# AP4030DN

# Product Description

**Issue** 01

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HUAWEI TECHNOLOGIES CO., LTD.

# Huawei Technologies Co., Ltd.

Address:     Huawei Industrial Base
             Bantian, Longgang
             Shenzhen 518129
             People's Republic of China

Website:     http://e.huawei.com

# About This Document

## Intended Audience

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.

This document is intended for:

- Network planning engineers
- Hardware installation engineers
- Commissioning engineer
- Data configuration engineers
- On-site maintenance engineers
- Network monitoring engineers
- System maintenance engineers

## Symbol Conventions

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

| Symbol | Description |
|---|---|
| ⚠ DANGER | Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. |
| ⚠ WARNING | Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. |
| ⚠ CAUTION | Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. |

| Symbol | Description |
|--------|-------------|
| ⚠ **NOTICE** | 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. |
| 📖 **NOTE** | 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. |

# Change History

Changes between document issues are cumulative. The latest document issue contains all the changes made in previous issues.

## Changes in Issue 01 (2015-03-10)

This is the initial commercial release.

# Contents

# 1 Product Positioning and Characteristics

## 1.1 Product Positioning

**Table 1-1** Product positioning

| Product Model | Frequency Band | IEEE Standard Compliance | Positioning | Usage Scenario |
|---|---|---|---|---|
| AP4030DN | Dual band:<br><br>● 2.4 GHz<br><br>● 5 GHz<br><br>The AP4030DN can provide services simultaneously on the 2.4 GHz and 5 GHz frequency bands to support more access users. | IEEE 802.11a/b/g/n/ac | The cost-effective AP4030DN supports 2 x 2 MIMO and provides comprehensive service support capabilities. It is deployed indoors and features high reliability, high security, simple network deployment, automatic AC discovery and configuration, and real-time management and maintenance. Huawei AP4030DN complies with IEEE 802.11ac and can provide | The AP4030DN provides 802.11n/ac wireless access networks for places with simple building structure, small size, dense users, and high capacity demands, such as small and medium enterprises and branches.<br><br>The AP4030DN can be flexibly deployed and work in both fit AP and bridge mode. |

| Product Model | Frequency Band | IEEE Standard Compliance | Positioning | Usage Scenario |
|---|---|---|---|---|
| | | | gigabit access for wireless users. This high capacity greatly improves user experience on wireless networks. | |

The AP4030DN can work as a Fat AP or Fit AP and switch flexibly between the two working modes based on the network plan.

When the wireless network scale is small, customers need to purchase only AP products and set the APs to work as Fat APs. As the network scale expands, tens of or hundreds of APs exist on the network. To simplify network management, customers are advised to purchase ACs to perform centralized management on the APs and set the APs to work as Fit APs.

Typical networking modes are as follows:

