MOXA
MRX-G4064
Industrial
Networking

MOXA MRX-G4064 Industrial Networking Installation Guide

Contents

MOXA

MOXA MRX-G4064 Industrial Networking

Technical Support Contact Information www.moxa.com/support

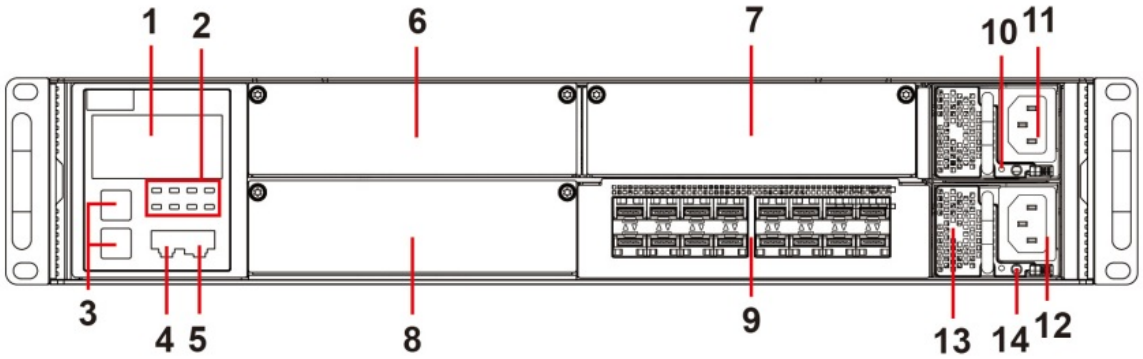
Package Checklist

The Moxa MRX-G4064/MRX-Q4064 industrial rackmount switch is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

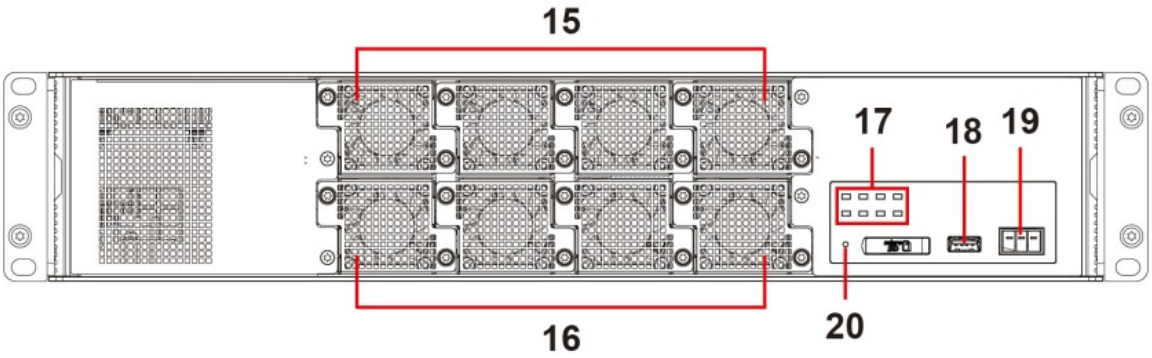
- 1 x MRX-G4064/MRX-Q4064 switch
- 2 x Rack-mounting ears
- 2 x PWR-300-HVA-IF
- 2 x Plastic IP30 dust cover for PWR power modules
- 8 x XM-4000-FAN-R (pre-installed)
- 8 x Tamper-evident stickers
- 1 x Quick installation guide (printed)
- 1 x Warranty card

