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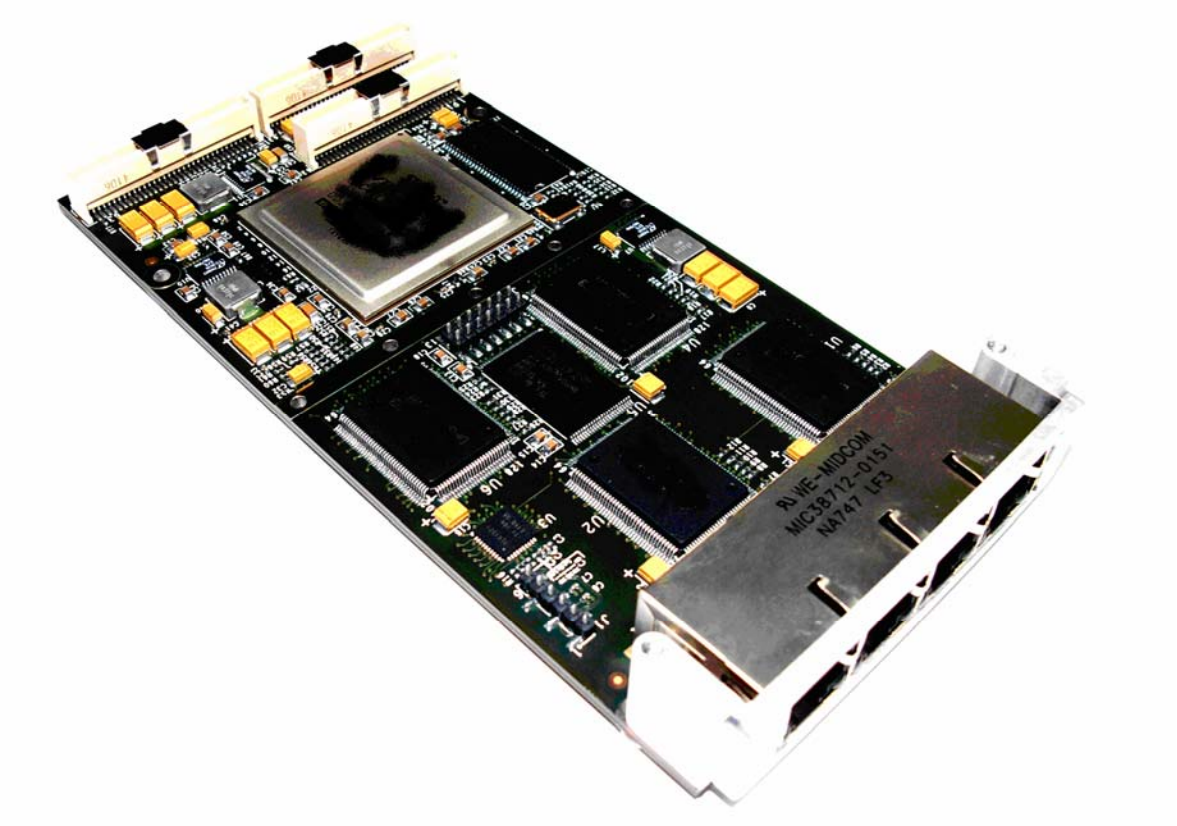
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Find the *Aitech Defense Systems S750* at our website: ***Click HERE***

