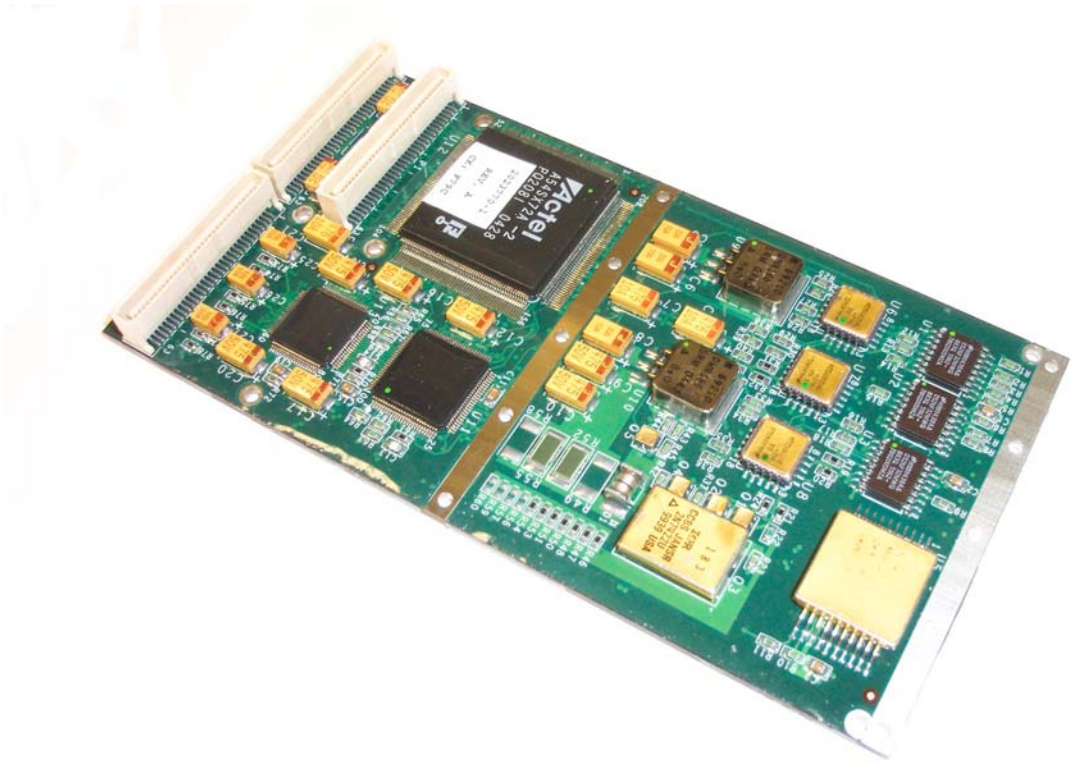
S710

Radiation Tolerant Communication PMC



- **Designed for LEO, Mars Terrestrial with an Option for GEO Environments**
- **One IEEE-1394a FireWire OHCI controller and Three 400Mbps FireWire ports with power management circuitry**
- **12 RS-422 Input and 12 RS-422 Output channels can be configured to NRZ-L, NRZ-M and BiPhase-L Modes**
- **FPGA Control Logic for a variety of spacecraft standard or custom data interfaces**
- **Triple-Voted algorithm is provided for input and output data buffer**
- **Software Configurable Interrupt capability to indicate Completion of Pre-defined Tasks**
- **IEEE 1101.2 (conduction cooled) for both engineering unit and flight unit**
- **32-bit PCI 2.1 compliant cPCI interface at 33.333 MHz**
- **Full-Featured 1394 Software Library is available for VxWorks**
- **S710 nominal power consumption is less than 3.5 Watts**
- **Level-2 Components per NASA GSFC 311-INST-001A specification are available**

