



Product Manual 26356
(Revision NEW)
Original Instructions

PCMCIA Programming
for NetCon[®] & MicroNet[™] 040 CPU

Installation Manual

IMPORTANT



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DEFINITIONS

- **DANGER**—Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
- **WARNING**—Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
- **CAUTION**—Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
- **NOTICE**—Indicates a hazard that could result in property damage only (including damage to the control).
- **IMPORTANT**—Designates an operating tip or maintenance suggestion.

WARNING

The engine, turbine, or other type of prime mover should be equipped with an overspeed shutdown device to protect against runaway or damage to the prime mover with possible personal injury, loss of life, or property damage.

The overspeed shutdown device must be totally independent of the prime mover control system. An overtemperature or overpressure shutdown device may also be needed for safety, as appropriate.



Read this entire manual and all other publications pertaining to the work to be performed before installing, operating, or servicing this equipment. Practice all plant and safety instructions and precautions. Failure to follow instructions can cause personal injury and/or property damage.



This publication may have been revised or updated since this copy was produced. To verify that you have the latest revision, be sure to check the *publications page* on the Woodward website:

www.woodward.com/publications

The current revision and distribution restriction of all publications are shown in manual **26311**.

The latest version of most publications is available on the *publications page*. If your publication is not there, please contact your customer service representative to get the latest copy.



Any unauthorized modifications to or use of this equipment outside its specified mechanical, electrical, or other operating limits may cause personal injury and/or property damage, including damage to the equipment. Any such unauthorized modifications: (i) constitute "misuse" and/or "negligence" within the meaning of the product warranty thereby excluding warranty coverage for any resulting damage, and (ii) invalidate product certifications or listings.

NOTICE

To prevent damage to a control system that uses an alternator or battery-charging device, make sure the charging device is turned off before disconnecting the battery from the system.

NOTICE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual **82715**, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

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Electrostatic Discharge Awareness

All electronic equipment is static-sensitive, some components more than others. To protect these components from static damage, you must take special precautions to minimize or eliminate electrostatic discharges.

Follow these precautions when working with or near the control.

1. Before doing maintenance on the electronic control, discharge the static electricity on your body to ground by touching and holding a grounded metal object (pipes, cabinets, equipment, etc.).
2. Avoid the build-up of static electricity on your body by not wearing clothing made of synthetic materials. Wear cotton or cotton-blend materials as much as possible because these do not store static electric charges as much as synthetics.
3. Keep plastic, vinyl, and Styrofoam materials (such as plastic or Styrofoam cups, cup holders, cigarette packages, cellophane wrappers, vinyl books or folders, plastic bottles, and plastic ash trays) away from the control, the modules, and the work area as much as possible.
4. Do not remove the printed circuit board (PCB) from the control cabinet unless absolutely necessary. If you must remove the PCB from the control cabinet, follow these precautions:
 - Do not touch any part of the PCB except the edges.
 - Do not touch the electrical conductors, the connectors, or the components with conductive devices or with your hands.
 - When replacing a PCB, keep the new PCB in the plastic antistatic protective bag it comes in until you are ready to install it. Immediately after removing the old PCB from the control cabinet, place it in the antistatic protective bag.

NOTICE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Chapter 1.

Installation Procedures

Part Numbers

| | |
|-----------|-----------------------------------------------------|
| 1790-9026 | Card Programmer – CSM OmniDrive USB LF Professional |
| 1790-787 | PCMCIA Card – 2 MB |
| 1790-789 | PCMCIA Card – 4 MB |
| 1790-791 | PCMCIA Card – 10 MB |
| 9927-1363 | LF Image Build Utility |

Installation

Three software installations are required to program PCMCIA cards with the OmniDrive USB LF Professional:

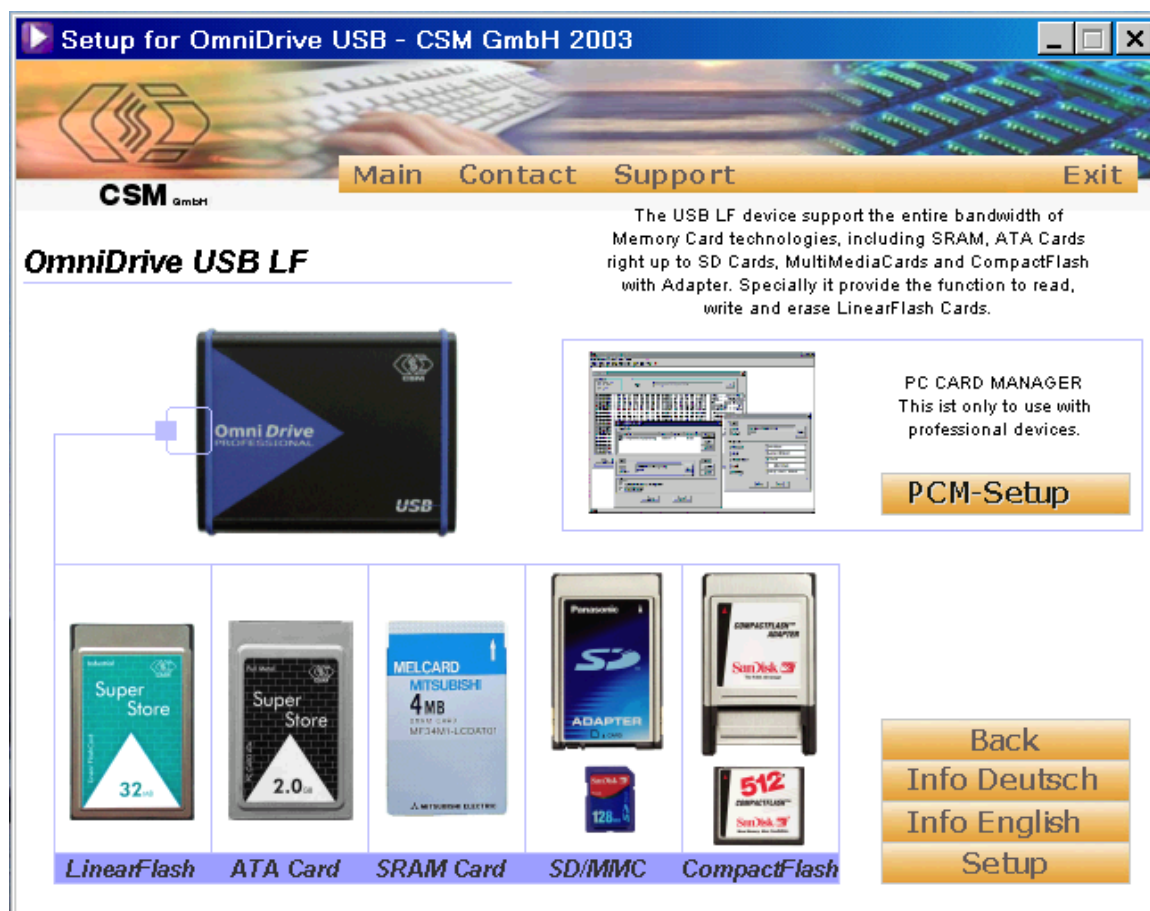
1. PCM Setup (PC Card Manager)
2. OmniDrive USB Professional (Hardware Driver)
3. LF Image Build (Woodward Utility)

1—PCM Setup (PC Card Manager) Installation

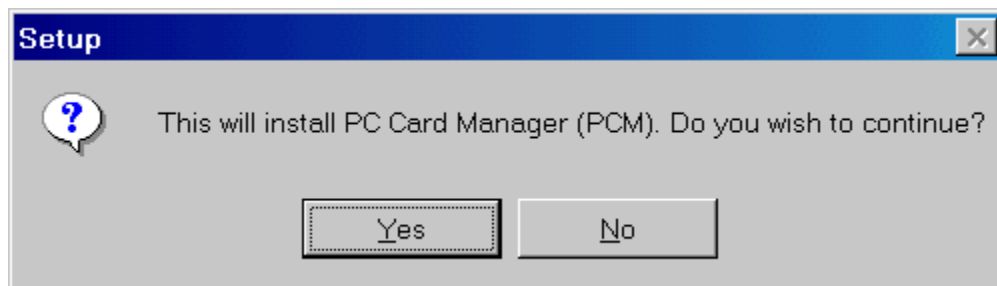
1. Insert the OmniDrive USB All Versions Setup-CD V2.3 into the CD-ROM drive.



2. Select 'USB LF' (Linear Flash) setup.



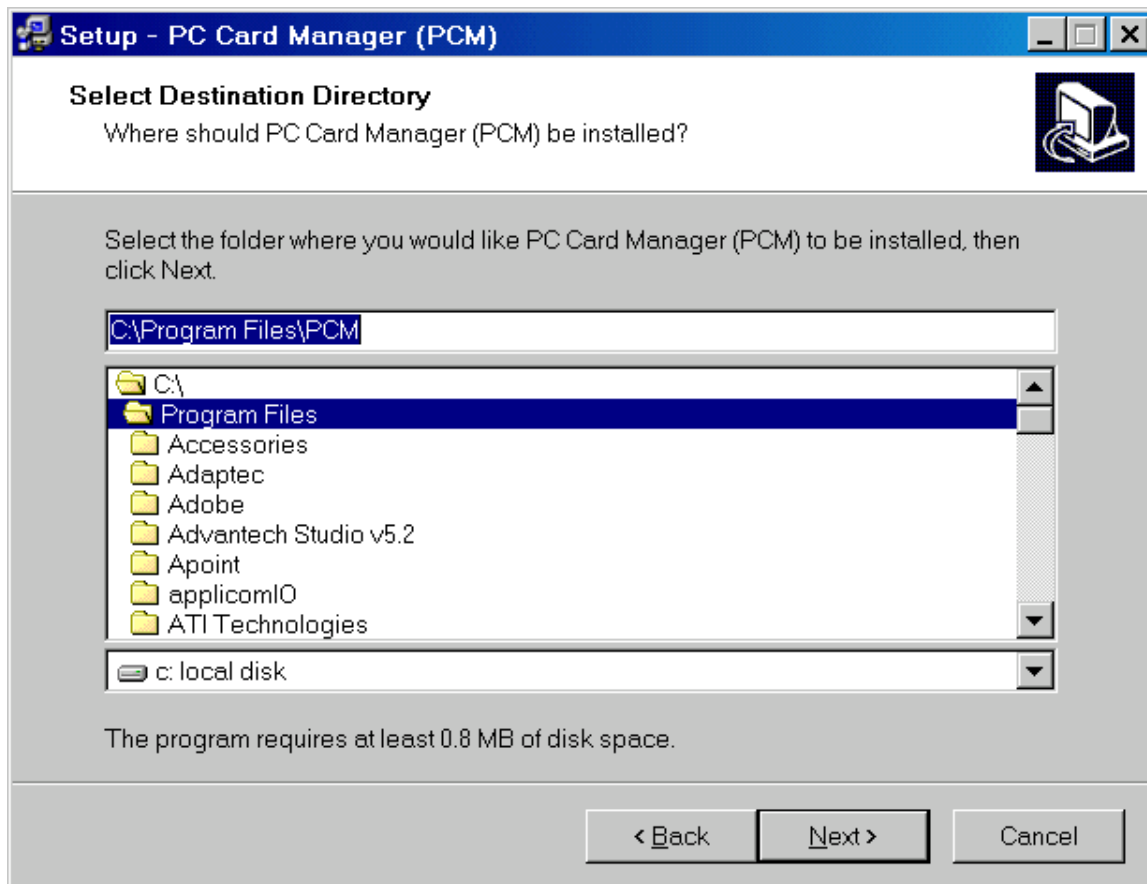
- Click on 'PCM-Setup'. This installs the PC Card Manager that allows the user to transfer files to and from the PCMCIA card.



