



AP3050DE

Product Description

Issue **02**

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About This Document

Purpose

This document describes the positioning, characteristics, hardware structure, product features, and technical specifications of the AP.



This document helps you understand the characteristics and features of the AP.

Intended Audience

This document is intended for network engineers responsible for network design and deployment. You should understand your network well, including the network topology and service requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance deterioration, or unanticipated results. NOTICE is used to address practices not related to personal injury.
	Calls attention to important information, best practices and tips. NOTE is used to address information not related to personal injury, equipment damage, and environment deterioration.

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1 Product Positioning

Table 1-1 Product positioning

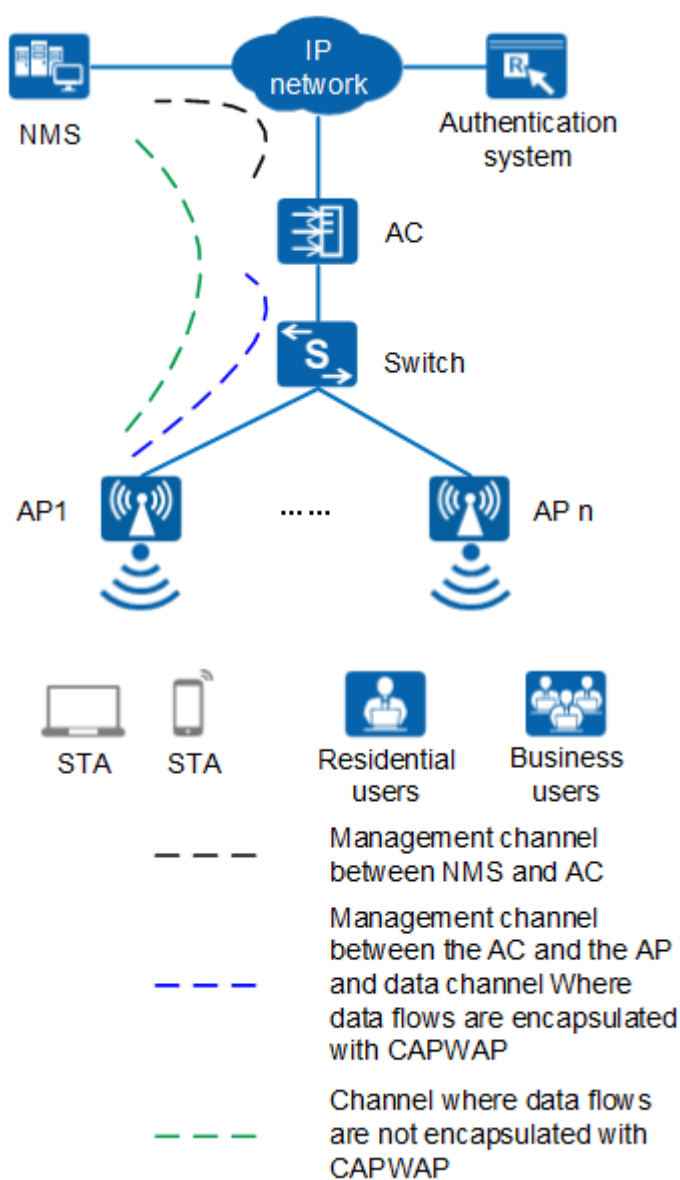
Product Model	Frequency Band	IEEE Standards Compliance	Positioning	Usage Scenario
AP3050DE	<p>Dual bands:</p> <ul style="list-style-type: none"> ● 2.4 GHz ● 5 GHz <p>The AP3050DE can provide services simultaneously on the 2.4 GHz and 5 GHz frequency bands to support more access users.</p>	IEEE 802.11a/b/g/n/a c/ac Wave 2	<p>The cost-effective AP3050DE supports 2 x 2 MIMO and provide comprehensive service support capabilities. They are deployed indoors and features high reliability, high security, simple network deployment, automatic AC discovery and configuration, and real-time management and maintenance. Huawei AP3050DE complies with IEEE 802.11ac wave2 and can provide gigabit access for</p>	<p>The AP3050DE provides 802.11n/ac wireless access networks for indoor settled scenarios such as education and mobile office in medium- to large-sized enterprises. It can be flexibly deployed in different environments.</p>

Product Model	Frequency Band	IEEE Standards Compliance	Positioning	Usage Scenario
			wireless users. This high capacity greatly improves user experience on wireless networks.	

The AP3050DE can work as a Fat AP, Fit AP, or cloud AP. It can switch flexibly among three working modes based on the network plan.

Typical networking modes are as follows:

Figure 1-1 Fit AP networking (AP mode)



In this networking, the AP functions as a Fit AP. The AC is responsible for user access, AP go-online, AP management, authentication, routing, security, and QoS. For Huawei products that provide the AC function, see [Quick Reference for AC and AP Version Information](#).

