USER GUIDE

ATEC EPROM '07

V | 1.0

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Preface

Welcome to the ATEC EPROM Programmer User Guide!

The *User Guide* tells you how to program EPROMs using the software and provides common troubleshooting information.

Structure of the Manual

This manual is organized by function. Operations are presented in order of probable use, but feel free to review the information in whatever manner you desire – even skip sections if the content is familiar.

Chapter 1 introduces you to the application. It provides an overview of the hardware and software features.

Chapter 2 walks you through the installation and setup process.

Chapter 3 shows you how to use the program to program EPROM modules.

Chapter 4 provides troubleshooting information.

Questions and Comments

Copies of this manual can be obtained directly from Technical Products Group via phone request, mail request, or from our World Wide Web site at http://www.tpgco.com. To provide feedback on this manual or suggest improvements, please send e-mail to sales@tpgco.com.

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Disclaimer

This document is designed to provide information about the TPG ATEC ‘07 hardware, computer program and related applications. Every effort has been made to make sure this document is as complete and accurate as possible, but no warranty or fitness is implied. All material provided with this application is subject to the terms and conditions of the purchase agreement between Allison Transmission and Technical Products Group Inc.

1

Introducing ATEC '07

ATEC '07 is a powerful new software application that provides the ability to program EPROM modules using the DataIO 3980 series of EPROM programmers.

Features

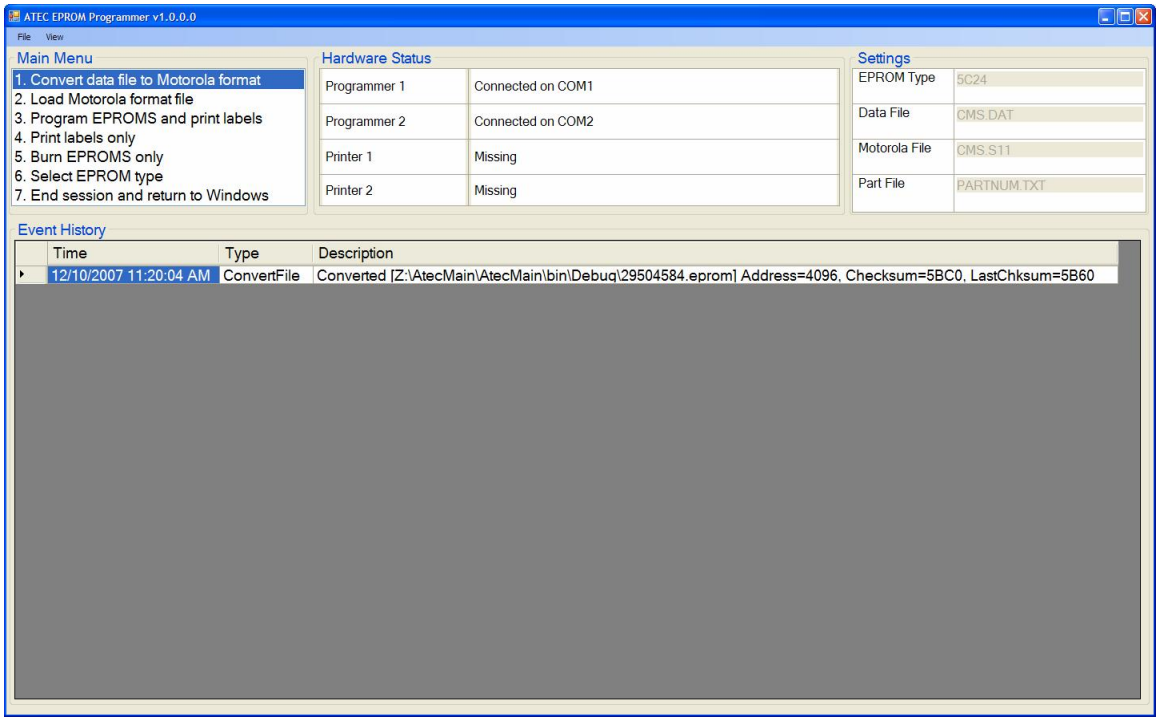
- Easy to use main menu interface (mouse not required).
- Main screen status display for EPROM Programmers and Printers.
- Event History that displays results of every action taken.
- Main screen display of current program settings.
- Complete diagnostics for EPROM Programmers and Printers.
- Troubleshooting log.
- Complete support for Microsoft Windows XP® and Windows Vista® Operating Systems.

ATEC ‘07 User Interface

ATEC ‘07 is a re-write of the existing EPROM Programming Station software. The User Interface has been designed to operate using the same menu interface used in the existing system. A Windows-style drop-down menu interface is also provided for compatibility and consistency with Windows applications. The application is designed to operate full-screen on a flat panel running 1440x900 screen resolutions.

The Main Screen

The ATEC ‘07 Main Screen is divided into five areas: The Windows menu, the Main Menu, Hardware Status, Settings, and Event History. The Main Screen is shown below:

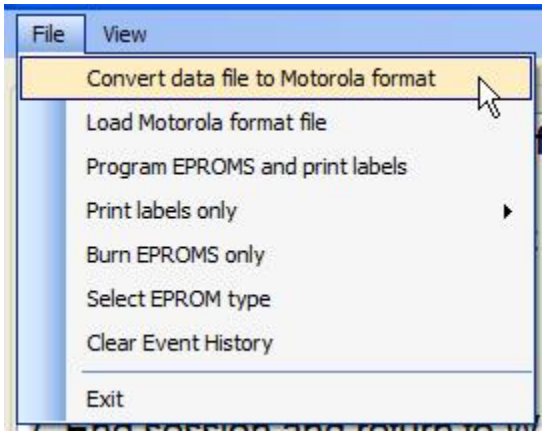


The Windows Menu

The Windows menu provides two menu options – File and View. These menus are available using the mouse or using the keyboard by pressing ALT+F for the File Menu and ALT+V for the View Menu.

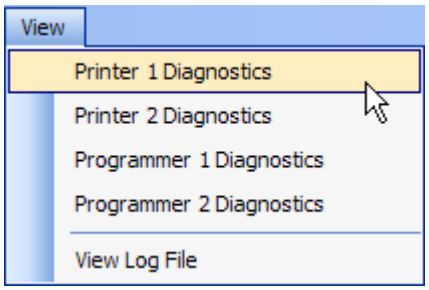
The File Menu

The File Menu provides the same options as the Main Menu using a Windows-style menu interface. It also provides an additional option to clear the Event History. The File Menu is shown below:



The View Menu

The View Menu provides functionality that is not available from the Main Menu. It is used to view diagnostics information pertinent to troubleshooting the system. The View Menu is shown below:



The Main Menu

The Main Menu is identical to the menu in the existing DOS-based ATEC System. Options may be selected from the Main Menu using the mouse or by entering the number of the Menu Option you wish to select. For example, press the [3] key on the keyboard to "Program EPROMS and print labels".

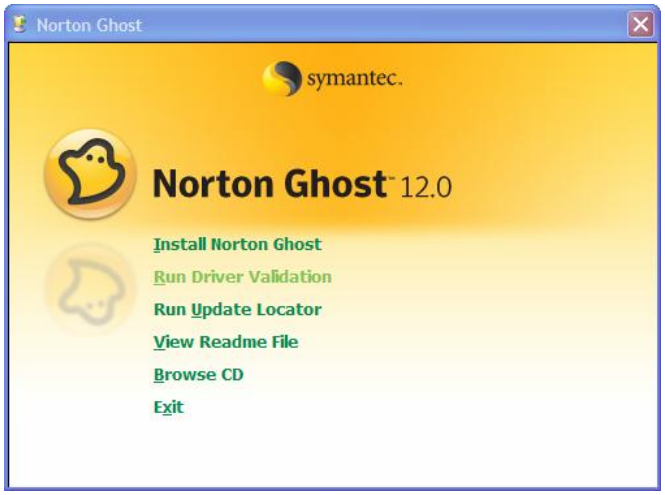
2

ATEC '07 Installation

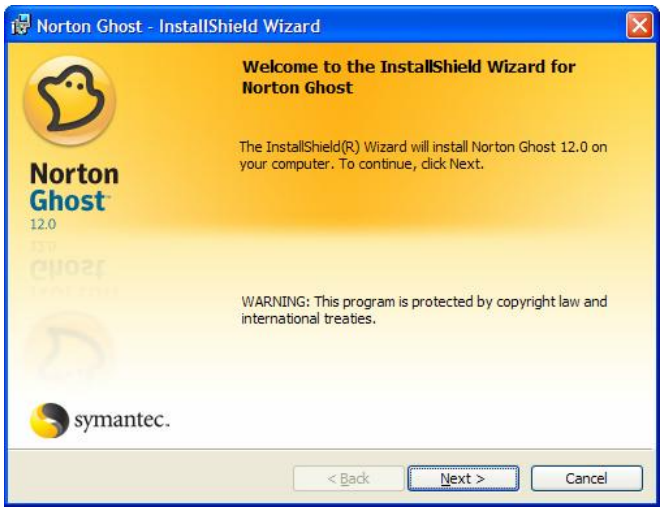
The ATEC '07 software is shipped complete on a single compact disk and the application is very simple to install. Simply follow the step-by-step instructions in this chapter to get up and running! NOTE: If you purchased ATEC '07 pre-installed, you can skip this section. Prior to installing the ATEC '07 software, the pre-requisite software must be installed. The following sections provide instructions for installing the prerequisite software: Norton Ghost 12, Diskeeper Pro, and Intermec PrintSet 4.

