H3C WA6630X New Generation Access Point

802.11ax Outdoor Series Access Point

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New H3C Technologies Co., Limited

H3C WA6630X Triple-radio Outdoor Access Point

Overview

WA6630X 802.11ax Triple-radio Outdoor AP

H3C WA6630X AP is new generation smart outdoor 802.11ax Access Point (AP) with triple-band, 10 streams and large RF radiated power. It provides up to 5.4Gbps throughput and multi-rate 10GE uplink which are suitable for high-density outdoor scenarios and make wireless multimedia application reality.

Based on 802.11ax technology, H3C WA6630X 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. It’s widely deployed for professional smart coverage in outdoor scenarios such as wireless city, big stadium and scenic spot. With enhanced IoT interface, H3C WA6630X can be combined with H3C IoT solution and deployed for smart campus and other IoT applications.

Features

Advanced industrial design concept

H3C WA6630X adopts perfect spherical design, which effectively improves the image of the campus or city, and meets the increasing requirements of users for outdoor wireless access such as wireless cities and scenic spots.

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

H3C WA6630X 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.

Integrated fusion customized cable

With the popularization of outdoor wireless coverage, the number of AP interface is more demanded. While increasing the number of interface, the aesthetics and convenience of the overall installation are indeed challenged. WA6630X adopts 32-pin professional integrated cable, which integrates Ethernet port and Console port. There is only one interface outside, which greatly reduces the complexity of equipment installation. At the same time, the reduction of the number of cables also raises the aesthetics after installation.

High-efficiency uplink ports with support of multiple rates

The uplink ports on the WA6630X supports auto-negotiation of various transmit rates, including 100Mbps, 1000Mbps, 2.5Gbps, 5Gbps and 10Gbps.

Orthogonal frequency division multiple access (OFDMA)

802.11ax uses OFDMA to allow multiple users to transmit data simultaneously. OFDMA splits a channel into sub-channels, known as resource units (RUs), with specific subcarriers, and assigns RUs to different users for simultaneous transmission. OFDMA enables simultaneous multi-user transmission and reduces latency caused by channel contention.

Spatial multiplexing

802.11ax assigns a different color per BSS to help WA6630X identify co-channel interference and stop transmission in time. If a radio detects 802.11ax signals from a BSS that has the same color as the radio's BSS, it determines that co-channel interference exists and stops data transmission. This optimizes frequency reuse and improves network capacity.

Target Wake Time (TWT)

TWT improves power efficiency and reduces contention by increasing client sleep time and allowing

negotiation of the times that clients can access the medium.

Built-in Bluetooth

H3C WA6630X adopts built-in Bluetooth technology, which can support 10m long-distance Console function, avoid additional workload in the process of equipment installation and maintenance, reduce the difficulty of troubleshooting, and support iBeacon shaking.

Support for IoT services

For the various application in IoT era, WA6630X has been designed IoT port for H3C T300 IoT modules to provide short-distance and low-power consumption IoT services, such as BLE, RFID, ZigBee, and UWB. It can connect up to ten T300 modules by IoT port. Both this IoT port and network port support link aggregation (LACP) which increase availability and capacity.

Built-in GPS

H3C WA6630X provides map-based operation and maintenance management. Customer can get real-time information about current scenarios, such as the coverage of wireless city, campus and other scenarios. The network running situation is clear at a glance. The wireless coverage, traffic flow and map are linked in real time, so that wireless network management will be more intuitive and simple.

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.

H3C Cellular Coexistence Feature (CCF)

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

Anchor AC mode

Anchor AC mode is designed for networks of all sizes, including SMB. In Anchor AC mode, AP will serve as a virtual controller for the entire network.

Could-based Management

H3C cloud-managed APs were 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.

Smart cloud access and optimal WLAN TCO

WA6630X AP complies with 802.11ax standard and features maximum 4.8Gbps wireless transfer rate for 5GHz and total 5.4Gbps speed of combining 2.4GHz and 5GHz. With the advanced antenna array technology, it can increase the scope of coverage, improve access density and operation stability and provide a better mobile cloud access and wireless network total cost of ownership (TCO).

Local forwarding

When WA6630X 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. WA6630X 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)

WA6630X 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 Oasis, 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

WA6630X 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)

WA6630X 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, band navigation which can support 5G radio priority to assign 5G radio-supported clients to 5G radio, prior to 2.4G. RF Management automatically assigns channel and power settings, provides airtime fairness, and ensures AP stay clear of all source of RF interference to deliver reliable, high performance WLANs

Intelligent AP load balancing

WA6630X 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.

Green design

WA6630X employs a green design that supports dynamic MIMO power saving (DMPS), enhanced automatic power save delivery (E-APSD), and smart identification of terminal network requirements. It can dynamically adjust the MIMO working mode and efficiently put terminals to sleep.

WA6630X supports green AP mode that enables single radio standby and allows for more precise power control.

WA6630X supports the innovative per-packet power control (PPC) technology, which reduces standby power consumption and improves mobile device standby time.