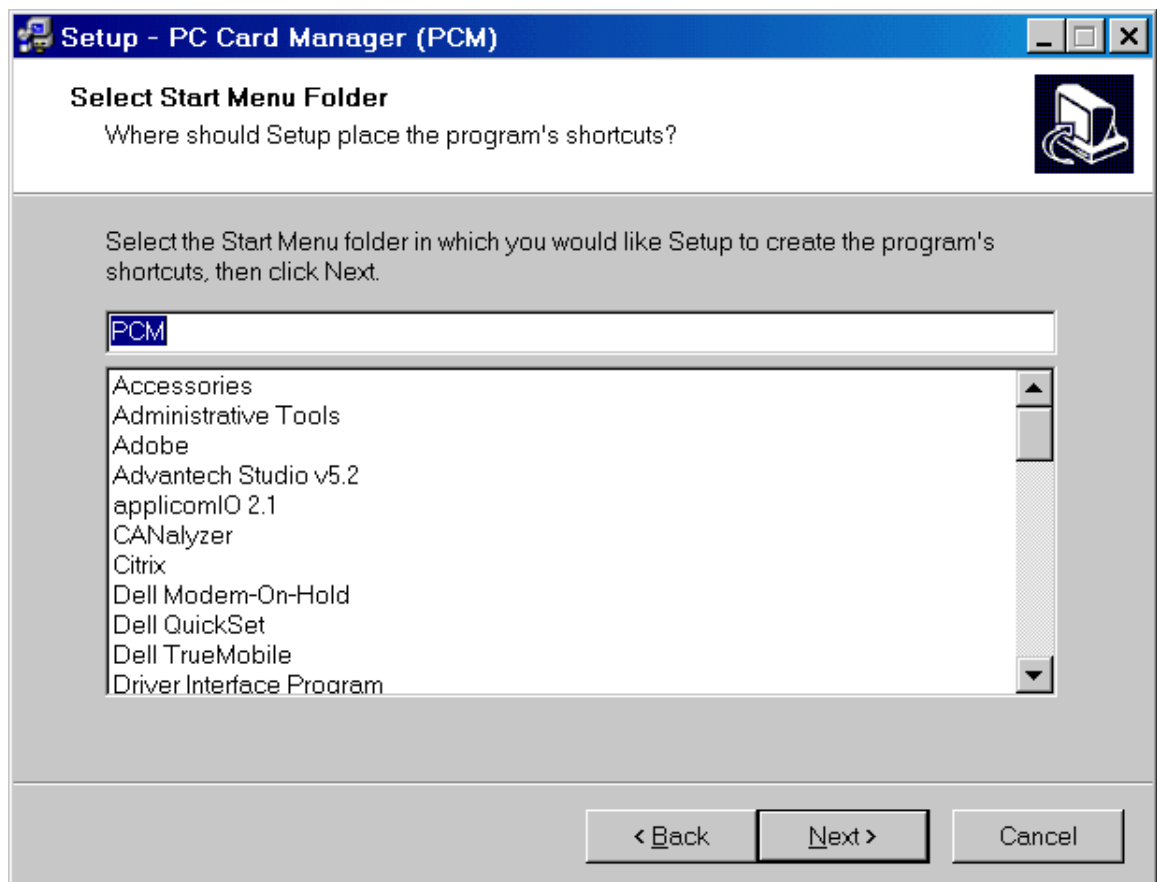
- Click 'Yes'.



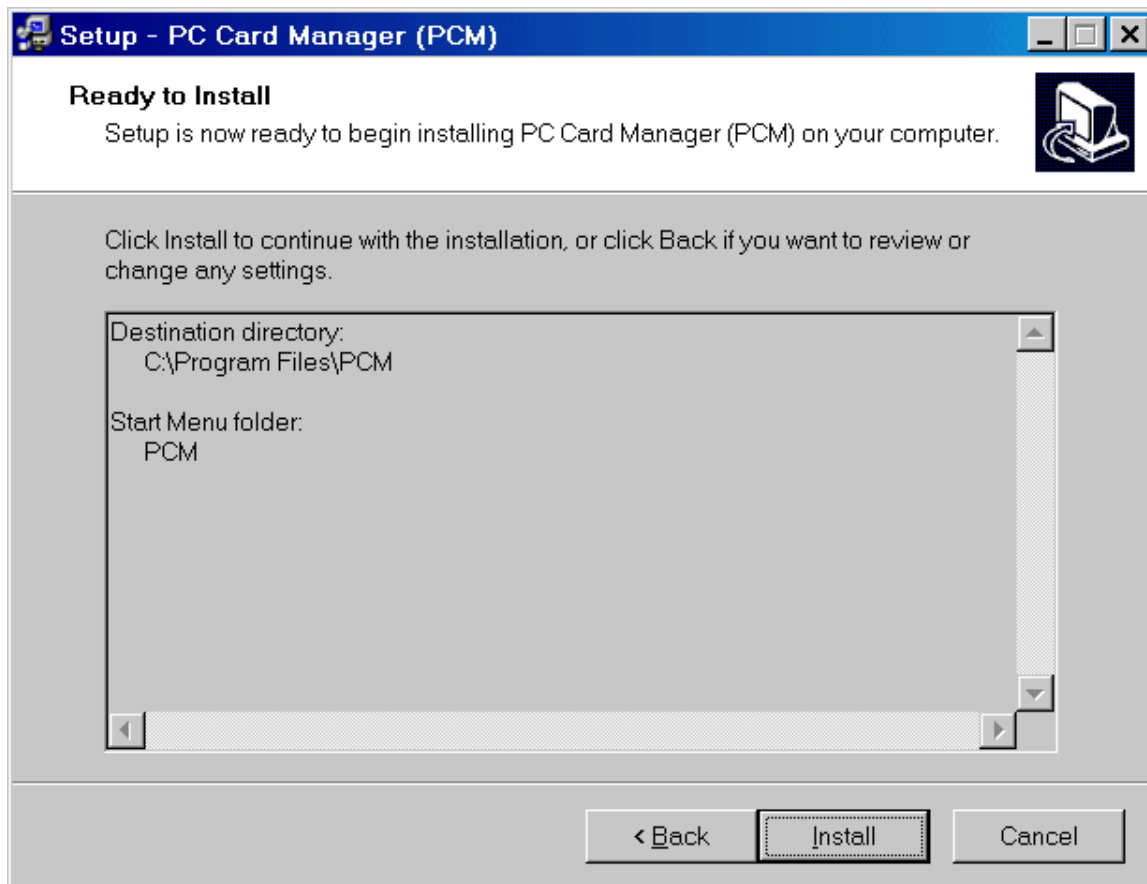
5. Click 'Next'.



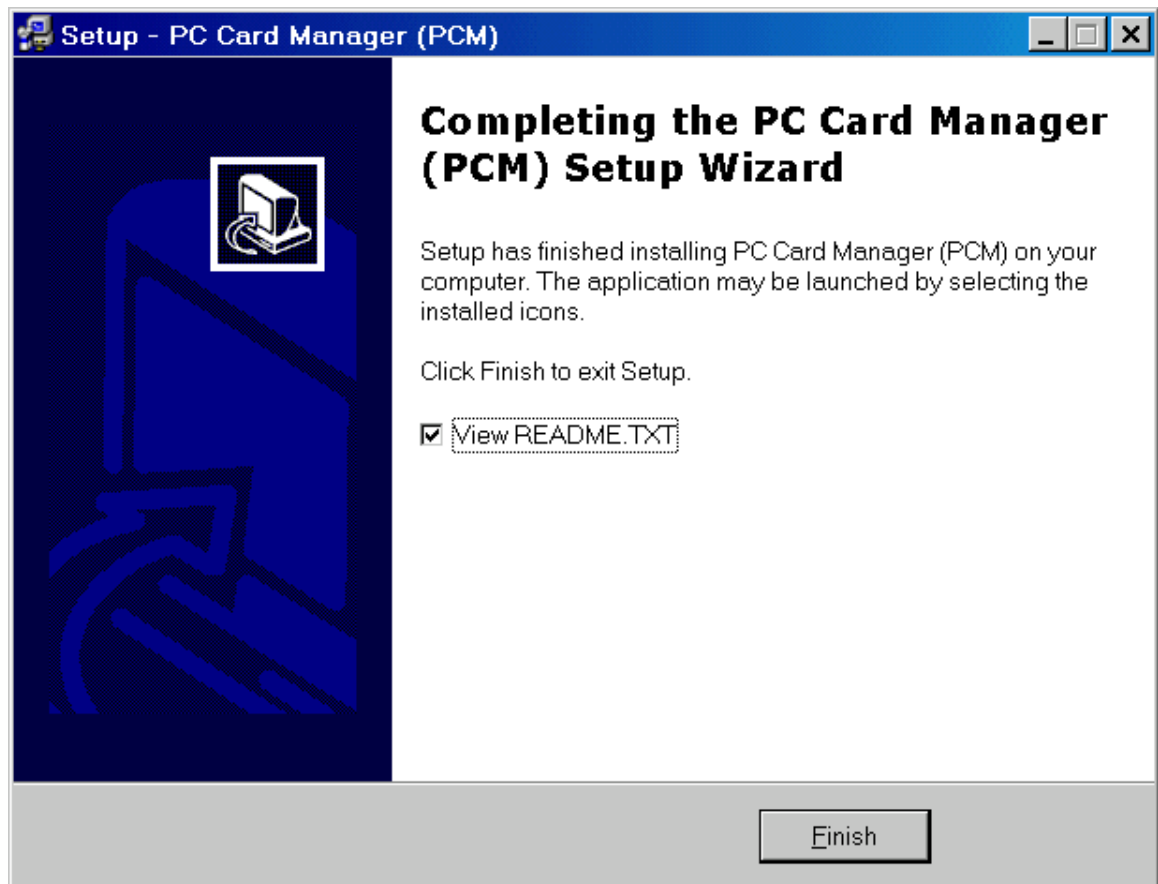
6. Select Destination Directory and click 'Next'.



