

## I XR-MG2404XS

Layer 3 3x Modular Slots + 4x 10G/GbE SFP+



- Static Routing, RIP v1, RIP v2, BGP v4, OSPF v2, PIM-SM, PIM-DM, PIM-SSM, DVMRP, VRRP v2
- Supports IEEE802.1AE MACsec network security (IRM-4GS-SEC, IRM-4GT-SEC)
- Supports ERPS, MRP, MSTP, RSTP, STP for redundant cabling
- EN62368-1, CE, FCC certified
- Modular design for flexible application



The industrial layer 3 switches adopt an enhanced and hardened design to meet critical and centralized strict requirements. It provides up to 24 Gigabit Ethernet ports, which can be implemented by 3 types of Ethernet module of Gigabit copper, PoE port and SFP slot, and come with 4 ports of 10 Gigabit SFP+ slot for uplink. Its redundant power input can improve system reliability and uninterrupted availability of the network backbone. The switch is ideal for smart city, surveillance, intelligent traffic control systems and production automation applications.

### Features

- Redundant 48VDC, or 110/220VAC power inputs
- Rugged metal, IP30 protection & Fanless design
- Supports IEEE 1588 PTP V2 for precise time synchronization to operate in BC, End-End mode for each port

### Specifications

<b>Standard</b>	IEEE 802.3	10Base-T 10Mbit/s Ethernet
	IEEE 802.3u	100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab	1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z	1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE802.3ae	10Gbit/s Ethernet over fiber
	IEEE802.3af	PoE (Power over Ethernet)
	IEEE802.3at	PoE+ (Power over Ethernet enhancement)
	IEEE 802.1d	STP (Spanning Tree Protocol)
	IEEE 802.1w	RSTP (Rapid Spanning Tree Protocol)
	IEEE 802.1s	MSTP (Multiple Spanning Tree Protocol)
	IEC62439-2	Media Redundancy Protocol (MRP)
	ITU-T G.8032 / Y.1344	ERPS (Ethernet Ring Protection Switching)
	IEEE 802.1Q	Virtual LANs (VLAN)
	IEEE 802.1X	Port based and MAC based Network Access Control, Authentication
	IEEE802.1AE	MACsec, Local and metropolitan area networks-Media Access Control (MAC) Security
	IEEE 802.3ac	Max frame size extended to 1522Bytes
	IEEE 802.3ad	Link aggregation for parallel links with LACP(Link Aggregation Control Protocol)
	IEEE 802.3X	Flow control for full duplex
	IEEE 802.1ad	Stacked VLANs, Q-in-Q
	IEEE 802.1p	LAN Layer 2 QoS/CoS Protocol for Traffic Prioritization
	IEEE 802.1ab	Link Layer Discovery Protocol (LLDP)
<b>VLAN ID</b>	4094	IEEE 802.1Q VLAN VID
<b>Switch Architecture</b>	Back-plane (Switching Fabric): 128Gbps (Full wire-speed)	
<b>Throughput</b>	95.24Mpps maximum	
<b>Data Processing</b>	Store and Forward	
<b>Network Connector</b>	3x modular slot + 4x 1000/10GBase-X SFP Provide various type of module for modular slot: 8x 10/100/1000Base-T RJ45 module 8x 10/100/1000Base-T RJ45 with IEEE802.3af/at PoE module 8x 100/1000Base-X SFP module 4x 10/100/1000Base-T RJ45 MACsec module 4x 100/1000Base-X SFP MACsec module PoE: Supports 3x PoE module/24x PoE ports maximum Maximum 30W/port, maximum total 720W/per device	
	All SFP support DDMI All RJ45 support auto negotiation speed, auto MDI/MDI-X function	
<b>Console Port</b>	RS232 (RJ45)	
<b>Network Cable</b>	UTP/STP Cat.5e cable or above EIA/TIA-568 100-ohm (100meter)	

<b>Protocols</b>	CSMA/CD	
<b>Power Supply (For Device)</b>	Redundant 2x AC input power (-AA model) Redundant 1x AC + 1xDC input power (-AD model) Redundant 2x DC input power (-DD model) AC input power (A) : 110/220VAC (85VAC~264VAC) IEC320 C-16 type connector DC input power (D) : 48VDC (48~57VDC) Removable Terminal Block	
<b>Power Supply (For PoE)</b>	Dual 48VDC for PoE (45~57VDC, For IEEE802.3af) (51~57VDC, For IEEE802.3at) Terminal Block	
<b>Power Consumption</b>	Maximum 64W@110-220VAC (Not include PoE) Maximum 32.7W@48VDC (Not include PoE) Maximum 370W for PoE	
<b>PoE Power Budget LED (System)</b>	360W (In full PoE Module)	
	Power 1 (Green), Power 2 (Green) for Device	Power 1 (Green), Power 2(Green) for PoE
	Sys (Green)	Blinking: Normally operate OFF: Not ready
	Ring (Green)	ON: Rings in normal Blinking: port link down in Ring OFF: Ring is disabled
	Master (Green)	ON: The device is a Master of the Ring OFF: Slave of the ERPS Ring
	Alarm (Red)	ON: Alarm is triggered by user defined OFF: Alarm is not triggered
<b>LED (Module)</b>	<b>Per RJ-45 port</b>	
	<b>Amber:</b>	<b>Green:</b>
	ON 1000M Link	ON Link
	Blink 100M Link	Blink Link & Active
	OFF 10M	OFF No Link
	<b>Per SFP Fiber port</b>	
	<b>Amber :</b>	<b>Green:</b>
	ON 1000M Link	ON Link
	Blink 100M Link	Blink Link & Active
		OFF No Link
	<b>PoE (Amber)</b>	
	ON: PoE Active OFF: PoE Inactive	
<b>Jumbo Frame</b>	9216 Byte	
<b>MAC Address Table</b>	16K	
<b>Memory Buffer</b>	1.5M Bytes for packet buffer	
<b>Warning Message</b>	System Syslog, SMTP/ e-mail event message, alarm relay	
<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1A @24VDC, 2-Pin removable terminal block	

