



Huawei AirEngine 5760-10 Access Point Datasheet

Product Overview

AirEngine 5760-10 is a Wi-Fi 6 (802.11ax) wireless access point (AP) released by Huawei. AirEngine 5760-10 supports 2x2 MIMO on the 2.4 GHz band and 2x2 MIMO on the 5 GHz band. When delivering services on both bands, the device can reach a rate of up to 1.774 Gbit/s. AirEngine 5760-10 has built-in smart antennas and is compatible with 802.11n, 802.11ac, and 802.11ax. AirEngine 5760-10 supports high bandwidth and high concurrency, and allows for IoT extension, which greatly enhances user experience on wireless networks and applies to enterprise office, education, and business scenarios.



AirEngine 5760-10

- Provides services simultaneously on both the 2.4 GHz and 5 GHz bands, at a rate of up to 574 Mbit/s at 2.4 GHz (2x2 MIMO), 1.2 Gbit/s at 5 GHz (2x2 MIMO), and 1.774 Gbit/s for the device.
- Uses adaptive array antenna technology to enable targeted signal coverage for mobile terminals, reduce interferences, and improve signal quality. Additionally, this technology implements switchover as STAs move.
- Supports Bluetooth serial interface-based O&M through built-in Bluetooth and CloudCampus APP, and precise locating of Bluetooth terminals by collaborating with eSight.
- Provides a USB interface for external power supply and storage. An IoT module can also be installed on the USB interface to implement flexible IoT application extension.
- Supports the Fat, Fit, and cloud modes and enables Huawei cloud-based management platform to manage and operate APs and services on the APs, reducing network O&M costs.

Feature Descriptions

Adaptive array antenna technology

- The AP integrates adaptive array antenna and implicit beamforming technologies to implement more precise user detection, suppress interference, and improve signal quality, enabling users to have a seamless, smooth wireless network experience.

802.11ax standard compliance

- The AP supports 1024QAM modulation and 2x2 MIMO technology, achieving an air interface rate of up to 1.2 Gbit/s on the 5 GHz band and 1.774 Gbit/s for the device.
- OFDMA modulation enables multiple users to receive and send information at the same time, reducing the delay and improving network efficiency.

Cloud-based management

- Huawei Cloud Managed Network (CMN) Solution consists of the cloud management platform and a full range of cloud managed network devices. The cloud management platform provides various functions including management of APs, tenants, applications, and licenses, network planning and optimization, device monitoring, network service configuration, and value-added services.

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 can work during smart roaming for load balancing detection among APs on the network after STA roaming to adjust the STA load on each AP, improving network stability.
- Intelligent DFA technology: The dynamic frequency assignment (DFA) algorithm is used to automatically detect adjacent-channel and co-channel interference, and identify any 2.4 GHz redundant radio. Through automatic inter-AP negotiation, the redundant radio is automatically switched to another mode (dual-5G AP models support 2.4G-to-5G switchover) or is disabled to reduce 2.4 GHz co-channel interference and increase the system capacity.
- Intelligent conflict optimization technology: The dynamic enhanced distributed channel access (EDCA) and airtime scheduling algorithms are used to schedule the channel occupation time and service priority of each user. This ensures that each user is assigned relatively equal 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 scenarios where many users access the network, increased number of low-rate STAs consumes more resources on the air interface, reduces the AP capacity, and lowers user experience. Therefore, Huawei APs will check the signal strength of STAs during access and rejects access from weak-signal STAs. At the same time, the APs monitor the rate of online STAs in real time and forcibly disconnect low-rate STAs so that the STAs can reassociate with APs that have stronger signals. The terminal access control technology can increase air interface use efficiency and allow access from more users.

5G-prior access (Band steering)

- The APs support both 2.4G and 5G frequency bands. The 5G-prior access function enables an AP to steer STAs to the 5 GHz frequency band first, which reduces load and interference on the 2.4 GHz frequency band, improving the user experience.