Figure 1-2 Fit AP networking (WDS mode: point-to-point)

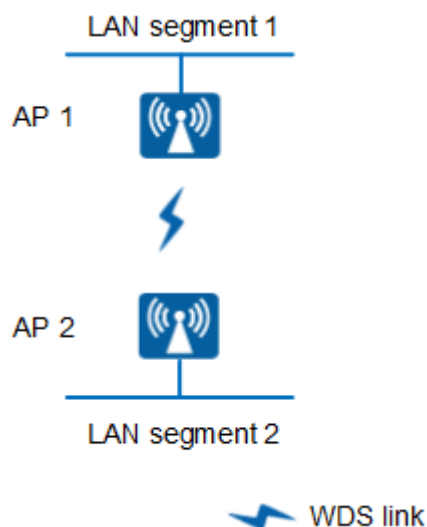
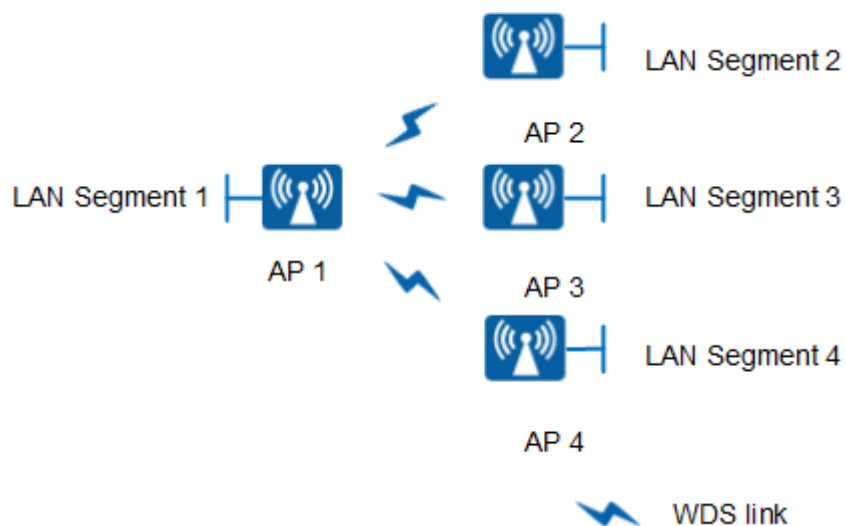
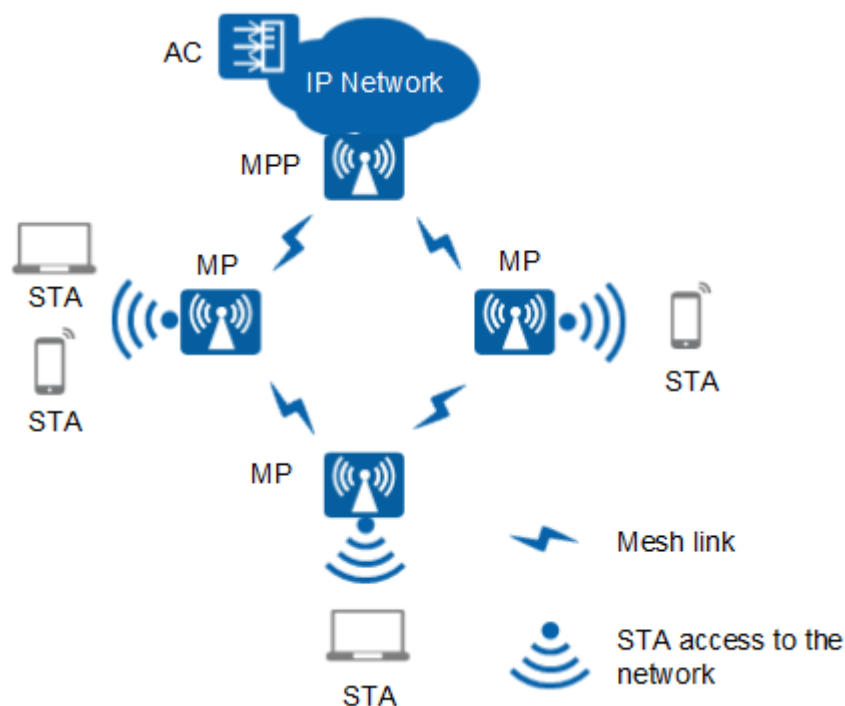


Figure 1-3 Fit AP networking (WDS mode: point-to-multipoint)