7. Select Start Menu Folder and click 'Next'.



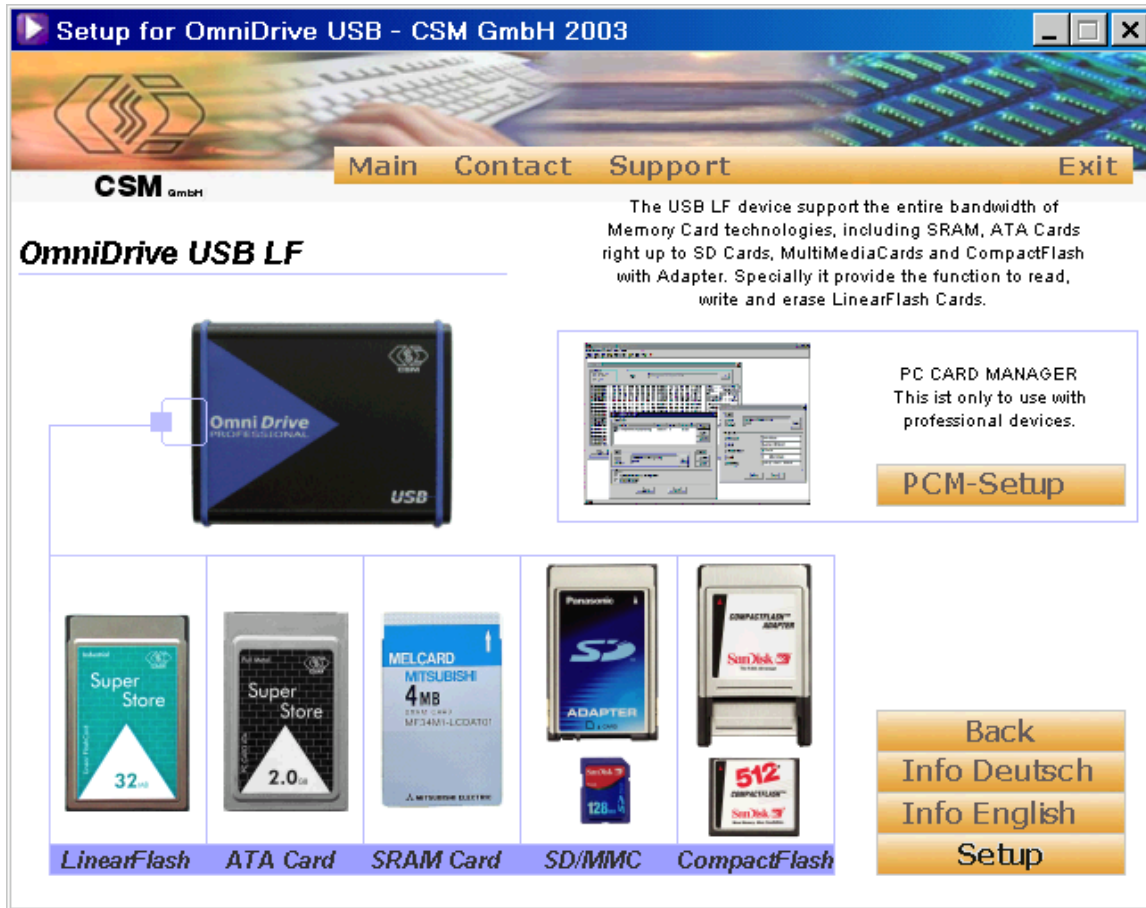
8. Click 'Install'.



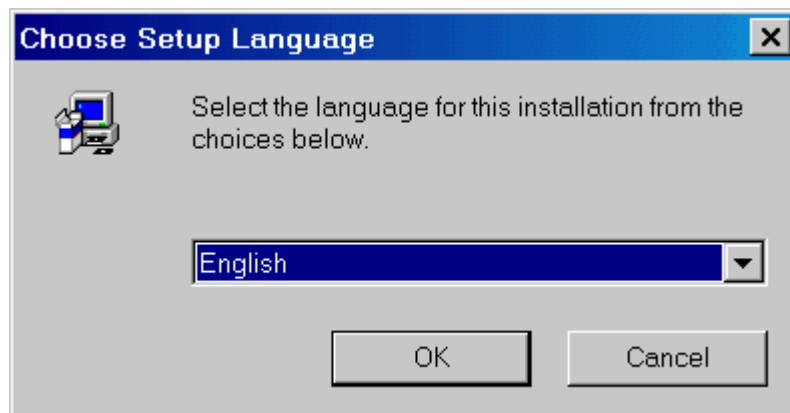
9. Click 'Finish'.

2—OmniDrive USB Professional (Hardware Driver) Installation

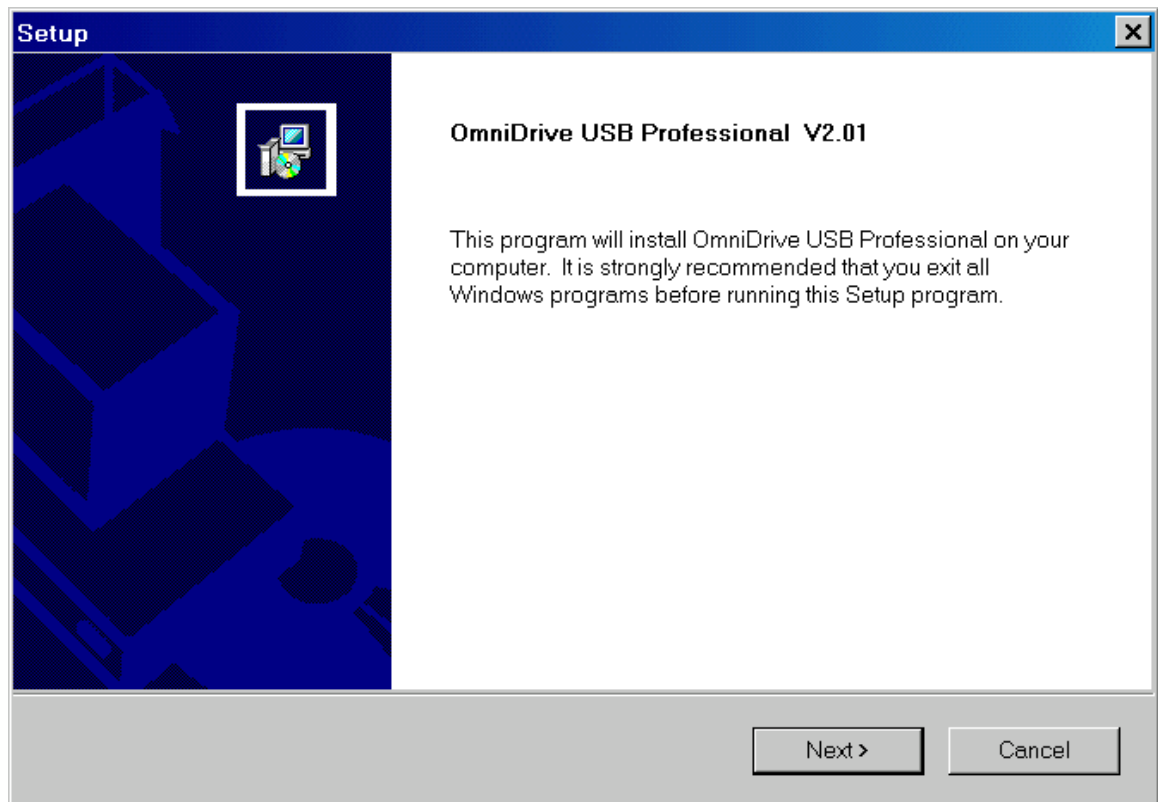
Windows operating system needs the USB device drivers to recognize the OmniDrive USB device.



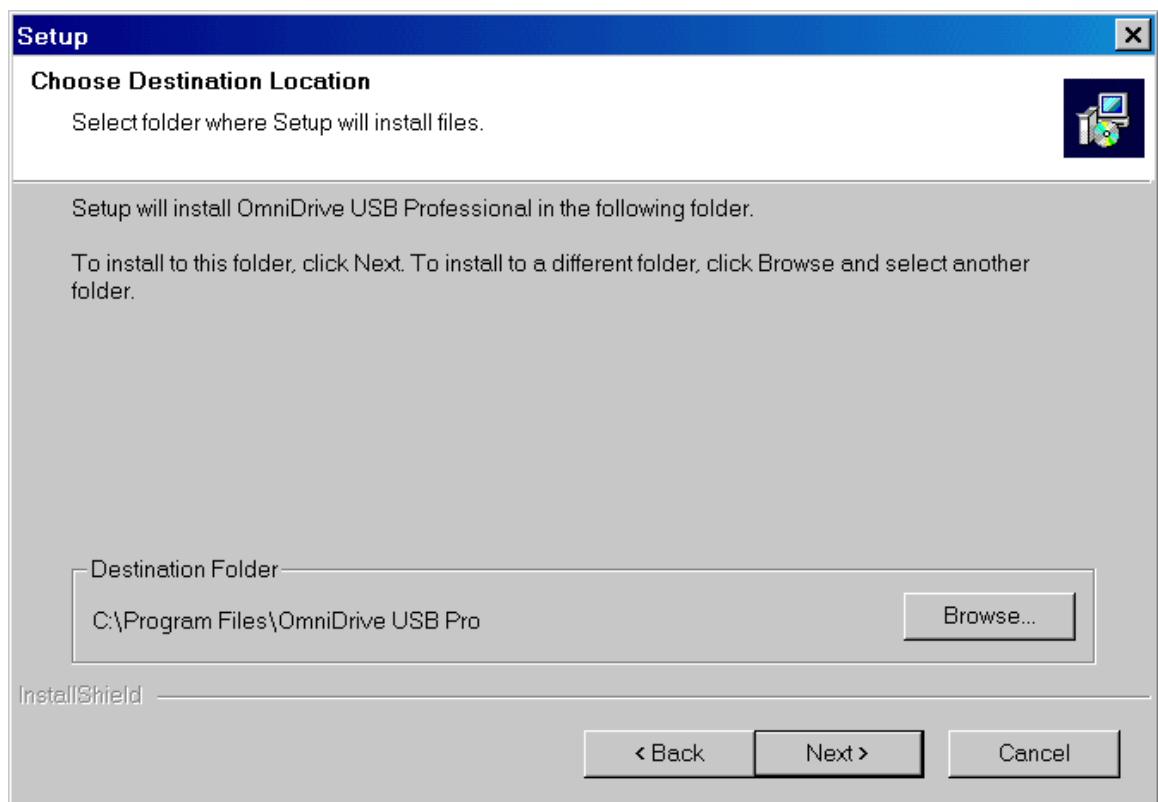
1. Click 'Setup' in the lower right hand corner of the Setup for OmniDrive USB screen.



