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User's Guide

XELTEK

Superpro®5000 Series

Ultra-Fast, Stand-Alone, 144pin Programmer of the Future

XELTEK

1296 Kifer Rd. Unit 605
Sunnyvale, CA 94086
Tel: (408) 530-8080
Fax: (408) 530-0096
www.xeltek.com

IMPORTANT!

1. This manual applies to SuperPro 5000, SuperPro 5000E, SuperPro 501S, SuperPro 500P and SuperPro M.
2. Make sure the software installation is completed before connecting the programmer to PC.
3. Please read the manual carefully before using programmers.
4. Please use Xeltek Adapters. Non-Xeltek adapters will cause error

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Welcome

Welcome to the world of Xeltek SuperPro programmers. Xeltek has produced the SuperPro line of IC programmers since 1985. Our motto is to provide high value products at affordable prices. In the past 23 years, Xeltek has produced a string of highly popular and successful programmers including SuperPro, SuperPro II, SuperPro III, SuperPro V, SuperPro 680, SuperPro 8000, SuperPro 3000U, and SuperPro 9000 models.

SuperPro 3000U is the first model to incorporate both PC connected and stand-alone modes operations combined into one programmer. It is also the first programmer to break the barrier of 40,000 devices supported in the industry. SuperPro 3000U is by far the most popular IC programmer in the industry today.

Pushing the barrier further yet, Xeltek is proud to announce the family of SuperPro 5000 programmers. SuperPro 5000 retains all the good features of SuperPro 3000U, but, in addition, it is designed to program today's large size devices efficiently and effectively.

Feature Highlights

- The SUPERPRO includes ultra high speed programming via 32bit RISC MCU device. This is especially suitable for programming high capacity NAND Flash devices
- A 144 pin-driver support is built-in to provide efficient programming of large pin count devices, an additional pin expander module is not necessary to program large pin-count devices.
- The SUPERPRO operates with a PC for engineering purpose or in stand-alone mode, without a PC, for repeat production mode programming. This provides seamless migration from engineering to production
- The SUPERPRO communicates through a USB 2.0 port and operates on most Pentium-based, IBM compatible desktop/notebook computers.
- The SUPERPRO comes with a standard 48-pin DIP ZIF socket and supports optional socket adapters to accommodate PLCC, TSOP, SOIC, SOP, QFP, TSSOP and BGA package types.
- The programmer and software supports Windows XP and Windows Vista.
- The programmer is scheduled to support 43,000+ IC devices by the end of 2008. Please check www.xeltek.com for the list of the currently supported devices.

- For authorized users, the SUPERPRO can provide for automatic generation of electronic serial numbers.

IMPORTANT! Make sure to complete the software installation before connecting the programmer USB cable.

User Manual Organization

This manual includes the following:

- An introduction to the SUPERPRO series, including the system requirements and the software and hardware installation
- Detailed explanations on the commands and the programming procedures
- Information about error messages and common problems
- An Appendix that includes the customer support information

Note: The software prevails in any discrepancy between it and the user manual, due to any upgrades of the software.

The information in this document is subject to change without notice.

Chapter 1 General Description

This chapter provides information on the package contents, software features, and system requirements for SUPERPRO.

Introduction to SUPERPRO

The SUPERPRO is a menu-driven software that operates a series of cost-effective, reliable, and high-speed universal programmers. SUPERPRO communicates through a USB 2.0 port and operates with most IBM-compatible desktop and notebook computers based on Pentium.

Package Contents

The SUPERPRO programming hardware includes the following items:

- A programming module (including a 48-pin ZIF socket) (SuperPro 5000/5000E come with a removable DIP48, CX0001 adapter, while SuperPro 500P/501S come with an attached DIP48 socket.)
- A power supply unit
- A USB connection cable

The SUPERPRO package also includes a software installation CD, this User's Guide and a registration form.

Optional socket adapters to accommodate PLCC, TSOP, SOIC, SOP, QFP, TSSOP and BGA package types are available.

Software Features

The USB 2.0 Series supports:

- Windows XP and Windows Vista
- Over 25,000 *(40,000 + by end of 2008)* types of devices, including PROM, E/EPROM, PLD and MCU from more than 150 manufacturers
- Many types of formats such as Binary, Intel (linear & segmented) Hex, Motorola S, Tektronix (linear & segmented), JEDEC, POF, etc.

