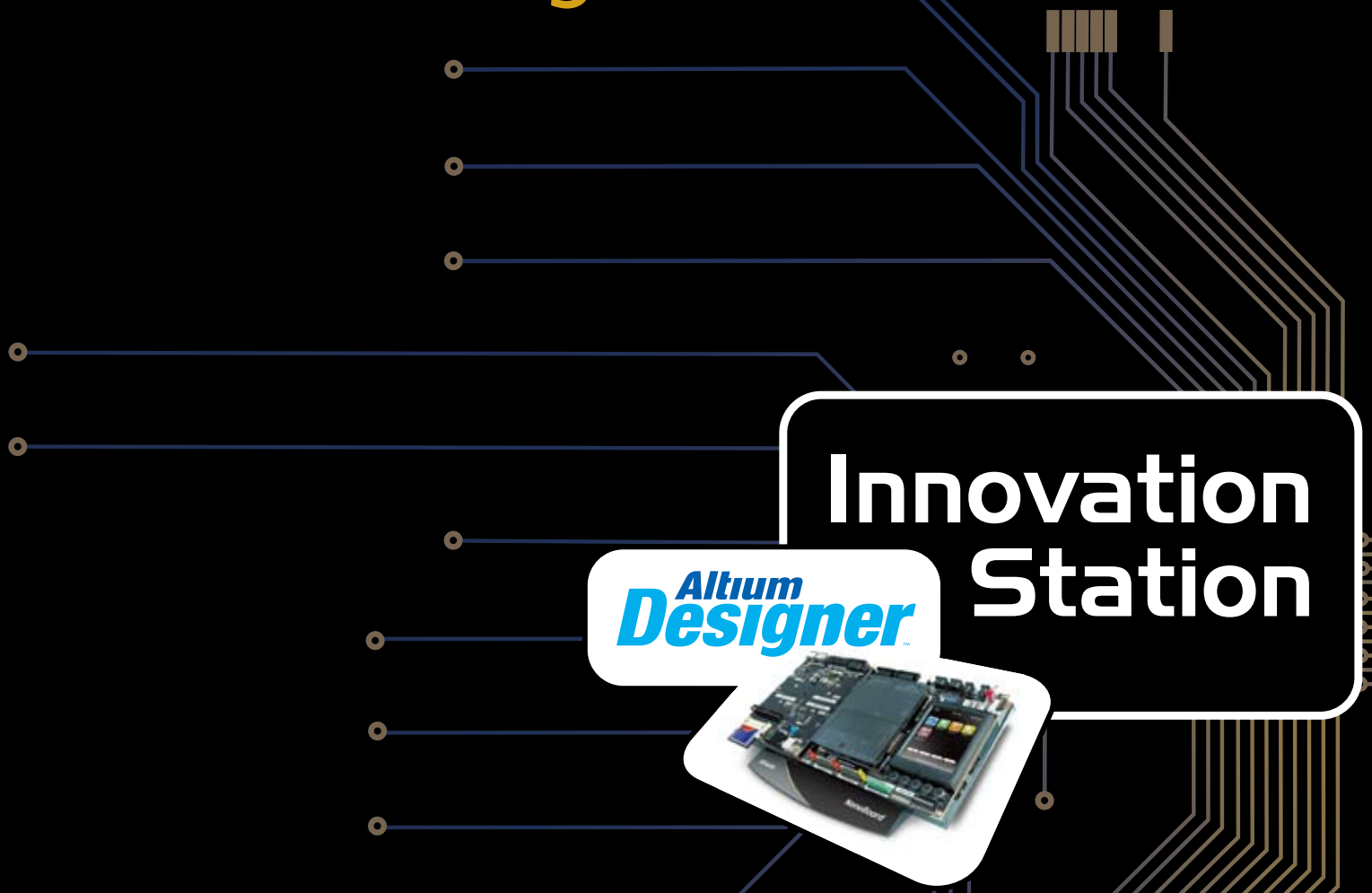
The freedom to Imagine>Create>Innovate



The ultimate electronics design environment

Welcome to a new world of electronics product design.

