GE Intelligent Platforms

RQVME2-1553
High Density VME Interface

Features
- 1, 2 or 4 Independent MILSTD-1553 Dual Redundant Channels
- RoHS compliant
- Multi-function Features
  - Simultaneous Bus Controller, 31 Remote Terminals, or Bus Monitor
- Single-function Features
  - Bus Controller, 31 Remote Terminals, or Bus Monitor
- Bus Controller – BC
  - BC -> RT, RT -> BC, RT -> RT
- Mode Codes, Broadcast and single-shot messaging
- Programmable time delays
- Major/Minor frames
- Real-time conditional branching
- Two aperiodic messaging methods
- Remote Terminal – RT
  - 1 to 31RT’s
  - RT data wrapping
  - Multiple RT buffers
  - 1760 startup time w/busy bit set
  - Dynamic Bus Control
  - Automatic Mode Code and status bit responses
  - Programmable response time
  - Hardwired RT address selection

Architecture
The RQVME2-1553 provides new levels of performance and flexibility for MIL-STD-1553A and B Notice II on the VMEbus and is 100% compatible with QVME-1553 functionality. Available in commercial, industrial and conductively cooled versions with one, two or four dual-redundant channels, the RQVME2-1553 includes advanced API (Application Programming Interface) software that reduces application development time. Standard features include selectable transformer or direct coupling, 1 Mbyte of RAM per channel, 45-bit message time-tagging, triggers, extensive BC & RT link-list structures, error detection/injection, advanced BC functionality, automatic/manual RT Status Bit and Mode Code responses plus IRIG/GPS synchronization capabilities. Optional IRIG-B signal Receiver/Generator, variable voltage outputs and environmental are available. The RQVME2-1553 Bus Monitors provide unparallel error detection and 100% monitoring of fully loaded buses.

Multi-function Interfaces
RQVME2-1553 multi-function interfaces are easily configured to operate with simultaneous Bus Controller, 31 Remote Terminals and Bus Monitor functionality.

Dual-function Interfaces
Dual-function RQVME2-1553 interfaces have all the features and functionality of the multifunction versions, with either Bus Monitor and Bus Controller or Bus monitor and 31 Remote terminals.

Single Function Interfaces
Single-function RQVME2-1553 interfaces have all the features and functionality of the multi-function versions, but only one major operational mode is enabled at a time. Each interface can independently emulate either a Bus Controller or 31 Remote Terminals or Bus Monitor.

Software
Our high-level "abstract" 1553 API list provided in source code, along with support for VxWorks, LynxOS v4.0, Microsoft® Windows® 7 (32 and 64bit) XP, 2000, Me, NT, 98 and 95, LabVIEW, Linux and Solaris support is available. Contact factory for other options. To access 1553 functionality without software development, BusTools/1553, MIL-STD-1553 bus analysis, simulation and data logging/monitoring solution is available.
Specifications

Physical
- 6U VME
- Standard configuration has front bezel I/O
- RoHS compliant (RQVME2-1553)
- Non RoHS (QVME2-1553) contact factory for availability

Environmental
- Standard operating temperature range: 0°C to +70°C
- Optional ruggedized, conductively cooled, extended temp range: -40°C to +85°C
- Relative humidity: 5 to 90% (non-condensing)

Software
- API – VxWorks, LynxOS v4.0, Windows XP, 2000, Me, NT 98 and 95 included
  - Source code API library included
- GUI – Optional support for BusTools/1553 GUI Bus analyzer with PCI-MXI-2 (MF boards only)
- Contact factory for Linux, Solaris and other OS

Connections
- Programmable direct or transformer coupling
- Transition cabling for each channel
  - Two CJ70 jack for 1553
  - Two BNC (male) for trigger in/out
  - Two BNC (male) for IRIG in/out
- 4 bi-directional avionics-level dedicated discretes
- On-board diagnostic bus

Multi-function Operational Modes
- Simultaneous BC, 31 RTs and BM

Single-function Operational Modes
- BC or 31 RTs or BM

On-board Shared RAM
- 1 Mbyte per dual-redundant channel

Interface
- A16, A24, A32 addressing
- D16, D32 data transfer
- VXI MODID supported

Optional Configurations
- 1, 2 or 4 dual-redundant channels
- Variable voltage transceivers
- Optional rear panel (P2) I/O
- Optional ruggedized, -40°C to +75°C operating temperature range
- Optional ruggedized, VITA compliant conductive cooling (max +85°C rail temp)
- Optional conformal coating
- Optional TRIG-B Receiver (AM or DC/TTL) and Generator (DC/TTL)

Power (±5 VDC @ 75% 1553 bus duty cycle)
- 2 channels: 1.2A typical
- 4 channels: 1.8A typical

Descriptions

Bus Controller
- Programmable control over:
  - Major and minor frame content and timing
  - Intermessage gap times
  - Response time-out and late response
  - Multiple BC retry
- Modify messages, data or setup while card is running
- Insert aperiodic messages into a running BC list
- “Oneshot” mode for simplified BC operation
- Conditional message sequencing based on real-time message data or status
- Selectable interrupt generation and status messages
  - Full range of system conditions
  - All detectable errors
- Full error detection
  - Invalid word
  - Bit count error
  - High word
  - Low word
  - Inverted sync
  - Extensive programmable error injection (on a per word basis)
- Extensive filter and trigger options

Remote Terminal
- Interrupts can be generated on a per message basis
- Programmable error injection (on a per word basis)
- Modify data, status words or setup while card is running
- Programmable message content (linked message buffers)
- Intermittent messages are supported

Software
- LabView support for MIL-STD-1553

Ordering Information

RQVME2-1553-1M
MIL-STD-1553 Multi-function, single dual-redundant channel, variable voltage, 6U VME interface board, RoHS complaint

RQVME2-1553-1DA
MIL-STD-1553 Dual-function, single dual-redundant channel, fixed voltage, 6U VME interface board, RoHS compliant

RQVME2-1553-4M
MIL-STD-1553 Multi-function, four dual-redundant channel, variable voltage, 6U VME interface board, RoHS compliant

RQVME2-1553-2M
MIL-STD-1553 Multi-function, two dual-redundant channel, variable voltage, 6U VME interface board, RoHS complaint

RQVME2-1553-2SA
MIL-STD-1553 Single-function, two dual-redundant channel, fixed voltage, 6U VME interface board, RoHS compliant

RQVME2-1553-4SA
MIL-STD-1553 Single-function, four dual-redundant channel, fixed voltage, 6U VME interface board, RoHS compliant

Optional Software

BT-1553
MIL-STD-1553 Bus Analysis & Data Logging software for Windows (multi-function boards only)

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)
defense.ge-ip.com/avionics

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