Panel Layouts

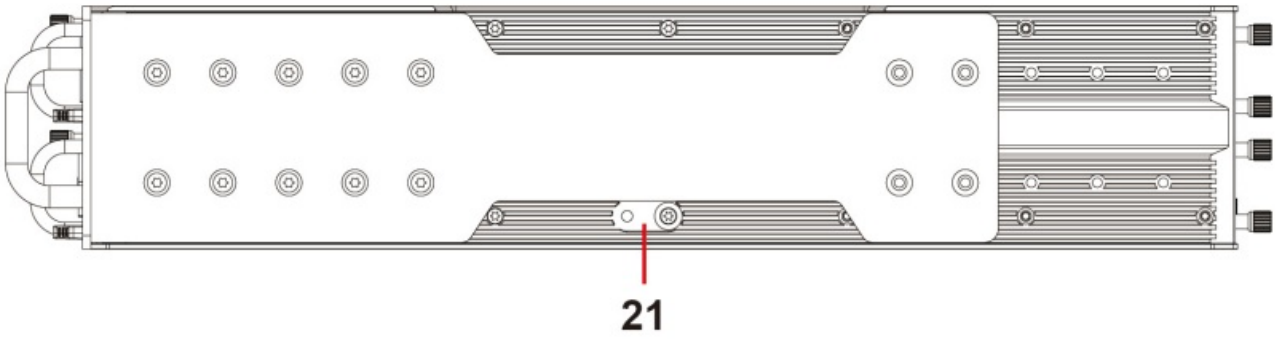
Front View



Rear View

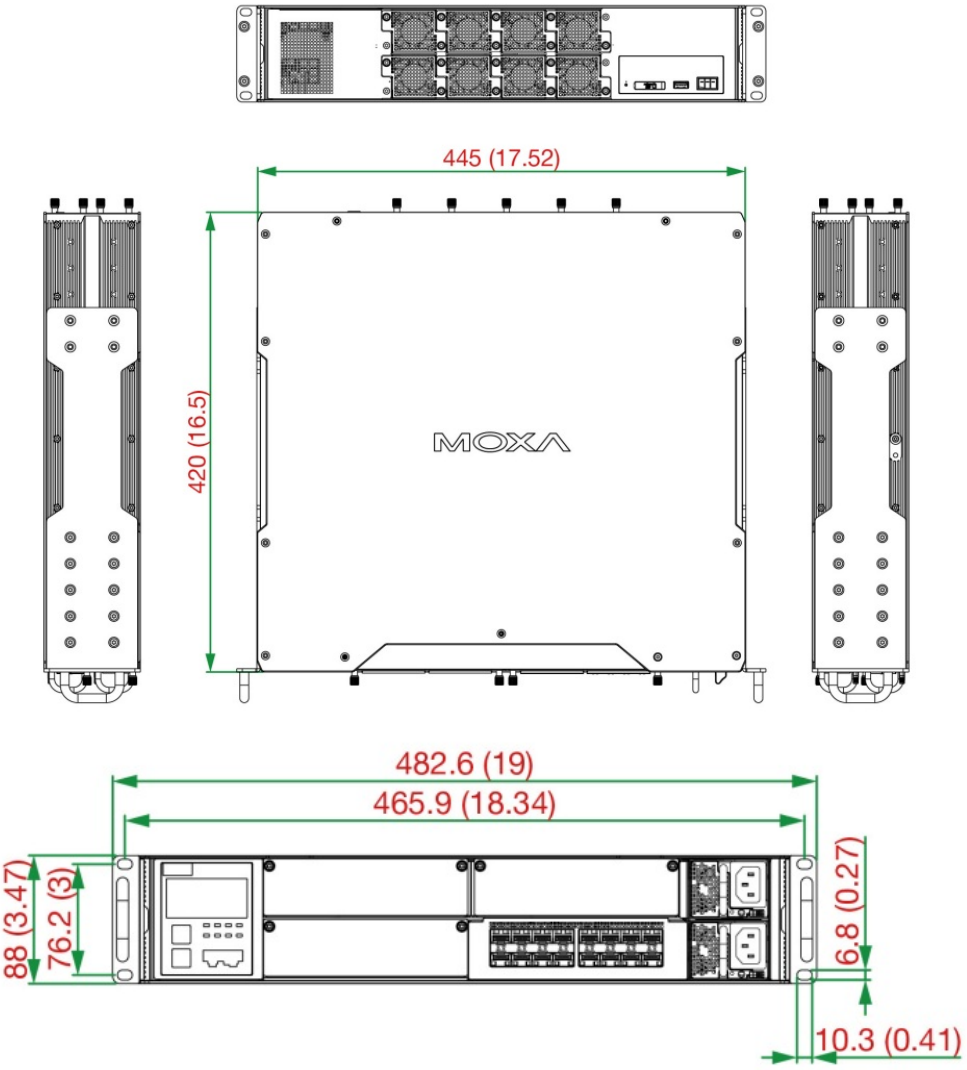


Side View



1. LCM interface
2. System status LEDs
3. LCM button
4. Console port (RS-232, RJ45)
5. MGMT port (OOBM)
6. Module 3 socket
7. Module 4 socket
8. Module 1 socket
9. Module 2
10. Power LED
11. Power input 2 for 110/220 VDC/VAC
12. Power input 1 for 110/220 VDC/VAC
13. Dust cover
14. Power cord retainer aperture
15. Upper Fan modules
16. Lower Fan modules
17. Fan status LEDs
18. USB host (type A)
19. Relay output
20. Reset button
21. Grounding screw

Dimensions



WARNING

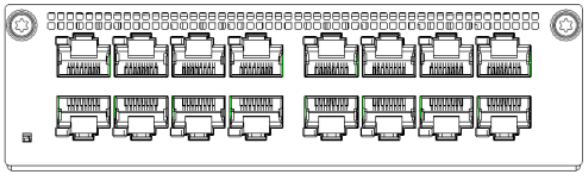
The MRX devices and modules are heavy. Ensure installation is done by engineers trained in proper handling techniques and with assistance. Be vigilant to prevent the risk of falling devices causing injury.

ATTENTION

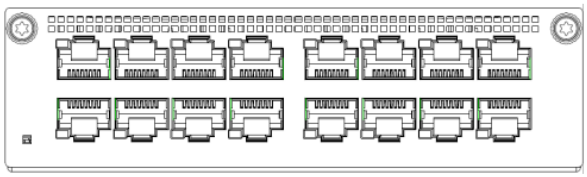
To prolong LCM lifespan, enable Energy Saving mode, or disable LCM when not in use. Refer to the user manual.

