



Hirschmann BAT450-F

Industrial Wireless LAN Access Points

The BAT450-F family of industrial WLAN access points offers a complete, cost-effective solution for deploying reliable, customizable wireless infrastructure.



Reliably deploy in harsh environments and mounting areas due to ruggedized, compact design



Ensure maximum network availability and data security across wireless connections with secure HiLCOS operating software



Increase efficiency and resiliency in rail applications with option of direct 110 V DC power supply

Key Features

- Configurable design for maximum flexibility and modular network interfaces
- WLAN radio versions comply with the IEEE 802.11 a/b/g/n WLAN standard
- Enables data rates up to 450 Mbit/s in both the 2.4 GHz and 5 GHz bands via 3 x 3 MIMO antenna technology
- WWAN/Cellular radio version supporting LTE (up to 100Mbit/s), 3G, 2G and GPS/GLONASS
- Gigabit Ethernet ports, including X-coded M12 connector technology
- Automatic mesh connections through Automatic Wireless Distribution System (AutoWDS) functions
- Operates at an extended temperature range (-40 °C to +70 °C)
- Adheres to IP65/IP67 protection ratings
- Power input via 24 V DC, 110 V DC and Power over Ethernet (PoE); connectivity options for WLAN and/or LTE with two SIM cards



The BAT450-F family of WLAN access points features a ruggedized, compact design for industrial needs and can be customized to support a variety of wireless and wired connections.

**Be certain.
Belden.**



Flexible Deployment and Modular Interfaces

The Hirschmann BAT450-F family of industrial access points provides a complete wireless solution offering WLAN, Ethernet and Wireless Wide Area Network (WWAN) interfaces. These wireless devices can operate as an Access Client (STA), Access Point or managed Access Point – with the option to combine with the BAT-Controllers.

The Hirschmann BAT450-F access points are designed to support Industrial IoT (IIoT) and wide area network (WAN) functionality through its modular/extension interface. The family includes an option specifically optimized for onboard and trackside rail applications: the BAT450-F 110 V DC. These specific access points are equipped with a 110 V DC power supply that allows engineers to connect directly to a train's power network without needing a 24 V converter. This means cost effective, resilient and easily retrofitted passenger WiFi.

The Hirschmann BAT450-F core access point configurations include:

- 1 x WLAN / 1 x ETH / 1 x serial interface (V.24)
- 1 x WLAN / 2 x ETH / 1 x serial interface (V.24)
- 2 x WLAN / 1 x ETH / 1 x serial interface (V.24)
- 2 x WLAN / 2 x ETH / 1 x serial interface (V.24)
- 1 x WLAN / 1 x ETH / 1 x LTE / 1 x serial interface (V.24)

Applications

The Hirschmann BAT450-F family of access points are ideal for use by industrial engineers across a variety of sectors where space and operating conditions are primary concerns.

The main application of the option equipped with the 110 V DC power supply is onboard rail cars and offers the following configurations and benefits:

- 110 V DC + WLAN + LTE: retrofit passenger WiFi onto trains in a single box
- 110 V DC + WLAN + WLAN: connect train redundantly to trackside with Parallel Redundancy Protocol (PRP) or Virtual Router Redundancy Protocol (VRRP) and provide passenger WiFi
- Coach-to-coach coupling: connect coaches automatically or control via serial connection

Markets

Ideal for use in transportation network environments, as well as in process automation areas. Additional applications can include: power transmission and distribution, machine building, water and wastewater, food and beverage, mining, solar and wind power, and oil and gas.



SIM card slots on LTE variant



The BAT450-F family of industrial WLAN access points deliver a new level of flexibility and performance that increases system reliability and efficiency, while reducing operational costs.

