

# Sundray S910PLUS Outdoor Access Point

## Product Overview

The S910PLUS outdoor wireless access point is a new generation of high-performance outdoor wireless access point for triple frequency 802.11ac wave 2 independently developed by Sundray. It adopts tri-band and eight-stream technology and supports 2.4G, 5G and 5G tri-band concurrency and supports MU-MIMO. The whole AP can reach up to 3000Mbps. The equipment adopts Gigabit uplinks to ensure high-speed wireless transmission; PoE remote power supply and Bluetooth serial port remote debugging management make network deployment easier.

The S910PLUS is designed with a shell of IP 68 with the highest degree of protection. It supports fully-enclosed waterproof, moisture-proof, dust-proof, fire-proof and sun-proof. It adopts low-temperature intelligent heating technology and can still be used in extremely harsh outdoor environments (-40 °C-70 °C). Normal use can effectively prevent outdoor bad weather and environmental impacts. S910PLUS also supports point-to-point and point-to-multipoint relay bridge functions, which improves the feasibility of outdoor networking. With the NAC series controller, to provide users with an unprecedented rapid experience and more secure service access.

The S910PLUS outdoor wireless access point has a built-in directional antenna and does not require additional external antennas. It is particularly suitable for deployment in outdoor environments such as scenic areas, campuses, and parks.



SUNDRAY S910PLUS

## Product Features

### High adaptability

#### ➤ High protection level to cope with severe environments

The shell of S910PLUS is of the IP 68 protection level and boasts waterproof, damp proof, dustproof, fireproof, and sun protection features. The shell can protect S910PLUS against severe weather and environments.

#### ➤ Professional lightning protection design

AP S910PLUS has building with the professional lightning protection design, adopting the antenna feeder lightning protection technology to protect S910PLUS against lightning strikes. Lightning protection measures are also taken for the Ethernet port to protect the Switch port from lightning strikes.

#### ➤ Wide operating temperature range

S910PLUS can operate properly at a temperature ranging from -40°C to 70°C without compromising the stability and service life. It applies to severe environments in both cold, hot and damp areas.

### Flexible network deployment

#### ➤ Flexible external antennas Option

The maximum output power of S910PLUS can reach 500 mW. It is specifically designed for wide wireless coverage outdoors. It can meet wireless coverage requirements in a wide range of outdoor scenarios by deploying omnidirectional or directional antenna. It applies to outdoor environments such as scenic spots, schools and parks, etc.

#### ➤ WDS wireless relay/bridge

S910PLUS supports WDS, wireless relay bridges, point-to-point, and point-to-multipoint to resolve inconvenience or difficult deployment problems. The WDS function is used to relay and amplify signals for the purpose of extending the wireless coverage scope. The Ethernet port of a wireless relay AP can be connected to a wired switch to extend both wired and wireless LAN coverage scope.

#### ➤ Bluetooth console port

Bluetooth serial port management mode is supported. When the AP device fails, the administrator does not need to climb the pole, does not need to be removed, does not need to pull long and long network cables, and can enter the console debugging background through Bluetooth signals. A mobile phone realizes control and saves. Equipment deployment costs and later operation and maintenance costs.

#### ➤ PoE remote power supply

S910PLUS adopts the PoE remote power supply design. A network cable is connected for transmitting data and supplying power to the AP. No power socket needs to be deployed. This shortens the construction time, reduces the construction costs, and avoids strong current threats. In other words, the AP is protected against damage caused by burst over-high voltage or unstable voltage.

#### ➤ PoE output

When the AP is powered by a 60W PoE injector, the EHT2 port outputs 15W power (standard

802.af) to other PoE powered devices such as bridges and cameras.

➤ **Virtual AP technology**

A maximum of 32 ESSIDs can be provided by using the virtual AP technology. Different SSIDs use different authentication modes and have different network access permission. The SSIDs are isolated from each other. L2 isolation can be implemented for terminals that use the same SSID on a subnet or VLAN to ensure user data security.