SUPERPRO also includes a device insertion test (48 pins or less) to detect defective chips, improperly inserted devices and pins of poor contact (model dependent).

SUPERPRO includes an integrated full screen buffer editing environment with commands such as fill, copy, move, swap, etc. It automatically generates electronic

serial numbers. Authorized users can use a user-defined mode.

System Requirements

The minimum system configuration is as follows:

- A desktop or laptop computer with Intel Pentium or an equivalent processor
- Windows XP or Windows Vista operating system
- At least 1 GB free space on the hard drive
- At least one standard (USB 2.0) compliant connector
- A CD drive

Chapter 2 System Installation

This chapter provides information on how to install the software and connect the programmer hardware properly.

To avoid complications during the installation process, you must install the software before connecting the programming hardware to your computer. Installing the software sets up the INF files and drivers automatically instead of going through the Windows New Hardware Wizard. This might install the wrong drivers with a compatible ID.

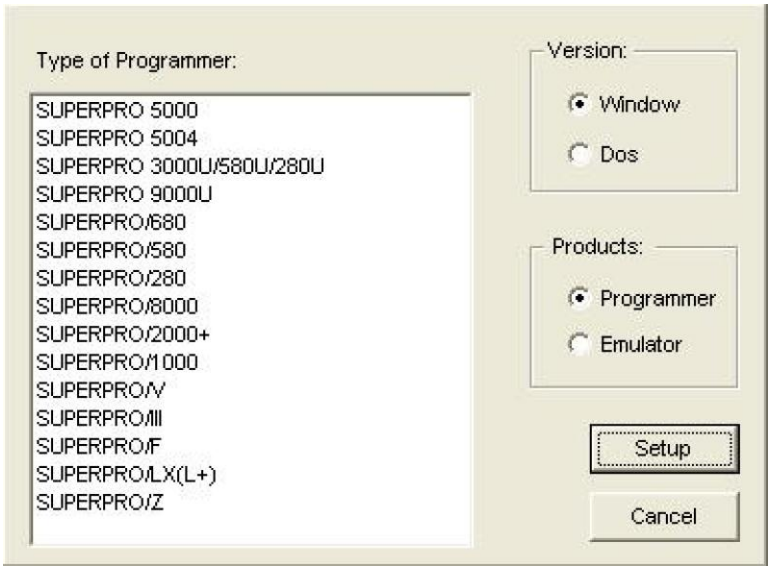
Software Setup

Select the software to setup your SUPERPRO programmer either from the CD-ROM or by downloading the program from the Xeltek website. Instructions for both methods are described below.

CD-ROM

1. Insert the CD into the CD-ROM drive.
2. If the setup program does not start automatically, run SETUP. EXE located in the root directory.

The system displays a dialog box to select the programmer model, illustrated below.



3. Select the appropriate programmer model. Make sure to select the model you purchased, since each model has its own software.

4. Select **Setup** to install the application software for the programmer.

Xeltek Website

You can download the specific software for a certain model at Xeltek website: http://www.xeltek.com. Select the icon to download the appropriate file for your programmer. Once you have saved the file to your computer, run it to setup the software.

Setup Process (for SuperPro 5000)

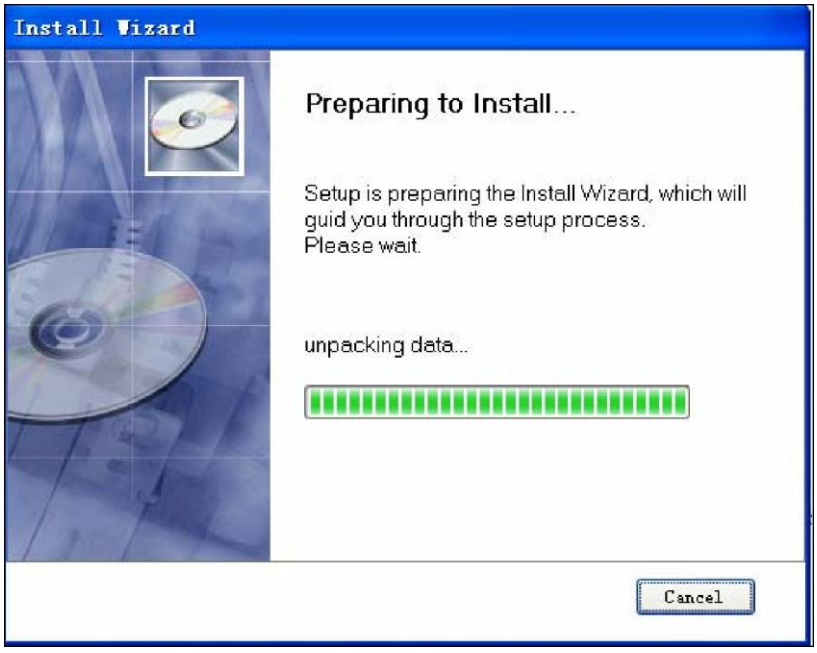
The following procedure explains the setup process.

