## *Single UTMC BC/RT/M or SµMMIT 1553 Controller*

Features

- 1 controller of dual redundant (A/B channel) 1553 communications
- UTMC's BCRTM or Summit controller options
- Programmable bus controller, remote terminal, or monitor terminal modes
- MIL-STD-1553 A and B compliant, Notice RT
- Long or short stub support
- Low power consumption
- PCIMG compliant
- +3.3V or +5 VDC VIO
- LED status
- Selectable external or internal clock

BCRTM shown
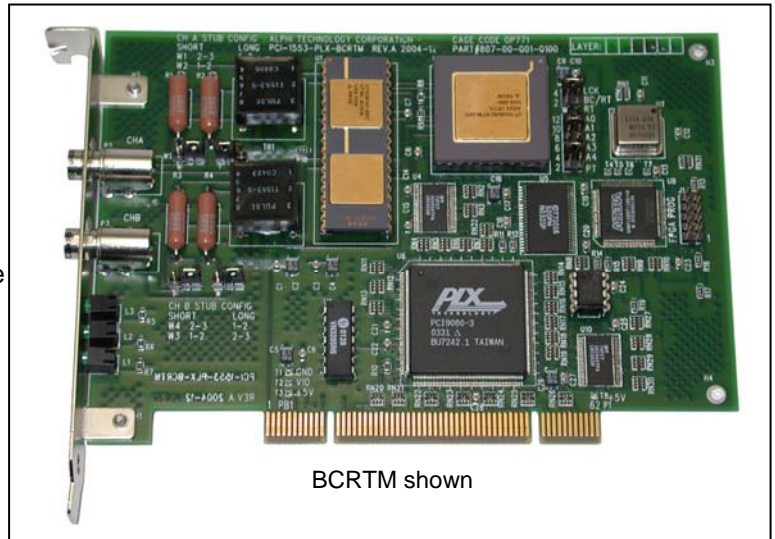
Block Diagram Overview

The PCI-1553-X uses a single UTMC's Sµmmit or BCRTM communication device as its 1553 bus controller, or remote terminal, or monitor terminal. The single controller has two redundant channels. This controller accesses 64Kx16 word of external memory and has external for both channel A and B. The 3U PCI board has on-board transformers for both channels.
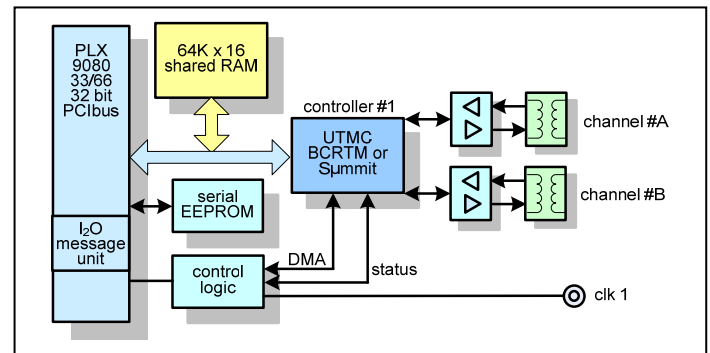
Available Software Drivers:
- C library dll's
- Linux drivers
- Window XP drivers
- VxWorks drivers

Applications:
This is a perfect solution for a wide array of 1553 communication applications such as:
- Test equipment supporting evaluation, simulation, monitoring, and analysis,
- Operational equipment such as avionics, space satellite systems, aircraft onboard systems, commercial systems, etc.
- Applications that require dual functionality of the terminal for monitoring and remote operation at the same time

1553 Compliance/Characteristics:
- Data Rate – 1 MHz
- Word Length – 20 bits
- Data Bits/Word – 16 bits
- Message Length – maximum of 32 data words
- Transmission Technique – half-duplex
- Operation – asynchronous
- Transmission encoding – Manchester II, bi-phase
- Protocol – command/response
- Bus Control – single or multiple
- Fault tolerance – typically dual redundant, second bus in "hot backup" status
- Message formats – controller to terminal, terminal to controller, terminal to terminal, broadcast, system control
- Number of remote terminals – maximum 31
- Terminal Types – remote terminal, bus controller, bus monitor
- Transmission Media – twisted shielded pair
- Coupling – transformer and direct

