SUNDRAY AP S582X Wireless Access Point

Product Overview

Sundray S582X wireless access point is the next generation product supports 802.1a/b/g/n/ac/ax launched by Sundray. Sundray S582X wireless access point has built-in smart antenna, based on the 802.11ax standard, support 8x8 MU-MIMO technology, OFDMA air division multiplexing technology and 1024QAM modulation and demodulation algorithm, it can provide a high transmission rate up to 6 Gbps, A higher wireless access rate and wider wireless coverage are provided .it can easily meet all kinds of wireless services, such as video, voice and other multimedia services, and provide intelligent radio frequency, service quality assurance, seamless roaming and so on.

The device adopts 5 Gigabit Ethernet uplinks, which exceeds the limit of 1000Mbps uplink speed and ensures high-speed wireless transmission. It supports local power supply and PoE remote power supply, and can be flexibly selected according to the customer's on-site power supply environment. With the Sundray NAC series controllers, users are provided with an unprecedented rapid experience and more secure service access.

The SUNDRAY S582X series products are aesthetically designed and can be conveniently installed.

SUNDRAY AP S582X

Product Features

Top-speed wireless network access

- **802.11ac high-speed access**

Sundray S582X access point is design for the high-density scene, it supports 802.11a/b/g/n/ac/wave2/ax. Each 5G space stream can reach to 600Mbps， it allows AP communicate with eight terminals at the same time, 802.11AX support 2.4G and 5G，2.4G can reach 1.2Gbps in maximum，5G can reach 4.8 Gbps in maximum，the device can reach 6 Gbps in maximum. thereby providing high-performance wireless access services in terms of coverage scope, access density and operation stability.

- **5G uplinks**

By using 5GE Ethernet port uplink, which is 5 times the connection rate of gigabit Ethernet, provides high-speed connection. The high-bandwidth uplink makes the wired port no longer become the rate bottleneck of wireless access, and enters the high-speed wireless era.

- **QoS guarantee**

SUNDRAY S582X 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 differentiated QoS levels

- **Seamless roaming for L2 and L3**

SUNDRAY S582X 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.

- **Terminal dragging prevention to ensure high-speed network access for all users on the entire network**

Terminal dragging prevention involves enabling terminals with different negotiated rates to occupy the identical wireless channel time by using the time fairness algorithm. This avoids problems of low wireless access speed, high delay and low network performance caused by low access rates of some terminals.

- **Intelligent load balancing**

In the case of high-density wireless users, SUNDRAY S582X pro works with SUNDRAY wireless controller to implement intelligent load balancing based on the user quantity, traffic, and frequency band for the purpose of improving the bandwidth usage, thereby ensuring high wireless access speed for users. Frequency band-based load balancing enables 2.4/5 GHz dual-frequency terminals to access the 5 GHz frequency band in preference.

- **Intelligent RF to reduce wireless interference in an all-round way**

The work channel and transmit power of the wireless access point are adjusted automatically and interference from the surrounding environment is detected in real time to reduce radio interference in an all-round way and to improve the overall service quality of the wireless network.

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, and QR code authentication modes are provided with the support of SUNDRAY wireless controller to meet network deployment requirements in environments including enterprises, schools, shopping malls, hotels, and financial organizations.

- **VPN**

The AP can build the VPN encryption channel connect to AC, implement AP wireless user access enterprise Intranet resource sharing，Access the public network or local resources by using bridge mode. Because the access point has the VPN function, so the small offices do not need to deploy VPN devices, saving customers' network deployment costs

- **All-round wireless security protection**

With the support of SUNDRAY wireless controller, S582X provides a wide range of wireless security protection functions including WIDS/WIPS, illegitimate AP detection and workaround, ARP spoofing prevention, and DoS attack prevention, constructing a truly secure and reliable wireless network for users.

- **Timed turning off RF for network security and environment protection**

RF can be turned off and on based on time periods. The wireless network can be automatically turned off at nights and weekends to prevent malicious users from intruding the network and to reduce energy consumption of the equipment.

Flexible network deployment

- **Gateway function to implement remote deployment across the public network**

SUNDRAY S582X supports the NAT gateway function and provides the functionality of the DHCP server and DNS proxy. When remotely deploying the wireless network for a branch or outlet, the PPPoE dial-up function provided by S582X can be used to directly access the Internet, lowering the network construction costs.

- **Fit mode and Fat mode**

AP support fit mode and fat mode, according to the different demands, you can change the mode of the access point. If there is no access controller in there，you can change the access point to the fat mode，fat ap can use independently；when the wireless solution is large，you can change the mode to the fit mode, and the fit mode access point is controlled by the access controller. In this mode, you can enable the centralized control, security certification, traffic management, behavior control, behavior audit, etc.

- **WDS wireless relay/bridge**

S582X supports WDS and wireless relays/bridges in point-to-point or point-to-multipoint mode to resolve deployment problems like deployment inconvenience. 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 the wireless coverage scope and wired LAN.

- **Local forwarding**

With the local forwarding technology, S582X can directly forward data that features high real-time transmission requirements, delay sensitivity, and large amount over the wired network without passing the wireless controller. This alleviates the traffic load of the wireless controller significantly and breaks the traffic restrictions of the wireless controller.

- **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 shopping malls or enterprises to improve discrimination.

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. it will help to accelerate the app authentication.

