



HUAWEI eKit

# Huawei eKitEngine AP160 Access Point Datasheet



## Product Overview

Huawei eKitEngine AP160 is a Wi-Fi 6 (802.11ax) wall plate 86x86 access point (AP) with an 8 mm ultra-thin panel. 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. It is ideal for indoor coverage scenarios such as enterprise workplaces, commercial real estates, and budget chain hotels.



AP160 (White)

- 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 uplink electrical port + 1 x GE downlink electrical port.
- International 86 mm x 86 mm size: easy AP installation on an exposed or embedded junction box (86 mm x 86 mm) with a minimum depth of 35 mm.
- Ultra-thin panel: 8 mm, slotting seamlessly into the power socket.
- 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. Users can enjoy full signal strength when moving around in the coverage space without any network disconnection or interruption.
- 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, barcode scanning, and leader AP. 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.

#### Leader AP-based deployment

- The leader AP function is an extended function of Fat APs. Like a WAC, a Fat AP enabled with the leader AP function can be deployed to build a WLAN together with multiple Fit APs. On this WLAN, the Fat AP manages and configures the Fit APs in a unified manner, enabling STAs to easily roam between APs.
- The HUAWEI eKit app supports leader AP-based network deployment. It automatically connects to the management Wi-Fi of one AP and sets the AP as the leader AP to manage other APs and deploy networks. After network deployment, you can use the app to perform O&M on the leader AP and all APs managed by the leader AP.
- Leader AP-based deployment can be used as an alternative solution for multi-AP networking. For example, the current multi-AP networking cannot meet Wi-Fi deployment requirements, and customers do not want to scan the barcodes of APs one by one for AP onboarding. In addition, onsite connection with the leader AP facilitates subsequent network O&M by customers. As such, leader AP-based deployment can be used.
- Currently, the leader AP function of the HUAWEI eKit app only works in the bridge mode. That is, the leader AP does not function as a gateway. A device that functions as an independent gateway, such as an optical modem or a wireless router, must be deployed on the network.

## 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 <b>Note</b> For detailed management channels, see <i>Country Codes &amp; Channels Compliance</i> . 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

Item	Description
	<p>Extended service set (ESS) in Fit AP mode</p> <p>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks</p> <p>Multi-user call admission control (CAC)</p> <p>802.11k and 802.11v smart roaming</p> <p>802.11r fast roaming (<math>\leq 50</math> ms)</p>
Network features	<p>Compliance with IEEE 802.3ab</p> <p>Auto-negotiation of the rate and duplex mode and automatic switchover between the Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)</p> <p>Compliance with IEEE 802.1Q</p> <p>SSID-based VLAN assignment</p> <p>VLAN trunk on uplink Ethernet ports</p> <p>Management channel of the AP's uplink port in tagged or untagged mode</p> <p>DHCP client, obtaining IP addresses through DHCP</p> <p>Tunnel data forwarding and direct data forwarding</p> <p>STA isolation in the same VLAN</p> <p>IPv4/IPv6 access control list (ACL)</p> <p>Link layer discovery protocol (LLDP)</p> <p>Uninterrupted service forwarding upon CAPWAP tunnel disconnection in Fit AP mode</p> <p>Unified authentication on the WAC in Fit AP mode</p> <p>WAC dual-link backup in Fit AP mode</p> <p>Network address translation (NAT) in Fat AP mode</p> <p>IPv6 in Fit AP mode</p> <p>IPv6 Source Address Validation Improvement (SAVI)</p> <p>Multicast Domain Name Service (mDNS) gateway protocol</p>
QoS features	<p>WMM parameter management for each radio</p> <p>WMM power saving</p> <p>Priority mapping for upstream packets and flow-based mapping for downstream packets</p> <p>Queue mapping and scheduling</p> <p>User-based bandwidth limiting</p> <p>Adaptive bandwidth management (automatic bandwidth adjustment based on the user quantity and radio environment) for user experience improvement</p> <p>Airtime scheduling</p> <p>Air interface HQoS scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption</p> <p>WPA2-802.1X authentication and encryption</p> <p>WPA3-SAE authentication and encryption</p> <p>WPA3-802.1X authentication and encryption</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>WPA2-PPSK authentication and encryption in Fit AP mode</p> <p>802.1X authentication, MAC address authentication, Portal authentication, etc.</p> <p>DHCP snooping</p>

