Industry Standard Module (ISM™) SPECIFICATION

Revision 1.0

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Revision History

Revision	Issue Date	Comments
1.0	8/25/09	Initial Release

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Figures

1.0 Overview

This document is written for design engineers that understand the basics of small form factor single board computers. The Industry Standard Module (ISM) Specification defines a 90mm x 96mm size board describing a pure board outline and mounting hole locations without regard to bus expansion. ISM modules are small, easy-to-use, and scalable as they provide a powerful set of building blocks for a variety of different applications. Depending upon the interconnect technology, they can be stacked on top of each other to expand or customize system solutions. This reduces cost and bulk while increasing mounting and packaging options.

ISM is an umbrella concept to provide coherence to the many different boards that are available in this industry standard footprint. This concept includes:

1.   Decoupling the form factor from its expansion interfaces.
2.   Fitting all circuitry onboard without extending beyond the board outline.
3.   Enabling flexible expansion bus and I/O connectorization.
4.   Allowing form factor bus combinations that were previously undefined and unnamed.

ISM™ CPU boards can be used with x86, RISC, microcontroller or proprietary processor circuits. ISM boards can be standalone SBCs, stackable CPU boards, stackable 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.

ISM specifies only the board outline and mounting holes. Connector mounting locations, stacking conventions, stacking height, and power distribution are addressed in the each respective board or interconnect specification.

2.0 Organization Contact Information:

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3.0 Industry Standard Module (ISM)

ISM™ is an abbreviation for Industry Standard Module™. It is a 90mm x 96mm form factor outline. The ISM Specification defines the board size, four fixed mounting holes, and flexible "expansion zones" for additional circuitry or I/O

and/or bus connectors. The fixed corner mounting holes allow re-use of enclosures without future modifications.
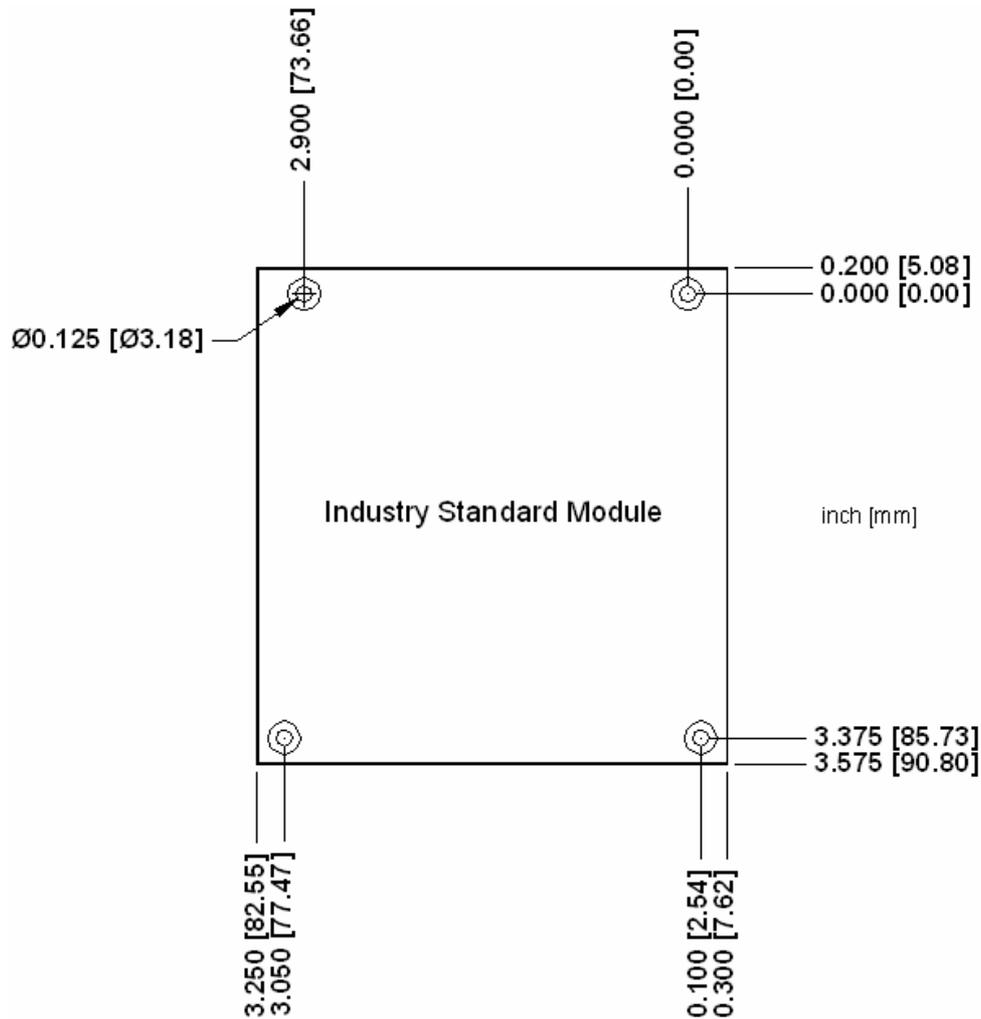

