HUAWEI eKit

Huawei eKitEngine AP361 Access Point Datasheet

HUAWEI

Product Overview

Huawei eKitEngine AP361 is an indoor access point (AP) in compliance with the Wi-Fi 6 (802.11ax) standard. It provides services simultaneously on the 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, achieving a maximum device rate of 1.775 Gbps. This AP features high bandwidth, high concurrency, and compact size, facilitating flexible deployment and saving customer investment. Such strengths make the AP a good fit for indoor coverage scenarios, such as small and micro enterprise workplaces, small- and medium-sized hospitals, commercial real estate, budget chain hotels, and primary and secondary schools.

AP361

- Dual-radio mode: 2.4 GHz (2x2) + 5 GHz (2x2), providing a maximum rate of 575 Mbps and 1.2 Gbps, respectively, and a rate of up to 1.775 Gbps for the device.
- 1 x GE electrical port.
- Built-in smart antenna: automatically adjusts the coverage direction and signal strength based on the intelligent switchover algorithm. Such capability enables the AP to flexibly adapt to the application environment changes, providing accurate and stable coverage as STAs move.
- Working modes: Fit, Fat, and cloud management.
- Deployment and O&M through the HUAWEI eKit app.

Feature Descriptions

Wi-Fi 6 (802.11ax) standard

- As the latest Wi-Fi standard defined in IEEE 802.11, 802.11ax improves the user access capacity and bandwidth in high-density access scenarios, reducing service latency and enhancing user experience.
- 802.11ax supports multi-user multiple-input multiple-output (MU-MIMO) on both the 2.4 GHz and 5 GHz frequency bands, allowing an AP to transmit data to and receive data from multiple STAs simultaneously and multiplying the utilization of radio spectrum resources.
- 802.11ax supports 1024-quadrature amplitude modulation (QAM), improving data transmission efficiency by 25% compared with 802.11ac (supporting 256-QAM).
- Orthogonal frequency division multiple access (OFDMA) technology enables the AP to transmit data to multiple STAs at the same time using different subcarriers, reducing latency and improving network efficiency.
- Spatial reuse (SR) technology uses basic service set (BSS) coloring to enable APs and STAs to distinguish overlapping BSSs, minimizing co-channel interference.

MU-MIMO

The AP supports MU-MIMO and a maximum of four spatial streams, two spatial streams at 2.4 GHz and two spatial streams at 5 GHz. The MU-MIMO technology enables an AP to send data to multiple STAs simultaneously, which doubles the radio spectrum resource usage, increases the number of access users and bandwidth, and improves user experience in high-density access scenarios.

High-speed access

The AP supports 80 MHz frequency bandwidth, which increases the number of available data subcarriers and extends transmission channels. In addition, the AP uses 1024-QAM and MU-MIMO technologies to achieve a rate of up to 0.575 Gbps on the 2.4 GHz frequency band and 1.2 Gbps on the 5 GHz frequency band, and 1.775 Gbps for the device.

High Density Boost technology

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

5G-prior access

- The AP supports both 2.4 GHz and 5 GHz frequency bands. The 5G-prior access function enables the AP to steer STAs to the 5 GHz frequency band preferentially, which reduces loads and interference on the 2.4 GHz frequency band, improving user experience.

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 AP supports WEP, WPA/WPA2-PSK, WPA3-SAE, WPA/WPA2-PPSK, and WPA/WPA2/WPA3-802.1X authentication/encryption modes to ensure wireless network security. 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 data can only be received and parsed by authorized users.

Wired access authentication and encryption for the AP

- The AP access control ensures validity of APs. The Control and Provisioning of Wireless Access Points (CAPWAP) link protection and DTLS encryption provide security assurance, improving data transmission security between the AP and the WLAN AC (WAC).

Automatic radio calibration

Automatic radio calibration allows an AP to collect signal strength and channel parameters of surrounding APs and generate an AP topology according to the collected data. Based on the interference caused by authorized APs, rogue APs, and non-Wi-Fi interference sources, and their loads, the 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.