Install Norton Ghost 12.0

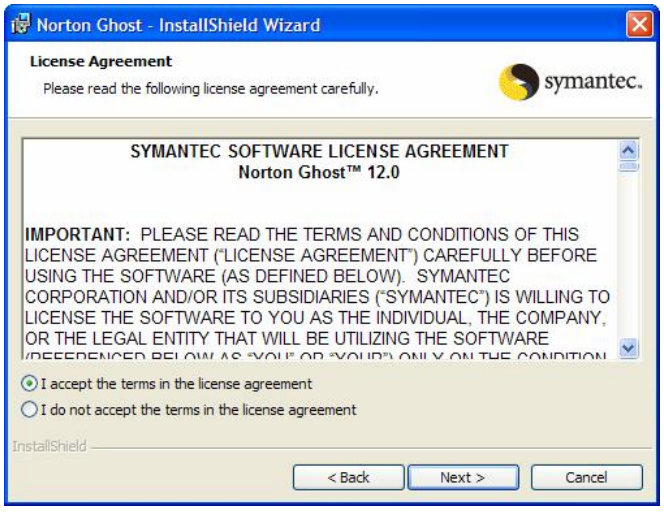
The Norton Ghost Software was installed using the default options. To re-install this application, simply insert the CD-ROM and double-click the AUTORUN.EXE program if the installation program does not begin automatically. The following screen will display:



Click on the "Install Norton Ghost" link. The installer program will begin and the following screen will display:

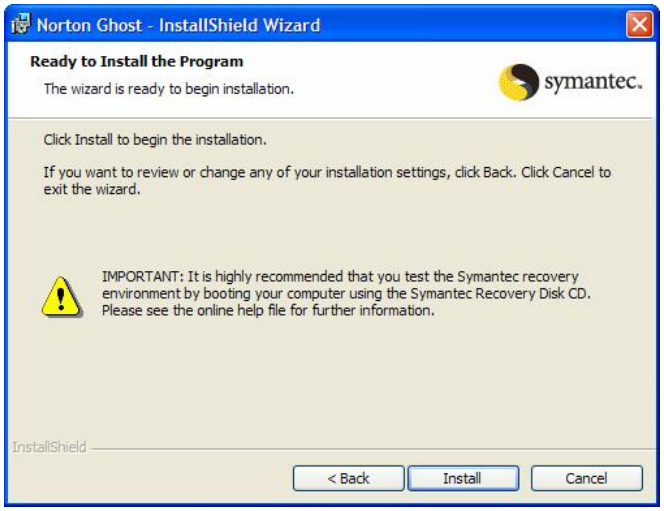


Click the "Next" button, the license agreement will display:



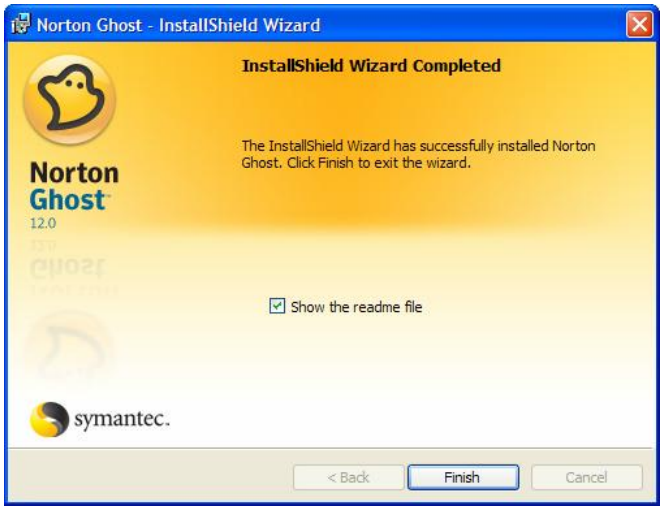
Click on the "I Accept the terms in the license agreement" button, then click the "Next" button. Click the "Next" button to install the software in the default installation directory. The following screen will display:

Leave the default "Complete" option selected and click the "Next" button. The following screen will display:



Click "Install" to begin the installation process. The following screen will display the installation progress:

When the installation is completed, the following screen will display:



Click the "Finish" button, then click "Restart Computer" to complete the installation. Please refer to Norton Ghost documentation for information on activating and configuring the application.

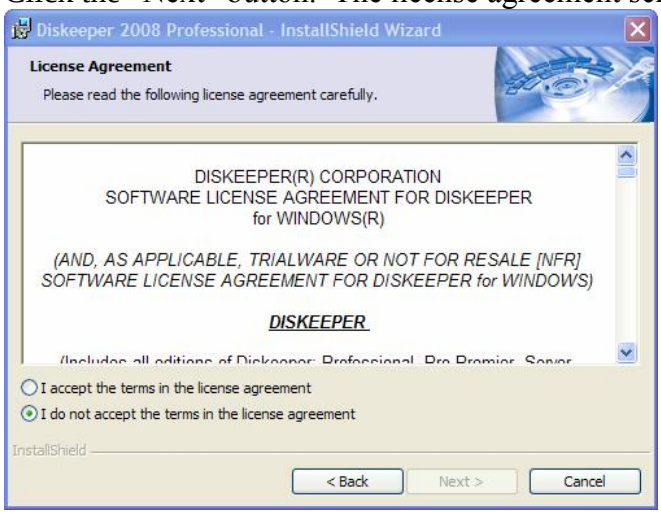
Install Diskeeper 2008

The Diskeeper Software was installed using the default options. To re-install this application, insert the Diskeeper 2008 CD-ROM and double-click on the "Diskeeper2008_Professional.exe" file. The following screen will display:

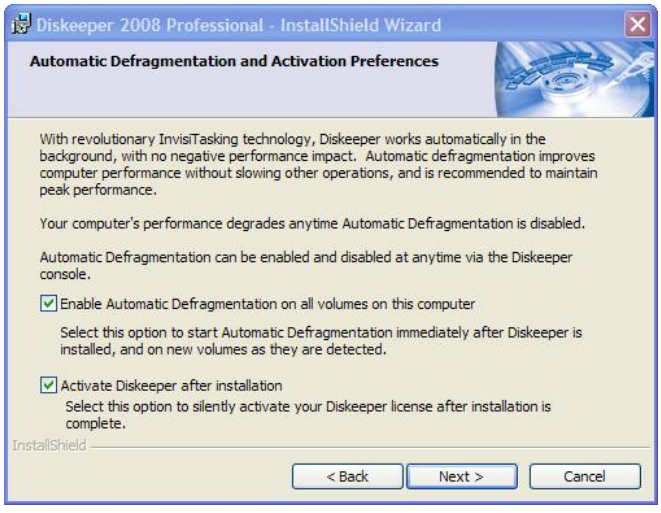
Click the "Next" button. The Welcome screen will display as shown below:

Click the "Next" button. The Windows Firewall message will display:

Click the "Next" button. The license agreement screen will display:

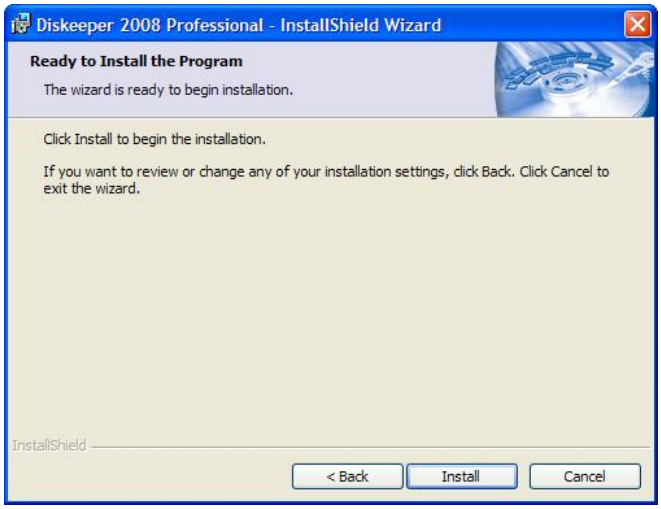


Select the "I accept the terms in the license agreement" button, then click the "Next" button. The Automatic Defragmentation screen will display:



