Unlock the Potential of your Multi-Gig devices.
802.3bt PoE++ up to 90W per port

The SP5220-8PXE1TF-8BT come with Copper Ethernet ports that provide either 2.5G Ethernet, 1-Gigabit, 2.5-Gigabit, as well as 1 SFP+ Fiber port with 1-Gigabit or 2.5-Gigabit or 10-Gigabit connectivity. Each port automatically detects which speed is needed by the connected device and provides the adequate speed. As opposed to regular 10-Gigabit switches that will only provide 1-Gigabit connectivity to any device that require less than 10-Gigabit, the SP5220-8PXE1TF-8BT gives the exact speed required, no downgrade. Also, the new SP5220-8PXE1TF-8BT Multi-speed switch ports can be connected with regular Cat5E Ethernet cables, without the need to upgrade to Cat6 wiring, therefore reducing wiring costs and hassle.

The PoE in-line power following the IEEE 802.3bt/at/af standard makes the SP5220-8PXE1TF-8BT able to deliver 2.5 Gb speed data and up to 90 watts of power per port to 8 PoE compliant powered devices (PDs) with a combined power output budget of up to 400 watts. The SP5220-8PXE1TF-8BT provides more flexibility in power requirement for all kinds of PDs with affordable installation costs.

Highlights

Multi-Speed Technology

• Expand your network instantly, and give your devices either 100Mb/1Gb/2.5 Gb , bautomatically,

SFP+ Port Uplink

• One SFP+ Fiber port with 1-Gigabit or 2.5-Gigabit or 10-Gigabit connectivity – Ideal for high-speed uplink connectivity to your core network

Plug and Play

• Simple set up with no software or configuration needed

IEEE802.3af/at/bt（PoE++）

• Following the IEEE 802.3bt/at/af standard，and up to 90 watts of power per port to 8 PoE compliant powered devices (PDs)

High Quality and Reliable Performance

• Durable metal case and long product life (shown by MTBF numbers)

Flexible Mounting

• Rackmount or Desktop Switches
• Silent design, free-standing in any position

Key features include:

- Complies with IEEE 802.3af/at/bt Power over Ethernet end-span PSE
- Up to 8 ports of IEEE 802.3af/802.3at/bt devices powered
- Supports PoE power up to 90 watts for each PoE port, all power up to 380W PoE budget.
- Circuit protection prevents power interference between ports
- Hardware-based 10/100/1000/2500Mbps 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 4K 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, 4K MAC addresses, 80Gbps Backplane bandwidth, 44.64Mpps Switch Throughput 9216 bytes Jumbo Frame
- Up to 8 ports of IEEE 802.3af/802.3at devices powered
- PoE+ support on all ports，PoE power up to 30 watts for each PoE port
- Expand your network instantly, and give your devices either 100Mb/1Gb/2.5 Gb, bautomatically,
- One SFP+ Fiber port with 1-Gigabit or 2.5-Gigabit or 10-Gigabit connectivity – Ideal for high-speed uplink connectivity to your core network

2500M Fast Access

- The remote units provide the full line-speed forwarding capability. Hardware-based 10/100/1000/2500Mbps auto-negotiation. 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.

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 termand 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 10/100/1000/2500Mbps 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

