

# Granite Storage Newsletter

**Letter from the President**

There is one sure thing about storage... it constantly changes. Today storage is larger, faster, and much more affordable. Our new line of Aluminum SATA Storage Systems offers up to 500 gigabytes per mechanism, hot-swapability for easy backup, duplication, and data sharing. SATA also offers simple design and low prices. Disk to disk backups using hot-swap hard drives offer many advantages over tape drives or DVD / CD backups.

With this issue of the newsletter we have tried to explain all the advantages of SATA, eSATA, SATA I, SATA II, and SATA RAID. Once you have an understanding of this exceptional technology you will quickly become aware of the advantages associated with SATA.

SATA RAID is a solution that provides a high degree of data integrity, simple set-up and operation, and the best price performance ratio of any type storage system. In other words, it's fast, simple, and really affordable. We offer a wide variety of Host Adapters that support all the popular OS's including Linux, Macintosh, and Windows.

Please take the time to download our complete catalog / pricelist from our website. If additional detailed information is needed, we also have complete spec. sheets on all of our products.

Frank Gabrielli, President

**Granite**  
**D•I•G•I•T•A•L**  
Providing Data Storage Integrity

**SATA II Hot-Swap**

**Volume 11 Quarter 1 Winter 2006**

## SATA II External Aluminum Hot-Swap provides cool operation without a fan.



Aluminum construction keeps any SATA I or SATA II drive cool while eliminating noise (no fan), lowering cost, and making these systems lightweight and compact. We designed in simplicity, but still offer the same Hot-Swap capabilities of our higher priced models. By adding additional Drive Trays, storage capabilities are limitless. Simply slide one Hot-Swap Tray into the enclosure and the drive becomes

available to the computer... remove it when finished and put in another... it's that simple. Additional Drive Trays are affordable and the "economy of scale"

Drive mechanism installs in tray and allows easy removal when needed.



### SATA II (External) Hot-Swap features and benefits:

- Offers true hot-swapability..insert a drive with power on.
- Supports data transfer rates up to 300MB/s.
- Commercial quality construction guarantees over 50,000 tray insertions.
- Ultra cool operation without the need of a fan.
- Uses SATA I or II drives; allows you to choose a drive based on size, speed or cost.

• Granite Digital • 3101 Whipple Rd. • Union City, Ca. 94587 •  
• 510-471-6442 Tel • 510-471-6267 Fax • [www.granitedigital.com](http://www.granitedigital.com) •

## SATA II Hot-Swap

that they provide offers the lowest possible cost per gigabyte.

Our larger Aluminum Storage Systems include 2-Bay, 4-Bay, and 8-Bay models. Combined with the proper host adapter these storage solutions are faster and more affordable than other storage solutions

on the market today. The added advantage of Hot-Swap allows for unlimited capabilities, an easy backup



2601

2 Bay SATA II Hot-Swap System

**Trays \$19.95!!!**



SATA Aluminum Drive Tray

solution, data sharing, and RAID capabilities. The key to this system is the inexpensive drive trays pictured above. These trays fit any SATA I or SATA II drive mechanism. By simply sliding the drive into the protective aluminum tray and installing the four screws, additional drives can easily be added to any data library.

Part #	Description	Each
5346	SATA II Hot-Swap 1 Bay Internal	49.95
3552	SATA II Hot-Swap 1 Bay External	69.95
2601	SATA II Hot-Swap 2 Bay External	159.95
2312	SATA II 2 Bay Hot-Swap	199.00
2310	SATA II 4 Bay Hot-Swap	299.00
3340	SATA II 2 Bay Rack Hot-Swap	199.00
5736	SATA II 4 Bay Rack Hot-Swap	399.00
1922	SATA II 4 Bay Rack Expandable	499.00
1512	SATA II 8 Bay Rack Hot-Swap	699.00
3420	Additional Hot-Swap Tray	19.95
2360	Padded Carrying Case for Tray	9.95
1033	SATA-SATA 3' Shielded Cable	14.95
2361	SATA-SATA 6' Shielded Cable	19.95
1029	SATA-eSATA 3' Shielded Cable	24.95
5007	SATA-eSATA 6' Shielded Cable	29.95

## SATA II Hot-Swap

### SATA Aluminum RAID Rack-Mount 2, 4, or 8 Bay can support 4 Terabyte capacity and run at over 600MB/s data transfer rates!



