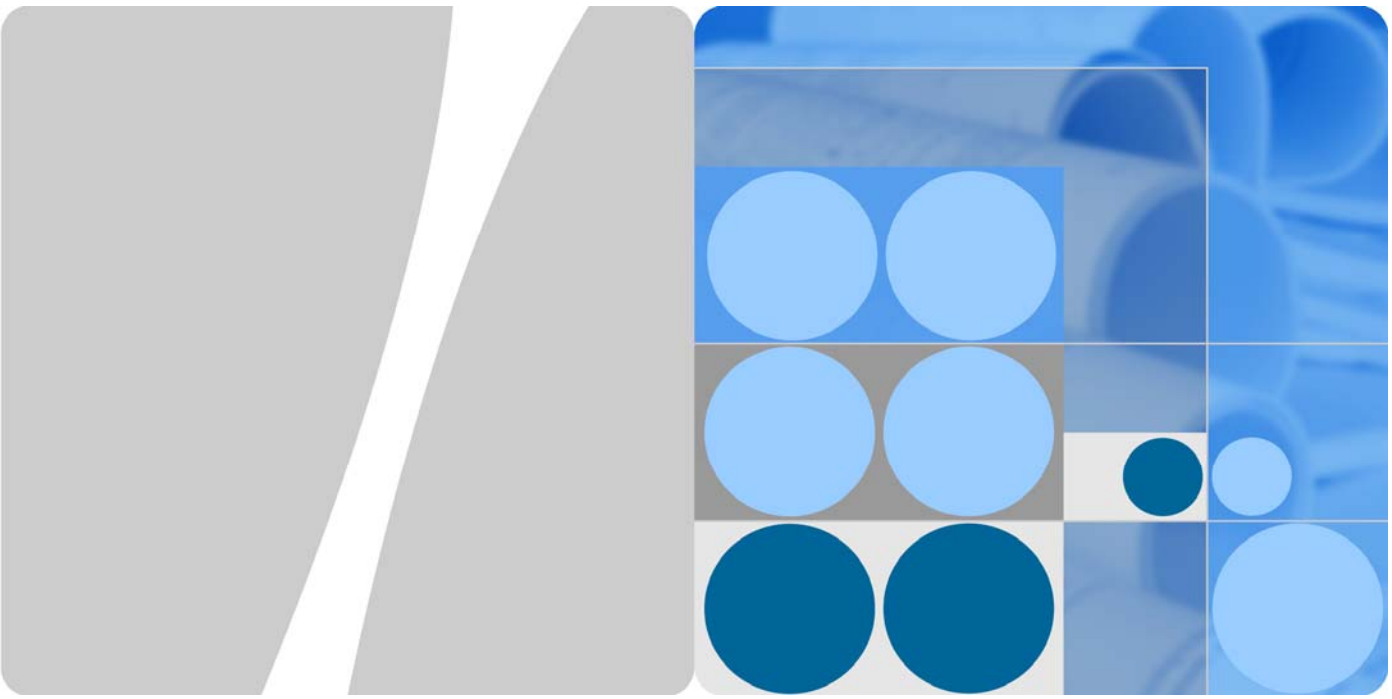

AP6010SN-GN Wireless LAN Access Point V200R001C00

Product Description

Issue 01

Date 2012-05-30

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Contents

1 Product Orientation and Characteristics

Product Orientation

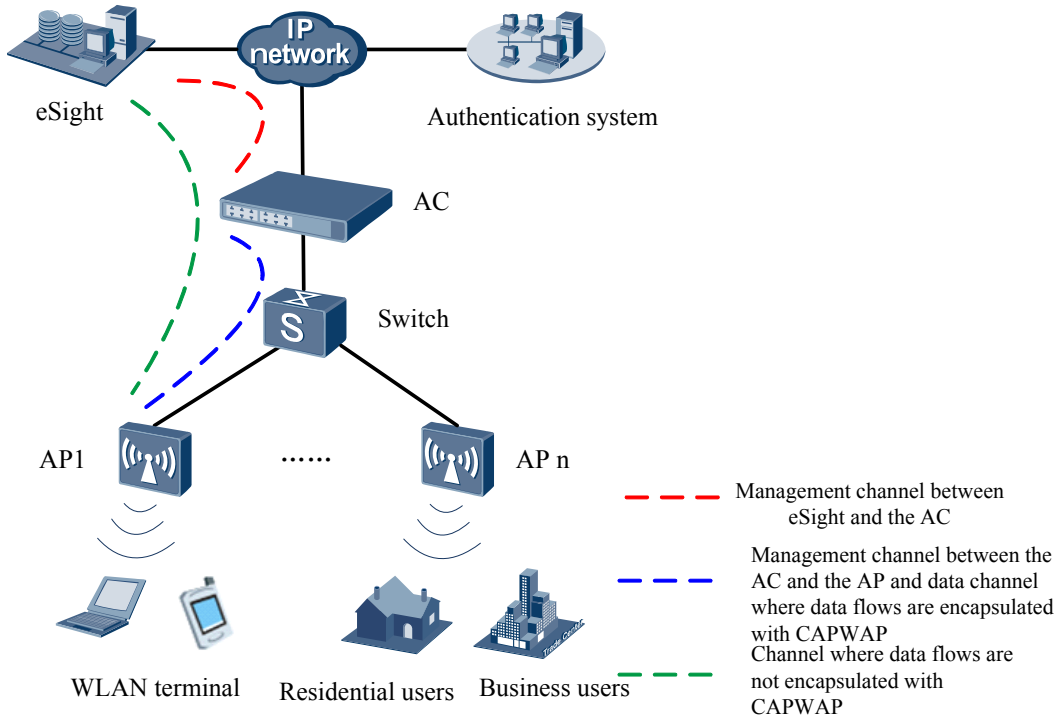
The AP6010SN is a standard indoor single-band 2x2 MIMO access point (AP) that supports 2.4 GHz frequency band. It complies with IEEE 802.11b/g/n, and works as a Fit AP. The AP6010SN has the following advantages:

- High reliability
- High security
- Simple network deployment
- Automatic AC discovery and configuration
- Real-time management and maintenance