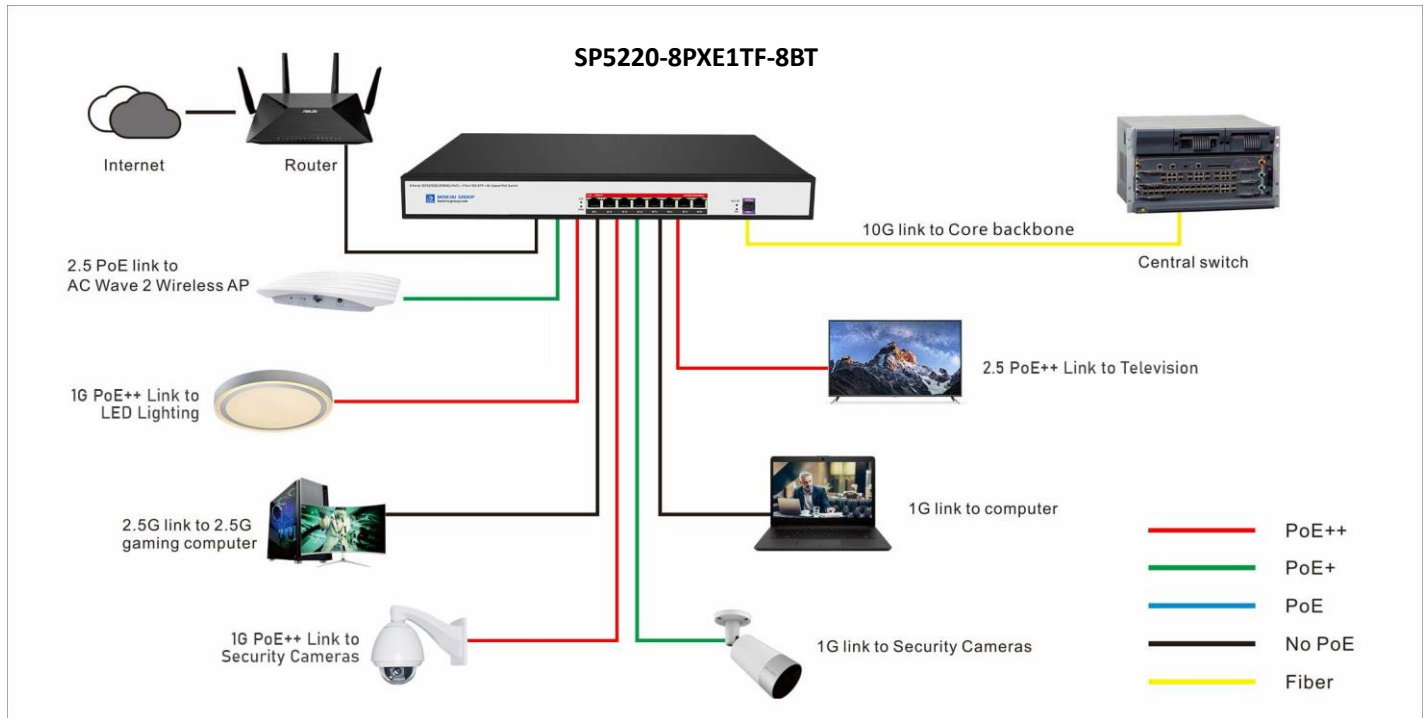| FRONT					REAR	SIDE
Model Name	100/1000/2500Base-T RJ45 ports	1G/2.5G/10GBASE-X Fiber SFP+ Port	PoE+ 802.3at Ports	Power Budget	Power Supply	Fans
SP5220-8PXE1TF-8BT	8	1	8 PoE+	400W	1 internal PSU, fixed	Fanless

Performance at a Glance

Model Name	Packet buffer	Chip	Fabric	Switch Throughput@64bytes	MAC Address Table	Jumbo Frame	Latency (Max Connection Speed)
SP5220-8PXE1TF-8BT	4.2MB	Realtek	80Gbps line-rate	44.64Mpps	4K	9216 bytes	1G Copper: <4.2µs 2.5G Copper: <3.4µs 10G Fiber: <2.95µs

Features and Benefits

Hardware Features	
2500BASE-T Copper Ethernet PoE++ connections	8 Ports UPoE+ up to 90W support LED lighting, PTZ Camera and Wi-Fi 6 AP deployments, scal-able for future growth.
2500BASE-T Copper Ethernet PoE+ connections	Support 2.5G gaming computer, Surveillance and AC Wave 2 Wireless AP deployments, scal-able for future growth. Never face the risk of running out of PoE ports.
1G/2.5G/10GBASE-X Fiber SFP ports	One dedicated 10G 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	380W PoE budget available across eight 2.5G PoE++ ports (802.3bt) – 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
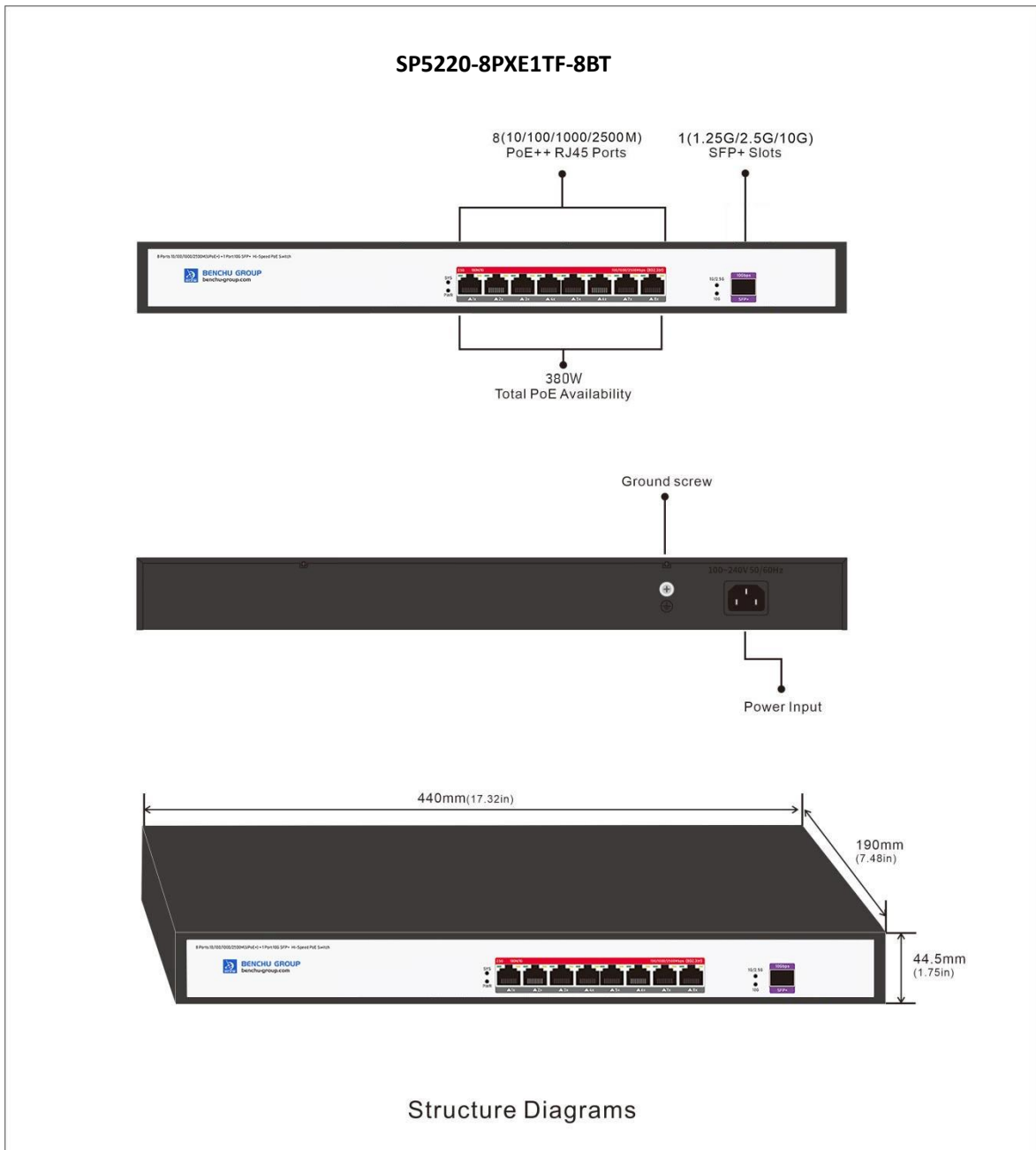
Network Convergence

