



- **Portable Ethernet Device**
- **Based on 10/100 Ethernet for MIL-STD-1553 Applications**
- **Upto 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**
- **MIL-STD-1553 Programmable as Bus Controller or Remote Terminal or Monitor Terminal**
- **Direct Coupled or Transformer Coupled**
- **Sample Applications for Windows, Linux & RT-Linux available**

OVERVIEW

The AT-ETH-1553 is an innovative product that provides "remoting" of 1553 operations on 10/100 Mbit/s Ethernet IP/UDP Local Area Network (LAN). The AT-ETH-1553 is a small, portable device that provides new levels of performance & flexibility for systems interfacing to a MIL-STD-1553 databus. There are up to two dual redundant MIL-STD-1553 channels operating in BC, RT, MT & RT/MT modes. Onboard USB 2.0 port is also available for general purpose use. This module is the perfect COTS solution for MIL-STD-1553 databus 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 Ethernet 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 RT architecture provides flexibility in meeting all common MIL-STD-1553B protocols. 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. Besides providing monitor filtering based on RT address, T/R bit & sub address, the message monitor eliminates the need to determine the start & end of messages by software. 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 I/Os 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-ETH-1553 module provides interface between non 1553 compatible device to 1553 bus system & this can be achieved through Ethernet 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

The device comes with a powerful set of library functions to access the entire MIL-STD-1553B functionality. Sample applications will be provided to help users quickly setup & use the card. Sample programs for BC, RT, MT modes are included. Sample applications for Windows, Linux & RT-Linux are included.

PRODUCT SPECIFICATIONS

System Interface

- 10/100Mbps IEEE 802.3 Standard Ethernet Interface

Ethernet

- RJ-45 Standard Ethernet connector

MIL-STD-1553B Interface

- Up to Two Dual Redundant MIL-STD-1553 Channels
- Transformer & Direct Coupled 1553 I/O
- 64KBRAM per 1553 Channel
- High Level 1553 CAPI Software Library Interface
- BC, RT, MT, RT/MT Operating Modes

1553 Bus Controller

- Minor & Major Frame Scheduling to Control Timing of 1553 Messages
- High & 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 8µs to 65ms
- Frame Auto Repeat up to 5s
- Programmable response time out up to 130µs
- GPS Synchronization of Bus Controller (optional)

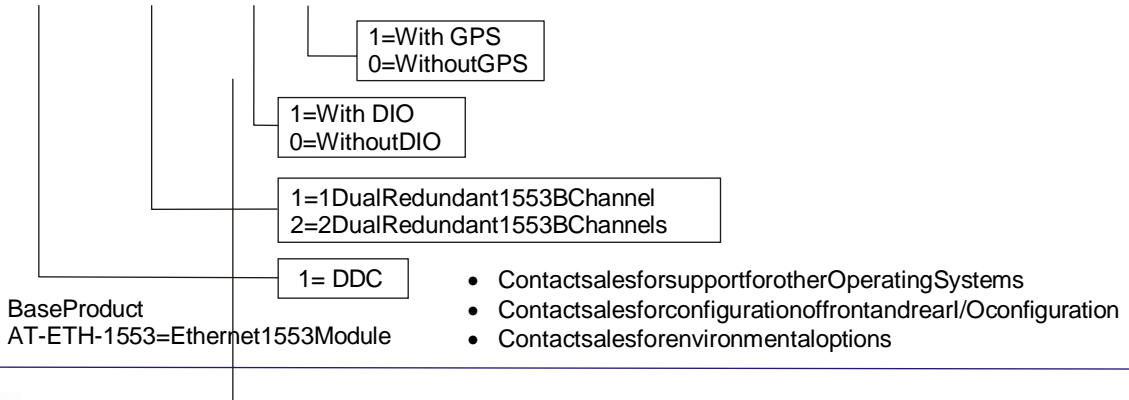
1553 Remote Terminal

- 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 Subaddress
- Alphanumeric Message ID

ORDERING INFORMATION

Hardware Selection

AT-ETH-1553-Controller-Channel-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

1553 Monitor Terminal

- Selective Message Monitor & 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 & 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

USB Port

- One general purpose USB 2.0 port via Type B connector

Software Support

- Sample applications for Windows, Linux & RT-Linux included

Physical

- Durable Enclosure with covers for 1553 connectors

Environmental

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

Power

- +6V External Powered through Adaptor

Warranty

- 1 year limited warranty



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