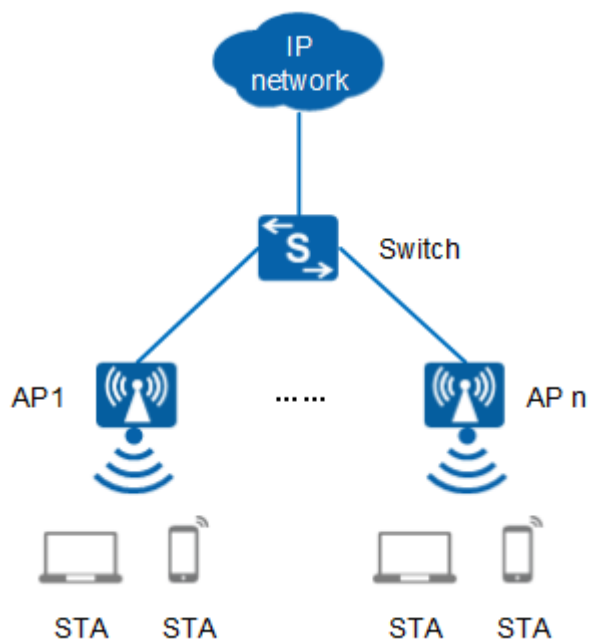
In this networking, the AP connects two or more independently wired or wireless LANs through wireless links to construct a network on which users can exchange data. In Wireless Distribution System (WDS) mode, the AP supports point-to-point (P2P) and point-to-multipoint (P2MP) networking modes. Supporting 5 GHz and 2.4 GHz frequency bands, the AP can implement wireless bridging and access functions.

Figure 1-4 Fit AP mesh networking



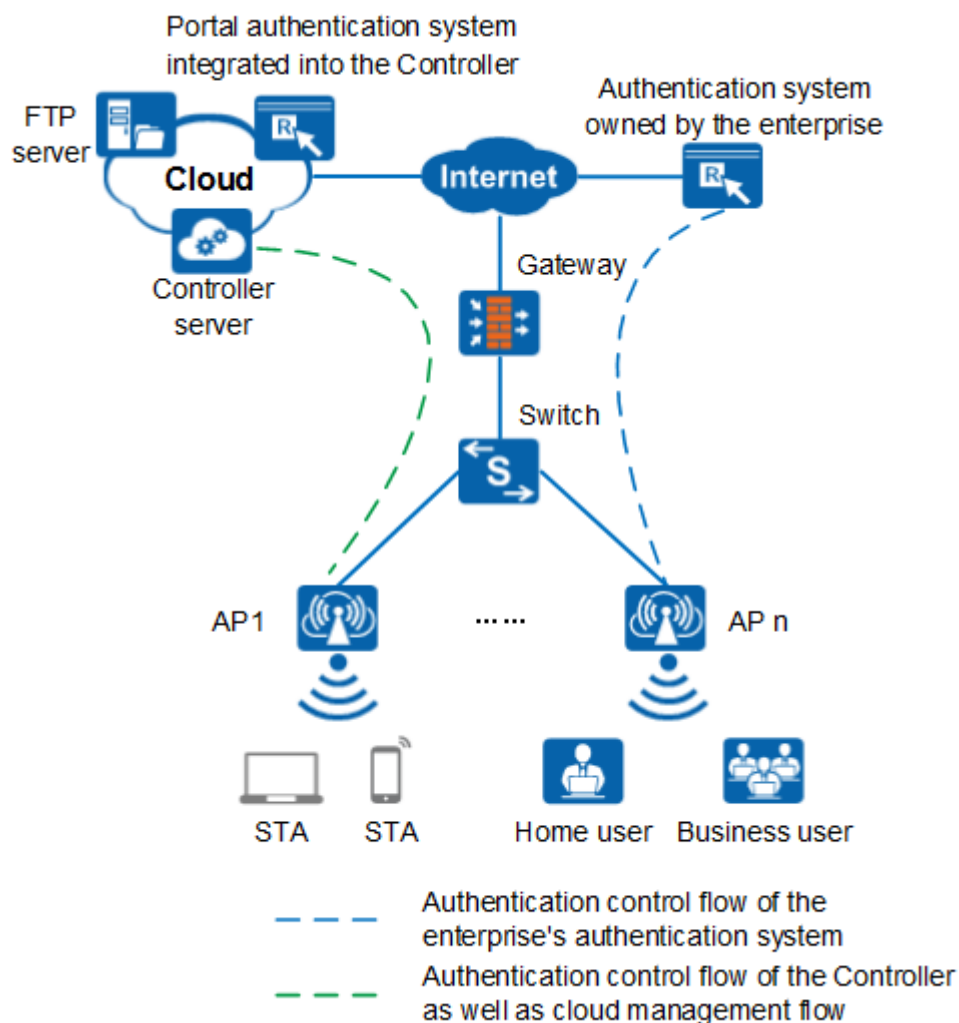
In this networking, APs function as mesh points (MPs) and are fully meshed to establish an auto-configured and self-healing wireless mesh network (WMN). APs with the gateway function can work as the mesh portal points (MPPs) through which the WMN can provide access to the Internet. Terminals connect to APs to access the WMN. The WMN uses dedicated mesh routing protocols to guarantee high transmission quality and is more applicable to scenarios that require high bandwidth and highly stable Internet connections.

