



# **Huawei AirEngine 5761R-11 & AirEngine 5761R-11E Access Points Datasheet**

# Product Overview

AirEngine 5761R-11 and AirEngine 5761R-11E are Huawei's Wi-Fi 6 (802.11ax) outdoor access points (APs). AirEngine 5761R-11 provides services on 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, achieving a device rate of up to 1.775Gbit/s ,AirEngine 5761R-11E provides services on 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands or 5 GHz (2x2 MIMO) +5 GHz (2x2 MIMO) frequency bands, achieving a maximum rate of 2.4 Gbit/s. These outdoor APs stand out with excellent outdoor coverage performance, IP68 waterproof and dustproof design, and strong surge protection capability. AirEngine 5761R-11 and AirEngine 5761R-11E provide uplink optical and electrical ports, allowing customers to select different deployment modes and saving customers' investment. These strengths make Huawei's Wi-Fi 6 outdoor APs ideal for high-density scenarios such as stadiums, squares, pedestrian streets, and amusement parks.



AirEngine 5761R-11

AirEngine 5761R-11E

- The AirEngine 5761R-11 has built-in directional antennas and works simultaneously on the 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO) frequency bands, achieving rates of up to 0.575 Gbit/s and 1.2 Gbit/s, respectively, and a maximum rate of 1.775 Gbit/s for the device.
- The AirEngine 5761R-11E uses external antennas and supports the following radio modes:
  - 2.4G+5G mode: 2.4 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO), achieving rates of up to 0.575 Gbit/s and 1.2 Gbit/s, respectively, and a maximum rate of 1.775 Gbit/s for the device.
  - Dual-5G mode: 5 GHz (2x2 MIMO) and 5 GHz (2x2 MIMO), each with a rate of up to 1.2 Gbit/s at 5 GHz, providing a maximum rate of 2.4 Gbit/s for the device.
- 1 x GE electrical, 1 x GE SFP.
- 6 KA surge protection for Ethernet ports, IP68 waterproof and dustproof design, and -40° C to + 65° C wide temperature, fully meeting industrial-grade requirements.
- The external antenna port of AirEngine 5761R-11E supports 5 KA surge protection, no need to install an external surge protector, simplifying installation, and minimizing the overall cost.
- Supports Bluetooth serial interface-based O&M through built-in Bluetooth and CloudCampus APP.
- Supports the Fat, Fit, and cloud three working modes.

## Feature Descriptions

### Wi-Fi 6 (802.11ax) standards

- As the latest generation Wi-Fi standards of IEEE 802.11, 802.11ax improves user experience in high-density access scenarios and supports 2.4 GHz and 5 GHz frequency bands.
- 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.
- 1024QAM modulation, improving data transmission efficiency by 25% compared with 802.11ac (256QAM).

- OFDMA scheduling enables multiple users to receive and send information at the same time, reducing latency and improving network efficiency.
- Spatial reuse (SR) technology uses basic service set (BSS) coloring to enable APs and STAs to distinguish BSSs, minimizing co-channel interference.
- The target wake time (TWT)\* allows APs and STAs to negotiate the sleep and wake time with each other, thereby improving the battery life of the STAs.

#### NOTE

- *The function and features marked with \* can be implemented through software upgrade. The following describes are the same.*

## MU-MIMO

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

- New Wi-Fi 6 technologies such as 1024QAM modulation, more subcarriers, and more efficient Symbol scheduling enable the 2.4 GHz radio rate to reach 0.575 Gbit/s (2 spatial streams), the 5 GHz radio rate to reach 1.2 Gbit/s (2 spatial streams), and the device rate to reach 1.775 Gbit/s (2 spatial streams@2.4GHz+ 2 spatial streams@5GHz) or 2.4 Gbit/s (2 spatial streams@5GHz+ 2 spatial streams@5GHz).

### High-level protection

- They use a use a metal shell, waterproof connectors, and an overall heat dissipation design, 6KA surge protection for Ethernet ports, IP68 waterproof and dustproof design, and -40° C to +65° C wide temperature, fully meeting industrial-grade requirements.
- The AirEngine 5761R-11E has built-in 5KA feeder surge protectors and require no external surge protective devices, which simplifies installation and lowers costs.

#### NOTE

The AirEngine 5761R-11 has built-in antennas and does not involve surge protection.

## 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.

### 5GHz-prior access (band steering)

- The APs support both 2.4G and 5G frequency bands. The 5GHz-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.

## 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, WPA3-SAE, WPA/WPA2-PPSK, WPA/WPA2/WPA3-802.1x, 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 NCE-Campus, 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.