1. The system displays the **Select Language** dialog box, illustrated below.

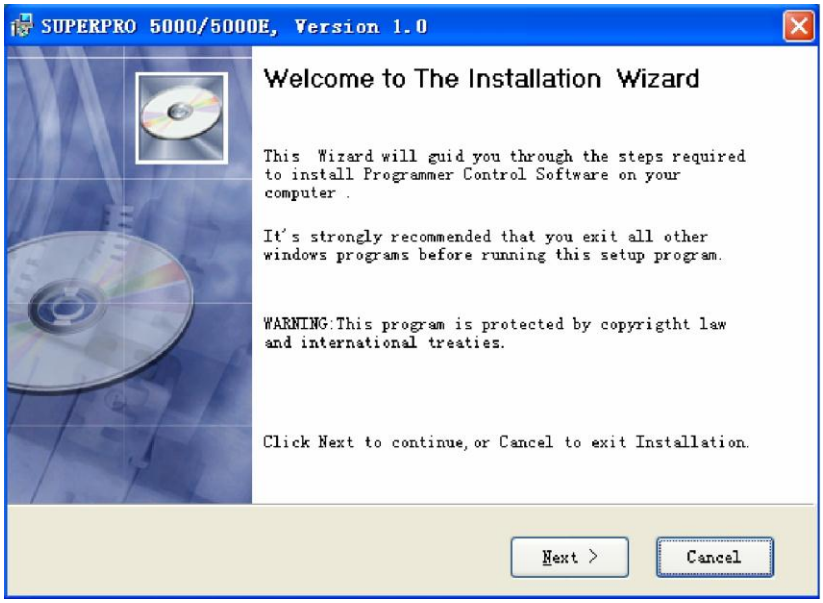
   Select your preferred language for the setup process from the drop down list.

2. Select **OK.**

The system displays the **Install Wizard** dialog box, illustrated below.

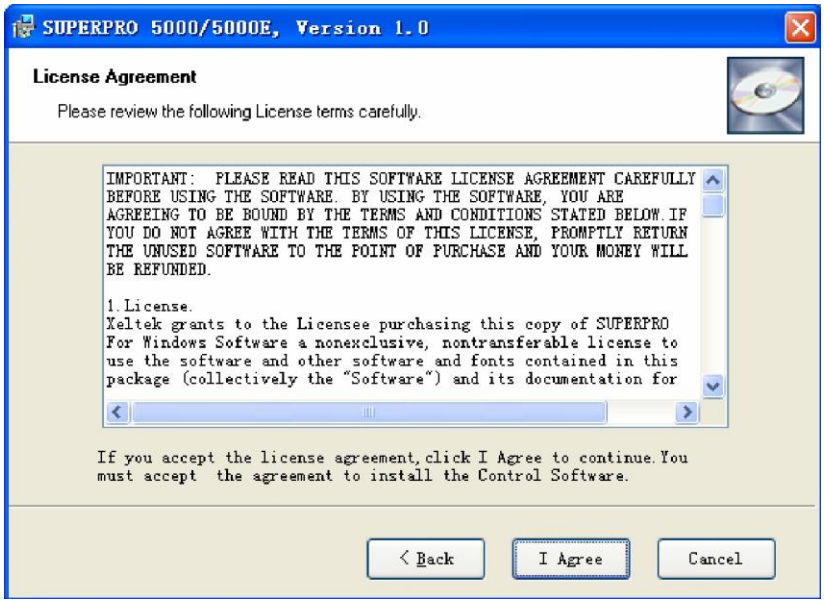


Next, the system displays the following dialog box.



