.



- Click on the "Start Download" button in the Remote Update window.
- Press Enter on the Juniper Allegro CE™. You can watch the progress bar on the computer and the Juniper Allegro CE™. The progress bar on the Juniper Allegro CE™ quickly moves about 3/4 of the way across, and then stops there for a few seconds. Do not be alarmed because it appears to stop. This is normal.
- When the Boot Loader has been updated, the Juniper Allegro CE™ automatically reboots, starts Windows CE, and prompts you to recalibrate the touch screen.

- On the PC, click on the Exit button in the Remote Update Utility window.
- The update is now complete. A message is shown that you have reset your factory defaults. Click on OK in the 'Persistent Storage' window.
- In the 'New Battery Detected' window, select 'Specify Charge (%)', set up the charge level at 10% and click on OK.
- You need to reinstall all the application programs (Bluetooth driver and FAST Survey).
- If you normally connect to your Desktop PC using the serial port, go back into ActiveSync "Connection Settings" menu item and check the check box to enable "Allow serial cable or infrared connection to this COM port".

6. How to upload the bluetooth driver:

Make sure that the Socket Bluetooth card is inserted in the Juniper Allegro CE™ slot.

To insert the Socket Bluetooth card, loosen the two screws on the back of the Juniper Allegro CE™ and insert the card as shown below.



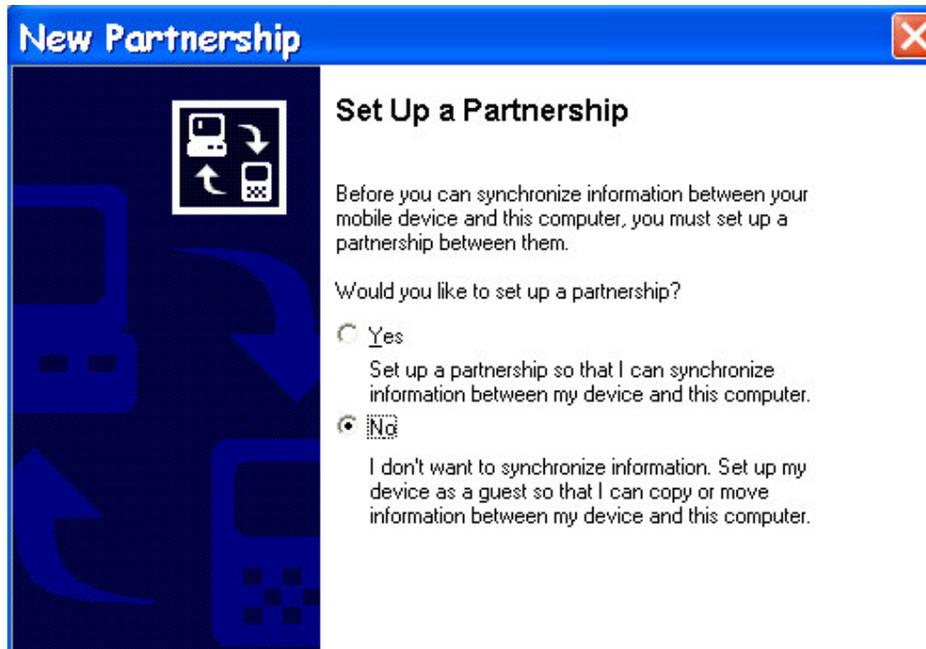
Link the Juniper Allegro CE™ with your PC through Microsoft ActiveSync.

Note that the default PC connection port on the Juniper Allegro CE™ is USB. To change it to serial com port, go to Start/Settings/Control/Panel/PC connection.

On the field terminal, go to Start/Settings/Control Panel/ and click on PC Connection. Select 'Com1 @ 115k baud' in the 'change...' menu and click on OK.

Close the Control Panel menu by clicking on the cross located on the top right corner or going in File/Close menu.

Double click on PCLink to connect the Juniper Allegro CE™ to your desktop PC. Check No on the 'New Partnership' window and click on Next.



The Bluetooth driver files may be found either on Allegro CE TM CD Rom or on Thales Navigation ftp site at :

<ftp.thalesnavigation.com>

If you are using the Allegro CE TM CD Rom:

Insert Allegro CD Rom CE.NET in your computer CD reader.