Cloud-based management

The AP supports cloud-based management. It provides various authentication functions, such as PSK, Portal, SMS, and social media authentication, without the need of a WAC or an authentication server. This greatly simplifies networking and reduces CAPEX. In addition, the AP can be deployed on a cloud management platform to implement cloud-based network planning, deployment, inspection, and O&M. In multi-branch deployment scenarios, after cloud APs are pre-configured on the cloud management platform, deployment personnel only need to power on the cloud APs on site, connect them to network ports of switches, and scan their QR codes to implement the plug-and-play function. Then the pre-configurations are automatically delivered to the APs. This mode greatly accelerates network deployment. The cloud management platform can monitor the network status, device status, and STA connection status at all sites of tenants in a comprehensive and intuitive manner.

Deployment and O&M through HUAWEI eKit app

The HUAWEI eKit app supports deployment through Wi-Fi, and barcode scanning After the deployment is complete, more project maintenance operations can be performed on the HUAWEI eKit app.

Wi-Fi-based deployment

- Wi-Fi-based deployment is a fast deployment mode provided by the HUAWEI eKit app. With this function, you can connect your mobile phone to the management Wi-Fi network of an AP and deploy network projects. In this way, devices can be automatically onboarded and remotely managed on the app.

Barcode scanning-based deployment

- In addition to Wi-Fi-based deployment, the HUAWEI eKit app also provides the barcode scanning-based deployment function. With this function, you only need to scan the SN on the device chassis and synchronize the information to the Huawei eKit system to onboard the device. Barcode scanning-based deployment is ideal for the following scenarios:
  - Devices in a network project have been deployed through Wi-Fi, and some devices need to be added to this project for capacity expansion.
  - The device version does not support Wi-Fi-based deployment but supports barcode scanning-based deployment, and you want to deploy the device without upgrading the device version first.

Product Features

Fat/Fit AP Mode

Item	Description
WLAN features	Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2 Maximum ratio combining (MRC) Space time block code (STBC) Cyclic delay diversity (CDD)/Cyclic shift diversity (CSD) Beamforming Multi-user multiple-input multiple-output (MU-MIMO) Orthogonal frequency division multiple access (OFDMA) Compliance with 1024-QAM and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK) Low-density parity-check (LDPC) 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 Wi-Fi multimedia (WMM) for priority-based data processing and forwarding WLAN channel management and channel rate adjustment **Note** For detailed management channels, see *Country Codes & Channels Compliance*. Automatic channel scanning and interference avoidance Separate service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs Signal sustain technology (SST) Unscheduled automatic power save delivery (U-APSD) Control and Provisioning of Wireless Access Points (CAPWAP) in Fit AP mode Extended service set (ESS) in Fit AP mode Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks Multi-user call admission control (CAC) 802.11k and 802.11v smart roaming 802.11r fast roaming (≤ 50 ms)
Network features	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's uplink port in tagged or untagged mode

Item	Description
	DHCP client, obtaining IP addresses through DHCP Tunnel data forwarding and direct data forwarding STA isolation in the same VLAN IPv4/IPv6 access control list (ACL) Link layer discovery protocol (LLDP) Uninterrupted service forwarding upon CAPWAP tunnel disconnection in Fit AP mode Unified authentication on the WAC in Fit AP mode WAC dual-link backup in Fit AP mode Network address translation (NAT) in Fat AP mode IPv6 in Fit AP mode IPv6 Source Address Validation Improvement (SAVI) Multicast Domain Name Service (mDNS) gateway protocol
QoS features	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) for user experience improvement Airtime scheduling Air interface HQoS scheduling Intelligent multimedia scheduling algorithm
Security features	Open system authentication WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key WPA2-PSK authentication and encryption WPA2-802.1X authentication and encryption WPA3-SAE authentication and encryption WPA3-802.1X authentication and encryption WPA-WPA2 hybrid authentication WPA2-WPA3 hybrid authentication WPA2-PPSK authentication and encryption in Fit AP mode WAPI authentication and encryption Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS), including rogue device detection and containment, attack detection and dynamic blacklist, and STA/AP blacklist and whitelist 802.1X authentication, MAC address authentication, Portal authentication, etc. DHCP snooping Dynamic ARP inspection (DAI) IP Source Guard (IPSG) 802.11w Protected Management Frames (PMF) DTLS encryption
Maintenance features	Unified management and maintenance on the WAC in Fit AP mode Automatic login, automatic configuration loading, and plug-and-play (PnP) in Fit AP mode Automatic batch upgrade in Fit AP mode Telnet

