



## IN THE WORKSHOP – Tip #22 Live clearance/interference checking

### Summary

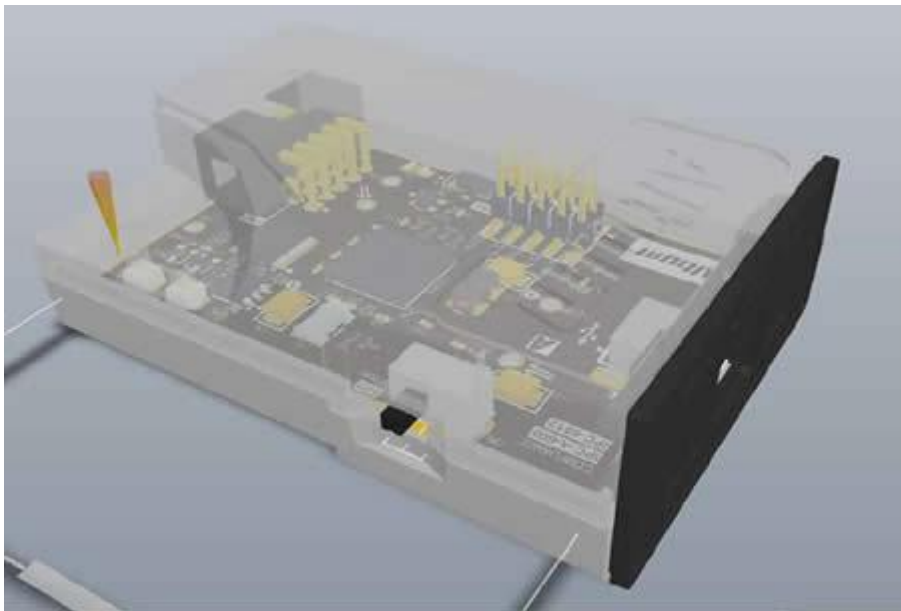
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In the Summer 08 release of Altium Designer, conflicts between 3D assemblies can now be seen and resolved immediately using real-time clearance checking.

The electronics of designs generally go into some sort of casing or enclosure, and their configurations have become a crucial factor in achieving product differentiation in the market. Traditionally there has been minimal linking between electronics designers and mechanical designers. Getting the electronics to fit into the case has traditionally been a matter of good luck, rather than good management.

The Summer 08 release of Altium Designer changes all this by introducing dynamic collaboration between Altium Designer's unified design environment and the MCAD world – the next step in Altium's strategy of unifying the whole design process.

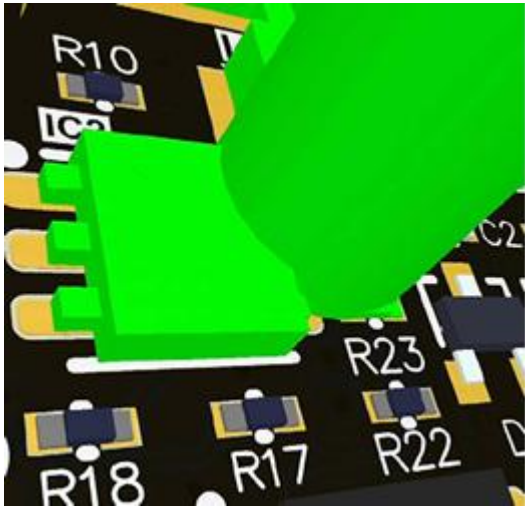
Altium now offers a real solution to the problem of matching electronics design (ECAD) to the mechanical design (MCAD) processes of enclosure design. Electronics designers, for the first time, can link directly to the mechanical CAD world in a non-proprietary way and unify ECAD and MCAD.



Altium Designer's 3D capabilities have been enhanced to allow for direct linking to external STEP models – a robust, data-rich 3D file format supported all major MCAD software. This means that you can now bring mechanical assemblies or case designs from the MCAD system into Altium Designer.

Updates to the source STEP models are detected by Altium Designer, providing a dynamic link between the electronic and mechanical domains. In practice, if changes are made to those STEP models by the mechanical CAD package you are altered by Altium Designer. The changes will then be reflected in the components on the PCB – in real time.

There is also support for the transparency of component and non-component 3D models. These capabilities are backed by a convenient new feature that allows the board outline to be defined directly from an imported MCAD data file (such as STEP model file). This prompts you to select a planar face within the 3D model, which is then used to create the board shape – including any holes or board cutouts.



Harnessing all these new capabilities and Altium Designer's 3D engine, features have now been added to allow full interference/clearance checking between any objects in the design, such as components, standoffs and the case that surrounds them.

You can now work directly with the case design as it is being done to ensure that the PCB will fit into the final enclosure by interactively adjusting the board layout, component placement and even component package choice to suit the proposed enclosure design. You can then make sure that the PCB complies with mechanical clearance constraints – tested directly against the real enclosure design – before the board is sent for prototyping or manufacture.

This significantly reduces the number of design iterations necessary to close the ECAD-MCAD loop and make electronic product design easier. It will also remove the obstacles to design collaboration that are currently facing electronics and mechanical designers. It represents a non-proprietary solution to the problem of ECAD/MCAD integration, with no additional cost, and is the first step to unifying these two traditionally disparate worlds.

#### **More Information**

See component clearance checking in action [visit \*http://www.altium.com/summer08iscoming/\*](http://www.altium.com/summer08iscoming/) for the demonstration video.