

# SECURE, COMPACT AND CLOUD-CONNECTED DEVICES WITH A TOP SPEED OF 40PPM



## i-SENSYS MF460 Series

The i-SENSYS MF460 Series consists of multifunction black & white laser printers designed for small businesses.



**PROTECT  
DOCUMENTS**



**BOOST  
PRODUCTIVITY**



**INTUITIVE USER  
EXPERIENCE**



**COLLABORATE IN  
THE CLOUD**

### Protect documents

Protect your documents, device and network with 360-degree security. Features include TLS1.3, Verify System at Startup, Secure PIN print

### Boost productivity

Save valuable time with print speeds of up to 40ppm, scanning speeds of 100ipm and a warm-up time of 14 seconds. Meet demand by using Universal Print to access your device from anywhere.

### Intuitive user experience

Easily carry out print and scanning jobs with one-touch Application Library buttons. Drag & Drop icons allow you to customise the display screen and perform routine tasks seamlessly.

### Collaborate in the cloud

Harness the power of the cloud with built-in connectivity to cloud storage services including Google Drive, DropBox, and OneDrive.

# Canon

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RANGE FEATURE STEP UP CHART



MF461dw



MF463dw



MF465dw

Fax			●
A4 print speed	36ppm	40ppm	40ppm
Display	12.7cm colour touch screen	12.7cm colour touch screen	12.7cm colour touch screen
Secure PIN print	●	●	●
Duplex printing	●	●	●
Built-in cloud connectivity	●	●	●
Application Library	●	●	●
Single Pass Duplex Scan	●	●	●
Wireless connectivity	●	●	●

TECHNICAL SPECIFICATIONS

Machine type	Mono Laser All-in-One
Available functionsw	MF465dw: Print, Copy, Scan and Fax MF463dw/MF461dw: Print, Copy, Scan
PRINTER	
Print speed	MF465dw/MF463dw: Single sided : Up to 40 ppm (A4) Up to 65.4 ppm(A5-Landscape) Double sided : Up to 33.6 ipm (A4) MF461dw: Single sided : Up to 36 ppm (A4) Up to 58.8 ppm(A5-Landscape) Double sided : Up to 30.2 ipm (A4)
Printing method	Monochrome laser beam printing
Print resolution	Up to 1200 x 1200 dpi
Warm-up time	Approx. 14 seconds or less from power on
First Print Out Time	Approx: 5.0 seconds or less
Printer languages	UFRII, PCL 5e², PCL6, Adobe® PostScript³
Fonts	45 PCL fonts 136 PostScript fonts
Print margins	5 mm-top, bottom, left and right 10 mm-top, bottom, left and right (Envelope)
Toner saver mode	Yes
Advanced printing features	Encrypted Secure Print Secure Print Print from USB memory key (JPEG/TIFF/PDF) Print from Cloud (Dropbox, GoogleDrive, OneDrive) (PDF/JPEG) Microsoft Universal Print iOS: AirPrint, Canon PRINT Business app Android: Mopria certified, Canon PRINT Business app, Canon Print Service Plug-in
COPIER	
Copy speed	MF465dw/MF463dw: Single sided (A4): Up to 40 ppm Double sided (A4): Up to 33.6 ipm MF461dw: Single sided (A4): Up to 36 ppm Double sided (A4): Up to 30.2 ipm
First Copy Output Time (FCOT)	Approx. 6.1 seconds or less
Copy resolution	Up to 600 x 600 dpi
Copy modes	Text/Photo, Text/Photo (High speed), Photo, Text
Double sided copying	1-sided to 2-sided (Automatic)
Multiple copy	Up to 999 copies
Reduction / Enlargement	25-400% in 1% increments
Other features	Collate Copies, 2 on 1, 4 on 1, ID card copy, Passport copy
SCANNER	
Type	Colour
Scan resolution	Optical: Up to 600 x 600 dpi Enhanced: Up to 9600 x 9600 dpi
Scan speed	Single sided mono: 50ipm (300x300dpi) Single sided colour: 40ipm (300x300dpi) Double sided mono: 100ipm (300x300dpi) Double sided colour: 80ipm (300x300dpi) Single sided mono: 40ipm (300x600dpi) Single sided colour: 20ipm (300x600dpi) Double sided mono: 80ipm (300x600dpi) Double sided colour: 40ipm (300x600dpi)
Colour scanning depth	24 bit/24 bit (input/output)
Greyscales	256 levels
Compatibility	TWAIN, WIA
Max. scan width	216mm
Scan to E-mail	TIFF/JPEG/PDF/Compact PDF/Searchable PDF/PDF A-1b
Scan to PC	
Interface and connectivity	TIFF/JPEG/PDF/PNG¹
Scan to USB memory key	
Scan to FTP	ITU-T.37
Scan to Cloud¹	
IFAX	
FAX	MF465dw ONLY
Modem speed	33.6 Kbps (Up to 3 seconds/page²)
Receive mode	Fax only, Fax/Tel Auto Switch, Answer Mode, Manual
Fax resolution	Normal: 200 x 100 dpi Fine: 200 x 200 dpi Photo: 200 x 200 dpi Super fine: 200 x 400 dpi
FAX memory	Up to 256 pages³
Speed dials	Up to 104 dials
Group dials/destinations	Max. 50 destinations in one group
Sequential broadcast	Max. 114 destinations
Memory backup	Permanent fax memory backup (Backup with flash memory)
Double sided faxing	Yes (Transmit and Receive)
Other features	Sender's Name (TTI), Direct Send, TX Report, Sequential Broadcasting
MEDIA HANDLING	
Scanner type	Platen, 2-sided ADF (single pass)
Paper input (Standard)	250-sheet cassette 100-sheet multi-purpose tray 50-sheet ADF
Paper input (Option)	550-sheet cassette
Maximum paper input capacity	900 sheets
Paper output	150-sheet
Media types	Plain paper, Recycled paper, Heavy Paper, Thin paper, Label, Post card, Envelope

Media sizes	Cassette (Standard and optional): A4, A5, A5 (Landscape), A6, B5, Legal, Letter, Executive, Statement, OFFICIO, B-OFFICIO, M-OFFICIO, GLTR, GLGL, Foolsap, 16K, Custom sizes: Min. 105 x 148 mm Max. 216.0 x 355.6 mm. Multi-purpose tray: A4, A5, A5 (Landscape), A6, B5, Legal, Letter, Executive, Statement, OFFICIO, B-OFFICIO, M-OFFICIO, GLTR, GLGL, Foolsap, 16K, Indexcard, Envelope (COM10, Monarch, C5, DL) Custom sizes: Min 76.2 x 127 mm Max. 216.0 x 355.6 mm. ADF: A4, A5, A6, B5, Legal, Letter, Statement, Custom sizes: Min. 48 x 85.0 mm Max 216 x 355.6 mm
Media weights	Cassette (standard and optional): 60 to 120 g/m² Multi-purpose tray: 60 to 199 g/m² ADF: 60 to 120 g/m²
Double sided printing	A4, Legal, Letter, OFFICIO, B-OFFICIO, M-OFFICIO, GLGL, Foolsap Custom size - Min. 210 x 279.4 mm Max. 216.0 x 355.6 mm 60 to 120 g/m²
INTERFACE & SOFTWARE	
Interface type	USB 2.0 Hi-Speed, 10BASE-T/100BASE-TX/1000Base-T, Wireless 802.11b/g/n, Wireless Direct Connection
Operating System compatibility	Windows® 11 / Windows® 10 / Server® 2022 / Server® 2019 / Server® 2016 / Server® 2012R2 / P Server¹ 2012 Mac OS X version 10.13 & up Linux⁴
Network Protocol	Print: TCP/IP (LPD/Port9100/IPP/IPPS/WSD) Scan: Push Scan: File: FTP (TCP/IP), SMB3.0 (TCP/IP) E-mail/I-Fax: SMTP (TCP/IP) (send), POP3 (receive) Pull Scan: TCP/IP Management: SNMPv1, SNMPv3 (IPv4,IPv6) Security: TLS1.3, IPsec, IP address filtering, IEEE802.1X, SNMPv3, SSL (HTTPS, IPPS) Security (wireless): Infrastructure Mode: WEP(64/128 bit), WPA-PSK(TKIP/AES), WPA2-PSK (TKIP/AES), WPA-EAP(AES), WPA2-EAP(AES) Access Point Mode: WPA2-PSK(AES)
Software and printer management	MF Scan Utility, Remote User Interface (RUI), Department ID Management, Toner Status Tool, iW Enterprise Management Console: Server-based software for centralised management of a fleet of devices eMaintenance: embedded RDS allows remote eMaintenance services such as meter capture, automatic consumables management and remote diagnostics Application Library
GENERAL FEATURES	
Recommended Monthly Print Volume	750 - 4,000 pages per month
Duty cycle	Max. 80,000 pages per month⁵
Processor Speed	1200MHz
Memory	1GB
Storage	4GB eMMC
Control panel	12.7 cm LCD Colour Touch Screen
Dimensions with trays (W x D x H)	420 mm x 460 mm x 375 mm
Installation space (W x D x H)	689 mm x 1,081 mm x 824 mm
Weight	Approx. 16.3 Kg
Operating environment	Temperature: 10 to 30°C (50 to 86°F) Humidity: 20 to 80% RH (no condensation)
Power Source	220-240V(±10%) 50/60Hz (±2Hz)
Power Consumption	Maximum: Approx. 1.280 W Active printing: Approx. 480W Standby: Approx. 8 W Sleep mode: Approx. 0.9 W Typical Electricity Consumption (TEC): MF465dw/MF463dw: 0.32 kWh/week (230V)⁶ MF461dw: 0.31 kWh/week (230V)⁶ For detailed information relating to Lot26 regulation, please go to: <a href="http://www.canon-europe.com/For_Work/Lot26/index.aspx">http://www.canon-europe.com/For_Work/Lot26/index.aspx</a>
Noise Levels	Sound Pressure⁷ : MF465dw/MF463dw: Active: 53 dB Standby: Inaudible⁸ MF461dw: Active: Simplex 53dB / Duplex 52dB Standby: Inaudible⁷ Sound Power⁷: Active: Duplex 68dB / Simplex 67dB Standby: Inaudible⁸
CONSUMABLES	
Cartridges	Cartridge 070 (3,000 pages⁹)¹⁰ Cartridge 070H (10,200 pages⁹)¹⁰
ACCESSORIES/ OPTIONS	
Items	CST.Feeding Module-AH1 (550-sheet cassette) MF465dw ONLY TEL 6 Kit Long Cord (Telephone handset)

Notes:

- [1] Subscription to a third party cloud service is required, and subject to their party terms and conditions.
- [2] A Canon PCL5e driver is not supplied, however PCL5e commands are supported on the device.
- [3] Scan by MF Scan Utility or Canon PRINT Business
- [4] Based on ITU-T Standard Chart No. 1
- [5] Linux support both printing and scanning
- [6] Duty cycle is defined as the maximum number of printed pages for a single peak month. Any usage above the recommended duty cycle may decrease the life of the product
- [7] Declared noise emission in accordance with ISO 9296
- [8] Inaudible means that the emission sound pressure level for a bystander is lower than absolute standard for background noise in accordance with ISO 7779
- [9] Based on ISO/IEC 19752
- [10] Printer ships with Cartridge 070 (3,000 pages)
- [11] As per US ENERGY STAR® version3.0.



# SECURE, COMPACT AND CLOUD-CONNECTED DEVICES WITH A TOP SPEED OF 40PPM

The i-SENSYS MF460 Series consists of multifunction black & white laser printers designed for small businesses.



PRODUCT DETAILS:

PRODUCT NAME	Mercury Code	EAN Code
i-SENSYS MF465dw	5951C007AA	4549292214901
i-SENSYS MF463dw	5951C008AA	4549292214918
i-SENSYS MF461dw	5951C020AA	4549292221299

ACCESSORIES

PRODUCT NAME	Mercury Code	EAN Code
Cassette Feeding Module-AH1	0732A033BA	4549292092769
Telephone 6 Kit EU (CW)	0752A054AA	4960999453910

CONSUMABLES:

PRODUCT NAME	Mercury Code	EAN Code
Cartridge 070	5639C002AA	4549292197839
Cartridge 070 H	5640C002AA	4549292198041

Canon Inc.  
canon.com

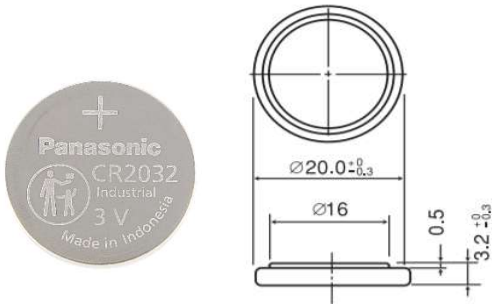
Canon Europe  
canon-europe.com

English edition  
© Canon Europa N.V.,2024



# CR2032

## CR Coin-type Lithium Battery



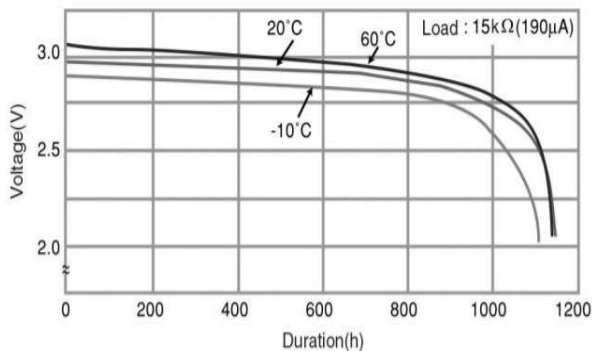
## Features & Benefits

- Offers high-rate pulse discharge
- Available in a range of compact sizes and capacities, from thin-type to high-capacity models
- Excellent low-temperature performance enhanced by manganese-dioxide positive pole

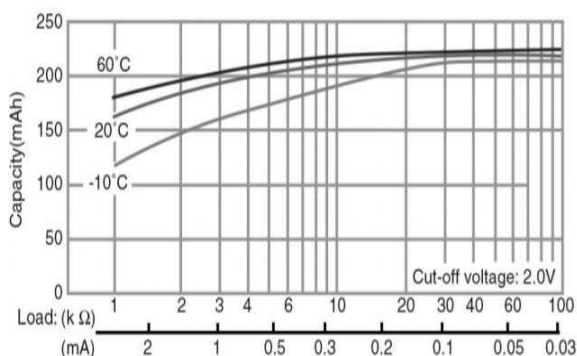
## Applications

Remote keyless entry, Card remote controls, memory backup, security price tags, smart transmitter tags and others.

### Discharge temperature characteristics



### Capacity vs. load resistance



## Specifications

Nominal voltage		3V
Nominal capacity		225mAh
Continuous drain		0.2mA
Dimensions* 1	Diameter(Max.)	20.0mm
	Height(Max.)	3.2mm
Weight*1		Approx. 2.8g
Operating temperature*2		-30°C to +85°C

\*1 Without tabs.

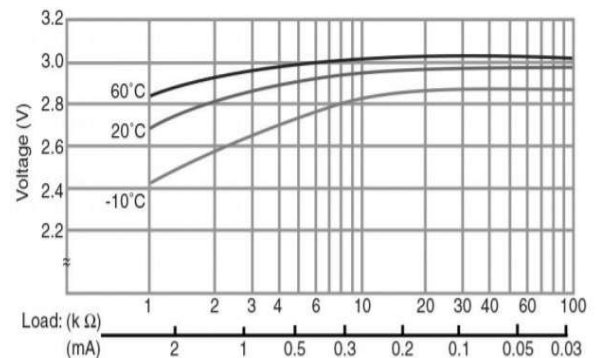
\*2 Please consult Panasonic when anticipating usage in operating temperatures of 70°C or above.

## Terminal types

Please see the documents for the terminal and lead wire settings.

- [Line up of tab terminal types\(by shape\)](#)
- [Line up of tab terminal types\(by product number\)](#)

### Operating voltage vs. load resistance (voltage at 50% discharge depth)



**Panasonic Energy Co., Ltd.**

<https://industrial.panasonic.com/ww/products/pt/lithium-batteries>


As of May, 2024. Panasonic offers batteries with tabs or lead wires. This data in this document is for descriptive purposes only and is not intended to make or imply any guarantee or warranty. The contents of this product information are subject to change without notice.





# Dell Pro 24 All-in-One 35W thin client solution

QC24251

 Built for seamless collaboration and optimized for Dell cloud client solutions

# Thin client solution built for seamless collaboration

Work in comfort and in style. This space-saving All-in-One with built-in camera, mics and speakers can optimize productivity and collaboration for a variety of workstyles. Whether you are in hospitality, retail, healthcare or another sector, experience confident and seamless access to virtual desktops and Desktop-as-a-Service environments.

## Responsive, business-class performance

Engineered to increase your productivity with Intel® Core™ up to i5 processors when configured with Dell ThinOS or Windows 11 IoT Enterprise.

## Next-level video conferencing

Connect like you're there with an FHD HDR (High Dynamic Range) webcam that automatically adjusts so users look clear in any lighting environment.

## Work comfortably

Choose the right set-up for your needs with 24" FHD touch or non-touch TÜV Rheinland certified low blue light displays<sup>2,3</sup>, with the choice of fixed or height-adjustable stands.

## Secure access to digital and virtual workspaces

Versatile thin client operating system options and centralized control from Wyse Management Suite. Configure your Dell Pro 24 All-in-One with Dell ThinOS or Windows 11 IoT Enterprise to power your VDI environment with a smarter user experience, stronger security and easier IT management.

## Most secure thin client solution with Dell ThinOS<sup>1</sup>

No sensitive data or personal information exposed on the local device. With a closed architecture, system hardening to limit attack surfaces, unpublished APIs, and encrypted data and files exclusively packaged by Dell, ThinOS is virus and malware-resistant.

## High-speed productivity

Up to 512GB M.2 Gen 4 SSD and up to 32GB DDR5 RAM with up to 5600 MT/s speeds.

Comprehensive connectivity including USB-C, USB-A, DP and HDMI ports. DP ports support up to 5K resolution for stunning visual quality.

## Fuel productivity with a complete Dell ecosystem

Designed and tested with Dell Accessories, Mounts and Stands, and Monitors from the world's #1 monitor company<sup>4</sup>.

## Intentional material choices

- Built with up to 54% recycled plastic<sup>9</sup>
- Up to 100% recycled or renewable packaging<sup>10</sup>

## Meets the latest environmental standards

Certified ENERGY STAR®, carries TCO certification and EPEAT Gold registered with Climate+ designation<sup>8</sup>.

## APEX and services

Experience the world's first and most comprehensive as-a-service portfolio with Dell APEX<sup>7</sup>.

## Simplify IT

Streamline PC fleet management with one unified BIOS across Dell Pro All-in-One PCs<sup>5</sup>.

Two year PC refresh lifecycle for managed transitions help reduce maintenance and support costs.

## Trusted reliability

Dell Pro desktops are built for reliability and durability, with less than 1% requiring service in their first year<sup>6</sup>.



# Sustainable innovation



## Sustainable materials

Built with up to 54% recycled plastic including closed-loop ITE derived plastic<sup>1</sup>. Plus, there is 16% recycled glass in the panel<sup>1</sup>.



## Packaging

These products ship in packaging made with up to 100% recycled or renewable content<sup>2</sup>.



## Built to last

Built with high-quality components, Dell Pro desktops drive top performance and value throughout its lifecycle. Dell makes it simple to access and replace parts to get the most life out of our products.

[Parts & upgrades >](#)



## Seamlessly modernize your tech

We can help you refresh to the latest technology while responsibly retiring your devices, regardless of brand, while addressing your sustainability goals.

[Asset recovery services >](#)



## Meets the latest environmental standards

These products are certified TCO, ENERGY STAR® and EPEAT Gold registered with Climate+<sup>3</sup>.



# Elevate your thin client experience

Fuel productivity and collaboration with a complete Dell ecosystem that is engineered and tested for a seamless experience with your Dell Pro 24 All-in-One.



## Purpose-built, integrative design

Work in comfortable style and create a seamless multi-display workspace with a choice of matching stands and Dell displays. Experience all-day productivity with ergonomic features like tilt, swivel and 90-degree rotation and Low Blue Light-certified touch and non-touch displays<sup>1,2</sup>.

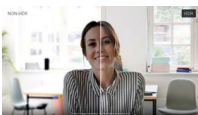
A. Dell Pro 24 All-in-One Basic Stand

B. Dell Pro 24 All-in-One Height Adjustable Stand

## Enhance collaboration

### Look your best

Look great, even in high-contrast lighting, with the FHD HDR camera. High dynamic range (HDR) technology automatically adjusts clarity in any lighting environment including low light, direct sunlight or high contrast lighting conditions with greater tonal range. And, when you're ready for privacy, simply push the pop-up camera down to hide it.



### Discover high-quality audio

Choose smart collaboration with select models offering the longest listening time of up to 80 hours in its class<sup>3</sup>, enabling focused work anywhere you go.



## More advanced drop-in-box options

Ensure same-time delivery and easy setup with Dell drop-in-box wireless keyboards and combos. Dell wireless keyboards offer up to 36 months of battery life for long-term performance<sup>4</sup>. Select models include silent keys for quiet, focused typing in open office environments.



# Your thin client solution in 3 easy steps

Meet the evolving needs of the workforce and increase efficiency without compromising on security with Cloud Client Workspace software and Dell thin client solutions. Pair our thin client software options with industry-leading Dell Pro systems for a personalized VDI endpoint solution delivering smarter user experiences and stronger security.

