

# EIRM-EXTEND

## Managed Hardened 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
- Supports SNMP allowing easy management of our Ethernet Extender along with monitoring connected devices.
- Operates transparent to higher layer protocols such as TCP/IP
- Ethernet Port: 10/100Mbps-Full/Half-duplex, Auto-Negotiation, Auto-MDI/MDIX
- Ethernet Extender (RJ-11 and Terminal Block) Ports
- Supports DIN-Rail Panel Rack Mounting installation
- Ten communications speeds with speed indicator LEDs on front panel of unit. From 50Mbps@about 300meters (984ft.) to 1Mbps@about 1,900meters (6,232ft.)
- Support external Hardware Watch Dog
- Support Web, CLI, SNMP management Interface
- Link Status (for VDSL, Ethernet),
- Redundant power inputs: 12 to 32VDC (Terminal Block);12VDC (DC Jack)
- -40°C to 75°C (-40°F to 167°F) operating temperature range
- Hardened IP30 aluminum case



### Functional Description

B&B Electronics' Industrial Hardened EIRM-EXTEND is a point-to-point Managed Ethernet Extender designed to operate in harsh environments that efficiently extends 10/100 Ethernet circuits to over 300meters (984feet) at 50Mbps using existing cross-over pair copper wire.

The EIRM-EXTEND operates 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 will allow Ethernet connectivity in existing facilities without pulling extra cable. This is the perfect solution to Ethernet on the factory -floor where systems have been upgraded from slower serial communications to Ethernet networking. Installation is easy with a single switch setting; one end is set for local and the other remote.

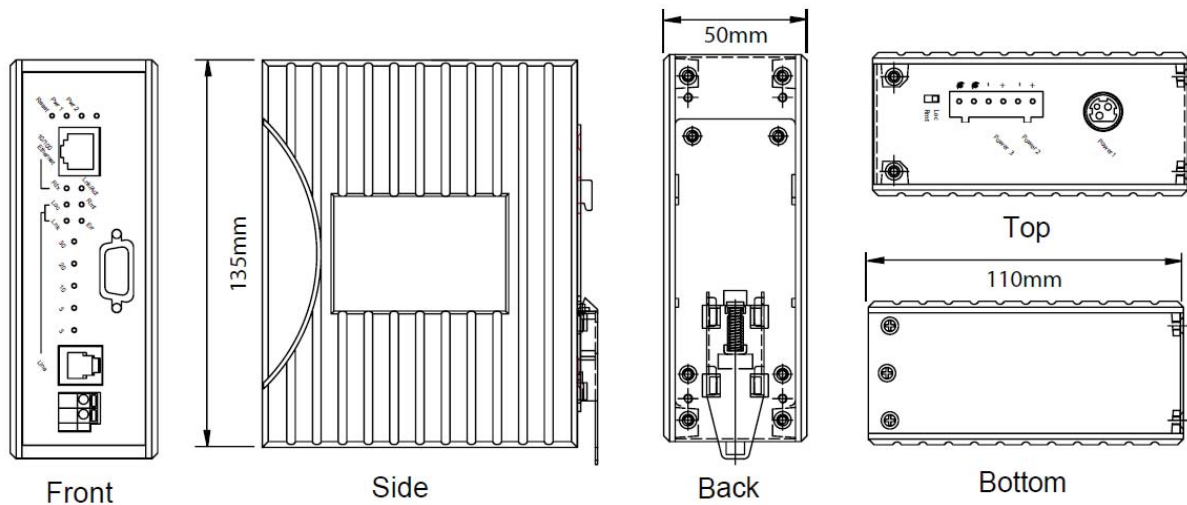
The EIRM-EXTEND is used in pairs to extend Ethernet connectivity over existing voice grade copper wire. The EIRM-EXTEND provides LED display for Power, VDSL speed and Ethernet connection status. The EIRM-EXTEND also provides several advanced functions such as System, SNMP, F/W upgrade, and Load Default setting through the Web based browser to enhance total networking performance.

Model Number	Ethernet Ports	Max Distance	Max Speed	VDSL Ports	Temp	Mounting
EIRM-EXTEND	1	1900m	50Mbps	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, IEEE802.3x, Ethernet over VDSL  
 Protocols: Transparent to higher layer protocols  
 Flow Control: Half-duplex back-pressure and IEEE802.3x Full-duplex flow control

### Ethernet Port

RJ45 Ports: One 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 Port

Port: One RJ-11 and Terminal Block Port  
 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

Port One DB9 RS232 port

### Power

Input Voltage: 12 to 32VDC  
 Power Use: 5.76W Max. 0.48A@12VDC, 0.24A@24VDC  
 Input Connection (Terminal Block);12VDC (DC Jack)  
 Protection: Reverse Polarity Protection

### 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 the Ethernet.



## Regulatory Approvals:

**ISO:** Manufactured in an ISO9001 facility

**Safety:** UL508

**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: + / - 4KV; 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**