### Wired access authentication and encryption for the AP

- The AP access control ensures validity of APs. The CAPWAP link protection, DTLS/IPsec encryption and hardware encryption provide security assurance, improving data transmission security between the AP and the AC.

## 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 no 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.

## 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 WLAN 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.

## 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.

## Cloud-based Management

The AP can be managed via cloud, eliminating the need to deploy a WLAN AC. In cloud-based management mode, abundant authentication functions, such as pre-shared key (PSK) authentication, Portal authentication, SMS authentication, and social media authentication, can be implemented with no authentication server. This mode significantly simplifies the networking and reduces the capital expenditure (CAPEX). In addition, multiple advanced functions, such as online cloud-based network planning, cloud-based deployment, cloud-based inspection, and cloud-based O&M, can be implemented through Huawei cloud management platform. In multi-branch deployment scenarios, cloud APs are pre-configured on the cloud management platform. During onsite network deployment, you only need to power on the cloud APs, connect them to the network ports of switches, and implement plug-and-play (PnP) of the APs by scanning the QR codes. The pre-configurations then are automatically delivered to the APs, significantly shortening the network deployment time. The cloud management platform can monitor the network status, device status, and STA connection status of all sites in a comprehensive and intuitive manner.

## Basic Specifications

### Fat/Fit AP mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)</p> <p>Beamforming</p> <p>Multi-user multiple-input multiple-output (MU-MIMO)</p> <p>Orthogonal frequency division multiple access (OFDMA)</p> <p>Compliance with 1024-quadrature amplitude modulation (QAM) and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)</p> <p>Target wake time (TWT)*</p> <p>Low-density parity-check (LDPC)</p> <p>Frame aggregation, including A-MPDU (Tx/Rx) and A-MSDU (Tx/Rx)</p> <p>802.11 dynamic frequency selection (DFS)</p> <p>Short guard interval (GI) in 20 MHz, 40 MHz, 80 MHz, and 160 MHz modes</p> <p>Priority mapping and scheduling that are compliant with Wi-Fi multimedia (WMM) to implement priority-based data processing and forwarding. Automatic and manual rate adjustment (the rate is adjusted automatically by default)</p> <p>WLAN channel management and channel rate adjustment</p> <p><b>NOTE</b></p> <p><i>For detailed management channels, see the Country Code &amp; Channel Compliances.</i></p> <p>Automatic channel scanning and interference avoidance</p> <p>Separate service set identifier (SSID) hiding configuration for each AP, supporting Chinese SSIDs</p> <p>Signal sustain technology (SST)</p> <p>Unscheduled automatic power save delivery (U-APSD)</p> <p>Control and Provisioning of Wireless Access Points (APs) in Fit AP mode</p> <p>Automatic login in Fit AP mode</p> <p>Extended Service Set (ESS) in Fit AP mode</p> <p>Advanced cellular coexistence (ACC), minimizing the impact of interference from cellular networks</p> <p>Multi-user call admission control (CAC)</p> <p>802.11k and 802.11v smart roaming</p> <p>802.11r fast roaming (<math>\leq 50</math> ms)</p>

Item	Description
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>Uplink VLAN trunks on Ethernet ports</p> <p>Management channel of the AP's 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>Application identification and QoS classification when AP local forwarding (also called direct forwarding), which can significantly improve voice quality for applications such as Skype, QQ, and WeChat</p> <p>STA isolation in the same VLAN</p> <p>IPv4/IPv6 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>Telemetry in Fit AP mode, quickly collecting AP status and application experience parameters</p> <p>IPv6 Source Address Validation Improvements (SAVI)</p> <p>Multicast Domain Name Service (mDNS) gateway protocol</p>
QoS features	<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>Airtime scheduling</p> <p>Air interface HQoS scheduling</p> <p>Application acceleration for VR and mobile gaming Application identification</p> <p>Intelligent multimedia scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption (WPA2-Personal)</p> <p>WPA2-802.1X authentication and encryption (WPA2-Enterprise)</p> <p>WPA3-SAE authentication and encryption (WPA3-Personal)</p> <p>WPA3-802.1X authentication and encryption (WPA3-Enterprise)</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>WPA2-PPSK authentication and encryption in Fit AP mode</p> <p>Wireless intrusion detection system (WIDS) and wireless intrusion prevention system (WIPS),</p>