Item	Description
	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 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	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) WLAN channel management and channel rate adjustment <b>Note</b> For detailed management channels, see <i>Country Codes &amp; Channels Compliance</i> . 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

Item	Description
	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) 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) 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 (H x W x D)	86 mm x 86 mm x 42.5 mm
	Weight	0.14 kg
	Port type	2 x 10M/100M/1GE electrical ports <b>Note</b> <ul style="list-style-type: none"><li>The uplink GE electrical port supports PoE input.</li></ul>
	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	<ul style="list-style-type: none"><li>9.1 W</li></ul> <b>Note</b> 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: 3 dBi 5 GHz: 2 dBi <b>Note</b> <ol style="list-style-type: none"><li>The preceding gain is the peak gain of a single antenna.</li><li>Equivalent antenna gain after all 2.4 GHz or 5 GHz antennas are combined: 3 dBi for 2.4 GHz and 1 dBi for 5 GHz.</li></ol>
	Maximum quantity of SSIDs on each radio	≤ 6
	Device capacity	≤ 128 <b>Note</b> 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) <b>Note</b> 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) <ul style="list-style-type: none"><li>802.11b/g<ul style="list-style-type: none"><li>20 MHz: 3</li></ul></li><li>802.11n</li></ul>



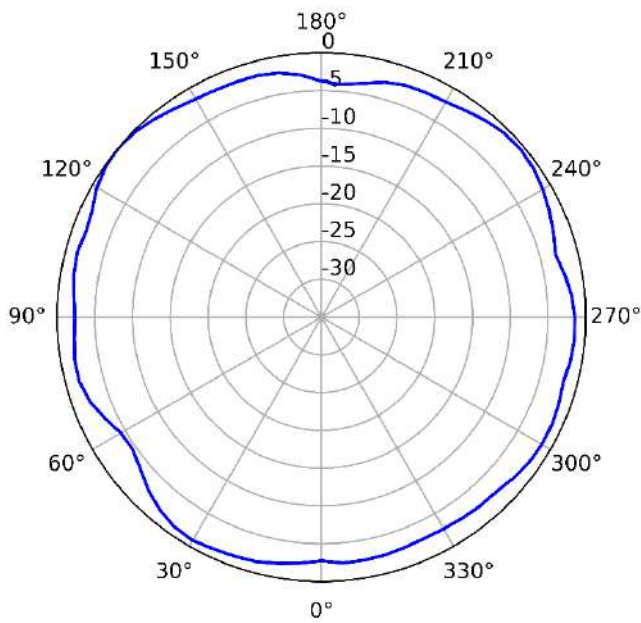
Item	Description
	<ul style="list-style-type: none"> <li>- 20 MHz: 3</li> <li>- 40 MHz: 1</li> <li>• 802.11ax <ul style="list-style-type: none"> <li>- 20 MHz: 3</li> <li>- 40 MHz: 1</li> </ul> </li> </ul> <p>5 GHz (5.18 GHz to 5.825 GHz)</p> <ul style="list-style-type: none"> <li>• 802.11a <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> </ul> </li> <li>• 802.11n <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> <li>- 40 MHz: 6</li> </ul> </li> <li>• 802.11ac <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> <li>- 40 MHz: 6</li> <li>- 80 MHz: 3</li> </ul> </li> <li>• 802.11ax <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> <li>- 40 MHz: 6</li> <li>- 80 MHz: 3</li> </ul> </li> </ul> <p><b>Note</b></p> <p>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 <i>Country Codes &amp; Channels Compliance</i>.</p>