Figure 1: Physical Dimensions for an Industry Standard Module

All ISM modules maintain the same module physical dimensions and mounting holes while allowing expansion connectors of various size, location and I/O signals. This is important for efficiency and integration of standard packaging and mounting in OEM equipment so that system design and original equipment manufacturers can preserve their non recurring engineering (NRE) investment.

However, SBC manufacturers have struggled to fit modern CPU platforms onto traditional 90x96 mm modules without protruding beyond the allowed board outlines with "wings", occupying space originally reserved for right-angle connector overhang with circuitry and vertical connectors. The ISM Specification allows, by definition, circuitry as well as bus and/or I/O connectors to be used

within these defined "expansion zones". ISM also offers a choice of using right-angle connectors that overhang the board edges in place of the expansion zones.
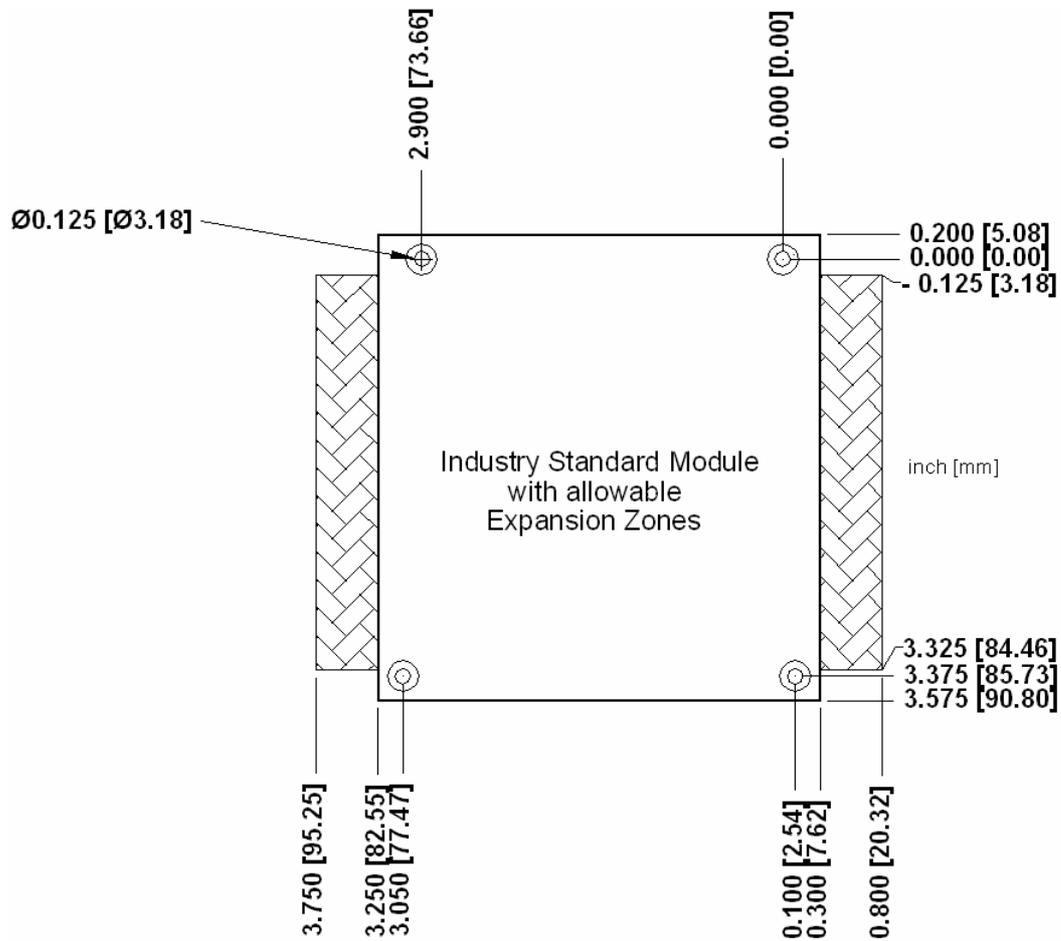

Figure 2: Dimensions for an Industry Standard Module with expansion zones

The tolerance for the dimensions for both Figure 1 and Figure 2 is ± 0.005 inches [± 0.13mm] from the reference hole on the ISM module.