A world that comes with all the support IP you need, with a unified design tool coupled to a reconfigurable development platform – all out of the box.

With the ultimate electronics design environment you can:

> Explore and evaluate designs with freedom.

> Create device intelligence without being constrained by hardware choice.

> Plug in and play with different programmable devices and reuse your design IP on the fly.

Welcome to the Altium Innovation Station.

Turning the design process inside out – to your advantage

The Altium Innovation Station is a new approach to electronics design. Imagine, create and innovate using the programmed intelligence of an electronic product in a way that turns the conventional design process inside out.

Focus first and foremost on developing the functional 'intelligence' of your design, then implement that functionality on the hardware of your choice.

With the Altium Innovation Station:

> You are free to explore and evaluate different implementation options as you develop your designs

> You can bring concepts to life in real time, without the risks of committing to hardware too early

> You can freely change hardware devices while you develop your design

> You can exploit a large, supplied IP library that is independent of the device and vendor

> You are free to create innovative designs without being constrained by the physical hardware

> You are free to play in the ultimate engineering sandpit.

And that freedom is a powerful tool for innovation.

The Altium Innovation Station provides:

> One unified software-hardware design solution

> One design data model and view of the design

> One vendor independent reconfigurable 'plug-and-play' development platform

> Rapid and interactive development, implementation and debugging of your design

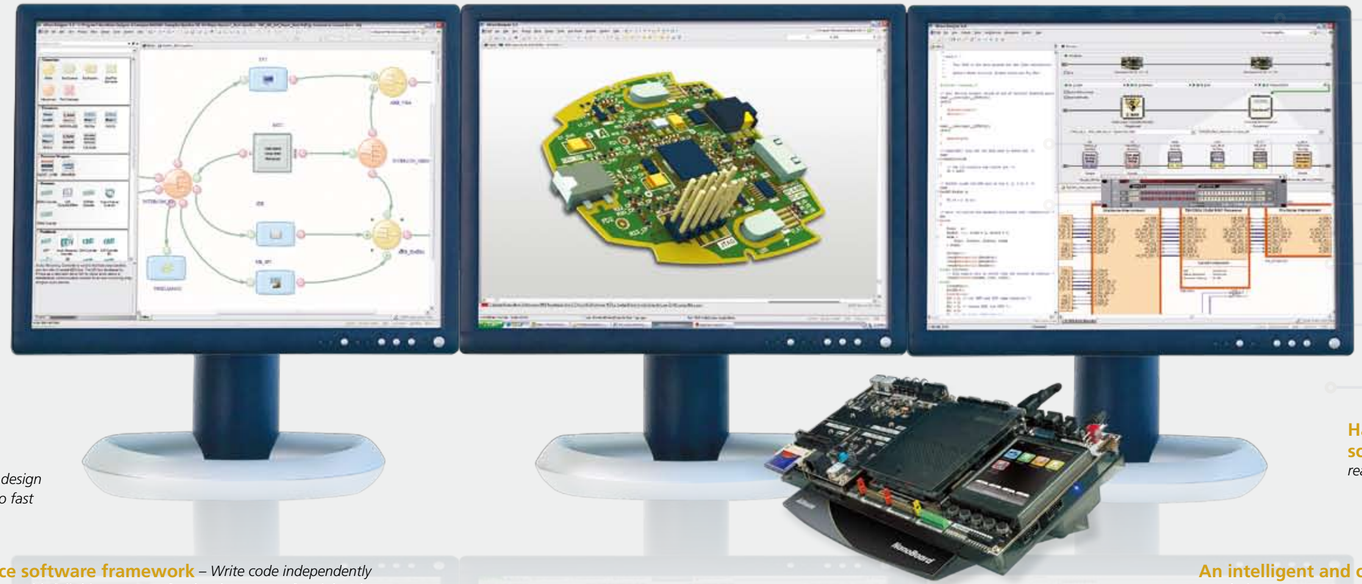
Altium Designer – unified electronics design from concept to creation

At the center of the ground breaking Altium Innovation Station is Altium's award winning design software, Altium Designer.

