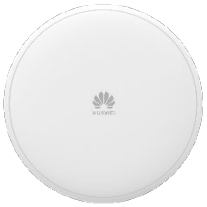
# Huawei AirEngine 5773-21 Access Point Datasheet

# Product Overview

Huawei AirEngine 5773-21 is a next-generation indoor access point (AP) in compliance with Wi-Fi 7 (802.11be). It can simultaneously provide services on 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, supporting a total of 4 spatial streams and achieving a device rate of up to 3.57 Gbps. The AP is empowered by brand-new Wi-Fi 7 technologies and is equipped with built-in smart antennas to enable always-on Wi-Fi signals for users, significantly enhancing users' wireless network experience. Additionally, it has a compact size, facilitating flexible deployment and saving customer investment. These strengths make the AirEngine 5773-21 ideal for indoor coverage scenarios such as SMB workplaces, hospitals, and shopping malls and supermarkets.



AirEngine 5773-21

- Provides services simultaneously on both the 2.4 GHz (2x2) and 5 GHz (2x2) frequency bands, at a rate of up to 689 Mbps at 2.4 GHz, 2.88 Gbps at 5 GHz, and 3.57 Gbps for the device.
- Has built-in smart antennas that automatically adjust 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.
- USB port can be used for external IoT expansion (supporting protocols such as ZigBee, and RFID).
- Allows for Bluetooth serial interface-based O&M through built-in Bluetooth and CloudCampus APP.
- Supports Fit and cloud management working modes, and enables Huawei cloud management platform to manage and operate APs and services on the APs, reducing network O&M costs.

# Feature Descriptions

## Wi-Fi 7 (802.11be) standard

Wi-Fi 7 (802.11be) is the next-generation Wi-Fi standard to be launched, also known as IEEE 802.11be or extremely high throughput (EHT). Based on Wi-Fi 6, Wi-Fi 7 introduces technologies such as 320 MHz bandwidth, 4096-quadrature amplitude modulation (QAM), multi-resource unit (RU), multi-link operation (MLO), enhanced multi-user multiple-input multiple-output (MU-MIMO), and multi-AP coordination. Drawing on these cutting-edge technologies, Wi-Fi 7 delivers a higher data transmission rate and lower latency than Wi-Fi 6.

## Wi-Fi 7 vs. Wi-Fi 6

Based on the Wi-Fi 6 standard, Wi-Fi 7 introduces a plurality of new technologies. The following compares Wi-Fi 6 and Wi-Fi 7.

| | Wi-Fi 6 | Wi-Fi 7 |
|---|---|---|
| IEEE standard | 802.11ax | 802.11be |
| Maximum transmission rate | 9.6 Gbps | 23 Gbps |
| Frequency band | 2.4 GHz, 5 GHz, 6 GHz (Wi-Fi 6E) | 2.4 GHz, 5 GHz, and 6 GHz |
| Security protocol | WPA3 | WPA3 |
| Channel bandwidth | 20 MHz, 40 MHz, 80 MHz, 160 MHz, 80+80 MHz | Up to 320 MHz |
| Modulation mode | 1024-QAM OFDMA | 4096-QAM OFDMA |

NOTE

The maximum transmission rate of the picture is the maximum rate of a single radio. It is 5 GHz radio for Wi-Fi 6, while it is 6 GHz radio for Wi-Fi 7.

## New Features in Wi-Fi 7

Wi-Fi 7 aims to increase the WLAN throughput and provide low-latency access assurance. To achieve this goal, the standard defines modifications to both the physical layer (PHY) and MAC layer. Compared with Wi-Fi 6, Wi-Fi 7 brings the following technical innovations:

### Multi-RU

- In Wi-Fi 6, each user can send or receive frames only on the RUs allocated to them, which greatly limits the flexibility of spectrum resource scheduling. To resolve this problem and further improve spectrum efficiency, Wi-Fi 7 defines a mechanism for allocating multiple RUs to a single user. To balance the implementation complexity and spectrum utilization, the standard specifications impose certain restrictions on RU combination. That is, small RUs (containing fewer than 242 tones) can be combined only with small RUs, and large RUs (containing greater than or equal to 242 tones) can be combined only with large RUs. Small RUs and large RUs cannot be combined together.

