

# IKS-6728-8PoE Series

## 24+4G-port Gigabit modular managed PoE+ Ethernet switches



- > 8 built-in PoE+ ports compliant with IEEE 802.3af/at
- > Up to 36 W output per PoE+ port
- > 3 KV LAN surge protection for extreme outdoor environments
- > PoE diagnostics for powered-device mode analysis
- > 4 Gigabit combo ports for high bandwidth communication
- > -40 to 75°C operating temperature range at 720 W full loading



### Introduction

The Moxa IKS-6728-8PoE series of Gigabit modular managed PoE+ Ethernet switches are designed to meet the demands of mission critical applications for business and industry. The IKS-6728-8PoE comes standard with up to 24 10/100BaseT(X), or PoE/PoE+, and 4 combo Gigabit Ethernet ports. The IKS-6728-8PoE Ethernet switches provide up to 30 watts of power per PoE+ port in standard mode, and also support high power output of up to 36 watts for heavy-duty industrial PoE devices, such as weather-proof IP surveillance cameras with wipers/heaters, high-performance wireless access points, and rugged IP phones. IKS-6728-8PoE Ethernet switches support two

types of power input sources: 48VDC for PoE+ ports and system power, and 110/220 VAC for system power. These Ethernet switches also support a variety of management functions, including STP/RSTP, TurboRing, Turbo Chain, PoE power management, PoE device auto-checking, PoE power scheduling, PoE diagnostic, IGMP, VLAN, QoS, RMON, bandwidth management, and port mirroring. The IKS-6728-8PoE series is designed especially for harsh outdoor applications with 3KV surge protection to ensure the uninterrupted reliability of PoE systems.

### Features and Benefits

- Advanced PoE management functions: PoE output setting, PD failure check, PoE scheduling, and PoE diagnostics
- Command Line Interface (CLI) for quickly configuring major managed functions
- IEEE 1588 PTP V2 (Precision Time Protocol) for precise time synchronization of networks
- DHCP Option 82 for IP address assignment with different policies
- Support EtherNet/IP and Modbus/TCP protocols for device management and monitoring
- Compatible with EtherNet/IP and PROFINET protocols for transparent data transmission
- Turbo Ring and Turbo Chain (recovery time < 20 ms @ 250 switches), RSTP/STP, and MSTP for network redundancy
- IGMP snooping and GMRP for filtering multicast traffic
- Port-based VLAN, IEEE 802.1Q VLAN, and GVRP to ease network planning
- QoS (IEEE 802.1p/1Q) and TOS/DiffServ to increase determinism
- IEEE 802.3ad, LACP for optimum bandwidth utilization
- TACACS+, IEEE 802.1X, SNMPv3, HTTPS, and SSH to enhance network security
- SNMPv1/v2c/v3 for different levels of network management
- RMON for efficient network monitoring and proactive capability
- Bandwidth management prevents unpredictable network status with "Lock port" to restrict access to authorized MAC addresses
- Port mirroring for online debugging
- Automatic warning by exception through email, relay output
- Automatic recovery of connected device's IP addresses
- Line-swap fast recovery
- Configurable by web browser, Telnet/serial console, CLI, Windows utility, and ABC-02-USB-T automatic backup configurator

## Specifications

### Technology

#### Standards:

IEEE 802.3af/at for PoE/PoE+ output  
 IEEE 802.3 for 10BaseT  
 IEEE 802.3u for 100BaseT(X) and 100BaseFX  
 IEEE 802.3ab for 1000BaseT(X)  
 IEEE 802.3z for 1000BaseX  
 IEEE 802.3x for Flow Control  
 IEEE 802.1D-2004 for Spanning Tree Protocol  
 IEEE 802.1w for Rapid STP  
 IEEE 802.1s for Multiple Spanning Tree Protocol  
 IEEE 802.1Q for VLAN Tagging  
 IEEE 802.1p for Class of Service  
 IEEE 802.1X for Authentication  
 IEEE 802.3ad for Port Trunk with LACP

**Protocols:** IGMP v1/v2, GMRP, GVRP, SNMPv1/v2c/v3, DHCP Server/Client, BootP, TFTP, SNTP, SMTP, RARP, RMON, HTTP, HTTPS, Telnet, SSH, Syslog, DHCP Option 66/67/82, EtherNet/IP, Modbus/TCP, LLDP, IEEE 1588 PTP V2, IPv6, NTP Server/Client

