The **3U CompactPCI standard single-board computer**, available in flight and prototype versions, employs the PowerPC RAD750® microprocessor, the radiationhardened version of the IBM PowerPC 750. The companion PowerPC bridge ASIC provides access to the memory and the PCI version 2.2 backplane bus.

**Key features**

- Example startup ROM and VxWorks board support package provided for all hardware configurations
- Green Hills Software's INTEGRITY real-time operating system can serve as an alternate board-support package
- Hardware reference manuals and software users guide provided
- Software developed for the RAD6000® processor is easily ported to the RAD750®
- All compilers currently available for the commercial PowerPC 750 are fully compatible with the RAD750® processor
- Operating systems for PowerPC 750-based computers are easily ported to RAD750® computers- VxWorks and INTEGRITY currently available
- Virtutech offers a RAD750® simulator
Specifications

Form factor
- CompactPCI 3U (100 mm x 160 mm)
- Weight: 549 grams

Memory
- 128 MB SDRAM, 256 kB SUROM

Radiation-hardness
- Total dose: >100 Krad (Si)
- SEU: 1.9 E-4 errors/card-day (90% W. C. GEO) varies with orbit
- Latchup-immune

Performance
- >260 Dhrystone 2.1 MIPS at 132 MHz
- 4.3 SPECint95 4.6 SPECfp95 at 132 MHz

Power supply
- 3.3V ± 10 percent
  (2.5 volts generated via on-board regulator)

Power dissipation
- <10.8 watts

Rail temperature range
- -55 degrees celcius to +70 degrees celcius

RAD750® 3U flexible architecture

RAD750® CPU
- PowerPC 750 ISA
- 6 execution units
- 32 KB I and D caches
- 1 MB L2 cache interface
- >260 MIPS at 132 MHz

Enhanced Power PCI Bridge
- PCI 2.2 bus interface
- PCI arbitration/resource controller
- Memory data/address interface
- PROM, SRAM, SDRAM, EEPROM, and C-RAM control
- EDAC-bit and Nibble
- Auto Memory Scrubbing
- 16550 compatible UART
- RAD750 clock control
- Timers, interrupts and discretes
- JTAG controller (master/slave)
- DMA controller
- Embedded microcontroller

Clocks, controls, & JTAG

SuROM
- 128K × 8 EEPROM or 32K × 8 PROM chips
- EDAC – SECDED
- 256 KB EEPROM/64 KB PROM
  – Organized 128K × 24/32K × 24

Sync SDRAM
- 64M chips (16M × 4)
- EDAC – Nibble Correct/SECDED
- 128 MB organized 16M × 80 per row

RAD750® family of products

RAD750® radiation-hardened PowerPC microprocessor
RAD750® 6U CompactPCI single-board computer
RAD750® 6U CompactPCI extended single-board computer
RAD750® 3U CompactPCI single-board computer
RAD750® space computers Virtutech Simics virtual platform
RAD750® custom single-board computers

Disclaimer and copyright
BAE Systems reserves the right to restrict component sales based on application and volume. Please contact the factory for more information.

This document gives only a general description of the product(s) and service(s) and, except where expressly provided otherwise, shall not form any part of any contract. From time to time, changes may be made in the products or the conditions of supply.

BAE Systems reserves the right to restrict component sales based on application and volume. Please contact the factory for more information.

BAE SYSTEMS is a registered trademark of BAE Systems plc.
©2018 BAE Systems. All rights reserved.
CS-16-776

For more information contact:
BAE Systems
9300 Wellington Road
Manassas, Virginia 20110-4122
T: 571 364 7777
W: baesystems.com/spaceproducts

Cleared for open publication on 07/08

BAE Systems | RAD750® 3U CompactPCI single-board computer