Figure 1-5 Fat AP networking



In this networking, the device functions as a Fat AP to implement functions such as user access, authentication, data security, service forwarding, and QoS.

Figure 1-6 Cloud AP networking



In this networking, the device functions as a cloud AP and works with the Agile Controller-Campus on the same cloud for user access, AP online, authentication, routing, AP management, security, and QoS. An enterprise can choose to use the Portal authentication server integrated in the Agile Controller-Campus or the authentication server deployed by itself.

2 Hardware Structure

2.1 AP3050DE

Appearance



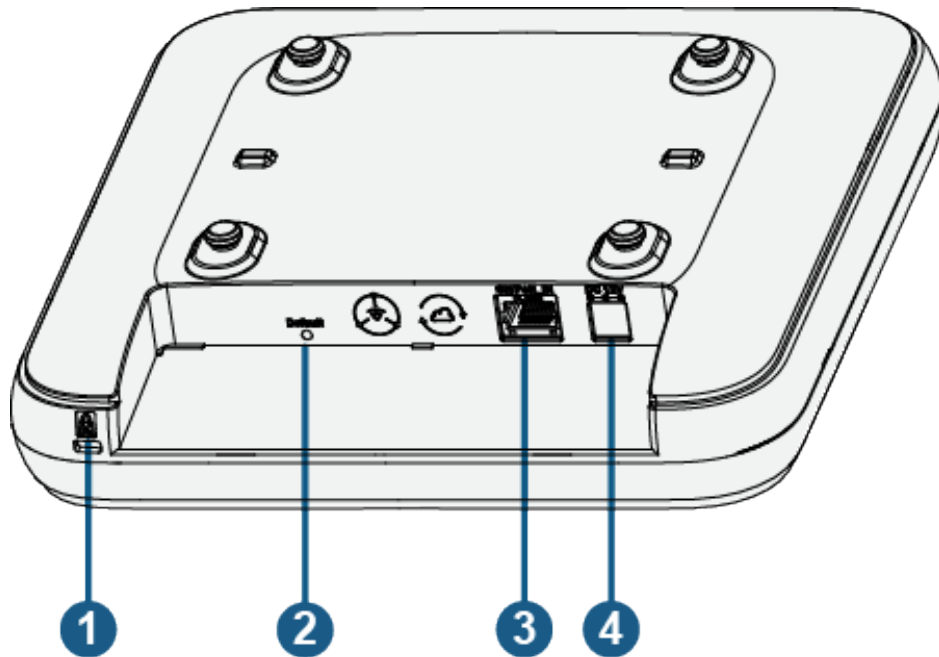
The actual device appearance may slightly differ from the following device appearance, but these differences will not affect device functions.

Figure 2-1 Appearance



Ports

Figure 2-2 Ports



As shown in [Figure 2-2](#), each port can be described as follows:

1. Security slot: Connects to a security lock.
2. Default: Restores factory settings and restarts the device when you hold down the button more than 3 seconds.
3. GE/PoE_IN: GE/PoE_IN
4. DC 12V: Connects a 12 V power adapter to the AP.

NOTE

- The AP supports the following power supply modes: PoE power supply and DC power supply.
- Use the selected power adapter for power supply; otherwise, the AP may be damaged.
- For power adapter models, see Power Adaptation Solution.

LED Indicators

The AP3050DE provides only a single indicator, as shown in [Figure 2-3](#).

NOTE

Indicator colors may vary slightly at different temperature.

Figure 2-3 Indicator

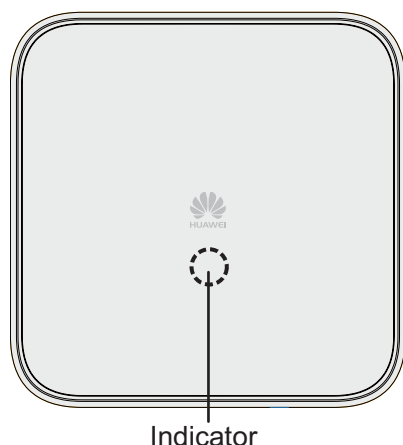


Table 2-1 Description about the single indicator

Indicator	Name	Color	Status	Description
Indicator	-	Green	Steady on	Default status after power-on. The AP is just powered on and the software is not started yet.
	-	Green	Steady on after blinking once	Software startup status. After the system is reset and starts uploading the software, the indicator blinks green once. Until the software is uploaded and started, the indicator remains steady green.
	-	Green	Blinking once every 2s (0.5 Hz)	Running status. <ul style="list-style-type: none"> ● The system is running properly, the Ethernet connection is normal, and STAs are associated with the AP. ● The system enters the Uboot CLI.
	-		Blinking once every 5s (0.2 Hz)	Running status. The system is running properly, the Ethernet connection is normal, and no STA is associated with the AP. The system is in low power consumption state.

