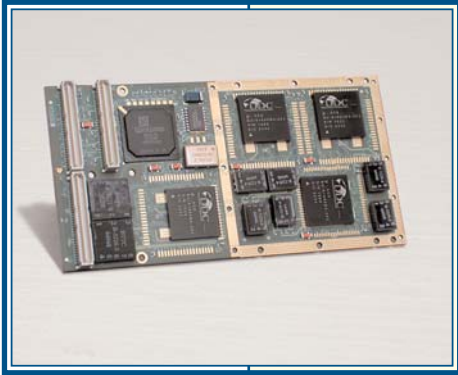


MIL-STD-1553 PMC Card

MODEL: BU-65566



FEATURES

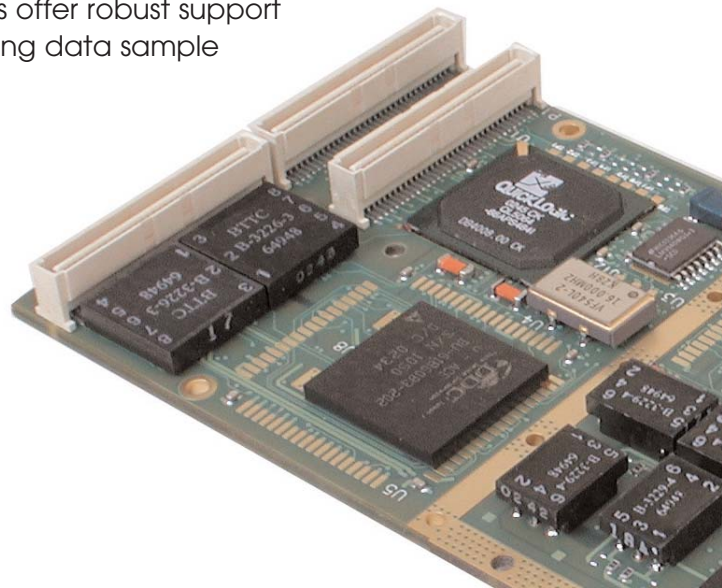
- 66 MHz PMC Card
- Up to 4 Channels of 1553
- 66MHz/32-bit Target PMC Card
- Conduction Cooled with Primary and Secondary Thermal Interfaces
- RAM Parity
- Autonomous BC Architecture Serves To Greatly Offload The Host
- Remote Terminal Flexibility
- True Message Monitor
- Autonomous Built In Self-Test
- Optional Advanced Graphical Data Analysis Software
- Applications
 - Mission Computers
 - Avionics
 - Communication Links
 - Spacecraft
 - Ground Vehicles
- Software Support for Integrity[®], VxWorks[®], Linux[®], Windows[®] 9x/2000/XP, and Windows NT[®]

DESCRIPTION

The BU-65566 PCI Mezzanine (PMC) card offers a comprehensive COTS solution for interfacing between embedded PCI and MIL-STD-1553 buses. The card features a robust design with thermal vias, a heat-spreading plane, and copper strips providing primary and secondary thermal interfaces to baseboard rails.

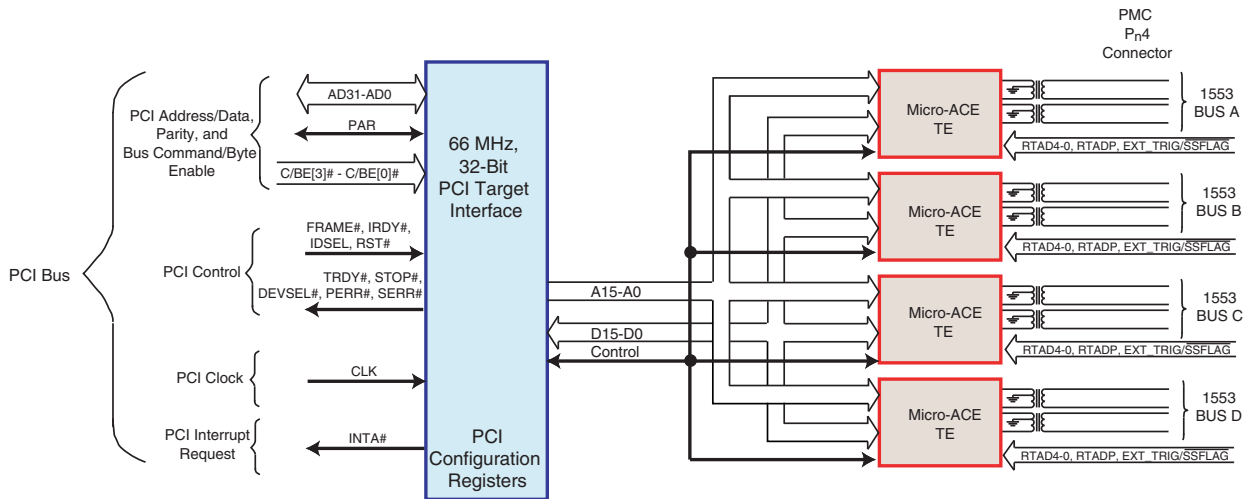
The BU-65566 includes up to four channels of DDC's field-proven, industry-standard, Enhanced Mini-ACE™ MIL-STD-1553 interfaces for commercial or military environments. The advanced bus controller architecture provides a high degree of flexibility and autonomy: improving message scheduling control, minimizing host overhead for asynchronous message insertion, facilitating bulk data transfers and double buffering, message retry and bus switching strategies, and data logging and fault reporting. In addition, the PMC card's remote terminal architecture meets all common MIL-STD-1553 protocols. RT data buffering and interrupt options offer robust support for synchronous and asynchronous messaging while ensuring data sample consistency and supporting bulk data transfers.

