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

Benchu group SP5220-16PGE4GC-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 SP5220-16PGE4GC-4BT optimizes the installation and power management of network devices such as wireless access points, VoIP phones, and PTZ cameras.

The SP5220-16PGE4GC-4BT is equipped with 16-10/100/1000BASE-T Gigabit Ethernet ports and 4-1000BASE-T/X RJ45/SFP Combo interfaces with inner power system. Its 20 Gigabit Ethernet ports are integrated with an 802.3at PoE+ injector function, 4 Gigabit Ethernet ports are integrated with an 802.3bt UPoE+ 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 SP5220-16PGE4GC-4BT able to deliver Gigabit speed data and up to 90 watts of power port to 16 PoE compliant powered devices (PDs) with a combined power output budget of up to 500 watts. The SP5220-16PGE4GC-4BT provides more flexibility in power requirement for all kinds of PDs with affordable installation costs.

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 5-16 PoE port, all power up to 470W 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,16K MAC addresses, 64Gbps Backplane bandwidth, 35.72Mpps Switch Throughput，9216 bytes Jumbo Frame
- Up to 4 ports of IEEE 802.3af/802.3at/802.3bt and 12 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 5-16 ports，PoE power up to 30 watts for each PoE port
- 4 RJ45/SFP Combo 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,2 fans, high-strength metal casing.
- High redundancy design, providing a long termand stable PoE power output.
- Contact Discharge 8KV DC；Air Discharge 15KV DC
- -20 to 55 degrees operating temperature
- 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
- Plug and play, No configuration required

Hardware at a Glance

FRONT						REAR	SIDE
Model Name	10/100/1000Base-T RJ45 ports	1Gb RJ45/SFP Combo Ports	UPoE+ 802.3bt Ports	PoE+ 802.3bt Ports	Power Budget	Power Supply	Fans
SP5220-16PGE4GC-4BT	16	4(Combo)	4 UPoE+	12 PoE+	500W	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)
SP5220-16PGE4GC-4BT	4MB	Realtek	64Gbps line-rate	35.72Mpps	16K	9216 bytes	1G Copper: <3.35μs 1G Fiber: <2.5μs