Patent Pending

S750

Radiation Tolerant Gigabit Ethernet PMC

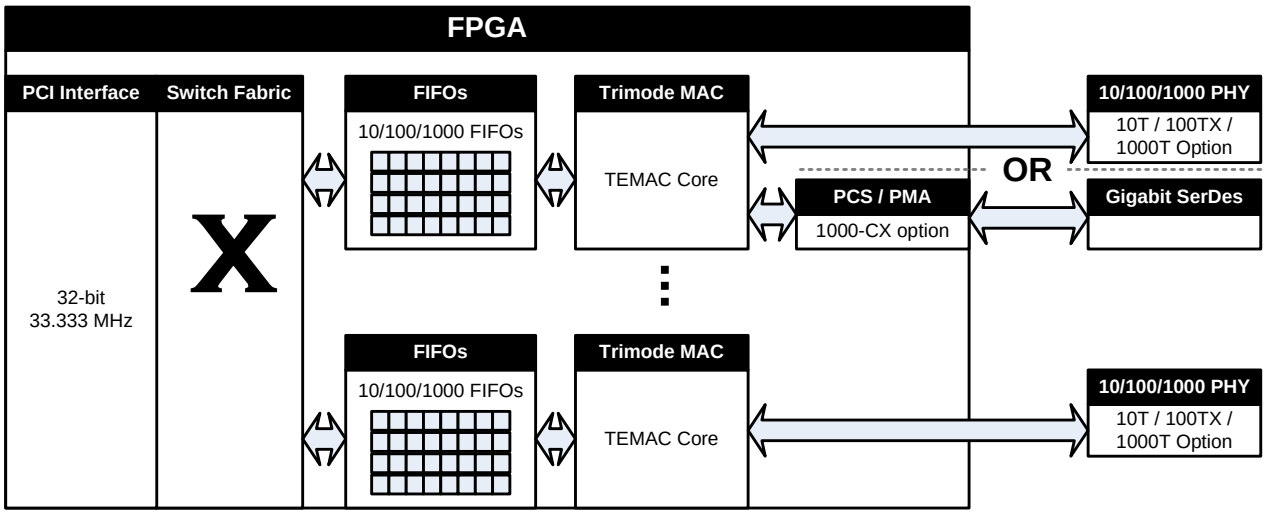


Note: Actual engineering and flight units do not have front panel for Ethernet access.

- **Designed for Launch Vehicle Environment**
- **Four 10/100/1000BaseT Ethernet Layer-2 Switch-Only ports**
- **Programmable FPGA to provide various functions for network layer IP protocol**
- **Provide MAC address translation for high-speed multipoint data distribution**
- **FPGA manage reset of the local Ethernet physical interfaces**
- **Flight unit are available with rear I/O hosted on the s950 SBC to the cPCI backplane**
- **32-bit PCI 2.1 compliant cPCI interface at 33.333 MHz**
- **S750 nominal power consumption is estimated at less than 8 Watts**

Aitech Defense Systems Inc.
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S750 Radiation Tolerant Gigabit Ethernet PMC

The set of features provided by the S750 product are as follow:

- Design to operate and host on the Aitech S950 Single Board Computer (SBC).
- Switch data between all ports based on the Media Access Control (MAC) Forwarding Table.
- Store dynamically learned host MAC addresses for connected devices in the MAC Forwarding Table.
- Provide status to the CPU Software using memory-mapped access over the local PCI bus.
- Provide an operational status of the switch functions to the CPU Software via the Local PCI bus.
- Provide an operational status and control of each port to the CPU Software via the Local PCI bus.
- Manage via the local PCI bus memory mapped registers.
- Host configuration is remained unchanged across power cycles by storing in the S950 User Flash.
- Provide a PCI interface to configure static entries in the forward lookup Media Access Control table.
- Provide a MAC forwarding and MAC translation table with a minimum of 16 entries.
- Provide a memory mapped register to enable or disable the operation of each Ethernet port.
- Provide a memory mapped register to enable or disable the MAC Address Translation function.
- The MAC Address Translation function is disabled at power-up.
- The 1000Base-CX port is designed to meet IEEE-Std-802.3-2005 Clauses 2, 3, 4, 28, 35, 36 and 39 with 150-Ohm impedance physical interface.
- The 1000Base-CX port has a configurable Media Access Control (MAC) Source Address.
- The four Switch 10/100/1000Base-T ports are compliant to the IEEE-STD-802.3-2005 Clauses 2, 3, 4, 28, 35 and 40.
- Each 10/100/1000Base-T port has at least one read/write accessible Media Access Control (MAC) Source Address from the S950.

