

# XMCspan

## XMC Expansion Mezzanine

■ Embedded Computing for  
Business-Critical Continuity™

### The XMCspan board provides a flexible, scalable expansion framework compatible with the newest Emerson VMEbus single-board computers

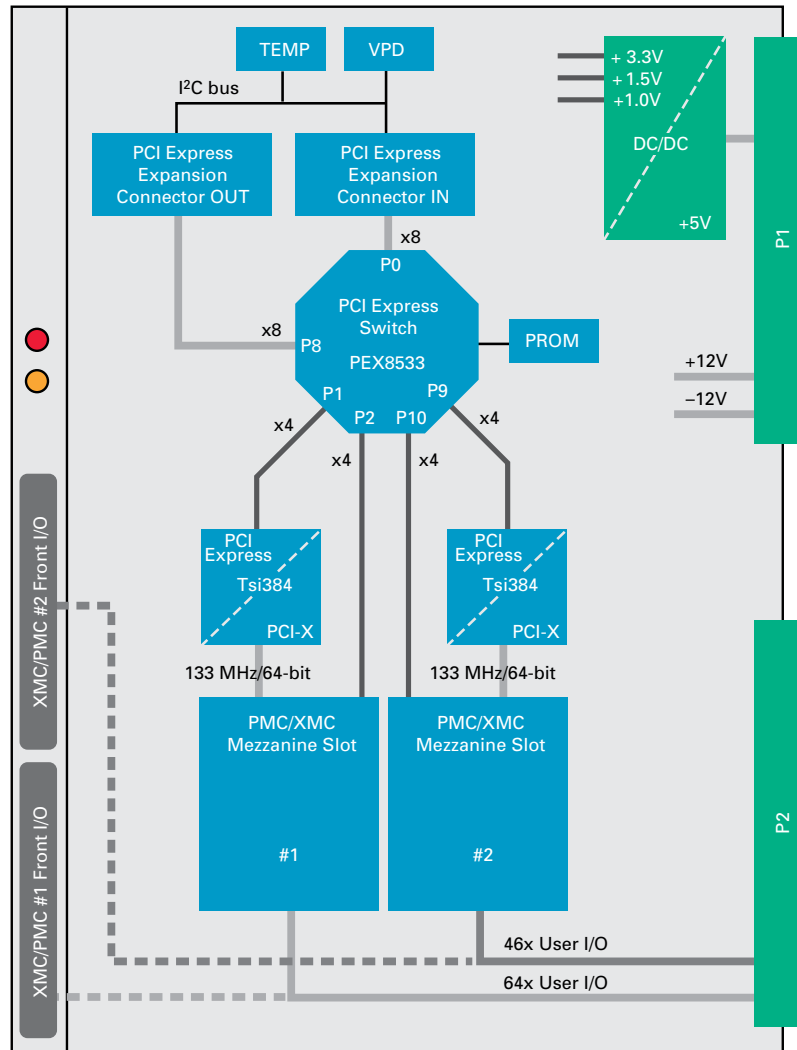
- Single-slot 6U VMEbus format
- PLX PEX8533 PCI Express 6-port switch
- Tundra Tsi384 PCI Express to PCI-X interface bridges
- Support for two single-wide, or one double-wide XMC or PMC per XMCspan
- Stacking capability
- Front-panel I/O
- Single 4-lane interface with P15 connector for XMCs
- Injector/ejector handles per VME64 extensions
- Compatible with Emerson's MVME7100 and MVME4100 VMEbus SBCs

The Emerson Network Power XMCspan board allows users to customize and expand I/O options when coupled with Emerson's MVME7100 and MVME4100 single-board computers (SBCs). When two XMCspan boards are coupled with an Emerson MVME7100 or MVME4100, the XMCspan boards add up to four single-wide XMC slots, or four single-wide PCI Mezzanine Cards (PMCs) slots, or two double-wide XMC slots, or two double-wide PMC slots, or a combination of both XMC modules and PMC modules. (Note: This is in addition to the two single-wide PMC slots or one double-wide PMC slot on the SBC board.). This feature allows for flexibility in design and a path for future scalability.

The XMCspan is a standard 6U single-slot VMEbus module that connects to its VMEbus SBC board via a PCI Express expansion connector. It supports front panel I/O access for customer supplied XMCs and/or PMCs. Additionally, the XMCspan supports a single 4-lane interface with the P15 connector for XMCs.



## Block Diagram



## XMCspan Details

### CARRIER BOARDS

Emerson offers a full line of PowerPC® microprocessor-based VMEbus products which can be custom configured for specific applications via on-board PMC slots. The XMCspan expands this capability by providing additional XMC slots and/or additional PMC slots. It is compatible with Emerson's MVME7100 and the MVME4100 VMEbus single-board computers. For further information on these VMEbus SBCs, please contact your local sales representative.

### PRODUCT OFFERING

The XMCspan utilizes a PCI Express port and then using a PLX PEX8533 PCI Express switch, it creates four x4 lanes for the XMC/PMC slots and another x8 port for the addition of a second XMCspan board. Two of these x4 lanes are routed to Tundra Tsi384 PCI Express to PCI-X bridges while the other two x4 lanes go directly to the XMC connectors. The PCI Express to PCI-X interface bridges support 133 MHz/64 bits. The XMCspan mates directly with the host CPU via a separate PCI Express expansion connector.