Item	Description
	STelnet using SSHv2 SFTP using SSHv2 Web system-based AP management and login through HTTP or HTTPS in Fat AP mode Real-time configuration monitoring and fast fault locating using the NMS SNMP v1/v2/v3 in Fat AP mode System status alarm Network Time Protocol (NTP) in Fat AP mode
Location services	**Note** The AP supports the location service only in Fit AP mode. Wi-Fi terminal location Working with a location server to locate rogue devices

Cloud-Based Management Mode

Item	Description
WLAN features	Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2/ax Maximum ratio combining (MRC) Space time block code (STBC) Cyclic delay diversity (CDD)/Cyclic shift diversity (CSD) Beamforming Multi-user multiple-input multiple-output (MU-MIMO) Orthogonal frequency division multiple access (OFDMA) Compliance with 1024-QAM and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK) Low-density parity-check (LDPC) 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 scheduling that are compliant with Wi-Fi multimedia (WMM) to implement priority-based data processing and forwarding WLAN channel management and channel rate adjustment **Note** For detailed management channels, see *Country Codes & Channels Compliance*. Automatic channel scanning and interference avoidance Separate service set identifier (SSID) hiding configuration for each AP Signal sustain technology (SST) Unscheduled automatic power save delivery (U-APSD)
Network features	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 list (ACL)

Item	Description
	Unified authentication on the cloud management platform Network address translation (NAT)
QoS features	Priority mapping and scheduling that are compliant with Wi-Fi multimedia (WMM) 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 Air interface HQoS scheduling
Security features	Open system authentication WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key WPA2-PSK authentication and encryption WPA2-802.1X authentication and encryption WPA3-SAE authentication and encryption WPA3-802.1X authentication and encryption WPA-WPA2 hybrid authentication WPA2-WPA3 hybrid authentication 802.1X authentication, MAC address authentication, Portal authentication, etc. DHCP snooping Dynamic ARP inspection (DAI) IP Source Guard (IPSG)
Maintenance features	Unified management and maintenance on the cloud management platform Automatic login, automatic configuration loading, and plug-and-play (PnP) Batch upgrade supported Telnet STelnet using SSHv2 SFTP using SSHv2 Web-based NMS management, and login through HTTP or HTTPS Real-time configuration monitoring and fast fault locating using the NMS System status alarm Network Time Protocol (NTP)

Product Specifications

Item		Description
Technical specifications	Dimensions (diameter x length)	Φ180 mm x 35 mm
	Weight	0.45 kg
	Port type	1 x 10M/100M/1GE electrical port

Item		Description
		Note • The GE electrical port supports PoE input.
	LED indicator	Indicates the power-on, startup, running, alarm, and fault states of the system.
Power specifications	Power input	PoE power supply: in compliance with IEEE 802.3af
	Maximum power consumption	• 8.8 W **Note** The actual maximum power consumption depends on local laws and regulations.
Environmental specifications	Operating temperature	0°C to +40°C (If the altitude is in the range of 1800 m to 5000 m, the temperature decreases by 1°C every time the altitude increases by 300 m.)
	Storage temperature	–40°C to +70°C
	Operating humidity	5% to 95% (non-condensing)
	Altitude	–60 m to +5000 m
	Atmospheric pressure	53 kPa to 106 kPa
Radio Specifications	Antenna type	Built-in smart antennas
	Antenna gain	2.4 GHz: 4 dBi 5 GHz: 5 dBi **Note** 1. The preceding gain is the peak gain of a single antenna. 2. Equivalent antenna gain after all 2.4 GHz or 5 GHz antennas are combined: 2 dBi for 2.4 GHz and 3 dBi for 5 GHz.
	Maximum quantity of SSIDs on each radio	≤ 6
	Device capacity	≤ 128 **Note** The actual number of users varies according to the environment.
	Maximum transmit power	2.4 GHz: 20 dBm (combined power) 5 GHz: 20 dBm (combined power) **Note** The actual transmit power depends on local laws and regulations.
	Power adjustment increment	1 dBm
	Maximum number of non-overlapping channels	2.4 GHz (2.412 GHz to 2.472 GHz) • 802.11b/g – 20 MHz: 3 • 802.11n – 20 MHz: 3 – 40 MHz: 1 • 802.11ax – 20 MHz: 3 – 40 MHz: 1 5 GHz (5.18 GHz to 5.825 GHz)