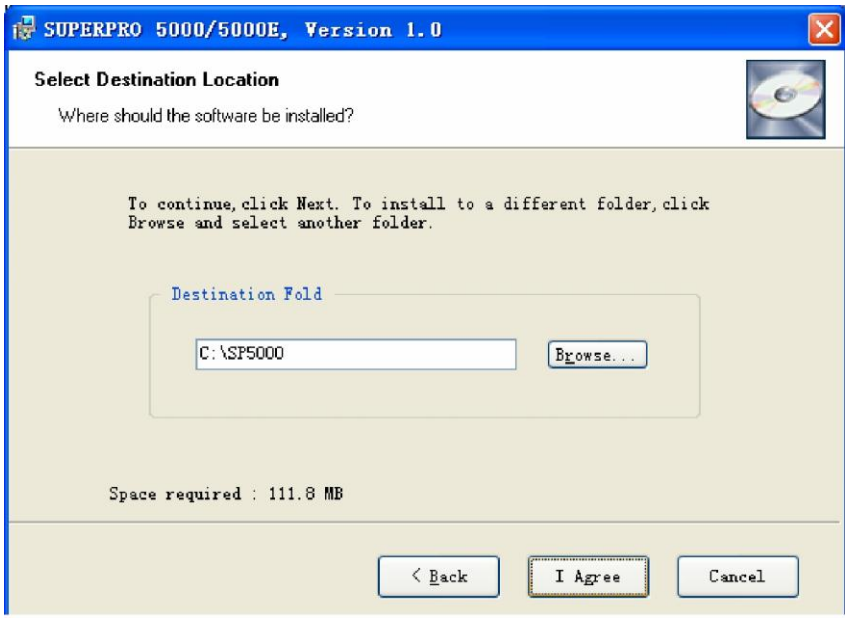
3. Select **Next** to proceed to the next step.

The system displays the License Agreement, illustrated below.



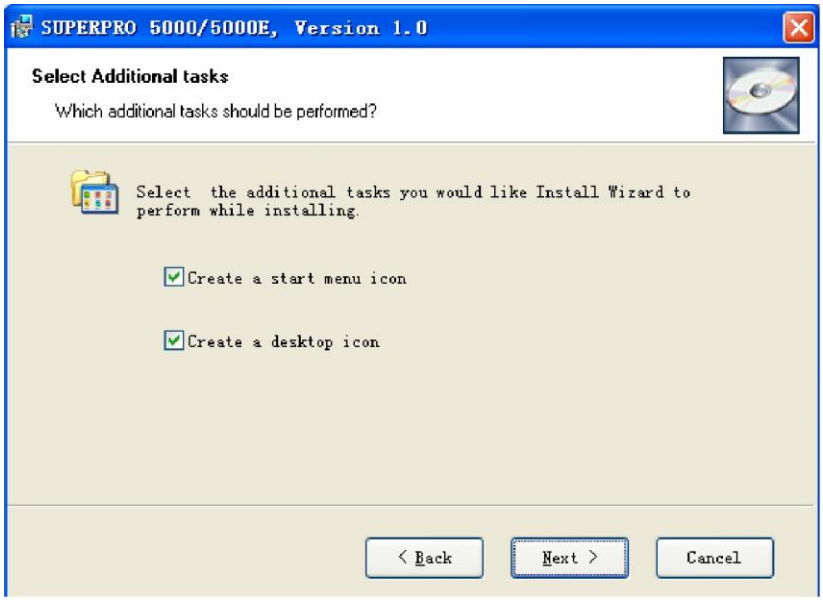
4. Please read the license agreement carefully. Select **I Agree** to continue the installation. To cancel the installation and exit the installation process, select **Cancel.**

The system asks for the **Destination Location**, illustrated below.



