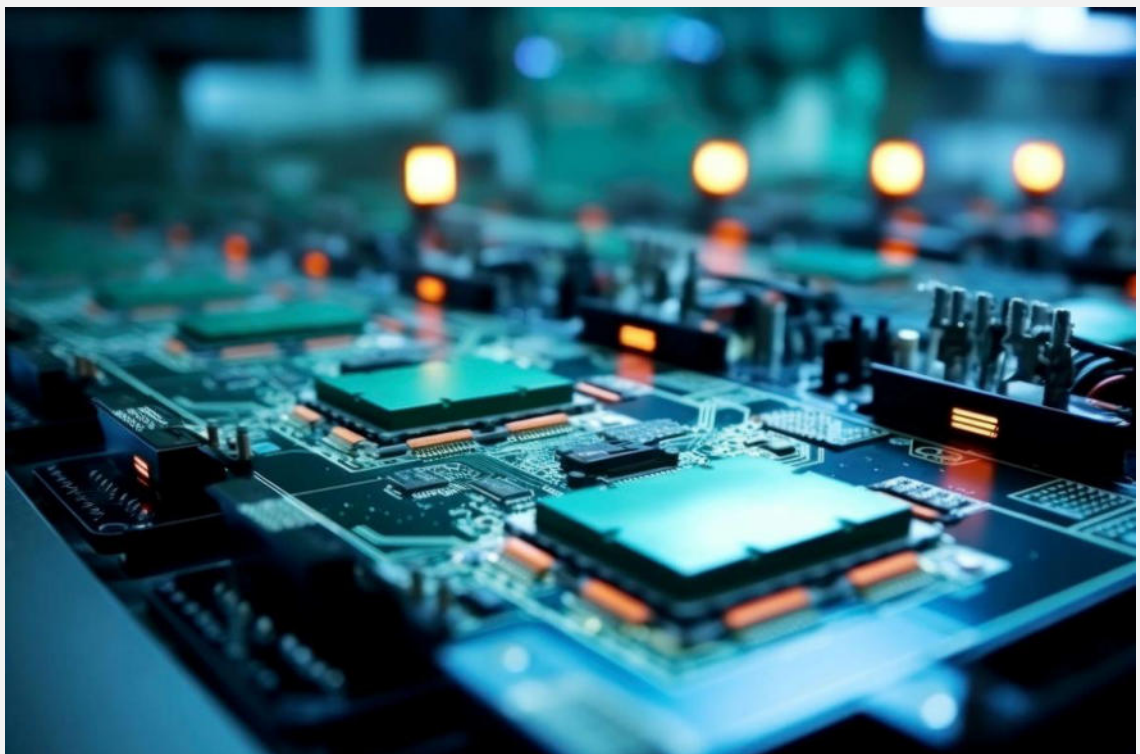


Choosing the Best Single Board Computers for Your Healthcare Application

Hospitals, clinics, and other similar environments are critical to our society. These facilities safeguard health and well-being for the populace and offer support when we need it most. But none of these institutions can operate without the right systems and digital infrastructure in place.

Single board computers (SBCs) are crucial components within these systems. But what exactly is an SBC computer unit? Which units are the most powerful single board computers on the market, and is this necessarily the best single board computer for your specific healthcare application?

Read on to discover more.



What Is a Single Board Computer?

A single board computer, or SBC computer unit, brings together a range of different components into one convenient piece of hardware.

The 'board' part of the name refers to the circuit board. All computers contain circuit boards like these, but most computers will contain multiple circuit boards linked together.

An SBC unit features all the components it needs on this single board. In other words, microprocessors, memory, and any required inputs and outputs are all installed on the one circuit board.

The General Benefits of an SBC Unit

These SBC computer units provide several general benefits, including:

Reduced Hardware Cost

The price of each individual component adds to the overall cost of hardware development. With an SBC unit, there are fewer components, so the cost of the hardware falls.