**Figure 1-1** Fit AP networking (AP mode)
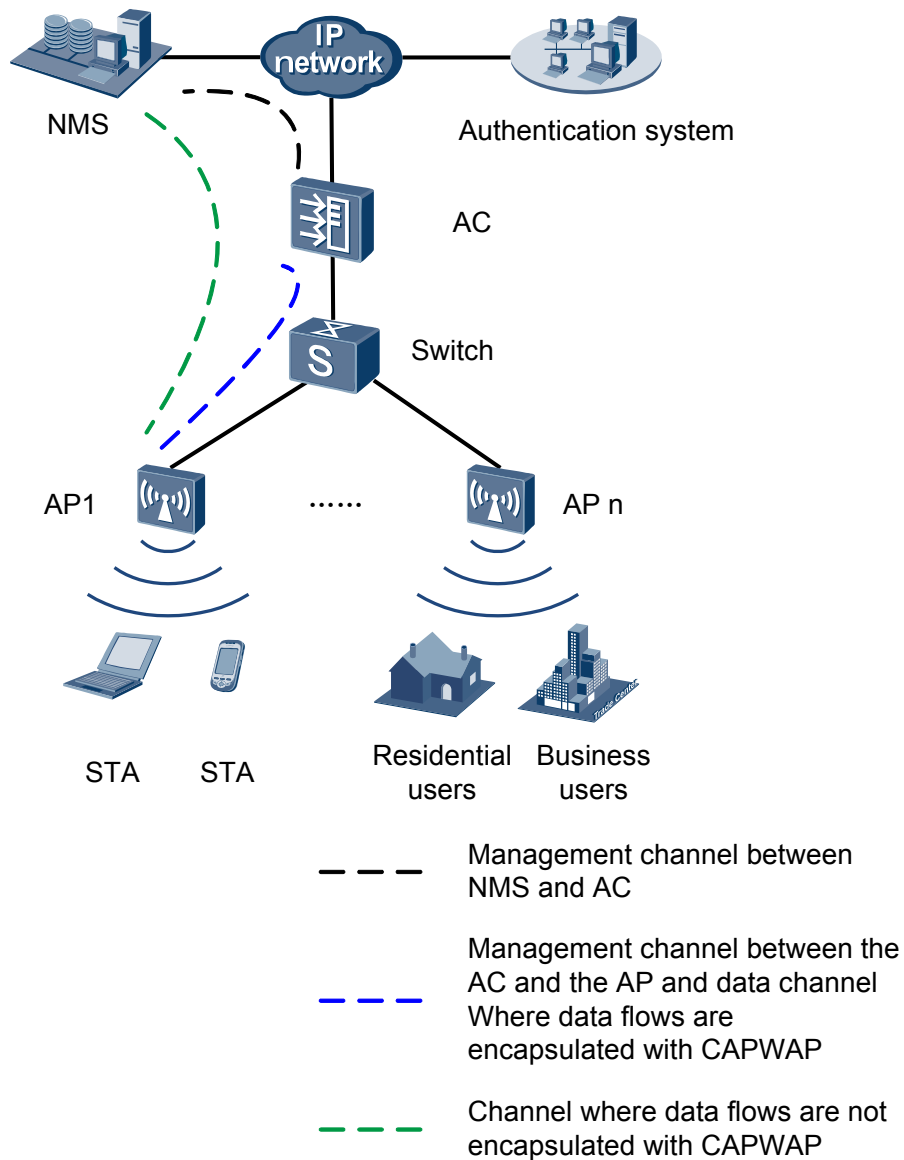


In this networking, the AP functions as a fit AP. The AC is responsible for user access, AP go-online, AP management, authentication, routing, security, and QoS.Huawei AC products include the AC6605, AC6005, ACU2 (with S7700, S9700, or S12700), S5720HI, S7700 (with X1E board), S9700 (with X1E board), and S12700 (with X1E board).

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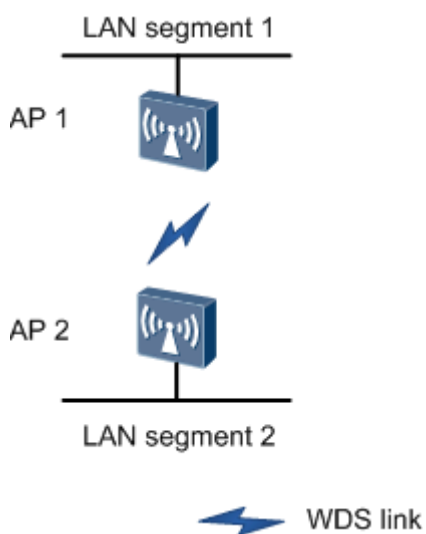


