

Huawei eKitEngine AP673 Wireless Access Point Datasheet



BE14000 Tri-Band Wi-Fi 7 Settled AP

Make SME Network Easier and Smarter



Product Overview

Huawei eKitEngine AP673 is a next-generation indoor access point (AP) that complies with the Wi-Fi 7 (802.11be) standard. It supports eight spatial streams on the 2.4 GHz (2x2 MIMO), 5 GHz (2x2 MIMO), and 6 GHz (4x4 MIMO) frequency bands, delivering a data rate of up to 13.66 Gbps.

It has built-in smart antennas, ensuring always-on signals for users. With the all-new Wi-Fi 7 technology, this AP can greatly improve users' wireless network experience. Compact in size, it can be flexibly deployed and saves customer TCO. These strengths make this AP ideal for indoor coverage scenarios such as small and midsize enterprise office, hospitals, and shopping malls and supermarkets.

You can use the EasyWeb or wireless access controller (WAC) to locally deploy and manage APs, or use the HUAWEI eKit App & SNC platform to remotely manage and maintain APs. In this way, network projects can be handed over or managed together, simplifying network O&M.

Feature Description

Wi-Fi 7 (802.11be) Standard

Wi-Fi 7 (802.11be) — also known as IEEE 802.11be Extremely High Throughput (EHT) — is the latest upcoming Wi-Fi standard. Based on Wi-Fi 6, Wi-Fi 7 introduces technologies such as 320 MHz bandwidth, 4096-quadrature amplitude modulation (4096-QAM), multiple resource unit (MRU), multi-link operation (MLO), enhanced multi-user multiple-input multiple-output (MU-MIMO), and multi-AP coordination. In this way, Wi-Fi 7 delivers a higher data transmission rate and a lower latency than Wi-Fi 6.

High-Speed Tri-Band Access

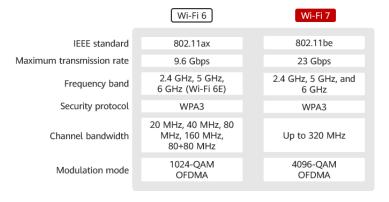
• The AP supports 320 MHz frequency bandwidth on the 6 GHz frequency band, which increases the number of available data subcarriers and expands transmission channels. In addition, the AP adopts 4096-QAM and MU-MIMO to achieve a rate of up to 0.69 Gbps on the 2.4 GHz band, 1.44 Gbps on the 5 GHz band, and 11.53 Gbps on the 6 GHz band, meaning up to 13.66 Gbps for the device.

Smart Antenna

The dual-band smart antenna array technology and intelligent switchover algorithm enable the AP to
intelligently sense the application environment and access density, achieving accurate Wi-Fi coverage and
interference suppression. They together provide the optimal coverage direction and signal quality for each
access station (STA), and offer seamless and smooth wireless network experience to users.

Wi-Fi 7 vs. Wi-Fi 6

Based on Wi-Fi 6, Wi-Fi 7 introduces many new technologies.



M NOTE

• In the figure, the maximum transmission rate refers to the one of a single radio, for example, 5 GHz radio for Wi-Fi 6 and 6 GHz radio for Wi-Fi 7.

New Features of Wi-Fi 7

Wi-Fi 7 aims to further increase the WLAN throughput to more than 30 Gbps 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:

MRU*

• 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 issue and further improve spectral 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.

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• Features marked with the asterisk (*) can be implemented through software upgrade.

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 IEEE 802.11 working group defines technologies related to multi-link aggregation, including the MAC architecture of enhanced multi-link aggregation, multi-link channel access, and multi-link transmission.

Multi-AP coordination*

• In the current 802.11 protocol framework, there is not much coordination between APs. Common WLAN functions, such as automatic radio calibration and smart roaming, are vendor-defined features. Multi-AP coordination aims to optimize channel selection and adjust loads among APs to achieve efficient utilization and balanced allocation of radio resources. Coordinated scheduling between multiple APs in Wi-Fi 7 involves inter-cell coordinated planning in the time and frequency domains, inter-cell interference coordination, and distributed MIMO. This reduces interference between APs and greatly improves the utilization of air interface resources. There are many coordinated scheduling methods between multiple APs, including coordinated orthogonal frequency-division multiple access (C-OFDMA), coordinated spatial reuse (CSR), coordinated beamforming (CBF), and joint transmission (JXT).