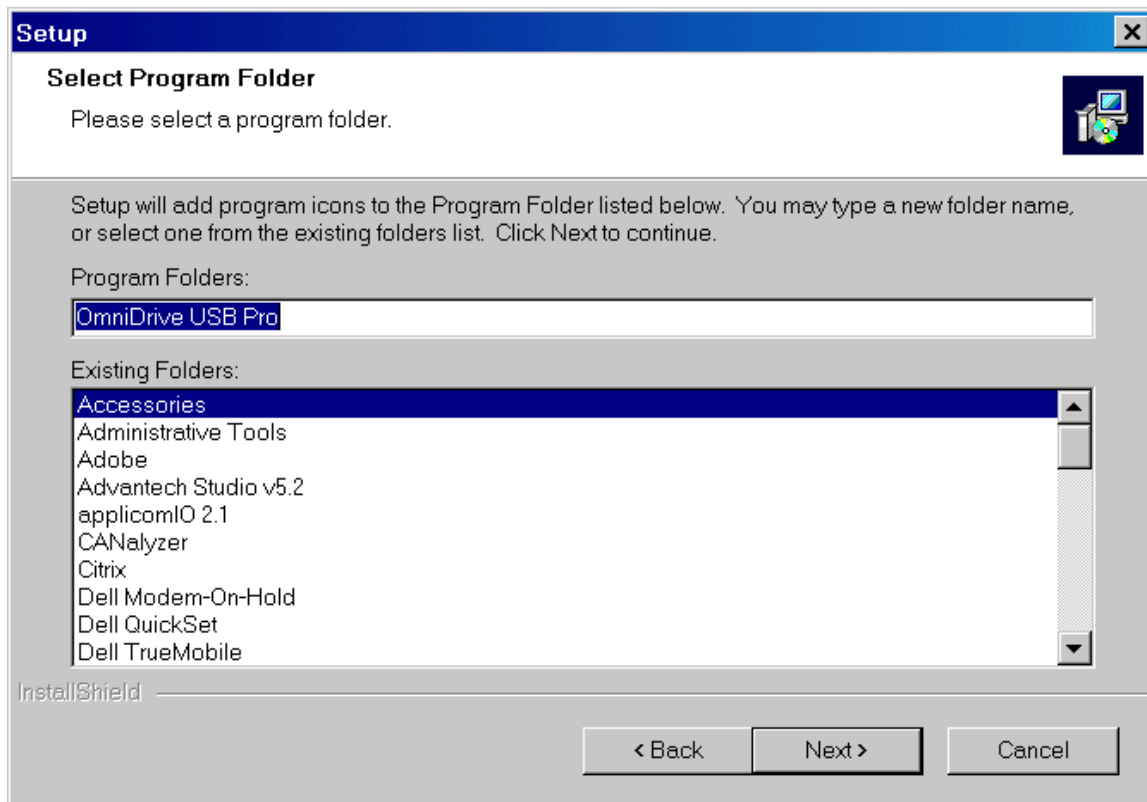
2. Choose Setup Language and click 'OK'.



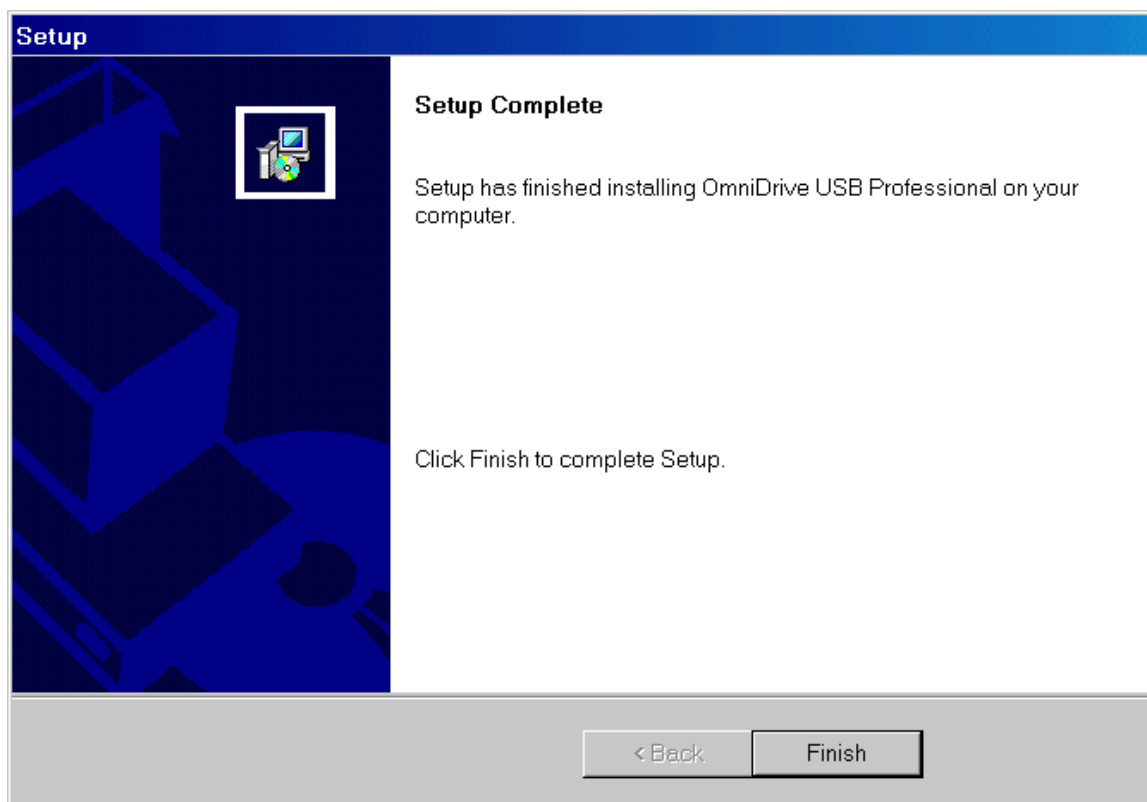
3. Click 'Next'.



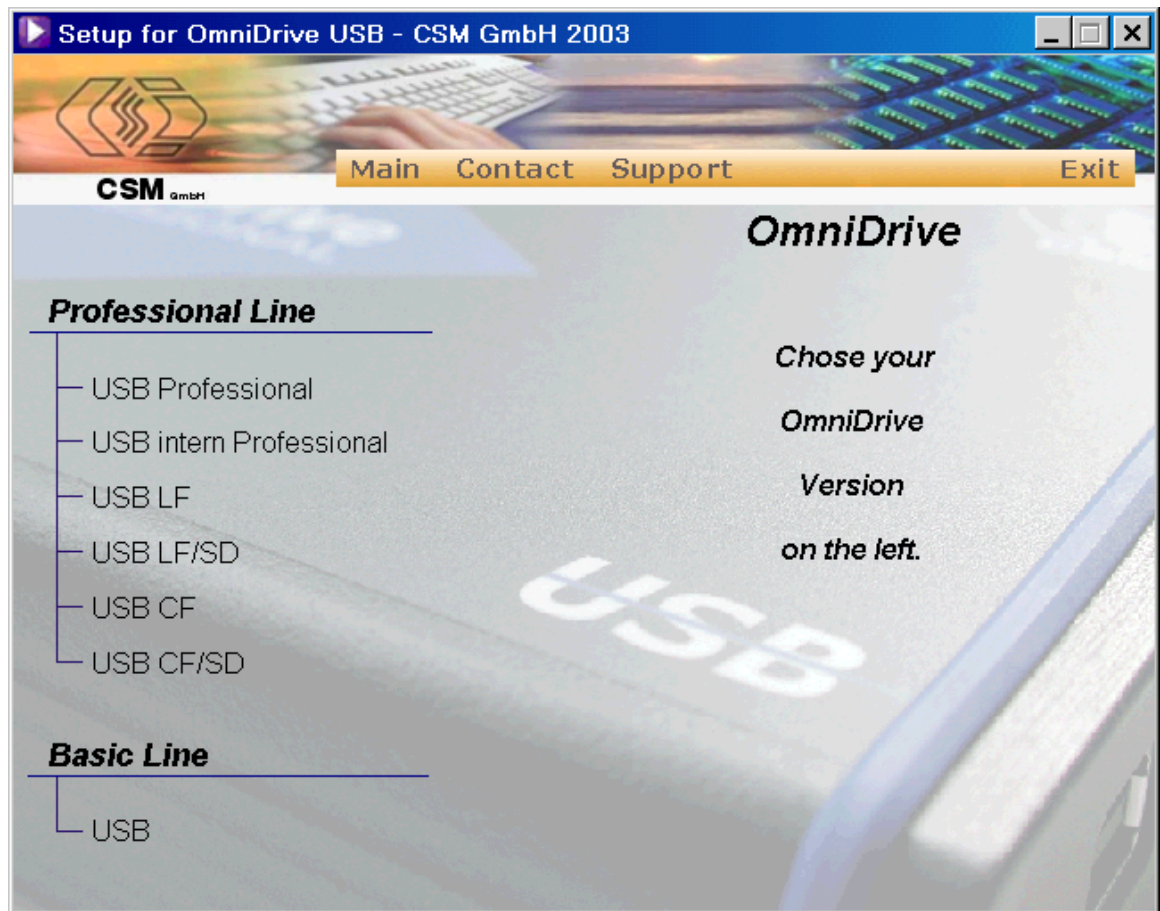
4. Click 'Next'.



