Outstanding Network Solution for Hardened Environment
Choose only the best for your business!

As a leading provider of network equipment for industrial communication, Benchu group understands the importance of providing stability and safety that can adapt to your business' needs, whether in the Safe City, Traffic,Mining,industrial automatic,Power or energy.

The IES7221-24GE4GC-AC with IP40 protection class and meet EMC industrial level 4 requirements. The product supports wide power input voltage range of 100-260VDC redundant power with reverse polarity protection and wide operating temperature range of -30 to the +75°C.

The switches can be easily installed on a rack-mounting as well as in distribution boxes. In addition to its compact size for space-saving installation, each product has passed a 100% burn-in test to ensure its quality high-reliability transmission.

The IES7221-24GE4GC-AC is equipped with 24-10/100/1000BASE-T gigabit ethernet ports and 4-gigabit RJ45/SFP interfaces with redundant power input.It offers a rack mountable, safe and reliable network solution for outdoor industrial environments deploying ethernet networks.

Support 4 ports gigabit RJ45/SFP Uplink，provides efficient transmission and powerful processing capacity. The administrator can flexibly choose the suitable SFP transceiver according to the transmission distance or the fiber type required to extend the network efficiently.

Highlights

Benchu group IES7221-24GE4GC-AC industrial ethernet switch, featuring 24-10/100/1000BASE-T ports and 4 gigabit RJ45/SFP uplink,its in a IP40 rugged metal case, can be installed in any difficult environment. Support 8kV lightning protection, ensures high network availability by preventing downtime caused by power surges. support redundant power input ,ensures continuous operation even if one power source fails,the risk of network outages due to power supply failure is significantly reduced.Rack mounting allows for compact and organized installation of industrial ethernet switch, maximizing the use of available space. Wide temperature range , low-power consumption and fanless design, It is able to operate reliably, stably and quietly in the temperature range from -30 to 75 degrees C.

Key features include:

- Circuit protection prevents power interference between ports
- Hardware-based 10/100/1000Mbps auto-negotiation and auto MDI/MDI-X
- Flow control for full duplex operation and back pressure for half duplex operation
- Integrates address look-up engine, supporting 8K absolute MAC addresses
- Automatic address learning and address aging
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)

Build a future-proof network with BENCHU:

- Solid performance with non-blocking architecture, 8K MAC addresses, 64Gbps Backplane bandwidth, 47.62Mpps switch throughput，9216 bytes Jumbo Frame
- 4 SFPs, Extends network distance up to 2KM/20KM/40KM/60KM/80KM/120KM with optical fiber.

Fast Access

- The remote units provide the full line-speed forwarding capability. All ports support non-blocking data packet forwarding, providing users with high-speed access experience and meeting the requirements of high-bandwidth services such as HD video conferencing, online video, and large file download.

BENCHU Quality and Reliability

- Low power consumption, fanless.
- High strength aluminum alloy shell
- IP40 Industrial design
- Contact Discharge 8KV DC；Air Discharge 15KV DC
- -30 to 75 degrees operating temperature
- Dual power input
- Rack mounting installation
- CE, FCC, RoHS,CB.

Easy operation and maintenance

- Hardware-based 10/100/1000Mbps auto-negotiation and auto MDI/MDI-X.
- Flow control for full duplex operation and back pressure for half duplex operation
- Supports Energy-Efficient Ethernet (EEE) function (IEEE 802.3az)
- Rack mount installation and dual power input
- Plug and play, No configuration required
- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