2 Bay Rack Mount SATA II Hot-Swap Systems

3340

5736

4 Bay Rack Mount SATA II Hot-Swap Systems

1922

1512

Sharing data, moving data, backing up data, duplicating data, and securing data are but a few of the benefits associated with Hot-Swap.

Additionally, SATA Drive data transfer rates are faster than IDE which also makes these systems the preferred choice for any time critical jobs. Applications like DV capture or AV recording are operations that are perfectly matched to this advanced storage technology. Now projects can be recorded directly to these fast SATA drives and stored, transferred, shipped, duplicated whenever necessary.

RAID 5 capabilities are supported by the larger 4 and 8 Bay Systems.

Combine these systems with a RAID controller card and have an affordable, safe, storage solution that offers better

8 Bay Rack Mount SATA II Hot-Swap System

price / performance than other types of storage systems that cost much more. The added benefit of the Hot-Swap Trays is that they also allow these systems to be used as a backup device. Multiple drives can be formatted into a RAID while individual



2 Bay SATA II Hot-Swap System (expandable to 4 bay)

2312

2310

4 Bay SATA II Hot-Swap System

drives can be formatted for offsite backups or for data sharing with other systems.

## SATA I vs. II

With the introduction of SATA II many facts have been misunderstood. Here are some of the real truths about SATA I vs. SATA II.

SATA I has a maximum data transfer rate of 150MB/s. This means that each drive can go up to 150MB/s burst data transfer rate while maintaining a "real world" 60MB/s sustained data transfer rate. SATA II has a maximum data transfer rate of 300MB/s while maintaining a "real world" 70MB/s when using a SATA II Host Adapter and a matching SATA II Drive Mechanism. The important fact to note is that the 150 and 300 MB/s data transfer rates really do not have much to do with the rates you will see from your drives. SATA II is not twice as fast as SATA I unless it is used in conjunction with another new technology called "Port Multipliers".

SATA I and SATA II use the same type of cables. Internally the original "L" style connector is used on both drive mechanisms and on host adapters or on-board SATA channels. This connector is very similar to the eSATA "I" style connector which is designed to be used externally. The difference in the connectors is very slight. The external "I" connector allows for more insertions. This allows external case kits to be continually plugged in and out. These connectors need to be mated to a shielded cable in order to provide a good data transfer and clean signals. SATA "L" style connectors are also used with shielded external cabling when the connector does not need to be plugged in and unplugged continuously. Granite uses SATA "L" type connectors on all of our Hot-Swap Systems because the cables are not plugged in and unplugged... rather the drive mechanism is what is being Hot-Swapped. This allows us to provide a more affordable solution for our customers without sacrificing

## SATA Backup RAID

# Granite SATA II Hot-Swap Systems provide storage solutions from simple backup to large scale RAID capabilities.

RAID compatibility, unlimited storage, and data protection is what these SATA Hot-Swap Systems offer. Now inexpensive SATA (Serial ATA) drives can be used in our SATA Hot-Swap Trays and as much storage as is required can be dedicated for backup, DV, AV, database application, and all other types of storage needs. To add more drives simply buy extra trays as needed. The trays are inexpensive and offer the best solution for large storage needs. These systems can also be configured for RAID using the OS's RAID capabilities or by using dedicated hardware RAID controller cards.

The heart of these SATA Hot-Swap Systems is our unique Aluminum Tray technology that allows SATA drives to be inserted or removed while the computer is running and the power is on. These Trays are also so efficient they provide enough cooling that fans are not needed. This eliminates the problems associated with overheating when fans stop working. The system operates very much like a floppy drive with the exception that the amount of storage is thousands of times larger. We support true ATA-6 specifications giving us compatibility with all the new larger drive mechanisms.

Making additional copies of important data can easily be accomplished by simply inserting two drives and copying from one to the other. This allows for duplicates that can be transported anywhere in the world. This is the most logical way of moving Gigabytes of data from one location to another.

These units come complete with Trays and hardware. To complete any system the following items will also be



needed:

- Shielded SATA Cables (one cable is required for each drive) Only Shielded Cables should be used and the maximum length allowed is 6' when using Granite SATA or eSATA types.
- SATA Drive Mechanisms of any capacity can be used. If a RAID System is being set up, the drives should all be the same capacity.
- SATA PCI Host Adapter or Cardbus Card that supports Hot-Swap. All the controller cards that we offer support Hot-Swap. Check with the manufacturer to make sure Hot-Swap is supported.

