

# EOM-104 Series

## 4-port embedded managed Ethernet switch modules



- > 10/100BaseT(X) and 100BaseFX Ethernet interfaces
- > Turbo Ring and RSTP/STP for Ethernet redundancy
- > SNMP and e-mail alerts for event trapping and notification
- > Two-thirds the size of a business card
- > Low power consumption
- > -40 to 75°C operating temperature range



### Introduction

The EOM-104 series Ethernet switch modules are designed for device manufacturers who would like to embed Ethernet modules in their products to enhance performance and reliability.

The EOM-104 series modules provide an easy and cost-effective integrated solution for adding an Ethernet switch module to an existing

product. The modules support 10/100M Ethernet transmission and come with Turbo Ring's fast recovery time of under 20 ms. The EOM-104 series also provide a rich set of peripherals, such as Turbo Ring Enable and GPIO programming pins, and is an ideal solution for embedded Ethernet applications.

### Specifications

#### Technology

##### Standards:

- IEEE 802.3 for 10BaseT
- IEEE 802.3u for 100BaseT(X) and 100BaseFX
- IEEE 802.3x for flow control
- IEEE 802.1D for Spanning Tree Protocol
- IEEE 802.1w for Rapid STP
- IEEE 802.1p for Class of service

**Protocols:** SNMPv1/v2c/v3, DHCP Client, BootP, TFTP, SMTP, RARP, RMON, HTTP, Telnet, Syslog

**MIB:** MIB-II, Ethernet-Like MIB, P-Bridge MIB, Bridge MIB, RSTP MIB, RMON MIB Group 1, 2, 3, 9

**Flow Control:** IEEE 802.3x flow control

#### Switch Properties

**MAC Table Size:** 1 K

**Packet Buffer Size:** 512 Kbit

#### Interface

##### Ethernet Ports:

EOM-104: 4 10/100BaseT(X) ports

EOM-104-FO: 2 10/100BaseT(X) and 2 100BaseFX ports

**Connectors:** 1 connector with 2 x 20 pins, 2 connectors with 1 x 9 pins, and 1 connector with 2 x 2 pins

**Console Port:** RS-232 (TxD, RxD, DTR, DSR)

**GPIO:** 4 programmable I/O pins

#### Power Requirements

**Input Voltage:** 3.3 V

**Input Current:**

EOM-104: 0.59 A @ 3.3 V

EOM-104-FO: 1.22 A @ 3.3 V

#### Physical Characteristics

**Dimensions:** 54 x 60 x 8.25 mm (2.13 x 2.36 x 0.32 in)

**Weight:** 21 g

#### Environmental Limits

**Operating Temperature:** -40 to 75°C (-40 to 167°F)

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

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

#### Standards and Certifications

**EMI:** FCC Part 15 Subpart B Class A, EN 55022 Class A, CE Class A

**Note:** Please check Moxa's website for the most up-to-date certification status.

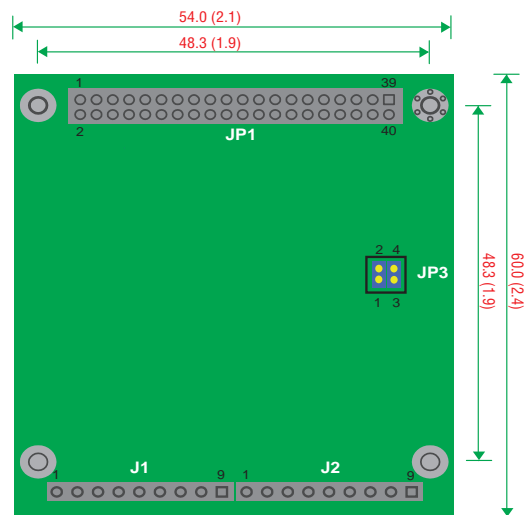
#### Warranty

**Warranty Period:** 5 years

**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

#### Dimensions

Unit: mm (inch)