Hardware at a Glance

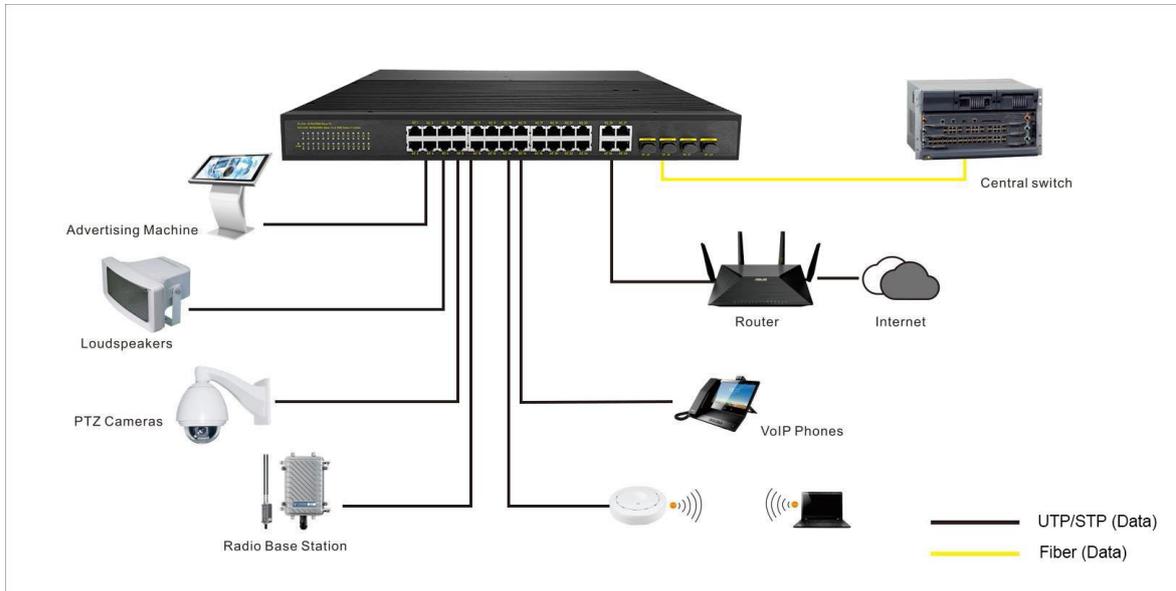| FRONT				REAR	SIDE
Model Name	Form-Factor	10/100/1000Base-T RJ45 ports	1GB RJ45/SFP Combo	Power Supply	Fans
IES7221-24GE4GC-AC	Rack mounting	24	4 combo	Dual power input AC100~260V	Fanless

Performance at a Glance

Model Name	Chip	Packet buffer	Fabric	Switch Throughput	MAC Address Table	Jumbo Frame	Latency (Max Connection Speed)
IES7221-24GE4GC-AC	Realtek	4.2MB	64Gbps	47.62Mpps line-rate	8K MAC	9216 bytes	1G Copper: <3.35µs 1G Fiber: <3.1µs

