LANCOM LN-830E Wireless

Dual-radio enterprise-class 11ac WLAN access point with up to 867 Mbps, Wireless ePaper technology, and iBeacon support in elegant design

The LANCOM LN-830E Wireless is a powerful 11ac WLAN enterprise-class access point. It provides fast WLAN to 11n clients in the 2.4-GHz frequency band and also to the increasing number of modern 11ac-enabled devices in the 5-GHz band. In addition to that, the access point supports the wireless update of radio-controlled, battery-powered ePaper displays and iBeacon technology in an interference-free, parallel operation. Thanks to its puristic and elegant design it is ideal for an inconspicuous application in modern environments.

- Dual concurrent WLAN – parallel operation at 2.4 and 5 GHz with up to 867 Mbps with IEEE 802.11ac
- Integrated radio module for updating LANCOM Wireless ePaper Displays
- Integrated iBeacon technology
- Dynamic WLAN optimization thanks to LANCOM Active Radio Control (ARC)
- Zero-touch deployment with a LANCOM WLAN controller or the LANCOM Management Cloud
- Easy and secure integration of external users with the Public Spot Option
- Elegant LANCOM design with integrated antennas

LANCOM Systems

LANCOM LN-830E Wireless

Dual concurrent WLAN with up to 867 Mbps

The LANCOM LN-830E Wireless offers one wireless radio module for 11ac WLAN and another for 11n WLAN. This provides fast WLAN to 11n clients in the 2.4-GHz frequency band and also the increasing number of modern 11ac-enabled devices in the 5-GHz band.

Update of LANCOM Wireless ePaper Displays

Besides providing two WLAN radio modules, the LANCOM LN-830E Wireless also offers one radio module for the update of LANCOM Wireless ePaper Displays. Thanks to the intelligent combination of different radio technologies in one access point, the interference-free and parallel operation is guaranteed.

Integrated iBeacon technology

The iBeacon, integrated in the LANCOM LN-830E Wireless, continously sends signals via the radio standard Bluetooth Low Energy (version 4.0). It is extremely well-suited for near-field communication and has the advantage that its power consumption is significantly lower compared to classic Bluetooth - an innovative method for various push marketing actions.

Active Radio Control for dynamic radio-field optimization

The LANCOM LN-830E Wireless supports the WLAN optimization concept LANCOM Active Radio Control. This intelligent combination of innovative features included with the LCOS operating system – such as Band Steering, Adaptive Noise Immunity, Adaptive RF Optimization, Airtime Fariness and Client Steering – sustainably increases WLAN performance and supports administrators with professional tools for WLAN management.

Zero-touch deployment

By supporting zero-touch deployment, the LANCOM LN-830E Wireless is quickly and easily integrated and configured without having to access the configuration UI. In combination with a WLAN controller or the LANCOM Management Cloud the access point receives an appropriate configuration immediately after network authentication.

Secure integration of external users

In combination with the LANCOM Public Spot Option, the LANCOM LN-830E Wireless is ideal for operating hotspots. Users benefits from a hotspot that is secure and easy-to-use, while hotspot operators can be sure that their own network remains separate from the hotspot.

Elegant LANCOM design

The white LANCOM LN-830E Wireless with integrated antennas stands out with its puristic elegance. Thanks to the modern design it is ideal for an inconspicuous application in environments of every industry sector and seamlessly fits into every environment.

Maximum future viability

LANCOM products are designed for a service life of several years and are equipped with hardware dimensioned for the future. Even reaching back to older product generations, updates to the LANCOM Operating System – LCOS – are available several times a year, free of charge and offering major features.

