

## CASE STUDY

# Right first time with CADSTAR

*Engineers at Malvern Instruments have benefited from CADSTAR Board Modeler Lite by enhancing data collaboration between ECAD and MCAD, and improving manufacturing data.*

### About Malvern Instruments

Malvern Instruments Ltd. are the market leader in the characterisation of particle size, particle shape, zeta potential, molecular weight, chemical composition, rheological properties and advanced SEC/GPC chromatography solutions. Analytical instrumentation from Malvern is used in the characterisation of a wide variety of materials, from industrial bulk powders to the latest nanomaterials and delicate macromolecules. The company's products provide essential information that supports the understanding, improvement and optimization of many industrial processes.

### Overview

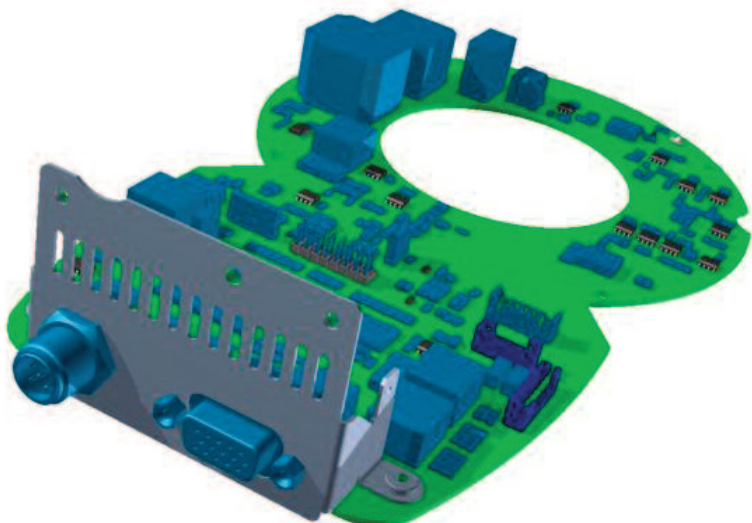
As Electronics engineers we often perceive the electronics design encapsulated in the PCB assembly to be the core of the product. At Malvern Instruments, however, that is not the case as their advanced instruments are primarily mechanical in nature so the electronics forms a critical, but secondary, element of the finished product.

*"We are a science based company, where electronics plays a supporting role to the physical domain. One of our customer's requirements is to reduce Cost per Bench Space so the footprint of the finished product is critical, meaning we have to fit the boards in any available space."*

Duncan Stephenson, Head of Electronics Design at Malvern Instruments

### Challenges

Once the physical characteristics of the board profile, keep-out areas and critical placements have been imported from the mechanical drawing and combined with design connectivity from the engineering schematic, the PCB Design Engineer can start the layout process.



When the initial component placement is complete the design needs to be checked to ensure no physical constraints have been broken. This is easily verified by creating a simple 3D model in Board Modeler Lite, importing the enclosure as a constraint, and using the powerful checking tools to ensure no collisions have been created. If any violations are detected changes can be made in the 3D environment and automatically back-annotated to the PCB layout.

If more accuracy is required the simple block models can be replaced by accurate 3D representations that can either be imported from the wide range of freely available parts or created in Board Modeler Lite using the built-in parametric model generator.

*“Using Board Modeler Lite in conjunction with CADSTAR PCB design and our 3D mechanical software, we can avoid costly mistakes and ensure the electronics fit the space constraints available. Our latest project included more than 20 PCBs, all of which fitted first time.*

*“The ability to fully characterise the 3D board with accurate models, plus the ability to check for and resolve clearance errors, helps us produce better documentation for test and assembly, and most importantly ensures we get easily manufacturable products in a shorter time.*

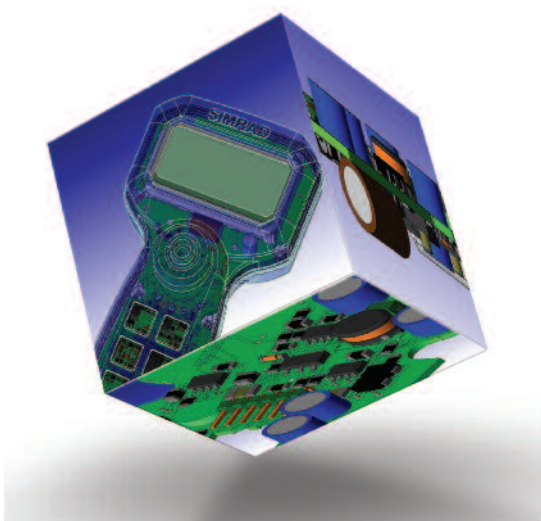
*“We also find that Board Modeler Lite is very useful as a design tool. It allows us to try multiple design ideas and develop virtual prototypes so that we can see what will and won't work before they go to manufacture – which obviously reduces our costs.”*

Simon Chubb, PCB Layout Specialist at Malvern Instruments



### About CADSTAR

CADSTAR is the industry standard desktop PCB design solution from Zuken, a long established provider of powerful and innovative software solutions for PCB layout from concept to product. CADSTAR allows intuitive work flow guiding users easily through their design process, incorporating all the technologies necessary for a complete electronic development process in one environment.



### Board Modeler Lite

Board Modeler Lite is a unique, stand-alone solution that bridges the gap between electronic and mechanical design. It is the most effective design review tool available, displaying both electronic and mechanical information in a single environment. Board Modeler Lite reduces iterations between departments, decreases duplication of effort, and provides greater accuracy.

**Quadra Solutions** is the exclusive reseller of CADSTAR PCB design solutions from Zuken operating in the UK and Benelux. As well as being an authorised Autodesk reseller, Quadra also has one of the most successful PCB design bureaus in the UK with an extensive client base and the technical capability to handle all design technologies. Quadra also provides technical support and training services on all of their solutions.



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**CADSTAR**

