intelbras

Intelbras Wi-Fi Router AP 7630X

Intelbras AP 7630X Triple-radio Outdoor Access Point

Overview

Intelbras AP 7630X AP is new generation smart outdoor 802.11ax Access Point (AP) with triple-radio, 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, Intelbras AP 7630X 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.

AP 7630X 802.11ax Triple-radio Outdoor AP

Features

Advanced industrial design concept

Intelbras AP 7630X 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)

Intelbras AP 7630X 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 interfaces, the aesthetics and convenience of the overall installation are indeed challenged. AP 7630X 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 AP 7630X supports auto-negotiation of various transmitting 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 AP 7630X 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.

Anchor WC mode

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

Cloud-based Management

Intelbras cloud-managed APs were developed based on the Cloud 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

AP 7630X 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.

Local forwarding

When AP 7630X 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. AP 7630X AP can convert wireless packets to wired packets avoiding data packets sent through WC but forwarded locally, which significantly saves the WAN link bandwidth.

Dual IPv4/IPv6 protocol stacks (Native IPv6)

AP 7630X 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 Intelbras WX series or Oasis, so that it never runs as an information silo.

Remote probing and analysis

AP 7630X 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)

AP 7630X 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, band navigation, IPv4/IPv6 multicast signal boost, per-packet power control and intelligent bandwidth guarantee, band navigation which can support 5GHz radio priority to assign 5GHz radio-supported clients to 5GHz radio, prior to 2.4GHz. 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

AP 7630X 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 Intelbras 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

AP 7630X 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.

AP 7630X supports green AP mode that enables single radio standby and allows for more precise power control.

AP 7630X supports the innovative per-packet power control (PPC) technology, which reduces standby power consumption and improves mobile device standby time.

Specifications

Hardware specifications

Features	AP 7630X
Installation	Outdoor pole
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 PoE+ (802.3at) 2× 100M/1000M Ethernet port PoE++ (802.3bt) 1× Console port (RJ45)

Antenna	10 built-in omnidirectional antennas, which:
	    .2x2 2.4GHz with 5dBi gain
	    .4x4 5GHz with 4dBi gain
	    .4x4 5GHz with 4dBi gain

Operating frequencies	802.11ax/ac/n/a: 5.15 GHz - 5.35 GHz; 5.47 GHz - 5.725 GHz; 5.725 GHz - 5.850 GHz; 802.11ax/b/g/n: 2.4GHz-2.483GHz
Compatible bandwidth	2.4GHz: 20/40MHz 5GHz: 20/40/80MHz
Nominal throughput	2.4GHz: 574Mbps 5GHz: 4804Mbps Combined: 5375Mbps
Modulation techniques	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 (MCS 0 -31): BPSK, QPSK, 16QAM, 64QAM 11ac/ac wave2 - MIMO-OFDM (0 – 9): BPSK, QPSK, 16QAM, 64QAM, 256QAM 11ax - MIMO-OFDM (0 – 11): BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Maximum transmit power (combined)	24dBm
Adjustable power	1dBm
Power Source	PoE Injector+55V DC Adapter (Optional) Adapted to 47~57V DC
Power consumption	≤48.6W（include PoE_OUT） ≤33.6W（exclude PoE_OUT）
Operating temperature/storage temperature	Operating Tem: -30ºC ~ 55ºC (Recommended); -40 ºC ~ 65ºC ; Storage Tem: -40ºC ~ 85ºC
Operating humidity/storage humidity	0% to 100% (non-condensing)

