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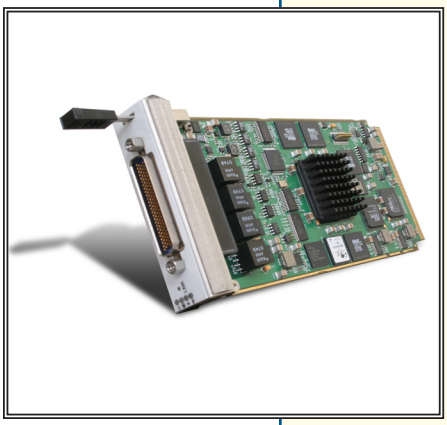
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Find the *DDC BU-65590A* at our website: *Click HERE*

MULTI-I/O 1553/429 Advanced Mezzanine Card (AMC) DATA SHEET

MODEL: BU-65590A



Features

- Multi-IO card with 1553, 429, Serial I/O, and Discrete I/O
- AMC.1 Four Lane PCI-Express
- Single Width, Mid-Height
- Front Panel I/O (100 pin Micro Miniature D)
- Air Cooled
- Multiple Configuration Options with up to:
  - 4 Dual Redundant 1553 Channels
  - 8 Receive 429 Channels
  - 4 Transmit 429 Channels
  - 2 RS-232 Serial IO Channels
  - 2 RS-422/485 Serial IO Channels
  - 6 User-Programmable Digital I/O's
- IRIG-B Time Code Input
- 48-bit / 1µs Time Stamp
- IRIG 106 Chapter 10 Monitor
- DMA Engine for Low CPU and PCI-E Utilization
- E²MA BC/RT/MT Architecture - API Compatible with Enhanced Mini-ACE® Library
- 1 MB Memory w/parity per 1553 Channel
- Built In Self Test
- Windows® 2000/XP VxWorks®, & Linux® Support

DESCRIPTION

The BU-65590A is a multi-protocol AMC card providing new levels of performance and flexibility for systems interfacing to a MIL-STD-1553 and/or ARINC 429 data bus. There are up to four dual redundant MIL-STD-1553 channels operating in BC, RT, MT, or RT/MT modes. Eight ARINC 429 receive channels and four ARINC 429 transmit channels operate in high/low speed operation with automatic slew rate adjustment. The card also contains six digital discrete I/Os, an IRIG-B time synchronization input, 2 RS-422/485 Serial I/O channels, and 2 RS-232 Serial I/O Channels (with handshaking). The combination of multiple I/O on one card saves valuable AMC sites on host computers, saving valuable space and weight in a micro-TCA or ATCA system.

The 1553 interface used on this card is DDC's Extended Enhanced Mini-ACE (E²MA) architecture which is API compatible with the field proven Enhanced Mini-ACE software. The card includes the BU-69092SX MIL-STD-1553 Enhanced Mini-ACE PLUS C Software Development Kit (SDK), and the DD-42992SX ARINC 429 Multi-IO C SDK, along with samples and detailed documentation.

APPLICATIONS

The card's rugged construction and ability to operate at +65°C inlet air temperature makes it ideal for use in naval applications, flight data recorders, ground vehicles, and other embedded systems that require an AMC card. The card has front panel I/O using a rugged micro-miniature D connector. The card is a valuable addition to design and test teams involved with both MIL-STD-1553 and/or ARINC 429 interfaces.

Make Sure the next Card you purchase ® has...

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Quick Specifications

PARAMETER	MIN	TYP	MAX	UNITS
ABSOLUTE MAXIMUM RATING				
Supply Voltage				
+3.3V (management)	-0.3	3.3	3.60	V
+12V	-0.3	12.0	14.0	V
POWER SUPPLY REQUIREMENT				
Voltages/Tolerances				
+3.3V (management)	3.0	3.3	3.6	V
+12V	10.0	12.0	14.0	V
CURRENT DRAIN (+12V)				
BU-65590A0-QA0				
(All Channels)				
IDLE		0.55		A
75% duty cycle		1.22		A
BU-65590A1-QA0				
(2 Channels)				
IDLE		0.50		A
75% duty cycle		0.88		A

PARAMETER	MIN	TYP	MAX	UNITS
THERMAL				
Operating Temperature				
BU-65590Ax-QA0	0		+65	°C
Inlet air temperature with 15 CFM of airflow				
Storage Temperature				
BU-65590Ax-QA0	-55		+85	°C
PHYSICAL CHARACTERISTICS				
Form factor	PICMG AMC.0 R2.0, Single, Mid-size PICMG AMC.1 x4			
Weight (Maximum)	5.6			oz.
	159			g.