## 1 Select the Thin Client Software

### Dell ThinOS<sup>1</sup>

The most secure thin client OS\* is purpose-built for VDI to deliver a simplified end-user and IT experience.

[Learn more >](#)

### Windows 11 IoT Enterprise LTSC<sup>1</sup>

Power and familiarity of Windows® in a thin client optimized by Dell with robust security features and flexible management options.

[Learn more >](#)

## 2 Choose a Form Factor

Laptop, All-in-One and desktop form factor options give you the freedom to create a personalized virtual workspace. Work in confidence anywhere and enable a more productive and collaborative VDI experience with our new premium devices<sup>2</sup>.



**OptiPlex 3000 Thin Client**

The OptiPlex 3000 Thin Client delivers a quiet, durable computing experience and makes it easier to multi-task.



**Dell Pro 24 All-in-One**  
(QC24251) [35W]

Sleek, space-saving All-in-One thin client solution that combines performance with collaboration features.



**Dell Pro 14**  
(PC14250)

Work confidently with this reliable laptop equipped with essential performance features.



**Dell Pro 16 Plus<sup>3</sup>**  
(PB16250)

Boost productivity with a large 16" display and a numeric keypad for data entry accuracy.

## 3 Add Wyse Management Suite Pro

An enterprise-class solution that provides modern and secure management of all your Dell thin client solutions from anywhere. Securely manage a distributed workforce with a hybrid cloud solution designed to meet all deployment levels.

[Click here to learn more about Cloud Client Workspace.](#)

\* Based on Dell analysis of Dell ThinOS in Appliance Mode vs. competitive products, January 2025. CLM-006980

<sup>1</sup> Offering may vary by country and by configuration and operating system. Some items may be available after product introduction.

<sup>2</sup> Product images are not to scale. Refer to specifications for accurate measurements

<sup>3</sup> ThinOS 10 is a customer install option available for select configuration options and capabilities of the Dell Pro 16 Plus. ThinOS 10 can be manually installed from a USB key or deployed to units shipped with factory-installed Ubuntu 24.04 for Managed Clients. The required ThinOS 10 subscription license is sold separately.

# Simplify client refresh with Dell Services

Enabling every step of the PC lifecycle

## Dell Technologies APEX

# 1st

**and most comprehensive<sup>1</sup>**

As-a-service portfolio that spans from multi-cloud to client devices.

Experience the flexibility to transform your IT and deploy the latest technologies at predictable costs.

### Dell APEX PC-as-a-Service<sup>2</sup>

Fully customizable monthly subscription that can include PCs, peripherals, software and services with no upfront investment.


[Dell APEX PC-as-a-Service \(PCAAS\) >](#)

## ProDeploy Client Suite

PC refresh starts with getting new devices in the hands of your end-users. Dell ProDeploy Suite streamlines operations and increases productivity with configured PCs that are ready to use on day one with dynamic cloud-based provisioning and imaging.

When transitioning from old to new technology, ProDeploy Plus includes the ability to securely erase sensitive end-user data with sophisticated tools to sanitize devices and includes Asset Recovery Services for responsible retirement.

[Dell ProDeploy Client Suite >](#)



Modern  
Lifecycle  
Solutions

## Dell Premier

# 324%

**ROI over 3 years<sup>4</sup>**

Modernize IT purchasing by shopping your catalog in a tailored online solution. Gain control over the entire IT ecosystem to cut costs, standardize ordering, access analytics and more.

[Dell Premier >](#)

## Asset Recovery Services

# 2.8B

**Pounds of electronics recovered through all recovery programs since 2007<sup>3</sup>**

Let Dell help you securely and responsibly retire your old IT equipment - regardless of brand - to allow for a seamless transition from old to new technology, while protecting both your business and the planet.

[Asset Recovery Services >](#)

## ProSupport Suite for PCs

ProSupport Suite is more than a 24/7 break-fix solution, it's a set of tools that automate and optimize your environment with little to no human intervention or end-user disruption.

Select from a robust library of Dell-authored scripts that correct company-wide issues quickly, minimizing remediation times and maintaining peak system performance. ProSupport Suite provides telemetry-driven data to arm IT with insights and make targeted updates, all controlled from a single dashboard.

[ProSupport Suite for PCs >](#)

# Work your way

This space-saving All-in-One with built-in camera, mics and speakers can optimize productivity and collaboration for a variety of workstyles. Whether you are in hospitality, retail, healthcare or another sector, maximize the efficiency of your virtual environment and empower teams to perform at their best with our Dell Pro 24 All-In-One thin client solution.



[Explore 360 view >](#)

Feature	Dell Pro 24 All-In-One 35W (QC24251)
Processor	Up to Intel® Core™ i5 processors (35-Watt) (14th Gen)
Chassis color options	Dark Grey
Stand options	Fixed stand or Height adjustable stand
Camera	FHD HDR (High Dynamic Range) camera
Speakers	2 x 2 Watt audio
Graphics	Integrated Graphics
Memory	Up to 32GB DDR5 memory
Storage	1 M.2 slot with up to 512GB SSD
Power supply	External Power Adapter
Native USB ports	6 USB ports (includes 1 USB-C port)
Native video ports	1 DisplayPort++ 1.4a port supporting up to 5K resolution at 60 Hz
Service terms	1 year



Not All Technical Specifications Available Per System Configuration.

[Please search Dell.com/support for product owner's manual or contact your Dell Technologies sales expert.](#)

FEATURE	TECHNICAL SPECIFICATION
<b>PRODUCT NAME</b>	Dell Pro 24 All-In-One 35W
<b>MODEL IDENTIFIER</b>	QC24251
<b>CHASSIS<sup>1</sup></b>	Dark Grey
<b>THIN CLIENT OPERATING SYSTEM OPTIONS<sup>1,2</sup></b>	Dell ThinOS 10 Windows 11 IoT Enterprise LTSC 2024
<b>DISPLAY<sup>1</sup></b>	23.81", FHD 1920x1080, 1500:1 contrast ratio, 100 Hz refresh rate, IPS, Non-touch, Anti-Glare, 250 nit, 99% sRGB, ComfortView Plus 23.81", FHD 1920x1080, 1000:1 contrast ratio, 75 Hz refresh rate, IPS, Touch, Anti-Glare, 300 nit, 99% sRGB, ComfortView Plus
<b>PROCESSOR OPTIONS<sup>1</sup></b>	Intel® Core™ 300T (2 cores, up to 3.4G Hz) Intel® Core™ i3 14100T (4 cores, up to 4.4 GHz) Intel® Core™ i5 14500T (14 cores, up to 4.8 GHz) Intel® Core™ i5 14600T (14 cores, up to 5.1 GHz)
<b>MEMORY OPTIONS<sup>1,2</sup></b>	For Intel® Core™ i5-14600T: 8 GB, 1 x 8 GB, DDR5, 5600 MT/s, single-channel 16 GB, 2 x 8 GB, DDR5, 5600 MT/s, dual-channel 16 GB, 1 x 16 GB, DDR5, 5600 MT/s, single-channel 32 GB, 2 x 16 GB, DDR5, 5600 MT/s, dual-channel 32 GB, 1 x 32 GB, DDR5, 5600 MT/s, single-channel For Intel® 300T/Intel® Core™ i3-14100T/Intel® Core™ i5-14500T 8 GB: 1 x 8 GB, DDR5, 4800 MT/s, single-channel 16 GB: 2 x 8 GB, DDR5, 4800 MT/s, dual-channel 16 GB: 1 x 16 GB, DDR5, 4800 MT/s, single-channel 32 GB: 2 x 16 GB, DDR5, 4800 MT/s, dual-channel 32 GB: 1 x 32 GB, DDR5, 4800 MT/s, single-channel
<b>STORAGE OPTIONS<sup>1,3</sup></b>	HDD: None  SSD: 512 GB SSD 256 GB SSD
<b>CHIPSET<sup>1</sup></b>	Intel® Q670
<b>GRAPHICS OPTIONS</b>	Integrated: Intel® Q670
<b>PORTS</b>	Right: 1 USB 3.2 Gen 2 (10 Gbps) port with PowerShare  Left: 1 Global headset jack  Below Display: 1 USB 3.2 Gen 2 (10 Gbps) Type-C® port  Back panel: 2 USB 3.2 Gen 1 (5 Gbps) ports 2 USB 2.0 ports with SmartPower On 1 DisplayPort++ 1.4a/HDCP 2.3 port 1 RJ-45 Ethernet Port (1 Gbps)
<b>SLOTS</b>	Energy Efficient (35W): 1 M.2 2230 slot for Wi-Fi and Bluetooth combo card 1 M.2 2230/2280 slot for solid-state drive 1 SD-card slot 1 security-cable slot (3 mm x 7 mm, T-Bar design)
<b>WIRELESS OPTIONS</b>	Intel® Wi-Fi 6E AX211, 2x2, 802.11ax, MU-MIMO, Bluetooth® 5.3 wireless card MediaTek Wi-Fi 6 MT7920, 2x2, 802.11ax, MU-MIMO, Bluetooth® 5.4 wireless card – coming soon Intel® Wi-Fi 7 BE200, 2x2, 802.11be, MU-MIMO, Bluetooth® 5.4 wireless card Card (Wi-Fi 7 feature support for ThinOS 10 is coming soon)
<b>CAMERA &amp; MICROPHONE<sup>1</sup></b>	1920 x 1080 at 30 fps FHD RGB camera, Dual-array microphones
<b>AUDIO &amp; SPEAKERS<sup>1</sup></b>	Internal stereo speakers with Realtek ALC3204, 2W x 2 = 4W total
<b>POWER</b>	35W External AC adapter (130W/180W 7.4mm barrel)
<b>DIMENSIONS</b>	Height (Front): 13.95 in. (354.30 mm) Height (Rear): 13.95 in. (354.30 mm) Width: 21.26 in. (540 mm) Depth: 2.28 in. (57.90 mm) Starting weight (Fixed stand): 15.69 lb (7.12 kg) Maximum Weight (Fixed stand): 18.57lb (8.43 kg) Starting weight (HAS stand): 17.83 lb (8.09 kg) Maximum Weight (HAS stand): 20.71 lb (9.40 kg) Starting weight (without stand): 11.49 lb (5.22 kg) Maximum Weight (without stand): 14.38 lb (6.53 kg)



Leading the industry in sustainable practices to reduce the environmental impact of our products and packaging.

Learn more: <https://www.dell.com/en-us/lp/dt/sustainable-devices>

FEATURE	TECHNICAL SPECIFICATION	
<b>MODEL NUMBER<sup>1</sup></b>	Dell Pro 24 All-In-One 35W	
<b>SUSTAINABLE MATERIALS<sup>1</sup></b>	Post-consumer recycled plastic (PCR) and closed loop ITE derived plastic – chassis: 52% Recycled or renewable packaging materials: up to 100%	
<b>ECO-LABELS<sup>1</sup></b>	EPEAT Climate+: EPEAT Gold with Climate+ TCO Certified: Yes	EPEAT: Gold Energy Star: Yes
<b>MULTI-PACK SHIPPING<sup>1</sup></b>	Dell Multi-pack: N/A	
<b>ASSET RECOVERY SERVICES<sup>5</sup></b>	Asset Recovery Services: Yes	
<b>GLOBAL COMPLIANCE</b>	US CEC MEPS compliant configurations available Australia and New Zealand MEPS compliant configurations available CEL WEEE Japan Energy Law South Korea E-standby EU RoHS China RoHS	
<b>REGULATORY<sup>4</sup></b>	<a href="#">Product Safety, EMC and Environmental Datasheets</a> <a href="#">Dell Regulatory Compliance Home Page</a> <a href="#">Dell and the Environment</a>	

## Product Disclaimers/Citations

### Page 2 (Product wheel)

1. Based on Dell analysis of Dell ThinOS in Appliance Mode vs. competitive products, January 2025.
2. Dell Pro 24 All-in-One 65W and Dell Pro 24 All-in-One Plus: Global (except China): TÜV Rheinland Certified (ID#1111265308 - Low Blue Light Content). China only: TÜV Rheinland Certified (ID#0000084862 - Low Blue Light Content). For more details, visit [www.tuv.com](http://www.tuv.com).
3. Dell Pro 24 All-in-One 35W: Global (except China): TÜV Rheinland Certified (ID#1111265309 - Low Blue Light Content). China only: TÜV Rheinland Certified (ID#0000084863 - Low Blue Light Content). For more details, visit [www.tuv.com](http://www.tuv.com).
4. Dell is the world's #1 monitor company. Source: IDC Worldwide Quarterly PC Monitor Tracker, Q4 2024.
5. Dell Pro All-in-One PCs with Intel® processors.
6. Source: Based on Dell Quality Intelligence (Qi) too - Dell Internal Analysis, January 2025.
7. Based on Dell Analysis, April 2024.
8. EPEAT Gold Registration with Climate+ and TCO certification apply to the Dell Pro 24 All-in-One 35 watt and Dell Pro 24 All-in-One Plus. Dell Pro 24 All-in-One 65 watt is EPEAT Silver registered with Climate+ Based on internal analysis, February 2025. EPEAT registered where applicable. EPEAT registration varies by country. See [www.epeat.net](http://www.epeat.net) for registration status by country. TCO certification with select Windows 11 IoT Enterprise configurations only (not available with ThinOS. Energy Star with Windows 11 IoT Enterprise and Dell ThinOS configurations coming soon.
9. Based on internal analysis, January 2025. Percentage is based on system plastic weight. Post-consumer recycled plastic: up to 43%, Closed-Loop ITE derived plastic: up to 11%.
10. Contains up to 96.3% recycled content and up to 41.5% renewable materials. Renewable materials in the form of sustainably forested materials. Percentages may vary slightly by region [and formfactor]. Excludes optional items added to order and included in the box.

### Page 3 (Sustainable Innovation)

1. Based on internal analysis, January 2025. Percentage is based on system plastic weight. Post-consumer recycled plastic: up to 41%, Closed-Loop ITE derived plastic: up to 11%. Recycled glass is in the panel.
2. Contains up to 96.3% recycled content and up to 41.5% renewable materials. Renewable materials in the form of sustainably forested materials. Percentages may vary slightly by region [and formfactor]. Excludes optional items added to order and included in the box.
3. EPEAT Gold Registration with Climate+ and TCO certification apply to the Dell Pro 24 All-in-One 35 watt and Dell Pro 24 All-in-One Plus. Dell Pro 24 All-in-One 65 watt is EPEAT Silver registered with Climate+ Based on internal analysis, February 2025. EPEAT registered where applicable. EPEAT registration varies by country. See [www.epeat.net](http://www.epeat.net) for registration status by country. TCO certification with select Windows 11 IoT Enterprise configurations only (not available with ThinOS. Energy Star with Windows 11 IoT Enterprise and Dell ThinOS configurations coming soon.

### Page 4 (Elevate your thin client experience)

1. Dell Pro 24 All-in-One 65W and Dell Pro 24 All-in-One Plus: Global (except China): TÜV Rheinland Certified (ID#1111265308 - Low Blue Light Content). China only: TÜV Rheinland Certified (ID#0000084862 - Low Blue Light Content). For more details, visit [www.tuv.com](http://www.tuv.com).
2. Dell Pro 24 All-in-One 35W: Global (except China): TÜV Rheinland Certified (ID#1111265309 - Low Blue Light Content). China only: TÜV Rheinland Certified (ID#0000084863 - Low Blue Light Content). For more details, visit [www.tuv.com](http://www.tuv.com).
3. Based on Dell analysis (busy light and ANC off mode) of battery life usage, July 2024. Results vary depending on use, operating conditions and other factors. Applies only to Dell Pro Premium Wireless Headset – WL7024.
4. Based on Dell analysis, January 2025.

### Page 6 (Simplify Client refresh with Dell Services)

1. Based on Dell internal analysis, April 2023.
2. Payment solutions provided and serviced by Dell Financial Services L.L.C. or its affiliate or designee ("DFS") for qualified customers. Offers may not be available or may vary in certain countries. Where available offers may be changed without notice and are subject to product availability, applicable law, credit approval, documentation provided by and acceptable to DFS and may be subject to minimum transaction size. Offers not available for personal, family or household use. Dell Technologies and the Dell Technologies logo are trademarks of Dell Inc. Restrictions and additional requirements may apply to transactions with governmental or public entities. At the end of the contract, the customer may renew the contract or return the equipment to DFS.
3. Dell Technologies has recovered 2.8 billion pounds of electronics since 2007. Source: Based on Dell internal analysis of publicly available data, April 2023.
4. Based on a Forrester Total Economic Impact™ Study Commissioned by Dell Technologies and AMD, "The Total Economic Impact™ Of Dell Premier," February 2024. Full study: The Total Economic Impact™ of Dell Premier.

**Technotes:**

1. Offering may vary by region. Some items may be available after product introduction. For complete details, refer to the Owner's Manual published on [www.dell.com/support](http://www.dell.com/support).
2. System Memory and Graphics: Significant system memory may be used to support graphics, depending on system memory size and other factors.
3. 4GB or Greater System Memory Capability: A 64-bit operating system is required to support 4GB or more of system memory.
4. Particular versions of Microsoft Windows may not support the full Bluetooth 5.0 functionality.
5. Storage Option: GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.
6. TPM is available in selected regions.
7. Please refer to [www.epeat.net](http://www.epeat.net) for specific country registration rating and participation.
8. Limited Hardware Warranty: For copy of Ltd Hardware Warranty, write Dell USA LP, Attn: Warranties, One Dell Way, Round Rock, TX 78682 or see [www.dell.com/warranty](http://www.dell.com/warranty).
9. Onsite service after Remote Diagnosis: Remote Diagnosis is determination by online/phone technician of cause of issue; may involve customer access to inside of system and multiple or extended sessions. If issue is covered by Limited Hardware Warranty ([www.dell.com/warranty](http://www.dell.com/warranty)) and not resolved remotely, technician and/or part will be dispatched, usually within 1 business day following completion of Remote Diagnosis. Availability varies. Other conditions apply.
10. Dell Services: Availability and terms of Dell Services vary by region. For more information, visit [www.dell.com/servicedescriptions](http://www.dell.com/servicedescriptions).
11. For complete listing of declarations and certifications, refer to the Dell Regulatory and Environmental Datasheet found in the Manuals section of Product Support information [www.dell.com/support/home/us/en/19](http://www.dell.com/support/home/us/en/19).
12. Dell ThinOS and Windows 11 IoT Enterprise LTSC 2024 thin client operating system options are available with select configuration options and support select capabilities of the Dell Pro 24 All-in-One 35W. For more information, visit [dell.com/CloudClientWorkspace](http://dell.com/CloudClientWorkspace).

PC

# P300 Desktop PC Hard Drive

Performance that meets demands



6 4 3 2 1  
TB TB TB TB TB

Color



**SATA** 3.5" SATA Hard Drive

**RPM** 7200 rpm /5400 rpm

 64/128 MB buffer

 Advanced Format


Toshiba's 3.5-inch P300 Desktop PC Hard Drive delivers a high performance for everyday home or office computing needs. With its two-stage actuator, you can count on smooth, responsive processing power. In addition, your data and media are secured with a loading ramp design to prevent data loss or drive wear and tear. The P300 is available in capacities up to 6TB.

Use for:

- Desktop workstations
- All-in-one PCs
- Desktop PCs
- External enclosures

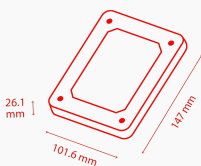


## Manual

[Installation-and-Safety-Internal-HDDs.pdf](#) 



# Product Specifications



## Basic Specifications

Form factor	3.5-inch
Interface	SATA 6 Gbit/s
RoHS compatible	Yes
Halogen Free	Yes

## Reliability

Limited warranty	2 years
Unrecoverable error rate	1 per 10 <sup>14</sup> bits read

## Performance

Buffer size	256 MB / 128 MB / 64 MB
-------------	-------------------------

# Product Range

Part number	Capacity	Color
HDWD260UZSVA (Bulk)	6 TB	-
HDWD240UZSVA (Bulk)	4 TB	-
HDWD130UZSVA (Bulk)	3 TB	-
HDWD320UZSVA (Bulk)	2 TB	-
HDWD110UZSVA (Bulk)	1 TB	-

# Logistical Information:

Box dimensions	189.0 mm (H) x 136.0 mm (W) x 60.0 mm (D)
Box weight (gross)	825 g max. (2 TB CMR, 3 TB, 6 TB), 795 g max. (4 TB), 595 g max. (1 TB, 2TB SMR)
Master carton dimensions	255 x 147 x 212mm
Master carton weight (gross)	3554 g max. (2 TB CMR, 3 TB, 6 TB), 3434 g max. (4 TB) 2594 g max. (2 TB SMR) 2634 g max. (1 TB)
Boxes per master carton	4 pcs
Pallet dimensions	1150 x 1150 x 130 mm
Pallet weight (net)	n/A
Units per pallet	400 pcs
Units per carton	20 pcs.
Carton dimensions	321 x 406 x 213 mm
Carton weight (gross)	16 kg (typ.) (2 TB - 6 TB), 11 kg (typ.) (500 GB, 1 TB)
Units per pallet	720 pcs.

