HIRSCHMANN IT
A **BELDEN** BRAND

Hirschmann IT Dragonfly DAP847
Wi-Fi 6 Radios for Railway Applications

PRODUCT BULLETIN

The Hirschmann IT Dragonfly DAP847 Railway Radios provide Wi-Fi 6 connectivity for train-to-ground communications, reliable roaming and high data throughput for rail applications.

- **Highly reliable Wi-Fi 6 connections,** designed for train-to-ground applications requiring low latency or high bandwidth, result in fewer dropped connections.

- **High-performance roaming** supports demanding passenger rail applications.

- **Long product life** with a ruggedized design, conformal coating and relatively small size meets the demands of onboard and wayside applications.

- **Plug-and-play deployment** with the Dragonfly Access Point Virtual Controller (DAC), providing easy and convenient DAP847 access point management.

Key Features

- Railway certified dual Wi-Fi 6 (802.11ax) radio for trackside and onboard deployments

- Access point and client modes of operation

- Active and standby link ensures fast roaming for mission critical train-to-ground communication

- Easy-to-use management using DAC

- 2.5 Gbit/s Ethernet M12 X-coded

- Parallel Redundancy Protocol (PRP): Maintain trailer

- Two power input options for onboard radios: Power over Ethernet (PoE) or 24 - 110 Volts direct current (DC)

- Operating temperature -40°C to 70°C / -40°F to 158°F

- IP67 rating for direct outdoor mounting of access points along the track

- One solution - trackside access point and onboard client - same hardware

> Hirschmann IT Dragonfly DAP847 Railway Radios deliver uninterrupted train-to-ground communications via Wi-Fi 6 to reduce dropped connections, increase safety and promote continuity of operations.

Your Benefits

Railway systems rely on continuous communication with trains to promote safety and reliability. In addition, demands for communication from onboard passengers and systems require high data throughput capabilities between trains and trackside systems.

The Hirschmann IT Dragonfly Radios for railway answer the call with Wi-Fi 6 technology. Additionally, these radios support high-performance roaming to deliver continuous connectivity as trains travel at typical speeds of 100 km/h. A ruggedized design enables these radios to withstand harsh onboard and trackside conditions.

Applications

Hirschmann IT Dragonfly DAP847 Railway Wi-Fi 6 Radios meet the specific train-to-ground communications requirements for rail systems. The radios can roam reliably from one access point to the next to provide continuous connectivity, supporting both passenger and system communications. These uninterrupted communications between trains and trackside systems are essential to promote safety and maximize uptime.

Markets

Designed with the specific requirements of the transportation sector in mind, these radios meet the needs of mass transit, rail-rolling stock, and railway and train station applications. Original equipment manufacturers (OEM) bidding on large-scale metro rail contracts can rely on them to deliver uninterrupted connectivity, prevent unplanned stoppages and achieve critical communication requirements.

Technical Information

Product Description

Name	Dragonfly Railway Wi-Fi 6 (802.11ax) Access Point	Dragonfly Railway Wi-Fi 6 (802.11ax) Access Point	Dragonfly Railway Wi-Fi 6 (802.11ax) Client	Dragonfly Railway Wi-Fi 6 (802.11ax) Client
Description	Outdoor, dual radio, 5 GHz 802.11ax 4 x 4:4 and 2.4 GHz 802.11ax 2 x 2:2, external antenna; scanning and security function			
Port Type and Quantity	• 1 × 10/100/1000/2500 Mbit/s M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) • 1 × Reset button • 1 × V.24 M12 A-code • 1 × Air Valve	• 1 × 10/100/1000/2500 Mbit/s M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) • 1 × Reset button • 1 × V.24 M12 A-code • 1 × Air Valve • 1 × PSU 7/8'' connector	• 1 × 10/100/1000/2500 Mbit/s M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) • 1 × Reset button • 1 × V.24 M12 A-code • 1 × Air Valve	• 1 × 10/100/1000/2500 Mbit/s M12 X-code, Eth, PoE PD (IEEE 802.3at, 802.3bt) • 1 × Reset button • 1 × V.24 M12 A-code • 1 × Air Valve • 1 × PSU 7/8'' connector
Radio Protocol	IEEE 802.11b; 802.11a/g/n/ac; 802.11ax; up to 2.975 Gbit/s (2.402 Gbit/s in 5 GHz and 573 Mbit/s in 2.4 GHz) data rate			
Product	DAP847-RWAPKT899EHH	DAP847-RWAKKT899EHH	DAP847-RWCPKT899EHH	DAP847-RWCKKT899EHH

Radio Technology

Antenna Connector	External antennas, 2×2:2 @ 2.4 GHz, 4x4:4 @ 5 GHz, 1x1:1 for scanning, 7 × N female connectors; ANT1-ANT4 for 5 GHz band, ANT5-ANT6 for 2.4 GHz 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
Scanning Radio	Dedicated scanning radio for enhanced roaming and security functions

Mechanical Construction

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

Power Requirement

Operating Voltage	Power over Ethernet (IEEE 802.3bt, 802.3at)	Power over Ethernet (IEEE 802.3bt, 802.3at) PSU 24 V/110 V DC	Power over Ethernet (IEEE 802.3bt, 802.3at)	Power over Ethernet (IEEE 802.3bt, 802.3at) PSU 24 V/110 V DC

Ambient Conditions

Operating Temperature	-40˚C to +70˚C, with conformal coating
Storage/Transport Temperature	-40˚C to +85˚C
Relative Humidity (non-condensing)	10% to 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 tailer	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; White/black list; ACL; Rogue AP locating and suppression; Wireless Attack Detection	Captive Portal; Wireless QoS; User behavior tracking
Authentication & Encryption	• 802.11i, WPA1, WPA2 (WPA2-Personal, WPA2-Enterprise), WPA3 (WPA3-Personal, WPA3-Enterprise) • 802.1X • Portal page authentication • Advanced Encryption Standard (AES)	• 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	EN61131-2, EN62368-1, EN60950-22
Radio	EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), EN 302 502 (5.8 GHz)
Transportation	EN 50155, EN50121-3-2, EN 50121-4, EN45545-2 (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

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

NOTE: These are the prominent technical specifications. For complete technical specifications visit: belden.com