Indicator	Name	Color	Status	Description
	-	Green	Blinking once every 0.25s (4 Hz)	Alarm. <ul style="list-style-type: none"> ● The software is being upgraded. ● After the software is loaded and started, the AP requests to go online if it works in Fit AP or cloud-based management mode. The indicator remains in this state before the AP successfully goes online. ● The AP works in Fit AP or cloud-based management mode and fails to go online.
	-	Red	Steady on	Fault. A fault that affects services has occurred, such as a DRAM detection failure or system software loading failure. The fault cannot be automatically rectified and must be rectified manually.

3 Product Features (in Fat AP and Fit AP Modes)

3.1 WLAN Features

WLAN features supported by the AP are as follows:

- Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2
- Maximum rate of 1.267 Gbit/s
- Maximum ratio combining (MRC)
- Space time block code (STBC)
- Beamforming
- MU-MIMO
- Low-density parity-check (LDPC)
- Maximum-likelihood detection (MLD)
- Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)
- 802.11 dynamic frequency selection (DFS)
- Short guard interval (GI) in 20 MHz, 40 MHz, and 80 MHz modes
- 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
- WLAN channel management and channel rate adjustment

 **NOTE**

For details about WLAN channel management, see the *Country Code & Channel Compliance Table*.

- Automatic channel scanning and interference avoidance
- Service set identifier (SSID) hiding
- Signal sustain technology (SST)
- Unscheduled automatic power save delivery (U-APSD)
- Control and Provisioning of Wireless Access Points (CAPWAP) in Fit AP mode
- Automatic login in Fit AP mode

- Extended Service Set (ESS) in Fit AP mode
- Wireless distribution system (WDS) in Fit AP mode
- Mesh networking in Fit AP mode
- Multi-user CAC

3.2 Network Features

Network features supported by the AP are as follows:

- Compliance with IEEE 802.3ab
- Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)
- Compliance with IEEE 802.1Q
- SSID-based VLAN assignment
- VLAN trunk on uplink Ethernet ports
- Management channel of the AP uplink port in tagged and untagged mode
- DHCP client, obtaining IP addresses through DHCP
- Tunnel data forwarding and direct data forwarding
- STA isolation in the same VLAN
- Access control lists (ACLs)
- Link Layer Discovery Protocol (LLDP)
- Uninterrupted service forwarding upon CAPWAP channel disconnection in Fit AP mode
- Unified authentication on the AC in Fit AP mode
- AC dual-link backup in Fit AP mode
- Network Address Translation (NAT) in Fat AP mode
- IPv6 in Fit AP mode

3.3 QoS Features

QoS features supported by the AP are as follows:

- Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding
- WMM parameter management for each radio
- 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 management (automatic bandwidth adjustment based on the user quantity and radio environment) to improve user experience
- Airtime scheduling
- Smart Application Control (SAC) in Fit AP mode

3.4 Security Features

Security features supported by the AP are as follows:

- Open system authentication
- WEP authentication/encryption using a 64-bit, 128-bit, or 152-bit encryption key
- WPA/WPA2-PSK authentication and encryption (WPA/WPA2 personal edition)
- WPA/WPA2-802.1X authentication and encryption (WPA/WPA2 enterprise edition)
- WPA-WPA2 hybrid authentication
- WAPI authentication and encryption
- Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS), including rogue device detection and countermeasure, attack detection and dynamic blacklist, and STA/AP blacklist and whitelist
- 802.1X authentication, MAC address authentication, and Portal authentication
- DHCP snooping
- Dynamic ARP Inspection (DAI)
- IP Source Guard (IPSG)
- Personal PSK (PPSK)

3.5 Maintenance Features

Maintenance features supported by the AP are as follows:

- Unified management and maintenance on the AC in Fit AP mode
- Automatic login and configuration loading, and plug-and-play (PnP) in Fit AP mode
- Batch upgrade in Fit AP mode
- Telnet
- STelnet using SSH v2
- SFTP using SSH v2
- Web local AP management through HTTP or HTTPS in Fat AP mode
- Real-time configuration monitoring and fast fault location using the NMS
- SNMP v1/v2/v3 in Fat AP mode
- System status alarm
- Network Time Protocol (NTP) in Fat AP mode

3.6 BYOD

NOTE

The AP supports bring your own device (BYOD) only in Fit AP mode.

BYOD features supported by the AP are as follows:

- Identifies the device type according to the organizationally unique identifier (OUI) in the MAC address.

- Identifies the device type according to the user agent (UA) information in an HTTP packet.
- Identifies the device type according to DHCP options.
- The RADIUS server delivers packet forwarding, security, and QoS policies according to the device type carried in the RADIUS authentication and accounting packets.

3.7 Locating Service

NOTE

The AP supports the locating service only in Fit AP mode.

Locating service features supported by the AP are as follows:

- Locates tags manufactured by AeroScout or Ekahau.
- Locates Wi-Fi terminals.
- Works with eSight to locate rogue devices.