XM-4000 Ethernet Interface Modules

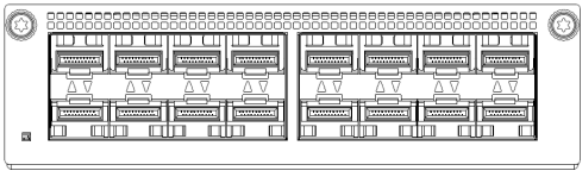
XM-4000-16GTX



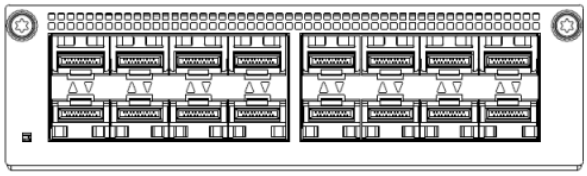
XM-4000-16QGTX



XM-4000-16GSFP



XM-4000-16QGSFP



- **NOTE** MRX-G4064 series doesn’t support 2.5GbE modules.
- **WARNING** When end users are using Optical SFP Communications modules, these must be limited to Laser Class 1.
- **WARNING** Use of the controls or adjustments or the performance of procedures other than those specified herein may result in hazardous radiation exposure.

Grounding the Moxa Industrial Rackmount Switch
Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the ground screw to the grounding surface prior to connecting devices.

NOTE
Using a shielded cable achieves better electromagnetic compatibility.

Wiring Requirements
When wiring the grounding screw, we suggest using AWG (American Wire Gauge) 16 (1.31 mm2) green-and-yellow wire, along with the corresponding pin type cable terminals. The rated temperature of wiring should be at least 105°C.Before completing installation, make sure the ground wire is connected.

WARNING
Do not disconnect modules or wires unless power has been switched off or the area is known to be non-hazardous. The device may only be connected to the supply voltage shown on the type plate. The device is designed for operation with an isolated power supply, which means that they may only be connected to the supply voltage connections and to the signal contact with an isolated power supply in compliance with IEC 62368-1/EN 62368-1/UL 62368-1 or UL 61010.

WARNING
Any adjustment, maintenance, and repair of the product should be carried out only by skilled persons.

NOTE
Since the MRX is modular, observe the following installation order of the device and components:

1. Install the empty modular switch on the mounting rack.
2. Install Ethernet Interface Modules.
3. Finally, install power interface modules.

To remove the device, follow the same procedure in reverse.

Installing and Removing Ethernet Modules
Ethernet modules are hot-swappable provided they are the same module type. You have the option to mount or remove the Ethernet module while the device is operating.

NOTE
When performing a cold start, you cannot remove and insert a module before booting up as it will cause the module to initially fail.

NOTE
If it is the first time you are mounting a Ethernet, or SFP module, please reboot the switch after inserting it. The

hot-swappable function, as defined above, will only work after the device is rebooted for the first time.

NOTE
If a different model type module is changed on the same slot, it is recommended to reconfigure the settings or reset the device to default settings after rebooting the switch.

To install an Ethernet module:

1. Loosen the 2 cover plate screws, and then remove the cover plate.
2. Align the Ethernet module with the slot so it is straight, then insert.
3. Secure the module by tightening the 2 screws. The tightening torque is 3.5 kgf-cm (0.35 Nm).

To remove an Ethernet module:

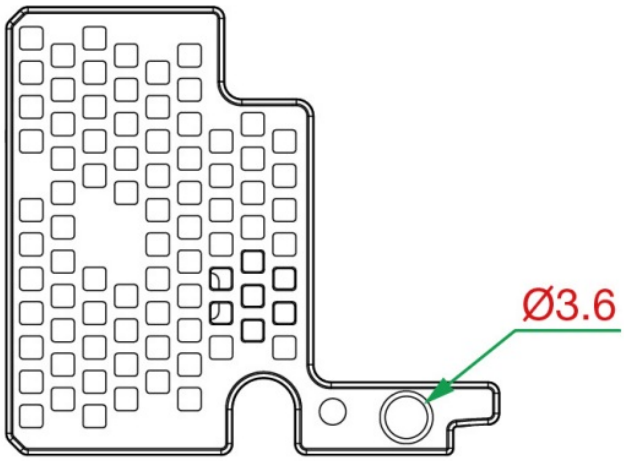
1. Loosen the 2 screws of the module.
2. Pull the module out of the slot.
3. Secure the cover plate over the slot to improve protection against dust and EMI.
4. Fasten the cover plate using 2 screws. The tightening torque is 4 kgf-cm (0.4 Nm).

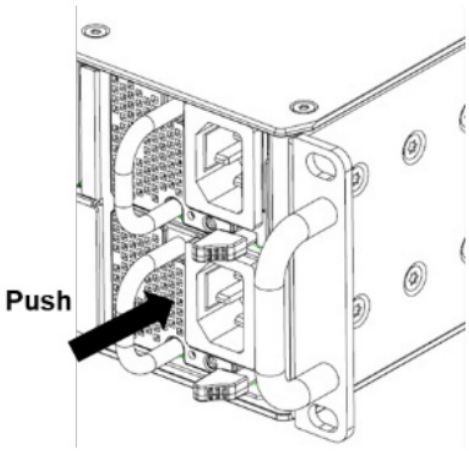
Installing and Removing Power Modules

The power supply modules are hot-swappable when both power modules are installed. You have the option to mount or remove the power supply units while the device is operating.