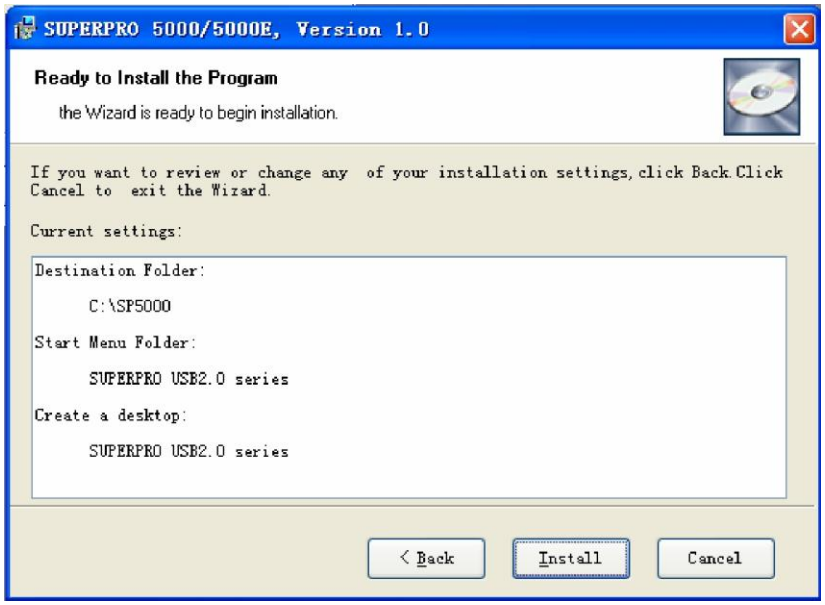
5. Select **Browse** to choose the installation path. After selecting the desired destination folder, select **Next**.

The system displays the **Additional tasks** dialog box, illustrated below.



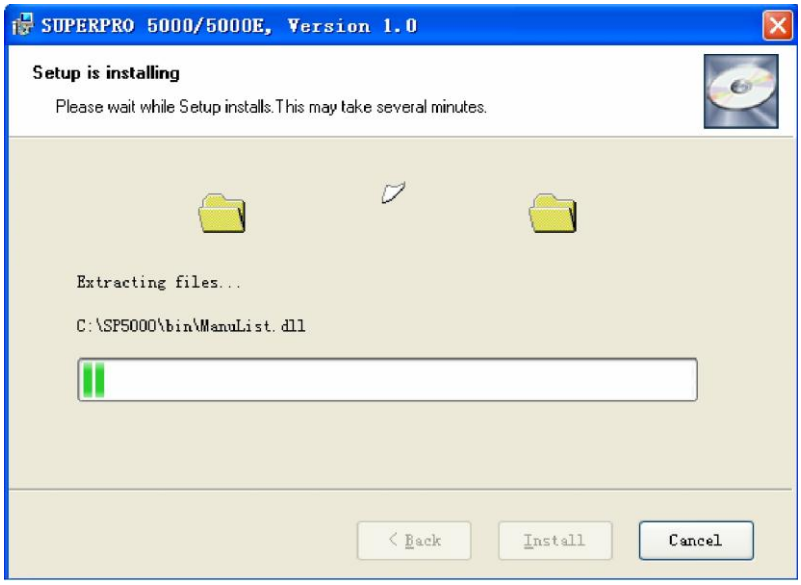
6. Check the **Create a start menu icon** box to add an icon on the Start menu during the installation. Check the **Create a desktop icon** box to add an icon to the desktop during the installation. Select **Next**.

The system displays the following dialog box.



7. Review the settings you selected. Select **Install** to proceed to the next step. Select **Back** to return to a previous step to change your selections.

The system displays the following dialog box.

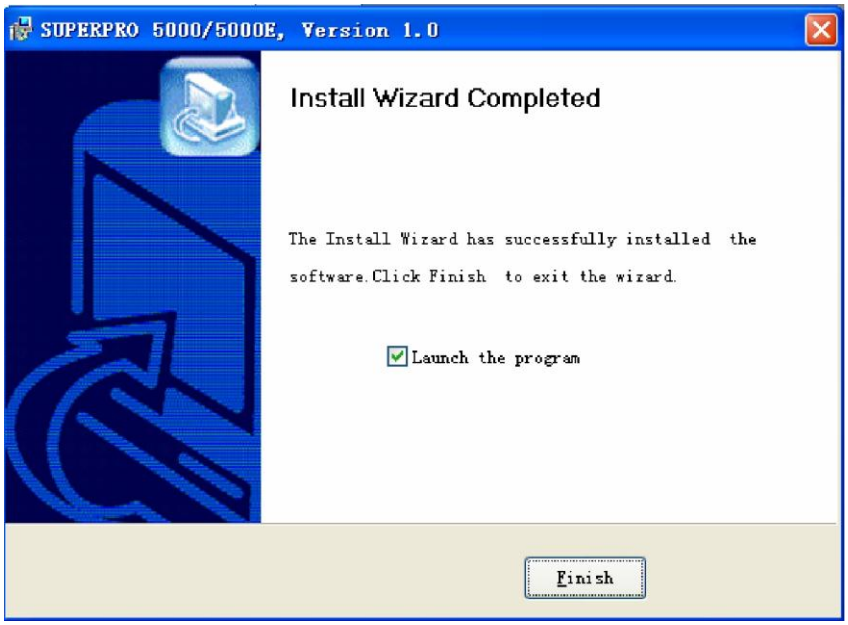


The system copies the files, installs the drivers and registers the software.