Automatic radio calibration

- Automatic radio calibration allows an AP to collect signal strength and channel parameters of surrounding APs and generate AP topology according to the collected data. Based on interference from authorized APs, rogue APs, and non-Wi-Fi interference sources, each 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.

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 APs support WEP, WPA/WPA2-PSK, WPA/WPA2-PPSK, WPA/WPA2-802.1x, 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 the data can only be received and parsed by expected users.

Analysis on non-Wi-Fi interference sources

- Huawei APs can analyze the spectrum of non-Wi-Fi interference sources and identify them, including baby monitors, Bluetooth devices, digital cordless phones (at 2.4 GHz frequency band only), wireless audio transmitters (at both the 2.4 GHz and 5 GHz frequency bands), wireless game controllers, and microwave ovens. Coupled with Huawei eSight, the precise locations of the interference sources can be detected, and the spectrum of them displayed, enabling the administrator to remove the interference in a timely manner.

Rogue device monitoring

- Huawei APs support WIDS/WIPS, and can monitor, identify, defend, counter, and perform refined management on the rogue devices, to provide security guarantees for air interface environment and wireless data transmission.

Automatic application identification

Huawei APs support smart application control technology and can implement visualized control on Layer 4 to Layer 7 applications.

Traffic identification

- Coupled with Huawei ACs, the APs can identify over 6000 common applications in various office scenarios. Based on the identification results, policy control can be implemented on user services, including priority adjustment, scheduling, blocking, and rate limiting to ensure efficient bandwidth resource use and improve quality of key services.

Traffic statistics collection

- Traffic statistics of each application can be collected globally, by SSID, or by user, enabling the network administrator to know application use status on the network. The network administrator or operator can implement visualized control on service applications on smart terminals to enhance security and ensure effective bandwidth control.

Basic Specifications

Fat/Fit AP mode

Item	Description
WLAN features	Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2/ax Maximum rate of up to 1.774 Gbit/s Maximum ratio combining (MRC) Space time block code (STBC) Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD) Beamforming MU-MIMO DL OFDMA 1024QAM Low-density parity-check (LDPC) Maximum-likelihood detection (MLD) 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 Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding Automatic and manual rate adjustment WLAN channel management and channel rate adjustment Automatic channel scanning and interference avoidance Service set identifier (SSID) hiding Signal sustain technology (SST) Unscheduled automatic power save delivery (U-APSD) Control and Provisioning of Wireless Access Points (CAPWAP) in Fit AP mode Automatic login in Fit AP mode Extended Service Set (ESS) in Fit AP mode Multi-user CAC Hotspot2.0 802.11k and 802.11v smart roaming

Item	Description
	<p>802.11r fast roaming (≤ 50 ms)</p> <p>WAN authentication escape. In local forwarding mode, this function retains the online state of existing STAs and allows access of new STAs when APs are disconnected from an AC, ensuring service continuity.</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 uplink port in tagged and 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>Access control lists (ACLs)</p> <p>Link Layer Discovery Protocol (LLDP)</p> <p>Uninterrupted service forwarding upon CAPWAP channel disconnection in Fit AP mode</p> <p>Unified authentication on the AC in Fit AP mode</p> <p>AC 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>Soft Generic Routing Encapsulation (GRE)</p> <p>IPv6 Source Address Validation Improvements (SAVI)</p> <p>Multicast Domain Name Service (mDNS) gateway protocol: supports AirPlay and AirPrint service sharing between users of different VLANs</p>
QoS features	<p>Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding</p> <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) to improve user experience</p> <p>Smart Application Control (SAC) in Fit AP mode</p> <p>Airtime scheduling</p> <p>Support for Microsoft Lync APIs and high voice call quality through Lync API identification and scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, or 152-bit encryption key</p> <p>WPA/WPA2-PSK authentication and encryption (WPA/WPA2 personal edition)</p> <p>WPA/WPA2-802.1x authentication and encryption (WPA/WPA2 enterprise edition)</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA/WPA2-PPSK authentication and encryption in Fit AP mode</p> <p>WAPI authentication and encryption</p> <p>Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS),</p>

