

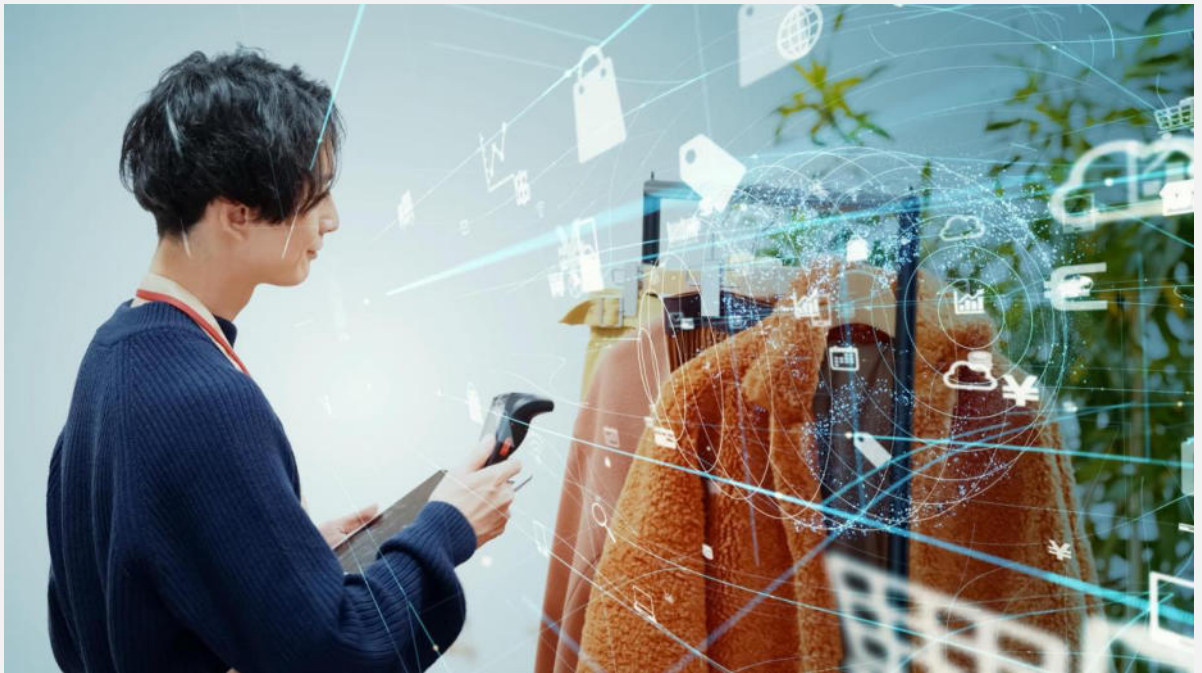
The Applications of an Embedded Motherboard

Nowadays, it's hard to find any professional, commercial, or industrial space without an embedded computer. Devices fitted with embedded motherboards connect with high performance computing networks to achieve high levels of capability and data insight for teams deployed within these spaces.

Life becomes much easier, output rates increase, and environmental sustainability is achieved.

But how are these components deployed in practice? In this article, we take a look at the applications of embedded motherboard technology in retail, manufacturing, and healthcare.

Embedded Motherboards in Retail



Some retail applications require only limited functionality, making [Pico ITX motherboards](#) ideal. These components are capable of operating within narrow functionality parameters while remaining sustainable, thanks to low power usage. [Micro-ATX motherboards](#) are also frequently used when a bit more versatility is required. Here are a few of the most common applications.

Point of Sale Devices

[Point of sale](#), or POS, devices, represent some of the most common applications for embedded computers in retail. Human personnel interact with the unit via a touchscreen or another interface, while input and output sockets support the use of handheld scanners.

The POS unit will also be connected to payment processing gateways and other solutions designed to support an effective retail environment. The unit will also connect with broader inventory management platforms, updating stock data with each sale.

Self-Service Units

Self-service checkouts have become almost ubiquitous in retail. While consumers were initially uncertain about these devices, the convenience and speed they provide have won the general public over.

