



R15-USB

RoHS Dual port MIL-STD-1553 USB adapter

Features

- In Multi-function mode operates simultaneously as a Bus Controller, with up to 31 Remote Terminals and Bus Monitor
- In Dual-function mode operates simultaneously as either a Bus Monitor and Bus Controller, or a Bus Monitor with up to 31 Remote terminals.
- High-level API for Microsoft® Windows® 7 (32 and 64 bit), Vista and XP included.
- IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL) standard
- 64-bit, 25 nanosecond resolution time tagging (virtually unlimited time stamping)
- Complete message programmability and flexible message generation
- I/O triggering and error injection/detection
- External differential time-tag reset and clock inputs
- 8 Bi-directional Avionics discretes
- Optional conformal coating
- Optional rugged, transformer coupled no relays
- RoHS compliant to EU directive 2002/95/EC

GE Intelligent Platforms R15-USB is the latest generation of performance and flexibility for MIL-STD-1553A/B Notice II using a high speed USB 2.0 interface with one or two dual-redundant MIL-STD-1553A/B Notice II/IV channels. Available in -40°C to +75°C temperatures (with relays) and ruggedized (without relays).

The R15-USB includes advanced API (Application Programming Interface) software that reduces application development time.

GE's R15-USB's standard features include: IRIG-B signal Receiver (AM or DC/TTL) / Generator (DC/TTL), software selectable transformer or direct coupling, 2 Mbytes of RAM, 64-bit, 25 nanosecond message timetagging, input and output triggers for each 1553 channel, extensive BC & RT link-list structures, error injection and detection, 8 bi-directional avionics level discretes, automatic and manual RT Status Bit and Mode Code responses, along with advanced BC functionality.

The R15-USB Bus Monitor provides unparalleled error detection and 100% monitoring of fully loaded buses.

Multi-function Interfaces

R15-USB multi-function interfaces are easily configured to operate with simultaneous Bus Controller, up to 31 Remote Terminals and Bus Monitor functionality.

Dual-function Interfaces

Dual-function R15-USB interfaces have all the features and functionality of the multi-function versions, with either Bus Monitor and Bus Controller or Bus monitor and up to 31 Remote terminals.

Software

GE Intelligent Platforms provides our advanced 1553 API in source code, along with support for Microsoft® Windows® 7 (32 and 64 bit), Vista, XP and other operating systems.



R15-USB provides lockable USB series B and DB-15 ports for secure connections.



R15-USB – RoHS Dual port MIL-STD-1553 USB adapter

Specifications

Physical

- USB Interface Box (4.3" x 5.0" x 1.4" inches)
- 10.5 ounces

Environmental

- Standard operating temperature range: -40°C to +75°C with 600ft/min air flow
- Rugged (without relays)
- Storage temperature -50°C to +100°C
- Relative humidity with relays: up to 85% (non-condensing)
- Relative humidity without relays: up to 95% (non-condensing)
- Optional conformal coating configurations

Software Support

- API - High-level libraries with source code included for Microsoft® Windows®, 7 (32 and 64 bit), Vista and XP
- GUI - Optional BusTools/1553 GUI Bus Analysis, Simulation & Data Logging software
- Standard with IRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)

Connections

- Software selectable transformer or direct coupling via relays
- 8 Bi-directional Avionics level discretes

Multi-function Operational Modes

- Simultaneous BC

Dual-function Operational Modes

- BM and 31 RTs, or BM and BC

Power (2 channels at 75% duty cycle)