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WLAN product specifications	
Frequency band 2.4 GHz and 5 GHz	2400-2483.5 MHz (ISM) and 5150-5700 MHz (depending on country-specific restrictions)
Data rates IEEE 802.11ac/n	867 Mbps according to IEEE 802.11ac with MCS9 (fallback to 6,5 Mbps with MCS0). Compatible to IEEE 802.11ac/n/a, IEEE 802.11 ac/n, IEEE 802.11n/a compatibility mode or pure IEEE 802.11ac, pure IEEE 802.11n, pure IEEE 802.11a mode and data rates selectable
Data rates IEEE 802.11n	300 Mbps according to IEEE 802.11n with MCS15 (fallback to 6,5 Mbps with MCS0). Compatible to IEEE 802.11a/n, IEEE 802.11g/n, IEEE 802.11b/g/n or IEEE 802.11b/g compatibility mode or pure IEEE 802.11n, pure IEEE 802.11a, IEEE 802.11g or pure IEEE 802.11b mode and data rates selectable
Data rates IEEE 802.11a/ h	54 Mbps (fallback to 48, 36 , 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection), fully compatible with TPC (adjustable power output) and DFS (automatic channel selection, radar detection) and data rates selectable
Data rates IEEE 802.11b/g	54 Mbps 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), IEEE 802.11b/g compatibility mode or pure IEEE 802.11g or pure IEEE 802.11b and data rates selectable
Range IEEE 802.11a/b/g *	Up to 150 m (up to 30 m in buildings)
Output power at radio module WLAN-1, 5 GHz	IEEE 802.11a/h: +17 up to +18 dBm @ 6 up to 48 Mbps, +13 up to +15 dBm @ 54 Mbps, IEEE 802.11n: +17 up to +18 dBm @ (MCS0/8/16, 20 MHz), +11 up to +13 dBm @ (MCS7/15/23, 20 MHz), +16 up to +17 dBm @ (MCS0/8/16, 40 MHz), +9 up to +12 dBm @ (MCS7/15/23, 40 MHz)
Output power at radio module WLAN-2, 5 GHz	IEEE 802.11a/h: +18 dBm @ 6 up to 48 MBit/s and +16 dBm @ 54 MBit/s IEEE 802.11ac: +16 up to +18 dBm @ (MCS0-7, 20/40/80 MHz), +14 dBm @ (MCS8, 20/40/80 MHz), +14 dBm @ (MCS9, 40/80 MHz)
Output power at radio module WLAN-1, 2.4 GHz	IEEE 802.11b: +22 dBm @ 1 and 2 Mbps, +22 dBm @ 5,5 and 11 Mbps, IEEE 802.11g: +22 dBm @ 6 up to 36 Mbps, +20 dBm @ 48 Mbps, +18 dBm @ 54 Mbps, IEEE 802.11n: +22 dBm @ (MCS0/8/16, 20 MHz), +16 dBm @ (MCS7/15/23, 20 MHz), +21 dBm @ (MCS0/8/16, 40 MHz), +15 dBm @ (MCS7/15/23, 40 MHz)
Minimum transmission power	Transmission power reduction in software in 1 dB steps to min. 0.5 dBm
Receiver sensitivity WLAN-1, 5 GHz	IEEE 802.11a/h: -98 dBm @ 6 Mbps, -81 dBm @ 54 Mbps, IEEE 802.11n: -94 dBm @ (MCS0, 20 MHz), -76dBm @ (MCS 7, 20 MHz), -92 dBm @ (MCS0, 40 MHz), -72 dBm @ (MCS7, 40 MHz)
Receiver sensitivity WLAN-2, 5 GHz	IEEE 802.11a/h: -95 dBm @ 6 MBit/s, -76 dBm @ 54MBit/s, IEEE 802.11ac: -94 dBm @ MCS0 20 MHz, -76 dBm @ MCS7 20 MHz, -72 dBm @ MCS8 20 MHz, -92 dBm @ MCS0 40 MHz, -76 dBm @ MCS7 40 MHz, -71 dBm @ MCS8 40 MHz, -70 dBm @ MCS9 40 MHz, -90 dBm @ MCS0 80 MHz, -72 dBm @ MCS7 80 MHz, -68 dBm @ MCS8 80 MHz, -67 dBm @ MCS9 80 MHz
Receiver sensitivity WLAN-1, 2.4 GHz	IEEE 802.11b: -97 dBm @ 1 MBit/s, -93 dBm @ 11 MBit/s, IEEE 802.11g: -95dBm @ 6 MBit/s, -81dBm @ 54 MBit/s IEEE 802.11n: -94 dBm @ 6,5MBit/s (MCS0, 20 MHz), -77 dBm @ 65 MBit/s (MCS7, 20 MHz), -91 dBm @ 15 MBit/s (MCS0, 40 MHz), -74 dBm @ 150 MBit/s (MCS7, 40 MHz)
Radio channels 5 GHz	Up to 26 non-overlapping channels (available channels and further obligations such as automatic DFS dynamic channel selection depending on national regulations)
Radio channels 2.4 GHz	Up to 13 channels, max. 3 non-overlapping (depending on country-specific restrictions)
Multi-SSID	Up to 31 (Simultaneous use of up to 16 independent WLAN networks at WLAN interface 1 and up to 15 independent WLAN networks at WLAN interface 2.
Concurrent WLAN clients	Up to 200 clients (recommended), 512 clients (max.)**
Others	Wireless Quality Indicators (WQI)
*) Note	The effective distances and transmission rates that can be achieved are depending of the onsite RF conditions
Supported WLAN standards	
IEEE standards	IEEE 802.11ac, IEEE 802.11n, IEEE 802.11a, IEEE 802.11g, IEEE 802.11b, IEEE 802.11i, IEEE 802.1X, IEEE 802.11u, IEEE 802.11r (Fast Roaming), IEEE 802.11w (Protected Management Frames), WME and U-APSD/WMM Power Save as defined in IEEE 802.11e, IEEE 802.11h, IEEE 802.11d
Standard IEEE 802.11ac	
Supported features	2x2 MIMO, 80 MHz channels, QAM-256
Standard IEEE 802.11n	
Supported features	2x2 MIMO, 40-MHz channel, 20/40MHz coexistence mechanisms in the 2.4 GHz band, MAC aggregation, Block Acknowledgement, STBC (Space Time Block Coding), LDPC (Low Density Parity Check), MRC (Maximal Ratio Combining), Short Guard Interval