### Higher-Order 4096-QAM

- The highest order modulation supported by Wi-Fi 6 is 1024-QAM, which allows each modulation symbol to carry up to 10 bits. To further improve the rate, Wi-Fi 7 introduces 4096-QAM so that each modulation symbol can carry 12 bits. With the same coding scheme, 4096-QAM in Wi-Fi 7 can achieve a 20% rate increase compared with 1024-QAM in Wi-Fi 6.

### Multi-Link Mechanism

- To efficiently utilize all available spectrum resources, the TGbe defines multi-link aggregation technologies, including the MAC architecture of enhanced multi-link aggregation, multi-link channel access, and multi-link transmission.
- There are two modes as for MLO:
  - High-concurrency mode, multiple links send different data to improve bandwidth.
  - High-reliability mode, multiple links send the same data, improving reliability.

## Leader AP

The leader AP integrates some WLAN AC functions and can be used to manage Fit APs in small- and medium-sized enterprises and stores, implementing WLAN AC-free access not requiring licenses and saving customer investment.

### Wi-Fi 7 Application Scenarios

New functions introduced by Wi-Fi 7 will significantly improve the data transmission rate and deliver lower latency. These highlights will contribute to the development of emerging applications:

- Video stream
- Video/Voice conference
- Online gaming
- Real-time collaboration
- Cloud/Edge computing
- Industrial IoT
- Immersive AR/VR
- Interactive telemedicine

## Basic Specifications

### Fit AP Mode

| Item | Description |
| --- | --- |
| WLAN features | Compliance with IEEE 802.11be and compatibility with IEEE 802.11a/b/g/n/ac/ax<br>Maximum ratio combining (MRC)<br>Space time block code (STBC)<br>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)<br>Beamforming<br>Multi-user multiple-input multiple-output (MU-MIMO)<br>Orthogonal frequency division multiple access (OFDMA)<br>Preamble puncturing<br>BSS Color<br>TxBF<br>TWT<br>Compliance with 4096-quadrature amplitude modulation (QAM) and compatibility with 1024-QAM, 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)<br>Low-density parity-check (LDPC)<br>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)<br>802.11 dynamic frequency selection (DFS)<br>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz, and 160 MHz modes<br>Wi-Fi multimedia (WMM) for priority-based data processing and forwarding<br>WLAN channel management and channel rate adjustment<br>NOTE<br>For detailed management channels, see the Country Codes & Channels Compliance.<br>Automatic channel scanning and interference avoidance |

| Item | Description |
| --- | --- |
| | Service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs<br>Signal sustain technology (SST)<br>Unscheduled automatic power save delivery (U-APSD)<br>Control and Provisioning of Wireless Access Points (CAPWAP)<br>Automatic AP onboarding<br>Multi-user call admission control (CAC)<br>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks<br>802.11k and 802.11v smart roaming<br>802.11r fast roaming (≤ 50 ms)<br>Spectrum analysis<br>Terminal location |
| Network features | Compliance with IEEE 802.3ab<br>Auto-negotiation of the rate and duplex mode, and automatic switchover between Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)<br>Compatibility with IEEE 802.1Q<br>SSID-based VLAN assignment<br>Eth-Trunk function<br>Management channel of the AP's uplink port in tagged and untagged modes<br>DHCP client, obtaining IP addresses through DHCP<br>Tunnel data forwarding and direct data forwarding<br>STA isolation in the same VLAN<br>IPv4/IPv6 access control list (ACL)<br>Link Layer Discovery Protocol (LLDP)<br>Service holding upon CAPWAP link disconnection<br>Unified authentication on the AC<br>AC dual-link backup<br>Telemetry , quickly collecting AP status and application experience parameters<br>MESH<br>HotSpot2.0 |
| QoS features | WMM power save<br>Priority mapping for upstream packets and flow-based mapping for downstream packets<br>Queue mapping and scheduling<br>User-based bandwidth limiting<br>Adaptive bandwidth management (automatic bandwidth adjustment based on the user quantity and radio environment) to improve user experience<br>Application identification and QoS classification to improve voice quality for popular applications, such as Zoom, QQ, and WeChat |