## Contact

### **Toshiba Electronics Europe GmbH**

Hansaallee 181  
40549 Düsseldorf  
Germany

SPG3-B-10C

## Фильтр питания

### PURE POWER

- Protects valuable equipment from harmful power surges
- Suitable for high power consumption devices
- Overload protection



### Особенности

- Сертифицированный лабораторией GS фильтр питания с евро-розетками
- Подавление помех: защищает подключенное оборудование от выбросов напряжения и помех
- Автоматический предохранитель на 16 ампер
- Термостойкий корпус
- Отверстия для крепления на стену
- Сертифицированный VDE силовой кабель
- Выключатель со световой индикацией

### Упаковка

Кол-во в коробке, шт	30
Объем коробки, куб.м.	0.055
Вес коробки, кг	21
Размеры индивидуальной упаковки ДхШхВ:	98х45х340 mm
Размеры картонной коробки ДхШхВ:	510х345х310 mm
Страна происхождения	CN
Баркод	8716309068659
Таможенный код	8536301000

### Спецификация

Rating: up to 250 V AC, 16 A, safety class IP20  
Maximum surge voltage 4,500 V, maximum spike current 4,500 A

Sockets: 5 pcs, German type  
Cable length: 3 m

### Сертификаты



# RELIABLE, SECURE AND COMPACT PRINTERS WITH SPEEDS OF UP TO 40PPM



## i-SENSYS LBP240 Series

The Canon i-SENSYS LBP240 Series consists of single-function black & white laser printers ideal for small businesses.



**PROTECT  
DOCUMENTS**



**EASE OF USE**



**BOOST  
PRODUCTIVITY**



**STAY  
CONNECTED**

### Protect documents

Protect your documents, device and network with 360-degree security. Features include TLS1.3, Verify System at Startup and Secure PIN print.

### Boost productivity

Save valuable time with single sided print speeds of up to 40ppm, double sided up to 33.6ipm and a warm-up time of 14 seconds. Add an additional 250 sheet paper cassette to increase productivity in busy offices.

### Ease of use

Setup and manage printer settings via the LCD display or remotely using a web browser. Change the All-in-One toner cartridge quickly and easily when needed to ensure minimum downtime.

### Stay connected

Mobile connectivity means you can conveniently print from smartphones or tablets, either with the Canon PRINT Business app, AirPrint (iOS) or Mopria (Android).

# Canon

---

RANGE FEATURE STEP UP CHART



LBP243dw



LBP246dw

Printer language PCL	●	●
Printer language PostScript		●
A4 Print speed	36ppm	40ppm
Display	5 Line LCD	5 Line LCD
Secure PIN Print		●
Duplex printing	●	●
Wireless connectivity	●	●

TECHNICAL SPECIFICATIONS

PRINTER ENGINE

Print speed

Printing method

Print Resolution

Warm-up time

First Page Out Time

Recommended Monthly Print Volume

Duty cycle

Print margins

Advanced printing features

LBP246dw:  
Single sided :Up to 40 ppm (A4)  
Up to 65.4 ppm(A5-Landscape)  
Double sided :Up to 33.6 ipm (A4)  
LBP243dw:  
Single sided :Up to 36 ppm (A4)  
Up to 58.8 ppm(A5-Landscape)  
Double sided :Up to 30.2 ipm (A4)  
Monochrome laser beam printing  
Up to 1200 x 1200 dpi  
Approx. 14 seconds or less from power on  
Approx: 5.0 seconds or less  
750 - 4,000 pages per month

LBP246dw:  
Encrypted Secure Print  
Secure Print  
Microsoft Universal Print support  
iOS: AirPrint, Canon PRINT Business app  
Android; Mopria certified, Canon Print Service Plug-in, Canon PRINT Business app  
LBP243dw:  
Microsoft Universal Print support  
iOS: AirPrint, Canon PRINT Business app  
Android; Mopria certified, Canon Print Service Plug-in, Canon PRINT Business app

MEDIA HANDLING

Paper input (Standard)

Paper input (Option)

Maximum paper input capacity

Paper output

Media types

250-sheet cassette  
100-sheet multi-purpose tray  
550-sheet cassette  
Up to 900 sheets  
150-sheet  
Plain paper, Recycled paper, Heavy Paper, Thin paper, Coated paper, Label, Post card, Envelope  
Cassette (Standard and optional):  
A4, A5, A5 (Landscape), A6, B5, Legal, Letter, Executive, Statement, OFFICIO, B-OFFICIO, M-OFFICIO, GLTR, GLGL, Foolscap, 16K, Custom sizes: Min. 105 x 148 mm Max. 216.0 x 355.6 mm.  
Multi-purpose tray:  
A4, A5, A5 (Landscape), A6, B5, Legal, Letter, Executive, Statement, OFFICIO, B-OFFICIO, M-OFFICIO, GLTR, GLGL, Foolscap, 16K, Indexcard, Envelope (COM10, Monarch, C5, DL), Custom sizes: Min 76.2 x 127 mm Max. 216.0 x 355.6 mm.  
Cassette (standard and optional): 60 to 120 g/m<sup>2</sup>  
Multi-purpose tray: 60 to 199 g/m<sup>2</sup>  
A4, Legal, Letter, OFFICIO, B-OFFICIO, M-OFFICIO, GLGL, Foolscap  
Custom size - Min. 210 x 279.4 mm Max. 216.0 x 355.6 mm  
60 to 120 g/m<sup>2</sup>

GENERAL FEATURES

Power requirements

Power consumption

220-240V(±10%) 50/60Hz (±2Hz)  
Maximum: Approx. 1,250 W  
Active printing: Approx. 480W  
Standby: Approx. 6 W  
Sleep mode: Approx. 0.9 W  
Typical Electricity Consumption (TEC):  
LBP246dw: 0.33 kWh/week (230V)<sup>7</sup>  
LBP243dw: 0.29 kWh/week (230V)<sup>7</sup>  
For detailed information relating to Lot26 regulation, please go to: [http://www.canon-europe.com/For\\_Work/Lot26/index.aspx](http://www.canon-europe.com/For_Work/Lot26/index.aspx)

i-SENSYS LBP240 Series

Noise level

Dimensions (W x D x H)

Weight

Operating environment

Control panel

CONTROLLER

Processor Speed

Memory

Storage

Printer Languages

Fon

Interface and connectivity

Network Protocol

Software and Printer Management

Operating Systems Compatibility

CONSUMABLES

All-in-One cartridges

ACCESSORIES/OPTIONS

Items

Sound Pressure<sup>1</sup> :  
LBP246dw:  
Active: 54 dB  
Standby: Inaudible<sup>2</sup>  
LBP243dw:  
Active:Simplex 54 dB or less  
Duplex 53 dB or less  
Standby: Inaudible<sup>2</sup>  
Sound Power<sup>1</sup>:  
Active: 68 dB  
Standby: Inaudible<sup>2</sup>  
399 mm x 373 mm x 249 mm  
Approx. 9.35 Kg  
Temperature: 10 to 30°C (50 to 86°F)  
Humidity 20 to 80% RH (no condensation)  
5 Line LCD, 3 LED (Job, Error, Energy saver), Buttons, 10-key numeric keypad

1200MHz  
1GB  
4GB eMMC  
LBP246dw: UFR II, PCL 5e<sup>3</sup>, PCL6, Adobe® PostScript3  
LBP243dw: UFR II, PCL 5e<sup>3</sup>, PCL6  
LBP246dw: 45 PCL fonts, 136 PS fonts  
LBP243dw: 45 PCL fonts  
USB 2.0 Hi-Speed, 10BASE-T/100BASE-TX/1000Base-T, Wireless 802.11b/g/n, Wireless Direct Connection  
Print:  
TCP/IP (LPD/Port9100/IPP/IPPS/WSD)  
Management:  
SNMPv1, SNMPv3 (IPv4,IPv6)  
Security :  
TLS1.3, IPSec, IP/Mac address filtering, IEEE802.1X,  
SNMPv3, SSL (HTTPS, IPPS)  
Security (wireless):  
Infrastructure Mode:  
WEP(64/128 bit), WPA-PSK(TKIP/AES), WPA2-PSK(TKIP/AES), WPA-EAP(AES), WPA2-EAP(AES)  
Access Point Mode:  
WPA2-PSK(AES)  
Remote User Interface (RUI),  
Department ID Management,  
Toner Status Tool,  
iW Enterprise Management Console: Server-based software for centralised management of a fleet of devices  
eMaintenance: embedded RDS allows remote eMaintenance services such as meter capture, automatic consumables management and remote diagnostics.  
Windows® 11 / Windows® 10 / Server® 2022 / Server® 2019 / Server® 2016 / Server® 2012R2 / Server® 2012  
Mac OS X version 10.13 & up  
Linux<sup>4</sup>

Cartridge 070 (3,000 pages <sup>5</sup>)<sup>6</sup>  
Cartridge 070H (10,200 pages <sup>5</sup>)<sup>6</sup>

Cassette Feeding Module-AH1

Notes:

<sup>[1]</sup> Declared noise emission in accordance with ISO 9296

<sup>[2]</sup> Inaudible means that the emission sound pressure level for a bystander is lower than absolute standard for background noise in accordance with ISO 7779

<sup>[3]</sup> A Canon PCL5e driver is not supplied, however PCL5e commands are supported on the device.

<sup>[4]</sup> Web distribution only

<sup>[5]</sup> Based on ISO/IEC 19752

<sup>[6]</sup> Printer ships with starter cartridge (Black: 1,500pages)

<sup>[7]</sup> As per US ENERGY STAR® version3.0.



# RELIABLE, SECURE AND COMPACT PRINTERS WITH SPEEDS OF UP TO 40PPM

The Canon i-SENSYS LBP240 Series consists of single-function black & white laser printers ideal for small businesses.



PRODUCT DETAILS:

PRODUCT NAME	Mercury Code	EAN Code
i-SENSYS LBP243dw	5952C013AA	4549292215076
i-SENSYS LBP246dw	5952C006AA	4549292215038

ACCESSORIES:

PRODUCT NAME	Mercury Code	EAN Code
Cassette Feeding Module-AH1	0732A033BA	4549292092769

CONSUMABLES:

PRODUCT NAME	Mercury Code	EAN Code
Cartridge 070	5639C002AA	4549292197839
Cartridge 070 H	5640C002AA	4549292198041



**Canon Inc.**  
canon.com

**Canon Europe**  
canon-europe.com

English edition  
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SATAIII 6Gb/s SSD AS340

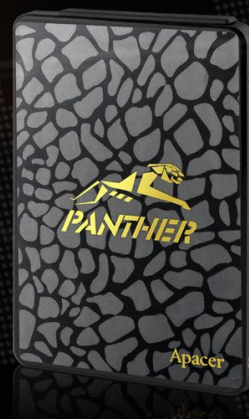
# PANTHER

Fast, Furious, Accurate- Dominate Your PC World

Read Up to  
**550** MB/s

Write Up to  
**520** MB/s

3D TLC



## AS340 SATA III SSD

AS340 operates at SATA III interface with the sequential read and write speed of up to 550/520 MB/s, making it a perfect companion for budding gamers on a budget.

### Features

- Compatible with SATA III 6.0 Gb/s Interface
- Sequential Read/Write Speed up to 550/520MB/s
- Supports SATA Power Management
- Supports S.M.A.R.T. Command
- Supports TRIM & NCQ Command
- Advanced Wear Leveling & ECC Function

### Specifications

- Form Factor : 2.5"
- Interface : SATA III 6Gb/s
- Capacity : 120GB / 240GB / 480GB / 960GB
- NAND Flash : 3D TLC
- MTBF : 1,500,000 hours
- Temperature Range
  - Standard Operating : 0°C ~ +70°C
  - Storage : -40 ~ +85°C
- Shock : 1500G/0.5msec
- Dimensions (L x W x H)
  - (L)100 x (W)69.9 x (H)7 mm
- Weight : 48g
- Warranty : 3 Years Limited

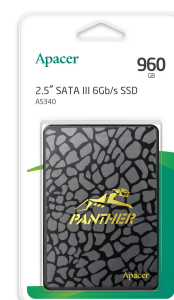
### Performance\*

Capacity	Sequential Performance (Up to)		4K Random (Up to)		Endurance (TBW)
	Read (MB/s)	Write (MB/s)	Read (IOPS)	Write (IOPS)	
120GB	550	500	38K	75K	70
240GB	550	520	38K	75K	140
480GB	550	520	87K	80K	280
960GB	550	510	93K	80K	560

\*The performance may vary due to host hardware, software, usage and storage capacity.

### Ordering Information

Capacity	Part Number	EAN Code
120GB	AP120GAS340G-1	4712389913944
240GB	AP240GAS340G-1	4712389913951
480GB	AP480GAS340G-1	4712389916259
960GB	AP960GAS340G-1	4712389917072



### Apacer Technology Inc.

1F, No.32, Zhongcheng Rd., Tucheng Dist.  
New Taipei City 236, Taiwan R.O.C.  
Tel: +886-2-2267-8000  
Fax: +886-2-2267-3410

# Gigabit L2+ Managed Switch Datasheet

MODELS: SG3210 V3.20 / SG3428 V2.30 / SG3428MP V6.20 / SG3452 V1.20 / SG3452P V3.30



## The TP-Link Solution

One-Step Solution  
Professional. Reliable. Secure.

### Overview

TP-Link | Omada L2+ managed switches provide high performance, powerful L2 and L2+ features like static routing, enterprise-level QoS, advanced security strategies and a bundle of ISP features. The IP-MAC-Port Binding (IMPB) and Access Control List (ACL) functions protect against broadcast storm, ARP and Denial-of-Service (DoS) attacks, etc. Quality of Service (QoS, L2 to L4) provides enhanced traffic management capabilities to move your data smoother and faster. The OAM and DDM functions help facilitate network management. Moreover, the easy-to-use web management interfaces, along with CLI, SNMP and Dual Image mean faster setup and configuration with less downtime. TP-Link | Omada L2+ managed Switches provide a reliable, secure solution for enterprise, campus and ISP networks.

# Omada Solution



## Hospitality

High Quality and Full Coverage Wi-Fi



## Education

High-Density Wi-Fi



## Retail

Social Marketing for O2O



## Office

Wireless and Wired Connections

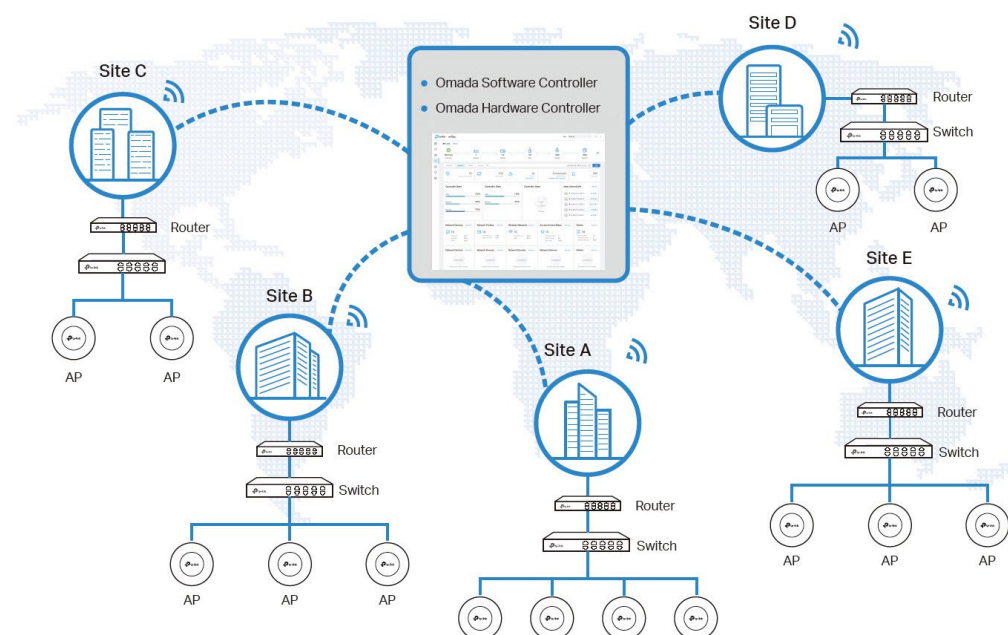


## Catering

Full Wi-Fi Coverage in High-Density Environment

## Software Defined Networking (SDN) with Cloud Access

Omada Software Defined Networking (SDN) platform integrates network devices, including access points, switches and gateways, providing 100% centralized cloud management. Omada creates a highly scalable network—all controlled from a single interface. Seamless wireless and wired connections are provided, ideal for use in hospitality, education, retail, offices, and more.



# Hassle-Free Centralized Cloud Management

100% centralized cloud management of the whole network from different sites—all controlled from a single interface anywhere, anytime.

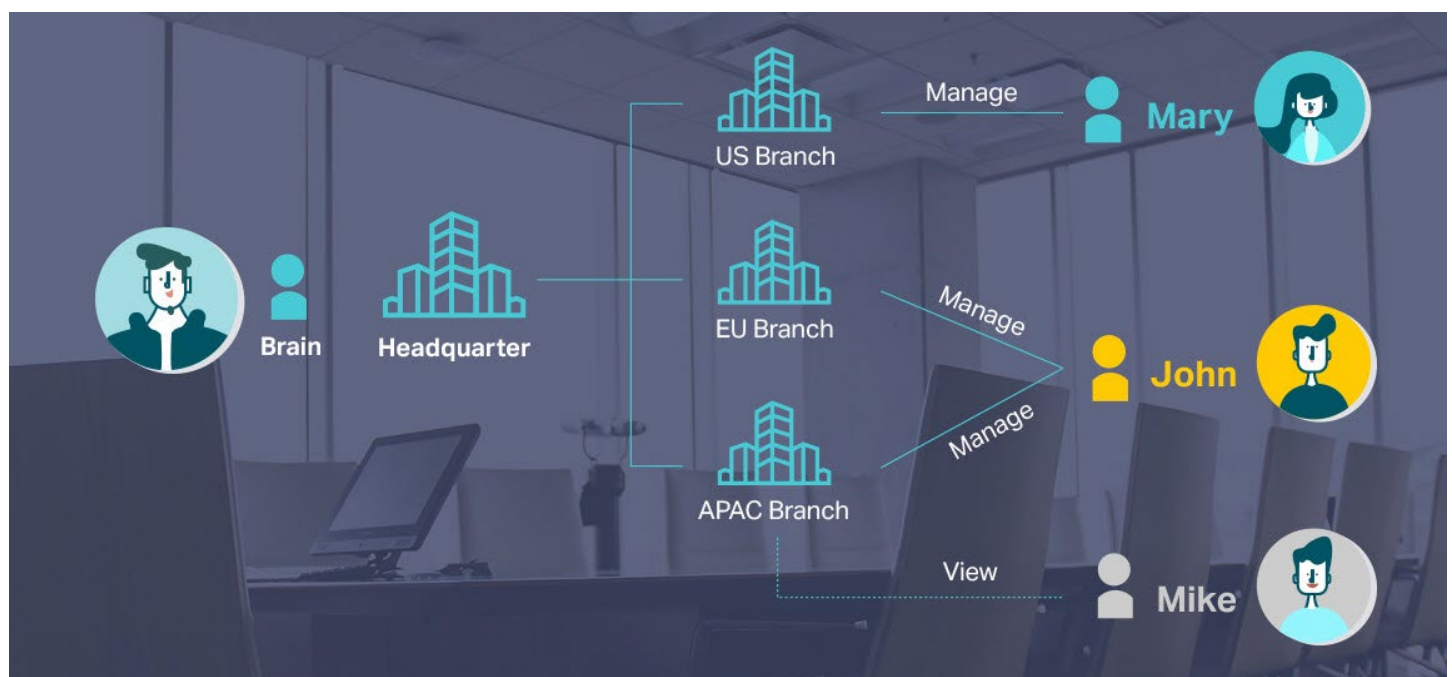


- ✓ No additional training needed
- ✓ Unlimited scalability
- ✓ Batch management
- ✓ Devices still work even when not connected to the Cloud

1

## Assign Different Management Roles

Multi-user privilege assignment is available to increase management efficiency and security. Multi-person management, multi-level permissions, and the ability to add admins as needed, enable flexible network operation and maintenance.