3.8 Spectrum Analysis

NOTE

APs support spectrum analysis only in Fit mode.

Spectrum analysis features supported by APs are as follows:

- Identify interference sources such as baby monitors, digital cordless phones (on the 2.4 GHz frequency band only), wireless audio transmitters (on both the 2.4 GHz and 5 GHz frequency bands), wireless game controllers, and microwave ovens.
- Work with eSight to perform and display spectrum analysis on interference sources.

4 Product Features (in Cloud-based Management Mode)

The following table lists features supported by APs in cloud-based management mode.

Features	Description
WLAN Features	<ul style="list-style-type: none"> ● Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2 ● Maximum rate of 1.267 Gbit/s ● Maximum ratio combining (MRC) ● Space time block code (STBC) ● Beamforming ● Low-density parity-check (LDPC) ● Maximum-likelihood detection (MLD) ● Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx) ● 802.11 dynamic frequency selection (DFS) ● Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding ● WLAN channel management and channel rate adjustment <p>NOTE For details about WLAN channel management, see the <i>Country Code & Channel Compliance Table</i>.</p> <ul style="list-style-type: none"> ● Automatic channel scanning and interference avoidance ● Service set identifier (SSID) hiding ● Signal sustain technology (SST) ● Unscheduled automatic power save delivery (U-APSD) ● Automatic login

Features	Description
Network Features	<ul style="list-style-type: none"> ● Compliance with IEEE 802.3ab ● Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X) ● Compliance with IEEE 802.1Q ● SSID-based VLAN assignment ● DHCP client, obtaining IP addresses through DHCP ● STA isolation in the same VLAN ● Access control lists (ACLs) ● Unified authentication on the Agile Controller-Campus ● Network Address Translation (NAT)
QoS Features	<ul style="list-style-type: none"> ● Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding ● WMM parameter management for each radio ● WMM power saving ● Priority mapping for upstream packets and flow-based mapping for downstream packets ● Queue mapping and scheduling ● User-based bandwidth limiting ● Airtime scheduling ● SAC

Features	Description
Security Features	<ul style="list-style-type: none"> ● Open system authentication ● WEP authentication/encryption using a 64-bit, 128-bit, or 152-bit encryption key ● WPA2-PSK authentication and encryption (WPA2 personal edition) ● WPA2-802.1X authentication and encryption (WPA2 enterprise edition) ● WPA-WPA2 hybrid authentication ● 802.1X authentication, MAC address authentication, and Portal authentication ● DHCP snooping ● Dynamic ARP Inspection (DAI) ● IP Source Guard (IPSG) ● Personal PSK (PPSK)
Maintenance Features	<ul style="list-style-type: none"> ● Unified management and maintenance on the Agile Controller-Campus ● Automatic login and configuration loading, and plug-and-play (PnP) ● Batch upgrade ● Telnet ● STelnet using SSH v2 ● SFTP using SSH v2 ● Local AP management through the serial interface ● Web local AP management through HTTP or HTTPS ● Real-time configuration monitoring and fast fault location using the NMS ● System status alarm ● Network Time Protocol (NTP)

5 Technical Specifications

5.1 Basic Specifications

Table 5-1 Basic specifications

Item		Description
Technical specifications	Dimensions (H x W x D)	47 mm x 200 mm x 200 mm
	Weight	0.7 kg
	System memory	<ul style="list-style-type: none"> ● 256 MB DDR3L ● 4 MB NOR FLASH + 128 MB NAND FLASH
Power specifications	Power input	<ul style="list-style-type: none"> ● DC: 12 V ± 10% ● PoE power supply: in compliance with IEEE 802.3at/af
	Maximum power consumption	11.48 W NOTE The actual maximum power consumption depends on local laws and regulations.
Environment specifications	Operating temperature	<ul style="list-style-type: none"> ● -60 m to +1800 m: -10°C to +50°C ● 1800 m to 5000 m: Temperature decreases by 1°C every time the altitude increases 300 m.
	Storage temperature	-40°C to +70°C
	Operating humidity	5% to 95% (non-condensing)
	IP rating	IP41
	Atmospheric pressure	53 kPa to 106 kPa

