# H3C WA6528X-E New Generation Access Point

**802.11ax Outdoor Series Access Point**

# H3C WA6528X-E Dual-radio Outdoor Access Point

## Overview



WA6528X-E 802.11ax Outdoor AP

H3C WA6528X-E AP is new generation smart outdoor 802.11ax Access Point (AP) with dual-band, 8 streams and large RF radiated power. It provides up to 5.95Gbps throughput which are suitable for high-density outdoor scenarios and make wireless multimedia application reality. The 2.4GHz band is switched to the 5GHz band, providing 9.6Gbps capability.

Based on 802.11ax technology, H3C WA6528X-E is integrated with smart RF optimizing technology. It can address outdoor WLAN coverage problems and enhance accuracy and stability. Professional and beautiful design and wide-temperature-range resistance make it convenient for outdoor installation and debugging. WA6528X-E adopts industrial-level design, meets the requirements of rail transit and other industry standards in terms of high and low temperature, vibration and electromagnetic compatibility, and provides flexible wireless coverage solutions for industrial application scenarios such as rail transit.

# Features

## Two SFP+ optical port

Sometimes, 100-meter-long cable is not enough to connect a remote outdoor AP. WA6528X-E series AP supports two SFP+ optical ports and prevents from faulty of devices like optical modem.

## Robust design to meet the harsh environment

All metal shell design, long-term operation in strong electromagnetic interference environment.

Select industrial grade wide temperature devices, which can operate stably for a long time under the environment of -40ºC ~ 70ºC.

Special installation accessories meet the requirements of flexible installation and facilitate the disassembly and replacement of equipment.

## Support OFDMA

WA6528X-E series wireless access point products support OFDMA technology, AP can further divide the wireless bandwidth, use different subcarriers to transmit data to multiple terminals at the same time, reduce the delay caused by multi-user air interface resource conflict and back off in traditional protocols Improve the user experience of low-latency applications such as voice and video in multi-user scenarios.

## Spatial Reuse

The WA6528X-E series of wireless access point products support spatial reuse technology. The AP can simultaneously control and adjust the transmission power by identifying non-associated messages, which can co-channel interference problems during multi-user use, and also greatly improve the utilization of spectrum resources.

## TWT (Target Wake up Time)

WA6528X-E series wireless access point products support TWT technology, allowing APs to make unified scheduling of terminal wake-up and sleep, which not only reduces the conflict between terminals, but also reduces the number of unnecessary wake-ups of the terminal, achieving the purpose of energy saving.

## DL/UL MU-MIMO (Wi-Fi 6)

H3C WA6528X-E AP supports DL/UL MU-MIMO technology, which is the most important feature of 802.11ax. DL/UL MU-MIMO technology allows AP to send data to multiple STAs simultaneously, which can highly improve transmission efficiency and access experience.

## Local forwarding

When WA6528X-E AP runs in Fit mode and forwards packets through a wide area network (WAN), they are usually deployed as data access devices in branch offices, while wireless Access Controllers (ACs) are deployed in headquarter. All user data is sent from APs to AC, and centrally forwarded by the AC. WA6528X-E AP can convert wireless packets to wired packets avoiding data packets sent through AC but forwarded locally, which significantly saves the WAN link bandwidth.

## Dual IPv4/IPv6 protocol stacks (Native IPv6)

WA6528X-E AP is fully compliant with IPv6 and implements a dual IPv4/IPv6 protocol stacks. Existing IPv4 and IPv6 wired networks can run in parallel and work seamlessly to register WLAN with H3C WX series or Cloudnet, so that it never runs as an information silo.

## End user Admission Domination (EAD)

End user Admission Domination (EAD) integrates network access and endpoint security products, which ensure only complied wireless clients with mandated enterprise security policies to access the network, reducing threat levels from infected wireless clients and raising the bar and improving the overall security of the wireless network. When working with a security policy server, it can remind users, isolate and boot them off the network when their systems are infected or not patched properly.

