



## BAT300-Rail

Industrial Networking:Industrial Ethernet:Wireless LAN:Chassis

| Delivery informations  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Availability           | available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Document created at    | 22.05.2009                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Product description    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Description            | Dualband Industrial high performance Wireless LAN Access Point/Client with 802.11n (draft 2.0) - (available from Q2/2009)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Port type and quantity | 1 x WLAN interface, up to 8 SSIDs per WLAN interface, two LAN ports 10/100BASE-TX, autosensing, Power over Ethernet according to IEEE 802.3af                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Type                   | BAT300-Rail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Order No.              | 943 989-001                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Radio technology       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Antenna connector      | 3 x RP-SMA jack antenna connectors                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Range                  | Up to 20 km with external antenna (depending on type of antenna, frequency range and data rate)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Transmission rate      | 54 Mbps according to IEEE 802.11g (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection) compatible to IEEE 802.11b (11, 5.5, 2, 1 Mbps, Automatic Rate Selection), 802.11 b/g compatibility mode or pure g or pure b. 54 Mbps according to 802.11a (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection), fully compatible with TPC (adjustable power output) and DFS 2 (automatic channel selection, radar detection) according to ETSI regulations.<br>300 Mbps according to IEEE 802.11n draft 2.0 with MCS15 (fallback to 6.5 Mbps with MCS0)                                                                                                                                                                                          |
| Encryption             | IEEE 802.11i / WPA2 with passphrase or 802.1x and hardware-accelerated AES, user authentication by 802.1x / EAP or LEPS, IEEE 802.1x supplicant in client mode, WPA/TKIP, WEP, access-control lists, WLAN port and protocol filter, RADIUS client and server, built-in firewall with QoS, port filter, protocol filter, IDS and DoS protection, PMK caching and preauthentication for fast roaming with IEEE 802.1x                                                                                                                                                                                                                                                                                                                                                        |
| Operating system       | LAN interface usable for simultaneous DSL-over-LAN, IP-Router, NAT/Reverse NAT (IP-Masquerading) DHCP-Server, DHCP-Client, DHCP-Relay-Server, DNS-Server, PPPoE-Client (incl. Multi-PPPoE), PPTP-Client und -Server, NetBIOSProxy, DynDNS-Client, NTP, Port-Mapping, Policy-based Routing on basis of Routing-Tags, Tagging according to firewall rules, dynamic routing RIPv2, VRRP, Rapid Spanning Tree Protocol (IEEE 802.1w), ARP, Proxy ARP, BOOTP, DHCP, DNS, HTTP, HTTPS, IP, ICMP, NTP/SNTP, NetBIOS, PPPoE (Server), RADIUS, RIP-1, RIP-2, RTP, SIP, SNMP, TCP, TFTP, UDP, VRRP, VLAN with up to 4094 VLAN IDs for WLAN connections, 32 usable simultaneously, dynamic VLAN-Tags for 802.1x-Clients, Integrated RADIUS server with IEEE 802.1x/EAP authentication |
| Frequency band         | 1 x radio module, supporting 2.4 GHz and 5 GHz:<br>2400-2483.5 MHz (ISM) and 5170-5850 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Modulation             | 22M0F7D(DSSS/OFDM) @ 2.4 GHz<br>20M0G7D (OFDM) @ 5 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Receiver sensitivity                       | 2.4 GHz 802.11b: - 91 dBm @ 11 MBit/s, -96 dBm @ 1 MBit/s; 802.11g: -96 dBm @ 6 MBit/s, -83 dBm @ 54 MBit/s; 802.11n: -96 dBm @ 6.5 MBit/s (MCS0, 20 MHz), -79 dBm @ 65 MBit/s (MCS 7, 20 MHz); -95 dBm @ 13 MBit/s (MCS8, 20 MHz), -75 dBm @ 130 MBit/s (MCS15, 20 MHz); -90 dBm @ 15 MBit/s (MCS0, 40 MHz), -75 dBm @ 150 MBit/s (MCS7, 40 MHz); -90 dBm @ 30 MBit/s (MCS8, 40 MHz), -71 dBm @ 300 MBit/s (MCS15, 40 MHz)<br>Empfangsempfindlichkeit 5 GHz 802.11a/h: -95 dBm @ 6 MBit/s, -82 dBm @ 54 MBit/s; 802.11n: -95 dBm @ 6.5 MBit/s (MCS0, 20 MHz), -77 dBm @ 65 MBit/s (MCS7, 20 MHz); -94 dBm @ 13 MBit/s (MCS8, 20 MHz), -74 dBm @ 130 MBit/s (MCS15, 20 MHz); -91 dBm @ 15 MBit/s (MCS0, 40 MHz), -74 dBm @ 150 MBit/s (MCS7, 40 MHz); -91 dBm @ 30 MBit/s (MCS8, 40 MHz), -70 dBm @ 300 MBit/s (MCS15, 40 MHz) |