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Mechanical Features

The S750 is available in a conduction cooled form factor per ANSI/VITA20-2001 for installation on top of an IEEE 1101.2 conduction-cooled carrier board such as the S950 or CM950.

Dimensions

All versions are offered in a conduction-cooled form factor per ANSI/VITA 20-2001 standard.

Radiation Performance

- Radiation Tolerant with a minimum unshielded Total Ionization Dose (TID) of greater than 10 krad (Si). Higher TID tolerance can be available upon request.
- Latch-up Immune with a minimum effective LET of 11 MeV•cm^2/mg
- Low SEU Rate – to be characterized

Power Requirements

The S750 draws most of its power from +3.3Vdc.

S750 typical power consumption is less than 8 Watts. The S750 power consumption is TBD:

+3.3V	(±5%)	2.8 A (typical)
+5V	(±5%)	0 A (typical)

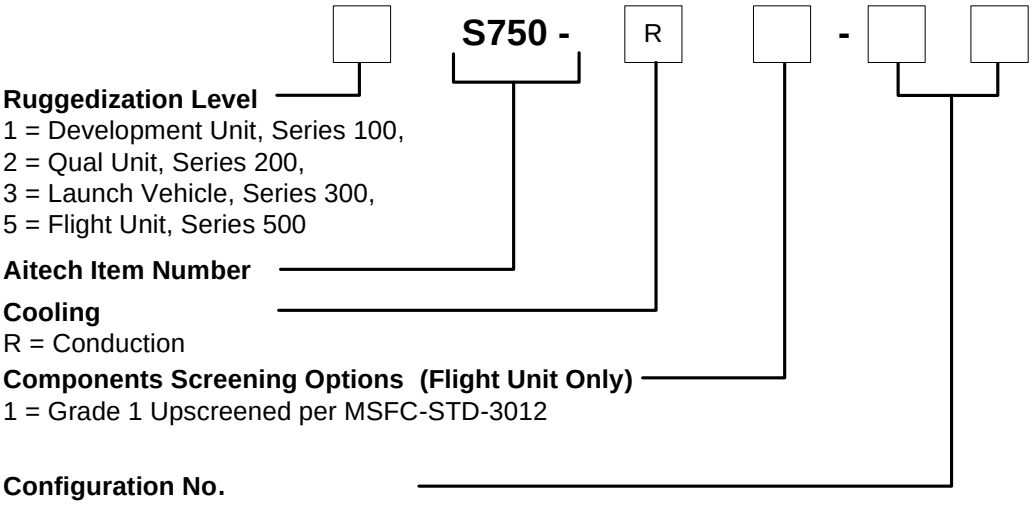
Environmental Features

Please refer to Aitech Ruggedization Datasheet:

http://www.rugged.com/ruggedizaticon.htm

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Ordering Information



Ruggedization Level
1 = Development Unit, Series 100,
2 = Qual Unit, Series 200,
3 = Launch Vehicle, Series 300,
5 = Flight Unit, Series 500

Aitech Item Number

Cooling
R = Conduction

Components Screening Options (Flight Unit Only)
1 = Grade 1 Upscreened per MSFC-STD-3012

Configuration No.
-00 with three 1000BaseT and one 1000Base-CX Ethernet Switch ports
-01 with four 1000BaseT and one 1000Base-CX Ethernet Switch ports
-02 with four 1000BaseT Ethernet Switch ports

Available Configurations are: 1S750-R-00, 1S750-R-01, 1S750-R-02
2S750-R-01
3S750-R1-01

For more information about the S750 or any Aitech product, please contact Aitech Defense Systems sales department at (888) AITECH-8 (888-248-3248).

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