**Figure 1-3** Fit AP networking (WDS mode: point-to-multipoint)
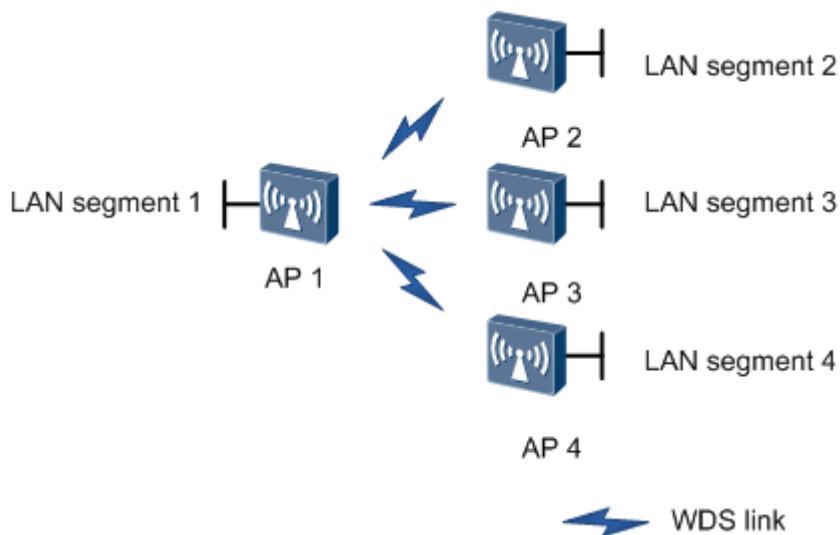


In this networking, the AP connects two or more independently wired or wireless LANs through wireless links to construct a network on which users can exchange data. In Wireless Distribution System (WDS) mode, the AP supports point-to-point (P2P) and point-to-multipoint (P2MP) networking modes. With 5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