Item	Description
	<p>including rogue device detection and containment, 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 (PMF)</p> <p>IPsec/DTLS hardware encryption</p>
Maintenance features	<p>Unified management and maintenance on the AC in Fit AP mode</p> <p>Automatic login, automatic configuration loading, and plug-and-play (PnP) in Fit AP mode</p> <p>Automatic batch upgrade in Fit AP mode</p> <p>Telnet</p> <p>STelnet using SSHv2</p> <p>SFTP using SSHv2</p> <p>Remote wireless O&amp;M through the Bluetooth serial interface</p> <p>Web system-based AP management in Fat AP mode, login through HTTP or HTTPS</p> <p>Real-time configuration monitoring and fast fault locating 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><b>NOTE</b></p> <p><i>The AP supports bring your own device (BYOD) only in Fit AP mode.</i></p> <p>Device type identification according to the organizationally unique identifier (OUI) in the MAC address</p> <p>Device type identification according to the user agent (UA) information in an HTTP packet</p> <p>Device type identification 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>
Spectrum analysis	<p><b>NOTE</b></p> <p><i>The AP supports spectrum analysis only in Fit AP mode.</i></p> <p>Identification of more than eight interference sources including Bluetooth devices, microwave ovens, cordless phones, ZigBee devices, game controllers, 2.4 GHz/5 GHz wireless video and audio devices, and baby monitors</p> <p>Working with the location server to locate interference sources and perform spectrum analysis on them</p>

## Cloud-based management mode

Item	Description
WLAN features	<p>Compliance with IEEE 802.11ax and compatibility with IEEE 802.11a/b/g/n/ac/ac Wave 2</p> <p>Maximum ratio combining (MRC)</p> <p>Space time block code (STBC)</p> <p>Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)</p> <p>Beamforming</p> <p>Multi-user multiple-input multiple-output (MU-MIMO)</p> <p>Orthogonal frequency division multiple access (OFDMA)</p>

Item	Description
	<p>Compliance with 1024-quadrature amplitude modulation (QAM) and compatibility with 256-QAM, 64-QAM, 16-QAM, 8-QAM, quadrature phase shift keying (QPSK), and binary phase shift keying (BPSK)</p> <p>Low-density parity-check (LDPC)</p> <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 scheduling that are compliant with WMM to implement priority-based data processing and forwarding. Automatic and manual rate adjustment (the rate is adjusted automatically by default)</p> <p>WLAN channel management and channel rate adjustment</p> <p><b>NOTE</b></p> <p><i>For detailed management channels, see the Country Code &amp; Channel Compliances.</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>
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 Cloud management platform</p> <p>Network Address Translation (NAT)</p>
QoS features	<p>Priority mapping and scheduling that are compliant with WMM 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> <p>Air interface HQoS scheduling</p>
Security features	<p>Open system authentication</p> <p>WEP authentication/encryption using a 64-bit, 128-bit, 152-bit or 192-bit encryption key</p> <p>WPA2-PSK authentication and encryption (WPA2-Personal)</p> <p>WPA2-802.1X authentication and encryption (WPA2-Enterprise)</p> <p>WPA3-SAE authentication and encryption (WPA3-Personal)</p> <p>WPA3-802.1X authentication and encryption (WPA3-Enterprise)</p> <p>WPA-WPA2 hybrid authentication</p> <p>WPA2-WPA3 hybrid authentication</p> <p>802.1x authentication, MAC address authentication, and Portal authentication</p> <p>DHCP snooping</p>



Item	Description
	Dynamic ARP Inspection (DAI) IP Source Guard (IPSG)
Maintenance features	Unified management and maintenance on the Cloud management platform Automatic login and configuration loading, and plug-and-play (PnP) Batch upgrade Telnet STelnet using SSHv2 SFTP using SSH v2 Remote wireless O&M through the Bluetooth console port Web-based local AP management through HTTP or HTTPS Real-time 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)	69 x 200x 200 mm
	Weight	<ul style="list-style-type: none"> <li>AirEngine 5761R-11: 1.91 kg</li> <li>AirEngine 5761R-11E: 2.04 kg</li> </ul>
	Interface type	1 x10/100M/1GE 1 x SFP <b>NOTE</b> <ul style="list-style-type: none"> <li>GE electrical port can support PoE input.</li> </ul>
	Bluetooth	Build in BLE5.0
	LED indicator	Indicates the power-on, startup, running, alarm, and fault states of the system.
Power specifications	Power input	PoE power supply: In compliance with 802.3at/af. <b>NOTE</b> <i>When 802.3af power is supplied, the AP will operate with restrictions, the details refer to the <a href="#">Specification Query Tool</a>.</i>
	Maximum power consumption	<ul style="list-style-type: none"> <li>AirEngine 5761R-11: 17.7W</li> <li>AirEngine 5761R-11E: 19.6W</li> </ul> <b>NOTE</b> <i>The actual maximum power consumption depends on local laws and regulations.</i>
Environmental specifications	Operating temperature	-40°C to +65°C
	Storage temperature	-40°C to +85°C
	Operating humidity	0% to 100%
	Dustproof and waterproof grade	IP68

