



Outstanding 802.3at PoE+ Network Solution for
Hardened Environment
Select your new network engine!

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 IES7211-8PGE2GF-4BT-DC with IP40 protection class and meet EMC industrial level 4 requirements. The product supports wide power input voltage range of 48-54VDC redundant power with reverse polarity protection and wide operating temperature range of -40 to the +85°C.

The switches can be easily installed on a DIN rail 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 IES7211-8PGE2GF-4BT-DC is equipped with 8-10/100/1000BASE-T Gigabit Ethernet ports and 2-1.25GBASE-X SFP interfaces with redundant power input. Its 4 Gigabit Ethernet ports are integrated with an 802.3bt PoE++ up to 90W injector function, 4 Gigabit Ethernet ports are integrated with an 802.3at PoE+ up to 30W injector function.

Support 2 Ports 1G 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. It offers a DIN-Rail mountable, safe and reliable power solution for outdoor industrial environments deploying Power over Ethernet networks

Highlights

Benchu group IES7211-8PGE2GF-4BT-DC Industrial UPoE+ Switch, featuring 4-10/100/1000BASE-T 802.3bt PoE++ ports with each port powering up to 90 watts, 4-10/100/1000BASE-T 802.3at PoE+ ports with each port powering up to 30 watts, and 2-1.25GBASE-X fiber ports, 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. DIN-Rail mounting allows for compact and organized installation of industrial PoE switches, 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 -40 to 85 degrees C.

Key features include:

- Complies with IEEE 802.3af/at/bt Power over Ethernet
- PoE power up to 90 watts for 1-4 PoE port, 30 watts for 5-8 PoE port
- PD alive check function
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- 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, 24Gbps Backplane bandwidth, 14.88Mpps Switch Throughput, 9216 bytes Jumbo Frame
- Support IEEE802.3bt UPoE+ on 1-4 ports, PoE power up to 90 watts for each PoE port
- Support IEEE802.3at PoE+ support on 5-8 ports, PoE power up to 30 watts for each PoE port
- 2 Dedicated SFPs, Extends network distance up to 2KM/20KM/40KM/60KM/80KM/120KM with optical fiber.

802.3bt UPoE+ 90-watt for high power consuming network PD

- Adopts the IEEE 802.bt UPoE+ standard technology, it is capable to source up to 90 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). Its power capability is three times more than that of the conventional 802.3at PoE+ and it is an ideal solution for those high power consuming network PDs.

BENCHU Quality and Reliability

- Low power consumption, fanless.
- High strength aluminum alloy shell
- IP40 Industrial design
- Contact Discharge 8KV DC; Air Discharge 15KV DC
- -40 to 85 degrees operating temperature
- Dual power input
- Din Rail 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)
- Din Rail 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	Install	10/100/1000Base-T RJ45 ports	1GBASE-X Fiber SFP Ports	UPoE+ 802.3bt Ports(90W)	PoE+ 802.3at Ports(30W)	Power Supply	Fans
IES7211-8PGE2GF-4BT-DC	Din Rail mounting	8	2	4	4	Dual power input DC48~56V	fanless

Performance at a Glance

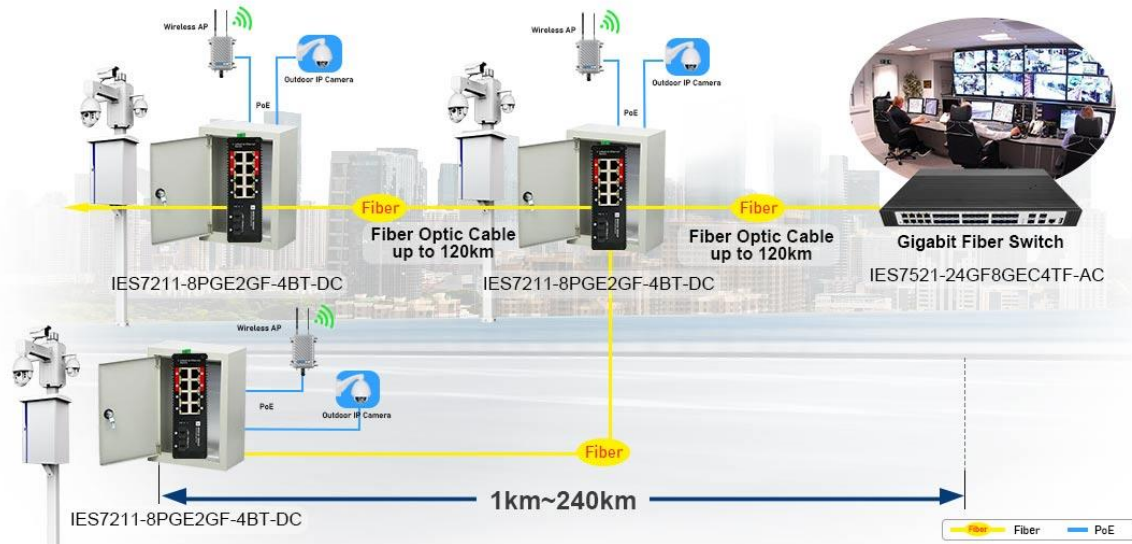
Model Name	Chip	Packet buffer	Fabric	Switch Throughput	MAC Address Table	Jumbo Frame	Latency (Max Connection Speed)
IES7211-8PGE2GF-4BT-DC	Realtek	1.6MB	24Gbps	14.88Mpps line-rate	8K MAC	9216 bytes	1G Copper: <3.35μs 1G Fiber: <3.1μs

