HIRSCHMANN IT
A **BELDEN** BRAND

Enterprise Outdoor Wi-Fi 6 (802.11ax) Access Point

Outdoor Enterprise
Wi-Fi 6 (802.11ax) Access Point

Hirschmann IT Dragonfly outdoor series is enterprise level Wi-Fi 6(802.11ax) certified access point including DAP645/646/647

WiFi 6 CERTIFIED

► Faster data rate, lower latency with Wi-Fi 6 technology the over all throughput improved by 37%, latency reduced by 75%

► IEEE802.11ax technology enhance throughput-per-area in high-density scenarios

► A key part for Belden IT/OT convergence solution product portfolio

Key Features

• 802.11ax WiFi6 supports maximum of 2.402Gbps in 5GHz and 573Mbps in 2.4Ghz

• Support various Wi-Fi6 features, OFDMA, BSS coloring, 1024-QAM and etc

• Featuring enhanced WLAN technology with RF Radio Dynamic Adjustment

• Cluster Management feature ensure quick deployment

• Robust design with IP67 grade shock and vibration protection

Hirschmann IT Dragonfly series outdoor access point

DAP outdoor series supports a maximum concurrent data rate of 2.975Gbps (2.402Gbps in 5GHz and 573Mbps in 2.4GHz), six spatial streams (2SS in 2.4GHz and 4SS in 5GHz), 160(80+80)MHz channels (HE80), and Wi-Fi 6 (802.11ax) features, such as UL/DL MU-MIMO, UL/DL OFDMA, BSS color, etc. All these features ensure the speed, capacity, and efficient airtime allocation for clients on both 2.4Ghz and 5Ghz Wi-Fi bands.

Featuring enhanced WLAN technology with RF Radio Dynamic Adjustment, a distributed control Wi-Fi architecture with unified access secure network admission control, built in application intelligence and analytics, making it ideal for enterprises wireless solution.

DAP outdoor series has integrated with BLE5/Zigbee (802.15.4), making it ideal for broad scope of IoT endpoints and applications.

Wi-Fi 6 (802.11ax) Features

Wi-Fi 6 (802.11ax) allows enterprises to deliver high performance wireless LAN services with increased throughput, enabling more clients in dense environments. Furthermore, it provides high power efficiency for Internet of Things (IoT) devices, while it remains fully backward compatible with existing 802.11 a/b/g/n/ac deployments. Some of the key features enabled on DAP OUTDOOR SERIES are:

Orthogonal frequency division multiple access (OFDMA) enables more clients to simultaneously operate in the same channel, therefore improved efficiency, latency, and throughput. OFDMA can simultaneously address multiple clients in both directions downlink (DL) and uplink (UL). OFDMA is extremely effective for lower latency applications with mass clients such as voice and video transmission.

Multi-user multiple input, multiple output (MU-MIMO) allows more data to be transferred at once and enables a single access point to handle a larger number of concurrent clients.

1024 quadrature amplitude modulation mode (1024-QAM)
boosting peak data-rates by as much as 25 %.

BSS Coloring improves spatial reuse in dense environments by providing a mechanism for color coding different overlapping BSS's, allowing more simultaneous transmissions.

Extended Range (ER) provides increased coverage in scenarios where receiving side encounters high path loss and channel delay spread, especially in outdoor environments.

Target wake time (TWT) improves power efficiency for Wi-Fi 6 devices. This capability lets client devices to sleep much longer, and wake up to less contention, extending the battery life of smart phones, IoT sensors, and other devices.

