



Reconfigurable Processor Node (RPN)

Modular Processor for Space Applications



Building-Block Processing Tailorable to Mission Needs

The RPN can be used to flexibly configure spacecraft processing. Using AFRL's Space Plug & Play Avionics (SPA) standards, a data-centric network of nodes may be created. Applications may be distributed based on available processor load and restarted upon failure, facilitating a robust, fault tolerant system. The RPN is suitable for subsystem support, including the support of payloads by providing local payload processing with a well defined interface to the core spacecraft data system. Through use of the SPA standards, the node is also usable as a network-based data store. In addition to the Spacewire-based interface, the node exposes RS-422 serial ports that may be used to interface to more traditional systems.

Features

Radiation Tolerant design - Total ionizing dose to 200K Rad (si)

1-3 Microblaze processors hosting uLinux or Dual PPC hardened processor cores

75 Mbps Spacewire system interface

128 MB Radiation Hardened error corrected RAM

512 MB non-volatile FLASH

RS-232 Serial Console, Ethernet interface for programming and GSE

RAM/FLASH upgradable to 2MB/8GB with extension card

Low power consumption at <7 Watts

Low cost, low-risk, reliable design – compact packaging at 6.3" x 6.3" x 2.7"

Contact Information

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