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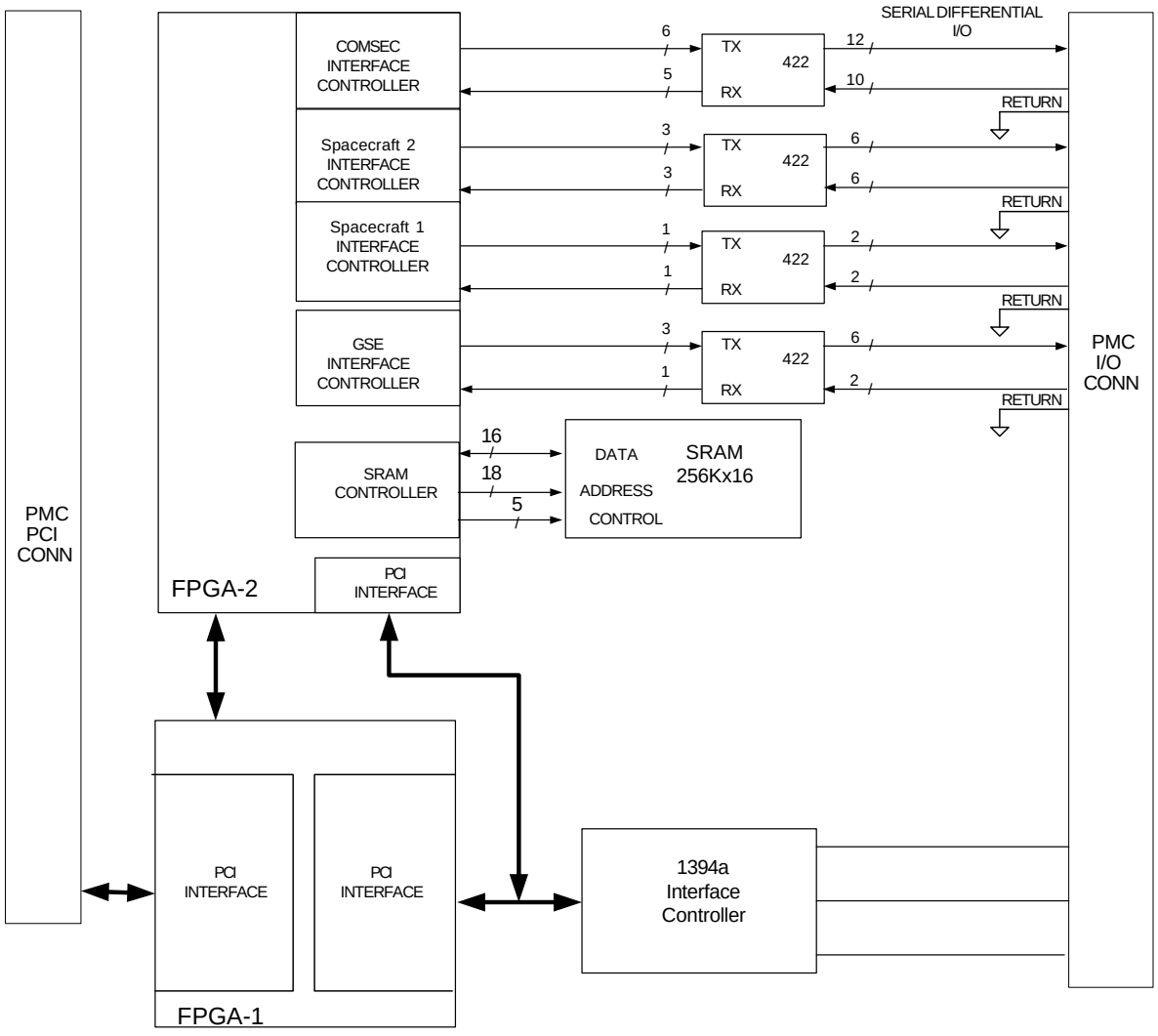


S710 Radiation Tolerant Communication PMC

Aitech's S710 Communication PMC features RS-422 differential Inputs and RS-422 differential Outputs with onboard FPGA logic to interface to the external spacecraft sensors and devices. The incoming data is parsed and stored in a ring buffer or dual buffer modes with a triple-voted mechanism to mitigate single event upset to the on board memory buffer. The S710 also provides for an IEEE-1394a communications interface with 3 physical ports. The FireWire ports are designed to provide DMA capability to local PCI memory. The S710 is a singlewide conduction-cooled PCI mezzanine card (PMC) with a 33.333 MHz 32-bit PCI interface.

Mechanical Features

The S710 is available in a conduction cooled form factor per ANSI/VITA20-2001 for installation on top of an IEEE 1101.2 conduction-cooled carrier boards

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 high LET of 37 MeV•cm^2/mg
- Low SEU Rate – less than 1 upset per 25 years of operation at ISS orbit

Power Requirements

The S710 draws its power +5.0V and +3.3V (VIO inputs) from the standard PMC interface. It then generates its own power on board (+2.5V).

S710 typical power consumption is less than 3.5 Watts. The S710 power consumption is estimated as follows:

+3.3V	(+-5%)	0.51A (typical)
+5V	(±5%)	0.36A (typical)

Note: The power consumption does not account for power drawn by external 1394 device(s).

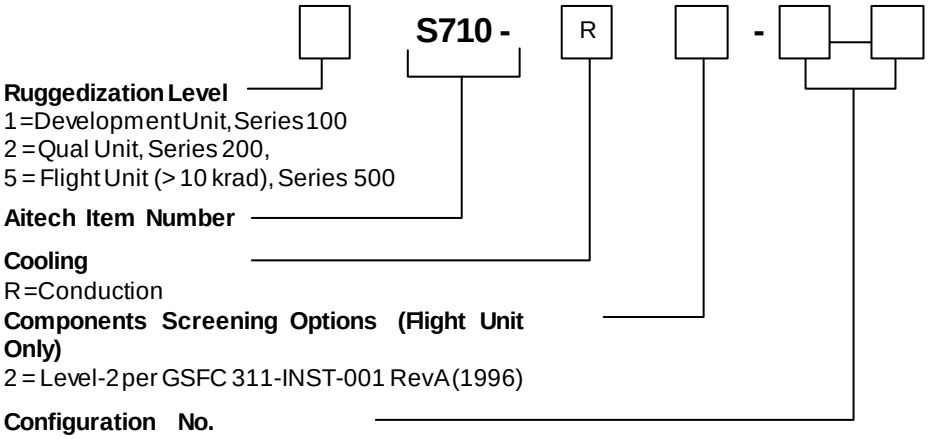
Environmental Features

Please refer to Aitech Ruggedization Datasheet:

http://www.rugged.com/home/rugged.html

Ordering Information

Ordering Information for the S710



Ruggedization Level
1 = Development Unit, Series 100
2 = Qual Unit, Series 200,
5 = Flight Unit (> 10 krad), Series 500

Aitech Item Number

Cooling
R = Conduction

Components Screening Options (Flight Unit Only)
2 = Level-2 per GSFC 311-INST-001 Rev A (1996)

Configuration No.
To be assigned by Aitech

Available Configurations are: 1S710-R, 2S710-R, 5S710-R2

For more information about the S710 or any Aitech product, please contact Aitech Defense Systems sales department at (888) AITECH-8 (888-248-3248).

www.dpie.com

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