Huawei

AP5030DN-C

Access Point

Datasheet

Product Overview ·· //

The AP5030DN-C is Huawei's 802.11ac Wave 1 access point(AP) for cloud management Wi-Fi scenarios.
Itsupports 3 x 3 MIMO and three spatial streams and provides industry-leading capabilities in terms of high-density access, multi-user performance, signal coverage, and anti-interference. The AP5030DN-C works on both 2.4 GHz and 5 GHz frequency bands and iscompatible with 802.11n/ac standards.
The 802.11ac-capable AP makes a major leap in Wi-Fi access from 100M to GE and meetsthe bandwidth requirements of large-bandwidth services such as High Definition (HD) video streams, multimedia, and desktop cloud services, delivering smooth and high-quality wireless services to enterprise users.

AP5030DN-C

- Compliance with 802.11ac Wave 1, delivering services simultaneously on 2.4G and 5G radios(450 Mbit/s at 2.4 GHz; 1.3 Gbit/s at 5 GHz; and 1.75 Gbit/s for the device)s
- PoE power supply in compliance with IEEE 802.3af/at for easy installation
- Dual GE ports, supporting data backup and PoE power supply
- Built-in omnidirectional antennas with 4 dBi gain at 2.4 GHz and 5 dBi gain at 5 GHz
- Supports cloud-based management and enables Huawei Agile Controller-Cloud Manager to manage and operate APs and services on the APs, reducing network O&M costs.

Feature Description ·· //

Cloud-based management

- Huawei Cloud Managed Network (CMN) Solution consists of the cloud management platform and a full range of cloud managed network devices. The cloud management platform provides various functions including management of APs, tenants, applications, and licenses, network planning and optimization, device monitoring, network service configuration, and value-added services.

802.11ac GE access

- The AP supports the 80-MHz bandwidth mode. Frequency bandwidth increase brings extended channels and more sub-carriers for data transmission, and a 2.16 times higher rate.

‑ High Quadrature Amplitude Modulation (HQAM) — at 256-QAM — increases the 5 GHz radio rate to 1.3 Gbit/s. The throughput of the 802.11ac AP is three times that of traditional APs.

High Density Boosttechnology

‑ Huawei uses the following technologies to address challenges in high-density scenarios, including access problems, data congestion, and poor roaming experience:

- Interference suppression

‑ In high-density scenarios, APs are usually densely placed. Huawei uses small-angle antennas that are purpose-built for high-density scenarios to mitigate interference. These antennas have good radiation angle control and can regulate AP coverage radius to within the appropriate range. Additionally, Huawei's Clear Channel Assessment (CCA) optimization technology reduces the possibility of air port resources shared by multiple devices, allows higher user access, and improves the throughput.

- Air port performance optimization

‑ In high-density scenarios where many users access the network, an increased number of low-rate STAs consume more resources on the air port, reduce the AP capacity, and lower user experience. Therefore, Huawei APs will check the signal strength of STAs during access and rejects access from weak-signal STAs. At the same time, the APs monitor the rate of online STAs in real time and forcibly disconnect low-rate STAs so that the STAs can reassociate with APs that have stronger signals.The terminal access control technology can increase air port use efficiency and allow access from more users.

- 5G-prior access

‑ Huawei APs support both 2.4G and 5G frequency bands. The 5G-prior access function enables an AP to steer STAs to the 5 GHz frequency band first, which reduces load and interference on the 2.4 GHz frequency band, improvinguser experience.

- Load balancing between APs

‑ After the load balancing function is enabled, the Agile Controller-Cloud Managerdistributes users evenly to APs based on user quantity and traffic volume. Traffic load is therefore balanced among APs to ensure stable AP performance.

- Smart roaming

‑ Smart roaming technology is based on 802.11k and 802.11v technologies and allows STAs to connect to APs with stronger signals, improving user experience and the overall performance of the wireless network.

‑ These measures together help construct a wireless expressway network that can accommodate more terminals.

Wired and wireless dual security guarantee

‑ To ensure data security, Huawei APs integrate wired and wireless security measures and provide comprehensive security protection.

- Authentication and encryption for wireless access

‑ The APs support WEP, WPA/WPA2–PSK, WPA/WPA2–802.1X, and WAPI authentication/encryption modes to ensure security of the wireless network. The authentication mechanism is used to authenticate user identities so that only authorized users can access network resources. The encryption mechanism is used to encrypt data transmitted over wireless links to ensure that the data can only be received and parsed by expected users.

- Analysis on non-Wi-Fi interference sources

  – Huawei APs can analyze the spectrum of non-Wi-Fi interference sources and identify them, including 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 microwave ovens. Coupled with Huawei eSight, the precise locations of the interference sources can be detected, and the spectrum of them displayed, enabling the administrator to remove the interference in a timely manner.