## Specifications

### FORM FACTOR

- Single-slot 6U VMEbus format

### PCI EXPRESS INTERFACE

- Switch: PLX PEX8533 PCI Express 6-port
- Frequency: PCI Express 2.5 GHz
- Mating Connector: 76-pin PCI Express expansion connector; still allows use of host CPUs original PMCs

### XMC SLOTS

- Connector: XMC PN15
- Interface: Single x4 lane
- Power: +3.3 V, +5 V, ±12 V, 7.5 Watts max. per XMC
- Module Types: Two single-wide or one double-wide, front-panel I/O

### IEEE P1386.1 PCI MEZZANINE CARD SLOTS

- Controller: Tundra Tsi384 PCI Express to PCI-X interface bridge
- Address/Data: A32/D32, PMC PN1, PN2, PN3, PN4 connectors
- PCI: 33/66 MHz/64-bit
- PCI-X: 66/100 MHz/64-bit
- Signaling: 3.3 V
- Power: +3.3 V, +5 V, ±12 V, 7.5 Watts max. per PMC
- Module Types: Two single-wide or one double-wide, front-panel or P2 I/O
- P2 PMC I/O: 64 I/O signals from first PMC routed to VMEbus P2 connector module

### POWER REQUIREMENTS (NO PMCS INSTALLED)

Power: +5V @ 0.44 ampere (max.)  
+12V @ 0 ampere (max.)  
-12V @ 0 ampere (max.)

### BOARD SIZE

- Height: 233.4 mm (9.2 in.)
- Depth: 160.0 mm (6.3 in.)
- Front Panel Height: 261.8 mm (10.3 in.)
- Width: 19.8 mm (0.8 in.)

## ENVIRONMENTAL

	Operating	Non-operating
Temperature:	0° C to +55° C forced air cooling	-40° C to +85° C
Altitude:	5,000 m	15,000 m
Humidity (NC):	5%-95% at +40° C	5%-95% at +40° C
Vibration:	2 G RMS, 20-20,000 Hz random	6 G RMS, 20-20,000 Hz random

### ELECTROMAGNETIC COMPATIBILITY (EMC)

- Intended for use in systems meeting the following regulations:
  - U.S.: FCC Part 15, Subpart B, Class B
  - Canada: ICES-003, Class B
- This product was tested in a representative system to the following standards:
  - CE Mark per European EMC Directive 89/336/EEC with Amendments; Emissions: EN55022 Class B; Immunity: EN55024

### SAFETY

All printed wiring boards (PWBs) are manufactured with a flammability rating of 94V-0 by UL recognized manufacturers.

Ordering Information	
Part Number	Description
XMCS PAN-001	XMC/PMC w/IEEE handles, 6E
XMCS PAN-002	XMC/PMC w/Scanbe handles, 6E
Documentation	
XMCS PAN/A/IH	PMC Carrier Installation and Use Manual













## SOLUTION SERVICES

Emerson Network Power provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

PowerPC is a trademark of IBM Corp. and used under license. All other product or service names are the property of their respective owners.

This document identifies products, their specifications, and their characteristics, which may be suitable for certain applications. It does not constitute an offer to sell or a commitment of present or future availability, and should not be relied upon to state the terms and conditions, including warranties and disclaimers thereof, on which Emerson Network Power may sell products. A prospective buyer should exercise its own independent judgment to confirm the suitability of the products for particular applications. Emerson Network Power reserves the right to make changes, without notice, to any products or information herein which will, in its sole discretion, improve reliability, function, or design. Emerson Network Power does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent or other intellectual property rights or under others. This disclaimer extends to any prospective buyer, and it includes Emerson Network Power's licensee, licensee's transferees, and licensee's customers and users. Availability of some of the products and services described herein may be restricted in some locations.

**Emerson Network Power.**  
The global leader in enabling  
*Business-Critical Continuity™*.

-  AC Power
-  Embedded Power
-  Precision Cooling
-  Connectivity
-  Infrastructure Management & Monitoring
-  Racks & Integrated Cabinets
-  DC Power
-  Outside Plant
-  Services
-  Embedded Computing
-  Power Switching & Controls
-  Surge Protection

### Emerson Network Power

**Offices:** Tempe, AZ U.S.A. 1 800 759 1107 or +1 602 438 5720 • Madison, WI U.S.A. 1 800 356 9602 or +1 608 831 5500  
Paris, France +33 1 60 92 31 20 • Munich, Germany +49 89 9608 2333 • Tel Aviv, Israel +972 9 9560361  
Hong Kong +852 2176 3540 • Shanghai, China +8610 8563 1122 • Tokyo, Japan +81 3 5403 2730 • Seoul, Korea +82 2 3483 1500

[EmersonNetworkPower.com/EmbeddedComputing](http://EmersonNetworkPower.com/EmbeddedComputing)

Emerson, Business-Critical Continuity and Emerson Network Power are trademarks of Emerson Electric Co. or one of its affiliated companies. ©2009 Emerson Electric Co.

XMCS PAN-DO 03/09