

MRX-Q4064 系列

48 個 2.5GbE 與 16 個 10GbE 連接埠 Layer 3 全 2.5 Gigabit 模組化網管型乙太網路交換器



特色與優點

- 16 個 10GbE 乙太網路連接埠
- 多達 48 個 1GbE 或 2.5GbE 連接埠或 SFP 插槽
- HAST (高可用性靜態匯聚網口) 技術支援骨幹可靠性
- 搭載 LCM 顯示屏，狀態更新一目了然，支援輕鬆的現場維護和操作
- 雙電源模組與 6+2 風扇冗餘設計，提供不間斷的網路運作
- 即時系統溫度監控，可保護網路與裝置

認證



簡介

MRX-Q4064 系列專為符合工業視訊、語音與數據應用的高效能、高可用性需求所設計，這些需求均源自於工業場所對於資訊科技的聚合成長。

MRX-Q4064 系列採用模組化設計，內建 16 個 10GbE 連接埠，並可透過模組支援多達 48 個 2.5GbE 連接埠，非常適合構建大規模工業網路應用。10GbE 連接埠可顯著提升網路交換頻寬，支援直接連接 10GbE 伺服器，並將數據收集與分析功能部署於應用場所的第一線。此外，支援多埠聚合功能可實現更高頻寬骨幹，同時為未來網路成長預留空間。

MRX-Q4064 系列不僅能容納更多現場設備，還能降低數據傳輸延遲，確保在高效能網路中實現視訊、語音及數據的高速傳輸。本系列配備備援多風扇散熱系統及備援隔離電源供應器。本系列支援工業高效 Turbo Ring 技術，以及 ERPS (ITU-T G.8032) 和 RSTP/STP 等多種網路備援技術，可顯著提升 IT/OT 聚合應用中骨幹網路的可靠性和可用性。

附加特色與優點

- 彈性頻寬/連接埠組合，可達成高效頻寬管理及最大可靠性
- 命令列介面 (CLI) 快速管理
- 頻外管理 (OOBM) 連接埠，可確保在無法存取頻內服務時的網路管理可用性
- 系統溫度控制與電源消耗管理可實現不間斷運作
- 連接埠鏡像 (N:M) 技術可支援安全監控與稽核
- 針對大規模視訊監控的突發性大流量傳輸進行最佳化，有效避免畫面丟幀
- 用於網路時間同步的 IEEE1588v2 PTP (精確時間協定)
- 支援 MXconfig 和 MXview One 用於工業網路管理和視覺化

規格

Ethernet Interface	
1000/2500/10000BaseSFP Ports	16
Out-of-band Management (OOBM)	1 x 8-pin RJ45 1GbE Ethernet port (MGMT)

Module	There are 3 module slots on the switch. Users can select different types of modules to insert into the switch. The modules that can be selected include 16-port modules with 1000BaseT(X), 1000/2500BaseT(X), 1000BaseSFP, or 1000/2500BaseSFP interfaces. Refer to Expansion Modules in the Accessories section for a full list of supported interface modules.
Standards	IEEE 802.1D-2004 for Spanning Tree Protocol IEEE 802.1p for Class of Service IEEE 802.1Q for VLAN Tagging IEEE 802.1s for Multiple Spanning Tree Protocol IEEE 802.1w for Rapid Spanning Tree Protocol IEEE 802.1X for Authentication IEEE 802.3ab for 1000BaseT(X) IEEE 802.3ad for Port Trunk with LACP IEEE 802.3x for Flow Control IEEE 802.3z for 1000BaseSX/LX/LHX/ZX IEEE 802.3bz for 2.5GBaseX IEEE 802.3ae for 10 Gigabit Ethernet IEEE 802.3az for Energy-Efficient Ethernet ITU-T G.8032 Ethernet Ring Protection Switching

Ethernet Software Features

Management	IPv4 Flow control Back Pressure Flow Control DHCP Client ARP RARP LLDP Linkup Delay SMTP SNMP Trap SNMP Inform SNMPv1/v2c/v3 RMON TFTP SFTP HTTP HTTPS Telnet Syslog Private MIB Port Mirroring (SPAN, RSPAN)
Filter	GMRP GVRP GARP 802.1Q IGMP Snooping v1/v2/v3 IGMP Querier
Redundancy Protocols	STP RSTP Turbo Ring v2 Ring Coupling Multiple Dual-Homing Link Aggregation Network Loop Protection MSTP
Routing Redundancy	VRRP
Security	Broadcast storm protection Rate Limit Access control list Static port lock Sticky MAC HTTPS/SSL SSH RADIUS TACACS+

