



## Altium Designer – the perfect educational solution

Altium believes that all engineers deserve access to the best possible design tools – and that extends to tomorrow’s electronics designers, engineers and developers. Altium Designer provides students with an industry-proven, flexible and ‘future-proof’ design environment that supports the latest electronics devices and design methodologies.

### Keeping up with design technology

As new electronics devices are released and design methodologies alter, the way electronics design is taught must be continuously updated and improved.

Altium Designer makes this easy because it utilizes the latest in programmable device technology to provide a system that is infinitely flexible, completely configurable and supports a wide range of design disciplines. Altium Designer is the industry’s first unified design system that brings together analog and digital hardware design, software development and programmable hardware design within a single environment.

This not only provides a system that can be used in multiple teaching scenarios, but one that supports the current movement towards ‘soft’ system design. As more functionality moves from discrete devices into the programmable realm, the various design processes are converging. The design of the physical platform, the implementation of functionality in programmable devices and the development of the software elements of the design are no longer independent processes. Altium Designer provides the perfect solution for exploring this new and important design paradigm.

### Complete electronics design coverage

Altium Designer has been created to support the convergence of design disciplines necessary to fully-harness the potential of today’s high-capacity, low-cost programmable devices as a system design platform. Because of this it can be used across a wide range of subject areas.

Altium Designer includes full capabilities necessary for component-based analog and digital hardware design, HDL-based design, microprocessor systems design using both FPGA-hosted and discrete processors, and embedded software development.

### The ultimate in ‘hands-on’ learning

Combine Altium Designer with Altium’s versatile NanoBoard reconfigurable development platform and you have a complete, interactive electronics lab. The Altium NanoBoard is an FPGA-based development board that features swappable target devices housed on plug-in daughter boards. Altium supplies a range of daughter boards featuring a variety of FPGAs and processors, as well as memory and other peripheral devices.

The Altium NanoBoard has upgradeable controller firmware that allows you to chain multiple NanoBoards together as well as allowing intelligent interaction with the Altium Designer software. For example, you can add a range of supplied ‘virtual instruments’ to your designs at the schematic level. The hardware portion of the instruments are instantiated in the target FPGA and communicate with Altium Designer via a secondary JTAG link managed by the controller. These virtual instruments, including logic analyzers, signal generators and frequency counters, allow you to stimulate and monitor circuitry implemented inside the FPGA without the need for external bench test instruments.

- Unifies hardware, software and programmable hardware design within a single application
- Is equipped for using the latest design technology
- Has hardware/software co-design and highly developed transitioning tools built in
- Has sophisticated document and design data sharing capabilities and centralized project management
- Is continuously developed and updated with Altium’s latest technology
- Has full database library capabilities and is version control ready
- Provides ONE solution to take a design from concept to completion.

One of the most exciting aspects of this 'LiveDesign' method of interaction with FPGA circuitry is that it allows students to easily create and implement digital designs and thoroughly test them in real-time, without the need for simulation.

Altium Designer plus the Altium NanoBoard form a complete and scalable solution to hands-on learning.

### Easy to deploy and maintain

Because Altium Designer provides a unified design solution using a single application, deployment and maintenance is far easier than with multiple point tools. You can easily control licensing centrally, and Altium Designer includes the ability to save and restore multiple desktop setups. This makes it fast and easy to configure for different teaching situations.

Altium Designer can be automatically set to download program updates from a centralized server or internet location. This makes it easy to take advantage of Altium Designer's frequent technology updates and keep your entire lab up-to-date.

The fact that Altium can offer a combined software and hardware-based solution also makes ongoing maintenance easier. Your design, implementation and test requirements can all be satisfied with a single, ready-to-use solution.

### Continually developed and updated

Altium Designer is used extensively throughout the electronics industry, and Altium is committed to ensuring that it always supports the latest devices and design technologies. We regularly release downloadable updates that introduce new design features and capabilities as well as enhance device support covering all component vendors.

Students benefit from this continuous development by having access to the latest technology, devices and packaging. This provides the best opportunity to prepare for 'real world' design scenarios and gives a solid grounding to the devices and technologies they will encounter in industry.

### Designing the engineers of the future

Altium believes that design innovation is the key to a vibrant and active electronics industry. We believe that all engineers should have access to state-of-the-art design tools that allow and encourage new ways of thinking about the design process in order to create more intelligent devices faster.

Altium Designer provides the perfect platform on which to build young engineers. It provides a 'one stop' learning solution for a wide range of design disciplines, as well as the freedom to experiment and make use of the latest design and devices technologies. Its unified nature also makes it a platform with the future built in. That makes it the ideal training ground for the engineers of the future.



### Altium Designer is suitable for a wide range of teaching scenarios:

- Analog circuit design
- SPICE simulation
- Digital logic design
- Processor-based system design
- Embedded software development
- Verilog and VHDL coding, design and simulation
- Programmable logic development
- PCB design, manufacturing and assembly
- Schematic capture designs faster – both now and into the future.