



MP2-1553

1-2 MIL-STD-1553 Channels M.2 PCI Express System



Alta Data Technologies' MP2-1553 provides 1-2 independent, dual redundant 1553 channels for rugged, embedded M.2 PCI Express. The MP2-1553 is 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 architecture. **Ideal for small embedded computer systems.**

AltaCore-1553 is **guaranteed** 1553B/C Notice II & IV **compliant** and all cards are manufactured to the highest IPC-Level 3 standards and ISO 9001:2015 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.

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

Key Features

- **1-2 Independent, Dual Redundant 1553 Channels for M.2 PCI Express Expansion**
- **M.2 Form Factor: 2280-D8-B-M (dual key)**
- 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/C Notice II/IV, 1553A and Link-16
- Commercial or Industrial Extended Temperature Parts
- BC Framing/Subframing/Aperiodic
- Common Data Packets (CDP) for BC, RT and Monitor – Complete Message Info
- True HW Playback – HW Sync Channels
- Industry First: 20ns Signal Generation
 - Bit Construction – 1553 PHY TX
- Advanced, Multi-layer **AltaAPI** Provided at No Cost with Source Code
- Windows, x86 Linux, LabVIEW & RT
- Contact Alta for RTOS Support Availability
- IRIG-B RX PAM or RX/TX PPS Ext Clock
- **Advanced BIT Features and Temperature Sensor**
- PCI Express 1.1 with MSI Interrupts

1-2 MIL-STD-1553 Channels

MP2-1553 Specifications

General

- **M.2 Form Factor: 2280-D8-B-M**
- PCI Express 1.1 with MSI Interrupts
- Molex Pico-Clasp 20-pin
- 1-2 Dual Redundant 1553 Channels
- One Megabyte RAM per Channel
- Common Data Packets (CDPs) for all BC, RT and Monitor Functions – Industry First
- MIL-STD-1553B/C Notice II & IV
- 1553A and Link-16
- 2 Avionics Discretes
- External RT Addressing (MIL-1760) Supported on Channel One with Factory Set Resistors.
- IRIG-B RX PAM or RX/TX PPS Ext Clock
- One LVTTTL Trigger Discrete
- Power Estimate at Full Bandwidth for two Channels is 5W
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to + 85 Extended
- 5.3"x1.03" x-y Dimensions
- Loop-Back & User BIT, Temp Sensor
- IPC Class 3 and ISO 9001:2015 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
- Full Error Injection/Detection

Playback/Signal Vector PHY TX

- Real Hardware Playback from Archive Files
 - 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
- Full Error Injection/Detection

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
- 8-bit, 50 nSec A/D Waveform Signal Capture with Trigger on Words or Errors
 - **AltaView** Software is Ideal for Signal Display

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

- Multi-Layer **AltaAPI** Architecture to Support Windows and Linux
 - 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

Part Numbers

Dual Function: BC/Mon or mRT (Multi RT)/Mon

- **MP2-1553-1/2D**

Full Function: BC, mRT (Multi RT) and Monitor

- **MP2-1553-1/2F**

Channel Count Digit: "1" or "2" Above

Options: -E for Ext Temp Parts (-40 to +85C);
-A for AltaView; -I 1553 TX Inhibit, -N NVRAM Write Disable,
-F Conformal Coating. Options Example (alpha order):

MP2-1553-2F-AEFIN

5 Year Limited Warranty!

RoHS Compliant

Contact Alta for Special Lead Build Configurations

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