



An important breakthrough, Configure-free Gigabit UPoE+ (bt 90W) Switch for System Integrators.

Benchu group SP5210-8PGE2GF-4BT, an ideal Gigabit UPoE+ Switch, provides a cost-effective advantage to local area networks of SMBs. Offering Layer 2 data packet switching and stable operation, this model also complies with IEEE 802.3bt ultra Power over Ethernet Plus (UPoE+) at an affordable price.

By offering reliable switching technology and advanced networking features, the SP5210-8PGE2GF-4BT optimizes the installation and power management of network devices such as wireless access points, VoIP phones, and PTZ cameras.

The SP5210-8PGE2GF-4BT is equipped with 8 10/100/1000BASE-T Gigabit Ethernet ports and 2-1000BASE-X SFP interfaces with inner power system. 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. It offers a rack-mountable, safe and reliable power solution for SMBs deploying Power over Ethernet networks.

The PoE in-line power following the IEEE 802.3bt/at/af standard makes the SP5210-8PGE2GF-4BT able to deliver Gigabit speed data and up to 90 watts of power port to 8 PoE compliant powered devices (PDs) with a combined power output budget of up to 300 watts. The SP5210-8PGE2GF-4BT provides more flexibility in power requirement for all kinds of PDs with affordable installation costs.

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## Highlights

The Benchu group gigabit unmanaged UPoE+ switches provides a great value, By offering reliable switching technology and advanced networking features, the UPoE+ switch optimizes the installation and power management of network devices such as wireless access points, LED lighting, and PTZ cameras. It also eliminates time and cost of deployment by integrating power and data switching into one unit and freeing network devices from restrictions of power outlet locations and the additional AC wiring.

#### Key features include:

- Complies with IEEE 802.3af/at/bt Power over Ethernet end-span PSE
- Up to 90W of IEEE 802.3af/802.3at/802.3bt devices powered
- Supports PoE power up to 90 watts for 1-4 PoE port, 30 watts for 5-8 PoE port, all power up to 280W PoE budget.
- PD alive check function
- Each port supports 52V DC power to PoE powered device
- 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, 16.37Mpps Switch Throughput, 9216 bytes Jumbo Frame
- Up to 4 ports of IEEE 802.3af/802.3at/802.3bt and 4 ports of IEEE 802.3af/802.3at devices powered
- UPoE+ support on 1-4 ports, PoE power up to 90 watts for each PoE port
- PoE+ support on 5-8 ports, PoE power up to 30 watts for each PoE port
- 2 Dedicated SFP fiber uplink, Extends network distance with highly Gigabit performance via fiber optic cable.

#### 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 metal casing.
- high redundancy design, providing a long term stable PoE power output.
- CE, FCC, RoHS,CB.
- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

#### 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, Silent Operation
- Plug and play, No configuration required



## Hardware at a Glance

FRONT					REAR		SIDE
Model Name	10/100/1000Base-T RJ45 ports	1GBASE-X Fiber SFP Ports	UPoE+ 802.3bt Ports	PoE+ 802.3bt Ports	Power Budget	Power Supply	Fans
SP5210-8PGE2GF-4BT	8	2	4 UPoE+	4 PoE+	300W	1 internal PSU, fixed	Fanless

