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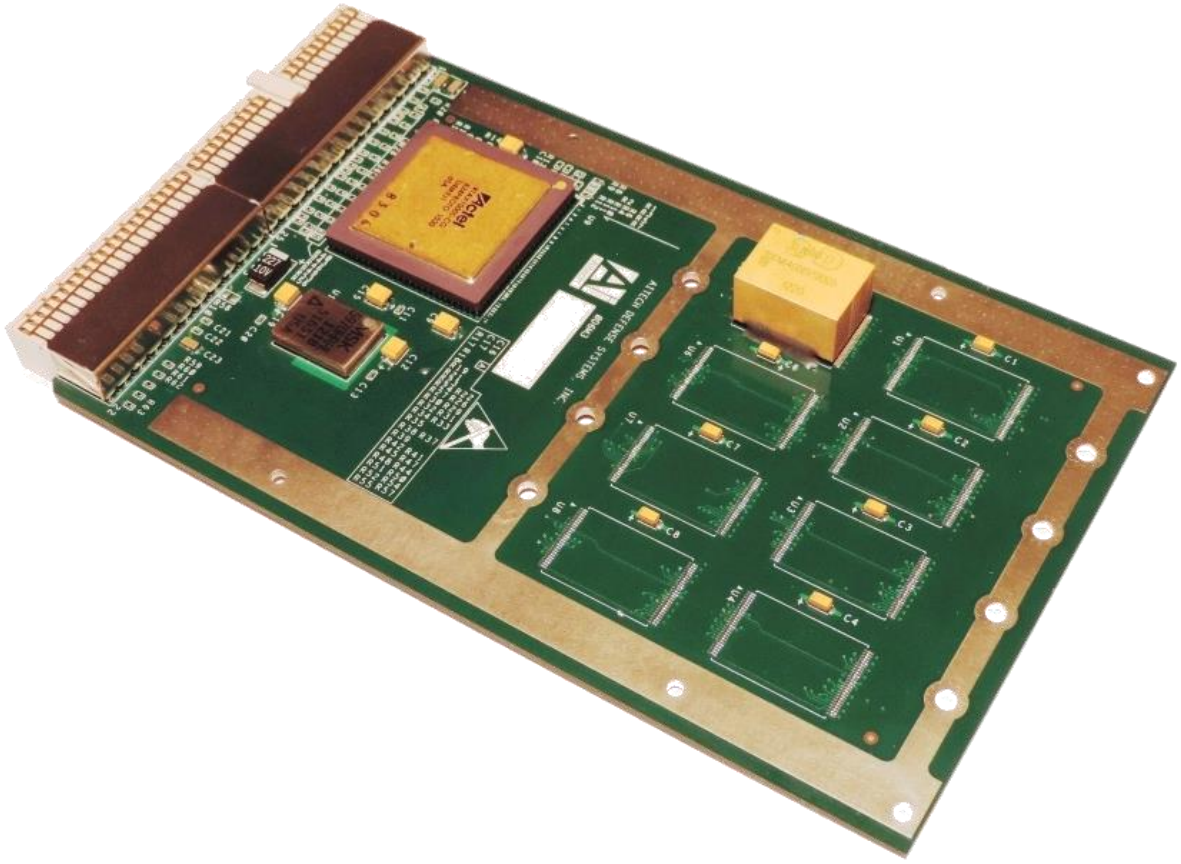
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Find the *Aitech Defense Systems S992* at our website: ***Click HERE***

