



Cost-optimized, Configure-free Gigabit PoE+ Switch for System Integrators.

Benchu group SP5220-16PGE2GE2GF, an ideal Gigabit PoE 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 802.3at Power over Ethernet Plus (PoE+) at an affordable price. By offering reliable switching technology and advanced networking features, the SP5220-16PGE2GE2GF optimizes the installation and power management of network devices such as wireless access points, VoIP phones, and security cameras.

The SP5220-16PGE2GE2GF is equipped with 16 10/100/1000BASE-T Gigabit Ethernet ports and 2- 10/100/1000BASE-T RJ45 and 2- 1000BASE-X SFP interfaces with inner power system. Its 16 Gigabit Ethernet ports are integrated with an 802.3at PoE+ 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 802.3at/af standard makes the SP5220-16PGE2GE2GF able to deliver Gigabit speed data and up to 30 watts of power per port to 16 PoE compliant powered devices (PDs) with a combined power output budget of up to 200 watts. The SP5220-16PGE2GE2GF 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 PoE+ Switches provides a great value, By offering reliable switching technology and advanced networking features, the PoE+ switch optimizes the installation and power management of network devices such as wireless access points, VoIP phones, and security 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 Power over Ethernet end-span PSE
- Up to 16 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE power up to 30 watts for each PoE port, all power up to 180W 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, 56Gbps Backplane bandwidth, 29.76Mpps Switch Throughput, 9216 bytes Jumbo Frame
- Up to 16 ports of IEEE 802.3af/802.3at devices powered
- PoE+ support on all ports, PoE power up to 30 watts for each PoE port
- 2 Dedicated SFPs, not only providing fiber uplinks, but also uplink redundancy and failover, improving reliability and availability for the network

#### 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 metal casing.
- high redundancy design, providing a long term and 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	PoE+ 802.3at Ports	Power Budget	Power Supply	Fans
SP5220-16PGE2GE2GF	18	2	16 PoE+	200W	1 internal PSU, fixed	Fanless

## Performance at a Glance

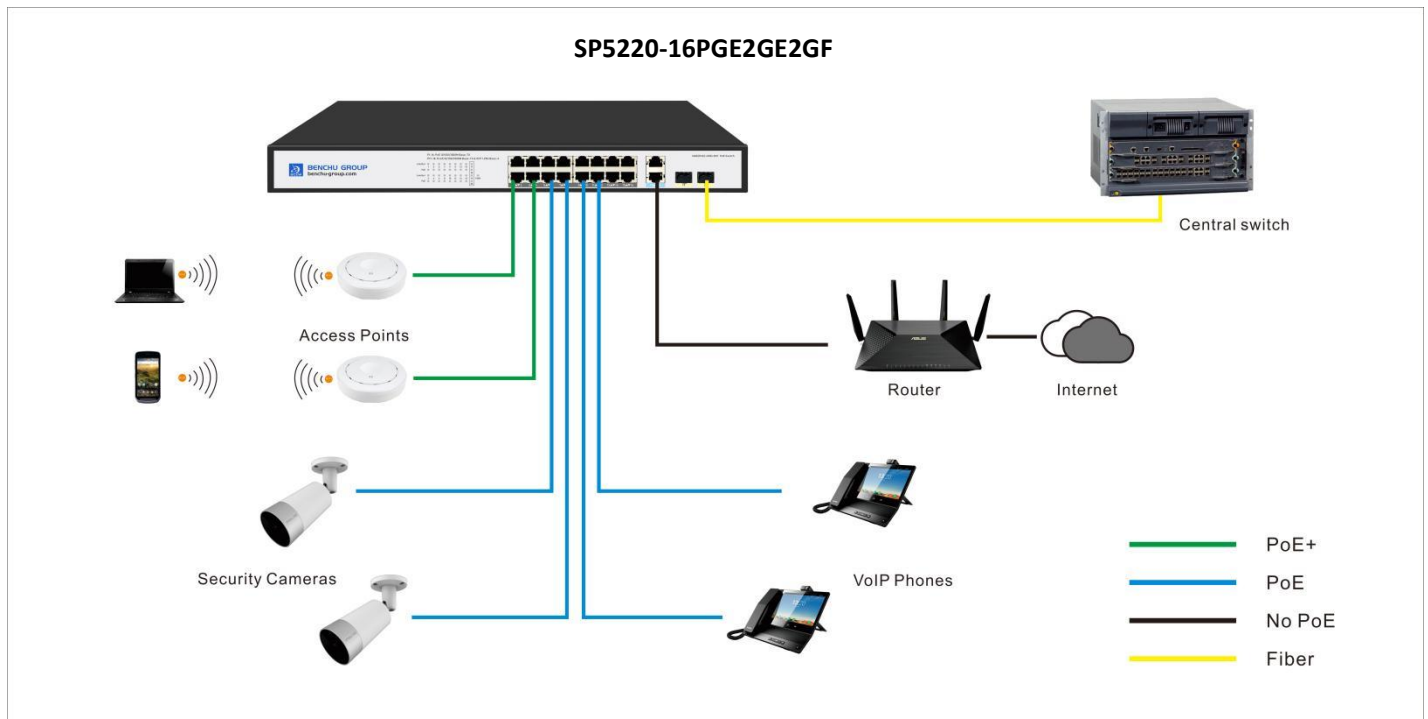
Model Name	Packet buffer	Chip	Fabric	Switch Throughput@64bytes	MAC Address Table	Jumbo Frame	Latency (Max Connection Speed)
SP5220-16PGE2GE2GF	2.7MB	Realtek	56Gbps line-rate	29.76Mpps	8K	9216 bytes	1G Copper: <3.35μs 1G Fiber: <2.5μs

