



## LANCOM IAP-822

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

The LANCOM IAP-822 is a powerful 11ac WLAN industrial 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 with up to 867 Mbps. 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.

- Dual concurrent WLAN – parallel operation at 2.4 and 5 GHz with up to 867 Mbps with IEEE 802.11ac
- Robust full metal housing with protection rating IP-50 for maximum reliability in rough environments
- Reliable even at demanding temperatures (-20° 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
- 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

# LANCOM IAP-822

## Dual concurrent WLAN with up to 867 Mbps

The LANCOM IAP-822 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.

## 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-822 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-822 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-822 provides optimal security for networks. As a result, employees and visitors all benefit from security policies in the network.

## Zero-touch deployment

By supporting zero-touch deployment, the LANCOM IAP-822 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 IAP-822 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.

## 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 802.11ac/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 802.11a/b/g *                                     | 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 30 independent WLAN networks  |
| Concurrent WLAN clients                                      | Up to 65 clients (recommended), 512 clients (max.)*   |
| *) Note  | The effective distances and transmission rates that can be achieved are depending of the onsite RF conditions   |
| **) Note   | The 11ac WLAN module supports max. 128 clients, this specification refers to the combination with the 11n radio module.   |
| 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   |
| WLAN operating modes   |   |
| Modes  | WLAN access point (standalone, WLC or Lightweight Controller architecture managed), WLAN bridge (P2P or P2MP) (standalone or AutoWDS*), (standalone, WLC or Lightweight Controller architecture managed), WLAN client mode, transparent WLAN client mode                                      |

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| 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   |
| 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   |
| 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, 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 packet filtering, extended port forwarding, N:N IP address mapping, packet tagging, 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 |
| 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  |

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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+  |
| 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   |
| 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 port                   | 1 x 10/100/1000BASE-T autosensing (RJ-45), PoE (Power over Ethernet)  |
| Ethernet port                   | 1 x 10/100BASE-T autosensing (RJ-45)  |
| External antenna connectors     | Four reverse SMA connectors for external LANCOM AirLancer Extender antennas or for antennas from other vendors. Please respect the restrictions which apply in your country when setting up an antenna system. For information about calculating the correct antenna setup, please refer to <a href="http://www.lancom-systems.eu">www.lancom-systems.eu</a>  |
| Hardware                        |   |
| Environment                     | Temperature range -20° to +50 °C; humidity up to 95%; non-condensing  |
| Power consumption (max)         | 12,95 Watts, 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                      | 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  |
| Monitoring                      | LANmonitor, WLANmonitor, LSM (LANCOM Large Scale Monitor)   |
| 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   |
| 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   |
| 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   |
| *) Note                         | You will find all declarations of conformity in the products section of our website at <a href="http://www.lancom-systems.eu">www.lancom-systems.eu</a>   |
| Scope of delivery               |   |
| Manual                          | Hardware Quick Reference (EN, DE), Installation Guide (DE/EN)   |
| Cable                           | 1 Ethernet cable, 3 m   |
| Mounting Kit                    | Mounting kit for wall mounting  |
| 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. 111301 (EU)/LANCOM item no 110829 (UK) (not included in bulk delivery)   |

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| 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 M    | Option to extend the manufacturer's warranty from 3 to 5 years, item no. 10711  |
| LANCOM Warranty Advanced Option M | 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. 10716  |
| 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 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 |
| External antenna, indoor use      | AirLancer IN-T180ag, item no. 61245   |
| 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 SA-LAN surge arrestor (LAN cable), item no. 61213  |
| 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   |
| 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)   |
| Item number(s)                    |   |
| LANCOM IAP-822                    | 61757 (EU), 61758 (UK)  |
| LANCOM IAP-822, 5-piece bulk      | 61760   |

