



Ethernet Bridging Module

10/100Base-TX to 100Base-FX Media Converter for the CV-MCU2

- Up to 10 ports media conversion in a single RU
- In-Band TS-1000 v2 OAM support
- Remote Monitoring
- Remote Loopback
- MDI/MDI-X Auto Crossover
- Link Diagnosis tests Copper Cable Integrity
- Auto Negotiation
- Pause
- Far-End Fault
- Dying Gasp Remote Power Failure Indicator
- Extended Environmental Operation Range

Overview

Ultra-DNE's new Ethernet Bridging Module brings a feature-rich Ethernet Media converter to tactical applications.

Each module provides 2 ports of full-feature 10/100Base-Tx to 100Base-Fx conversion, reliably extending your network distance up to 2 km over tactical or commercial multimode fiber optic cables.

Each port also acts as a fully functional bridge, providing an economical path to separate collision domains.

With up to ten ports of media conversion in a one rack-unit box, a CV-MCU2 populated with Ethernet Bridging Modules provides industry-leading density for applications where space matters.

With the addition of this module to the CV-MCU2 portfolio, customers can now support NRZ/CDI/FOM and IP media conversions in the same unit, providing an adaptable upgrade path from legacy equipment to Everything over IP.

Designed with the deployed military user in mind, these modules utilize state-of-the-art diagnostics to make troubleshooting the network a breeze. With the use of TS-1000 version 2 compliant Operation, Administration and Maintenance (OAM), the user can monitor traffic and diagnose remote failures from a central operation point.

OAM support, which is typically only seen in high-end network devices, can be used to pinpoint link faults to prevent the loss of valuable data unknowingly transmitted over a broken or disconnected link.

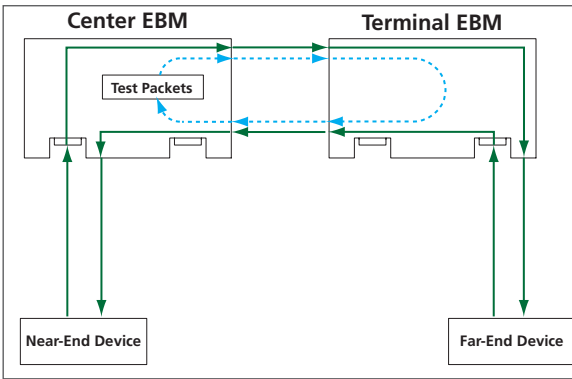
A full suite of traffic statistics is available to the operator for both the local and the remote unit. The user can look at real-time traffic to monitor for critical indicators in order to quickly resolve network performance issues, thus promoting more effective troubleshooting with less on-site maintenance.

In addition to 802.3 compliance, the Ethernet Bridging Module also offers such advanced support features as:

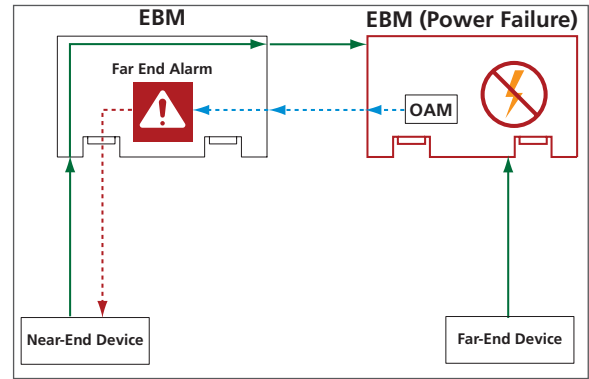
- Dying Gasp - alerts the operator of a remote power failure;
- Link Diagnosis- pinpoints copper cable failure location;
- MDI/MDI-X Auto Crossover - automates operation with straight or crossover CAT 5 cables;
- Traffic flow control features including Pause and Backpressure.

The CV-MCU2 chassis is designed for the tactical environment. When populated with Ethernet Bridging Modules, the system can operate at temperatures from -20°C to +60°C. The system is also tested to MIL-STD 810F shock and vibration.

