

LANCOM IAP-821

Single-radio industrial 11ac WLAN access point with up to 867 Mbps



The LANCOM IAP-821 is a powerful 11ac WLAN industrial access point. It serves mobile clients with fast wireless LAN either with up to 867 Mbps at 5 GHz or up to 300 Mbps at 2.4 GHz. In combination with an extended temperature range of -20 to +50 °C and a dust-proof housing, the access point is ideal for demanding environments such as logistic surroundings, sheltered outdoor areas or installations at mobile machines.

- Single operation WLAN – optional operation at 5 GHz with up to
- 867 Mbps with IEEE 802.11ac or in 2.4GHz with up to 300 Mbps in IEEE 802.11n
- Robust full metal housing with protection rating IP-50 for maximum reliability in rough environments
- Reliable even at demanding temperatures (-20°C to +50°C)
- Dynamic WLAN optimization thanks to LANCOM Active Radio Control (ARC)
- Powerful WLAN diagnostics with Spectral Scan
- Professional security features such as IEEE 802.1X
- Operation via LANCOM Management Cloud, WLAN controller or stand-alone
- Easy and secure integration of external users with the Public Spot Option

LCOS 10.72

LANCOM IAP-821

Single Operation Wi-Fi with up to 867 Mbps

The LANCOM IAP-821 is a powerful 11ac WLAN industrial access point. It provides 11n and 11ac clients optionally in the 2.4-GHz frequency band or 5-GHz band with 867 Mbps WLAN.

Robust full metal housing

Thanks to the resistant full metal housing the industrial access point convinces even in rough environments with a heavy dust occurrence with a high robustness. Thus, the device is optimally protected against external influences and ideally suits for WLAN applications in warehouses or covered event areas.

Extended temperature range

Thanks to an extended temperature range from -20 °C to +50 °C the device offers a reliable radio connection and a high WLAN availability even at extreme conditions.

Active Radio Control for dynamic radio-field optimization

The LANCOM IAP-821 supports the WLAN optimization concept LANCOM Active Radio Control. This intelligent combination of innovative features included with the LCOS operating system – such as Adaptive Noise Immunity, RF Optimization, and Client Steering – sustainably increases WLAN performance and supports administrators with professional tools for WLAN management.

Powerful WLAN diagnostics with Spectral Scan

The LANCOM IAP-821 uses Spectral Scan to search the surrounding radio field for sources of interference. This professional tool for efficient WLAN troubleshooting is a combination of hardware and software features. It identifies and graphically represents sources of interference, so helping the administrator to initiate countermeasures.

LANCOM security for wireless networks

With numerous integrated security features, such as IEEE 802.1X, the LANCOM IAP-821 provides optimal security for networks. As a result, employees and visitors all benefit from security policies in the network.

Zero-touch deployment

The LANCOM IAP-821 can be versatilely operated: Managed via the LANCOM Management Cloud it is integrated into a comprehensive, automated network orchestration, based on Software-defined Networking technology. It can also be operated via a LANCOM WLAN controller or be applied in stand-alone operation.

Secure integration of external users

In combination with the LANCOM Public Spot Option, the LANCOM IAP-821 is ideal for operating hotspots. Users benefit 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.

LANCOM IAP-821

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 or 5 GHz	2400-2483.5 MHz (ISM) or 5180-5700 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
Net Data Throughput	max. 250 Mbps
Range IEEE 802.11ac/n/a/g/b *	Up to 150 m (up to 30 m in buildings)
Output power at radio module, 5 GHz and per transmit chain	IEEE 802.11a/h: +17 dBm @ 54 MBit/s; IEEE 802.11an/ac: +16 dBm @ (MCS7, 20 MHz), +15 dBm @ (MCS7, 40 MHz), +15 dBm (MCS9, 20 MHz), +14 dBm (MCS9, 40/80 MHz)
Output power at radio module, 2.4 GHz and per transmit chain	IEEE 802.11b/g: +18 dBm @ 54 MBit/s, IEEE 802.11n: +16 dBm @ (MCS7, 20 MHz), +16 dBm @ (MCS7, 40 MHz)
Max. allowed radiation power (EIRP), 5 GHz	IEEE 802.11a/h: Up to 30 dBm / 1000 mW EIRP (depending on national regulations on channel usage and subject to further obligations such as TPC and DFS)
Max. allowed radiation power (EIRP), 2.4 GHz	IEEE 802.11b/g: Up to 20 dBm / 100 mW EIRP (transmission power control according to TPC)
Minimum transmission power	Transmission power reduction in software in 1 dB steps to min. 0.5 dBm
Receiver sensitivity 5 GHz	IEEE 802.11a/h: -80 dBm @ 54 MBit/s, IEEE 802.11an/ac: -75 dBm @ (MCS7, 20/40MHz), -71 dBm @ (MCS9, 20/40 MHz), -68 dBm (MCS9, 80 MHz)
Receiver sensitivity 2.4 GHz	IEEE 802.11b/g: -80 dBm @ 54 MBit/s, IEEE 802.11n: -77 dBm @ (MCS7, 20 MHz), -75 dBm @ (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 15 independent WLAN networks; time-controlled activation and deactivation of WLAN networks
Concurrent WLAN clients	Up to 65 clients (recommended), 128 clients (max.)
*) Note	The effective distances and transmission rates that can be achieved are depending of the onsite RF conditions