To install a power module

1. Carefully remove the cover plate.
2. Insert the power supply module straight into the slot and ensure its fully installed.
3. (optional) Insert the dust cover to satisfy IP30
4. (optional) Install a power cord retainer (dust cover aperture Ø3.6 mm; power module aperture Ø4.5 mm)





To remove a power module:

1. Release the latch to the left at lower right corner of power module.
2. Hold the handle and gently pull it out.

3. Secure the cover plate into the slot for better protection against dust and EMI.
4. Align and push the cover plate into place.

NOTE
The PWR-300 power modules use IEC 60320 C15 cables (not included). Observe all electrical regulations in your region and use corresponding equipment.

NOTE
For MRX devices supplied with two power modules, both power units activate simultaneously to allow power redundancy.

NOTE
When closing the cabinet door, leave at least 10 cm for the bending radius of the power cord and Ethernet cable.

Caution
Shock hazard! Disconnect all power cords from unit before changing modules.

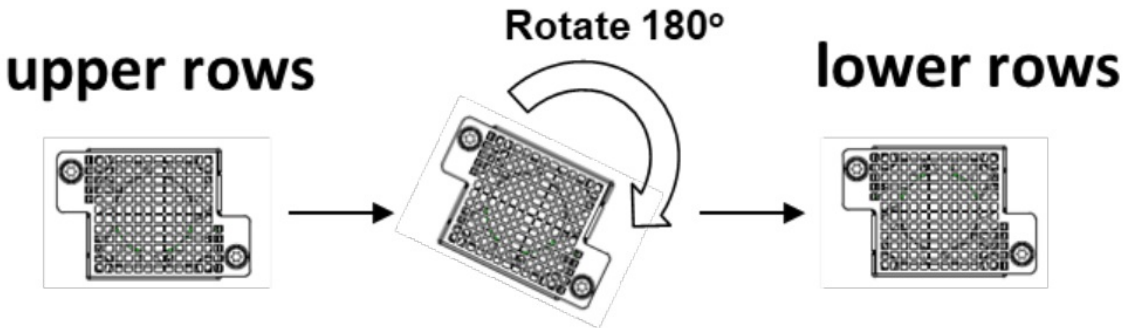
Installing and Replacing Fan Modules
The fan modules are hot-swappable. You have the option to install or replace the fan modules while the device is operating.

NOTE Do not delay replacing fan modules after removal, otherwise the device may overheat.

Caution The fan may continue to spin for several seconds after removal. Do not touch or obstruct rotating fan blades.

To install a fan module:

1. Align the fan module with the slot so it is straight, then insert.
2. The upper and lower rows of modules are inverted. When installing modules in the lower rows, rotate 180 degrees before insertion.



3. Fasten the module to the device by tightening the 2 screws. The tightening torque is 3.5 kgf-cm (0.35 Nm).

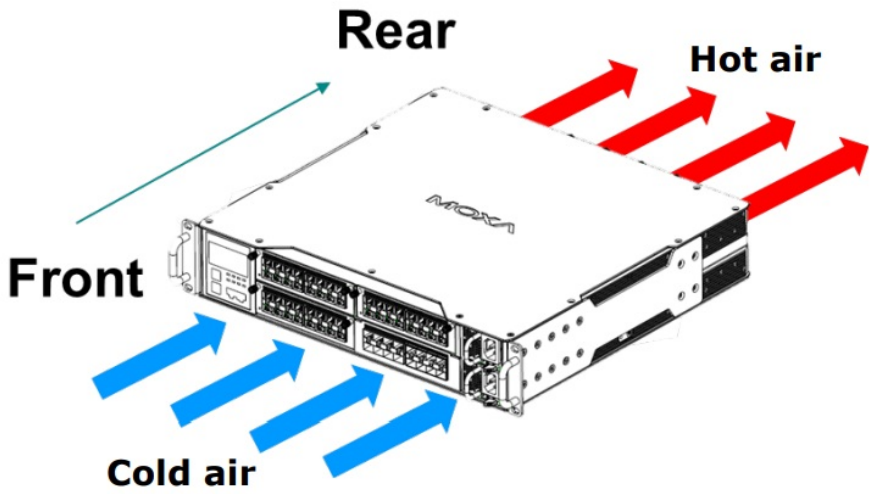
To remove a fan module:

1. Loosen the 2 screws securing the module.
2. Pull the module out of the slot.
3. Lock the cover plate into the slot to improve protection against dust and EMI.
4. Fasten the cover plate using 2 screws. The tightening torque is 4 kgf-cm (0.4 Nm).

ATTENTION
The MRX-G4064/MRX-Q4064 series provides 6+2 modular redundancy in the fan system. To ensure redundancy, make sure all 8 fan units are properly installed. All sockets must be filled for operation.

