

**Single or Dual UTMC SUMMIT 1553 Controller, LXE/DXE**

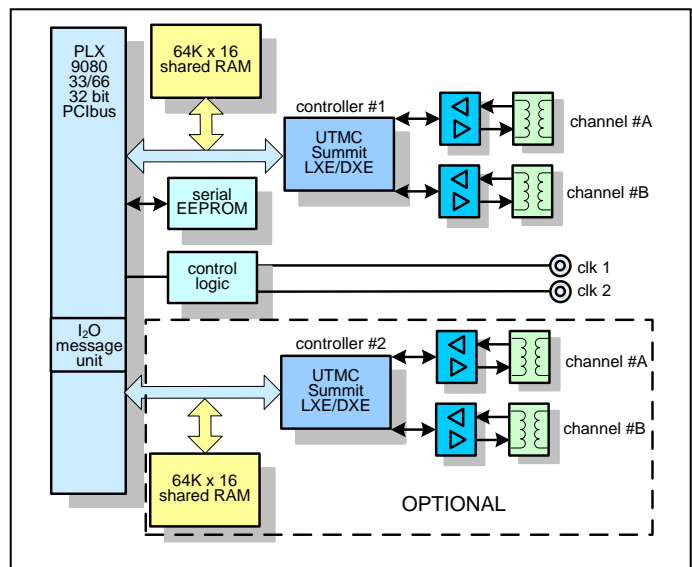
**Features**

- 1 or 2 controllers of dual redundant (A/B channel) 1553 communications
- Programmable/autonomous bus controller, remote terminal, or monitor terminal modes
- MIL-STD-1553 A and B compliant, Notice 2 RT
- Long or short stub support
- Low power consumption
- PCIMG compliant
- +3.3V or +5 VDC VIO
- LED status
- Selectable external or internal clock
- 32 x16 bit message buffer
- RT/MT simultaneous mode



**Block Diagram Overview**

The PCI-1553-LXE/DXE 1,2 uses UTMC's Summit LXE/DXE version, UT69151DXE-GPC 1553 communication device as its 1553 bus controller, or remote terminal, or monitor terminal. A single controller has two redundant channels. The 1553 board can have 1 or 2 communication channels. The controller accesses 64Kx16 word of external memory and has internal transceivers for both channel A and B. The 3U PCI board has on-board transformers for both channels and both controllers.



**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/LXE/DXE Features:**

- Integrated transceivers
- RT mode internal command illegalization
- 16-bit read/write time-tag with user-defined resolution
- Sub-address data buffering
- Simultaneous RT/MT mode of operation
- BC architecture designed with:
  - Minor frame timing
  - Efficient command block flow statements
  - Status word polling
  - Programmable retries
- Programmable interrupt architecture
- Autonomous operation in all three modes

**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
- 8-FIFO's, support burst operations

**PCI Bus Control:**

- I<sub>2</sub>O 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, RJ-45

**Operating Environment:**

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

**Mechanical: Environmental:**

- Size – 3U CPCI module  
100mm x 160mm
- Single wide PMC 2.92" X 5.87"
- 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 <sup>1</sup>	0.866-14.0V	1.2-20.0V
No response <sup>1</sup>	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 <sup>2</sup>	140 mV WGN	200 mV WGN
Common mode rejection <sup>3</sup>	+/- 10.0V peak	+/- 10.0V peak
Input impedance <sup>4</sup>	1000 ohms	2000 ohms

Notes on measurement conditions:

1. p-p, I-I
2. BER 1 per 10<sup>7</sup>
3. Line-ground DC-2 MHz
4. 75 KHz-1MHz

**Terminal Electrical Output Characteristics:**

Requirements	Transformer coupled	Direct Coupled
Output level <sup>1</sup>	18.0-27.0V	6.0-9.0V
Zero crossing stability	25.0 nsec	25.0 nsec
Rise/fall <sup>2</sup>	100-300 nsec	100-300 nsec
Max distortion <sup>3</sup>	+/-900.0 mV	+/- 300.0 mV
Max output noise <sup>4</sup>	14.0 mV	5.0 mV
Max residual voltage <sup>3</sup>	+/-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-LXE/DXE-1 MIL-1553, LXE/DXE, UTMC Summit; Single, dual redundant  
 PCI-1553-LXE/DXE-2 MIL-1553, LXE/DXE, UTMC Summit; Dual, dual redundant  
 PCI-1553-LXE/DXE -1-1 same as above with -40 to +85 temperature rating  
 PCI-1553-LXE/DXE -2-1 same as above with -40 to +85 temperature rating

**Optional Accessories**

EngKit-1553-micro 2 T's, 2 Terminators, 1-16" cable  
 CBL-1553-micro Standard-standard 16" 1553 cable