Product Features

Fat/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)	

Item	Description
	Beamforming
	MU-MIMO
	OFDMA
	Compliance with 4096-QAM and compatibility with 1024-QAM/256-QAM/64-QAM/16-QAM/8-QAM/QPSK/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 Country Code & Channel Compliance Table.
	Separate service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs
	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
	Multi-user CAC
	802.11k and 802.11v smart roaming
	802.11r fast roaming
Network features	Compliance with IEEE 802.3ab Auto-negotiation of the rate and duplex mode
	SSID-based VLAN assignment
	Management channel of the AP's uplink port in tagged or untagged mode
	DHCP client, obtaining IP addresses through DHCP
	Tunnel data forwarding and direct data forwarding
	STA isolation in the same VLAN
	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
	Telemetry in Fit AP mode, quickly collecting AP status and application experience parameters
QoS features	WMM power saving
200 .catares	Priority mapping for uplink packets; flow-based mapping for downlink 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
Security	Open system authentication
features	WPA2-PSK authentication and encryption (WPA2-Personal)
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Item	Description
	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/WPA2-WPA3 hybrid authentication
	WPA2-PPSK authentication and encryption in Fit AP mode
	WIDS, 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
	802.11w Protected Management Frames (PMF)
Maintenance	Unified management and maintenance on the WAC in Fit AP mode
features	Automatic login, 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 Bluetooth serial ports
	System status alarm

Cloud Management 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		
	MU-MIMO		
	OFDMA		
	Compliance with 4096-QAM and compatibility with 1024-QAM/256-QAM/64-QAM/16-QAM/8-QAM/QPSK/BPSK		
	LDPC		
	Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)		
	802.11 DFS		
	Short GI in 20 MHz, 40 MHz, 80 MHz, 160MHz and 320 MHz modes		
	NOTE 320MHz need to support 6GHz.		
	WMM for priority-based data processing and forwarding		
	WLAN channel management and channel rate adjustment		
	NOTE		
	For detailed management channels, see Country Code & Channel Compliance Table.		
	Automatic channel scanning and interference avoidance		

Item	Description
	SSID hiding configuration for each AP, supporting Chinese SSIDs U-APSD 802.11k and 802.11v smart roaming 802.11r fast roaming
Network features	Compliance with IEEE 802.3ab Auto-negotiation of the rate and duplex mode SSID-based VLAN assignment DHCP client, obtaining IP addresses through DHCP STA isolation in the same VLAN 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 saving Priority mapping for uplink packets; flow-based mapping for downlink 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
Security features	Open system authentication WPA2-PSK authentication and encryption (WPA2-Personal) WPA2-802.1X authentication and encryption (WPA3-Enterprise) WPA3-SAE authentication and encryption (WPA3-Personal) WPA3-802.1X authentication and encryption (WPA3-Enterprise) WPA-WPA2/WPA2-WPA3 hybrid authentication WPA2-PPSK authentication and encryption 802.1X authentication, MAC address authentication, Portal authentication, etc. DHCP snooping
Maintenance features	Unified management and maintenance on the cloud management platform Automatic AP onboarding and PnP Batch upgrade STelnet using SSHv2 SFTP using SSHv2 Remote wireless O&M through Bluetooth serial ports Real-time configuration monitoring and fast fault locating using the NMS System status alarm