➤ **SSID**

An SSID with a maximum of 32 characters can be specified. An SSID can also contain both Chinese and English characters. Individualized SSIDs are available for scenic spots, schools or parks to improve discrimination.

**Top-speed wireless network access**

➤ **Tri-band eight stream high speed access**

The S910PLUS complies with the 11a/b/g/n/ac/wave2 protocol standard. It adopts an innovative tri-band design and supports 2.4G, 5G, and 5G tri-band concurrency. It adds a four-stream 802.11ac radio over traditional equipment. With a rate of up to 3Gbps, it is more suitable for use in high-density scenarios and can provide higher-performance wireless access services from coverage, access density, and stable operation.

➤ **Gigabit uplink**

Two 10/100/1000Base-T Ethernet port is used as the uplink port, and also one SFP port is used for fiber connection, ensuring high-speed wireless transmission.

➤ **QoS guarantee**

SUNDRAY S910PLUS supports different QoS levels. It supports air interface resource management based on applications, SSIDs or STAs to ensure that air interfaces are appropriately allocated and that the data of important SSIDs and applications is transmitted in preference. Transmission priorities can be defined for different service data through 802.11e/WMM. This ensures smooth wireless access.

➤ **Seamless roaming for L2 and L3**

SUNDRAY S910PLUS works with SUNDRAY wireless controller to implement seamless roaming for L2 and L3. When a wireless user roams, the IP address and authentication status remain unchanged. The terminal viscosity prevention function is provided to intelligently guide an STA to the optimal AP, increasing the roaming speed.

**All-round security protection**

➤ **Multiple easy-to-use and secure authentication modes**

Multiple flexible, easy-to-use and secure user authentication modes are available. 802.1x, portal, SMS, WeChat, Facebook, app and QR code authentication modes are provided with the support of SUNDRAY wireless controller to meet network deployment requirements in environments including scenic spots, schools and parks, etc.

➤ **All-round wireless security protection**

With the support of SUNDRAY wireless controllers, S910PLUS provides a wide range of wireless security protection functions including WIDS/WIPS, illegitimate AP detection, ARP spoofing prevention, and DoS attack prevention, constructing a truly secure and reliable wireless network for users.

## Marketing

### ➤ Access analysis

Build-in access analysis system, support report the device appear time, MAC address, and report the data differently in the first access and repeat access, passerby and total number coming and not coming in. Also will show the duration of stay. Based on the statistics, will have a better understanding of the clients in the network and offer information for the operators to make decision.

### ➤ Marketing based on user behavior

Based on the client's behavior to make the policy of when to push the message. The policy support based on the application the client is using, and based on location, schedule, first access repeat access. The message support banner, SMS, wechat message and webpage.

### ➤ APP and file cache

The controller can cache the application for ios and android devices. It will help to accelerate the network. Also it will help to accelerate the app authentication.

## Technical Specifications

### Hardware specifications

Product Specifications of SUNDRAY AP S910Plus	
Hardware specifications	
Item	Description
Model	S910PLUS
Dimensions	242mm*242mm*68mm
Ethernet port	1*10/100/1000Mbps ETH0/PoE IN (RJ45) 1*SFP 1*10/100/1000Mbps ETH1/PoE OUT (RJ45)
PoE	802.3at
Transmit power	≤ 27 dBm
Power adjustment granularity	1 dbm
Power range	3 dBm to the value specified by national regulations
Power consumption	< 25 W
Antenna	Build-in directional antenna, support external antenna
Operating/storage temperature	-40°C to +70°C
Operating/storage humidity	0%-100% (non-condensing)
Protection level	IP 68
MTBF	> 250000 H

