



## Stratix IV GX FPGA Development Kit

from *Altera Corporation*

The Altera® Stratix® IV GX FPGA Development Kit delivers a complete system-level design environment that includes both the hardware and software needed to immediately begin developing FPGA designs. With this PCI-SIG-compliant board and a one-year license for the Quartus® II design software, you can:

- Develop and test PCI Express 2.0 (up to x8 lane) endpoint and rootpoint designs
- Develop and test memory subsystems consisting of DDR3 and/or QDRII+ memory
- Build designs capable of migrating to Altera's low-cost HardCopy® IV ASICs
- Add other Stratix IV GX supported protocol interfaces such as 10 Gigabit Ethernet, CPRI, OBSAI, SAS/SATA, Serial RapidIO® and many others by taking advantage of this board's modular capability through the high-speed mezzanine connectors (HSMC) and over 20 different HSMC cards available through Altera partners.

### Ordering Information

Table 1. Altera's Stratix IV GX FPGA Development Kit Ordering Information		
Ordering Code	Price	Ordering Information
DK-DEV-4SGX230N/C2	\$4,495	<p>The Stratix IV GX FPGA Development Kit features -C2 (fast) speed grade device and includes a 1-year license for the Quartus II Design Software, Development Kit Edition (DKE).</p> <p>In North America, call 1-888-800-0631 or contact your local distributor.</p> <p>For International Sales, contact your local distributor.</p>

### Development Kit Contents

The Stratix IV GX FPGA Development Kit features the following:

- Stratix IV GX FPGA development board (see Figure 1)
  - Featured device
    - Stratix IV GX EP4SGX230KF40C2N FPGA
  - Configuration status and setup elements
    - MAX II CPLD EPM2210 System Controller and Fast Passive Parallel (FPP) configuration
    - On-board USB-Blaster™ download cable using Quartus II Programmer
  - Clocks
    - On-board clock oscillators: 50 MHz, 100 MHz, 125 MHz, 148.5 MHz, 155.52 MHz, and 156.25 MHz
    - SMA connectors for external clock input
    - SMA connectors for clock output
  - General user input/output
    - LEDs
    - LCD display
    - Push-button and DIP switches
  - Memory devices
    - 512-MByte DDR3 SDRAM with a 64-bit data bus
    - 128-MByte DDR3 SDRAM with a 16-bit data bus
    - Two 4-MByte QDRII+ SRAMs with a 18-bit data bus
    - 64-MByte Sync Flash and 2-MByte SSRAM
  - Component and interfaces
    - USB 2.0
    - PCI Express x8 edge connector
    - 10/100/1000BASE-T Ethernet PHY with RJ-45 connector
    - Two HSMC connectors
    - HDMI video output
    - SMB connectors for SDI video input and output
    - Power measurement circuitry on transceiver and core related rails
    - Temperature measurement circuitry
  - Power
    - Laptop DC input
    - PCI Express edge connector power
    - Power measurement circuitry on transceiver and core logic related rails
  - Other features
    - PCI Express half-length full-height (6.6" x 4.376") board format
    - RoHS compliant
- Stratix IV GX FPGA Development Kit CD-ROM
  - Design Examples
    - Board Update Portal featuring the Nios® II processor web server and remote system update
    - Board Test System
  - Complete documentation (see Table 2)

- Altera's Complete Design Suite DVD
  - Quartus II Software Development Kit Edition includes support for Stratix IV FPGAs and HardCopy IV ASICs
    - One-year license included
  - Nios II Embedded Design Suite
  - MegaCore® IP Library includes PCI Express, Triple-Speed Ethernet, SDI, and DDR3 High Performance Controller MegaCore IP cores
    - IP evaluation available through OpenCore Plus
- Loopback and debug HSMC cards
- Power adapter and cables

Figure 1. Stratix IV GX FPGA Development Board



#### Available Documentation

Table 2. Documents Available for the Stratix IV GX FPGA Development Kit			
Document	File Format	Download	Language
User Guide	Adobe PDF	Coming soon	English
Reference Manual	Adobe PDF		
Board Assembly	Adobe PDF		
Board Mechanicals	Adobe PDF		
Board Schematic	Adobe PDF		
Bill of Materials	Microsoft Excel		

#### Related Links

- [Literature for Stratix IV FPGAs](#)
- [Design Guidelines for Stratix IV FPGAs \(PDF\)](#)
- [Stratix IV GX Transceiver Protocols](#)
- [Partner High-Speed Mezzanine Connector \(HSMC\) Cards](#)
- [Other Stratix IV FPGA-based Development Kits](#)
- [Jungo PCI Express WinDriver \(30-day Evaluation\)](#)

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