The AP6010SN is recommended for use in buildings with a simple structure, small area, a high density of users, and require a high capacity, for example, small-scale meeting rooms, bars, and entertainment places. The AP6010SN APs can be flexibly deployed in these places and work in both Fit AP and bridge mode.

The AP6010SN is for use in Fit AP and bridge networking scenarios.

Figure 1-1 Fit AP networking



In this networking, the AP6010SN functions as a Fit AP that provides only data forwarding functions. The AC is responsible for user access, authentication, AP management, and configurations of security protocols, routing, and QoS.

Figure 1-2 WDS networking (point-to-point)

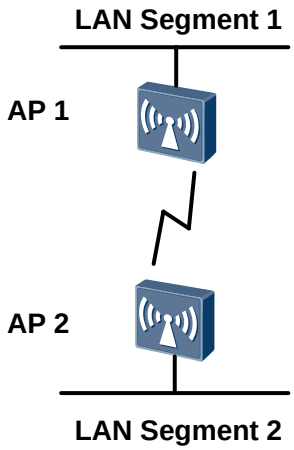
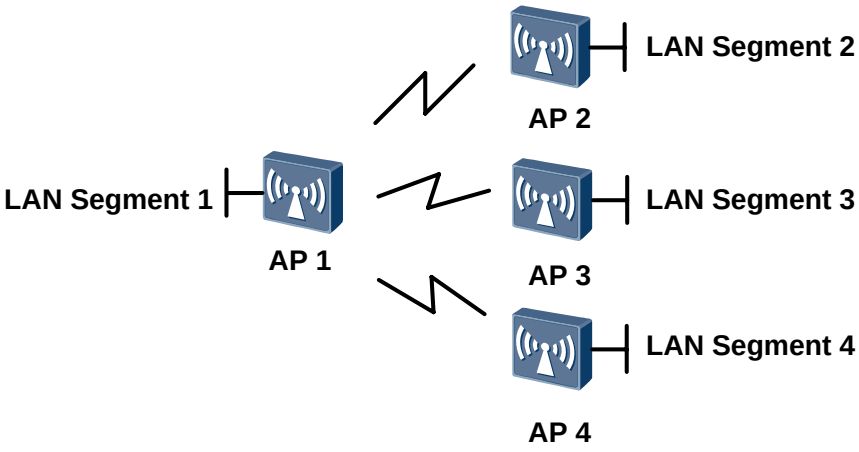


