Data Device Corporation

Avionics Bridge Device

Product Overview

DDC®
Connectivity Power Control

DDC's Family of Avionics Bridge Device(ABD)

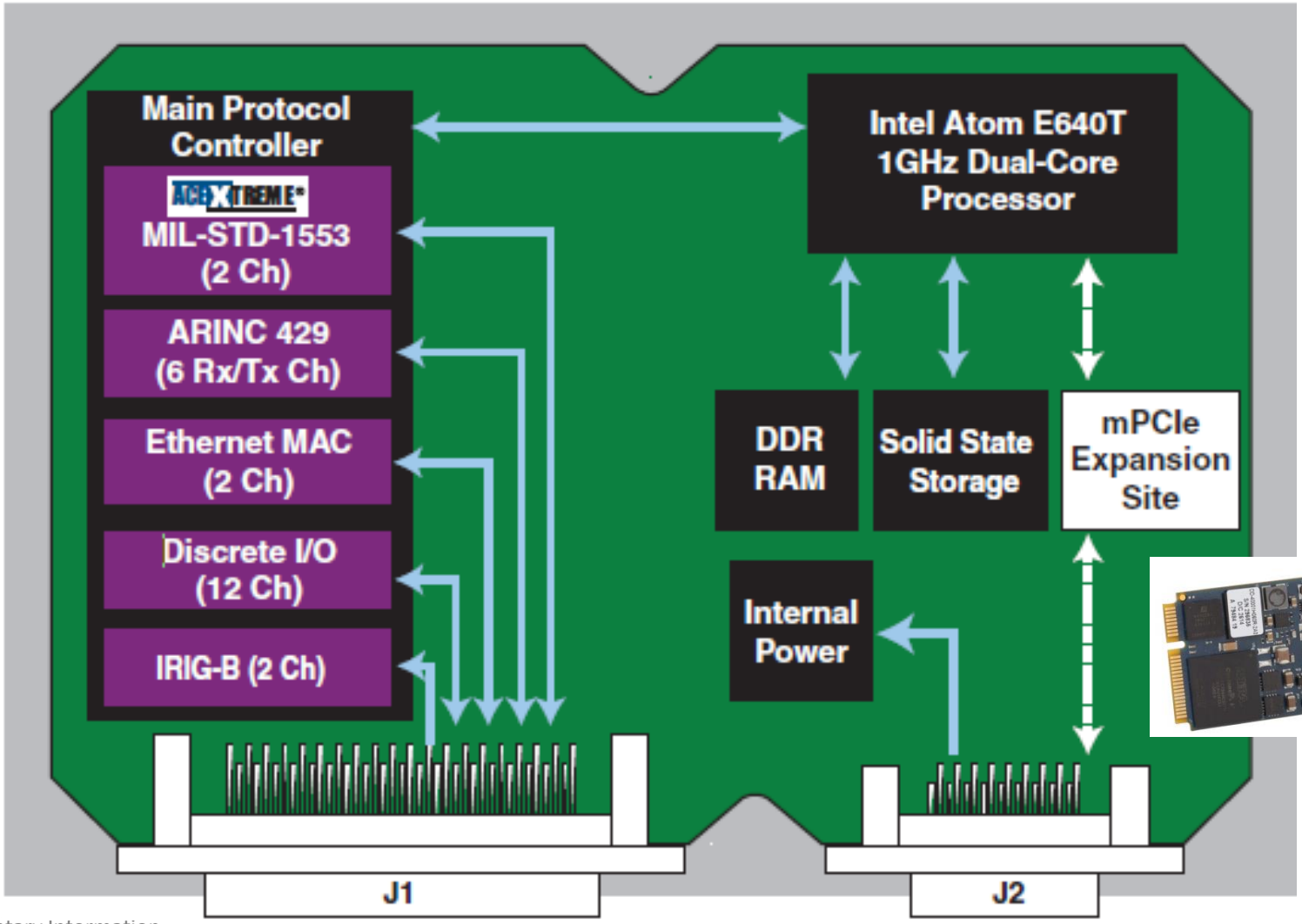
- Basic I/O conversion functionality
- Converts data between 1553 / 429 / Ethernet