## Remote probing and analysis

WA6528X-E AP can work as a remote probing and analysis sensor device. It can intercept Wi-Fi packets nearby and save to a local device in real-time for troubleshooting and optimization analysis. Remote probing can conduct a non-convergent image for operating channels, or a polling of all channels to satisfy wireless network monitoring and maintenance requirements.

## RF Optimizing Engine (ROE)

WA6528X-E AP supports RF Optimizing Engine (ROE), which effectively increases the number of concurrent sessions in middle to high-density access, accomplishes streaming media application acceleration and QoS through character and protocol based RF optimization. Features include multi-user fairness, mixed access fairness, interference filtering, speed optimization, spectrum guide, IPv4/IPv6 multicast signal boost, per-packet power control and intelligent bandwidth guarantee.

## Intelligent AP load balancing

WA6528X-E AP comes with intelligent load balancing, which spreads the workload according to the number of concurrent users and traffic. If a new incoming user breaks the preset loading limit, AP will check the location of the wireless client in real-time, determine if nearby APs with smaller workload can provide access,

and deny the user access only when such AP exists. What sets H3C intelligent load balancing apart from existing load balancing schemes is that it kicks in only if the user is located in an area with overlapping AP coverage, and prevents loss of access when the workload limit is reached but no backup AP exists. This maximizes wireless network capacity while preventing any erratic behavior in load balancing.

## H3C Cellular Coexistence Feature (CCF)

H3C uses built-in hardware filtering to minimize the impact of interference from 3G/4G cellular networks.

## Could-based Management

H3C cloud-managed APs are developed based on the Cloudnet platform, on which network administrators can manage the cloud-managed APs directly, for example, view cloud-managed AP status in real time and deploy configurations from the cloud to cloud-managed APs. This greatly improves network efficiency and enhances security and stability.

## Real Time Spectrum Guard (RTSG)

Real Time Spectrum Guard (RTSG) is the innovative H3C professional state-monitoring program for the wireless spectrum. H3C 802.11ax series AP supports the internal RF data acquisition module to achieve deeply integrated monitoring and real time spectrum protection.
The RTSG Console is integrated into the iMC (intelligent Management Center), and performs data acquisition through the CAPWAP tunnel management and Sensor AP. It can achieve 24x7 wireless signal quality monitoring, trend assessment and unauthorized interference alert. Through active probe and 2.4GHz/5GHz RF interference source (WiFi or non-WiFi) in every band, it provides a graphic representation of real-time FFT plot of the spectral density plot, spectrum diagram, the duty cycle map, event spectrum diagram, channel gain and interference gain. It can also automatically identify the source of interference, to determine the location of rogue wireless equipment, to ensure the wireless network is always in great shape. Combined with H3C iMC IAR (Intelligent Analysis Report) module, it can maintain a complete history of RF quality in the coverage area, including its trace and playback, automatically generate customized trend, compliance and audit reports.
To cater for the different supervision demands in user's wireless environment, the RTSG solution can be deployed in either Local mode or Monitor mode. In Local Mode, you can maintain normal user access and data packet forwarding without compromising effective spectrum protection.

## Unified management of wired and wireless networks

Wireless Service Manager (WSM) of iMC provides unified management of wired and wireless networks, adding network management functions into existing wired network management systems. All WSM based wireless products can be managed through the open management protocol.
WSM is SOA complied, modular based, fully expandable and evolving with the growing needs of network management. It offers a web-based management system and a simple and user-friendly management platform for wireless network administrators. When working in iMC and coupled with other modules, it

also implements panel management wireless management, troubleshooting, performance monitoring, software version control, deployment configuration management and user access management.

