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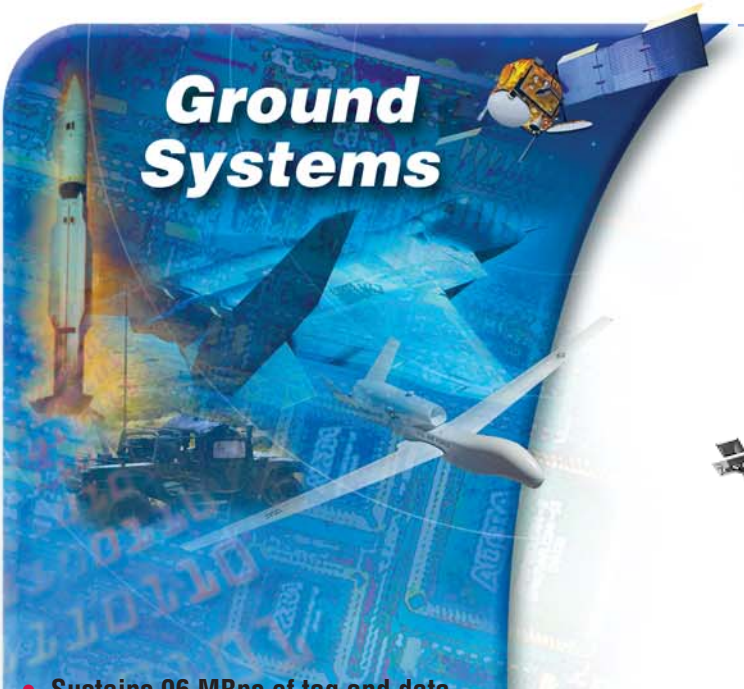
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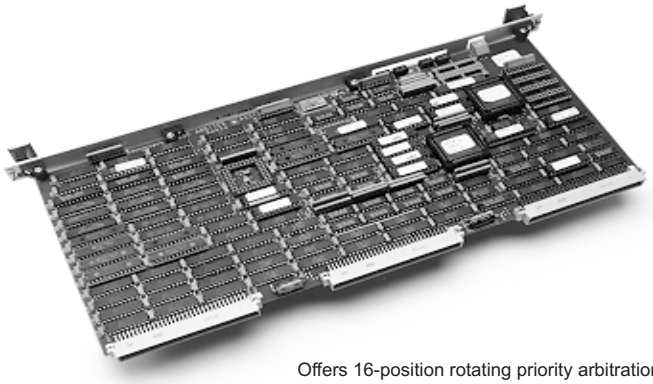
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MUXbus II Arbiter/Analyzer

ARB593



Offers 16-position rotating priority arbitration for MUXbus II guaranteeing access time of 1.2 µsec from 16 boards on MUXbus II.

- **Sustains 96 MBps of tag and data (or 64 MBps data only) transfer on the MUXbus II**
- **Serves as MUXbus II Analyzer with tag trigger and 1024-word deep capture buffer**
- **Provides MUXbus II bandwidth utilization monitoring**
- **Monitors power supply and fan**
- **Offers VMEbus to MUXbus II transfers with 6 output modes**
- **Features optional round-robin processing control (ensures time-ordering of data when processed in parallel)**
- **Provides 16-MHz hardware CVT allowing read/access to MUXbus II data without processing overhead to save processing capability for real-time needs**

The multifunction Arbiter/Analyzer module performs arbitration for the 550's 16 MUXbus II and Avalon's card slots. Arbitration occurs at 16-MHz speed so there is no latency between MUXbus II accesses. It also acts as a MUXbus II analyzer with a 1024-word buffer that can be triggered to capture selected MUXbus II transactions for analysis by the system's applications software. Finally, the module provides such diverse functions as VMEbus to MUXbus II, monitors MUXbus II bandwidth utilization, fan and power supply monitoring inputs, an optional round-robin processing controller, and a full MUXbus II speed hardware CVT.

L3 communications

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ARB593 Specifications

MUXbus II Interface

Input:
Tag 16-bit
Data 32-bit
Input FIFO . . . . . .1024 deep x 80 bits
Tag Decoding . . . . . .2 bits x 64K tags
Speed . . . . . .16 MHz
Output:
Tag 16-bit
Data . . . . . .32-bit (upper 16 bits can be zero or sign-extended) MUXbus II output section is VMEbus memory mapped in blocks, with different modes per block

System Bus Interface

Function . . . . . .Setup and Control, Status Reporting, MUXbus II Output, MUXbus II Analyzer Input, CVT RAM access
Architecture . . . . . .VMEbus Slave Interface, A24/D32
Compatibility . . . . . .VMEbus C.1 Specification
Address Space . . . . . .1 MB (A24)
Address Modifier . . . . . .^ h39, ^ h3B, ^ h3D, ^ h3F
Data Width . . . . . .32 bits (D32) or 16 bits (D16)
Max DS to DTACK . . . . . .215 nsec (except TDR & CVT read)
Interrupts . . . . . .VME level 1-7, 32-bit vector,
8 interrupt sources
Interrupt Conditions
Enabled Individually . . . . . .FIFO overflow, FIFO half-full; FIFO not empty; MUXbus II load counter interrupt; Analyzer Trigger interrupt; Invalid buffer read interrupt; Flow Control interrupt; Round-robin interrupt

MUXbus II Arbiter

Functions . . . . . .Arbitrates for MUXbus II between requesters; controls MUXbus II transactions; generates Hardware Update cycles on request; generates MUXbus II blocks
Speed . . . . . .16 MHz
Positions . . . . . .16 card slots
Max Latency . . . . . .1.1 µsec from request to access
Inputs . . . . . .16 single cycle requests, 1 per slot; 16 multiple cycle requests, 1 per slot; 1 Hardware Update Cycle request
Outputs . . . . . .16 MUXbus II output enables, 1 per slot; 1 MUXbus II input clock, 16 MHz (MXCLK); 1 16-MHz general purpose clock; 1 32-MHz general purpose clock; 1 MUXbus II Data Valid clock (MXDAV); 1 Hardware Update Enable (MXDIS); 1 Hardware Update clock (MXWR)

MUXbus II Load Monitor

Generates a periodic interrupt and provides the number of active MUXbus II cycles during that period. Loading is displayed in percent of MUXbus II bandwidth.

MUXbus II Analyzer Function

Buffer . . . . . .1024 deep x 80 bits; 32 bits of data; 16 bits of tag; 24 bits of time; 4 bits of source; 1 bit of trigger event; 1 bit of FIFO Empty Flag; 1 bit of FIFO Fill Flag; 1 bit unused
Speed . . . . . .16-MHz capture rate
Trigger Events . . . . . .One, several, or all tags
Trigger Point . . . . . .Location 1 to 1024 in buffer
Capture Events . . . . . .One, several, or all tags

General Requirements

Chassis Requirement . . . . . .1 MUXbus II slot in Base 550 or Avalon System Chassis
Location . . . . . .Slot 20 only (550) / Slot 6 only (Avalon)
Rear Panel . . . . . .No slots required
Power . . . . . .5V @ 3.0 A
Environment . . . . . .SeeBase 550 System Chassis (PRO550A, PRO550B) or Avalon System Chassis (AVALON-R) data sheets
Dimensions . . . . . .365mm (9U) x 160mm (Eurocard Standard)

Compatibility

Base 550 system Chassis (PRO550A, PRO550B)
Avalon System Chassis (AVALON-R)
SWA500 Applications Software
VISTA Software

Ordering Information

ARB593 . . . . . .MUXbus II Arbiter/Analyzer Module

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