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	WA6630X
Weight(excluding mounting accessories)	4.0kg
Dimensions(H × W × D, excluding mounting accessories)	260mm x 260mm x 394mm
Fixed port	1 × 100M/1000M/2.5G/5G/10G Ethernet multi-rate ports 2 × 100M/1000M Ethernet port, GE*2 support IoT extension, PSE:802.3af 1 × Console port (RJ45)
Antenna	Built-in Omnidirectional 5dBi antenna gain @2.4GHz 4dBi antenna gain @5GHz 4dBi antenna gain @5GHz
Operating frequencies	802.11ax/ac wave2/ac/n/a : 5.725GHz-5.850GHz; 5.47～5.725GHz; 5.15~5.35GHz 802.11ax/b/g/n : 2.4GHz-2.483GHz
Modulation	OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps, CCK@5.5/11Mbps MIMO-OFDM (11n): MCS 0-31 MIMO-OFDM (11ac): MCS 0-9 MIMO-OFDM (11ax): MCS 0-11
Modulation mode	11b: DSS: CCK@5.5/11Mbps, DQPSK@2Mbps, DBPSK@1Mbps 11a/g: OFDM: 64QAM@48/54Mbps, 16QAM@24Mbps, QPSK@12/18Mbps, BPSK@6/9Mbps 11n: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM 11ac: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM 11ax: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Maximum radio power	2.4GHz: 24dBm 5GHz: 24dBm (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
Power Source	PoE Injector+55V DC Adapter(Optional)

	Adapted to 47~57V DC
Power consumption	≤55W
Operating temperature/storage temperature	Operating Tem: -30°C ~ 55°C(Recommended); -40 °C ~ 65°C ; Storage Tem: -40º C ~ 85º C
Operating humidity/storage humidity	0% to 100% (non-condensing)
Safety compliance	IEC 60950-1, EN 60950-1, IEC 60950-22, EN 60950-22
EMC	EN 301489-1, EN 301489-17, EN 55032, EN 55024, EN 60601-1-2
Radio frequency certification	EN 300 328, EN 301 893, FCC Part 15
Health	FCC Bulletin OET-65C, EN 50385, IC Safety Code 6
Protection degree	IP68
MTBF	>250000 hours

Software specifications

Features		WA6630X
Positioning		Outdoor 802.11ax triple-radio AP
11ax Supported	Working frequencies and MIMO	5GHz (1), 4×4:4 MU-MIMO 2.4Gbps 5GHz (2), 4×4:4 MU-MIMO 2.4Gbps 2.4GHz, 2×2:2 MU-MIMO 0.575Gbps
	20MHz/40MHz/80MHz bandwidth	✓
	Maximum transmission speed	5.375Gbps (2.4Gbps+2.4Gbps+575Mbps)
	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

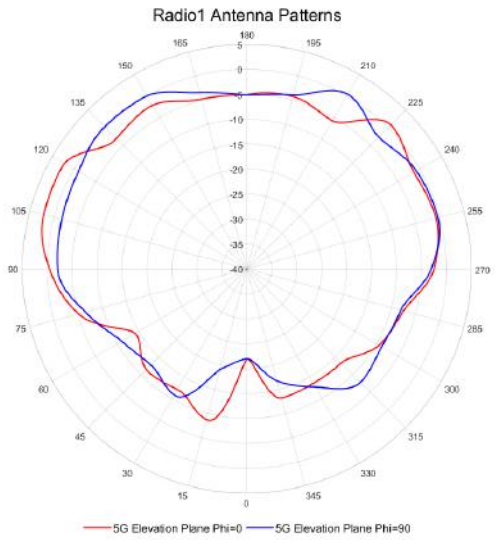
	DFS(dynamic frequency selection)	Supported
	Transmit Beamforming	Supported
WLAN basics	Maximum users per radio	512
	Maximum number of SSIDs for each radio	16
	open system/shared key authentication	✓
	Broadcast Probe acknowledge control	✓
	Mixed connection for WPA, WPA2,WPA3 and Pre-RSNA users	✓
	RTS/CTS	✓
	CTS-to-self	✓
	Concealed SSID	✓
	802.11k and 802.11v smart roaming	✓
	802.11r fast transition roaming	✓
	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
	STA related	STA offline anomaly check, STA aging, statistics and status query
WLAN extended	Limit user number	✓
	Link integrity check	✓
	Station related	Abnormal offline check, station aging, statistics and status query
	Repeater mode	Supported
		WEP-64/128/152bit, dynamic WEP, TKIP,