Item	Description	
	Altitude	-60 m to +5000 m
	Atmospheric pressure	53 kPa to 106 kPa
Radio specifications	Antenna type	AirEngine 5761R-11: Built-in antennas <b>NOTE</b> <ul style="list-style-type: none"> <li>• 2.4GHz Horizontal beamwidth: 65°, 2.4GHz Vertical beamwidth: 40°</li> <li>• 5GHz Horizontal beamwidth: 65°, 5GHz Vertical beamwidth: 20°</li> </ul> AirEngine 5761R-11E: External antennas
	Antenna gain	2.4GHz: 10dBi 5GHz: 11dBi
	Maximum number of SSIDs for each radio	≤ 16
	Maximum number of users	≤ 1024 (512/Radio) <b>NOTE</b> <i>The actual number of users varies according to the environment.</i>
	Maximum transmit power	2.4G: 28dBm (combined power) 5G: 27dBm (combined power) <b>NOTE</b> <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"> <li>• 802.11b/g               <ul style="list-style-type: none"> <li>- 20 MHz: 3</li> </ul> </li> <li>• 802.11n               <ul style="list-style-type: none"> <li>- 20 MHz: 3</li> <li>- 40 MHz: 1</li> </ul> </li> <li>• 802.11ax               <ul style="list-style-type: none"> <li>- 20 MHz: 3</li> <li>- 40 MHz: 1</li> </ul> </li> </ul> 5 GHz (5.18 GHz to 5.825 GHz) <ul style="list-style-type: none"> <li>• 802.11a               <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> </ul> </li> <li>• 802.11n               <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> <li>- 40 MHz: 6</li> </ul> </li> <li>• 802.11ac               <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> <li>- 40 MHz: 6</li> <li>- 80 MHz: 3</li> </ul> </li> <li>• 802.11ax               <ul style="list-style-type: none"> <li>- 20 MHz: 13</li> <li>- 40 MHz: 6</li> <li>- 80 MHz: 3</li> </ul> </li> </ul>