Product Specifications

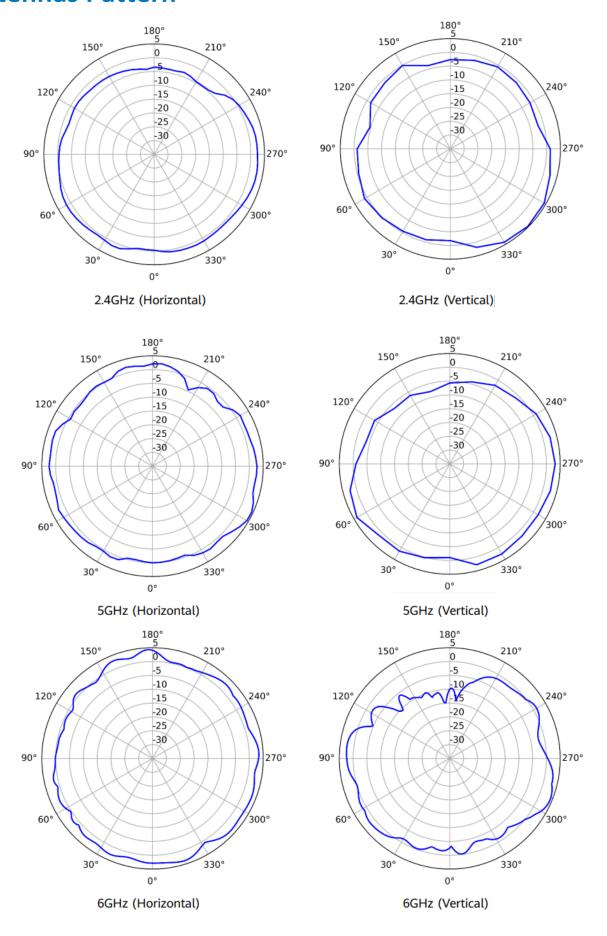
Item		Description	
Technical specifications	Dimensions (diameter x height)	Ф220 mm x 45 mm	
	Port	1 x 100M/GE/2.5GE/5GE electrical port	
		1 x 10M/100M/GE electrical port	
		1 x USB port	
		NOTE The 5GE electrical port supports PoE IN.	
	LED indicator	Indicate the power-on, startup, running, alarm, and fault states of the system.	
Power	Power input	• DC: 12 V ± 10%	
specifications		PoE power supply: in compliance with IEEE 802.3at/af	
		NOTE When working in 802.3af power supply mode, the AP is restricted in functions. For example, the USB port is unavailable. For details, see the Quick Information Check website.	
	Maximum power	• 21.1 W (excluding USB)	
	consumption	NOTE	
		The actual maximum power consumption depends on local laws and regulations.	
Environmental	Operating temperature	-10°C to +50°C	
specifications		NOTE The temperature on part of the AP shell may be higher than its operating temperature upper limit. The AP's performance will not be affected as long as the shell temperature complies with the safety standards.	
	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	
		6 GHz: 5 dBi	
		NOTE The preceding gains are the peak gains of a single antenna.	
	Maximum quantity of SSIDs	30	
	Maximum number of access STAs	1024	
	Maximum transmit	2.4 GHz: 23 dBm (combined power)	
	power	5 GHz: 23 dBm (combined power)	

Item		Description	
		6 GHz: 26 dBm (combined power)	
		NOTE	
		The actual transmit power varies according to local laws and regulations.	

Standards Compliance

Safety standards		 UL 62368-1 EN 62368-1 IEC 62368-1 CSA 62368-1 	• GB 4943.1
Radio standards	• ETSI EN 300 328	• ETSI EN 301 893	• AS/NZS 4268
EMC standards	 EN 301 489-1 EN 301 489-17 EN 60601-1-1 EN 60601-1-2 EN 55024 EN 55032 EN 55035 	 GB 9254 GB 17625.1 GB 17625.2 AS/NZS CISPR 32 CISPR 24 CISPR 32 CISPR 35 	 IEC/EN 61000-4-2 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 802.1X Advanced Encryption Standards (AES), Temporal Key Integrity Protocol (TKIP), WEP, Open EAP Type(s) 		
EMF standards	• EN 62311	● EN 50385	
RoHS standards	 Directive 2002/95/EC & 2011/65/EU (EU) 2015/863 		
Reach standards	• Regulation 1907/2006/EC		
WEEE standards	• Directive 2002/96/EC & 2012/19/EU		

Antennas Pattern



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:

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

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