## Pin Assignment

### JP1 (2 x 20 connector pin assignment)

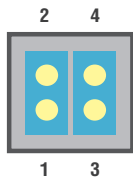
PIN	1	3	5	7	9	11	13	15	17	19
SIGNAL	TX2 -	RX2 -	NC	RX1 +	TX1 +	NC	GND	3.3V	GND	DTR
PIN	2	4	6	8	10	12	14	16	18	20
SIGNAL	TX2 +	RX2 +	NC	RX1 -	TX1 -	NC	GND	3.3V	GND	DSR
PIN	21	23	25	27	29	31	33	35	37	39

SIGNAL	TXD	GPIO 4	GPIO 2	MASTER ENABLE	MASTER LED	PORT 1 LED	PORT 3 LED	MANUAL RESET	3.3V	GND
PIN	22	24	26	28	30	32	34	36	38	40
SIGNAL	RXD	GPIO 3	GPIO 1	TURBO RING ENABLE	TURBO RING LED	RESET DEFAULT	PORT 4 LED	PORT 2 LED	3.3V	GND
PIN	1	2	3	4	5	6	7	8	9	
SIGNAL	GND	TX4 +	TX4 -	3.3 V	3.3 V	FXSD	RX4 -	RX4 +	GND	

### J2 (1 x 9 connector pin assignment)

PIN	1	2	3	4	5	6	7	8	9
SIGNAL	GND	TX3 +	TX3 -	3.3 V	3.3 V	FXSD	RX3 -	RX3 +	GND

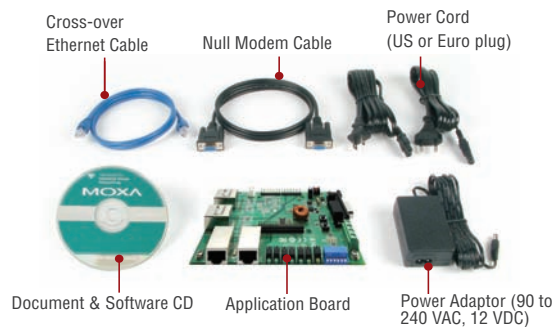
### JP3 (2 x 2 connector pin assignment)



Jumpers 1 and 2 are used to enable the Ring Master  
Jumpers 3 and 4 are used to enable Turbo Ring

## Evaluation Kits

The EOM Evaluation Kit includes an evaluation board, power adaptor, software CD, and serial and Ethernet cables to allow quick and easy evaluation of all embedded Ethernet switch functions. The evaluation board is equipped with Ethernet ports, console port, and Turbo Ring DIP switch to help you test your modules and applications.



## Ordering Information

### Available Models

**EOM-104:** Embedded managed Ethernet switch module with 4 10/100BaseT(X) ports, -40 to 75°C operating temperature

**EOM-104-FO:** Embedded managed Ethernet switch module with 2 10/100BaseT(X) and 2 100BaseFX ports, -40 to 75°C operating temperature

**EOM-104 20PCS:** Embedded managed Ethernet switch module with 4 10/100BaseT(X) ports, -40 to 75°C operating temperature, 20 pcs per package

**EOM-104-FO 20PCS:** Embedded managed Ethernet switch module with 2 10/100BaseT(X) and 2 100BaseFX ports, -40 to 75°C operating temperature, 20 pcs per package

### Evaluation Kits (must be purchased separately)

**EOM-104 Evaluation Kit:** Includes an EOM-104 switch module and evaluation board with 4 10/100BaseT(X) ports for testing and application development

**EOM-104-FO Evaluation Kit:** Includes an EOM-104-FO switch module and evaluation board with 2 10/100BaseT(X) ports and 2 100BaseFX multi-mode ports (SC connectors) for testing and application development

### Package Checklist

- EOM-104 module
- EOM-104 evaluation board
- Universal power adaptor
- 2 power cords
- Null modem serial cable
- Cross-over Ethernet cable
- Accessories pack
- Quick installation guide (printed)
- Warranty card