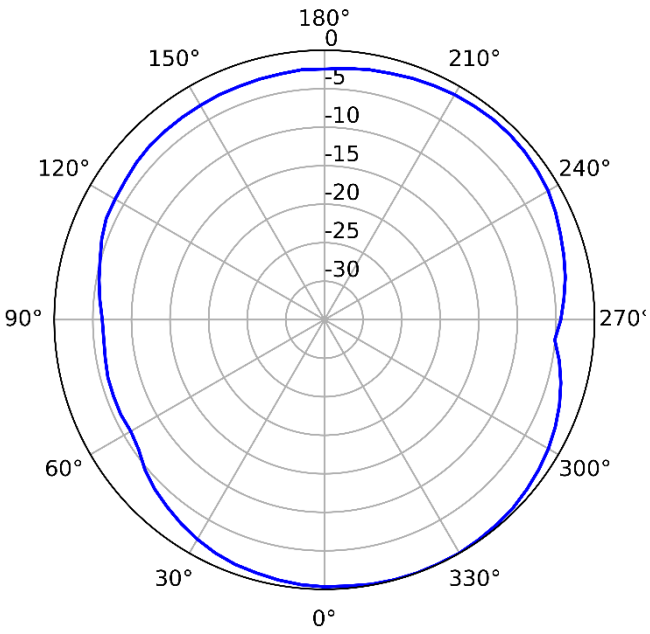
Item		Description
		• 802.11a – 20 MHz: 13 • 802.11n – 20 MHz: 13 – 40 MHz: 6 • 802.11ac – 20 MHz: 13 – 40 MHz: 6 – 80 MHz: 3 • 802.11ax – 20 MHz: 13 – 40 MHz: 6 – 80 MHz: 3 **Note** In this table, the number of non-overlapping channels supported in China is used as an example. The number of non-overlapping channels varies with countries. For details, see *Country Codes & Channels Compliance*.

Standards Compliance

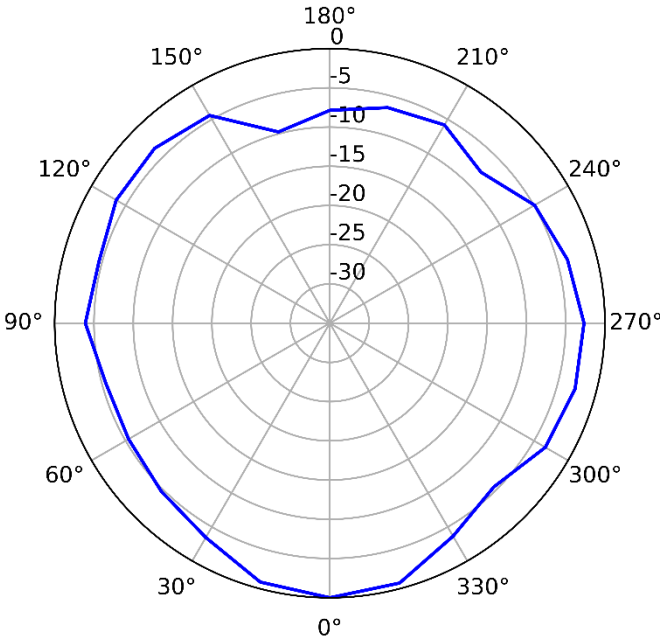
Item	Description		
Safety standards	• UL 60950-1 • EN 60950-1 • IEC 60950-1	• UL 62368-1 • EN 62368-1 • IEC 62368-1	• GB 4943.1 • CAN/CSA 22.2 No.60950-1
Radio standards	• ETSI EN 300 328	• ETSI EN 301 893	• AS/NZS 4268
EMC standards	• EN 301 489-1 • EN 301 489-17 • EN 60601-1-2 • EN 55024 • EN 55032 • EN 55035	• GB 9254 • GB 17625.1 • GB 17625.2 • AS/NZS CISPR32 • CISPR 24 • CISPR 32 • CISPR 35	• IEC/EN61000-4-2 • IEC/EN 61000-4-3 • IEC/EN 61000-4-4 • IEC/EN 61000-4-5 • IEC/EN61000-4-6 • ICES-003
IEEE standards	• IEEE 802.11a/b/g • IEEE 802.11n • IEEE 802.11ac • IEEE 802.11ax	• IEEE 802.11h • IEEE 802.11d • IEEE 802.11e • IEEE 802.11k	• IEEE 802.11v • IEEE 802.11w • IEEE 802.11r
Security standards	• 802.11i, Wi-Fi Protected Access (WPA), WPA2, WPA2-Enterprise, WPA2-PSK, WPA3, WAPI • 802.1X • Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open • EAP Type(s)		
EMF	• EN 62311	• EN 50385	