Technical Information

Product Description	
Type	BAT450-F
Description	Dual Band Ruggedized Industrial Wireless LAN Access Point/Client with IEEE 802.11n for installation in harsh environment.
Port Type and Quantity	Up to 2 x Radio interfaces, up to 2 x LAN ports 10/100/1000BASE-TX, Power over Ethernet according to IEEE 802.3af, 1 x V.24/ACA11
Radio Technology (WLAN)	
Radio Standard	IEEE 802.11a/b/g/h/n WLAN interface as per IEEE 802.11n, 3 x 3 MIMO up to 450 Mbit/s gross bandwidth.
Antenna Connector	For each WLAN module: 3 x N socket
Range	Depending on type of antenna, frequency range and data rate
Frequency Band	Supporting 2.4 GHz and 5 GHz: 2400 to 2483.5 MHz (ISM) and 5170 to 5850 MHz
Modulation	20M0F7D (DSSS/OFDM) @ 2.4 GHz, 20M0G7D (OFDM) @ 5 GHz, MCS 0 - MCS23
Radio Topology	WLAN access point, bridge, router, point-to-point, client, client-bridge mode, AutoWDS, fixed mesh with RSTP
Encryption	IEEE 802.11i/WPA2 with passphrase or 802.1x and hardware-accelerated AES, closed network, WEP64, WEP128, WEP152, user authentication, 802.1x/EAP, LEPS, WPA1/TKIP, fast roaming with Opportunistic Key Caching. Please refer to the HiLCOS data sheet for further information.
Option: Radio Technology (Cellular)	
Antenna Connector	3 x N socket
Antenna Configuration	Main + Aux (Div. for 2G/3G and MIMO 2x2 for LTE) + GNSS
Frequency Band	Quad Band EDGE /GSM/GPRS (2G): 1900 /1800/900/850 MHz Quad Band UMTS/HSPA (3G): 2100/1900/850/900 MHz FDD-Band (1, 2, 5, 8) Penta Band LTE (4G): 2100/1800/2600/900/800 MHz FDD-Band (1, 3, 7, 8, 20)
Transfer Rate (max) / Data Speed	LTE Cat.3: 100 Mbit/s Download, 50 Mbit/s Upload
SIM-cards/Slots	Two SIM card holders/slots, Dual-SIM fail over functionality • Switch SIM on disconnect • Switch SIM on remaining data volume
GNSS/Location Solution	Satellite Systems : GPS, GLONASS
Interfaces	
Ethernet	M12, X-coded, 10/100/1000 Mbit/s
V.24/ACA11	M12, A-coded, configuration interface or for automatic P2P connections verified over V.24 (train carriage coupling)
Power Requirements	
Operating Voltage	Option: 24 V DC and Power over Ethernet (PoE) Option: 110 V DC
Power Consumption	Up to 12.95 W, depending on number of radio modules
Ambient Conditions	
Operation Temperature	-40 °C to +70 °C
Storage/Transport Temperature	-40 °C to +85 °C
Relative Humidity (non-condensing)	10 % to 95 %
Mechanical Construction	
Dimensions (W x H x D)	261 x 189 x 55 mm
Mounting	Wall and mast
Protection Class	IP65/IP67
Approvals	
Safety of Industrial Control Equipment	EN 60950
Radio	EN 300328, EN 301893, UL60950
Environmental	EN 61000-6-2, EN 61131, E1 and EN 50155

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



Configurations

B A T 4 5 0 - F - E U W W 9 A W 9 K 9 A T 6 V 4 T C 9 A Z H

Product

BAT450-F = IP65-/67-housing

Country-Certification

EU = Europe (CE)

Many other country certifications available.

Please refer to the online configurator at: www.hirschmann.com

Slot 1

W = WLAN module

Slot 2

W = WLAN modules

9 = Not installed

Slot 3

L = LTE

9 = Not installed

Client/AP

A = Access Point

C = Client

Voltage Range 1

W = 24 V DC and PoE

N = 110 V DC

Voltage Range 2

9 = Not installed

Approvals 1

K = Train (EN 50155)

9 = No additional approval

Approvals 2

9 = No additional approval

Mounting

A = Standard

Interface 1

T6 = 10/100/1000 Mbit/s M12

Interface 2

V4 = V.24/ACA 11

T6 = 10/100/1000 Mbit/s M12

T7 = 10/100/1000 Mbit/s M12+V.24/ACA 11

99 = Not installed

Temperature Range

T = -40 °C to +70 °C

Software Option 1

A = VPN-5

B = VPN-50

C = VPN-100

9 = None

Software Option 2

9 = None

Software Option 3

D = Public Spot

P = PRP

A = AutoWDS

9 = None

Configuration

Z = Accessory package

9 = No Accessories

Type

H = Standard Hirschmann

Software Release

XX.XX.XXXX = Current Software Release

NOTE: The part number categories (**Configuration** and **Software Release**) are optional.

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