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

**Flow Control:** IEEE 802.3x flow control, back pressure flow control

### Switch Properties

**Priority Queues:** 4

**Max. Number of Available VLANs:** 64

**VLAN ID Range:** VID 1 to 4094

**IGMP Groups:** 256

**MAC Table Size:** 8 K

**Packet Buffer Size:** 2 Mbit

### Interface

**Fast Ethernet:** 8-port 10/100BaseT(X) or PoE+ 10/100BaseT(X) 2 modular slots for any 8-, or 6-port Interface Modules with 10/100BaseT(X), 100BaseFX (SC/ST connector), 100Base SFP, or PoE+ 10/100BaseT(X)

*Note: See below for IM-6700 Fast Ethernet module and PoE+ module product information*

**Gigabit Ethernet:** 4-port 10/100/1000BaseT(X) or 100/1000Base SFP

**Console Port:** USB-serial console (Type B connector)

**USB Storage Port:** USB 2.0 (Type A connector for ABC-02-USB-T)

**System LED Indicators:** PWR1, PWR2, EPS1, EPS2, STATE, FAULT, MSTR/HEAD, CPLR/TAIL

**Alarm Contact:** 1 relay output with current carrying capacity of 3 A @ 30 VDC

### Power Requirements

#### Input Voltage:

HV models:

- 110/220 VAC (85 to 264 VAC) for switch system
- 48 VDC (46 to 57 VDC) for PoE system (53~57 VDC is recommended for PoE+ devices)

48 VDC models:

- 48 VDC (46~57 VDC) for switch and PoE system

#### Input Current:

HV models:

- PWR input current (switch system):

Max. 0.33 A @ 110 VAC

Max. 0.24 A @ 230 VAC

- EPS input current (PoE system):

Max. 0.29 A @ 48 VDC (excluding power consumption of PoE devices)

48 VDC models:

- PWR/EPS input current (switch and PoE systems):

Max. 0.53 A @ 48 VDC (excluding power consumption of PoE devices)

**Overload Current Protection:** Present

**Reverse Polarity Protection:** Present

## Modular Rackmount Ethernet Switch System, IKS-6728-8PoE series

IKS-6728-8PoE-4GTXSFP-HV-T  
 IKS-6728-8PoE-4GTXSFP-HV-HV-T  
 IKS-6728-8PoE-4GTXSFP-48-T  
 IKS-6728-8PoE-4GTXSFP-48-48-T