		Model Number	Channels			Op. Temp.			RoHS	Size/Weight
			Ethernet	1553	429	-40°C to +71°C	-40°C to +85°C	0°C to +55°C		
Rugged		BU-67115W000L-CC0	2	0	6	✓				6.92 in x 5.05 in x 1.49 in (176 mm x 128 mm x 37.8 mm) 35.3 oz. (1000 g)
		BU-67115W100L-CC0	2	1	0	✓				
		BU-67115W200L-CC0	2	2	0	✓				
		BU-67115W300L-CC0	2	2	6	✓				
Board		BU-67116W000L-2C0	2	0	6		✓			6.31 in x 4.20 in x 1.15 in (160 mm x 107 mm x 29.2 mm) 17.64 oz. (500 g)
		BU-67116W100L-2C0	2	1	0		✓			
		BU-67116W200L-2C0	2	2	0		✓			
		BU-67116W300L-2C0	2	2	6		✓			
Lab		BU-67119W000R-JL0	2	0	6			✓	✓	6.67 in x 5.28 in x 2.19 in (169.4 mm x 134.1 mm x 55.6 mm) 26.0 oz. (737 g)
		BU-67119W100R-JL0	2	1	0			✓	✓	
		BU-67119W200R-JL0	2	2	0			✓	✓	
		BU-67119W300R-JL0	2	2	6			✓	✓	

Rugged ABD (BU-67115 W)

- Enclosed Ruggeded Box
- Assembled on Mounting Plate Type

Block Diagram



Features : General

- **Overall Configuration :**
  - Two 10/100/1000 BASE-T Ethernet Channels
  - Options for One or Two MIL-STD-1553 Channels
  - Option for Six ARINC 429 Transmit or Receive Channels
  - Intel Atom E640T Processor
  - Embedded Linux Real Time Operating System
- **Bridge Any Channel to Any Other Channel(s)**
- **Self-Contained Development Environment**
- **Lab and Rugged Versions**

IO

- DDC's ABD includes dual Ethernet ports;
- This secondary Ethernet port can be used as a maintenance port simultaneously
  - Both Ethernet ports can be used simultaneously for protocol conversion if necessary

Environmental

- ABD is rated to IP67 (waterproof)

- MIL-STD-810 Shock, Vibration, Humidity, and Altitude
- MIL-STD-461 EMC
- Available in a circuit card assembly form factor as well as lab grade box

Features : MIL-STD-1553

- One or Two Dual Redundant 1553 channels
  - Each 1553 channel can be independently programmed for BC, BC/MT, RT, Multi-RT, Monitor, RT/Monitor, or Multi-RT/Monitor operation.
  - Transformer-coupled 1553 bus connection (consult factory for direct-coupled).
- 1553 Bus Controller (BC)
- 1553 Remote Terminal (RT)
- 1553 Bus Monitor (MT)

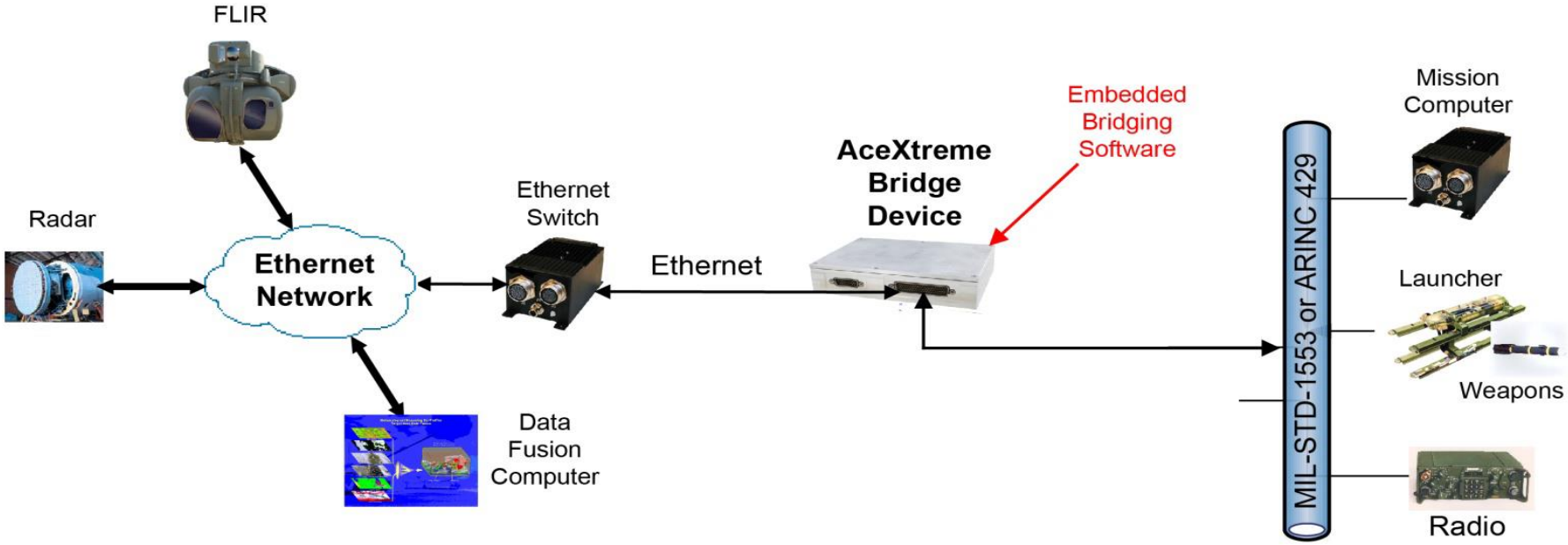
Features : ARINC 429

- Six ARINC 429 channels programmable for Transmit or Receive operation
- Programmable High or Low Speed Operation for each ARINC 429 Channel
- Scheduled and FIFO ARINC 429 transmission
- FIFO and mailbox ARINC 429 reception

Features : Software

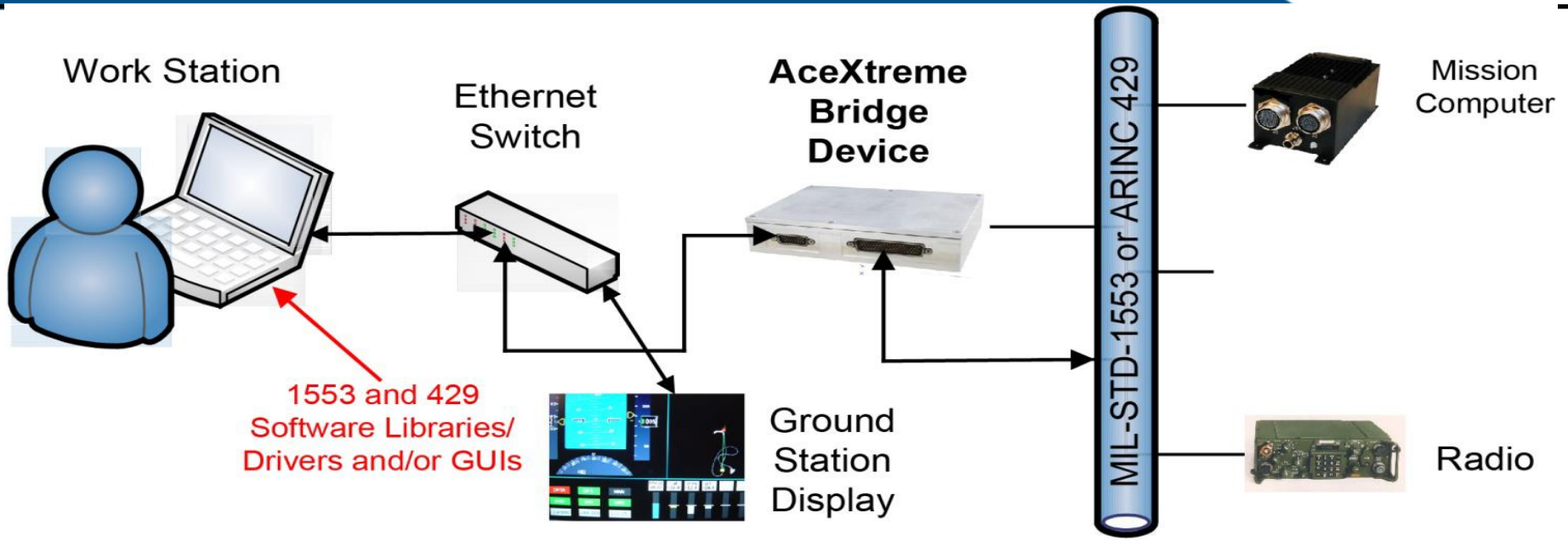
- Linux Operating System and BSP
  - Ethernet Stacks, with UDP/IP and TCP/IP Sockets, Telnet, FTP, TFTP, SSH, and HCTP.
- DDC AceXtreme MIL-STD-1553 API, Including Sample Programs
- DDC ARINC 429 API, Including Sample Programs
- Built-in Editor, Allowing Editing and Saving Files Over Telnet
- Built-in ‘C’ Compiler