# Hardware specifications

| Features | WA6528X-E |
|---|---|
| Weight (excluding mounting accessories) | 3.2kg |
| Dimensions (excluding mounting accessories) | 280 mm (W) x 280 mm (D) x 85 mm (H) |
| Uplink Ethernet ports | 1x100M/1000M/2.5G/5G Ethernet port<br>2x100/1000M/10G SFP+ |
| Console port | 1×Console port (RJ45) |
| Antenna | External antenna support 8xN type interface can extend with omni & directional antenna |
| Operating frequencies | 802.11ax/ac/n/a: 5.725GHz-5.850GHz; 5.47-5.725GHz; 5.15-5.35GHz<br>802.11ax/b/g/n: 2.4GHz-2.483GHz |
| Modulation | OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps<br>DSSS: DBPSK@1Mbps, DQPSK@2Mbps, CCK@5.5/11Mbps<br>MIMO-OFDM (11n): MCS 0-31<br>MIMO-OFDM (11ac): MCS 0-9<br>MIMO-OFDM (11ax): MCS 0-11 |
| Modulation mode | 11b: DSS: CCK@5.5/11Mbps, DQPSK@2Mbps, DBPSK@1Mbps<br>11a/g: OFDM: 64QAM@48/54Mbps, 16QAM@24Mbps, QPSK@12/18Mbps, BPSK@6/9Mbps<br>11n: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM<br>11ac: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM<br>11ax: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM |
| Maximum radio power | 24dBm<br>(Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations) |
| Adjustable power | 1dBm |
| BLE | BLE 5.1 |
| Power Source | 5GE 802.3bt/at/af<br>POE injector |
| Power consumption | AC powered: ≤43W (110-240V)<br>POE powered: ≤43W (802.3bt) |
| Operating temperature/storage | Operating Temperature: -30ºC ~ 55ºC<br>Storage Temperature: -40ºC ~ 70ºC |

| temperature | |
|---|---|
| Operating humidity/storage humidity | 0% to 100% (non-condensing) |
| Safety compliance | GB4943、EN/IEC/UL 60950-1、EN/IEC/UL 62386-1 |
| EMC | EN301 489-1、EN301 489-17，EN50121-4:2016/IEC62236-4:2018，EN 50121-3-2-2006、GB/T 24338.4-2009、GB/T 24338.5-2009、GB/T9254-2008 |
| Radio frequency certification | FCC Part 15、EN 300 328、EN 301 893 |
| Health | FCC Bulletin OET-65C, EN 50385, IC Safety Code 6 |
| Protection degree | IP68 |
| MTBF | >850000 hours |

# Software specifications

| Features | | WA6528X-E |
|---|---|---|
| Positioning | | Outdoor 802.11ax dual-radio AP |
| 11ax Supported | Working frequencies and MIMO | 5GHz 4×4:4 MU-MIMO 4.8Gbps<br>2.4GHz/5GHz 4×4:4 MU-MIMO 1.15Gbps/4.8Gbps |
| | 20MHz/40MHz/80MHz/160Mhz bandwidth | ✓ |
| | Maximum transmission speed | 4.8Gbps +1.15Gbps/4.8Gbps |
| | A-MPDU | ✓ |
| | A-MSDU | ✓ |
| | Maximum likelihood demodulation (MLD) | ✓ |
| | Maximum-ratio combining (MRC) | ✓ |
| | Spatial-Time block coding (STBC) | ✓ |
| | Low-density parity check (LDPC) | ✓ |
| | Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD) | Supported |

| | | |
|---|---|---|
| | DFS (dynamic frequency selection) | Supported |
| | Transmit Beamforming | ✓ |
| WLAN basics | Maximum users per radio | 512 |
| | Maximum number of SSIDs for each radio | 16 |
| | open system/shared key authentication | ✓ |
| | Broadcast Probe acknowledge control | ✓ |
| | Mixed connection for WPA, WPA2 and Pre-RSNA users | ✓ |
| | RTS/CTS | ✓ |
| | CTS-to-self | ✓ |
| | Concealed SSID | ✓ |
| | 802.11k and 802.11v smart roaming | ✓ |
| | 802.11r fast transition roaming | ✓ |
| | STA related | STA offline anomaly check, STA aging, statistics and status query |
| | Mesh | ✓ |
| | Advanced Traffic Management | Supported |
| | Hotspot 2.0 | Supported |
| | Restrict low rate/sticky terminals access | Supported |
| | Channel reuse | Supported |
| | Receiver sensitivity adjustment | Supported |
| | Automatic channel/power/bandwidth adjustment | Supported |
| WLAN extended | Limit user number | ✓ |
| | Link integrity check | ✓ |
| | Repeater mode | ✓ |
| | | WEP-64/128/152bit, dynamic WEP, TKIP, CCMP, |

