

# Cyclone V GT FPGA Development Kit

## 1. Overview



The Altera® Cyclone® V GT FPGA Development Kit can be used to prototype Cyclone V GT FPGA or Cyclone V GX FPGA applications. It offers a quick and simple way to develop low-cost and low-power FPGA system-level designs and achieve rapid results. This kit supports a myriad of functionalities such as:

- FPGA prototyping
- FPGA power measurement
- Transceiver I/O performance up to 5.0 Gbps
- PCI Express® (PCIe®) Gen2 x4 (at 5.0 Gbps per lane)
- Endpoint or rootport support

## 2. Specification

### FPGA Device

- 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
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## Memory Device

- Communication
- Embedded USB-Blaster II (JTAG)
- Fast Passive Parallel (PFL)
- Altera EPCQ—EPCQ256SII16N (Quad Serial Configuration Device)

## Standard communication ports

- PCIe x4 edge connector
- Gigabit Ethernet (GbE)
- One SMA clock output
- Two universal high-speed mezzanine card (HSMC) connectors, each with four high-speed serial transceiver channels
- One serial digital interface (SDI) channel —1 SMB for RX and 1 SMB for TX
- Channel shared with HSMA via resistor stuffing option

## Push buttons, DIP switches, and LEDs

### Clocking

- Programmable clock generator for FPGA reference clock input
- 125 MHz LVDS oscillator for FPGA reference clock input
- 148.5/148.35 MHz LVDS VCXO for FPGA reference clock input
- 50 MHz single-ended oscillator for FPGA and MAX V CPLD clock input
- 100 MHz single-ended oscillator for MAX V CPLD configuration clock input
- SMA input (LVPECL)

### Power

- Laptop DC Input 14 – 20 V adapter
- PCIe edge connector

### System monitoring circuit

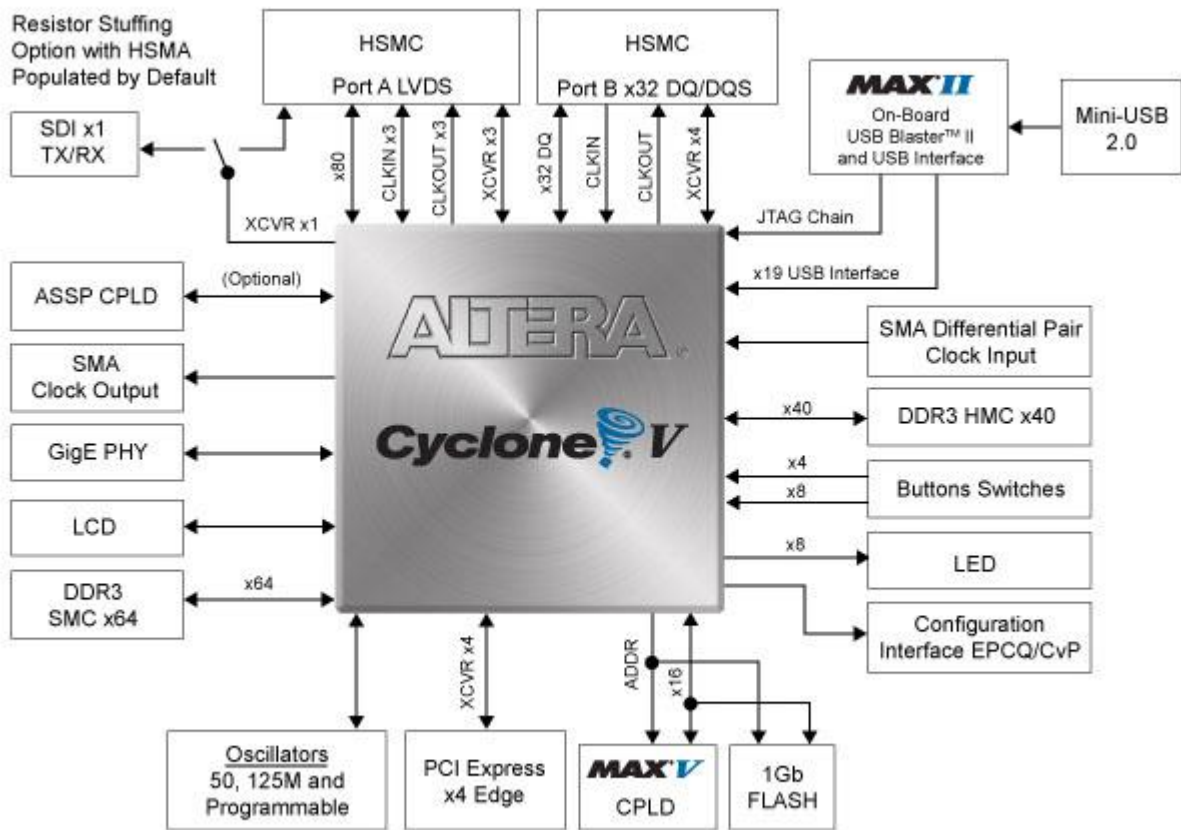
- Power (Voltage, Current, Wattage)

### Mechanical

- PCIe card standard size (4.376" x 6.600")

### Block Diagram

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