Protocol Conversion Mode



- ABD may be configured to provide autonomous communication bridging between any channel and any other channel(s).
- To minimize setup time and provide turnkey operation, the ABD includes a high-level protocol bridging API
- Alternatively, users may develop their own bridging applications invoking DDC's AceXtreme MIL-STD-1553 and/or ARINC 429 APIs, along with the Linux socket interfaces for the two Ethernet channels.

Remote Assess Mode



- **User develops applications running on a remote computer**
  - Applications invokes the AceXtreme MIL-STD-1553 and/or ARINC 429 APIs
  - AceXtreme software drivers for Windows XP, Vista, 7,8, and 10; Linux kernel version 2.6.x and 3.x.x; and Wind River VxWorks versions 6.x.
- **Communicates over Ethernet to the AIC I/O's**
  - MIL-STD-1553, ARINC 429, Serial, Digital I/O

Data Bus Board - Products

- **Defining the Data Bus Board to address the application**
  - Functionality – Mil-Std-1553 and/or ARINC 429, Discrete
  - Number of Channels
    - Mil-Std-1553 1 to 8
    - ARINC 429 4 to 36

  - Form Factor – XMC, PMC, PCI, PCIe, Mini-PCIe, cPCI/PXI, PC/104, USB
  - I/O – Front/Rear
  - Lead Free Option – Lead/RoHS
  - Cooling Method – Conduction vs. Convection
  - Ruggedness – Operating Temperature Range
    - 0 to 55^{0}C
    - -40 to 85^{0}C

- **DDC has the widest range of Data Bus Board Types to meet customer applications**

Data Bus Boards
Embedded Applications

- **PMC & XMC Cards**
  - Order Type: Recurring business with high volume
  - Applications: Mission Computers, Radars, Launchers, Ground Stations
  - Where to Sell:
    - CPU Vendors such as Xes, Curtis Wright, GE, Aitech, & Mercury
    - System Integrators such as Northrop Grumman, Lockheed Martin, Honeywell, Rockwell Collins, Raytheon
- **Small Form Factors (USB & Mini-PCIe Cards)**
  - Order Type: Mixed / Recurring business with high volume and some low/medium volume
  - Applications: Limited space small boxes, Notebooks, Tablets
  - Where to Sell:
    - Component customers that don't want to make a board
    - Rugged Small Form Factor Computer Suppliers: GMS, Themis, Curtis Wright, Quantum3d, Versalogic
    - Laptops/Tablets : Miltope, DRS, GD, Argon Corp, Black Diamond, Getac, MaxVision, Mid-Atlantic Computers

Data Bus Boards Maintenance Applications

- **Portable Test or Data Loaders**
  - Applications: Rugged Depot Repairs, Data Loading, Flight Test
  - Where to Sell: Bases, Depot Repair, Verification Labs, Flight Test, Rugged Laptop/Notebook Suppliers, Aircraft Carriers
- **Products**
  - Unique Form Factors compared to Test and Simulation Market
  - Adapters connected to rugged computers
  - Convert Mil-Std-1553 to USB Interface
  - Portable
  - Rugged