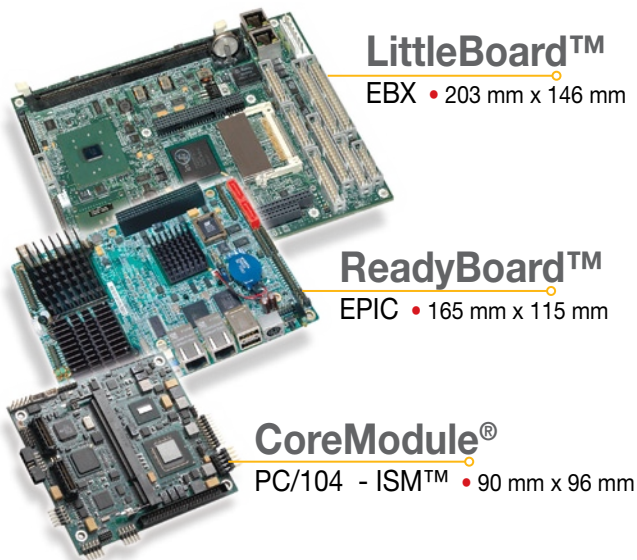


What are ISM™ & SUMIT™

What is ISM™?

ISM™, short for Industry Standard Module™, is a pure 90mm x 96mm form factor (compatible with PC/104) that addresses shortcomings of existing small form factors:

- Fitting circuitry without extending beyond the board outline.
- Meeting top-and bottom-side component height restrictions.
- Decoupling form factors from expansion interfaces.
- Enabling flexible expansion bus and I/O connectorization.
- Allowing bus combinations that were previously undefined and unnamed.



SBC manufacturers have struggled to fit modern legacy-free platforms onto small form factors without protruding beyond the allowed board outlines with “wings”. With the ISA bus, serial ports, and even the PCI bus no longer integrated into low power chipsets, it takes extra circuitry to meet the needs of many embedded applications.

What is included in the specification?

The ISM™ Specification defines the board size, four fixed mounting holes, component height limits, and flexible “expansion zones” for I/O and/or bus connectors. The fixed corner mounting holes allow re-use of enclosures without modifications in the future.

What interfaces are allowed?

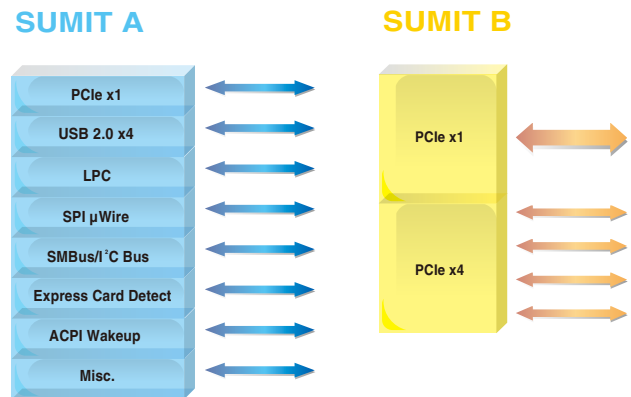
ISM™ allows many combinations of bus and I/O connectors as long as those interfaces reside within the defined “expansion zones”. ISM™ also offers a choice of using right-angle connectors that overhang the board edges, or extending the circuit board if vertical / non-overhang connectors are used.

What architectures are allowed?

ISM™ boards can be SBCs, stackable CPU and I/O cards, and even computer-on-modules (COMs). This flexibility allows easy migration from SBCs to COMs and vice-versa, or from processor to processor, while preserving investments in mechanical designs.

What is SUMIT™?

SUMIT™ is one of many board-to-board expansion interfaces that are permitted with ISM™. SUMIT™, short for Stackable Unified Module Interconnect Technology, offers PCI Express®, USB, SPI, I²C, and LPC Bus expansion using, footprint-efficient, 52-pin, high-bandwidth rugged Samtec Q2-series connectors. This mix of high-speed and low-speed buses simplifies the task of attaching many types of I/O without complex bridges and software.



What is SUMIT-ISM™?

An ISM-size SBC with SUMIT™ expansion is called a “SUMIT-ISM™ SBC”. An ISM-size I/O card is similarly called a “SUMIT-ISM™ I/O module”. A more general naming scheme handles SBCs that accepts smaller boards as I/O cards, or SBCs with multiple buses, in a descriptive manner by mentioning the form factor first, followed by a list of expansion interfaces. For example, “ISM™ SBC with SUMIT™ and PC/104 expansion”, and “EPIC SBC with SUMIT™ and PC/104 expansion” are some of the possibilities. The notations “SUMIT-ISM™” or “SUMIT™ on ISM™” are contracted forms for a special case, while boards with multiple interfaces could be more confusing to label with contracted names.

Who manages these standards?

A new, independent standards organization called the Small Form Factor Special Interest Group, or SFF-SIG, creates, adopts, and maintains a number of emerging standards for the low power, small form factor market. As consumer technology is often inappropriate for the embedded market, the standards feature re-usable modular building blocks, developed by embedded vendors for embedded OEMs. Many of these are optimized for ultra low power processors and controllers, yet scale up to multi-core processor environments. For more information about the specifications, visit www.sff-sig.org.