H3C WA6628E-T New Generation Access Point

802.11ax Railway Access Point

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New H3C Technologies Co., Limited

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Overview

WA6628E-T 802.11ax Railway AP

H3C WA6628E-T AP is new generation smart railway 802.11ax Access Point (AP) with dual-band, 12 streams and large RF radiated power. It provides up to 5.95Gbps throughput which are suitable for high-density railway scenarios and make wireless multimedia application reality.

Based on 802.11ax technology, H3C WA6628E-T is integrated with smart RF optimizing technology. It can address railway WLAN coverage problems and enhance accuracy and stability. Professional and beautiful design and wide-temperature-range resistance make it convenient for railway installation and debugging. WA6628E-T 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

SFP+ optical port

Sometimes, 100-meter-long cable is not enough to connect a remote railway AP. WA6628E-T series AP supports one 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.

Ethernet interface adopts M12 connector to resist vibration and shock.

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

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

Support OFDMA

WA6628E-T 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 WA6628E-T 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)

WA6628E-T 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 WA6628E-T 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 WA6628E-T 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. WA6628E-T 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)

WA6628E-T 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

WA6628E-T 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)

WA6628E-T 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

WA6628E-T 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.

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	WA6628E-T
Weight(excluding mounting accessories)	2.4kg
Dimensions(H × W × D, excluding mounting accessories)	260mm × 210mm × 40mm

Fixed port	2×100M/1000M A-coding M12 interface 1xSFP+ 1×Console port (RJ45)
Antenna	External antenna support 8xN type interface
Operating frequencies	802.11ax/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: 30dBm 5GHz: 30dBm (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	Local Power Supply AC：100-240VAC DC：70-143VDC
Power consumption	≤40W
Operating temperature/storage temperature	Operating Tem: -30℃～55℃(Recommended); -40 ℃～70℃ ; Storage Tem: -40º C～85º C
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	IP31
MTBF	>860000 hours

Software specifications

Features		WA6628E-T
Positioning		Railway 802.11ax dual-radio AP
11ax Supported	Working frequencies and MIMO	5GHz 8×8:8 MU-MIMO 4.8Gbps 2.4GHz, 4×4:4 MU-MIMO 1.15Gbps
	20MHz/40MHz/80MHz/160Mhz bandwidth	✓
	Maximum transmission speed	4.8Gbps +1.15Gbps
	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
	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	✓
Security	Encryption	WEP-64/128/152bit, dynamic WEP, TKIP, CCMP, EAP,AES,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: 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	✓
	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
	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	Green AP mode	✓
	Dynamic MIMO power saving	✓

features	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-WA6628E-T	H3C WA6628E-T External Antenna 12 Streams Dual Radio 802.11ax Railway Access Point, WW

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