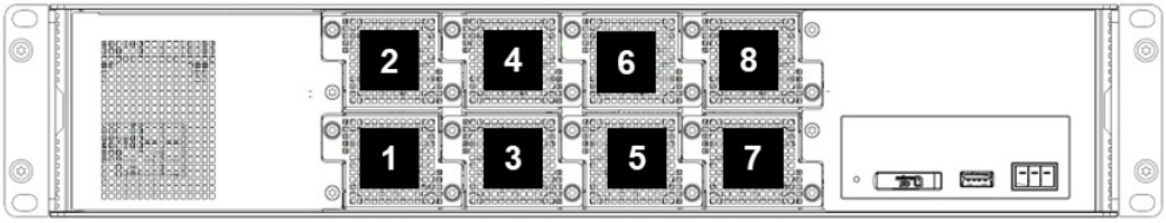
ATTENTION
Fan modules require periodic maintenance (minimum yearly) to maintain the longevity of MRX devices.

Cooling system
XM-4000-FAN-R and PWR-300-HVA-IF provide ventilation to prevent the device overheating. The airflow is from front to rear.



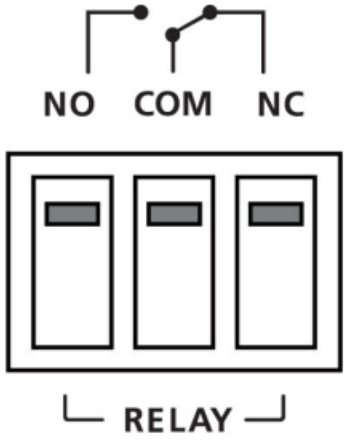
The MRX-G4064/MRX-Q4064 series supports fan modules with 6+2 redundancy level (active-active type). The fan module experiences wear during operation. Failure of three or more fan modules may cause the device overheating and decrease the lifetime of the device. Temperature and fan status is available through the device monitoring functions.

8 fan modules should be arranged as follows:



Wiring the Relay Contact

The MRX device relay provides two output types. Refer to the table below for detailed information. The relay contacts present user-configured events. Two wires are attached to the relay pins with normally close and normally open options.

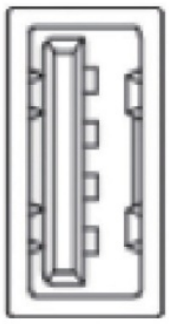


FAULT: The relay contacts of the 3-pin terminal block connector are used to present user-configured events. The device provides normally open and normally closed circuits depending on what the user chooses. For pin definitions, refer to the table below.

Relay Connection	Power Off	Boot up Ready	Event Trigger
NO and COM	Open Circuit	Closed Circuit	Open Circuit
NC and COM	Closed Circuit	Open Circuit	Closed Circuit

WARNING
When wiring the relay contacts, we suggest using the cable type – AWG (American Wire Gauge) 16-21 (1.31-0.42 mm2) and the corresponding pin terminals. Wiring should be copper and rated for at least 105°C.

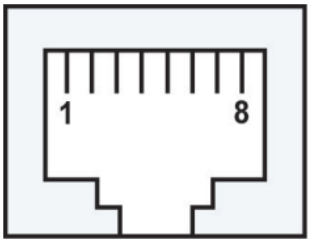
USB Connection
Use Moxa's USB Automatic Backup Configurator ABC-02-USB to connect to the USB host port to backup and restore configuration files, auto-load configuration files, upgrade firmware, and backup system log files.



Type A

Console Port Connection
The MRX device has one RJ45 console port (RS-232), located on the front panel. Use an RJ45-based cable to connect the MRX's console port to your PC's COM port. You may then use a console terminal program, such as Moxa PComm Terminal Emulator, to access the MRX device that has a baud rate of 115200. Refer to the following table figure for the pin definition.

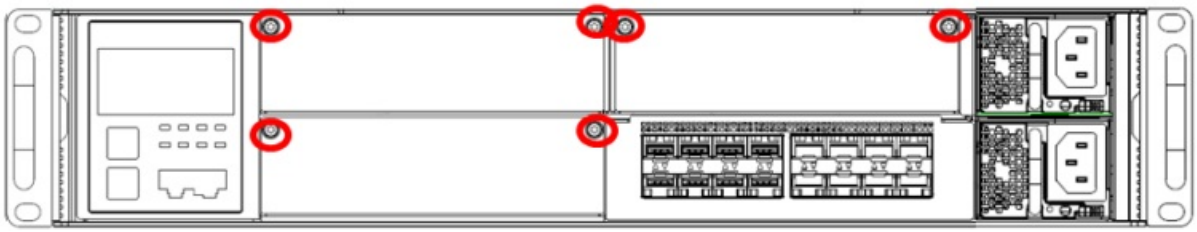
Pin	Description
1	–
2	–
3	–
4	TxD
5	RxD
6	GND
7	–
8	–



The Reset Button
Depress the Reset button for five continuous seconds to load the factory default settings. Use a pointed object, such as a straightened paper clip or toothpick, to depress the Reset button. When you do so, the STATE LED will start to blink about once per second. Continue to depress the STATE LED until it begins blinking more rapidly; this indicates that the button has been depressed for five seconds and you can release the Reset button to load factory default settings.

NOTE
Do NOT power off the switch when loading default settings.

Applying Tamper-Evident Stickers
Moxa includes eight round, tamper-evident stickers in the package. These stickers can be placed on the module screws. If the stickers are broken, users will know the modules have been accessed by unauthorized persons. The figure below highlights the locations of the screws.