NOTE: For full specifications and additional information, refer to the **BU-65590A Hardware Manual** (MN-65590AX-001) and the **BU-69092 EMACE Plus SDK Software Manual** (MN-69092SX-001).

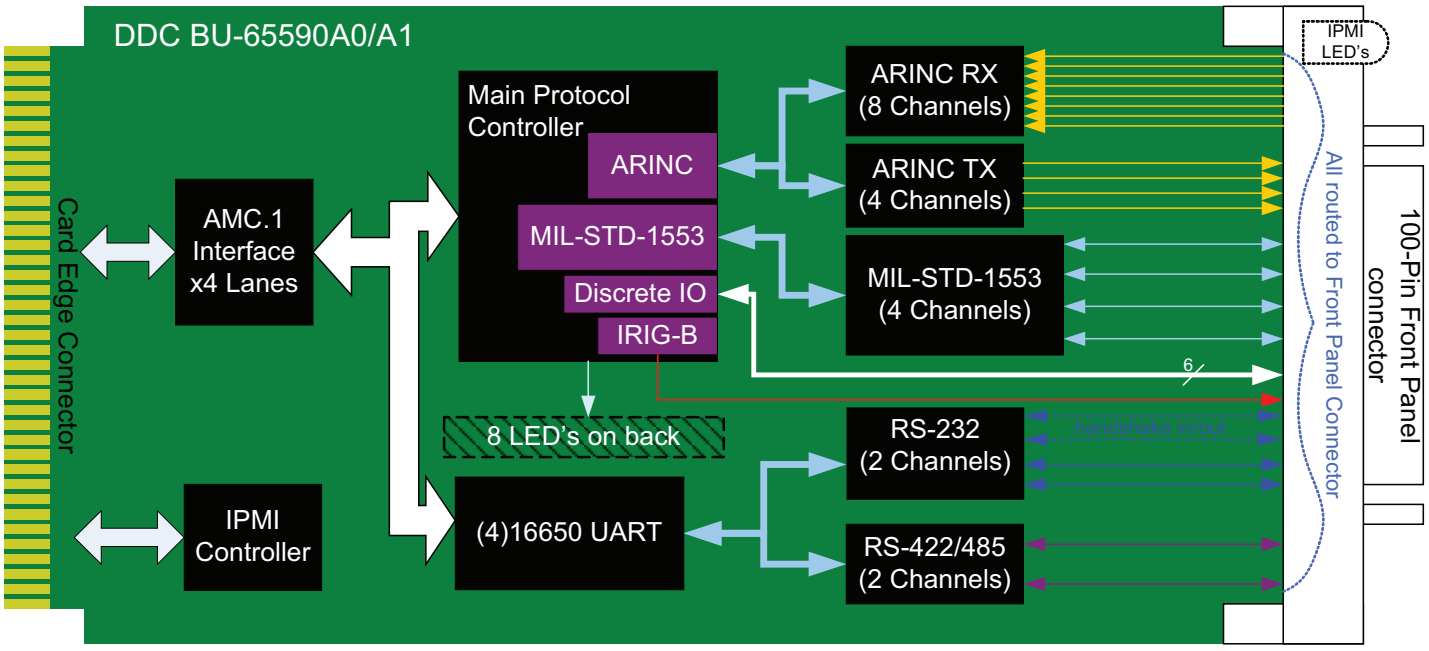


Figure 1. BU-65590A Block Diagram

COTS Solution for Avionics

- Air Cooled AMC.1 Card with Front I/O
- Rugged 100-pin Micro Miniature D Connector
- Four Lane PCI-Express Interface
- 48-bit, 1 µs resolution time tag
- 6 Digital Discrete I/O