- Rogue device monitoring

  – Huawei APs support WIDS/WIPS, and can monitor, identify, defend, counter, and perform refined management on the rogue devices, to provide security guarantees for air interface environment and wireless data transmission.

- AP access authentication and encryption

  – The AP access control ensures validity of APs. The connection-oriented NETCONF ensures security of network connections and service data.

Automatic radio calibration

  – Automatic radio calibration allows an AP to collect signal strength and channel parameters of surrounding APs and generate AP topology according to the collected data. Based on interference from authorized APs, rogue APs, and non-Wi-Fi interference sources, each AP automatically adjusts its transmit power and working channel to make the network operate at the optimal performance. In this way, network reliability and user experience are improved.

Automatic application identification

  – Huawei APs support smart application control technology and can implement visualized control on Layer 4 to Layer 7 applications.

- Traffic identification

  – Coupled with the Agile-Controller-Cloud Manager, the APs can identify over 800 common applications in various office scenarios. Based on the identification results, policy control can be implemented on user services, including priority adjustment, scheduling, blocking, and rate limiting to ensure efficient bandwidth resource use and improve quality of key services.

- Traffic statistics collection

  – Traffic statistics of each application can be collected globally, by SSID, or by user, enabling the network administrator to know application use status on the network. The network administrator or operator can implement visualized control on service applications on smart terminals to enhance security and ensure effective bandwidth control.

Basic Specifications //

Hardware specifications

Item		Description
Physical specifications	Dimensions (W x D x H)	220 mm x 220 mm x 53 mm
	Weight	0.8 kg
	Ethernet ports	2 x RJ45
Power specifications	Power input	12V DC ± 10% PoE power supply: -48V DC (in compliance with IEEE 802.3af/at)
	Maximum power consumption	12.95W NOTE: The actual maximum power consumption depends on local laws and regulations.
Environmental specifications	Operating temperature	−10°C to +50°C
	Storage temperature	−40°C to +70°C
	Operating humidity	5% to 95% (non-condensing)
	Dustproof and waterproof grade	IP41
	Altitude	−60 m to +5,000 m
	Atmospheric pressure	70 kPa to 106 kPa
Radio specifications	Antenna type	Built-in antenna
	Antenna gain	4 dBi (2.4 GHz); 5 dBi (5 GHz)
	Maximum number of users	≤ 256
	Maximum transmit power	2.4 GHz: 25 dBm (combined power) 5 GHz: 25 dBm (combined power) NOTE: The actual transmit power depends on local laws and regulations.
	Power increment	1dBm

Item		Description
Radio specifications	Receiver sensitivity	2.4 GHz 802.11b：-101 dBm @ 1 Mbit/s；-91 dBm @ 11 Mbit/s
		2.4 GHz 802.11g：-92 dBm @ 6 Mbit/s；-81 dBm @ 54 Mbit/s
		2.4 GHz 802.11n (HT20)：-92 dBm @ MCS0；-73 dBm @ MCS23
		2.4 GHz 802.11n(HT40)：-90 dBm @ MCS0；-71 dBm @ MCS23
		5 GHz 802.11a (non-HT20)：-94 dBm @ 6 Mbit/s；-79 dBm @ 54 Mbit/s
		5 GHz 802.11n (HT20)：-93 dBm @ MCS0；-72 dBm @ MCS23
		5 GHz 802.11n (HT40)：-91 dBm @ MCS0；-70 dBm @ MCS23
		5 GHz 802.11ac (VHT20)：-93 dBm @ MCS0NSS1；-65 dBm @ MCS9NSS3
		5 GHz 802.11ac (VHT40)：-91 dBm @ MCS0NSS1；-61 dBm @ MCS9NSS3
		5 GHz 802.11ac (VHT80)：-89 dBm @ MCS0NSS1；-59 dBm @ MCS9NSS3

Software specifications

Item	Description
WLAN features	• Compliance with IEEE 802.11a/b/g/n/ac • Maximum rate: 1.75 Gbit/s • Maximum Ratio Combining (MRC) • Space time block code (STBC) • Beamforming • Low-density parity-check (LDPC) • Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD) • Maximum Likelihood Detection (MLD) • Data unit aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Rx only) • 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 • Automatic and manual rate adjustment (the rate is adjusted automatically by default) • WLAN channel management and channel rate adjustment • Automatic channel scanning and interference avoidance • Service Set Identifier (SSID) hiding, support for SSIDs in Chinese • Signal Sustain Technology (SST) • Unscheduled Automatic Power Save Delivery (U-APSD) • Automatic access • Hotspot2.0 in Fit AP mode • 802.11k and 802.11v smart roaming in Fit AP mode • Cloud-based management