Altium Designer is the world's first and only unified electronic product development solution. It brings together hardware, software and programmable hardware development within a unified environment – so that engineers can take a design from concept to completion within a single application.

Altium Designer transcends traditional tool boundaries, opening up new design possibilities with more device intelligence, designed more easily than ever before.

You can harness the potential of today's technology, even as it changes, allowing you to create innovation today and tomorrow.



Capture design functionality in the way that suits your skills – *Use HDL, schematic-based entry and OpenBus to design embedded systems without having to deal with the complexity of the underlying hardware architecture.*

On-the-fly hardware generation – *Capture design in an abstract way, and then push it from the code into fast hardware, with a few mouse clicks.*

A full device software framework – *Write code independently of the processor, with full driver support for the chosen set of peripheral blocks. Create and edit C code, compile and simulate your program and undertake complete source-level debugging on the target system.*

Design software interfaced directly to the development hardware – *Reconfigure your development environment to suit your design with swappable FPGAs, processors and peripheral devices.*

Test probe and debug designs in real time – *See what's really happening in your design by interacting with embedded test instruments such as Logic Analyzers and design Power Monitoring, via 'soft' instrument panels.*

Design libraries that are more than component symbols and low-level code libraries – *Design with blocks of preconfigured hardware, complete with software drivers to suit. Supplied IP is pre-compiled and ready for use on all supported programmable devices*

Hardware blocks that go beyond being mere schematics – *Use plug-and-play hardware I/O modules, ready to connect to your chosen processor and FPGA.*

An intelligent and connected design environment – *A design system so versatile that it automatically configures itself to suit your design. High-level JTAG-based communications with the NanoBoard enable hardware configuration sensing and live FPGA pin status monitoring.*

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The new Altium Desktop NanoBoard – the ultimate reconfigurable hardware development platform

Altium Designer directly interfaces to the Altium Desktop NanoBoard NB2. The high-level interaction between the two creates a single, unified design environment where configuration and design data flow freely. Change the hardware configuration on the Desktop NanoBoard NB2 by swapping a plug-in peripheral board, and Altium Designer simply reconfigures the design to match.

The Altium Innovation Station provides:

> One unified software-hardware design solution

> One design data model

> One development platform

> Complete hardware and software device vendor independence

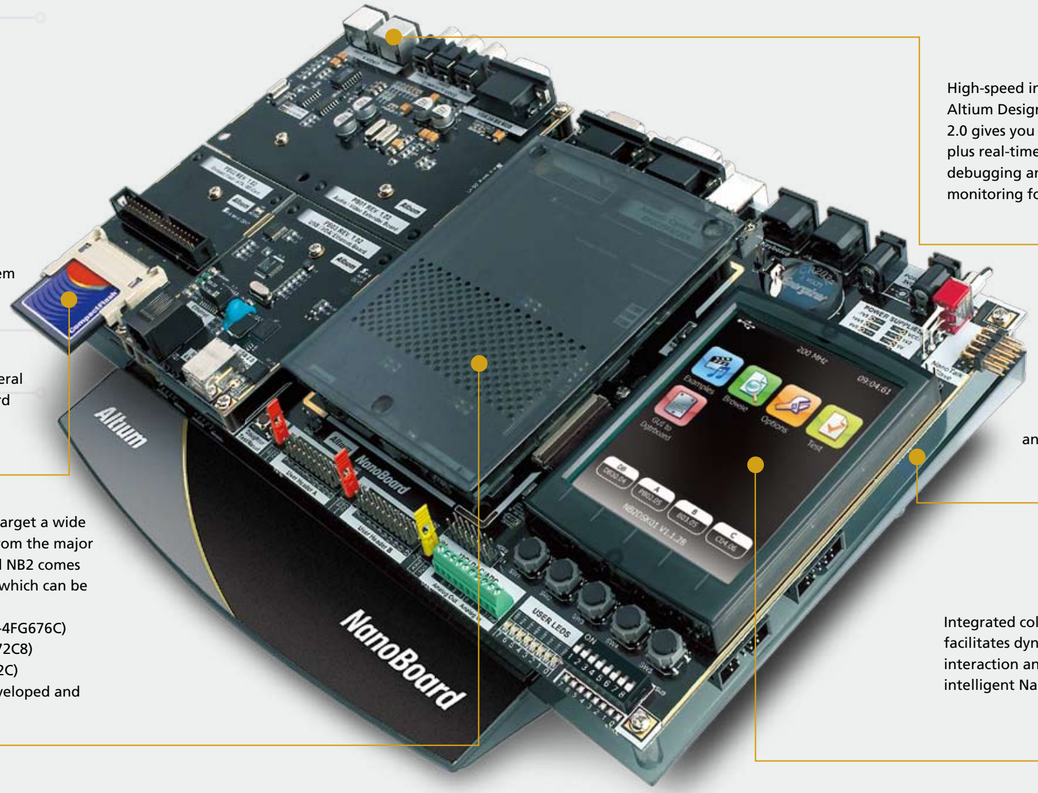
> Multiple hardware deployment possibilities