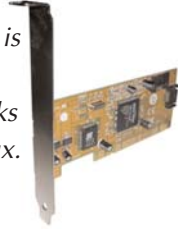
## SATA Host-Adapters

SATA I & SATA II Host Adapters incorporate the Silicon Image family of SATA chips. These are the most popular and compatible SATA chips on the market and provide an exceptional price / performance level.

### 2 Channel 2 Internal Connectors

Supports Hot-Swap and is designed for 2 channel internal drive use. Works with XP, 2003, and Linux.

3330 - PCI



### 2 Channel 2 External Connectors

Supports Hot-Swap and is designed for 2 channel external drive use. Works with XP, 2003, and Linux.

4042 - PCI-E



### 2 Channel 1 Internal and 1 External Connectors

Supports Hot-Swap and is designed with 1 external channel and 1 internal channel. Works with XP, 2003, and 2000.

### 4 Channel 3 Internal and 1 External Connector

Supports Hot-Swap and is designed with 1 external channel and 3 internal channels. Works with XP, 2003, and 2000. Supports RAID

8721 PCI



### 2 Channel 2 External Connectors

Supports Hot-Swap and plugs into the Cardbus PCMCIA card slot. Two external channels are supported. Works with XP, 2003, and 2000.

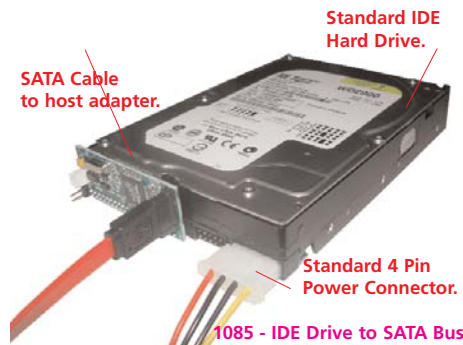


Part #	Description	Each
--------	-------------	------

3330	SATA 2 Ch (2 Internal) PCI	29.95
6030	SATA 2 Ch (1 Int & 1 Ext) PCI	29.95
9504	SATA II 2 Ch (1 Int & 1 Ext) PCI-E+Pw	39.95
4041	SATA II 2 Ch (2 Ext) PCI + Power	39.95
4042	SATA II 2 Ch (2 Ext) PCI-E	39.95
8721	SATA 4 Ch (3 Int & 1 Ext) PCI-X	49.95
3845	SATA II 4 Ch (4 Ext) PCI-X RAID 5	129.95
1084	SATA CardBus 2 Ch - PC only	39.95
8650	SATA II CardBus 2 Ch - Mac/ PC	49.95
3755	SATA II ExpressBus 2 Ch - PC only	59.95

## SATA Bridge Boards

These ultra compact IDE Drive to SATA Bus Bridge Boards convert standard ATA 5 or ATA 6 IDE drive mechanisms into SATA (Serial ATA) mechanisms. These boards are the perfect solution for taking older drives and allowing them to be converted to SATA so that they can work with the newer computers and motherboards on the market. SATA also provides a smaller cable for better internal cooling and easier installation.



Now it is easy to convert any SATA Drive to the standard IDE Bus with our Bridge Board. This allows using the new SATA drives on older computers that do not have the SATA bus. This is a perfect solution for the Forensics community because SATA Drives can be connected to existing hardware at very little cost.



Part #	Description	Each
--------	-------------	------

1085	IDE Drive to SATA Bridge Board	28.95
1087	SATA Drive to IDE Bridge Board	39.95

## SATA Cables & Brackets

The SATAVue™ Internal and External Cables make it easy to connect or disconnect SATA devices with guaranteed reliability. Designed using ultra high quality materials and perfect cable impedance and shielding, the SATAVue Cables outperform the competition.

The Granite SATAVue Cable product line includes innovative designs that allow SATA products to be used internally or externally with no limitation.



• Granite Digital • 3101 Whipple Rd. • Union City, Ca. 94587 •  
 • 510-471-6442 Tel • 510-471-6267 Fax • www.granitedigital.com •