Smart Flash Programmer

User Manual

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Revision History

Each instance in Revision History of this document reflects a change to this document from its previous revision. For more details, refer to corresponding pages or appropriate links given in the table below.

Date	Revision Level	Description	Page #
March 2006	1	First Release	All

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Preface

This user manual describes the Smart Flash Programmer (SFP) for automating programming of Flash devices in targets having microcontrollers like Z8 Encore!® or eZ80Acclaim!®.

Manual Organization

This manual is divided into the following chapters:

Chapter 1 – Using the Smart Flash Programmer (SFP)

This chapter describes the SFP features, tool requirements, supported operating systems, supported host system configuration, and software installation.

Chapter 2 – Understanding the SFP GUI

This chapter describes SFP graphical user interface and explains in detail, the menu bar, the toolbar, information window, workspace and configuration window, project tab description, target tab description, project and target options, and status window.

Chapter 3 – Configuration

This chapter describes the procedure for creating a new project and target device.

Chapter 4 – Programming Flash Memory

This chapter describes a Flash programming workflow and procedure for the following on an attached target:

- Program Flash.
- Fast program Flash.
- Verify program stored in Flash.
- Erase Flash.
- Program single value in Flash.

Chapter 5 – Advanced Configuration

This chapter describes the advanced configuration window and procedure for calculating the file and Flash checksum, specifies Flash files to be programmed, and procedure for managing targets.

Chapter 6 – SFP Command Line and Scripting Feature

This chapter describes the process for starting SFP from command prompt and explains the supported script file commands, project related commands, setting up Flash options,

target related commands, communication settings, command execution, error handling, and other miscellaneous commands.

Conventions

The following conventions are used in this manual:

italics

Expressions in italics indicate variables to be replaced by specific values. For example, the statement: watch <*identifier*>, requires you to substitute a value for <*identifier*>.

Bold

Window names, menu commands and button names are bold to make them stand out in the text. Likewise, bold is used to denote the command that you are executing, for example: (Press **OK**).

`Courier`

Courier is used for code, directory, and file names.

Additional Information

Before you use the technical support provided on the web page, refer the following documentation:

- **Readme.txt File**

Refer to `Readme.txt` file available in the `<ZILOGINSTALL>\SFP_<version>` for SFP installation tips.

where

`ZILOGINSTALL` is the SFP installation directory.

`version` is the SFP version number like 2.0.

The default installation directory is `C:\Program Files\ZiLOG`

- **Quick Start Guide**

Quick start guide (QS0058).

ZiLOG Technical Support

For technical questions related to ZiLOG products and tools or for design assistance, visit our website: http://www.zilog.com.

You must provide the following information in your support ticket:

- Product release version (using the **About** toolbar icon).
- Type of hardware you are using.
- Exact wording of any error or warning messages.
- Any applicable files attached to the e-mail.

Supported ZiLOG Parts

The following steps helps you to find out the supported ZiLOG parts:

1. From the **File** menu, select **New project**.

   The **Project Creation** window (Figure 54) is displayed.

2. In the **Project Creation** window, the **CPU Family Group**, **CPU Family,** and **CPU** drop-down list boxes display the supported ZiLOG parts.

   `Readme.txt` file also provides the list of supported ZiLOG parts.

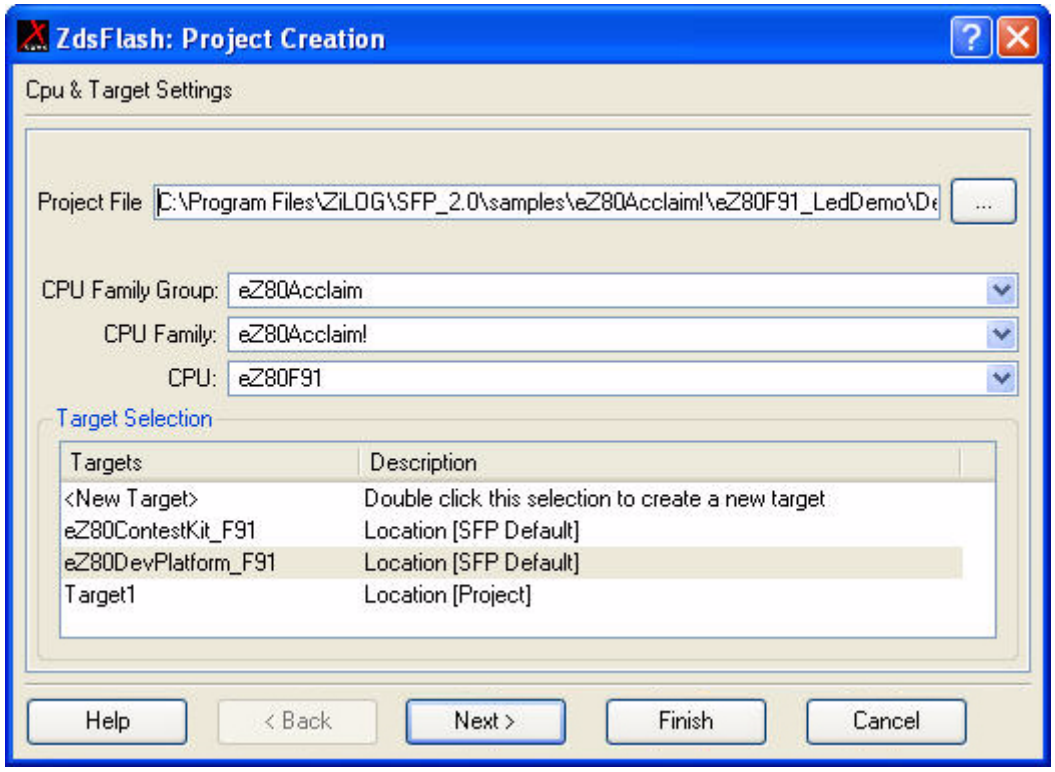


Figure 54. Project Creation Window

Chapter 1
Using the Smart Flash Programmer (SFP)

This chapter describes the SFP under the following topics:

Introduction

The SFP is a software tool used to automate programming of Flash devices in targets having microcontrollers like Z8 Encore!® or eZ80Acclaim!®.

Use the SFP's Advance Configuration interface to create Flash project files. These project files store the configuration settings needed to burn the Flash memory on a specific target.

Once a project is configured, the SFP interface can be used to automate Flash memory programming.

This user manual provides instructions that support:

- SFP Configuration (see Chapter 3 on page 35 for more details).
- Using SFP (see Chapter 4 on page 47 for operation instructions).

Features of SFP

The following list provides a brief overview of SFP features:

- Windows-based software Flash programming tool.
- Easy-to-use GUI.
- Two end-user configurations:
  - Simplified (on step programming).
  - Advanced (for advance SFP configuration).
- Supports **Program and Verify** and **Fast Program** modes.
- Calculates hex File checksum and Flash checksum.
- Allows you to set-up serialization for programming a Flash memory location with a unique number over a range of values:
  - Supports incremental serialization.
  - Supports hex, decimal, IP, and MAC serialization values.
- Enables multiple hex file programming.
- Uses hex files produced by ZiLOG's ZDS II IDE.
- Programs the attached targets through the ZiLOG debug interface. It requires use of a serial Smart Cable or USB Smart Cable or Ethernet ZPAK (eZ80Acclaim!®).
- Allows you to Flash multiple targets sequentially over Ethernet ZPAK (eZ80Acclaim!®) and USB cables (eZ80Acclaim!® and Z8 Encore!®).
- Supports scripting and automation. Script commands can be used to automate the execution of a significant portion of the application.

- Supports different Flash devices like Atmel, Micron, STMicro, Intel, and AMD for eZ80Acclaim!®.

Tool Requirements

The following sections describes the tool requirements for Z8 Encore!® and eZ80Acclaim!® family of microcontrollers.

Requirement for Z8 Encore!® Families

Z8 Encore!® family of microcontrollers requires one of the following Smart Cable for connecting the PC to a target board:

- Z8 Encore!® Serial Smart Cable.
- ZiLOG® USB Smart Cable.
- USB hub for multiple target programming.

Requirement for eZ80Acclaim!® Families

eZ80Acclaim!® family of microcontrollers requires one of the following cables for connecting the PC to a target board:

- ZPAK II with CAT5 Ethernet Cable.
- eZ80Acclaim!® Serial Smart Cable.
- ZiLOG® USB Smart Cable.

Supported Operating Systems

SFP supports the following operating systems:

- MS Windows 98SE.
- Windows NT 4.0 SP6(Serial and Ethernet only).
- Windows 2000 SP4.
- Windows XP Pro.

System Requirements

The following section describes the recommended and minimum configuration for SFP.

Recommended Configuration

The recommended configuration for SFP is listed below:

- Operating system - MS Windows XP Pro.
- Pentium III/500 MHz processor or higher.
- 128 MB RAM or more.
- 25 MB hard disk space (includes both application and documentation).
- Super VGA video adapter.
- CD-ROM drive.
- Ethernet port.
- High-speed USB port (when using USB Smart Cable).
- RS232 communication port with hardware flow control.
- Internet Explorer 6.0 or Netscape (HTML Help 1.1 or later).

Minimum Configuration

The minimum configuration for SFP is listed below:

- Operating system - MS Windows 98 SE.
- Pentium II 233 MHz processor.
- 96 MB RAM.
- 25 MB hard disk space (includes both application and documentation).
- Super VGA video adapter.
- CD-ROM drive.
- Ethernet port.
- RS232 communication port with hardware flow control.
- Internet Explorer 6.0 or Netscape (HTML Help 1.1 or later).

Software Installation

You can install SFP either from the CD-ROM provided by ZiLOG or download from ZiLOG website http://www.zilog.com.

The following steps helps to install SFP:

1. Double-click the installation file if you have downloaded SFP from ZiLOG website or use the menu option **Install SFP** if installing from CD-ROM and follow the on-screen instructions.
2. In the **Licence Agreement** window, click **Yes** to accept the agreement.
3. In the **Choose Destination Location** window, click **Next.**

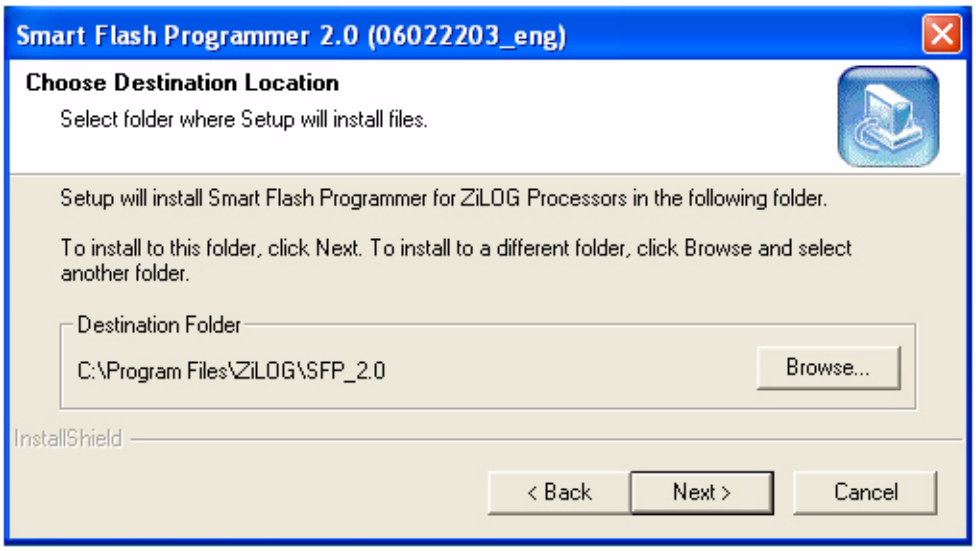


Figure 55. Choose Destination Location Window

By default, the software is installed in the following path:

`C:\Program Files\ZiLOG\SFP_<version>`

4. In the **Select Program Folder** window, click **Next** to install in the default location:

   Start menu>Programs > ZiLOG Smart Flash Programmer <version>

Chapter 2
Understanding the SFP GUI

This chapter describes the SFP GUI under the following topics:

SFP GUI

SFP graphical user interface consists of a menu bar, toolbar, information window, workspace window, configuration window, and status window (see Figure 56).

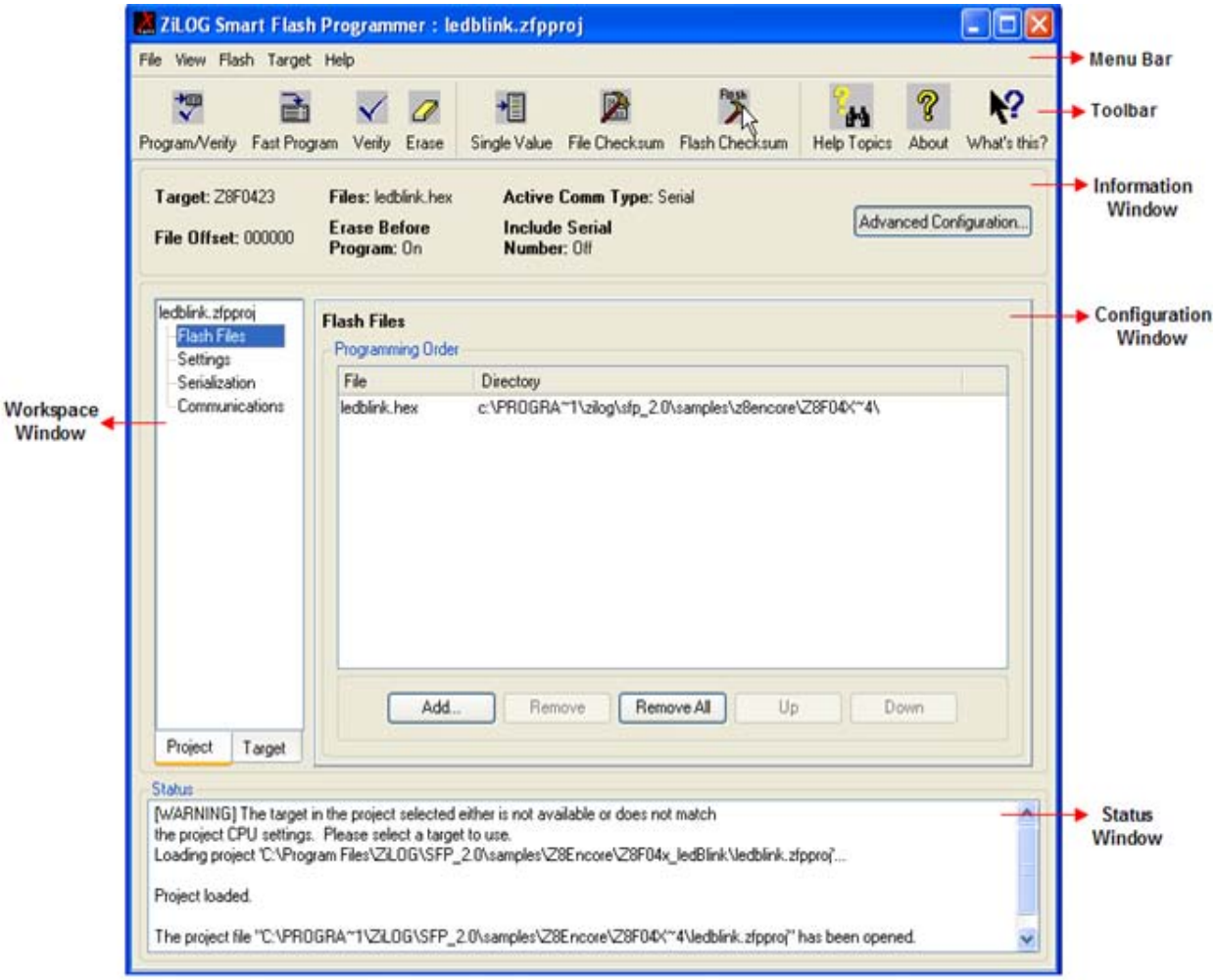


Figure 56. SFP Graphical User Interface

Menu Bar

The menu bar consists of the following menus: File, View, Flash, Target, and Help as shown in Figure 57.

Figure 57. Menu Bar

Table 1 describes the **Menu Bar**.

Table 1. Menu Bar Description

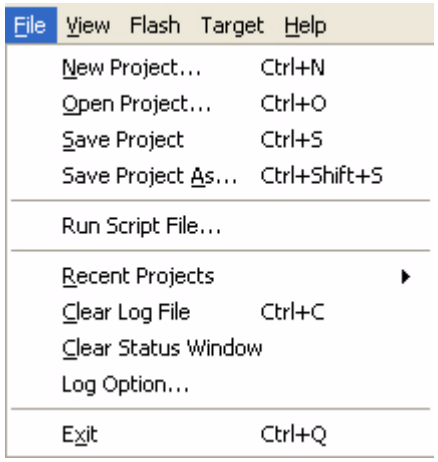
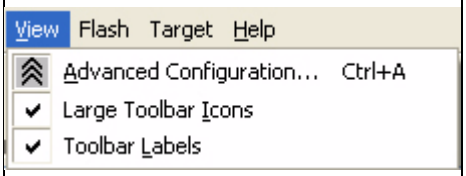
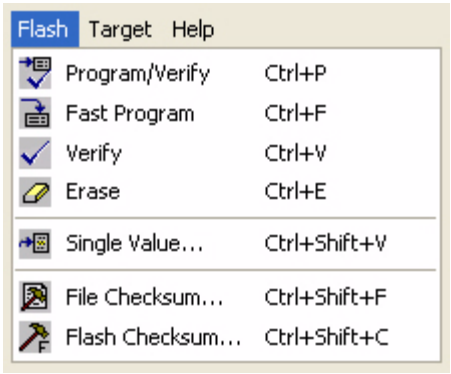
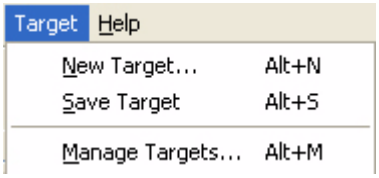
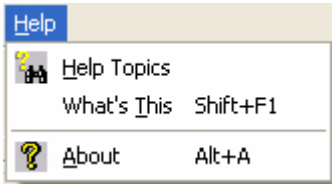
Menu Name	Menu	Description
File		Use the **File** menu to create, open, or save a project. You can set log option, clear log file and status window, run script file, and also view the recent projects.
View		Use the **View** menu to show or hide the Advance Configuration window and to customize the display of toolbar icons and labels.

Table 1. Menu Bar Description (Continued)

Menu Name	Menu	Description
Flash		Use the **Flash** menu to perform the following flash operations: Program/Verify, Fast Program, Verify, Erase, Program Single Value, Calculate File and Flash Checksum.
Target		Use **Target** menu to create, save, and manage targets.
Help		Use the **Help** menu to list the help topics, context-sensitive help, and general information about the software.

Toolbar

Figure 58 displays the SFP **Toolbar** buttons and Table 2 describes the **Toolbar** buttons.

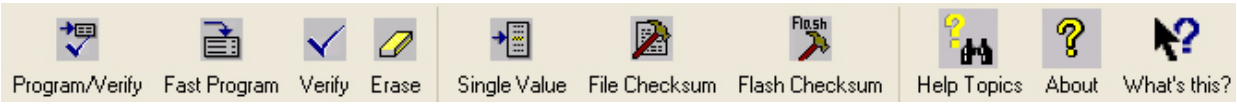


Figure 58. Toolbar

Table 2. Toolbar Description

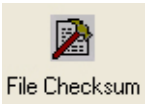
Toolbar Name	Button	Description
Program/Verify		Programs and verifies the target/targets sequentially.
Fast Program		Programs the target/targets sequentially without verification.
Verify		Verifies the program stored in Flash on an attached target/targets sequentially.
Erase		Erases the program stored in Flash on an attached target/targets sequentially.
Single Value		Programs a single value in Flash on an attached target/targets sequentially.
File Checksum		Calculates the checksum for a specific hex file.
Flash Checksum		Calculates the checksum for the Flash devices connected to the target.

