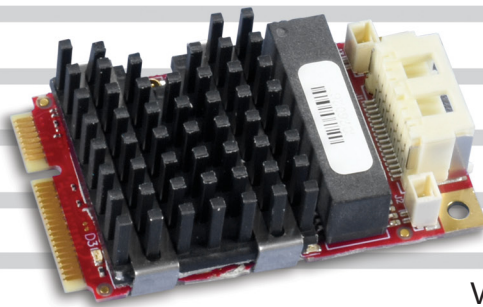# Dual 2.5 Gigabit Ethernet TSN
Mini PCIe Module

VL-MPEe-E7

Actual Size!

Overview

The "E7" module is an extremely small, rugged, and fully contained dual 2.5 Gigabit Ethernet add-on network interface card (NIC) that does not require a daughter card. The E7 uses Intel's i226-IT Ethernet controller to power two independent 2500 Base-T ports. The E7 provides a simple, clean, and rugged way to add 2.5 Gigabit Ethernet interface to most embedded computer systems.

The VL-MPEe-E7 is designed and tested for full industrial temperature (-40° to +85°C) operation and meets MIL-STD-202H specifications for shock and vibration. It uses a latching connector to address cable detachment issues in hostile environments.

VersaLogic's 10+ year product life support programs ensure long-term availability. This avoids expensive upgrades and migrations that come from short, disposable lifecycle products.

Highlights

- **Dual 2.5 Gigabit Ethernet**
  10BASE-TE/100BASE-TX/1000BASE-T/2500BASE-T
- **On-board magnetically coupled isolation**
  No need for off-board magnetics
- **Supports TSN when paired with TSN capable processors**
- **-40 to +85°C operating temperature models**
  Performs in extreme environments
- **10+ Year Production Lifecycle**

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Specifications

General

Board Size	VL-MPEe-E7E	30 x 50.95 x 28.5 mm (1.18 x 2.01 x 1.12")
	VL-MPEe-E7S	30 x 50.95 x 13.5 mm (1.18 x 2.01 x 0.53")
Weight	VL-MPEe-E7E	21.8 grams (0.77 oz.)
	VL-MPEe-E7S	17.2 grams (0.61 oz.)
Power Requirements	3.3V ±5% @ 3 W Typical (supplied by the Mini PCIe socket).	
Manufacturing Standards	IPC-A-610 Class 2	
Regulatory Compliance	RoHS (EU 2015/863), Conflict Minerals compliant.	
Mini PCIe Signal Type	PCI Express. Gen 1 and Gen 2.	

Environmental

Operating Temperature ◊	Model	Heat Sink
	VL-MPEe-E7E	-40° to +85°C
	VL-MPEe-E7S	-40° to +60°C
Airflow Requirements	0.5 Linear Meter per Second	
Storage Temperature	-40° to +85°C	
Thermal Shock	5°C/min. over operating temperature.	
Humidity	MIL-STD-202H method 103 – Humidity steady state	
Vibration, Sinusoidal Sweep †	MIL-STD-202H method MIL-STD-202-204, Condition A: 2g	
Vibration, Random †	MIL-STD-202H method MIL-STD-202-214, Condition A: 5.35g rms	
Mechanical Shock †	MIL-STD-202H method MIL-STD-202-213, Condition G: 20g half-sine	

Device I/O

Ethernet	Two magnetically isolated auto-negotiation 10BASE-TE/100BASE-TX/1000BASE-T/ 2500BASE-T ports. Latching connector.
LAN Controller	Two Intel I226-IT
VLAN	802.1q
Synchronization	IEEE 1588/802.1AS-REV Precision Time Protocol, with TSN
Indicators	External link/activity indicator signals to latching pin header
Network Boot	PXE Boot and Wake on LAN
Efficiency	Energy Efficient Ethernet (IEEE 802.3az)

Software

Operating Systems	Compatible with Windows, Linux.

◊ Derate -1.1°C per 305m (1,000 ft.) above 2,300m (7,500 ft.)

† MIL-STD-202H shock and vibe levels are used to illustrate the ruggedness of this product in general. Testing to higher levels and/or different types of shock or vibration methods can be accommodated per the specific requirements of the application. Contact VersaLogic Sales for further information.

Specifications are subject to change without notification. PCI Express is a registered trademark of the PCI-SIG. All other trademarks are the property of their respective owners.

Ordering Information

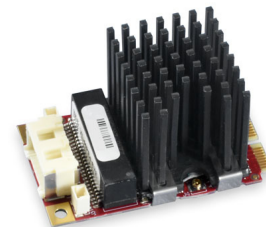| Model	Function	Operating Temp.
VL-MPEe-E7E	Dual 2.5 Gigabit Ethernet Mini PCIe Module, +85	-40° to +85°C
VL-MPEe-E7S	Dual 2.5 Gigabit Ethernet Mini PCIe Module, +60 ST	-40° to +60°C

Accessories

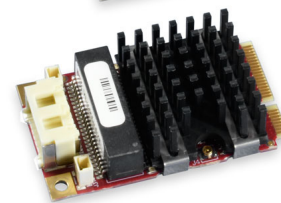| Part Number	Description
Cables	
VL-CBR-1604	Dual Ethernet adapter cable, latching, 12"
VL-CBR-0207	Ethernet activity cable 2-pin Pico Clasp to LED 12" (Two required)
Hardware	
VL-HDW-108	Mini PCIe module hold-down screws (10) for use with 2.5 mm standoffs.
VL-HDW-110	Mini PCIe module hold-down screws (10) for use with 2.0 mm standoffs.

Other VersaLogic Mini PCIe Modules

Model	Function	Signaling
VL-MPEe-A1E	Analog input (12-bit resolution)	PCIe
VL-MPEe-A2E	Analog input (16-bit resolution)	PCIe
VL-MPEu-C1	Dual CAN Bus Interface	USB
VL-MPEe-E4E	Gigabit Ethernet Over Fiber Module	PCIe
VL-MPEe-E5	Dual Gigabit Ethernet	PCIe
VL-MPEe-E6E-P	Gigabit Ethernet with POE+	PCIe
VL-MPEu-U2E	Four Serial ports. Twelve GPIO lines.	PCIe
VL-MPEe-V5E	Video Display Adapter. VGA and LVDS interfaces	PCIe
VL-MPEe-FW1	1394 Firewire Module	PCIe
VL-MPEs-F1Exx	mSATA drive (4/16/32 GB)	SATA
VL-MPEs-S3E	SATA adapter	SATA
VL-MPEu-G2E	GPS receiver	USB
VL-MPEu-G3E	Advanced GPS receiver	USB

Call VersaLogic Sales at (503) 747-2261 for more information!

VL-MPEe-E7E

VL-MPEe-E7S

Modify a Module to Your Exact Requirements

COT's modifications are available in quantities as low as 100 pieces. Options include conformal coating, application-specific testing, BOM revision locks, special labeling, and more.

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