Item	Description
	<p><b>NOTE</b></p> <p><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 &amp; Channels Compliance</i></p>
Receiver sensitivity	<ul style="list-style-type: none"> <li>• 2.4G 802.11b: -101dBm/1LMbit/s;-98dBm/2Mbit/s;-96dBm/5.5Mbit/s;-93dBm/11SMbit/s;</li> <li>• 2.4G 802.11g: -96dBm/6Mbit/s;-94dBm/9Mbit/s;-93dBm/12Mbit/s;-91dBm/18Mbit/s;-88dBm/24Mbit/s;-85dBm/36Mbit/s;-81dBm/48Mbit/s;-79dBm/54Mbit/s;</li> <li>• 2.4G 802.11a: -95dBm/6Mbit/s;-93dBm/9Mbit/s;-93dBm/12Mbit/s;-90dBm/18Mbit/s;-87dBm/24Mbit/s;-84dBm/36Mbit/s;-79dBm/48Mbit/s;-77dBm/54Mbit/s;</li> <li>• 2.4 GHz 802.11n (HT20): -96dBm/MCS0Mbit/s;-93dBm/MCS1Mbit/s;-91dBm/MCS2Mbit/s;-87dBm/MCS3Mbit/s;-84dBm/MCS4Mbit/s;-80dBm/MCS5Mbit/s;-78dBm/MCS6Mbit/s;-77dBm/MCS7Mbit/s;-95dBm/MCS8Mbit/s;-92dBm/MCS9Mbit/s;-90dBm/MCS10Mbit/s;-86dBm/MCS11Mbit/s;-83dBm/MCS12Mbit/s;-79dBm/MCS13Mbit/s;-77dBm/MCS14Mbit/s;-76dBm/MCS15Mbit/s;</li> <li>• 2.4 GHz 802.11n (HT40): -93dBm/MCS0Mbit/s;-92dBm/MCS1Mbit/s;-90dBm/MCS2Mbit/s;-87dBm/MCS3Mbit/s;-83dBm/MCS4Mbit/s;-79dBm/MCS5Mbit/s;-77dBm/MCS6Mbit/s;-75dBm/MCS7Mbit/s;-92dBm/MCS8Mbit/s;-91dBm/MCS9Mbit/s;-89dBm/MCS10Mbit/s;-86dBm/MCS11Mbit/s;-82dBm/MCS12Mbit/s;-78dBm/MCS13Mbit/s;-76dBm/MCS14Mbit/s;-74dBm/MCS15Mbit/s;</li> <li>• 2.4GHz 802.11ax (HE20): -96dBm/MCS0NSS1Mbit/s;-93dBm/MCS1NSS1Mbit/s;-90dBm/MCS2NSS1Mbit/s;-87dBm/MCS3NSS1Mbit/s;-84dBm/MCS4NSS1Mbit/s;-80dBm/MCS5NSS1Mbit/s;-78dBm/MCS6NSS1Mbit/s;-77dBm/MCS7NSS1Mbit/s;-73dBm/MCS8NSS1Mbit/s;-71dBm/MCS9NSS1Mbit/s;-67dBm/MCS10NSS1Mbit/s;-65dBm/MCS11NSS1Mbit/s;-95dBm/MCS0NSS2Mbit/s;-92dBm/MCS1NSS2Mbit/s;-89dBm/MCS2NSS2Mbit/s;-86dBm/MCS3NSS2Mbit/s;-83dBm/MCS4NSS2Mbit/s;-79dBm/MCS5NSS2Mbit/s;-77dBm/MCS6NSS2Mbit/s;-76dBm/MCS7NSS2Mbit/s;-72dBm/MCS8NSS2Mbit/s;-70dBm/MCS9NSS2Mbit/s;-66dBm/MCS10NSS2Mbit/s;-64dBm/MCS11NSS2Mbit/s;</li> <li>• 2.4GHz 802.11ax (HE40): -94dBm/MCS0NSS1Mbit/s;-92dBm/MCS1NSS1Mbit/s;-89dBm/MCS2NSS1Mbit/s;-86dBm/MCS3NSS1Mbit/s;-83dBm/MCS4NSS1Mbit/s;-79dBm/MCS5NSS1Mbit/s;-78dBm/MCS6NSS1Mbit/s;-76dBm/MCS7NSS1Mbit/s;-72dBm/MCS8NSS1Mbit/s;-71dBm/MCS9NSS1Mbit/s;-67dBm/MCS10NSS1Mbit/s;-65dBm/MCS11NSS1Mbit/s;-93dBm/MCS0NSS2Mbit/s;-91dBm/MCS1NSS2Mbit/s;-88dBm/MCS2NSS2Mbit/s;-85dBm/MCS3NSS2Mbit/s;-82dBm/MCS4NSS2Mbit/s;-78dBm/MCS5NSS2Mbit/s;-77dBm/MCS6NSS2Mbit/s;-75dBm/MCS7NSS2Mbit/s;-71dBm/MCS8NSS2Mbit/s;-70dBm/MCS9NSS2Mbit/s;-66dBm/MCS10NSS2Mbit/s;-64dBm/MCS11NSS2Mbit/s;</li> <li>• 5GHz 802.11n (HT20): -95dBm/MCS0Mbit/s;-93dBm/MCS1Mbit/s;-91dBm/MCS2Mbit/s;-88dBm/MCS3Mbit/s;-85dBm/MCS4Mbit/s;-80dBm/MCS5Mbit/s;-79dBm/MCS6Mbit/s;-</li> </ul>