	Login and password policy Secure Boot
Time Management	SNTP IEEE 1588v2 PTP (hardware-based) NTP Server/Client NTP Authentication
Protocols	TCP/IP UDP ICMP ARP RARP TFTP DNS NTP Client DHCP Client 802.1X QoS HTTPS HTTP Telnet SMTP SNMPv1/v2c/v3 IPv4 RMON Syslog
Unicast Routing	OSPF Static Route
MIB	P-BRIDGE MIB Q-BRIDGE MIB IEEE8021-SPANNING-TREE-MIB IEEE8021-PAE-MIB IEEE8023-LAG-MIB LLDP-EXT-DOT1-MIB LLDP-EXT-DOT3-MIB SNMPv2-MIB RMON MIB Groups 1, 2, 3, 9

Switch Properties

MAC Table Size	32 K
Max. No. of VLANs	512
IGMP Groups	1500
Jumbo Frame Size	9.6 KB
Packet Buffer Size	6 MB
Priority Queues	8
VLAN ID Range	VID 1 to 4094

USB Interface

Storage Port	USB Type A
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MicroSD Interface

Storage Port	microSD card
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Serial Interface

Console Port	RS-232 (RJ45)
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Input/Output Interface

Alarm Contact Channels	1 relay output with current carrying capacity of 2 A @ 30 VDC
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Power Parameters

Input Voltage	100-240 VAC, 50-60 Hz or 230-240 VDC (for each power supply)
Operating Voltage	90-264 VAC, 47-63 Hz or 180-300 VDC (for each power supply)
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Input Current	Max. 2.703 A @ 110 VAC Max. 1.339 A @ 220 VAC Max. 1.615 A @ 180 VDC Max. 0.948 A @ 300 VDC
Power Consumption (Max.)	Max. 297 W @ 110 VAC Max. 287.3 W @ 220 VAC Max. 290.3 W @ 180 VDC Max. 284.3 W @ 300 VDC Note: These are the maximum power consumption ratings for the device with the maximum number of modules installed.
Power Module	2 x slots (2 x PWR-300-HVA-IF power modules included)

Physical Characteristics

IP Rating	IP30
Dimensions	440 x 88 x 420 mm (17.32 x 3.46 x 16.54 in)
Weight	12 kg (26 lb)
Fan Module	8 x slots (8 x XM-4000-FAN-R preinstalled)
Installation	Rack mounting
Interactive Interface	Onboard LCM display Push buttons for configuration

Environmental Limits

Operating Temperature	-10 to 60°C (-14 to 140°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

Safety	UL 62368-1 UL 61010-2-201 IEC 62368-1
EMC	EN 55032/35 EN 61000-6-2/-6-4
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF IEC 61000-4-11 Voltage Dips & Interruptions
Railway	EN 50121-4
Shock	IEC 60068-2-27

Vibration	IEC 60068-2-6
Package Drop Test	ISTA 1A
Package Vibration Test	ISTA 1A

MTBF

Time	1,337,959 hrs
Standards	Telcordia (Bellcore), GB

Warranty

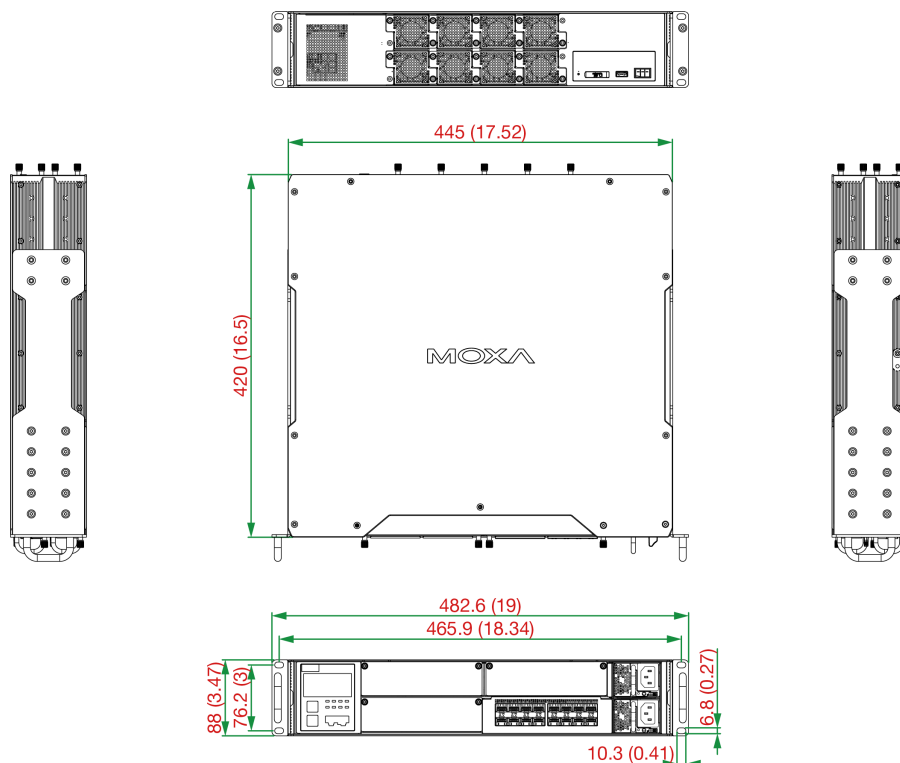
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x MRX-Q4064-L3-16XGS Series switch (eight XM-4000-FAN-R fan modules preinstalled)
Power Supply	2 x PWR-300-HVA-IF power modules
Installation Kit	2 x rack-mounting ear 2 x plastic IP30 dust cover for PWR power modules 8 x round stickers for module screws
Documentation	1 x quick installation guide 1 x warranty card
Note	This product requires additional modules (sold separately) and IEC 60320 C15 power cords to function.