## Performance at a Glance

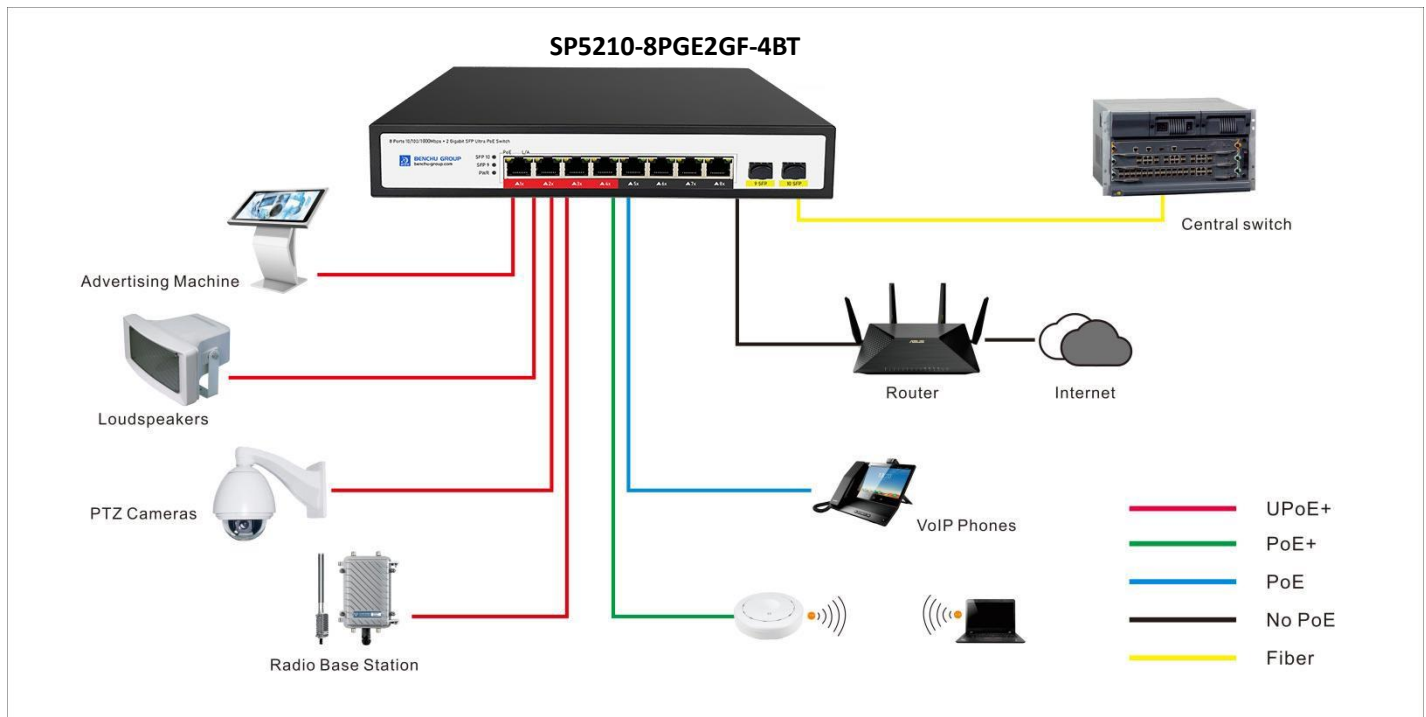
Model Name	Packet buffer	Chip	Fabric	Switch Throughput@64bytes	MAC Address Table	Jumbo Frame	Latency (Max Connection Speed)
SP5210-8PGE2GF-4BT	1.2MB	Realtek	24Gbps line-rate	14.88Mpps	8K	9216 bytes	1G Copper: <3.35μs 1G Fiber: <2.5μs

## 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.
1GBASE-X Fiber SFP ports	Two 1G SFP ports for aggregation to the network core. Support for Fiber and Copper modules.
Great choice of PoE port counts and PoE power budgets that can adapt to the business's needs	280W PoE budget available across 4 Gigabit UPoE+ ports and 4 Gigabit PoE+ ports– Connect multiple power demanding devices to your network with a single wire for power and connectivity.
Energy Efficient Ethernet (IEEE 802.3az)	Maximum power reduction for onging operational cost savings.