Features and Benefits

Hardware Features	
1000BASE-T Copper Ethernet UPoE+ connections	Support LED lighting, PTZ Camera and Wi-Fi 6 AP deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
1000BASE-T Copper Ethernet PoE+ connections	Support Surveillance, Wi-Fi AP, VoIP, Access control and Speaker, deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
1.25GBASE-X SFP Combo ports	Two 1Gb SFP ports for aggregation to the network core. Support for Fiber and Copper modules.
Redundant Power Input	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 -40 to 85°C	Remains reliable in both extremely cold and hot environments. Reliable performance in extreme conditions reduces downtime and maintenance needs, ensuring continuous operation.

Target Application

Network Convergence

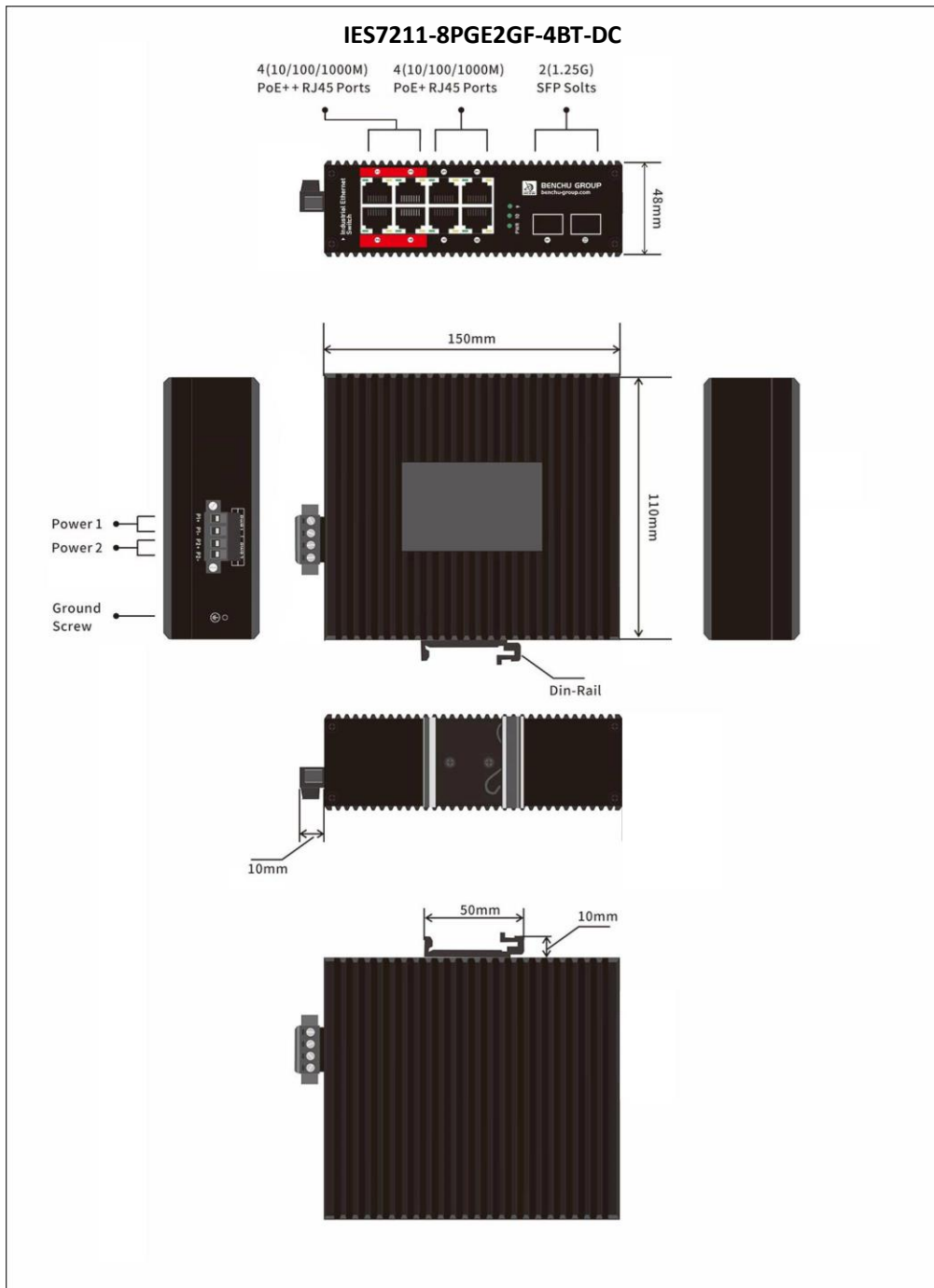


Across various industries—particularly in industrial parks, automation, power, public safety, and energy sectors—the adoption of IoT devices such as VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, and secure access door locks is rapidly increasing. The close concentration of these devices demands industrial network switches with PoE capabilities, allowing network managers to connect IoT devices using a single cable for both data and power. Advanced devices like Wave 2 802.11ac wireless access points and HD surveillance cameras with features like night vision and motion tracking require PoE++ (802.3bt) power. Additionally, harsh environments necessitate industrial-grade network switches with enhanced durability, further increasing the power requirements for Industrial PoE switches.

The BENCHU GROUP 10-port Industrial PoE++ Switch support dense deployments of these modern high-power PoE++/UPoE/UPoE+ devices. They offer enhanced performance and a focus on usability within Industrial environments:

- Provide 4-10/100/1000M 802.3af/at/bt PoE+ ports
- Provide 4-10/100/1000M 802.3af/at PoE+ ports
- 2 dedicated 1Gb SFP fiber 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 -40 to 85°C
- 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





Technical Specifications	IES7211-8PGE2GF-4BT-DC
10M/100M/1G RJ-45 copper ports	8
PoE / PoE+/UPoE+ ports (90W)	4 UPoE+
PoE / PoE+ ports	4 PoE+
1G SFP (fiber) ports	2
Power over Ethernet	
