

# EIRM-EXTEND-8

## Managed Hardened 8 port 10/100BASE-TX Ethernet Extender

### Features

- Extends Ethernet communications up to 1900 meters
- Complies with NEMA TS1 & TS2 Environmental requirements for Traffic control equipment
- Complies with IEC61000-6-2 EMC Generic standard immunity for Industrial environment
- Ethernet Port: 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- Ethernet Extender (RJ-11 and Terminal Block) Ports
- Proprietary "-ring" support for network redundancy; recovery time <15ms
- IEEE802.1w RSTP, IEEE802.1S MSTP and IEEE802.1D STP compatible
- IP Multicast Filtering through IGMP Snooping V1, V2 & V3
- Supports port-based VLAN and IEEE802.1Q VLAN Tagging and GVRP
- IEEE802.1p QoS with four priority queues
- MAC-based Trunking with automatic link fail-over
- RS-232 console, Telnet, SSL/SSH, SNMP V1, V2c & V3, RMON, Web Browser, and TFTP Management
- Supports IEEE802.1x Security
- Bandwidth Rate Control
- Per-port programmable MAC address locking
- Up to 24 Static Secure MAC addresses per port
- Port mirroring
- Full wire-speed forwarding rate
- Redundant power inputs with Terminal Block and DC Jack
- -40°C to 75°C (-40°F to 167°F) operating temperature range
- Hardened aluminum case
- Supports NTP



### Functional Description

Designed for rugged environments, the EIRM-EXTEND-8 series switch comes with eight 10/100BASE-TX plus two VDSL ports in one package. It efficiently extends 10/100 Ethernet circuits to over 300 meters (984 feet) at 50Mbps by using an existing pair of copper wire. Installation is easy with a single switch setting - one end is set for local and the other for remote. The EIRM-EXTEND-8 is used in pairs (compatible with other EIS, EIR and EIRM models) to extend Ethernet connectivity over existing voice grade copper wire.

The EIRM-EXTEND-8 functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F) and is tested for functional operation @ -40°C to 85°C (-40°F to 185°F). The EIRM-EXTEND-8 is fully managed via SNMP, Web Browser, Telnet or Console Port and is designed to integrate 10/100 Mbps networks into VDSL backbones. The EIRM-EXTEND-8 series supports advanced features such as 802.1Q VLAN, MAC-based Trunking, IP Multicast IGMP Snooping, Rapid Spanning Tree for Redundancy, QoS for priority queuing, and port mirroring. Users may choose among SNMP/RMON, Web browser, or Telnet for remote monitoring and configuration. It also supports rate control, which allows users to set the maximum bandwidth in each port individually.



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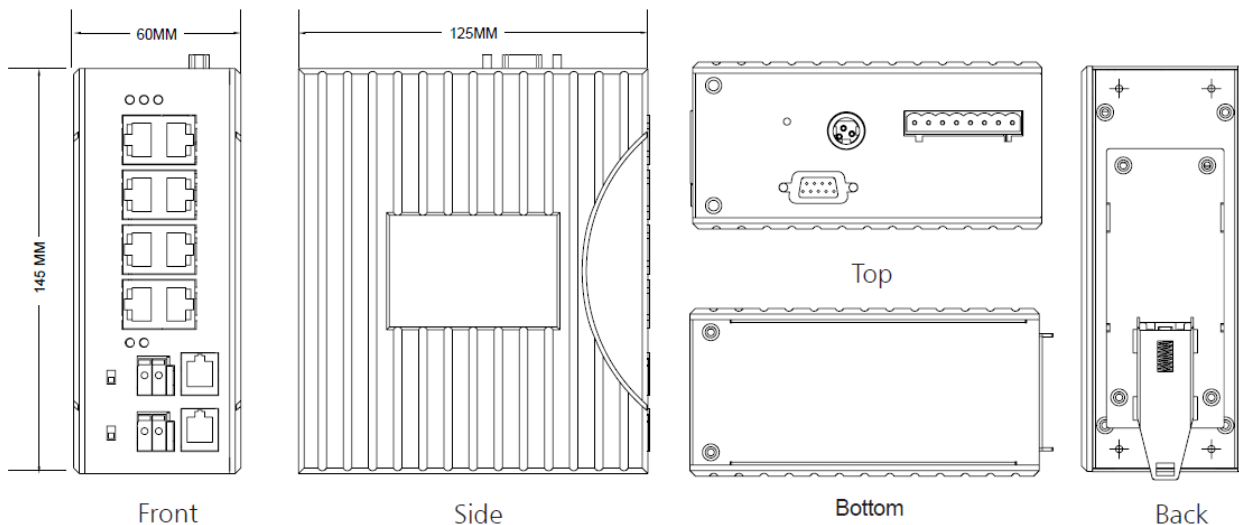
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### Ordering Information

Model Number	Ethernet Ports	Max Distance	Max Speed	VDSL Ports	Temp	Mounting
EIRM-EXTEND-8	8	1900m	50Mbps	Two RJ-11 and Terminal Block	-40 to 75C	Din, Panel (EIRPMKT)

