



**ORCHID TECHNOLOGIES ENGINEERING & CONSULTING, INC.**

## **Introduction**

Shrinking product development cycles coupled with demanding product requirements and increasingly complex design implementations can overwhelm a design team. The technical risk of employing new, complex, high-speed processor technology can often deter a design group from incorporating new technology in their product designs.

Intel Corporation's ATOM processor and low power chipset solution is a technology choice which cannot be overlooked. With the potential for wide application in deeply embedded, low power, fanless industrial, medical, communications, automotive and consumer applications this technology demands attention.

Orchid Technologies, a developer of custom electronics product solutions, can help. With our new ATOM processor technology core design, we can combine your custom electronic hardware with an ATOM processor core. The result is a highly integrated circuit board solution customized for your applications needs. The development time and risk are low, because Orchid Technologies has done much of these designs before. Your custom design builds on our firm foundation of design success.

## **Intel ATOM Processor Technology**

The Intel ATOM, Intel's smallest chip, designed for low power and high performance devices, is setting the stage for future innovation in embedded architectures. For example, the ever growing MID's (Mobile Internet Device) presents enormous opportunity to gain competitive advantage by implementing a low cost, high performing, low power, Intel chipset into your design. The Intel Centrino Atom processor technology, includes the Intel Atom processor, a low-power companion chip with integrated graphics providing high definition video with little power consumption for the best Internet experience.

Intel is breathing new life into the embedded IA32 universe. For the last ten or so years, embedded X86 developers have had a limited range of silicon devices to choose from. The introduction of Intel's ATOM will be a boon to the entire industry. Though originally designed for the MID market-place, industrial, medical, and automotive product developers can now take advantage of the latest developments in embedded IA32 architecture. With its extraordinarily low power operation (enabled by Intel's IMVP-6 low power technology) industrial controls developers, medical product developers, automotive developers, and ruggedized computer developers can each benefit from this new architecture.

## **Orchid Technologies Engineering and Consulting, Inc. (OTEC) – A Unique Electronics Products Developer**

Orchid Technologies is unique among electronic product development companies. We have been doing electronic product development for over fifteen years. We have designed almost every conceivable type of product, and we have integrated almost every variation of electronics, bringing a wealth of insight and experience to all our product designs.

Within the IA32 design space, Orchid has designed many highly customized Intel-processor-based (IA32) circuit boards. We bring the combined knowledge of analog and specialized circuit design together with existing IA32 architecture design and BIOS firmware customization. The result; a unique, customized circuit board designed to address our client's specific needs.

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**Among the many circuit board designs we have performed are:**

- **Converse's Series IV Telecommunications Processor.**  
This Pentium-based product built on Orchid's IA32 Processor Core Design, interfaces to sixteen Texas Instruments DSP devices, a dual port memory interface, and T1/E1 WAN networks.
- **Dialogic Corporation's Private Branch Exchange Processor.**  
This Pentium-based product built on Orchid's IA32 Processor Core Design, is coupled to a Texas Instruments based DSP Soft Modem, Solid State Disk Drive, and Telephony Line interfaces.
- **Moving Map Technology IA32 Avionics Processor.**  
This Pentium-based product built on Orchid's IA32 Processor Core Design was combined with our client's specialized DO-160 avionics requirements, specialized power conversion requirements, and special IA32 failover architecture.

**Meeting Design Challenges**

Orchid has met clients' design challenges by using a three-phase approach to product development.

- **Phase Zero:** Orchid reviews our client's product design requirements in detail. Working with your requirements and concerns, Orchid creates a Phase One Development Plan that includes: i) Top-Level Specification, ii) Non-Recurring Engineering (NRE) Cost Model, iii) Prototype Cost Model, and iv) Phase 1 Development Schedule.
- **Phase One:** Orchid executes the Phase One Development Plan. During this phase, Orchid performs detailed design, fabrication, assembly, checkout and debug tasks. The purpose of the Phase One period is to design and deliver Phase 1 prototype units as defined in the Phase One Development Plan.
- **Phase Two:** Orchid and our client evaluate and test the Phase One prototypes. Agency approvals testing may be performed, specification additions may be considered, design errata are corrected. The Phase 1 prototype design, is made production-ready. Practical experience shows that product tweaks and changes are inevitable. Phase Two addresses those changes readying the product for pilot and then full production.



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**Choose an Intel Design Expert**

Orchid Technologies has competent answers to the most challenging Intel Atom design questions. Today's electronic product development requires the skillful blend of expert hardware and software engineering together with a spirit of creativity and innovation, tempered by the practical concerns of manufacturability, cost consciousness, testability and on-time delivery. Orchid will work with your idea, perform detailed design, construct prototype units, refine the prototype design and manufacture your electronic product fast, accurately, on-time and within budget.

For more information: Call Orchid Technologies to discuss your specific needs and cost requirements at 978-461-2000 x111 or visit our website at [www.orchid-tech.com](http://www.orchid-tech.com)

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