

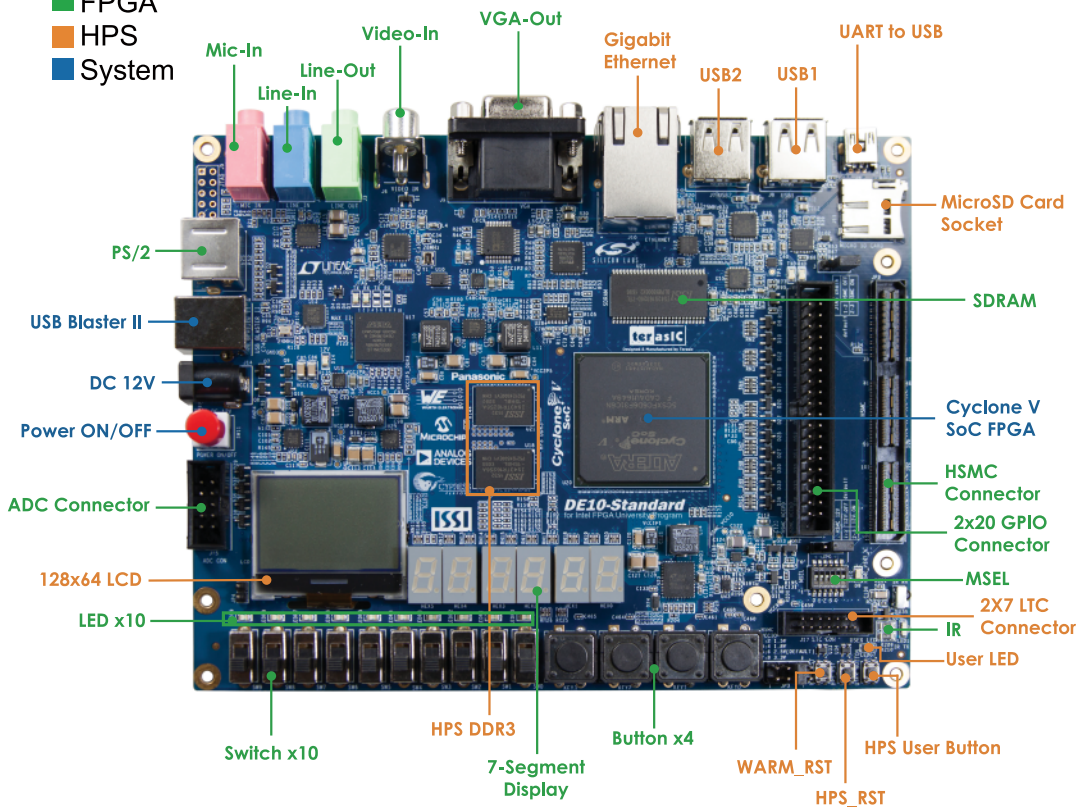
DE10-Standard

for Intel FPGA University Program

Quick Start Guide



For further discussion, support, and resources, go to: <http://de10-standard.terasic.com>

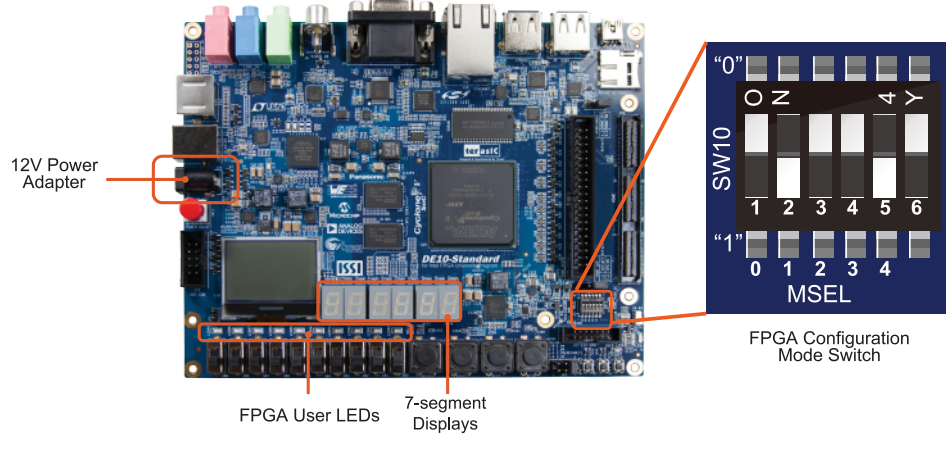


If you encounter any problem, please contact us via
 ✉ e-Mail: support@terasic.com ☎ Tel: +886-3-575-0880