Features	AP 7630X
Protection degree	IP68
MTBF	>250000 hours

Software specifications

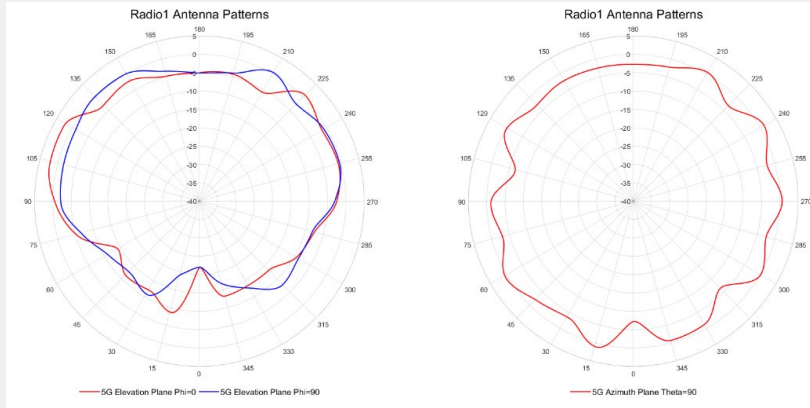| Features		AP 7630X
Operating mode	Fit mode	Controlled by AC
	Cloud mode (Fat mode)	Controlled via Cloud or operates independently
	Mode switching	Mode switching via command lines, ACs, Cloud, or reset button
	Router (IPv4/IPv6)	via command line or web interface
Management and maintenance	Cloud Centralized management	Support by INC Cloud
	Local centralized management	Support by INC
	WC centralized management	Fit mode: support Cloud mode: support version upgrade, switch mode
	Local web	Cloud mode support
	Telnet	Cloud mode support
	SSH	Cloud mode support
	SNMP	Cloud mode support
	Debug serial port	support
	Intelligent operation and maintenance	Fit/ Cloud mode support
11ax Supported	A-MPDU	Supported
	A-MSDU	Supported
	Maximum likelihood demodulation (MLD)	Supported
	Maximum-ratio combining (MRC)	Supported
	Spatial-Time block coding (STBC)	Supported

Features		AP 7630X
	Low-density parity check (LDPC)	Supported
	Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)	Supported
	DFS (dynamic frequency selection)	Supported
	Transmit Beamforming	Supported
WLAN basics	Maximum client's connections	1536 (512 per radio)
	Maximum number of SSIDs for each radio	16
	Virtual APs	48 (As a best practice, configure a maximum of five virtual APs for each radio)
	open system/shared key authentication	Supported
	Broadcast Probe acknowledge control	Supported
	Mixed connection for WPA, WPA2, WPA3 and Pre-RSNA users	Supported
	RTS/CTS	Supported
	CTS-to-self	Supported
	Concealed SSID	Supported
	802.11k and 802.11v smart roaming	Supported
	802.11r fast transition roaming	Supported
	Advanced Traffic Management	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	Supported
	Link integrity check	Supported

8

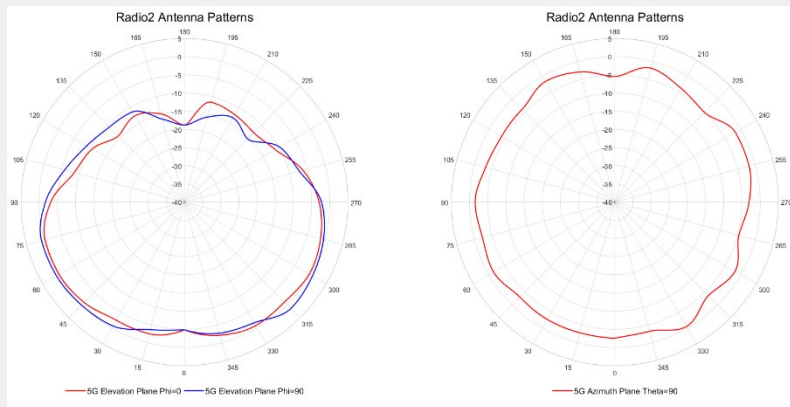| Features		AP 7630X
Security	Station related	Abnormal offline check, station aging, statistics and status query
	Repeater mode	Supported
	Encryption	WEP-64/128/152bit, dynamic WEP, TKIP, CCMP, WPA3, AES, EAP
		Multiple encryption key triggered dynamic unicast/multicast key update
	802.11i	Supported
	Authentication	802.1X, MAC address authentication, PSK authentication, PPSK (Need to work with Intelbras 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	Supported
	WIPS/WIDS	Supported
	Rogue device detection and countermeasure	Supported
	Dynamic ARP Inspection (DAI)	Supported
	IP Source Guard (IPSG)	Supported
	802.11w	Supported
Layer 2 and layer 3 features	IP address configuration	Static IP (available only in fat AP mode) DHCP assigned IP (option 60)
	Native IPv6	Supported
	IPv6 Portal	Supported
	IPv6 SAVI	Supported
	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

Features		AP 7630X
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	Supported
	CAR	Supported
	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	Supported
	Multicast enhancement	Multicast to Unicast (IPv4, IPv6)
	CAC (Call Admission Control)	Session-based CAC Channel usage-based CAC
	SVP Phone	Supported
	Airtime optimization	Supported
	Airtime fairness	Supported
	Layer 4-7 application identification	Coupled with Intelbras 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)	Supported
Green features	Green AP mode	Supported
	Dynamic MIMO power saving	Supported
	Enhanced automatic power save delivery (E-APSD)	Supported
	WMM Power Save	Supported

Antenna Patterns

Radio1:

Radio2:

Radio3: