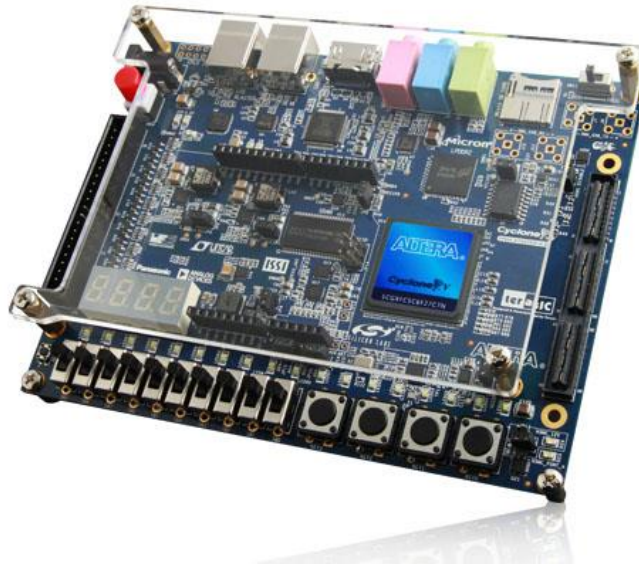


Cyclone V GX Starter Kit

1. Overview



The Cyclone V Starter Kit presents a robust hardware design platform built around the Altera Cyclone V GX FPGA, which is optimized for the lowest cost and power requirement for transceiver applications with industry-leading programmable logic for ultimate design flexibility. With Cyclone V FPGAs, you can get the power, cost, and performance levels you need for high-volume applications including protocol bridging, motor control drives, broadcast video converter and capture cards, and handheld devices. The Cyclone V Starter Kit development board includes hardware such as Arduino Header, on-board USB Blaster, audio and video capabilities and much more. In addition, an on-board HSMC connector with high-speed transceivers allows for an even greater array of hardware setups. By leveraging all of these capabilities, the Cyclone V Starter Kit is the perfect solution for showcasing, evaluating, and prototyping the true potential of the Altera Cyclone V GX FPGA.

2. Specification

FPGA Device

- Cyclone V GX 5CGXFC5C6F27C7N Device
- 77K Programmable Logic Elements
- 4884 Kbits embedded memory
- Six Fractional PLLs
- Two Hard Memory Controllers
- Six 3.125G Transceivers
- **Company: Terasic**
- **Tel: +886-3-5750880**
- **Fax: +886-3-5726690**
- **Add: 9F., No.176, Sec.2, Gongdao 5th Rd, East Dist, Hsinchu City, 30070. Taiwan**

Configuration and Debug

- Quad Serial Configuration device – EPCQ256 on FPGA
- On-Board USB Blaster (Normal Type-B USB connector)
- JTAG and AS mode configuration supported

Memory Device

- 4Gb LPDDR2 x32 bits data bus
- 4Mb SRAM x16 bits data bus

Communication

- UART to USB

Expansion I/O

- HSMC x 1(voltage levels: 2.5V), including 4-lanes 3.125G transceiver
- 2x20 GPIO Header (voltage levels: 3.3V)
- Arduino header, including analog pins
- SMA x 4 (DNI), one-lane 3.125G transceiver

Display

- HDMI TX, compatible with DVI v1.0 and HDCP v1.4

Audio

- 24-bit CODEC, Line-in, line-out, and microphone-in jacks

Switches, Buttons, LED, and 7-Segments

- 18 LEDs
- 10 Slide Switches
- 4 Debounced Push Buttons
- 1 CPU reset Push Buttons
- Four 7-Segments

