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Introducing The Cardinal™ USB Dongle

Conveniently Install AMOS™ On Virtually Any Modern Windows XP® PC

Dear Alpha Micro Dealer:

For years, it has seemed that the “Holy Grail” for Alpha Micro dealers has been the ability to run AMOS on a laptop. Sure, the Falcon family of products has long permitted running AMOS on a PC, but with the exception of early laptops that had ISA sockets, it has never been possible to boot AMOS up on a portable computer.

That changes today: Alpha Micro is pleased to announce the availability of the Cardinal, a new dongle-style Application Processor which provides much of the functionality of the SuperFalcon™ card, off of a USB port. And laptop compatibility is only the beginning...



A More Convenient Tool to Distribute Your AMOS Software Worldwide

The simplicity of the Cardinal now makes it possible for you to deliver your AMOS solution to a wider area customer base without hardware installation concerns. Not every end-user is comfortable with installing a SuperFalcon PCI card, even less so if the motherboard happens to be incompatible. But everybody should be fine with plugging in a dongle. This opens up new worlds:

Single-user and small user count applications, such as Point-of-Sale, are now more viable than ever before. Users will experience performance faster than an AM-6000, at a fraction of the price.

Simplify your sales efforts: Ship a Cardinal and a CD containing your application to a potential customer anywhere. No need to make an on-site visit to make a low-margin sale. Just loan them your solution! ***Installation of your AMOS software is now just as simple as any Windows application!***

Lower cost of installation means lower price of your delivered solution, means more sales of your AMOS products!

New Microcontroller Technology Makes It Possible

If you have taken a close look at a SuperFalcon card, you have surely noticed that it contains a lot of circuitry crammed into a compact space. It also makes use of programmable logic chips that surround the ColdFire® CPU, to interface it to the outside world.

Recent advances in microprocessor technology have made available a new type of microcontroller chip that combines much of the SuperFalcon's circuitry onto one chip, seen at the top in the photo to the right (the lower chip is the SSD). This microcontroller contains:

- A programmable microprocessor, analogous to the ColdFire
- A USB interface
- RAM
- ROM
- Flash firmware
- Data bus interface for the SSD chip

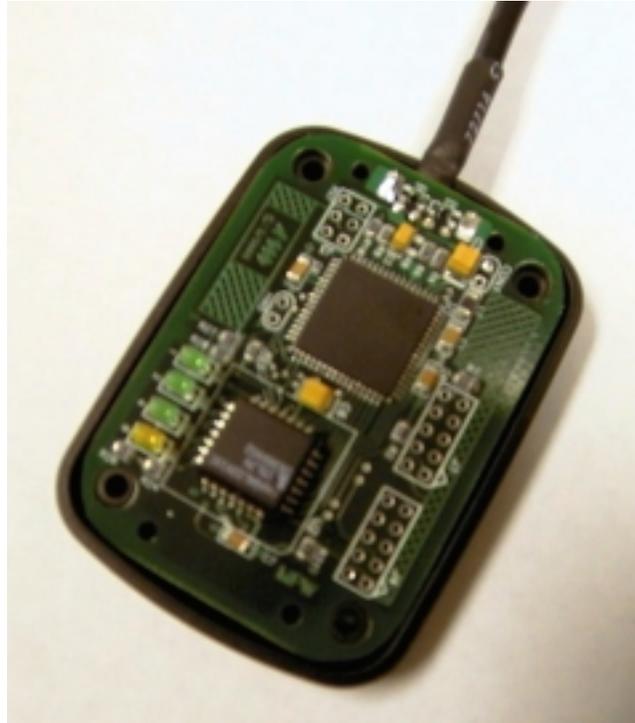
After evaluating a number of these new microcontroller designs, Alpha Micro settled upon a chip developed by Atmel, which has the most functionality we could find on one IC, yet had the programmability we needed.