If you are using Windows Vista, the system displays following dialog box.

8. Select **Install this driver software anyway**.

The system displays the following dialog box.



9. Select **Finish** to complete the setup process.

Hardware and Driver Installation

If you connect the hardware before installing the software, the system opens the **Found New Hardware Wizard**, illustrated below.

1. Select **Cancel** to make sure the system does not install the wrong driver.
2. Return to the ***Software Setup*** process to setup the software before installing the

hardware. Refer to page 13 for instructions.

After you set up the software, you can install the hardware and driver. The following procedure explains the installation process.

1. Make sure all other programs are closed during the installation process.
2. Connect the programmer module to the computer through the USB port.
3. Turn on the power switch of the programmer module.

When you connect the new hardware, the system initiates the **New Hardware Wizard**, which locates the driver from the software you have just installed. The system displays alerts one at a time, illustrated below. The alerts on your system may be slightly different.

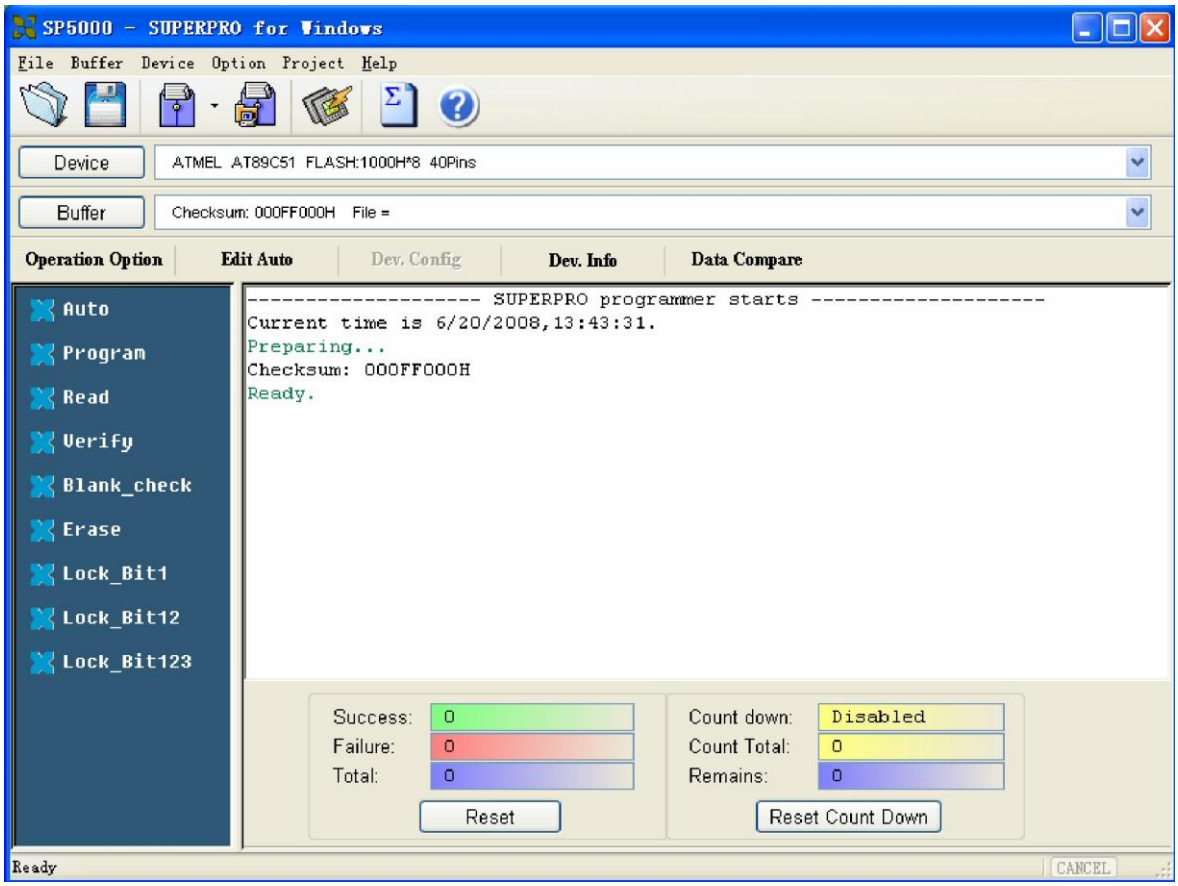
4. After you open the application software for the programmer, the system automatically starts the initialization. If it does not, make sure the programmer is securely connected to the computer and that the power switch is on.