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WLAN operating modes	
Modes	WLAN access point (standalone, WLC or Lightweight Controller architectur managed), WLAN bridge (P2P or P2MP) (standalone or AutoWDS*), (standalone, WLC or Lightweight Controller architectur managed), WLAN client mode, transparent WLAN client mode
Security	
Encryption options	IEEE 802.1X (WPA2-Enterprise), IEEE 802.11i (WPA2-Personal), Wi-Fi Certified™ WPA2™, WPA, WEP, IEEE 802.11w (Protected Management Frames), LEPS (LANCOM Enhanced Passphrase Security)
Encryption	AES:CCMP (Advanced Encryption Standard with Counter Mode and Cipher Block Chaining Message Authentication Code Protocol), TKIP (Temporal Key Integrity Protocol), RC4 (only used by WEP)
EAP types (authenticator)	EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-SIM, EAP-AKA, EAP-AKA Prime, EAP-FAST
RADIUS/EAP-server	User administration MAC-based, rate limiting, passphrases, VLAN user based, authentication of IEEE 802.1X clients via EAP-TLS, EAP-TTLS, EAP-MD5, EAP-GTC, PEAP, MSCHAP or MSCHAPv2
Others	WLAN protocol filters, IP-redirection of any packet received over the WLAN interface, IEEE 802.1X supplicant, background scanning, client detection ("rogue WLAN client detection"), Wireless Intrusion Detection System (WIDS)
LANCOM Active Radio Control	
Client Steering*	Steering of WLAN clients to the ideal access point
Band Steering	Steering of 5GHz clients to the corresponding high-performance frequency band
Managed RF Optimization*	Selection of optimal WLAN channels by the administrator
Adaptive Noise Immunity	Better WLAN throughput due to immunity against interferences
Spectral Scan	Monitoring your WLAN for sources of interference
Adaptive RF Optimization	Dynamic selection of the optimal WLAN channel
Airtime Fairness	Improved utilization of the WLAN bandwidth
*) Note	Only in installations with WLAN controller
Roaming	
Roaming	IAPP (Inter Access Point Protocol), IEEE 802.11r (Fast Roaming), OKC (Opportunistic Key Caching), Fast Client Roaming (only in operating mode client modus)
Wireless ePaper Displays	
Support of LANCOM Wireless ePaper Displays	The device is equipped with a radio module for the update of LANCOM Wireless ePaper Displays in the 2.4 GHz frequency band.
iBeacon	
Support of iBeacon technology	The device is equipped with a BLE radio module and can thus transmit a configurable iBeacon. The UUID as well as the major and minor ID are configurable. On top of that, all three radiated powers are supported (near, immediate, far).
Layer 2 features	
VLAN	4.096 IDs based on IEEE 802.1q, dynamic assignment, Q-in-Q tagging
Quality of Service	WME based on IEEE 802.11e, Wi-Fi Certified™ WMM®
Rate limiting	SSID based, WLAN client based
Multicast	IGMP-Snooping
Protocols	Ethernet over GRE-Tunnel (EoGRE), ARP-Lookup, LLDP, DHCP option 82, IPv6-Router-Advertisement-Snooping, DHCPv6-Snooping, LDRA (Lightweight DHCPv6 Relay Agent), Spanning Tree, Rapid Spanning Tree, ARP, Proxy ARP, BOOTP, DHCP
Layer 3 features	
Firewall	Stateful inspection firewall including paket filtering, extended port forwarding, N:N IP address mapping, paket tagging, user-defined rules and notifications
Quality of Service	Traffic shaping, bandwidth reservation, DiffServ/TOS, packetsize control, layer-2-in-layer-3 tagging
Security	Intrusion Prevention, IP spoofing, access control lists, Denial of Service protection, detailed settings for handling reassembly, session-recovery, PING, stealth mode and AUTH port, URL blocker, password protection, programmable reset button
PPP authentication mechanisms	PAP, CHAP, MS-CHAP, and MS-CHAPv2