5. Select Program Folder and click 'Next'.



6. Click 'Finish'.



7. Installation of the OmniDrive USB device drivers and PC Card Manger software is now complete. Press 'Exit'.

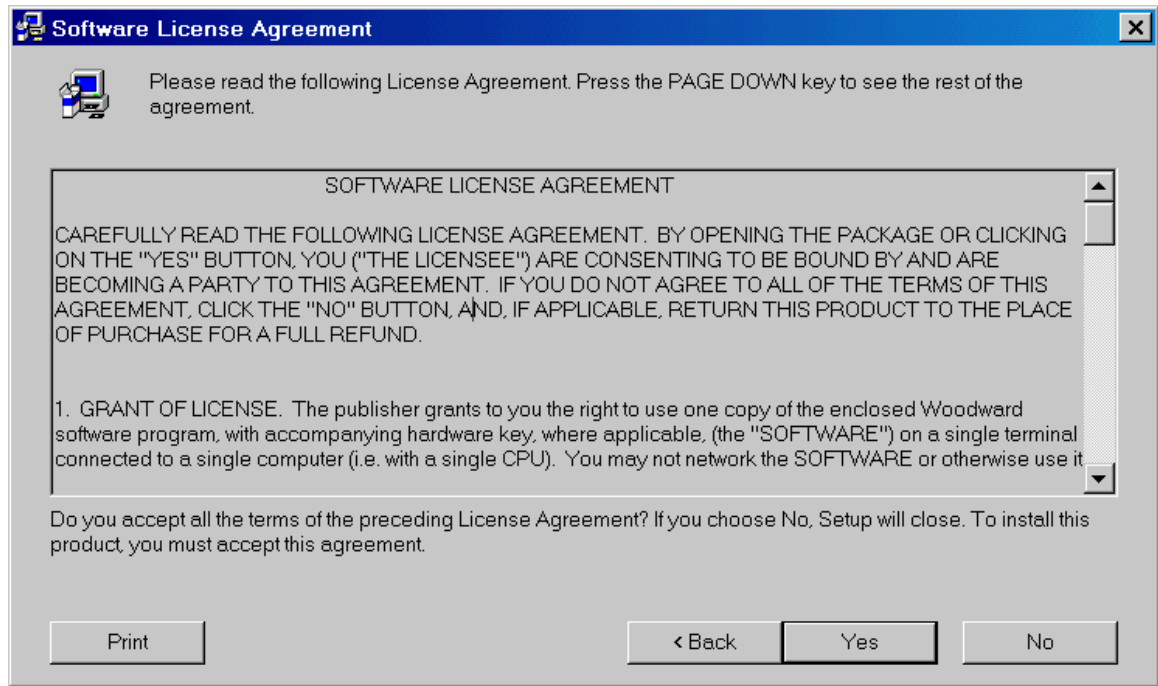
3—LF Image Build (Woodward Utility) Installation

Overview

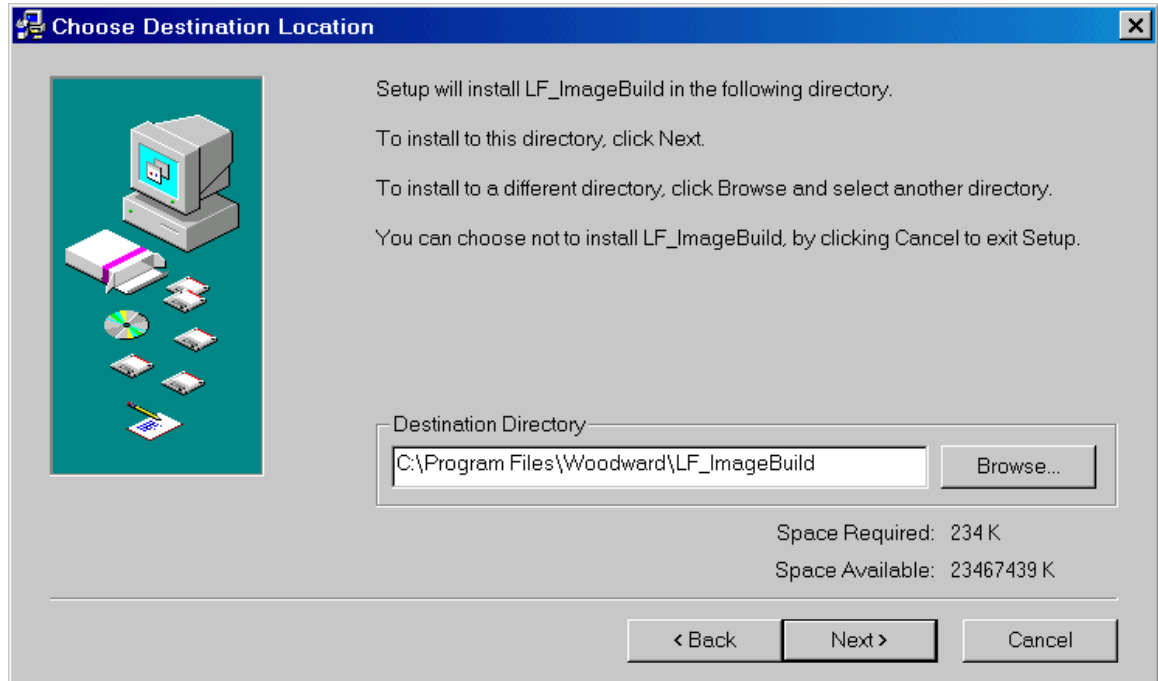
The LF Image Build software allows the user to create a .PCC file. A .PCC file is a recognized file extension by the PCMCIA card programmer. HEX and valve files must be packaged into .PCC files so they can be transferred to a PCMCIA card in a format that the Woodward CPU can read. The Woodward LF_ImageBuild utility performs this function.



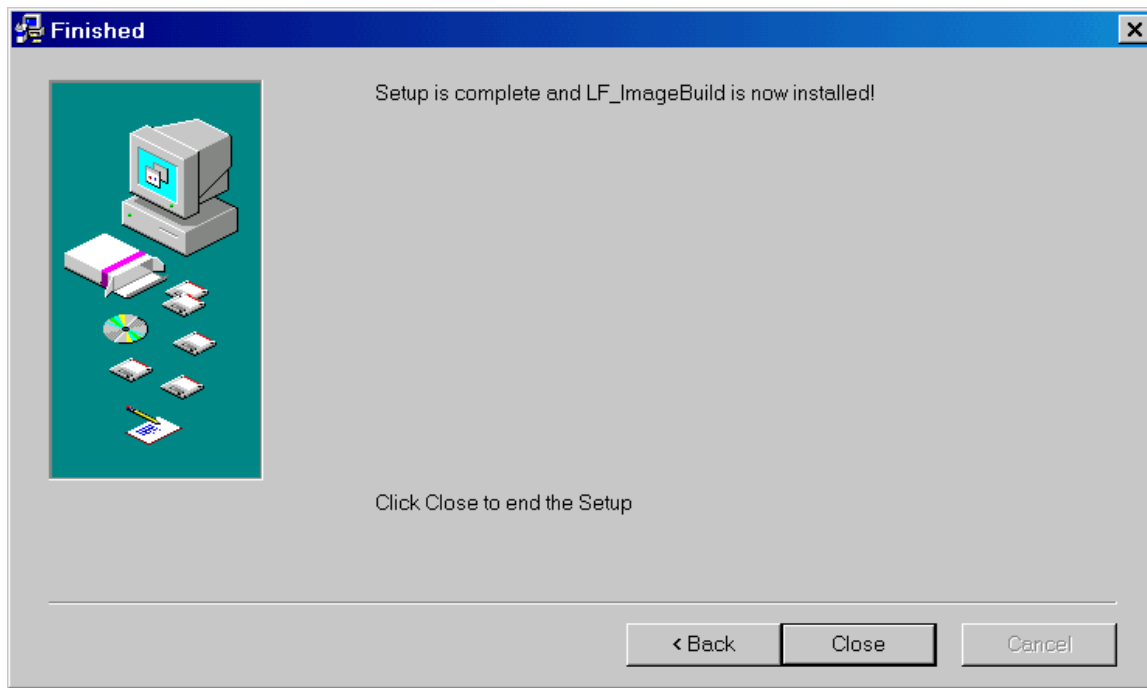
1. Download the LF_ImageBuild software from the **www.woodward.com/software**. After the download is complete, run 9927-1363-New.exe.



2. Press 'Yes'.



3. Press 'Next'.



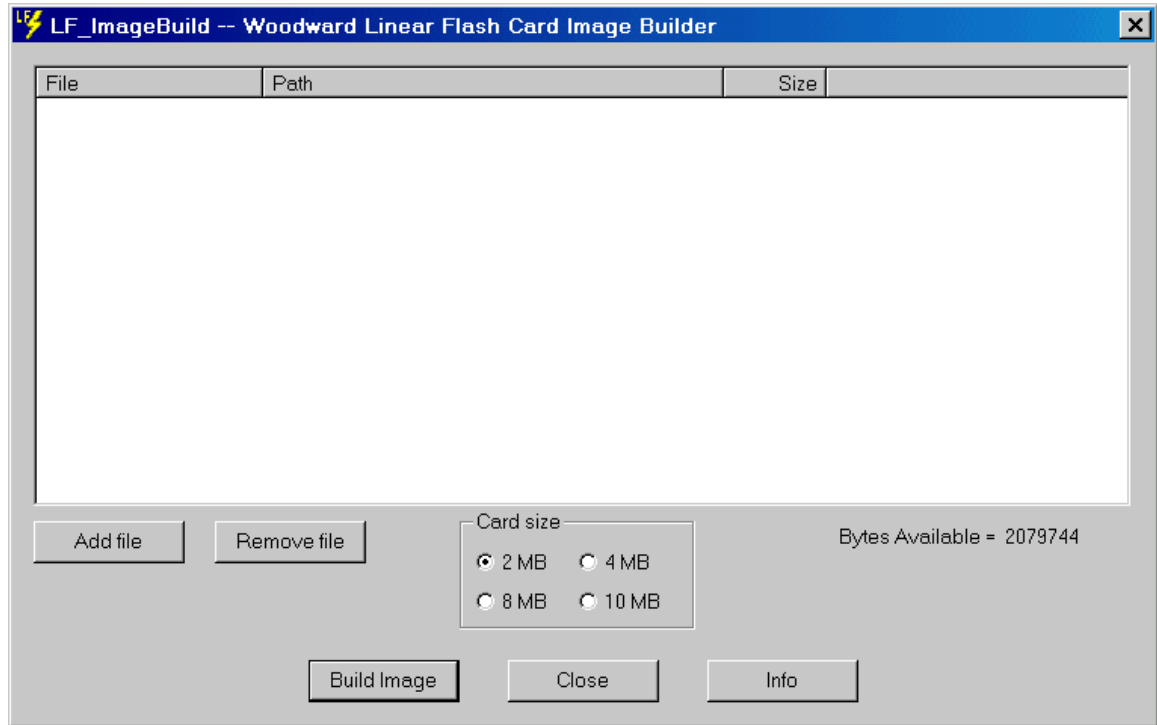
4. Press 'Close'. This completes the software installation.

