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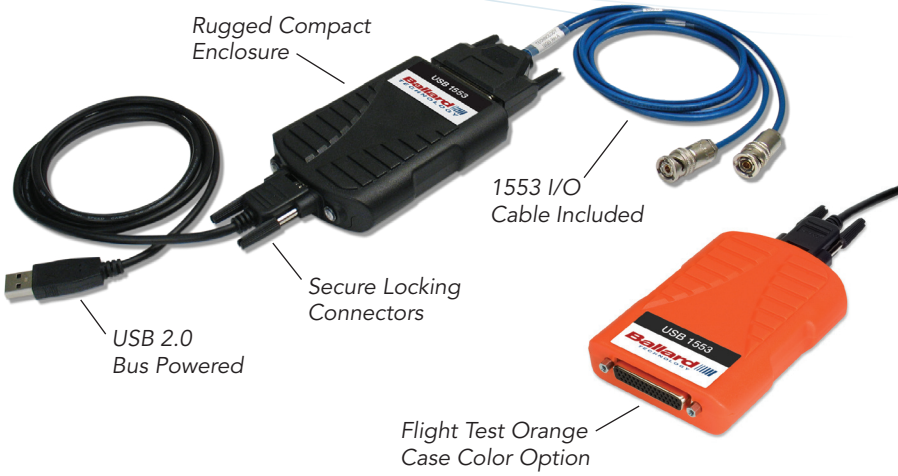
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Find the *Astronics / Ballard Technology USB 1553* at our website: ***Click HERE***

ASTRONICS
BALLARD TECHNOLOGY

USB 1553

USB Avionics Interfaces for MIL-STD-1553



The USB 1553 family of pocket-sized USB adapters enable computers to communicate with, simulate, test, and monitor MIL-STD-1553 equipment and systems. These rugged USB 2.0 peripherals feature extensive 1553 functionality and are compatible with virtually all modern PC laptop, desktop, and tablet computers.

Portable Avionics Interfaces

These versatile interfaces are suitable for a wide range of applications in the lab and in the field. They support maximum data throughput on all 1553 channels and have a large 32 MB built-in memory. All power necessary for operation is provided via the single USB port. Plug and Play and Hot Swap features make them easy to install and move between computers.

Fully-Featured Design

Depending upon the hardware model, each 1553 channel may be either single-function, multi-function, or bus monitor only. Single-function channels can be configured in software as either a Bus Controller (BC), a Bus Monitor (BM), or up to 32 Remote Terminals (RTs). Multi-function channels have protocol error injection capability and can simultaneously be a BC, BM, and up to 32 RTs. All models include eight avionics level input/output discretes and IRIG time synchronization/generation.

Easy-to-Use Software

Users can develop their own software applications with the included BTIDriver API. With only a few function calls, a program can operate the USB hardware and process messages to and from the avionics databuses. Functions include routines for transmitting, receiving, scheduling, recording, time-tagging, and manipulating data. With BTIDriver, application code migrates seamlessly to and from other Ballard devices, reducing development time and costs.

Ballard's optional CoPilot software provides easy-to-use, interactive tools for databus test, analysis, and simulation. CoPilot simplifies project development and provides added productivity through virtual instrument displays, flexible monitoring and analysis tools, and a powerful scripting engine. Special bundled pricing is available when ordering CoPilot along with the USB interface hardware.

KEY FEATURES

- Small, portable, and rugged
- Easy Plug and Play installation
- USB 2.0 Bus powered – no external power supply needed
- 1 or 2 MIL-STD-1553 Channels
- 8 Avionics Discrete I/O
- IRIG A/B PWM and AM
- 32 MB Data Memory
- Full MIL-STD-1553 functionality
  - Dual-redundant channels
  - BC, RT, and/or Monitor
  - Single-function, Multi-function, and Bus Monitor-only models available
  - Error injection (Multi-function)
  - LEDs indicate bus traffic and errors
- FCC, CE and RoHS compliant
- Boards also available without enclosure for embedded use
- 3-year limited warranty standard