**Figure 1-4** Fit AP mesh networking
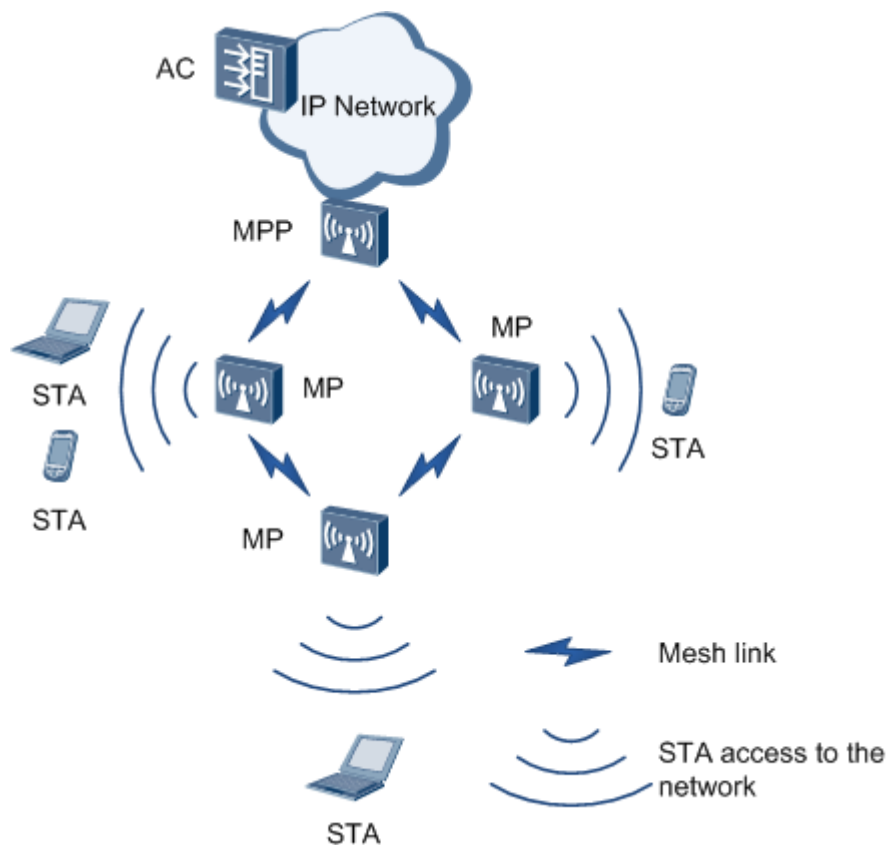


On the preceding network, APs function as mesh points (MPs) and are fully-meshed to establish an auto-configured and self-healing wireless mesh network (WMN). APs with the gateway function can work as the mesh portal points (MPPs) through which the WMN can provide access to the Internet. Terminals connect 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
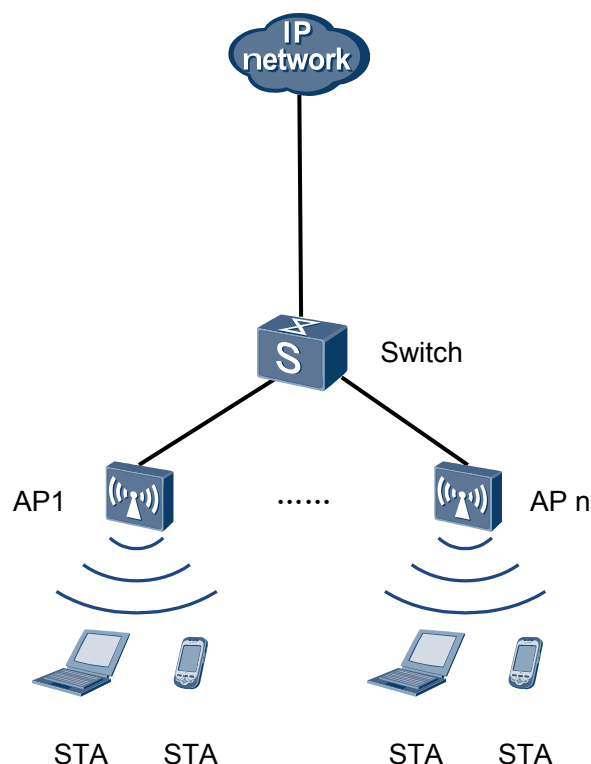


On the preceding network, the device functions as a Fat AP to implement functions such as user access, authentication, data security, service forwarding, and QoS.

# 1.2 Product Characteristics

The AP4030DN has the following advantages on a WLAN.

| Product Characteristics | Description |
| --- | --- |
| High-speed and reliable wireless access | <ul><li>Compatibility with IEEE 802.11a/b/g/n/ac</li><li>2 x 2 MIMO and a maximum rate of 1.16 Gbit/s</li><li>Link aggregation of dual Ethernet ports</li><li>Supports Wi-Fi Multimedia (WMM) and priority mapping on the air interface and wired interface.</li><li>Supports wired link integrity check.</li><li>Supports load balancing.</li><li>Supports roaming without service interruption in Fit AP mode.</li><li>Supports AC dual-link backup in Fit AP mode.</li><li>Latest 802.11ac chip with higher performance and wider coverage</li><li>Supports airtime scheduling which ensures fairness in channel occupation time for all users.</li></ul> |

| Product Characteristics | Description |
|---|---|
| Comprehensive user access control capability | <ul><li>Supports access control lists (ACLs) and implements user access control based on the user group policy.</li><li>Provides fine-grained bandwidth management for each user.</li><li>Supports user isolation policies.</li><li>Supports unified authentication on the AC in Fit AP mode.</li><li>Identifies the device type according to the organizationally unique identifier (OUI) in the MAC address, user agent (UA) information in an HTTP packet, and DHCP options in Fit AP mode.</li><li>The RADIUS server delivers packet forwarding, security, and QoS policies according to the device type carried in the RADIUS authentication and accounting packets in Fit AP mode.</li></ul> |
| High network security | <ul><li>Open system authentication</li><li>WEP authentication/encryption</li><li>WPA/WPA2-PSK authentication and encryption</li><li>WPA/WPA2-802.1x authentication and encryption</li><li>WAPI authentication and encryption</li><li>Supports wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS), including rogue device detection and countermeasure, attack detection and dynamic blacklist, STA/AP blacklist and whitelist.</li></ul> |
| Flexible networking and environment adaptability | <ul><li>Provides flexible networking capabilities and applies to various application scenarios. Mesh and WDS scenarios are supported only in Fit AP mode.</li><li>Has strong environment adaptability. The AP can automatically select the transmission rates, channels, and transmit power to adapt to various radio environments and avoid interference in real time.</li><li>Adjusts bandwidth allocation based on the user quantity and environment to improve user experience.</li><li>Identifies interference sources such as baby monitors, Bluetooth devices, digital cordless phones (at 2.4 GHz frequency band only), wireless audio transmitters (at both the 2.4 GHz and 5 GHz frequency bands), wireless game controllers, and microwaves in Fit AP mode and works with eSight to locate interference sources and display spectrums.</li></ul> |

