EXC-8000ccXMC

The EXC-8000ccXMC is part of Excalibur's 8000 family of multiprotocol boards. This conduction cooled XMC avionics communication interface board has a PCI Express host interface and can be ordered with any of the protocols listed below. The board holds up to eight onboard modules, each supporting its own protocol.

The EXC-8000ccXMC supports Direct Memory Access (DMA), which enables the board to access system memory for reading and writing independently of the computer's CPU. This results in faster data transfer to and from modules that support DMA, with much less CPU overhead than when not using DMA.

General Features

♦ Supported protocols:
- MIL-STD-1553 (up to 4 modules, 1 ch. per module)
- MIL-STD-1760 (up to 4 modules, 1 ch. per module)
- ARINC 708/453 (up to 4 modules, 2 ch. per module)
- ARINC 429/575 (up to 2 modules, 5 ch. per module)
- ARINC 717 (up to 2 modules, 2 ch. per module)
- Discrete I/O (up to 1 module, 10 ch. per module)
- Serial RS-232/485/422 (up to 1 module, 2 ch. per module)

♦ 16-bit Count Down Timer
- 1–65,635 µs resolution and
- Interrupt or global reset upon count down

♦ Ruggedized option (bonded components)

♦ Meets the following standards:
- ANSI/VITA 42.0-2021 XMC Switched Mezzanine Card (XMC)
- ANSI/VITA 42.3-2020 XMC PCI Express Protocol Layer Standard
- ANSI/VITA 20-2005 (S2018) Conduction Cooled PMC

♦ Supports VPWR at +5V or +12V

IRIG B Time Code Input

♦ Standard IRIG B120 Serial Time Code
♦ Carrier wave: 1KHz Amplitude modulated sine wave
♦ Rate Designation: 100 peaks per second
♦ Modulation ratio: 3:1
♦ Input Amplitude: 0.8–3.5 Vpp (3 Vpp Typ)
♦ Coded Expressions supported:
- BCD time-of-year code word
- Control functions
- Straight Binary Seconds (SBS) time-of-day
♦ Application:
- Synchronization of Time Tags, display and IRIG B time

Physical Characteristics

♦ Dimensions: Standard single ccXMC mezzanine card (143.75 x 74.0 mm)
♦ Weight: 84g (with all modules occupied)

Operating Environment

♦ Temperature: -40°C to +85°C
♦ Humidity: 5%–90% noncondensing
♦ MTBF: 30,700 hours at 25°C, G_F, S217F (with all modules occupied)

Host Interface

♦ PCI Express compliance: x1 lane PCIe v1.1
♦ ANSI/VITA 46.9-2018 compatible XMC to VPX signal mapping profiles:
- P2w7-X8d+X12d
- P2w3-X38s+X8d
- P1w9-X12d+P2w3-X38s+X8d
- P1w13-X38s+P2w7-X8d+X12d (or P1w13-X38s+X8d+X12d)
- P1w9-X12d
- P1w9-X12d+P2w1-X8d
♦ Memory space occupied: 64 MB
♦ Interupts: INTA# virtual wire
♦ Power: Depends on configuration

Software Support

♦ *Excalibur Carrier Board Family 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
♦ *Exalt Plus:* Excalibur Analysis Laboratory Tools for Windows (optional)
♦ GUI driven software for many of our supported protocols

Ordering Information

♦ **EXC-8000ccXMC/*xx*** Multi-protocol interface board for XMC systems

Note: Replace "*xx*" with module codes. See **Ordering Information** in the board's user's manual.

♦ Additional Options:
- **-001** With conformal coating
- **-R** Ruggedized option (bonded components)

These specifications are subject to change without notification

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