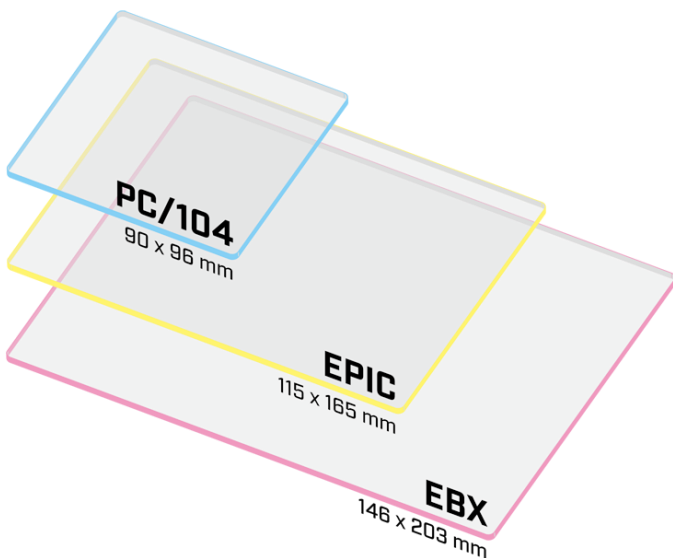# AAEON Takes "EPIC" Steps Beyond the Standard
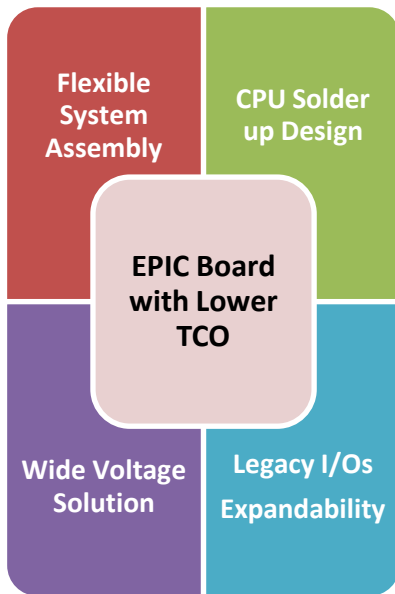

EPIC standard for SBCs was intended to fill the gap that existed between the small, stackable PC/104 solutions and the larger EBX solutions

EPIC: An Introduction

In 2004, the PC/104 Embedded Consortium released the standard for Embedded Platform for Industrial Computing, more commonly referred to as EPIC. This standard for SBCs was intended to fill the gap that existed between the small, stackable PC/104 solutions and the larger EBX solutions. According to the PC/104 Embedded Consortium, "the purpose of this specification is to define a physical platform for the mid-sized embedded Single Board Computer (SBC) with multiple I/O expansion options. Its size is midway between the industry standard PC/104 stackable format and EBX SBC format. The added space allows for combining features on an SBC which would normally be found on multiple PC/104 modules"

As noted by the PC/104 Consortium, the EPIC standard defines a board that has x and y dimensions well-suited for smaller embedded industrial PC systems. With more board level real estate, EPIC systems can accommodate greater I/O integration as compared to its sister PC/104 standard that would require more stack-on peripheral boards. The dimensional increase also allows for the use of higher performance processors that often call for advanced heat dissipation.

| Flexible System Assembly | CPU Solder up Design |
| Wide Voltage Solution | Legacy I/Os Expandability |

EPIC Board with Lower TCO

AAEON's EPIC products provide a comprehensive set of core functionalities and renders additional modules unnecessary

Reduced Total Cost of Ownership

AAEON's EPIC products are fully tested for compatibility and equips a comprehensive set of core functionalities that render additional modules unnecessary (less expansion), effectively lowering the total cost of ownership (TCO) by 10 ~ 20%.

Legacy I/Os Expandability

In computing, looking back is as important as looking forward. In that regard, AAEON's EPIC products are designed to support legacy systems with the inclusion of the PC/104, PCI-104 (or PCIe) for prolonged use of tried-and-true systems while future-proofing it with newer, more modern technologies.

CPU Solder up Design

Since the Cedar View platforms, aka EPIC-CV07, EPIC-BT07, EPIC-QM77, EPIC-BDU7, AAEON's EPIC products have boosted the "Solder up" design that places the CPU at the solder side of the PCB. Aiming to take the hassle out of thermal management, the design allows users to adopt a broader range of coolers (even making the idea of treating the chassis as a heat sink possible) without altering the layout of the components, saving development and system integration costs.

Wide Voltage Solution

Depending on the situation for which the solution is deployed, voltage can be a major hurdle to overcome. With this idea in mind, AAEON's EPIC products are built to support a wide voltage range of 9-24V design to reduce the possibility of damaging the onboard components in the event a DC to DC converter module is used. In addition, the extended voltage range grants enhanced adoptability with up to 80% of today's industrial requirements that can be adequately satisfied without the need for additional power modules.
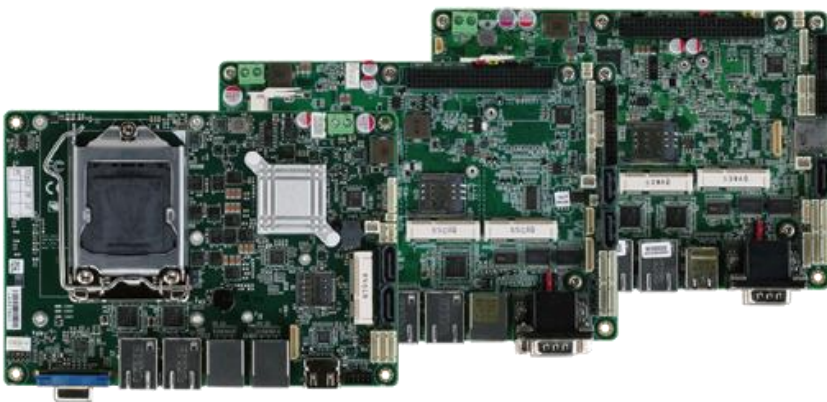
Flexible System Assembly

The EPIC standard is exceptionally well-suited for smaller embedded

These highly integrated EPICs can be found serving the requirements of various industry segments from mobile infotainment to industrial automation, and even in the retail space.

industrial PC applications with its generous dimensions, offering a compact system with I/Os most conducive in today's industrial use. AAEON's EPIC board offers up to six USB ports (USB 2.0/ 3.0), eight COM ports (RS-232/422/485), and two Mini-PCIe slots to satisfy the needs for extra components without assembling additional I/O modules.