| | | |
|---|---|---|
| Security | Encryption | AES,EAP,WPA3 |
| | | Multiple encryption key triggered dynamic unicast/multicast key update |
| | 802.11i | ✓ |
| | Authentication | 802.1X, MAC address authentication, PSK authentication, Portal |
| | | (Need to work with H3C Access Controller depending on application) |
| | User Isolation | Supported:<br>1. Layer 2 user isolation<br>2. SSID-based user isolation |
| | Forwarding security | Packet filtering, MAC address filtering, Broadcast storm suppression |
| | SSID and VLAN binding | ✓ |
| | WIPS | ✓ |
| | Rogue device detection and countermeasure | Supported |
| | Dynamic ARP Inspection (DAI) | Supported |
| | IP Source Guard (IPSG) | Supported |
| | 802.11w | ✓ |
| AAA | Radius Client | ✓ |
| | Multiple-domain authentication server | ✓ |
| | Backup authentication server | ✓ |
| Layer 2 and layer 3 features | IP address configuration | Static IP (available only in fat AP mode)<br>DHCP assigned IP (option 60) |
| | Native IPv6 | ✓ |
| | IPv6 Portal | ✓ |
| | IPv6 SAVI | ✓ |
| | ACL | IPv4/IPv6 |
| | Local forwarding | Local forwarding based on SSID+VLAN |
| | Link Layer Discovery Protocol (LLDP) | Supported |
| | SSID-based VLAN assignment | Supported |

| | EoGRE Tunnel | Supported |
|---|---|---|
| | Multicast enhancement | IGMP Snooping/MLD Snooping |
| QoS | 802.11e | Wi-Fi Multimedia (WMM) |
| | Priority | Ethernet port based 802.1p identification and marking priority |
| | | Priority mapping for wired and wireless connection |
| | Strategic QoS mapping | Distinctive QoS strategies based on individual SSID/VLAN |
| | Layer 2 to Layer 4 packet filtering and traffic classification | ✓ |
| | CAR | ✓ |
| | User bandwidth management | Bandwidth allocation per STA, or all STAs sharing bandwidth with a common SSID |
| | Load balancing | User/traffic/radio (dual frequencies) based |
| | Spectrum Guide | ✓ |
| | Multicast enhancement | Multicast to Unicast (IPv4, IPv6) |
| | CAC (Call Admission Control) | Session-based CAC Channel usage-based CAC |
| | Airtime optimization | Supported |
| | Airtime fairness | Supported |
| | Layer 4-7 application identification | Coupled with H3C WLAN ACs, the APs can identify variety of applications and policy control can be implemented including priority adjustment, scheduling, blocking, and rate limiting on users |
| | SVP Phone | ✓ |
| | Per-packet power control (PPC) | ✓ |
| Green features | Green AP mode | ✓ |
| | Dynamic MIMO power saving | ✓ |
| | Enhanced automatic power save delivery (E-APSD) | ✓ |
| | WMM Power Save | ✓ |
| Management and maintenance | Managed SSID | ✓ |
| | Log function | SYSLOG |
| | Remote probe analysis | ✓ |
| | Web management | Trap, HTTP(S), SSH, Telnet, FTP/TFTP, SNMP V1/V2/V3 only applicable in Cloud/Fat mode |

| Wi-Fi Certified | IEEE 802.11a/b/g/n/ac/ax, WMM, WPA, WPA2 and WPA3 – Enterprise, Personal (SAE), Enhanced Open (OWE), Wi-Fi Alliance |
|---|---|

# Ordering Information:

| Product ID | Product Description |
|---|---|
| EWP-WA6528X-E-FIT | H3C WA6528X-E External Antennas 8 Streams Dual Radio 802.11ax/ac/n Industrial Access Point,FIT |
| ADP060-55V-PoE-GL | H3C 55V 60W PoE Adapter Power Supply |

**http://www.h3c.com**

The Leader in Digital Solutions