5.2 Radio Specifications

Table 5-2 Radio specifications

Item	Description		
Antenna type	Built-in dual-band smart omnidirectional antenna		
Antenna gain	<ul style="list-style-type: none"> ● 2.4 GHz: 3 dBi ● 5 GHz: 3 dBi 		
Maximum number of users	FIT AP: ≤ 512 FAT AP: ≤ 512 Cloud AP: ≤ 512 NOTE The actual number of users varies according to the environment.		
Maximum number of VAPs for each radio	16		
Maximum transmit power	<ul style="list-style-type: none"> ● 2.4 GHz: 20 dBm (combined power) ● 5 GHz: 20 dBm (combined power) NOTE The actual transmit power depends on local laws and regulations.		
Maximum number of non-overlapping channels	2.4 GHz (2.412 GHz to 2.472 GHz) <ul style="list-style-type: none"> ● 802.11b/g <ul style="list-style-type: none"> - 20 MHz: 3 ● 802.11n <ul style="list-style-type: none"> - 20 MHz: 3 - 40 MHz: 1 	5 GHz (5.18 GHz to 5.825 GHz) <ul style="list-style-type: none"> ● 802.11a <ul style="list-style-type: none"> - 20 MHz: 13 ● 802.11n <ul style="list-style-type: none"> - 20 MHz: 13 - 40 MHz: 6 ● 802.11ac <ul style="list-style-type: none"> - 20 MHz: 13 - 40 MHz: 6 - 80 MHz: 3 	NOTE The table uses the number of non-overlapping channels supported by China as an example. The number of non-overlapping channels varies in different countries. For details, see the <i>Country Codes & Channels Compliance</i> .

Item	Description			
Channel rate supported	<ul style="list-style-type: none"> ● 802.11b: 1, 2, 5.5, and 11 Mbit/s ● 802.11a/g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbit/s ● 802.11n: 6.5 to 400 Mbit/s ● 802.11ac: 6.5 to 867 Mbit/s 			
Receiver sensitivity (Typical values)	<p>2.4 GHz 802.11b</p> <ul style="list-style-type: none"> ● -103 dBm @ 1 Mbit/s ● -100 dBm @ 2 Mbit/s ● -99 dBm @ 5.5 Mbit/s ● -95 dBm @ 11 Mbit/s 	<p>2.4 GHz 802.11g</p> <ul style="list-style-type: none"> ● -96 dBm @ 6 Mbit/s ● -96 dBm @ 9 Mbit/s ● -95 dBm @ 12 Mbit/s ● -93 dBm @ 18 Mbit/s ● -90 dBm @ 24 Mbit/s ● -86 dBm @ 36 Mbit/s ● -82 dBm @ 48 Mbit/s ● -80 dBm @ 54 Mbit/s 	<p>2.4 GHz 802.11n (HT20)</p> <ul style="list-style-type: none"> ● -96 dBm @ MCS0 ● -93 dBm @ MCS1 ● -92 dBm @ MCS2 ● -88 dBm @ MCS3 ● -86 dBm @ MCS4 ● -82 dBm @ MCS5 ● -79 dBm @ MCS6 ● -77 dBm @ MCS7 ● -94 dBm @ MCS8 ● -91 dBm @ MCS9 ● -90 dBm @ MCS10 ● -86 dBm @ MCS11 ● -83 dBm @ MCS12 ● -79 dBm @ MCS13 ● -77 dBm @ MCS14 ● -75 dBm @ MCS15 	<p>2.4 GHz 802.11n(HT40)</p> <ul style="list-style-type: none"> ● -94 dBm @ MCS0 ● -91 dBm @ MCS1 ● -89 dBm @ MCS2 ● -85 dBm @ MCS3 ● -82 dBm @ MCS4 ● -78 dBm @ MCS5 ● -76 dBm @ MCS6 ● -75 dBm @ MCS7 ● -92 dBm @ MCS8 ● -89 dBm @ MCS9 ● -87 dBm @ MCS10 ● -83 dBm @ MCS11 ● -80 dBm @ MCS12 ● -76 dBm @ MCS13 ● -74 dBm @ MCS14 ● -73 dBm @ MCS15

Item	Description			
	5 GHz 802.11a ● -94 dBm @ 6 Mbit/s ● -93 dBm @ 9 Mbit/s ● -91 dBm @ 12 Mbit/s ● -90 dBm @ 18 Mbit/s ● -88 dBm @ 24 Mbit/s ● -85 dBm @ 36 Mbit/s ● -84 dBm @ 48 Mbit/s ● -79 dBm @ 54 Mbit/s	5 GHz 802.11n (HT20) ● -94 dBm @ MCS0 ● -90 dBm @ MCS1 ● -89 dBm @ MCS2 ● -86 dBm @ MCS3 ● -83 dBm @ MCS4 ● -79 dBm @ MCS5 ● -78 dBm @ MCS6 ● -76 dBm @ MCS7 ● -92 dBm @ MCS8 ● -88 dBm @ MCS9 ● -87 dBm @ MCS10 ● -84 dBm @ MCS11 ● -81 dBm @ MCS12 ● -77 dBm @ MCS13 ● -76 dBm @ MCS14 ● -74 dBm @ MCS15	5 GHz 802.11n (HT40) ● -91 dBm @ MCS0 ● -89 dBm @ MCS1 ● -86 dBm @ MCS2 ● -84 dBm @ MCS3 ● -81 dBm @ MCS4 ● -77 dBm @ MCS5 ● -75 dBm @ MCS6 ● -74 dBm @ MCS7 ● -89 dBm @ MCS8 ● -87 dBm @ MCS9 ● -84 dBm @ MCS10 ● -82 dBm @ MCS11 ● -79 dBm @ MCS12 ● -75 dBm @ MCS13 ● -73 dBm @ MCS14 ● -72 dBm @ MCS15	-

