Pentium® II processor In-Circuit Emulator Keep Out Space

An Application Note

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Purpose

The purpose of this article is to illustrate design layout considerations in order to use American Arium's In-Circuit Emulator products for the Pentium® II processor. A brief description of the feature set, keep-away airspace and software interface will also be discussed.

TRC-S1 and ECM-S2 Features

The TRC-S1 allows source-level debug, run/stop of the processor, view and modify processor resources, and a powerful command language for automating tasks. Additional features include the ability to trace and break on processor bus events. By replacing the target interface connector, the TRC-S1 can also be used to debug a Pentium® Pro processor environment.

For those developers not requiring processor bus trace or bus event breakpoints, the ECM-S2 offers low-cost processor emulation via the JTAG debug connector. The ECM-S2 provides the basic tools to minimize debug time during product development and can be used to debug either Pentium® II processor or Pentium® Pro processor targets.

Keep Away Airspace

Forethought needs to be given by hardware designers when designing Pentium® II processor systems that can be probed. Figure 1 shows the minimum keep away zones required for the target to support an ICE.
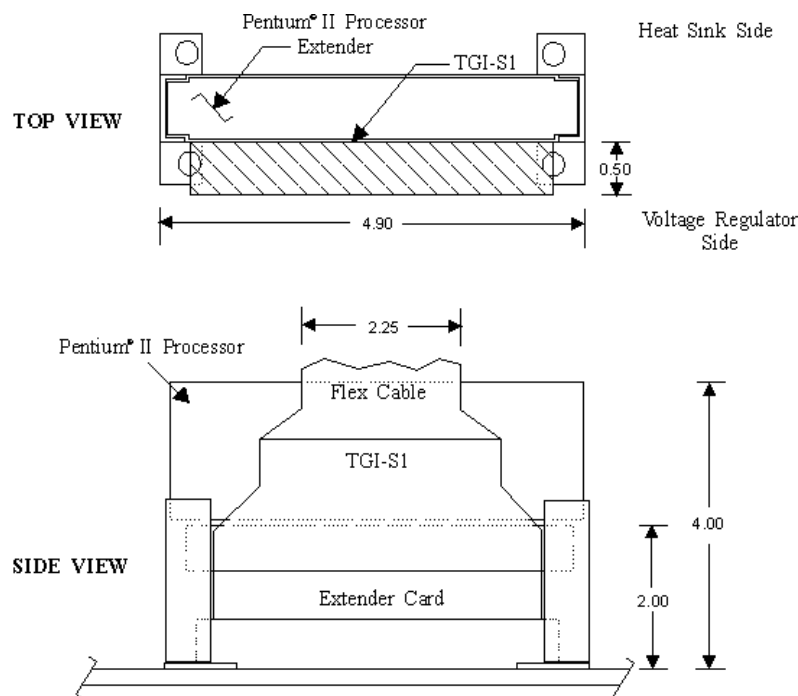

Figure 1: Keep Away Airspace Measurements in Inches

Installing the ICE is a very straightforward. An extender card is plugged into the socket normally occupied by the Pentium® II processor, and the processor plugs into a socket in the top of the extender card. Attached to the side of the extender card is either a TGI-S1 or TAP-S1.

The TGI-S1 flex-circuit connects the extender card in the target to the rest of the TRC-S1.

The TAP-S1 is a circuit card that pulls out the TAP signals from the processor, and is used by the ECM-S2 if the target motherboard is not hosting a JTAG debug connector. If the motherboard has a debug connector, neither the extender card nor the TAP-S1 are necessary.

american arium

14281 Chambers Road
Tustin, CA 92780
Voice: 714-731-1661
Fax: 714-731-6344
Web: www.arium.com
E-mail: info@arium.com