| Product Characteristics | Description |
|---|---|
| Easy device management and maintenance | ● Automatically goes online and loads the configuration, and supports plug-and-play (PnP) in Fit AP mode.<br>● Supports batch upgrade.<br>● Manages APs locally on the web platform and supports HTTP or HTTPS login, configuration, and maintenance in Fat AP mode.<br>● Allows real-time monitoring on the network management system (NMS) to facilitate remote configuration and fast fault location.<br>● Supports the Link Layer Discovery Protocol (LLDP) to implement automatic link discovery and obtain the network topology. |

# 2 Hardware Structure

## 2.1 AP4030DN

### Appearance

Figure 2-1 shows the appearance of the AP.

📖NOTE

The actual device appearance may be different from the following device appearance, but these differences will not affect device functions.
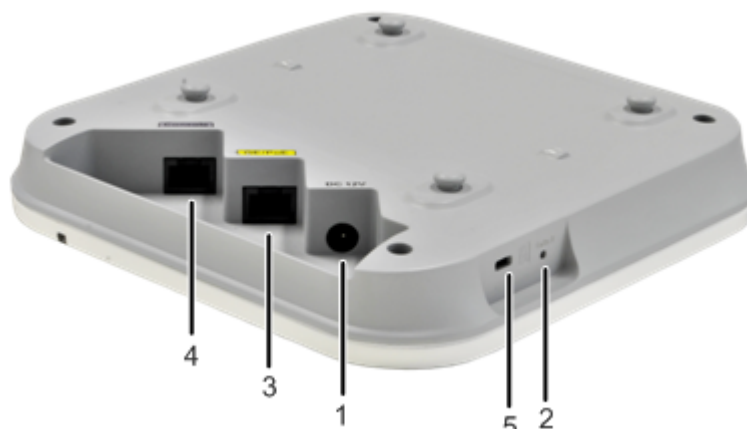
**Figure 2-1** AP4030DN appearance



### Port

The following figure shows ports on the AP4030DN.

**Figure 2-2** AP4030DN ports



As shown in **Figure 2-2**, each port can be described as follows:

- 1. Input port for 12 V DC power supply

- 2. Default button: restores factory settings if you hold down the button more than 3 seconds.

- 4. GE/PoE: 10/100/1000M port used to connect to the wired Ethernet. The port can connect to a PoE power supply to provide power for APs.

- 5. Console port: connects to the maintenance terminal for AP configuration and management.

- 6. Lock port: protects the AP against theft.

## LED Indicators

⫿NOTE

Indicator colors may vary slightly at different temperature.

| Type | Color | Status | Description |
|------|-------|--------|-------------|
| Default status after power-on | Green | Steady on | The AP is just powered on and the software is not started yet. |
| Software startup status | Green | Steady on after blinking once | 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. |
| Running status | Green | Blinking once every 2s (0.5 Hz) | ● The system is running properly, the Ethernet connection is normal, and STAs are associated with the AP.<br>● The system enters the Uboot CLI. |
| | | Blinking once every 5s (0.2 Hz) | 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. |

| Type | Color | Status | Description |
|------|-------|--------|-------------|
| Alarm | Green | Blinking once every 0.25s (4 Hz) | <ul><li>The software is being upgraded.</li><li>After the software is uploaded and started, the AP working in Fit AP mode requests to go online on the AC and maintains this state until it goes online successfully on the AC (before the CAPWAP link is established).</li><li>The AP working in Fit AP mode fails to go online on the AC (the CAPWAP link disconnects).</li></ul> |
| Fault | Red | Steady on | 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