Space Saving Benefits

As a single board computer requires only one circuit board, it takes up far less space than a standard computer. While desktop and laptop computers have become ever smaller in recent years, they are still not slimline enough to be installed within a system like a vending machine. The single circuit board, on the other hand, can be easily installed in such a system.

A More Streamlined System

The single board computer is a self-contained unit. While it lacks some of the processing power of a larger unit, it has enough capability to support a range of different needs. In many applications, SBC units provide all the capability required without overcomplicating the system. This, in turn, makes it easier to maintain and repair if required.

The Applications of SBC Computer Technology in Healthcare

At Avalue, we provide a variety of [industrial embedded motherboards](#) and SBC units for our customers. But how are these actually deployed in a healthcare environment?

Executing Limited Operations

One of the most common applications for a single board computer is in executing limited operations on a repetitive basis. For example, running an HVAC system in a clinic – team members may program the HVAC system, make manual inputs, and set it to run automatically, and a single board computer is more than capable of overseeing this.

Autonomous Process Monitoring and Control

As single board computers are well-suited to operating within strict sets of parameters, they are adept at monitoring and controlling processes. With automated and autonomous systems playing increasingly important roles in the healthcare facility environment, single board computers will become instrumental in supporting this.

Modular Developments Within Rack Systems

While SBC units are designed to stand alone, they can still interact with other system components. Rack systems are often used in the IT setups for [healthcare environments](#) to provide low-cost but highly flexible and powerful systems. Single board computers are ideal in this setup, as they can be quickly and easily integrated into a modular system.

How to Choose the Best Single Board Computers for Your Healthcare Needs



As you explore our range of products, you will notice that we have a wide number of processors and SBC units available. Each of these units could represent the best single board computer for a specific set of requirements, but all our clients' needs are different.

Here are a few things to look out for as you select the right SBC for you.

Processing Capability

Selecting the best option for you won't always mean choosing the most powerful single board computers. However, you will need enough processing power to meet your requirements.

Our [EZ-X-EHLP 1.8" SBC](#) features the Intel® Atom® x6000E Series, as well as the Intel® Pentium® and Celeron® J Series Processor. The [Mini-ITX EMX-ASLP](#), in contrast, is smaller and features only an Intel® Processor N97 Processor.

Power Usage

A single board computer will generally use less power than a larger system, but it's still important to be aware of the energy ratings. A busy healthcare environment draws a lot of power, so optimizing the usage across each system is critical.

Our [Advanced RISC Machine \(ARM\)](#) SBC units are designed to optimize power usage without compromising on output. RISC stands for reduced instruction set computer, which means the processor performs only a limited set of instructions. This reduces power wastage by focusing the SBC on specifically required tasks.

Connectivity

Each single board computer has its own set of connectivity ports. Our [2.5" SBC Pico-ITX EPX-ASLP](#) unit, for example, features six USB connections, two computer output connections, and two local area network (LAN) connections. There is also a single serial advanced technology attachment (SATA) connection for connecting to external storage hardware.

The [EPX-EHLP](#) unit, on the other hand, features all of the USB, COM, and LAN connections of the EPX-ASLP but lacks the additional SATA connection.

Display

The way in which your SBC unit displays data will dictate how personnel interact with the hardware. HDMI, DisplayPort, and low-voltage differential signaling (LVDS) are commonly supported by our single board computers.

The [3.5" SBC ECM-ASL](#) unit in our range offers HDMI, DP, and LVDS display. This may be perfectly suitable for most purposes. However, if required, you may prefer to consider the ECM-RPL model, with Dual-Mode DisplayPort support as well as USB Type-C connectivity.

Powering Healthcare Facilities Around the World

At Avalue, we are proud to offer one of the leading selections of SBC products on the market. From products that rank among the most powerful single board computers on the market to smaller devices designed for more specialized requirements, we set out to cover all the bases for our customers in the healthcare field.