| Item	Description
Network features	• Compliance with IEEE 802.3u • Auto-negotiation of the rate and duplex mode; automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X) • SSID-based VLAN assignment • VLAN trunk on uplink Ethernet ports • 4,094 VLAN IDs (1 to 4,094) and a maximum of 16 virtual APs (VAPs) for each radio • AP control channel in tagged and untagged mixed mode • DHCP client, obtaining IP addresses through DHCP • Tunnel forwarding and direct forwarding • STA isolation in the same VLAN • Multicast Domain Name Service (mDNS) gateway protocol: supports AirPlay and AirPrint service sharing between users of different VLANs • Access control lists (ACLs) • Link Layer Discovery Protocol (LLDP) • Unified authentication on the Agile Controller-Cloud Manager in Fit AP mode • Network Address Translation (NAT)
QoS features	• Priority mapping and packet scheduling based on a 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 fair scheduling • Support for Microsoft Lync APIs and high voice call quality through Lync API identification and scheduling
Security features	• Open system authentication • WEP authentication/encryption • WPA/WPA2-PSK authentication and encryption • WPA/WPA2-802.1x authentication and encryption • WPA-WPA2 authentication • WAPI authentication and encryption • WIDS including rogue AP and STA detection, attack detection, STA/AP blacklist and whitelist • 802.1x authentication, MAC address authentication, and Portal authentication • 802.11w Protected Management Frames (PMFs) • DHCP snooping • Dynamic ARP Inspection (DAI) • IP Source Guard (IPSG)

| Item	Description
Maintenance features	• Unified management and maintenance on the Agile Controller-Cloud Manager • Plug-and-Play (PnP): automatically going online and loading configurations • Batch upgrade • Local AP management through the serial port or using Telnet • STelnet using SSH v2 • SFTP using SSH v2 • Real-time configuration monitoring and fast fault location using the NMS • System status alarm • Network Time Protocol (NTP)

Standards compliance

Item	Description	
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 FCC Part 15C: 15.247	FCC Part 15C: 15.407 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.21 GB 9254	GB 17625.1 AS/NZS CIPSR22 EN 55022 EN 55024 CISPR 22 CISPR 24 IEC61000-4-6 IEC61000-4-2

Item	Description
IEEE standards	IEEE 802.11a/b/g IEEE 802.11n IEEE 802.11ac IEEE 802.11h IEEE 802.11d IEEE 802.11e IEEE 802.11k IEEE 802.11u IEEE 802.11v IEEE 802.11w
Security standards	802.11i, Wi-Fi Protected Access 2(WPA2), WPA 802.1X Advanced Encryption Standards(AES), Temporal Key Integrity Protocol(TKIP), and EAP Type(s)
Environmental 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 series
RoHS	Directive 2002/95/EC & 2011/65/EU
Reach	Regulation 1907/2006/EC
WEEE	Directive 2002/96/EC & 2012/19/EU