Chapter 2. Programming Operations

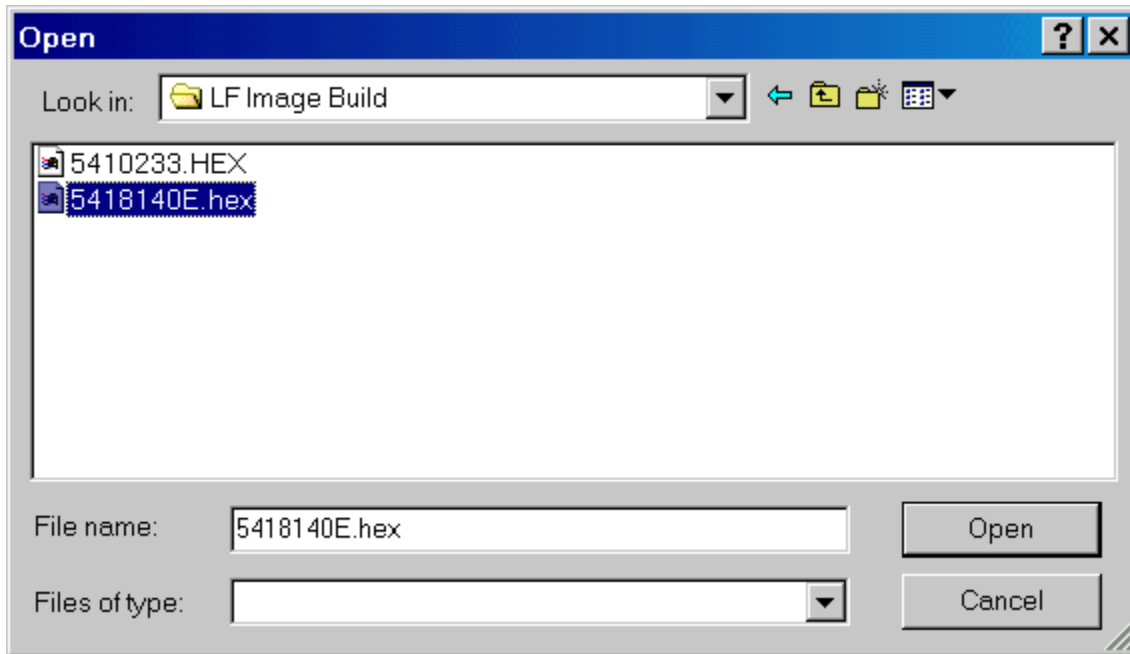
Creating a .PCC File

The LF_Imagebuild utility moves .HEX and .VLV files to a .PCC file, and formats the data so the Woodward CPU module can read it from the card.

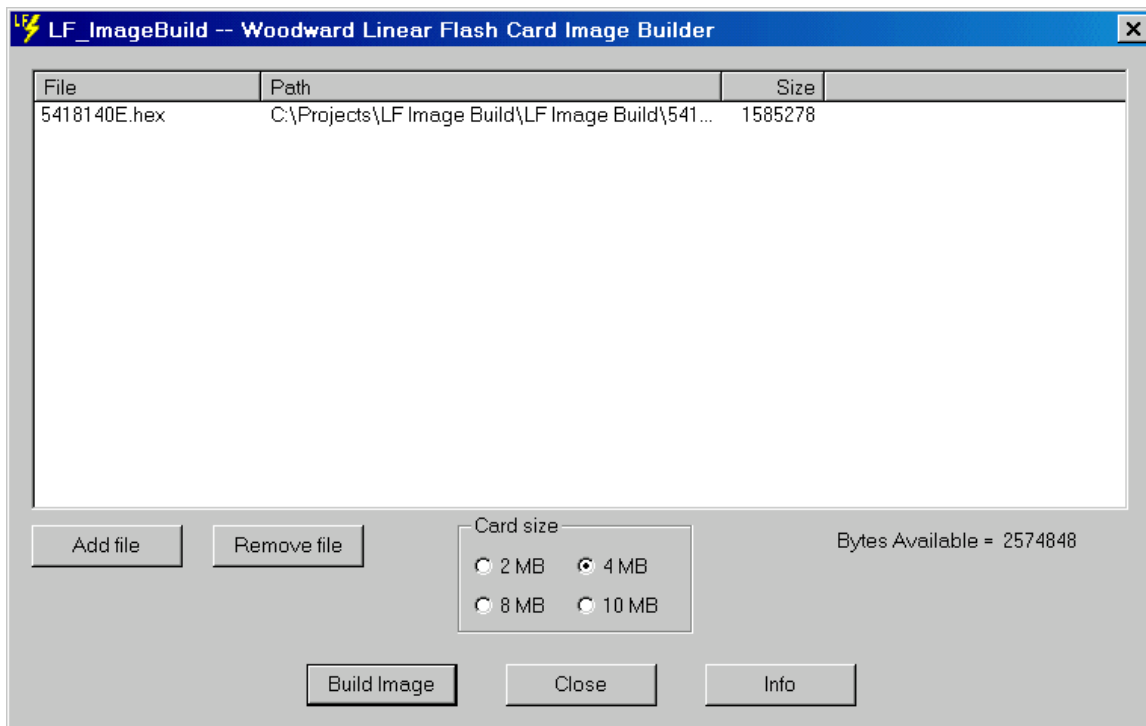
1. Launch LF_Imagebuild.



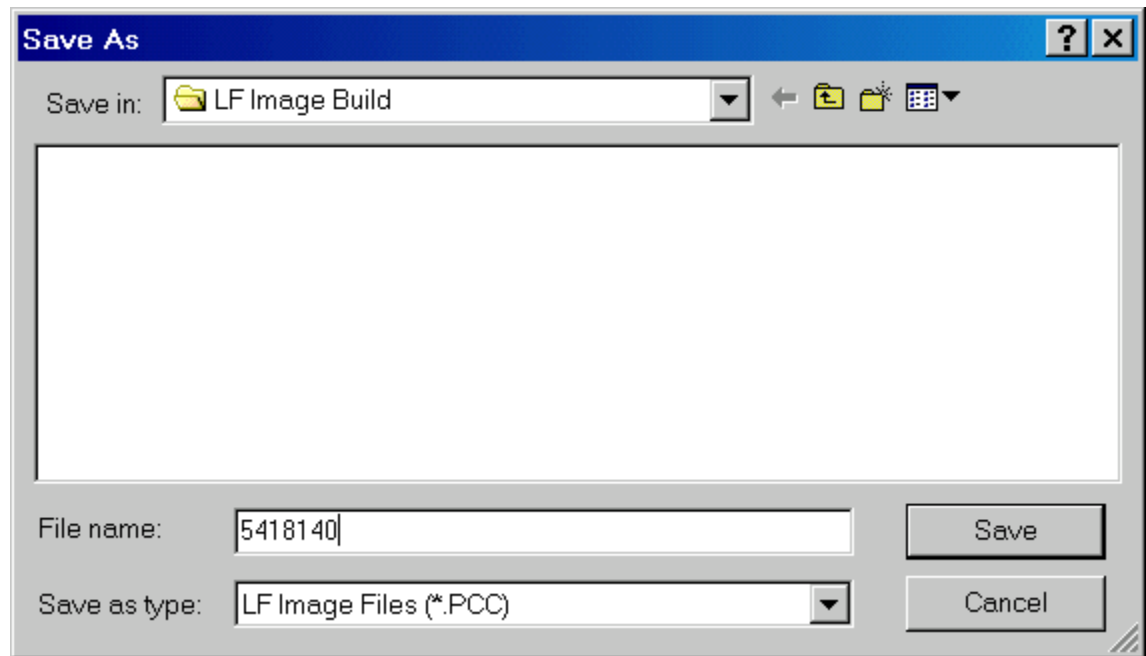
2. Click on 'Add file' and select the .hex file(s) to open from the pop up window.



3. Highlight the .hex or .vlv file(s) you want and press 'Open'.



4. After adding the desired .hex file(s), select the 'Card size' and press 'Build Image'.



5. Type in the desired name of the output file. As in this case, 5418140.PCC will be saved in the 'Save In' location.
6. The application will show that the file was built successfully. Press 'Close' to exit the LF Image Build Utility.