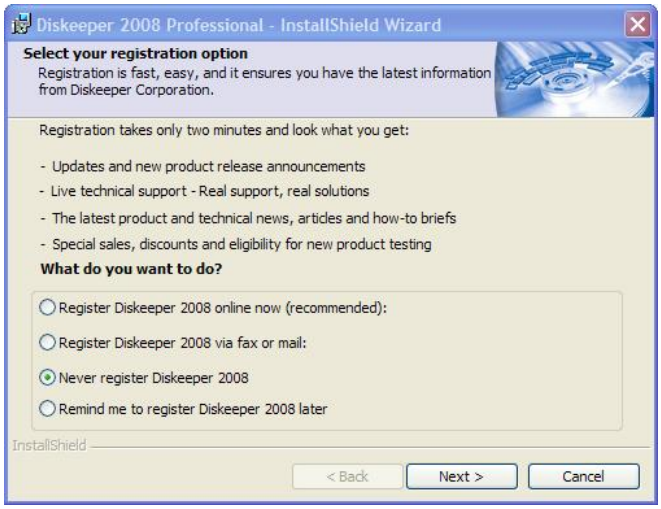
Leave both checkboxes checked and click the “Next” button. The destination folder screen will display:

Check the “Create Desktop Shortcut for Diskeeper” checkbox and click the “Next” Button. The Ready To Install Program screen will display:



Click the “Install” button to begin installation. The installation progress window will display:

When the installation has completed, the Registration screen will display:



Click on the “Never Register Diskeeper 2008” option and click the “Next” button. The Installation Completed screen will display:

Click on the “Finish” button to complete the installation.

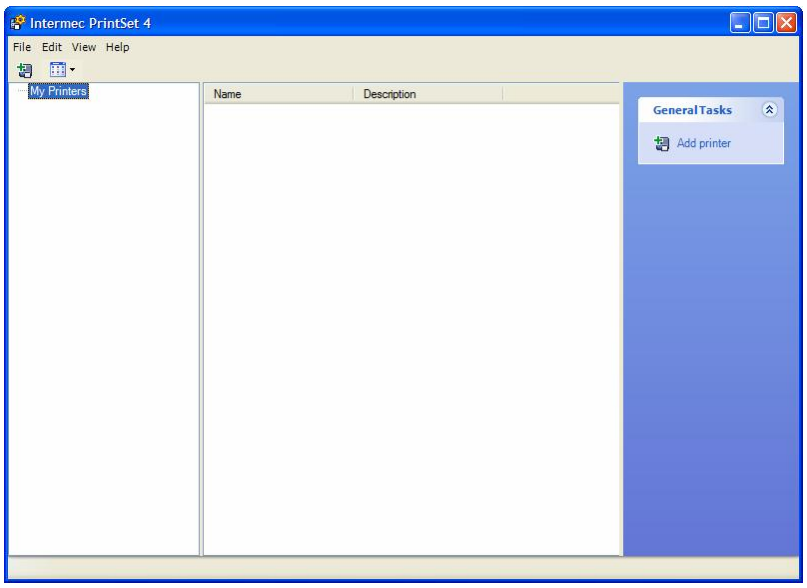
NOTE: Diskeeper will begin defragmenting the hard disk drive immediately upon completion of installation. The disk drive LED may stay lit for 30 or more minutes while defragmenting. This is normal. The computer may seem slow or sluggish while this process is running.

Install Intermec PrintSet 4

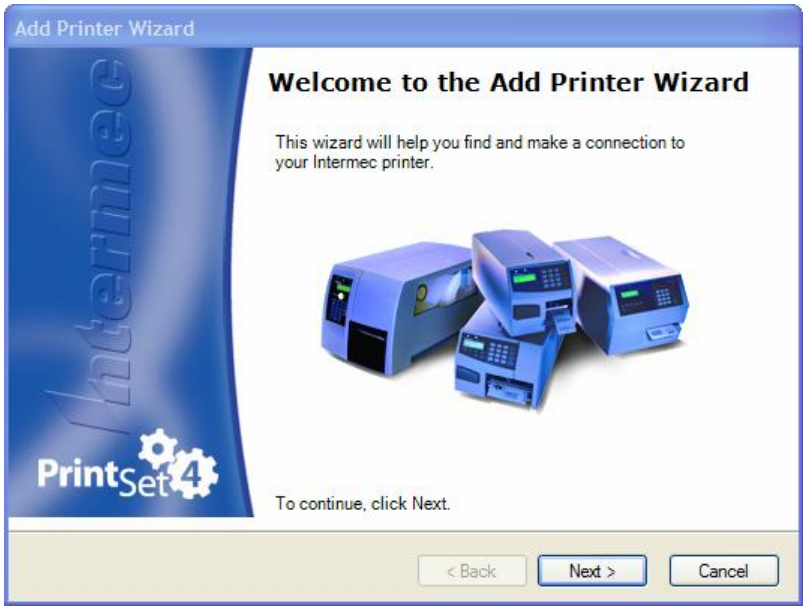
The Intermec PrintSet 4 Software was installed using the default options. To re-install this application, simply insert the CD-ROM and follow the on-screen setup instructions.

Configuring the Intermec Printers

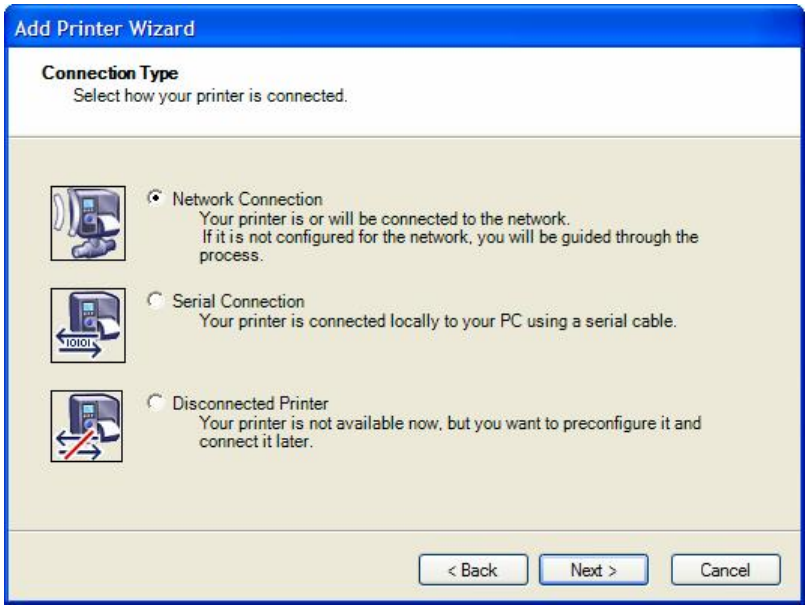
The Intermec PF2i printers are shipped with Factory Defaults that must be changed to work with ATEC ’07. To change these settings, start the Intermec PrintSet 4 software by selecting it from the “Start\All Programs\Intermec PrintSet” menu. The following screen will display:



Select “Add Printer” from the file menu. The following screen will display:

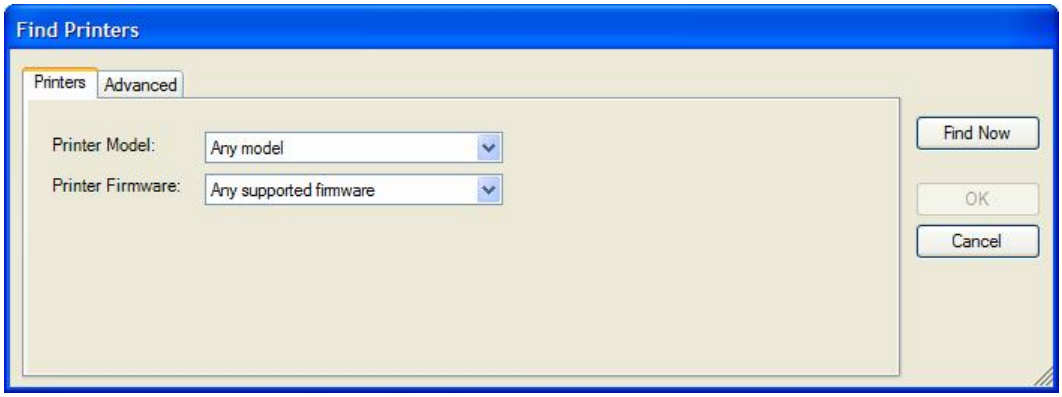


Click “Next” to continue. The Following screen will display:

