

M8K1553Px

The M8K1553Px is an intelligent, MIL-STD-1553 interface module for Excalibur's 8000 family of multiprotocol carrier boards. The M8K1553Px 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 M8K1553Px 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 M8K1553Px 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.

M8K1553PxS 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 4 μ sec Time Tag or 64-bit IRIG B Time Tag
Programmable resolution (RT & MON)
Can be read in real-time
- ◆ IRIG B input (standard IRIG B120 Serial Time Code)
- ◆ Direct or Transformer Bus coupling mode
- ◆ Extensive interrupt features
- ◆ Variable Amplitude (Px only)
- ◆ Loopback Mode for module and cable testing
- ◆ Ruggedized and extended temperature options

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

Physical Characteristics

- ◆ Dimensions: 46mm x 30mm
- ◆ Weight: 12g

Operating Environment

- ◆ Temperature: 0°–70°C standard temperature
-40° to +85°C extended
temperature (optional)
- ◆ Humidity: 5%–90% noncondensing
- ◆ MTBF: 360,350 hours at 25°C, G_F, S217F



Host Interface

- ◆ EXC-8000 family of carrier boards
- ◆ Power (Px): 5V @ 670mA (100% duty cycle)

Software Support

- ◆ *1553Px Software Tools*: Intuitive and flexible API with source code
 - ◆ Compatible with 32/64-bit Windows 7/8/10/11 & Linux kernel 3.x/4.x/5.x
 - ◆ Includes application interface for NI LabView & CVI
- ◆ *MerlinPlus MIL-STD-1553 Bus Analyzer* for Windows
- ◆ *Exalt Plus*: Excalibur Analysis Laboratory Tools (optional)

Ordering Information

- ◆ **M8K1553Px** Multifunction MIL-STD-1553 module
- ◆ **M8K1553PxM** Monitor-only MIL-STD-1553 module
- ◆ **M8K1553PxS** Single function MIL-STD-1553 module
- ◆ **M8K1553PxSM** Single function monitor only MIL-STD-1553 module
- ◆ Additional Options:
 - E Extended temperature option
 - 001 With conformal coating
 - LB Onboard loopback option (Px only)
 - R Ruggedized option

Note: When ordering this module with a carrier board, use the module code specified in the user's manual of the carrier board.