AP5030DN-CAntenna Pattern Plots
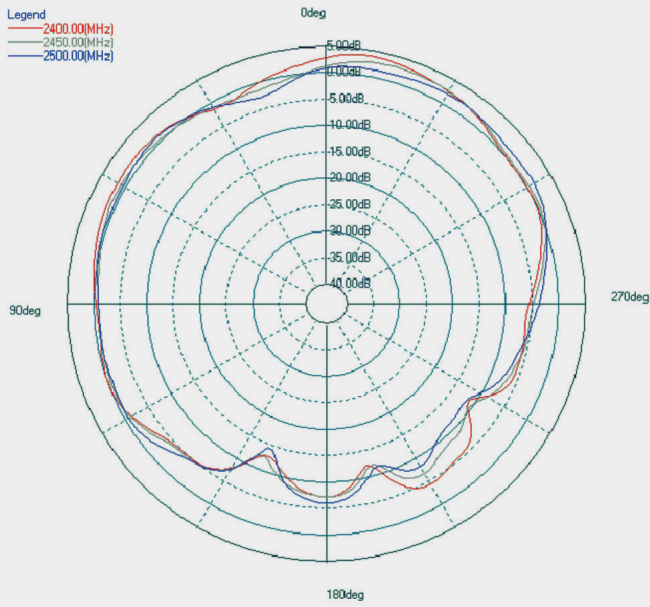
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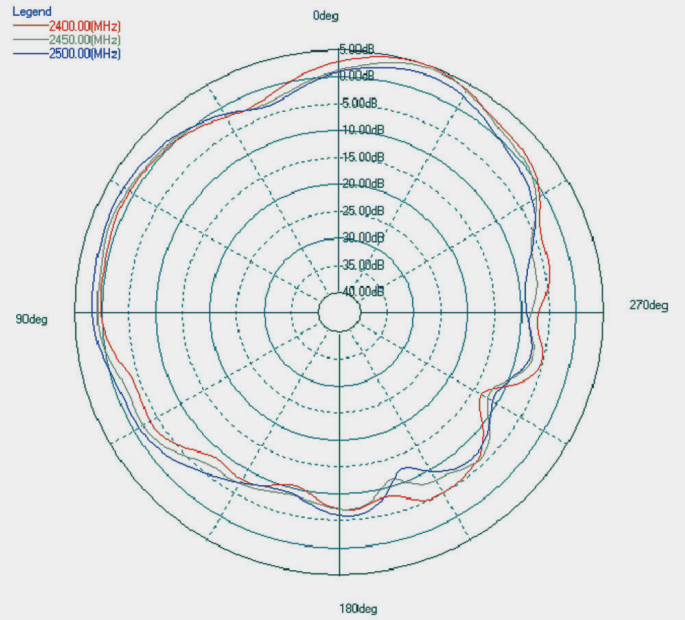
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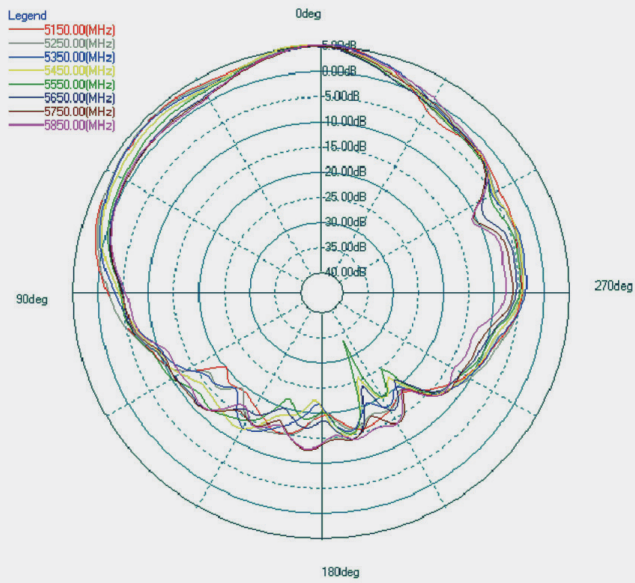
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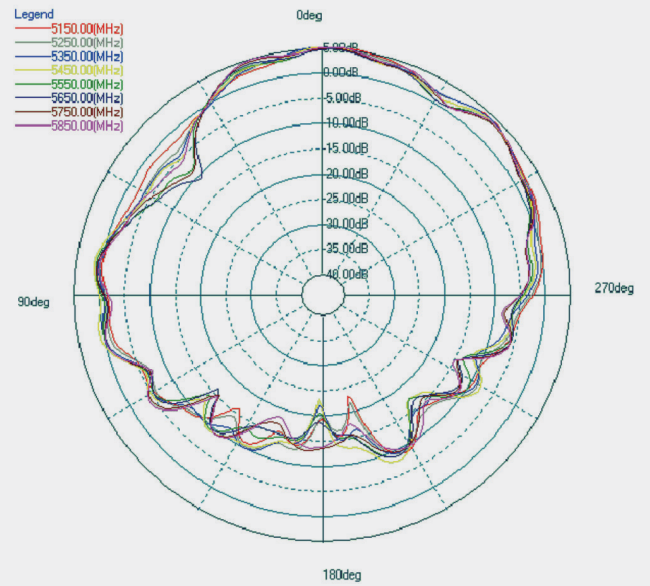
5G (PHI=90)

Professional Service and Support

Huawei WLAN planning tools deliver expert network design and optimization services using the most professional simulation platform in the industry. Backed by fifteen years of continuous investment in wireless technologies, extensive network planning and optimization experience, and rich expert resources, Huawei helps customers:

- Design, deploy, and operate a high-performance network that is reliable and secure.
- Maximize return on investment and reduce operating expenses.

More Information

For more information, please visit http://e.huawei.com/en/ or contact your local Huawei office.

Enterprise Services   Product Overview   Marketing Documentation
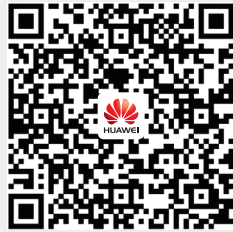
HUAWEI TECHNOLOGIES CO.,LTD.
Huawei Industrial Base
Bantian Longgang
Shenzhen 518129,P.R.China
Tel: +86 755 28780808

www.huawei.com