MIL-STD-1553

- One to Four Dual Redundant MIL-STD-1553 Channels
- 1 MB RAM with Parity per 1553 Channel
- Transformer Coupled Channels
- High Level 1553 C Software Development Kit
- BC/RT/MT/RTMT Operating Modes
- User-Definable Interrupts

1553 Bus Controller

- Minor and Major Frame Scheduling to Control Timing of 1553 Messages
- High and Low Priority Asynchronous Message Insertion
- Modify Messages or Data while BC is running
- Conditional Messages or Subroutines based on User Defined Conditions
- Multiple BC retry programmable options
- Error Detection as per MIL-STD-1553 Standard

1553 Remote Terminal

- Choice of Sub-address Single Message, Double Buffering, Circular Buffering or Global Circular Buffering
- Message Status, Time Tag, Command Word, Data Words
- Programmable Command Illegalization
- Programmable Busy by Sub-address
- Programmable RT Address via Software

1553 Bus Monitor

- IRIG-106 Chapter 10 Compatibility
- DMA Engine for Low CPU Utilization
- Selective Message Monitor
- Filter Based on RT Address, T/R bit, Sub-Address
- Message Status, Time Tag, Command Word, Data Words
- Programmable Interrupt Conditions
- Simultaneous RT/Message Monitor Option

ARINC 429

- High / Low Speed Operation with automatic slew rate adjustment
- 8 Receive Channels, 4 Transmit Channels
- FIFO or Mailbox Reception Methods
- FIFO or Scheduled Transmission Methods Message
- Filtering based on Label/SDI combinations
- 48-bit Message Time Tagging
- Triggering and message filtering
- User Definable Interrupts

Serial I/O

- 2 channels of user selectable RS-422/485
- Up to 2 channels of RS-232
- Programmable baud rate up to 921.6 Kbps
- RS-232 RTS/CTS & DTR/DSR serial data flow control handshaking signals
- Autonomous RS-485 Half Duplex data transceiver direction control signal

Built In 1553 Self-Test Capability

- Ram Self Test
- Register Self Test
- Online Loopback Test
- Capability to Test Transmitter Timeout Function

Built In 429 Self-Test Capability

- Internal Loopback Test
- External Loopback Test

Supporting Software

- C Software Development Kits (SDK) for MIL-STD-1553 and ARINC 429
- Windows 2000, Windows XP, Linux and VxWorks support
- Abstracts all low level hardware
- High-Level Register/Memory Initialization Routines
- Creation of Consolidated Status and Data Structures
- Memory Allocation Performed Transparent to Application Program

VxWorks Driver

- Designed for Version 5.x and 6.x of Wind River's VxWorks
- Version for Power PC, and x86

Linux Driver

- Loadable Linux driver module for kernel version 2.6.x
- Version for Power PC, and x86

Windows Driver

- Plug and Play Windows Device Driver for Windows 2000 and Windows XP

ORDERING INFORMATION

BU-65590XX-X X X X

Conformal Coating:
N = Acrylic
U = Polyurethane
Blank = None

Test Criteria:
0 = none

Environmental & Operating Temperature Options:
QA = Rugged Air-Cooled Card (0°C to +65°C Inlet Air Temperature Range)

I/O Options:

OPTION #	CHANNEL NUMBER AND TYPE						
	1553	ARINC 429 Rx	ARINC 429 Tx	RS-232	RS-422/485	DISCRETE I/O	IRIG-B INPUT
0 =	4	8	4	2	2	6	Yes
1 =	2	8	4	2	2	6	Yes

Card Type:
A = AMC Card

Base Model Number:
BU-65590 = Multi-IO Avionics Card

Included Software:

BU-69092SX - MIL-STD-1553 EMACE Plus C Software Development Kit
Operating System:
0 = Windows 2000/XP
1 = Linux
2 = VxWorks

DD-42992SX - ARINC 429 Multi-IO C Software Development Kit
Operating System:
0 = Windows 2000/XP
1 = Linux
2 = VxWorks

The information in this **Data Sheet** is believed to be accurate; however, no responsibility is assumed by Data Device Corporation for its use, and no license or rights are granted by implication or otherwise in connection therewith. Specifications are subject to change without notice.

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