Item	Description
	<p>77dBm/MCS7Mbit/s;-94dBm/MCS8Mbit/s;-92dBm/MCS9Mbit/s;-90dBm/MCS10Mbit/s;-87dBm/MCS11Mbit/s;-84dBm/MCS12Mbit/s;-79dBm/MCS13Mbit/s;-78dBm/MCS14Mbit/s;-76dBm/MCS15Mbit/s;</p> <ul style="list-style-type: none"> <li>• 5GHz 802.11n (HT40): -93dBm/MCS0Mbit/s;-91dBm/MCS1Mbit/s;-89dBm/MCS2Mbit/s;-86dBm/MCS3Mbit/s;-82dBm/MCS4Mbit/s;-78dBm/MCS5Mbit/s;-77dBm/MCS6Mbit/s;-75dBm/MCS7Mbit/s;-92dBm/MCS8Mbit/s;-90dBm/MCS9Mbit/s;-88dBm/MCS10Mbit/s;-85dBm/MCS11Mbit/s;-81dBm/MCS12Mbit/s;-77dBm/MCS13Mbit/s;-76dBm/MCS14Mbit/s;-74dBm/MCS15Mbit/s;</li> <li>• 5GHz 802.11ac (VHT20): -95dBm/MCS0NSS1Mbit/s;-94dBm/MCS1NSS1Mbit/s;-90dBm/MCS2NSS1Mbit/s;-88dBm/MCS3NSS1Mbit/s;-85dBm/MCS4NSS1Mbit/s;-81dBm/MCS5NSS1Mbit/s;-79dBm/MCS6NSS1Mbit/s;-78dBm/MCS7NSS1Mbit/s;-74dBm/MCS8NSS1Mbit/s;;-94dBm/MCS0NSS2Mbit/s;-93dBm/MCS1NSS2Mbit/s;-89dBm/MCS2NSS2Mbit/s;-87dBm/MCS3NSS2Mbit/s;-84dBm/MCS4NSS2Mbit/s;-80dBm/MCS5NSS2Mbit/s;-78dBm/MCS6NSS2Mbit/s;-77dBm/MCS7NSS2Mbit/s;-73dBm/MCS8NSS2Mbit/s;</li> <li>• 5GHz 802.11ac (VHT40): -92dBm/MCS0NSS1Mbit/s;-91dBm/MCS1NSS1Mbit/s;-89dBm/MCS2NSS1Mbit/s;-86dBm/MCS3NSS1Mbit/s;-83dBm/MCS4NSS1Mbit/s;-78dBm/MCS5NSS1Mbit/s;-77dBm/MCS6NSS1Mbit/s;-75dBm/MCS7NSS1Mbit/s;-71dBm/MCS8NSS1Mbit/s;-70dBm/MCS9NSS1Mbit/s;-91dBm/MCS0NSS2Mbit/s;-90dBm/MCS1NSS2Mbit/s;-88dBm/MCS2NSS2Mbit/s;-85dBm/MCS3NSS2Mbit/s;-82dBm/MCS4NSS2Mbit/s;-77dBm/MCS5NSS2Mbit/s;-76dBm/MCS6NSS2Mbit/s;-74dBm/MCS7NSS2Mbit/s;-70dBm/MCS8NSS2Mbit/s;-69dBm/MCS9NSS2Mbit/s;</li> <li>• 5GHz 802.11ac (VHT80): -90dBm/MCS0NSS1Mbit/s;-89dBm/MCS1NSS1Mbit/s;-86dBm/MCS2NSS1Mbit/s;-83dBm/MCS3NSS1Mbit/s;-80dBm/MCS4NSS1Mbit/s;-75dBm/MCS5NSS1Mbit/s;-74dBm/MCS6NSS1Mbit/s;-73dBm/MCS7NSS1Mbit/s;-68dBm/MCS8NSS1Mbit/s;-67dBm/MCS9NSS1Mbit/s;-89dBm/MCS0NSS2Mbit/s;-88dBm/MCS1NSS2Mbit/s;-85dBm/MCS2NSS2Mbit/s;-82dBm/MCS3NSS2Mbit/s;-79dBm/MCS4NSS2Mbit/s;-74dBm/MCS5NSS2Mbit/s;-73dBm/MCS6NSS2Mbit/s;-72dBm/MCS7NSS2Mbit/s;-67dBm/MCS8NSS2Mbit/s;-66dBm/MCS9NSS2Mbit/s;</li> <li>• 5GHz 802.11ax (HE20): -95dBm/MCS0NSS1Mbit/s;-93dBm/MCS1NSS1Mbit/s;-91dBm/MCS2NSS1Mbit/s;-88dBm/MCS3NSS1Mbit/s;-85dBm/MCS4NSS1Mbit/s;-80dBm/MCS5NSS1Mbit/s;-79dBm/MCS6NSS1Mbit/s;-77dBm/MCS7NSS1Mbit/s;-73dBm/MCS8NSS1Mbit/s;-72dBm/MCS9NSS1Mbit/s;-67dBm/MCS10NSS1Mbit/s;-65dBm/MCS11NSS1Mbit/s;-94dBm/MCS0NSS2Mbit/s;-92dBm/MCS1NSS2Mbit/s;-90dBm/MCS2NSS2Mbit/s;-87dBm/MCS3NSS2Mbit/s;-84dBm/MCS4NSS2Mbit/s;-79dBm/MCS5NSS2Mbit/s;-78dBm/MCS6NSS2Mbit/s;-76dBm/MCS7NSS2Mbit/s;-72dBm/MCS8NSS2Mbit/s;-71dBm/MCS9NSS2Mbit/s;-66dBm/MCS10NSS2Mbit/s;-64dBm/MCS11NSS2Mbit/s;</li> <li>• 5GHz 802.11ax (HE40): -93dBm/MCS0NSS1Mbit/s;-91dBm/MCS1NSS1Mbit/s;-89dBm/MCS2NSS1Mbit/s;-</li> </ul>