## Target Application

### Network Convergence

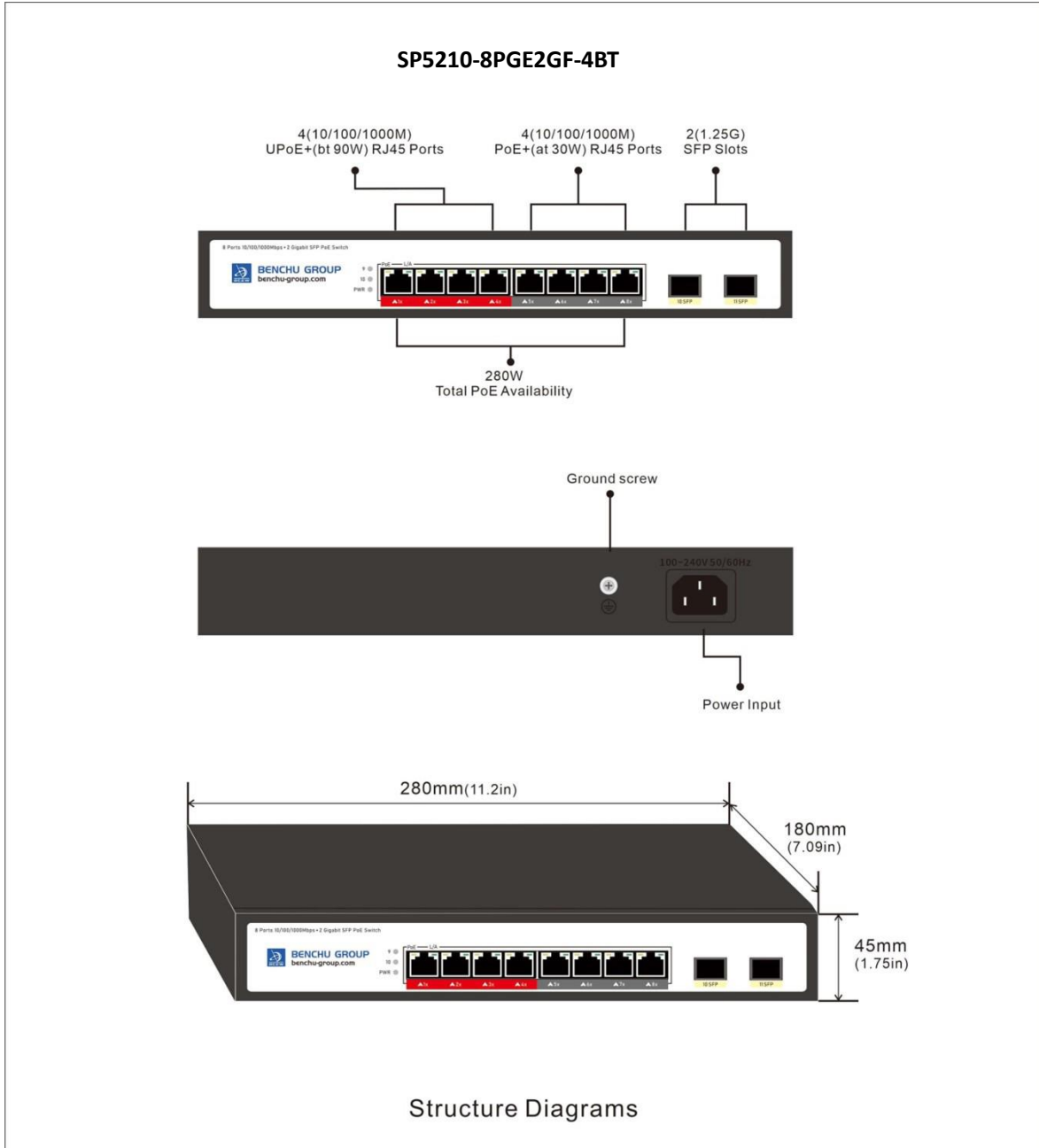


Within small and medium-sized organizations — especially in the hospitality, catering, education, and retail industries — there is growing deployment of VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The dense proximity of these devices requires network switches capable of supporting PoE so a network manager can add power-hungry devices to the network with a single wire for power AND connectivity. Wave 2 802.11ac wireless access points and pan-tilt-zoom HD surveillance cameras with features such as night vision and built-in motion tracking also require UPoE+ power (802.3bt), increasing the power demands on UPoE+ switches.