Follow these steps to install the stickers.

1. Use a cloth to clean the surface of the screws with a 75% alcohol solution.
2. Carefully align the stickers. Use of tweezers is recommended.
3. Press the stickers down firmly (15 PSI) for at least 15 seconds.
4. Keep the device at room temperature for 24 hours before deploying the devices in harsh environments.

NOTE

1. Place the stickers carefully as they are thin and fragile.
2. The ideal environment for the stickers to be stored in is 22°C (72°F) and 50% relative humidity.
3. Keep the extra two stickers in a safe place so that unauthorized persons cannot access them.

LED Indicators

The front/rear panels of the MRX-G4064/MRX-Q4064 series are equipped with a variety of LED indicators. The function of each LED is described in the table below.

LED	Color	State	Description
System LEDs			
P2 (PWR2)	Amber	On	Power is being supplied via power supply module 2
		Off	Power is not being supplied via power supply module 2
P1 (PWR1)	Amber	On	Power is being supplied via power supply module 1
		Off	Power is not being supplied via power supply module 1
S (STATE)	Green	On	The system passed the self-diagnosis test on boot-up and is ready to run
		Blinking (1Hz)	1. Holding the reset button for 5 seconds to reset factory default 2. System service initialization
		Blinking (4Hz)	While external storage is connected to the switch
	Red	On	Initial failure in boot-up process
F (FAULT)	Red	On	1. Network loop detected when loop protection is enabled 2. Relay contact triggered 3. External storage loading/saving failure 4. The port disabled due to exceeding the ingress rate threshold 5. Invalid Ring port connection
		Off	When system boot up and run well or a user-configured event is not trigger

LED	Color	State	Description
M/H (MSTR/ HEAD)	Green	On	1. The switch is the Master of the Turbo Ring 2. The switch is the PRL owner of ERPS in a major ring domain and in idle state
		Blinking (4Hz)	1. The switch is set as the Master of Turbo Ring and the ring is broken 2. The switch is set as a Member of Turbo Ring and all o f the corresponding ring ports are link down 3. The switch in a ERPS major ring domain is not in idle state
		Off	The switch is not the Master of Turbo Ring or RPL owner ERPS major ring
C/T (CPLR/ T AIL)	Green	On	The switch’s ring coupling or dual homing function is enabl ed The switch is the PRL owner of ERPS in a subring domain
		Blinking (4Hz)	The switch in a ERPS subring domain is not in idle state
		Off	1. When the switch disables the coupling 2. The switch is not or RPL owner of ERPS subring
Sync	Amber	On	The PTP function is enabled.
		Blinking (2Hz)	The switch receives sync packets, but the time has not co nverged yet.
	Green	On	The PTP function has successfully converged.

System LED **(Except PWR)**	Green + Amber + Red	Rotate On à Off Sequentially	The switch is importing/exporting a file via external storage
		Blinking (2Hz)	The switch is being discovered/ located by locator function
FAN	Green	On	FAN system is working normally
	Red	On	FAN system is out of service
		Blinking (1Hz)	Failures of one or two fan modules, operational but no 6+2 redundancy
Fan Status (F1 – F8)	Green	On	The corresponding fan module is working normally.
	Red	On	The corresponding fan module is not installed or out of service.
Copper (1G) on MGMT **port**		On	Port is active with 1Gbps link
		Blinking	Activity at 1Gbps
		Off	When the port is inactive or link down
SFP (1G)	Green	ON	Port is active with 1Gbps link
		Blinking	Transmission at 1Gbps
		OFF	Port inactive or link down
	Amber	On	Port active with 1Gbps link
		Blinking	Activity at 1Gbps
		Off	Port inactive or link down

LED	Color	State	Description
SFP+ (1G/ 2.5G/ 10G)	Green	ON	Port active with 10Gbps link
		Blinking	Activity at 10Gbps
		OFF	Port inactive or link down
	Amber	On	Port active with links at less than 10Gbps
		Blinking	Activity at less than 10Gbps
		Off	When the port is inactive or link down

LEDs for XM-4000 Modules

XM-4000-16GTX

LED	Color	State	Description
MS (Module State)	Green	On	Normal operation
		Off	Module is out of service
	Red	On	Module has initially failed (PHY init failed/EEPROM read failed)
Copper (1G)	Green	On	Active with 1Gbps link
		Blinking	Activity at 1Gbps
		Off	Port inactive or link down

XM-4000-16QGTX

LED	Color	State	Description
MS (Module State)	Green	On	Normal operation
		Off	Module out of service
	Red	On	Module has initially failed (PHY init failed / EEPROM read failed)
Copper (1Gbps/ 2.5Gbps)	Green	On	Port active with 2.5Gbps link
		Blinking	Activity at 2.5Gbps
		Off	Port inactive or link down
	Amber	On	Port active with 1Gbps link
		Blinking	Activity at 1Gbps
		Off	Port is inactive or link down