## Features and Benefits

Hardware Features	
1000BASE-T Copper Ethernet PoE+ connections	Support high-density VoIP, Surveillance and Wi-Fi AP deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
1GBASE-X Fiber SFP ports	Two dedicated 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	180W PoE budget available across 16 Gigabit PoE+ ports (802.3at) – 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 ongoing operational cost savings.

## Target Application

### Network Convergence

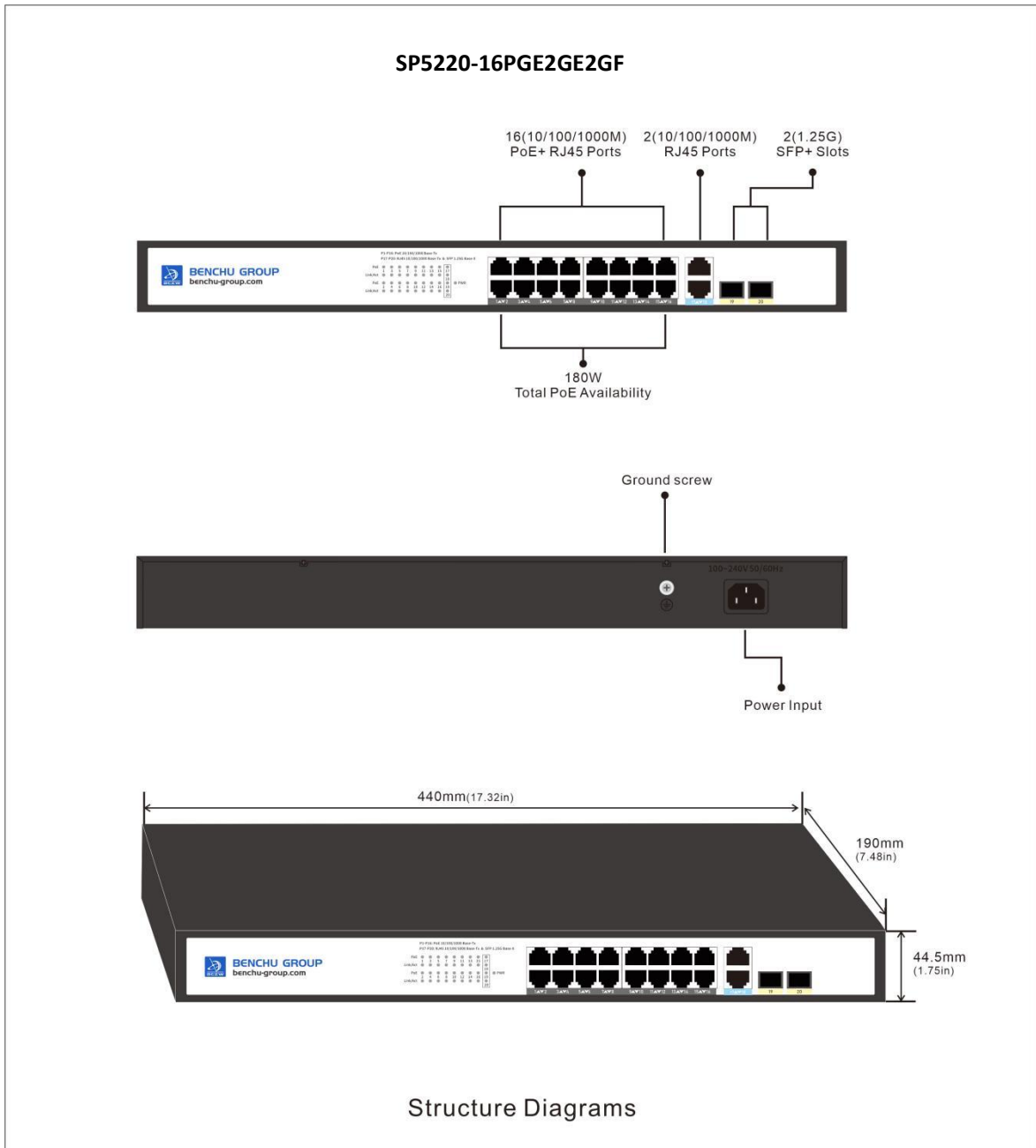


Within small and medium-sized organizations — especially in the hospitality, catering, education, and retail industries — there is growing deployment of VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The dense 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 PoE+ power (802.3at), increasing the power demands on PoE switches.

The new 16-port BENCHU GROUP PoE+ Switches support dense deployments of these modern high-power PoE+ devices. with enhanced performance and a focus on usability within commercial environments:

- 180W PoE budget across 16 Gigabit PoE+ ports
- 2 x 1Gb SFP fiber ports and 2 x 1Gb RJ45 Ports for aggregation to the network core to facilitate users' flexible networking
- Comply with IEEE 802.3 af/at PoE power supply standard, automatically identify PoE equipment for power supply.
- 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	SP5220-16PGE2GE2GF
10M/100M/1G RJ-45 copper ports	18