| Item | Description |
| --- | --- |
| | Airtime scheduling<br>Air interface HQoS scheduling |
| Security features | Open system authentication<br>WEP authentication and encryption. The encryption length can be 64 bits, 128 bits, 152 bits, or 192 bits<br>WPA2-PSK authentication and encryption (WPA2-Personal)<br>WPA2-802.1X authentication and encryption (WPA2-Enterprise)<br>WPA3-SAE authentication and encryption (WPA3-Personal)<br>WPA3-802.1X authentication and encryption (WPA3-Enterprise)<br>WPA-WPA2 hybrid authentication<br>WPA2-WPA3 hybrid authentication<br>WPA/WPA2/WPA2-PPSK authentication and encryption<br>WPA/WPA2/WPA2-DPSK authentication and encryption<br>WAPI authentication and encryption<br>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<br>802.1X authentication, MAC address authentication, and Portal authentication<br>DHCP snooping<br>802.11w Protected Management Frames (PMF)<br>WAPI GCM-SM4 encryption algorithm<br>CAPWAP DTLS data encryption and decryption<br>URL filtering<br>Secure boot |
| EAP types | EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-CHAP, EAP-SIM, EAP-AKA, EAP-GTC, EAP-FAST, EAP-PEAP, EAP-MD5, EAP-MSCHAPv2, PEAPv0, PEAPv1 |
| Maintenance features | Unified AP management and maintenance on the AC<br>Automatic AP onboarding, automatic configuration loading, and plug-and-play (PnP)<br>Automatic batch upgrade<br>STelnet using SSHv2<br>SFTP using SSHv2<br>Remote wireless O&M through the Bluetooth serial port<br>System status alarm |

## Fat AP Mode

| Item | Description |
| --- | --- |
| WLAN features | Compliance with IEEE 802.11be and compatibility with IEEE 802.11a/b/g/n/ac/ax<br>Maximum ratio combining (MRC)<br>Space time block code (STBC)<br>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)<br>Beamforming<br>Multi-user multiple-input multiple-output (MU-MIMO)<br>Orthogonal frequency division multiple access (OFDMA)<br>Preamble puncturing<br>BSS Color<br>TxBF<br>Compliance with 4096-quadrature amplitude modulation (QAM) and compatibility with 1024-QAM, 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)<br>Low-density parity-check (LDPC)<br>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)<br>802.11 dynamic frequency selection (DFS)<br>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz, and 160 MHz modes<br>Wi-Fi multimedia (WMM) for priority-based data processing and forwarding<br>WLAN channel management and channel rate adjustment<br>NOTE<br>For detailed management channels, see the Country Codes & Channels Compliance.<br>Automatic channel scanning and interference avoidance<br>Service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs<br>Signal sustain technology (SST)<br>Unscheduled automatic power save delivery (U-APSD)<br>Control and Provisioning of Wireless Access Points (CAPWAP)<br>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks<br>802.11k and 802.11v smart roaming<br>802.11r fast roaming (≤ 50 ms) |
| Network features | Compliance with IEEE 802.3ab<br>Auto-negotiation of the rate and duplex mode, and automatic switchover between Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)<br>Compatibility with IEEE 802.1Q<br>SSID-based VLAN assignment<br>DHCP client, obtaining IP addresses through DHCP<br>Tunnel data forwarding and direct data forwarding |