XM-4000-16GSFP

LED	Color	State	Description
MS **(Module State)**	Green	On	Normal operation
		Off	Module out of service
	Red	On	Module has initially failed (PHY init failed / EEPROM read failed)
SFP **(1Gbps)**	Green	ON	Port is active with 1Gbps Link
		Blinking	Activity at 1Gbps
		OFF	Port is inactive or link down

XM-4000-16QGSFP

LED	Color	State	Description
MS **(Module State)**	Green	On	Normal operation
		Off	Module out of service
	Red	On	Module has initially failed (PHY init failed / EEPROM read failed)
SFP **(1Gbps/ 2.5Gbps)**	Green	ON	Port active with 2.5Gbps link
		Blinking	Activity at 2.5Gbps
		OFF	Port inactive or link down
	Amber	On	Port active with 1Gbps link
		Blinking	Activity at 1Gbps

		Off	Port inactive or link down

Specifications

Ethernet Interface	
Pre-installed Modules	MRX-G4064-L3-8XG: 8 embedded 1GbE SFP slots and 8 embedded 10GbE SFP+ slots MRX-Q4064-L3-16XG: 16 embedded 10GbE SFP+ slots
Module	3 slots for optional Gigabit or 2.5GbE Ethernet ports or SFP 16-port modules

Standards	IEEE 802.3ae for 10 Gigabit Ethernet IEEE 802.3bz for 2.5GBaseX IEEE802.3ab for 1000BaseT(X) IEEE802.3z for1000BaseX IEEE802.3x for flow control IEEE802.3ad for Port Trunk with LACP IEEE 802.3az for Energy Efficient Ethernet IEEE802.1Q for VLAN Tagging IEEE802.1D-2004 for Spanning Tree Protocol IEEE802.1s for Multiple Spanning Tree Protocol IEEE802.1w for Rapid Spanning Tree Protocol IEEE802.1p for Class of Service IEEE802.1X for authentication ITU-T G.8032 Ethernet Ring Protection Switching
Power Parameters	
Input Voltage	230-240 VDC; 100-240 VAC, 50-60 Hz (using PWR-300-HVA-IF)
Operating Voltage	180-300 VDC; 90-264 VAC, 47-63 Hz (using PWR-300-HVA-IF)
Overload Current Protection	Supported
Reverse Polarity Protection	Supported
Input Current	MRX-G4064-L3-8XGS: Max. 1.236 A @ 110 VAC Max. 0.675 A @ 220 VAC Max. 0.74 A @ 180 VDC Max. 0.439 A @ 300 VDC MRX-Q4064-L3-16XGS: 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.) (Full modules installed)	MRX-G4064-L3-8XGS: Max. 134.2 W @ 110 VAC Max. 132.3 W @ 220 VAC Max. 133.2 W @ 180 VDC Max. 131.8 W @ 300 VDC MRX-Q4064-L3-16XGS: Max. 297 W @ 110 VAC Max. 287.3 W @ 220 VAC Max. 290.3 W @ 180 VDC

	Max. 284.3 W @ 300 VDC
Physical Characteristics	
IP Rating	IP30
Dimensions	440 x 88 x 420 mm
Weight	MRX-G4064/ Q4064: 12 kg (26 lb) XM-4000-16GTX/ 16QGTX: 0.7 kg (1.4 lb) XM-4000-16GSFP/ 16QGSFP: 0.5 kg (1.2 lb) XM-4000-FAN models: 0.1 kg (0.2 lb) PWR-300 models: 0.7 kg (1.6 lb)
Installation	Rack mounting
Fan module slot	8 (supports MX-4000-FAN)
Environmental Limits	
Operating Temperature	Standard 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 61010-2-201, IEC/UL 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 DIPs
Railway	EN 50121-4
Note: For improved conductive radiation immunity, use an STP cable	
Freefall	ISTA 1A
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty

Supported SFP Modules

Module	Description
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

Module	Description

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 temperatur e
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 temperatur e
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 temperat ure
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 temperat ure
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 temperat ure
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 temperat ure
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-1GEZXLC	SFP module with 1 1000BaseEZX port with LC connector for 110 km transmiss ion, 0 to 60°C operating temperature
SFP-1GEZXLC-120	SFP module with 1 1000BaseEZX port with LC connector for 120 km transmiss ion, 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-1GLHXLC	SFP module with 1 1000BaseLHX port with LC connector for 40 km 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

Module	**Description**
SFP-1GSXLC	SFP module with 1 1000BaseSX port with LC connector for 300m/550m 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-1GLHLC-T	SFP module with 1 1000BaseLH port with LC connector for 30 km transmission, -40 to 85°C operating temperature
SFP-1GLHXLC-T	SFP module with 1 1000BaseLHX port with LC connector for 40 km transmission, -40 to 85°C operating temperature
SFP-1GLSXLC-T	SFP module with 1 1000BaseLSX port with LC connector for 1km/2km transmission, -40 to 85°C operating temperature
SFP-1GLXLC-T	SFP module with 1 1000BaseLX port with LC connector for 10 km transmission, -40 to 85°C operating temperature
SFP-1GSXLC-T	SFP module with 1 1000BaseSX port with LC connector for 300m/550m 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-10GERLC-T	SFP+ module with 1 10GBase-ER port, LC connector for 40 km 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-10GSRLC-T	SFP+ module with 1 10GBase-SR port, LC connector for 33m/82m/300m/400m transmission, -40 to 85°C operating temper
SFP-10GZRLC-T	SFP+ module with 1 10GBase-ZR port, LC connector for 80 km transmission, -40 to 85°C operating temperature
SFP-2.5GLSLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 20 km transmission, – 40 to 85 °C operating temperature
SFP-2.5GSLHLC-T	SFP module with 1 2.5GBaseFX port with LC connector, single-mode, for 45 km transmission, – 40 to 85 °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

Rack Mounting Instructions

1. Ambient Operating Temperature: If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tam) specified by the manufacturer.