Figure 1-3 WDS networking (point-to-multipoint)



In this networking, the AP6010SN connects two or more independent wired or wireless LANs through wireless links. In a Wireless Distribution System (WDS), the AP6010SN supports point-to-point, point-to-multipoint networking modes.

Product Characteristics

The AP6010SN has the following characteristics on the WLAN.

Product Characteristics	Description
Highly reliable wireless access	• Complies with IEEE 802.11 b/g/n. • Provides a maximum rate of 150 Mbit/s for each radio. • Uses Wi-Fi Multimedia (WMM) to implement priority scheduling based on the service type (voice, video, or data), and implements end-to-end QoS through priority mapping on wireless and wired interfaces. • Supports wired link integrity check. • Supports load balancing. • Supports roaming without service interruptions. • Supports AC hot standby. • Supports the beamforming technique. • Uses the latest 802.11n chip to increase the performance by 20%. • Has a strong coverage capability.
Comprehensive user access control capability	• Supports access control lists (ACLs) and user access controls based on user group policies. • Provides per-user bandwidth management. • Supports user isolation policies.
High security	The AP6010SN supports multiple authentication and encryption modes and provides various measures to enhance system security: • Wired Equivalent Privacy (WEP)

Product Characteristics	Description
	• Wi-Fi Protected Access (WPA)/WPA2 • WLAN Authentication and Privacy Infrastructure (WAPI) • 802.1x • Detection of unauthorized APs
Flexible networking and environment adaptability	• For use in Fit AP and WDS networking scenarios. • Automatically selects the transmission rate, channel, and transmit power to adapt to multiple radio environments and limit interference in real time. • Adjusts bandwidth allocation based on the number of users and radio environment.
Simple device management and maintenance	• Automatically discovers ACs and loads the AC (plug-and-play) configuration. • Supports batch upgrade. • Monitored by the NMS in real time. You can remotely configure APs and locate faults on APs using the NMS. • Supports the Link Layer Discovery Protocol (LLDP) to implement automatic link discovery and obtain the network topology.

2 Product Structure

Appearance

Figure 2-1 shows the appearance of the AP6010SN.

NOTE
The actual device appearance may differ from the figure, but the appearance does not affect device

Figure 2-1 Appearance of the AP6010SN

Ports

Figure 2-2 shows ports on the AP6010SN.

Figure 2-2 Ports of the AP6010SN

1. Console port.
2. ETH/PoE: 10/100/1000M port, which connects to the Ethernet. The port can connect to a PoE switch or a PoE power source to receive power.

3. Default: restores factory settings.
4. Power input port: 12 V DC.

LED Indicators

Type	Color	Frequency	Description
Default status	Green	Steady on	The AP is just powered on.
Running	Green	0.5 Hz	The system is running properly, the Ethernet connection is correct, and STAs are associated with the AP.
		0.2 Hz	The system is running properly, the Ethernet connection is correct, no user is connected, and the system is in low power consumption state.
Alarm	Green	4 Hz	• The AP is being upgraded. • The CAPWAP tunnel is disconnected. • The AP is running properly, but does not go online.
Error	Red	Steady on	A fault that affects services occurs and cannot be rectified automatically. For example, the system fails to load the DRAM or system software. The fault needs to be rectified manually.