| Item | Description |
| --- | --- |
| | STA isolation in the same VLAN<br>IPv4 access control list (ACL)<br>Link Layer Discovery Protocol (LLDP)<br>Leader AP<br>Unified authentication of Leader AP<br>NAT |
| QoS features | WMM power save<br>Priority mapping for upstream packets and flow-based mapping for downstream packets<br>Queue mapping and scheduling<br>User-based bandwidth limiting<br>Airtime scheduling<br>Air interface HQoS scheduling |
| Security features | Open system authentication<br>WPA2-PSK authentication and encryption (WPA2-Personal)<br>WPA2-802.1X authentication and encryption (WPA2-Enterprise)<br>WPA3-SAE authentication and encryption (WPA3-Personal)<br>WPA3-802.1X authentication and encryption (WPA3-Enterprise)<br>WPA-WPA2 hybrid authentication<br>WPA2-WPA3 hybrid authentication<br>MAC address authentication and Portal authentication<br>DHCP snooping<br>802.11w Protected Management Frames (PMF)<br>Secure boot |
| EAP types | EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-CHAP, EAP-SIM, EAP-AKA, EAP-GTC, EAP-FAST, EAP-PEAP, EAP-MD5, EAP-MSCHAPv2, PEAPv0, PEAPv1 |
| Maintenance features | STelnet using SSHv2<br>SFTP using SSHv2<br>Remote wireless O&M through the Bluetooth serial port<br>System status alarm |

## Cloud-Managed AP Mode

| Item | Description |
| --- | --- |
| WLAN features | Compliance with IEEE 802.11be and compatibility with IEEE 802.11a/b/g/n/ac/ax<br>Maximum ratio combining (MRC)<br>Space time block code (STBC)<br>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD) |

| Item | Description |
| --- | --- |
| | Beamforming<br>Multi-user multiple-input multiple-output (MU-MIMO)<br>Orthogonal frequency division multiple access (OFDMA)<br>Preamble puncturing<br>BSS Color<br>TxBF<br>TWT<br>Compliance with 4096-quadrature amplitude modulation (QAM) and compatibility with 1024-QAM, 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)<br>Low-density parity-check (LDPC)<br>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)<br>802.11 dynamic frequency selection (DFS)<br>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz, and 160 MHz modes<br>Wi-Fi multimedia (WMM) for priority-based data processing and forwarding<br>WLAN channel management and channel rate adjustment<br>NOTE<br>For detailed management channels, see the Country Codes & Channels Compliance.<br>Automatic channel scanning and interference avoidance<br>Service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs<br>Signal sustain technology (SST)<br>Unscheduled automatic power save delivery (U-APSD)<br>Automatic AP onboarding<br>Automatic AP Online by NCE (Campus)<br>Multi-user call admission control (CAC)<br>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks<br>802.11k and 802.11v smart roaming<br>802.11r fast roaming (≤ 50 ms)<br>Spectrum analysis<br>Terminal location |
| Network features | Compliance with IEEE 802.3ab<br>Auto-negotiation of the rate and duplex mode, and automatic switchover between Media Dependent Interface (MDI) and Media Dependent Interface Crossover (MDI-X)<br>Compatibility with IEEE 802.1Q<br>SSID-based VLAN assignment<br>DHCP client, obtaining IP addresses through DHCP<br>STA isolation in the same VLAN |

| Item | Description |
| --- | --- |
| | IPv4/IPv6 access control list (ACL)<br>Link Layer Discovery Protocol (LLDP)<br>Unified authentication on the cloud management platform<br>Network address translation (NAT)<br>Telemetry, quickly collecting AP status and application experience parameters<br>MESH<br>Tunnel-AC<br>HotSpot2.0 |
| QoS features | WMM power save<br>Priority mapping for upstream packets and flow-based mapping for downstream packets<br>Queue mapping and scheduling<br>User-based bandwidth limiting<br>Adaptive bandwidth management (automatic bandwidth adjustment based on the user quantity and radio environment) to improve user experience<br>Application identification and QoS classification to improve voice quality for popular applications, such as Zoom, QQ, and WeChat<br>Airtime scheduling<br>Air interface HQoS scheduling |
| Security features | Open system authentication<br>WPA2-PSK authentication and encryption (WPA2-Personal)<br>WPA2-802.1X authentication and encryption (WPA2-Enterprise)<br>WPA3-SAE authentication and encryption (WPA3-Personal)<br>WPA3-802.1X authentication and encryption (WPA3-Enterprise)<br>WPA-WPA2 hybrid authentication<br>WPA2-WPA3 hybrid authentication<br>WPA/WPA2/WPA2-PPSK authentication and encryption<br>WPA/WPA2/WPA2-DPSK authentication and encryption802.1X authentication, MAC address authentication, and Portal authentication<br>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<br>DHCP snooping<br>802.11w Protected Management Frames (PMF)<br>CAPWAP DTLS data encryption and decryption<br>URL filtering<br>Secure boot |
| EAP types | EAP-TLS, EAP-TTLS, EAP-PEAP, EAP-CHAP, EAP-SIM, EAP-AKA, EAP-GTC, EAP-FAST, EAP-PEAP, EAP-MD5, EAP-MSCHAPv2, PEAPv0, PEAPv1 |

