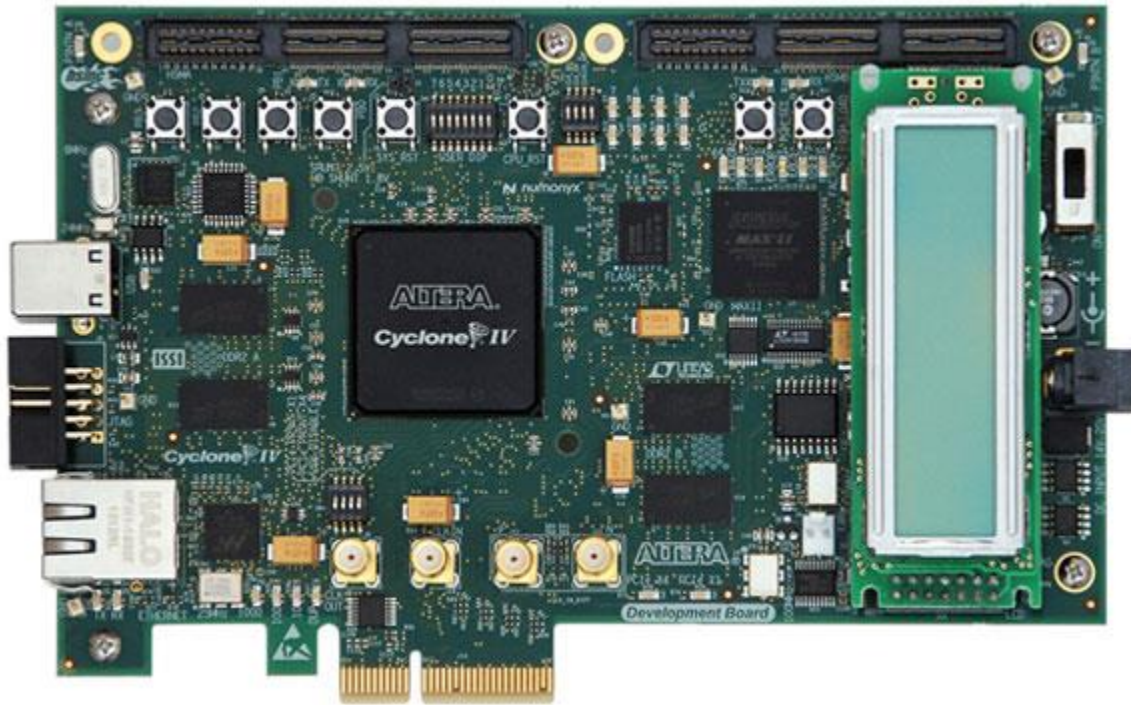


Altera Cyclone IV GX FPGA Development Kit

1. Overview



Altera® Cyclone® IV GX FPGA Development Kit provides a comprehensive, best-in-class design environment to quickly begin developing low-cost and low-power FPGA system-level designs. This kit helps to shorten your product's development cycle so that you can meet your product's time to market and production milestones. With this platform, you can:

- Develop and test PCI Express® Gen1 x1, x2, x4 endpoint designs using the Cyclone IV GX PCI Express hard intellectual property (IP) and PCI-SIG® -compliant board
- Develop and test multi-lane protocol bridging designs using on-board DDR2 memory and through its expansion capability, the high-speed mezzanine card (HSMC) connectors. There are over 30 different HSMCs available through Altera partners and supporting protocols such as CPRI, SATA, and SDI.
- Come up to speed quickly with your FPGA design by reusing the example designs provided by the kit's Board Test System.
- Use the kit's host board as design model for your product's low-cost and low-power board.

2. Specification

Featured device

- **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

- Cyclone IV GX EP4CGX150N FPGA in a F896 package

Configuration status and set-up elements

- Passive serial (PS) configuration via a MAX[®] II EPM2210 CPLD and flash memory
- On-board USB-Blaster[™] download cable using Quartus[®] II Programmer

Clocks

- On-board clock oscillators: 50 MHz, 100 MHz (programmable), and 125 MHz
- SMA connectors for external clock input
- SMA connectors for clock output

General user input and output

- LEDs
- LCD display
- Push button and dual in-line package (DIP) switches

Memory devices

- 128-megabytes (MB) DDR2 SDRAMs with a 32-bit data bus
- 64-MB sync flash and 4-MB SSRAM

Component and interfaces

- PCI Express edge connector
- 10/100/1000-Mbps Ethernet PHY with RJ-45 connector
- Two HSMC connectors
- Power measurement circuitry