Plug-and-play deployment

The DAP outdoor series works in a fully redundant cluster architecture to provide simplified plug-and-play deployments. One single access point (AP) cluster is an autonomous system that consists of a group of APs and a virtual controller, which is performed by a selected access point for cluster management. One AP cluster supports up to 255APs
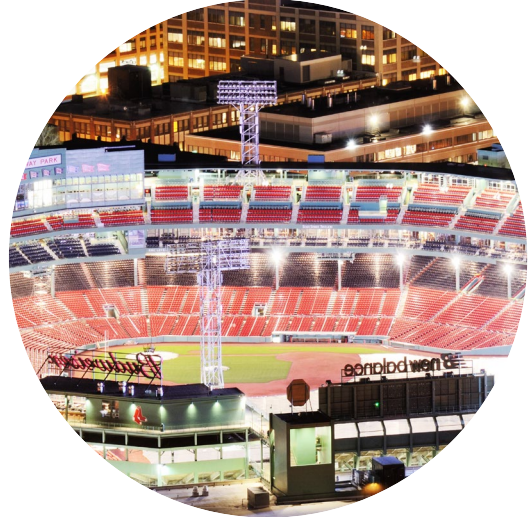
The access point cluster architecture ensures simplified and quick deployment. Once the first AP is configured using the configuration wizard, the remaining APs in the network will get online automatically with updated configuration. This ensures that the whole network is up and operational within a few minutes.

Network Management Platform deployment

The DAP outdoor series can be managed by DAC (Dragonfly Access Point Virtual Controller). APs is managed as one or more AP Groups (a logical grouping of one or more access points). The DAC is a visualized, user friendly and hardware free management platform. It supports WLAN management together with integrated authentication server which helps define authentication strategy and policy enforcement for Employees and Guest devices. The network administrator can obtain a comprehensive overview of all running applications on the network and apply adequate control to optimize the network performance for mission critical applications. DAC Management platform provides advanced options for RF Management, as well as WIDS/WIPS for intrusion detection and prevention.

Markets

Specifically designed for lite industrial environments. Hirschmann IT Dragonfly outdoor series is ideal for industrial park, warehouse as well as outdoor stadium and venues.

Technical Information

Product description

Type	DAP645	DAP646	DAP647
Description	Outdoor, dual radio, 5 GHz 802.11ax 4x4:4 and 2.4 GHz 802.11ax 2x2:2, built-in omni-antennas; integrated BLE/Zigbee, scanning and security function	Outdoor, dual radio, 5 GHz 802.11ax 4x4:4 and 2.4 GHz 802.11ax 2x2:2, integrated directional antenna; integrated BLE/Zigbee, scanning and security function	Outdoor, dual radio, 5 GHz 802.11ax 4x4:4 and 2.4 GHz 802.11ax 2x2:2, external antenna; integrated BLE/Zigbee, scanning and security function
Port type and quantity	• 1× 10/100/1000/2500Mbps RJ45 port, Eth0, PoE PD (IEEE 802.3bt) • 1×10/100/1000Mbps RJ45 port, Eth1, PoE PSE (IEEE 802.3at) • 1×SFP slot 1Gbps • 1×Reset button		
Radio protocol	IEEE 802.11b; 802.11a/g/n/ac; 802.11ax; up to 2.975Gbps (2.402Gbps in 5GHz and 573Mbps in 2.4GHz) data rate		
Order No.	942 999-308	942 999-312	942 999-316

Radio technology

	DAP645	DAP646	DAP647
Antenna connector	Built-in 2×2:2 @ 2.4GHz, 4x4:4 @ 5GHz, four integrated 5GHz omni antennas for 4x4 MIMO with peak antenna gain 6.48dBi, two integrated 2.4GHz omni antennas for 2x2 MIMO with peak antenna gain 4.85dBi	Built-in 2×2:2 @ 2.4GHz, 4x4:4 @ 5GHz, four integrated 5GHz directional antennas for 4x4 MIMO with peak antenna gain 7.4dBi, two integrated 2.4GHz directional antennas for 2x2 MIMO with peak antenna gain 7.5dBi (H80°V80°)	External antennas, 2×2:2 @ 2.4GHz, 4x4:4 @ 5GHz, 6 × N femal connectors, built in 6KA antenna feeder lightning /port; ANT0-ANT3 are 5GHz band, ANT4-ANT5 support 2.4GHz band; Integrated BLE antenna
Frequency band	• 2.400 to 2.4835 GHz • 5.150 to 5.250 GHz • 5.250 to 5.350 GHz • 5.470 to 5.725 GHz • 5.725 to 5.850 GHz *available channels: Dependent on configured regulatory domain		
Modulation	• 802.11b: BPSK, QPSK, CCK • 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM • 802.11ax: BPSK,QPSK,CCK,16-QAM,64-QAM,256-QAM,1024-QAM	• 802.11b: BPSK, QPSK, CCK • 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM • 802.11n high-throughput (HT) support: HT 20/40 • 802.11ac very high throughput (VHT) support: VHT 20/40/80 • 802.11ax(HE):BPSK, QPSK, CCK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM	• 802.11b: BPSK, QPSK, CCK • 802.11a/g/n/ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM • 802.11ax: BPSK,QPSK,CCK,16-QAM,64-QAM,256-QAM,1024-QAM
Additional radio feature	BLE5/Zigbee (802.15.4), scanning and security function		

