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PC/104P-1553

Multi-Channel 1553 Interface for PC/104-Plus Systems



Alta Data Technologies' PC104P-1553 interface cards (PC/104-Plus) are multi-channel (1-4) 1553 bus interfaces supported by the latest software technologies. These PC/104-Plus cards are based on the industry's most advanced 32-bit 1553 FPGA protocol engine, **AltaCore™**, and by a feature-rich application programming interface, **AltaAPI™**, which is a multi-layer ANSI C and Windows .NET (MSVS 2005/08/10 C++, C#, VB .NET) architecture. This hardware and software package provides increased system performance and reduces integration time.

The PC104P-1553's BC capability, including variable message framing/subframing with transmission scheduling provides the most advanced BC control operations. RT, Monitor, Playback and Signal Generator functions also include industry leading functions to meet the most demanding requirements.

AltaCore-1553 is guaranteed 1553B Notice II & IV compliant and all cards are manufactured to the highest IPC-Class 3 standards and ISO 9001:2008 processes. Cards are available in dual-function (BC/Mon or multi-RT/Monitor) or full-function (BC, mRT and Mon) configurations. Playback and Signal Generation are part of BC operations. Alta is committed to a risk free integration and will be glad to help with any level of your system development.

Key Features:

- One to Four Independent, Dual Redundant MIL-STD-1553 Channels
- Dual Function (BC/Mon or mRT/Mon) or Full Function (BC/mRT/Mon)
- One Mbyte of Memory per Channel
- Fully Compliant to MIL-STD-1553B Notice II/IV, MIL-STD-1760,1553A and Link-16
- Commercial or Industrial Extended Temperature Parts
- Advanced 32-bit BC, RT and Monitor FPGA Design – Full 32 bit Memory.
- BC Framing/Subframing/Aperiodic
- Common Data Packets (CDP) for BC, RT and Monitor – Complete Message Info
- Advanced, Multi-layer **AltaAPI** Provided at No Cost with Source Code
- Windows, Linux, RTOS, LabVIEW & RT
 - .NET Managed DLLs
 - Contact Factory for Latest RTOS Support
- True HW Playback – HW Sync Channels
- Industry First: 20ns Signal Generation
 - Bit Construction – 1553 PHY TX
 - Supports RT Validation Testing
- IRIG-B RX PAM or RX/TX PPS Ext Clock
- Avionics Level & RS-485 Discretes/Clk
 - 1760 Ext RT Addressing
- Advanced BIT Features and Dual Temperature Sensors
- Full HW Interrupt Features
- PCI 32 Bit, 33/66MHz & PCI-X Compatible, PC104P-Plus 2.0,ISA Pass Through Standard

AltaView & AltaRTVal
Multi-Protocol Analyzer & 1553 AS4111/4112 5.2 Validation
User's Application with Modular, Portable **AltaAPI**

AltaAPI Architecture

Layer 2 – Windows Managed DLL
Object Oriented Code for .NET, C#, C++, VB, LabVIEW
Network Client/Server C#

Layer 1 – Portable ANSI C Application Program Interface (API)
(most applications tie-in here – includes native LabVIEW/LabWindows CVI DLL)

Layer 0 – OS Device Driver
Windows, Linux, Real-Time Operating Systems, LabVIEW-RT

Hardware – PCI, PCI Express, cPCI, PCCD, XMC, etc...

Alta's Advanced Software Architecture

Multi-Channel (1-4) PC/104-Plus 1553 Specifications

General

- 32-Bit PCI 33/66MHz/PCI-X Compatible
 - PCI-SIG PCI 2.1 Compliant
 - PC104-Plus 2.0 Compliant
 - ISA Pass Through Standard
- One Megabyte RAM per Channel
- Common Data Packets (CDPs) for all BC, RT and Monitor Functions – Industry First
- MIL-STD-1553B Notice II & IV
 - MIL-STD-1760, 1553A and Link-16
- Weight: 4oz/120grams
- Power (Estimated @ Max Bandwidth)
 - 1CH@5.5W, 2CH@6.5W, 3CH@7.5W, 4CH@8.5W
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to +85 Extended
- Locking Molex Connector for Each Channel and AUX I/O
- 8 Avionics Discretes, 1 RS-485 Discretes/Trig/Ck, 1 Trig/Chan
- 1 Channel 1760 Ext RT Address Power-Up
- Loop-Back & User BIT, Dual Temp Sensors
- IRIG-B RX PAM and TX/RX PPS Time Sync
- IPC Class 3 and ISO 9001:2008 Processes

BC Features

- Simple One-Shot Lists to Advanced Message Framing and Subframing
- Message Timing with 100 nSec Accuracy
- Infinite Linked CDP Data Buffers
 - 64-Bit, 20 ns Time Tags, Interrupts, Triggers
- Low and High Priority Aperiodic Messages
- Multi Branching Per Message, No-Ops, Delays, Ext Trigger In/Out, Interrupts etc...
- Up to 15 Retries Per Message
- Legal and Reserved Mode Codes
- 1553A and 1553B Support
- Full Error Injection/Detection

Playback/Signal Vector PHY TX

- Real Hardware Playback from Archive Files
- Multi Channel and Multi Card Playback Clock Synchronization - 100 nSec Accuracy
- Signal Vector Generation at 20 nsecs
INDUSTRY FIRST
 - Construct 1553 Bit Signals at 20 nsecs
 - **AS4111 5.2 RT Val Protocol Capability
 - Advanced BC, RT or any 1553 PHY Signal TX

RT Features

- Infinite Linked CDP Data Buffers
 - 64-Bit, 20 ns Time Tags, Interrupts, Triggers
- Legal and Reserved Mode Codes
 - 1553A and 1553B Support
 - Full Buffering of All Mode Codes

Monitor

- Sequential and RT Mapped Monitoring with Infinite Linked CDP Data Buffers
 - Available with All Card Models
 - 64-Bit, 20 ns Time Tags, Interrupts, Triggers
 - Full Error Detection

Software: *AltaAPI*, *AltaView*, *AltaRTVal*

- Multi-Layer *AltaAPI* Architecture to Support Windows (.Net 2.0) and ANSI C Linux, VxWorks, Integrity, etc...
 - Contact Factory For RTOS Platforms
 - LabVIEW & RT Support
- Optional *AltaView* is Based on the Latest Windows MS Office User Interface Style with Ribbon-Bar
 - Full Analyzer Integration Tool
 - Multi Language Support
- Optional *AltaRTVal* provides full AS4111/4112 5.2 RT Validation GUI and Reports

Part Numbers

Dual Function Models: BC/Mon or mRT/Mon

- **PC104P-1553-1D/2D/3D/4D**

Full Function Models: BC, mRT and Monitor

- **PC104P-1553-1F/2F/3F/4F**

Options: -E for Ext Temp Parts (-40 to +85C); Conformal Coated or Non ISA Pass-Through on Request

5 Year Limited Warranty!

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Contact Alta for Special Lead Build Configurations

AltaAPI Software with ANSI C Source, .Net Managed DLLs and LabVIEW & LabVIEW-RT Provided at No Cost.

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