Item	Description	
standards		
RoHS	• Directive 2002/95/EC & 2011/65/EU	• (EU)2015/863
Reach	• Regulation 1907/2006/EC	
WEEE	• Directive 2002/96/EC & 2012/19/EU	

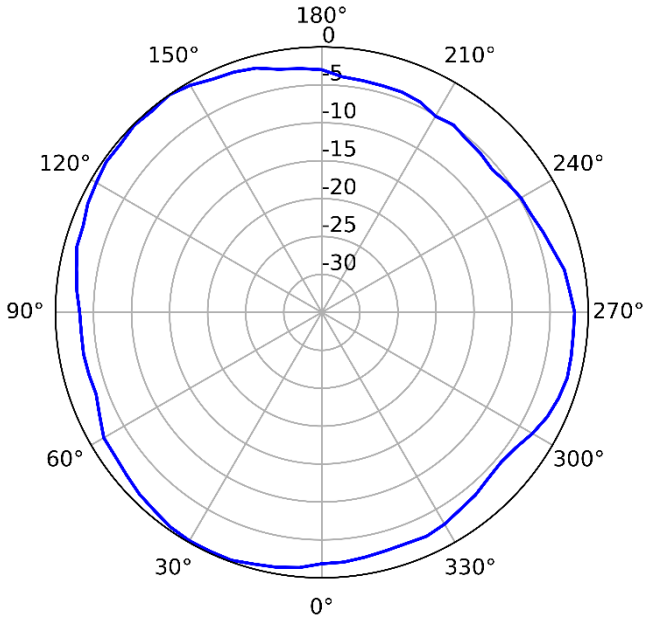
Antenna Patterns



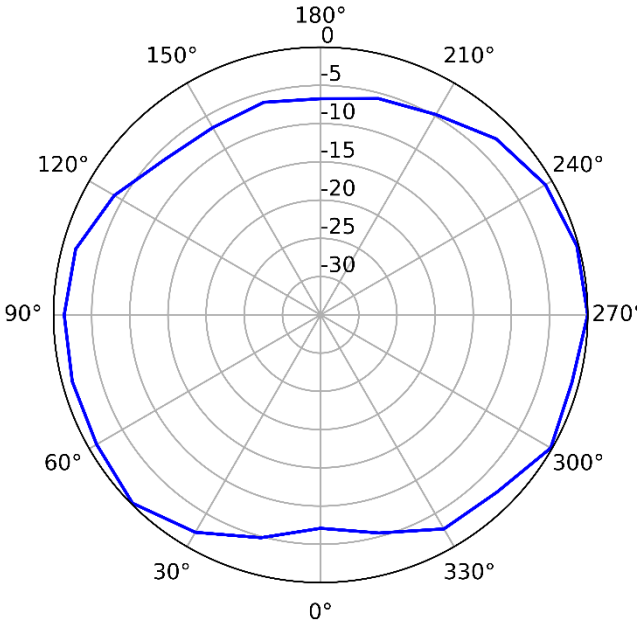
2.4 GHz (horizontal)



2.4 GHz (vertical)



5 GHz (horizontal)



5 GHz (vertical)

Ordering Information

Part Number	Item	Description
50086473	eKitEngine AP361	Indoor AP supporting 802.11ax, 2+2 dual bands, smart antennas

More Information

For more information about Huawei WLAN, visit http://ekit.huawei.com or contact Huawei's local sales office.

Alternatively, you can contact us through one of the following methods:

1. Global service hotline: http://e.huawei.com/en/service-hotline
2. Enterprise technical support website: http://support.huawei.com/enterprise/
3. Service email address for enterprise users: support_e@huawei.com

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