Chapter 3 SUPERPRO Software Features

This chapter gives detailed explanations of the software functions of the programmer.

Main Screen

The main SUPERPRO screen is illustrated below. Each part of the user interface is labeled with a number and described below.



1. The Main Menu provides access to the File, Buffer, Device, Option, Project, and Help menus. Refer to the Menu section beginning on page 22 for more information.
2. The Toolbar includes icons for quick access to common functions. Refer to Tool Bar section on page 49 for more information.
3. Select **Device** to open the Device Selection dialog box. Refer to Select Device on page 33 for more information.
4. Select **Buffer** to open the Buffer Edit window. Refer to Buffer Menu on page 26

for more information.

5. The system displays information about the selected device. Refer to Main Screen Device Information Display on page 51 for more information.
6. The system displays information about the file currently loaded in the buffer. Refer to Main Screen File Information on page 52 for more information.
7. The Operation Option toolbar facilitates setting the operation options properly. The items correspond to the items in the Option Menu. Refer to the Option Menu section beginning on page 39 for more information.
8. The left side of the screen lists device operation functions. Refer to the Device Operation Window section on page 55 for more information.
9. The Operation Message Window displays the operation process, the operation result and the historical records of information. Refer to the Operation Information Window section on page 59 for more information.
10. The Status bar displays the menu item info, the progress of operation, and a Cancel button. Refer to the Status Bar section on page 59 for more information.
11. The Statistical Window displays statistical information. Refer to the section on page 60 for more information.

Main Menu

File Menu

The **File** menu provides access to the **Load**, **Save**, **Recent Projects**, and **Exit** functions. Each function is described in the following sections.

Load File

There may be one or more data buffers in the device. If several data buffers are displayed after you have selected the device, refer to the name and the data manual for the meanings of the buffers.

The two data types of the device are **Data (HEX/ASCII)** and **Fuse**.

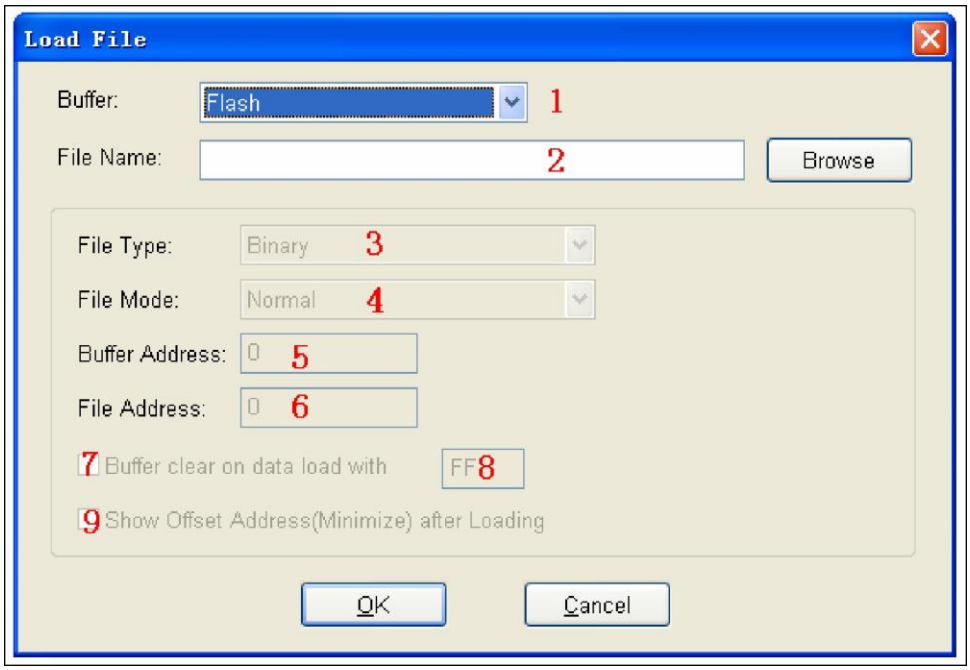
- For most EPROM and SCM, the data type is **Data (HEX/ASCII)**.
- The data type for PLD device is **Fuse**.