UTMC /Summit Features:

- Integrates BC, RM, T functions
- Buffers up to 256 received messages
- Supports ping-pong and circular buffering
- Sub-address data buffering
- Collects programmable interrupt history
- BC is autonomous from host
- Chained command support
- Can be configured as both an RT and M
- DMA support to external memory

UTMC/BCRTM Features:

- Variable space allocation
- Selectable data storage
- Programmable interrupt selection
- Interrupt history list
- Illegalizing mode codes and sub-addresses
- Command history list
- Sequential data storage supporting M mode

PCI Bus:

- PCI Bus Interface 3.3VDC/5VDC
- PLX 9080 33/66MHz 32-bit, PCI r2.2 compliant
- 3.3V I/O, 5V tolerant bus interfaces
- PICMG 2.1 r2.0 hot swap
- Zero wait state burst operation, with PCI bus bursts to 264 MB/sec and local bus bursts to 264 MB/sec
- 2 DMA channels
- Direct master data transfers
- Direct slave data transfers
- 33 MHz clock
- 16-bit address
- 16-bit data
- FIFO support burst operations

PCI Bus Control:

- I_2O r1.5 messaging unit
- 8 mailboxes and 32 doorbell registers
- PCI arbiter supports 7 external masters
- Host mode reset/interrupt
- Big endian/little endian conversions
- Power management event generation support
- Serial EEPROM interface
- JTAG boundary scan, RS-232 RJ45

Operating Environment:

- Operating temperature
  Commercial: 0 to +70 ºC
  Optional: -25 ºC to +80 ºC
- Non-operating: -40 ºC to +85 ºC
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet

Mechanical: Environmental:

- Size – ½ PCI card
- Power – 1.5 watt
- Front panel or rear panel I/O
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

Terminal Electrical Input Characteristics:

Requirements	Transformer coupled	Direct Coupled
Input level[1]	0.866-14.0V	1.2-20.0V
No response[1]	0.0-0.2V	0.0-0.28V
Zero crossing stability	+/-150.0 nSec	+/_ 150.0 nSec
Rise/fall times	0 nsec – Sine	0 nsec – Sine
Noise rejection[2]	140 mV WGN	200 mV WGN
Common mode rejection[3]	+/- 10.0V peak	+/- 10.0V peak
IInput impedance[4]	1000 ohms	2000 ohms

Notes on measurement conditions:
1. p-p, I-I
2. BER 1 per 10^7
3. Line-ground DC-2 MHz
4. 75 KHz-1MHz

Terminal Electrical Output Characteristics:

Requirements	Transformer coupled	Direct Coupled
Output level[1]	18.0-27.0V	6.0-9.0V
Zero crossing stability	25.0 nsec	25.0 nsec
Rise/fall[2]	100-300 nsec	100-300 nsec
Max distortion[3]	+/-900.0 mV	+/- 300.0 mV
Max output noise[4]	14.0 mV	5.0 mV
Max residual voltage[3]	+/-250.0 mV	+/-90.0 mV

Notes on measurement conditions:
1. p-p, I-I
2. 10%-90%
3. peak, I-I
4. rms, I-I

Ordering Information:

PCI-1553-BCRTM-Summit
PCI-1553-BCRTM-BC/RT/M

Optional Accessories

EngKit-1553-1	2 T's, 2 Terminators, 2-1 meter cables
CBL-1553-2	Standard-standard 2 meter 1553 cable
CBL-1553-3	Standard-mini 2 meter 1553 cable
CBL-1553-4	Mini-mini 2 meter 1553 cable