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Find the *Abaco Systems / SBS ASF-PMC2-2* at our website: *Click HERE*

ASF-PMC2-1, -2

MIL-STD-1553 Interface

I/O & COMMUNICATIONS

Features

1 or 2 dual redundant 1553 channels featuring 100% independent operation as one of the following:

- Bus Controller
- Remote Terminal
- Dual Function Bus Monitor

Bus Controller

- Programmable frame lists
- BC-RT, RT-BC, RT-RT
- Mode codes, broadcasts, and time delays

RT Functionality

- RT level protocol selection
- RT definition tables
- Programmable response time
- Optional multiple RT support

Bus Monitor

- Map monitoring
- Sequential monitoring
- Time stamped
- Double buffered
- Error tables
- Definable monitoring

Architecture

- On-the-fly data structures
- BC and RT linked lists
- High-speed DSP
- Flexible memory structure
- Flash memory

Versions

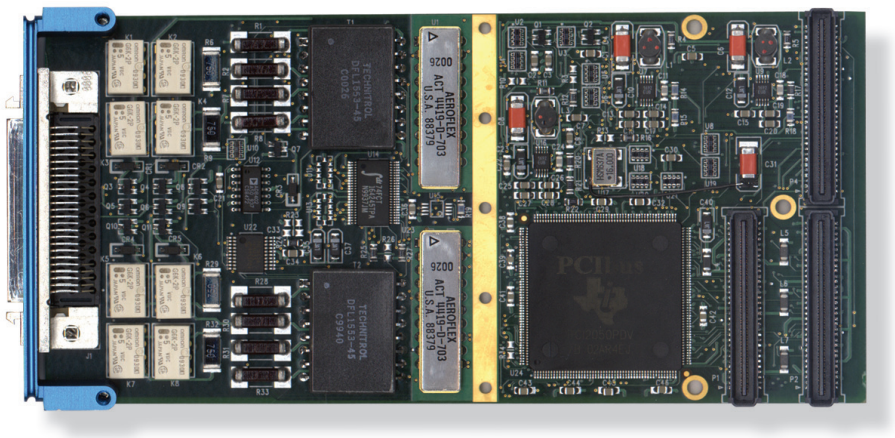
- Commercial (Level C)
- Ruggedized forced air (Level R)
- Conductive cooled (Level N)

Mezzanine Card

- IEEE P1386 compliant

Software Support

- Complimentary drivers for most operating systems
- Integrated Avionics Library, including source code



ASF-PMC2 (PCI Mezzanine Card) is a flexible interface providing a single function, dual redundant MIL-STD-1553 interface to the PCI Mezzanine. This Advanced Single Function (ASF) architecture provides independent operation as a Bus Controller (BC), Remote Terminal (RT), or dual function Bus Monitoring (BM). The MRT option allows multiple RT capability. The ASF-PMC2 interface equips the PMC carrier with a complete 1553 interface. This includes 1553A/1553B selections, pointer-driven transmit and receive buffers and extensive programmable event interrupts.

BC simulation structures consist of linked lists of 1553 command messages: BC-to-RT, RT-to-BC, RT-to-RT, mode code, broadcast and time delay block transmissions. We define RT simulation as a simple series of pointers to RT definition tables. The RT definition tables in turn point to control data buffers. We define the bus activity we want to monitor in both the Map and Sequential monitoring modes. This provides user defined linked lists of data buffers and sequential 1553 activity. The user can time stamp and/or double buffer the 1553 activity. Both monitoring modes perform broad error monitoring. They also provide a comprehensive error table that the host processor can read at any time.

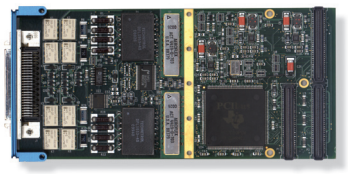
Hardware Overview

SBS bases the ASF interface upon an advanced high-speed DSP, programmable logic and dual port RAM. It delivers a highly reliable hardware platform that is feature rich and user friendly. Through the 256 kB of dual port RAM per channel, the host processor has access to set up, monitor, and change the 1553 interface data structures at any time. Link-list memory architecture allows the user to structure interface memory usage for the maximum in flexibility and usefulness.

