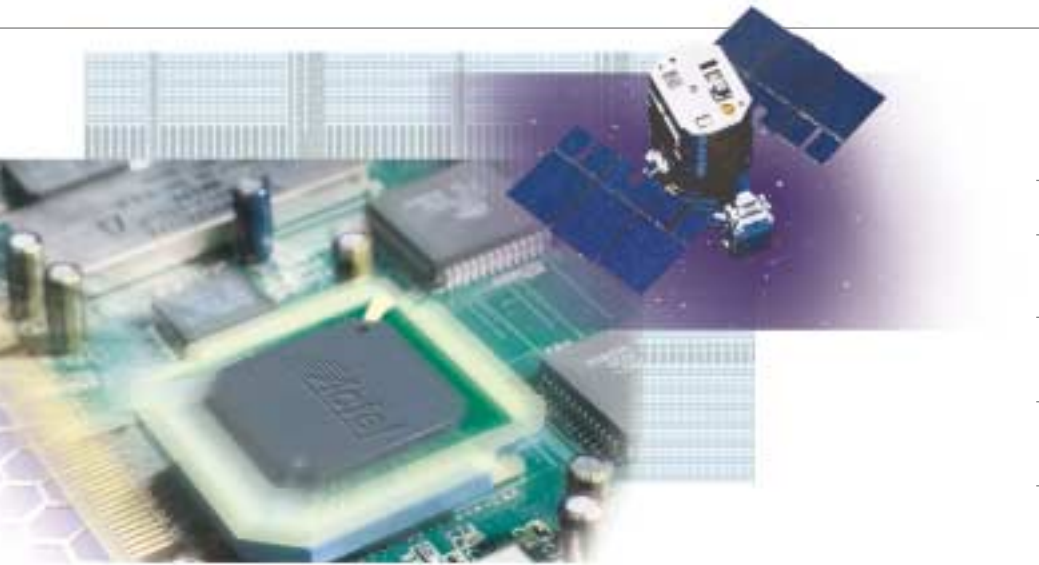




# Core1553BRT

## Remote Terminal Core for 1553B Applications



As a leader in providing HiRel FPGA solutions, Actel Corporation has developed a flexible MIL-STD-1553B remote terminal (RT) core for use with Actel devices in HiRel applications.

MIL-STD-1553B is a command/response, time-multiplexed serial data bus with a 1 Mbit/sec bit rate. The bus contains a bus controller and up to 31 remote terminals. Actel's Core1553BRT meets all the requirements for dual-redundant remote terminal operation.

Core1553BRT provides a programmable logic alternative to a limited number of 1553B remote terminal choices available today. It can be used in a variety of high-reliability applications such as in aircraft, spacecraft, military vehicles and severe control environments where system redundancy is essential. Since Core1553BRT is fully verified by Actel and certified by Test Systems, Inc., an independent MIL-STD-1553B test house, it reliably fulfills the need for a redundant bus in HiRel applications. Core1553BRT is also compatible with legacy remote terminal systems to preserve your investment in existing systems and software code.

### Key Features

- MIL-STD-1553B Compliant
- Certified to RT Validation Test Plan MIL-HDBK-1553 Appendix A
- A Backend Interface to Memory or Directly to System Devices
- Programmable Mode Code and Subaddress Legality Circuitry
- Interfaces to Standard External Transceivers
- Supports Ten Message Types Including RT-to-RT and Broadcast BC-to-RT Data Transfers
- Operates from a 12 MHz or 16 MHz clock
- Supports a Range of Commercial, Industrial, Military and Space Environments
- Low-Power Operation
- Compatible with Legacy Remote Terminal Systems