### Physical Characteristics

**Housing:** IP30 protection

**Dimensions:** 440 x 44 x 280 mm (17.32 x 1.37 x 11.02 in)

**Weight:** IKS-6728-8PoE-4GTXSFP-HV-HV-T: 4250 g

IKS-6728-8PoE-4GTXSFP-HV-T: 4150 g

IKS-6728-8PoE-4GTXSFP-48-48-T: 4250 g

IKS-6728-8PoE-4GTXSFP-48-T: 4150 g

**Installation:** 19" rack mounting

### 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

**Safety:** UL 60950-1, EN 60950-1

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

**EMS:**

EN 61000-4-2 (ESD) Level 3, EN 61000-4-3 (RS) Level 3,

EN 61000-4-4 (EFT) Level 3, EN 61000-4-5 (Surge) Level 3,

EN 61000-4-6 (CS) Level 3, EN 61000-4-8, EN 61000-4-11

**Shock:** IEC 60068-2-27

**Freefall:** IEC 60068-2-32

**Vibration:** IEC 60068-2-6

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

### MTBF (mean time between failures)

**Time:** 214,975 hrs

**Database:** Telcordia (Bellcore), GB

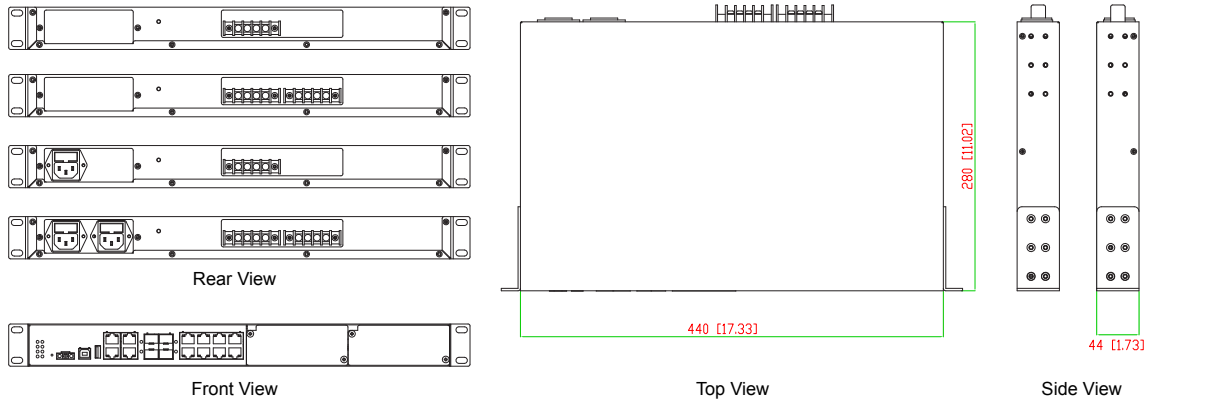
### Warranty

**Warranty Period:** 5 years

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

**Dimensions**

**IKS-6728-8PoE-4GTXSFP Series**



**Ordering Information**

Step 1: Select Ethernet switch system

Step 2: Select interface modules

IKS-6728-8PoE with power supply



IM-6700 modules (PoE+/Fast Ethernet)

Note: The IKS-6728-PoE Ethernet switch system is delivered without interface modules. See below to find IM-6700 interface modules suitable for your application.

**IKS-6728-8PoE Modular Rackmount Ethernet PoE+ Switch System**

Modular managed rackmount Ethernet PoE+ switch with 8 built-in 10/100BaseT(X) PoE+ ports, 4 Gigabit Copper/SFP combo ports, and 2 slots for Fast Ethernet PoE+ modules. Support up to 24+4G ports with 8 built-in PoE+ ports and up to 24 PoE+ ports, -40 to 75°C operating temperature.

Available Models	Port Interface			Power Supply				
	Gigabit Ethernet	Fast Ethernet			Isolated Power Supply 1		Isolated Power Supply 2	
		10/100/1000BaseT(X) or 100/1000BaseSFP*	10/100BaseT(X) (or PoE+ ports)	100BaseFX	100BaseSFP*	HV (85 to 264 VAC)	48 VDC (46 to 57 VDC)	HV (85 to 264 VAC)
<b>IKS-6728-8PoE Series</b>								
IKS-6728-8PoE-4GTXSFP-HV-T	4	Up to 24	Up to 12	Up to 20	1	-	-	-
IKS-6728-8PoE-4GTXSFP-HV-HV-T	4	Up to 24	Up to 12	Up to 20	1	-	1	-
IKS-6728-8PoE-4GTXSFP-48-T	4	Up to 24	Up to 12	Up to 20	-	1	-	-
IKS-6728-8PoE-4GTXSFP-48-48-T	4	Up to 24	Up to 12	Up to 20	-	1	-	1

**Notes:**

The IKS 6728-8PoE series needs an external 48 VDC (46 to 57 VDC) power supply for PoE+ output

The IKS 6728-8PoE series supports up to 24 PoE+ ports. 8 PoE+ ports are built in. Two IM-6700-8PoE modules can add up to 16 more PoE+ ports.

The IKS 6728-8PoE series supports 100BaseSFP and 100/1000BaseSFP slots. See below for SFP-1G/1FE series SFP module product information

**Optional Accessories** (can be purchased separately)

**MXview:** Moxa industrial network management software with 50, 100, 250, 500, 1000, or 2000 nodes

**EDS-SNMP OPC Server Pro:** OPC server software that works with all SNMP devices

**ABC-02-USB-T:** Configuration backup and restoration tool for managed Ethernet switches, -40 to 75°C operating temperature

**Power Cords:** See Appendix A for details

**Package Checklist**

- IKS-6728-8PoE switch
- USB cable (Type A male to Type B male)
- AC power cord (US type x1, EU type x1, HV model only)
- Protective caps for unused ports
- 2 rackmount ears
- Documentation and software CD
- Hardware installation guide (printed)
- Warranty card

# IM-6700 Series

**Fast Ethernet modules for IKS-6726-2GTXSFP/IKS-6728-4GTXSFP /IKS-6728-8PoE-4GTXSFP series switches**

## Specifications

### Fast Ethernet Interface Modules, IM-6700 series



IM-6700-8TX



IM-6700-8SFP\*



IM-6700-6SSC  
IM-6700-6MSC



IM-6700-6MST



IM-6700-2MSC4TX  
IM-6700-2SSC4TX



IM-6700-2MST4TX



IM-6700-4MSC2TX  
IM-6700-4SSC2TX



IM-6700-4MST2TX



IM-6700-8PoE\*\*

\*See below for SFP-1FE Fast Ethernet module product information.

\*\*IM-6700-8PoE is supported by the IKS-6728-8PoE series

#### Interface

**RJ45 Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection

**Fiber Ports:** 100BaseFX ports (SC/ST or SFP LC connector)

**LED Indicators:** 10/100 for TP port, 100M for fiber port

**PoE Ports:** 10/100BaseT(X) auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection, IEEE 802.3af/at standards, Mode A

#### Power Requirements

**Power Consumption:**

IM-6700-8TX: 1.43 W

IM-6700-8PoE: 1.43 W (w/o PoE output)

IM-6700-8SFP: 9.95 W

IM-6700-6MSC, -6MST, -6SSC: 8.20 W

IM-6700-4MSC2TX, -4MST2TX: 5.72 W

IM-6700-2MSC4TX, -2MST4TX, -2SSC4TX: 3.45 W

#### Physical Characteristics

**Weight:**

IM-6700-8TX: 225 g

IM-6700-8PoE: 260 g

IM-6700-8SFP: 295 g

IM-6700-6MSC, -6MST, -6SSC: 390 g

IM-6700-4MSC2TX, -4MST2TX, -4SSC2TX: 270 g

IM-6700-2MSC4TX, -2MST4TX, -2SSC4TX: 270 g

#### Reliability

**MTBF (mean time between failures):**

IM-6700-8TX: 10,412,400 hrs

IM-6700-8SFP: 3,510,110 hrs

IM-6700-6MSC: 366,119 hrs

IM-6700-6MST: 365,741 hrs

IM-6700-6SSC: 365,741 hrs

IM-6700-4MSC2TX: 530,268 hrs

IM-6700-4MST2TX: 537,942 hrs

IM-6700-2MSC4TX: 1,031,180 hrs

IM-6700-2MST4TX: 1,031,180 hrs

IM-6700-2SSC4TX: 1,031,180 hrs

IM-6700-8PoE: 338,800 hrs

**Database:** Telcordia (Bellcore), GB

#### Warranty

**Warranty Period:** 5 years

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

#### Optical Fiber

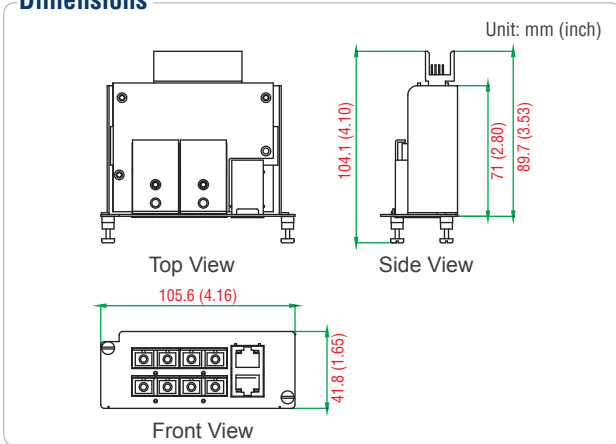
	100BaseFX	
	Multi-mode	Single-mode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km <sup>a</sup> 4 km <sup>b</sup>	40 km <sup>c</sup>
Saturation	-6 dBm	-3 dBm

a. 50/125 μm, 800 MHz\*km fiber optic cable

b. 62.5/125 μm, 500 MHz\*km fiber optic cable

c. 9/125 μm single-mode fiber optic cable

### Dimensions



### Ordering Information

#### Compatible Rackmount Ethernet Switch Systems

##### Modular Rackmount Ethernet Switch System:

IKS-6726-2GTXSFP



IKS-6728-4GTXSFP



IKS-6728-8PoE



#### Fast Ethernet Modules, IM-6700 Series

Available Models	Port Interface				
	10/100BaseT(X)	100BaseFX			100BaseSFP*
		Multi-mode, SC Connector	Multi-mode, ST Connector	Single-mode, SC Connector	
IM-6700-8TX	8	–	–	–	–
IM-6700-8SFP	–	–	–	–	8
IM-6700-6MSC	–	6	–	–	–
IM-6700-6MST	–	–	6	–	–
IM-6700-6SSC	–	–	–	6	–
IM-6700-4MSC2TX	2	4	–	–	–
IM-6700-4MST2TX	2	–	4	–	–
IM-6700-4SSC2TX	2	–	–	4	–
IM-6700-2MSC4TX	4	2	–	–	–
IM-6700-2MST4TX	4	–	2	–	–
IM-6700-2SSC4TX	4	–	–	2	–
IM-6700-8PoE	8 (PoE+ ports)	–	–	–	–

##### Package Checklist

- IM-6700 series interface module
- Warranty card