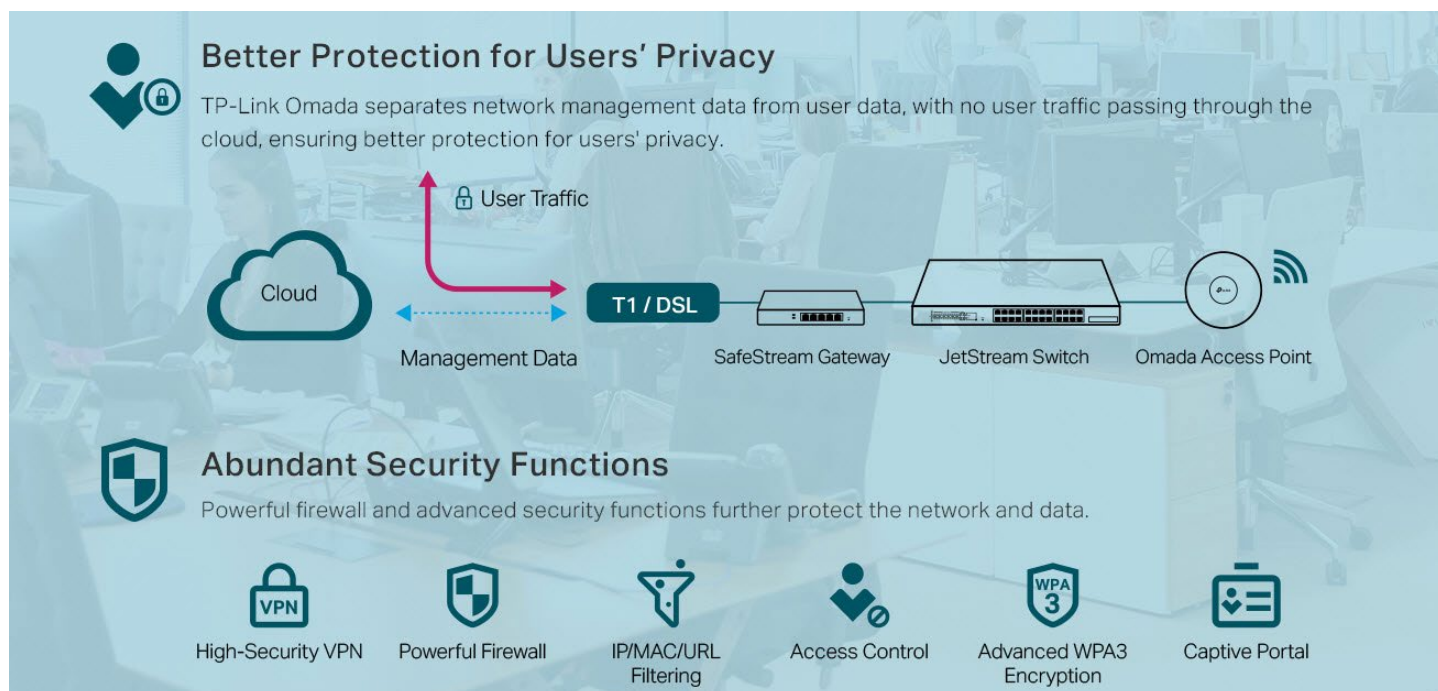


## Easy and Intelligent Network Monitoring

The easy-to-use dashboard makes it easy to see your real-time network status; check network usage and traffic distribution; receive network condition logs, abnormal event warnings, and notifications; or even track key data for better business results. Network topology helps IP admins quickly see and troubleshoot connection at a glance.



## Comprehensive Protection for the Whole Network



# Switch Product Features

## Networking Security

The TP-Link | Omada L2+ managed switches provide IP-MAC-Port Binding, Port Security, Storm control and DHCP Snooping which protect against broadcast storms, ARP attacks, etc. It integrates some typical DoS attacks to select. You can protect these attacks more easily ever than before. In addition, the Access Control Lists (ACL, L2 to L4) feature restricts access to sensitive network resources by denying packets based on source and destination MAC address, IP address, TCP/UDP ports and even VLAN ID. Moreover, the switch supports 802.1X authentication, which is used in conjunction with a RADIUS/TACACS+ server to require some authentication information before access to the network is allowed.

## Advanced QoS features

To integrate voice, data and video service on one traffic based on a variety of means including IP or MAC address, TCP or UDP port number, etc. to ensure that voice and video are always clear, smooth and jitter free. In conjunction with the Voice VLAN the switch supporting, the voice applications will operate with much smoother performance.

## Abundant L2 and L2+ features

The L2+ managed switches support a complete lineup of L2 features, including 802.1Q VLAN, Port Mirroring, STP/RSTP/ MSTP, Link Aggregation Control Protocol and 802.3x Flow Control function. Any more, the switch provides advanced features for network maintenance. Such as Loopback Detection, Cable Diagnostics and IGMP Snooping. IGMP snooping ensures the switch intelligently forward the multicast stream only to the appropriate subscribers while IGMP throttling & filtering restrict each subscriber on a port level to prevent unauthorized multicast access. Moreover, L2+ managed switches support L2+ feature-static routing, which is a simple way to provide segmentation of the network with internal routing through the switch and helps network traffic for more efficient use.

## ISP Features

The L2+ managed switches support a bundle of ISP features such as 802.3ah OAM, DDM, sFlow, QinQ, L2PT PPPoE ID Insertion, IGMP authentication etc. 802.3ah OAM and Device Link Detection Protocol (DLDP) functions improve monitor and troubleshoot Ethernet networks, help facilitate network management. DDM(Digital Diagnostic Monitoring) function helps view the status of SFP modules inserting to the Switch and to configure alarm settings, warning settings, temperature threshold settings, voltage threshold settings, bias current threshold settings, TX power threshold settings, and Rx power threshold settings.

## Enterprise Level Management Features

TP-Link's new Omada L2+ managed switches are easy to use and manage. It supports various user-friendly standard management features, such as intuitive web-based Graphical User Interface (GUI), industry-standard Command Line Interface (CLI), SNMP (v1/v2c/v3), and RMON. This allows the switch to provide valuable status information and send reports on abnormal events. It also supports Dual Image and Dual Configuration to provide improved reliability and network uptime.

## IPv6 Support

The L2+ managed switches support various IPv6 functions such as Dual IPv4/IPv6 Stack, MLD Snooping, IPv6 ACL, DHCPv6 Snooping, IPv6 Interface, Path Maximum Transmission Unit (PMTU) Discovery and IPv6 Neighbor Discovery, which guarantees your network is ready for the Next Generation Network (NGN) without upgrading your network equipment.



# Specifications

## Hardware Features & Performance





Product Picture		
Model		SG3210 V3.20
General	Interface	8 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots
	Console	1 RJ45 Console Port, 1 Micro-USB Console Port
	Flash	32 MB
	DRAM	256 MB
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)
PoE	PoE Standard	-
	PoE Ports	-
	PoE Power Budget	-
Performance	Switching Capacity	20 Gbps
	Packet Forwarding Rate	14.89 Mpps
	MAC Address Table	8K
	Packet Buffer	4.1 Mbit
	Transmission Method	Store and Forward
	Number of IP Interfaces	16
	Number of Static Routers	48 (IPv4, IPv6)
	Jumbo Frame	9 KB
Physical & Environment	Power Supply	100-240 V AC~50/60 Hz
	Max Power Consumption	6.84 W (220 V/50 Hz)
	Max Heat Dissipation	23.33 BTU/hr (220 V/50 Hz)
	Standby Power Consumption	1.91 W (220 V/50 Hz)
	Dimensions (W x D x H)	11.6 × 7.1 × 1.7 in (294 × 180 × 44 mm)
	Fan Quantity	Fanless
	Installation	Rack Mountable
	Operating Temperature	0 °C to 45 °C (32 °F to 113 °F)
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
	Operation Humidity	10% to 90% RH, non-condensing
	Storage Humidity	5% to 90% RH, non-condensing
	Certification	CE, FCC, RoHS

Hardware Features & Performance

Product Picture			
Model		SG3428 V2.30	SG3428MP V6.20
General	Interface	24 10/100/1000Mbps RJ45 Ports 4 Gigabit SFP Slots	
	Console	1 RJ45 Console Port, 1 Micro-USB Console Port	
	Flash	32 MB	
	DRAM	256 MB	
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)	
PoE	PoE Standard	-	802.3af/at
	PoE Ports	-	24, up to 30 W
	PoE Power Budget	-	384 W
Performance	Switching Capacity	56 Gbps	
	Packet Forwarding Rate	41.66 Mpps	
	MAC Address Table	16K	
	Packet Buffer	12 Mbit	
	Transmission Method	Store and Forward	
	Number of IP Interfaces	16	
	Number of Static Routers	48 (IPv4, IPv6)	
	Jumbo Frame	9 KB	
Physical & Environment	Power Supply	100-240 V AC~50/60 Hz	
	Max Power Consumption	20.6 W (220 V/50 Hz)	480.1 W (110 V/60 Hz) (with 384 W PD connected)
	Max Heat Dissipation	70.30 BTU/hr (220 V/50 Hz)	1637.14 BTU/hr (110 V/60 Hz) (with 384 W PD connected)
	Standby Power Consumption	10.3 W (220 V/50 Hz)	15.7 W (110V/60 Hz)
	Dimensions (W x D x H)	17.3 × 7.1 × 1.7 in (440 × 180 × 44 mm)	17.3 × 13.0 × 1.7 in (440 × 330 × 44 mm)
	Fan Quantity	Fanless	2
	Installation	Rack Mountable	
	Operating Temperature	0 °C to 45 °C (32 °F to 113 °F)	
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)	
	Operation Humidity	10% to 90% RH, non-condensing	
	Storage Humidity	5% to 90% RH, non-condensing	
	Certification	CE, FCC, RoHS	

## Hardware Features & Performance

Product Picture			
Model		SG3452 V1.20	SG3452P V3.30
General	Interface	48 10/100/1000Mbps RJ45 Ports, 4 Gigabit SFP Slots	
	Console	1 RJ45 Console Port, 1 Micro-USB Console Port	
	Flash	32 MB	
	DRAM	256 MB	
Port Standard		IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)	
PoE	PoE Standard	-	802.3af/at
	PoE Ports	-	48, up to 30 W
	PoE Power Budget	-	384 W
Performance	Switching Capacity	104 Gbps	
	Packet Forwarding Rate	77.38 Mpps	
	MAC Address Table	16K	
	Packet Buffer	12 Mbit	
	Transmission Method	Store and Forward	
	Number of IP Interfaces	16	
	Number of Static Routers	48 (IPv4, IPv6)	
	Jumbo Frame	9 KB	
Physical & Environment	Power Supply	100-240 V AC~50/60 Hz	
	Max Power Consumption	34.86 W (220 V/50 Hz)	464.2 W (110 V/60 Hz) (with 384 W PD connected)
	Max Heat Dissipation	118.94 BTU/hr (220 V/50 Hz)	1584.08 BTU/hr (110 V/60 Hz) (with 384 W PD connected)
	Standby Power Consumption	11.65 W (220 V/50 Hz)	27.9 W (110V/60 Hz)
	Dimensions (W x D x H)	17.3 × 8.7 × 1.7 in (440 × 220 × 44 mm)	17.3 × 13.0 × 1.7 in (440 × 330 × 44 mm)
	Fan Quantity	Fanless	3
	Installation	Rack Mountable	
	Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)	
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)	
	Operation Humidity	10% to 90% RH, non-condensing	
	Storage Humidity	5% to 90% RH, non-condensing	
	Certification	CE, FCC, RoHS	

## Software Features

Model	SG3210 V3.20 / SG3428 V2.30 / SG3428MP V6.20 / SG3452 V1.20 / SG3452P V3.30	
SDN Support	<ul style="list-style-type: none"> <li>• Support Omada Hardware Controller, Software Controller</li> <li>• Automatic Device Discovery</li> <li>• Batch Configuration</li> <li>• Batch Firmware Upgrading</li> </ul>	<ul style="list-style-type: none"> <li>• Intelligent Network Monitoring</li> <li>• Abnormal Event Warnings</li> <li>• Unified Configuration</li> <li>• Reboot Schedule</li> </ul>
L3 Features	<ul style="list-style-type: none"> <li>• 16 IPv4/IPv6 Interfaces</li> <li>• Static Routing <ul style="list-style-type: none"> <li>- 48 static routes</li> </ul> </li> <li>• Static ARP <ul style="list-style-type: none"> <li>- 128 static entries</li> </ul> </li> <li>• 316 ARP Entries (512 ARP Entries for SG3428 &amp; SG3428MP)</li> </ul>	<ul style="list-style-type: none"> <li>• Proxy ARP</li> <li>• Gratuitous ARP</li> <li>• DHCP Server</li> <li>• DHCP Relay <ul style="list-style-type: none"> <li>- DHCP interface relay</li> <li>- DHCP VLAN relay</li> </ul> </li> <li>• DHCP L2 Relay</li> </ul>
L2 Features	<ul style="list-style-type: none"> <li>• Link Aggregation <ul style="list-style-type: none"> <li>- Static link aggregation</li> <li>- 802.3ad LACP</li> <li>- Up to 8 aggregation groups and up to 8 ports per group</li> </ul> </li> <li>• Spanning Tree Protocol <ul style="list-style-type: none"> <li>- 802.1d STP</li> <li>- 802.1w RSTP</li> <li>- 802.1s MSTP</li> <li>- STP Security: TC Protect, BPDU Filter, BPDU Protect, Root Protect, Loop Protect</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Loopback Detection <ul style="list-style-type: none"> <li>- Port based</li> <li>- VLAN based</li> </ul> </li> <li>• Flow Control <ul style="list-style-type: none"> <li>- 802.3x Flow Control</li> <li>- HOL Blocking Prevention</li> </ul> </li> <li>• Mirroring <ul style="list-style-type: none"> <li>- Port Mirroring</li> <li>- CPU Mirroring</li> <li>- One-to-One</li> <li>- Many-to-One</li> <li>- Tx/Rx/Both</li> </ul> </li> </ul>
L2 Multicast	<ul style="list-style-type: none"> <li>• Supports 511 (IPv4, IPv6) IGMP groups</li> <li>• IGMP Snooping <ul style="list-style-type: none"> <li>- IGMP v1/v2/v3 Snooping</li> <li>- Fast Leave</li> <li>- IGMP Snooping Querier</li> <li>- IGMP Authentication</li> </ul> </li> <li>• IGMP Authentication</li> <li>• MVR</li> </ul>	<ul style="list-style-type: none"> <li>• MLD Snooping <ul style="list-style-type: none"> <li>- MLD v1/v2 Snooping</li> <li>- Fast Leave</li> <li>- MLD Snooping Querier</li> <li>- Static Group Config</li> <li>- Limited IP Multicast</li> </ul> </li> <li>• Multicast Filtering: 256 profiles and 16 entries per profile</li> </ul>
VLAN	<ul style="list-style-type: none"> <li>• VLAN Group <ul style="list-style-type: none"> <li>- Max 4K VLAN Groups</li> </ul> </li> <li>• 802.1Q Tagged VLAN</li> <li>• MAC VLAN: <ul style="list-style-type: none"> <li>- 12 Entries for SG3210</li> <li>- 30 Entries for SG3428 &amp; SG3428MP</li> <li>- 48 Entries for SG3452 &amp; SG3452P</li> </ul> </li> <li>• Protocol VLAN: Protocol Template 16, Protocol VLAN 16</li> </ul>	<ul style="list-style-type: none"> <li>• Private VLAN</li> <li>• GVRP</li> <li>• VLAN VPN (QinQ) <ul style="list-style-type: none"> <li>- Port-Based QinQ</li> <li>- Selective QinQ</li> </ul> </li> <li>• Voice VLAN</li> </ul>
QoS	<ul style="list-style-type: none"> <li>• 8 priority queues</li> <li>• 802.1p CoS/DSCP priority</li> <li>• Queue scheduling <ul style="list-style-type: none"> <li>- SP (Strict Priority)</li> <li>- WRR (Weighted Round Robin)</li> <li>- SP+WRR</li> </ul> </li> <li>• Bandwidth Control <ul style="list-style-type: none"> <li>- Port/Flow based Rating Limiting</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Smoother Performance</li> <li>• Action for Flows <ul style="list-style-type: none"> <li>- Mirror (to supported interface)</li> <li>- Redirect (to supported interface)</li> <li>- Rate Limit</li> <li>- QoS Remark</li> </ul> </li> </ul>

Software Features		
Model	SG3210 V3.20 / SG3428 V2.30 / SG3428MP V6.20 / SG3452 V1.20 / SG3452P V3.30	
ACL	<ul style="list-style-type: none"> <li>• MAC ACL <ul style="list-style-type: none"> <li>- Source MAC</li> <li>- Destination MAC</li> <li>- VLAN ID</li> <li>- User Priority</li> <li>- Ether Type</li> </ul> </li> <li>• IP ACL <ul style="list-style-type: none"> <li>-Source IP</li> <li>- Destination IP</li> <li>- Fragment</li> <li>- IP Protocol</li> <li>- TCP Flag</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- TCP/UDP Port</li> <li>- DSCP/IP TOS</li> <li>- User Priority</li> <li>• Combined ACL</li> <li>• IPv6 ACL</li> <li>• Policy <ul style="list-style-type: none"> <li>- Mirroring</li> <li>- Redirect</li> <li>- Rate Limit</li> <li>- QoS Remark</li> </ul> </li> <li>• ACL apply to Port/VLAN</li> <li>• Time-based ACL</li> </ul>
Security	<ul style="list-style-type: none"> <li>• IP-MAC-Port Binding <ul style="list-style-type: none"> <li>-512 Entries</li> <li>- DHCP Snooping</li> <li>- ARP Inspection</li> <li>- IPv4 Source Guard: 100 Entries</li> </ul> </li> <li>• IPv6-MAC-Port Binding <ul style="list-style-type: none"> <li>-512 Entries</li> <li>- DHCPv6 Snooping</li> <li>- ND Detection</li> <li>- ND Snooping</li> <li>- IPv6 Source Guard: 100 Entries</li> </ul> </li> <li>• DoS Defend</li> <li>• DHCP Filter</li> <li>• Static/Dynamic Port Security <ul style="list-style-type: none"> <li>- Up to 64 MAC addresses per port</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Broadcast/Multicast/Unicast Storm Control <ul style="list-style-type: none"> <li>- kbps/ratio/pps control mode</li> </ul> </li> <li>• 802.1X <ul style="list-style-type: none"> <li>- Port base authentication</li> <li>- Mac base authentication</li> <li>- VLAN Assignment</li> <li>- MAB</li> <li>- Guest VLAN</li> <li>- Support RADIUS authentication and accountability</li> </ul> </li> <li>• AAA (including TACACS+)</li> <li>• Port Isolation</li> <li>• Secure web management through HTTPS with SSLv3/TLS 1.2</li> <li>• Secure Command Line Interface (CLI) management with SSHv1/SSHv2</li> <li>• IP/Port/MAC based access control</li> </ul>
ISP Features	<ul style="list-style-type: none"> <li>• 802.3ah Ethernet Link OAM (except SG3452 V1.20)</li> <li>• L2PT (Layer 2 Protocol Tunneling)</li> <li>• DDM (for SG3210 &amp; SG3428 &amp; SG3428MP)</li> </ul>	<ul style="list-style-type: none"> <li>• Device Link Detect Protocol (DLDP)</li> <li>• PPPoE ID Insertion</li> <li>• sFlow (for SG3428 &amp; SG3428MP)</li> <li>• ERPS</li> </ul>
Management	<ul style="list-style-type: none"> <li>• Web-based GUI</li> <li>• Command Line Interface (CLI) through consoleport, telnet</li> <li>• SNMPv1/v2c/v3 <ul style="list-style-type: none"> <li>- Trap/Inform</li> <li>- RMON (1, 2, 3, 9 groups)</li> </ul> </li> <li>• SDM Template</li> <li>• DHCP/BOOTP Client</li> <li>• 802.1ab LLDP/LLDP-MED</li> </ul>	<ul style="list-style-type: none"> <li>• DHCP Auto Install</li> <li>• Dual Image, Dual Configuration</li> <li>• CPU Monitoring</li> <li>• Cable Diagnostics</li> <li>• EEE</li> <li>• Password Recovery</li> <li>• SNTP</li> <li>• System Log</li> </ul>
IPv6 Support	<ul style="list-style-type: none"> <li>• IPv6 Dual IPv4/IPv6</li> <li>• Multicast Listener Discovery (MLD) Snooping</li> <li>• IPv6 ACL</li> <li>• IPv6 Interface</li> <li>• Static IPv6 Routing</li> <li>• IPv6 neighbor discovery (ND)</li> <li>• Path maximum transmission unit (MTU) discovery</li> <li>• Internet Control Message Protocol (ICMP) version 6</li> <li>• TCPv6/UDPv6</li> </ul>	<ul style="list-style-type: none"> <li>• IPv6 applications <ul style="list-style-type: none"> <li>- DHCPv6 Client</li> <li>- Ping6</li> <li>- Tracert6</li> <li>- Telnet (v6)</li> <li>- IPv6 SNMP</li> <li>- IPv6 SSH</li> <li>- IPv6 SSL</li> <li>- Http/Https</li> <li>- IPv6 TFTP</li> </ul> </li> </ul>
MIBs	<ul style="list-style-type: none"> <li>• MIB II (RFC1213)</li> <li>• Interface MIB (RFC2233)</li> <li>• Ethernet Interface MIB (RFC1643)</li> <li>• Bridge MIB (RFC1493)</li> <li>• P/Q-Bridge MIB (RFC2674)</li> <li>• RMON MIB (RFC2819)</li> </ul>	<ul style="list-style-type: none"> <li>• RMON2 MIB (RFC2021)</li> <li>• RADIUS Accounting Client MIB (RFC2620)</li> <li>• RADIUS Authentication Client MIB (RFC2618)</li> <li>• Remote Ping, Traceroute MIB (RFC2925)</li> <li>• Support TP-Link Private MIB</li> </ul>

# Ordering Information

Host Switch	
Model	Description
SG3210 V3.20	Omada 8-Port Gigabit L2+ Managed Switch with 2 SFP Slots
SG3428 V2.30	Omada 24-Port Gigabit L2+ Managed Switch with 4 SFP Slots
SG3428MP V6.20	Omada 28-Port Gigabit L2+ Managed Switch with 24-Port PoE+
SG3452 V1.20	Omada 48-Port Gigabit L2+ Managed Switch with 4 SFP Slots
SG3452P V3.30	Omada 52-Port Gigabit L2+ Managed Switch with 48-Port PoE+

SFP Modules	
Model	Description
SM311LS	Gigabit SFP module, Single-mode, LC interface, Up to 20km distance
SM311LM	Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance
SM321A	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 20 km
SM321A-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 2 km
SM321B	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 20 km
SM321B-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 2 km

MC Series Media Converter	
Model	Description
MC210CS	Gigabit Single-Mode Media Converter, up to 20 km, chassis mountable
MC200CM	Gigabit multi-mode SC SFP Transceiver, up to 550 m, chassis mountable
MC200L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable
MC1400	14-slot power supply chassis for TP-LINK MC Series Media Converter, 19-inch rack-mountable

RJ45 SFP Modules	
Model	Description
SM331T	1000BASE-T RJ45 SFP Module

FC Series Media Converter	
Model	Description
FC111A-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC111B-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
FC1400	14-slot power supply chassis for TP-LINK FC Series Media Converter, 19-inch rack-mountable

Some models featured in this guide may be unavailable in your country or region. Visit TP-Link website for local sales information: [www.tp-link.com](http://www.tp-link.com).

PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.

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 JetStream

## Smart Switches Datasheet

MODELS: TL-SG2008 V3 / TL-SG2008P / TL-SG2210P V3.20 /  
TL-SG2210MP / TL-SG2218 / TL-SG2428P /  
TL-SL2428P V4.20



### The TP-Link Solution

One-Step Solution  
Professional. Reliable. Secure.

## Overview

TP-Link's brand new JetStream gigabit smart switches provide huge upgrade comparing with previous versions. The switches can be managed by Omada SDN Controller, which provides professional and reliable one-step solutions. Integrated L2 and L2+ features such as 802.1Q VLAN, QoS, IGMP Snooping and static routing provide cost-effective networking solutions for small and medium-sized businesses without sacrificing enhanced usability and strong performance.

# Omada Solution



## Hospitality

High Quality and Full Coverage Wi-Fi



## Education

High-Density Wi-Fi



## Retail

Social Marketing for O2O



## Office

Wireless and Wired Connections

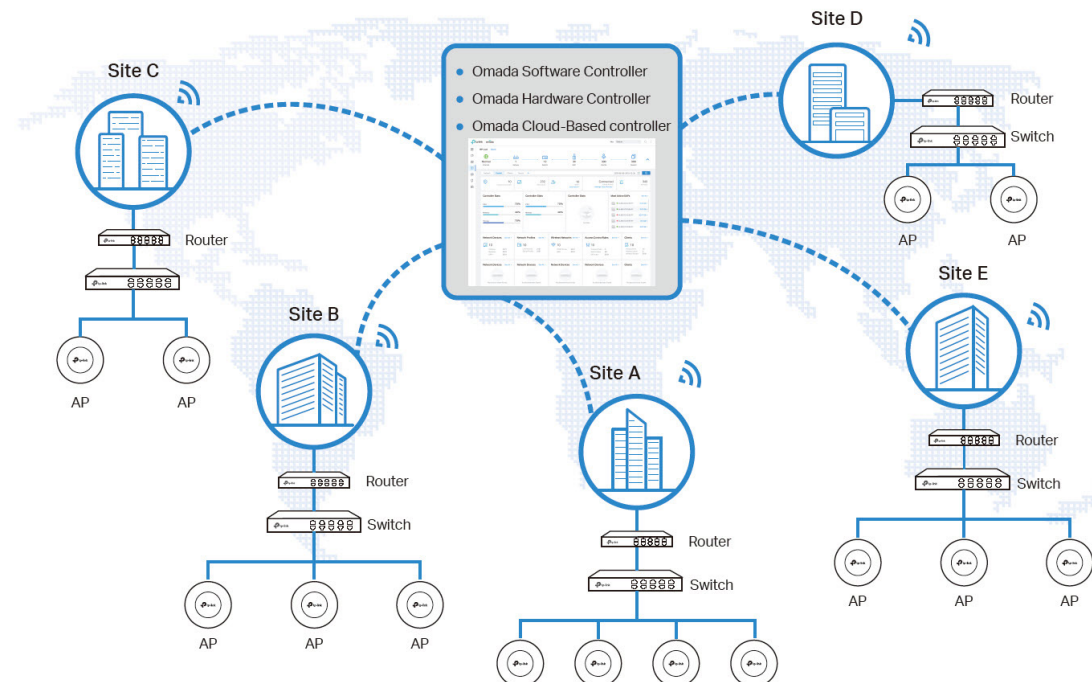


## Catering

Full Wi-Fi Coverage in High-Density Environment

## Software Defined Networking (SDN) with Cloud Access

Omada Software Defined Networking (SDN) platform integrates network devices, including access points, switches and gateways, providing 100% centralized cloud management. Omada creates a highly scalable network—all controlled from a single interface. Seamless wireless and wired connections are provided, ideal for use in hospitality, education, retail, offices, and more.



### Higher Efficiency



Centralized Cloud Management



Zero-Touch Provisioning



AI-Driven Technology



Auto Channel Selection and Power Adjustment



Multi-Tenant Privilege Assignment



Easy and Intelligent Monitoring



### Higher Security



Separate Management and User Data



Abundant Security Functions



### Higher Reliability



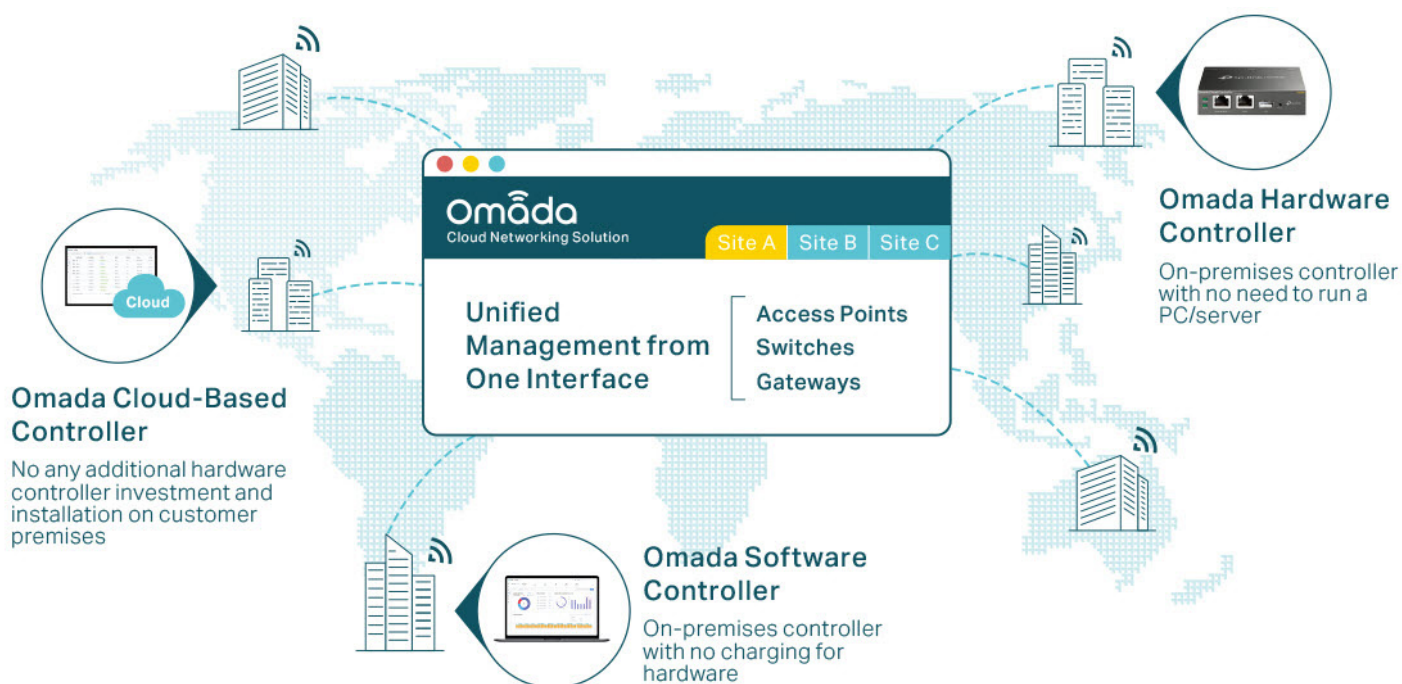
99.99% SLA Availability



Reliable Connections with High-Density Clients

# Hassle-Free Centralized Cloud Management

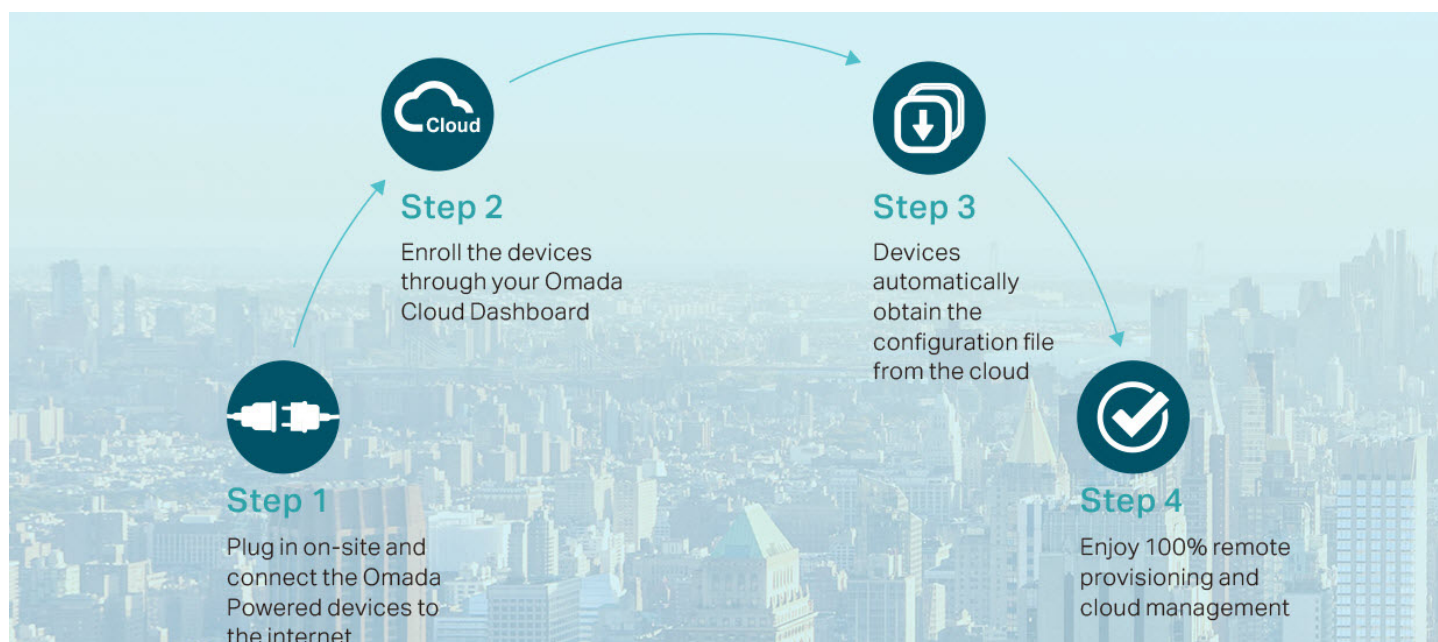
100% centralized cloud management of the whole network from different sites—all controlled from a single interface anywhere, anytime.



- ✓ No additional training needed
- ✓ Unlimited scalability
- ✓ Batch management
- ✓ Devices still work even when not connected to the Cloud

## Zero-Touch Provisioning for Efficient Deployment<sup>1</sup>

Omada zero-touch provisioning allows remotely deployment and configuration of multi-site networks, so there's no need to send out an engineer for on-site configuration. The Omada Cloud ensures efficient deployment with lower costs.



1. Zero-Touch Provisioning is supported when using Omada Cloud-Based Controller

# AI-Driven Technology for Stronger Performance and Easy Network Maintenance

## Intelligent Network Analysis, Warning, and Optimization\*

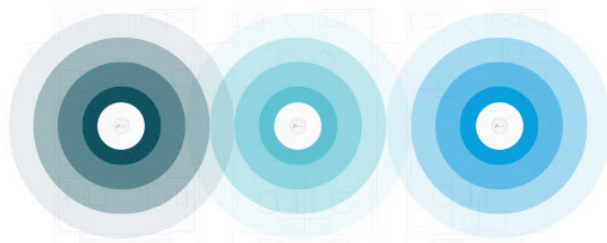
- Analyzes potential network problems and sends optimization suggestions for higher network efficiency
- Locates network faults, warns and notify users, and generates solutions to reduce network risk



\*Intelligent Network Analysis, Warning, and Optimization are being developed and are scheduled to be released in 2020

## Auto Channel Selection and Power Adjustment

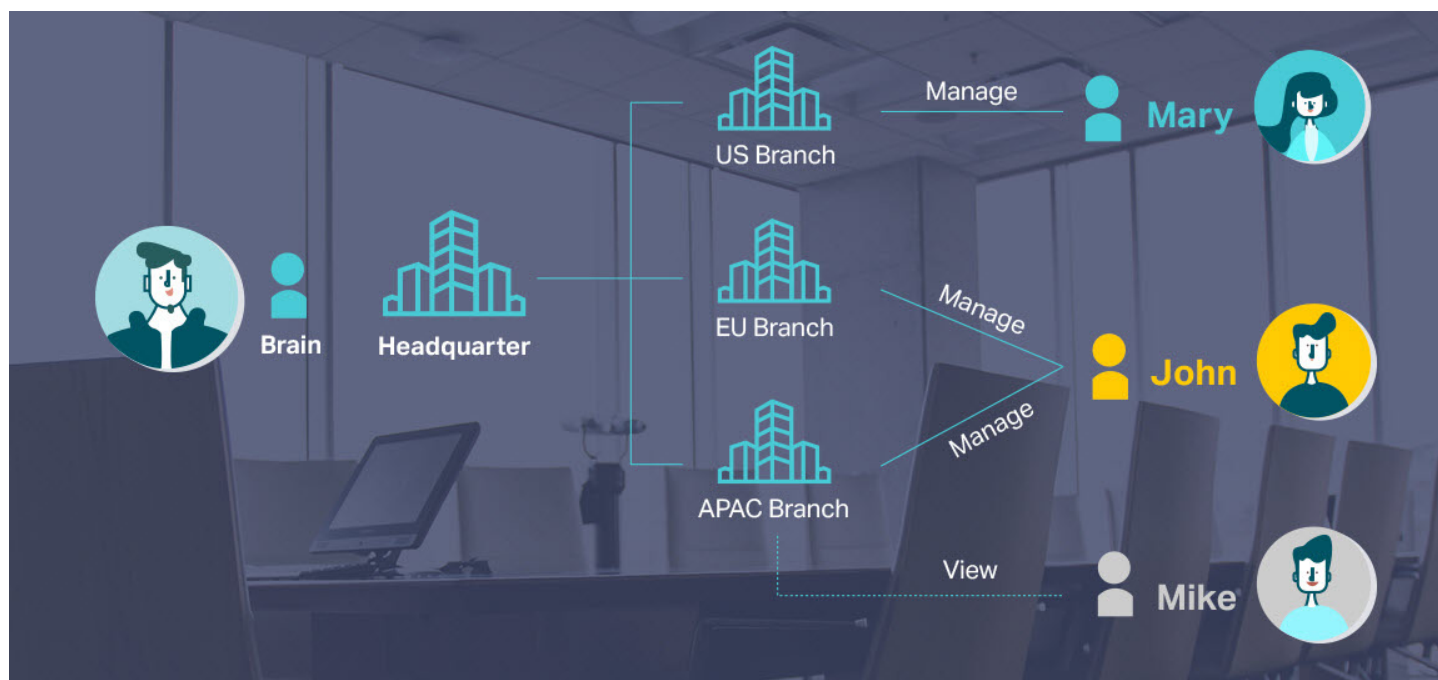
Provides powerful wireless performance while greatly reducing Wi-Fi interference by automatically adjusting the channel settings and transmission power levels of neighboring APs in the same network.



● Channel 1 ● Channel 11 ● Channel 6

## Assign Different Management Roles

Multi-user privilege assignment is available to increase management efficiency and security. Multi-person management, multi-level permissions, and the ability to add admins as needed, enable flexible network operation and maintenance.

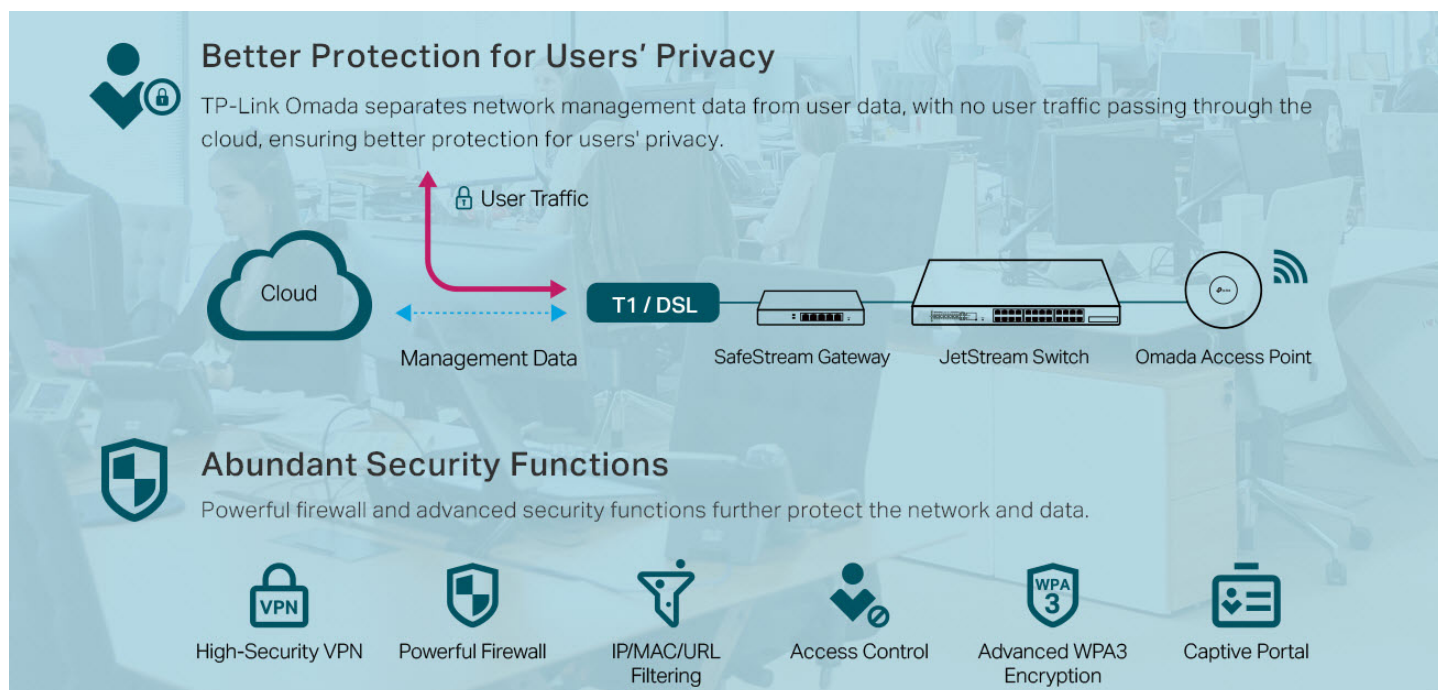


## Easy and Intelligent Network Monitoring

The easy-to-use dashboard makes it easy to see your real-time network status; check network usage and traffic distribution; receive network condition logs, abnormal event warnings, and notifications; or even track key data for better business results. Network topology helps IP admins quickly see and troubleshoot connection at a glance.