Application-specific plug-in peripheral boards give complete flexibility in system architecture. Automatic detection and project reconfiguration brings true plug-and-play operation. The Desktop NanoBoard NB2 comes with three peripheral boards: Audio/Video Peripheral Board (PB01), Interface Peripheral Board (PB02) and a Data Communications Peripheral Board (PB03).

Plug-in daughter boards allow you to target a wide range of FPGA and processor devices from the major chip vendors. Each Desktop NanoBoard NB2 comes with one daughter board as standard, which can be selected from the following:

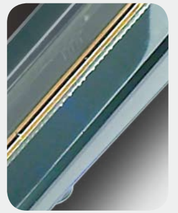
- Xilinx® Spartan™ -3 FPGA (XC3S1500-4FG676C)
- Altera® Cyclone™ II FPGA (EP2C35F672C8)
- Lattice ECP™ FPGA (LFECP33E-3FN672C)

Additional daughter boards will be developed and sold separately.



High-speed interconnection to Altium Designer through USB 2.0 gives you faster download plus real-time development, debugging and power monitoring for the entire system.

Sophisticated I2S-based stereo audio system with on-board mixer, amplifiers and stereo speakers.



Integrated color TFT touch screen facilitates dynamic application interaction and access to the intelligent NanoBoard controller.

With the Altium Innovation Station on your desktop you'll have the only unified electronics design tool and the most flexible, vendor-independent reconfigurable hardware development platform at your fingertips.

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The Altium Innovation Station

Concept to deployment in one connected system

The Altium Innovation Station delivers everything you need to rapidly make your design ideas a reality.

Capture design concepts in a design entry system, develop and debug your ideas in real time on real hardware, then deploy the design to a custom printed circuit board, or even to off-the-shelf deployment NanoBoards from Altium in the future.

1. Capture your design

Start by capturing the functional intelligence using simple, visual design systems that make the most of your existing skills.

Create the embedded software that defines the design's critical functionality using C-language tool chains for a wide range of supported processors.

Choose the embedded hardware on which the software will run from a wide range of pre-verified, pre-synthesized IP function blocks – ready to use with all supported programmable devices, including software drivers.

Use a schematic-based entry system to create hardware from function blocks. Simply 'wire' together functional elements to create a complete embedded system from processors, memory, peripherals, and a range of logic and interface blocks.

Capture processor-based design using OpenBus, an advanced drag-and-drop graphical capture system. Just select functional icons from a palette and connect them using simple data flow lines, to create sophisticated embedded systems divorced from the complexity of the underlying hardware architecture.