尺寸

單位：公釐（英吋）



Model Name	Max. No. of Ports	10GbE SFP+ Slots	1000/2500Base SFP Slots	1000/2500BaseT(X) Ports (RJ-45)	L3 Functionality	Operating Temp.
MRX-Q4064-L3-16XGS	64	16	Up to 48	Up to 48	√	-10 to 60°C

配件 (選購)

Expansion Modules

XM-4000-16GTX	Gigabit Ethernet module with 16 1000BaseT(X) ports
XM-4000-16GSFP	Gigabit Ethernet module with 16 1000BaseSFP ports
XM-4000-16QGTX	2.5 Gigabit Ethernet module with 16 1000/2500BaseT(X) ports
XM-4000-16QGSFP	2.5 Gigabit Ethernet module with 16 1000/2500BaseSFP ports

Power Modules

PWR-300-HVA-IF	Isolated power supply module (110/220 VAC/VDC) with system power input, AC power inlet, intake fan
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Fan Modules

XM-4000-FAN-R	Exhaust fan module for MRX switches
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SFP Modules

SFP-1G10ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G10BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G20ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G20BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G40ALC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, 0 to 60°C operating temperature
SFP-1G40BLC	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, 0 to 60°C operating temperature
SFP-1G10ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G10BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 10 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G20ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G20BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 20 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1G40ALC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1310 nm, RX 1550 nm, -40 to 85°C operating temperature
SFP-1G40BLC-T	WDM-type (BiDi) SFP module with 1 1000BaseSFP port with LC connector for 40 km transmission; TX 1550 nm, RX 1310 nm, -40 to 85°C operating temperature
SFP-1GSXLC	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, 0 to 60°C operating temperature
SFP-1GLSXLC	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, 0 to 60°C operating temperature
SFP-1GLXLC	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, 0 to 60°C operating temperature
SFP-1GLHLC	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, 0 to 60°C operating temperature

SFP-1GLHXL	SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, 0 to 60°C operating temperature
SFP-1GZXLC	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, 0 to 60°C operating temperature
SFP-1GEZXL	SFP module with 1 1000BaseEZ port with LC connector for 110 km transmission, 0 to 60°C operating temperature
SFP-1GEZXL-120	SFP module with 1 1000BaseEZ port with LC connector for 120 km transmission, 0 to 60°C operating temperature
SFP-1GSXL-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m transmission, -40 to 85°C operating temperature
SFP-1GLSXL-T	SFP module with 1 1000BaseLS port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXL-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GLHL-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXL-T	SFP module with 1 1000BaseLH port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GZXLC-T	SFP module with 1 1000BaseZX port with LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-1GTXRJ45-T	SFP module with 1 1000BaseT port with RJ45 connector for 100 m transmission, -40 to 75°C operating temperature
SFP-2.5GMLC-T	SFP module with 1 2.5GBaseFX port with LC connector, multi-mode, for 170, 200, 550, 600 m transmission, -40 to 85 °C operating temperature
SFP-2.5GSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 5 km transmission, -40 to 85 °C operating temperature
SFP-2.5GSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 20 km transmission, -40 to 85 °C operating temperature
SFP-2.5GSLHL-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 45 km transmission, -40 to 85 °C operating temperature
SFP-10GSRLC-T	SFP+ module with 1 10GBase-SR port, LC connector for 33m/82m/300m/400m transmission, -40 to 85° C operating temperature
SFP-10GLRLC-T	SFP+ module with 1 10GBase-LR port, LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-10GERLC-T	SFP+ module with 1 10GBase-ER port, LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-10GZRLC-T	SFP+ module with 1 10GBase-ZR port, LC connector for 80 km transmission, -40 to 85°C operating temperature

Cables

CN20070	10-pin RJ45 to DB9 female serial cable
PWC-C15US-3B-183	C15 power cord with US plug, 1.83 m
PWC-C15EU-3B-183	C15 power cord with EU plug, 1.83 m

Software

LIC-MXviewOne-NEW-XN-SR	MXview One node license with customizable node quantity (minimum 1 node)
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Storage Kits

ABC-02-USB	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, 0 to 60°C operating temperature
ABC-02-USB-T	Configuration backup and restoration tool, firmware upgrade, and log file storage tool for managed Ethernet switches and routers, -40 to 75°C operating temperature
ABC-03-microSD-T	MicroSD-based configuration backup and restoration tool, firmware upgrades, and log file storage tool for managed Ethernet switches and WLAN products, -40 to 85°C operating temperature

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