S992

3U cPCI Radiation Tolerant Flash Memory

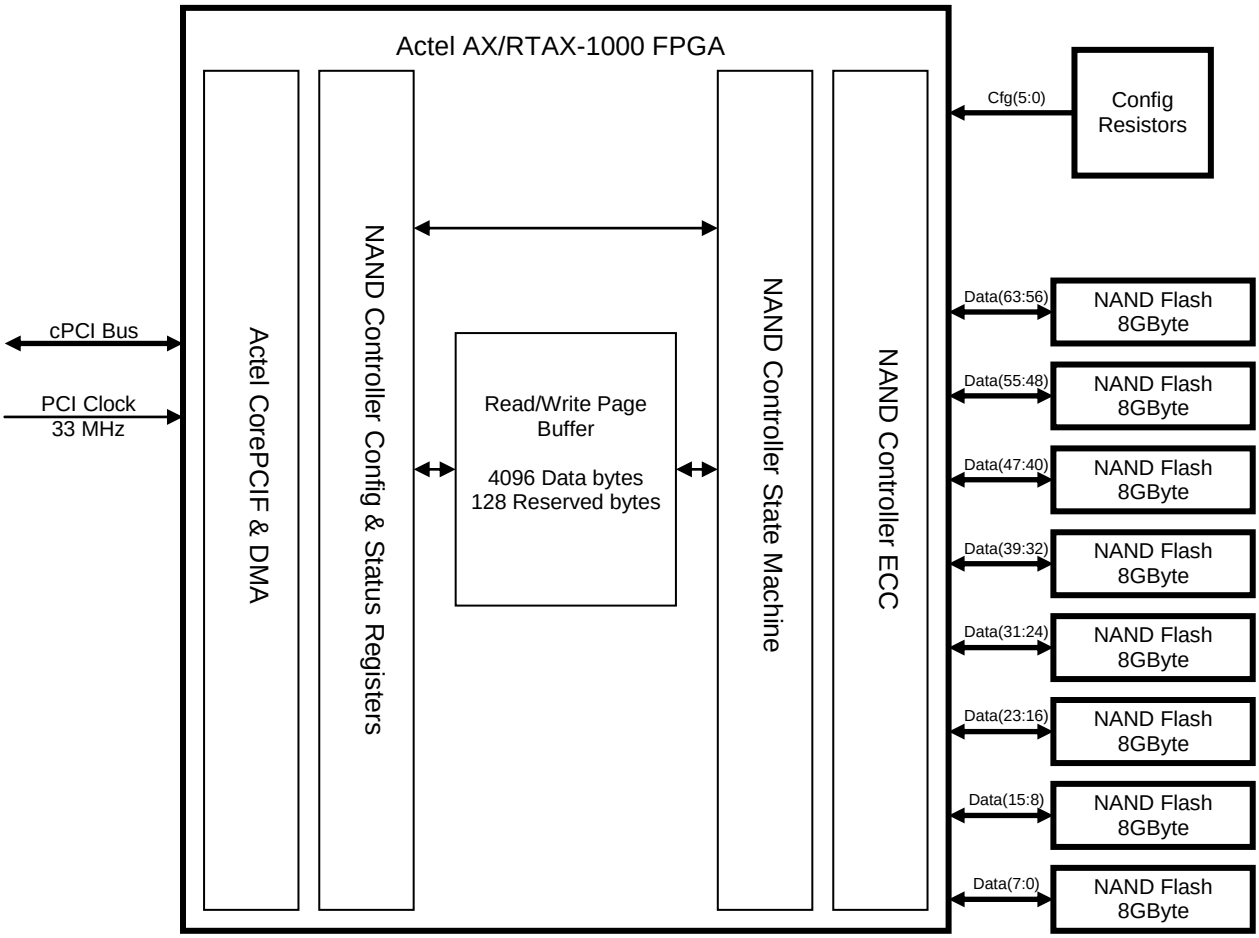


- **Designed for Space Flight Applications**
- **Single-Slot Conduction-Cooled 3U CompactPCI (cPCI) card**
- **Scalable from 8 to 64 GBytes of Non-Volatile Flash Memory**
- **Hardware Error Detection and Correction (EDAC)**
- **PCI DMA Engine for high performance data transfer rates with Interrupts**
- **32-bit cPCI interface at 33.333 MHz**
- **S992 nominal power consumption is less than 2.0 Watts**
- **Flash File Management S/W available with Wear Leveling implemented**

Aitech Defense Systems Inc.
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S992 3U cPCI Radiation Tolerant Non-Volatile Memory Module

Aitech's S992 Non-Volatile Memory Module is a radiation tolerant, high-capacity Flash Memory, 3U CompactPCI board designed to work in the space radiation environments. The Aitech S992 implements the Flash Memory array using one to eight individually addressable radiation-tolerant NAND Flash modules from 3D-Plus. This device is designed to provide reliable data storage, low SEU-rate, and high latch up immunity. The Aitech S992 has built-in hardware EDAC to correct single-bit errors and detect double-bit errors.



S992 Flash Memory Board Block Diagram

High Memory Capacity and Modular

Multiple S992 modules can operate in the same cPCI system to provide incremental storage. Each S992 comes with factory configurable options of 8 GBytes to 64 Gbytes of Memory. The S992 design is ideal for sequential storage requirements and temporary non-volatile data buffers for downlink communication systems. With the Aitech Flash File Driver (FFD) technology, the S992 can be accessed as a file system from any cPCI SBC with a Flash File System implemented. The FFD is a POSIX compliant file system with wear leveling implemented and semaphore protection.

S992 cPCI DMA Controller

Aitech's S992 Flash Memory Module has an on board cPCI DMA Controller. The DMA Controller is programmable to provide both read and write data transfers of up to 4096 Bytes of data per block. The PCI Bus Cycle Burst Length is programmable up to the 4096 Byte limit and is capable of bursting at full PCI Bus Bandwidth with no wait states.