Cables and Speed

The following table describes the network cables that you can use for the switch connections and the speeds that these cables can support, up to 100 meters (328 feet).

SPEED	CABLE TYPE
100Mbps	Category 5 (Cat 5) or higher rated
1Gbps, 2.5Gbps, or 5Gbps	Category 5e (Cat 5e) or higher rated
10Gbps	Category 6A (Cat 6A) or higher rated

Why the BENCHU GROUP 10-Gig/Multi-Gig Switches are ideal for SMB？

1. Plug-and-play. No need for an IT expert!
2. Expand your network instantly, and give your devices either 100Mb, 1G, 2.5G or 10-Gigabit, automatically
3. Silent desktop or rackmount form factor for quiet operation – Adapts to your needs and configuration in any environment
4. Energy efficient switches that automatically adjust power consumption according to the link status and cable length.

Structure Diagrams

SP5220-8PXE1TF-8BT

8(10/100/1000/2500M)
PoE++ RJ45 Ports

1(1.25G/2.5G/10G)
SFP+ Slots

380W
Total PoE Availability

Ground screw

100~240V 50/60Hz

Power Input

440mm(17.32in)

190mm
(7.48in)

44.5mm
(1.75in)

Structure Diagrams

Technical Specifications	SP5220-8PXE1TF-8BT
10M/100M/1G/2.5 RJ-45 copper ports	8
PoE / PoE+/PoE++ ports	8 PoE++
1G/2.5G/10G SFP+ (fiber) ports	1
Power over Ethernet	
PoE Standard	IEEE 802.3bt Power over Ethernet Plus Plus/PSE Backward compatible with IEEE 802.3at Power over Ethernet Plus/PSE Backward compatible with IEEE 802.3af Power over Ethernet
PoE Power Supply Type	End-span: 1/2/4/5 (+), 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	380 Watts
Number of PDs, 80 watts	4
Number of PDs, 60 watts	6
Number of PDs, 40 watts	8
Number of PDs, 30 watts	8
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	4.2 Mb
Forwarding modes	Store and Forward(Full Wire Speed)
Bandwidth	80 Gbps
Packet forwarding rate (64 byte packet size) (Mpps)	44.64Mpps
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	112,213 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; 3.645µs; 3.728µs
2.5G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.132µs; 3.245µs; 3.328µs
10G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.831µs; 2.995µs; 3.012µs

IEEE Network Protocols	SP5220-8PXE1TF-8BT
• IEEE 802.3 Ethernet	• IEEE 802.3ae 10G BASE-X
• IEEE 802.3u 100BASE-T	• IEEE 802.3af PoE
• IEEE 802.3ab 1000BASE-T	• IEEE 802.3at PoE+
• IEEE 802.3z 1000BASE-SX/LX	• IEEE 802.3az Energy Efficient Ethernet (EEE)
• IEEE 802.3bz 2.5GBASE-T	• 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 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)	400W
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	15W
Iddle power consumption (all ports link-down standby) (Watts)	12W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	Fanless

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 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

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CE FC **SP5220-8PXE1TF-8BT**