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M4K1553Px

The M4K1553Px is an intelligent, MIL-STD-1553 interface module for the multiprotocol Excalibur 4000 family of carrier boards. The M4K1553Px provides a complete solution for developing and testing 1553 interfaces and performing system simulation of the MIL-STD-1553 bus. The module handles all standard variations of the MIL-STD-1553 protocol. Each module of the M4K1553Px contains 64K bytes of dual-port RAM for Data Blocks, Control registers, and Look-up Tables. All Data Blocks and Control registers are memory mapped, and may be accessed in real-time. The M4K1553Px module can be programmed to operate in one of three modes of operation: Remote Terminal, Bus Controller/Concurrent-RT, and Bus Monitor. In addition, the module simultaneously performs as an Internal Concurrent Monitor in Remote Terminal and Bus Controller/Concurrent-RT modes.

M4K1553PxS is a single function version for embedded applications for a single RT. It has a fixed voltage output and no error injection.

General Features

- Independent MIL-STD-1553 dual-redundant channel
- 64 KB x 8 true dual-port RAM
- Module setup modifiable in real-time
- 32 Bit Time Tag
  - Programmable resolution (RT & MON)
  - Can be read in real-time
- Direct or Transformer Bus coupling mode
- Extensive interrupt features
- Variable Amplitude
- Loopback Mode for module and cable testing



Mode Related Features

- Operates as RT, BC/Concurrent-RT or Triggerable Bus Monitor
- Internal Concurrent Monitor in RT and BC/RT modes
- Multiple-RT simulation (up to 32 Remote Terminals)
- Minor and Major frames in BC mode
- Multi-mode Bus Monitor (SEQ, LL, LUT)
- Real-time operation
- Multiple protocol capability (i.e. 1553A/B)
- Programmable broadcast mode
- Service Request Processing
- Error injection capabilities:
  - Word Count (+/-3 words)
  - Bit Count (+/-3 bits)
  - Incorrect sync
  - Incorrect RT address
  - Incorrect parity
  - Non-contiguous data
- External Trigger Start option
- MIL-STD-1760 Option:
  - Checksum error detection
  - Checksum error injection
  - Header Words

Physical Characteristics

- Dimensions: 67mm x 46mm
- Weight: 30g

Operation Environment

- Temperature: 0°–70°C standard temperature
  -40° to +85°C extended temperature (optional)
- Humidity: 5%–90% noncondensing
- MTBF: 314,360 hours at 25°C, G_F

Host Interface

- 4000 family of carrier boards
- Power: 5V @ 800mA
  12V @ 15mA

Software Support

- C drivers with source code
- MerlinPlus software for Windows
- *Exalt Plus:* Excalibur Analysis Laboratory Tools (optional)
- Additional software may be available on our website

Ordering Information

- **M4K1553Px** Multifunction module
- **M4K1553PxS** Single function
- **M4K1553PxM** Monitor-only
- **M4K1553Px-1760** MIL-STD-1760 option
- Additional Options:
  - **-E** Extended temperature
  - **-001** With conformal coating
  - **-LB** Onboard loopback option

Note: When ordering this module with a 4000 family carrier board, use the module code specified in the *Module Ordering Information* on our website, or in the *User's Manual* of the carrier board.

These specifications are subject to change without notification

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