Hardware EDAC (Error Detection and Correction)

The S992 Flash Memory Module has on board Error Detection and Correction logic utilizing the reserved memory on each page of the Flash Memory. The EDAC function detects and corrects single bit errors per memory page and detects double bit errors per page.

The 128 byte reserve memory at the end of each flash memory page is used for EDAC syndrome data storage.

Optional Memory Sizes Available:

The Aitech S992 is available with the following memory capacities:

- 8 Gbytes
- 16 Gbytes
- 32 Gbytes
- 64 Gbytes

Mechanical Features

The S992 is available in a conduction cooled 3U cPCI format per VITA 30.1-2002. A custom metal frame provides high rigidity, shock resistance and thermal characteristics.

Dimensions
All versions are offered in conduction-cooled 3U CompactPCI form factor per VITA 30.1-2002 standard.

Thermal Management
The mechanical design includes a heat sink and frame with wedge locks for heat dissipation and strength of the board assembly.

CompactPCI Backplane Connectors
High performance, Hypertronics™ Hypertac® backplane connectors are available for Series 500 Flight units.

Radiation Performance

- Radiation Tolerant design with mitigation and or immunity to SEE, TID and Latch-up.
- Standard design has the following performance:
  - TID > 60Krads(Si)
  - SEL > 60 MeV.cm^2/mg
  - SEU LET > 2 MeV.cm^2/mg
  - Saturated Cross-section 1E-11 cm^2/bit

Power Requirements

The S992 requires +3.3V from the standard cPCI backplane. The Aitech S992 regulates its own local FPGA Core power on board (+1.5V).

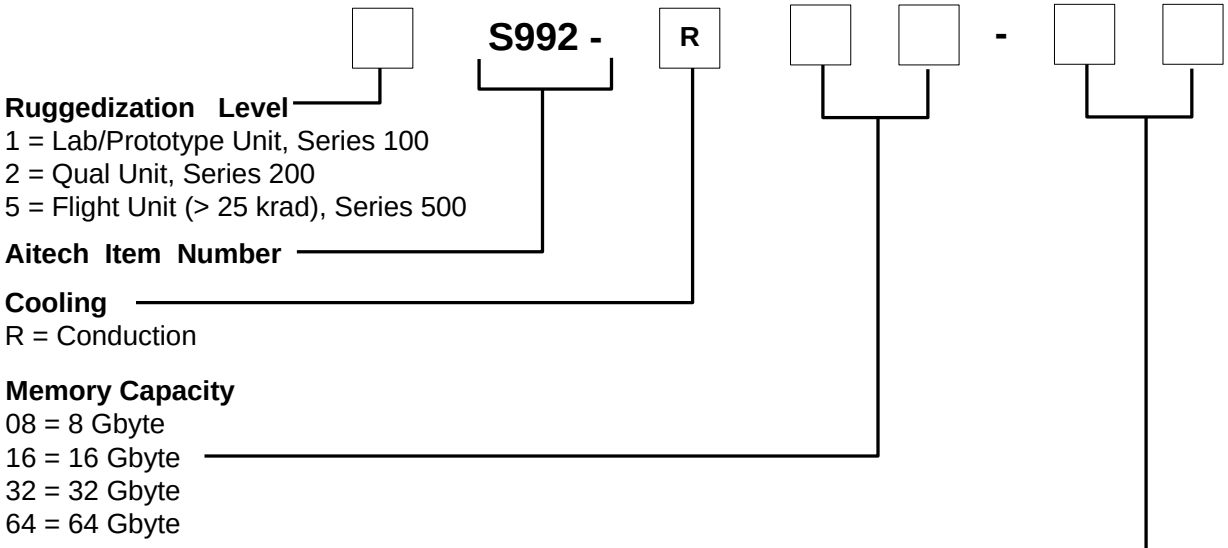
S992 typical power consumption is less than 2.0 Watts with high data transfer rates (lower for lower rates).

The S992 power consumption is as follows:
+3.3V (+-5%) 0.6 A (typical)

Environmental Features

Please refer to Aitech Ruggedization Datasheet for additional information:
http://www.rugged.com/home/rugged.html

Ordering Information for the S992



Ruggedization Level
1 = Lab/Prototype Unit, Series 100
2 = Qual Unit, Series 200
5 = Flight Unit (> 25 krad), Series 500

Aitech Item Number

Cooling
R = Conduction

Memory Capacity
08 = 8 Gbyte
16 = 16 Gbyte
32 = 32 Gbyte
64 = 64 Gbyte

Configuration Number – To be assigned by Aitech
00 = Standard Product
xx = Customer-specific variant

Examples: 2S992-R08-00; 5S992-R32-00

For more information about the S992 or any Aitech product, please contact Aitech Defense Systems, Inc. sales department at (888) AITECH-8 (888-248-3248) or call direct at (818) 700-2000.

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