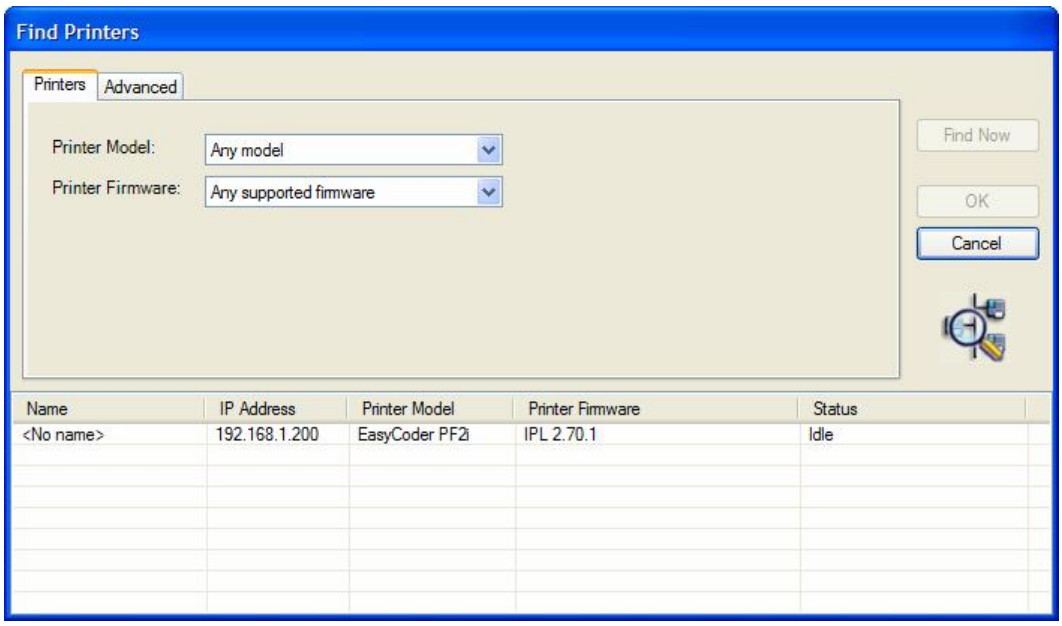


Leave the default “Network Connections” option selected, then click the “Next” button. The following screen will display:

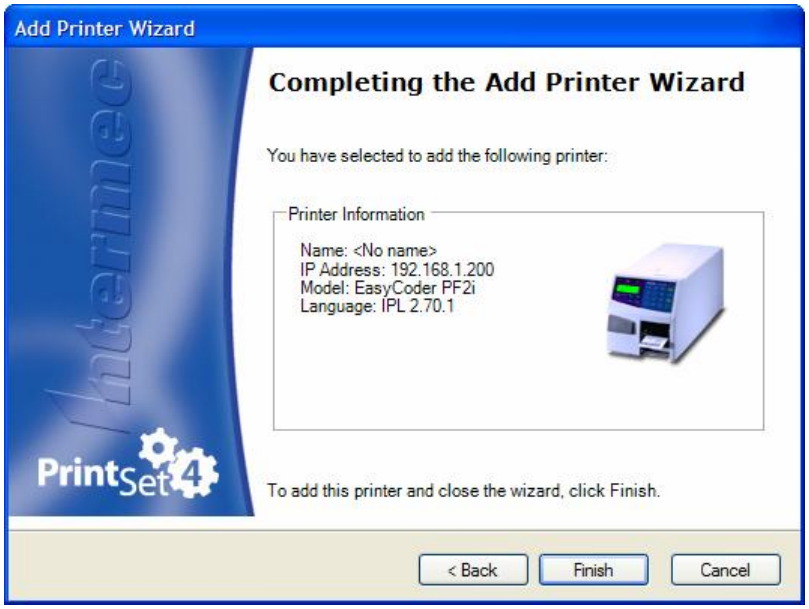
Make sure the printer is physically connected to the same network as the ATEC ’07 PC and is powered on. Leave the default option “Current Network Connection” selected and click the “Next” button. The following screen will display:



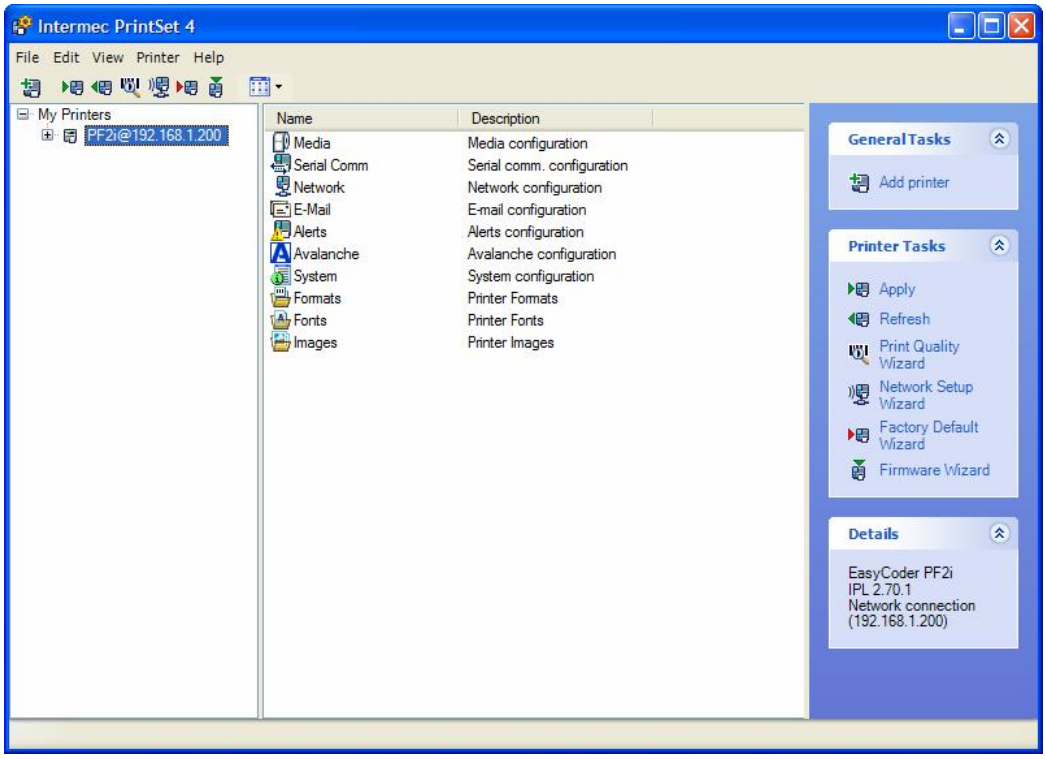
Click the “Find Now” button. The following window will display:



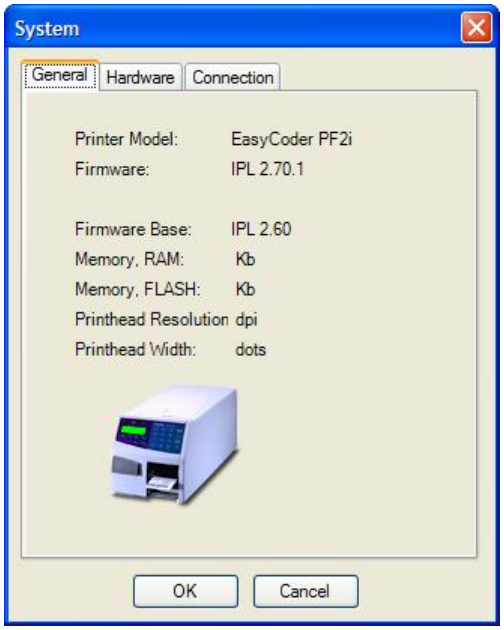
NOTE: The actual address, printer name, and number of printers in the list may vary depending upon how many printers of similar make and model are found on the network. Select the printer that you are configuring, then click the "OK" button. The following window will display:



Click the "Finish" button. The main PrintSet screen will display with the newly added printer listed:



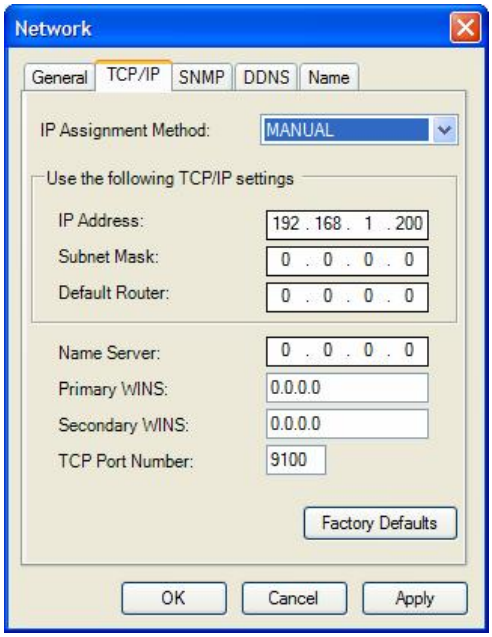
Double-click on the System Icon. The following screen will display:



If the Firmware is anything other than "IPL 2.70.1" as shown in the picture above, it will need to be updated using the Firmware Wizard option. To update the Firmware, click the "Firmware Wizard" option on the right-hand side of the PrintSet 4 screen (shown above). Click "Next" on the Wizard page. On the Firmware selection screen, navigate to and select the following file: ipl2701.bin.

