



- **Portable USB Device**
- **Up to 2 Dual Redundant MIL-STD-1553 Channels**
- **Supported Configurations are:**
 - > Stand-Alone BC
 - > Stand-Alone RT
 - > Stand-Alone MT
- **16 User programmable DIO's**
- **GPS Synchronization capability (optional)**
- **Externally Powered**
- **Graphical User Interface Software for Bus Analysis & Simulation**
- **MIL-STD-1553 Programmable as Bus Controller or Remote Terminal or Monitor Terminal**
- **Direct Coupled or Transformer Coupled**
- **Software Driver Support for Windows XP, Windows 7, Linux & RT-Linux**

OVERVIEW

The USB-1553 module is a small, portable, USB device that provides new levels of performance & flexibility for systems interfacing to a MIL-STD-1553 data bus. There are up to two dual redundant MIL-STD-1553 channels operating in BC, RT, MT & RT/MT modes. The device includes the MIL-STD-1553 C API (Application Programming Interface) library & drivers, along with source code samples & detailed documentation. This module is the perfect COTS solution for MIL-STD-1553 data bus systems. Its small size, lightweight & durable construction makes it an ideal choice for use in avionics labs, field service, flight line test equipment & flight instrumentation applications. The USB interface makes it suitable for use with desktop, laptop or tablet computers.

MIL-STD-1553 CHANNELS

Each 1553 channel can emulate as a Bus Controller (BC), a Remote Terminal (RT) or a Bus Monitor (MT). Standard features include 64KB of RAM per 1553 channel, transformer & direct coupling, triggers, extensive BC & RT frame structures, RT Status Bit & Mode Code responses, along with advanced BC functionality. The advanced BC architecture provides a high degree of flexibility & autonomy by providing message schedule control, minimizing host overhead for asynchronous message insertion, facilitating bulk data transfers, double buffering, message retry bus switching strategies, data logging & fault reporting. The choices of RT buffering & interrupt options provide robust support for synchronous & asynchronous messaging, while ensuring data sample consistency & supporting bulk data transfers. The interface includes a message monitor mode & a combined RT/MT mode where the MT will monitor all 1553 communications on the bus including the 1553 Channel's assigned RT addresses. The Bus Monitor Mode provides for Selective Message Monitoring & Combined RT/Message Monitor Mode. A combined RT/MT mode allows the device to run in both modes of operation at the same time on the bus.

Discrete I/O

The device includes 16 (digital 5V) discrete that are individually programmable as inputs or outputs (Open/Ground Discrete). The discrete outputs can be used for a variety of purposes, including triggering events, indicating status & general-purpose use.

Stand-Alone Feature

AT-USB-1553 module provides interface between non 1553 compatible device to 1553 bus system & this can be achieved through USB interface. This feature allows the unit to operate in stand-alone mode in either BC or RT or MT. Firmware allows the User to dynamically reconfigure the unit to one of the supported modes.

SOFTWARE

This USB Avionics Device includes a Bus Monitor Software. Source code provided for samples & detailed documentation. The device comes with a powerful set of library functions to access the entire MIL-STD-1553B functionality. The drivers are designed in a modular fashion consisting of component functions & application functions. The user's test program can be developed with few calls to the driver by using the set of application functions provided. Driver & high-level API libraries for Windows XP, Windows 7, Linux & RT-Linux are available. Sample programs for BC, RT, MT modes are included.

AT-USB-1553

MIL-STD-1553B USB MODULE

PRODUCT SPECIFICATIONS

MIL-STD-1553B Interface

- Up to Two Dual Redundant MIL-STD-1553 Channels
- Transformer and Direct Coupled 1553 I/O
- 64KB RAM per 1553 Channel
- High Level 1553 C API Software Library Interface
- BC, RT, MT, RT/MT Operating Modes

1553 Bus Controller

- Minor and Major Frame Scheduling to Control Timing of 1553 Messages
- High and Low Priority Asynchronous Message Insertion
- Modify Messages or Data while BC is running
- Conditional Messages or Subroutines based on User Defined Conditions
- Multiple BC retry programmable options
- Automatic retries on alternate Bus
- Inter Message Gap from 8us to 65ms
- Frame Auto Repeat up to 5s
- Programmable response timeout up to 130us
- GPS synchronization of Bus Controller (optional)

1553 Remote Terminal

- Choice of Sub-address Single Message, Double Buffering, Circular Buffering or Global Circular Buffering
- Stack with Descriptors for Individual Messages
- Message Status, Time Tag, Command Word, Data Words
- Programmable Command Illegalization
- Programmable Busy by Sub-address
- Software-Programmable RT Address
- Busy Bit programmable by Sub address
- Alpha numeric Message ID

1553 Monitor Terminal

- Selective Message Monitor and Word Monitor
- Filter Based on RT Address, T/R bit, Sub-address Message Status, Time Tag, Command Word, Data Words
- Simultaneous RT/Message Monitor Option
- Dynamic Data Update
- Bus Error Status
- Bus Load
- Unique Message Identifier
- Message periodicity
- Record and Replay Option
- GPS synchronization (optional)

GPS Receiver (optional) for Synchronization

- GPS receiver on-board for synchronization
- Synchronization control through software
- Synchronization of on-board time tag counters with GPS time
- Separate GPS antenna provided along with the unit

Software Support

- Driver & high-level API libraries for Windows XP, Windows 7, Linux & RT-Linux
- Sample Applications provided to help users quickly setup & use the card

Physical

- Durable Enclosure with covers for 1553 connectors
- L -152mm X H - 40mm X W - 135mm

Environmental

- Operating temperature: 0° C to +50° C
- Storage temperature: -20° C to +70° C

Power

- +5V External Powered through Adapter

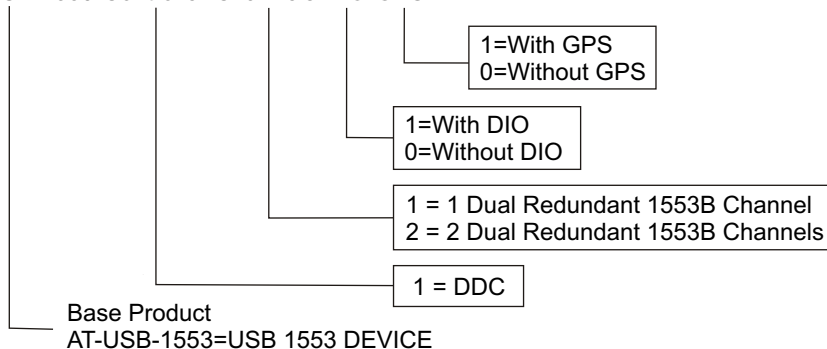
Warranty

- 1 year limited warranty

ORDERING INFORMATION

Hardware Selection

AT-USB-1553-Controller-Channels-DIO-GPS



- Contact sales for support for other Operating Systems
- Contact sales for configuration of front and rear I/O configuration
- Contact sales for environmental options



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