## 3.1 WLAN Features

WLAN features supported by the AP are as follows:

- Comply with IEEE 802.11a/b/g/n/ac

- The maximum rate of 1.16Gbit/s

- Maximum ratio combining (MRC)

- Space time block code (STBC)

- Low-density parity-check (LDPC)

- Maximum-likelihood detection (MLD)

- Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Rx only)

- 802.11 dynamic frequency selection (DFS)

- Short 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 802.3u
- 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
- AP control channel 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
- 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 (the system dynamically adjusts bandwidth based on the number of users and radio environment to improve user experience)
- Airtime scheduling

## 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

- Supports wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS), including rogue device detection and countermeasure, attack detection and dynamic blacklist, STA/AP blacklist and whitelist.

- 802.1x authentication, MAC address authentication, and Portal authentication

- DHCP Snooping

- DAI (Dynamic ARP Inspection)

- IPSG (IP Source Guard)

# 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

- WDS zero-configuration deployment in Fit AP mode

- Mesh network zero-configuration deployment in Fit AP mode

- Batch upgrade in Fit AP mode

- Telnet

- STelnet using SSH v2

- SFTP using SSH v2

- Local AP management through the serial interface

- 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**

    The AP supports spectrum analysis only in Fit AP mode.

Spectrum analysis features supported by the AP are as follows:

- Identifies interference sources such as baby monitors, Bluetooth devices, digital cordless phones (at 2.4 GHz frequency band only), wireless audio transmitters (at both the 2.4 GHz and 5 GHz frequency bands), wireless game controllers, and microwaves.
- Works with eSight to perform spectrum analysis on interference sources.

# 4 Technical Specifications

## 4.1 Basic Specifications

Table 4-1 Basic specifications of the AP4030DN

| Item | | Description |
|------|--|-------------|
| Technical specifications | Dimensions (H x W x D) | 39.5mm x 180mm x 180mm |
| | Weight | 0.4kg |
| | System memory | • 256MB DDR2<br>• 32MB Flash |
| Power specifications | Power input | • DC 12V±10%<br>• PoE power: in compliance with IEEE 802.3af/at |
| | Maximum power consumption | 10.2W<br>**NOTE**<br>The actual maximum power consumption depends on local laws and regulations. |
| Environment specifications | Operating temperature | -60 m to +1800 m: -10°C to +50°C<br>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) |
| | Ingress Protection Rating | IP41 |

| Item | | Description |
| --- | --- | --- |
| | Atmospheric pressure | 70kPa to 106kPa |

# 4.2 Radio Specifications

Table 4-2 Radio specifications

| Item | Description | | |
| --- | --- | --- | --- |
| Antenna type | Built-in antenna | | |
| Antenna gain | • 2.4G: 4dBi<br>• 5G: 6dBi | | |
| Maximum number of concurrent users | • FIT AP: $\leq 256$<br>• FAT AP: $\leq 64$ | | |
| Maximum number of VAPs for each radio | 16 | | |
| Maximum transmit power | • 2.4 GHz: 23 dBm (combined power)<br>• 5 GHz: 23 dBm (combined power)<br>**NOTE**<br>The actual transmit power depends on local laws and regulations.<br>You can adjust the transmit power from the maximum transmit power to 1 dBm, with a step of 1 dB. | | |
| Maximum number of non-overlapping channels | 2.4 GHz<br>802.11b/g<br>• 20 MHz: 3<br>802.11n<br>• 20 MHz: 3<br>• 40 MHz: 1 | 5 GHz<br>• 802.11a<br>  – 20 MHz: 13<br>• 802.11n<br>  – 20 MHz: 13<br>  – 40 MHz: 6<br>• 802.11ac<br>  – 20MHz: 13<br>  – 40MHz: 6<br>  – 80MHz: 3 | **NOTE**<br>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 *Country Code & Channels compliance status* |

