



VL-M2e-E12E

M.2 Gigabit Ethernet Module

Highlights

- **Gigabit Ethernet**
10BaseT/100BaseTX/1000BaseT port
- **M.2 signaling**
Compatible with B key and M key 2242 M.2 sockets
- **On-board magnetic isolation**
No off-board circuitry needed
- **Industrial temperature**
-40° to +85°C operation for harsh environments

Overview

The “E12” module is a compact add-on network interface card (NIC) that provides Gigabit Ethernet connectivity. The module features Intel’s I210-IT Ethernet controller, supporting a single 1000Base-T port. It also features on board magnetics, which eliminates external daughter boards or other external circuitry. The E12 offers a simple solution for adding a Gigabit Ethernet interface to most embedded computer systems.

The VL-M2e-E12E is specifically designed and tested for full industrial temperature operation, ranging from -40° to +85°C, and complies with MIL-STD-202H specifications for shock and vibration. The E12 features a latching connector to prevent cable detachment in high-vibration environments.

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

Modify a Module to Your Exact Requirements

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

Specifications

General	
Board Size	M.2 module: 22 x 42 x 11 mm (0.9 x 1.7 x 0.5")
Weight	5.4 grams (0.20 oz.)
Power Requirements	3.3V ±5% @ 2.2 W Typical (supplied by the M.2 socket)
Manufacturing Standards	IPC-610 Class 2
RoHs	RoHS 3 (EU 2015/863), Conflict Minerals compliant
Signal Type	M.2 PCIe x2

Environmental	
Operating Temperature	-40° to +85°C
Storage Temperature	-40° to +85°C
Altitude	Operating * To 4,570m (15,000 ft.) Storage To 12,000m (40,000 ft.)
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

Network	
Ethernet	One autotetect 10BaseT/100BaseTX/1000BaseT
LAN Controller	Intel I210-IT
Connectors	16-pin Clik-Mate, latching

Software	
Drivers	Compatible with Windows 10/11 and Linux

* For extended altitude information contact VersaLogic Sales Dept.

† MIL-STD-202H shock and vibrate 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. All trademarks are the property of their respective owners.

Ordering Information

Model	Function	Operating Temp.
VL-M2e-E12E	Dual GbE Ethernet M.2 card, 2280 B+M key, ET	-40° to +85°C

Accessories

Part Number	Description
Cables	
VL-CBR-1605	12" 16-pin Clik-Mate to RJ-45 Cable, RoHS