3 Functions and Features

Functions and Features Supported by the AP6010SN

Table 3-1 Features

Features	Description
WLAN features	• Compliance with IEEE 802.11b/g/n, providing a maximum rate of 150 Mbit/s for each radio • Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding • Automatic and manual rate adjustment (the rate is adjusted automatically by default) • WLAN channel management and channel rate adjustment: – Number of 802.11b/g channels: 13 – Number of 802.11n channels: 13 • Automatic channel scanning (the AP6010SN scans channels used by other APs, measures their interference, and reports the scanning result to the AC to trigger channel adjustment) • Service set identifier (SSID) hiding • Signal sustain technology (SST) • STA power-saving mode • Control and Provisioning of Wireless Access Points (CAPWAP) • Automatic AC discovery
Network features	• Compliance with IEEE 802.3u • Ports: Auto-negotiation of the rate and duplex mode and automatic switching between the Media Dependant Interface (MDI) and Media Dependant Interface Crossover (MDI-X) mode • 1024 unicast MAC addresses • VLAN assignment based on SSIDs • VLAN aggregation on uplink Ethernet ports • 4093 VLAN IDs (1-4093) and 16 virtual APs (VAPs) • Uplink ports in tagged and untagged mode

Features	Description
	• DHCP client • PPPoE dialup • Centralized data forwarding and local data forwarding • STA isolation in the same VLAN • ACL • LLDP
QoS features	• Priority mapping and packet scheduling based on WMM profiles to implement priority-based data processing and forwarding • WMM parameter management for each radio frequency • WMM power saving • Priority mapping for upstream packets and flow-based mapping for downstream packets • Queue mapping and scheduling • User-based bandwidth limiting • Adaptive bandwidth allocation (the system dynamically adjusts bandwidth based on the number of users and radio environment)
Security features	• Open system authentication • WEP authentication/encryption • WPA/WPA2 authentication and encryption • 802.1x authentication and encryption • WAPI authentication and encryption • SMS4 decryption for data packets • Wired link integrity check (the AP stops sending radio signals if the tunnel between the AP and AC is terminated)
Maintenance features	• AP management and maintenance by the AC • Plug-and-play: automatic AC discovery and automatic configuration loading • Batch upgrade • Debugging using Telnet and the serial interface • Real-time configuration monitoring and fast fault location by using the NMS • System status alarm

4 Technical Specifications

Specifications

Table 4-1 Specifications of the AP6010SN

Item		Description
Technical specifications	Dimensions (H x W x D)	50 mm x 180 mm x 180 mm
	Weight	0.4 kg
	System memory	• 128 MB DRAM • 32 MB flash memory
Power specifications	Power input	• DC 12V±10% • POE Power:-48V DC
	Maximum power consumption	6.5 W **NOTE** The maximum power consumption depends on local laws.
Environment parameters	Operating temperature	-10℃ to +50℃
	Storage temperature	-40℃ to +70℃
	Humidity	5% to 95% (non-condensing)
	Waterproof grade	IP31
	Altitude	-60m to 4000 m

Antenna Parameters

Table 4-2 Antenna parameters of the AP6010SN

Item	Description			
Antenna type	Built-in antenna			
Antenna gain	4 dBi			
Maximum number of concurrent users	128			
Maximum transmit power	20 dBm • You can adjust the transmit power by 100%, 50%, 25%, or 12.5%, with a step of 3 dBm. • You can adjust the transmit power from the maximum to 15 dBm, with a step of 1 dBm. **NOTE** Actual transmit power depends on local laws and regulations.			
Maximum number of non-overlapping channels	• 802.11b/g – 20 MHz: 3 • 802.11n – 20 MHz: 3 – 40 MHz: 1			
Channel rate	802.11b: 1, 2, 5.5, and 11 Mbit/s			
	802.11g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbit/s			
	802.11n: 2.4 GHz			
	MCS index	GI=800 ns		GI=400 ns	
		20 MHz (Mbit/s)	40 MHz (Mbit/s)	20 MHz (Mbit/s)	40 MHz (Mbit/s)
	0	6.5	13.5	7.2	15
	1	13	27	14.4	30
	2	19.5	40.5	21.7	45
	3	26	54	28.9	60
	4	39	81	43.3	90
	5	52	108	57.8	123
	6	58.5	121.5	65	135
	7	65	135	72.2	150

