HUAWEI

Huawei AirEngine 5562-17W-V2 Access Point Datasheet

Product Overview

Huawei AirEngine 5562-17W-V2 is an indoor slim wall plate access point (AP) in compliance with the Wi-Fi 6 (802.11ax) standard. It can simultaneously provide services on the 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands with four spatial streams, delivering a data rate of up to 2.975 Gbps. It can be installed on a desk, wall, ceiling, or junction box, meeting connection requirements in multiple scenarios. The AP is small and easy to deploy, ideal for indoor coverage scenarios such as budget hotels, hospitals, commercial stores, and schools.

AirEngine 5562-17W-V2

- Working simultaneously on the 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, at a data rate of up to 575 Mbps and 2.4 Gbps, respectively, meaning 2.975 Gbps for the entire AP.
- 1 x GE uplink electrical port + 4 x GE downlink electrical ports.
- Built-in smart antennas that automatically adjust the coverage direction and signal strength based on the intelligent switchover algorithm to adapt to the changing application environment, providing accurate and stable coverage as stations (STAs) move.
- Working modes: Fit, Fat, and cloud management.

Feature Description

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.
- 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
- 1024-quadrature amplitude modulation (QAM), improving data transmission efficiency by 25% compared with 802.11ac (256-QAM).
- Spatial reuse (SR) technology uses basic service set (BSS) coloring to enable the AP and STAs to distinguish overlapping BSSs, minimizing co-channel interference.
- Target Wake Time (TWT) technology allows the AP and STAs to negotiate the sleep and wake time with each other, thereby improving the battery life of the STAs.

MU-MIMO

The AP supports MU-MIMO and supports a maximum of four spatial streams (two on the 2.4 GHz frequency band and two on the 5 GHz frequency band). 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 160 MHz frequency bandwidth, which increases the number of available data subcarriers and expands transmission channels. In addition, the AP adopts 1024-QAM and MUMIMO to achieve a rate of up to 0.575 Gbps on the 2.4 GHz band and 2.4 Gbps on the 5 GHz band, meaning up to 2.975 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: SmartRadio for air interface optimization

- Load balancing during smart roaming: The load balancing algorithm is used to perform load balancing detection on APs after STA roam, and adjust the STA load on each AP accordingly to improve network stability.
- Intelligent Dynamic Frequency Assignment (DFA) technology: The DFA algorithm is used to automatically detect adjacent-channel and co-channel interference, and identify any redundant 2.4 GHz radio. Through automatic inter-AP negotiation, a redundant radio is automatically switched to another mode or is disabled to reduce 2.4 GHz co-channel interference and increase the system capacity.
- Intelligent conflict optimization technology: Dynamic enhanced distributed channel access (EDCA) and airtime scheduling algorithms are used to schedule the channel occupation time and service priority of each STA. This ensures that each STA is assigned a relatively equal amount of time for using channel resources and user services are scheduled in an orderly manner, improving service processing efficiency and user experience. Air interface performance optimization
- In high-density access scenarios, access of many low-rate STAs consumes many resources on the air interface, compromises the AP capacity, and degrades user experience. To address this issue, the AP checks the access rate of STAs and denies access of low-rate or weak-signal STAs. In addition, the AP monitors the rate and signal strength of online STAs in real time, disconnects low-rate or weak-signal STAs, and then steers these STAs to APs with stronger signals. This STA access control technology can increase air interface utilization and allow access of more STAs.

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 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, WPA/WPA2/WPA3, and WAPI authentication/encryption modes to ensure security of the wireless network. 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.

Authentication and encryption for wired access

- The AP access control mechanism ensures that only authorized users can access the AP. Control and provisioning of wireless access point (CAPWAP) link protection and Datagram Transport Layer Security (DTLS) encryption provide security guarantee and improve data transmission security between the AP and wireless access controller (WAC).

Automatic Radio Calibration

Automatic radio calibration allows the AP to collect signal strength, channel, and other parameters of surrounding APs and generate an AP topology according to the collected data. Based on interference from other 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 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 and connect them to network ports of switches. This 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.

