Intrinsically Safe Industrial Wi-Fi 7 AP BL5300E



Features and Advantages

- Compact design with vibration-resistant SMA connectors for vehicle-mounted mobile terminals
- 802.11k/v/r fast roaming with 15 ms switching and Mesh operation
- Cross-subnet roaming proxy helps avoid interruptions caused by delayed upstream forwarding-table updates
- Intrinsically safe hardware design with multi-stage power and port protection
- Centralized AC and cloud management with wireless diagnostics and network recovery
- Dual-band Wi-Fi 7 with up to 160MHz bandwidth at 5.8GHz and 40MHz at 2.4GHz

Introduction



The BL5300E is an industrial IEEE 802.11be Wi-Fi 7 AP. Its 2.4GHz and 5.8GHz 2 x 2 radios operate simultaneously at an aggregate rate up to 3.6Gbps. It supports 20/40/80/160MHz at 5.8GHz and 20/40MHz at 2.4GHz, with maximum rates of 2900Mbps and 700Mbps respectively. The hardware design meets intrinsic-safety requirements and uses multi-stage power and port protection for demanding industrial environments.

The compact device uses vibration-resistant SMA RF connectors for integration in vehicle-mounted mobile terminals. Combined with a BL5000Air client, it supports low-latency, high-bandwidth and long-distance communications in underground coal mines, warehousing, AGVs, inspection robots, video surveillance, autonomous driving and converged communication systems.

Hardware Specifications

Item	Specification
Model	BL5300E
Operating bands	2.4G + 5.8G
DDR	512MB
Flash	128MB + 4MB
Maximum Wireless Rate	Up to 3.6 Gbps aggregate; 700 Mbps at 2.4 GHz and 2900 Mbps at 5.8 GHz
Antennas	2 combined interfaces or 4 antenna interfaces (optional), for directional or omnidirectional antennas

Item	Specification
Power input	9-36V through Phoenix terminal and DC interfaces; reverse-polarity and overvoltage protection
Surge protection	6kV surge protection on Ethernet and power ports; 2kV pulse
Roaming	15 ms
Power consumption	13W
Interfaces	2 x 10/100/1000M/2.5G auto-negotiation ports 1 x Phoenix terminal 1 x RS-485 serial port 1 x reset Antenna interfaces: 2 x SMA connectors
Indicators	Ethernet, system, Wi-Fi and power LEDs
Environment	Operating temperature: -40°C to 75°C Storage temperature: -40°C to 85°C Relative humidity: 5% to 95%, non-condensing
Mechanical	Mounting: embedded installation Dimensions (W x L x H): 81.6 x 124 x 22.5mm Weight: 0.25kg (including heatsink)
Warranty	One years

Software Features

Item	Specification
Operating modes	Router / AP / Mesh (Cloud)
Wi-Fi 7	802.11a/b/g/n/ac/ax/be; TWT; OFDMA; BSS Color
WLAN basics	16 virtual APs; A-MPDU; A-MSDU; maximum likelihood demodulation (MLD); maximum ratio combining (MRC); STBC; LDPC
WLAN extensions	STA management; client limit; link integrity detection; broadcast probe-request response control; weak-signal client access restriction; hidden SSID; WLAN RRM; Mesh Doctor AP; Remote AP; 802.11k/v/r
Energy saving	Green AP mode; dynamic MIMO power saving; U-APSD; SM Power Save
Management	Centralized AC management; cloud management; local web, Telnet, SSH, SNMP and debug serial port; intelligent operations and maintenance
Radio	802.11b/g/n/ax/be: 2.412-2.4835GHz 802.11a/n/ac/ax/be: 5.18-5.825GHz 2.4G: 2 x 2, 700Mbps 5.8G: 2 x 2, 2900Mbps Modulation: DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64-QAM, 256-QAM, 4096QAM

Item	Specification
Receive/transmit sensitivity	802.11b: -86dBm@1Mbps, -80dBm@11Mbps 802.11g/a: -82dBm@6Mbps, -65dBm@54Mbps 802.11n: -82dBm@MCS0, -64dBm@MCS7 802.11ac: -82dBm@MCS0, -59dBm@MCS9 802.11ax: -82dBm@MCS0, -52dBm@MCS11 802.11be: -82dBm@MCS0, -46dBm@MCS13
Transmit power	802.11b: 24dBm@1Mbps, 24dBm@11Mbps 802.11g: 24dBm@6Mbps, 23dBm@54Mbps 802.11a: 23dBm@6Mbps, 20.5dBm@54Mbps 802.11n: 22.5dBm@MCS0, 20dBm@MCS7 802.11ac: 22.5dBm@MCs0.19dBm@Mcs9 802.11ax: 22.5dBm@MCS0, 18.5dBm@MCS11 802.11be: 22.5dBm@MCS0, 18dBm@MCS13

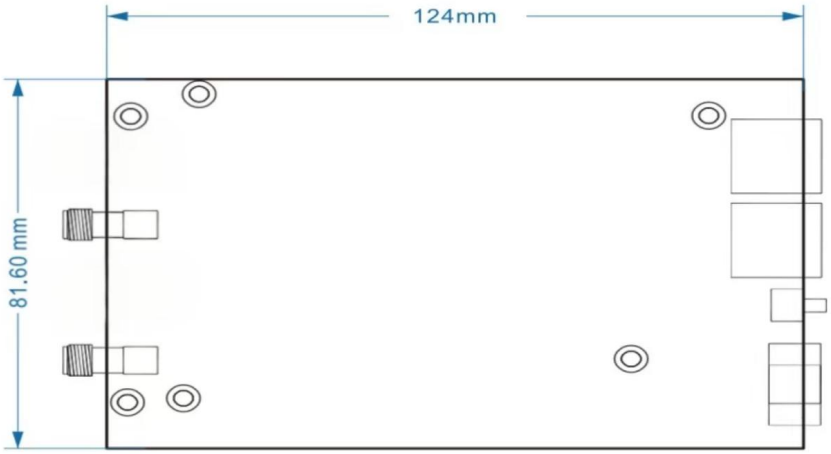
Additional Functions

Item	Specification
Wireless security	WPA / WPA2 / WPA3 Personal and Enterprise; TKIP / AES
AC and roaming proxy	Directed AC management using specified AC device information; cross-subnet roaming proxy to avoid interruption caused by delayed upstream forwarding-table updates
WMM	Improved wireless transmission quality for voice, video and similar applications
Diagnostics	Wireless network diagnosis and selected network recovery operations; Ping and traceroute
Wireless VLAN	Wireless VLAN tags simplify network planning

Ordering Information

Model	2.4G/5G dual-band antenna connectors	Interfaces	Power	Wi-Fi
BL5000X	2	2	1	WiFi6
BL5000Air	2	2	1	WiFi6
BL6000Max	4	3 optical + 3 electrical	2	WiFi6
BL6500E	4	2 optical + 3 electrical	2	WiFi7

Dimensions



Product Appearance



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