Features and Benefits

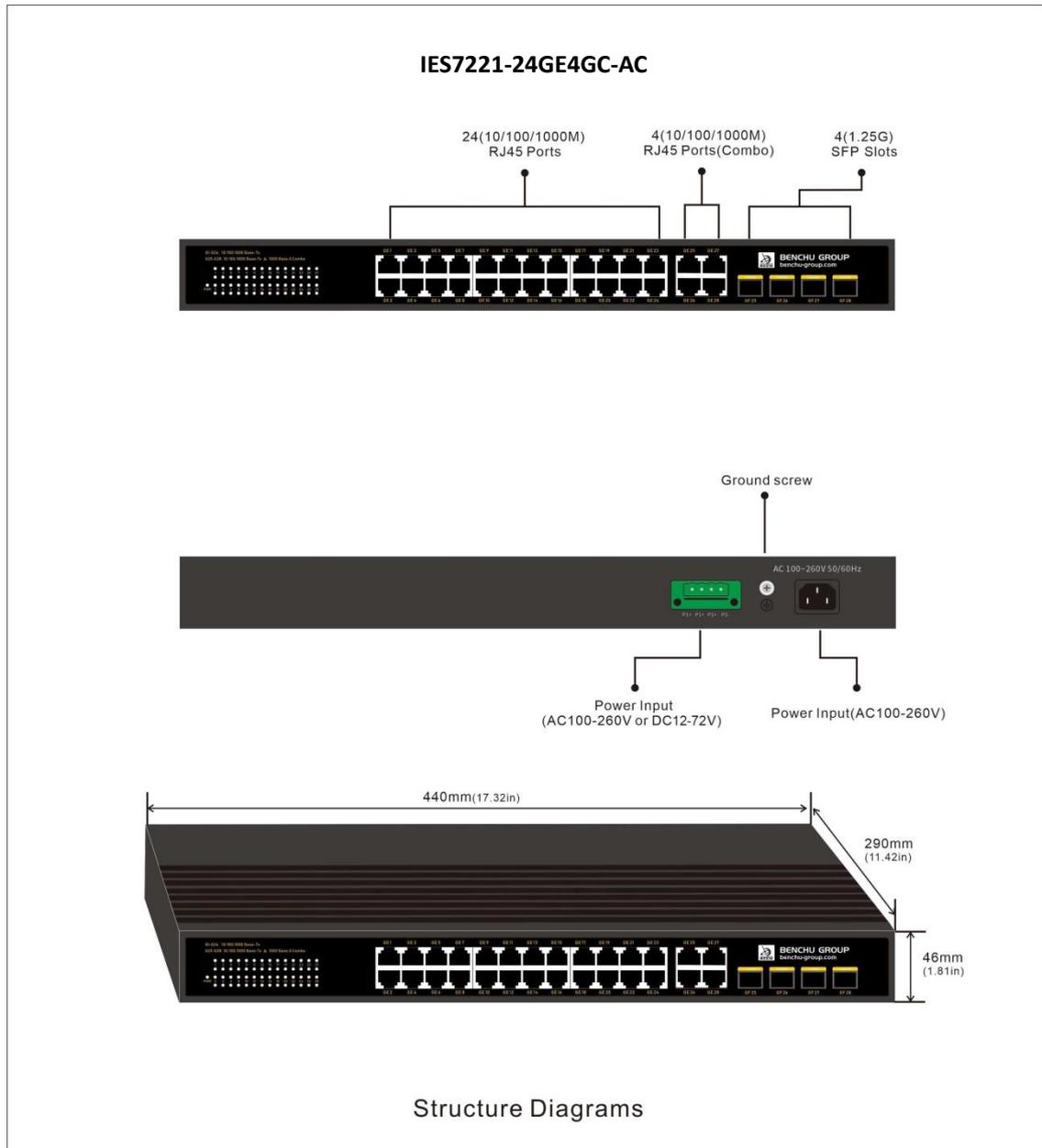| Hardware Features	
1000BASE-T Copper Ethernet connections	Support Surveillance, Wi-Fi AP, VoIP, PLC, Access control and Speaker, deployments, scal-able for future growth.
1.25GBASE-X SFP Combo ports	Four 1.25Gb SFP ports for aggregation to the network core. Support for Fiber and Copper modules.
Redundant Power Inpout	By having a secondary power supply, the switch can seamlessly switch to the backup power, maintaining network connectivity without interruption.
8kV Lightning Protection	Enhanced protection minimizes the risk of costly repairs and replacements, maintaining network stability and reliability in environments prone to lightning activity.
Wide Operating Temperature Range of -30 to 75℃	Remains reliable in both extremely cold and hot environments. Reliable performance in extreme conditions reduces downtime and maintenance needs, ensuring continuous operation.
IP40 Industrial Design	Features an IP40-rated industrial design, which provides a high level of protection against dust and debris, ensuring reliable operation in demanding environments.

Target Application

Network Convergence

Across sectors like industrial parks, power and utilities, industrial automation, and energy, there is a rapid rise in the use of IoT devices such as VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, and secure access door locks. This growing deployment of devices requires reliable and stable industrial network switches to maintain consistent network performance. Additionally, the challenging conditions of outdoor and harsh environments call for industrial-grade switches built with durability and resilience to endure extreme conditions, including temperature changes, dust, and moisture exposure. These industrial ethernet switches are engineered to ensure dependable performance, enabling uninterrupted operations. As industrial networks become increasingly complex, selecting high-quality industrial-grade switches has become critical to supporting the expanding IoT infrastructure and addressing the needs of modern industrial applications.

The 32-port industrial ethernet switch support dense deployments of these modern high-uniformity network devices. They offer enhanced performance and a focus on usability within Industrial environments:

- Provide 24-10/100/1000M ethernet network ports
- 4-1Gb RJ45/SFP combo ports for aggregation to the network core
- Dual power input --- the risk of network outages due to power supply failure is significantly reduced.
- Wide Operating Temperature Range of -30 to 75℃
- Contact Discharge 8KV DC；Air Discharge 15KV DC
- High strength aluminum alloy shell,IP40 Industrial design
- Excellent features such as fast response, resisting vibration, enduring dust, adapting for the hard environment, etc.
- Plug and play, No configuration required --- simplifies the installation process
- Limited Lifetime* Warranty, Tech support

Structure Diagrams

IES7221-24GE4GC-AC

24(10/100/1000M)
RJ45 Ports

4(10/100/1000M)
RJ45 Ports(Combo)

4(1.25G)
SFP Slots

Ground screw

AC 100~260V 50/60Hz

Power Input
(AC100-260V or DC12-72V)