<b>Operating Temperature</b>	-40 ~ 60°C
<b>Operating Humidity</b>	5% to 95% (Non-condensing)
<b>Storage Temperature</b>	-40 ~ 85°C
<b>Housing</b>	Rugged Metal, IP30 Protection, Fanless
<b>Dimensions</b>	340 x 440 x 44mm (Dx W x H)
<b>Weight</b>	5kg (Not include module)
<b>Installation Mounting</b>	19" rack mount
<b>MTBF</b>	106,872 Hours (MIL-HDBK-217)
<b>Warranty</b>	5 years
<b>Certification</b>	
<b>EMC</b>	CE (EN55032, EN55024)

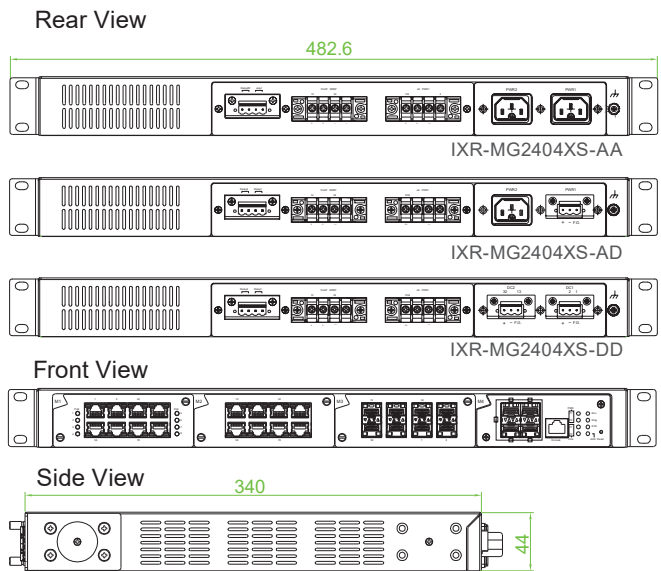
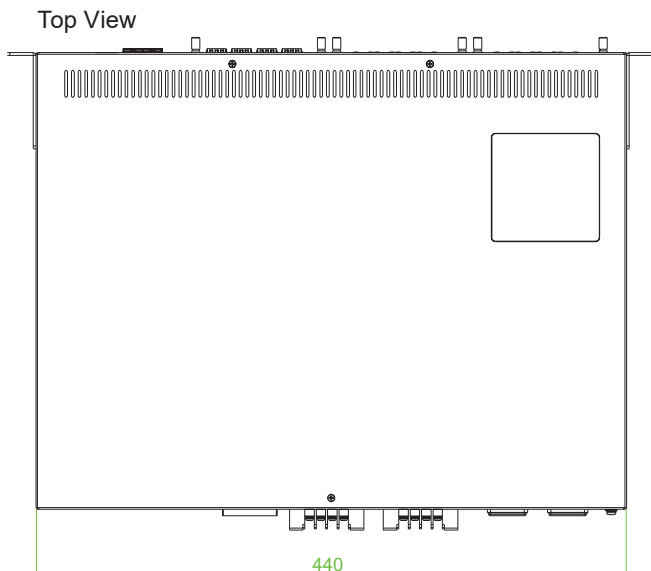
<b>EMI (Electromagnetic Interference)</b>	FCC Part 15 Subpart B Class A, CE
<b>EMS (Electromagnetic Susceptibility) Protection Level</b>	EN61000-4-2 (ESD) Level 3, Criteria B EN61000-4-3 (RS) Level 3, Criteria A EN61000-4-4 (Burst) Level 3, Criteria A EN61000-4-5 (Surge) Level 3, Criteria B EN61000-4-6 (CS) Level 3, Criteria A EN61000-4-8 (PFMF, Magnetic Field) Field Strength: 300A/m, Criteria A
<b>Safety</b>	EN62368-1
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-31
<b>Vibration</b>	IEC 60068-2-6