PoE / PoE+ ports	16 PoE+
1G SFP (fiber) ports	2
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE; Backward compatible with IEEE 802.3af Power over Ethernet
PoE Power Supply Type	End-span: 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)
PoE Power Budget	180 Watts
Number of PDs, 7 watts	16
Number of PDs, 15 watts	12
Number of PDs, 30 watts	6
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	2.7 Mb
Forwarding modes	Store-and-forward
Bandwidth	56 Gbps
Packet forwarding rate (64 byte packet size) (Mpps)	29.76Mpps
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	134,213 hours
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.314µs; 8.412µs; 8.451µs
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)	2.982µs; 3.106µs; 3.156µs



IEEE Network Protocols	SP5220-16PGE2GE2GF
<ul style="list-style-type: none"><li>• IEEE 802.3 Ethernet</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></ul>	<ul style="list-style-type: none"><li>• IEEE 802.3af PoE</li><li>• IEEE 802.3at PoE+</li><li>• IEEE 802.3az Energy Efficient Ethernet (EEE)</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	440 x 190 x 44.5mm (17.32 x 7.48 x 1.75 in)
Weight	2.6 kg (5.73 lb)
Power Consumption (when all ports used, line-rate traffic and max PoE)	200W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	15W
Idle power consumption (all ports link-down standby) (Watts)	10W
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 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