Power

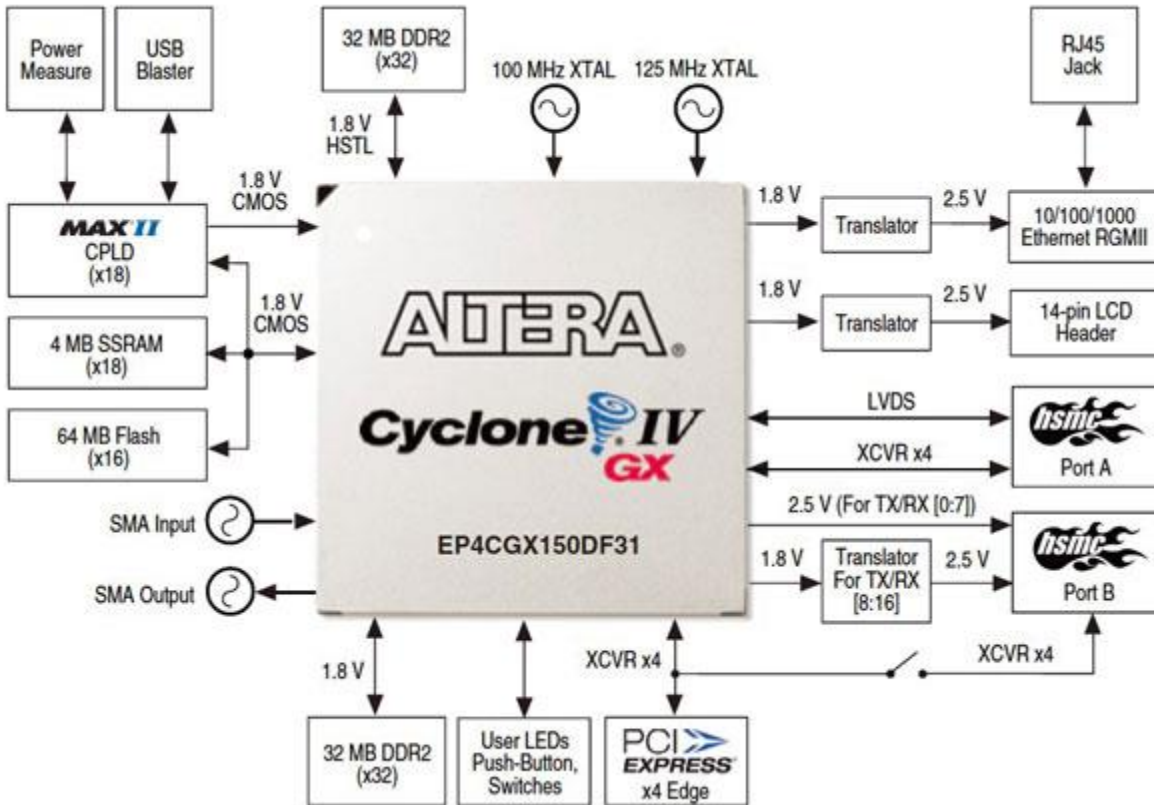
- Laptop DC input
- PCI Express edge connector power

Other features

- PCI Express short card form factor
- RoHS-compliant

Altera Cyclone IV GX FPGA Development Board Block Diagram

- **Company: Terasic**
- **Tel: +886-3-5750880**
- **Fax: +886-3-5726690**
- **Add: 9F., No.176, Sec.2, Gongdao 5th Rd, East Dist, Hsinchu City, 30070. Taiwa**

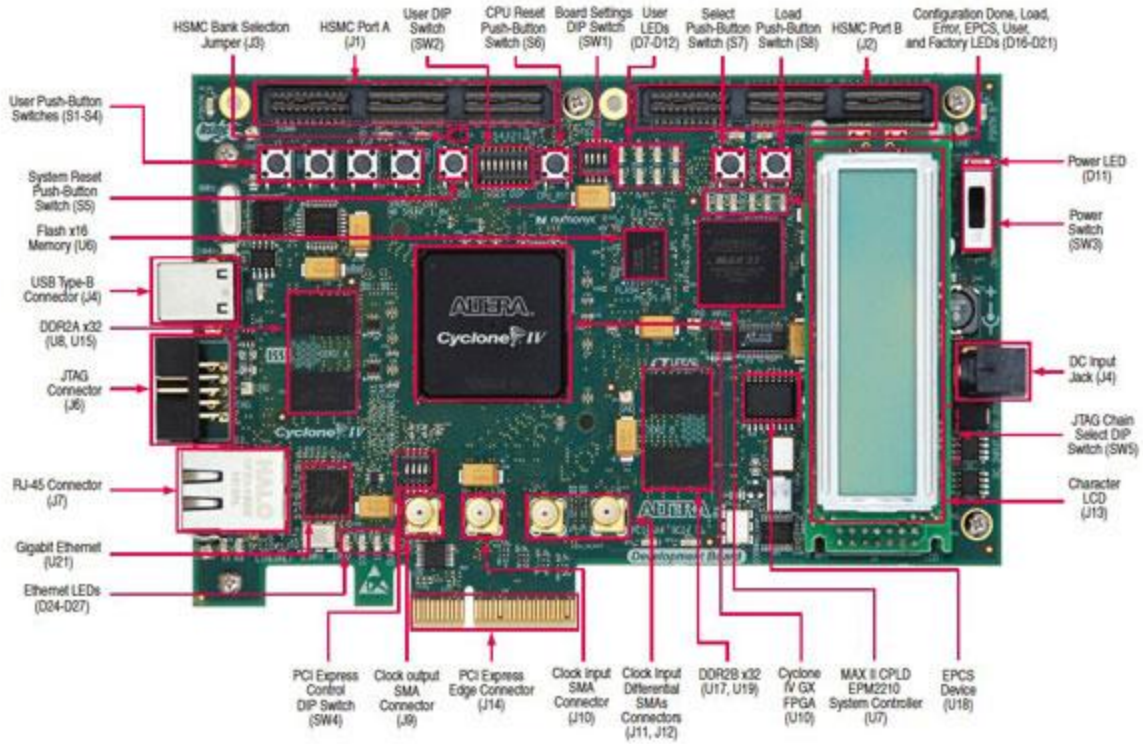


3. Kit content

- Cyclone IV GX FPGA Development Kit software content
 - Design examples
 - Board Update Portal featuring the Nios[®] II processor web server and remote system update
 - Board Test System
 - Complete documentation
- Free Quartus II Web Edition Software includes support for Cyclone IV FPGAs and:
 - Nios II Embedded Design Suite
 - MegaCore[®] IP Library includes PCI Express, Triple-Speed Ethernet, SDI, and DDR2 High-Performance Controller MegaCore IP cores
 - IP evaluation available through OpenCore Plus
- Loopback and debug HSMCs
- Power adapter and cables

4. Layout

- **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**



- **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**