CV-MCU2+ Ethernet Bridging Module
10/100Base-TX to 100Base-FX Media Converter

Features

- 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

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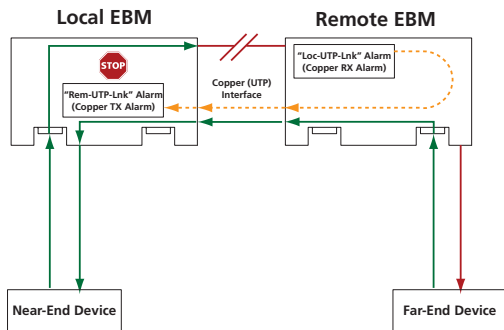
A full suite of traffic statistics is available to the operator for both the local and the remote unit. The user can look at real-time traffic to monitor for critical indicators in order to quickly resolve network performance issues, thus promoting more effective troubleshooting with less on-site maintenance.

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

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- 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 -20ºC to +60ºC. 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.

Local EBM **Remote EBM**

STOP

"Loc-UTP-Lnk" Alarm (Copper RX Alarm)

"Rem-UTP-Lnk" Alarm (Copper TX Alarm)

Copper (UTP) Interface

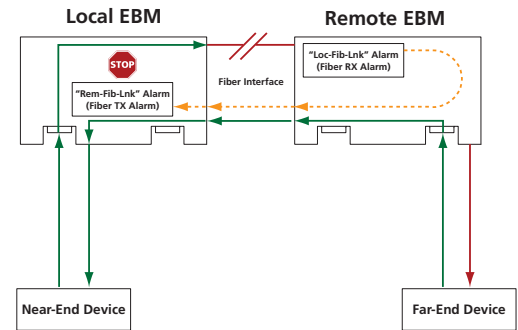**Near-End Device**   **Far-End Device**

◄ **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.

EBM **EBM (Power Failure)**

Far End Alarm

OAM

Near-End Device   **Far-End Device**
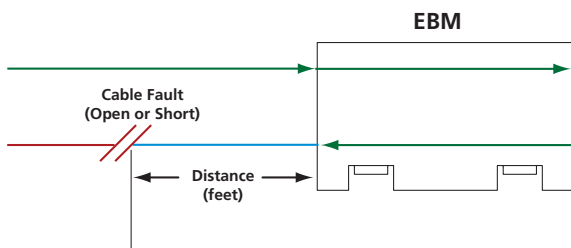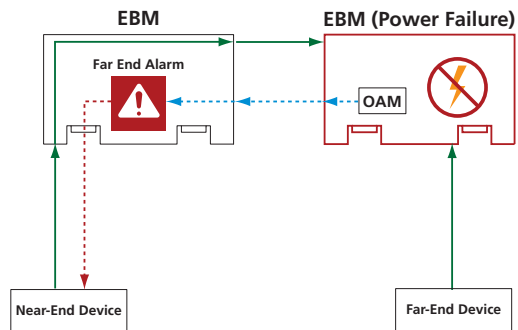
◄ **Link Diagnosis**
With the Link Diagnosis feature, an operator can quickly pinpoint the location of a cable disconnect or break to within 2 meters.

EBM

Cable Fault (Open or Short)

Distance (feet)

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

Local EBM **Remote EBM**

STOP

"Loc-Fib-Lnk" Alarm (Fiber RX Alarm)

"Rem-Fib-Lnk" Alarm (Fiber TX Alarm)

Fiber Interface

Near-End Device   **Far-End Device**

SPECIFICATIONS

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	
Temperature	-20° C to 60° C Operating -40° C to 80° C Storage
Shock and Vibration	MIL-STD 810F
Humidity	Up to 95% Humidity (non-condensing) for operation and storage
Altitude	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: 13Watts EBM Module: 6.5Watts per module
Menu Selection	Front panel interface and customer option of ASCII terminal using a DB-9M or Telnet using an RJ-45 connector
Dimensions	EBM Module: 2.5"W x 1.5"H x 8.5"D. Weight: 6.0 oz. CV-MCU2 Chassis: 19.0"W x 1.75"H (1 RU) x 17"D. Weight with 5 EBM Modules: Approx 7.2 lbs

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