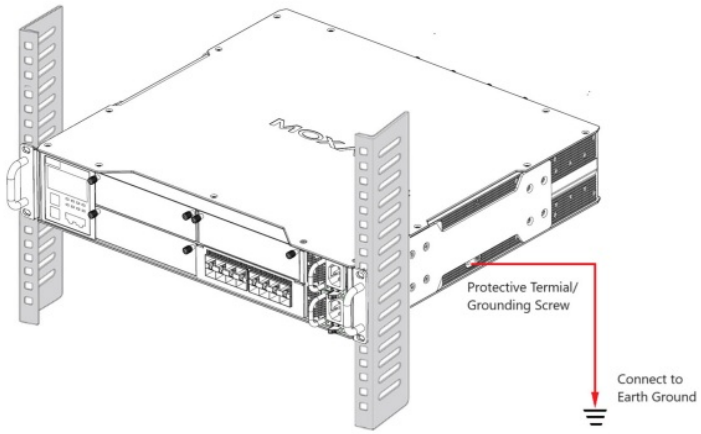
   NOTE

   In order to ensure reliable operations, please make sure the operating temp. of the environment does not exceed the spec. When mounting an MRX-G4064/MRX-Q4064 rack-mounted switch with other operating units in a cabinet without forced ventilation, it is recommended that 2U of space is reserved between each rack-mounted switch and/or device.
2. Sufficient Air Flow: Installation of the equipment in a rack should be such that the amount of airflow required for the safe operation of the equipment is not compromised. Make sure that the front and back of the device (cold air intake, hot air exhaust) allow unobstructed airflow.
3. Mechanical Loading: Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

   NOTE

   Due to device’s size and weight, for your safety during mounting, we suggest that two people to lift it together and hold it steady to install the screws and modules.
4. Circuit Loading: Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
5. Reliable Grounding: Reliable grounding of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips). Make sure the grounding screw of the device has been connected by a 16 AWG (min.) green-and-

yellow wire to the rack, and the protective terminal of the rack has been connected to the earth ground. Additionally, power cords should be connected to grounded power outlets.



6. Power Source: Equipment with DC power inputs is intended to be supplied by DC power, separated from AC mains by double or reinforced insulation.

ATTENTION
When installing the device onto a rack, make sure that the input terminal block and protective terminal do not connect, or it may cause an electric shock.

NOTE
The rackmount ears can only be equipped on the front of the Moxa MRX-G4064/MRX-Q4064 switch.

NOTE
For IP30 compliance: All module slots must be either occupied or covered. A cover plate must be used to cover the module slot without a module installed. The plastic IP30 dust cover must be used on power modules. Additionally, a power cord retainer must be installed to cover the aperture. A 3-pin terminal block must be used on the Relay port.

Restricted Access Locations

- This equipment is intended to be used in Restricted Access Locations, such as a computer room, with access limited to SERVICE PERSONNEL or USERS who have been instructed on how to handle the metal chassis of equipment that is so hot that special protection may be needed before touching it. The location should only be accessible with a key or through a security identity system.
- External metal parts of this equipment are extremely hot!! Before touching the equipment, you must take special precautions to protect your hands and body from serious injury.

Patent https://www.moxa.com/doc/operations/Moxa_Patent_Marking.pdf

ATTENTION

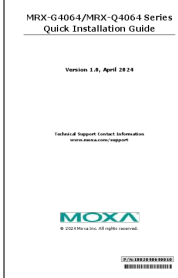
1. To protect against the risk of fire, only replace the fuse with one that has the same type and rating.
2. It is recommended to incorporate a readily accessible disconnect device into the building installation wiring. Importantly, ensure the power supply is disconnected before performing any maintenance.
3. This equipment is designed to connect the earthed conductor of the D.C. supply circuit to the equipment earthing conductor.
4. It is recommended to keep the PoE network indoors when using Information Technology Equipment.

NOTE

- This device is intended for indoor use only, at altitudes of up to 5,000 meters above sea level.
- Overvoltage category II
- Pollution degree 2

NOTE
To preserve device label integrity and legibility, wipe with a dry cloth only. Avoid liquids, detergents, or other substances to avoid label degradation.

Documents / Resources

	MOXA MRX-G4064 Industrial Networking [pdf] Installation Guide MRX-G4064-L3-8XGS, MRX-Q4064, MRX-G4064 Industrial Networking, MRX-G4064, Industrial Networking, Networking

References

- Moxa - Support
- User Manual