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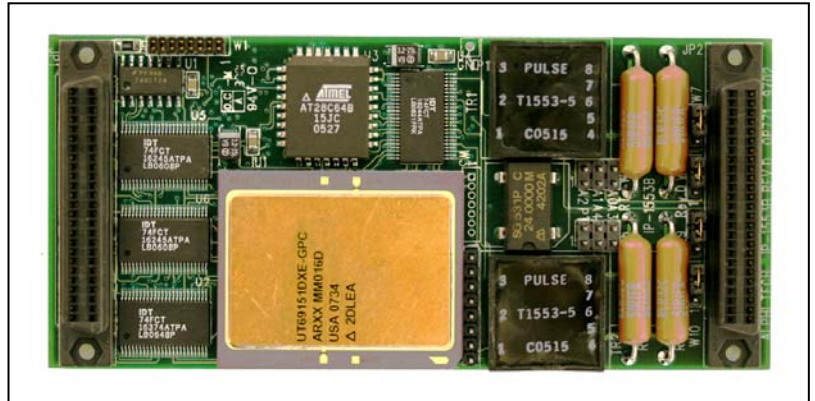
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IP UTMC LXE/DXE 1553 Controller

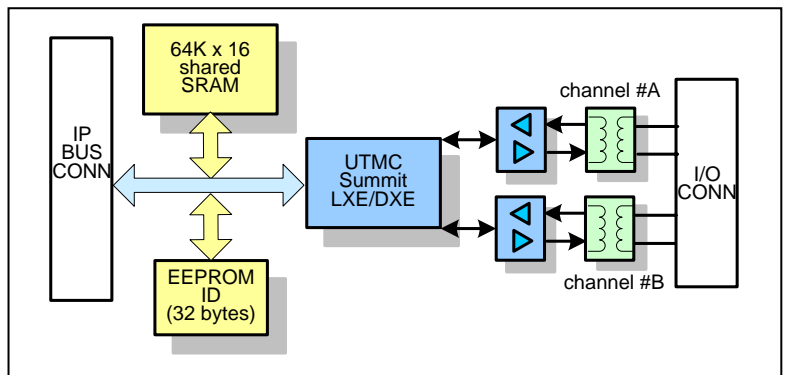
Features

- 1 controller of dual redundant (A/B channel) 1553 communications
- Programmable 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
- On-chip transceivers
- On-board isolation transformers
- Single +5 VDC supply
- EEPROM (32 bytes) for identification
- Simultaneous RT/M mode
- RT address and operational modes program or jumper selectable
- 8 or 32 MHz clock
- 2 interrupts and 2 slave DMA IP bus lines
- VITA 4 compliant



Block Diagram Overview

The IP-1553-UTMC 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 and built in transceivers. The controller accesses 64Kx16 word of external dual port memory and has internal transceivers for both channel A and B. The IP board has on-board transformers.



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:

- The UT69151DXE-GPC has 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
- Supports IEEE Standard 1149.1 (JTAG)

Industry Pack Specifications:

- Meets ANSI/VITA 4-1995
- 8/32 MHz synchronous operation
- Supports ID, 128 byte I/O, interrupt. & 8 Mbyte memory spaces
- 2 Interrupts per module
- Two passive DMA channels are possible.
- Hardware self timed per IP module
- Triggered via system reset and software control
- Jumper or software time-out function
- 5, +/-12 volt reset-able fuse per IP

Mechanical: Environmental:

- Size – VITA 4 compliant
1.8" x 3.9" or 46 mm x 99 mm
- Power – 1.0 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

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

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 |
| I Input impedance ⁴ | 1000 ohms | 2000 ohms |

Notes on measurement conditions:

1. p-p, I-I
2. BER 1 per 10⁷
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:

Part Number : IP-1553
 Part Number : IP-1553-I

MIL-1553, BC/RT/M, UTMC SUMMIT Industry Pack module same as above with -20 to +85 temperature rating

Part Number : EngKit-IP1553
 Part Number : CBL-1553-1
 Part Number : CBL-1553-2
 Part Number : CBL-1553-3

Optional Accessories

Transition module, 2 T's, 2 Terminators, 2 1 meter cables
 Standard-standard 2 meter 1553 cable
 Standard-mini 2 meter 1553 cable
 Mini-mini 2 meter 1553 cable



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