Huawei AirEngine 5773-25HW Access Point Datasheet

Product Overview

Huawei AirEngine 5773-25HW is a next-generation wall plate 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. Designed with a total of 4 spatial streams, the AP delivers a data rate of up to 3.57 Gbps. AirEngine 5773-25HW draws on Wi-Fi 7 innovations to redefine wireless user experience. Additionally, it supports hybrid cables and simplified architecture solution, facilitating flexible deployment and saving customer investment. These strengths make the AirEngine 5773-25HW ideal for indoor coverage scenarios such as dormitories and hotels.

AirEngine 5773-25HW

- Provides services simultaneously on both the 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, at a data rate of up to 689 Mbps at 2.4 GHz and 2.88 Gbps at 5 GHz, meaning 3.57 Gbps for the entire AP.
- Comes with abundant ports for on-demand deployment, including 1 x 2.5G optical port (supporting optical/electrical hybrid cables) + 1 x 2.5GE electrical port in the upstream direction, and 8 x GE electrical ports in the downstream direction.
- 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).
- Supports Bluetooth serial port-based O&M through built-in Bluetooth and CloudCampus APP.
- Supports Fit AP and cloud-managed AP modes, easily managing the AP and its services on Huawei cloud management platform and 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 is expected to support a throughput of up to Gbps, about three times that of 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.
- Features marked with asterisks (*) can be implemented through software upgrade.

New Features in Wi-Fi 7

Wi-Fi 7 aims to increase the WLAN throughput to over 30 Gbps and provide low-latency access assurance. To achieve this goal, the Wi-Fi 7 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 Wi-Fi 7 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 Wi-Fi 7 standard defines multi-link aggregation technologies, including the MAC architecture of enhanced multi-link aggregation, multi-link channel access, and multi-link transmission.

Wi-Fi 7 Application Scenarios

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

- Video streaming
- Video/Audio 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 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) Preamble puncturing Per-packet power control BSS Color TxBF 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) 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, 80 MHz, and 160 MHz modes Wi-Fi multimedia (WMM) for priority-based data processing and forwarding WLAN channel management and channel rate adjustment Automatic channel scanning and interference avoidance NOTE For detailed management channels, see the Country Codes & Channels Compliance. 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 Automatic AP onboarding in Fit AP mode Extended Service Set (ESS) in Fit AP mode Multi-user call admission control (CAC)

Item	Description
	Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks 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) Compatibility with IEEE 802.1Q SSID-based VLAN assignment Eth-Trunk function Management channel of the AP's uplink port in tagged and untagged modes DHCP client, obtaining IP addresses through DHCP Tunnel data forwarding and direct data forwarding Application identification and QoS classification to improve voice quality for popular applications, such as Zoom, QQ, and WeChat STA isolation in the same VLAN IPv4/IPv6 access control list (ACL) Link Layer Discovery Protocol (LLDP) Service holding upon CAPWAP link disconnection in Fit AP mode Unified authentication on the AC in Fit AP mode AC dual-link backup in Fit AP mode Telemetry in Fit AP mode, quickly collecting AP status and application experience parameters
QoS features	WMM power save 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) to improve user experience Airtime scheduling Air interface HQoS scheduling VIP bandwidth reservation
Security features	Open system authentication WPA2-PSK authentication and encryption (WPA2-Personal) WPA2-802.1X authentication and encryption (WPA2-Enterprise) WPA3-SAE authentication and encryption (WPA3-Personal) WPA3-802.1X authentication and encryption (WPA3-Enterprise) WPA-WPA2 hybrid authentication

Item	Description
	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, and Portal authentication DHCP snooping 802.11w Protected Management Frames (PMF)
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 in Fit AP mode Automatic AP onboarding, automatic configuration loading, and plug-and-play (PnP) in Fit AP mode Automatic batch upgrade in Fit AP mode STelnet using SSHv2 SFTP using SSHv2 Remote wireless O&M through the Bluetooth serial port 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 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) Preamble puncturing Per-packet power control BSS Color TxBF 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) Low-density parity-check (LDPC)