"EPIC" Technology in Action

The AAEON family of EPIC SBCs offers a line of versatile solutions. These highly integrated SBCs can be found serving the requirements of various industry segments from mobile infotainment to industrial automation, and even in the retail space. Due to the fact that AAEON has made these EPIC SBCs much like a component in terms of mechanical and thermal consideration, the benefits they bring to application developers are truly "EPIC" and considerably minimize the limitations for implementation.

EPIC-SKS7

The EPIC-SKS7 is the latest and most advanced member of AAEON's EPIC product family with a 6th Generation Intel® Core™ processor. The enhanced performance delivered by the chips came in form of support for up to 16 GB of DDR4 memory and clearer, higher resolution video output, making it viable in demanding applications such as high resolution machine vision equipment or mini-servers. The board also sports a CPU socket allowing for greater flexibility.

EPIC-BDU7

Based on the Broadwell platform, the EPIC-BDU7 carries a U-series CPU that lowers power consumption to 15 W, while still delivering impressive performance for 4K resolution media content or triple independent displays. The abovementioned solder up design is featured on this board in addition to the inclusion of the PCI-104 interface, two features that place the board in an ideal position for applications where legacy
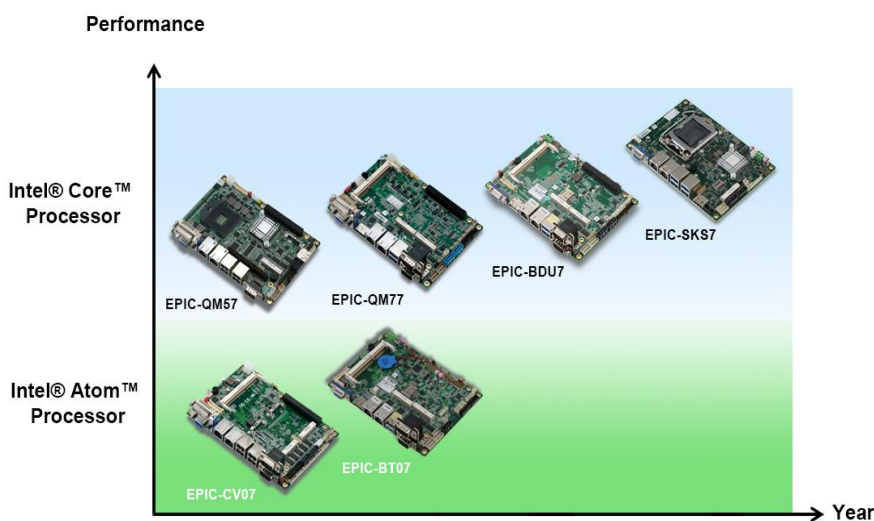
systems are in place and convenient thermal management is required, namely industrial automation and certain military equipment.

EPIC-BT07

While the Intel® Core™ series is deemed overpowered for certain applications, such as industrial HMIs, the EPIC-BT07 will be up to the task with its lower grade, but less power hungry Intel® Atom™ CPU. Still sporting a solder up design, the board is capable of dual displays as well as wide voltage support of 9 ~ 24V with a healthy set of I/Os, including six USB ports, two RJ-25 ports, and as many as six COM ports. Similar to its Broadwell counterpart, the EPIC-BT07 also uses a fanless thermal solution.

EPIC-CV07 & EPIC-QM57

The most mature and seasoned platform among the AAEON EPIC product family, the EPIC-CV07 and EPIC-QM57 have been the staples of the product line and ideally suited in applications ranging from industrial machinery to intelligent transportation.

Support for legacy systems are highlighted with the boards' PCI-104 and PCIe interface as well as older operating systems such as Windows XP. In addition, the EPIC-CV07 carries as many as eight COM ports while the EPIC-QM57 sports a CPU socket for greater flexibility.

About AAEON

AAEON is a leading manufacturer of advanced industrial and embedded computing platforms. Committed to innovative engineering, AAEON provides integrated solutions, hardware and services for premier OEM/ODMs and system integrators worldwide. Reliable and high quality computing platforms include industrial motherboards and systems, industrial displays, rugged tablets, PC/104 modules, PICMG half-size and full-size boards and COM modules, embedded SBCs, embedded controllers and related accessories.

AAEON also offers customized end-to-end services from initial product conceptualization and product development on through after-sales service programs. AAEON is a GSA contract holder (#GS-35F-0470Y) serving the

Federal, State & Local government sectors. AAEON is also an Associate member of the Intel® Internet of Things Solutions Alliance. From modular components to market-ready systems, Intel and the 400+ global member companies of the Alliance provide scalable, interoperable solutions that accelerate deployment of intelligent devices and end-to-end analytics. Close collaboration with Intel enables Alliance members to innovate with the latest technologies, helping developers deliver state-of-the-art, first-to-market solutions.

Peruse AAEON's breadth of products and services by visiting us at www.aaeon.com.