Micro SD Card Socket

- Provides SPI and 4-bit SD mode for SD Card access

ADC

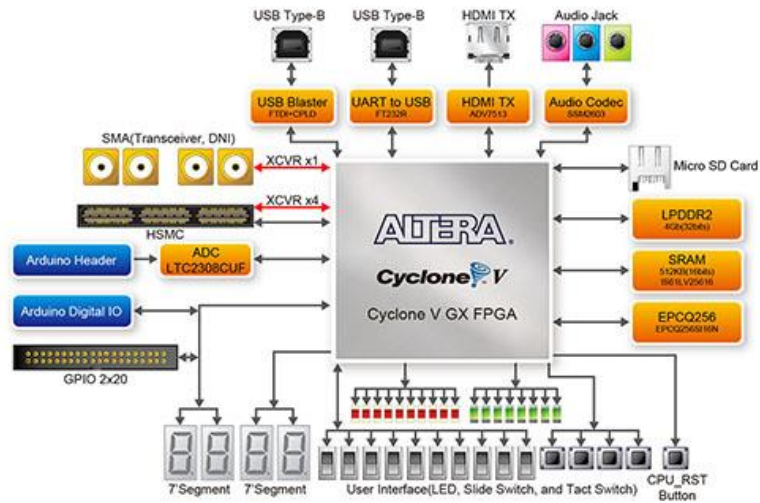
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- 12-Bit Resolution, 500Ksps Sampling Rate. SPI Interface.
- 8-Channel Analog Input. Input Range : 0V ~ 4.096V.

Power

- 12V DC input

Block Diagram



3. Kit Content

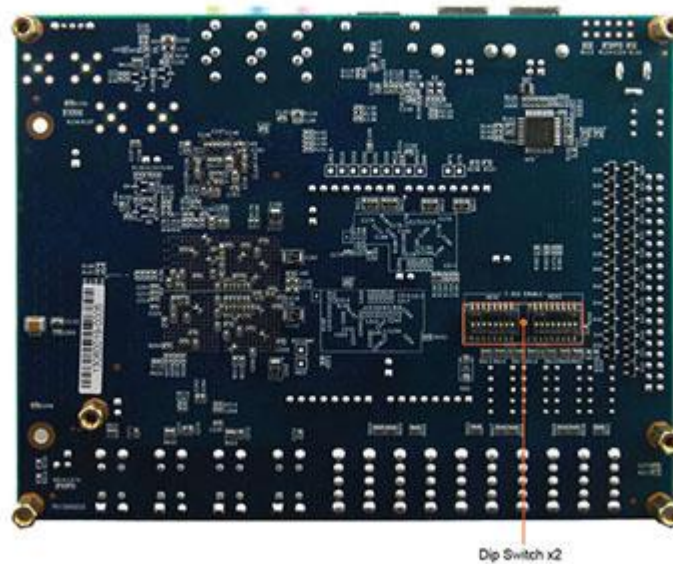
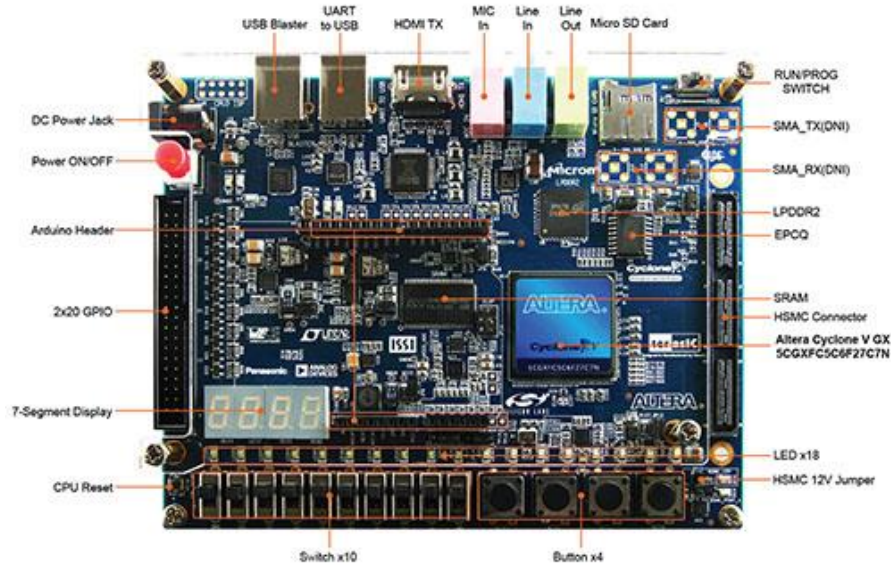


- Cyclone V GX Starter Kit board
- Cyclone V GX Starter Kit Quick Start Guide

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- Type A to B USB Cable
- Power DC Adapter (12V)

4. Layout



- Size : 150*115.8 mm

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