MIL-STD-1553 Features

Bus Controller

Automatic or custom scheduling
Programmable: frame times, intermessage gaps, conditional retries, and branches
Run modes: continuous, loop N times, single-step
Start on software or external trigger
Aperiodic and one-shot messages
Sync out on all or selected messages
Programmable BC timeout values

Remote Terminal

Multi-terminal simulation (32 RTs)
Configurable 1553A or B response time
Programmable response time and status word bits
Auto Busy Bit option
Support for all 1553B mode codes
Selectable mode code subaddress
Enable broadcast on a per-RT basis
RT 31 as broadcast or valid RT
Configure/legalize selected SA/MCs
RT "Shadow Monitor" mode

Bus Monitor

Capture all 1553 traffic or filter by RT/SA
Capture and time-tag discrete I/O
Sequential record includes:
Command/status/data words, time-tag, errors, bus, and response time(s)
Efficient DMA monitor pipe to host

Message Data

Comprehensive error detection
Guaranteed data integrity
Buffering schemes facilitate data handling:
- Single buffers (default)
- Circular lists transmit a repeated pattern
- FIFO list buffers for sequential data

Data initialization options
Track activity by min, max, or elapsed time

Error Injection (Multi-function only)

Trigger from software or an external signal
Inject errors in all or tagged messages
Parity, bit count, inverted sync, Manchester, gap, and word count (relative or absolute)

Other Features

Standard Features

- Model dependent 1553 capability
- USB 2.0 interface
- 8 avionics discrete I/O
- IRIG A/B input and output
- 2 LED indicators
- 32 MB on-board memory

Avionics Discrete I/O

8 programmable inputs/outputs
Can be used as syncs and triggers
Output: Open/Gnd, 200 mA (max), self monitoring, inductive load protected
Log transitions to sequential record

Time-tag/IRIG

48-bit hardware time-tag (1µs resolution)
IRIG A or B, AM (input), PWM, and PPS
- Generate or synchronize
- Synchronize hardware time-tags

Interrupts/Logging

Poll or use interrupts
Configurable event log
Programmable event logging/interrupts from messages, BC schedule, and buffers

Channel Details

All channels dual redundant – Bus A and B
Single-function: BC, 32 RTs, or Bus Monitor
Multi-function: Error injection, BC, 32 RTs, and Bus Monitor simultaneously
Bus Monitor only: Monitor Only
Transformer and direct coupling
Jumper for direct coupled termination

Specifications

Component temp: -40 to +85 deg C
Storage temp: -55 to +100 deg C
I/O Connector: HD44F D-Sub
Dimensions: 3.0 x 4.45 x 0.97 in (76 x 113 x 25 mm)
Weight: under 5 oz (140 g)
Power: Single USB port
MTBF: 1,500,000 hours

Software

Universal BTIDriver API for C/C++, C#, VB, VB.Net, and LabVIEWTM
Windows®, Linux® and Solaris OS drivers
Translation DLLs for older Ballard devices
CoPilot analysis & test software (optional)
Call for latest language and OS support.

Ordering Information

Hardware & CoPilot*	Hardware Only	Channel 1	2	3	4
CP-UA1133	UA1133	M	M	–	–
CP-UA1130	UA1130	M	–	–	–
CP-UA1122	UA1122	S	S	–	–
CP-UA1120	UA1120	S	–	–	–
CP-UA1131	UA1131	M	BM	–	–
CP-UA1121	UA1121	S	BM	–	–
CP-UA1111	UA1111	BM	BM	–	–
CP-UA1110	UA1110	BM	–	–	–
CP-UA1140**	UA1140**	BM	BM	BM	BM

**Includes CoPilot analysis & test software*
***Channels are non-redundant*
S = Single-function, M = Multi-function, BM = Bus Monitor only

Options

To order, add the appropriate suffix to the above part number. Example: UA1133/NE

/FTO	Flight Test Orange case (black case is standard)
/NE	No Enclosure, Printed Circuit Board Assembly only, for embedded use
/FXY	Conformal coating (Parylene)

Accessories (Included*)

1553 transformer-coupled I/O cable with PL-75 connectors (3 ft)
USB cable with screw-locks (5 ft)
Mating HD44P D-Sub I/O connector
Manuals and software CD
**Except models with "/NE" option*

CONTACT INFO

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