**Software specifications**

Software specifications		
Item	Description	
Model	S910PLUS	
RF	Streams	8
	Maximum transmission speed of a single frequency	2.4 G: 400 Mbps 5 G(1): 867 Mbps 5 G(2): 1733 Mbps
	Operating frequency band	802.11ac/n/a : 5.725GHz-5.850GHz ; 5.15~5.35GHz
		802.11b/g/n : 2.4GHz-2.483GHz
	Modulation technology	OFDM: BPSK@6/9 Mbps, QPSK@12/18 Mbps, 16-QAM@24 Mbps, 64-QAM@48/54 Mbps
		DSSS: DBPSK@1 Mbps, DQPSK@2 Mbps, CCK@5.5/11 Mbps
		MIMO-OFDM: MCS 0-15 MIMO-OFDM (11ac) : MCS 0-9
	Modulation method	11b: DSS:CCK@5.5/11Mbps,DQPSK@2Mbps,DBPSK@1Mbps 11a/g:OFDM:64QAM@48/54Mbps,16QAM@24Mbps,QPSK@12/18Mbps,BPSK@6/9Mbps
		11n: MIMO-OFDM:BPSK,QPSK,16QAM,64QAM
		11ac: MIMO-OFDM:BPSK,QPSK,16QAM,64QAM,256QAM
		802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
		802.11n: 6.5 to 300 (MCS0 to MCS15) 802.11n high throughput support: MCS 0-7 HT 20/40 802.11ac: MCS 0-9; 20/40/80
	Channel quantity	802.11a, 802.11n, 802.11ac (compatible with 802.11a) : 13 channels
802.11b, 802.11g, 802.11n (compatible with 802.11b/g mode): 13 channels		
Manual and automatic channel adjustment	Supported	
Automatic power adjustment	Supported	
Manual power adjustment	The AP supports manual power adjustment with an adjustment granularity of 1 dBm. The power scope is from 1 dBm to the value specified by national regulations.	
Timed turning on or off of RF	RF can be turned on or off based on the specified time period.	
Turn off MIMO	Supported. An RF interface can be selected for single output.	
WLAN function	Maximum number of connected users	512
	Connected user	Supported

Software specifications		
	quantity restriction	
	Virtual AP	32
	Chinese SSID	Supported
	SSID hiding	Supported
	Wireless relay/bridge	Point-to-point and point-to-multipoint supported
	User-, traffic-, and frequency band-based intelligent load balancing	Supported
	Bandwidth restriction	STA, SSID, or AP-based rate limiting is supported.
	STA function	Abnormal STA disconnection detection, STA aging detection, and STA statistic and status query are supported.
	Link integrity detection	Supported
Security authentication	Authentication mode	Pre-shared key authentication, portal authentication, 802.1x authentication, CA certificate authentication, WeChat authentication, Facebook, SMS authentication, QR code authentication, temporary visitor authentication, WAPI personal and enterprise
	Pre-shared key	WPA-PSK, WPA2-PSK, WPA-PSK/WPA2-PSK hybrid authentication
	Portal authentication	Intelligent terminal type identification is supported. A page matching the terminal size is pushed to terminals. The page logo and displayed information can be customized. In addition, the verification, authentication interval, and reconnection authentication time thresholds can be set.
	802.1x authentication	802.1x one-key configuration and 802.1x perception-free authentication are supported. You only need to download the one-key automatic configuration tool at initial access and finish wireless network configuration quickly. This simplified network deployment significantly.
	CA certificate authentication	High-security certificate authentication can be implemented by using the CA certificate issuance center embedded into the controller, without the need to constructing a certificate server. Authentication by using a certificate imported from an external certificate server is also supported.
	WeChat authentication	After access the wireless network, a user can scan the QR code of the shopping mall or enterprise and follow the public account to access the Internet. The one-key follow function can be easily deployed without any code development. In WeChat authentication, a user can access the network by clicking a text message network access link or

