

RAD750® radiation-hardened PowerPC microprocessor

The RAD750® radiation-hardened PowerPC microprocessor is the best space microprocessor available today by any selection criterion — performance, cost, availability, or flight heritage.

Based on re-engineered commercial technology, it is a licensed, rad-hard version of the IBM PowerPC 750. With nearly 10 times the performance of current rad-hard space processors, the RAD750 processor is the most powerful radiation-hardened general-purpose microprocessor ever developed.

This chip's architecture supports the industry leading performance of >400 MIPS operating at 200 MHz.

The first RAD750 flight units were launched in 2005 on Deep Impact, XSS-11, and Mars Reconnaissance Orbiter missions. Since those first flights, 28 additional RAD750 microprocessors have been launched.



FEATURES AND CAPABILITIES

Rad-tolerant RAD750 specifications	Rad-hard RAD750 specifications
Technology – 0.25 µm radiation-hardened bulk CMOS	Technology – 0.15 µm radiation-hardened bulk CMOS
Speed – 110 to 132 MHz	Speed – 200 MHz
Radiation-hardness – Total dose: 200 Krad (Si) – SEU: <1.6 E-10 errors/bit-day (90% W. C. GEO) – Latchup-immune	Radiation-hardness – Total dose: 1Mrad (Si) – SEU: <1.6 E-10 errors/bit-day (90% W. C. GEO) – Latchup-immune
Performance – >260 Dhrystone 2.1 MIPS at 132 MHz	Performance – >400 Dhrystone 2.1 MIPS at 200 MHz
Temperature range – -55°C to +125°C	Temperature range – -55°C to +125°C
Packaging – 360-pin ceramic package with column grid array (CGA)	Packaging – 360-pin ceramic package with CGA

RAD750® FAMILY OF PRODUCTS

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

FOR MORE INFORMATION, CONTACT:

BAE Systems
9300 Wellington Road
Manassas, Virginia 20110-4122
Telephone 866 530 8104
www.baesystems.com/rad750

Cleared for open publication on 07/08

This document gives only a general description of the product(s) or 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.

©2008 BAE Systems
PUBS-08-B32-01