

The background features a blue-toned digital aesthetic. On the left, a perspective view of a data tunnel is formed by rows of binary code (0s and 1s) that recede into the distance. On the right, a complex circuit board layout is depicted with glowing blue and white traces and nodes. The overall composition is clean and futuristic.

QUARTUS II DESIGN SOFTWARE

Fastest Path to Your Design

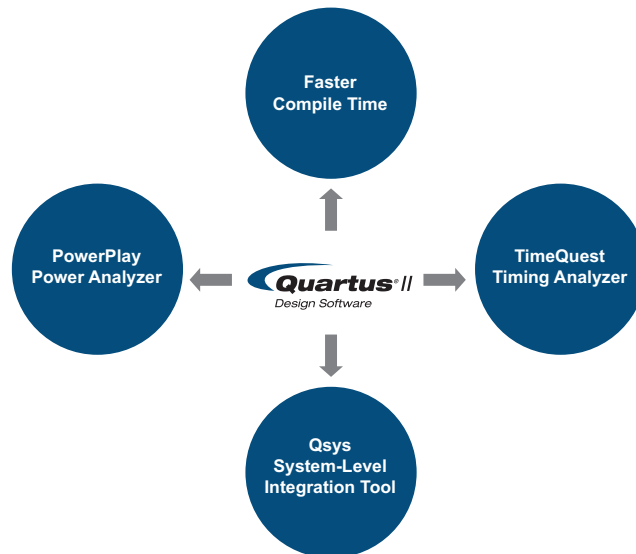
Quartus® II software is number one in performance and productivity for CPLD, FPGA, and SoC designs, providing the fastest path to convert your concept into reality. Quartus II software can easily adapt to your specific needs in all phases of FPGA and CPLD design in different platforms.

Quartus II software provides everything you need to design with Altera devices:

- Qsys system integration tool
- TimeQuest timing analyzer
- Transceiver Toolkit
- External Memory Interface Toolkit
- PowerPlay power analysis tools
- DSP Builder Advanced Blockset
- Altera SDK for OpenCL™
- ModelSim®-Altera Edition simulation software