PoE Standard	IEEE 802.3bt Ultra Power over Ethernet Plus /PSE IEEE 802.3at Power over Ethernet Plus/PSE Backward compatible with IEEE 802.3af Power over Ethernet
PoE Power Supply Type	UPoE+ Ports: 1/2/4/5 (+), 3/6/7/8 (-) PoE+ Ports: 1/2 (+), 3/6/ (-)
PoE Power Output	Per port 52V DC, 300mA. max. 15.4 watts (IEEE 802.3af) Per port 52V DC, 600mA. max. 30 watts (IEEE 802.3at) Per port 52V DC, 1800mA. max. 90 watts (IEEE 802.3bt)
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	1.6 MB
Forwarding modes	Store-and-forward
Bandwidth	24 Gbps
Packet forwarding rate (64 byte packet size) (Mpps)	14.88Mpps
MAC address database size (48-bit MAC addresses)	8K
Jumbo frame support (bytes)	Up to 9K packet size
Mean Time Between Failures (MTBF) @ 25°C	181,365 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



IEEE Network Protocols	IES7211-8PGE2GF-4BT-DC
<ul style="list-style-type: none">• IEEE 802.3i 10BASE-T• IEEE 802.3u 100BASE-T• IEEE 802.3ab 1000BASE-T• IEEE 802.3z 1000BASE-SX/LX• IEEE 802.3az Energy Efficient Ethernet (EEE)	<ul style="list-style-type: none">• IEEE 802.3af PoE• IEEE 802.3at PoE+• IEEE 802.3bt UPoE+/PoE++• IEEE 802.3x Full-Duplex Flow Control
Monitoring	
LEDs	Yes
Per port	Speed, Link, Activity; or PoE in different mode
Per device	Power
Physical Specifications	
Dimensions	150 x 110 x 48 mm (5.91 x 4.43 x 1.89 in)
Weight (includes packaging accessories)	0.95 kg (1.76 lb)
Power Input (Dual power input)	DC 48~56V
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	9W
Idle power consumption (all ports link-down standby) (Watts)	7W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	Fanless
Environmental Specifications	
Operating	
Operating Temperature	-40° to 85°C (-40° to 185°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
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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)
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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	Unmanaged Industrial PoE++ Switch Brackets and screws for DIN-Rail mounting which are already installed in the industrial switch Rubber protection caps, which are already installed in the SFP sockets Installation guide User's manual
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