With flexibility comes complexity: Over the past year, Alpha Micro's Engineering staff has written a significant amount of code, both to program the Atmel microcontroller itself, and to modify AMPC and AM8000.EXE to communicate with the Atmel chip. The result is a device that replicates the coprocessor functionality of the SuperFalcon card, including the SSD, in a small plastic box that connects to a USB port. With this unit, you can finally boot up AMOS, or more specifically the new AMPC™ 7.1, on any Windows XP computer, including notebooks.

The name "Cardinal" continues in Alpha Micro's aviary tradition, and is also an acronym for "[AM-113] CARD In A Little [container]".

Smaller Entry Level AMOS License Results In Lower Price

The Cardinal is supplied with a 2-port starter AMOS license instead of the SuperFalcon's four port license. As a result, the Cardinal has a very low entry-level price. This gives you the ability to sell into single-user marketplaces that may never have been AMOS candidates before. Eagle 750 pricing has also been lowered accordingly.



Solves The Compatibility Problem

The BIOS on some motherboards would not detect the SuperFalcon card. Occasionally, we could solve that problem by re-programming the board ID to be a more commonplace “COM Port” rather than a “Multifunction I/O Controller”, its more appropriate classification. Other motherboards pinned out the PCI bus differently and were electrically incompatible with the SuperFalcon. Still other motherboards don’t have 32-bit PCI slots at all, a more fundamental problem.

The Cardinal is designed to end those incompatibilities: Any Windows XP® computer with a USB port will work. USB is a popular technology, not about to be phased out any time soon. That makes the Cardinal a longer term, more trustworthy solution to installing AMOS on a PC.

Requirements

The host PC must be running Windows XP Home® or XP Professional®. Full testing with Windows Vista® has not yet been completed, but Vista is intended to be compatible. Pre-XP versions of Windows are not supported.

The Cardinal is intended to connect directly to a USB 2.0 port. Connections through USB hubs slow down USB bus traffic and are not recommended. USB 1.1 ports are not supported.

Dedicated RAM for AMOS No Longer Needed

The SuperFalcon requires on-board RAM for AMOS. In contrast, AMPC 7.1 and the Cardinal obtain their AMOS memory from the Windows pool, therefore dedicated AMOS RAM is not needed. *This lowers the cost of installing AMOS on a PC versus a SuperFalcon even further!* The host PC should have at least 512 MB RAM to provide sufficient real (not virtual) memory for AMOS to use.

Serial Ports Now Optional

Today, most AMOS users connect to their servers via Telnet. Increasingly, printers are connected over a network via LPR. Because so many AMOS systems are connected to the Internet, modems are becoming rarer. Therefore, serial ports are becoming less and less frequently used. As a result, Alpha Micro will not be supplying serial ports standard with the Cardinal. Of course, many PCs already come with one or two COM ports.

COM Port Incompatibility Resolved

Since the introduction of AMPC 5.0, a number of issues have been resolved that made COM ports behave differently from “Alpha Micro-style” serial ports as found on AM-359 cards. The last outstanding problem was the inability for Autolog’s™ SLAVE.LIT to work on a COM port. This problem has been corrected in AMPC 7.1.

Therefore, Alpha Micro now believes that COM ports are an acceptable replacement for all small-number AMOS serial port applications. Of course, you must use appropriate adapters to make COM ports work with cables designed for “Alpha Micro style” serial ports. Those adapters are

detailed in our VAR Price List and were recently discussed in VAR Technical Advisory VTBO6-02, "COM Port vs. AM-113/359 Port Pinouts", dated August 21, 2006.

SSD Built-In

Each Cardinal includes an SSD chip. Due to the size constraints of the device, the SSD chip is soldered onto the board. It is not socketed like previous SSD designs. Therefore, the SSD is a permanent part of the dongle. Alpha Micro will provide SSD exchange programs for those situations where you require changing to a different SSD number.

Magic Codes for AMPC No Longer Required

When we updated AMPC with enhancements and patches done for AM8000.EXE to create AMPC 7.0, we imported the Magic Code system that locked AMPC to a particular piece of hardware. After feedback from dealers, we have removed the Magic Code system from AMPC 7.1. AMPC 7.1 will also work with the SuperFalcon, so Magic Codes are no longer required for them, either.