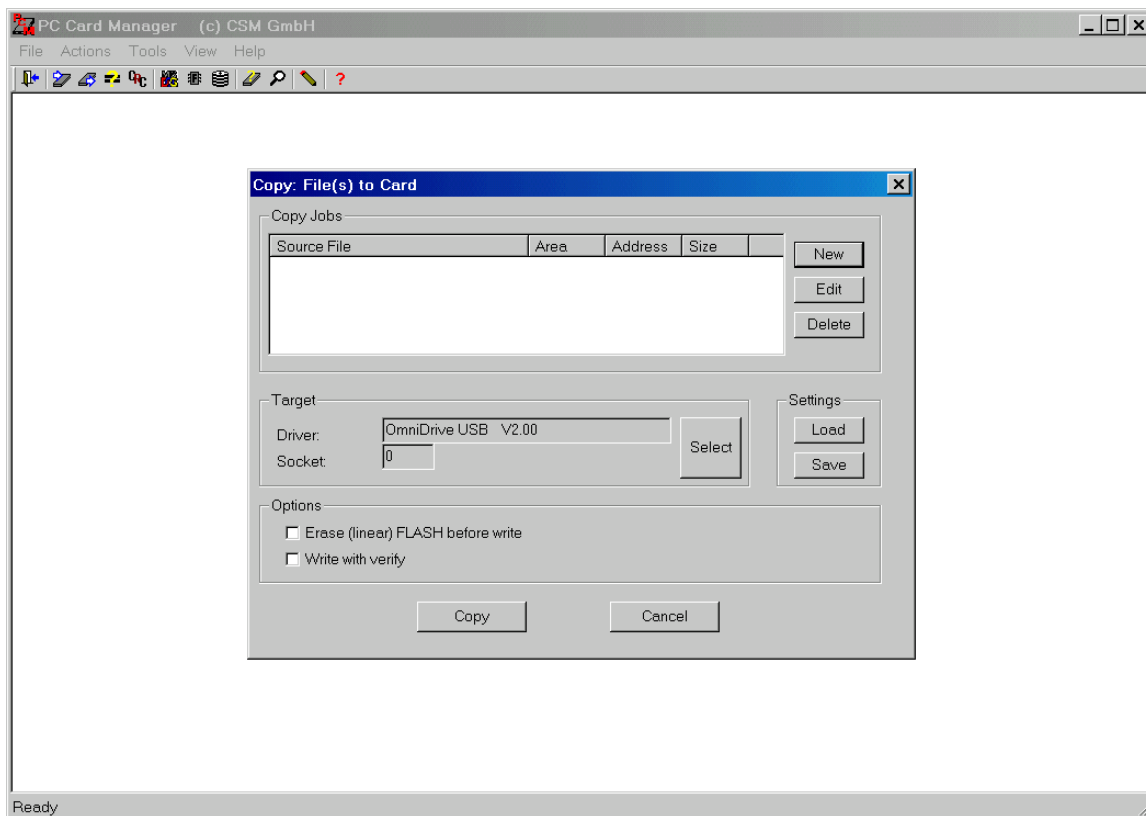
Programming a PCMCIA Card

IMPORTANT

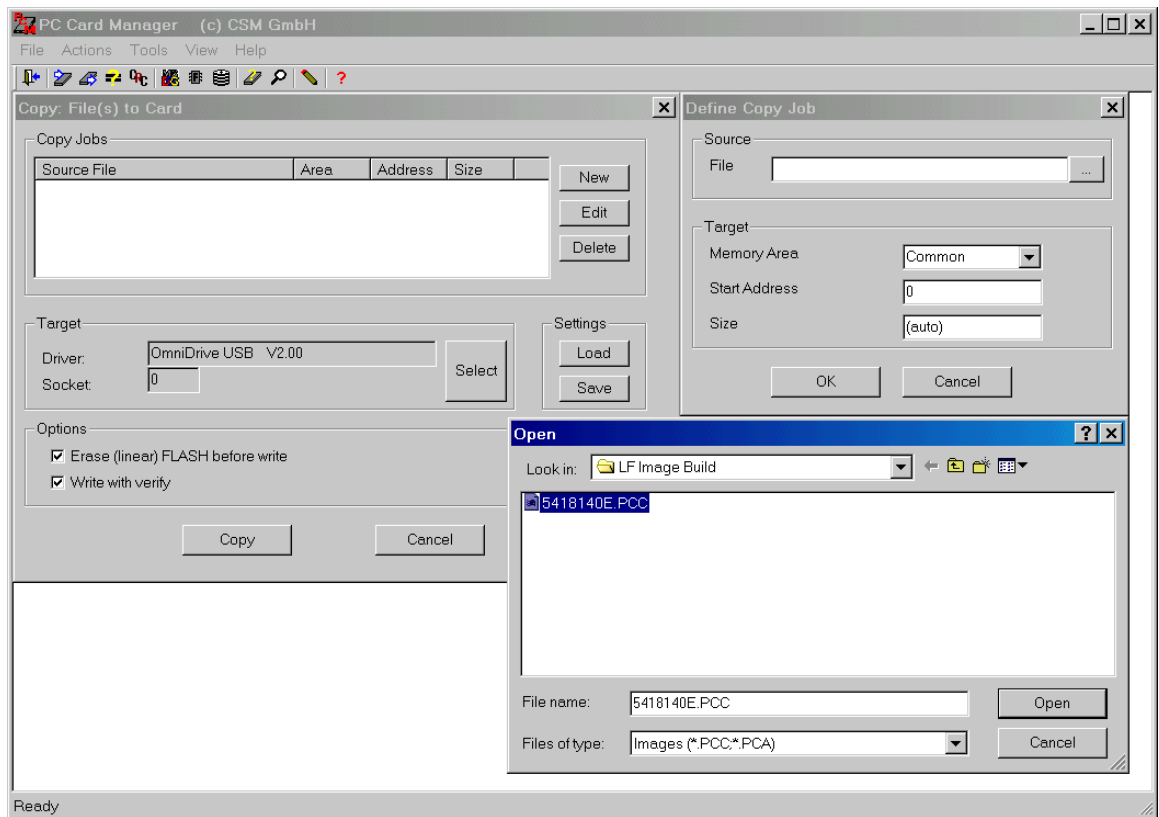
Only PCMCIA Linear Flash Cards using Intel Series 2 or Intel Series 2+ (flexible voltage) flash chips have been tested and approved for use with the Woodward 040 CPU. These are available in 2 MB, 4 MB, 8 MB, 10 MB, and some higher densities.

The 'series 2' cards have a programming (write/erase) voltage of 12 V and are read with 5 V signals. The 'series 2+' cards will read, erase, and program with 3.3 or 5 V signals, and do not require 12 V to erase (they create the voltage internally), thus the "flexible voltage" label. Both series 2 and series 2+ cards are read with 5 V signals in the 040 CPU.

Before opening the PC Card Manager, connect the OmniDrive USB Device. Do NOT use a USB hub to connect to the OmniDrive USB Device. Insert a Flash Memory Card into the OmniDrive USB Device. The red LED will flash when the OmniDrive is accessing the flash memory card. The Green LED will illuminate when the OmniDrive device has power.



1. Open PC Card Manager, select Actions → Copy → File(s) to Card.



2. Press 'New'.
3. In the 'Define Copy Job' pop up window, press the '...' button to the right of the Source File box and browse to the .PCC file you created with the LF Image Build program. Press 'Open'.
4. Select Memory Area to Common, Start Address and Size to defaults. Press 'OK'.

Copy: File(s) to Card [X]

Copy Jobs

| Source File | Area | Address | Size |
|--------------------------------------------------------------|--------|---------|--------|
| <input type="checkbox"/> C:\Projects\LF Image Build\LF Im... | Common | 0 | (auto) |