Quartus II Software Key Features

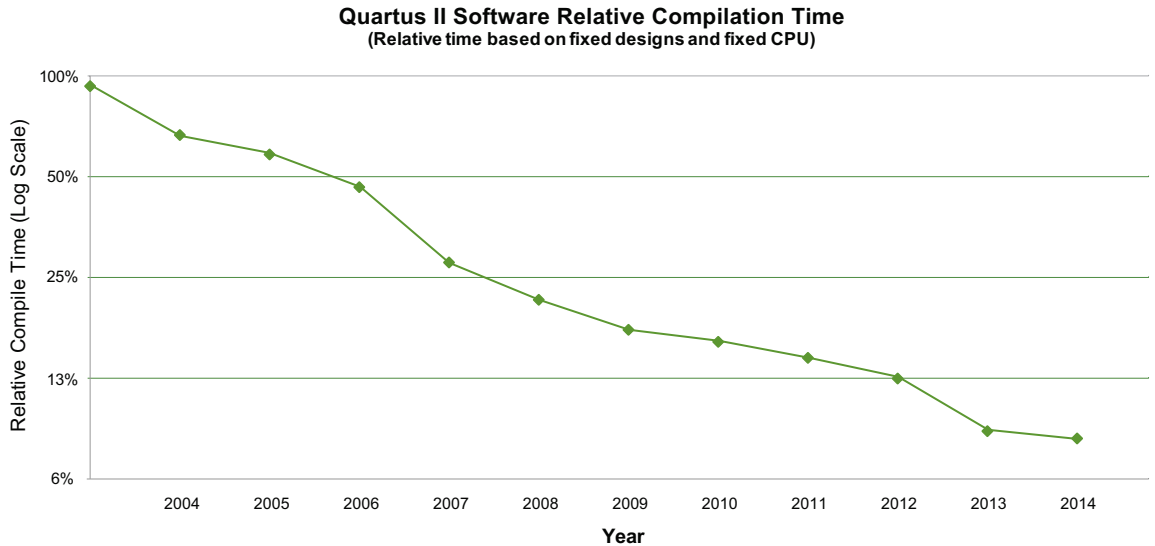


Industry-Leading Compile Time

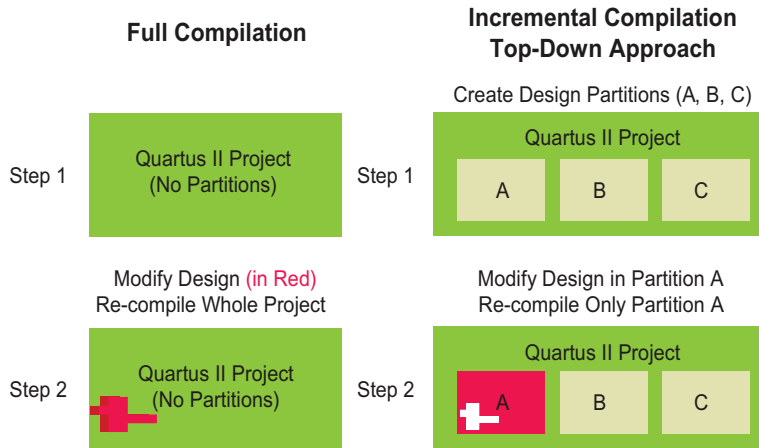
Quartus II software delivers superior synthesis and placement and routing, resulting in compilation time advantages for both Web Edition and Subscription Edition software. Additional compilation time reduction features include the following:

- Multiprocessor support
- Incremental compile
- Advanced place-and-route algorithms

Compile Time Comparison



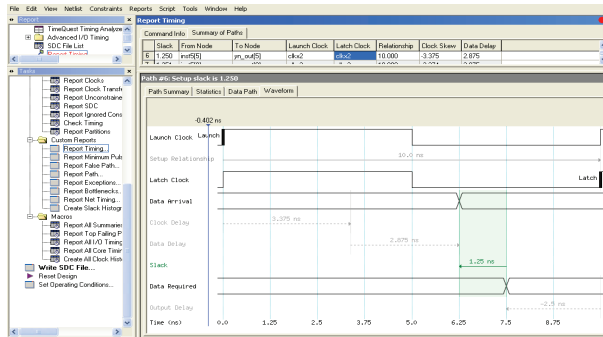
Compare Full and Incremental Compile



Incremental Compile

- Compiles only the changes in a partition to reduce compile time by up to 70 percent
- Preserves timing in unchanged partitions for performance preservation
- Enables team-based designs

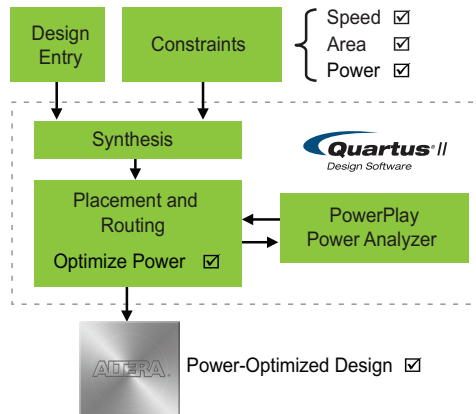
TimeQuest Timing Analyzer



TimeQuest Timing Analyzer GUI

- Comprehensive Synopsys® Design Constraints (SDC) support
- Second-generation, easy-to-use timing analyzer
- Complete GUI environment and scripting support to create timing constraints and reports
- Easy-to-use wizard to create SDC constraints

PowerPlay Power Analyzer Flow



PowerPlay Power Analyzer

- Push-button power optimization technology
- Automated power optimization for an average 10 percent reduction in power consumption

Qsys System Integration Tool

The Qsys system integration tool saves significant time and effort in the FPGA design process by automatically generating interconnect logic to connect intellectual property (IP) functions and subsystems. Qsys is powered by a new FPGA-optimized network-on-a-chip (NoC) technology, delivering higher performance, improved design reuse, and faster verification.

- High-performance Qsys interconnect based on the NoC architecture and automatic pipelining delivers up to 2X higher performance
- Hierarchical design flow enables scalable designs, supports team-based design, and maximizes design reuse
- Higher flexibility with support for mixing different industry-standard interfaces, such as the AMBA® AXI™, AMBA APB™, AMBA AHB™, and Avalon® interfaces
- IP management capabilities enable designs and systems to appear as an IP for easier reuse
- Faster board bring-up with a system-level debug approach using address-based transactions and System Console