The new 8-port BENCHU GROUP UPoE+ Switches support dense deployments of these modern high-power UPoE+ devices. with enhanced performance and a focus on usability within commercial environments:

- 280W PoE budget across 4 Gigabit UPoE+ ports and 4 Gigabit PoE+ Ports
- 2 x 1Gb SFP fiber ports for aggregation to the network core to facilitate users' flexible networking
- Comply with IEEE 802.3 af/at/bt PoE power supply standard, automatically identify PoE equipment for power supply.
- Built-in 802.3bt type-4 PoE 90W injector function
- PoE ports support priority mechanism. When the remaining power is insufficient, priority is given to ensuring the power supply of high-priority ports to avoid equipment overload.
- Support non-blocking wire-speed forwarding.
- Plug and play, no configuration, simple and convenient.
- Limited Lifetime\* Warranty, Tech support

## Structure Diagrams





Technical Specifications	SP5210-8PGE2GF-4BT
10M/100M/1G RJ-45 copper ports	8
1G SFP (fiber) ports	2
PoE / PoE+/UPoE+ ports	4 UPoE+
PoE / PoE+ ports	4 PoE+
Power over Ethernet	
PoE Standard	IEEE 802.3bt 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	1/2 /4/5(+), 3/6/7/8 (-)
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)
PoE Power Budget	280 Watts
Number of PDs, 15 watts	8
Number of PDs, 30 watts	8
Number of PDs, 45 watts	4 (1-4 Port)
Number of PDs, 60 watts	4 (1-4 Port)
Number of PDs, 75 watts	3 (1-4 Port)
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	1.2 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
Forwarding Mode	Store and Forward(Full Wire Speed)
Mean Time Between Failures (MTBF) @ 25°C	121,136 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)	3.414µs; 3.545µs; 3.628µs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.980µs; 3.101µs; 3.179µs



IEEE Network Protocols	SP5210-8PGE2GF-4BT
<ul style="list-style-type: none"><li>• IEEE 802.3i 10BASE-T</li><li>• IEEE 802.3u 100BASE-T</li><li>• IEEE 802.3ab 1000BASE-T</li><li>• IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX</li><li>• IEEE 802.3az Energy Efficient Ethernet (EEE)</li></ul>	<ul style="list-style-type: none"><li>• IEEE 802.3af PoE</li><li>• IEEE 802.3at PoE+</li><li>• IEEE 802.3bt PoE++</li><li>• IEEE 802.3x Full-Duplex Flow Control</li></ul>
<b>Monitoring</b>	
LEDs	Yes
Per port	Speed, Link, Activity; PoE in different mode
Per device	Power
<b>Physical Specifications</b>	
Dimensions	280x 180 x 44.5mm (11.02 x 7.09 x 1.75 in)
Weight	1.6 kg (3.53 lb)
Power Requirements	AC 100~240V 50/60Hz
Power Consumption (when all ports used, line-rate traffic and max PoE)	300W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	12W
Idle power consumption (all ports link-down standby) (Watts)	8W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	Fanless
<b>Environmental Specifications</b>	
<b>Operating</b>	
Operating Temperature	-20° to 50°C (-4° to 122°F)
Humidity	90% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum
<b>Storage</b>	
Storage Temperature	-20° to 70°C (-4° to 158°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum

### 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)
	UL listed (UL 1950)/cUL IEC 950/EN 60950
	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	Smart PoE++ Switch
	AC Power cord with C13 connector (localized to region of sale)
	Brackets and screws for rack mounting
	Rubber protection caps, which are already installed in the SFP sockets Installation guide
	User's manual