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# COM-1250 / 1251

Datasheet

1 / 2-Channel 1553 PC/104 Bus Interfaces

## FEATURES

### Dual Redundancy:

Dual Redundant MIL-STD-1553 Bus Operation

### 1553 Mode Support:

Supports Remote Terminal (RT), Bus Control (BC), and Monitor (MT) Modes

### 1553 A/B Support:

Jumper Selectable MIL-STD-1553 A/B Protocols

### Software:

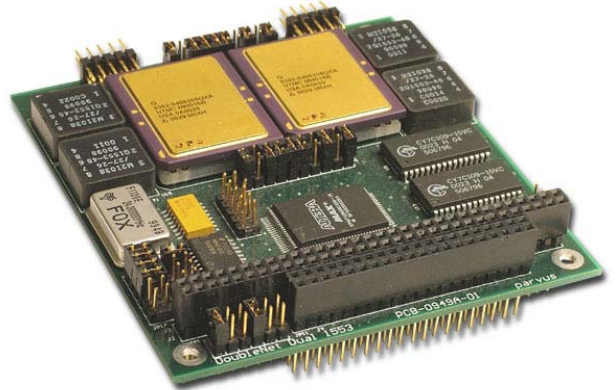
Microsoft® Windows® 9X/2000/NT/XP and DOS® Device Drivers; Test Software Program Provided; Visual C and C Source Code Provided (for Recompile under Linux or other RTOS)

### Registers:

Eight 16-bit Register Locations (COM-1251)  
Four 16-bit Register Locations (COM-1250)

### 1760 Support:

Supports MIL-STD-1760



## DESCRIPTION

The COM-1250 and COM-1251 PC/104 1553 Interface boards provide the systems designer with an intelligent solution to MIL-STD-1553b multiplexed serial data design problems. These Commercial-Off-the-Shelf (COTS) PC/104 modules provide an interface from its one or two dual-redundant 1553 buses to any embedded PC/104 computer system bus. A PC/104 processor can then be used to access the 1553 Dual Bus to configure it for various modes of operation: Remote Terminal (RT) mode, Bus Control (BC) mode, or Monitor Terminal (MT) mode for a variety of 1553 military avionics and ground vehicle applications.

Satisfying all requirements of MIL-STD-1553B Notice II, the 1553 Dual Interface utilizes Aeroflex UTM's [SuMMIT](#) MIL-STD-1553 support chips, which offer automatic message handling, message status, general status polling and interrupt capability. The register-based interface architecture provides many programmable functions as well as extensive device maintenance information. Four/Eight 16-bit register locations within the SuMMIT and the Pseudo Dual Ported Memory (PDPM) allow complete access to interface functions through PC/104 I/O space. Software, including programmed I/O instructions (supplied with the board) can be used to access the PDPM and internal registers, and also be used to transfer data to and from the PDPM using Direct Memory Access (DMA). The SuMMIT chip can also cause interrupts to be generated and routed to the PC/104 processor.

This military/avionics databus interface operates in extended temperatures and is specifically designed to work with transformer-coupled stubs in military Local Area Network (LAN) applications, including airplanes, tanks, missiles, satellites and helicopters, as well as space and land-based systems to process data for navigation and altitude, weapon status indications, target tracks and electronic warfare lines.



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## DESCRIPTION (continued)

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Operating as a *Remote Terminal*, the board provides many features for efficient handling of both bulk and periodic data. Capabilities include sub-address data indexing, double (ping pong) and circular buffering, internal illegalization, user-selectable broadcast command control, programmable interrupts, retries, message information word and time-lag, 16-bit for all transacted messages.

In *Bus Controller* mode, the powerful, field-proven module meets the demands of multi-frame processing with minimal host attention. User-programmable decision-making allows autonomous bus operation until a user-defined event, or series of events occurs. Structuring of independent tasks through the PC/104 host, such as data transfer, service requests and bus diagnostics (initiate BIT), facilitates multiple message processing. Periodic message transactions with multiple remote terminals can be controlled by specifying time between messages. Host instructions can also be given for polling activities. It also offers automatic retry (up to four times per command block).

As a full-featured bus monitor in *Monitor Terminal* mode, the module provides the capability to monitor message validity and terminal health on all, or selected remote stations on the bus with very little host interaction. The board also provides the option of running simultaneously in RT/MT mode, allowing the MT to communicate on the bus as a Remote Terminal. (Note: in this combined mode, the MT can not monitor its own RT address.)

## SPECIFICATIONS

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### 1553 Compliance:

MIL-STD-1553B Notice II

### Dimensions:

3.550" x 3.775" (PC/104)

### Humidity:

10% to 80%, non-condensing

### Operating Temperature:

-40°C to +85°C

### 1553 Connectors:

User Provided

### Options:

Conformal Coating, Custom Connectors

### Power:

+5vdc +/- 0.25 Volts; 600 Milliamps receiving; 1.6 Amps w/ both buses transmitting

## ORDERING INFORMATION

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### PART NUMBER

### DESCRIPTION

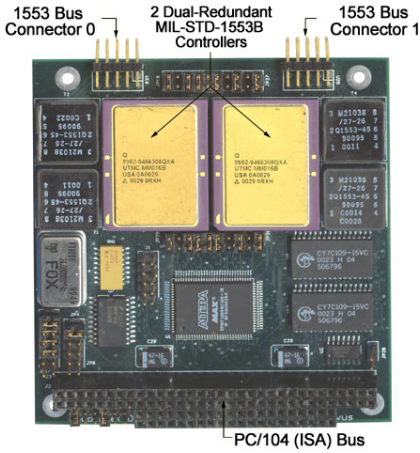
**COM-1250-01**

COM-1250, PC104 MIL-STD-1553 Interface, Single Channel

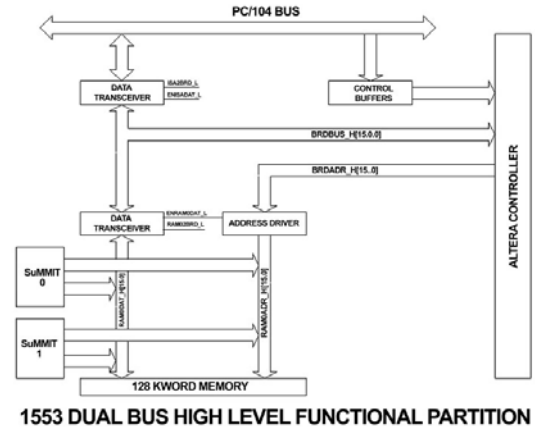
**COM-1251-00**

COM-1251, PC104 MIL-STD-1553 Interface, Dual Channel



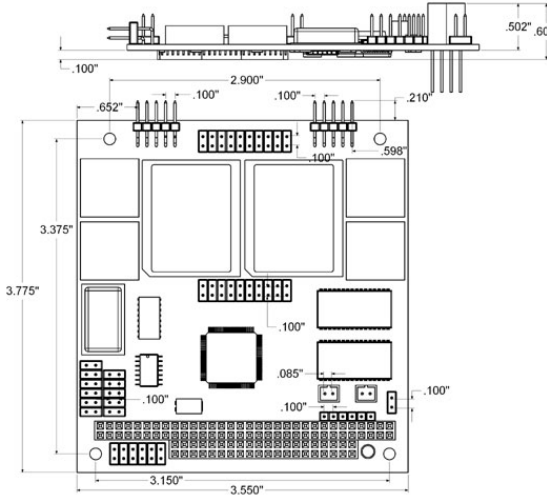


Connectors

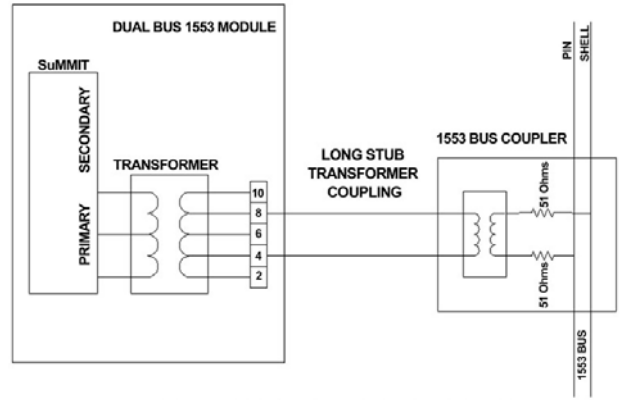


1553 DUAL BUS HIGH LEVEL FUNCTIONAL PARTITION

Diagram - High Level Functional Partition

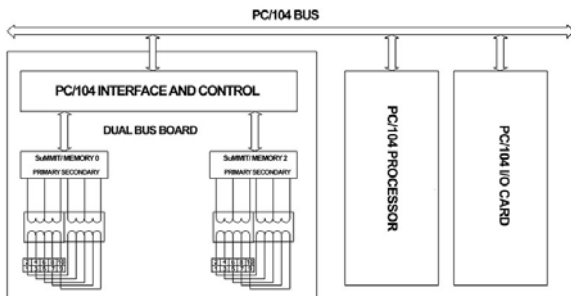


Dimensional Drawing



INTERFACING TRANSFORMER COUPLERS TO PRIMARY AND SECONDARY 1553 BUS LINES

Diagram - Interfacing Couplers to 1553 Bus



DUAL BUS MIL-STD-1553 TO PC/104 INTERFACE

Diagram - Dual 1553 to PC/104 Bus Interface



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