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## Low Cost Internal SATA-2 RAID Level 1 Product Announced

*Affordable Disk Mirroring For Eagle 750™ and Eagle 800™ Systems*

Dear Alpha Micro Dealer:

A surprisingly high percentage of new-generation Alpha Micro servers today enjoy redundant disk drive operation, largely thanks to the popularity of the AM-452™ internal IDE RAID subsystem. Available since 2004, this unit offers RAID Level 1 redundancy: If one of the two hard drives contained in it fails, the system continues to operate off of the second drive. When a replacement drive is installed into the AM-452, the RAID detects its presence and automatically commences a mirroring rebuild onto the new drive. Simple – exactly the way RAID should be.

Most mainstream disk drives today employ the SATA interface instead of IDE, and thus Alpha Micro is pleased to introduce a successor unit to the AM-452: The **AM-452S™** internal SATA RAID.

### Taking a Good Design and Making It Better and Faster

The AM-452S is a hot-swappable, non-stop disk array that attaches directly to the SATA interface of Eagle 750 and Eagle 800 Series III servers. Like its predecessor, it sports an LCD display that informs the user of the status of the RAID and any pending rebuild operation. It has a faster processor than its older sibling, and it supports the new SATA-2 3.0 Gbit/sec. standard, also supported by the Eagle 800 Series III motherboard. This results in a low-cost RAID that sports state-of-the-art technology and unparalleled speed for the price.

The AM-452S requires two 5.25” half-height drive bays for physical mounting (see below for expansion options). It utilizes the same SATA-2 disk drives currently sold with Eagle 750 and Eagle 800 systems.

The AM-452S can house two identical hard disks (current capacity is 160 GB each), mounted in hot-swappable disk drive trays, as shown in the adjacent picture. Should one of the hard disks fail, an audible alarm sounds and the system administrator can easily replace the failed hard disk while the system is operating, resulting in no system down time. Once the failed drive is replaced, the AM-452S automatically rebuilds all contents of the existing disk on to the new hard drive. Control buttons on the front panel initiate rebuild operations, and an LCD display informs you of the status of the rebuild. The background disk rebuilding is fully transparent to the system users.



## True Hardware RAID For Maximum Performance

Nowadays, it is common to see motherboards include basic RAID capabilities onboard. Likewise, certain operating systems may include built-in RAID capabilities. Many of the former, and all of the latter approaches consume CPU cycles managing what amounts to a software RAID system. This technique can cause unpredictable slowdowns in system throughput.

Alpha Micro's AM-452S is a true hardware RAID. All of the logic that administers the RAID is contained inside the RAID unit. The host system sees the RAID as merely a generic SATA disk drive. There is no overhead to AMOS™ or to XPE to manage the RAID. You get the added protection of RAID without giving up any server horsepower.

## Solid Construction Built to Last

Constructed from steel components, the AM-452S is a durable unit designed to withstand ongoing drive tray exchanges. The high-tech appearance of the unit complements the attractive look of modern Alpha Micro servers.

## How Many Drives To Order

The base AM-452S configuration includes one 160 GB SATA-2 disk drive. If you order the AM-452S in conjunction with a new Eagle 750 or 800, which itself comes with one 160 GB hard drive, you only need that one drive with the RAID. Alpha Micro will deliver the system with the AM-452S holding two 160 GB drives, because the second RAID drive will be supplied in place of the one (non-RAID) drive normally supplied with an Eagle 750 or 800.

If you are adding the AM-452S to an existing Eagle 750 or 800 in the field, you only need to order the basic configuration with one 160 GB disk drive, because you can move the Eagle's standard drive into the AM-452S.

You would be required to order two drives if the existing Eagle's drive were not the same size as the one currently being supplied with the AM-452S. This will happen as drive capacities inevitably increase over time. For example, if your Eagle 800 has a 160 GB drive today, and two years from now you order an AM-452S whose standard drive is then 320 GB in size, then you will need to purchase a second 320 GB drive to comprise the RAID, because the Eagle's original 160 GB drive cannot be used as a mirror to the 320 GB drive.

Consider purchasing an extra drive and drive tray so that you have an additional disk module on hand in the event of a drive failure.

## Mounting Space Considerations for the Eagle Chassis

Since the current Eagle chassis has only three 5.25" half-height drive bays (one for CD-RW or DVD-RAM peripheral, and two for the internal IDE RAID), any additional 5-1/4" peripheral, such as a streaming tape drive, will require one of the following options for Eagle 750 and 800 configurations:

- ◆ House an additional peripheral, such as a streaming tape drive (not the AM-452S RAID unit) in an external enclosure, such as the PDB-00904-00 (see attached Reseller Supplement).
- ◆ Purchase the Eagle with the Larger Pedestal chassis or Rack Mount chassis option, which provide additional 5-1/4" peripheral mounting bays (see attached Reseller Supplement). In the Pedestal configuration, this essentially puts an Eagle into an AM-8000 chassis.

## Two RAID Models For Different Scale Alpha Micro Servers

The AM-452S is an elegant, low cost RAID solution. Our new AM-453 internal SAS RAID is a better choice for sites that need to stand up to a heavier multi-user load.

The AM-448 has a higher performance SCSI RAID controller with on-board caching. The AM-448 is also available in RAID Level 5 configurations for the ultimate in redundancy.

In general, the AM-452S will be a better fit for Eagle 750 and 800 systems, and the AM-453 will match the types of system loads encountered by AM-8000™ sites. We do not recommend replacing the AM-8000's standard high-speed SAS drive with this SATA RAID, as performance is likely to suffer.

## AM-452S Specifications

Specifications for the AM-452S internal SATA RAID are as follows:

Interface:	“SATA 2” 3.0 Gbit/sec.
Mounting:	Two free 5.25” drive bays with front access
Disk Capacity:	A total of two disk drives, 160 GB each
RAID Configuration:	RAID Level 1
Drive Hot Swap Capability:	Yes
Drive Auto Rebuild:	Yes
Drive Failure Alert:	Yes, audible and visual alarms

## Availability

The AM-452S is available for shipment now.

The AM-452 internal IDE RAID remains available for Series I and Series II systems, for at least the short term.