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Supported WLAN standards

IEEE standards	IEEE 802.11ac (Wi-Fi 5), IEEE 802.11n (Wi-Fi 4), 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
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Standard IEEE 802.11ac (Wi-Fi 5)

Supported features	2x2 MIMO, 80 MHz channels, QAM-256
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Standard IEEE 802.11n (Wi-Fi 4)

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 LANCOM Management Cloud managed), WLAN bridge (P2P or P2MP) (standalone or AutoWDS*), (standalone, WLC or LANCOM Management Cloud managed), WLAN client mode, transparent WLAN client mode
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Security

Encryption options	WPA3-Personal, IEEE 802.1X (WPA3-Enterprise, WPA2-Enterprise), IEEE 802.11i (WPA2-Personal), Wi-Fi Certified™ WPA2™, WPA, WEP, IEEE 802.11w (Protected Management Frames), LEPS-MAC (LANCOM Enhanced Passphrase Security MAC), LEPS-U (LANCOM Enhanced Passphrase Security User)
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Encryption	AES-CCMP AES-GCMP, TKIP, RC4 (only used by WEP)
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EAP types (authenticator)	EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-FAST
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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, MSCHAPv2, Dynamic Peer Discovery
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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), RADIUS CoA (Change of Authorization)
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LANCOM Active Radio Control

Client Management	Steering of WLAN clients to the ideal access point using 802.11k and 802.11v
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Managed RF Optimization*	Selection of optimal WLAN channels by the administrator
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Adaptive Noise Immunity	Better WLAN throughput due to immunity against interferences
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Spectral Scan	Monitoring your WLAN for sources of interference
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Adaptive RF Optimization	Dynamic selection of the optimal WLAN channel
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Airtime Fairness	Improved utilization of the WLAN bandwidth
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LANCOM Active Radio Control

Adaptive Transmission Power Automatic adjustment of the transmission power for Wi-Fi backup scenarios

*) 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)

Layer 2 features

VLAN 4.096 IDs based on IEEE 802.1q, dynamic assignment

Quality of Service WME based on IEEE 802.11e, Wi-Fi Certified™ WMM®

Rate limiting SSID based, WLAN client based

Multicast IGMP-Snooping, MLD-Snooping, Multicast-to-Unicast-conversion on WLAN interfaces

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 packet filtering, extended port forwarding, N:N IP address mapping, packet tagging, support for DNS targets, user-defined rules and notifications

Quality of Service Traffic shaping, bandwidth reservation, DiffServ/TOS, packet size 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

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, Bonjour-Proxy, RADIUS

IPv6 services HTTP and HTTPS server for configuration by web interface, DHCPv6 client, DHCPv6 server, DHCPv6 relay, DNS client, DNS server, dynamic DNS client, NTP client, SNTP server, Bonjour-Proxy, RADIUS

Dynamic routing protocols RIPv2

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Layer 3 features

IPv4 protocols	DNS, HTTP, HTTPS, ICMP, NTP/SNTP, NetBIOS, PPPoE (server), RADIUS, RADSEC (secure RADIUS), RTP, SNMPv1,v2c,v3, TFTP, TACACS+, IGMPv3
IPv6 protocols	NDP, stateless address autoconfiguration (SLAAC), stateful address autoconfiguration (DHCPv6), router advertisements, ICMPv6, DHCPv6, DNS, HTTP, HTTPS, PPPoE, RADIUS, SMTP, NTP, Syslog, SNMPv1,v2c,v3, MLDv2, NPTv6 (NAT66)
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), L2TPv3 with Ethernet-Pseudowire, 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), 464XLAT

Interfaces

Ethernet port	1 x 10/100/1000BASE-T autosensing (RJ-45), PoE (Power over Ethernet)
External antenna connectors	Two reverse SMA connectors

Hardware

Environment	Temperature range -20°C to +50 °C; humidity up to 95%; non-condensing
Power consumption (max)	11 watt, incl. PoE-Injector
Housing	Robust metal housing, IP 50 protection class, for wall, mast and top-hat rail mounting, 210 x 152 x 33 mm (length x width x depth)

Management and monitoring

Management	LANCOM Management Cloud, 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 separately), 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
automatic firmware update	configurable automatic checking and installation of firmware updates
Monitoring	LANCOM Management Cloud, LANmonitor, WLANmonitor
Monitoring functions	Device SYSLOG, SNMPv1,v2c,v3 incl. SNMP-TRAPS, extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, internal logging buffer for firewall events