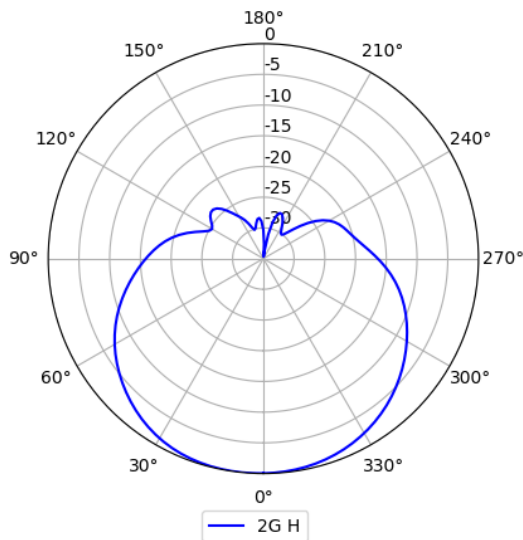
Item	Description
	<p>86dBm/MCS3NSS1Mbit/s;-82dBm/MCS4NSS1Mbit/s;-78dBm/MCS5NSS1Mbit/s;-77dBm/MCS6NSS1Mbit/s;-75dBm/MCS7NSS1Mbit/s;-71dBm/MCS8NSS1Mbit/s;-70dBm/MCS9NSS1Mbit/s;-65dBm/MCS10NSS1Mbit/s;-64dBm/MCS11NSS1Mbit/s;-92dBm/MCS0NSS2Mbit/s;-90dBm/MCS1NSS2Mbit/s;-88dBm/MCS2NSS2Mbit/s;-85dBm/MCS3NSS2Mbit/s;-81dBm/MCS4NSS2Mbit/s;-77dBm/MCS5NSS2Mbit/s;-76dBm/MCS6NSS2Mbit/s;-74dBm/MCS7NSS2Mbit/s;-70dBm/MCS8NSS2Mbit/s;-69dBm/MCS9NSS2Mbit/s;-64dBm/MCS10NSS2Mbit/s;-63dBm/MCS11NSS2Mbit/s;</p> <ul style="list-style-type: none"> <li>• 5GHz 802.11ax (HE80): -90dBm/MCS0NSS1Mbit/s;-88dBm/MCS1NSS1Mbit/s;-86dBm/MCS2NSS1Mbit/s;-83dBm/MCS3NSS1Mbit/s;-80dBm/MCS4NSS1Mbit/s;-75dBm/MCS5NSS1Mbit/s;-74dBm/MCS6NSS1Mbit/s;-73dBm/MCS7NSS1Mbit/s;-68dBm/MCS8NSS1Mbit/s;-67dBm/MCS9NSS1Mbit/s;-62dBm/MCS10NSS1Mbit/s;-61dBm/MCS11NSS1Mbit/s;-89dBm/MCS0NSS2Mbit/s;-87dBm/MCS1NSS2Mbit/s;-85dBm/MCS2NSS2Mbit/s;-82dBm/MCS3NSS2Mbit/s;-79dBm/MCS4NSS2Mbit/s;-74dBm/MCS5NSS2Mbit/s;-73dBm/MCS6NSS2Mbit/s;-72dBm/MCS7NSS2Mbit/s;-67dBm/MCS8NSS2Mbit/s;-66dBm/MCS9NSS2Mbit/s;-61dBm/MCS10NSS2Mbit/s;-60dBm/MCS11NSS2Mbit/s;</li> </ul>