<table>
<tr><th>Item</th><th colspan="5">Description</th></tr>
<tr><td></td><td>8</td><td>13</td><td>27</td><td>14.4</td><td>30</td></tr>
<tr><td></td><td>9</td><td>26</td><td>54</td><td>28.9</td><td>60</td></tr>
<tr><td></td><td>10</td><td>39</td><td>81</td><td>43.3</td><td>90</td></tr>
<tr><td></td><td>11</td><td>52</td><td>108</td><td>57.8</td><td>120</td></tr>
<tr><td></td><td>12</td><td>78</td><td>162</td><td>86.7</td><td>180</td></tr>
<tr><td></td><td>13</td><td>104</td><td>216</td><td>115.6</td><td>240</td></tr>
<tr><td></td><td>14</td><td>117</td><td>243</td><td>130</td><td>270</td></tr>
<tr><td></td><td>15</td><td>130</td><td>270</td><td>144.4</td><td>300</td></tr>
<tr><td></td><td colspan="5">NOTE
Modulation coding scheme (MCS) index: determines the spatial flow quantity, modulation, coding rate, and data rate.
Guard interval (GI): indicates the period in nanoseconds the radio listens between packets.</td></tr>
<tr><td>Receiver sensitivity</td><td colspan="2">802.11b (CCK)
• -97 dBm @ 1 Mb/s
• -92 dBm @ 2 Mb/s
• -91 dBm @ 5.5 Mb/s
• -90 dBm @ 11 Mb/s</td><td colspan="3">802.11g (non-HT20)
• -92 dBm @ 6 Mb/s
• -91 dBm @ 9 Mb/s
• -90 dBm @ 12 Mb/s
• -87 dBm @ 18 Mb/s
• -83 dBm @ 24 Mb/s
• -80 dBm @ 36 Mb/s
• -76 dBm @ 48 Mb/s
• -74 dBm @ 54 Mb/s</td></tr>
<tr><td></td><td colspan="2">802.11n (HT20)
• -92 dBm @ MCS0/8
• -89 dBm @ MCS1/9
• -86 dBm @ MCS2/10
• -82 dBm @ MCS3/11
• -79 dBm @ MCS4/12
• -74 dBm @ MCS5/13
• -73 dBm @ MCS6/14
• -71 dBm @ MCS7/15</td><td colspan="3">802.11n (HT40)
• -89 dBm @ MCS0/8
• -86 dBm @ MCS1/9
• -83 dBm @ MCS2/10
• -79 dBm @ MCS3/11
• -76 dBm @ MCS4/12
• -72 dBm @ MCS5/13
• -70 dBm @ MCS6/14
• -68 dBm @ MCS7/15</td></tr>
</table>

Standards Compliance

- Safety standards
  - UL 60950-1
  - IEC 60950-1
  - EN 60950-1

  - GB 4943
- Radio standards
  - ESTI EN 300 328
  - Part 15C:15.247
  - RSS-210
- EMC standards
  - EN 301.489–1
  - EN 301.489–17
  - FCC Part 15 (15.107,15.109,15.247,15.407)
  - ICES-003
  - YD/T 1312.2-2004
  - EN55022 (Class B)
- IEEE standards
  - IEEE 802.11b/g
  - IEEE 802.11n
  - IEEE 802.11h
  - IEEE 802.11d
  - IEEE 802.11e
- Security standards
  - 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA
  - 802.1x
  - Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP)
  - EAP Type(s)
- Environment standards
  - ETSI 300 019-2-1
  - ETSI 300 019-2-2
  - ETSI 300 019-2-3
- EAP types
  - EAP-TLS/TTLS, PEAP, EAP-MD5, EAP-SIM
- Multimedia
  - WMM™