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Layer 3 features	
High availability / redundancy	VRRP (Virtual Router Redundancy Protocol), analog/GSM modem backup
Router	IPv4-, IPv6-, NetBIOS/IP multiprotokoll router, IPv4/IPv6 dual stack
Router virtualization	ARF (Advanced Routing and Forwarding) up to separate processing of 16 contexts
IPv4 services	HTTP and HTTPS server for configuration by web interface, DNS client, DNS server, DNS relay, DNS proxy, dynamic DNS client, DHCP client, DHCP relay and DHCP server including autodetection, NetBIOS/IP proxy, NTP client, SNTP server, policy-based routing
IPv6 services	DHCPv6 client, DHCPv6 server, DHCPv6 relay
IPv6 compatible LCOS applications	WEBconfig, HTTP, HTTPS, SSH, Telnet, DNS, TFTP, firewall, RAS dial-in
Dynamic routing protocol	RIPv2
IPv4 protocols	DNS, HTTP, HTTPS, ICMP, NTP/SNTP, NetBIOS, PPPoE (server), RADIUS, RADSEC (secure RADIUS), RTP, SNMP, TFTP, TACACS+
IPv6 protocols	NDP, stateless address autoconfiguration (SLAAC), stateful address autoconfiguration (DHCPv6), router advertisements, ICMPv6, DHCPv6, DNS, HTTP, HTTPS, PPPoE, RADIUS, SMTP
WAN operating mode	VDSL, ADSL1, ADSL2 or ADSL2+ additional with external DSL modem at an ETH port
WAN protocols	PPPoE, Multi-PPPoE, ML-PPP, GRE, EoGRE, PPTP (PAC or PNS), L2TPv2 (LAC or LNS) and IPoE (using DHCP or no DHCP), RIP-1, RIP-2, VLAN, IPv6 over PPP (IPv6 and IPv4/IPv6 dual stack session), IP(v6)oE (autokonfiguration, DHCPv6 or static)
Tunneling protocols (IPv4/IPv6)	6to4, 6in4, 6rd (static and over DHCP), Dual Stack Lite (IPv4-in-IPv6-Tunnel)
Interfaces	
Ethernet ports	2 x 10/100/1000BASE-T autosensing (RJ-45), PoE (Power over Ethernet) at ETH1
Serial interface	Serial configuration interface / COM port (8 pin Mini-DIN): 9,600 - 115,000 baud, suitable for optional connection of analog/GPRS modems. Supports internal COM port server and allows for transparent asynchronous transmission of serial data via TCP
Internal antennas per radio module	Two internal antennas can be used to control Wireless ePaper Displays and iBeacon as well as two internal antennas for each WLAN Radio module.
Hardware	
Power supply	12 V DC, external power adapter (230 V) with bayonet cap. PoE (Power over Ethernet), compliant with IEEE 802.3af
Environment	Temperature range 0° to +40°C for wall mouting (vertical mounting position) and 0° to 35°C for ceiling mounting (horizontal mounting position) ; humidity up to 95%; non-condensing
Power consumption (max)	Approx. 11 Watts with 12 V/ 1,5 A power supply adapter (total power consumption of access point and power supply adapter), approx. 12 Watts via PoE
Housing	Robust synthetic housing, rear connectors, ready for wall mounting, Kensington lock; 205 x 42 x 205 mm (W x H x D)
Management and monitoring	
Management	LANconfig, WEBconfig, WLAN controller, LANCOM Layer 2 management (emergency management)
Management functions	Alternative boot configuration, voluntary automatic updates for LCMS and LCOS, individual access and function rights up to 16 administrators, RADIUS and RADSEC user management, remote access (WAN or (W)LAN, access rights (read/write) adjustable seperately), SSL, SSH, HTTPS, Telnet, TFTP, SNMP, HTTP, access rights via TACACS+, scripting, timed control of all parameters and actions through cron job
FirmSafe	Two stored firmware versions, incl. test mode for firmware updates
Monitoring	LANmonitor, WLANmonitor, LSM (LANCOM Large Scale Monitor)
Monitoring functions	Device SYSLOG, SNMPv2c, extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, internal logging buffer for firewall events
Monitoring statistics	Extensive Ethernet, IP and DNS statistics; SYSLOG error counter, accounting information exportable via LANmonitor and SYSLOG
Declarations of conformity*	
CE	EN 60950-1, EN 301 489-1, EN 301 489-17
5 GHz WLAN	EN 301 893
2.4 GHz WLAN	EN 300 328