Software Support Overview

SBS distributed software includes host processor device drivers to the dual port control and data structures as well as an application layer to these structures. SBS also provides low-level drivers for most operating systems, and the Integrated Avionics Library with source code, with the interface at no additional cost.

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ASF-PMC2-1, -2

Configurations

Model Number	Configuration
ASF-PMC2-1,2	1 or 2 Channel 1553 to PMC interface, Commercial Temp
ASF-PMC2XT-1,2	1 or 2 Channel 1553 to PMC interface, Extended Temp
ASF-PMC2CC-1,2	1 or 2 Channel 1553 to PMC interface, Conductive Cooled
IRIG	IRIG B Time Receiver (add /I to product number)
MRT	Multiple RT capability (add /MRT to product number)

Specifications

ASF Functionality:

Bus Controller (BC)
- BC retry
- Minor frame timing and message scheduling
- Intermessage gap selectable
- Programmable delay gaps and null BC blocks
- Multiple BC data buffers in a linked list structure
- Programmable RT no-response timeout

Remote Terminal (RT)
- RT and all subaddresses supported
- Transmit/Receive buffers for each subaddress
- Multiple RT data buffers in a linked list structure
- Programmable RT response time and no-response selection
- Auto boot

Map Monitoring
- Multiple linked buffers for each transmit/receive subaddress
- Mapped buffers read by host processor as time permits
- Number of buffers per transmit/receive subaddress is programmable or user definable to account for various host speeds

Sequential Monitoring
- Host driver selected messages are double buffered
- Messages time stamped with a 1 µs 32-bit clock or optional 48-bit IRIG-B clock
- Standard firmware performs broad error monitoring
- Comprehensive error table readable at any time by host processor

Self Test
- Power-up test with status register report
- BIT-RAM and encoder/decoder test
- Run-time health status register
- Unit Test application for 1553 bus functionality

Multi-Purpose I/O
- Bi-directional external trigger
- IRIG clock input (optional)
- External TTL/RS-422 system clock input
- Discretes for RT address and RT address parity

PMC Functionality
- PCI bus is 2.1 compliant
- 132 MB per second max transfer rate
- 16-bit and 32-bit transfer modes
- 5 V and 3.3 V signal levels supported
- Memory mapped
- Selectable interrupt requests
- On-board firmware storage via Flash memory

PCI Mezzanine Connection
- IEEE P1386 PMC connection
- PMC P4 to VMEbus P2 support
- CC version interface available
- Compatible with VITA/ANSI-20-199x (Draft 1.6)

Interface Connections
- 50-pin SCSI to coupling harness (CA-2189)
- Coupling harness to bus and I/O connectors
- DB I/O Connector
- BJ77$_F$ Triax connector to 1553 bus

Interface Card Specifications
- Mechanical - standard PMC card Length 6.0” Width 2.9”
- Maximum power consumption:
  Single channel
  5 V @ 1.5 A (98% bus activity), (1.0 A with Bus Inactive)
  Dual channel
  5 V @ 2.12 A
- Temperature - ruggedization
  Level C (standard commercial, air cooled temperature):
  0° C to +70° C, ≤ 95% rH non-condensing
  Level R (rugged, forced air temperature):
  -40° C to +85° C, ≤ 95% rH non-condensing
  Level N (rugged, conductive cooled temperature):
  -40° C to +85° C, ≤ 95% rH non-condensing

Software and Documentation

Support
- Low-level drivers for most operating systems
- Integrated Avionics Library with source code
- Borland and Microsoft® C Compiler compatible
- Hardware and Integrated Avionics Library documentation included on CD. Hard copies of the documentation are available upon request.

Customer Support
- Two-year warranty
- Extended warranties available
- Driver and library upgrades
- Over 18 operating systems supported on various platforms

Corporate Headquarters
7401 Snaproll NE
Albuquerque, NM 87109
Tel 505-875-0600 Fax 505-875-0400
Email: info@sbs.com

European Headquarters
Memminger Str. 14
D-86159 Augsburg, Germany
Tel +49-821-5034-0 Fax +49-821-5034-119
Email: sales@sbs-europe.com

For additional contact information, please visit our web site at www.sbs.com

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