Mechanical construction

Dimensions (W×D×H)	243mm x 243mm x 85mm	
Weight	2.5kg	
Mounting	Pole mounting	Pole/Wall mounting

Technical Information

Power requirement	
Operating voltage	Support Power over Ethernet (IEEE 802.3bt, 802.3at)
Power consumption	• 24W (802.3at PoE in, Eth1 PSE disabled) • 46W (802.3bt Type3 PoE in, Eth1 supports 802.3af PSE) • 64W (802.3bt Type4 PoE in, full functions, Eth1 supports 802.3at PSE)

Ambient conditions	
Operating temperature	-40°C...65°C
Storage/transport temperature	-40°C...85°C
Relative humidity (non-condensing)	0%...100%
Protection class	IP67
Wind resistance	up to 100MPH sustained winds; up to 165MPH wind gusts

Software	
Software features	Auto channel selection; Auto transmit power control; Bandwidth control per SSID; L2 roaming; L3 roaming with DAC software; Band steering; Client smart load balance; NTP server client; Wireless MESH P2P/P2MP
Management	Internal User Database; Zero-touch provisioning (ZTP); System log report; SNMP Trap Notification with DAC software; Floor plan and heat map with DAC software
Security	Captive Portal; Radius Client; Wireless QoS; Client sticky avoidance; User behavior tracking; White / black list; ACL; Rogue AP location and containment; Wireless Attack Detection
Authentication & Encryption	• 802.11i, Wi-Fi Protected Access 2 (WPA2), WPA, WPA3 (WPA3-Personal, WPA3-Enterprise) • 802.1X • Portal page authentication • Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP)
Management software	DAC Software, Industrial HiVision

Compliance	
IEEE standard	• EEE 802.11a/b/g/n/ac/ax • IEEE 802.11e WMM • IEEE 802.11h, 802.11i, 802.11e QoS • IEEE 802.11k Radio Resource Management • IEEE 802.11v BSS Transition Management • IEEE 802.11r Fast roaming
Basic standard	CE, FCC, UL
Safety	EN61131-2, EN62368-1, EN60950-22
Radio	EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), EN 301 489-1, EN 301 489-17
Medical electrical equipment	EN 60601-1-1, EN 60601-1-2
RoHS	RoHS ((EU)2015/863) and RoHS (GB/T26572-2011) compliant
Wi-Fi Alliance	Wi-Fi 6 certified, Passpoint

Scope of delivery and accessories			
Scope of delivery	Installation guide		
Accessories to order separately	Mounting kit (AP-MNT-OUT-H), PoE injector, SFP module (only support HIT SFP module), SFP Gland	Mounting kit (AP-MNT-OUT), PoE injector, SFP module (only support HIT SFP module), SFP Gland	Mounting kit (AP-MNT-OUT), PoE injector, SFP module (only support HIT SFP module), SFP Gland , Cables 2m,5m,15m

About Belden

Belden Inc., a global leader in high quality, end-to-end signal transmission solutions, delivers a comprehensive product portfolio designed to meet the mission-critical network infrastructure needs of industrial, enterprise and broadcast markets. With innovative solutions targeted at reliable and secure transmission of rapidly growing amounts of data, audio and video needed for today's applications, Belden is at the center of the global transformation to a connected world. Founded in 1902, the company is headquartered in St. Louis, USA, and has manufacturing capabilities in North and South America, Europe and Asia.