Table 2. Toolbar Description (Continued)

Toolbar Name	Button	Description
Help Topics		Displays the help topics.
About		Provides general information about the software like version number and the components installed.
What's this?		Displays a popup window with the text describing the control and what it is for.

Information Window

Figure 59 displays the **Information** window.

Figure 59. Information Window

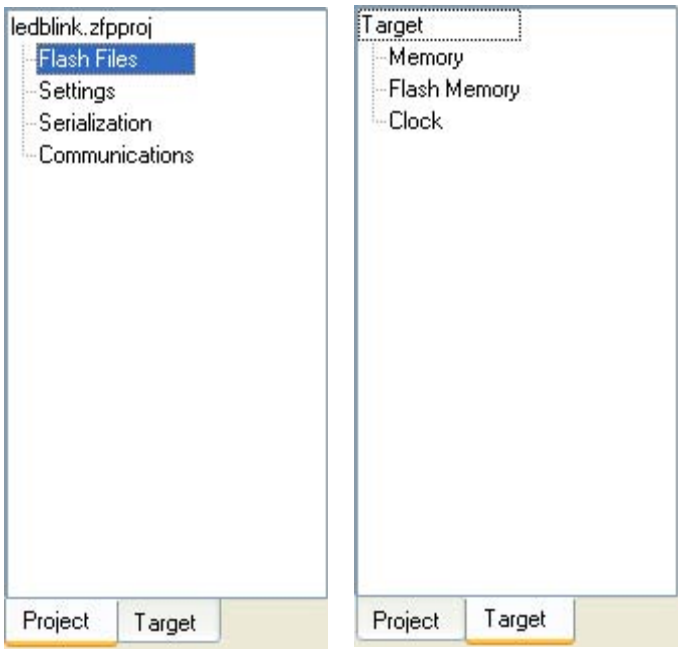
The **Information** window displays the following:

- Target Name.
- File Name.
- Active Communication Type.
- File Offset Value.
- **Erase Before Program** indicates whether erase before program option is enabled or disabled.
- **Include Serial Number** indicates whether serial number is included or not.

- Advance Configuration button for displaying/hiding the **Workspace** and **Configuration** windows. Displaying/hiding menu items available for advance mode only.

Configuring Workspace

Figure 60 displays the **Workspace** window.



Project Tab **Target Tab**

Figure 60. Workspace Window

The **Workspace** window and **Configuration** window are displayed only when the **Advanced Configuration** button on the **Information** window (see Figure 59) is clicked.

For each link selected on the **Workspace** window, the corresponding details of that link will be displayed on the **Configuration** window. The following sections describes in detail, the different **Configuration** windows for each of the link selected on the **Workspace** window. See Figure 56 for different windows of SFP.

The SFP **Workspace** window (see Figure 60) consists of two tabs:

- Project tab
- Target tab

Project Tab

The **Project** tab allows you to view and/or change the following window details:

- Flash Details
- Flash Files
- Settings
- Communication
- Serialization

The following sections describes in detail, the various windows under the **Project** tab.

Flash Details Window

Click the project name under the **Project** tab in the **Workspace** window, the corresponding **Configuration** window – **Flash Details** window (see Figure 61) is displayed.

The **Flash Details** (see Figure 61) window provides a summary of project details like, the CPU family, selected Flash files, whether Flash memory will be erased before programming or not, file offset, whether to include the serial number with programming or not, serialization address, serialization number, serialization size in bytes, serialization increment, and communication settings.

Note: The project details: Erase Info Page and Use Info Page with Serialization will be displayed only for eZ80Acclaim!® microcontrollers.

Right-click on the **Flash Details** window (see Figure 61) allows you to copy selected text or to select all text in the **Flash Details** window.

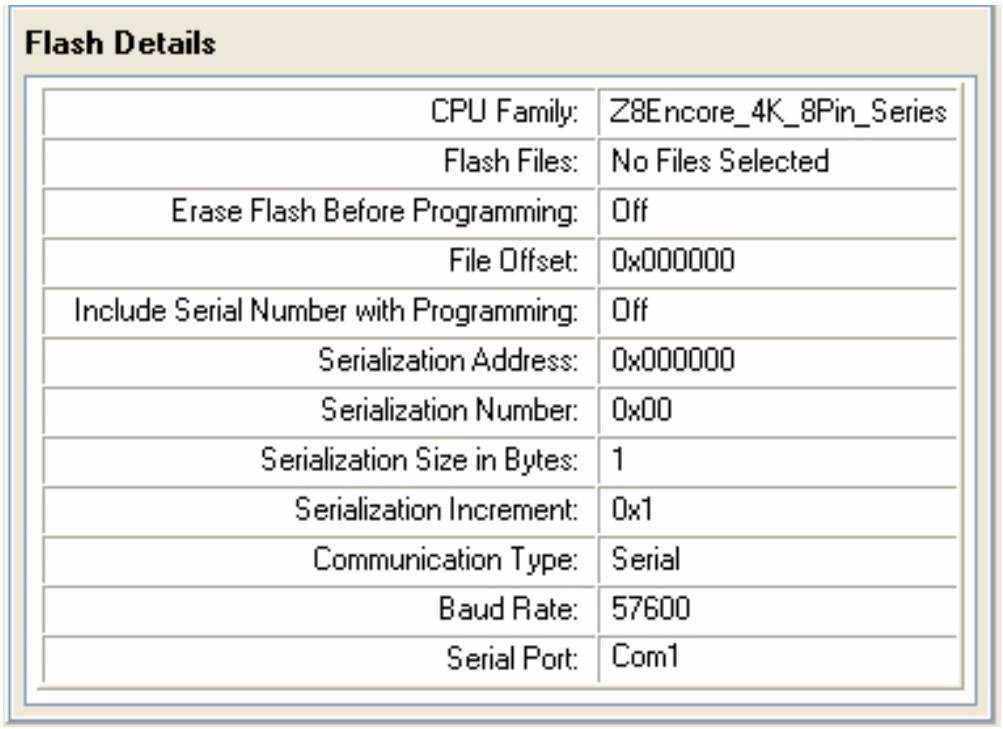


Figure 61. Example For Configuration Window – The Flash Details Window

Flash Files Window

Click the **Flash Files** link under the **Project** tab in the **Workspace** window, the corresponding **Configuration** window – **Flash Files** window (see Figure 62) is displayed.

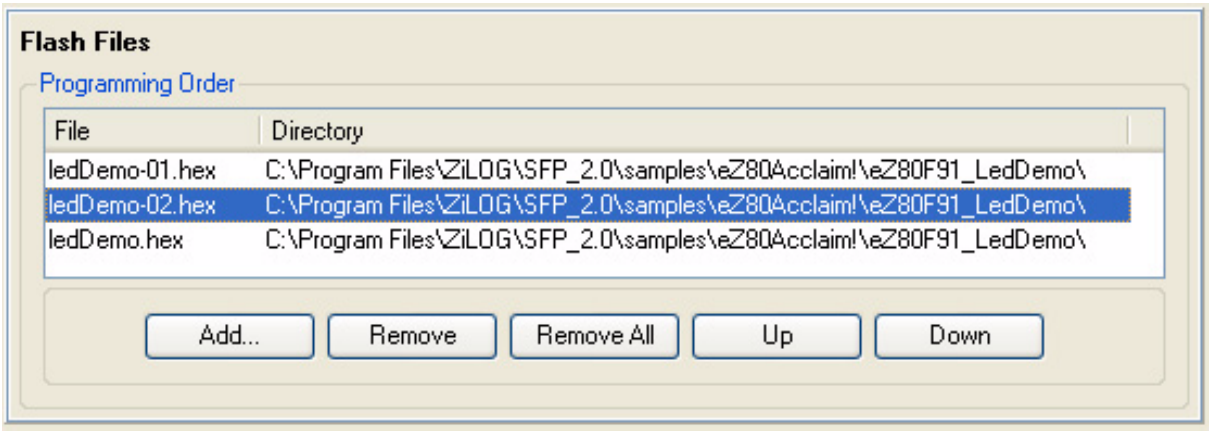


Figure 62. Flash Files Window

The **Flash Files** window lists the Flash files in the order that they will be programmed. It includes the following buttons:

- **Add** button will navigate to the location of a Flash file to be programmed.
- **Remove** button will remove the selected Flash file from the **Flash File** window.
- **Remove All** button will remove all the Flash files from the **Flash File** window.
- **Up** and **Down** buttons are used for re-arranging the programming order of the Flash files.

Right-click on a file link in the **Flash Files** window (see Figure 62) will display the **Option** menu to calculate the File checksum. Selecting the **File Checksum** option will invoke the **File Checksum Calculator** dialog box (see Figure 63) to calculate the checksum for the selected file.

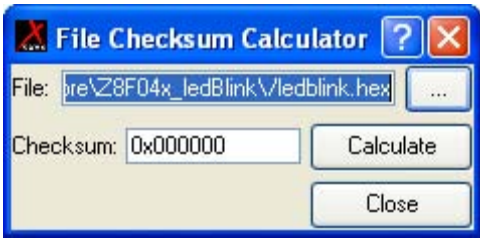


Figure 63. File Checksum Calculator

Settings Window

Click **Settings** link under the **Project** tab in the **Workspace** window, the corresponding **Configuration** window – **Settings** window (see Figure 64) is displayed.

The **Settings** window includes the following configurations:

1. In the **File Offset (Hex)** text box, enter a hexadecimal file offset value. This value applies to every file in the project's Flash files list.
2. If you want to erase the Flash memory range defined in your target settings before programming, select the **Erase Before Programming** check-box.
3. If you want to preserve the Flash memory Info page when the target device is erased, Select the **Do NOT Erase Info Page** check-box.

Note : **Do NOT Erase Info Page** option is available only for eZ80Acclaim!® microcontrollers.

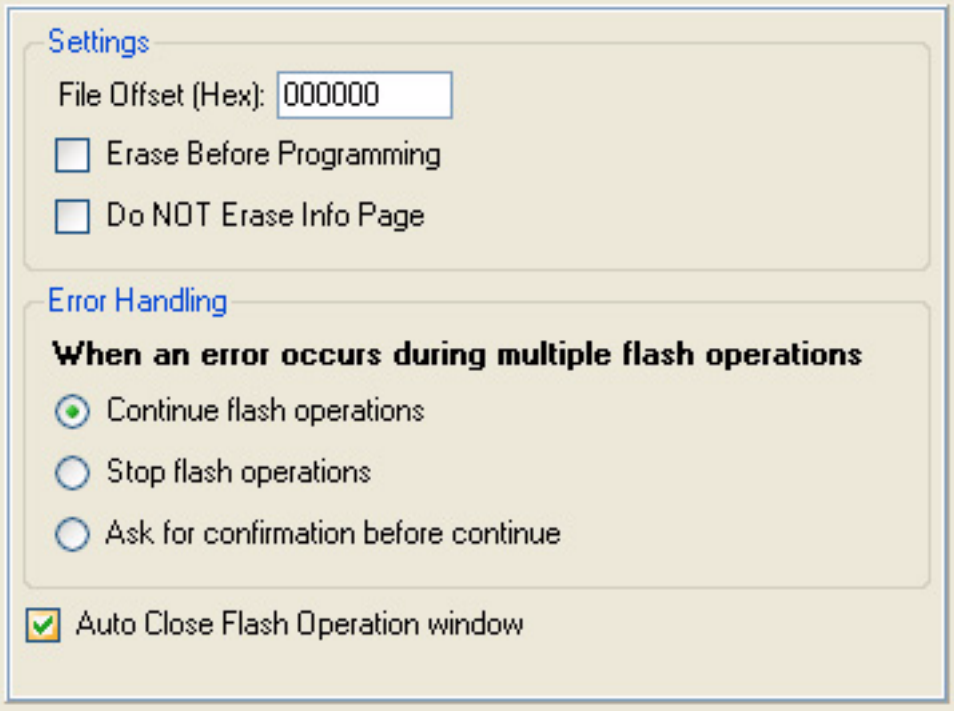


Figure 64. Example for Settings Window – eZ80Acclaim!®

4. For error handling, you can set any one of the following options:
   - **Continue Flash operations –** Select this option to continue the Flash operation on the next target when an error is encountered.
   - **Stop Flash operations –** Select this option to stop the Flash operation when an error is encountered.
   - **Ask for confirmation before continue –** Select this option to ask for confirmation before continuing Flash operations on the next target.

Notes :
- The above error handling options for multiple target programming are available when using the USB Smart Cable and/or while using eZ80Acclaim!® ZPAK II. Serial Smart Cables do not support multiple target programming.
- The above error handling options are not available during the execution of scripts. If an error is encountered during execution of scripts, SFP continues with the default option of continuing the Flash operation on the next target.

5. **Auto Close Flash Operation Window –** Select this option to close the Flash operation windows (see Figure 36, Figure 37, and Figure 40)automatically after the Flash operation is complete. The status of the Flash operation will be indicated in the Status window.

Communications Window

Click the **Communications** link under **Project** tab in the **Workspace** window, the corresponding **Configuration** window – **Communication** window (see Figure 65 through Figure 67) is displayed.

SFP supports three debug tools (Serial, USB, and Ethernet) for communication. Depending on the debug tool selected in the **Type** drop-down list on the **Communication** window, the other fields are displayed accordingly as shown below.

- When communication type is serial, **Communication** window (see Figure 65) will have the following fields.
  - **Port:** You can select the required port from the **Port** drop-down list.
  - **Baud Rate:** You can select the required baud rate from the **Baud Rate** drop-down list.

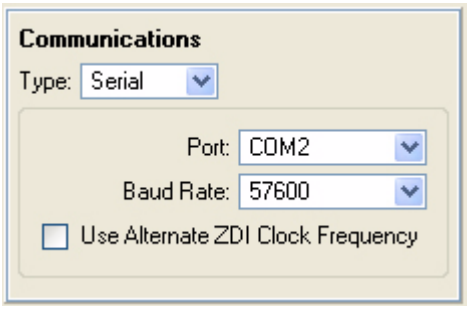


Figure 65. Serial Communication Type

- When the communication type is USB, SFP scans all the USB ports on the PC to detect all USB Smart Cables and then lists their serial numbers in the **Serial Number** pane as shown in Figure 66.

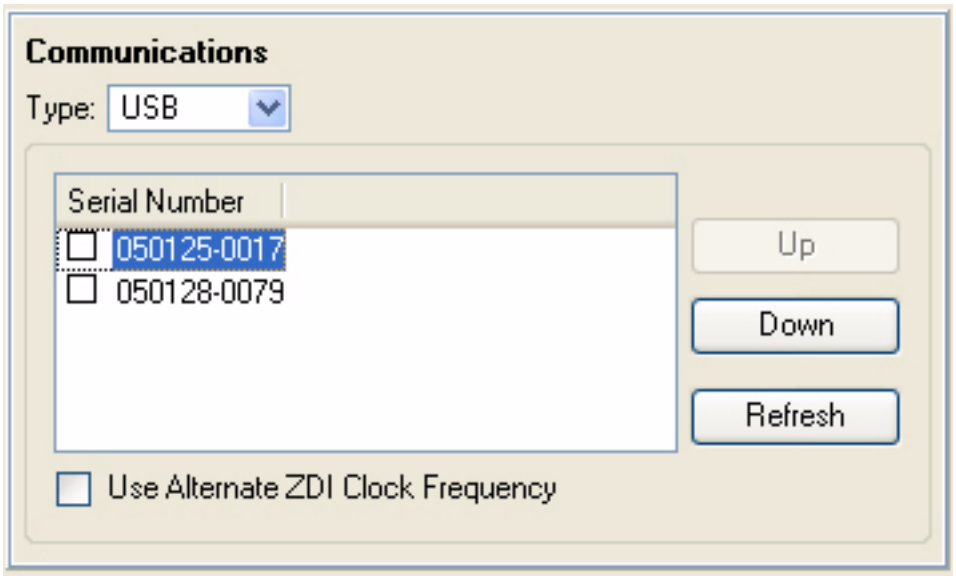


Figure 66. USB Communication Type

The **Communication** window (see Figure 66) provides the following options:

- You can change the order of connecting the USB devices using the **Up** and **Down** buttons.
- Use the **Refresh** button to re-scan the USB ports.

- When the communication type selected is Ethernet, SFP displays a list of IP addresses and the port number as shown in Figure 67. You can select/deselect the check-boxes preceeding the IP address to include/exclude the IP address in the project for Flash operations. New IP addresses are added to the list with the Add function.

Note: SFP reads the IP addresses from the `<installation_dir>/debug tool/ <product>/directory` and lists all the IP address and port numbers that have been added.

For more information on the debug tools (see Appendix A: Files Used by SFP on page 89).

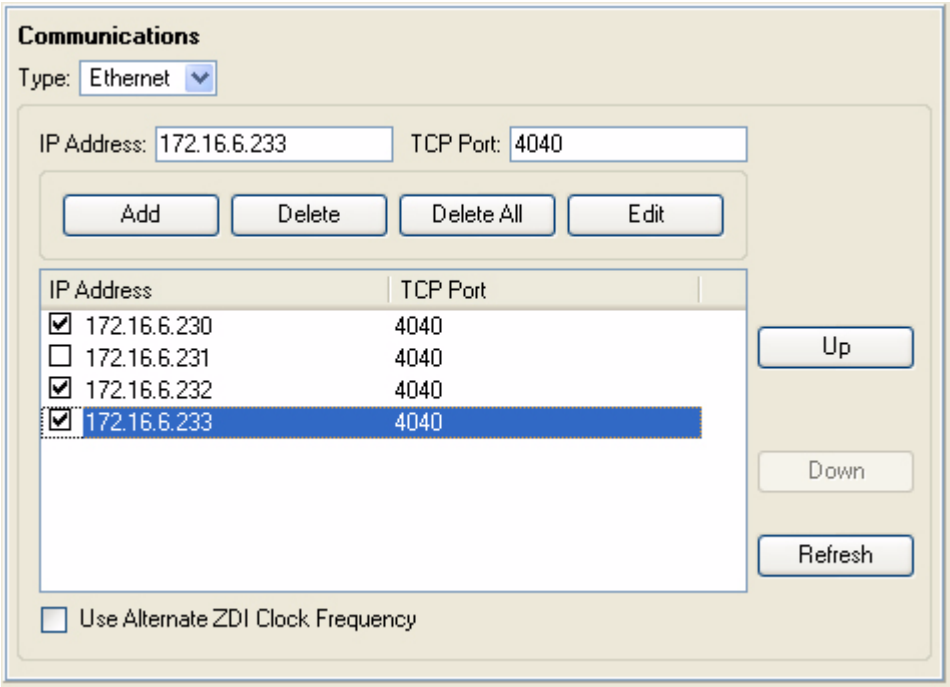


Figure 67. Ethernet Communication Type

The **Communication** window (see Figure 67) provides the following options:

– **Add IP Address**

Enter the IP address to to be added in the **IP Address** text box, and the TCP port number in the **TCP Port** text box, and click **Add**. By default, the added IP address is selected in the IP address list.

– **Delete IP Address**

To delete a particular IP address from the IP address list, select the IP address, and click **Delete.** To delete all the IP addresses from the IP address list, select all the IP address, and click **Delete All.**

Note: Deleting an IP address will also delete the corresponding debug tool files from the `<installation_dir>/debug tools/<product>/ directory`. The deleted IP address will no longer be available for other projects.