The FREE BU-69090 series software includes the Enhanced Mini-ACE C API library and drivers to support all modes of operation for Integrity, VxWorks, Linux, Windows 9x/2000/XP, and Windows NT, including source code, samples, detailed documentation, and an offline development environment.



BU-65566 Block Diagram

Figure 1



Complete Off-the-Shelf Solution for Embedded MIL-STD-1553

- C API Library and drivers for Windows 9x/NT/2000/XP, Linux, VxWorks, and Integrity Available
- Each Channel Individually Programmable as BC, RT, Monitor, or RT/Monitor
- 64K X 17 RAM Per Channel
 - 66 MHz, 32-bit Target PMC Interface
 - 5V and 3.3V-Powered
- Operates in 3.3V or 5V PCI Signaling Environments
- Operates off +5V supply
- Transformer Coupled 1553 I/O
- Option for Direct Coupling

Designed for Extended Ruggedized Environments

- -40 to +85° C Operating Temperature Range (BU-65566GX-200)
- Constructed in Accordance with VITA-20-2001
- Rear-Panel I/O
- Thermal Vias under Hottest Chips (transceivers)
- Conduction Cooled
- Primary and Secondary Thermal interfaces

Available for Commercial Environments

- 0 to +55° C Temperature Range (BU-65566GX-300)

Autonomous BC Architecture

- Built-in Message Sequence Control Engine Serves to Greatly Offload Host Processor
- Defined Set of Instructions
- Control/Status Blocks for Individual Messages
- Minor and Major Frame Scheduling
- Asynchronous Message Insertion
- Conditional Branching and Subroutines
- General Purpose Queue: Message Status, Time Tag, Immediate Data, Indirect Data
- Fully User-definable Interrupts
- Legacy Mode for Compatibility with ACE and Mini-ACE Applications

Remote Terminal Flexibility

- Compatibility with ACE and Mini-ACE Applications
- Multiprotocol: MIL-STD-1553A/B, STANAG-3838

- Choice of Subaddress Single Message, Double Buffering, Circular Buffering, or Global Circular Buffering
- 50% and 100% Rollover Interrupts for Command and Data Stacks
- Stack with Descriptors for Individual Messages
- Hardware (via connector) or Software-Programmable RT Address
- Programmable Command Illegalization
- Programmable Busy by Subaddress
- Interrupts on All Messages, or Individual Subaddresses and/or Mode Codes
- 32-Entry Interrupt Status Queue

True Message Monitor

- Selective Message Monitor
 - Filter Based on RT Address, T/R bit, Subaddress
- 50% and 100% Rollover Interrupts for Command and Data Stacks
- 32-Entry Interrupt Status Queue
- Simultaneous RT/Message Monitor Software Programmable Option

Autonomous Built-In Self-Test

- Protocol Self-Test
- RAM Self-Test
- Continuous Online Loopback Test
- Capability for CH. A-to-CH. B Wraparound Test
- Capability to Test Transmitter Timeout Function

Supporting Software

- **Complete BU-69090 series 'C' Library for all supported operating systems**
 - Drivers for Integrity, VxWorks, Linux, and Windows 9x/NT/2000/XP included
 - RTL High-Level Routines Abstract Register/Memory Setup
 - Easy-To-Use
 - No Low Level Knowledge of Hardware Required
 - Supports BC, RT, MT, and RT/MT Modes of Operation
 - Memory Management Software
 - Open/Access/Close Model
 - Memory Allocation Performed Transparent to User's Application
 - Internally Manages Data Structures
 - Includes Examples for All Operating Modes
 - Detailed Library Software Manual