This file is in the "FirmWare\IPL" folder on the Intermec CD-ROM. Simply click the "Next" button and confirmation buttons to program the Firmware.

The next step in configuration is to set the Network settings. Double-click the "Network" icon in the center of the PrintSet 4 screen. Click on the "TCP/IP" tab of the Network Window. The following window will display:



NOTE: The ATEC '07 program uses a fixed IP Address to communicate with both printers. These addresses are defined in the program settings file (see Appendix A). It is necessary to configure the printer with MANUAL addressing. Enter the IP Address, Subnet Mask, and Default Router provided to you by the network administrator, then click the "OK" button.

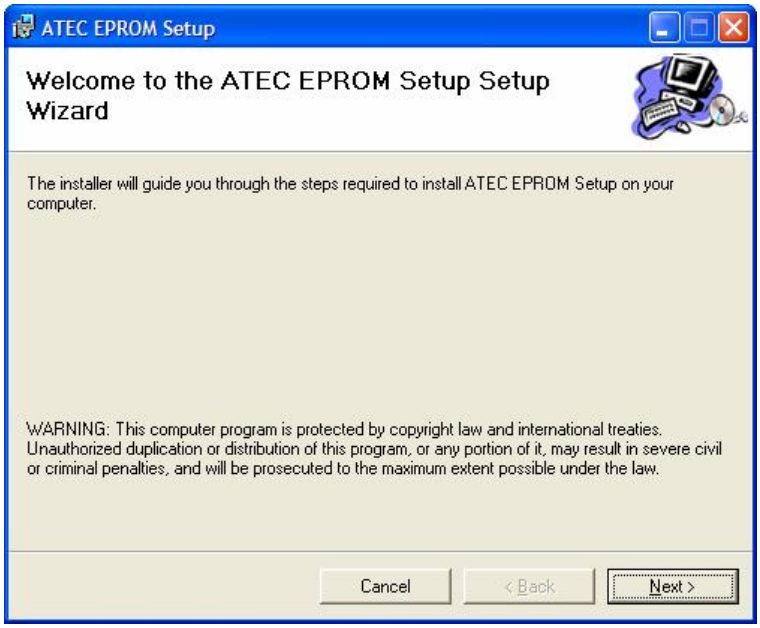
Lastly, click the "Apply" button on the right-hand side of the PrintSet 4 screen to save the settings to the printer. The following settings were used when the software was tested prior to shipment:

Setting	**Printer 1**	**Printer 2**
IP Address	192.168.1.200	192.168.1.201
Subnet Mask	255.255.255.0	255.255.255.0
Default Router	192.168.1.1	192.168.1.1

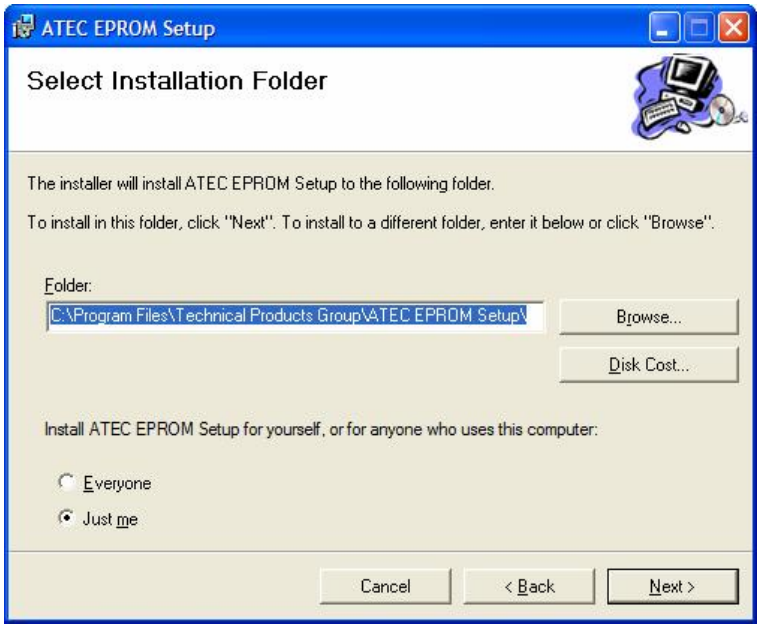
Installing the ATEC ’07 Software

NOTE: There are two files required to install ATEC ’07, the SETUP.EXE program is the main setup program and it uses the “ATEC EPROM Setup.msi” file during the installation process.

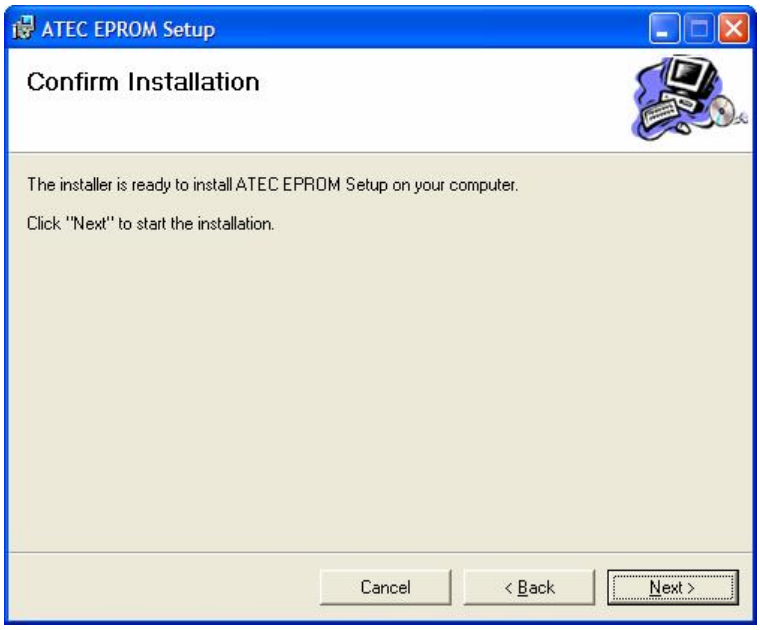
To install the ATEC ‘07 application, simply insert the ATEC ‘07 CD-ROM into your CD-ROM Drive and run the SETUP.EXE program. The following screen will display:



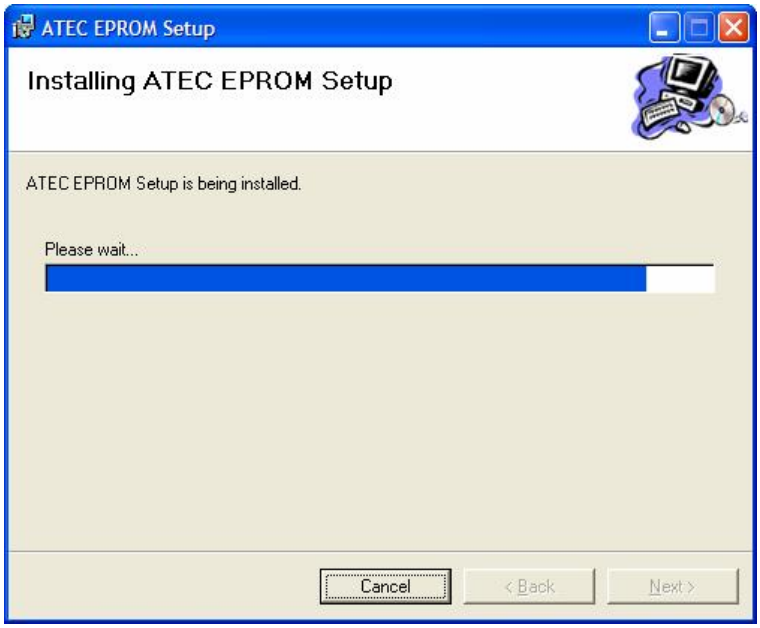
Simply click the “Next” button to continue. The following screen will display:



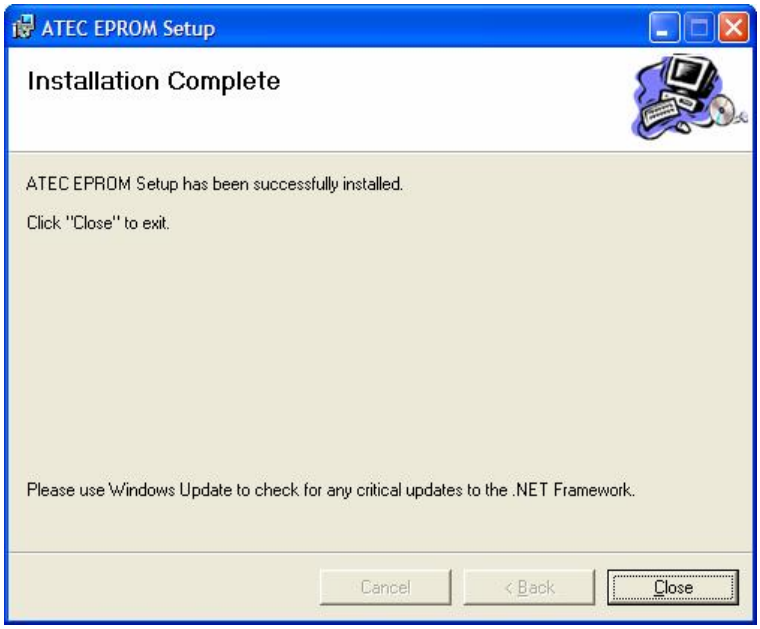
The program should be installed into the default folder. Simply click the "Next" button to continue. The confirmation screen will display next:



Click the "Next" button to continue. While the program installs the following screen will display showing the progress of the installation:



When the installation has completed, the following screen will display:



Click the “Close” button to complete the installation. You should now see an icon on the windows Desktop for the ATEC Programmer software. An icon is also installed on the Start menu under All Programs.