– **Edit IP Address**

To edit an IP address, select the IP address from the IP address list, and click **Edit**. In the **Edit IP Address and TCP Port** dialog box (see Figure 68), edit the values, and click **OK**.

The **Edit IP Address and TCP Port** dialog box (see Figure 68) can also be opened by double-clicking the IP address from the IP address list.

Note: To select an IP address, click the corresponding check-box proceeding the IP address in the IP address list.

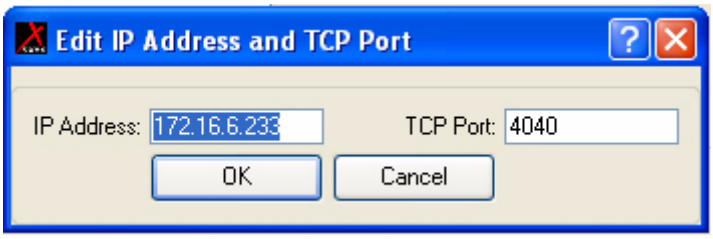


Figure 68. Edit IP Address and TCP Port

– **Rearrange the IP Address list**

You can rearrange the order of using the IP address using the **Up** and **Down** buttons.The order of IP address determines the order of Flash operations.

Note: You have the option to use the alternate ZDI clock frequency. This option is available only for the eZ80Acclaim!® microcontrollers.

Serialization Window

Serialization is the ability to store customer identifier information such as a serial number or internet address into the Flash memory.You can program unique values into Flash, or set an initial value and uniformly increment it. Serialization is a useful tool and is not required to program Flash.

Click the **Serialization** link under the **Project** tab of the **Workspace** window, the corresponding **Configuration** window – **Serialization** window (see Figure 69 through Figure 71) is displayed.

Based on your selection of the target device in the **Target** window and the communication type in the **Communication** window, the **Serialization** window will have different settings as shown below.

- If the target device is eZ80F91 with serial communication selected, the **Serialization** window (see Figure 69) will have the following settings:
  – To enable serialization, select the **Include Serialization in Programming** check-box. When this option is selected, SFP calculates the serialization value and writes that value at the specified location during Flash programming of the hex file.

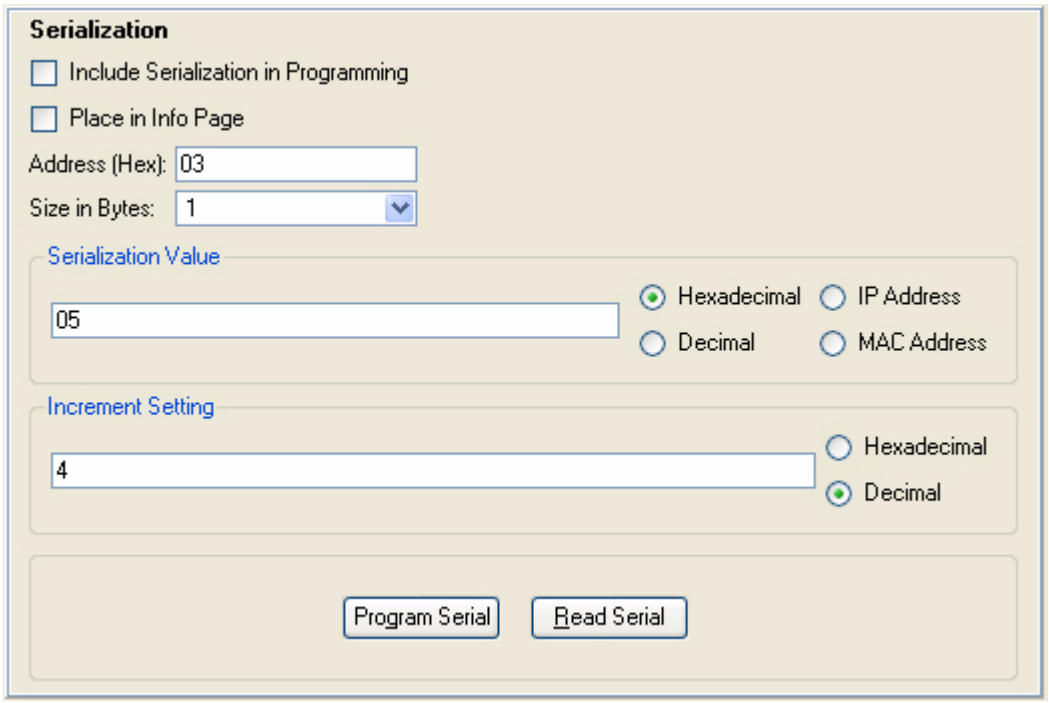


Figure 69. Serialization Settings for Serial Communication

Note: For eZ80Acclaim!® CPU family, if you want the serialization value to be stored in the Flash memory Info page, select the **Place in Info Page** check-box. For Z8 Encore!® family of products that support non-volatile data storage (NVDS) the option for using the NVDS can be selected for serialization value storage.

- In the **Address (Hex)** text box, you can enter the Flash memory address where you want the serialization code to be programmed.
- In the **Size in Bytes** drop-down list, select the number of bytes required to store the serialized entry. The sizes available depend on the serialization value display format.
- In the **Serialization Value** text box, you can enter a unique serial number or a starting value for sequential serialization.
- In the **Serialization Value** section, you can select a radio button to determine how you want the value to be entered and displayed. The options are:
  - Hexadecimal
  - Decimal
  - IP Address: Four dotted decimal octets, for example 192.168.1.30.

– Media Access Control (MAC): Six hexadecimal bytes separated by colons, for example 00:90:23:1C:45:1B.

Regardless of the display format, serialization values are always stored as a binary value of the specified size.

– In the **Increment setting** section, enter an increment value for the serialization value to be incremented after programming each target. The increment value can be either an hexadecimal or an decimal value.
– If you have a target device attached to your host PC, you can click **Read Serial** to read the serial number currently stored in that device.
– If you want to program unique values into the individual parts, you can click **Program Serial** to program the current serialization value into the Flash memory of the currently attached target.

Note: The serialization bytes in Flash memory must be blank (all FFH) for the Program Serial to succeed. If an hex file is stored, it should include a blank space for the serial number.

If the communication type selected is USB/Ethernet, the **Serialization** window (see Figure 70 and Figure 71) displays all the targets selected for programming. These targets are selected by the user in the **Communication** window (see Figure 66 and Figure 67). SFP automatically calculates the serialization values for all the targets based on the serialization value and the increment settings.

- If the USB type of communication is selected in the **Communication** window (see Figure 66), the **Serialization** window (see Figure 70) will have all the settings configured for serial communication, and in addition, it also includes the **USB Serial Number** pane as shown in Figure 70. The serial number of the USB devices connected will be displayed in the **USB Serial Number** pane.

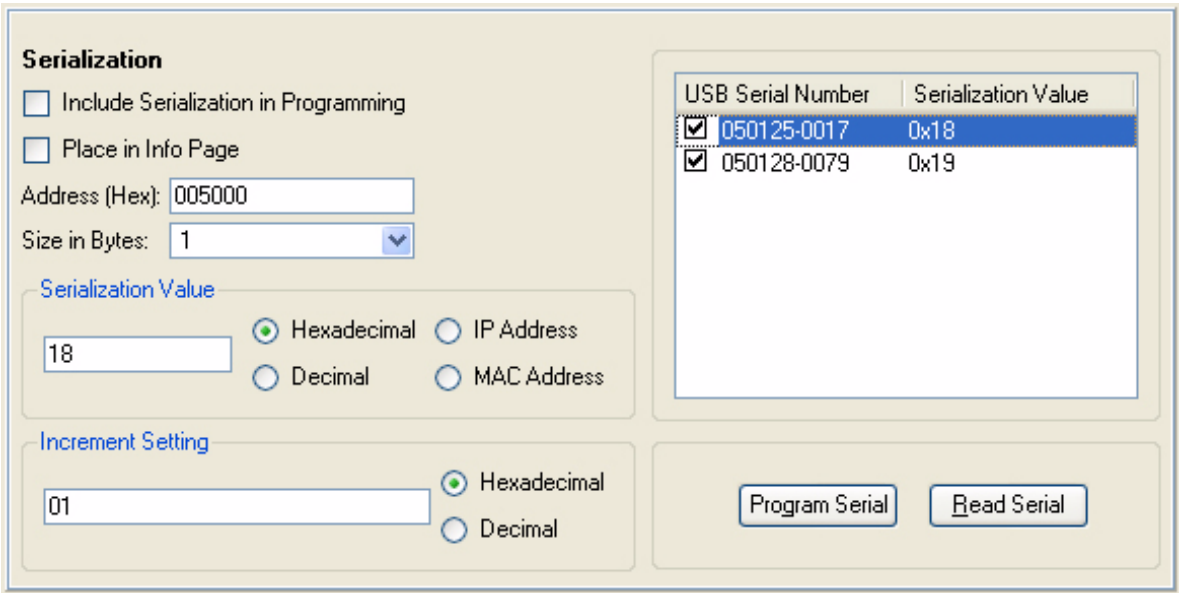


Figure 70. Serialization Settings for USB Communication

- If the Ethernet type of communication is selected in the **Communication** window (see Figure 67), the **Serialization** window (see Figure 71) will have all the settings configured for serial communication and in addition, it also includes the IP Address list as shown in Figure 71.

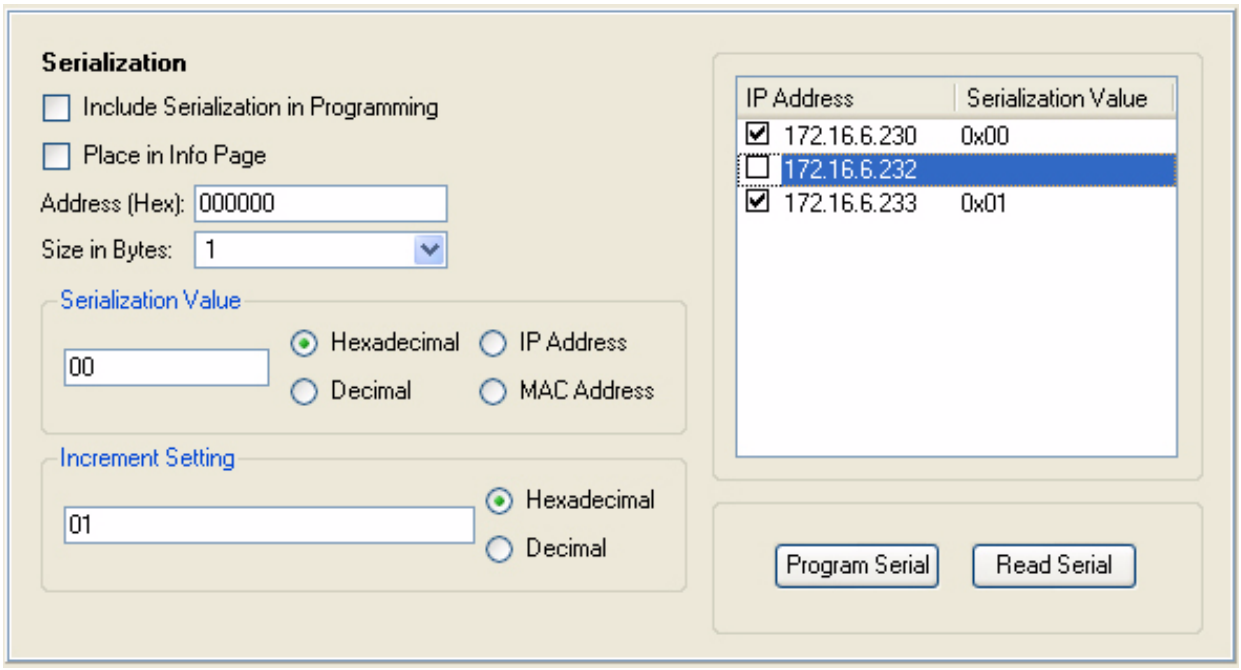


Figure 71. Serialization Settings for Ethernet Communication

Target Tab

The **Target** tab allows you to view and change the following window details:

- Target Details.
- Memory (available only for eZ80Acclaim!® CPU families).
- Flash Memory (available only for eZ80Acclaim!® CPU families).
- Clock.

Target Details Window

Click the target name under the **Target** tab in the **Workspace** window, the corresponding **Configuration** window – **Target Details** window (see Figure 72) is displayed.

The **Target Details** window provides a summary of target details like the Name of the Target, CPU Family, CPU Name, and Clock Frequency.

Note: For eZ80Acclaim!® families, the **Target Details** window will also display the External Flash Manufacturer, External Flash Device, External Flash Base Address, and External Flash Units.

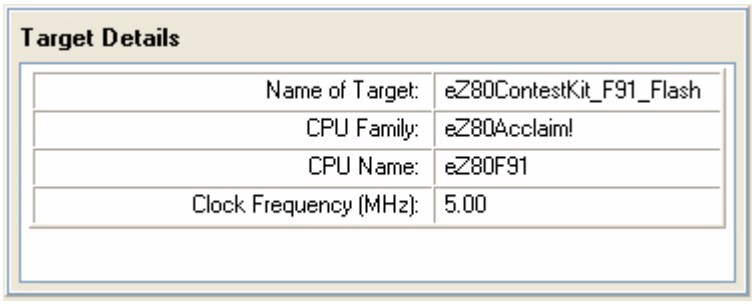


Figure 72. Target Details Window

Clock Window

Click the **Clock** link under the **Target** tab of the **Workspace** window, the corresponding **Configuration** window – **Clock** window (see Figure 73, Figure 74) will be displayed.

In the **Clock** window for eZ80Acclaim!® (see Figure 73), enter the frequency in the **System Clock Frequency** (Hz) text box.

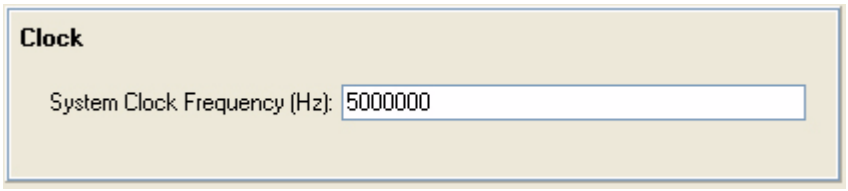


Figure 73. Clock Window for eZ80Acclaim!®

In the **Clock** window for Z8 Encore!® (see Figure 74), select the clock source radio button **Internal** or **External** in the **Clock Source** pane and select/enter the clock frequency in the **Clock Frequency** (MHz) pane.

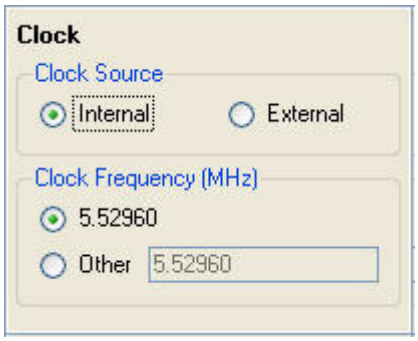


Figure 74. Clock Window for Z8 Encore!®

Memory Window

Click the **Memory** link under the **Target** tab of the **Workspace** window, the corresponding **Configuration** window – **Memory** window (see Figure 75) will be displayed.

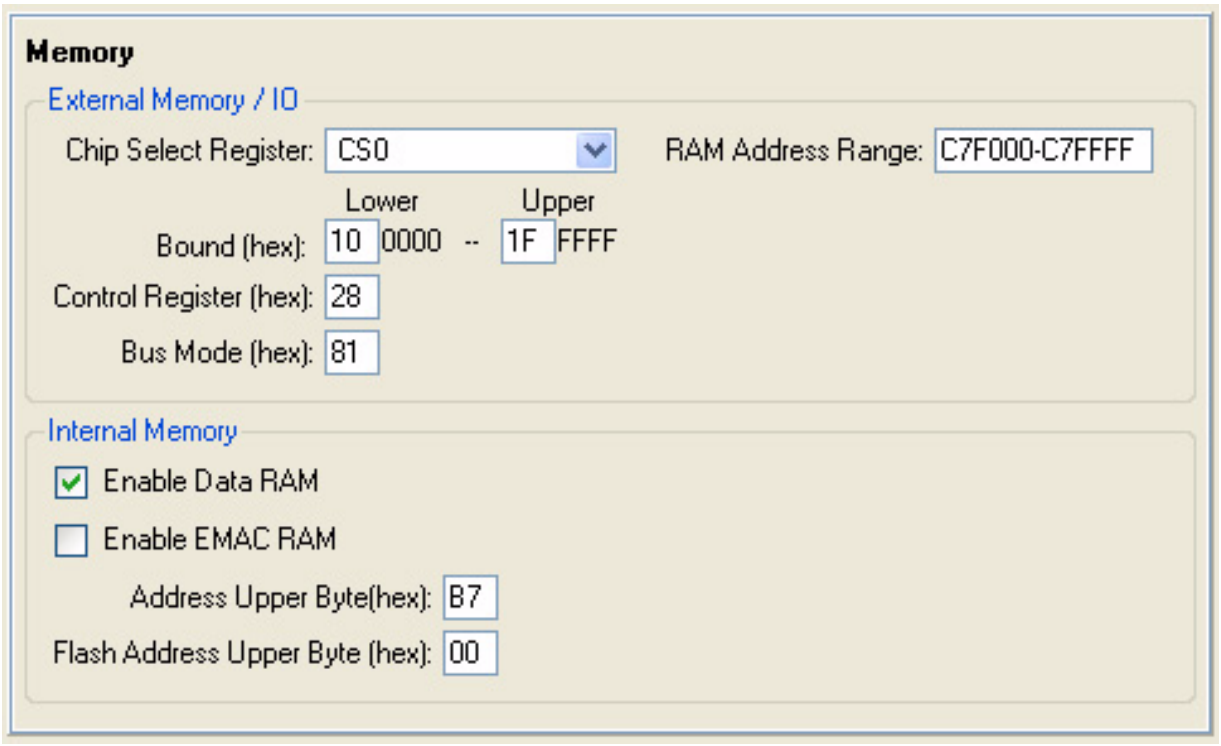


Figure 75. Memory Window

The SFP writes the initialization parameters to the target while the connection is being established. This allows for a virtual reset condition to be created using the following:

1. On the **Memory** window (see Figure 75), in the **External Memory/IO** section, you can configure the following settings:
   - Select a chip select register (CS) from the **Chip Select Register** drop-down list.The chip select registers control the type of access, address bounds, and wait state assertion.
   - Enter the lower bound for the chip select register in the **Lower Bound (hex)** text box.
   - Enter the upper bound for the chip select register in the **Upper Bound (hex)** text box.
   - Enter the control register value in the **Control Register (hex)** text box.

– Enter the bus mode in the **Bus Mode (hex)** text box.
– Enter the external RAM address range in the **RAM Address Range** text box. SFP uses this external RAM address to download the Flash agent during Flash programming and requires approximately 4 K of memory space to run.

2. On the **Memory** window (see Figure 75), in the **Internal Memory** section, you can configure the following settings:
   – Select the **Enable Data RAM** check-box (eZ80Acclaim!®) to enable the general-purpose internal RAM block. Enter the address in the **Address Upper Byte (hex)** field. The Data RAM will be mapped to the top of the selected 64 KB block.
   – Select the **Enable EMAC RAM** check-box (eZ80Acclaim!®) to enable the Ethernet Media Access Controller's internal RAM (eZ80Acclaim!® F91 only).

Flash Memory Window

Click the **Flash Memory** link under the **Target** tab of the **Workspace** window, the corresponding **Configuration** window – **Flash Memory** window (see Figure 76) will be displayed.