| Item | Description | | | |
|---|---|---|---|---|
| Channel rate supported | ● 802.11b: 1, 2, 5.5, and 11 Mbit/s<br>● 802.11a/g: 6, 9, 12, 18, 24, 36, 48, and 54 Mbit/s<br>● 802.11n: 6.5 to 300 Mbit/s<br>● 802.11ac: 6.5 to 867 Mbit/s | | | |
| Receiver sensitivity (Typical values) | 2.4 GHz<br>● -101 dBm @ 1 Mbit/s<br>● -96 dBm @ 2 Mbit/s<br>● -94 dBm @ 5.5 Mbit/s<br>● -89 dBm @ 11 Mbit/s | 2.4 GHz<br>802.11g (non-HT20)<br>● -95 dBm @ 6 Mbit/s<br>● -95 dBm @ 9 Mbit/s<br>● -93 dBm @ 12 Mbit/s<br>● -91 dBm @ 18 Mbit/s<br>● -87 dBm @ 24 Mbit/s<br>● -84 dBm @ 36 Mbit/s<br>● -80 dBm @ 48 Mbit/s<br>● -79 dBm @ 54 Mbit/s | 2.4 GHz<br>802.11n (HT20)<br>● -93 dBm @ MCS0<br>● -93 dBm @ MCS1<br>● -91 dBm @ MCS2<br>● -86 dBm @ MCS3<br>● -83 dBm @ MCS4<br>● -78 dBm @ MCS5<br>● -77 dBm @ MCS6<br>● -75 dBm @ MCS7<br>● -91 dBm @ MCS8<br>● -91 dBm @ MCS9<br>● -89 dBm @ MCS10<br>● -84 dBm @ MCS11<br>● -81 dBm @ MCS12<br>● -76 dBm @ MCS13<br>● -75 dBm @ MCS14<br>● -73 dBm @ MCS15 | 2.4 GHz<br>802.11n(HT40)<br>● -90 dBm @ MCS0<br>● -90 dBm @ MCS1<br>● -88 dBm @ MCS2<br>● -84 dBm @ MCS3<br>● -81 dBm @ MCS4<br>● -76 dBm @ MCS5<br>● -75 dBm @ MCS6<br>● -73 dBm @ MCS7<br>● -88 dBm @ MCS8<br>● -88 dBm @ MCS9<br>● -86 dBm @ MCS10<br>● -82 dBm @ MCS11<br>● -79 dBm @ MCS12<br>● -74 dBm @ MCS13<br>● -73 dBm @ MCS14<br>● -71 dBm @ MCS15 |

| Item | Description | | | |
|---|---|---|---|---|
| | 5 GHz<br><br>802.11a (non-HT20)<br>● -95 dBm @ 6 Mbit/s<br>● -93 dBm @ 9 Mbit/s<br>● -92 dBm @ 12 Mbit/s<br>● -90 dBm @ 18 Mbit/s<br>● -87 dBm @ 24 Mbit/s<br>● -84 dBm @ 36 Mbit/s<br>● -80 dBm @ 48 Mbit/s<br>● -78 dBm @ 54 Mbit/s | 5 GHz<br><br>802.11n (HT20)<br>● -95 dBm @ MCS0<br>● -93 dBm @ MCS1<br>● -90 dBm @ MCS2<br>● -86 dBm @ MCS3<br>● -82 dBm @ MCS4<br>● -79 dBm @ MCS5<br>● -77 dBm @ MCS6<br>● -75 dBm @ MCS7<br>● -93 dBm @ MCS8<br>● -91 dBm @ MCS9<br>● -88 dBm @ MCS10<br>● -84 dBm @ MCS11<br>● -80 dBm @ MCS12<br>● -77 dBm @ MCS13<br>● -75 dBm @ MCS14<br>● -73 dBm @ MCS15 | 5 GHz<br><br>802.11n (HT40)<br>● -92 dBm @ MCS0<br>● -90 dBm @ MCS1<br>● -87 dBm @ MCS2<br>● -84 dBm @ MCS3<br>● -80 dBm @ MCS4<br>● -76 dBm @ MCS5<br>● -75 dBm @ MCS6<br>● -73 dBm @ MCS7<br>● -90 dBm @ MCS8<br>● -88 dBm @ MCS9<br>● -85 dBm @ MCS10<br>● -82 dBm @ MCS11<br>● -78 dBm @ MCS12<br>● -74 dBm @ MCS13<br>● -73 dBm @ MCS14<br>● -71 dBm @ MCS15 | - |