2. Develop your design in hardware

The Altium Innovation Station lets you develop your design in real hardware without the need to rely on simulation. Choose from programmable device daughter boards such as the Altera® Cyclone™ II, Xilinx® Spartan™-3, Xilinx® Virtex™-4 and LatticeECP™ – with more to come.

The plug-in hardware peripheral boards connect the functional intelligence of your design to the real world. Change the peripheral and daughter boards on the fly, as the design develops and the hardware needs become clearer.

The system reconfigures itself to new hardware automatically, in a unique plug-and-play design environment. Altium Designer and the Desktop NanoBoard connect together using the high-level NanoTalk protocol, which provides full bi-directional communication (via USB) between the development software and hardware elements of the Altium Innovation Station.

Develop your design for the NanoBoard platform easily – all of its IP elements such as hardware blocks, software drivers and interface systems are available from within the design software itself.

Concept to deployment in one connected system (cont)

3. Implement and debug your design

The Altium Innovation Station offers everything you need to easily implement, test and optimize your design on real hardware and in real time.

Implement on the Desktop NanoBoard with a 'one touch' process: your design is quickly compiled, synthesized and programmed into hardware using the underlying place and route tools. Debug both software and hardware in the one system.

Fully test and 'probe' your design using a range of advanced, interactive Virtual Instruments programmed into the device. Communicate with these via virtual instrument panels in real time, via the Desktop NanoBoard's advanced JTAG – base communications. Along with advanced instruments such as Logical Analyzers, a unique Power Monitoring instrument is provided to help you monitor and optimize critical power usage within your design.

Debug right into the heart of the design by seeing and manipulating the real time status of pins, no matter how physically inaccessible they are. Using JTAG boundary scan monitoring, a JTAG viewer displays the active pin states of any JTAG supported part (including FPGAs) within the design.

Optimize your design's performance by changing processors and hardware devices without disrupting the soft functionality of the design, or accelerate software functions by compiling them into hardware co-processors using the C-to-hardware generation capabilities of the Altium Innovation Station.

4. Deploy your design

The Altium Innovation Station makes it easy to deploy your design to customers.

Port your fully-debugged and optimized NanoBoard design to a custom board using Altium Designer's advanced board-level design capabilities. All of the NanoBoard's IP and hardware (including the NanoTalk interface) are included in Altium Designer, so your fully-developed working design is transferred straight to the new hardware.

Use the Desktop NanoBoard itself for proof of concept, or deploy it as a working unit for a rapid solution to customer needs. Update at any time by reprogramming both the hardware and software functions in the field.

Innovative deployment options

Adding the Altium Designer Board Implementation module to the Altium Innovation Station lets you move your defined hardware platform directly from the Desktop NanoBoard to your own custom board design. All the IP for the NanoBoard, its peripheral boards and all daughter boards is provided as part of the license allowing you to move rapidly to final hardware and production.

The Altium Innovation Station lets you design without limits, and even beyond the Desktop NanoBoard. When it comes to getting your design into the hands of your customers, the Altium Innovation Station supports a range of deployment options from full, off-the-shelf hardware solutions to complete custom PCB design.

> Fulfill specific product hardware requirements by adding custom plug-in peripheral boards to any of our NanoBoard solutions.

> Use the complete set of NanoBoard, daughter board and peripheral board reference designs to create your own custom NanoBoard form factor to suit your specific application.

> Take your design and implement it as a traditional full custom PCB design using as much or as little of the NanoBoard IP as you wish, with the option of including NanoBoard firmware to support direct communication between Altium Designer and your custom board.

And Altium is developing a range of deployment NanoBoards that will let you move your device intelligence directly into an off-the-shelf, application-specific production unit – for short-run prototypes or small volume production, without having to complete any custom hardware design.

You just choose the implementation option that best suits your application, target market and technical and business needs.

Register Now for a Live Web Demo

Seeing is believing.
Learn how you can benefit with the ultimate Altium Innovation Station.

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Innovation Station

Altium Designer

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