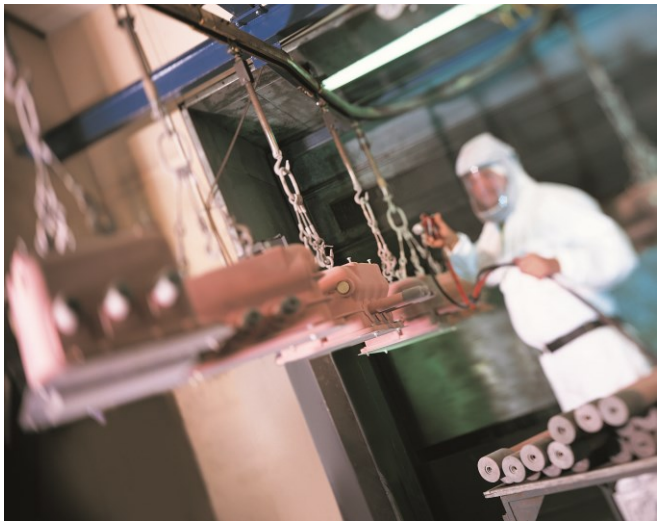
BEYOND CLAY AND SAND SCULPTURES: AUTOMATING THE INJECTION MOLDING INDUSTRY

MINI-ITX EMBEDDED MOTHERBOARD WITH INTEL® ATOM™ E3845 PROCESSOR

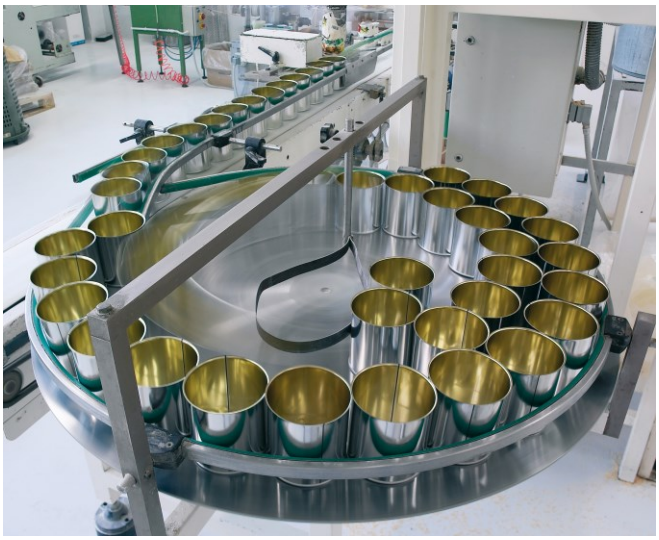


BY VIVIEN WANG

INJECTION molding is a highly efficient form of plastic component manufacturing which has gained renewed attention in recent years with the advent of alternative auto-manufacturing processes for the production of components, such as 3D printing. It is ideally suited for mass production of the same component, and is currently in use across a wide variety of industries, such as the manufacturing of automotive components, instrument parts, mechanical composites, and most forms of plastic products. The framework of the process is facilitated by the injection of molten thermoplastics into a pre-defined mold cavity. The material is then cooled and solidified, and takes on the shape of the mold, thus preparing it for further use in other applications.

"MAINTAINING AGILITY AND INTERSECTING THE PERFECT BALANCE BETWEEN EXPEDIENCY AND COST MANAGEMENT IS KEY TO INNOVATION."

The injection molding industry, like many other automated processes, can trace its roots back to the Second World War, during which there was a heightened need for a high volume of both civilian and military equipment that needed to be produced in the quickest and most inexpensive way possible. "Let us try to imagine a dweller in the 'Plastic Age,'" wrote Victor Yarsley and Edward Couzens, two British chemists in their saliently named book 'Plastics.' "This 'Plastic Man' will come into a world of colour and bright shining surfaces [...] a world in which man, like a magician, makes what he wants for almost every need." Driven by the need for mass produced, affordable plastic products, the plastic manufacturing industry flourished. Injection molding is currently the most widespread method of plastic part production.



CHALLENGES

The client, a renowned manufacturer of micro-nano melt transcription molding machines (MTM) and injection molding machines, required a low power consumption board with ECC functions and Android OS service support to consolidate their systems. Another objective was to find a

board capable of consolidating two applications simultaneously, expediting the manufacturing process whilst lowering production costs. Additionally, the client required meticulous end-to-end service support for hardware and software, especially for Android debugging.

> "THE ABILITY TO IMMEDIATELY AND EFFICIENTLY MITIGATE ISSUES, AND TO FIND EFFECTIVE SOLUTIONS FOR OUR CUSTOMERS, IS OUR MAIN PRIORITY."
>
> **– CLARK LEE, PRODUCT MANAGER, INDUSTRIAL PC DIVISION**

SOLUTIONS

AAEON proposed the EMB-BT7, a mini-ITX embedded motherboard powered with the Intel® Atom™ E3845 Processor. This model features a wide range of high-end amenities such as 2 SATA3 ports, 1 SATA2 port, and 8 USB ports. The EMB-BT7 runs on the E3845 SoC processor, supporting ECC memory and fulfilling both low and high end application requirements for the customer. AAEON provided a superior end-to-end software service, offering timely and efficient fault and hazard mitigation during the research and development period. The client was therefore able to produce a proofed and tested Android design, facilitating speedy time-to-market turnaround time and other long-term benefits such as quicker product cycles.

"As with all competitive market products and services, the ability to immediately and efficiently mitigate issues, and to find effective solutions for our customers, is our main priority,' said Clark Lee, Product Manager for AAEON's Industrial PC Division. "Speed to market is critical in the ever changing landscape of industrial automation, and we're still writing the early chapters of plastic manufacturing – we've come a long way, but there's still so much to be done, and so many exciting new avenues we can explore and improve. Maintaining agility and intersecting the perfect balance between expediency and cost management is key to innovation."

REFERENCES

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ABOUT AAEON

Established in 1992, AAEON is one of the leading designers and manufacturers of professional intelligent IoT solutions. Committed to innovative engineering, AAEON provides reliable and high quality computing platforms, including industrial motherboards and systems, industrial displays, rugged tablets, embedded controllers, network appliances and related accessories, as well as integrated solutions. AAEON also has the hardware and services for premier OEM/ODMs and system integrators, worldwide. Being an Associate Member of the Intel® Internet of Things Solutions Alliance, AAEON offers customized end-to-end services from the initial product conceptualization and board product development to mass manufacturing and after-sales service programs. AAEON is also a GSA government contract holder (#GS-35F-0470Y) serving Federal, State & Local government sectors. Peruse AAEON's expansive line of products and services by visiting www.aaeon.com.