3

Using ATEC '07

This chapter explains how to use the ATEC '07 application. It covers everything from starting the program using the Windows Start menu to programming EPROM Modules. Please read this entire chapter thoroughly prior to using the ATEC '07 software.

Things You Should Already Be Familiar With

This chapter assumes that you already familiar with using Microsoft Windows XP®. This includes starting applications and basic window navigation.

This manual is not intended to provide a reference or tutorial for the Microsoft Windows or Office products. For more information on those products, please refer to the Microsoft user documentation and the Microsoft World-Wide-Web site (http://www.microsoft.com). Training on all Microsoft Windows and Office products is available world-wide through Microsoft Solution Providers and Microsoft Education Partners. Please contact Microsoft for more information on available training options.

Starting ATEC '07

The ATEC '07 program should start automatically with Windows. If the previous user has exited the program, or the program did not start with Windows simply double click on the "ATEC Programmer" icon on the Windows desktop.

NOTE: The installation program also installs an icon on the Windows Start Menu under the "All Programs" menu. This can also be used to start the program.

Check Hardware Status

If both programmers are connected, the status of each programmer should be "Connected on COM1" and "Connected on COM2" respectively. If both programmers are connected and selected in the program's settings file they will be used to program EPROMs simultaneously.

Similarly, if both printers are connected, the status of each printer should be "Connected on xxx.xxx.xxx.xxx" where xxx represents the actual network address of the printer. If both printers are connected and selected in the program's settings file they will be used to print labels simultaneously.

NOTE: If either of the EPROM Programmer or Label Printers show "Missing", "Disabled", or "Error" they will not be used during the programming and label printing procedures. The proper status is "Connected on xxxx" where xxxx is the physical address or communications port the device is connected to.

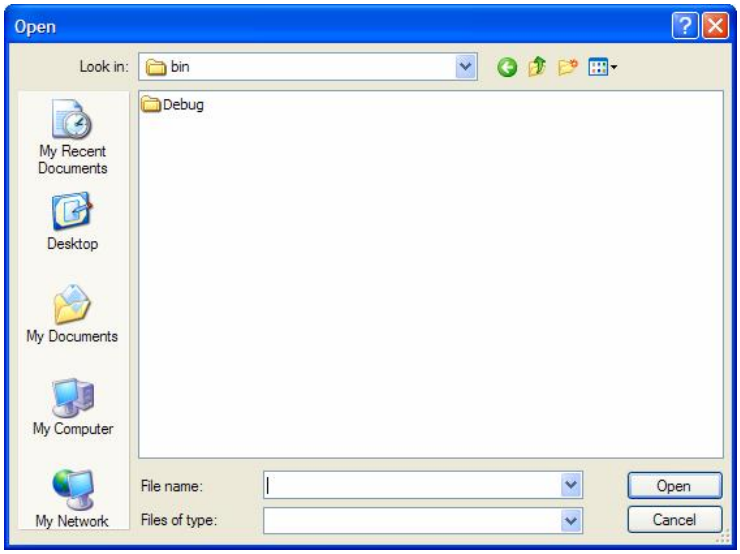
Check the Settings

The EPROM type is shown on the first line of the Settings grid. To change the EPROM type, select the "Select EPROM type" menu option, enter a new type then press [Enter].

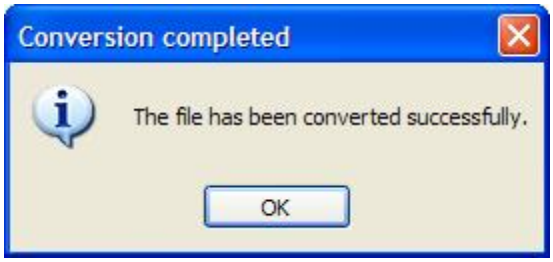
The Data File and Motorola file will display the last data file converted to Motorola format and the name of the Motorola format file loaded into the programmer.

Converting a Data File

To convert a data file to Motorola format, select the "Convert data file to Motorola format" option on the Main Menu or select "File\Convert data file to Motorola format" on the application menu. The following window will display:

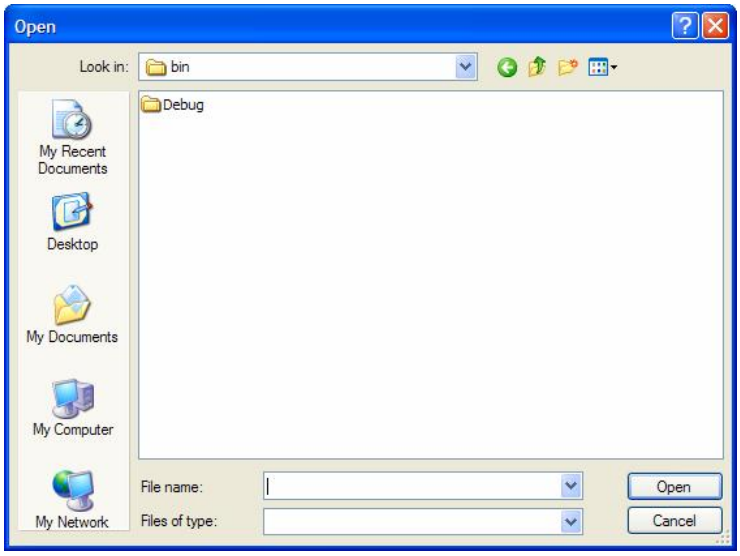


Select the file you wish to convert, and then click the "Open" button. When the conversion process is completed the following window will display:



Loading a Motorola Format File

To load a Motorola Format File into the EPROM Programmer's memory, select the "Load Motorola Format File" option on the Main Menu or select "File\ Load Motorola Format File" from the application menu. The following window will display:

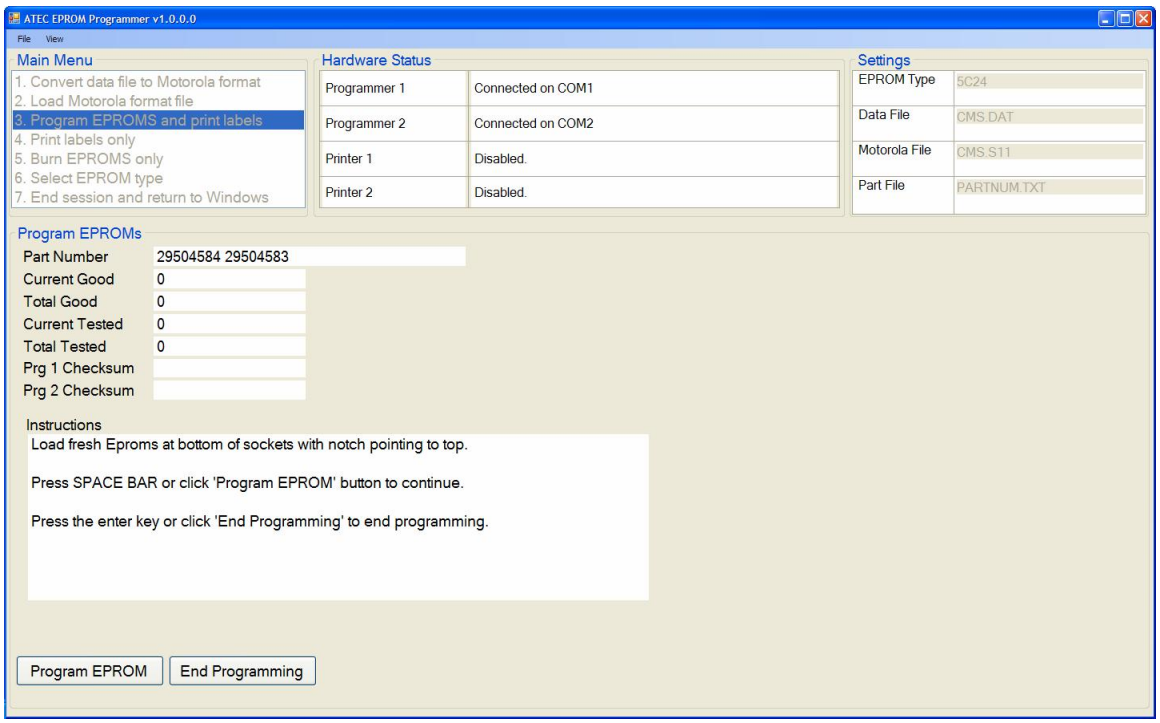


Select the file you wish to load, and then click the "Open" button. When the loading process is completed the following window will display:

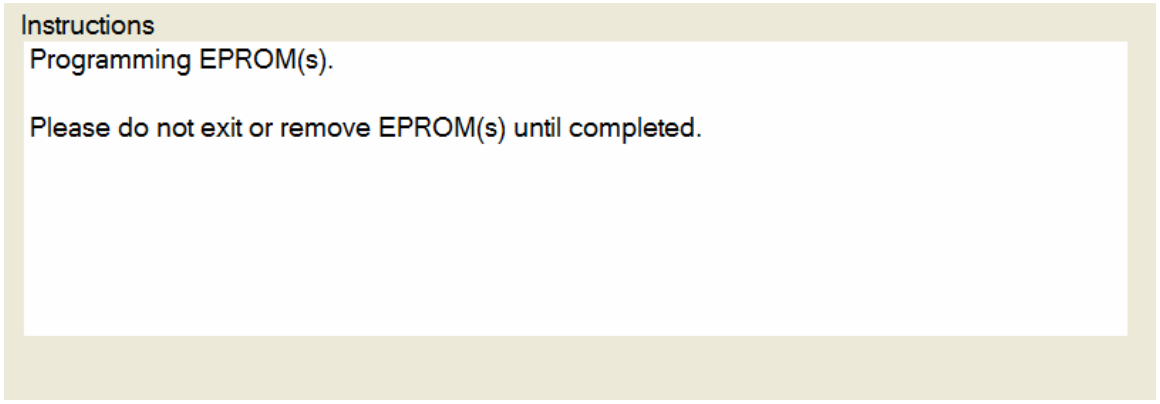
Programming EPROMS and Printing Labels (optional)

The process of burning EPROMs and printing labels is the main purpose for the ATEC ’07 application. Select either the “Program EPROMS and print labels” option or the “Burn EPROMS only” option on the Main Menu. Both options operate identically with the exception of printing labels during the process.

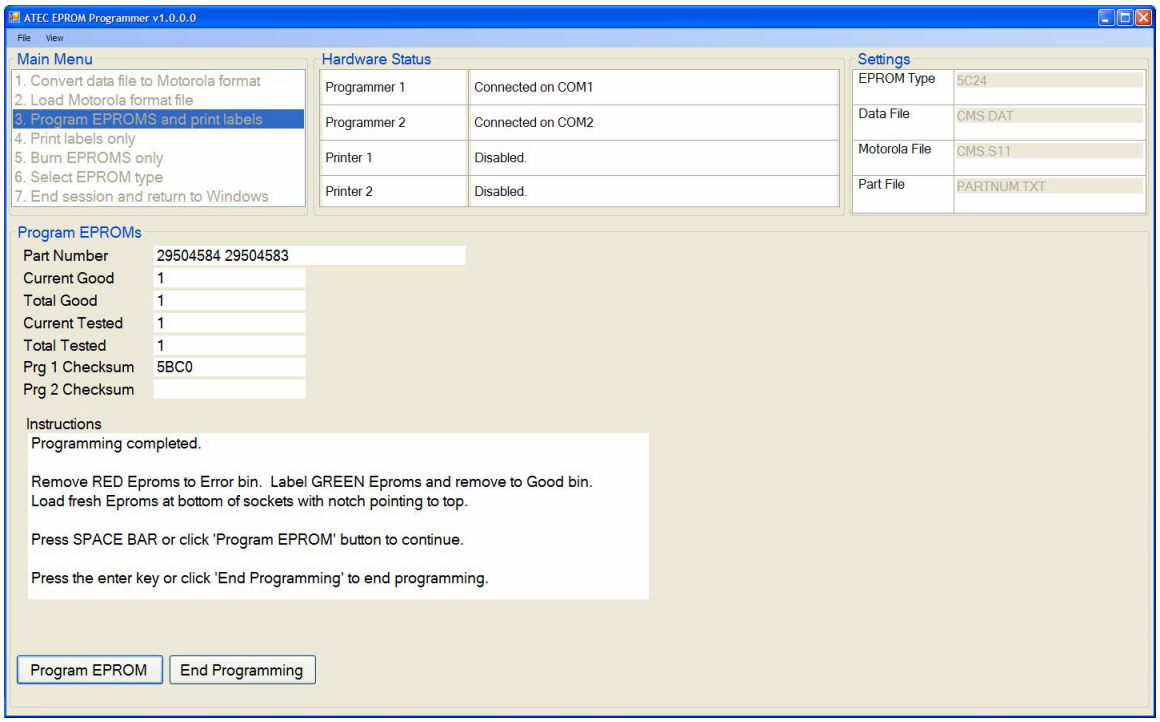
When you select the “Program EPROMS and print labels” option, the following screen will display:



Load fresh EPROMs at the bottom of each socket with the notch positioning towards the top of the programmer, then click the “Program EPROM” button or press the [SPACE BAR] key. The following message will display while the EPROMS are programming:



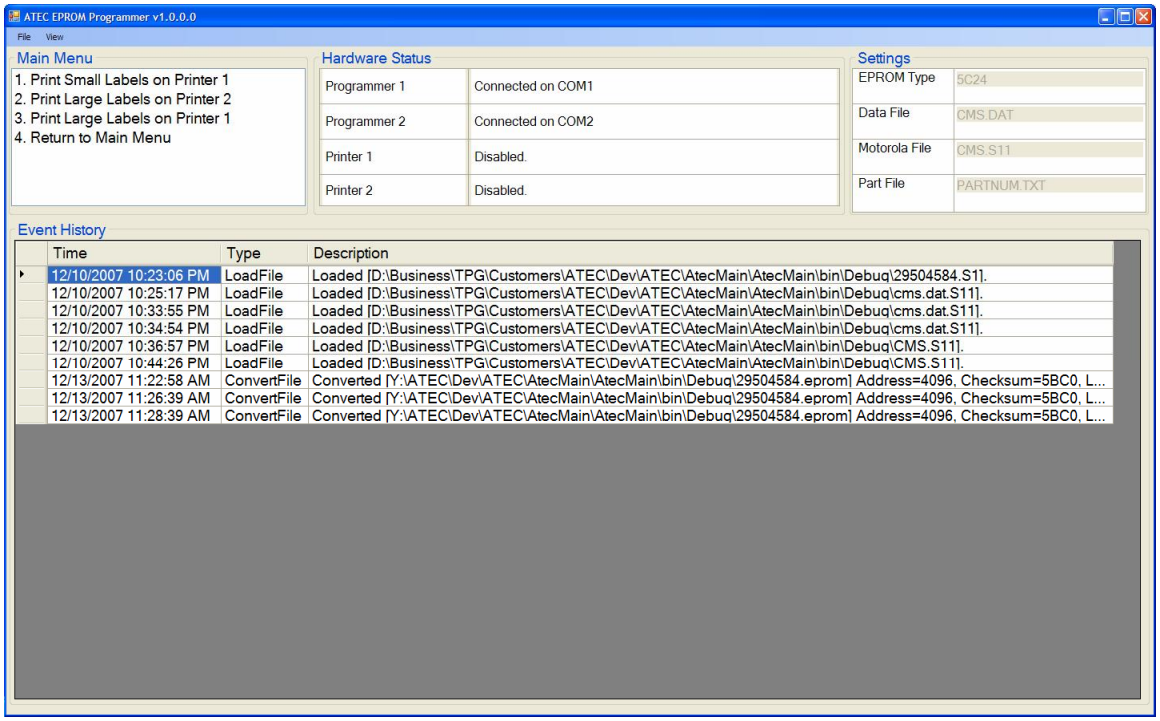
When programming is completed, the checksums and counts will display showing the completion status similar to the screen shown below:



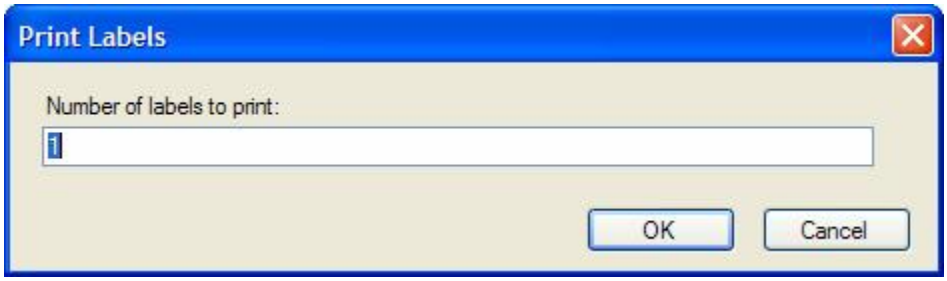
Remove RED EPROMS to the Error Bin. Label GREEN EPROMS and remove to the Good bin. Follow the on-screen instructions to continue programming EPROMS or end the programming session.