- **BC Software**
 - Supports Full Use of BC Instruction Set
 - Manages Creation of Data Blocks
 - Easily Create BC Opcodes, Messages, and Frames
 - Dynamically Insert Asynchronous Messages While BC is Running
 - Host Buffer Logs all messages and Data Software
- **RT Software**
 - Easily Create RT Data Blocks
 - Map Data Blocks to Subaddresses
 - Command Illegalization
 - Software Host Buffer Logs all Messages and Data
- **Monitor Software**
 - Enable Monitor Filtering for Specified Address/ T-R/Subaddresses
 - Software Host Buffer Logs All Messages and Data
- **VxWorks Driver**
 - Designed for Version 5.2 of Wind River's VxWorks
 - Source Code Included
 - Power PC and Intel Processor
- **Linux Driver**
 - Loadable Linux Driver Module
 - Source Code Included
 - Intel Processor
- **Integrity Driver**
 - Source Code Included
 - Power PC Processor

- **Supports an Offline Development Environment**
 - Allows Development on Desktop PC
 - Generates Binary Image and 'C' Header Files
 - Results in Reduced Embedded Code Size
 - Reduced Computational Resources
 - Reduces Software Validation and Documentation
 - Allows Development In Simulated Access Mode
 - No Need For Hardware To Start Software Development
 - Allocates Host Memory As If Enhanced Mini-ACE Memory
 - Setup Can Be Easily Recreated In An Embedded System

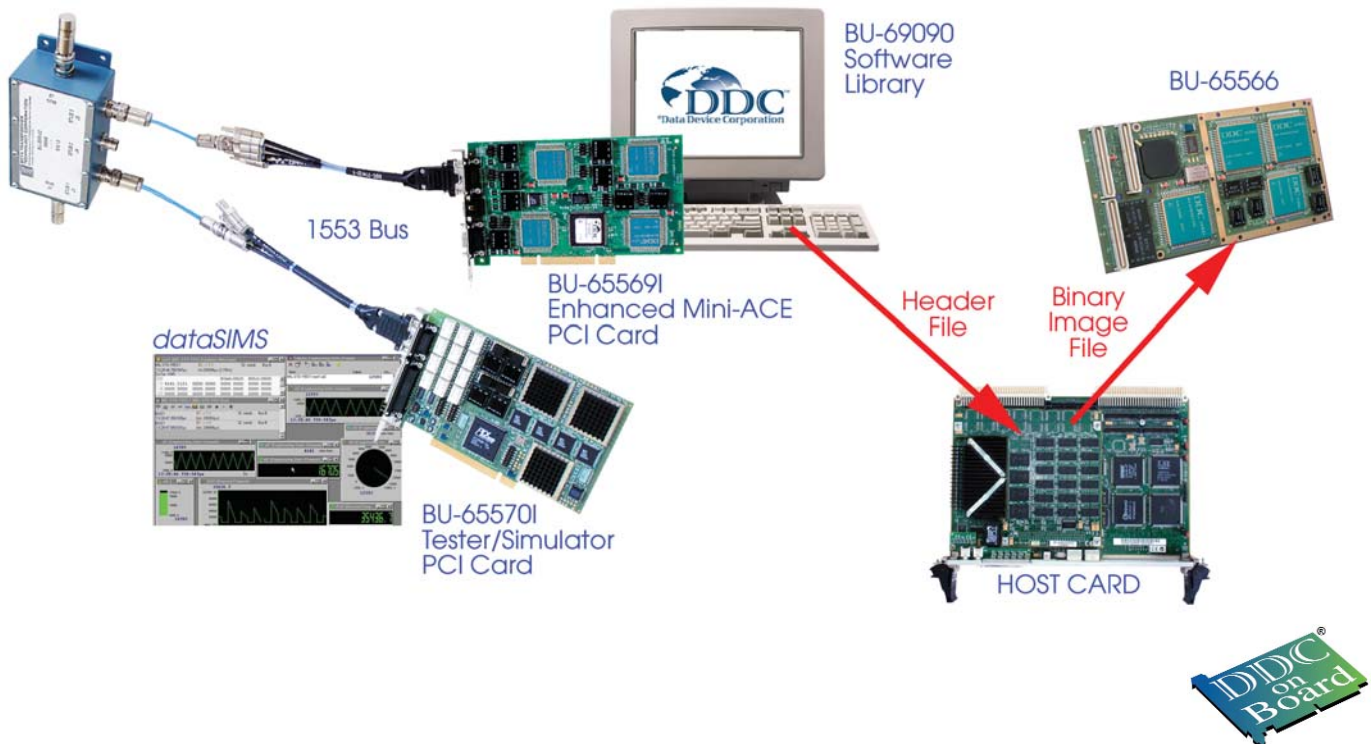
Optional Debugging and Bus Analyzer Software Tools