Features and Benefits

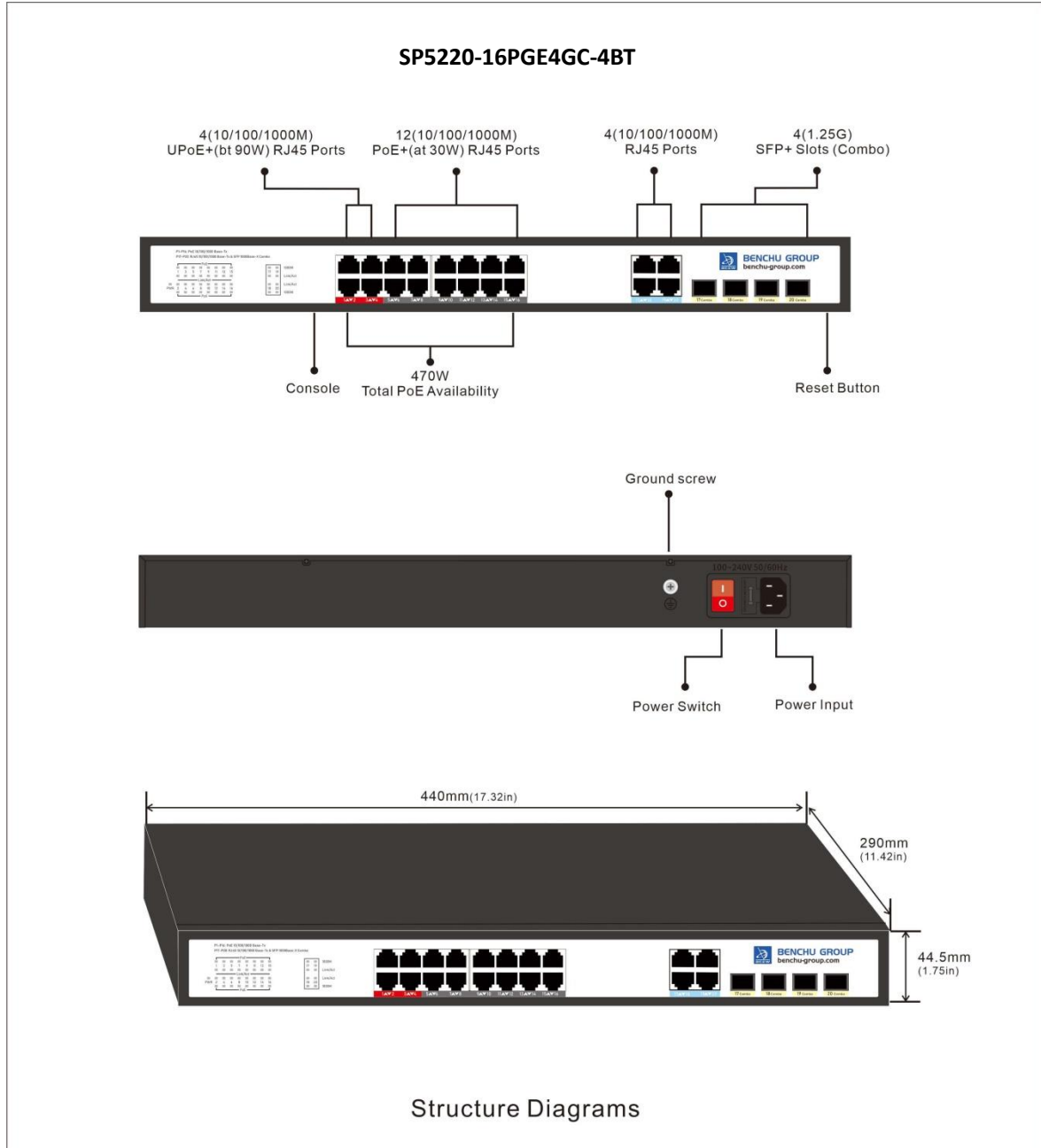| Hardware Features	
1000BASE-T Copper Ethernet UPoE+ connections	Support LED lighting, PTZ Camera and Wi-Fi 6 AP deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
1000BASE-T Copper Ethernet PoE+ connections	Support high-density VoIP, Surveillance and Wi-Fi AP deployments, scal-able for future growth.
1GBASE-TX RJ45/SFP Combo ports	Four 1Gb RJ45/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	470W PoE budget available across 4 Gigabit UPoE+ ports and 20 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
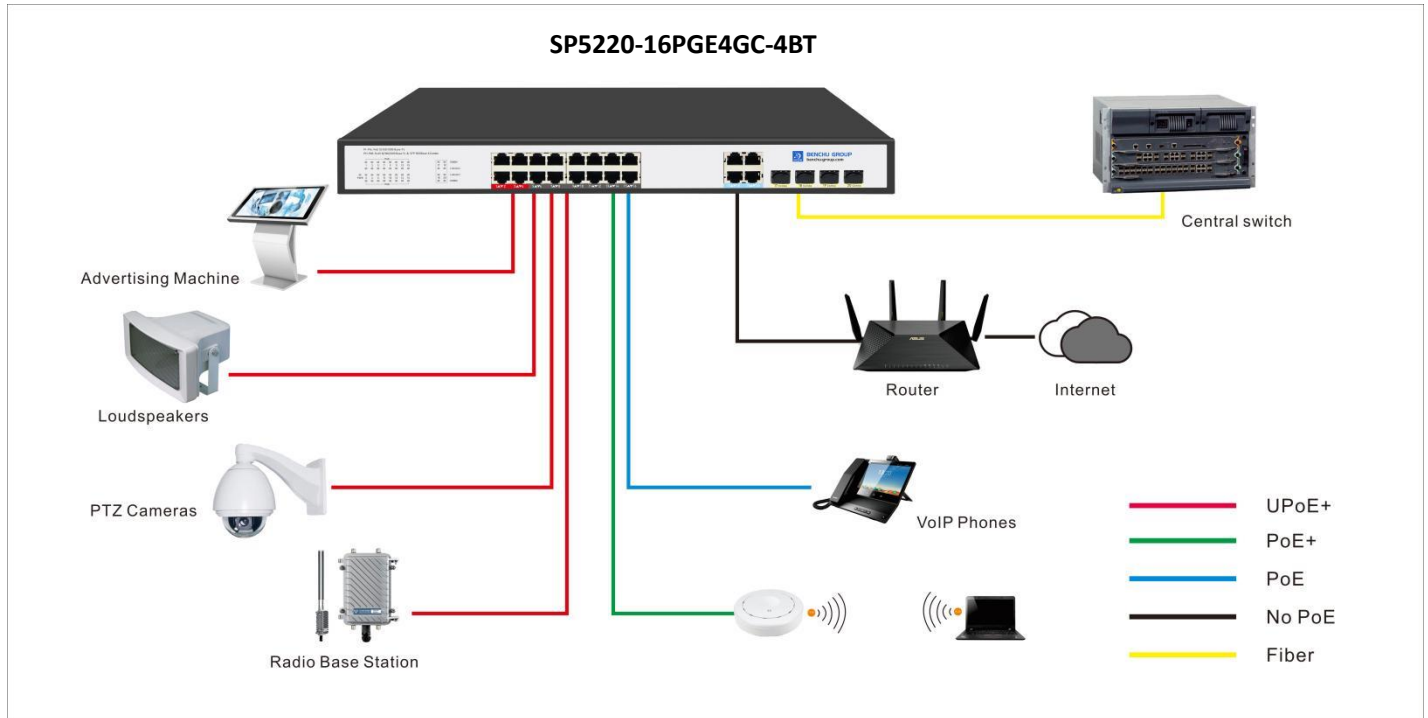
Within small and medium-sized organizations — especially in the hospitality, catering, education, and retail industries — there is growing deployment of VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, secure access door locks, and other IoT devices. The dense 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 16-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:

