

## Introduction

This quick start guide helps you to get started with Zilog File System for Zilog Real-Time Kernel (RZK) software on Zilog's eZ80<sup>®</sup> product line. The Zilog File System is currently available for the eZ80L92 MPU and the eZ80Acclaim!<sup>®</sup> family of Flash MCUs, which includes the eZ80F91, eZ80F92 and eZ80F93 microcontrollers. This document guides you through the following tasks:

- [Zilog File System Overview](#)
- [RZK Developer's Kit](#)
- [Target Hardware Requirements](#)
- [Host Hardware and Software Requirements](#)
- [Zilog File System Library Directory Structure](#)
- [Using the Zilog File System in the ZDSII Environment](#)
- [Related Documentation](#)

## Zilog File System Overview

Zilog File System is implemented on RZK, which is a real-time, preemptive and a multi-tasking kernel designed for time-critical embedded applications. Zilog File System is currently available for eZ80 and it is supplied as a C library module. Any application that uses Zilog File System is linked with the RZK and the Zilog File System libraries. Resulting executable files are downloaded to a target platform or placed in ROM. The features of Zilog File System include:

- Implements a core that is independent of the underlying memory device
- Provides easy file system and volume configuration
- Supports access to multiple volumes (such as C:\ or D:\ drives) located in RAM, Flash memory, or both
- Provides volume-related configuration parameters, such as maximum directories created and maximum opened files to use the Zilog File System with limited memory space
- Supports a full-fledged directory structure with all basic file and directory operations
- Allows period in file and directory names to distinguish filename extensions

- Supports simultaneous opening of a file for read and write access
- Supports media error handling and Flash data recovery after a power failure
- Implements garbage collection to fully utilize memory for active files and directories
- All file system APIs are multithread-safe (re-entrant)
- Provides easy porting of the file system core to other toolsets
- Supports NOR Flash devices

For information about configuring the Zilog File System, refer to the [Zilog File System User Manual \(UM0179\)](#), which is available free for download on the Zilog website, and can also be found in the following filepath:

```
<ZDSII installed directory\Programfiles\Zilog\  
ZDSII_eZ80Acclaim!_A.B.C\ZTP\ZTPX.Y.Z_Lib\RZK\Docs
```

► **Note:** Throughout this document, *x.y.z* represents the ZTP/RZK version number in *Major.Minor.Revision* format, and *A.B.C* represents the ZDSII – eZ80Acclaim! version number in *Major.Minor.Revision* format.

## RZK Developer's Kit

Zilog File System is included with the RZK Developer's Kit, which contains the following documents:

- Zilog File System Quick Start Guide (QS0050)
- Zilog File System Reference Manual (RM0039)
- Zilog File System User Manual (UM0179)
- Zilog Real-Time Kernel Product Brief (PB0155)
- Zilog Real-Time Kernel Quick Start Guide (QS0048)
- Zilog Real-Time Kernel Reference Manual (RM0006)
- Zilog Real-Time Kernel User Manual (UM0075)

## Target Hardware Requirements

The hardware required to install and use RZK and Zilog File System include:

- eZ80 Development Platform
- eZ80F91, eZ80F92, eZ80F93 and eZ80L92 modules
- ZPAKII Debug interface tool, including the ZDI Target Interface Module (TIM) or USB Smart Cable
- 20-pin FRC cable
- RS-232 and RJ-45 cables
- 9V and 5V DC power supply (supplied with each eZ80<sup>®</sup> development kit)
- Documentation on CD-ROM
- Optional: Parallel cable, IEEE 1284

## Host Hardware and Software Requirements

To use RZK and the Zilog File System with any eZ80Acclaim!<sup>®</sup> development kit, the host system must meet the following hardware and software requirements:

- ZDSII – eZ80Acclaim! IDE for the eZ80F91, eZ80F92 or eZ80F93 modules; available for download at [www.zilog.com](http://www.zilog.com)
- HyperTerminal terminal emulator
- Internet browser (Internet Explorer or Netscape Navigator)
- Pentium II 233MHz processor
- 96 MB RAM (or more, as required by operating system)
- 100MB free hard disk space
- Super VGA video adapter
- Ethernet port
- One or more RS-232 communications ports
- Optional: parallel port
- Optional: four-port 10-baseT Ethernet hub

## Zilog File System Library Directory Structure

Figure 1 displays the Zilog File System's directory structure, which is created in the installation directory when you install ZDSII\_eZ80Acclaim!\_A.B.C on a host PC. By default, this installation directory is:

```
<ZDSII installed directory>\Program Files\Zilog\  
ZDSII_eZ80Acclaim!_A.B.C\ZTP\ZTPX.Y.Z_Lib.
```



**Figure 1. RZK Directory Structure**

Table 1 describes the contents of Zilog File System folders in the RZK directory.

**Table 1. RZK Directory Contents**

<b>Folder</b>	<b>File Type</b>	<b>Description</b>
\Inc	Header files	Zilog File System header files that must be included in the application project workspace.
\Lib	Library files	Zilog File System library file that must be included in the application project workspace. Also contains the Zilog File System stub file that must be included in the application to remove the Zilog File System footprint, even if the application uses the Zilog File System APIs.
\Conf	C files	This folder contains the Zilog File System configuration source file that must be included in the application project workspace.
\Docs		This folder contains RZK-related documents.
\SamplePrograms\FS	Project workspace, application	Sample application project workspace using the Zilog File System and an interactive shell that showcases the different features available in the Zilog File System.

## Using the Zilog File System in the ZDSII Environment

This section specifies the requirements for using RZK in the ZDSII environment and describes the procedure for configuring the hardware and executing the sample applications.