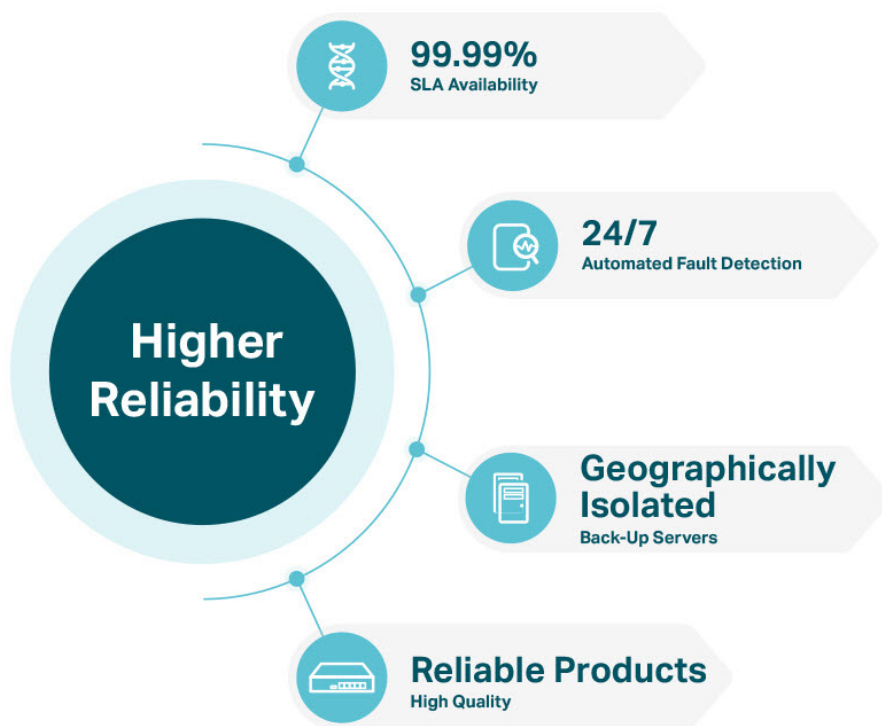


## Comprehensive Protection for the Whole Network



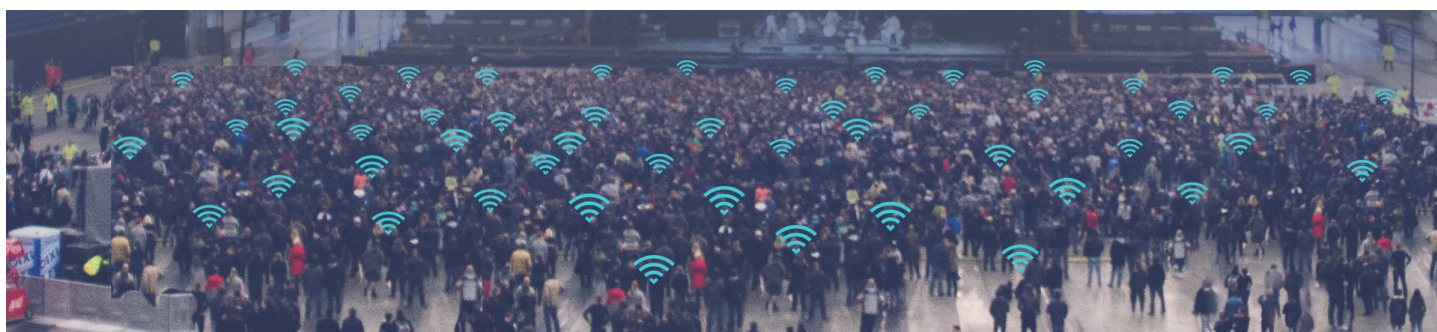
## Multiple Factors Guarantee Higher Reliability

Higher reliability of cloud service is guaranteed with 99.99% SLA availability, 24/7 automated fault detection, geographically isolated backup servers, and reliable product quality. Your network functions even if management traffic is interrupted.



## Reliable Connections Even with High-Density Clients

Equipped with enterprise chipsets, dedicated antennas, advanced RF functions, auto channel selection, and power adjustment, Omada Wi-Fi 6 and Wi-Fi 5 APs have high concurrency capacities for remarkable performance in high-density environments.



# Switch Product Features

## Highlights

- Gigabit Ethernet connections on all ports provide full speed of data transferring
- L2+ Feature ——Static Routing, helps route internal traffic for more efficient use of network resources
- Advanced security features include IP-MAC-Port Binding, ACL, Port Security, DoS Defend, Storm Control, DHCP Snooping, 802.1X and Radius Authentication
- L2/L3/L4 QoS and IGMP Snooping optimize voice and video applications
- Comprehensive IPv6 support for management, QoS and ACL
- Web/CLI managed modes, SNMP, RMON and Dual Image bring abundant management features

## Advanced QoS features

To integrate voice, data and video service on one network, the switch applies rich QoS policies. Administrator can designate the priority of the traffic based on a variety of means including Port Priority, 802.1P Priority and DSCP Priority, to ensure that voice and video are always clear, smooth and jitter free. In conjunction with the Voice VLAN that the switches support, Voice Applications will perform better and smoother.

## Abundant L2 and L2+ features

TP-Link JetStream smart switches support a complete lineup of L2 features, including IGMP Snooping/MLD Snooping, 802.1Q/MAC/Protocol VLAN, STP/RSTP/MSTP, Link Aggregation Group (LAG), Port Isolation, Port Mirroring, and 802.3x Flow control function. IGMP Snooping ensures the multicast stream be forwarded intelligently to the appropriate subscribers by the switch, while IGMP Throttling & Filtering restricts each subscriber on a certain level to prevent unauthorized multicast access. Besides, these smart switches also support L2+ features like static routing. It is a simple way to provide segmentation of the network with internal routing through the switch and helps network traffic to be more efficient.

## Enterprise Level Management Features




TP-Link JetStream smart switches support multiple user-friendly standard management features such as intuitive web-based Graphical User Interface (GUI), industrially standard Command Line Interface (CLI) and SNMP (v1/v2c/v3). These switches support RMON (Remote Network Monitoring), which enables the switch to be polled for valuable status information and send traps when encountering abnormal events. Also, this series of switches support Dual Image function, which makes there be less 'down-time' when switches are being upgraded/downgraded.

## IPv6 Support




TP-Link JetStream smart switches support comprehensive IPv6 features including IPv6 management, ACL, QoS and MLD Snooping, all of these features help to ensure a smooth migration to IPv6-based network without changing switches in the future.

# Specifications


## Hardware Features & Performance

Product Picture				
Model		TL-SG2008 V3	TL-SG2008P	TL-SG2210P V3.20
General	Interface	8 10/100/1000Mbps RJ45 Ports	8 10/100/1000Mbps RJ45 ports	8 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots
	Flash	32 MB		
	DRAM	256 MB		
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber) (only for TL-SG2210P)		
PoE	PoE Standard	--	802.3af/at	802.3af/at
	PoE Ports		4, up to 30 W	8, up to 30 W
	PoE Power Budget		62 W	61 W
Performance	Switching Capacity	16 Gbps	16 Gbps	20 Gbps
	Packet Forwarding Rate	11.90 Mpps		14.88 Mpps
	MAC Address Table	8K		
	Packet Buffer	4.1 Mbit		
	Transmission Method	Store and Forward		
	Number of IP Interfaces	16		
	Number of Static Routers	32 (IPv4, IPv6)		
	Jumbo Frame	9 KB		
Physical & Environmet	Power Supply	12 VDC/1 A External Adapter or Obtain Power from PoE Source	53.5 VDC/1.31 A External Adapter	
	Max Power Consumption	6.4 W (220 V/50 Hz)	7.9 W (220 V/50 Hz) (no PD connected) 69.7 W (220 V/50 Hz) (with 62 W PD connected)	10.3 W (220 V/50 Hz) (no PD connected) 76.5 W (220 V/50 Hz) (with 61 W PD connected)
	Max Heat Dissipation	21.84 BTU/hr (220 V/50 Hz)	26.95 BTU/hr (220 V/50 Hz) (no PD connected) 237.82 BTU/hr (220 V/50 Hz) (with 62 W PD connected)	35.14 BTU/hr (220 V/50 Hz) (no PD connected) 261.02 BTU/hr (220 V/50 Hz) (with 61 W PD connected)
	Standby Power Consumption	2.56 W (220 V/50 Hz)	2.89 W (220 V/50 Hz)	4.99 W (220 V/50 Hz)
	Dimensions (W x D x H)	8.2 × 4.9 × 1.0 in (209 × 126 × 26 mm)		
	Fan Quantity	Fanless		
	Installation	Desktop/Wall-Mounting		
	Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)		
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)		
	Operation Humidity	10% to 90% RH, non-condensing		
	Storage Humidity	5% to 90% RH, non-condensing		
	Certification	CE, FCC, RoHS		

Hardware Features & Performance

Product Picture				
Model		TL-SG2210MP	TL-SG2218	TL-SG2428P
General	Interface	8 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots	16 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots	24 10/100/1000Mbps RJ45 ports 4 Gigabit SFP Slots
	Flash	32 MB		
	DRAM	256 MB		
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)		
PoE	PoE Standard	802.3af/at	-	802.3af/at
	PoE Ports	8, up to 30 W	-	24, up to 30 W
	PoE Power Budget	150 W	-	250 W
Performance	Switching Capacity	20 Gbps	36 Gbps	56 Gbps
	Packet Forwarding Rate	14.88 Mpps	26.78 Mpps	41.66 Mpps
	MAC Address Table	8K		
	Packet Buffer	4.1 Mbit		
	Transmission Method	Store and Forward		
	Number of IP Interfaces	16		
	Number of Static Routers	32 (IPv4, IPv6)		
	Jumbo Frame	9 KB		
Physical & Environmet	Power Supply	100-240V AC, 50/60Hz		
	Max Power Consumption	12.2 W (110 V/60 Hz) (no PD connected) 173.9 W (110 V/60 Hz) (with 150 W PD connected)	12.3 W (220 V/50 Hz)	32.1 W (110 V/60 Hz) (no PD connected) 308.6 W (110 V/60 Hz) (with 250 W PD connected)
	Max Heat Dissipation	41.63 BTU/hr (110 V/60 Hz) (no PD connected) 539.35 BTU/hr (110 V/60 Hz) (with 150 W PD connected)	41.97 BTU/hr	109.53 BTU/hr (110 V/60 Hz) (no PD connected) 1052.94 BTU/hr (110 V/60 Hz) (with 250 W PD connected)
	Standby Power Consumption	8.56 W (110 V/60 Hz)	3.84 W (220 V/50 Hz)	21.96 W (110 V/60 Hz)
	Dimensions (W x D x H)	11.6 x 7.1 x 1.7 in (294 x 180 x 44 mm)	17.3 x 7.1 x 1.7 in (440 x 180 x 44 mm)	17.3 x 8.7 x 1.7 in (440 x 220 x 44 mm)
	Fan Quantity	1	Fanless	2
	Installation	Rackmount/Desktop	Rackmount	Rackmount
	Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)		
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)		
	Operation Humidity	10% to 90% RH, non-condensing		
	Storage Humidity	5% to 90% RH, non-condensing		
	Certification	CE, FCC, RoHS		

Hardware Features & Performance

Product Picture		
Model		TL-SL2428P V4.20
General	Interface	24 10/100 Mbps RJ45 Ports 2 10/100/1000 Mbps RJ45 Ports 2 Combo Gigabit RJ45/SFP Ports
	Flash	32 MB
	DRAM	256 MB
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)
PoE	PoE Standard	802.3af/at
	PoE Ports	24, up to 30 W
	PoE Power Budget	250 W
Performance	Switching Capacity	12.8 Gbps
	Packet Forwarding Rate	9.52 Mpps
	MAC Address Table	Store and Forward
	Packet Buffer	8K
	Transmission Method	4.1 Mbit
	Number of IP Interfaces	16
	Number of Static Routers	32 (IPv4, IPv6)
	Jumbo Frame	9 KB
Physical & Environmet	Power Supply	100-240V AC, 50/60Hz
	Max Power Consumption	18.8 W (220 V/50 Hz) (with no PD connected) 286.7 W (220 V/50 Hz) (with 250 W PD connected)
	Max Heat Dissipation	64.1 BTU/hr (220 V/50Hz) (with no PD connected) 977.6 BTU/hr (220 V/50 Hz) (with 250 W PD connected)
	Standby Power Consumption	15.9 W (220 V/50 Hz)
	Dimensions (W x D x H)	17.3 × 7.1 × 1.7 in (440 × 180 × 44 mm)
	Fan Quantity	2
	Installation	Rackmount
	Operating Temperature	0 °C to 50 °C (32 °F to 122 °F)
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
	Operation Humidity	10% to 90% RH, non-condensing
	Storage Humidity	5% to 90% RH, non-condensing
	Certification	CE, FCC, RoHS

## Software Features

Model	TL-SG2008 V3 / TL-SG2008P / TL-SG2210P V3.20 / TL-SG2210MP / TL-SG2218 / TL-SG2428P / TL-SL2428P V4.20	
SDN Support	<ul style="list-style-type: none"> <li>• Support Omada Hardware Controller (OC200/ OC300), Software Controller</li> <li>• Automatic Device Discovery</li> <li>• Batch Configuration</li> <li>• Batch Firmware Upgrading</li> </ul>	<ul style="list-style-type: none"> <li>• Intelligent Network Monitoring</li> <li>• Abnormal Event Warnings</li> <li>• Unified Configuration</li> <li>• Reboot Schedule</li> <li>• ZTP (Zero-Touch Provisioning)*</li> </ul>
L2+ Features	<ul style="list-style-type: none"> <li>• 16 IP Interfaces <ul style="list-style-type: none"> <li>- Support IPv4/IPv6 Interface</li> </ul> </li> <li>• Static Routing <ul style="list-style-type: none"> <li>- 32 IPv4/IPv6 Static Routes</li> </ul> </li> <li>• DHCP Server</li> <li>• DHCP Relay <ul style="list-style-type: none"> <li>- DHCP Interface Relay</li> <li>- DHCP VLAN Relay</li> </ul> </li> <li>• DHCP L2 Relay</li> </ul>	<ul style="list-style-type: none"> <li>• Static ARP</li> <li>• Proxy ARP</li> <li>• Gratuitous ARP</li> </ul>
L2 Features	<ul style="list-style-type: none"> <li>• Link Aggregation <ul style="list-style-type: none"> <li>- Static link aggregation</li> <li>- 802.3ad LACP</li> <li>- Up to 8 aggregation groups and up to 8 ports per group</li> </ul> </li> <li>• Spanning Tree Protocol <ul style="list-style-type: none"> <li>- 802.1D STP</li> <li>- 802.1w RSTP</li> <li>- 802.1s MSTP</li> <li>- STP Security: TC Protect, BPDU Filter/Protect, Root Protect</li> </ul> </li> <li>• Loopback Detection</li> </ul>	<ul style="list-style-type: none"> <li>• Flow Control <ul style="list-style-type: none"> <li>- 802.3x Flow Control</li> </ul> </li> <li>• Mirroring <ul style="list-style-type: none"> <li>- Port Mirroring</li> <li>- CPU Mirroring</li> <li>- One-to-One</li> <li>- Many-to-One</li> <li>- Flow-Based</li> <li>- Ingress/Egress/Both</li> </ul> </li> <li>• Device Link Detect Protocol (DLDP)</li> <li>• 802.1ab LLDP/ LLDP-MED</li> </ul>
L2 Multicast	<ul style="list-style-type: none"> <li>• 511 IPv4, IPv6 shared multicast groups</li> <li>• IGMP Snooping <ul style="list-style-type: none"> <li>- IGMP v1/v2/v3 Snooping</li> <li>- Fast Leave</li> <li>- IGMP Snooping Querier</li> <li>- Static Group Config</li> </ul> </li> <li>• Multicast VLAN Registration (MVR)</li> <li>• Multicast Filtering</li> </ul>	<ul style="list-style-type: none"> <li>• MLD Snooping <ul style="list-style-type: none"> <li>- MLD v1/v2 Snooping</li> <li>- Fast Leave</li> <li>- MLD Snooping Querier</li> <li>- Static Group Config</li> </ul> </li> <li>• Limited IP Multicast (256 profiles and 16 entries per profile)</li> </ul>
VLAN	<ul style="list-style-type: none"> <li>• VLAN Group <ul style="list-style-type: none"> <li>- Max. 4K VLAN Groups</li> </ul> </li> <li>• 802.1Q tag VLAN</li> <li>• MAC VLAN</li> </ul>	<ul style="list-style-type: none"> <li>• Protocol VLAN</li> <li>• GVRP</li> <li>• Voice VLAN</li> </ul>
QoS	<ul style="list-style-type: none"> <li>• 802.1p CoS/DSCP priority</li> <li>• 8 priority queues</li> <li>• Priority Schedule Mode <ul style="list-style-type: none"> <li>- SP (Strict Priority)</li> <li>- WRR (Weighted Round Robin)</li> </ul> </li> <li>• Queue Weight Config</li> </ul>	<ul style="list-style-type: none"> <li>• Bandwidth Control <ul style="list-style-type: none"> <li>- Port/Flow based Rating Limit</li> </ul> </li> <li>• Smoother Performance</li> <li>• Storm Control <ul style="list-style-type: none"> <li>- Multiple Control Modes(kbps/ratio)</li> <li>- Broadcast/Multicast/Unknown-Unicast Control</li> </ul> </li> </ul>

\* Zero-Touch Provisioning is supported when using Omada Cloud-Based Controller

## Software Features

Model	TL-SG2008 V3 / TL-SG2008P / TL-SG2210P V3.20 / TL-SG2210MP / TL-SG2218 / TL-SG2428P / TL-SL2428P V4.20	
ACL	<ul style="list-style-type: none"> <li>• Support up to 230 entries</li> <li>• Time-Range <ul style="list-style-type: none"> <li>- Time Slice</li> <li>- Week Time-Range</li> <li>- Absolute Time-Range</li> <li>- Holiday</li> </ul> </li> <li>• Time-based ACL</li> <li>• MAC ACL <ul style="list-style-type: none"> <li>- Source MAC</li> <li>- Destination MAC</li> <li>- VLAN ID</li> <li>- User Priority</li> <li>- Ether Type</li> </ul> </li> <li>• IP ACL <ul style="list-style-type: none"> <li>- Source IP</li> <li>- Destination IP</li> <li>- IP Protocol</li> <li>- TCP Flag</li> <li>- TCP/UDP Source Port</li> <li>- TCP/UDP Destination Port</li> <li>- DSCP/IP TOS</li> </ul> </li> <li>• IPv6 ACL</li> <li>• Combined ACL</li> <li>• Rule Operation <ul style="list-style-type: none"> <li>- Permit/Deny</li> </ul> </li> <li>• Policy Action <ul style="list-style-type: none"> <li>- Mirror</li> <li>- Rate Limit</li> <li>- Redirect</li> <li>- QoS Remark</li> </ul> </li> <li>• ACL Rules Binding <ul style="list-style-type: none"> <li>- Port Binding</li> <li>- VLAN Binding</li> </ul> </li> <li>• Actions for flows <ul style="list-style-type: none"> <li>- Mirror (to supported interface)</li> <li>- Redirect (to supported interface)</li> <li>- Rate Limit</li> <li>- QoS Remark</li> </ul> </li> </ul>	
Security	<ul style="list-style-type: none"> <li>• AAA</li> <li>• 802.1X <ul style="list-style-type: none"> <li>- Port based authentication</li> <li>- MAC (Host) based authentication</li> <li>- Authentication Method includes PAP/EAP-MD5</li> <li>- MAB</li> <li>- Guest VLAN</li> <li>- Support Radius authentication and accountability</li> </ul> </li> <li>• IP/IPv6-MAC Binding <ul style="list-style-type: none"> <li>- 512 Binding Entries</li> <li>- DHCP Snooping</li> <li>- DHCPv6 Snooping</li> <li>- ARP Inspection</li> <li>- ND Detection</li> <li>- ND Snooping</li> </ul> </li> <li>• IP Source Guard <ul style="list-style-type: none"> <li>- 253 Entries</li> <li>- Source IP+Source MAC</li> </ul> </li> <li>• IPv6 Source Guard <ul style="list-style-type: none"> <li>- 183 Entries</li> <li>- Source IPv6 Address+Source MAC</li> </ul> </li> <li>• DoS Defend</li> <li>• DHCP Filter</li> <li>• Static/Dynamic/Permanent Port Security <ul style="list-style-type: none"> <li>- Up to 64 MAC addresses per port</li> </ul> </li> <li>• Broadcast/Multicast/Unicast Storm Control <ul style="list-style-type: none"> <li>- kbps/ratio control mode</li> </ul> </li> <li>• Port Isolation</li> <li>• Secure web management through HTTPS with SSLv3/TLS 1.2</li> <li>• Secure Command Line Interface (CLI) management with SSHv1/SSHv2</li> <li>• IP/Port/MAC based access control</li> </ul>	

## Software Features

Model	TL-SG2008 V3 / TL-SG2008P / TL-SG2210P V3.20 / TL-SG2210MP / TL-SG2218 / TL-SG2428P / TL-SL2428P V4.20	
IPv6 Support	<ul style="list-style-type: none"> <li>• IPv6 Static Routing and ACL</li> <li>• IPv6 Dual IPv4/IPv6</li> <li>• IPv6 Interface</li> <li>• Multicast Listener Discovery (MLD) Snooping</li> <li>• IPv6 neighbor discovery (ND)</li> <li>• Path maximum transmission unit (MTU) discovery</li> <li>• Internet Control Message Protocol (ICMP) version 6</li> <li>• TCPv6/UDPv6</li> <li>• IPv6 applications               <ul style="list-style-type: none"> <li>- DHCPv6 Client</li> <li>- Ping6</li> <li>- Tracert6</li> <li>- Telnet(v6)</li> <li>- IPv6 SNMP</li> <li>- IPv6 SSH</li> <li>- IPv6 SSL</li> <li>- Http/Https</li> <li>- IPv6 TFTP</li> </ul> </li> </ul>	
Management	<ul style="list-style-type: none"> <li>• Web-based GUI</li> <li>• Command Line Interface (CLI) through telnet</li> <li>• SNMPv1/v2c/v3</li> <li>• SNMP Trap/Inform</li> <li>• RMON (1,2,3,9 groups)</li> <li>• SDM Template</li> <li>• DHCP/BOOTP Client</li> </ul>	<ul style="list-style-type: none"> <li>• Dual Image, Dual Configuration</li> <li>• CPU Monitoring</li> <li>• Cable Diagnostics</li> <li>• EEE</li> <li>• SNTP</li> <li>• System Log</li> </ul>
MIBs	<ul style="list-style-type: none"> <li>• MIB II (RFC1213)</li> <li>• Bridge MIB (RFC1493)</li> <li>• P/Q-Bridge MIB (RFC2674)</li> <li>• Radius Accounting Client MIB (RFC2620)</li> </ul>	<ul style="list-style-type: none"> <li>• Radius Authentication Client MIB (RFC2618)</li> <li>• Remote Ping, Traceroute MIB (RFC2925)</li> <li>• Support TP-Link private MIBs</li> <li>• RMON MIB(RFC1757, rmon 1,2,3,9)</li> </ul>

# Ordering Information

## Host Switch

Model	Description
TL-SG2008 V3	JetStream 8-Port Gigabit Smart Switch
TL-SG2008P	JetStream 8-Port Gigabit Smart Switch with 4-Port PoE+
TL-SG2210P V3.20	JetStream 10-Port Gigabit Smart Switch with 8-Port PoE+
TL-SG2210MP	JetStream 10-Port Gigabit Smart Switch with 8-Port PoE+
TL-SG2218	JetStream 16-Port Gigabit Smart Switch with 2 SFP Slots
TL-SG2428P	JetStream 28-Port Gigabit Smart Switch with 24-Port PoE+
TL-SL2428P V4.20	JetStream 24-Port 10/100Mbps + 4-Port Gigabit Smart Switch with 24-Port PoE+

## SFP Modules

Model	Description
TL-SM311LS	Gigabit SFP module, Single-mode, LC interface, Up to 20km distance
TL-SM311LM	Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance
TL-SM321A	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 20 km
TL-SM321A-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 2 km
TL-SM321B	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 20 km
TL-SM321B-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 2 km

## MC Series Media Converter

Model	Description
MC210CS	Gigabit Single-Mode Media Converter, up to 20 km, chassis mountable
MC200CM	Gigabit multi-mode SC SFP Transceiver, up to 550 m, chassis mountable
MC200L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable
TL-MC1400	14-slot power supply chassis for TP-LINK MC Series Media Converter, 19-inch rack-mountable

## FC Series Media Converter

Model	Description
TL-FC111A-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
TL-FC111B-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
TL-FC311A-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1550nm, RX:1310nm, chassis mountable
TL-FC311B-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1310nm, RX:1550nm, chassis mountable
TL-FC311A-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
TL-FC311B-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
TL-FC1400	14-slot power supply chassis for TP-LINK FC Series Media Converter, 19-inch rack-mountable

Some models featured in this guide may be unavailable in your country or region. Visit TP-Link website for local sales information: [www.tp-link.com](http://www.tp-link.com).

PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.

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# Gigabit L2+ Managed Switch Datasheet

MODELS: SG3210 V3.20 / SG3428 V2.30 / SG3428MP V6.20 / SG3452 V1.20 / SG3452P V3.30



## The TP-Link Solution

One-Step Solution  
Professional. Reliable. Secure.

### Overview

TP-Link | Omada L2+ managed switches provide high performance, powerful L2 and L2+ features like static routing, enterprise-level QoS, advanced security strategies and a bundle of ISP features. The IP-MAC-Port Binding (IMPB) and Access Control List (ACL) functions protect against broadcast storm, ARP and Denial-of-Service (DoS) attacks, etc. Quality of Service (QoS, L2 to L4) provides enhanced traffic management capabilities to move your data smoother and faster. The OAM and DDM functions help facilitate network management. Moreover, the easy-to-use web management interfaces, along with CLI, SNMP and Dual Image mean faster setup and configuration with less downtime. TP-Link | Omada L2+ managed Switches provide a reliable, secure solution for enterprise, campus and ISP networks.

# Omada Solution



## Hospitality

High Quality and Full Coverage Wi-Fi



## Education

High-Density Wi-Fi



## Retail

Social Marketing for O2O



## Office

Wireless and Wired Connections

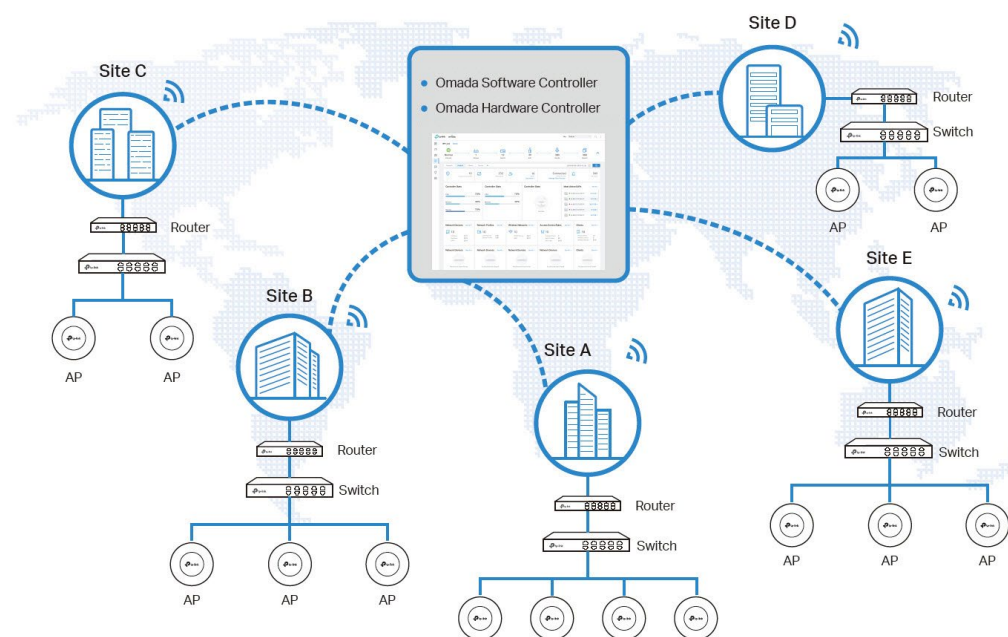


## Catering

Full Wi-Fi Coverage in High-Density Environment

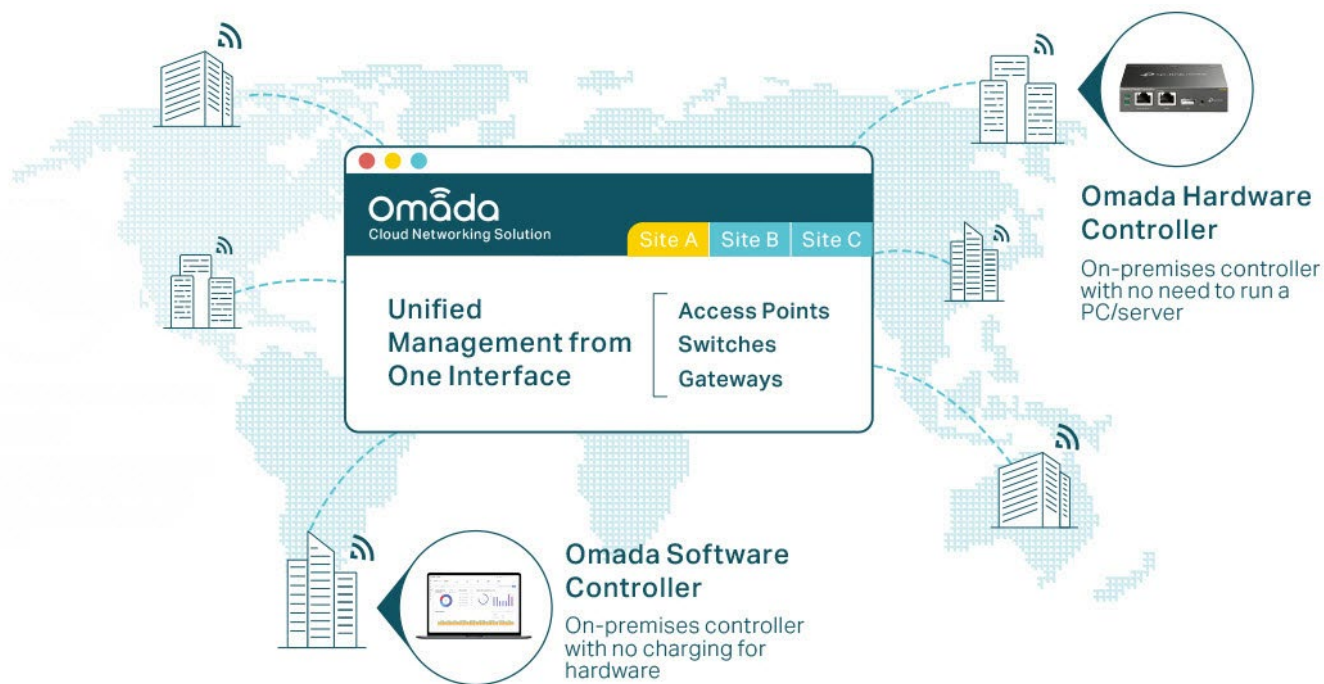
## Software Defined Networking (SDN) with Cloud Access

Omada Software Defined Networking (SDN) platform integrates network devices, including access points, switches and gateways, providing 100% centralized cloud management. Omada creates a highly scalable network—all controlled from a single interface. Seamless wireless and wired connections are provided, ideal for use in hospitality, education, retail, offices, and more.



# Hassle-Free Centralized Cloud Management

100% centralized cloud management of the whole network from different sites—all controlled from a single interface anywhere, anytime.

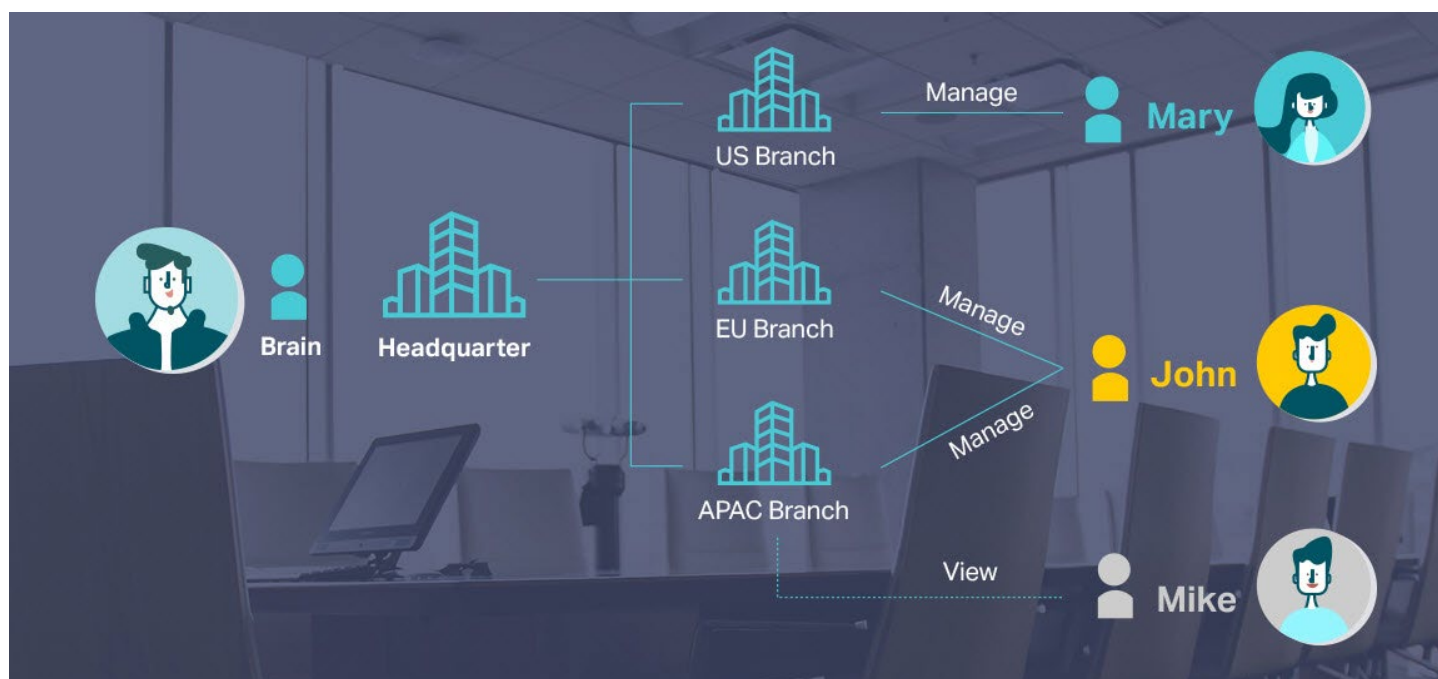


- ✓ No additional training needed
- ✓ Unlimited scalability
- ✓ Batch management
- ✓ Devices still work even when not connected to the Cloud

1

## Assign Different Management Roles

Multi-user privilege assignment is available to increase management efficiency and security. Multi-person management, multi-level permissions, and the ability to add admins as needed, enable flexible network operation and maintenance.

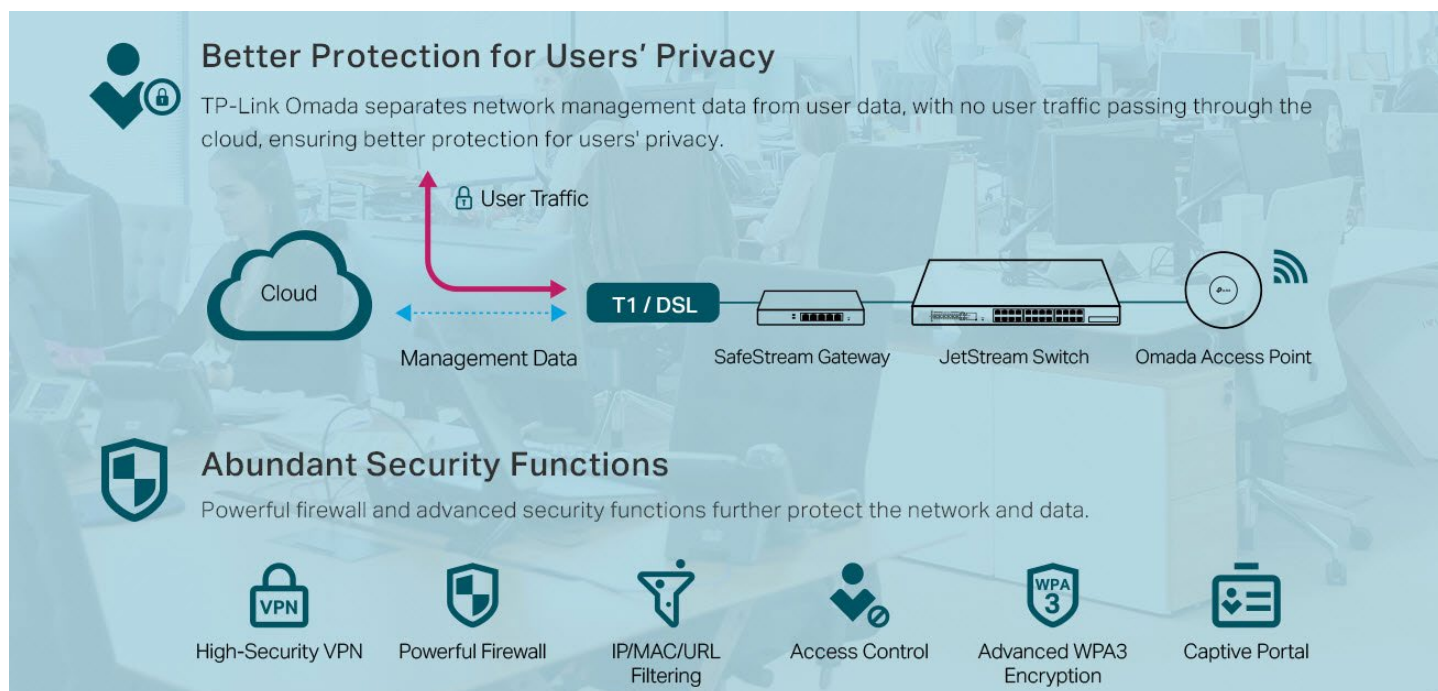


## Easy and Intelligent Network Monitoring

The easy-to-use dashboard makes it easy to see your real-time network status; check network usage and traffic distribution; receive network condition logs, abnormal event warnings, and notifications; or even track key data for better business results. Network topology helps IP admins quickly see and troubleshoot connection at a glance.



## Comprehensive Protection for the Whole Network



# Switch Product Features

## Networking Security

The TP-Link | Omada L2+ managed switches provide IP-MAC-Port Binding, Port Security, Storm control and DHCP Snooping which protect against broadcast storms, ARP attacks, etc. It integrates some typical DoS attacks to select. You can protect these attacks more easily ever than before. In addition, the Access Control Lists (ACL, L2 to L4) feature restricts access to sensitive network resources by denying packets based on source and destination MAC address, IP address, TCP/UDP ports and even VLAN ID. Moreover, the switch supports 802.1X authentication, which is used in conjunction with a RADIUS/TACACS+ server to require some authentication information before access to the network is allowed.

## Advanced QoS features

To integrate voice, data and video service on one traffic based on a variety of means including IP or MAC address, TCP or UDP port number, etc. to ensure that voice and video are always clear, smooth and jitter free. In conjunction with the Voice VLAN the switch supporting, the voice applications will operate with much smoother performance.

## Abundant L2 and L2+ features

The L2+ managed switches support a complete lineup of L2 features, including 802.1Q VLAN, Port Mirroring, STP/RSTP/ MSTP, Link Aggregation Control Protocol and 802.3x Flow Control function. Any more, the switch provides advanced features for network maintenance. Such as Loopback Detection, Cable Diagnostics and IGMP Snooping. IGMP snooping ensures the switch intelligently forward the multicast stream only to the appropriate subscribers while IGMP throttling & filtering restrict each subscriber on a port level to prevent unauthorized multicast access. Moreover, L2+ managed switches support L2+ feature-static routing, which is a simple way to provide segmentation of the network with internal routing through the switch and helps network traffic for more efficient use.

## ISP Features

The L2+ managed switches support a bundle of ISP features such as 802.3ah OAM, DDM, sFlow, QinQ, L2PT PPPoE ID Insertion, IGMP authentication etc. 802.3ah OAM and Device Link Detection Protocol (DLDP) functions improve monitor and troubleshoot Ethernet networks, help facilitate network management. DDM(Digital Diagnostic Monitoring) function helps view the status of SFP modules inserting to the Switch and to configure alarm settings, warning settings, temperature threshold settings, voltage threshold settings, bias current threshold settings, TX power threshold settings, and Rx power threshold settings.

## Enterprise Level Management Features

TP-Link's new Omada L2+ managed switches are easy to use and manage. It supports various user-friendly standard management features, such as intuitive web-based Graphical User Interface (GUI), industry-standard Command Line Interface (CLI), SNMP (v1/v2c/v3), and RMON. This allows the switch to provide valuable status information and send reports on abnormal events. It also supports Dual Image and Dual Configuration to provide improved reliability and network uptime.

## IPv6 Support

The L2+ managed switches support various IPv6 functions such as Dual IPv4/IPv6 Stack, MLD Snooping, IPv6 ACL, DHCPv6 Snooping, IPv6 Interface, Path Maximum Transmission Unit (PMTU) Discovery and IPv6 Neighbor Discovery, which guarantees your network is ready for the Next Generation Network (NGN) without upgrading your network equipment.



