
Platform8051 Development Kit

Quick Start Guide



Actel Corporation, Mountain View, CA 94043

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Introduction

This Quick Start Guide provides basic information and instructions to run the pre-programmed web server application on the *Platform8051* development board. Please refer to the *Platform8051* Development Kit User's Guide for more details.

What Is in the Box

The *Platform8051* Development Kit is a starter kit for working with Actel *Platform8051* products, and is intended to help you get your 8051 product to market faster. The kit consists of the following items:

1. *Platform8051* development board
2. Universal power supply
3. European power adaptor
4. One category 5 Ethernet cable
5. One category 5 Ethernet crossover cable
6. *Platform8051* Development Board CD
 - a. Board layout documentation
 - b. User's Guide or Quick Start Guide
 - c. Web server demonstration design
 - i. FPGA design (top level connections, IP cores needs to purchased separately) and programming file
 - ii. 8051 C source code
7. FS2 Debugger CD
8. Keil IDE CD

Instructions to Run the *Platform8051* Web Server

LAN with a DHCP server

Please follow these instructions when you connect the *Platform8051* development board into your company's Ethernet network. Your Ethernet network must have an active DHCP server.

1. Connect the power plug into the board's power connector.
2. Connect the Ethernet cat5 cable into an Ethernet RJ-45 jack for your company.
3. The position of the dipswitch should be set to All Closed.
4. Turn on the power switch for the board; the default address 10.0.0.198 is displayed on the LCD.

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5. Wait for up to 2-3 minutes, until the IP address <A.B.C.D> (other than 10.0.0.198) obtained from the DHCP server appears on the LCD display.
 6. Enter the following http request in your web browser according to IP address shown in the board LCD:
<http://A.B.C.D>, e.g. <http://190.10.15.118>
 7. The web page in [Figure 4 on page 8](#) will appear.
 8. Enter a text string in text box “Text to display in LCD” on the web page, then click the submit button. The entered text string should be displayed on the board’s LCD. The maximum number of characters you can enter is 16.

Directly Connecting to a PC

Please follow these instructions when connecting the *Platform8051* development board to your PC directly without using a DHCP server:

1. Set your PC’s ip address to 10.0.0.100 and network mask to 255.255.255.0. Please consult your PC’s OS manual for information about IP settings.
2. Connect the power plug into the board’s power connector.
3. Connect the crossover Ethernet cat5 cable to the board, then connect it to your PC’s Ethernet jack.
4. The position of the dipswitch should be set to All Close.
5. Turn on the power switch for the board; the default address 10.0.0.198 is displayed on the LCD.
6. Enter the following http request in your web browser:
<http://10.0.0.198>
7. The web page in [Figure 4 on page 8](#) will appear.
8. Enter a text string in text box “Text to display in LCD” on the web page, then click the submit button. The entered text string should be displayed on the board’s LCD. The maximum number of the characters you can enter is 16.

Functional Overview

The *Platform8051* development board consists of one Actel Flash-based FPGA device, APA600-FG676, and other components shown in Figure 1. The APA600 is the central component that connects to all other on-board components.

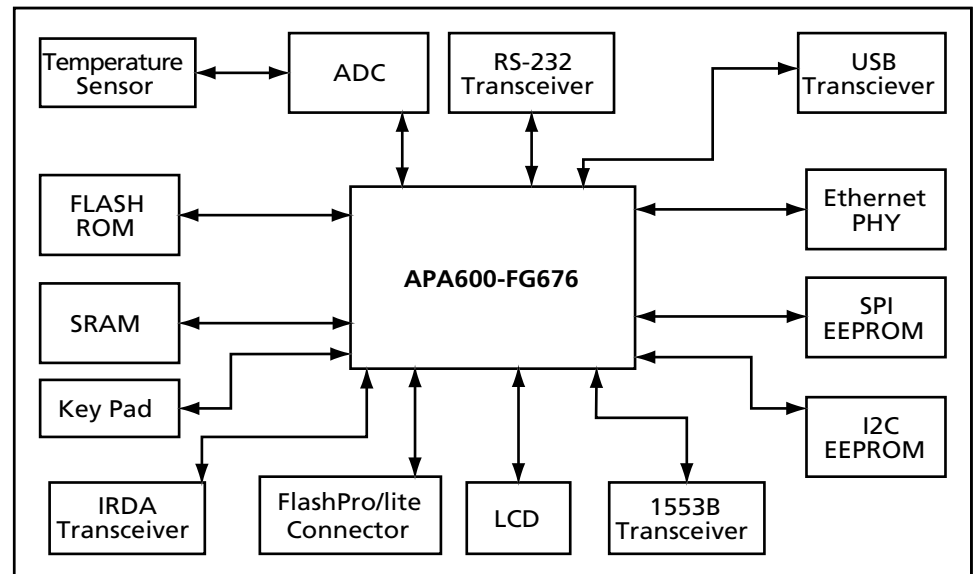


Figure 1. A Components and Connections Illustration for the *Platform8051* Development Board

Please note that the USB, 1553B and IRDA transceivers are not fitted. Power, clock, and some other resources are not shown in Figure 1.

