![EFINIX® logo]

Xyloni Development Kit Quick Start Guide

XYLONI-DK-QSG-v1.0　|　November 2020

Introduction

Thank you for choosing the Xyloni Development Kit (part number: XYLONI), which allows you to explore the features of the T8 FPGA.

Figure 1: Xyloni Development Kit

⚠️ **Warning:** The board can be damaged without proper anti-static handling.

What's in the Box?

The Xyloni Development Kit includes:

- Xyloni Development Board preloaded with a demonstration design
- Mini-USB cable (type B)

- 3 unsoldered pin headers

Register Your Kit

When you purchase an Efinix development kit, you also receive a copy of the Efinity®
software plus one year of software upgrades and patches. The Efinity® software is available
for download from the Support Center on the Efinix web site.

To get access to our Support Center to download your software, register your development
kit at https://www.efinixinc.com/register.

Download the Efinity® Software

To develop your own designs for the T8 device on the board, you must install the Efinity®
software. You can obtain the software from the Efinix® Support Center under Efinity
Software (www.efinixinc.com/support/).

The Efinity® software includes tools to program the device on the board. Refer to the
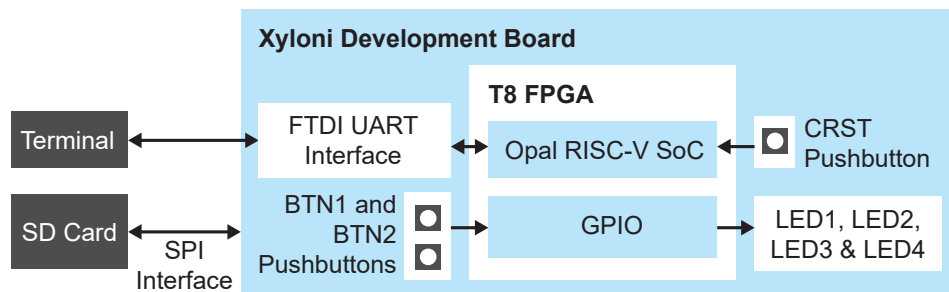Efinity® Software User Guide for information about how to program the device.

Learn more: Efinity® documentation is installed with the software (see **Help** > **Documentation**) and is also
available in the Support Center under Documentation (www.efinixinc.com/support/).

Running the Example Design

Efinix® preloads the Xyloni Development Board with an example design and firmware. The
design includes two functions, the invert LED operation and the read SD card information
operation. The read SD card information operation requires a terminal program in a
computer and an SD card inserted into the SD card slot to display the SD card information.

The example design implements an open-source variation of the Efinix®'s Opal RISC-V
SoC. The Opal RISC-V is a cacheless, small footprint SoC that is ideal for applications that
require embedded compute capability such as system monitoring or remote configuration
and control. For more information, refer to the Opal (Xyloni) RISC-V SoC Hardware and
Software User Guide.

Figure 2: Xyloni Development Board Example Design Block Diagram

Invert LED

Follow these steps to run the invert LED operation:

1. Connect the USB cable to the board and to your computer. LED PWR turns on, indicating that the board is receiving power correctly. When configuration completes, the configuration done (LED CDN) turns on. The LEDs turn on sequentially from LED1 to LED4.

> **ⓘ** **Note:** If LED PWR does not turn on, the board is not receiving power correctly.

2. Press pushbutton BTN2 to invert the LEDs. The LEDs turn off sequentially from LED1 to LED4.

Read SD Card Information

Follow these steps to run the read SD card information operation:

1. Connect the USB cable to the board and to your computer. LED PWR turns on, indicating that the board is receiving power correctly. When configuration completes, the LED CDN turns on. The LEDs turn on sequentially from LED1 to LED4.

> **ⓘ** **Note:** If LED PWR does not turn on, the board is not receiving power correctly.

2. Insert the SD card into the SC card slot.
3. Open a terminal software on the computer. You can use any Windows or Linux terminal applications such as, PuTTY, Tera Term, Minicom, and others.
4. Select the available USB COM port. Depending on the operating system settings, the terminal may show four COM ports instead of one. In that case, select the COM[2] port in the terminal software. Example:
   - In Windows, if the terminal shows COM30 COM31 COM32 COM33, select COM32.
   - In Linux, if the terminal shows ttyUSB0 ttyUSB1 ttyUSB2 ttyUSB3, select USB2.
5. Set the serial port baud rate to 115200 bits per second.
6. Press pushbutton BTN1. The terminal displays the following test menu:

```
==========Xyloni Test Menu==========
---Press BTN2 On Board - INVERT LED BLINK
---Press Keyboard 'Enter' Key  - READ SD CARD INFO
```

> **ⓘ** **Note:** If the terminal does not display the Xyloni test menu correctly, verify that the port's baud rate is set correctly.

7. Press the Enter key, and the terminal displays the SD card information. For example:

```
=========SD Card Info=========

Manufacturer ID    : 3
Type               : Hard disk file system
TRAN_SPEED         : 10Mbit/s
SD CARD Size       : 15218 MByte
```

8. If there is no SD card in the SD card slot, the terminal displays:

```
Response Fail!! NO SD Card Detect
```

Revision History

Table 1: Revision History

Date	Version	Description
November 2020	1.0	Initial release.