With Windows explorer, go to x:\Utility Applications\Bluetooth Driver Install\Stack and double click on Setup.exe.

Then follow up the installation procedure on the PC screen.

Click on 'Yes' at 'Install Socket Bluetooth software using the default application install directory'.

Once the installation is complete, a Bluetooth Setup wizard window will open on the Juniper Allegro CE TM screen.

Drag the window to the left and click on 'Next' three times and then 'Finish'.

Click on OK in the following 'Setup Wizard' message window.

Hold down the Allegro On/Off button for until the unit reboots. Release the On/off button (Soft Reset required by Juniper Allegro CE TM).

If you download the installation files from Thales Navigation ftp site:

All Bluetooth driver files are located in the following folder :

ZMax_System/Z-Max V1.5 software&Firmware/Allegro Bluetooth driver CE-Net/

Download the entire folder 'Allegro Bluetooth driver CE-Net' onto you hard disk and run Setup.exe.

Then follow up the installation procedure on the PC screen.

Click on 'Yes' at 'Install Socket Bluetooth software using the default application install directory'.

Once the installation is complete, a Bluetooth Setup wizard window will open on the Juniper Allegro CE™ screen.

Drag the window to the left and click on 'Next' three times and then 'Finish'.

Click on OK in the following 'Setup Wizard' message window.

Hold down the Allegro On/Off button for until the unit reboots. Release the On/off button (Soft Reset required by Juniper Allegro CE™).

7. How to upload FAST Survey:

Connect the Juniper Allegro CE™ to the PC and run ActiveSync if not already done (see above).

The FAST Survey installation file can be found either on FAST Survey CD Rom or on Thales Navigation ftp site at :

<ftp.thalesnavigation.com>

If you are using the FAST Survey CD Rom :

Insert the Fast Survey CD into your PC's CD reader

If Autorun is enabled, the startup program begins. If not, run Setup.exe on the CD.

Select the language you want in the pull down menu located at the right hand end corner.

Select "Install Fast Survey V1.50 for Allegro CE (*language*)".

Follow the Install Shield instructions on the PC Screen.

If you download the FAST Survey installation file from the ftp site :

The FAST Survey installation files are located in

ZMax_System/Z-Max V1.5 software&Firmware/Allegro FAST Survey/

Select the FAST Survey installation file depending on your country language and download it onto your PC hard disk.

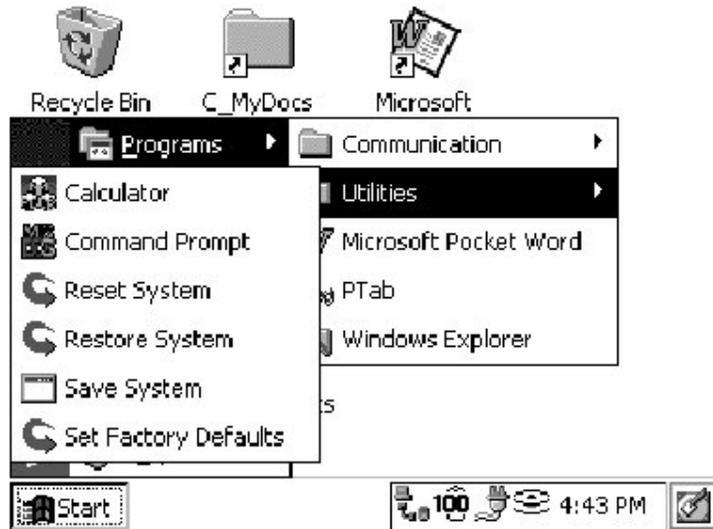
Run the FAST Survey installation file on your PC hard disk.

Follow the Install Shield instructions on the PC Screen.

8. Save System:

Once everything has been properly installed, it is highly recommended to save the programs and data in the Allegro Back up Ram.

To do so, go to Start/Programs/utilities and click on Save System :



9. Restore System:

If the batteries are removed from the Allegro for longer than five minutes, the Allegro *resets* to the Desktop instead of resuming to the screen that was last displayed before the batteries were removed. All data that was stored in RAM are lost.

Go to Start/Programs/Utilities/Restore System to recover the programs and data that have been saved last time you did a 'Save System'.

Do not perform a '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 won't find a backup, so the system will come up and in the factory default condition.

The FAST Survey software, Bluetooth driver and registration will be lost.