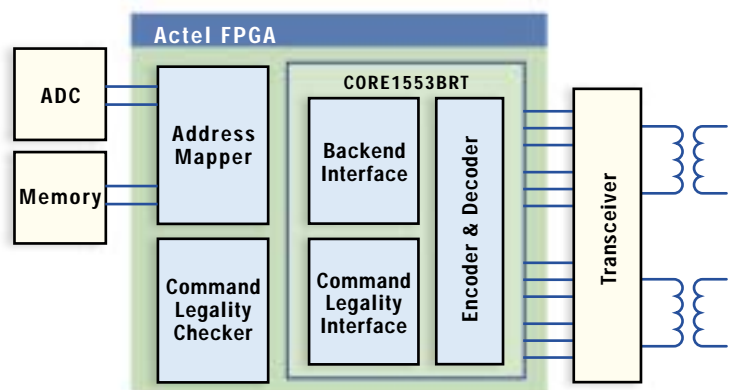


Figure 1: Typical Core1553BRT System

### Flexible and Cost-Efficient

Unlike non-programmable 1553B remote terminal approaches, Actel provides a flexible core-plus-silicon combination that can be incorporated into the rest of the design quickly without the need for long design cycles, expensive NRE payments (including re-spins), or the limitations of fixed-logic cores.

### A Complete 1553BRT Solution

Actel provides everything needed to incorporate a 1553B remote terminal into a system design. This includes development tools, documentation, and software. A fully verified Actel development board that is compliant with MIL-STD-1553B is available to help simplify design integration and verification.

Core1553BRT can be used with popular development tools from Mentor Graphics, Synopsys, and Synplicity. Actel's Core1553BRT is available in two forms: a netlist version, which simplifies the system integration, and an RTL version that allows full user customization. The RTL-based cores can also be simulated on any Verilog- or VHDL/Vital-compliant simulator. This allows the Core1553BRT to be simulated with the rest of the design using an Actel-supplied testbench prior to implementation.

### Device Utilization

Family	Device	Utilization
Accelerator	AX500	13%
ProASIC <sup>PLUS</sup>	APA150	27%
RTSX	RT54SX32	37%
RTSX-S	RT54SX32S	37%
SX-A	A54SX32A	37%

### Want to Learn More?

The Core1553BRT datasheet and user's guide are available on Actel's website: <http://www.actel.com/products/ip>. Additionally, Actel's worldwide staff of sales professionals is experienced with HiRel market requirements. They are ready to assist in the purchase of the core and with design instantiation to an Actel FPGA.

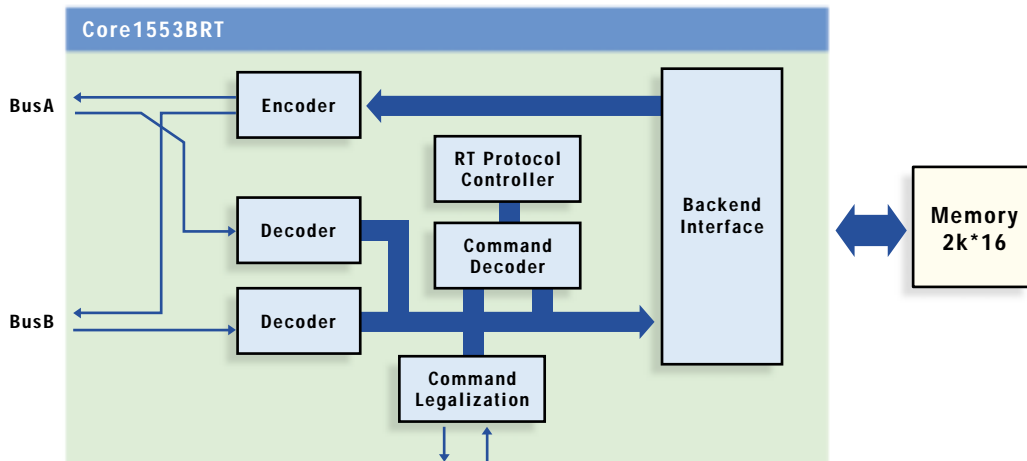


Figure 2: Core1553BRT Block Diagram

For more information about Actel IP Cores, call 1.888.99.ACTEL or visit our website at [www.actel.com](http://www.actel.com)



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