HIRSCHMANN IT
A BELDEN BRAND

Dragonfly Industrial Wi-Fi 6 (802.11ax) Access Point

PRODUCT BULLETIN

Wi-Fi 6 Radios for Metro Railway Applications and Industrial Applications

The Dragonfly DAP847 (previously known as BAT-NG DAP847*) provides wireless Wi-Fi 6 connectivity for train- to-ground communications, reliable roaming and high data throughput for speed of 100km/h in metro rail applications. DAP847 also provides reliable wireless Wi-Fi 6 connectivity for Industrial communications, in terms of industrial applications.

- **Highly reliable Wi-Fi 6 wireless connections for transportation and industrial,** designed for train-to-ground applications requiring low latency, high bandwidth, and low packet losses, with high-speed roaming. Designed for applications in complex and harsh environments.
- **Long product life with a ruggedized design,** conformal coating and ruggedized connectors meet on-board and wayside applications, as well as the discrete automation, process automation and energy applications.

Key Features

- Railway certified dual Wi-Fi 6 (802.11ax) radios for trackside and on-board deployments
- Active and standby links ensure fast roaming for mission critical train-to-ground communication
- High throughput with Dual Wi-Fi 6 (802.11ax) radios to ensure coverage and transmission in industrial scenarios
- Easy-to-use management using Dragonfly Access Point Controller (DAC)
- IP67 rating for direct outdoor mounting of access points along the track, plant and warehouse etc

Dragonfly DAP847 delivers uninterrupted communications via Wi-Fi 6 to reduce packet loss, increase safety and promote continuity of operations, for train-to-ground applications, as well as for industrial applications.

Your Benefits

Dragonfly DAP847 takes advantages of Wi-Fi 6 technologies, such as OFDMA, MU-MIMO, 1024QAM and BSS coloring to enable higher throughput and low latency, meanwhile, it supports the 802.11k/v/r for fast roaming. Dual radios with independent antenna ports enable 2*2MIMO in 2.4GHz and 4*4MIMO in 5GHz to make full use of spectrum availabilities. PoE only and PoE plus PSU options are for customers to adopt different power supply scenarios. It is with ruggedized design to meet the requirements of both transportation and industrial complex environment.

DAP847 provides flexible radio resource management algorithms to ensure both train-to- ground communication and industrial communication. Cluster mode and DAC managed mode enable the flexibility of wireless network deployments and management.

DAP847 together with DAC enable enhanced security level of the wireless network by means of robust security mechanisms.

Applications

Railways Metro rail systems rely on continuous communication with trains to promote safety and reliability for such as CBTC application. In addition, demands for communication from on- board applications and systems require high data throughput capabilities between trains and trackside systems for such as CCTV applications, etc.

The Dragonfly DAP847 wireless radios for railway take advantages of Wi-Fi 6 technology to provide high data throughput rates. Additionally, these radios support high-performance roaming to deliver continuous connectivity as trains travel at speeds of 100 km/hr. A ruggedized design enables these radios to withstand harsh on-board and trackside conditions.

As for industrial systems, such as discrete automation, process automation and energy verticals, PLC and CCTV applications also have high demands on the ultimate low latency, low connection drops and high throughput. DAP847 is suitable with the ruggedized design for both transmission and coverage against the complex and harsh environment.

Markets

Designed with the specific requirements of the transportation sector in mind, these radios meet the needs of mass transit, rail-rolling stock, railway and train station applications. Large-scale metro rail projects can rely on them to deliver uninterrupted connectivity, prevent unplanned stoppages and achieve critical communication requirements. Meanwhile, with the flexibility on design, DAP847 is also suitable for factory automations, warehouse logistics automation wireless projects, as well as wireless projects in PA and energy verticals.

Product Description

Type	DAP847-RWAPKT899THH	DAP847-RWAPKT899EHH	DAP847-RWAKKT899THH	DAP847-RWAKKT899EHH	DAP847-RWCPKT899THH	DAP847-RWCPKT899EHH	DAP847-RWCKKT899THH	DAP847-RWCKKT899EHH
Description	Outdoor, dual radio, 5 GHz 802.11ax 4x4:4 and 2.4 GHz 802.11ax 2x2:2, external antenna; 1*1 scanning and security function							
Port Type and Quantity	1× 10/100/1000/2500Mbps M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) 1 × Reset button 1 × V.24 M12 A-coded 1 × Air Valve		1× 10/100/1000/2500Mbps M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) 1 × Reset button 1 × V.24 M12 A-coded 1 × Air Valve 1 × PSU 7/8" connector		1× 10/100/1000/2500Mbps M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) 1 × Reset button 1 × V.24 M12 A-coded 1 × Air Valve		1× 10/100/1000/2500Mbps M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) 1 × Reset button 1 × V.24 M12 A-coded 1 × Air Valve 1 × PSU 7/8" connector	
Order No.	9AA101001	9AA101002	9AA101003	9AA101004	9AA101005	9AA101006	9AA101007	9AA101008

