

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.

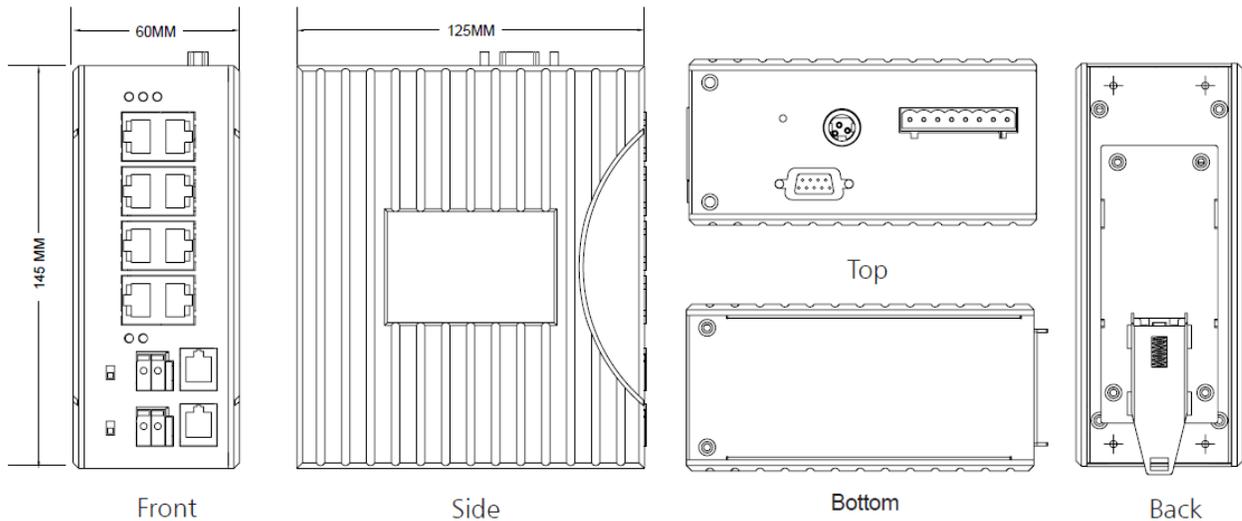
The EIRM-EXTEND-8 functions at temperatures ranging from -40°C to 75°C (-40°F to 167°F) and is tested for functional operation @ -40°C to 85°C (-40°F to 185°F). The EIRM-EXTEND-8 is fully managed via SNMP, Web Browser, Telnet or Console Port and is designed to integrate 10/100 Mbps networks into VDSL 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.

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



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

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