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Declarations of conformity*	
IPv6	IPv6 Ready Gold
*) Note	You will find all declarations of conformity in the products section of our website at www.lancom-systems.eu
Scope of delivery	
Manual	Installation Guide (DE/EN/FR/ES/IT/PT/NL)
Cable	1 Ethernet cable, 3 m
Power supply unit	External power adapter (230 V), NEST 12 V/1.5 A DC/S, coaxial power connector 2.1/5.5 mm bayonet, temperature range from -5 to +45° C, LANCOM item no. 111140 (EU) (not included in bulk delivery)
Support	
Warranty	3 years support via hotline and Internet KnowledgeBase
Software updates	Regular free updates (LCOS operating system and LANCOM Management System) via Internet
Options	
LANCOM Warranty Basic Option S	Option to extend the manufacturer´s warranty from 3 to 5 years, item no. 10710
LANCOM Warranty Advanced Option S	Option to extend the manufacturer´s warranty from 3 to 5 years and replacement of a defective device on the next working day, item no. 10715
LANCOM Public Spot	Hotspot option for LANCOM access points and the LANCOM 17xx series for user authentication (up to 64), versatile access (via voucher, e-mail, SMS), including a comfortable setup wizard, secure separation of guest access and internal network, item no. 60642
Accessories	
LANCOM Wireless ePaper Displays	2.7" LANCOM Wireless ePaper Display, item no. 62213 (bulk 5), 4.4" LANCOM Wireless ePaper Display, item no. 62211 and item no. 62214 (bulk 5), 7.4" LANCOM Wireless ePaper Display, item no. 62212 and item no. 62215 (bulk 5)
LANCOM WLAN controllers	LANCOM WLC-4006+, item no. 62035 (EU), item no. 62036 (UK) and item no. 62037 (US), LANCOM WLC-4025+, item no. 61378, item no. 61379 and item no. 61384 (US), LANCOM WLC-4100, item no. 61369 (EU) and item no. 61377 (UK), LANCOM WLC Basic Option for Routers, item no. 61639
LANCOM Wall Mount LN	Robust mounting plate for simple, theft-proof mounting of LANCOM devices with LN housing, Item no. 61342
LANCOM Serial Adapter Kit	For the connection of V.24 modems with AT command set and serial interface for the connection to the LANCOM COM interface, incl. serial cable and connection plug, item no. 61500
Power over Ethernet Injector	1-port PoE injector with Gigabit support, integrated power supply, compatible with the standard IEEE 802.3af/at, item no. 61738 (EU) and 61739 (UK)

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Item number(s)	
LANCOM LN-830E Wireless (EU/UK)	61747 (EU), 61748 (UK)