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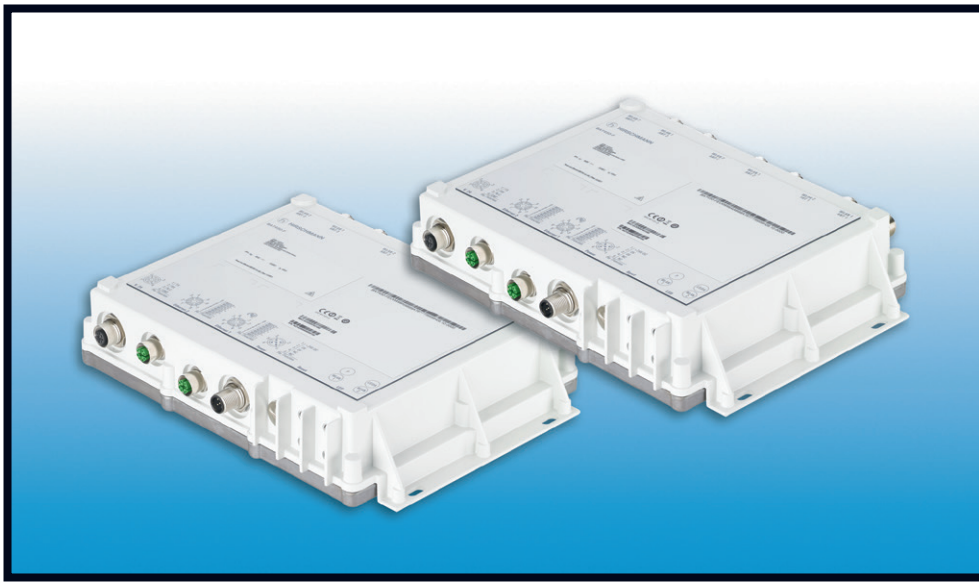
Product Bulletin

PB00046HE

BAT450-F Industrial Wireless LAN Access Points

The new family of industrial WLAN access points offers a complete solution to deploy a reliable, customizable and versatile wireless infrastructure while maximizing cost effectiveness.



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. Combined with the latest HiLCOS software, it provides extensive redundancy and security functions, as well as IPv4/6 routing.

- **Flexible deployment –** With ruggedized features to meet IP65/IP67 ratings, a compact design and the ability to operate under extreme temperatures, the BAT450-F can be mounted anywhere.
- **Customized connections –** A wide range of configurable network options, including wireless, wired and cellular, ensure reliable connections and high network availability.
- **Powerful operating system –** Hirschmann's operating system, HiLCOS, adds a rich set of redundancy protocols and best-in-class security features to the BAT450-F family.

The BAT450-F family is the answer to an increasing need to fit powerful wireless access points in industrial locations where space is a premium and ease of installation is required.

Through these access points, network managers can quickly set up a wireless network infrastructure through the Automatic Wireless Distribution System (AutoWDS). With its modular design, the BAT450-F can be customized for a variety of network functions, country-specific approvals and port interface types.

Applications

The BAT450-F access points are ideal for use in transportation network environments, specifically the railway industry. Dual-band radios enable simultaneous voice and data communications on board trains, and its proven technology also offers wired and wireless communication between rail cars, known as coach-to-coach coupling.

For other industrial environments where the network needs to communicate in harsh conditions and with limited installation space, the BAT450-F offers a compact and ruggedized design that is also cost efficient. Its low weight and small footprint could in future enable industries – including power transmission and distribution, process automation, and oil and gas – to mount the device on walls and masts or in confined spaces.

Your Benefits

The access points in the BAT450-F family are compact and lightweight, yet able to withstand extreme environments and temperatures. This product family offers a complete solution for industrial engineers looking to deploy a reliable, customizable and versatile wireless infrastructure.

A new product to serve your needs.
Be certain.

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BAT450-F Access Point Family

The access points in the new BAT450-F family provide a complete wireless solution offering WLAN, Ethernet and Wireless Wide Area Network (WWAN) Interfaces. These wireless devices can operate as an Access Client, Access Point or managed Access Point in combination with the BAT-Controllers. The built-in Stateful Packet Inspection (SPI) firewall controls communication either for bridged or routed traffic, enabling the creation of zones according to the guiding parameters of a reliable Defense in Depth strategy.

The five core access point configurations include:

- BAT450-F: 1 x WLAN / 1 x ETH / 1 x serial interface (V.24)
- BAT450-F: 1 x WLAN / 2 x ETH / 1 x serial interface (V.24)
- BAT450-F: 2 x WLAN / 1 x ETH / 1 x serial interface (V.24)
- BAT450-F: 2 x WLAN / 2 x ETH / 1 x serial interface (V.24)
- BAT450-F: 1 x WLAN / 1 x ETH / 1 x LTE / 1 x serial interface (V.24)

The BAT450-F is designed to support Industrial IoT (IIoT) and wide area network (WAN) functionality through its modular/extension interface.

The BAT450-F access points are highly configurable with a range of connection interfaces, including wireless, wired and cellular options.

Its WLAN radio module complies with the IEEE 802.11 a/b/g/n WLAN standard, enabling data rates of up to 450 Mbit/s in both the 2.4 GHz and 5 GHz bands by using 3 x multiple-input and multiple-output (MIMO) antenna technology.
Dedicated versions with country-specific approvals are available.

Benefits at a Glance

- Highly configurable design for maximum flexibility and cost effectiveness
- WLAN radio versions comply with the IEEE 802.11 a/b/g/n WLAN standard
  – Also enable data rates up to 450 Mbit/s in both the 2.4 GHz and 5 GHz bands via 3 x MIMO antenna technology
- Ethernet ports, including X coded M12 connector technology (IP67 version), support 10/100/1000BASE-TX data rates
- Prepared to support in future WWAN and IIoT technologies (ISA100.11a, Zigbee, Bluetooth, Wireless HART, etc.)
- Power input via 24 V DC and Power over Ethernet (PoE) (802.3af)
- Automatic point-to-point connections through AutoWDS function
- Operates at an extended temperature range (-40 °C to +70 °C)
- HiLCOS software with extensive management, redundancy and security functions, as well as IPv4/6 routing

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 WLAN 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 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.
Radio Technology	
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.
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	1 x 24 V DC and 1 x Power over Ethernet according to IEEE 802.3af
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 (pending)
Environmental	EN 61000-6-2, EN 61131, E1 (pending) and EN 50155

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

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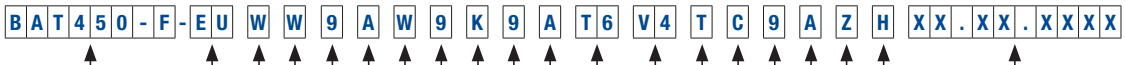
BAT450-F Access Point Configurations



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
9 = Not installed

Client/AP
A = Access Point C = Client

Voltage Range 1
W = 24 V DC and PoE

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
T7 = 10/100/1000 Mbit/s M12+V.24/ACA 11
T6 = 10/100/1000 Mbit/s M12
99 = Not installed

Temperature Range
T = -40 °C to +70 °C

Software Option 1
A = VPN-5
C = VPN-100
B = VPN-50
9 = None

Software Option 2
9 = None

Software Option 3
D = Public Spot
A = AutoWDS
P = PRP
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 (**OEM Type, Configuration** and **Software Version**) are optional.

Phone **+49 (0)7127/14-1809**
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