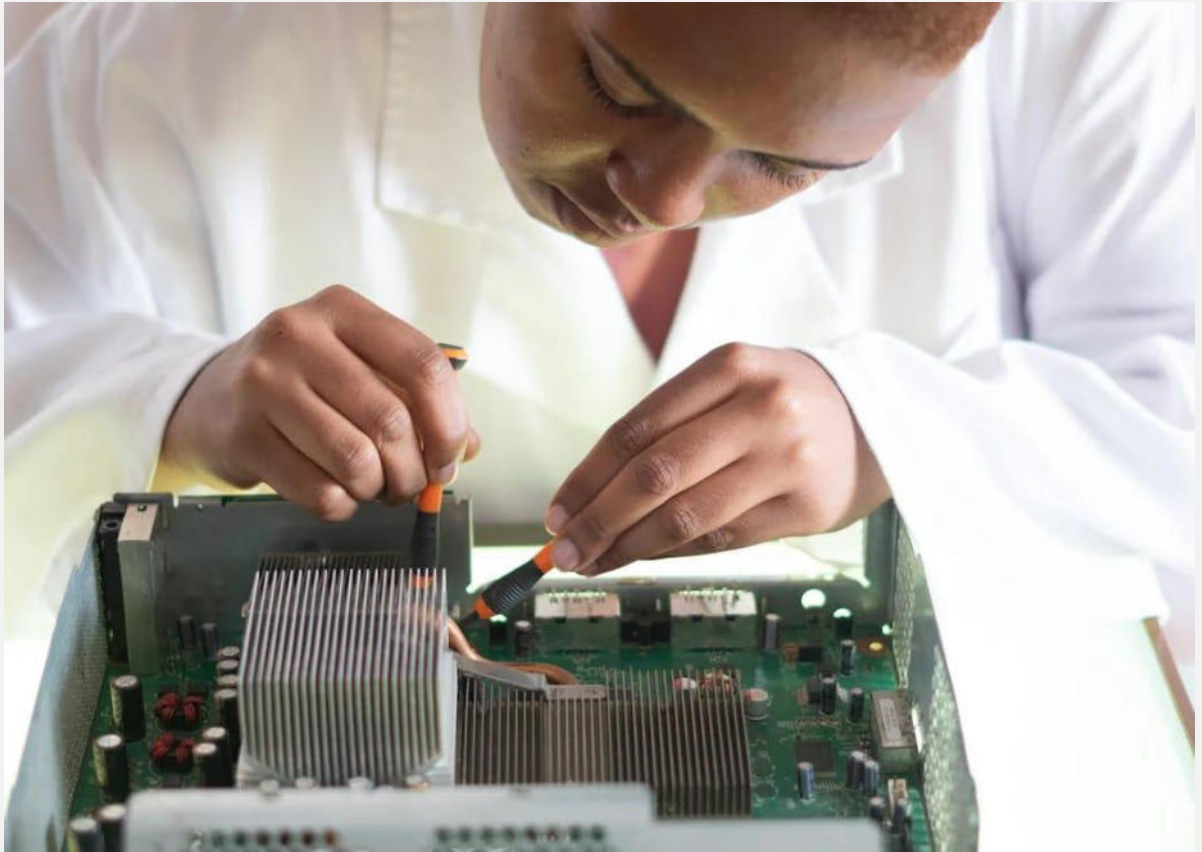
Embedded motherboards give customers all the functionality they need via the touchscreen interface. Wireless or ethernet connectivity enables real-time syncing with inventory management platforms and other systems.

Vending Machines

Embedded motherboards don't necessarily need to be linked to a high performance computing network. Some applications are relatively simple. Vending machines are good examples and are among the oldest applications of an embedded computer in retail.

While technically a self-service unit of sorts, vending machines do not need broader connectivity. They simply need enough computing power to handle repetitive, simple functionality. Nowadays, smart vending machines may also offer broader connectivity, but this is not necessary in all cases.

Embedded Motherboards in Manufacturing



In busy manufacturing environments, [Mini-ITX motherboards](#) are a popular choice, thanks to their reduced power consumption. However, other computing components are also applied in these spaces. Let's take a look at some common use cases.

Monitoring Systems for High Precision Machinery

High precision machinery is business-critical for manufacturing operations. The failure of one of these machines can result in expensive delays in production or repairs, and even replacement of equipment.

An embedded computer, built into the machinery, provides the answer. These systems can detect issues ahead of time, eliminating delays and limiting the cost of repairs.

Inventory Management Devices

A manufacturing facility exists within the wider supply chain. Materials flow in from suppliers, and the finished product flows out to retailers or direct to customers. Even when just-in-time production methods are deployed, there will still be inventory and stock levels to take into account.

Personnel can use handheld devices with embedded motherboard components to monitor these levels. Alternatively, an embedded computer terminal in the warehouse area may also be utilized.

IoT Facility Monitoring

The modern production environment is highly complex, with thousands of different datapoints feeding into the monitoring and assessment system. The Internet of Things, or IoT, has an important role to play here. Smart devices gather data from around the facility and interact with a central management system.

These devices may be fitted with embedded motherboards to enhance their functionality. As data is collected, a high performance computing network makes sense of this data and derives insight from it.

Embedded Motherboards in Healthcare



[Healthcare](#) facilities have some of the most diverse needs of any functional space, requiring high levels of computing power and versatility. This makes the [standard ATX motherboard](#) a common component for hospital systems, although other components certainly have their own roles to play. There are many potential applications here. Let's take a look at just a few:

Handheld Devices in Treatment Areas

The traditional notebook and pen method of recording patient information is an inefficient way to carry out hospital rounds. Today, doctors, nurses, and other professionals are far more likely to carry a handheld device, typically a tablet computer. Tablet computers are among the most common uses of embedded motherboards across all industrial applications.

These devices connect directly with high performance computing networks, achieving real-time updates. This makes the work of medical professionals easier and accomplishes a higher level of patient care.

Patient Monitoring Units

Monitoring units fitted to patient beds and to other hospital equipment also provide a valuable function. These units utilize embedded computer components to keep track of patient vitals and to follow other metrics, maintaining patient safety even when medical professionals aren't present.

Connecting with the broader network, these devices provide alerts and other inputs when necessary. This network connects in turn with handheld devices, facilitating a holistic approach to care and treatment.

Entrance and Exit Management Devices

Healthcare facilities need to be able to effectively manage entrances and exits. This includes automated sign-in and security check technology to secure entry points. In addition, traffic management around car parks, loading bays, or ambulance terminals ensures personal safety and the efficient flow of traffic around the facility.

Terminals and units, fitted with embedded motherboard technology, help to make sure this is the case. Again, these terminals integrate with the broader computer network, supporting wide-ranging insight on how these spaces can be made more efficient.

Find the Embedded Computer Technology You Need for Your Applications

Here at Avalue, we offer a broad array of embedded motherboards, ready for integration into high performance computer networks. To discover more about our range, and to make the right choice for your highly specialized application, reach out to our team today.

Take a look at Avalue's [Industrial Mainboard Solutions](#).