- Will operate with USB power
- External +5V power input provided

On-board Shared RAM

- 2 Mbyte

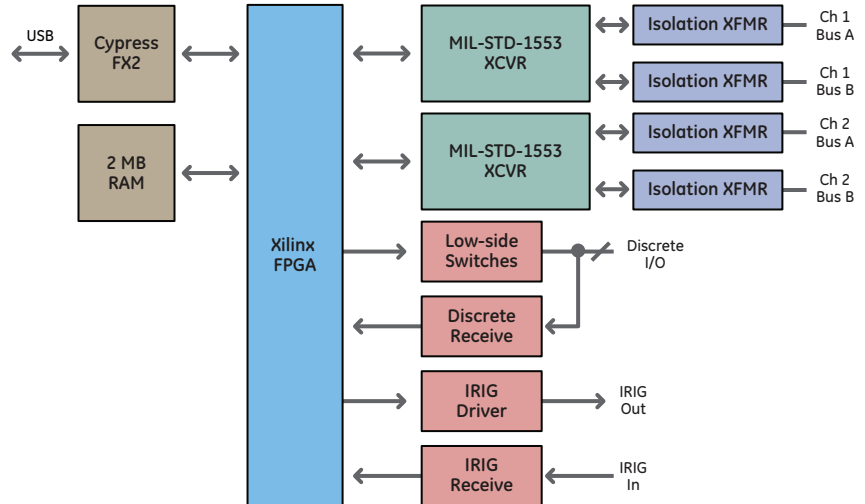
Timing

- Independent 64-bit, 25ns message time-tagging per channel
- Time can be programmed via the host or by a 1553 trigger
- All timers can be synchronized to 0 via the host
- Timers can independently use IRIG time
- IRIG-B receiver (AM or DC/TTL) and generator (DC/TTL)

Bus Controller

- Programmable control over:
 - Major and minor frame content and timing
 - Inter-message gap times
 - Response time-out and late response
- Modify messages, data or setup on the fly
- Insert aperiodic messages into a running BC list
- Multiple data buffers
- Conditional message sequencing based on real-time message data or status
- Selectable interrupt generation and status messages on full range of system conditions or all detected errors
- Synchronize BC operation to external time source

Block Diagram



Programmable full error detection/injection available on BC and RT and full detection available on BM (on a per word basis)

- Invalid word
- Bit count error
- High word
- Low word
- Inverted sync
- Manchester
- Late response
- Early response
- No response
- Incorrect RT address
- Parity error

Bus Monitor

- Capture 100% fully loaded bus traffic with:
 - Time-tagging
 - Error status
 - Word status
 - Message status
- Extensive filtering and triggering options
 - By individual RT/subaddress
 - Transmit, receive or broadcast mode codes

- Internal or external triggering
- Trigger output on user specified data
- Real-time bus playback with RT edit mode

Remote Terminal

- Multiple RT simulation (up to 31 RTs)
- Modify data, status words or setup while card is running
- Programmable message content (linked message buffers)
- Selectable interrupts upon multiple conditions
- RT Map Monitoring

Optional Configurations

- 1 or 2 Dual or Multi-function channels
- Optional conformal coating
- Optional Transformer or Direct coupling
- Contact factory for Custom requirements

Ordering Information

R15-USB - 1D

MIL-STD-1553 Dual-Function, Single dual-redundant channel, 32-bit FW, USB interface box, 8 Bi-directional discretes, Relay coupled, Fixed voltage with IRIG-B Rec/Gen

R15-USB - 1M

MIL-STD-1553 Multi-Function, Single dual-redundant channel, 32-bit FW, USB interface box, 8 Bi-directional discretes, Relay coupled, Fixed voltage with IRIG-B Rec/Gen

R15-USB - 2D

MIL-STD-1553 Dual-Function, Two dual-redundant channel, 32-bit FW, USB interface box, 8 Bi-directional discretes, Relay coupled, Fixed voltage with IRIG-B Rec/Gen

R15-USB - 2M

MIL-STD-1553 Multi-Function, Two dual-redundant channel, 32-bit FW, USB interface box, 8 Bi-directional discretes, Relay coupled, Fixed voltage with IRIG-B Rec/Gen

BT3-R15-USB-1D

MIL-STD-1553 Bus Analyzer bundle (Includes R15-USB-1D hardware and BT-1553 software)

BT3-R15-USB-1M

MIL-STD-1553 Bus Analyzer bundle (Includes R15-USB-1M hardware and BT-1553 software)

BT3-R15-USB-2D

MIL-STD-1553 Bus Analyzer bundle (Includes R15-USB-2D hardware and BT-1553 software)

BT3-R15-USB-2M

MIL-STD-1553 Bus Analyzer bundle (Includes R15-USB-2M hardware and BT-1553 software)

Ordering Options

K Suffix = Conformal Coating
R Suffix = No Relays

Optional Software

BT-1553 – MIL-STD-1553 Bus analysis and data logging software for Windows
LV-1553 – Lab/View Support for MIL-STD-1553

GE Intelligent Platforms Contact Information

Americas: 1 877 429 1553

Global regional phone numbers are listed by location on our web site at defense.ge-ip.com/avionics-contacts

www.defense.ge-ip.com