Item	Description
	<p>including rogue device detection and countermeasure, attack detection and dynamic blacklist, and STA/AP blacklist and whitelist</p> <p>802.1x authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p> <p>Dynamic ARP Inspection (DAI)</p> <p>IP Source Guard (IPSG)</p> <p>802.11w Protected Management Frames (PMFs)</p> <p>Application identification</p>
Maintenance features	<p>Unified management and maintenance on the AC in Fit AP mode</p> <p>Automatic login and configuration loading, and plug-and-play (PnP) in Fit AP mode</p> <p>Batch upgrade in Fit AP mode</p> <p>Telnet</p> <p>STelnet using SSH v2</p> <p>SFTP using SSH v2</p> <p>Web local AP management through HTTP or HTTPS in Fat AP mode</p> <p>Real-time configuration monitoring and fast fault location using the NMS</p> <p>SNMP v1/v2/v3 in Fat AP mode</p> <p>System status alarm</p> <p>Network Time Protocol (NTP) in Fat AP mode</p>
BYOD	<p>NOTE</p> <p><i>The AP supports bring your own device (BYOD) only in Fit AP mode.</i></p> <p>Identifies the device type according to the organizationally unique identifier (OUI) in the MAC address.</p> <p>Identifies the device type according to the user agent (UA) information in an HTTP packet.</p> <p>Identifies the device type according to DHCP options.</p> <p>The RADIUS server delivers packet forwarding, security, and QoS policies according to the device type carried in the RADIUS authentication and accounting packets.</p>
Location service	<p>NOTE</p> <p><i>The AP supports the locating service only in Fit AP mode.</i></p> <p>Locates tags in compliance with proprietary protocols of AeroScout and Ekahau.</p> <p>Locates Wi-Fi terminals.</p> <p>Works with eSight to locate rogue devices.</p>

Cloud-based management mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11a/b/g/n/ac/ac Wave 2/ax</p> <p>Maximum rate of up to 1.774 Gbit/s</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Beamforming</p> <p>MU-MIMO</p> <p>DL OFDMA</p> <p>Low-density parity-check (LDPC)</p> <p>Maximum-likelihood detection (MLD)</p>

Item	Description
	<p>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)</p> <p>802.11 dynamic frequency selection (DFS)</p> <p>Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding</p> <p>WLAN channel management and channel rate adjustment</p> <p>NOTE</p> <p><i>For detailed management channels, see the Country Code & Channel Compliance Table.</i></p> <p>Automatic channel scanning and interference avoidance</p> <p>Service set identifier (SSID) hiding</p> <p>Signal sustain technology (SST)</p> <p>Unscheduled automatic power save delivery (U-APSD)</p> <p>Automatic login</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>DHCP client, obtaining IP addresses through DHCP</p> <p>STA isolation in the same VLAN</p> <p>Access control lists (ACLs)</p> <p>Unified authentication on the Agile Controller</p> <p>Network Address Translation (NAT)</p>
QoS features	<p>Priority mapping and packet scheduling based on a Wi-Fi Multimedia (WMM) profile to implement priority-based data processing and forwarding</p> <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>Airtime scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, or 152-bit encryption key</p> <p>WPA/WPA2-PSK authentication and encryption (WPA/WPA2 personal edition)</p> <p>WPA/WPA2-802.1x authentication and encryption (WPA/WPA2 enterprise edition)</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA/WPA2-PPSK authentication and encryption</p> <p>802.1x authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p> <p>Dynamic ARP Inspection (DAI)</p> <p>IP Source Guard (IPSG)</p>
Maintenance features	<p>Unified management and maintenance on the Agile Controller</p> <p>Automatic login and configuration loading, and plug-and-play (PnP)</p> <p>Batch upgrade</p> <p>Telnet</p>

Item	Description
	STelnet using SSH v2 SFTP using SSH v2 Wireless O&M through the Bluetooth serial port Web local AP management through HTTP or HTTPS Real-time configuration monitoring and fast fault location using the NMS System status alarm Network Time Protocol (NTP)