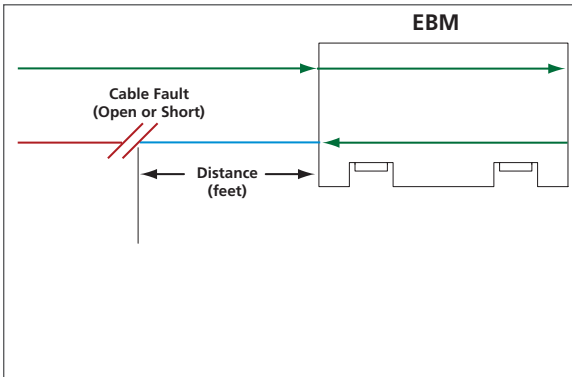
Ethernet Bridging modules are also hot swappable, allowing for minimum downtime during maintenance and repair.



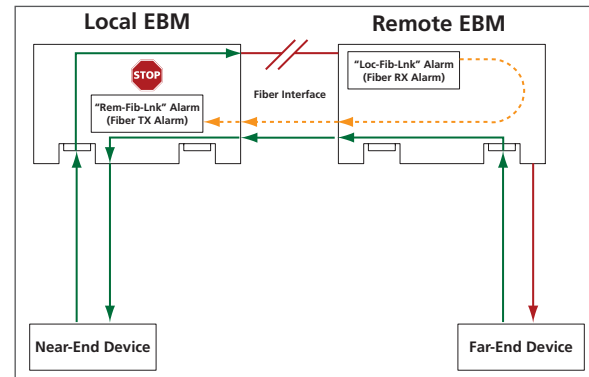
Remote Loopback
 With the Remote Loopback feature, a user can send a variety of broadcast and unicast test packets across the fiber connection to validate link status.



Dying Gasp Notification
 In the case of a power failure, the remote Ethernet Bridging Module (EBM) can send out an OAM packet to alert the far end of the power outage.



Link Diagnosis
 With the Link Diagnosis feature, an operator can quickly pinpoint the location of a cable disconnect or break to within 2 meters.



Far End Fault
 With the Far-End Fault Feature enabled, both end devices are automatically notified when one of the fiber connections goes down.

Ethernet Bridging Module (EBM)

Standards:	IEEE Standard 802.3; IEEE Standard 802.3u; IEEE Standard 802.3x; TS-1000 V2	
Copper Specifications:	10/100 Mbps over up to 100m of Unshielded Twisted Pair (UTP) or Shielded Twisted Pair (STP) CAT 5 cable, RJ-45	
Fiber Optic Specifications (dBm):	100 Mbps over up to 2 km Multimode (62.5/125µm) fiber optic cable, ST Connector, 1310nm Min TC Power: -19 Max Tx Power: -14 Min Rx Sensitivity: -31 Max Rx Input Power: -14 Minimum Link Budget: 11	
Filtering Addresses:	1K MAC Addresses, with provisioning to review and clear the table. Automatic table aging with a link outage is detected.	
RAM Buffer:	32K depth in both transmit and receive directions	
Max Frame Size:	802.3ac Tagged: 1628 bytes. Untagged: 1632 bytes.	
Environmental:	<i>Temperature:</i>	-20° C to 60° C Operating; -40° C to 80° C Storage
	<i>Shock and Vibration:</i>	MIL-STD 810F
	<i>Humidity:</i>	Up to 95% Humidity (non-condensing) for operation and storage
	<i>Altitude:</i>	Operating altitudes of up to 15,000 ft (4600m). Storage altitudes up to 40,000 ft (12,200m)
Regulatory:	FCC Part 15 Class A	
Power:	90-264 VAC, 47-63 Hz	Chassis: 13 Watts. EBM Module: 6.5 Watts per module
Menu Selection:	Front panel interface and customer option of ASCII terminal using a DB-9 M or Telnet using an RJ-45 connector	
Dimensions:	<i>EBM Module:</i>	2.5" W x 1.5" H x 8.5" D. Individual Module weight: 6.0 ounces.
	<i>CV-MCU2 Chassis:</i>	19.0" W x 1.75" H (1RU) x 17" D. Weight with five EBM Modules: approx. 7.2 pounds.



Ultra Electronics
 DNE TECHNOLOGIES
 50 Barnes Park North
 Wallingford CT USA 06492
 Tel: (203) 265-7151 Toll Free: (800) 370-4485
 Fax: (203) 265-9101 info@ultra-dne.com
 www.ultra-dne.com

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