Board Layout

The *Platform8051* development board layout is shown in Figure 2.

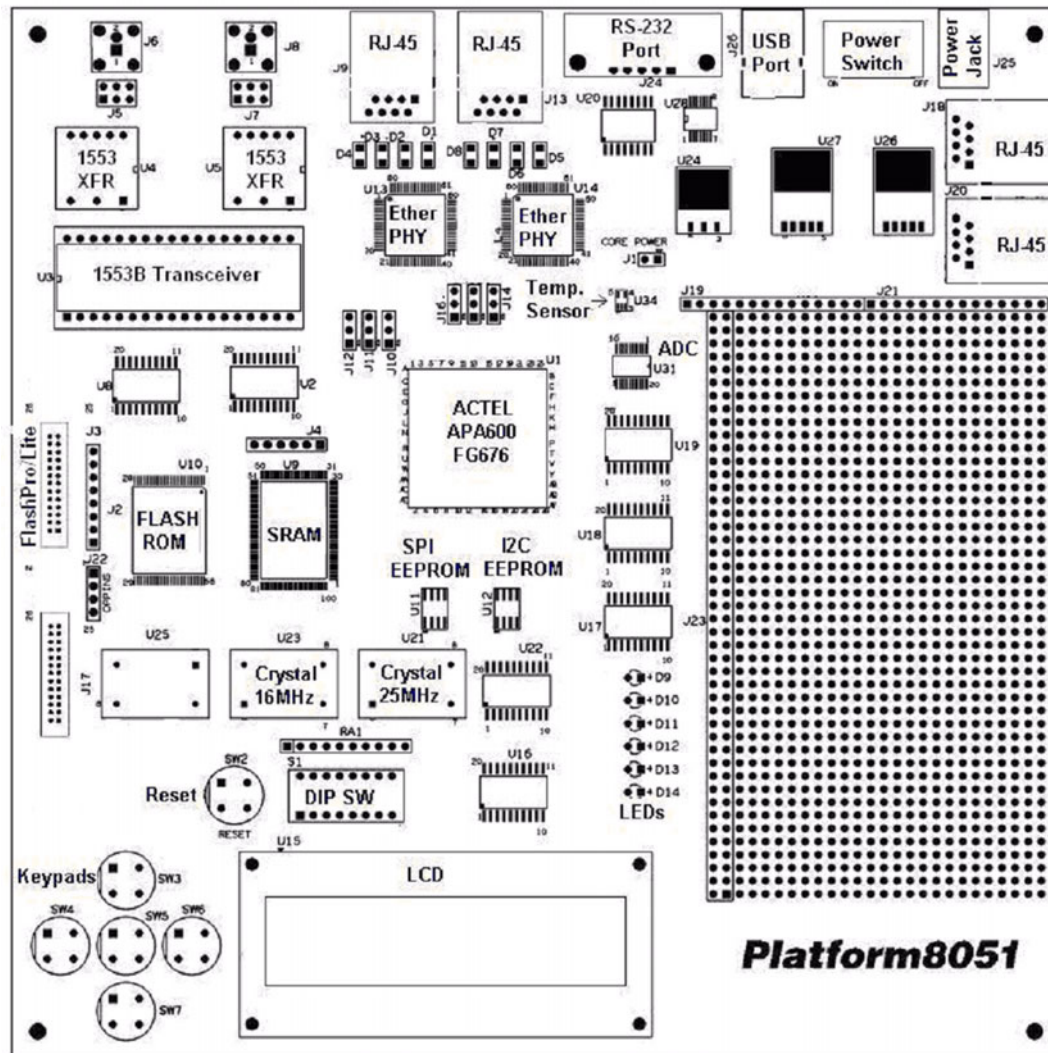


Figure 2. *Platform8051* Development Board Layout

Please note that the USB, 1553B, and IRDA transceivers are not fitted, and only one Ethernet PHY and one RJ-45 connector are fitted.

Web Server Application

A sample web server application is included in the *Platform8051* development kit to demonstrate the functionality of the *Platform8051*.

The FPGA Design of the Web Server

Actel IP Core8051 and Core10/100 are used in the demonstration design shown [Figure 3](#).