Qsys – Altera’s System Integration Tool



Quartus II Software Design Flow

| Quartus II Software Design Flow | | | |
|--------------------------------------|--|----------------------|------------------------|
| Quartus II Software Key Features | | Availability | |
| | | Subscription Edition | Web Edition (Free) |
| Design Entry | Cyclone® FPGA and MAX® device support | ✓ | ✓ |
| | Arria® and Stratix® FPGA device support | ✓ | ✓ ¹ |
| | SoCs | ✓ | ✓ |
| | Multiprocessor support (faster compile time support) | ✓ | ✓ ² |
| | IP Base Suite (includes licenses for 15 popular IP cores) | ✓ | Available for purchase |
| | Qsys system integration tool | ✓ | ✓ |
| | Rapid Recompile (faster compile for small design changes) | ✓ | |
| | Incremental compile (performance preservation and team-based design) | ✓ | |
| Functional Simulation | ModelSim-Altera Starter Edition software | ✓ | ✓ |
| | ModelSim-Altera Edition software | ✓ ³ | ✓ ³ |
| Synthesis | Quartus Integrated Synthesis (synthesis tool) | ✓ | ✓ |
| Placement and Routing | Fitter (placement and routing tool) | ✓ | ✓ |
| Timing and Power Verification | TimeQuest tool (static timing analysis) | ✓ | ✓ |
| | PowerPlay tool and optimization (power analysis) | ✓ | ✓ |
| In-System Debug | SignalTap™ II Logic Analyzer (embedded logic analyzer) | ✓ | ✓ ² |
| | Transceiver Toolkit (transceiver interface and verification tool) | ✓ | |
| | JNEye link analysis tool | ✓ | |
| System Design Software | Nios® II Embedded Design Suite | ✓ | ✓ |
| | Altera SDK for OpenCL | ✓ ³ | |
| | DSP Builder Advanced Blockset | ✓ ³ | ✓ ³ |
| Operating System Support | | Availability | |
| | | Subscription Edition | Web Edition (Free) |
| Windows/Linux 64 bit support | | ✓ | ✓ |

¹The only Arria II FPGA supported is the EP2AGX45 device.

²Available with TalkBack feature enabled.

³Requires an additional license.

Quartus II Software Ordering Information

Purchase Quartus II software and increase your productivity today.

| Pricing | Description |
|--|---|
| \$2,995 (SW-QUARTUS-SE-FIX) Renewal \$2,495 (SWR-QUARTUS-SE-FIX) | Fixed-node license: subscription for one year—Windows only. |
| \$3,995 (SW-QUARTUS-SE-FLT) Renewal \$2,495 (SWR-QUARTUS-SE-FLT) Add seat \$3,995 (SW-QUARTUS-SE-ADD) | Floating-node license: subscription for one year—Windows/Linux. |

| ModelSim-Altera Edition Software | |
|--|---|
| \$945 (SW-MODELSIM-AE) Renewal \$945 (SWR-MODELSIM-AE) | ModelSim-Altera Edition software is available as a \$945 option for both Quartus II software Subscription Edition and Web Edition. It's 33 percent faster than Starter Edition, with no line limitation. |
| ModelSim-Altera Starter Edition Software | |
| Free | Free for both Quartus II software Subscription Edition and Web Edition softwares with a 10,000 executable line limitation, ModelSim-Altera Starter Edition software is recommended for simulating small FPGA designs. |

Want to Dig Deeper?

Are you ready to accelerate your design process? Take these steps to gain proficiency in designing with Quartus II software:

- Step 1:** Download free Web Edition software
www.altera.com/download
- Step 2:** Sign up for training
www.altera.com/training
- Step 3:** Download documentation
www.altera.com/literature/lit-qts.jsp

MAIN CORPORATE OFFICES

Altera Corporation

101 Innovation Drive
San Jose, CA 95134
USA
Telephone: (408) 544 7000
www.altera.com

Altera European Headquarters

Holmers Farm Way
High Wycombe
Buckinghamshire
HP12 4XF
United Kingdom
Telephone: (44) 1 494 602 000

Altera European Trading Company Ltd.

Building 2100
Cork Airport Business Park,
Cork, Republic of Ireland
Telephone: +353 21 454 7500

Altera Japan Ltd.

Shinjuku i-Land Tower 32F
6-5-1, Nishi Shinjuku
Shinjuku-ku, Tokyo 163-1332
Japan
Telephone: (81) 3 3340 9480
www.altera.co.jp

Altera International Ltd.

Unit 11- 18, 9/F
Millennium City 1, Tower 1
388 Kwun Tong Road
Kwun Tong
Kowloon, Hong Kong
Telephone: (852) 2945 7000
www.altera.com.cn

Altera Corporation Technology Center

Plot 6, Bayan Lepas Technoplex
Medan Bayan Lepas
11900 Bayan Lepas
Penang, Malaysia
Telephone: 604 636 6100

