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Cyclone III FPGA Sta

from Intel

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The economical Cyclone III FPGA Starter Kit is easy to use and an ideal introduction if you have never designed with FPGAs before. Several design examples included in the kit make for a quick "out-of-the-box" evaluation experience.

Ordering Information

Table 1. Cyclone III FPGA Starter Kit Ordering Code and Pricing Information

Ordering Code	Price	Ordering Information
DK-START-3C25N	Buy Now ▶	Buy online via Intel's eStore or contact your local Intel® distributor to place your order.

Notes:

1. Buyer represents that it is a product developer, software developer or system integrator and acknowledges that this product is an evaluation kit that is not FCC authorized, is made available solely for evaluation and software development, and may not be resold.
2. You can purchase optional HSMC interface-compatible daughtercards, adapters, or cables to use with your development kit.

Cyclone III FPGAs and Nios II 32-Bit Soft IP Processor

Cyclone III FPGAs are perfectly suited as embedded processors or microcontrollers when combined with 32-bit embedded processor intellectual property (IP) cores.

- Nios II processor from Intel
- Other 32-bit, 16-bit, and 8-bit embedded soft IP cores

You can add many other functions to the Cyclone III FPGA with additional IP cores available from Intel and Intel's partners.

HSMC Interface

Intel developed the specification for the HSMC, which is based on the Samtec mechanical connector, to define and standardize the interface between optional daughtercards and host boards. This specification outlines both the electrical and mechanical properties of the interface between daughtercard and host. You can also create your own HSMC interface-compatible daughtercards.

- Download the High Speed Mezzanine Card (HSMC) Specification (PDF)

Development Kit Contents

The Cyclone III FPGA Starter Development Kit features:

- Cyclone III starter board (see Figure 1)
  - Cyclone III EP3C25F324 FPGA
  - Configuration
    - Embedded USB-Blaster™ circuitry (includes an Intel EPM3128A CPLD) allowing the download of FPGA configuration files via the user's USB port

- Power and analog devices from Linear Technology
  - Switching power supply LTM4603EV-1
  - Switching and step-down regulators LTC3413, LT1959, and LT1117
- Memory
  - 256 megabits (Mb) of DDR SDRAM
  - 1 megabyte (MB) of synchronous SRAM
  - 16 MB of Intel P30/P33 flash memory
- Clocking
  - 50 MHz onboard oscillator
- Switches and indicators
  - Six push buttons in total, four user controlled
  - Seven LEDs in total, four user controlled
- Connectors
  - HSMC
  - USB Type B
- Cables and power
  - USB cable
  - External power supply (U.S. compatible plug with EU and UK adaptors)
- Cyclone III FPGA Starter Kit, contents
  - Example designs targeting the Cyclone III FPGA starter board
    - Create an FPGA design in one hour
    - Power measurements of a Cyclone III FPGA
    - A 32-bit soft processor system inside an FPGA
  - Complete documentation (see Table 2)
    - User guide
    - Reference manual
    - Board schematic and layout
    - Bill of materials (BOM)
    - Product and partner information
- Download instructions to receive the latest version of the following software (at no charge):
  - Quartus® II Web Edition (FPGA design software)
  - ModelSim®-Intel Web Edition (FPGA simulation software from ModelSim)
  - Nios II Embedded Design Suite, Evaluation Edition (32-bit microprocessor software)

Figure 1. Cyclone III FPGA Starter Board

Available Documentation

Table 2. Documents Available for the Cyclone III FPGA Starter Kit

Document	Description	Version
Reference manual	Detailed document containing information about the onboard components and interfaces	1.3.0
Kit installation (Windows PC only)	(Updated) Full installation of all files, including quick start guide, user guide, reference manual, BOM, layout, PCB, schematics, Board Test System design example, and other documents or files.	12.0.0 (1)
Kit installation (Windows PC only)	(Updated) Full installation of all files, including quick start guide, user guide, reference manual, BOM, layout, PCB, schematics, Board Test System design example, and other documents or files.	11.1.0 (2)
Kit installation (Windows PC only)	(Archive) Full installation of all files, including quick start guide, user guide, reference manual, BOM, layout, PCB, schematics, Board Test System design example, and other documents or files.	11.0.0 (3)
Kit installation (Windows PC only)		10.1.0 (4)

Notes:

1. This kit installation works with Quartus II design software version 12.0.0.

2. This kit installation works with Quartus II design software version 11.1.0.
3. This kit installation works with Quartus II design software version 11.0.0.
4. This kit installation works with Quartus II design software version 10.1.0.

Reference Designs

Learn about the benefits of remotely updating FPGA designs by working with the Cyclone III Active Parallel Remote System Upgrade Reference Design. Details are described in AN 521: Cyclone III Active Parallel Remote System Upgrade Reference Design, and you can download the Quartus II software design files for use on the Cyclone III FPGA Starter Kit.

*   AN 521: Cyclone III Active Parallel Remote System Upgrade Reference Design (PDF)
*   AN521 Design Example, Quartus II software files (1 MB)

For a detailed write-up on how to update systems with the remote update feature in Cyclone III FPGAs, read the IEEE 1149.1 (JTAG) Boundary-Scan Testing for Cyclone III Devices (PDF) chapter of the Cyclone III Device Handbook.

Related Links

⬀ Other Cyclone III FPGA-based development kits

⬀ All Cyclone FPGA-based development kits

⬀ Literature for Cyclone III low-cost FPGAs

⬀ Altera's Nios II 32-bit embedded processor solutions

⬀ Digital signal processing (DSP) in Cyclone III FPGAs

⬀ Power Management Resource Center for Altera devices

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