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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	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). In North America, call 1-888-800-0631 or contact your local distributor. For International Sales, contact your local distributor.

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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