The **Flash Memory** window (see Figure 76) allows you to check the Flash memory map. The eZ80Acclaim!® family requires a Refresh to populate the Flash information. Flash memory map displays the actual memory map of the selected Flash memory device with the following details:

- Address Range –These address ranges are determined by the selected Flash memory device.
- Type of Flash corresponding to the address (internal/external).
- Chip select register (CS) selected in case of external flash.
- In the **Flash Memory Map** pane, select the pages to include in Flash operation. The pages that appear in gray are not available for selection. To select/deselect all the pages, right-click the **Flash Memory Map** pane to display the select all/deselect all option.

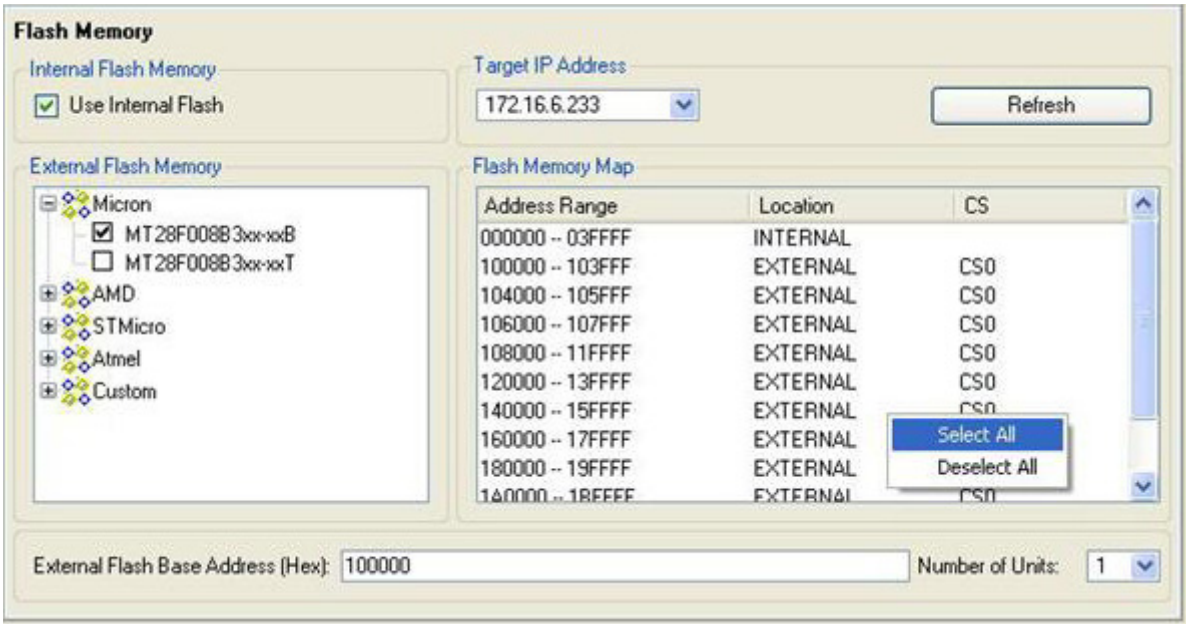


Figure 76. Flash Memory Window

You can configure the following settings on the **Flash Memory** window:

- If you want to use internal Flash memory, select the **Use Internal Flash** check-box (eZ80Acclaim!®).
- If you are want to use external Flash memory, expand the Flash device tree in the **External Flash Memory** pane and select the appropriate Flash memory device that you want to program and configure the following settings:
  - Specify the external Flash base address in hex value in the **External Flash Base Address(Hex)** text box.
  - Select the number of units from the **Number of Units** drop-down list.

Project and Target Options

Right-click on the project workspace window provides the following menu options:

- New Project
- Open Project
- Save Project
- Save As Project

Right-click on the target workspace window provides the following menu options:

- New Target
- Save Target
- Manage Targets

Status Window

The **Status** window displays basic information about your actions, error, and warning messages as shown in Figure 77. You can clear the **Status** window by selecting **Clear status window** from the **File** menu.

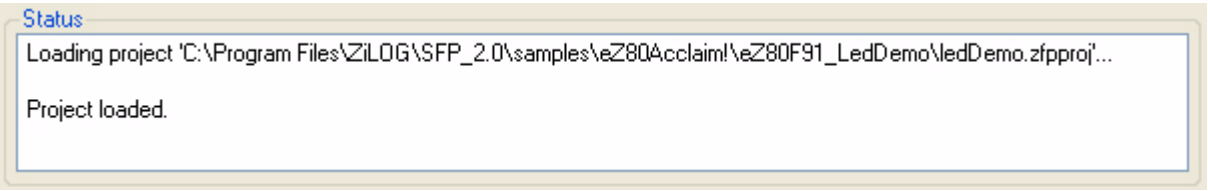


Figure 77. Status Window

Chapter 3
Configuration

This chapter describes configuration under the following topics:

Introduction

SFP settings are stored in project files. Create a project file and configure the project to support Flash memory programming for a specific target (eZ80Acclaim!® or Z8 Encore!®).

Create a New Project

Once the SFP is installed, the **Project File Selection** window (see Figure 78) is displayed.

Note: **Project File Selection** window will be displayed only for the first time after installation.

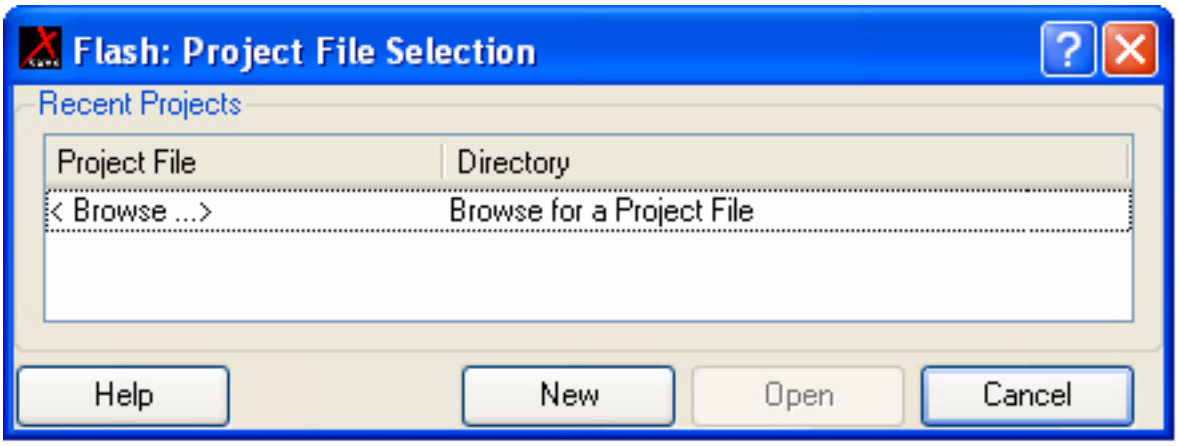


Figure 78. Project File Selection Window

1. If you have already created projects, you can click the **Browse** link to locate the project.
2. To create a new project click **New** in the **Project File Selection** window (see Figure 78). The **Project Creation** window is displayed (see Figure 79).

Note: If the **Project Creation** window is not displayed, enable the advance settings by clicking the **Advanced Configuration** button on the **Information** window (see Figure 59) and then select **New Project** from the **File** menu to create a new project.

3. In the **Project Creation** window (see Figure 79), click the browse button  to locate the project file.

   You can also type the path and file name for the new project directly into the **Project File** text box and move to step 8. **Select the File** window is displayed (see Figure 80).

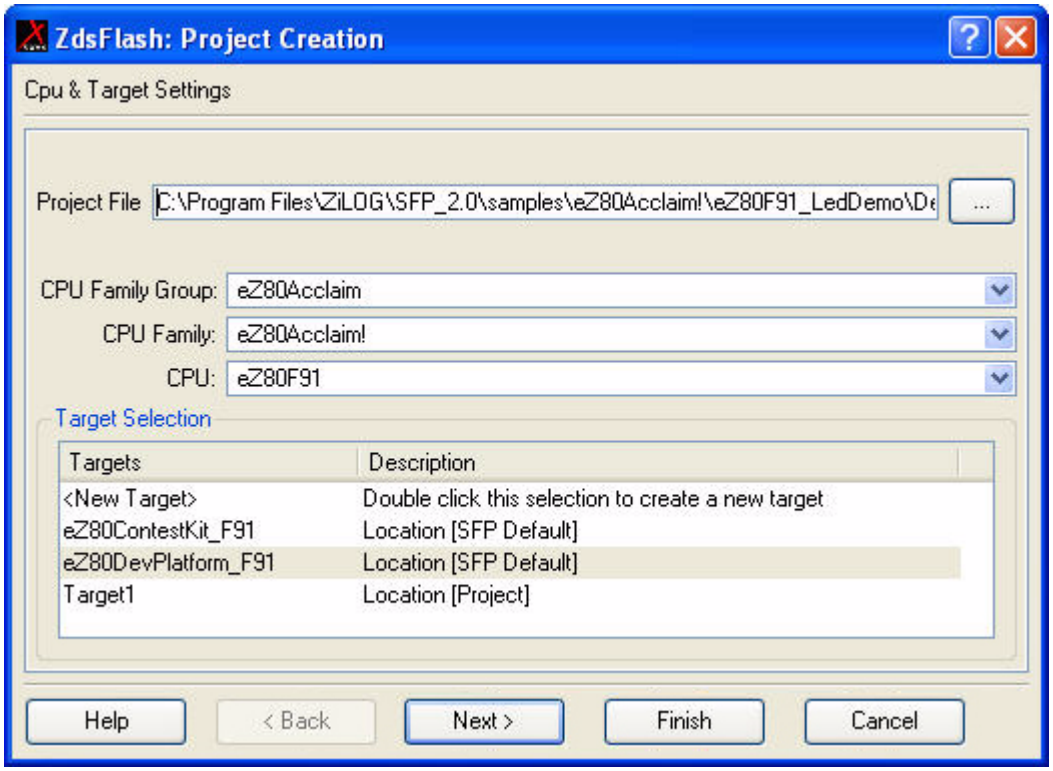


Figure 79. Project Creation Window

4. In the **Select the File** window (see Figure 80), select the folder in which you want to save the new project.
5. In the **File name** text box, enter a file name for the new project. Use legitimate windows filename. Do not enter any extension. The default extension of the project file is:.zfpproj.
6. Click **Save** to close the **Select the File** window.

   The **Project File** text box in the **Project Creation** window (see Figure 79) will display the path along with the file name.
7. In the **Project Creation** window (see Figure 79), select the CPU family group from the **CPU Family Group** drop-down list.
8. Select the CPU family from the **CPU Family** drop-down list.
9. Select the CPU from the **CPU** drop-down list.
10. In the **Target Selection** list, select the required target, if available in the list or create a new target as per the steps given in section Create a Target Device on page 39.

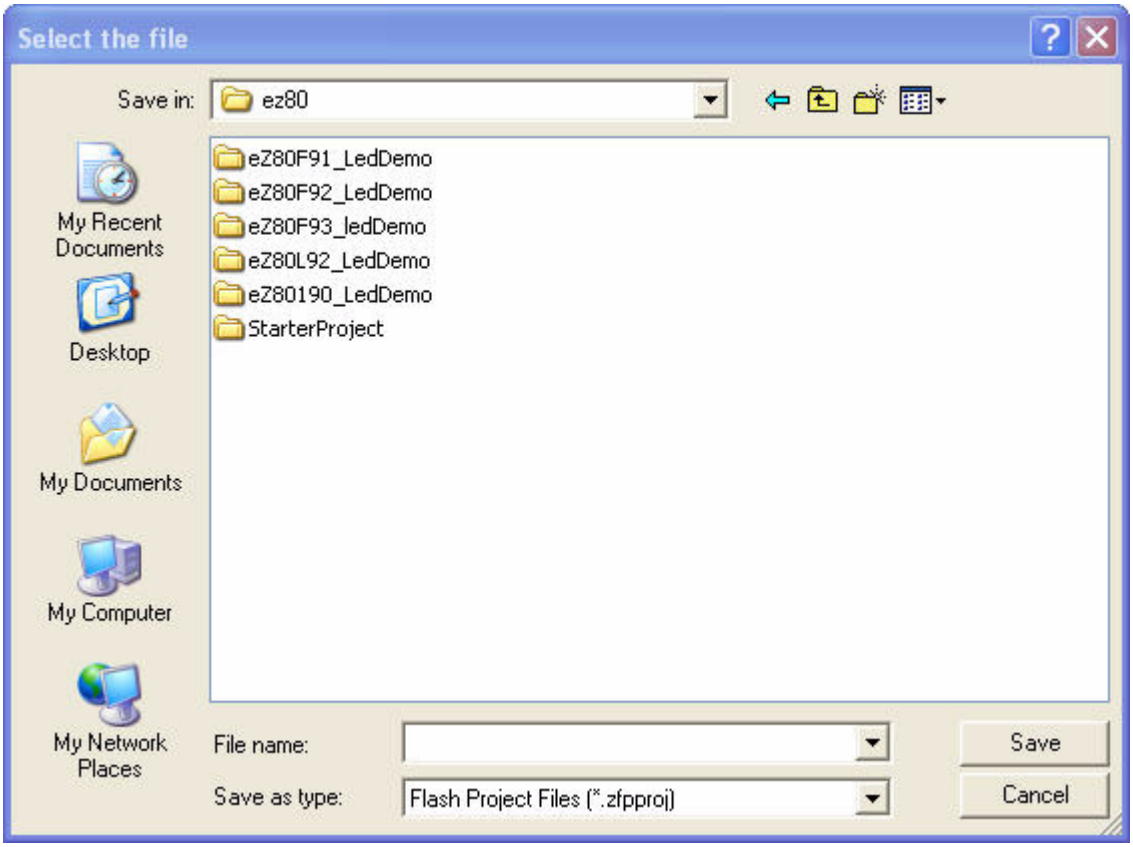


Figure 80. File Selection Window

11. In the **Project Creation** window (see Figure 79), click **Finish** to complete the project creation or click **Next** to display the **Communication Settings** window (see Figure 81). The **Communication Settings** window displays the communication parameters for the project.
12. In the **Communication Settings** window, select the appropriate communication type and enter the communication parameters. You have the option to change these parameters at a later time using the **Communication** link under the **Project** tab of the **Workspace** window. See Communications Window on page 22
13. Click **Finish** to complete the creation of the project.

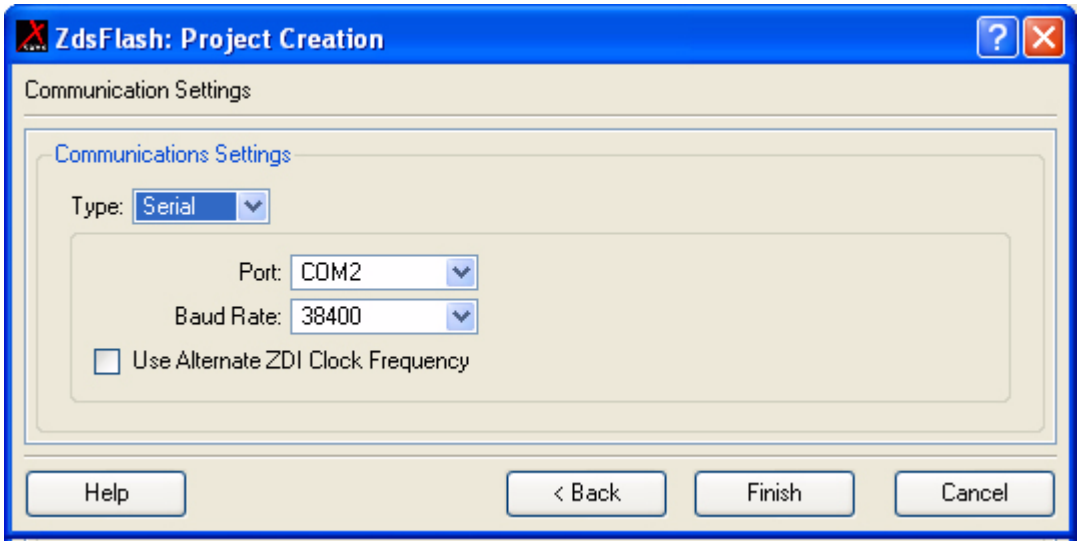


Figure 81. Communication Settings Window

Create a Target Device

This section describes the procedure for creating a target device for eZ80Acclaim!® and Z8 Encore!® family of processors.

New Target Wizard for eZ80Acclaim!® Family of Processors

The following steps helps you to create a new target device for eZ80Acclaim!® family of processors.

1. In the **Target Selection** section of the **Project Creation** window (see Figure 79), double-click `<New Target>`.

Note: If the **Project Creation** window is not displayed, enable the advance settings by clicking the **Advanced Configuration** button on the **Information** window (see Figure 59) and then select **New Target** from the **Target** menu to create a new target.

The **Target Creation** window is displayed (see Figure 82)

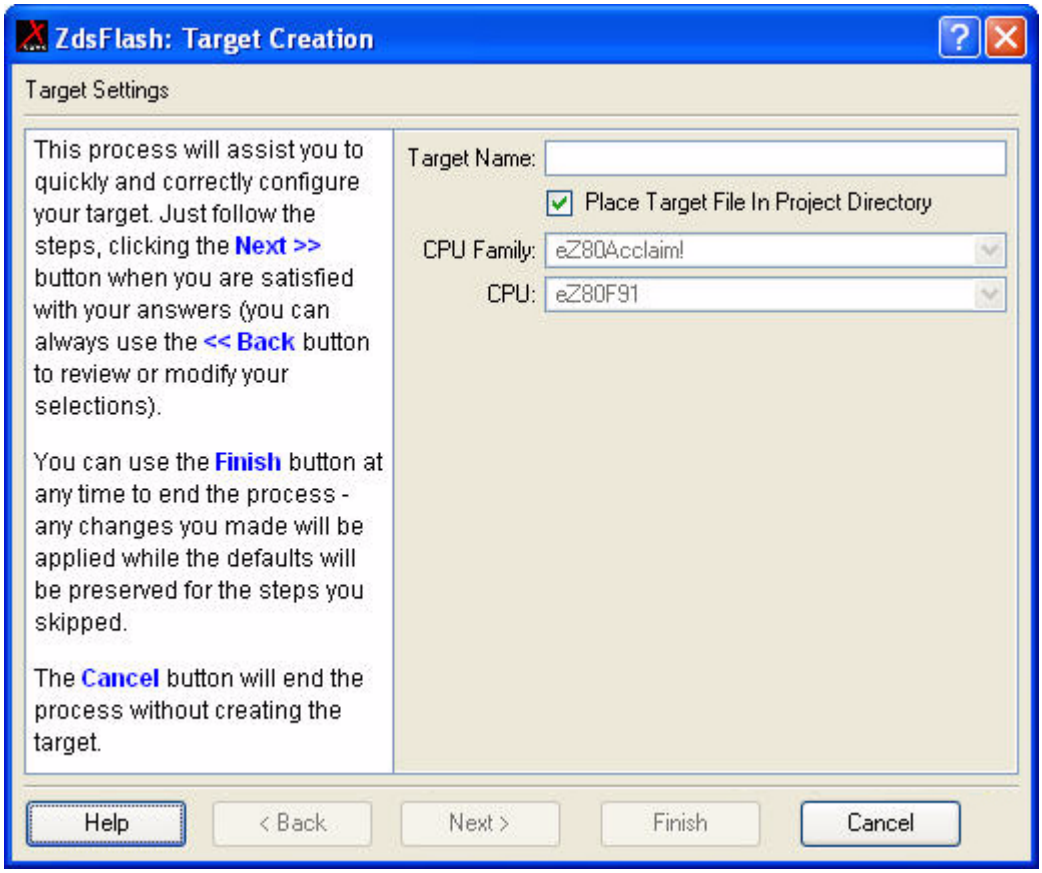


Figure 82. Target Settings for eZ80Acclaim!®

2. Enter a descriptive name in the **Target Name** text box. The name must be a legitimate Windows file name.
3. Select the **Place Target File In Project Directory** check box if you want your new target file to be saved in the same directory as the currently active project.
4. Click **Next.**
5. The **Target Clock Settings** window is displayed (see Figure 83).
6. In the **Target Clock Settings** window (see Figure 83), the default clock frequency for the selected CPU will be displayed in the **System clock Frequency** text box. You can also enter a new appropriate system clock frequency.