• 470W PoE budget across 4 Gigabit UPoE+ ports and 12 Gigabit PoE+ Ports
• 4 x 1Gb RJ45 and 4 x 1Gb SFP Combo 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

SP5220-16PGE4GC-4BT

4(10/100/1000M)
UPoE+(bt 90W) RJ45 Ports

12(10/100/1000M)
PoE+(at 30W) RJ45 Ports

4(10/100/1000M)
RJ45 Ports

4(1.25G)
SFP+ Slots (Combo)

Console

470W
Total PoE Availability

Reset Button

Ground screw

100~240V 50/60Hz

Power Switch

Power Input

440mm(17.32in)

290mm
(11.42in)

44.5mm
(1.75in)

Structure Diagrams

Technical Specifications	SP5220-16PGE4GC-4BT
10M/100M/1G RJ-45 copper ports	16
1G RJ45/SFP (fiber) ports	4 Combo
PoE / PoE+/UPoE+ ports	4 UPoE+
PoE / PoE+ ports	12 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	470 Watts
Number of PDs, 15 watts	16
Number of PDs, 30 watts	15
Number of PDs, 45 watts	4 (1-4 Port)
Number of PDs, 60 watts	4 (1-4 Port)
Number of PDs, 75 watts	4 (1-4 Port)
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	4 Mb
Forwarding modes	Store-and-forward
Bandwidth	64 Gbps
Packet forwarding rate (64 byte packet size) (Mpps)	45.72Mpps
MAC address database size (48-bit MAC ad-dresses)	16K
Jumbo frame support (bytes)	Up to 9K packet size
Forwarding Mode	Store and Forward(Full Wire Speed)
Mean Time Between Failures (MTBF) @ 25°C	114,673 hours
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.314μs; 8.612μs; 8.451μs
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.614μs; 3.545μs; 3.628μs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.980μs; 3.101μs; 3.179μs

IEEE Network Protocols	SP5220-16PGE4GC-4BT

- IEEE 802.3i 10BASE-T
- IEEE 802.3u 100BASE-T
- IEEE 802.3ab 1000BASE-T
- IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX
- IEEE 802.3az Energy Efficient Ethernet (EEE)

- IEEE 802.3af PoE
- IEEE 802.3at PoE+
- IEEE 802.3bt PoE+
- IEEE 802.3x Full-Duplex Flow Control

Monitoring	
LEDs	Yes
Per port	Speed, Link, Activity; PoE in different mode
Per device	Power

Physical Specifications	
Dimensions	440x 290 x 44.5mm (17.32 x 11.42 x 1.75 in)
Weight	4.7 kg (10.36 lb)
Power Requirements	AC 100~240V 50/60Hz
Power Consumption (when all ports used, line-rate traffic and max PoE)	500W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	21W
Iddle power consumption (all ports link-down standby) (Watts)	18W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	2 Fans

Environmental Specifications	
Operating	
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
Storage	
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

CE FCC   **SP5220-16PGE4GC-4BT**