Software specifications		
		clicking the menu bar to view advertisements, or access the network via WeChat authorization.
	SMS authentication	SMS authentication takes effect forever. That is, a user can directly access the network without authentication after being authenticated via SMS at initial access. This reduces the SMS costs and improves user experience.
	QR code authentication	After a visitor terminal accesses the wireless network, the terminal will automatically display a QR page. The approver scans the QR code of the visitor terminal via a cell phone and then the visitor can access the Internet. The visitor information is recorded in three dimensions: approver, remarks, and MAC address of the visitor terminal. This ensures user traceability and network security.
	Temporary visitor authentication	A temporary user information management system is embedded. A temporary user can log in within the validity period and cannot after the validity period elapses. A secondary permission system for temporary account management is embedded and temporary accounts can be created and managed in this system. The QR code of a temporary visitor can be printed and the temporary visitor can scan the QR code to access the network. Temporary visitors can be grouped.
	Authentication exemption	Only a portal advertisement page is displayed. A user needs to click the login button to access the network without entering any account password or performing other authentication.
	Data encryption	Data encryption via TKIP and AES (CCMP) is supported.
	Blacklist and whitelist	Static whitelist and blacklist are supported.
	User isolation	SSID-based isolation, automatic VLAN grouping, and user isolation of specified VLANs are supported.
	WIPS	Supported
	Illegitimate AP detection and workaround	Supported
	ACL	Account-, access location-, access terminal type- and SSID-based ACL policy assignment and management are supported.
	Radius protocol	Supported
Wireless optimization	Application layer acceleration	Acceleration can be performed for the application layer. The acceleration service application can help increase the transmission speed by 1.5 to 4 times.
	E-schoolbag scenario optimization	The transmission speed of multicast packets is increased, improving the effects of the E-schoolbag scenario in an all-round way.

Software specifications		
	Intelligent broadcast acceleration	The transmission speed of broadcast packets is automatically increased based on the actual environment, thereby improving the transmission efficiency of broadcast packets.
	Terminal dragging prevention	This function aims to prevent the decrease of the entire network speed caused by low-speed terminals based on the time fairness algorithm.
	Terminal viscosity prevention	This function involves detecting STAs connected to APs and intelligently guiding the STAs to the optimal AP.
	Prohibited access of low-speed terminals	The speed of access terminals is limited. Weak-signal terminals with a speed lower than the specified value are prohibited from accessing the network. This improves the entire network speed.
	High-density access scenario optimization	The response to broadcast probe requests is controlled for the purpose of optimizing high-density access scenarios.
	ARP-unicast conversion	ARP broadcast packets are converted into unicast packets. This reduces the number of broadcast packets, thereby improving the transmission speed.
	Prohibit DHCP requests destined for wireless terminals	After this function is enabled, DHCP broadcast requests will be forwarded only to the wired network, instead of other wireless network. This improves the network throughput and performance of the wireless network.
Hotspot analysis	AP-based access user quantity statistics	The number of connected users and change trends of each AP in the recent one day, one week, and one month can be measured.
	AP-based network access traffic statistics	The network access traffic and change trends of each AP in the recent one day, one week, and one month can be measured.
	AP-based signal quality analysis	Statistic analysis for the signal usage, noise, retransmit rate, BER, and BER change trends of each AP is supported.
AP access mode	AC discovery mechanism	L2 broadcast automatic discovery
		L3 discovery based on configured static IP addresses
		DHCP Option43 discovery
		DNS domain name discovery
	Cross-WAN and cross-NAT remote AP deployment	Supported
	webAgent	Controller IP addresses can be dynamically discovered by using the webAgent technology. This avoids AP disconnection caused by unfixed controller IP addresses.
Tunnel encryption	Supported	
	Relay mode	Point-to-point and point-to-multipoint supported

Software specifications		
Wireless relay/bridge	Relay frequency band	2.4/5.8 GHz
	Disable wireless network on relay frequency band	Supported
	Wireless backhaul service	Supported

## Order Information

Model	Specifications	Remarks
<b>SUNDRAY AP S910Plus series</b>		
AP S910Plus	The S910PLUS outdoor wireless access point is an outdoor high-speed wireless access device independently developed by Sundray.	Essential
<b>Optional parts</b>		
SI3200-08T-PWR-UN	8-port PoE switch that supports 802.3af/at	Optional
SI3200-24H-PWR	24-port PoE switch that supports 802.3af/at	Optional



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