Item	Description
	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, 80 MHz, and 160 MHz modes Wi-Fi multimedia (WMM) for priority-based data processing and forwarding WLAN channel management and channel rate adjustment Automatic channel scanning and interference avoidance NOTE For detailed management channels, see the Country Codes & Channels Compliance. Service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs Signal sustain technology (SST) Unscheduled automatic power save delivery (U-APSD) Automatic AP onboarding 802.11k and 802.11v smart roaming 802.11r fast roaming (≤ 50 ms) Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks
Network features	Compatibility 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) Compatibility with IEEE 802.1Q SSID-based VLAN assignment DHCP client, obtaining IP addresses through DHCP STA isolation in the same VLAN IPv4/IPv6 access control list (ACL) Unified authentication on the cloud management platform Network address translation (NAT) Telemetry, quickly collecting AP status and application experience parameters
QoS features	WMM power save 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) to improve user experience Application identification and QoS classification to improve voice quality for popular applications, such as Zoom, QQ, and WeChat VIP bandwidth reservation Airtime scheduling Air interface HQoS scheduling

Item	Description
Security features	Open system authentication WPA2-PSK authentication and encryption (WPA2-Personal) WPA2-802.1X authentication and encryption (WPA2-Enterprise) WPA3-SAE authentication and encryption (WPA3-Personal) WPA3-802.1X authentication and encryption (WPA3-Enterprise) WPA-WPA2 hybrid authentication WPA2-WPA3 hybrid authentication WPA2-PPSK authentication and encryption 802.1X authentication, MAC address authentication, and Portal authentication DHCP snooping
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 cloud management platform Automatic AP onboarding, automatic configuration loading, and plug-and-play (PnP) Batch upgrade STelnet using SSHv2 SFTP using SSHv2 Remote wireless O&M through the Bluetooth serial port Real-time user configuration monitoring and fast fault locating using the NMS System status alarm Network Time Protocol (NTP)

Technical Specifications

Item		Description
Technical specifications	Dimensions (H x W x D)	185 mm x 185 mm x 42 mm
	Weight	0.73 kg
	Port type	1 x 1GE/2.5GE optical port 1 x 100M/1000M/2.5GE electrical port 8 x 10M/100M/1GE electrical ports 1 x USB port NOTE • The 2.5GE optical port supports the hybrid cable (optical fiber for data transmission through LC

Item		Description
		interface, copper wire for power supply through additional Phoenix connector). • The 2.5GE optical interface is embedded with a BIDI optical module and connects to a single-mode optical fiber through an LC interface. The transmit and receive wavelengths on the AP side are TX1310 nm and RX1490 nm. For details, please see the Info-Finder. • The 2.5GE electrical port supports PoE input.
	Bluetooth	BLE 5.2
	LED indicator	Indicates the power-on, startup, running, alarm, and fault states of the system.
Power specifications	Power input	• DC: 43.2 V to 57.6 V • PoE power supply: in compliance with IEEE 802.3bt/at NOTE 802.3at power supply restrictions are detailed in the Info-Finder.
	Maximum power consumption	• 21.9 W (excluding USB) NOTE The actual maximum power consumption depends on local laws and regulations.
Environmental specifications	Operating temperature	0°C to +40°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: 5 dBi 5 GHz: 6 dBi NOTE • The preceding gains are the peak gains of a single antenna. • When all WLAN 2.4 GHz or 5 GHz antennas are combined, the equivalent antenna gain is 2 dBi for 2.4 GHz radios and 3 dBi for 5 GHz radios.
	Maximum number of SSIDs for each radio	15

Item		Description
	Maximum transmit power	• 2.4 GHz: 23 dBm (combined power) • 5 GHz: 23 dBm (combined power) NOTE The actual transmit power depends on local laws and regulations.
	Frequency bands	2.400 to 2.4835 GHz ISM 5.150 to 5.250 GHz U-NII-1 5.250 to 5.350 GHz U-NII-2A 5.470 to 5.725 GHz U-NII-2C 5.725 to 5.850 GHz U-NII-3/ISM NOTE The available bands and channels are dependent on the configured regulatory domain (country).

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/EN 61000-4-6 • ICES-003
IEEE standards	• IEEE 802.11a/b/g • IEEE 802.11n • IEEE 802.11ac • IEEE 802.11ax • IEEE 802.11be	• 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		

Item	Description	
	• 802.1X • Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open • EAP Type(s)	
EMF	• EN 62311	• EN 50385
RoHS	• Directive 2002/95/EC & 2011/65/EU • (EU)2015/863	
Reach	• Regulation 1907/2006/EC	
WEEE	• Directive 2002/96/EC & 2012/19/EU	

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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