## Standards Compliance

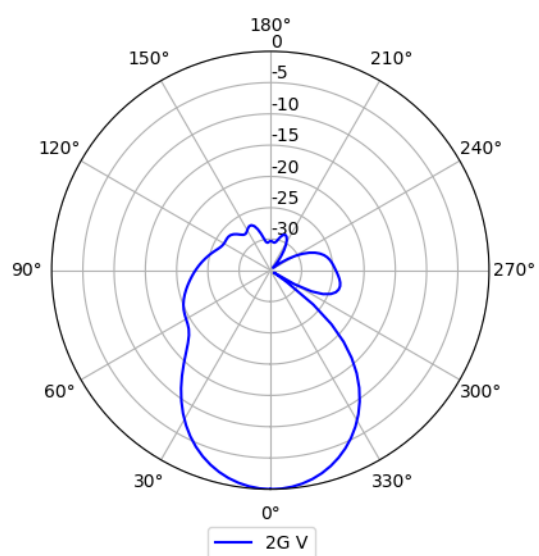
Item	Description
Safety standards	<ul style="list-style-type: none"> <li>• UL 60950-1</li> <li>• EN 60950-1</li> <li>• IEC 60950-1</li> <li>• UL 62368-1</li> <li>• EN 62368-1</li> <li>• IEC 62368-1</li> <li>• GB 4943.1</li> <li>• CAN/CSA 22.2 No.60950-1</li> </ul>
Radio standards	<ul style="list-style-type: none"> <li>• ETSI EN 300 328</li> <li>• ETSI EN 301 893</li> <li>• AS/NZS 4268</li> </ul>
EMC standards	<ul style="list-style-type: none"> <li>• EN 301 489-1</li> <li>• EN 301 489-17</li> <li>• EN 60601-1-2</li> <li>• EN 55024</li> <li>• EN 55032</li> <li>• EN 55035</li> <li>• GB 9254</li> <li>• GB 17625.1</li> <li>• GB 17625.2</li> <li>• AS/NZS CISPR32</li> <li>• CISPR 24</li> <li>• CISPR 32</li> <li>• CISPR 35</li> <li>• IEC/EN61000-4-2</li> <li>• IEC/EN 61000-4-3</li> <li>• IEC/EN 61000-4-4</li> <li>• IEC/EN 61000-4-5</li> <li>• IEC/EN61000-4-6</li> <li>• ICES-003</li> </ul>
IEEE standards	<ul style="list-style-type: none"> <li>• IEEE 802.11a/b/g</li> <li>• IEEE 802.11n</li> <li>• IEEE 802.11ac</li> <li>• IEEE 802.11ax</li> <li>• IEEE 802.11h</li> <li>• IEEE 802.11d</li> <li>• IEEE 802.11e</li> <li>• IEEE 802.11k</li> <li>• IEEE 802.11v</li> <li>• IEEE 802.11w</li> <li>• IEEE 802.11r</li> </ul>
Security standards	<ul style="list-style-type: none"> <li>• 802.11i, Wi-Fi Protected Access (WPA), WPA2, WPA2-Enterprise, WPA2-PSK, WPA3, WAPI</li> <li>• 802.1X</li> <li>• Advanced Encryption Standards(AES), Temporal Key Integrity Protocol(TKIP), WEP, Open</li> <li>• EAP Type(s)</li> </ul>

Item	Description	
EMF	<ul style="list-style-type: none"> <li>EN 62311</li> </ul>	<ul style="list-style-type: none"> <li>EN 50385</li> </ul>
RoHS	<ul style="list-style-type: none"> <li>Directive 2002/95/EC &amp; 2011/65/EU</li> </ul>	<ul style="list-style-type: none"> <li>(EU)2015/863</li> </ul>
Reach	<ul style="list-style-type: none"> <li>Regulation 1907/2006/EC</li> </ul>	
WEEE	<ul style="list-style-type: none"> <li>Directive 2002/96/EC &amp; 2012/19/EU</li> </ul>	

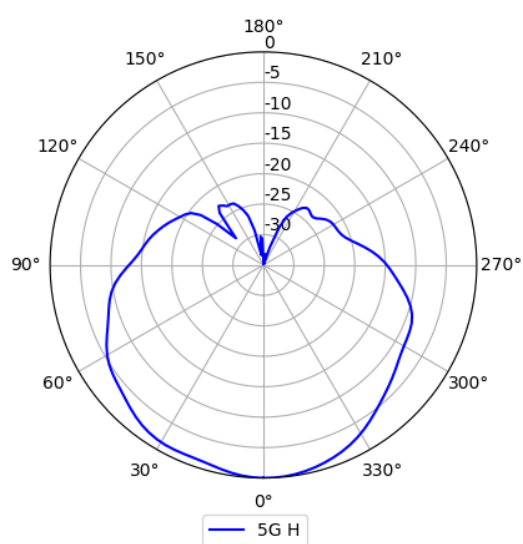
## Antennas Pattern



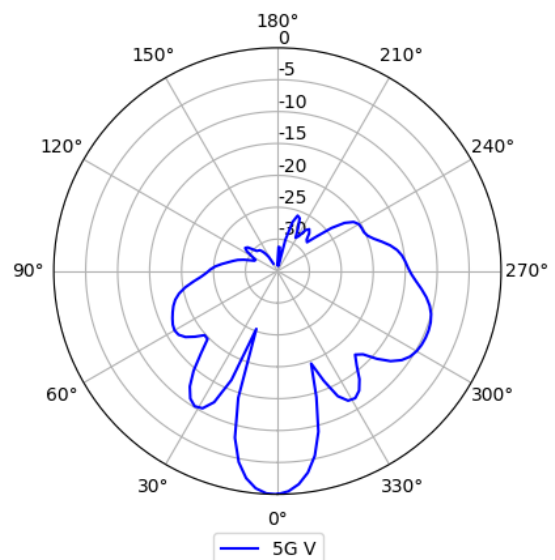
2.4GHz (Horizontal)



2.4GHz (Vertical)



5GHz (Horizontal)



5GHz (Vertical)

## More Information

For more information about Huawei WLAN products, visit <http://e.huawei.com> or contact 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](mailto:support_e@huawei.com)

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