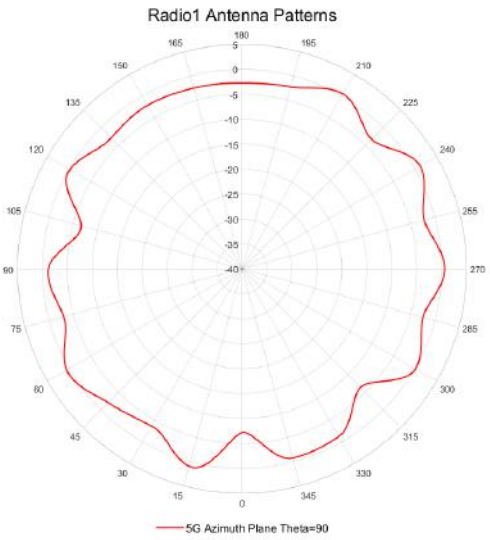
Security	Encryption	CCMP ,WPA3,AES,EAP
		Multiple encryption key triggered dynamic unicast/multicast key update
	802.11i	✓
	Authentication	802.1X, MAC address authentication, PSK authentication, Portal,PPSK (Need to work with H3C Access Controller depending on application)
	User Isolation	Supported: 1. Layer 2 user isolation 2. SSID-based user isolation
	Forwarding security	Packet filtering, MAC address filtering, Broadcast storm suppression
	SSID and VLAN binding	✓
	WIPS/WIDS	✓
	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) 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
	SVP Phone	✓
	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
	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	✓
	Network management	Trap, HTTP(S), SSH, Telnet, FTP/TFTP, SNMP V1/V2/V3 only applicable in Cloud/Fat mode
	AP Working Mode	Fit/Anchor/Cloud/Fat
	Log function	SYSLOG
	Remote probe analysis	✓
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	

Antenna Patterns

Radio1:





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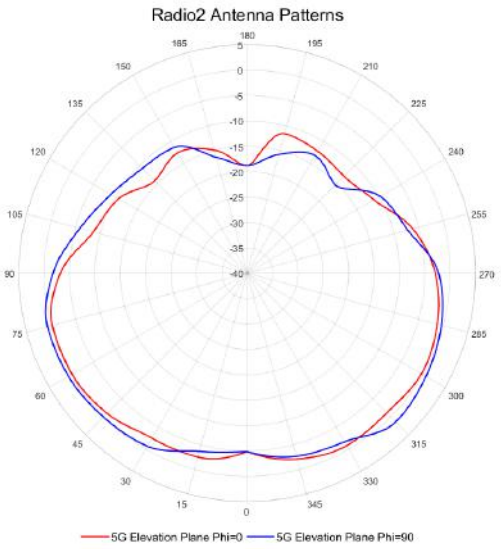

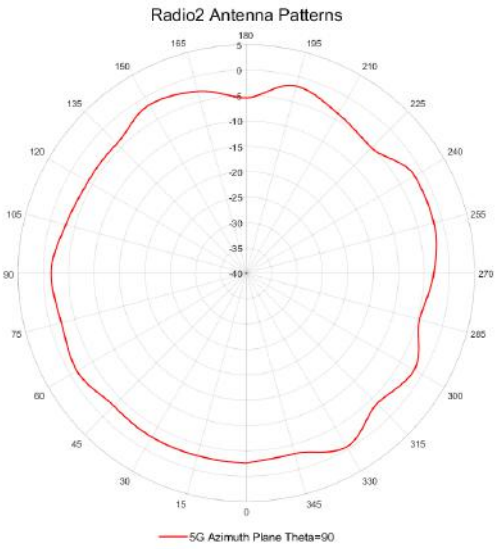

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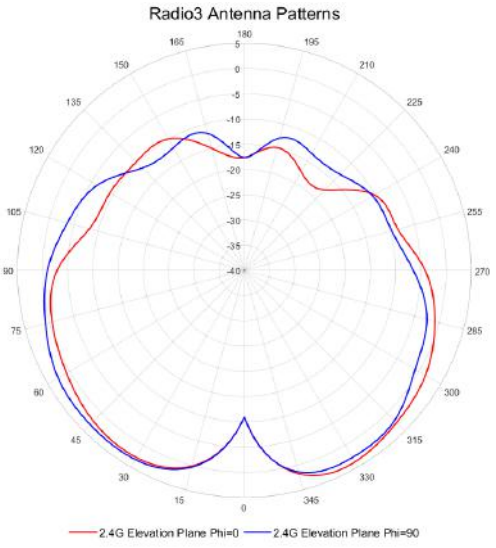

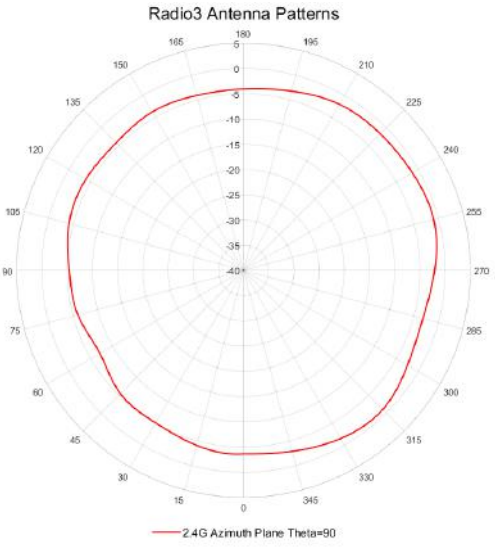

Ordering Information:

Product ID	Product Description
EWP-WA6630X-FIT	H3C WA6630X Internal Antennas 10 Streams Triple Radio 802.11ax/ac wave2/ac/n Access Point, FIT
ADP060-55V-PoE-GL	H3C 55V 60W PoE Adapter Power Supply

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