- Advanced Graphical Monitoring Software
- Customizable Environment
- Allows Simulating Engineering Units Using Constraints, Values, Built-In Waveforms and User-Defined Expressions



Offline Development (Software) Environment

Figure 2

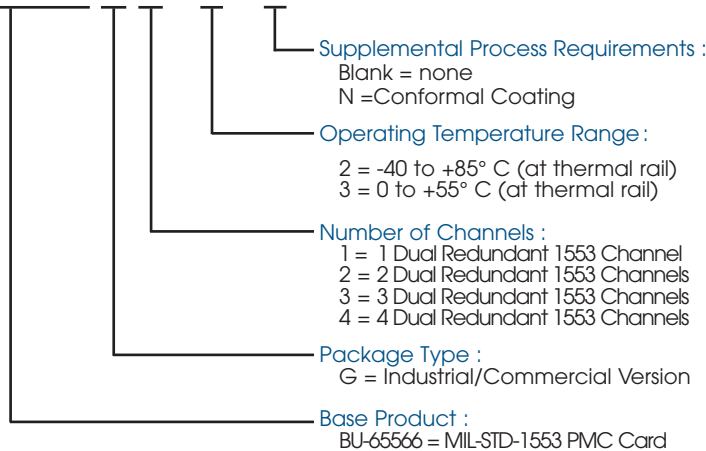


Specifications

PARAMETER	MIN	TYP	MAX	UNITS	PARAMETER	MIN	TYP	MAX	UNITS
ABSOLUTE MAXIMUM RATINGS					THERMAL				
Voltage +5V	-0.3		6.0	V	Operating Temperature				
POWER SUPPLY REQUIREMENTS					MECHANICAL DESIGN				
Voltages/Tolerance +5 V	4.75	5.0	5.5	V	Shock: Three pulses, half sine on six (6) axes 40g's, 11 msec/axes				
Current Drain					Vibration: Random input, one hour each axes, 14g's rms				
BU-65566X1					Resonant Frequency: BU-65566X2 (calculated) 12 Hz				
+5 V					PHYSICAL CHARACTERISTICS				
0% Transmit/Monitor		.250	.280	Amps	Size	5.659 X 2.913			in.
75% Duty Transmitter Cycle		.553	.613	Amps	Weight	144 X 74			mm
BU-65566X2					BU-65566X1	2.7 (76.5)			oz. (g)
+5 V					BU-65566X2	3.3 (93.56)			oz. (g)
0% Transmit/Monitor		.355	.394	Amps	BU-65566X3	3.9 (110.6)			oz. (g)
75% Duty Transmitter Cycle		.930	1.03	Amps	BU-65566X4	4.5 (127.6)			oz. (g)
BU-65566X3									
+5 V									
0% Transmit/Monitor		.455	.505	Amps					
75% Duty Transmitter Cycle		1.35	1.50	Amps					
BU-65566X4									
+5 V									
0% Transmit/Monitor		.550	.611	Amps					
75% Duty Transmitter Cycle		1.78	1.98	Amps					

Ordering Information

BU-65566 X X - X00N



Included Software

BU-69090SX

Enhanced Mini-ACE C API Library and Drivers
0 = Windows 9x/2000/XP and Windows NT
1 = Linux
2 = VxWorks
5 = Integrity

Optional Bus Analyzer Software Tool

BU-69404DM-64VM

dataMARS Advanced Graphical Monitoring Software for Windows 9x/NT/2000/XP

Optional Accessory

5980-0527-0001

Blank Front Panel Bezel for Air Cooled Applications

These products contain tin-lead solder.

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105 Wilbur Place, Bohemia, New York, U.S.A. 11716-2482
For Technical Support - 1-800-DDC-5757 ext. 7771
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Southeast, U.S.A. - Tel: (703) 450-7900, Fax: (703) 450-6610
West Coast, U.S.A. - Tel: (714) 895-9777, Fax: (714) 895-4988
United Kingdom - Tel: +44-(0)1635-811140, Fax: +44-(0)1635-32264

France - Tel: +33-(0)1-41-16-3424, Fax: +33-(0)1-41-16-3425
Germany - Tel: +49-(0)89-15 00 12-11, Fax: +49-(0)89-15 00 12- 22
Japan - Tel: +81-(0)3-3814-7688, Fax: +81-(0)3-3814-7689