| Item | Description | | | |
|---|---|---|---|---|
| | 5 GHz<br><br>802.11ac (VTH20)<br><br>● -95 dBm @ MCS0NSS1<br>● -93 dBm @ MCS1NSS1<br>● -90 dBm @ MCS2NSS1<br>● -86 dBm @ MCS3NSS1<br>● -83 dBm @ MCS4NSS1<br>● -78 dBm @ MCS5NSS1<br>● -77 dBm @ MCS6NSS1<br>● -75 dBm @ MCS7NSS1<br>● -72 dBm @ MCS8NSS1<br>● -93 dBm @ MCS0NSS2<br>● -91 dBm @ MCS1NSS2<br>● -88 dBm @ MCS2NSS2<br>● -84 dBm @ MCS3NSS2<br>● -81 dBm @ MCS4NSS2<br>● -76 dBm @ MCS5NSS2<br>● -75 dBm @ MCS6NSS2<br>● -73 dBm @ MCS7NSS2<br>● -70 dBm @ MCS8NSS2 | 5 GHz<br><br>802.11ac (VTH40)<br><br>● -92 dBm @ MCS0NSS1<br>● -90 dBm @ MCS1NSS1<br>● -87 dBm @ MCS2NSS1<br>● -83 dBm @ MCS3NSS1<br>● -80 dBm @ MCS4NSS1<br>● -76 dBm @ MCS5NSS1<br>● -74 dBm @ MCS6NSS1<br>● -73 dBm @ MCS7NSS1<br>● -68 dBm @ MCS8NSS1<br>● -67 dBm @ MCS9NSS1<br>● -90 dBm @ MCS0NSS2<br>● -88 dBm @ MCS1NSS2<br>● -85 dBm @ MCS2NSS2<br>● -81 dBm @ MCS3NSS2<br>● -78 dBm @ MCS4NSS2<br>● -74 dBm @ MCS5NSS2<br>● -72 dBm @ MCS6NSS2<br>● -71 dBm @ MCS7NSS2<br>● -65 dBm @ MCS8NSS2<br>● -64 dBm @ MCS9NSS2 | 5 GHz<br><br>802.11ac (VTH80)<br><br>● -87 dBm @ MCS0NSS1<br>● -87 dBm @ MCS1NSS1<br>● -81 dBm @ MCS2NSS1<br>● -79 dBm @ MCS3NSS1<br>● -75 dBm @ MCS4NSS1<br>● -73 dBm @ MCS5NSS1<br>● -70 dBm @ MCS6NSS1<br>● -68 dBm @ MCS7NSS1<br>● -65 dBm @ MCS8NSS1<br>● -62 dBm @ MCS9NSS1<br>● -85 dBm @ MCS0NSS2<br>● -85 dBm @ MCS1NSS2<br>● -79 dBm @ MCS2NSS2<br>● -77 dBm @ MCS3NSS2<br>● -73 dBm @ MCS4NSS2<br>● -71 dBm @ MCS5NSS2<br>● -68 dBm @ MCS6NSS2<br>● -66 dBm @ MCS7NSS2<br>● -62 dBm @ MCS8NSS2<br>● -59 dBm @ MCS9NSS2 | - |

# 4.3 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
- 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)

## Environment standards

- ETSI 300 019-2-1
- ETSI 300 019-2-2
- ETSI 300 019-2-3
- ETSI 300 019-1-1
- ETSI 300 019-1-2
- ETSI 300 019-1-3

## EMF

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

## RoHS

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

## Reach

- Regulation 1907/2006/EC

## WEEE

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