## Standards Compliance

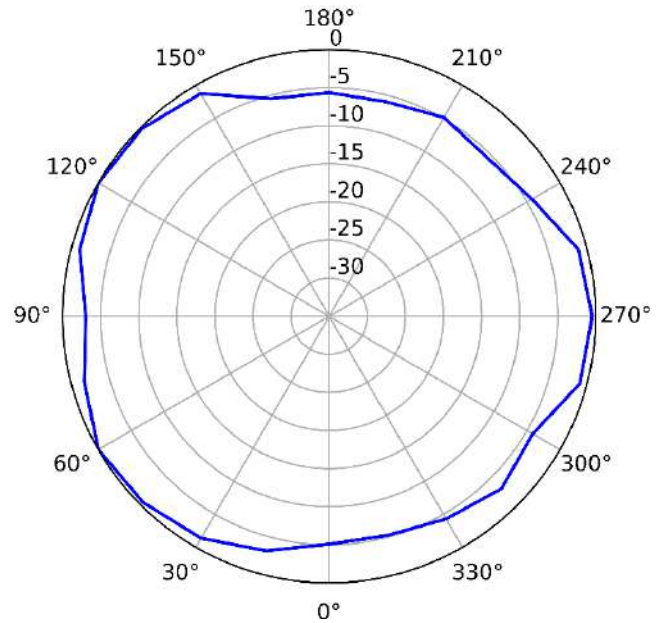
Item	Description		
Safety standards	<ul style="list-style-type: none"> <li>• UL 60950-1</li> <li>• EN 60950-1</li> <li>• IEC 60950-1</li> </ul>	<ul style="list-style-type: none"> <li>• UL 62368-1</li> <li>• EN 62368-1</li> <li>• IEC 62368-1</li> </ul>	<ul style="list-style-type: none"> <li>• GB 4943.1</li> <li>• CAN/CSA 22.2 No.60950-1</li> </ul>
Radio standards	<ul style="list-style-type: none"> <li>• ETSI EN 300 328</li> </ul>	<ul style="list-style-type: none"> <li>• ETSI EN 301 893</li> </ul>	<ul style="list-style-type: none"> <li>• AS/NZS 4268</li> </ul>
EMC standards	<ul style="list-style-type: none"> <li>• EN 301 489-1</li> <li>• EN 301 489-17</li> <li>• EN 60601-1-2</li> <li>• EN 55024</li> <li>• EN 55032</li> <li>• EN 55035</li> </ul>	<ul style="list-style-type: none"> <li>• GB 9254</li> <li>• GB 17625.1</li> <li>• GB 17625.2</li> <li>• AS/NZS CISPR32</li> <li>• CISPR 24</li> <li>• CISPR 32</li> <li>• CISPR 35</li> </ul>	<ul style="list-style-type: none"> <li>• IEC/EN61000-4-2</li> <li>• IEC/EN 61000-4-3</li> <li>• IEC/EN 61000-4-4</li> <li>• IEC/EN 61000-4-5</li> <li>• IEC/EN61000-4-6</li> <li>• ICES-003</li> </ul>
IEEE standards	<ul style="list-style-type: none"> <li>• IEEE 802.11a/b/g</li> <li>• IEEE 802.11n</li> <li>• IEEE 802.11ac</li> </ul>	<ul style="list-style-type: none"> <li>• IEEE 802.11h</li> <li>• IEEE 802.11d</li> <li>• IEEE 802.11e</li> </ul>	<ul style="list-style-type: none"> <li>• IEEE 802.11v</li> <li>• IEEE 802.11w</li> <li>• IEEE 802.11r</li> </ul>

Item	Description	
	<ul style="list-style-type: none"> <li>IEEE 802.11ax</li> </ul>	<ul style="list-style-type: none"> <li>IEEE 802.11k</li> </ul>
Security standards	<ul style="list-style-type: none"> <li>802.11i, Wi-Fi Protected Access (WPA), WPA2, WPA2-Enterprise, WPA2-PSK, WPA3, WAPI</li> <li>802.1X</li> <li>Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open</li> <li>EAP Type(s)</li> </ul>	
EMF standards	<ul style="list-style-type: none"> <li>EN 62311</li> </ul>	<ul style="list-style-type: none"> <li>EN 50385</li> </ul>
RoHS	<ul style="list-style-type: none"> <li>Directive 2002/95/EC &amp; 2011/65/EU</li> </ul>	<ul style="list-style-type: none"> <li>(EU)2015/863</li> </ul>
Reach	<ul style="list-style-type: none"> <li>Regulation 1907/2006/EC</li> </ul>	
WEEE	<ul style="list-style-type: none"> <li>Directive 2002/96/EC &amp; 2012/19/EU</li> </ul>	

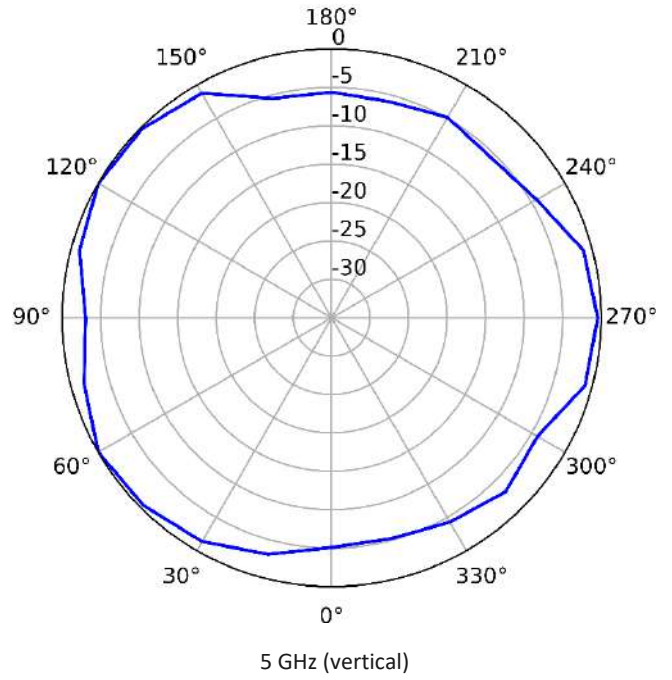
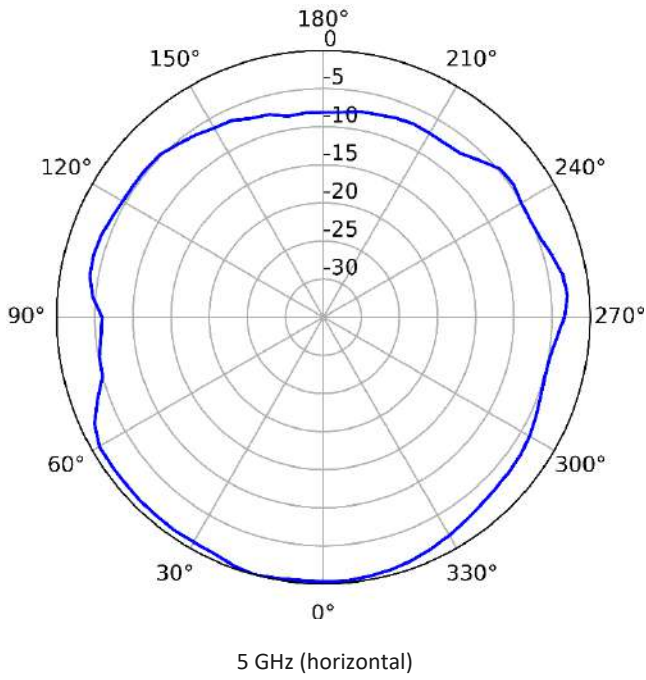
## Antenna Patterns



2.4 GHz (horizontal)



2.4 GHz (vertical)



## Ordering Information

Part Number	Item	Description
50086472	eKitEngine AP160 (Elegant White panel)	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](mailto:support_e@huawei.com)

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