# 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 Sµmmit 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:**

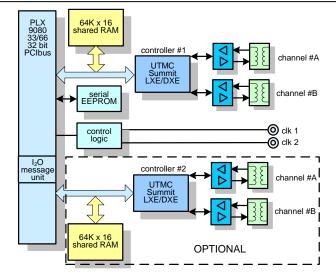
- · C library dll's
- Linux drivers
- Window XP drivers
- VxWorks drivers

# **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



# PCI-1553-LXE/DXE 1,2

# **PCI** Module

# **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, 1/2 sine
- Weight tbd
- MTBF >250,000 hours

# **Terminal Electrical Input Characteristics:**

Requirements	Transformer	Direct Coupled
	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
IInput impedance <sup>4</sup>	1000 ohms	2000 ohms

Notes on measurement conditions:

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

# **Terminal Electrical Output Characteristics:**

Requirements	Transformer	Direct Coupled
	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, l-l
- 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