| Item | Description |
| --- | --- |
| Maintenance features | Unified AP management and maintenance on the cloud management platform<br>Automatic AP onboarding, automatic configuration loading, and PnP<br>Batch upgrade<br>STelnet using SSHv2<br>SFTP using SSHv2<br>Remote wireless O&M through the Bluetooth serial port<br>Real-time user configuration monitoring and fast fault locating using the NMS<br>System status alarm<br>Network Time Protocol (NTP) |

# Technical Specifications

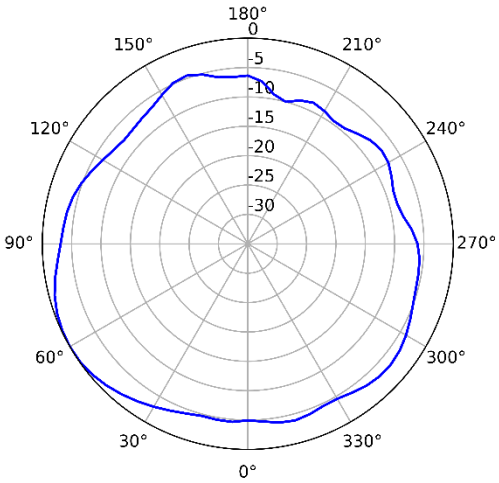
| Item | | Description |
| --- | --- | --- |
| Technical specifications | Dimensions (Diameter × Height) | 180 mm x 35 mm |
| | Weight | 0.47 kg |
| | Port type | 1 x 100M/1GE/2.5GE electrical port<br>1 x USB port<br>NOTE<br>The 2.5GE electrical port supports PoE input. |
| | Bluetooth | Bluetooth 5.4 |
| | IoT | USB port extension external IoT (Supports protocols such as ZigBee, RFID, and UWB) |
| | LED indicator | Indicates the power-on, startup, running, alarm, and fault states of the system. |
| Power specifications | Power input | • DC: 12 V ± 10%<br>• PoE power supply: in compliance with 802.3at/af<br>NOTE<br>When 802.3af power is supplied, the AP will operate with restrictions, for example the USB port is unavailable, and the details refer to the Info-Finder. |
| | Maximum power consumption | • 13.60 W (excluding USB)<br>NOTE<br>The actual maximum power consumption depends on local laws and regulations. |

| Item | | Description |
| --- | --- | --- |
| Environmental specifications | Operating temperature | -10°C to +50°C |
| | 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<br>5 GHz: 5 dBi<br>NOTE<br>The preceding gains are the peak gains of a single antenna. |
| | Maximum number of SSIDs for each radio | 15 |
| | Maximum number of users | 256<br>NOTE<br>The actual number of users varies according to the environment. |
| | 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. |
| | Frequency bands | 2.400 to 2.4835 GHz ISM<br>5.150 to 5.250 GHz U-NII-1<br>5.250 to 5.350 GHz U-NII-2A<br>5.470 to 5.725 GHz U-NII-2C<br>5.725 to 5.850 GHz U-NII-3/ISM<br>NOTE<br>The available bands and channels are dependent on the configured regulatory domain (country). |