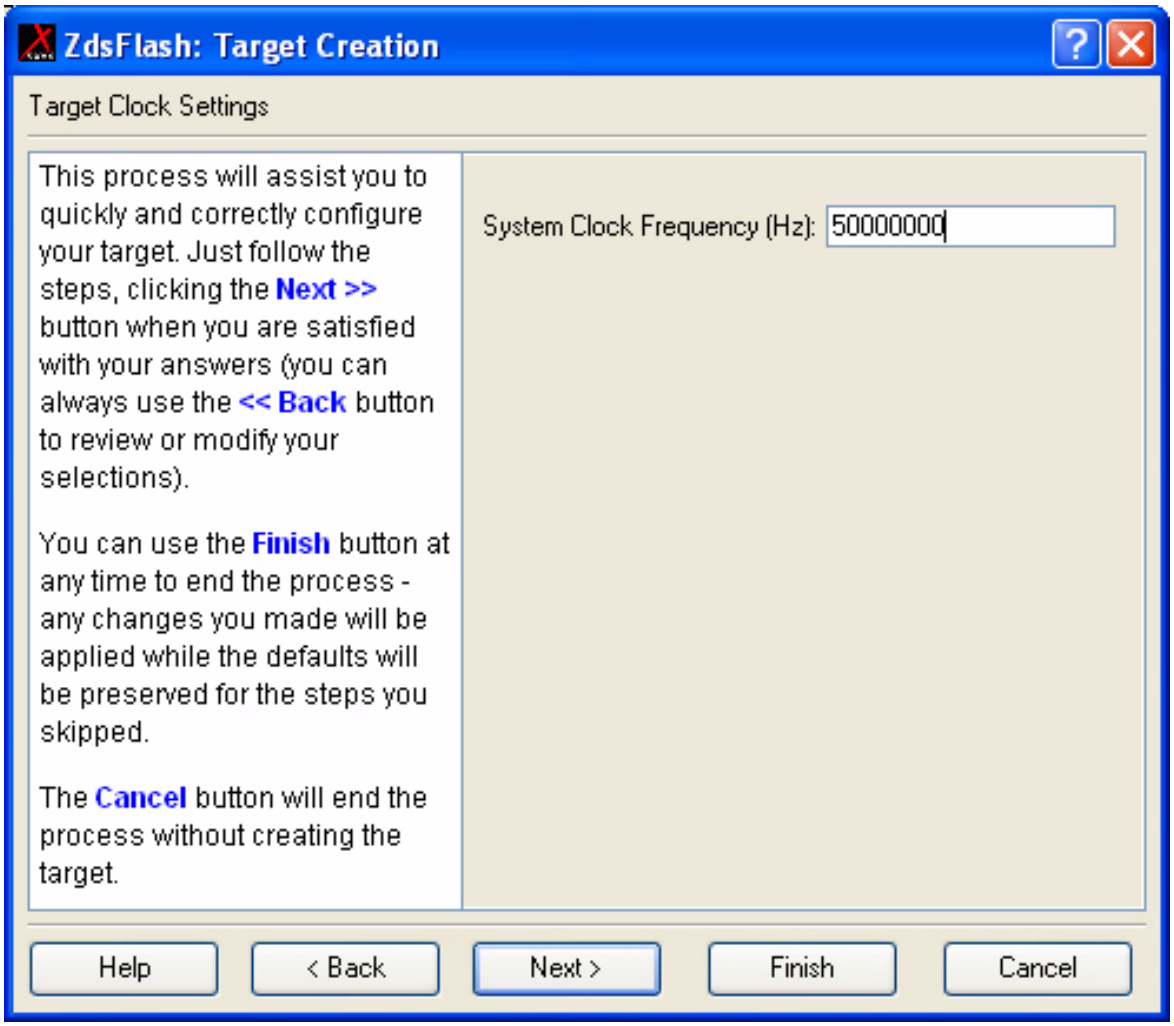


Figure 83. Target Clock Settings Window for eZ80Acclaim!®

7. Click **Next,** the **Target Memory Settings** window will be displayed. Enter the appropriate values for the target memory settings. For details, see Memory Window on page 31.
8. Click **Next**, the **Target Flash Memory Settings** window will be displayed. Select the Flash memory device that you want to program and enter the appropriate settings. You have the option to change the settings later using the Flash memory link under the **Target** tab of the **Workspace** window. For details, see Flash Memory Window on page 32.

9. Click **Next,** the **Target Summary** (see Figure 84) window will be displayed. The **Target Summary** (see Figure 84) window provides a summary of all your selections made during the creation of a target device.

   If it is required to change a target setting, click **Back** until you reach the appropriate **Target Setting** window.

10. Click **Finish.**

    The **ZdsFlash:Project Creation** window (see Figure 79) reappears. The target you have created will be highlighted in the **Target Selection** list.

11. On the **Project Creation** window (see Figure 79), click **Finish** to complete the project creation.

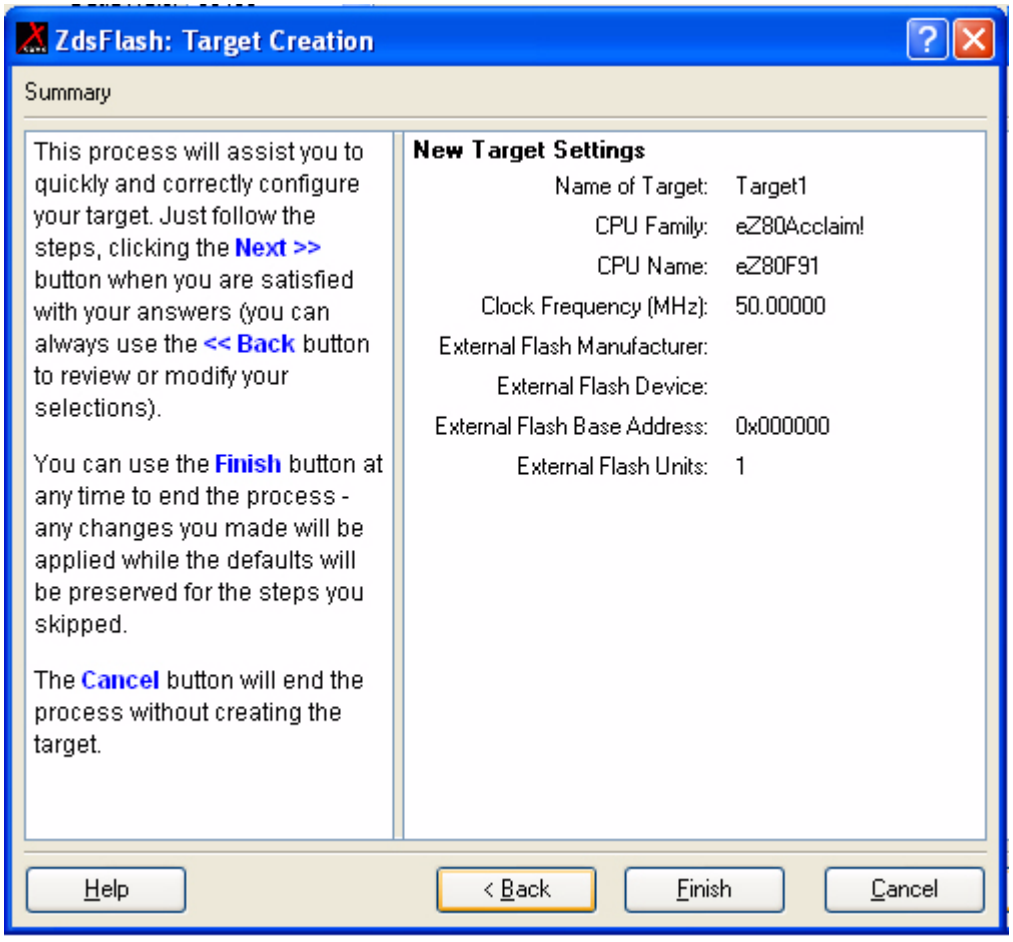


Figure 84. Target Summary Window for eZ80Acclaim!®

Note: Clicking the **Cancel** button in the **Project Creation** window (see Figure 79) will cancel the project creation. However the new target created will not be deleted and will be available for use later.

New Target Wizard for Z8 Encore!® Family of Processors

The following steps helps you to create a new target device for Z8 Encore!® family of processors.

1. In the **Target Selection** section of the **Project Creation** window (see Figure 79), double-click `<New Target>`.

The **Target Creation** window is displayed (see Figure 85).

Note: If the **Project Creation** window is not displayed, enable the advance settings by clicking the **Advanced Configuration** button on the **Information** window (see Figure 59) and then select **New Target** from the **Target** menu to create a new target.

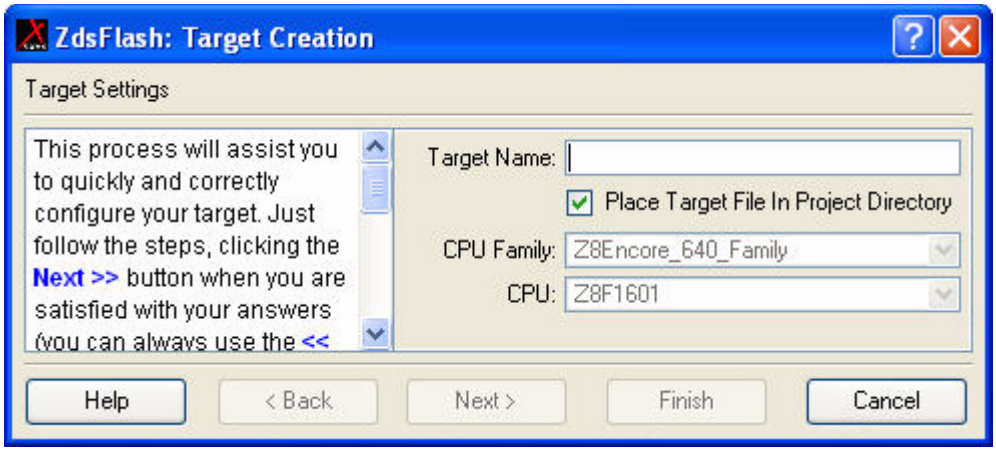


Figure 85. Target Settings for Z8 Encore!®

2. Enter a descriptive name in the **Target Name** text box. The name must be a legitimate windows file name.
3. Select the **Place Target File In Project Directory** check box if you want your new target file to be saved in the same directory as the currently active project.
4. Click **Next**.
5. The **Target Clock Settings** window is displayed (see Figure 86).

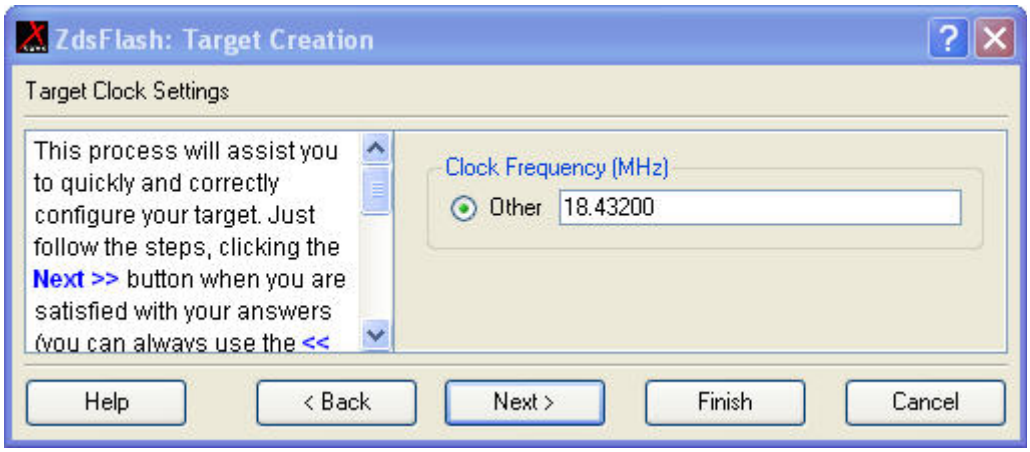


Figure 86. Target Clock Settings Window for Z8 Encore!®

6. In the **Target Clock Settings** window (see Figure 86), the default clock frequency for the selected CPU will be displayed in the **System clock Frequency** text box. You can also enter a new appropriate system clock frequency.
7. Click **Next,** the **Target Summary** window (see Figure 87) displays the summary of all your selections made during the creation of a target device.

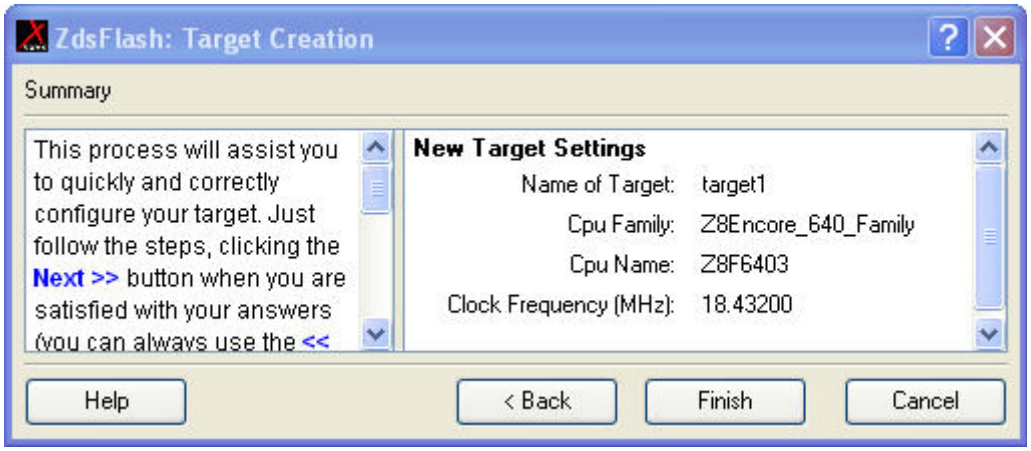


Figure 87. Target Summary Window for Z8 Encore!®

If it is required to change a target setting, click **Back** until you reach the appropriate **Target Setting** window.

8. Click **Finish** when you have completed setting up the target.

The **Project Creation** window (see Figure 79) reappears. The target you have created will be highlighted in the **Target Selection** list.

9. On the **Project Creation** window (see Figure 79), click **Finish** to complete project creation.

Note: Project creation can be cancelled by clicking the **Cancel** button on the **Project Creation** window (see Figure 79). However the new target created will not be deleted and will be available for use at a later time.

Chapter 4
Programming Flash Memory

This chapter describes a Flash programming workflow under the following topics:

- Introduction
- Program Flash on an Attached Target
- Fast Program Flash on an Attached Target
- Verify Program Stored in Flash on an Attached Target
- Erase Flash on an Attached Target
- Program a Single Value in Flash on an Attached Target

Introduction

The instructions in this section describe a suggested Flash programming workflow for manufacturing use.

The following instructions gives you the basic steps for using SFP:

1. Connect your manufacturing PC to the target board using a ZiLOG Smart cable.

   If you wish to program multiple target programming using USB or Ethernet, select all the target devices to be programmed and connect them to the USB or Ethernet hub.

   Refer your manufacturing test instructions for connection details.

2. Start the SFP and load the correct Flash project file.
3. Flash the target board.
4. Disconnect the target board and connect another.

Program Flash on an Attached Target

The following steps describes the procedure for programming Flash on a target device with the currently open project file and automatically verify the Flash program:

1. Connect your manufacturing PC to the target board containing the target device to be programmed using serial or USB or Ethernet cable as appropriate. If you wish to program multiple targets using USB or Ethernet, connect the targets to USB or Ethernet hub.
2. Open the **File** menu and click **Open Project**. The **Project File Selection** window (see Figure 35) is displayed. Select the project file to be programmed, and click **Open**.

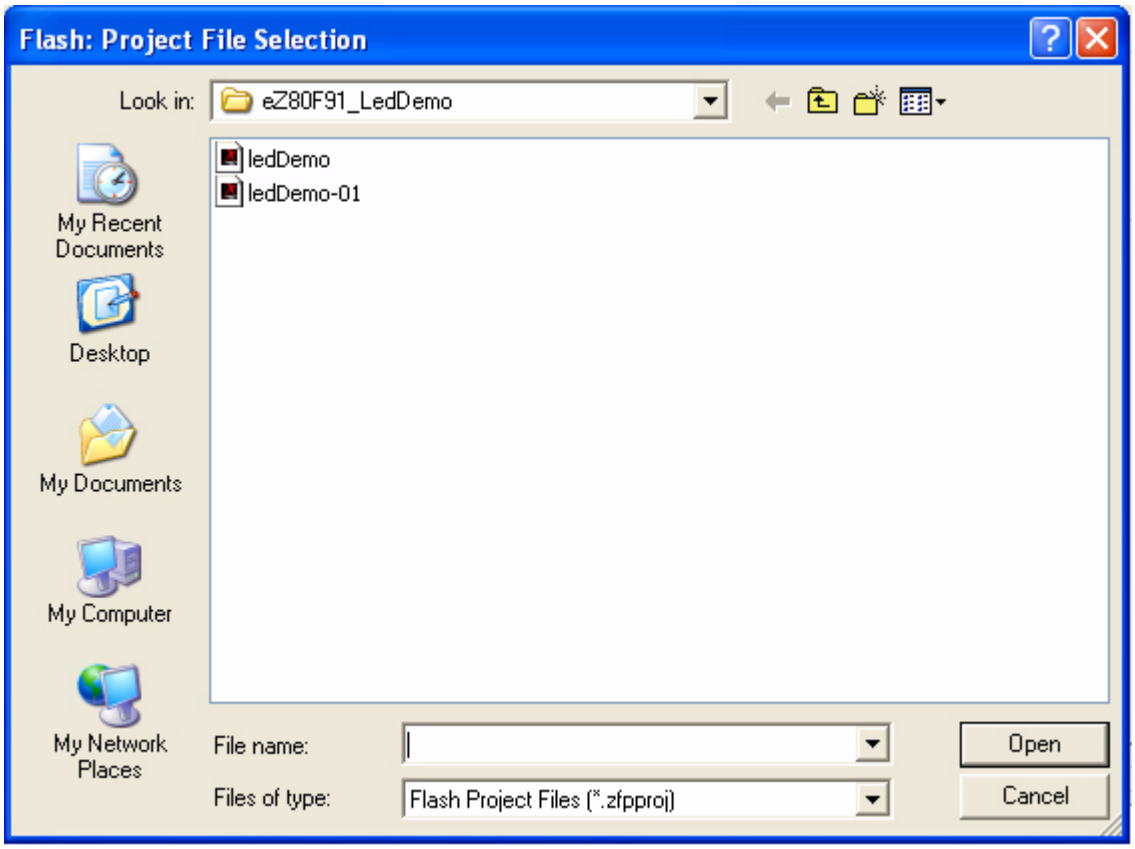


Figure 35. Project File Selection Window

3. Click **Program/Verify** 

   If you are programming multiple targets using Ethernet/USB, select all the target IP addresses/serial numbers in the **Communication** window under the **Project** tab of the **Workspace** window (see Figure 66 and Figure 67).