Power Input(AC100-260V)

440mm(17.32in)

290mm
(11.42in)

46mm
(1.81in)

Structure Diagrams

Technical Specifications	IES7221-24GE4GC-AC
10M/100M/1G RJ-45 copper ports	24
1G RJ45/SFP (combo) ports	4
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	4.2 MB
Forwarding modes	Store-and-forward
Bandwidth	64 Gbps
Packet forwarding rate (64 byte packet size) (Mpps)	47.62Mpps
MAC address database size (48-bit MAC ad-dresses)	8K
Jumbo frame support (bytes)	Up to 9K packet size
Mean Time Between Failures (MTBF) @ 25°C	166,136 hours
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.314μs; 8.412μs; 8.551μs
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.514μs; 3.545μs; 3.628μs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.980μs; 3.101μs; 3.179μs

IEE Network Protocols	
• IEEE 802.3i 10BASE-T	• IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX
• IEEE 802.3u 100BASE-T	• IEEE 802.3az Energy Efficient Ethernet (EEE)
• IEEE 802.3ab 1000BASE-T	• IEEE 802.3x Full-Duplex Flow Control

Monitoring	
LEDs	Yes
Per port	Speed, Link, Activity
Per device	Power

Physical Specifications	
Dimensions	440 x 290 x 46 mm (17.32 x 11.32 x 1.81 in)
Weight (includes packaging accessories)	4.6 kg (10.14 lb)
Power Inpout (Dual power input)	AC 100~260V 50/60Hz
Max power (worst case, all ports used, line-rate traffic) (Watts)	15W
Idle power consumption (all ports link-down standby) (Watts)	8W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	Fanless

Environmental Specifications	IES7221-24GE4GC-AC
Operating	
Operating Temperature	-30° to 75°C (-22° to 167°F)
Humidity	95% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum
Storage	
Storage Temperature	-40° to 85°C (-40° to 185°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum
Executive Standard & Protection	
Lightning Protection	
IEC61000-4-3 (RS)	10V/m (80~1000MHz)
FCC Part 15/CISPR22 (EN55022)	Class B
CE	EN55032,EN55035
IEC61000-6-2	Common Industrial Standard
IEC61000-4-9 (Pulsed magnet field)	1000A/m
IEC61000-4-10 (Damped oscillation)	30A/m, 1MHz
IEC61000-4-12/18 (Shockwave)	CM 2.5kV, DM 1kV
IEC61000-4-4(EFT)	Power cable:±4kV, Data cable: ±2kV
IEC61000-4-16(Common-mode transmission)	30V, 300V, 1s
IEC61000-4-2 (ESD)	±8kV contact discharge, ±15kV air discharge
IEC61000-4-6 (Radio frequency transmission)	10V(150kHz~80MHz)
IEC61000-4-8 (Power frequency magnetic field)	100A/m, 1000A/m, 1s-3s
IEC61000-4-5 (Surge): Power cable	CM±4kV/ DM±2kV, Data cable: ±4kV
Mechanical Properties	
IEC60068-2-6	Anti Vibration
IEC60068-2-32	Free Fall
IEC60068-2-27	Anti Shock

Electromagnetic Emissions and Immunity

Certifications	
	CE mark, commercial
	FCC Part 15 Class A, VCCI Class A
	Class A EN 55022 (CISPR 22) Class A
	Class A C-Tick
	EN 55024
	CCC
	47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A
	ANSI C63.4:2014
	IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A

Safety

Certifications	
	CB mark, commercial
	CSA certified (CSA 22.2 #950)
	EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013
	AN/NZS 60950.1:2015
	CCC (China Compulsory Certificate)

Warranty and Support

Hardware Limited Warranty	Limited Lifetime*
Technical Support via Phone and Email*	Limited Lifetime*
Limited Lifetime* 24x7 Online Chat Technical Support	Limited Lifetime*

Package Contents

All models	Industrial ethernet switch
	Brackets and screws for rack mounting
	Rubber protection caps, which are already installed in the SFP sockets
	User's manual

Shenzhen Benchu Group Technology Limited

5F,Block5,GuangmingGu Industrial Park,Matian Villiage,

Guangming Disitrict,Shenzhen,China

Tel:+86-755 23246531   Email: sales@benchu-group.com

www.benchu-group.com

IES7221-24GE4GC-AC