After you select the device, the software automatically identifies the data buffer type. You can review the buffer data types if you open the **Edit** dialog box for the data buffer. Refer to the **Buffer Menu** on page 26 for more information.

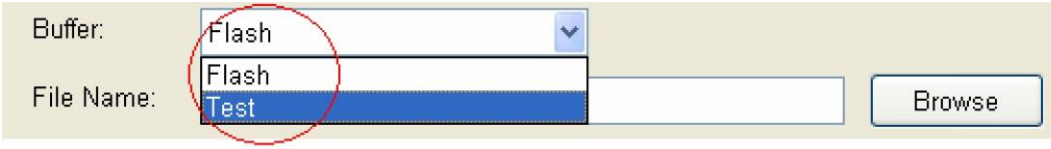
When some file data are loaded into the data buffer, the following rules apply:

- With a HEX/ASCII data buffer (EPROM, MCU etc.), the system assumes that 8 bits of the data are valid.
- With a JEDEC buffer (PLD/PAL), the system considers the lowest bit (1 bit) of the file data valid.

Select **Load** from the **File** menu to open the **Load File** dialog box, illustrated below. The red labels refer to the numbered explanations below.



1. Select the data **Buffer** name from the drop down list, as illustrated below.



   - The default option is considered the programming zone of the device as described in the data manual.
   - To choose between several buffers, determine the corresponding programming zones according to the names and the data manual.

The system loads the file data into the data buffers according to the data buffer names.

2. Enter the name of the data file to load in the **File Name** field.

   Alternatively, you can select **Browse** and choose the file using the **Select File** box, which is illustrated below.

   First select the file type from the **Files of type** drop down list.

   - Data (HEX/ASCII data) file types can be further divided into many different types according to their storage forms. You must select the appropriate file type to ensure the data loads correctly.
   - The file type for Fuse data files is JEDEC and the file extension is "jed." After selecting the file, you do not need to select the data file type.

Altera Corporation uses POF format files. To program an Altera Corporation chip, refer to POF Format Files on page 77.

3. Select the **File Type** from the drop down list.
4. Select one of the following **File Modes** from the drop down list:
   - **Norm**al to load the whole file
   - **Even** to load the first byte and discard the second byte out of every two bytes
   - **Odd** to discard the first byte and load the second byte out of every two bytes
   - **1st byte of 4** to load first byte and discard the other three bytes out of every four bytes

- **2nd byte of 4** to load the second byte and discard the other three bytes out of every four bytes
- **3rd byte of 4** to load the third byte and discard the other three bytes out of every four bytes
- **4th byte of 4** to load the fourth byte and discard the other three bytes out of every four bytes
- **1st 2_byte of 4** to load the first two bytes and discard the other two bytes out of every four bytes
- **2nd 2_byte of 4** to load the last two bytes and discard the other two bytes out of every four bytes

Refer to Separate File Data for Programming on page 77 for more information.

5. The **Buffer Address** field displays the start address of the data loaded into the buffer.
6. The system displays the minimum offset address in the **File Address** field. If the file type has a non-zero start address, enter the data offset address in the **File Address** field. Make sure to enter the correct address, because an incorrect file offset address causes part of the buffer to be filled with FF (or incorrect data). This causes a system overflow or failure. Refer to Solve Invalid File Type or File Data Overflow on page 77 for more information on this problem.
7. Select the **Buffer clear on data load with** checkbox to fill the data buffers with the specified data.
8. Enter the data input type.
9. Check the **Show Offset Address (Minimize) After Loading** to show the minimized file offset address or initial address on the screen.
10. Select **OK** to load the file. Otherwise, select **Cancel**.

Save

Select **Save** from the **File** menu to save data in the current buffer to a disk file. The system opens the **Save File** dialog box, illustrated below. The red labels refer to the numbered explanations below.