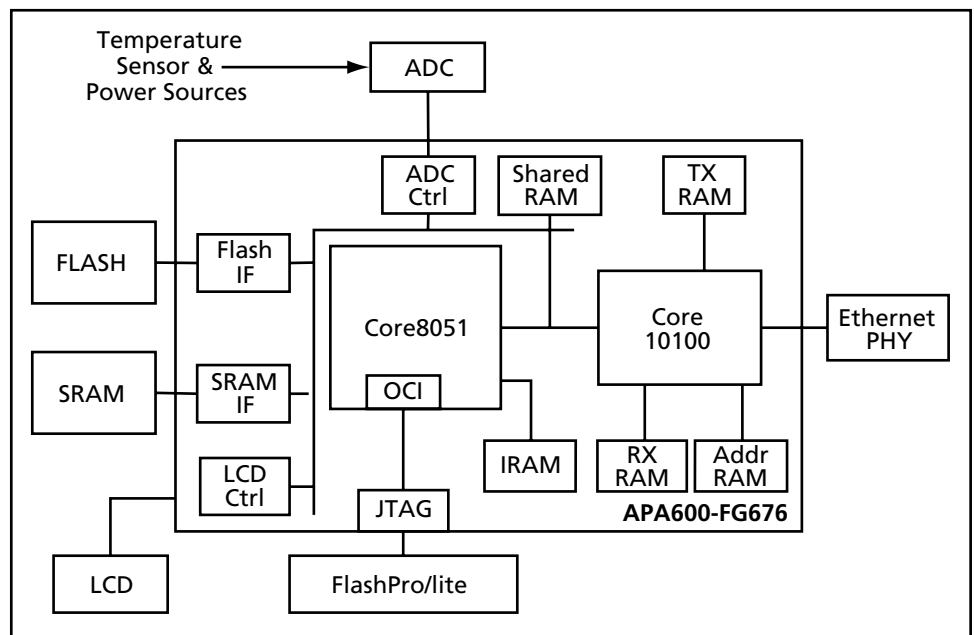


Figure 3. The FPGA Block Diagram for the Web Server Design

Top-level source code for the FPGA design can be found in the Platform Development Kit CD.

The Core8051 obtains analog readings from the eight analog channels listed below:

- Channel 0 for FPGA power consumption estimation
- Channel 1 for 2.5V source
- Channel 2 for 3.3V source

- Channel 3 for input power voltage
- Channel 4 for 5.0V source
- Channel 5 and 6 are connected to daughter board area
- Channel 7 for temperature sensor

The web server displays the information above on a user web page.

Web Server Software

The web server software is written in C and provided in the *Platform8051* Development Kit CD. It is an example code and is not supported or warranted by Actel. The *Platform8051* Web Server user interface is a web page, shown in Figure 4.

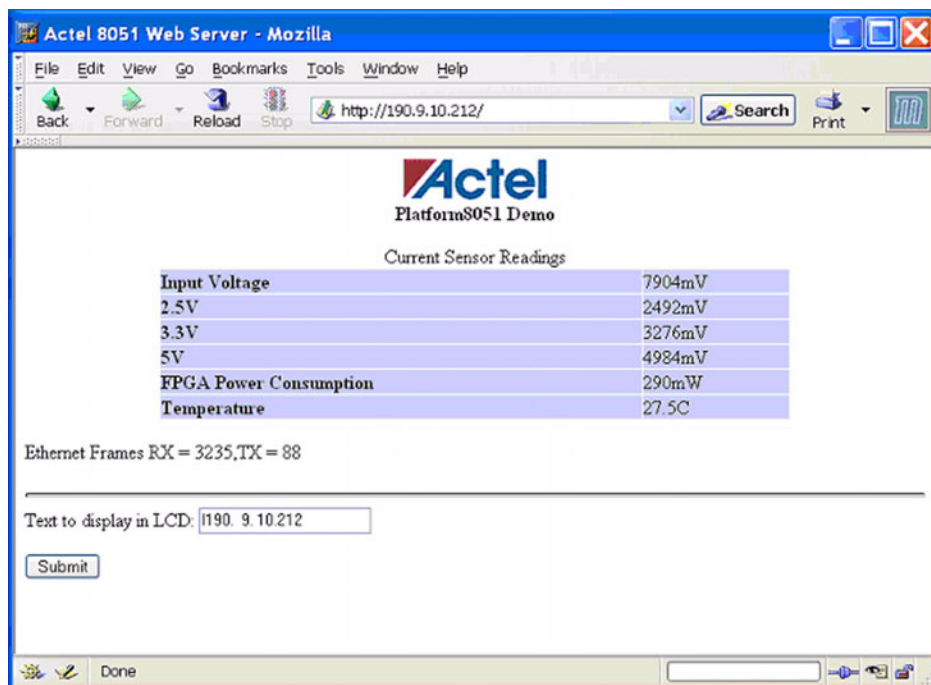


Figure 4. The Web Page for the *Platform8051* Web Server Application.

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Actel Corporation • 2061 Stierlin Court • Mountain View, CA USA 94043

U.S. Toll Free Line: 888-99-ACTEL • Customer Service: 650-318-1010 • Customer Applications Center: 800-262-1060

Actel Europe Ltd. • River Court, Meadows Business Park • Station Approach, Blackwater • Camberley, Surrey GU15 3YL

Tel: +44 (0)1276.609 300 • Fax: +44 (0)1276.607 540

Actel Japan • EXOS Ebisu Bldg. 4F • 1-24-14 Ebisu Shibuya-ku • Toyko 150 • Japan

Tel: +81 (0)334-457-671 Fax: +81 (0)334-457-668

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