### Hardware Requirements

The hardware required to execute the sample application using RZK include:

- eZ80 Development Platform with eZ80Acclaim!<sup>®</sup> Module installed
- ZPAKII/Serial Smart Cable/USB Smart Cable
- RS-232 cable
- Ethernet cable
- Two COM ports on the PC

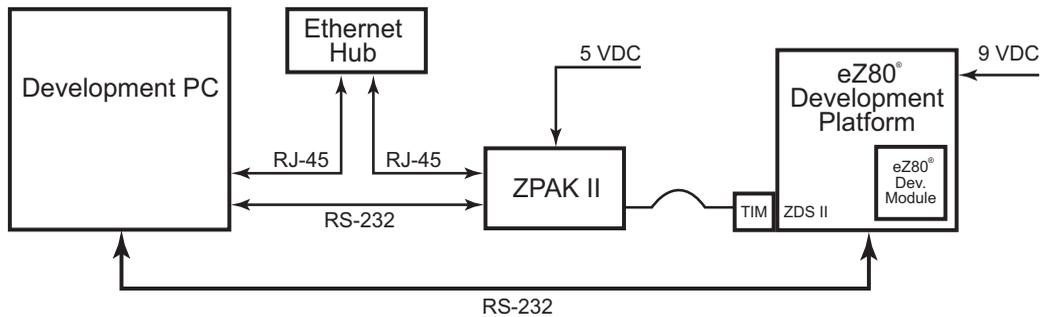
## Software Requirements

The software required to execute the sample application using RZK includes:

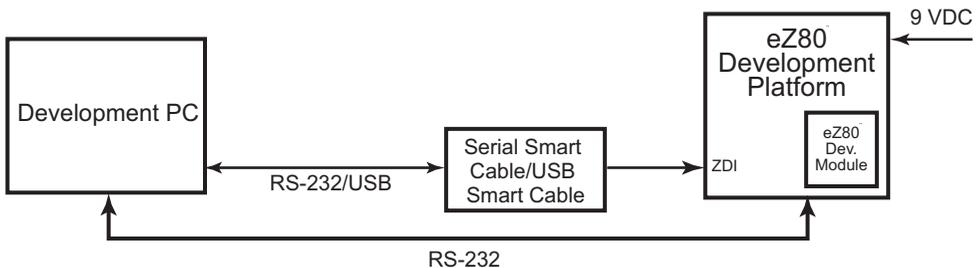
- Windows operating system
- ZDS II – eZ80Acclaim!
- HyperTerminal application

## Hardware Setup

Figure 2 and Figure 3 display the hardware setup.



**Figure 2. Hardware Setup Using an Ethernet Hub and ZPAK II**



**Figure 3. Hardware Setup Using a Serial Smart Cable/USB Smart Cable**

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Observe the following steps to set up the hardware:

1. Set the jumper pin connections on the eZ80 Development Platform to their default settings.
2. Connect the power supply (9V) cables to the eZ80 Development Platform.
3. If you're using ZPAKII, follow this brief procedure; if you're using either of the Serial or USB smart cables, skip ahead to Step 4.
  - a. Connect the ZDI target interface module to the ZDI J4 port on the eZ80 Development Platform.
  - b. Connect one end of the RJ-45 cable to the Ethernet port on the ZPAKII unit and the other end to the LAN (required if debugging with ZDSII).
  - c. Connect the power supply (5 V) to the ZPAKII unit.
4. If you're using a Serial or USB Smart Cable, follow either of the following procedures:
  - **Serial Smart Cable:** Connect the ZDI target interface module of the Serial Smart Cable to the ZDI J4 port on the eZ80 Development Platform, and connect the other end to the serial port on the host PC.
  - **USB Smart Cable:** Connect the ZDI target interface module of the USB Smart Cable to the ZDI J4 port on the eZ80 Development Platform, and connect the other end to the USB port the on host PC.
5. Connect one end of the RJ-45 cable to the Ethernet port on the eZ80 Module and the other end to the LAN.
6. Connect the RS-232 cable to the eZ80 Development Platform and to the COM1 port of the development PC.

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► **Note:** Ensure that all of the host and target system requirements are met and that the software installation was successful before using the Zilog File System.

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## Configuring the HyperTerminal Application

Observe the following steps to configure the HyperTerminal application:

1. In Windows, launch the HyperTerminal application by navigating via the **Start** menu to **Programs** → **Accessories** → **Communications** → **HyperTerminal**. The **Connection Description** dialog box appears.
2. Enter the name for a new connection in the **Connection Description** dialog and click **OK** to open the **Connect To** dialog box.
3. In the **Connect Using** text field, select the port (COM1 or COM2) to which the serial cable is connected. Click **OK** to open the **Port Settings** dialog box for the selected port.
4. In the **Port Settings** dialog box, enter the values listed in Table 2 into their respective text fields:

**Table 2. HyperTerminal Port Settings**

Bits per second	57600 bps
Data bits	8
Parity	None
Stop Bits	2
Flow control	None

5. Click **OK** to finish setting up the serial port.

## Related Documentation

The following documents apply to all eZ80 and eZ80Acclaim! devices. Each is available free for download from the Zilog website.

- [eZ80 CPU User Manual \(UM0077\)](#)
- [Zilog Developer StudioII – eZ80Acclaim! User Manual \(UM0144\)](#)
- [ZPAK II Debug Interface Tool Product User Guide \(PUG0015\)](#)
- [eZ80 C Compiler User Manual \(UM0055\)](#)
- [eZ80Acclaim! External Flash Loader Product User Guide \(PUG0016\)](#)

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## Customer Support

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To learn more about this product, find additional documentation, or to discover other facets about Zilog product offerings, please visit the Zilog Knowledge Base at <http://zilog.com/kb> or consider participating in the Zilog Forum at <http://zilog.com/forum>.

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