1 What's in the Box?

- DE10-Standard Board
- DE10-Standard Quick Start Guide
- Type A to B USB Cable
- Type A to Mini-B USB Cable
- Power DC Adapter (12V)
- Four Silicon Footstands

2 Performing Power-on Test: FPGA Configuration



- Set the MSEL[4:0]= 10010 in Fast AS Mode
- Connect the power adapter to the power jack on the DE10-Standard, then press the power button to power it up
- All the FPGA user LEDs will be flashing and 7-segment displays will be counting
- Connect a VGA monitor to the D-sub connector(J9) and the VGA monitor will display the board image

3 Contents of DE10-Standard System CD

Users can download the DE10-Standard System CD from the link below:

<http://de10-standard.terasic.com/cd>

DE10-Standard System CD Contents

Directory Name	Contents
Manual	Contains the DE10-Standard documentation
Demonstrations	Contains the DE10-Standard example designs
Datasheet	Contains the data sheets of components used on the DE10-Standard
Schematic	Contains the DE10-Standard schematic
Tools	Contains design tools used to develop with the DE10-Standard

4 Getting Started with the DE10-Standard Board

To help users to learn DE10-Standard more systematically, we provide a reference document (Learning_Loadmap.pdf). This document provides steps-by-step guidance for users to learn how to develop with this board (the learning order is from basic development board operation to HPS design), and improve efficiency.

Users can refer to Getting_Start_Guide.pdf in the DE10-Standard System CD manual folder. This guide provides an overview of the hardware and software setups, including step-by-step procedures for installing the necessary software tools to use the DE10-Standard board.

The instructions in this guide explain how to perform the following tasks:

- Software Installation: Quartus Prime and SoC EDS
- Development Board Setup: Power up the DE10-Standard
- Perform FPGA System Test: Download an FPGA SRAM Objective File (.sof)
- Run Linux on the DE10-Standard board

5 Starting Your First FPGA Design

For a full description of the development board, its design, and use, refer to My_First_FPGA.pdf in the Manual folder of the DE10-Standard System CD.

This document describes the complete FPGA design flow, including how to:

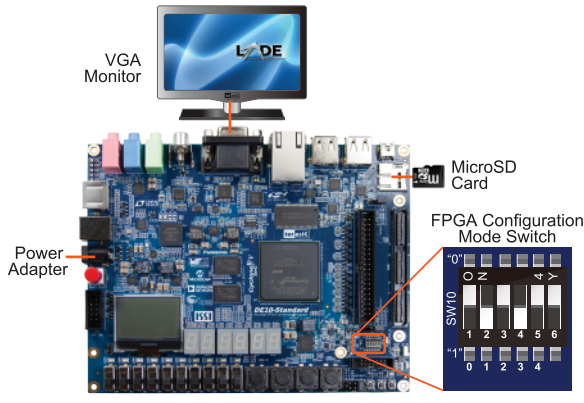
- Create a new Quartus Prime project
- Add user logic and utilize MegaCore IPs
- Download a .sof file to the FPGA to view the result

6 LinuxBSP (Board Support Package)

Users can download the DE10-Standard Linux BSP from:

<http://de10-standard.terasic.com/cd>

To perform the power-on test, follow these steps:



- Download the LXDE Desktop Linux image from the link above
 - Decompress the Linux image file and write the contents to a microSD Card
 - Insert the microSD card into DE10-Standard
 - Connect the VGA port of DE10-Standard to a monitor with VGA Input.
 - Connect the power adapter to the power jack on the DE10-Standard, press the power button to power it up
 - Users can see a Penguin Linux Logo emerging on the monitor
 - It takes approximately 35 seconds to boot Linux. Finally, the screen will enter LXDE desktop on the monitor
- For more details, visit Chapter 5 of the document Getting_Started_Guide.pdf in the system CD

7 Starting Your First HPS Design

The kit's user guide My_First_HPS.pdf, DE10-Standard System CD describes in detail the complete design flow, including how to:

- Create and build a C/C++ project
- Copy files to Linux running on DE10-Standard
- Launch executable files on Linux running on DE10-Standard

8 Getting Help

For further instructions, support, and resources, visit
<http://de10-standard.terasic.com>