New
Edit
Delete

Target

Driver: OmniDrive USB V2.00
Socket: 0

Select

Settings

Load
Save

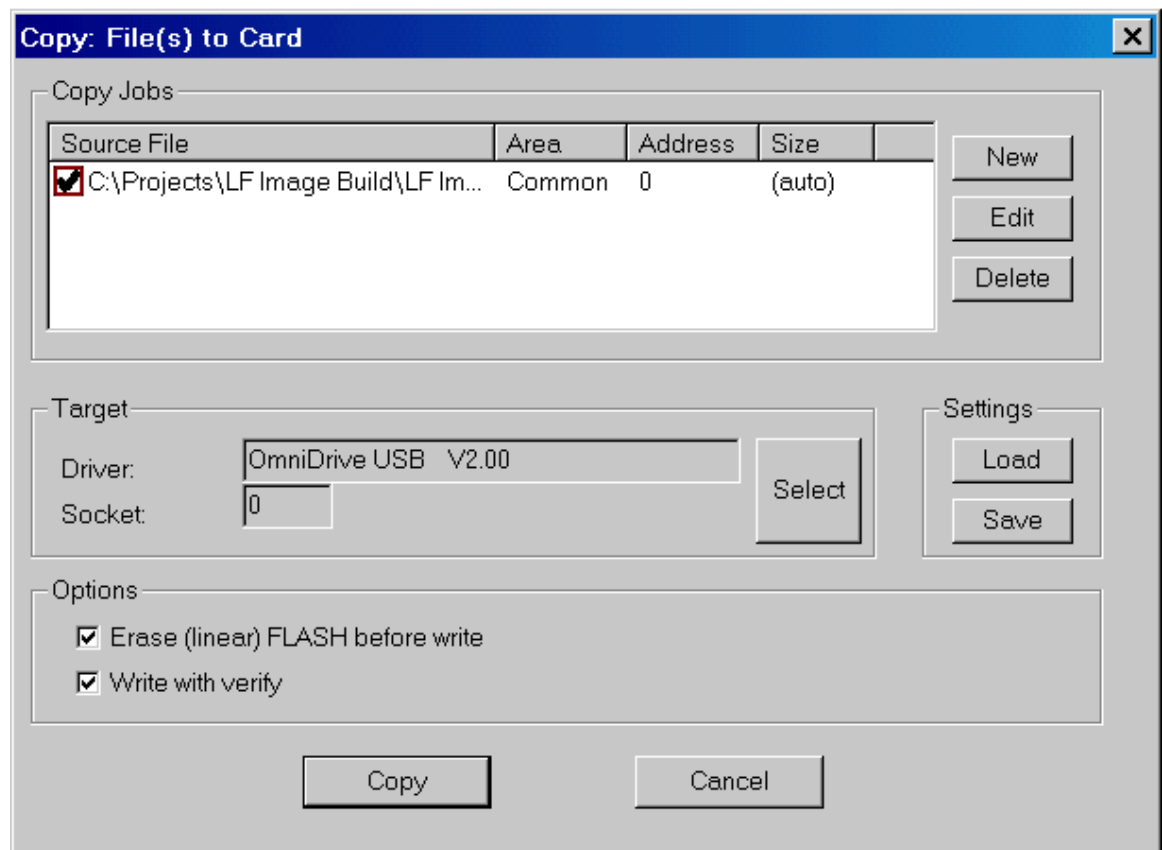
Options

☒ Erase (linear) FLASH before write
☒ Write with verify

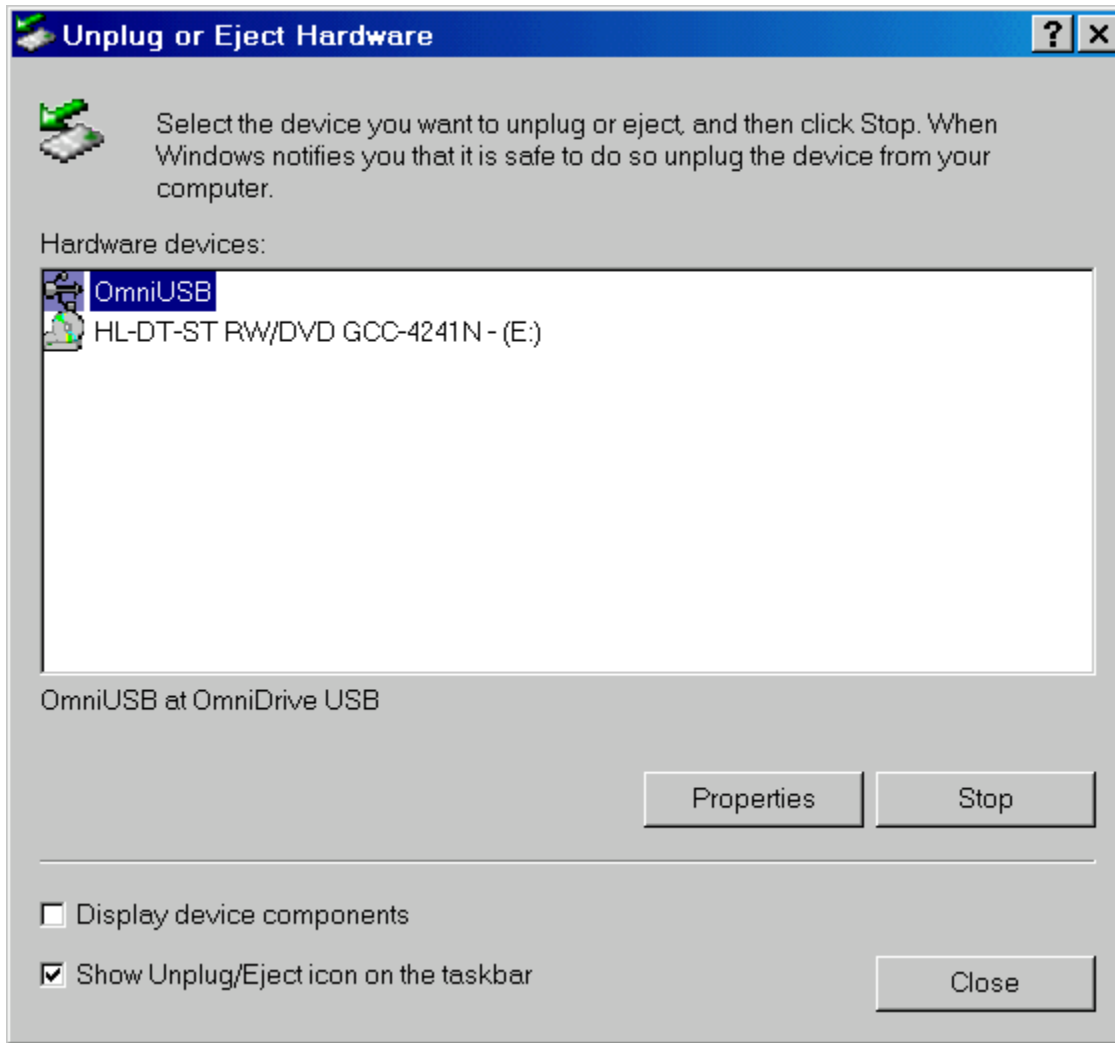
Copy Cancel

The 'Source File' will show the path and .PCC file to be copied to the PCMCIA card. The 'Target' box should show Driver: OmniDrive USB V2.00 and Socket: 0. If the Driver box is empty, the OmniDrive USB device drivers are not installed or installed incorrectly.

5. Select 'Erase (linear) FLASH before write' checkbox and 'Write with verify' checkbox. Press 'Copy'.



6. After the copy is complete the check box next to the source file will be selected. Press 'Cancel' to exit the copy function.



7. Disconnect the Omni USB device with the Unplug or Eject Hardware utility in Windows.
8. Remove the PCMCIA card from the programmer.
9. The card is now ready to program a NetCon[®] or MicroNet[™] 040 CPU module.

Chapter 3.

Product Support and Service Options

Product Support Options

If you are experiencing problems with the installation, or unsatisfactory performance of a Woodward product, the following options are available:

1. Consult the troubleshooting guide in the manual.
2. Contact the **OE Manufacturer or Packager** of your system.
3. Contact the **Woodward Business Partner** serving your area.
4. Contact Woodward technical assistance via email (EngineHelpDesk@Woodward.com) with detailed information on the product, application, and symptoms. Your email will be forwarded to an appropriate expert on the product and application to respond by telephone or return email.
5. If the issue cannot be resolved, you can select a further course of action to pursue based on the available services listed in this chapter.

OEM or Packager Support: Many Woodward controls and control devices are installed into the equipment system and programmed by an Original Equipment Manufacturer (OEM) or Equipment Packager at their factory. In some cases, the programming is password-protected by the OEM or packager, and they are the best source for product service and support. Warranty service for Woodward products shipped with an equipment system should also be handled through the OEM or Packager. Please review your equipment system documentation for details.

Woodward Business Partner Support: Woodward works with and supports a global network of independent business partners whose mission is to serve the users of Woodward controls, as described here:

- A **Full-Service Distributor** has the primary responsibility for sales, service, system integration solutions, technical desk support, and aftermarket marketing of standard Woodward products within a specific geographic area and market segment.
- An **Authorized Independent Service Facility (AISF)** provides authorized service that includes repairs, repair parts, and warranty service on Woodward's behalf. Service (not new unit sales) is an AISF's primary mission.
- A **Recognized Engine Retrofitter (RER)** is an independent company that does retrofits and upgrades on reciprocating gas engines and dual-fuel conversions, and can provide the full line of Woodward systems and components for the retrofits and overhauls, emission compliance upgrades, long term service contracts, emergency repairs, etc.

A current list of Woodward Business Partners is available at www.woodward.com/directory.

Product Service Options

Depending on the type of product, the following options for servicing Woodward products may be available through your local Full-Service Distributor or the OEM or Packager of the equipment system.

- Replacement/Exchange (24-hour service)
- Flat Rate Repair
- Flat Rate Remanufacture

Replacement/Exchange: Replacement/Exchange is a premium program designed for the user who is in need of immediate service. It allows you to request and receive a like-new replacement unit in minimum time (usually within 24 hours of the request), providing a suitable unit is available at the time of the request, thereby minimizing costly downtime.

This option allows you to call your Full-Service Distributor in the event of an unexpected outage, or in advance of a scheduled outage, to request a replacement control unit. If the unit is available at the time of the call, it can usually be shipped out within 24 hours. You replace your field control unit with the like-new replacement and return the field unit to the Full-Service Distributor.

Flat Rate Repair: Flat Rate Repair is available for many of the standard mechanical products and some of the electronic products in the field. This program offers you repair service for your products with the advantage of knowing in advance what the cost will be.

Flat Rate Remanufacture: Flat Rate Remanufacture is very similar to the Flat Rate Repair option, with the exception that the unit will be returned to you in “like-new” condition. This option is applicable to mechanical products only.

Returning Equipment for Repair

If a control (or any part of an electronic control) is to be returned for repair, please contact your Full-Service Distributor in advance to obtain Return Authorization and shipping instructions.

When shipping the item(s), attach a tag with the following information:

- return number;
- name and location where the control is installed;
- name and phone number of contact person;
- complete Woodward part number(s) and serial number(s);
- description of the problem;
- instructions describing the desired type of repair.

Packing a Control

Use the following materials when returning a complete control:

- protective caps on any connectors;
- antistatic protective bags on all electronic modules;
- packing materials that will not damage the surface of the unit;
- at least 100 mm (4 inches) of tightly packed, industry-approved packing material;
- a packing carton with double walls;
- a strong tape around the outside of the carton for increased strength.

NOTICE

To prevent damage to electronic components caused by improper handling, read and observe the precautions in Woodward manual 82715, *Guide for Handling and Protection of Electronic Controls, Printed Circuit Boards, and Modules*.

Replacement Parts

When ordering replacement parts for controls, include the following information:

- the part number(s) (XXXX-XXXX) that is on the enclosure nameplate;
- the unit serial number, which is also on the nameplate.

Engineering Services

Woodward's Full-Service Distributors offer various Engineering Services for our products. For these services, you can contact the Distributor by telephone or by email.

- Technical Support
- Product Training
- Field Service

Technical Support is available from your equipment system supplier, your local Full-Service Distributor, or from many of Woodward's worldwide locations, depending upon the product and application. This service can assist you with technical questions or problem solving during the normal business hours of the Woodward location you contact.

Product Training is available as standard classes at many Distributor locations. Customized classes are also available, which can be tailored to your needs and held at one of our Distributor locations or at your site. This training, conducted by experienced personnel, will assure that you will be able to maintain system reliability and availability.

Field Service engineering on-site support is available, depending on the product and location, from one of our Full-Service Distributors. The field engineers are experienced both on Woodward products as well as on much of the non-Woodward equipment with which our products interface.

For information on these services, please contact one of the Full-Service Distributors listed at www.woodward.com/directory.

Contacting Woodward's Support Organization

For the name of your nearest Woodward Full-Service Distributor or service facility, please consult our worldwide directory published at www.woodward.com/directory.

You can also contact the Woodward Customer Service Department at one of the following Woodward facilities to obtain the address and phone number of the nearest facility at which you can obtain information and service.

Products Used In Electrical Power Systems

| <u>Facility</u> ----- | <u>Phone Number</u> |
|-----------------------|---------------------|
| Brazil ----- | +55 (19) 3708 4800 |
| China ----- | +86 (512) 6762 6727 |
| Germany: | |
| Kempen---- | +49 (0) 21 52 14 51 |
| Stuttgart-- | +49 (711) 78954-510 |
| India ----- | +91 (129) 4097100 |
| Japan----- | +81 (43) 213-2191 |
| Korea ----- | +82 (51) 636-7080 |
| Poland----- | +48 12 295 13 00 |
| United States---- | +1 (970) 482-5811 |

Products Used In Engine Systems

| <u>Facility</u> ----- | <u>Phone Number</u> |
|-----------------------|---------------------|
| Brazil ----- | +55 (19) 3708 4800 |
| China ----- | +86 (512) 6762 6727 |
| Germany----- | +49 (711) 78954-510 |
| India ----- | +91 (129) 4097100 |
| Japan----- | +81 (43) 213-2191 |
| Korea ----- | +82 (51) 636-7080 |
| The Netherlands- | +31 (23) 5661111 |
| United States---- | +1 (970) 482-5811 |

Products Used In Industrial Turbomachinery Systems

| <u>Facility</u> ----- | <u>Phone Number</u> |
|-----------------------|---------------------|
| Brazil ----- | +55 (19) 3708 4800 |
| China ----- | +86 (512) 6762 6727 |
| India ----- | +91 (129) 4097100 |
| Japan----- | +81 (43) 213-2191 |
| Korea ----- | +82 (51) 636-7080 |
| The Netherlands- | +31 (23) 5661111 |
| Poland----- | +48 12 295 13 00 |
| United States---- | +1 (970) 482-5811 |

For the most current product support and contact information, please visit our website directory at www.woodward.com/directory.

Technical Assistance

If you need to contact technical assistance, you will need to provide the following information. Please write it down here before contacting the Engine OEM, the Packager, a Woodward Business Partner, or the Woodward factory:

General

Your Name _____

Site Location _____

Phone Number _____

Fax Number _____

Prime Mover Information

Manufacturer _____

Engine Model Number _____

Number of Cylinders _____

Type of Fuel (gas, gaseous, diesel,
dual-fuel, etc.) _____

Power Output Rating _____

Application (power generation, marine,
etc.) _____

Control/Governor Information

Control/Governor #1

Woodward Part Number & Rev. Letter _____

Control Description or Governor Type _____

Serial Number _____

Control/Governor #2

Woodward Part Number & Rev. Letter _____

Control Description or Governor Type _____

Serial Number _____

Control/Governor #3

Woodward Part Number & Rev. Letter _____

Control Description or Governor Type _____

Serial Number _____

Symptoms

Description _____

If you have an electronic or programmable control, please have the adjustment setting positions or the menu settings written down and with you at the time of the call.

We appreciate your comments about the content of our publications.

Send comments to: icinfo@woodward.com

Please reference publication 26356.



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Email and Website—www.woodward.com

**Woodward has company-owned plants, subsidiaries, and branches,
as well as authorized distributors and other authorized service and sales facilities throughout the world.**

Complete address / phone / fax / email information for all locations is available on our website.