   The **Flash Burn** window (see Figure 36) is displayed indicating the status of Flash programming.

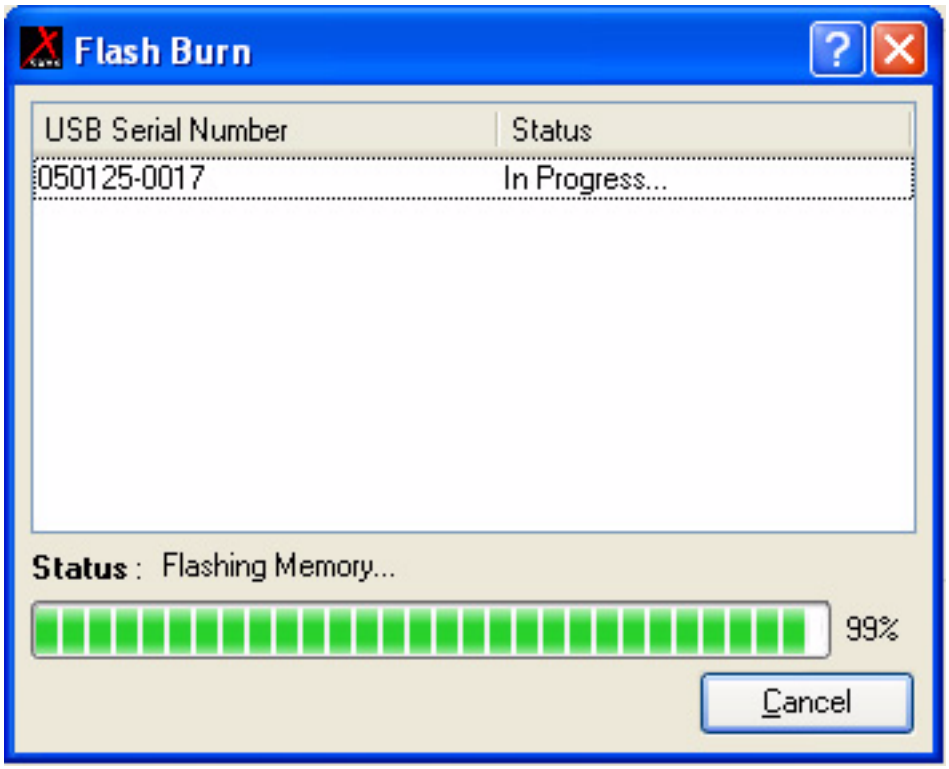


Figure 36. Flash Burn Window

The **Flash Burn** window (see Figure 36) indicates programming and verification status. If verification fails, the **Flash Burn** window (see Figure 36) indicates the file that failed and its associated memory location.

4. When the **Status** window (see Figure 77) indicates that verification is complete, disconnect the target board and connect a new target board.
5. Repeat Steps 2 through 4.

Fast Program Flash on an Attached Target

The Fast Program option programs Flash on a target device with the open project file without verification. The following steps describes the procedure for fast programming Flash on a target device:

1. Connect your manufacturing PC to the target board containing the target device to be programmed using serial or USB or Ethernet cable as appropriate. If you wish to

program multiple targets using USB or Ethernet, connect the targets to USB or Ethernet hub.

2. Open the **File** menu and click **Open Project**. The **Project File Selection** window (see Figure 35) is displayed. Select the project file to be programmed, and click **Open**.
3. Click **Fast Program** 

   If programming multiple targets using Ethernet/USB, select all the target IP addresses/ serial numbers in the **Communication** window under the **Project** tab of the **Workspace** window (see Figure 66 and Figure 67).

   A **Flash Burn** window (see Figure 36) is displayed indicating the status of Flash programming.
4. When the **Status** window (see Figure 77) indicates that programming is complete, disconnect the target board and connect a new target board.
5. Repeat steps 2 through 4.

Verify Program Stored in Flash on an Attached Target

To verify the program stored in Flash on an attached target:

1. Connect your manufacturing PC to the target board containing the target device to be programmed using serial or USB or Ethernet cable as appropriate. If you wish to program multiple targets using USB or Ethernet, connect the targets to USB or Ethernet hub.
2. Open the **File** menu and click **Open Project**. The **Project File Selection** window (see Figure 35) is displayed. Select the project file to be verified, and click **Open**.
3. Click **Verify** 

For verifying multiple targets using Ethernet/USB, select all the target IP addresses/serial numbers in the **Communication** window under the **Project** tab of the **Workspace** window (see Figure 66 and Figure 67).

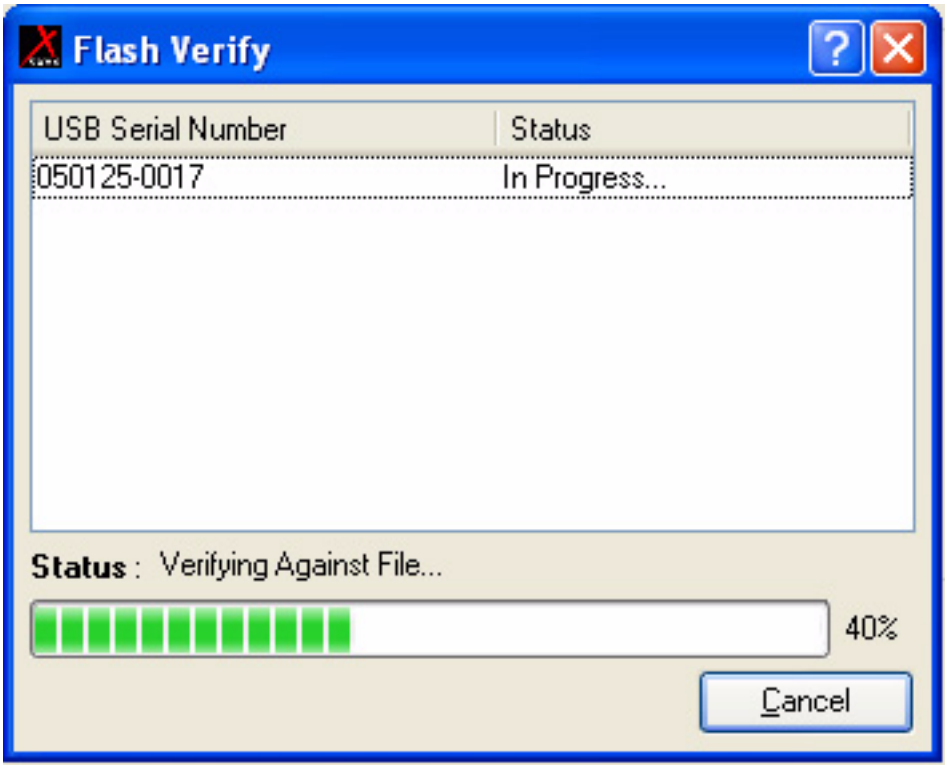


Figure 37. Flash Verify Window

The **Flash Verify** (see Figure 37) window displays the status of verification. If verification process fails, this window displays the failed file name and associated memory location.

Erase Flash on an Attached Target

Writing 1s to all memory locations is considered erasing Flash memory. To set all bits in Flash memory on an attached target to 1:

1. Connect your manufacturing PC to the target board containing the target device to be programmed using serial or USB or Ethernet cable as appropriate. If you wish to program multiple targets using USB or Ethernet, connect the targets to USB or Ethernet hub.
2. Open the **File** menu and click **Open Project**. The **Project File Selection** window (see Figure 35) is displayed. Select the project file to be erased, and click **Open**.
3. Click **Erase** 

The **Question** window (see Figure 38 and Figure 39) is displayed.

Figure 38. Question Window for Z8 Encore!®

Figure 39. Question Window for eZ80Acclaim!®

4. In the **Question** dialog window (see Figure 38 and Figure 39), click **Yes** to erase and **No** to cancel the erase operation.

For erasing multiple targets using Ethernet/USB, select all the target IP addresses/serial numbers in the **Communication** window under the **Project** tab of the **Workspace** window. (see Figure 66 and Figure 67).

The **Flash Erase** window (see Figure 40) is displayed indicating the status of erasing.

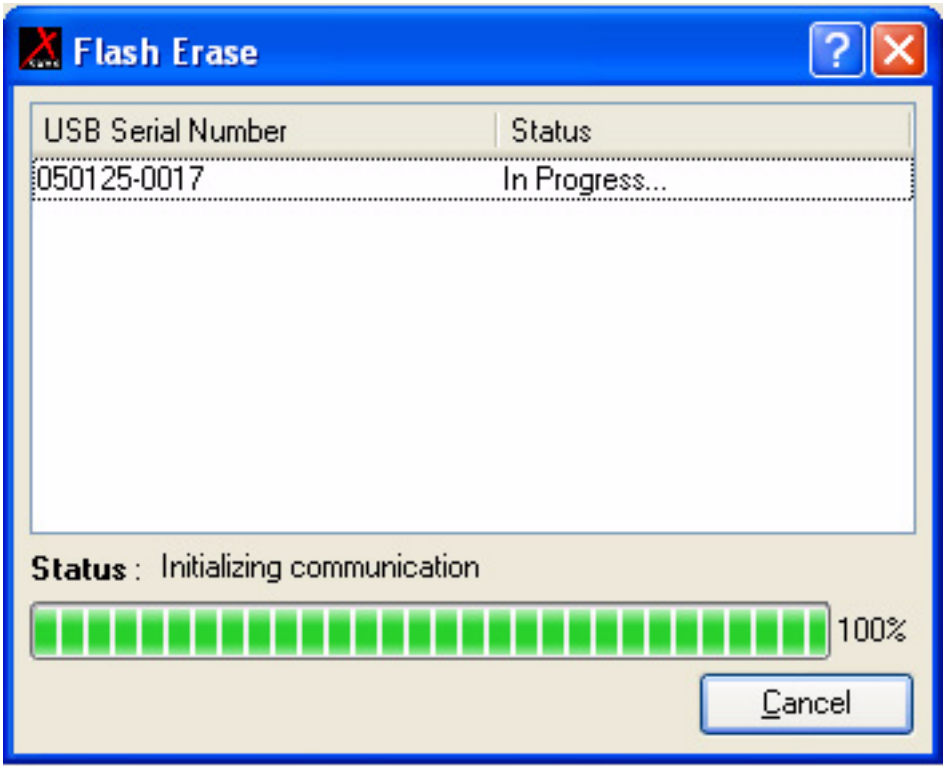


Figure 40. Flash Erase Window

Program a Single Value in Flash on an Attached Target

The Program Single Value option is a serialization feature that programs a single unique value into Flash memory on an attached target. Before programming a single value, ensure that serialization values for address and byte size are properly configured.

To program a single unique value into Flash on an attached target:

1. Ensure the target is properly connected to the manufacturing PC.
2. Click **Single Value** 

The **Program Single Value** window (see Figure 41) is displayed.

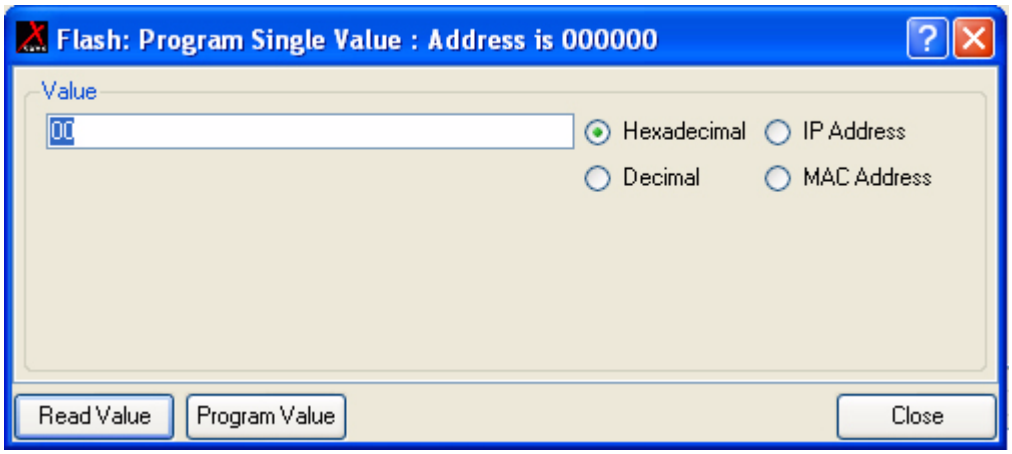


Figure 41. Program Single Value Window

3. In the **Program Single Value** window (see Figure 41), enter a value in the **Value** text box and select the format (Hexadecimal, Decimal, IP Address, or MAC Address) of entry for the value to be programmed.
4. Click **Program Value.**

The value you entered is programmed into Flash memory on the attached target at the memory location specified in the serialization settings. The status of initializing communication and gathering information is displayed in Figure 42 and Figure 43.

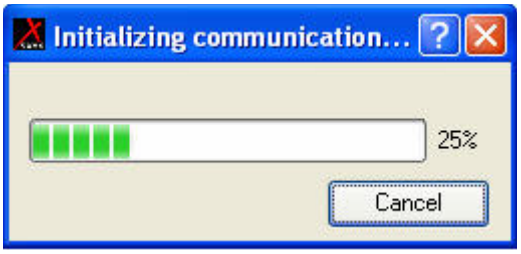


Figure 42. Initializing Communication Window

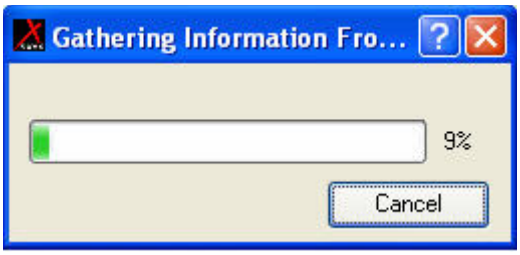


Figure 43. Gathering Information Window

You can also read the value programmed in the attached target. To do so, ensure that the target is attached and click **Read Value**. The SFP returns the value of the data stored in the location defined by the serialization settings.

Chapter 5
Advanced Configuration

This chapter describes the Advanced Configuration window under the following topics:

- Advance Configuration
- Calculate File Checksum
- Calculate Flash Checksum
- Specify the Flash Files to be Programmed
- Set-Up Serialization
- Manage Targets

Advance Configuration

In the **Information window** of the SFP, click **Advance Configuration** button to enable the advanced configuration interface.

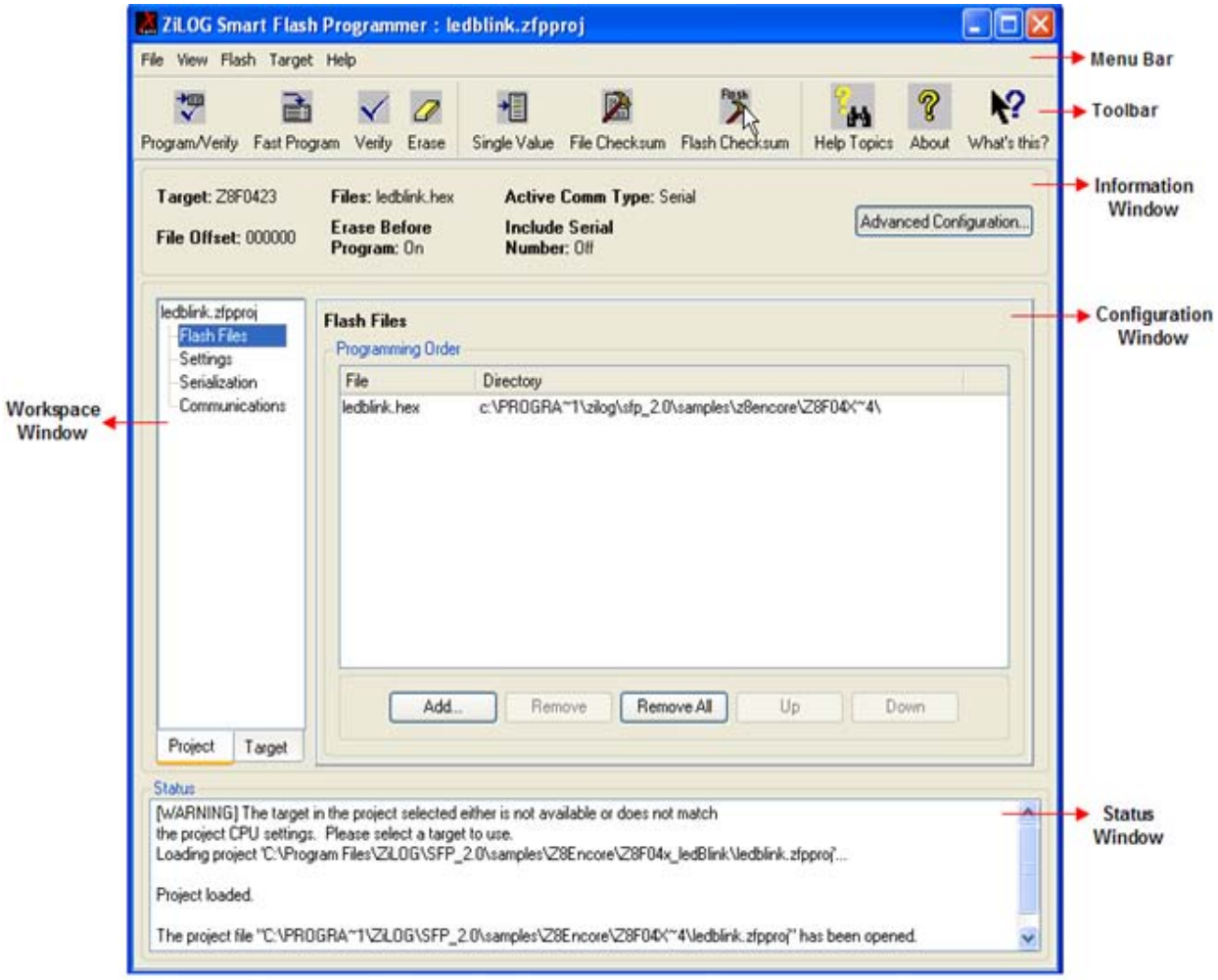


Figure 44. Advanced Configuration Window

The **Advanced Configuration** window allows you to:

- Calculate the checksum for a specific hex file (Flash menu).
- Specify Flash Files to be programmed (Project tab).
- Specify Flash File offsets (Project tab).

- Configure Serialization (Project tab).
- Change communication settings (Project tab).
- Change the target system clock settings (Target tab).

See Information Window for detailed description of the above features.

Note: Flash files are not required for serialization-only operations.

Calculate File Checksum

Follow the steps below to calculate the checksum of a hex file to be loaded into Flash memory. Observe the checksum value before you use a Flash file, so that you can make sure that the file has not changed since the last time you used it.

1. From the **Flash** menu, select **File Checksum**. The **File Checksum Calculator** window is displayed (Figure 45).

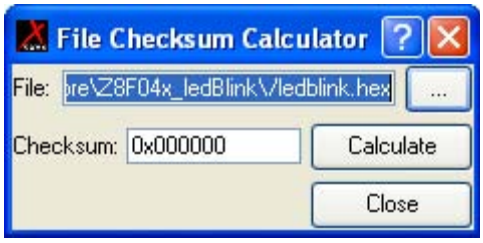


Figure 45. File Checksum Calculator Window

2. Click browse  button.

   Select a File for Checksum Calculation window (Figure 46) is displayed.

