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Altium Designer

Improved real-time 3D PCB design, new plug-n-play Software Platform Builder and a field instrumentation dashboard for FPGAs to boost designer effectiveness

Earl's Court, London —16 June, 2009 —The current release (the winter 09 release, announced November 2008) of Altium's unified electronics design solution introduced over 40 new features and 230 new enhancements.

Performance upgrades to 3D PCB graphics engine—even more accuracy, faster

Altium's 3D PCB design environment gives board designers realistic three dimensional views of what they are designing in real time. They can work more intuitively and represent mechanical CAD information directly within the PCB design space. This helps designers make decisions about placement and clearance of components more accurately.

Altium Designer has higher-speed 3D PCB graphics. Two-dimensional drawing speeds are up three times faster than earlier versions; 2D transparency, over 11 times faster; highlighting and masking, over nine times faster; and 3D rotation, up to five times faster.

The optimisation of the 3D PCB graphics engine is particularly important. It lowers the hardware requirements necessary to achieve stunning results on-screen, makes the

whole system more responsive and 'feel' better, and removes distractions to design caused by lags in the GUI.

Enhanced PCB modeling—realistic surface finishes and other visualisation enhancements

Altium has extended its real-time, dynamic 3D PCB design features. Altium Designer now supports texture mapping of 3D models, which lets designers add realistic surface finishes to components and boards.

Altium has also enhanced vias by allowing different sized pads to be used on different signal layers for each via. This so-called via layer stack-up supports higher trace densities, and designers can offset holes in component pads.

All of these enhancements add to the accuracy of PCB design, and provide new design options for board layout and visualisation.

New interactive routing features—higher-speed 'walk around' and 'hugging' features

Routing of differential pair signals and of buses (routing multiple, related traces in one action) uses all the capabilities of Altium's new routing engine. These include 'automatic walk around' of existing objects, 'hugging' new traces to existing traces, pushing aside of existing objects (including vias) and intelligent, automatic completion of traces. These modes also use the speed and smoothness of the new engine.

Designers can intelligently swap pins on-the-fly with both differential pair and single-ended signals during interactive routing. This is particularly useful with FPGA devices, which often allow a particular signal to be brought out on a range of pins. Altium has improved the way the system handles the dragging of existing traces by using the interactive routing engine to automatically deal with obstacles.

Introducing new design concept—managing links to manufacturing

Altium Designer has technologies to help designers manage the process of managing a product from design through to manufacture.

When designers prepare a design to go to manufacture, they produce a large number of files in various formats for different groups of people in the manufacturing chain.

Typically, the information comes from a variety of sources: schematic documents, PCB files, bills of materials, component data, FPGA and software source and object files, reports from the design process, and so on. Some people need printouts, while others require PDFs of the same documents.

Generating the correct documents is a time consuming process in itself. Mistakes, or changes not carried through this process, can be costly in both time and money.

Altium has introduced new technology to create and track document histories within the design environment, to make this management process easier and quicker. Altium Designer centralises the definition and generation of output files to allow simpler processing of outputs. And documents can be created in a variety of formats, most notably as smart PDFs and in online formats.

These features also link to Altium's 3D PCB design environment. This smoothes out the path to manufacture by letting designers visually check their designs before they generate the manufacturing files.

The Design Release Manager provides a wizard-style interface for managing the entire process of releasing a design to people beyond the design team. It provides a central control panel for creating all the various output files in the various formats, and distributing them to the people that need them. The Design Release Manager can also take a 'snapshot' of designs so that designers can retrieve, modify and re-release the design, complete with the correct file dependencies. Multiple releases can be created for a design, providing a complete and traceable release history for the project.

Manufacturing rules help prevent common manufacturing issues becoming design problems. A range of constraints can now be checked in real-time during the design process and before the fabrication of files, helping avoid unnecessary design re-spins and getting to market faster.

Field dashboard for FPGA-based instruments—a new, stand-alone way to test FPGAs

Altium Designer has a stand-alone instrument dashboard for FPGAs which helps overcome some of the challenges of testing or remotely monitoring designs inside programmable devices.

Altium's LiveDesign protocol lets designers create, build and explore instruments inside FPGAs as part of the application. The instrument dashboard lets designers stimulate and probe their design live inside the device. The dashboard can be downloaded and installed on any PC, without having to run a full licence of Altium Designer. The remote dashboard interacts with the instruments programmed inside the FPGA by the designer, so that users can test or service the device, or look to add advanced services to the product, once it's in the field.

Plug-n-Play Software Platform Builder—a new concept to create basic software platforms in the soft domain

Using the new Plug-n-Play Software Platform Builder concept in conjunction with Altium's NanoBoard, designers can 'snap' together the basic software platforms needed to run on the hardware. This covers the design elements common to many electronic designs: the peripherals, the communications, and the associated protocols and drivers needed to make these basic design elements work (which come with the NanoBoard). This essentially reduces the task of creating these basic, but necessary, software blocks to one of dragging and dropping preconfigured software blocks into a design. The designer is then free to focus on creating the application (the 'smarts' of the product)

itself. This feature supports the drivers and software protocols for the peripherals on its NanoBoard development platform.

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About Altium

Altium Limited (ASX:ALU) provides next-generation electronics design solutions that break down the barriers to innovation. Altium's solutions are unique because they unify the separate processes of electronics design, all within a single electronics design environment, working off a single data model, linking all aspects of electronics product design into one process. This unified design environment helps electronics designers easily harness the latest devices and technologies, manage their projects across broad design 'ecosystems', and create connected, intelligent designs.

Founded in 1985, Altium has headquarters in Sydney, sales offices in the United States, Europe, Japan, China, and resellers in all other major markets. For more information, visit www.altium.com.