### Accessories

Model No.	Description
MDR-20-24	DIN rail mount power supply 24VDC, 1.0 A output power
MDR-40-24	DIN rail mount power supply 24VDC, 1.7 A output power
PS12VDC3P	Hardened AC power adapter, 12 VDC, 36W, US plug (for EIR and EIRM series)
EIRPMKT	Panel Mount Kit For Switches
C5UMB3FBG	Ethernet Category 5e patch cord, 3 ft. (0.9m), beige
C5UMB7FBG	Ethernet Category 5e patch cord, 7 ft. (0.9m), beige



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## Specifications

### Technology

Standards: IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX, Ethernet over VDSL, IEEE802.3x, IEEE802.1p, IEEE802.1Q, IEEE802.1w, IEEE802.1x

Forward and Filtering Rate: 14,880pps for 10Mbps  
 148,810pps for 100Mbps

Packet Buffer Memory: 2M bits

Processing Type: Store-and-Forward Half-duplex back-pressure and IEEE802.3x full-duplex flow control

Address Table Size: 8192 MAC addresses

### Ethernet Ports

RJ45 Ports: Eight Ethernet 10/100BASE-TX Full/Half-duplex Auto-Negotiation, Auto-MDI/MDIX

RJ45 Distance: 100 meters (328ft)

LED Indicators: LNK/ACT, Duplex

### Ethernet VDSL Extender Ports

Port: Two RJ-11 and Terminal Block Ports

Speed: 1/3/5/10/15/20/25/30/40/50Mbps

Distance: 1900meters (6,232ft.)

Cable: Telephone line 24 AWG (0.5mm diameter, 1- pair wire) or larger

### Console Port

One DB9 RS232 port

### Power

Input Voltage: 12 to 48VDC

Power Use: 11W Max. 0.92A@12VDC, 0.46A@24VDC

Input Connection (Terminal Block);12VDC (DC Jack)

Protection: Reverse Polarity Protection

### Mechanical

Enclosure: Aluminum IP30

Dimensions: 60mm (W) x 125mm (D) x 145mm (H)  
 (2.36" (W) x 4.92" (D) x 5.7" (H))

Installation: Din Rail or optional Panel mount

### Environmental

Op. Temperature: -40°C to 75°C  
 (-40°F to 167°F)  
 Tested @ -40°C to 85°C  
 (-40°F to 185°F)

Storage Temp: -40°C to 85°C  
 (-40°F to 185°F)

Op. Humidity: 5% to 95% (non condensing)

MTBF 844,028.71

### LED Indicators

Per input: Power Status LED

Per Port: 10/100TX: Link/Activity, Full-duplex  
 Line: Error, Link, Local, Remote

	LED	Speed	Distance
1	Green	1 Mbps	1,900m(6,232 ft.)
	Amber	3 Mbps	1,800m(5,904 ft.)
2	Green	5 Mbps	1,600m(5,249 ft.)
	Amber	10Mbps	1,400m(4,593 ft.)
3	Green	15Mbps	1,200m(3,936 ft.)
	Amber	20Mbps	1,000m(3,280 ft.)
4	Green	25Mbps	800m(2,624 ft.)
	Amber	30Mbps	700m(2,296 ft.)
5	Green	40Mbps	600m(1,968 ft.)
	Amber	50Mbps	300m (984 ft.)

Note: All speed selections are Symmetrical on the DSL and Full-duplex on Ethernet.

**Alarm Contact:** One relay output with current 1A@24VDC



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## Regulatory Approvals:

**ISO:** Manufactured in an ISO9001 facility

**EMI:** FCC Part 15, Class A  
VCCI, Class A  
EN61000-6-4

- EN55022
- EN61000-3-2
- EN61000-3-3

**EMS:**

EN61000-6-2

- EN61000-4-2 (ESD Standards)
- Contact: + / - 6KV; Criteria B
- Air: + / - 8KV; Criteria B

EN61000-4-3 (Radiated RFI Standards)

- 10V/m, 80 to 3000MHz; 80% AM Criteria A

EN61000-4-4 (Burst Standards)

- Signal Ports: + / - 4KV; Criteria B
- D.C. Power Ports: + / - 4KV; Criteria B

EN61000-4-5 (Surge Standards)

- Signal Ports: + / - 1KV; Line-to-Line; Criteria B
- D.C. Power Ports: + / - 0.5KV; Line-to-earth; Criteria B

EN61000-4-6 (Induced RFI Standards)

- Signal Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A
- D.C. Power Ports: 10Vrms @ 0.15~80MHz; 80% AM Criteria A

EN61000-4-8 (Magnetic Field Standards)

- 30A/m @ 50, 60Hz; Criteria A

## Environmental Test Compliance:

IEC60068-2-6 Fc (Vibration Resistance)

- 5g @ 10~150Hz, Amplitude 0.35mm  
(Operation/Storage/Transport)

IEC60068-2-27 Ea (Shock)

- 25g @ 11ms (Half-Sine Shock Pulse; Operation)
- 50g @ 11ms (Half-Sine Shock Pulse; Storage/Transport)

IEC60068-2-32 Ed (Free Fall)

- 1M (3.281ft.)

**NEMA TS1/2 Environmental requirements for Traffic control equipment**



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