# Specifications

## Hardware Features & Performance





Product Picture		
Model		SG3210 V3.20
General	Interface	8 10/100/1000Mbps RJ45 Ports 2 Gigabit SFP Slots
	Console	1 RJ45 Console Port, 1 Micro-USB Console Port
	Flash	32 MB
	DRAM	256 MB
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)
PoE	PoE Standard	-
	PoE Ports	-
	PoE Power Budget	-
Performance	Switching Capacity	20 Gbps
	Packet Forwarding Rate	14.89 Mpps
	MAC Address Table	8K
	Packet Buffer	4.1 Mbit
	Transmission Method	Store and Forward
	Number of IP Interfaces	16
	Number of Static Routers	48 (IPv4, IPv6)
	Jumbo Frame	9 KB
Physical & Environment	Power Supply	100-240 V AC~50/60 Hz
	Max Power Consumption	6.84 W (220 V/50 Hz)
	Max Heat Dissipation	23.33 BTU/hr (220 V/50 Hz)
	Standby Power Consumption	1.91 W (220 V/50 Hz)
	Dimensions (W x D x H)	11.6 × 7.1 × 1.7 in (294 × 180 × 44 mm)
	Fan Quantity	Fanless
	Installation	Rack Mountable
	Operating Temperature	0 °C to 45 °C (32 °F to 113 °F)
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)
	Operation Humidity	10% to 90% RH, non-condensing
	Storage Humidity	5% to 90% RH, non-condensing
	Certification	CE, FCC, RoHS

Hardware Features & Performance

Product Picture			
Model		SG3428 V2.30	SG3428MP V6.20
General	Interface	24 10/100/1000Mbps RJ45 Ports 4 Gigabit SFP Slots	
	Console	1 RJ45 Console Port, 1 Micro-USB Console Port	
	Flash	32 MB	
	DRAM	256 MB	
	Port Standard	IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)	
PoE	PoE Standard	-	802.3af/at
	PoE Ports	-	24, up to 30 W
	PoE Power Budget	-	384 W
Performance	Switching Capacity	56 Gbps	
	Packet Forwarding Rate	41.66 Mpps	
	MAC Address Table	16K	
	Packet Buffer	12 Mbit	
	Transmission Method	Store and Forward	
	Number of IP Interfaces	16	
	Number of Static Routers	48 (IPv4, IPv6)	
	Jumbo Frame	9 KB	
Physical & Environment	Power Supply	100-240 V AC~50/60 Hz	
	Max Power Consumption	20.6 W (220 V/50 Hz)	480.1 W (110 V/60 Hz) (with 384 W PD connected)
	Max Heat Dissipation	70.30 BTU/hr (220 V/50 Hz)	1637.14 BTU/hr (110 V/60 Hz) (with 384 W PD connected)
	Standby Power Consumption	10.3 W (220 V/50 Hz)	15.7 W (110V/60 Hz)
	Dimensions (W x D x H)	17.3 × 7.1 × 1.7 in (440 × 180 × 44 mm)	17.3 × 13.0 × 1.7 in (440 × 330 × 44 mm)
	Fan Quantity	Fanless	2
	Installation	Rack Mountable	
	Operating Temperature	0 °C to 45 °C (32 °F to 113 °F)	
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)	
	Operation Humidity	10% to 90% RH, non-condensing	
	Storage Humidity	5% to 90% RH, non-condensing	
	Certification	CE, FCC, RoHS	

## Hardware Features & Performance

Product Picture			
Model		SG3452 V1.20	SG3452P V3.30
General	Interface	48 10/100/1000Mbps RJ45 Ports, 4 Gigabit SFP Slots	
	Console	1 RJ45 Console Port, 1 Micro-USB Console Port	
	Flash	32 MB	
	DRAM	256 MB	
Port Standard		IEEE 802.3i:10BASE-T Ethernet; IEEE 802.3u:100BASE-X Fast Ethernet; IEEE 802.3ab:1000BASE-T Gigabit Ethernet; IEEE 802.3z:1000BASE-X Gigabit Ethernet (Optical fiber)	
PoE	PoE Standard	-	802.3af/at
	PoE Ports	-	48, up to 30 W
	PoE Power Budget	-	384 W
Performance	Switching Capacity	104 Gbps	
	Packet Forwarding Rate	77.38 Mpps	
	MAC Address Table	16K	
	Packet Buffer	12 Mbit	
	Transmission Method	Store and Forward	
	Number of IP Interfaces	16	
	Number of Static Routers	48 (IPv4, IPv6)	
	Jumbo Frame	9 KB	
Physical & Environment	Power Supply	100-240 V AC~50/60 Hz	
	Max Power Consumption	34.86 W (220 V/50 Hz)	464.2 W (110 V/60 Hz) (with 384 W PD connected)
	Max Heat Dissipation	118.94 BTU/hr (220 V/50 Hz)	1584.08 BTU/hr (110 V/60 Hz) (with 384 W PD connected)
	Standby Power Consumption	11.65 W (220 V/50 Hz)	27.9 W (110V/60 Hz)
	Dimensions (W x D x H)	17.3 × 8.7 × 1.7 in (440 × 220 × 44 mm)	17.3 × 13.0 × 1.7 in (440 × 330 × 44 mm)
	Fan Quantity	Fanless	3
	Installation	Rack Mountable	
	Operating Temperature	0 °C to 40 °C (32 °F to 104 °F)	
	Storage Temperature	-40 °C to 70 °C (-40 °F to 158 °F)	
	Operation Humidity	10% to 90% RH, non-condensing	
	Storage Humidity	5% to 90% RH, non-condensing	
	Certification	CE, FCC, RoHS	

## Software Features

Model	SG3210 V3.20 / SG3428 V2.30 / SG3428MP V6.20 / SG3452 V1.20 / SG3452P V3.30	
SDN Support	<ul style="list-style-type: none"> <li>• Support Omada Hardware Controller, Software Controller</li> <li>• Automatic Device Discovery</li> <li>• Batch Configuration</li> <li>• Batch Firmware Upgrading</li> </ul>	<ul style="list-style-type: none"> <li>• Intelligent Network Monitoring</li> <li>• Abnormal Event Warnings</li> <li>• Unified Configuration</li> <li>• Reboot Schedule</li> </ul>
L3 Features	<ul style="list-style-type: none"> <li>• 16 IPv4/IPv6 Interfaces</li> <li>• Static Routing <ul style="list-style-type: none"> <li>- 48 static routes</li> </ul> </li> <li>• Static ARP <ul style="list-style-type: none"> <li>- 128 static entries</li> </ul> </li> <li>• 316 ARP Entries (512 ARP Entries for SG3428 &amp; SG3428MP)</li> </ul>	<ul style="list-style-type: none"> <li>• Proxy ARP</li> <li>• Gratuitous ARP</li> <li>• DHCP Server</li> <li>• DHCP Relay <ul style="list-style-type: none"> <li>- DHCP interface relay</li> <li>- DHCP VLAN relay</li> </ul> </li> <li>• DHCP L2 Relay</li> </ul>
L2 Features	<ul style="list-style-type: none"> <li>• Link Aggregation <ul style="list-style-type: none"> <li>- Static link aggregation</li> <li>- 802.3ad LACP</li> <li>- Up to 8 aggregation groups and up to 8 ports per group</li> </ul> </li> <li>• Spanning Tree Protocol <ul style="list-style-type: none"> <li>- 802.1d STP</li> <li>- 802.1w RSTP</li> <li>- 802.1s MSTP</li> <li>- STP Security: TC Protect, BPDU Filter, BPDU Protect, Root Protect, Loop Protect</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Loopback Detection <ul style="list-style-type: none"> <li>- Port based</li> <li>- VLAN based</li> </ul> </li> <li>• Flow Control <ul style="list-style-type: none"> <li>- 802.3x Flow Control</li> <li>- HOL Blocking Prevention</li> </ul> </li> <li>• Mirroring <ul style="list-style-type: none"> <li>- Port Mirroring</li> <li>- CPU Mirroring</li> <li>- One-to-One</li> <li>- Many-to-One</li> <li>- Tx/Rx/Both</li> </ul> </li> </ul>
L2 Multicast	<ul style="list-style-type: none"> <li>• Supports 511 (IPv4, IPv6) IGMP groups</li> <li>• IGMP Snooping <ul style="list-style-type: none"> <li>- IGMP v1/v2/v3 Snooping</li> <li>- Fast Leave</li> <li>- IGMP Snooping Querier</li> <li>- IGMP Authentication</li> </ul> </li> <li>• IGMP Authentication</li> <li>• MVR</li> </ul>	<ul style="list-style-type: none"> <li>• MLD Snooping <ul style="list-style-type: none"> <li>- MLD v1/v2 Snooping</li> <li>- Fast Leave</li> <li>- MLD Snooping Querier</li> <li>- Static Group Config</li> <li>- Limited IP Multicast</li> </ul> </li> <li>• Multicast Filtering: 256 profiles and 16 entries per profile</li> </ul>
VLAN	<ul style="list-style-type: none"> <li>• VLAN Group <ul style="list-style-type: none"> <li>- Max 4K VLAN Groups</li> </ul> </li> <li>• 802.1Q Tagged VLAN</li> <li>• MAC VLAN: <ul style="list-style-type: none"> <li>- 12 Entries for SG3210</li> <li>- 30 Entries for SG3428 &amp; SG3428MP</li> <li>- 48 Entries for SG3452 &amp; SG3452P</li> </ul> </li> <li>• Protocol VLAN: Protocol Template 16, Protocol VLAN 16</li> </ul>	<ul style="list-style-type: none"> <li>• Private VLAN</li> <li>• GVRP</li> <li>• VLAN VPN (QinQ) <ul style="list-style-type: none"> <li>- Port-Based QinQ</li> <li>- Selective QinQ</li> </ul> </li> <li>• Voice VLAN</li> </ul>
QoS	<ul style="list-style-type: none"> <li>• 8 priority queues</li> <li>• 802.1p CoS/DSCP priority</li> <li>• Queue scheduling <ul style="list-style-type: none"> <li>- SP (Strict Priority)</li> <li>- WRR (Weighted Round Robin)</li> <li>- SP+WRR</li> </ul> </li> <li>• Bandwidth Control <ul style="list-style-type: none"> <li>- Port/Flow based Rating Limiting</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Smoother Performance</li> <li>• Action for Flows <ul style="list-style-type: none"> <li>- Mirror (to supported interface)</li> <li>- Redirect (to supported interface)</li> <li>- Rate Limit</li> <li>- QoS Remark</li> </ul> </li> </ul>

Software Features		
Model	SG3210 V3.20 / SG3428 V2.30 / SG3428MP V6.20 / SG3452 V1.20 / SG3452P V3.30	
ACL	<ul style="list-style-type: none"> <li>• MAC ACL <ul style="list-style-type: none"> <li>- Source MAC</li> <li>- Destination MAC</li> <li>- VLAN ID</li> <li>- User Priority</li> <li>- Ether Type</li> </ul> </li> <li>• IP ACL <ul style="list-style-type: none"> <li>-Source IP</li> <li>- Destination IP</li> <li>- Fragment</li> <li>- IP Protocol</li> <li>- TCP Flag</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- TCP/UDP Port</li> <li>- DSCP/IP TOS</li> <li>- User Priority</li> <li>• Combined ACL</li> <li>• IPv6 ACL</li> <li>• Policy <ul style="list-style-type: none"> <li>- Mirroring</li> <li>- Redirect</li> <li>- Rate Limit</li> <li>- QoS Remark</li> </ul> </li> <li>• ACL apply to Port/VLAN</li> <li>• Time-based ACL</li> </ul>
Security	<ul style="list-style-type: none"> <li>• IP-MAC-Port Binding <ul style="list-style-type: none"> <li>-512 Entries</li> <li>- DHCP Snooping</li> <li>- ARP Inspection</li> <li>- IPv4 Source Guard: 100 Entries</li> </ul> </li> <li>• IPv6-MAC-Port Binding <ul style="list-style-type: none"> <li>-512 Entries</li> <li>- DHCPv6 Snooping</li> <li>- ND Detection</li> <li>- ND Snooping</li> <li>- IPv6 Source Guard: 100 Entries</li> </ul> </li> <li>• DoS Defend</li> <li>• DHCP Filter</li> <li>• Static/Dynamic Port Security <ul style="list-style-type: none"> <li>- Up to 64 MAC addresses per port</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Broadcast/Multicast/Unicast Storm Control <ul style="list-style-type: none"> <li>- kbps/ratio/pps control mode</li> </ul> </li> <li>• 802.1X <ul style="list-style-type: none"> <li>- Port base authentication</li> <li>- Mac base authentication</li> <li>- VLAN Assignment</li> <li>- MAB</li> <li>- Guest VLAN</li> <li>- Support RADIUS authentication and accountability</li> </ul> </li> <li>• AAA (including TACACS+)</li> <li>• Port Isolation</li> <li>• Secure web management through HTTPS with SSLv3/TLS 1.2</li> <li>• Secure Command Line Interface (CLI) management with SSHv1/SSHv2</li> <li>• IP/Port/MAC based access control</li> </ul>
ISP Features	<ul style="list-style-type: none"> <li>• 802.3ah Ethernet Link OAM (except SG3452 V1.20)</li> <li>• L2PT (Layer 2 Protocol Tunneling)</li> <li>• DDM (for SG3210 &amp; SG3428 &amp; SG3428MP)</li> </ul>	<ul style="list-style-type: none"> <li>• Device Link Detect Protocol (DLDP)</li> <li>• PPPoE ID Insertion</li> <li>• sFlow (for SG3428 &amp; SG3428MP)</li> <li>• ERPS</li> </ul>
Management	<ul style="list-style-type: none"> <li>• Web-based GUI</li> <li>• Command Line Interface (CLI) through consoleport, telnet</li> <li>• SNMPv1/v2c/v3 <ul style="list-style-type: none"> <li>- Trap/Inform</li> <li>- RMON (1, 2, 3, 9 groups)</li> </ul> </li> <li>• SDM Template</li> <li>• DHCP/BOOTP Client</li> <li>• 802.1ab LLDP/LLDP-MED</li> </ul>	<ul style="list-style-type: none"> <li>• DHCP Auto Install</li> <li>• Dual Image, Dual Configuration</li> <li>• CPU Monitoring</li> <li>• Cable Diagnostics</li> <li>• EEE</li> <li>• Password Recovery</li> <li>• SNTP</li> <li>• System Log</li> </ul>
IPv6 Support	<ul style="list-style-type: none"> <li>• IPv6 Dual IPv4/IPv6</li> <li>• Multicast Listener Discovery (MLD) Snooping</li> <li>• IPv6 ACL</li> <li>• IPv6 Interface</li> <li>• Static IPv6 Routing</li> <li>• IPv6 neighbor discovery (ND)</li> <li>• Path maximum transmission unit (MTU) discovery</li> <li>• Internet Control Message Protocol (ICMP) version 6</li> <li>• TCPv6/UDPv6</li> </ul>	<ul style="list-style-type: none"> <li>• IPv6 applications <ul style="list-style-type: none"> <li>- DHCPv6 Client</li> <li>- Ping6</li> <li>- Tracert6</li> <li>- Telnet (v6)</li> <li>- IPv6 SNMP</li> <li>- IPv6 SSH</li> <li>- IPv6 SSL</li> <li>- Http/Https</li> <li>- IPv6 TFTP</li> </ul> </li> </ul>
MIBs	<ul style="list-style-type: none"> <li>• MIB II (RFC1213)</li> <li>• Interface MIB (RFC2233)</li> <li>• Ethernet Interface MIB (RFC1643)</li> <li>• Bridge MIB (RFC1493)</li> <li>• P/Q-Bridge MIB (RFC2674)</li> <li>• RMON MIB (RFC2819)</li> </ul>	<ul style="list-style-type: none"> <li>• RMON2 MIB (RFC2021)</li> <li>• RADIUS Accounting Client MIB (RFC2620)</li> <li>• RADIUS Authentication Client MIB (RFC2618)</li> <li>• Remote Ping, Traceroute MIB (RFC2925)</li> <li>• Support TP-Link Private MIB</li> </ul>

# Ordering Information

## Host Switch

Model	Description
SG3210 V3.20	Omada 8-Port Gigabit L2+ Managed Switch with 2 SFP Slots
SG3428 V2.30	Omada 24-Port Gigabit L2+ Managed Switch with 4 SFP Slots
SG3428MP V6.20	Omada 28-Port Gigabit L2+ Managed Switch with 24-Port PoE+
SG3452 V1.20	Omada 48-Port Gigabit L2+ Managed Switch with 4 SFP Slots
SG3452P V3.30	Omada 52-Port Gigabit L2+ Managed Switch with 48-Port PoE+

## SFP Modules

Model	Description
SM311LS	Gigabit SFP module, Single-mode, LC interface, Up to 20km distance
SM311LM	Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance
SM321A	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 20 km
SM321A-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 2 km
SM321B	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 20 km
SM321B-2	Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 2 km

## MC Series Media Converter

Model	Description
MC210CS	Gigabit Single-Mode Media Converter, up to 20 km, chassis mountable
MC200CM	Gigabit multi-mode SC SFP Transceiver, up to 550 m, chassis mountable
MC200L	Gigabit SFP slot supporting mini-GBIC modules, chassis mountable
MC1400	14-slot power supply chassis for TP-LINK MC Series Media Converter, 19-inch rack-mountable

## RJ45 SFP Modules

Model	Description
SM331T	1000BASE-T RJ45 SFP Module

## FC Series Media Converter

Model	Description
FC111A-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC111B-20	100Mbps Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-2	Gigabit Single-Mode WDM Media Converter, up to 2 km, TX:1310nm, RX:1550nm, chassis mountable
FC311A-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1550nm, RX:1310nm, chassis mountable
FC311B-20	Gigabit Single-Mode WDM Media Converter, up to 20 km, TX:1310nm, RX:1550nm, chassis mountable
FC1400	14-slot power supply chassis for TP-LINK FC Series Media Converter, 19-inch rack-mountable

Some models featured in this guide may be unavailable in your country or region. Visit TP-Link website for local sales information: [www.tp-link.com](http://www.tp-link.com).

PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.

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## CUBE

Compatibility, connectivity, and security for home and office



### Main Feature

#### Protection

##### Off-line UPS design

Off-line UPS provide comprehensive protection against short circuit, overload, and surge; Supports critical power during power failure.

##### Tele-communication protection

Alone with your critical equipment, telecommunication port provides surge protection to your modem and telecom system.

##### Advanced battery management

ABM system optimize battery charging efficiency.

#### Management

##### Power Saving Design

Our energy-saving technology saves unnecessary consumption during non-essential time; Increase power efficiency and battery lifespan.

##### Monitoring connectivity

UPS supports monitoring connection through USB/RS232. UPSMON PRO monitoring software allows various status and function available through computer and mobile device.

#### Convenient

##### Easy-Swap Battery replacement.

Easy-Swap design allows battery replacement with minimum part removal; Ensure low difficulty for user operation.

##### Multi-socket connectivity

Up to 8 socket support allows adequate home & office equipment to operate under protection.

##### Tri-direction hanger

CUB's Tri-direction hanger enables multiple options to install in compact office space; ensure placements are always flexible to user.



Download Link



UPSMON PRO for portable Device

The UPSMON PRO monitoring software interface, showing various system status parameters and a navigation menu on the left. The interface is titled 'UPSMON PRO' and includes sections for Power Status, Battery Capacity, Load Level, and AC Utility Power.

Power Status		AC Utility Power
Input Voltage	234 (V)	
Output Voltage	230 (V)	
Input Frequency	60 (Hz)	
Battery Status		Normal
Battery Capacity	100 (%)	
Est. Backup Time	229 (Min)	
UPS Status		ON-Line
UPS Load	60 (%)	
UPS Temperature	26 (C)	

UPSMON PRO Interface

## Specification

Model	CUB-450E CUB-450N	CUB-650E CUB-650N	CUB-850E CUB-850N	CUB-1000E CUB-1000N
Configuration				
Capacity (VA)	450 VA	650 VA	850 VA	1000 VA
Capacity (Watts)	270 W	390 W	510 W	550 W
Form	Office Type			
Input				
Voltage	220 / 230 / 240 VAC			
Input Voltage Range	165 - 276 VAC			
Input Frequency Range	50 Hz / 60 Hz (Auto Sensing)			
Output				
Waveform	Simulated Sine Wave			
Voltage	220 / 230 / 240 VAC			
Frequency	50 Hz / 60 Hz ± 0.5 Hz			
Transfer Time	2 - 4 ms (Typical)			
Protection				
Full Protection	Overload, Surge, Short Circuit			
Tele Communication	RJ11 / RJ45 : E model			
Battery				
Type	12V 7Ah	12V 7.2Ah	12V 9Ah	
Quantity	1		1	
Sealed, Maintenance Free	Yes			
Typical Recharge Time	8 hr to 90%			
Management & Communication				
Indicator	LED Panel, LCD Panel (Option)			
Communication Port	USB B type : E model			
Physical				
Dimensions (WxDxH) (mm)	245 x 160 x 125			
Weight (kgs)	3.5	3.7	3.9	3.9
Shipping Dimensions (mm)	312 x 174 x 238			
Shipping Weight (kgs)	3.9	4	4.3	4.3
Alarm				
Overload / Fault	Continuous Beeping			
Battery Mode	Beep every 4 seconds			
Low Battery	Beep every 0.5 second			
Environment				
Operating Humidity	0-90 % RH at 0-40°C (Non-condensing)			
Audible Noise	Less than 40 dB			

\* N series without tel communication, USB port.

\* Specifications are subject to change without further notice.

\* Specifications are for reference, please refer to information based on real product.

20240322

# Yuasa Technical Data Sheet

## Yuasa SW280 Industrial VRLA Battery



### Specifications

Nominal voltage (V)	12
10m rate Constant Power (Typ) to 9.6V at 20°C (W/Block)	280
10m rate Constant Power (Typ) to 1.6V/cell at 20°C (W/Cell)	46.7

### Dimensions

Length (mm)	151 (±1)
Width (mm)	65 (±1)
Height over terminals (mm)	97.5 (±2)
Mass (kg)	2.6

### Terminal Type

FASTON - Quickfit / release (JST where stated)	6.35
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### Operating Temperature Range

Storage (in fully charged condition)	-20°C to +60°C
Charge	-15°C to +50°C
Discharge	-20°C to +60°C

### Storage

Capacity loss per month at 20°C (% approx.)	3
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### Case Material

Standard	ABS (UL94:HB)
FR version available	UL94:V0

### Charge Voltage

Float charge voltage at 20°C (V)/Block	13.65 (±1%)
Float charge voltage at 20°C (V)/Cell	2.275 (±1%)
Float Chg voltage tmp correction factor from std 20°C (mV)	-3
Cyclic (or Boost) charge Voltage at 20°C (V)/Block	14.5 (±3%)
Cyclic (or Boost) charge Voltage at 20°C (V)/Cell	2.42 (±3%)
Cyclic Chg voltage tmp correction factor from std 20°C (mV)	-4

### Charge Current

Float charge current limit (A)	1.9
Cyclic (or Boost) charge current limit (A)	1.9

### Maximum Discharge Current

1 second (A)	150
1 minute (A)	50

### Impedance

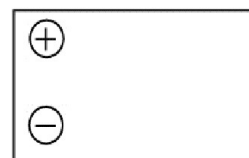
Measured at 1 kHz (mΩ)	14
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### Design Life & Approvals

EUROBAT Classification: General Purpose	6 to 9 years
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### Layout



### 3rd Party Certifications

ISO9001 - Quality Management Systems  
ISO14001 - Environmental Management Systems  
ISO45001 OHSAS Management Systems  
UNDERWRITERS LABORATORIES Inc.



## Safety

### Installation

Can be installed and operated in orientations up to 90° from the upright position.

### Handles

Batteries must not be suspended by their handles (where fitted).

### Vent valves

Each cell is fitted with a low pressure release valve to allow gasses to escape and then reseal.

### Gas release

VRLA batteries release hydrogen gas which can form explosive mixtures in the air. Do not place inside a sealed container.

### Recycling

YUASA's VRLA batteries must be recycled at the end of life in accordance with local and national laws and regulations.