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Management and monitoring

Monitoring statistics	Extensive Ethernet, IP and DNS statistics; SYSLOG error counter, accounting information exportable via LANmonitor and SYSLOG
IPerf	IPerf is a tool for measurements of the bandwidth on IP networks (integrated client and server)
SLA-Monitor (ICMP)	Performance monitoring of connections
SD-WLAN	SD-WLAN – automatic WLAN configuration via the LANCOM Management Cloud
SD-LAN	SD-LAN – automatic LAN configuration via the LANCOM Management Cloud

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
IPv6	IPv6 Ready Gold
Country of Origin	Made in Germany
*) Note	You will find all declarations of conformity in the products section of our website at www.lancom-systems.com

Scope of delivery

Manual	Hardware Quick Reference (DE/EN), Installation Guide (DE/EN)
Cable	1 Ethernet cable, 3 m
Mounting Kit	Mounting kit for wall mounting
Antennas	Two 3 dBi dipole antennas (Gain depends on frequency.)
Power supply unit	External power adapter (230 V), NEST 12 V/2.0 A DC/S, coaxial power connector 2.1/5.5 mm, temperature range from -5 to +45° C, LANCOM item no. 111303 (EU)/ External power adapter (230 V), NEST 12 V/1.5 A DC/S, coaxial power connector 2.1/5.5 mm, temperature range from -5 to +45° C, LANCOM item no 110829 (UK) (not included in bulk delivery)

Support

Warranty	3 years For details, please refer to the General Warranty Conditions at: www.lancom-systems.com/warranty-conditions
Software updates	Regular free updates as part of the LANCOM Software Lifecycle Managements (www.lancom-systems.com/lifecycle)
Manufacturer support	Free technical manufacturer support as part of the LANCOM Software Lifecycle Management (www.lancom-systems.com/lifecycle).

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Software

Software Lifecycle Management After discontinuation, the device is subject to the LANCOM Software Lifecycle Management. Details can be found at:
www.lancom-systems.com/lifecycle

Anti-backdoor policy Products from LANCOM are free of hidden access paths (backdoors) and other undesirable features for introducing, extracting or manipulating data. The trust seal "IT Security made in Germany" (ITSMIG) and certification by the German Federal Office for Information Security (BSI) confirm the trustworthiness and the outstanding level of security.

Options

LANcare Basic M Service package with security updates and support entitlement* until EOL and 5 years replacement service (* support access required, e.g. support contract or LANCOM Service Packs 24/7 or 10/5), item no. 10721

LANcare Advanced M Service package with security updates and support entitlement* until EOL and 5 years NBD advance replacement (* support access required, e.g. support contract or LANCOM Service Packs 24/7 or 10/5), item no. 10731

LANCOM Public Spot Hotspot option for LANCOM products, versatile access (via voucher, e-mail, SMS), including a comfortable setup wizard, secure separation of guest access and internal network, item no. 60642

LANCOM Management Cloud

LANCOM LMC-A-1Y LMC License LANCOM LMC-A-1Y License (1 Year), enables the management of one category A device for one year via the LANCOM Management Cloud, item no. 50100

LANCOM LMC-A-3Y LMC License LANCOM LMC-A-3Y License (3 Years), enables the management of one category A device for three years via the LANCOM Management Cloud, item no. 50101

LANCOM LMC-A-5Y LMC License LANCOM LMC-A-5Y License (5 Years), enables the management of one category A device for five years via the LANCOM Management Cloud, item no. 50102

LANCOM LMC-A-10Y LMC License LANCOM LMC-A-10Y License (10 Years), enables the management of one category A device for ten years via the LANCOM Management Cloud, item no. 50132

Accessories

LANCOM WLAN controllers LANCOM WLC-30, Art.-Nr. 61789 (EU), LANCOM WLC-1000, Art.-Nr. 61783 (EU), LANCOM WLC Basic Option for Routers, Art.-Nr. 61639

External antenna, indoor use AirLancer IN-Q180+, item no. 61249

Adapter AirLancer AN-RPSMA-NJ adapter to connect ON Antennas to LANCOM Indoor Access Points and IAPs, item no. 61259

Surge arrestor (LAN cable) AirLancer Extender SN-LAN surge arrestor (LAN cable), item no. 61261

LANCOM IAP Mount LANCOM IAP Mount for cap rail and pole mounting, item no. 61647

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

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Accessories

LANCOM PoE++ Injector (EU)	1-port PoE injector with multi-Gigabit support, integrated power supply, compatible with the standard IEEE 802.3af/at/bt (up to 65W), item no. 61779 (EU)
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Item number(s)

LANCOM IAP-821	61755 (EU), 61756 (UK)
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LANCOM IAP-821, 5-piece bulk	61759
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