| Radio topology                             | WLAN access point, bridge, router, point-to-point, client, client-bridge mode, fixed mesh with RSTP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Roaming                                    | seamless handover between radio cells, IAPP support, IEEE 802.11d support, background scanning for rogue AP detection and fast roaming, support of IEEE 802.11e (WME), preauthentication and PMK caching with IEEE 802.1x                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Radio Power                                | max. 2.4 GHz 802.11b: +19 dBm @ 1 und 2 MBit/s, +19 dBm @ 5.5 and 11 MBit/s (output power at antenna connector); max. 2.4 GHz output power at antenna connector 802.11g: +18 dBm @ 6 to 36 MBit/s, +17 dBm @ 48 MBit/s, +16 dBm @ 54 MBit/s; 802.11n: +19 dBm @ 6.5/13 MBit/s (MCS0/8, 20 MHz), +10 dBm @ 65/130 MBit/s (MCS7/15, 20 MHz), +17 dBm @ 15/30 MBit/s (MCS0/8, 40 MHz), +10 dBm @ 150/300 MBit/s (MCS7/15, 40 MHz); max. 5 GHz output power at antenna connector 802.11a/h: +18 dBm @ 6 to 24 MBit/s, +17 dBm @ 36 MBit/s, +16 dBm @ 48 MBit/s, +15 dBm @ 54 MBit/s; 802.11n: +18 dBm @ 6.5/13 MBit/s (MCS0/8, 20 MHz), +10 dBm @ 65/130 MBit/s (MCS7/15, 20 MHz), +17 dBm @ 15/30 MBit/s (MCS0/8, 40 MHz), +10 dBm @ 150/300 MBit/s (MCS7/15, 40 MHz); min. power reduction in 1 dB steps down to 0.5 dBm minimum |
| <b>Power requirements</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operating voltage                          | 2 x DC 24 V; DC 12 V external power supply (230 V)<br>2 x Power over Ethernet according to IEEE802.3af; all power supplies redundant to each other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Current consumption at 24 V DC             | 417 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Current consumption                        | DC 12 V: 625 mA; DC 24 V: 417 mA; PoE (48 V DC): 167 mA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Service</b>                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Diagnostics                                | Extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, LANmonitor status display, internal logging buffer for SYSLOG and firewall events, monitor mode for Ethernet ports, WLANmonitor for WLAN network overview and Rogue AP detection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Management                                 | SNMP management via SNMP V2, private MIB exportable by WEBconfig, MIB II; Remote configuration with Telnet/SSL, SSH, browser (HTTP/HTTPS), TFTP or SNMP, firmware upload via HTTP/HTTPS or TFTP; Support of up to 4094 VLAN IDs for WLAN connections, 256 simultaneously usable VLAN tags for 802.11 clients                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Other services                             | Warning via e-mail, SNMP-Traps and SYSLOG; Remote management and configuration by modem support via LAN (DSL) or serial port                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Ambient conditions</b>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Operation temperature                      | -30 °C to +50 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Storage/transport temperature              | -40 °C to +70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Relative humidity (non-condensing)         | max. 95%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| MTBF                                       | 43.3 years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Mechanical construction</b>             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Dimensions (W x H x D)                     | 80 mm x 100 mm x 135 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Mounting                                   | for wall and Din Rail mounting                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Protection class                           | IP 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Approvals</b>                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Safety of information technology equipment | EN 60950                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Radio                                      | EN 300328, EN 301893, notified in all countries of EU.<br>For other notifications or certifications please refer to INET-Sales@hirschmann.de                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environmental                              | EN 61131 for operation in automation environment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Scope of delivery and accessories</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Scope of delivery                          | device, CD, serial cable, Ethernet cable (3 m), 3 x 3-dBi-dipol - dualband antennas, rail mount material, 2 x 50 Ohm terminator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Accessories to order separately            | external antennas for industrial applications, indoor and outdoor; adapter cable and surge arrestor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |