

VX3718

VME64 to USB 2.0/Optical Link Bridge



Features



- USB 2.0 and CONET (CAEN Daisy Chainable Optical Link Protocol) interfaces
- Compliant to A3818, A4818, and A5818 cards for optical link control
- Up to 8 VME crates controlled by 1 CONET link
- From 30 MB/s via USB type C to 80 MB/s data transfer rate via CONET2
- VME Master (arbiter or requester)
- Cycles: RW, RMW, BLT, MBLT, IACK, ADO, ADOH
- Addressing: A16, A24, A32, CR/CSR, LCK
- Data width: D8, D16, D32, D64
- System Controller capabilities
- Interrupt handler
- Transparent interrupt propagation from VME to PCIe
- Front-panel DataWay Display (remotely readable from PC)
- Front-panel LEMO TTL/NIM fully programmable I/Os (4 outputs and 2 inputs)
- Libraries, Demos and Software tools for Windows® and Linux

Description

The CAEN **Mod. VX3718** is the new VME to USB 2.0/Optical Link Bridge that fully replaces the **VX1718** (VME-USB) and **V2718** (VME- CONET) models. The Bridge Implements a VME master controlled by a PC via USB 2.0 and Optical Link (CAEN CONET protocol) including all the functions of its two predecessors in a unique device. The mechanics is 1-unit wide VME 6U.

The optical link connection between the VX3718 and the host PC requires the **A5818** PCI Express CONET2 Controller, or the **A4818** USB3-to-CONET Bridge and an optical fiber cable (**AI2700** - Optical Fiber Series). The VX3718 is also compatible with CAEN **A3818** PCI Express CONET Controller. Multi-crate sessions can be easily performed thanks to the CONET Daisy chain capability: up to eight VX3718 units controlled by a single **A3818/A4818** building a CONET Optical Network. The USB data transfer over the USB 2.0 compliant interface takes place through the High-Speed Bulk Transaction protocol.

The VX3718 can perform all the cycles foreseen by the VME46 standard except those intended for 3U boards. The Bridge can operate as VME System Controller (normally when plugged in the slot 1) acting as a Bus Arbiter in Multi-Master systems. The activity on the VME bus can be monitored in detail both locally (through an 88-LED DataWay Display) and remotely.

The front panel of the VX3718 hosts 6 TTL/NIM programmable I/Os on LEMO connectors: four outputs (default assignment is: DS_n, AS, DTK, BERR) and two inputs. The I/Os can be programmed via USB and Optical Link to implement functions like Timer, Counter, Pulse generator, I/O register, and others.

The supported data transfer rate is up to 30 MB/s by USB 2.0 and up to 80 MB/s by CONET2. Thanks to the 128KB memory buffer, the activity on the VME bus is not slowed down by the transfer rate on the USB port, or on the CONET one, especially when several VX3718 units share the same network.

The VX3718 can be integrated into the most common Windows® and Linux® computers by CAEN dedicated drivers. Middleware libraries and useful example demos are also provided. Firmware can be upgraded via USB/Optical link.

Technical Specifications

PHYSICAL

Form Factor: 1-unit wide, 6U VME64X
Weight: 315 g

PC INTERFACE

USB: USB 2.0, Type-C socket
Optical Link: CONET (CAEN protocol), FSP+ connector

TRANSFER RATE

- up to 80 MB/s with CONET2
- up to 30 MB/s with USB 2.0

ADDRESSING

A16, A24, A32, CR/CSR, LCK; ADO, ADOH cycles

INTERRUPT CYCLES

D08, D16, D32, IACK cycles

INTERRUPTS TRANSFER AND MONITOR

Optical Link

VME interrupts IRQ[7:1] passed directly from VME to the PCIe bus via optical link; Host system is notified asynchronously (polling not required)

USB

VME interrupts are not directly passed to the PC; host system has to poll IRQ[7:1] via USB

LED DISPLAY

Data bus, address bus, address modifier, interrupt request, control signals

PANEL I/Os

OUT[0:3]

- 4 signal outputs
- Single-ended NIM/TTL ($Z_{in} = 50 \Omega$)
- LEMO 00 female socket
- Software programmable

Default functions:

- OUT 0 = DSn
- OUT 1 = AS
- OUT 2 = DTACK
- OUT 3 = BERR

IN[0:1]

- 2 signal inputs
- Single-ended NIM/TTL ($Z_{in} = 50 \Omega$)
- LEMO 00 female socket
- Software programmable

SOFTWARE

- Windows® and Linux® support
- Drivers for the communication links (USB 2.0, CONET)
- Middleware libraries C/C++
- Example demos and firmware upgrade tool

POWER REQUIREMENTS

- 0.6 A @ +5V
- 0.050 A @ +12V
- 0.050 A @ -12V

Ordering Options

Code	Description
WVX3718XAAA	VX3718 - VME-USB Bridge RoHS

Related Software

CAEN Toolbox



Multi-Functional Software Suite for the Upgrade of Front-end Boards, Bridges and Power Supplies

CAENVMELib Library



Interface library for CAEN VME Bridges

Related Products

V3718



VME to USB 2.0 / Optical Link Bridge

A2818



PCI CONET Controller

A3818



PCI Express CONET2 Controller

VME8200



9U 21Slot VME64X Enhanced Crate series

VME8008X



4U 8 Slot VME64X Mini Crate

VX4718



VME to USB 3.0/Ethernet/Optical Link Bridge

μ-crate



Desktop single-slot VME64X Crate

VME8004X



2U 4 Slot VME64X Mini Crate

VME8100



8U 21 Slot VME64/64X Enhanced Crate Series

A4818



USB 3.0 to CONET2 Adapter



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CAEN S.p.A.

Via Vetraia 11
55049 - Viareggio
Italy

Phone +39.0584.388.398

Fax +39.0584.388.959

info@caen.it

www.caen.it

CAEN GmbH

Brunnenweg 9
64331 Weiterstadt, Germany

Phone +49 (0)212.254.4077

Mobile +49 (0)151.16.548.484

info@caen-de.com

www.caen-de.com

CAEN Technologies, Inc.

1 Edgewater Street - Suite 101
Staten Island, NY 10305
USA

Phone +1.718.981.0401

Fax +1.718.556.9185

info@caentechnologies.com

www.caentechnologies.com

CAENspa India Private Limited

B205, BLDG42, B Wing,
Azad Nagar Sangam CHS,
Mhada Layout, Azad Nagar, Andheri West
Mumbai, Maharashtra 400053, India

info@caen-india.in

www.caen-india.in