- **Support USB port**

AP has a built-in USB port, which can connect to USB or iBeacon Bluetooth module. USB can restore APP and file cache. By connecting iBeacon Bluetooth module. The coupons can be pushed by WeChat. Online coupons can be used offline to help merchants attract customers to shop and promote their brands.

- **Visitor portrait analysis**

Cooperate with AC, you can check the customer's preference, peak time visiting, visiting frequency, resident time, terminal type, gender ratio, visitor region and user label information collection and analysis, and support analysis a single visitor portrait and a single user activity, which can help you to make a business decision.

Technical Specifications

Hardware specifications

Product Specifications of SUNDRAY AP S582X Indoors	
Hardware specifications	
Item	Description
model	S582X
weight	1.1 Kg
Dimensions (excluding antenna interfaces and accessories)	296 x 296 x 48 mm
Ethernet port	2*1*10/100/1000M Ethernet port，1*5G Ethernet Port
Console	1*RJ45
USB	1*USB
PoE	Support 802.3at/bt
Power adaptor	12V/3A
Transmit power	≤20dBm
Power adjustment granularity	1dBm
Power adjustment range	1dBm~ the value specified by national regulations
Power consumption	<38W
antenna	Built-in smart antenna
reset	support
LED	1*status
Operating/storage temperature	-10℃～55℃/-40℃～70℃
Operating/storage humidity	5%～95%（no condensing）
Protection level	IP 41
MTBF	>250000H

Software specifications

Software Specification		
item		Description
model		S582X
RF	Streams	2.4 G：4*4 5 G：8*8
	Maximum transmission speed of a single frequency	2.4 G：1.2Gbps 5 G：4.8 Gbps
	Frequency band	802.11ax/ac/n/a : 5.725GHz-5.850GHz ; 5.15~5.35GHz 802.11ax/b/g/n : 2.4GHz-2.483GHz

	Modulation technology	OFDM: BPSK@6/9Mbps 、 QPSK@12/18Mbps 、 16-QAM@24Mbps、64-QAM@48/54Mbps DSSS : DBPSK@1Mbps 、 DQPSK@2Mbps 、 CCK@5.5/11Mbps MIMO-OFDM : MCS 0-15 MIMO-OFDM （11ac）: MCS 0-9 MIMO-OFDMA（11ax）: MCS 0-11
	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 11ac：MIMO-OFDMA:BPSK,QPSK,16QAM,64QAM,256QAM, 1024QAM
	Channel	802.11a、802.11n、802.11ac、802.11ax（compatible 802.11a）：13 channels 802.11b、802.11g、802.11n、802.11ax（compatible 802.11b/g）：13 channels
	Manual and automatic channel adjustment	Support
	Channel transmit power adjustment	support
	Manual transmit 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 RF	RF can be turned on or off based on the specified time period
	Coverage black hole detection and compensation	support
WLAN	Maximum number of connected users	1024
	Connected users number control	support
	Virtual AP	32
	Chinese SSID	support
	SSID hiding	support
	Wireless relay	Support point to point, point to multiple points

	User, traffic, and frequency band-based intelligent load balancing	support
	Bandwidth control	Support STA/SSID/AP bandwidth control
	STA	Abnormal STA disconnection detection, STA aging detection, and STA statistic and status query are supported.
	Link integrity detection	support
Data forwarding	Bridge mode	Support
	Tunnel mode	Support
	Mixed mode	Support
authentication	Pre-shared key	WPA-PSK、WPA2-PSK、WPA-PSK/WPA2-PSK
	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	Support 802.1x perception-free authentication
	CA 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	support
	E-mail authentication	support
	SMS authentication	support
	QR-code authentication	support
	Gust authentication	support
	MAC+WEB authentication	support
	Open authentication	support
	WAPI authentication	Support WAPI private authentication and WAPI enterprise authentication
	Facebook authentication	support
	Account self-activation	Support, setup the password by using phone number， and support changing the password by using phone number.
	E-Mail binding user	Account binding mailbox, forget password can be retrieved through the mailbox

	Data encryption	Support TKIP and AES(CCMP)
	Blacklist and whitelist	Static whitelist and blacklist and dynamic blacklist are supported.
	User isolation	SSID-based isolation, automatic VLAN grouping, and user isolation of specified VLANs are supported.
	WIDS/WIPS	support
	Illegitimate AP detection and workaround	support
	ACL policy	Account-, access location-, access terminal type- and SSID-based ACL policy assignment and management are supported.
	Radius protocol	support
Wireless optimization	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.
	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.
	Bandwidth is evenly distributed among users	support
	Anti-terminal viscosity	support
	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 scene 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.
	Prohibited DHCP requests destined for wireless terminals	support
Hotspot analysis	AP-based access user quantity statistics	support
	AP-based network access traffic statistics	support
	AP-based signal quality statistics	support
AP access mode	Fit mode and fat mode	support

	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
L3 function	NAT	Supported
	Network access mode	PPPoE dial-up and static IP address
	DHCP server	Supported
	DNS proxy	Supported
VPN	AP VPN	Built encryption channel between AP and AC, data access to enterprise internal resources transferred by encrypted tunnel, data access to external resources be transferred locally
Wireless relay/bridge	Relay mode	Point-to-point and point-to-multipoint supported
	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
SUNDRAY AP S582X series		
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Optional parts		
AP power supply	External power adapter: 12 V/3 A	Optional
RS3320-28M-4MT-PWR-LI	24-port PoE switch that supports 802.3af/at	Optional

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