Product Features

Fat/Fit AP Mode

Item	Description
WLAN features	Compliance with IEEE 802.11a/b/g/n/ac/ax Beamforming MU-MIMO Per-packet power control BSS Color TxBF Compliance with 1024-QAM and compatibility with 256-QAM/64-QAM/16-QAM/8QAM/QPSK/BPSK 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) WLAN channel management and channel rate adjustment **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) CAPWAP in Fit AP mode

Item	Description
	Extended service set (ESS) in Fit AP mode 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 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
QoS features	WMM parameter management for each radio 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 WEP authentication and 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/WPA2-WPA3 hybrid authentication WPA2-PPSK authentication and encryption in Fit AP mode 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
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 management and maintenance on the WAC in Fit AP mode Automatic login, automatic configuration loading, and plug-and-play (PnP) in Fit AP mode
Item	**Description**

	Automatic batch upgrade in Fit AP mode Telnet and STelnet using SSHv2 SFTP using SSHv2 Real-time configuration monitoring and fast fault locating using the NMS System status alarm

Cloud Management Mode

Item	Description
WLAN features	Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2/ax Cyclic delay diversity (CDD)/Cyclic shift diversity (CSD) Beamforming MU-MIMO Per-packet power control BSS Color TxBF Compliance with 1024-QAM and compatibility with 256-QAM/64-QAM/16-QAM/8QAM/QPSK/BPSK 802.11 DFS Short GI in 20 MHz, 40 MHz, 80 MHz, and 160 MHz modes Priority mapping and scheduling in compliance with WMM WLAN channel management and channel rate adjustment **NOTE** For detailed management channels, see Country Code & Channel Compliance Table. Automatic channel scanning and interference avoidance SSID hiding 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)
QoS features	Priority mapping and scheduling in compliance with WMM WMM parameter management for each radio
Item	**Description**

	Queue mapping and scheduling User-based bandwidth limiting Airtime scheduling
Security features	Open system authentication WEP authentication and 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/WPA2-WPA3 hybrid authentication 802.1X authentication, MAC address authentication, Portal authentication, etc. DHCP snooping DAI IPSG
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 management and maintenance on the cloud management platform Batch upgrade Telnet and STelnet using SSHv2 SFTP using SSHv2 Web-based NMS, 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)	160 mm x 86 mm x 38 mm
	Weight	0.23 kg
	Port	Uplink: 1 x 10M/100M/GE electrical port Downlink: 4 x 10M/100M/GE electrical ports **NOTE** The uplink electrical port supports PoE IN.
	LED indicator	Indicate the power-on, startup, running, alarm, and fault states of the system.

Power	Power input	● PoE power supply: in compliance with IEEE 802.3af

Item		Description
specifications	Maximum power consumption	● 9.4 W **NOTE** The actual maximum power consumption depends on local laws and regulations.
Environmental specifications	Operating temperature	0°C to 40°C (From 1800 m to 5000 m, the maximum temperature of the device decreases by 1°C for every 300 m increase in altitude.) **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: 4 dBi **NOTE** The preceding gains are the peak gains of a single antenna.
	Maximum quantity of SSIDs on each radio	8
	Maximum number of access STAs	128 **NOTE** The actual number of users varies according to the environment.
	Maximum transmit power	2.4 GHz: 23 dBm (combined power) 5 GHz: 23 dBm (combined power) **NOTE** The actual transmit power varies according to local laws and regulations.
	Power adjustment increment	1 dBm

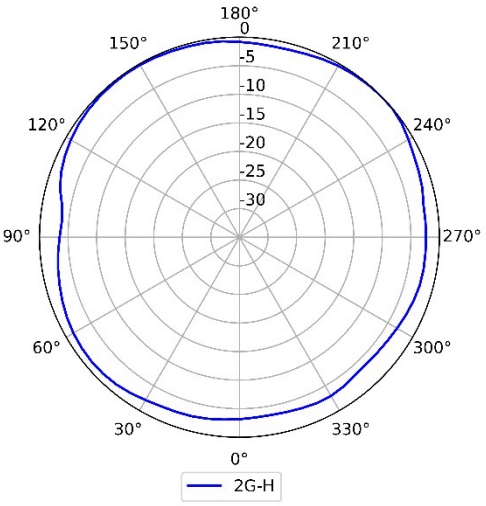
	Frequency bands	2.400 to 2.4835 GHz ISM 5.150 to 5.250 GHz U-NII-1 5.250 to 5.350 GHz U-NII-2A 5.470 to 5.725 GHz U-NII-2C 5.725 to 5.850 GHz U-NII-3/ISM NOTE The available bands and channels are dependent on the configured regulatory domain (country).

Standards Compliance

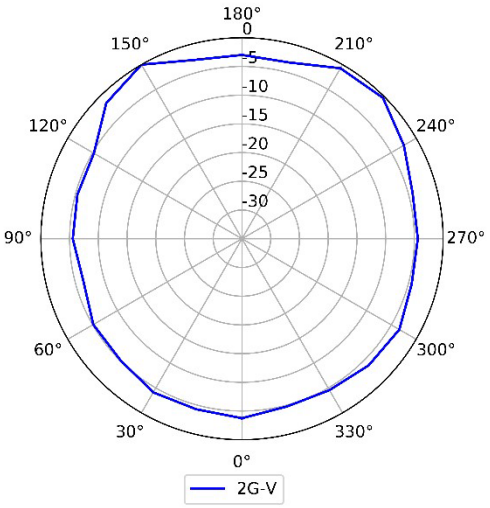
Item	Description		
Safety standards	● UL 62368-1 ● EN 62368-1 ● IEC 62368-1 ● CSA 62386-1		● GB 4943.1
Radio standards	● ETSI EN 300 328	● ETSI EN 301 893	
EMC standards	● EN 301 489-1 ● EN 301 489-17 ● EN 60601-1-2 ● EN 55024 ● EN 55032 ● EN 55035	● GB 9254 ● GB 17625.1 ● GB 17625.2 ● CISPR 24 ● CISPR 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 802.11h ● 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	

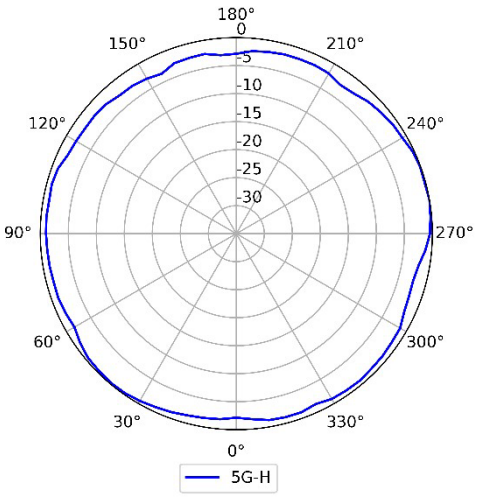
Antenna Patterns



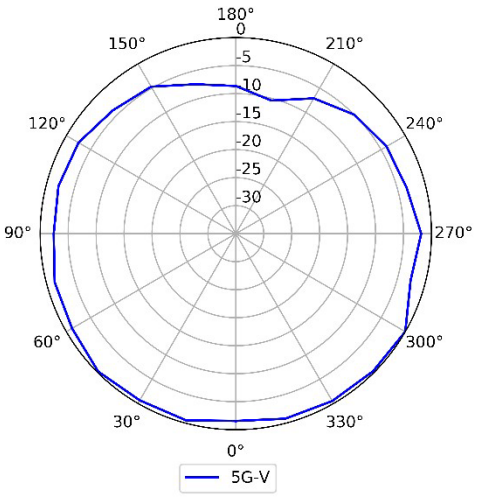
2.4 GHz (horizontal)



2.4 GHz (vertical)



5 GHz (horizontal)



5 GHz (vertical)

More Information

For more information about Huawei WLAN products, visit https://e.huawei.com/en 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
3. Service email address for enterprise users: support_e@huawei.com

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base, Bantian, Longgang, Shenzhen, People's Republic of China Post code: 518129

Website: www.huawei.com