Radio technology

Antenna connector	External antennas, 2×2:2 @ 2.4GHz, 4x4:4 @ 5GHz, 1x1:1 for scanning, 7 × N female connectors; ANT1-ANT4 for 5GHz band, ANT5-ANT6 for 2.4GHz band;
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
Additional radio feature	scanning and security function

Mechanical construction

Dimensions (W×D×H)	284mm×200mm×57mm
Weight	2.5kg
Mounting	Wall mounting

Power requirement

Operating Voltage	Support Power over Ethernet (IEEE 802.3at, 802.3bt)	Support Power over Ethernet (IEEE 802.3at, 802.3bt); PSU 24/110VDC	Support Power over Ethernet (IEEE 802.3at, 802.3bt)	Support Power over Ethernet (IEEE 802.3at, 802.3bt); PSU 24/110VDC
Power Consumption	24W			

Ambient Conditions

Operating Temperature	-40℃ ...70℃
Storage/ transport temperature	-40℃ ...85℃
Relative humidity(non-condensing)	10%...95%
Protection Class	IP67

Software

Software features	Auto channel selection; Auto transmit power control; Dynamic bandwidth selection; Band steering; Client smart load balance; DFS; Roaming; NTP client; Wireless MESH P2P/P2MP; Dynamic EDCA based on WMM; BSS Coloring; PRP maintain trailer;	MESH mode for onboard applications; Roaming; Dynamic EDCA based on WMM; PRP maintain tailer; Front-rear switching; NTP client;
Management	Cluster and DAC mode management; MIMO configuration; Internal User Database; Zero-touch provisioning (ZTP); System log report; SNMP; SNMP Trap Notification with DAC software;	Cluster mode management; MIMO configuration; Zero-touch provisioning (ZTP); System log report; SNMP;
Security	Captive Portal; Radius Client; Wireless QoS; Client sticky avoidance; User behavior tracking; Allow/block list; ACL; Rogue AP locating and suppression; Wireless Attack Detection	Captive Portal; Wireless QoS; User behavior tracking;
Authentication & Encryption	802.11i, WPA2(WPA2-Personal、WPA2 -Enterprise), WPA3 (WPA3-Personal、WPA3 -Enterprise) 802.1X Portal page authentication Advanced Encryption Standard (AES)	
Management software	DAC Software, Industrial HiVision	Industrial HiVision

Compliance

IEEE standard	• IEEE 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	EN 61131-2, EN 62368-1, EN 60950-22
Radio	EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), EN 302 502(5.8GHz)
Transportation	EN 50155, EN 50121-3-2, EN 50121-4, EN 45545-2 (Fire Protection Railway)
RoHS	RoHS(2011/65/EU,(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	1x DAP847 device 1x General safety instructions 1x Information sheet and outdoor safety instructions	1x DAP847 device 1x RKC40/9, 7/8" socket: 7/8" connector, 4-pin for Power supply 1x General safety instructions 1x Information sheet and outdoor safety instructions	1x DAP847 device 1x General safety instructions 1x Information sheet and outdoor safety instructions	1x DAP847 device 1x RKC40/9, 7/8" socket: 7/8" connector, 4-pin for Power supply 1x General safety instructions 1x Information sheet and outdoor safety instructions
Accessories to order separately	• EM12G OCTOPUS: Field attachable Gigabit Ethernet connector, M12 male, 8-pole, "X"-coded • Terminal Cable, M12-4pin to DB9: Terminal cable, Side A: M12 "A"-coded 4-pin connector, Side B: Sub-D connector, 9-pin • BAT-ANT-Protector m-f • N-Abschl-Wdst. 50 Ohm • BAT-CLB-RJ142-5 N m-m • Antennas：BAT-ANT-N-MiMoDB-11N-IP65-R for trackside			

* Dragonfly DAP847 was previously known as BAT-NG DAP847, all the product variants and functionality declared for BAT-NG remains same except the family name change from BAT-NG to Dragonfly