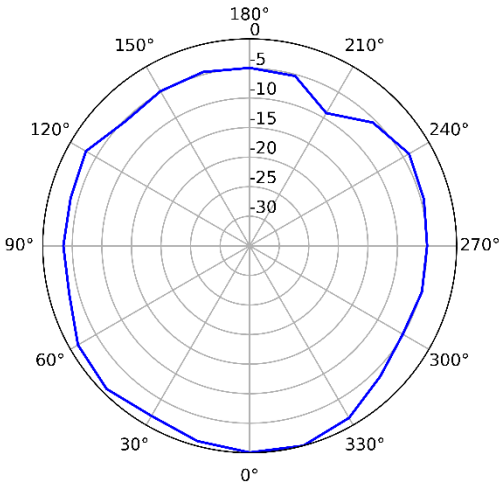
# Standards Compliance

| Item | Description | | |
|---|---|---|---|
| Safety standards | • EN 62368-1 | • IEC 62368-1 | • GB 4943.1 |
| Radio standards | • ETSI EN 300 328 | • ETSI EN 301 893 | • AS/NZS 4268 |
| EMC standards | • EN 301 489-1<br>• EN 301 489-17<br>• EN 60601-1-2<br>• EN 55032<br>• EN 55035 | • GB 9254<br>• GB 17625.2<br>• AS/NZS CISPR32<br>• CISPR 32<br>• CISPR 35 | • IEC/EN61000-4-2<br>• IEC/EN 61000-4-3<br>• IEC/EN 61000-4-4<br>• IEC/EN 61000-4-5<br>• IEC/EN 61000-4-6<br>• ICES-003 |
| IEEE standards | • IEEE 802.11a/b/g<br>• IEEE 802.11n<br>• IEEE 802.11ac<br>• IEEE 802.11ax<br>• IEEE 802.11be | • IEEE 802.11h<br>• IEEE 802.11d<br>• IEEE 802.11e<br>• IEEE 802.11k | • IEEE 802.11v<br>• IEEE 802.11w<br>• IEEE 802.11r |
| Security standards | • 802.11i, Wi-Fi Protected Access (WPA), WPA2, WPA2-Enterprise, WPA2-PSK, WPA3, WAPI<br>• 802.1X<br>• Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open<br>• EAP Type(s) | | |
| EMF | • EN 62311 | • EN 50385 | |
| RoHS | • Directive 2002/95/EC & 2011/65/EU<br>• (EU)2015/863 | | |
| Reach | • Regulation 1907/2006/EC | | |
| WEEE | • Directive 2002/96/EC & 2012/19/EU | | |

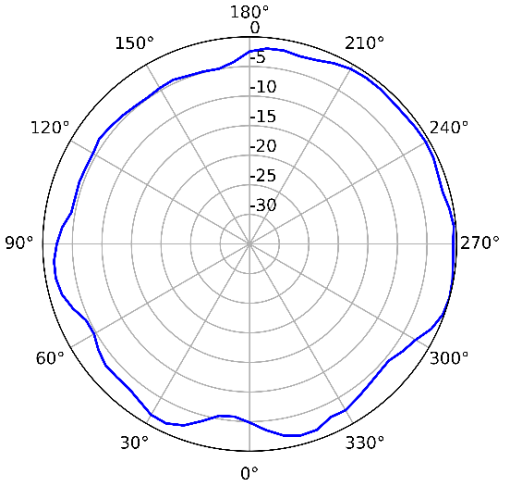
# Antennas Pattern



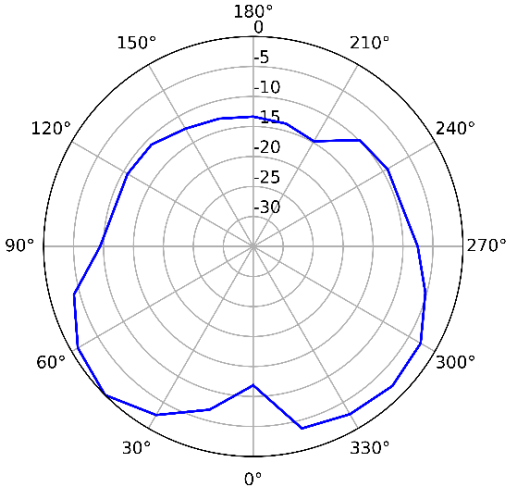

2.4GHz (Horizontal)




2.4GHz (Vertical)




5GHz (Horizontal)




5GHz (Vertical)

# More Information

For more information about Huawei WLAN products, visit http://e.huawei.com or contact Huawei's local sales office. Alternatively, you can contact us through one of the following methods:

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

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