Technical Specifications

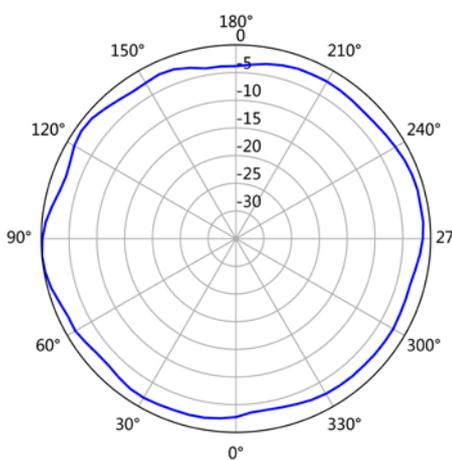
Item	Description	
Technical specifications	Dimensions (H x W x D)	47 mm x 200 mm x 200 mm
	Weight	1.05 kg
	Interface type	1 x 10/100/1000M self-adaptive Ethernet interface (RJ45) 1 x USB interface
	Bluetooth	BLE5.0
	External IoT module	1 x USB External IoT module (supporting ZigBee and RFID)
	LED indicator	Indicates the power-on, startup, running, alarm, and fault states of the system.
	BLE	BLE5.0
Power specifications	Power input	<ul style="list-style-type: none"> DC: 12 V \pm 10% PoE power supply: In compliance with 802.3at.
	Maximum power consumption	15.8 W (excluding output power consumption of the USB interface and IoT) NOTE <i>The actual maximum power consumption depends on local laws and regulations.</i>
Environmental specifications	Operating temperature	-10°C to +50°C
	Storage temperature	-40°C to +70°C
	Operating humidity	5% to 95% (non-condensing)
	Dustproof and waterproof grade	IP41
	Altitude	-60 m to +5000 m
	Atmospheric pressure	53 kPa to 106 kPa
Radio specifications	Antenna type	Built-in smart antennas
	Antenna gain	2.4G: 3.5 dBi 5G: 5 dBi NOTE 1. The gains above are the single-antenna peak gains. 2. The equivalent antenna gain after all 2.4 GHz or 5

Item	Description
	<p><i>GHz antennas are combined is 1 dBi in 2.4 GHz or 2 dBi in 5 GHz.</i></p>
Maximum number of SSIDs for each radio	≤ 16
Maximum number of users	≤ 512 NOTE <i>The actual number of users varies according to the environment.</i>
Maximum transmit power	2.4G: 25 dBm (combined power) 5G: 25 dBm (combined power) NOTE <i>The actual transmit power depends on local laws and regulations.</i>
Power 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"> • 802.11b/g <ul style="list-style-type: none"> – 20 MHz: 3 • 802.11n <ul style="list-style-type: none"> – 20 MHz: 3 – 40 MHz: 1 • 802.11ax <ul style="list-style-type: none"> – 20 MHz: 3 – 40 MHz: 1 5 GHz (5.18 GHz to 5.825 GHz) <ul style="list-style-type: none"> • 802.11a <ul style="list-style-type: none"> – 20 MHz: 13 • 802.11n <ul style="list-style-type: none"> – 20 MHz: 13 – 40 MHz: 6 • 802.11ac <ul style="list-style-type: none"> – 20 MHz: 13 – 40 MHz: 6 – 80 MHz: 3 – 160 MHz: 1 • 802.11ax <ul style="list-style-type: none"> – 20 MHz: 13 – 40 MHz: 6 – 80 MHz: 3 – 160 MHz: 1 NOTE <i>The table uses the number of non-overlapping channels supported by China as an example. The number of non-overlapping channels varies in different countries. For details, see the Country Codes & Channels Compliance</i>