Item	Description			
	5 GHz 802.11ac (VHT20) <ul style="list-style-type: none"> ● -94 dBm @ MCS0NSS1 ● -90 dBm @ MCS1NSS1 ● -89 dBm @ MCS2NSS1 ● -86 dBm @ MCS3NSS1 ● -83 dBm @ MCS4NSS1 ● -79 dBm @ MCS5NSS1 ● -78 dBm @ MCS6NSS1 ● -76 dBm @ MCS7NSS1 ● -72 dBm @ MCS8NSS1 ● -92 dBm @ MCS0NSS2 ● -88 dBm @ MCS1NSS2 ● -87 dBm @ MCS2NSS2 ● -84 dBm @ MCS3NSS2 ● -81 dBm @ MCS4NSS2 ● -77 dBm @ MCS5NSS2 ● -77 dBm @ MCS6NSS2 ● -74 dBm @ MCS7NSS2 ● -70 dBm @ MCS8NSS2 	5 GHz 802.11ac (VHT40) <ul style="list-style-type: none"> ● -92 dBm @ MCS0NSS1 ● -90 dBm @ MCS1NSS1 ● -87 dBm @ MCS2NSS1 ● -85 dBm @ MCS3NSS1 ● -82 dBm @ MCS4NSS1 ● -78 dBm @ MCS5NSS1 ● -76 dBm @ MCS6NSS1 ● -75 dBm @ MCS7NSS1 ● -71 dBm @ MCS8NSS1 ● -69 dBm @ MCS9NSS1 ● -90 dBm @ MCS0NSS2 ● -88 dBm @ MCS1NSS2 ● -85 dBm @ MCS2NSS2 ● -83 dBm @ MCS3NSS2 ● -80 dBm @ MCS4NSS2 ● -76 dBm @ MCS5NSS2 ● -74 dBm @ MCS6NSS2 ● -73 dBm @ MCS7NSS2 ● -69 dBm @ MCS8NSS2 ● -67 dBm @ MCS9NSS2 	5 GHz 802.11ac (VHT80) <ul style="list-style-type: none"> ● -89 dBm @ MCS0NSS1 ● -87 dBm @ MCS1NSS1 ● -84 dBm @ MCS2NSS1 ● -81 dBm @ MCS3NSS1 ● -79 dBm @ MCS4NSS1 ● -75 dBm @ MCS5NSS1 ● -73 dBm @ MCS6NSS1 ● -72 dBm @ MCS7NSS1 ● -68 dBm @ MCS8NSS1 ● -66 dBm @ MCS9NSS1 ● -87 dBm @ MCS0NSS2 ● -85 dBm @ MCS1NSS2 ● -82 dBm @ MCS2NSS2 ● -80 dBm @ MCS3NSS2 ● -77 dBm @ MCS4NSS2 ● -73 dBm @ MCS5NSS2 ● -71 dBm @ MCS6NSS2 ● -70 dBm @ MCS7NSS2 ● -66 dBm @ MCS8NSS2 ● -64 dBm @ MCS9NSS2 	-

5.3 Standards Compliance

Safety Standards

- UL 60950 - 1
- CAN/CSA 22.2 No.60950-1
- IEC 60950 - 1
- EN 60950 - 1
- GB 4943

Radio Standards

- ETSI EN 300 328
- ETSI EN 301 893
- China's SRRC document [2002] No. 353
- China's SRRC document [2002] No. 277
- China's SRRC document [2012] No. 620
- RSS-210
- AS/NZS 4268

EMC Standards

- EN 301 489 - 1
- EN 301 489 - 17
- ETSI EN 60601-1-2
- FCC Part 15
- ICES-003
- YD/T 1312.2-2004
- ITU k.20
- GB 9254
- GB 17625.1
- AS/NZS CISPR22
- EN 55022
- EN 55024
- CISPR 22
- CISPR 24
- IEC61000-4-6
- IEC61000-4-2

IEEE Standards

- IEEE 802.11a/b/g

- IEEE 802.11n
- IEEE 802.11ac
- IEEE 802.11h
- IEEE 802.11d
- IEEE 802.11e

Security Standards

- 802.11i, Wi-Fi Protected Access 2 (WPA2), and WPA
- 802.1X
- Advanced Encryption Standards (AES) and Temporal Key Integrity Protocol (TKIP)
- EAP Type (s)

EMF

- CENELEC EN 62311
- CENELEC EN 50385
- OET65
- RSS-102
- FCC Part1&2
- FCC KDB series

RoHS

- Directive 2002/95/EC & 2011/65/EU

Reach

- Regulation 1907/2006/EC

WEEE

- Directive 2002/96/EC & 2012/19/EU