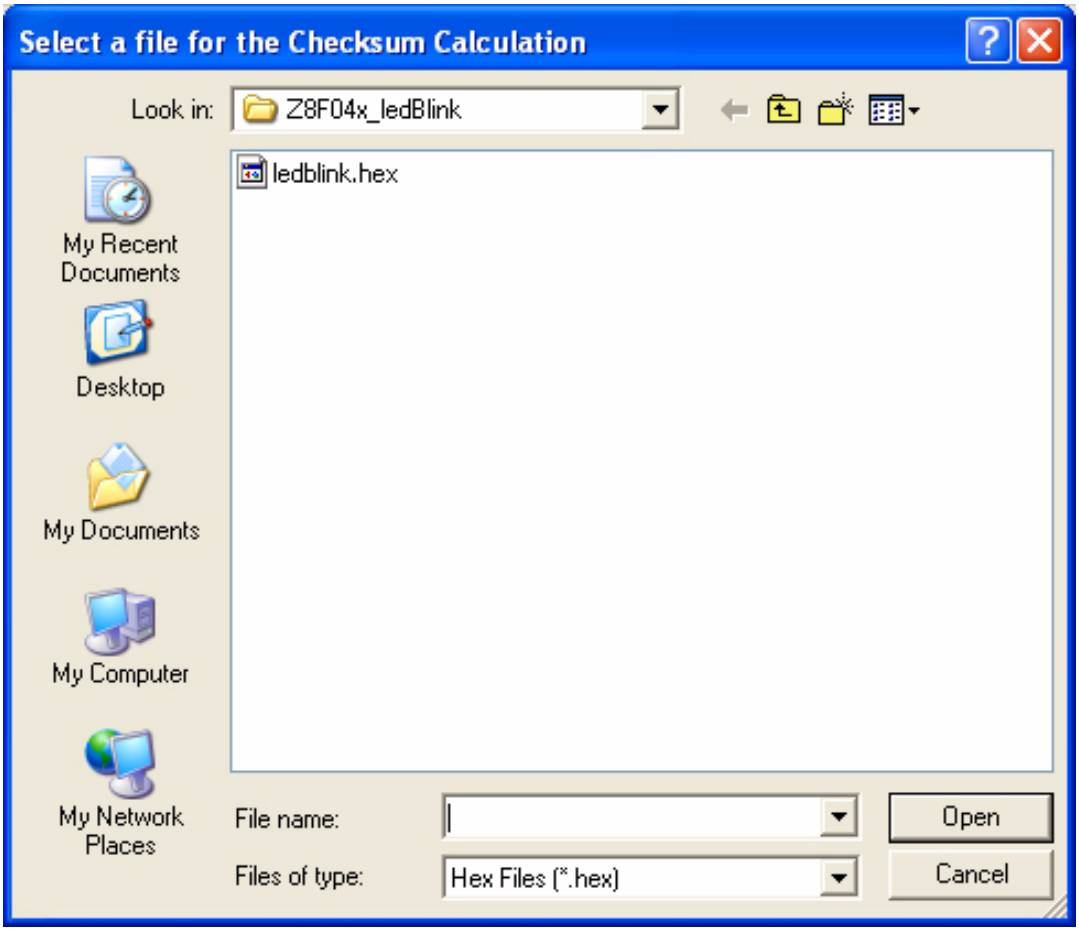


Figure 46. Select File For Checksum Calculation Window

3. In the **Select a File for Checksum Calculation** window (Figure 46), select the hex file and click **Open**.
4. In the **File Checksum Calculator** window (Figure 45), click **Calculate**.

   The checksum for the selected hex file is calculated.

Calculate Flash Checksum

Follow the steps below to calculate the Flash Checksum for the selected target. Observe the Flash checksum and compare it with the file checksum to verify whether the target flash has the same contents as the files mentioned in the project.

1. From the **Flash** menu, select **Flash Checksum**.

2. Based on the Communication type selected in the **Communication** window under the **Project** tab. See Communications Window on page 22, one of the **Flash Checksum Calculator** window (Figure 47 or Figure 48) is displayed. If serial type of communication is selected, Figure 47 is displayed and if USB or Ethernet type of communication is selected, Figure 48 is displayed.

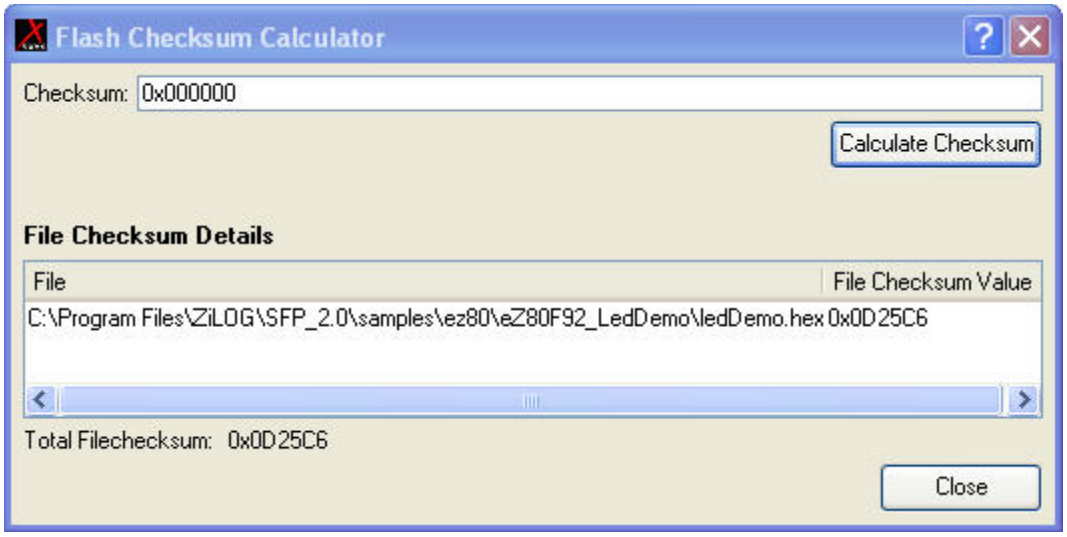


Figure 47. Flash Checksum Calculator for Serial Type of Communication

3. The **File Checksum Details** pane of the **Flash Checksum Calculator** window (Figure 47 or Figure 48), displays all the hex files included in the project for programming along with their individual checksum. It also displays the total file checksum of all the files included in the project.

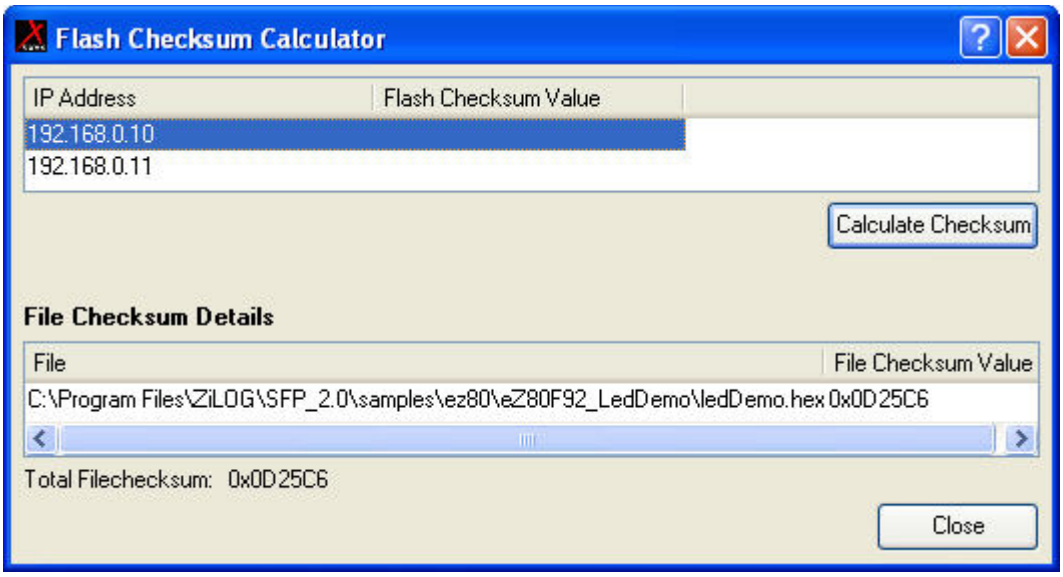


Figure 48. Flash Checksum Calculator for Ethernet/USB Type of Communication

4. In case of serial communication type, click **Calculate Checksum** button and in case of Ethernet or USB communication type, select the target IP address/serial number (see Communications Window on page 22), and then click **Calculate Checksum** button.

   SFP reads all the memory locations from the Flash pertinent to the addresses found in the hex files and displays the final checksum. The Flash checksum will be the same as the file checksum if the Flash contents and the file contents are same.

Specify the Flash Files to be Programmed

Follow the steps below for programming hex files into the target device.

1. On the **Workspace** window, under the **Project** tab, click **Flash Files** link. The **Flash File** window (Figure 49) is displayed. For detailed description of the Flash files, see Flash Files Window .

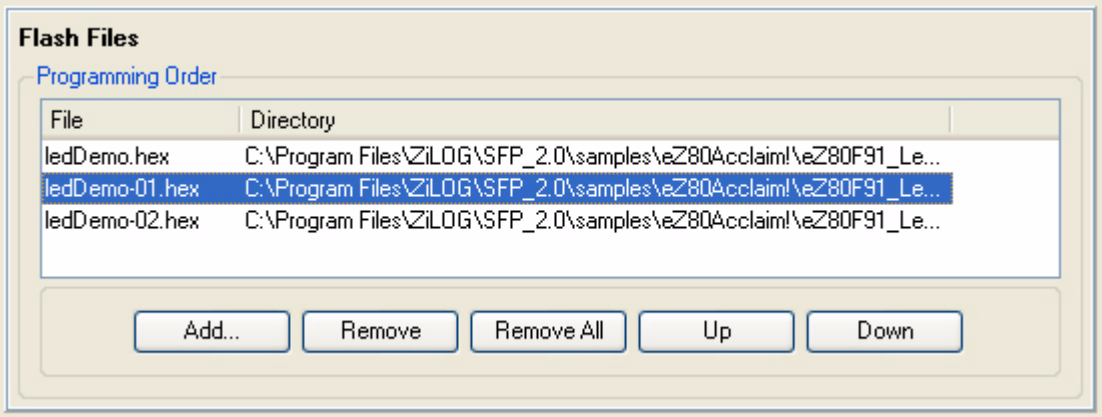


Figure 49. Flash Files Window

2. In the **Flash Files Programming Order** section on the **Flash Files** window (Figure 49), click **Add.**

   Select Files to be Programmed window is displayed (Figure 50).

3. Browse to the folder containing the Flash file(s) you want to program. Select a file, and click **Open**.

   The Flash file selected will be displayed in the **Programming Order** section of the **Flash Files** window (Figure 49).

4. Repeat step three for each Flash file to be programmed.

   You can change the programming order of the Flash file using the **Up** or **Down** button.

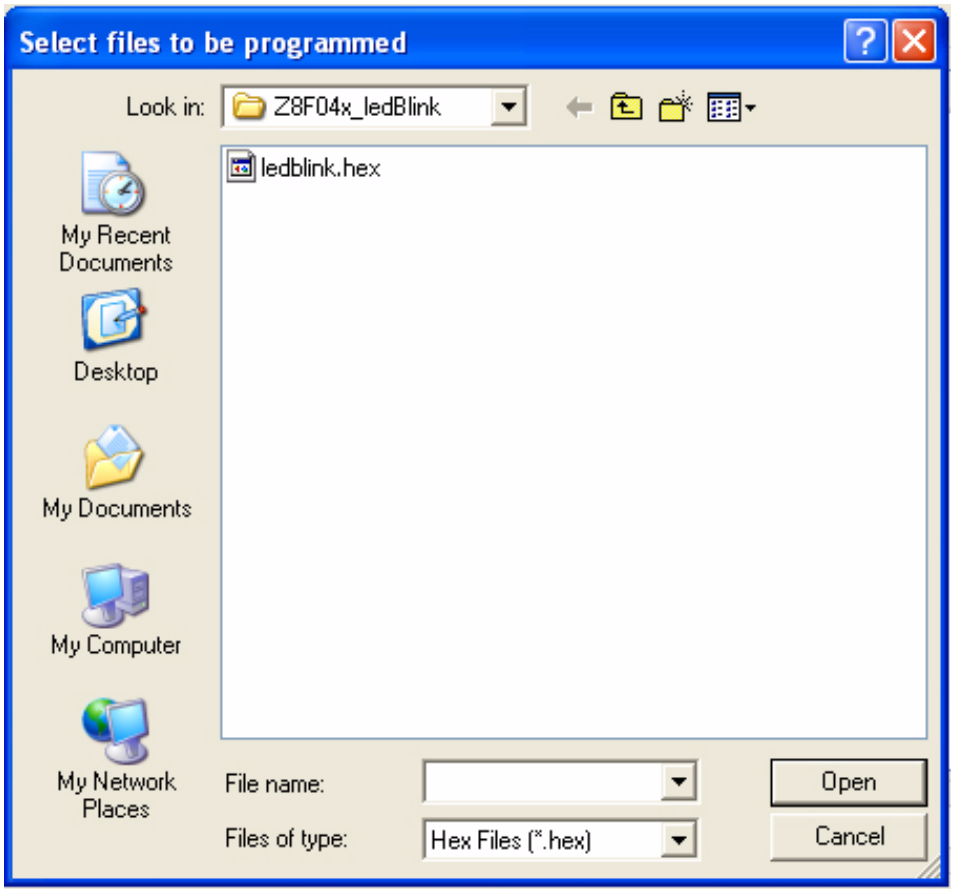


Figure 50. File Selection Window

Set-Up Serialization

See Serialization Window on page 25.

Manage Targets

Follow the steps below for managing the available target configurations.

1. On the **Target** menu, select **Manage Targets**.The **Target Manager** window (Figure 51) is displayed.

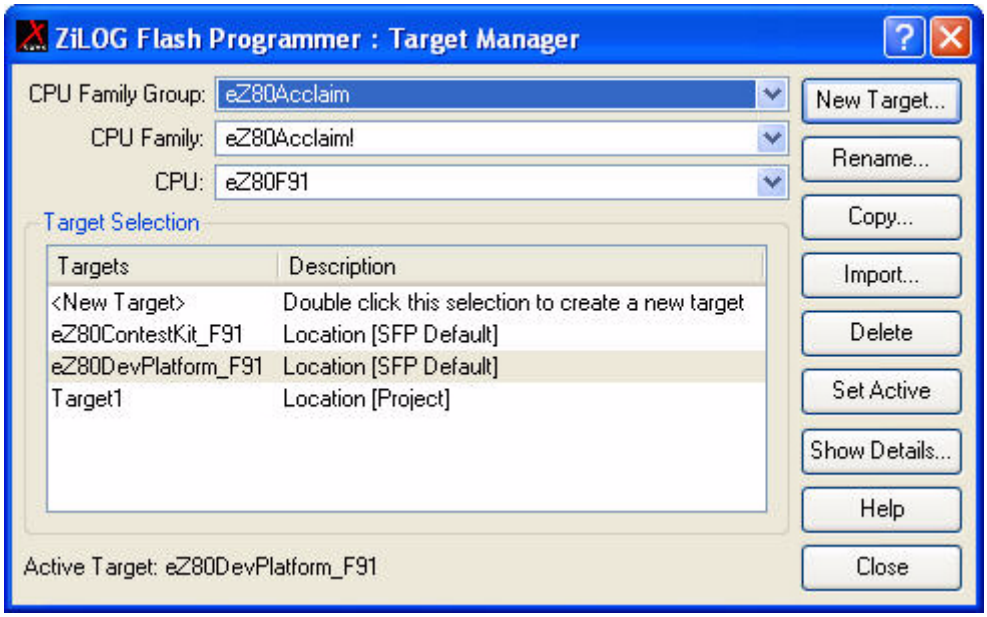


Figure 51. Target Manager

From the **Target Manager** window, you can perform the following tasks.

2. To create a target, click **New Target** and follow the instructions given in Create a Target Device on page 39.
3. To rename a target:
   – Select a target and click **Rename**.

   Name the New Target window (Figure 52) is displayed.

Figure 52. Name the New Target Window

   – In the **Name the New Target** window (Figure 52), enter the new name for the target and click **OK**, the target name changes.

   You can also use the browse button to locate the new target

Note: You cannot rename an active target.

4. To copy a target configuration to a new target:
   – Select the target you wish to copy and click **Copy**. **Name the New Target** window (Figure 52) is displayed.
   – Enter the name for the new target and click **OK**.The new target appears in the **Target Selection** list of the **Target Manager** window (Figure 51).
5. To delete a target configuration:
   – Select the target you wish to delete and click **Delete**. The system prompts you to confirm the deletion.

- Select **Yes** to confirm deletion, or **No** to cancel.

Note: You cannot delete an active target.

6. To set active target configuration:
   – Select the target that you wish to set as active and click **Set Active**.

   The system sets the selected target as an active target. Double-clicking the target also sets the target as an active target.

7. To import a target
   – Click **Import**. **Import Target** Window (Figure 53) is displayed.

Figure 53. Import Target Window

   – In the **Import Target** window (Figure 53), enter the target file path and file name.

   You can also use the **Browse** button to locate the new target. The target files will have the extension: `.ztgt`.
   – Once the target is selected, you can click **Show Details** to view the details of the selected target.
   – Click **OK** to import the target. The imported target file will be copied to the appropriate family directory at `<installation_dir>/targets`.

Notes:
- The CPU family group of the target being imported should match with the active CPU family group for the import process to be successful.

- If the CPU family of the target being imported differs from the CPU family of the active target, but both belonging to the same CPU family group, the import operation will be successful. However, such a target will not be listed under the available targets for the current active configuration.
- The target file being imported must be a valid target file and must have the extension.ztgt. Otherwise the import process will fail.

Chapter 6
SFP Command Line and Scripting Features

This chapter describes the SFP command line and scripting features under the following topics:

Starting SFP from Command Prompt

You can start SFP from an Windows command prompt and use command prompt switches to specify the display options.

Command Syntax

```
C:\[installation_path]\bin\zdsflash [<project_file>]|[-s] [-l]
[<log_file>][-h] [-dl] [-b] [<script_file>]
```

Switches

- `<project_file>` – Specify a project file name to load.
- `-s` – Cause the SFP to display the project selection dialog on startup.
- `-l <log_file>` – Change the name of the default log file created for the new session.
- `-h` – Display a usage summary for the SFP command line launch options.
- `-dl -` Disable logging.
- `-b <script_file>-` Run the script file.

For example, to load the project file `c:\flash_files\my_project.zfpproj` from the command line, enter:

```
C:\[installation_path]\bin\zdsflash C:\flash_files\my_project.zfpproj
```

SFP Scripting

The SFP scripting feature allows you to use script files to automate the execution of a significant portion of the SFP's functionality.

You can run the script file commands in one of the following ways:

- Using the command prompt.You need to precede the script file with a switch `-b` when passing the command file to the SFP on the command line. For example:

  ```
  zdsflash -b "c:\path\to\command\file\runall.zfpscr
  ```

- Using the **Run Script File** option from the **File** menu.

  Commands and associated results are displayed in the status window in SFP and also saved into the log files if logging feature is enabled.

Command Script File

A script file is a text-based file with a collection of commands. The file can be created with any editor that can save or export files in a text-based format. Each command must be listed on its own line. Anything following a semicolon (;) is considered a comment.

Command Syntax

```
C:\[installation_path]\bin\zdsflash [-b][<script_file>]
```

Switches

`<script_file>` – Specify a project file name to load

For example: To run a script file "`test.zpfscr`" from the command line, use the following syntax:

```
C:\Program Files\ZiLOG\ZiLOG SFP_2.0.0\bin>zdsflash -b"test.zpfscr"
```

Supported Script File Commands

Table 3 lists SFP menu commands and dialog box options that have corresponding script file commands.