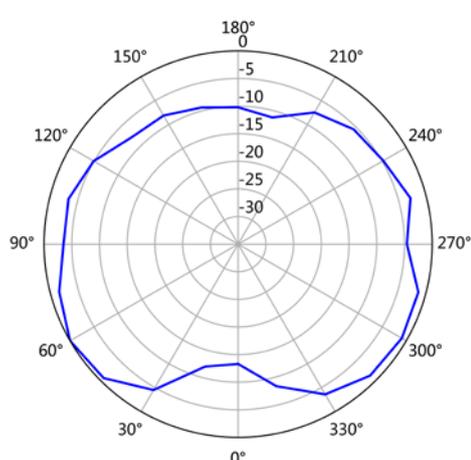
Standards Compliance

Item	Description		
Safety standards	UL 62368-1 EN 62368-1 IEC 62368-1	GB 4943 EN 60950-1 UL 60950-1	CAN/CSA 22.2 No.60950-1 IEC 60950-1
Radio standards	ETSI EN 300 328 ETSI EN 301 893	RSS-210	AS/NZS 4268
EMC standards	EN 301 489-1 EN 301 489-17 ETSI EN 60601-1-2 FCC Part 15 ICES-003 YD/T 1312.2-2004	ITU k.20 GB 9254 GB 17625.1 AS/NZS CISPR22 EN 55022	EN 55024 CISPR 22 CISPR 24 IEC61000-4-6 IEC61000-4-2
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 802.11u IEEE 802.11v IEEE 802.11w IEEE 802.11r
Security standards	802.11i, Wi-Fi Protected Access 2(WPA2), WPA 802.1X Advanced Encryption Standards(AES), Temporal Key Integrity Protocol(TKIP) EAP Type(s)		
EMF	CENELEC EN 62311 CENELEC EN 50385	OET65 RSS-102	FCC Part1&2 FCC KDB Series
RoHS	Directive 2002/95/EC & 2011/65/EU		
Reach	Regulation 1907/2006/EC		
WEEE	Directive 2002/96/EC & 2012/19/EU		

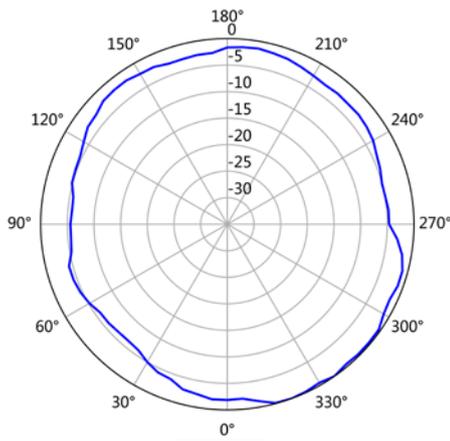
Antennas Pattern



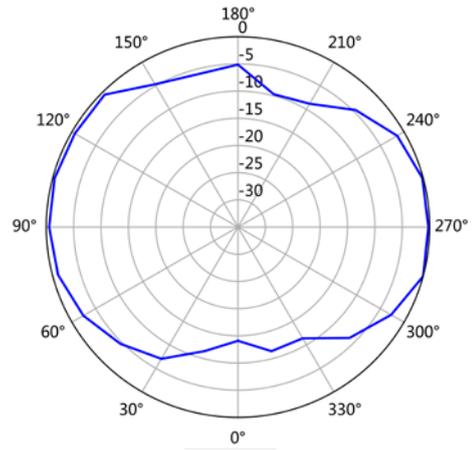
2.4G (Horizontal)



2.4G (Vertical)



5G (Horizontal)



5G (Vertical)

Ordering Information

Part Number	Description
02352UBR	AirEngine 5760-10 mainframe (11ax, indoor, 2.4G 2x2 + 5G 2x2 dual bands, built-in antenna, GE, USB, BLE)

More Information

For more information about Huawei WLAN products, visit <http://e.huawei.com> or contact us in the following ways:

- Global service hotline: <http://e.huawei.com/en/service-hotline>
- Logging in to the Huawei Enterprise technical support web: <http://support.huawei.com/enterprise/>
- Sending an email to the customer service mailbox: support_e@huawei.com

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