As you were able to do with previous versions of AMPC, you can once again change your underlying PC hardware without requiring a new encodement from Alpha Micro.

Mounting Considerations

Because the Cardinal is small and lightweight, it needs to be secured so that it does not fall off easily. For ease of use and maximal compatibility with a variety of environments, we provide Velcro[®] strips to attach the unit to the side of a PC chassis.

Alternatively, you can mount the Cardinal inside a PC chassis, connecting it directly to a motherboard USB port. You will need to provide any necessary internal cable to connect the Cardinal cable to the motherboard internal USB connector.

Treat It Carefully – Don't Lose It

You and your customers will need to treat Cardinals with care. Despite their compact size, they contain the SSD which is the embodiment of the license for your software. Alpha Micro will not provide replacement Cardinals with the same SSD number as an earlier unit, unless you are able to return the earlier, defective unit to Alpha Micro. Advance exchanges will be available, however.

In practical terms, your users must be careful not to position the Cardinal in an unsafe place. For example, don't let someone from the cleaning staff yank out a Cardinal while vacuuming around a PC. If you lose a Cardinal, you lose all rights to have that SSD number recreated. With portability comes responsibility!

Alpha Micro itself has a responsibility to its fellow AMOS software developers to protect the uniqueness of each SSD chip and therefore cannot deviate from this policy under any circumstances.

Pricing

AMOS for the Cardinal requires a new PIC Code, different from the PICs for AMPC 7.0 or AMPC 7.1 for the SuperFalcon, as well as other versions of AMOS for larger Alpha Micro systems.

As with AMPC 7.0, network (LPR) and TRMDEF'd printers do not count as users consumed by the AMOS port license.

Alpha Micro will accept orders for upgrades to the Cardinal from older systems, however there will be no trade-in credit for the old CPU, except for SuperFalcon boards (see details below). AMOS will have to be re-licensed; there is no credit for the previous AMOS license. In this case, an "upgrade" signifies use of an existing SSD chip in the Cardinal. You will need to return the SSD from the old system within three weeks after you receive the Cardinal. An Upgrade Registration Form, included in the VAR section of this announcement, must be faxed to Order Administration.

A trade-in credit will be granted for the return of SuperFalcon boards. Also, the full AMOS license for these boards will be transferred at no additional charge. See the Price List attached to this Marketing bulletin for further details.

Because we realize that small systems often evolve into large systems, the Cardinal's AMOS license will transfer at no charge to a larger Alpha Micro system down the road. For example, if you purchase an 8 user AMOS license for a Cardinal today, and upgrade to an Eagle 800 two years later, there will be no charge for the equivalent 8 user AMOS/32 license.

Upgrade Opportunities

AM-113 and ISA Falcon users in particular should be interested in an easy migration to a faster solution compatible with current technology PCs.

Please note that a Cardinal will not run AMOS any faster than a SuperFalcon running AMPC 7.0, so a Cardinal is not recommended to users whose SuperFalcons are running satisfactorily.

SuperFalcon Still Available

If you have an application that is better suited to a SuperFalcon card than to a Cardinal, we will continue to make those available if demand exists. Let Order Administration know if you will continue to have a marketplace for them.

Availability

The Cardinal is available now. All Eagle 750 orders will also be filled with Cardinals at the new, lower price, unless you specify otherwise.

A New Tool With Which To Approach Smaller User Sites

The Cardinal is the first product to allow your AMOS applications to install on generic PC hardware as conveniently as any other Windows software does. You can now market your solution to a geographically broader base of prospective customers without having to be concerned about

hardware installation costs and inconveniences. These issues have long presented a challenge to VARs trying to attract smaller end users.

Now your imagination is the only limitation. Even single-user laptop installations of AMOS are now possible, opening up interesting new avenues of growth for the Alpha Micro community.