## Software Specifications

<b>Topology</b>	
<b>Layer 3 Routing</b>	Static routing, RIP v1/v2, OSPFv2, DVMRP, PIM-DM, PIM-SM, PIM-SSM
<b>Layer 3 redundancy</b>	VRRP v2
<b>VLAN</b>	IEEE 802.1q VLAN, up to 4094 802.1Q VLAN VID MAC-based VLAN GARP GVRP (GARP VLAN Registration Protocol) GMRP
<b>Link Aggregation (Port Trunk)</b>	Static, Dynamic (IEEE 802.3ad LACP)
<b>Spanning Tree</b>	IEEE 802.1d STP, IEEE 802.1w RSTP, IEEE 802.1s MSTP, IEC62439-2 MRP(Client)
<b>ITU-T G.8032 / Y.1344 ERPS (Ethernet Ring Protection)</b>	Recovery time <50ms Single Ring
<b>QoS</b>	
<b>QoS</b>	Supported
<b>IP Multicasting Features</b>	
<b>IGMP</b>	IGMP v1, v2, v3 / IGMP Snooping
<b>Security Features</b>	
<b>IEEE802.1AE</b>	Support IEEE802.1AE MACsec network security Provide by IRM-4GS-SEC, IRM-4GT-SEC optional module
<b>IEEE 802.1X</b>	Port-Based
<b>ACL</b>	Supported
<b>RADIUS authentication &amp; accounting</b>	

<b>TACACS+ authentication &amp; accounting</b>	
<b>HTTPS, HTTP</b>	Supported
<b>SSH</b>	Supported
<b>Management Interface Access Filtering</b>	Web, Telnet / SSH, CLI RS-232 console
<b>Management Features</b>	
<b>CLI</b>	Supported
<b>Web Based Management</b>	
<b>Telnet</b>	Server
<b>SNMP</b>	V1, V2c, V3
<b>sFlow</b>	Supported
<b>SMTP</b>	SMTP, SMTP (Gmail)
<b>Automation Profile</b>	Profinet v2 conformance Modbus/TCP status registers
<b>SW &amp; Configuration Upgrade</b>	
<b>RMON</b>	RMON I (1, 2, 3, 9 group)
<b>MIB</b>	RFC1213 MIB II, Private MIB
<b>DHCP</b>	Server, Client, Relay, DHCP option 66/67/82
<b>BootP</b>	Supported
<b>RARP</b>	Supported
<b>Mirroring</b>	Supported
<b>Event Syslog</b>	Client
<b>Warning Message</b>	System syslog, SMTP e-mail, alarm relay
<b>IEEE 1588 PTP V2</b>	BC, End-End mode for each port
<b>NTP V4.0, SNTP</b>	NTP (server/ Client), SNTP (Client)
<b>LLDP (IEEE 802.1ab)</b>	Link Layer Discovery Protocol

## Dimensions



## Ordering Information

Model Name	Managed	Total Ports (Max)	Extension port	Modular Slot	Input Power	Certification		Operating Temperature
			1000/10GBase-X	See Module selection table for Optional	Device and PoE	Safety EN62368-1	CE, FCC	
IXR-MG2404XS-AA	V	28	4x SFP	3	Dual 110/220VAC Dual 48VDC for PoE	V	V	-40 ~ 60°C
IXR-MG2404XS-AD	V	28	4x SFP	3	110/220VAC and 48VDC Dual 48VDC for PoE	V	V	-40 ~ 60°C
IXR-MG2404XS-DD	V	28	4x SFP	3	Dual 48VDC Dual 48VDC for PoE	V	V	-40 ~ 60°C

## Module Selection

Model Name	100/1000 Base-X SFP	10/100/1000 Base-TX RJ45	IEEE802.3 af/at PoE	MACsec
IRM-8GS	8			
IRM-8GT		8		
IRM-8GP		8	8	
IRM-4GS-SEC	4			V
IRM-4GT-SEC		4		V



IRM-8GS



IRM-8GT



IRM-8GP



IRM-4GS-SEC



IRM-4GT-SEC

## Optional Accessories

### Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with all CTC Union industrial grade Ethernet switches for guaranteed compatibility and performance. Best performance can be guaranteed, even in mission-critical applications. (Please see CTC Union's Industrial SFP datasheets for more items and detailed information.)

ISFP-M9000-85-D(E)	Industrial SFP 10GbE 10GBase-SR, M/M, 300 meter (OM3 fiber), wave length 850nm, DDMI, -10~70°C (-40~85°C)
ISFP-S9010-31-D(E)	Industrial SFP 10GbE 10GBase-LR, S/M, 10km, wave length 1310nm, DDMI, -10~70°C (-40~85°C)
ISFP-M7000-85-D(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, DDMI, -10~70°C (-40~85°C)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDMI, -10~70°C (-40~85°C)
ISFP-T7T00-00-E	Industrial SFP 10/100/1000Base-T UTP 100meter, -10~70°C (-40~85°C)

### Industrial Power Supply

NDR-120-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 120W, -20 ~ +70°C (For DC input type, Non PoE)
NDR-480-48	Industrial Power, Input 90 ~ 264VAC/127 ~ 370VDC, Output 48VDC, 480W, -20 ~ +70°C (For PoE application)