

**Product:** BAT-FEUWW9ACC99AO599S999ZHXX.XX.XXXX

**Configurator:** OpenBAT



## Configurator Description

The ruggedized WLAN devices BAT-R and BAT-F supply proven industrial-grade IEEE 802.11n technology to make your wireless applications successful. The same core is available with DIN-Rail mounting (BAT-R) or wall/mast mounting (BAT-F). Each device comes equipped with one or two independent WLAN modules that can be freely configured as: Standalone Access Point, Controller managed Access Point and Client. The WLAN modules are also freely configurable in 2.4GHz and 5GHz bands. Devices can have a 24/7 operating temperature range between -40°C to +70°C. Options with train approval EN50155 or bus approval E1 are available. Conformal coating of the PCB is available as well. Protocols like ProfiNet are often used in industrial applications and require low-level communication over WLAN. Our advanced Client Bridge functionality allows transparent bridging of complete Layer-2 networks even in a high-speed roaming scenario. Another feature is our ARP-NAT Client mode, which allows transparent Layer-3 networks, independent of the AccessPoint manufacturer and does not require end-devices attached to the Client to be reconfigured or changed.

## Technical Specifications

### Product description

Description	The ruggedized WLAN devices BAT-R and BAT-F supply proven industrial-grade IEEE 802.11n WLAN technology.
Port type and quantity	Ethernet 1: ComboPort 10/100/1000 via M12-X or SFP
Radio protocol	IEEE 802.11a/b/g/n WLAN as per IEEE 802.11n
Country certification	Europe (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherland, Poland, Portugal, Romania, Sweden, Slovakia, Slovenia, Spain), Iceland, Liechtenstein, Norway, Switzerland, Turkey

### More Interfaces

V.24 interface	8-pin "A"-coded M12 socket, Serial console, Automatic Point-to-Point configuration between two devices (Coach-to-Coach coupling). AT modem.
USB interface	Can be disabled in software. 5-pin "A"-coded M12 socket, compatible with ACA21-M12 EEC and ACA22-M12 EEC
Power Supply	Power 1: 2-pin terminal block, Power 2: 2-pin terminal block
Signaling contact	Signal 1: 2-pin terminal block, Signal 2: 2-pin terminal block
Local Management and Device Replacement	Auto Configuration Adapter (ACA) for Plug&Play device replacement, HiDiscovery v1

### Radio technology

Antenna connector	3x N socket for each WLAN interface
Frequency band	Freely configurable between 2.4 GHz and 5 GHz independently on each WLAN interface: 2400 -2483.5 MHz (ISM) and 5170 -5850 MHz (additional regulatory restrictions apply depending on the country of operation)
Modulation	20M0F7D (DSSS/OFDM) @ 2.4 GHz, 20M0G7D (OFDM) @ 5 GHz, MCS 0 - MCS23
Receiver sensitivity	-94 dBm
Additional radio features	Integrated ESD protection, Clear Space®. WLAN 1: 3x3 MIMO (configurable), up to 3 streams (configurable). WLAN 2: 3x3 MIMO (configurable), up to 3 streams (configurable)

### Hardware

Encryption	Open, WEP, 802.11i - WPA/WPA2 - Personal (PSK), 802.11i - WPA/WPA2 - Enterprise (802.1X: TLS, TTLS/PAP, TTLS/CHAP, TTLS/MSCHAP, TTLS/MSCHAPV2, TTLS/MD5, PEAP/MSCHAPV2)
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### Power requirements

Operating Voltage	Power 1: 24 .. 48 VDC, Power 2: 24 .. 48 VDC
Power consumption	max. 12.95W, second WLAN module adds max. 4.55W to a total of 17.5W

### Software

Software features	High performance operating system HiLCOS. Supports all WLAN functions, routing, firewall, VLAN, remote access, and redundancy. IPv4 and IPv6.
Management	Web Interface (HTTPS), IPv4, IPv6, SNMP v1/v2/v3
Diagnostics	IPerf Server and Client, System Log, Syslog, Ping, detailed trace functionality, (W)LANMonitor, SNMP
Management Software	WLAN Controller, Industrial HiVision, LANConfig

## Ambient conditions

MTBF (Telecordia SR-332 Issue 3) @ 25°C	50 Years
Operating temperature	0 +60 °C
Note	Temperature of the surrounding air.
Storage/transport temperature	-40+85 °C
Relative humidity (non-condensing)	10-95 %

## Mechanical construction

Dimensions (WxHxD)	311 x 219 x 73 mm
Housing	metal
Mounting	Wall
Protection class	IP65/67 (when using appropriate connectors)

## Approvals

Basis Standard	CE, RED, EAC
Safety of information technology equipment	IEC/EN 60950-1, IEC/EN 60950-22 (outdoor), NEMA 250 Type 4X (indoor/outdoor), cUL/UL 60950-1
Radio	EN 300 328 (2.4 GHz), EN 301 893 (5 GHz), EN 302 502 (5.8 GHz)

## WLAN Access Point

Access Point Functionality	Yes (Free selection between Access Point, Access Client and Point-to-Point functionality for each module separately in software). Operates as Managed Access Point in combination with a controller (WLC).
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## WLAN Client

Client / STA Functionality	Yes
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## Scope of delivery and accessories

Scope of delivery	Device, safety instructions, field-assembly power supply plugs, EU declaration of conformity, V.24 Terminal cable (M12 to DB9), 3dBi antennas, 50Ω terminating resistors
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