

# CUSTOMER SUCCESS STORY



## Using electronics to see patterns

Shenzhen Joyscan Technology makes intelligent machine vision and pattern recognition equipment. And in doing so, it designs and then manufactures both the electronics and the mechanical designs.

Shenzhen Joyscan Technology has very stringent requirements when it comes to electronic and mechanical design collaboration. In the recent past, the company used two disparate software tools, one each for circuit development and mechanical design. Traditionally, an electronic product design had to be fitted into a mechanical enclosure, on a trial-and-error basis. If the PCB did not fit the enclosure, adjustments had to be made before trying again. Back then, a product model could only be finalized after several attempts, which affected both the product's time to market and its design.

Shenzhen Joyscan Technology needed a different approach to bringing these two design worlds together, one that not only reduced R&D costs but also sped up machine design and product marketing.

The company turned to Altium Designer. The non-proprietary nature of Altium Designer lets the company's electronics designers link the mechanical CAD environment and electronics design environment together in real time.

Altium Designer's 3D board design functions work seamlessly with STEP models of the design files, an intelligent 3D file format supported by all major MCAD software. This allows designers at the company to directly import mechanical assemblies, or design solutions completed using an MCAD tool, into Altium Designer. By reading/writing STEP files, the designers can create dynamic links between PCBs and mechanical design kits. As a result, the whole product design cycle is shortened and the R&D costs greatly reduced.

With its 3D PCB visual design capabilities, Altium Designer provides Shenzhen Joyscan Technology's engineers a three-dimensional view of a PCB design in real-time, even while design work is still being done. The visual environment offered by Altium Designer can also display mechanical CAD information directly on a PCB design, allowing full interference/clearance checking between objects, such as components and the case that surrounds them, in the design.

**" Altium Designer helps us get our products to market faster. It is an extraordinarily helpful tool for a small enterprise like us. And its powerful 3D PCB visualization capabilities, in particular, make ECAD-MCAD collaboration possible in ways that it has shortened Joyscan's time-to-market by 30%. "**

Fan Xiaoming, General Manager, Shenzhen Joyscan Technology Co., Ltd.

## The Result

Altium Designer's ability to show mechanical CAD information directly on PCB designs has helped Shenzhen Joyscan Technology make more accurate and reliable product designs faster, and improved the engineers' work efficiency.

With its 3D functions, Altium Designer ensures that PCBs comply with mechanical clearance constraints — tested directly against real enclosure designs — before the boards are sent for prototyping or manufacturing. As a result, the number of design iterations necessary to close the ECAD-MCAD loop is minimized, which makes electronic product design easier.

According to Shenzhen Joyscan Technology, not only are Altium Designer's key features, such as 3D ECAD-MCAD collaboration, 3D PCB routing and graphics, and file management and storage, suitable for small and medium-sized companies, they also contribute considerably to product R&D, and shorten the product-to-market time by 30%.

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## Product Information

Shenzhen Joyscan Technology designs and manufactures high-tech products which include artificial intelligence, image processing, photoelectric sensors, microelectronics, optics and precision machinery. The company is developing machine vision devices such as banknote intelligent identification equipment, commercial barcode identification equipment, high-speed image scanners, industrial machine vision systems and fingerprint identification systems.

## About Joyscan Technology

Founded in October 2002, Shenzhen Joyscan Technology Co., Ltd. is a high-tech enterprise based in Shenzhen. Since its establishment the company has been engaged in the R&D and sale of intelligent machine vision and pattern recognition equipments, such as artificial intelligence, image processing, photoelectric sensor, microelectronics and optical, precision machinery. After years of development the company has become a leading supplier of OMR (Optical Mark Recognition) and OCR (optical character recognition), and has manufactured a series of lottery equipment in China. The company also develops machine vision devices for other industries, including banknotes intelligent identification equipment, commercial barcode identification equipment, high-speed image scanner, industrial machine vision and fingerprint identification.

## ABOUT ALTIUM

Altium Limited (ASX:ALU) creates electronics design software. Altium's unified electronics design environment links all aspects of electronics product design in a single application that is priced as affordable as possible. This enables electronics designers to innovate, harness the latest devices and technologies, manage their projects across broad design 'ecosystems', and create connected, intelligent designs.

Founded in 1985, Altium has offices in San Diego, Sydney, Karlsruhe, Shanghai, Tokyo, Kiev, with value added resellers worldwide. For more information, visit [www.altium.com](http://www.altium.com). You can also follow and engage with Altium via [Facebook](#), [Twitter](#) and [YouTube](#).