PCIE1L-1553

Multi-Channel 1553 Interface
for Single Lane PCI Express Systems

Alta Data Technologies’ PCIE1L-1553 interface module is a multi-channel (1-2), ½ size, Low Profile, One Lane PCI Express 1553 card with the latest software technologies. The PCI Express card 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 (MSVS 2005/08/10 C++, C#, VB .NET) architecture. This package provides increased system performance and reduces integration time.

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 or Two 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
- Variable Voltage 1553 TX Optional
- Fully Compliant to MIL-STD-1553B Notice II/IV, MIL-STD-1760, 1553A and Link-16
- Commercial or Industrial Extended Temperature Parts
- **One Channel of A/D Signal Capture – View 1553 Waveforms with AltaView!**
  - 8-bit, 50 nSec A/D for Voltage Measurements
- 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
- 1/2 Size, Low Profile, One Lane PCI Express 1.1
- MSI & Regular HW Interrupt Support
Multi-Channel (1-2)  
PCIe1L-1553 Specifications

**General**
- ½ Size, Low Profile, One Lane  
  PCI Express 1.1  
  • Full Profile Front Panel also Provided  
- One Megabyte RAM per Channel  
- TX Variable Voltage Optional  
- 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 (without cable)  
- Power (Estimated @ Max Bandwidth)  
  • 1CH@5W, 2CH@6.5W  
- Parts Temp (C) : -55 to +120 Storage, 0 to +70 Commercial, -40 to +85 Extended Parts  
- Cable Assembly with 1553 3-Plug Stub Sold Separately. DB15 Optional for Discrete/Clocks/Triggers.  
- Micro D Honda Thumb Screw Connector  
- Card Header Connector for Additional I/O  
- 14 Avionics and Two RS-485 Discretes  
- 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  
- 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 - First Channel Only  
  - AltaView Software is Ideal for Signal Display

**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  
- 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  
  - PCIe1L-1553-1D/2D  
- Full Function Models: BC, mRT and Monitor  
  - PCIe1L-1553-1F/2F  
- Options: -E for Ext Temp Parts (-40 to +85C); -V for Variable Voltage Output, -A for AltaView and -B for AltaRTVal  
- Cable Options: PCCDCAB-1553-X-01 or PCCDCAB-1553-X-AUX01 (DB15 Included for AUX I/O). X= 1553 Channel Count (1 or 2). Cables Sold Separately.

**5 Year Limited Warranty!**  
EU and China RoHS Compliant

Contact Alta for Special Lead Build Configurations

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

Alta Data Technologies LLC  
4901 Rockaway Blvd., Building A  
Rio Rancho, NM 87124 USA  
888-429-1553 (in US)  
505-994-3111 (outside US)  
alta.sales@altadt.com  
www.altadt.com

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