Printing Labels

To print labels only, select one of the print options from the "File\Print Labels Only" application menu or select "Print Labels Only" from the Main Menu. For this menu option, the following menu will display:



Select a label option to print either large or small labels on Printer 1 or Printer 2. The following window will display:



Enter the number of labels to print, then press [Enter] or click the "OK" button to begin.

Ending the Session and Returning to Windows

To end the current programming session and return to the Windows Operating System, select the "End Session and Return to Windows" option from the Main Menu or select File\Exit from the application menu.

The following window will display:

Click "Yes" to exit the program or "No" to remain in the program.

4

Technical Reference

This chapter provides technical information about the configuration and inner workings of the ATEC ’07 application. It is intended for technical support and administrative tasks and is not necessary for the user or operator.

In this chapter you will find:

1. Hardware and Software Requirements
2. Location of ATEC ’07 Files
3. The ATEC ’07 Settings File
4. The Motorola Format File Specification

ATEC ‘07 System Requirements

Hardware Requirements

Processor: Intel or AMD 1.5 GHz Minimum
Memory: 256MB Minimum, 512MB Recommended, 1GB as configured.
Data Bus Speed 400MHz Frontside Bus Minimum
Display Resolution 1440x900 at 32-bit (16.7M colors)
20GB Available Disk Space
1 10/100/1000MB Ethernet Connector Required for network and printing connectivity
1 RS-232C Serial Port with DB9 Male Connector for EPROM Programmer connectivity

Software Requirements

Operating System: Microsoft Windows XP® Home or Professional Edition
Microsoft .NET Framework 2.0®

Supported Hardware

DataIO 3980 Series EPROM Programmers
Intermec PF2i Thermal Barcode Printers running IPL 2.70.1 Firmware.

Location of ATEC ’07 Files

The ATEC ’07 application is shipped in an installation package, either compressed in a Windows Compressed Folder (also commonly known as a ZIP file) or on a CD-ROM disc. The package contains two files:

SETUP.EXE
This is the setup application to run to install the program.

ATEC EPROM Setup.msi
This is a Microsoft Setup Installer file that contains the actual program. This file must be present in the same directory as the SETUP.EXE program for the installation process to work correctly.

The ATEC ’07 setup will modify the system in the following ways assuming the installation is completed using the default options:

1. It will install a shortcut on the desktop that points to the application’s executable program.

2. It will install a shortcut on the Start Menu\All Programs menu that points to the application’s executable program.

3. It will create the following directory structure for the program directory:

   C:\Program Files\Technical Products Group\ATEC EPROM\

4. It will copy the following application executables into the program directory:

   AtecMain.exe
   This is the ATEC EPROM programming executable application.

   AtecMain.exe.config
   This is the ATEC EPROM application settings file.

5. Each time the program executes, it will create a log file that can be used for troubleshooting. The log file is a plain-text file named “AppLog_” followed by the date and time the program started. These files are located in the program directory and are maintained automatically. They can also be manually removed by selecting the “Clear History” button on the “View Log File” menu option.

The ATEC ’07 Settings File

The ATEC ’07 application stores it’s settings in an XML configuration file that is located in the program directory. The XML format is a standard Microsoft .NET 2005 Settings File format. An example of the ATEC ’07 Settings File is shown below:

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
    <configSections>
        <sectionGroup name="userSettings" type="System.Configuration.UserSettingsGroup,
System, Version=2.0.0.0, Culture=neutral, PublicKeyToken=b77a5c561934e089" >
            <section name="AtecMain.Properties.Settings"
type="System.Configuration.ClientSettingsSection, System, Version=2.0.0.0,
Culture=neutral, PublicKeyToken=b77a5c561934e089" allowExeDefinition="MachineToLocalUser"
requirePermission="false" />
        </sectionGroup>
    </configSections>
    <userSettings>
        <AtecMain.Properties.Settings>
            <setting name="EPromType" serializeAs="String">
                <value>5C24</value>
            </setting>
            <setting name="DataFile" serializeAs="String">
                <value>CMS.DAT</value>
            </setting>
            <setting name="MotorolaFile" serializeAs="String">
                <value>CMS.S11</value>
            </setting>
            <setting name="PartFile" serializeAs="String">
                <value>PARTNUM.TXT</value>
            </setting>
            <setting name="PrinterAddress1" serializeAs="String">
                <value>192.168.1.200</value>
            </setting>
            <setting name="PrinterAddress2" serializeAs="String">
                <value>192.168.1.201</value>
            </setting>
            <setting name="SerialPortBaud1" serializeAs="String">
                <value>9600</value>
            </setting>
            <setting name="SerialPortComPort1" serializeAs="String">
                <value>COM1</value>
            </setting>
            <setting name="SerialPortData1" serializeAs="String">
                <value>8</value>
            </setting>
            <setting name="SerialPortBaud2" serializeAs="String">
                <value>9600</value>
            </setting>
            <setting name="SerialPortComPort2" serializeAs="String">
                <value>COM2</value>
            </setting>
            <setting name="SerialPortData2" serializeAs="String">
                <value>8</value>
            </setting>
            <setting name="UsePrinter1" serializeAs="String">
                <value>False</value>
            </setting>
            <setting name="UsePrinter2" serializeAs="String">
                <value>False</value>
            </setting>
            <setting name="UseBurner1" serializeAs="String">
                <value>True</value>
            </setting>
            <setting name="UseBurner2" serializeAs="String">
                <value>False</value>
```

```
            </setting>
        </AtecMain.Properties.Settings>
    </userSettings>
</configuration>
```

The Settings File may be edited using a standard text editor such as NotePad, but this is not recommended. All of the settings are configurable within the application using the View\Settings menu option.

The Motorola Format File Specification

The ATEC ’07 application provides an option to convert a compiler output object file to Motorola EPROM (S1) format. The conversion process basically reads the input file one line at a time and writes an output file one line at a time using the following conversion formula:

1. Embedded blanks are removed.
2. A prefix is added to each line for the line record type and memory offset.
3. A postfix is added to each line with a checksum.
4. A record is added to the end of the file with a checksum for the EPROM.

Sample Input Data

```
29 50 45 84 48 20 48 20 00 00 00 00 00 00 7D 20
60 20 42 20 4A 20 4E 20 5E 20 5F 20 00 20 62 21
62 22 00 00 00 00 00 00 60 21 60 21 41 21 41 22
50 21 50 22 44 21 44 22 0A 18 BA 28 1D 3F 58 5C
91 80 00 80 00 19 00 00 00 00 00 00 00 00 00 00
```

Sample Output Data

```
S113000029532758402040200000000000075209C
S113001060204220462056205720572057205720622235
S113002062210000000000006021602141214122 82
S11300305021502244214422 0A20002FBE3FAE5EAC
S1130040B88000BEB81F00000000000000000000DF
S113005000000E4EA9E90FFF00FA00000F40400017
```

Motorola File Format Information

Type: A 1 character field that specifies whether the record is an S0, S1, S2, S3, S5, S7, S8 or S9 field.

Record Length: A 2 character (1 byte) field that specifies the number of character pairs (bytes) in the record, excluding the type and record length fields.

Address: A 2-, 3- or 4-byte address that specifies where the data in the S-record is to be loaded into memory.

Data: The executable code, memory-loadable data or descriptive information to be transferred.

Checksum: An 8-bit field that represents the least significant byte of the one's complement of the sum of the values represented by the pairs of characters making up the record's length, address, and data fields.

Record Types:

S0 This type of record is the header record for each block of S-records. The data field may contain any descriptive information identifying the following block of S-records. (It is commonly "HDR" on many systems.) The address field is normally zero.

S1 A record containing data and the 2-byte address at which the data is to reside.

S2 A record containing data and the 3-byte address at which the data is to reside.

S3 A record containing data and the 4-byte address at which the data is to reside.

S5 A record containing the number of S1, S2 and S3 records transmitted in a particular block. The count appears in the two-byte address field. There is no data field.

S6 A record containing the number of S1, S2 and S3 records transmitted in a particular block. The count appears in the three-byte address field. There is no data field.

S7 A termination record for a block of S3 records. The address field may contain the 4-byte address of the instruction to which control is passed. There is no data field.

S8 A termination record for a block of S2 records. The address field may optionally contain the 3-byte address of the instruction to which control is passed. There is no data field.

S9 A termination record for a block of S1 records. The address field may optionally contain the 2-byte address of the instruction to which control is passed. If not specified, the first entry point specification encountered in the object module input will be used. There is no data field.