Table 3. Script File Commands

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
File	New Project		new project "<*name*>" "<target>" [NOREPLACE]	All	Page 78
	Open Project		open project "<*Project_Name*>"	All	Page 79
	Save Project		save project	All	Page 79
	SaveAs Project		saveas project "<*Destname*>"	All	Page 79
	Clear Log		clear log	All	Page 80
	Exit		exit	All	Page 80
Flash	Program/Verify		Flash burnverify	All	Page 85
	Fast Program		Flash burn	All	Page 84
	Verify		Flash verify	All	Page 85
	Erase		Flash erase	All	Page 84
	Single Value		Flash programhex "<*Hex*>"	All	Page 85

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
			Flash programdec "<D*ec*>"	All	Page 85
			Flash programIPaddr "<*IPAddress*>"	All	Page 85
			Flash programmacaddr "<*MacAddress*>"	All	Page 85
	Read Value		Flash readvalue	All	Page 85
	Flash Checksum		Flash checksum	All	Page 85
Target	Manage Target				
		Rename	target rename srcname="<*source target name*>"newname="<*new target name*>"	All	Page 82
		Copy	target copy destname="<*new target name*>" srcname="<*new target name*>"	All	Page 82
		Delete	target delete "<target name>"	All	Page 82
		Selection	target list	All	Page 82
	Save Target		target save	All	Page 82
	New target		Target Create TargetName = "<*targetName*>" FAMILY ="<*family*>" CPU ="<*cpu*>" [NOREPLACE]	All	Page 81
	Target settings page (communication settings category)	Type	target options Commtype = <*ethernet/serial/USB*>	All	Page 81
		Type Serial	target options Commtype =Serial	All	Page 81
		Port	target options serialport =<*Port Number*>	All	Page 81

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
		Baud rate	target options Serialbaud =<*Baudrate*>	All	Page 81
		Use alternate ZDI clock frequency	target options Altclk =<*True/False*>	eZ80® and eZ80Acclaim!® families	Page 81
		Type Ethernet	target options Commtype = Ethernet	eZ80® and eZ80Acclaim!® families	Page 81
		ADD	Comm.AddTCP IPaddr= <"*IPaddr*"> TCPIPport<*Portnum*>	eZ80® and eZ80Acclaim!® families	Page 83
		Delete	Comm DeleteTCP IPaddr=*"<IPaddr>"*	eZ80® and eZ80Acclaim!® families	
		Delete all	Comm DeleteAllTCP	eZ80® and eZ80Acclaim!® families	Page 83
		Select IP address	Comm SelectTCP IPaddr = "<*IPaddr*>"	eZ80® and eZ80Acclaim!® families	Page 83
		Deselect IP Address	Comm DeselectTCP IPaddr = "<*IPaddr*>"	All	Page 83
		Type USB	target options Commtype = USB	All	Page 81
		Select USB	Comm SelectUSB "<UsbserialNo>"	All	Page 84
		Deselect USB	Comm DeselectUSB "<UsbserialNo>"	All	Page 84
	Target clock settings page	System clock frequency	target options Clk="50000000"	All	Page 81

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
		Clock source	1. target options IntClk //Clock source internal 2. target options ExtClk // Clock source external	Z8 Encore!® 4k series	Page 81
	Target memory settings page (External memory)	Bound Upper (CS0)	target options CS0UPR = "10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bound Lower (CS0)	target options CS0LWR ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Control Register (CS0)	target options CS0CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bus mode (CS0)	target options CS0BUS ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bound Upper (CS1)	target options CS1CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Control Register (CS1)	target options CS1CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bus mode (CS1)	target options CS1BUS ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bound Upper (CS2)	target options CS2CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Control Register (CS2)	target options CS2CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
		Bus mode (CS2)	target options CS2BUS ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bound Upper (CS3)	target options CS3CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Control Register (CS3)	target options CS3CTL ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Bus mode (CS3)	target options CS3BUS ="10"	eZ80® and eZ80Acclaim!® families	Page 81
		Ram address range (lower)	target options RAMLOWER ="B7E000"	eZ80® and eZ80Acclaim!® families	Page 81
		Ram address range (upper)	target options RAMUPPER ="B7FFFF"	eZ80® and eZ80Acclaim!® families	Page 81
	Target Memory settings page (category internal memory)	Enable Data Ram	target options DATARAM=<TRUE/FALSE>	eZ80® and eZ80Acclaim!® families	Page 81
		Enable EMAC RAM	target options EMACRAM=<TRUE/FALSE>	eZ80® and eZ80Acclaim!® families	Page 81
		Address Upper byte	target options ADDRU ="FF"	eZ80® and eZ80Acclaim!® families	Page 81
		Flash Address Upper byte	target options FLASHUPR ="FF"	eZ80® and eZ80Acclaim!® families	Page 81

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
	Target Flash memory settings page	Use internal flash(internal falsh memory)	1. Flash options INTMEM //Set to internal memory 2. Flash options EXTMEM //Set to external memory 3. Flash options BOTHMEM //Set to internal and external memory	eZ80® and eZ80Acclaim!® families	Page 81
		External flash memory		eZ80® and eZ80Acclaim!® families	Page 81
		Micron(MT28F008B3xx-xxB)	Flash options MANUF ="MICRON" DEVICE ="MT28F008B3xx-xxB"	eZ80® and eZ80Acclaim!® families	Page 81
		Micron(MT28F008B3xx-xxT)	Flash options MANUF ="MICRON" DEVICE ="MT28F008B3xx-xxT"	eZ80® and eZ80Acclaim!® families	Page 81
		AMD(AM29LV160BB)	Flash options MANUF ="AMD" DEVICE ="AM29LV160BB"	eZ80® and eZ80Acclaim!® families	Page 81
		AMD(AM29LV160BT)	Flash options MANUF ="AMD" DEVICE ="AM29LV160BT"	eZ80® and eZ80Acclaim!® families	Page 81
		AMD(M29W008AB)	Flash options MANUF ="STMICRO" DEVICE ="M29W008AB"	eZ80® and eZ80Acclaim!® families	Page 81
		AMD(M29W008AT)	Flash options MANUF ="STMICRO" DEVICE ="M29W008AT"	eZ80® and eZ80Acclaim!® families	Page 81
		Atmel(AT49BV162A)	Flash options MANUF ="ATMEL" DEVICE ="AT49BV162A"	eZ80® and eZ80Acclaim!® families	Page 81
		Atmel(AT49BV162AT)	Flash options MANUF ="ATMEL" DEVICE ="AT49BV162AT"	eZ80® and eZ80Acclaim!® families	Page 81

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
		Custom(MT28F008B3 w/ jmp vectors)	Flash options MANUF ="CUSTOM" DEVICE ="MT28F008B3 w/jmp vectors"	eZ80® and eZ80Acclaim!® families	Page 81
		External Flash base address	target options EXTERNALADDR="FFFEE"	eZ80® and eZ80Acclaim!® families	Page 81
		Number of units	target options UNITS=<NUMBER>	eZ80® and eZ80Acclaim!® families	Page 81
	Project tab (Flash files item)	Add	target add file "<hex file>"	All	Page 80
		Remove	target remove file "<hex file>"	All	Page 80
	Project tab (settings item)	File offset(hex)	Flash options OFFSET ="<address>"	All	Page 81
		Erase before programming	Flash options EBF /*Erase*/ Flash options NEBF /*Do not erase*/	All	Page 81
		Do not erase info page	Flash options EIP /*Erase*/ Flash options NEIP /*Do not erase*/	eZ80® and eZ80Acclaim!® families	Page 81
	Project tab(Serialization item)	Include serialization in programming	Flash options ISN /*Include*/ Flash options NISN /*Not include*/	All	Page 81
		Place in info NVDS	Flash option NVDS Flash options NNVDS	Z8 Encore!®	Page 81
		Place in info page	Flash options IP Flash options NIP	eZ80® and eZ80Acclaim!® families	Page 81
		Address	Flash options SERIALADDRESS ="<address>"	All	Page 81
		Size in bytes	Flash options SERIALSIZE =<1-8>	All	Page 81

Table 3. Script File Commands (Continued)

SFP Menu	SFP Commands	Dialog Box Options	Script File Command	Target	Page
		Serialization value	Flash Option SERIALVALUE =< " ">	All	Page 81
		Serial entry type	Flash Option SERIALENTRY =<Decimal/Hexa/MACAddr/ IPAddr>	All	Page 81
		Increment setting	Flash options INCREMENT = "<Decimal value>	All	Page 81
		Program serial	Flash BURNSERIAL	All	Page 85
		Read Serial	Flash READSERIAL	All	Page 85

Notes:

- Commands are not case sensitive.
- In directory or path-based parameters, you can use \, \\, or / as separators as long as you use the same separator throughout a single parameter.

  The following example are legal:

  cd "..\path\to\change\to"

  cd "..\\path\\to\\change\\to"

  cd "../path/to/change/to"

  The following examples are illegal:

  cd "..\path/to\change/to"

  cd "..\\path\to\change\to"

Project Related Commands

New Project

The new project command creates a new project designated by `project_name`, target, and the type provided. If the full path is not provided, the current working directory is used. By default, existing projects with the same name are replaced. Use NOREPLACE to prevent the overwriting of existing projects.

Syntax:

```
new project "<name>" "<target>"  [NOREPLACE]
```

`<name>`	Name of the new project.
`<target>`	Must match one of the previously created targets. Use target list command to list out all the previously created targets. The target created is saved in a target file.
`[NOREPLACE]`	Optional parameter to prevent overwtiting of the existing project.

Examples:

```
new project "test1.zdsproj" "eZ80ContestKit_F91"

new project "test1.zdsproj" "eZ80ContestKit_F91" NOREPLACE
```

Open Project

The open project command opens the project designated by project_name. If the full path is not supplied, the current working directory is used. The command fails if the specified project does not exist.

Syntax:

```
open project "<project_name>"
```

Examples:

```
open project "test1.zfpproj"
open project "c:\projectsest1.zfpproj"
```

Save Project

The save project command saves the project that is open.

Syntax:

```
save project
```

Examples:

```
save project
```

//new project "test1.zdsproj"

Saveas Project

The saveas command copies *Srcname* to the project name specified by *Destname*.

Syntax:

```
saveas project  "<Destname>"
```

`<Destname>`	Destination Name.

Examples:

```
saveas project "test1.zdsproj"
```

Clear Log

Clears the log file

Syntax:

```
clear log
```

Example:

```
clear log
```

Exit

The exit command exits the SFP.

Syntax:

```
exit
```

Add File

The add file command adds the hex file to be programmed on the target. If the full path is not provided, the current working directory is used.

Syntax:

```
target add file "<hex file>"
```

Example:

```
target add file "blah.hex"
```

Remove File

The remove file command removes the given file from the currently open project. If the full path is not provided, the current working directory is used.

Syntax:

```
target remove file "<hex file>"
```

Example:

```
target remove file "blah.hex"
```

Flash Options Settings

The various Flash options are listed below:

Syntax	Description
`Flash Options Offset = "<address>"`	Offset address in hex file
`Flash Options NEBF`	Do not erase before flash
`Flash Options EBF`	Erase before flash
`Flash Options NISN`	Do not include serial number
`Flash Options ISN`	Include a serial number
`Flash Options NVDS`	Place in NVDS
`Flash Options NNVDS`	Not Place in NVDS
`Flash Options INTMEM`	Set to internal memory
`Flash Options SERIALADDRESS = "<address>"`	Serial number address
`Flash Options SERIALENTRY =<DECIMAL/HEXA/MACADDR/IPADDR>`	Sets the serial value entry(Decimal, Hexadecimal, Macaddress, IPaddress)
`Flash Options SERIALVALUE =<" ">`	Sets the serial value to be programmed
`Flash Options SERIALSIZE = <1-8>`	Number of bytes in serial number
`Flash Options INCREMENT = "<Decimal value>"`	Increment value for serial number

Target Related Commands

Target Create

The target create command creates a target.

Syntax:

```
Target Create TargetName = "<targetName>" FAMILY ="<family>" CPU
                    ="<cpu>" [NOREPLACE]
```

`NOREPLACE` optional parameter to overwrite the existing target

Target Options

Syntax:

```
Target Options <option name>
Target Options <option name>="<value to set>"
```

Target Set

Sets the target name as active target

Syntax:

```
Target Set "<Target Name>"
```

Target Copy

The target copy command copies *Srcname* to the target name specified by *Destname*.

Syntax:

```
TargetCopy DestName = "<New Target Name>" Srcname = "<New  Target
Name>"  [NOREPLACE]
```

`NOREPLACE` optional parameter to overwrite the existing target

Target Save

The target save command saves the configuration for the target *TargetName*. If no target specified, currently selected target for the project is used

Syntax:

```
target save "<TargetName>"
```

Target Delete

The target delete command delete the target *TargetName*.

Syntax:

```
target delete "<TargetName>"
```

Target Rename

The Target rename command renames target *Srcname* to the new target name specified by *Destname*.

`NOREPLACE` optional parameter to overwrite the existing target.

Syntax:

```
Target rename SRCNAME = "<SOURCE Target Name>"  NEWNAME = "<New
Target Name>"  [NOREPLACE]
```

Target List

Displays list of all currently created targets.

Syntax:

```
target list
```

Example:

```
target list
```

Communication Settings

The communication settings command allows you to select the target communication type. In case of Ethernet and USB type of communication, the communication settings command allows you to manage the targets connected to different communication points. You can add, delete, select, and deselect the communication points. These commands would be useful in multiple target programming.

In case of serial communication, the communication settings command allows you to set the port number and baud rate for the device connected.

Serial Settings

```
target options CommType = Serial
```

Ethernet Settings

```
target options COMMTYPE = TCPIP
```

Comm AddTCP

The Comm AddTCP command adds an IPAddress to the debug tool list.

Syntax:

```
Comm AddTCP IPaddr = <" "> TCPIPport<" ">
```

Comm DeleteTCP IPaddr = <" ">

The `Comm DeleteTCP` command deletes an IPAddress from the debug tool list.

Syntax:

```
Comm DeleteTCP IPaddr = <" ">
```

Comm DeleteAllTCP

The Comm DeleteAllTCP command deletes all IPAddress from the debug tool list.

Syntax:

```
Comm  DeleteAllTCP
```

Comm SelectTCP

The Comm SelectTCP command selects an IPAddress for the multiple target programming.

Syntax:

```
Comm SelectTCP    IPaddr = <" ">
```

Comm DeselectTCP

The Comm DeselectTCP command deselects the IPAddress which is already selected for the multiple target programming.

Syntax:

```
Comm  DeselectTCP
```

USB Settings

```
target options CommType = USB
```

Comm SelectUSB

The Comm SelectUSB command selects an USB for the multiple target programming.

Syntax:

```
Comm  SelectUSB
```

Comm DeselectUSB

The Comm DeselectUSB command deselects the USB which is already selected for the multiple target programming.

Syntax

```
Comm DeselectUSB
```

Flash Operations

Erase Flash

Erase Flash memory

Syntax:

```
Flash Erase [Repeat]
```

`Repeat` optional parameter to repeat the command.

`Set` optional parameter to be used for multiple target programming.

Note: Using `Repeat` option: After execution of the command, a message box is displayed, which waits for the user input. The user can disconnect and connect new set of target/ targets.

Burn Flash

Burn Flash memory

Syntax:

```
Flash Burn [Repeat]
```

Burn and Verify Flash

Burn and verify Flash memory

Syntax:

```
Flash BurnVerify [Repeat]
```

Verify Flash

Verify Flash memory

Syntax:

```
Flash Verify [Repeat]
```

Burn Serial

Burn the serial number

Syntax:

```
Flash BurnSerial [Repeat]
```

Read Serial

Read the serial number

Syntax:

```
Flash ReadSerial [Repeat]
```

Program Single Value

Program a single value in Flash on an attached target

Syntax:

```
Flash ProgramHex  "<Hex>"
Flash ProgramDec  "<Dec>"
Flash ProgramIPaddr "<IP address>"
Flash ProgrammMacaddr "<MAC ADDRESS>"
```

Read Single value

Read the value programmed into the attached target

Syntax:

```
Flash ReadValue
```

Calculate checksum

Calculates the Flash checksum for the target

Syntax:

```
Flash checksum
```

Error Handling

Scripting provides the following command to handle errors while executing commands. The default behavior is to exit from the scripting mode, when an error is encourted.

Syntax:

```
command_error [<Continue/Discontinue>]
```

This command specifies the action on executing command:

```
command_error [CONTINUE]
```

Continues with the execution of next command.

```
command_error [DISCONTINUE]
```

Stops executing commands when it encounters the error.

Miscellaneous Commands

Pwd

The pwd command retrieves the current working directory.

Syntax:

```
pwd
```

Example:

```
pwd
```

Cd

The cd command changes the working directory to dir.

Syntax:

```
cd   "<dir>"
```

Examples:

```
cd "c:emp"
```

Batch

The batch command runs a script file through the Command Processor. If the full path is not provided, the current working directory is used.

Syntax:

```
batch "<filename>"
```

Examples:

```
BATCH "commands.txt"
batch "d:\batch\do_it.cmd"
```

Log

The log command sets the given file as the default log file.

Syntax:

The log command can take one of three forms:

```
log "<filename>"
```

Sets the file name as the default log file.

```
log on
```

Activates the log.

```
log off
```

Deactivates the log.

Examples:

```
log "buildall.log"
@log on
@log off
```

Appendix A—Files Used by SFP

SFP uses three different files for storing the data:

Debug Tool Files: Stores all the communication details. SFP uses three debug tools: serial, USB and Ethernet. SFP saves all the debug tool related information in a separate file. These files are saved in common repository at `<installation_dir>/debug tools` directory. Any changes made to debug tools in one project will reflect other projects also.

Target Files: The target file stores all the target details. The target file is also stored in the default directory at `<installation_dir>/targets`.

Project File: The project file stores all the project details. The location of storing the project file is user specific.

Appendix B—Example Script

The example given below illustrates the script commands for the following requirement

1. Create target for eZ80Acclaim!® family.
2. Setting the target options.
3. Creating a new project for the above target.
4. Adding Flash files to be programmed.
5. Adding a set of targets which are on network.
6. Program all these targets.
7. Repeat programming for the new set of targets.

// Create target

```
target create TargetName ="targetf91_ether_101101"
FAMILY="ez80Acclaim!" CPU="ez80F91" CommType=Ethernet
```

// Settings the target options

```
target Options RAMLower="000000"
target Options RAMUpper ="03FFFF"
target Options CS0LWR = "04"
target Options CS0UPR = "7F"
target Options CS0CTL = "E8"
```

// Create Project

```
new project "F:\Projects\proj_ether101101.Zfpproj"
"targetf91_ether_101101"
```

// Adding files

```
add file "C:\samples\ledDemo1.hex"
add file "C:\samples\ledDemo2.hex"
```

// Adding communication points

```
Comm AddTCP IPaddr="172.16.6.231" TCPIPport=4040
Comm AddTCP IPaddr="172.16.6.232" TCPIPport=4040
Comm AddTCP IPaddr="172.16.6.233" TCPIPport=4040
Comm AddTCP IPaddr="172.16.6.234" TCPIPport=4040
COMM AddTCP IPaddr="172.16.6.235" TCPIPport=4040
```

// The repeat option displays a message box, waiting for the user i/p to
// repeat the programming. The user can connect new set of targets to
// above IP address and presses OK button to repeat the programming

```
flash burn repeat
```

Customer Support

If you experience any problems while operating this product, please check the ZiLOG Knowledge Base:

http://kb.zilog.com/kb/oKBmain.asp

If you cannot find an answer or have further questions, please see the ZiLOG Technical Support web page:

http://support.zilog.com