

# PC/104 Board Capabilities

MIL-STD-1553 / ARINC 429 / Synchro Conversion



**DDC**<sup>®</sup>  
Data Device Corporation  
[www.ddc-web.com](http://www.ddc-web.com)



## CAPABILITIES

### PC/104 ■ PCI-104 ■ PC/104-PLUS

#### PC/104 CARDS

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The PC/104 form factor has allowed both embedded and laboratory system designers to keep development costs low through the use of commercial off-the-shelf (COTS) products. Compact and reliable, DDC's PC/104 family of embedded COTS modules are employed in systems with tight space constraints such as digital flight data recorders, small avionics displays, line replaceable units (LRU's), and radars.

DDC offers various configurations of PC/104, PC/104-Plus, and PCI-104 products for numerous interfaces including MIL-STD-1553, EBR-1553, ARINC 429 and Synchro/Resolver.

#### COOLING METHODS

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DDC offers PC/104 boards in two thermal configurations:

- with a heat sink for air-cooled applications that have forced air
- without a heat sink for conduction cooled applications

Although the PC/104 specifications do not specify conduction cooling, many embedded applications use a custom plate to conduction cool the boards in a stack. In general, a heat sink is not designed into boards that are to be used in conduction-cooled stacks, as it may interfere with the cooling method. Thermal considerations of DDC board design keeps one side of PC/104-Plus or two sides of PCI-104 cards free to allow entry for a custom plate that can be used to conduction cool boards in a stack.

#### TECHNOLOGIES

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- MIL-STD-1553
- EBR-1553/MMSI
- ARINC 429
- Avionics Discrete I/O
- Digital Discrete I/O
- Multi-I/O Boards
- Synchro/Resolver

#### APPLICATIONS

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- Digital Flight Data Recorders
- Telemetry/Instrumentation Recorders
- Displays
- LRU boxes
- Radars
- Situational Awareness
- Navy Applications
- Ground Vehicles
- Munitions

#### SOFTWARE

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- VxWorks®
- Linux®
- Integrity®
- LynxOS®
- Windows®
- Solaris™



## MIL-STD-1553 / ARINC 429 / SYNCHRO FEATURED PRODUCTS

### PC/104 CARDS



**MIL-STD-1553 CARD**

- One to Four 1553 Channels
- Enhanced Mini-ACE® RT-only or BC/RT/MT Architecture
- 64K-word RAM per Channel



**MMSI/EBR MIL-STD-1553 CARD**

- One to Four EBR-1553 Channels
- MMSI Serial Addressing Capability with Supporting CANBus Interface(s)
- Optional Dual Redundant MIL-STD-1553 Interface



**SYNCHRO-TO-DIGITAL CONVERTER CARD**

- Up to Four Synchro/Resolver Input Channels with Accuracy to  $\pm 1$  minute
- Synthesized Reference
- Velocity Output Signal

### PC/104-Plus & PCI-104 CARDS



**MIL-STD-1553 CARD**

**Key Features**

- Up to 4 Dual Redundant MIL-STD-1553 Channels
  - BC/Monitor or Multi-RT/Monitor per 1553 Channel
  - Supports MIL-STD-1760
  - Transformer and/or direct coupled
- Up to 16 Receive and 8 Transmit 429 Channels
- Digital and (+35v) Avionics Discrete I/O
- IRIG-B Time Code Input/Output
- 48-bit/100ns Time Stamp
- +5V only operation



**MULTI-I/O MIL-STD-1553 & ARINC 429 CARD**

**Benefits**

- Rugged Design for Harsh Environments
- Proven & Reliable Technology
- Unique I/O Mix & High Channel Count Reduces:
  - Space, Power, Weight, Cost
- C Application Code Generation GUI Shortens Development Cycle and Reduces Risk
- IRIG-106 Chapter 10 On Board Formatting
- User Selectable BC Disable/Tx Inhibit per 1553 channel
- On-Board DMA Engine for Low CPU/PCI Utilization



## The first choice for more than 45 years —DDC

Data Device Corporation is the world leader in the design and manufacture of high reliability data interface products, motion control, and solid-state power controllers for aerospace, defense, and industrial automation.

## CUSTOMER TESTIMONIALS

*"We have selected DDC's PC/104-Plus cards for use in our embedded systems that require a MIL-STD-1553 data bus interface due to the product's high quality and proven reliability along with DDC's solid reputation for excellent support,"*

**Parvus Corporation, Utah**

*"DDC's 4-channel 1553 PCI-104 card has allowed us to save space and weight in our ENERTEC airborne mission recorders that require MIL-STD-1553 and IRIG-106 Chapter 10 interfaces due to the high channel density of the card."*

**ZODIAC DATA SYSTEMS, France**

*"DDC's high reliability PC/104-Plus card allowed us to operate as the 1553 BC transferring data from the INS to the Radar across the 1553 Bus. Navigation data is also collected from the 429 bus and bridged to 1553 to be sent to the Radar. Having 1553 and 429 on one card allowed us to accomplish this task."*

**Allied Data Systems, Australia**



For ordering assistance and technical support,  
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