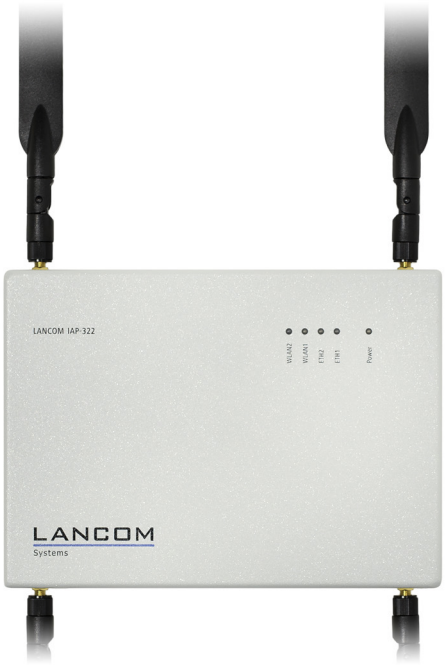

LANCOM IAP-322

Dual-radio industrial 11n WLAN access point with up to 300 Mbps

The LANCOM IAP-322 is a powerful 11n WLAN industrial access point. It simultaneously serves professional and reliable WLAN to 11n clients in the 2.4-GHz and 5-GHz band with an optimized network load. In combination with the dust proof and vibration resistant the access point is ideal for the application in demanding environments such as warehouses, logistics, and covered outdoor areas

- Dual concurrent WLAN – parallel operation at 2.4 and 5 GHz with up to 300 Mbps with IEEE 802.11a/g/n
- Robust full metal housing with protection rating IP-50 for maximum reliability in rough environments
- Reliable even at demanding temperatures (-20°C bis +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 LSR
- Easy and secure integration of external users with the Public Spot Option

LANCOM
Systems

LANCOM IAP-322

Dual concurrent WLAN with up to 300 Mbps

The LANCOM IAP-322 is a powerful 11n WLAN industrial access point. It provides 11n clients simultaneously in the 2.4-GHz frequency band and 5-GHz band with 300 Mbps WLAN and optimized load balance thanks to Band Steering.

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. Even applied to mobile machines, the indusrtrial access point stands out with its high shock- and vibration resistance. 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-322 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, 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-322 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-322 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-322 is quickly and easily integrated and configured without having to access the configuration UI. In installations operated by a WLAN controller or LSR 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-322 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.

LANCOM IAP-322

LCOS 9.20

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 802.11n	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, 5 GHz and per transmit chain	IEEE 802.11a/h: +14 dBm @ 54 MBit/s, IEEE 802.11n: +12 dBm @ (MCS7, 20 MHz), +11 dBm @ (MCS7, 40 MHz)
Output power at radio module, 2.4 GHz and per transmit chain	IEEE 802.11b: +19 dBm @ 54 MBit/s, IEEE 802.11g: +16 dBm @ 54 MBit/s, IEEE 802.11n: +15 dBm @ (MCS7, 20 MHz), +14 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: -77 dBm @ 54 Mbps, IEEE 802.11n: -63 dBm@ MCS7, 20 MHz, -70 dBm @ MCS7, 40 MHz
Receiver sensitivity 2.4 GHz	IEEE 802.11b: -85 dBm @11 Mbps, IEEE 802.11g: -77 dBm @ 54 Mbps, IEEE 802.11n: -74 dBm @ MCS7, 20 MHz, -71 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 32 independent WLAN networks
Concurrent WLAN clients	Up to 30 clients per radio (recommended), 512 clients (max.)
*) Note	The effective distances and transmission rates that can be achieved are depending of the onsite RF conditions
Supported WLAN standards	
IEEE standards	IEEE 802.11n, 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 (Protectet Management Frames), WME and U-APSD/WMM Power Save as defined in IEEE 802.11e, IEEE 802.11h, IEEE 802.11d
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 architectur managed), WLAN bridge (P2P or P2MP) (standalone or AutoWDS*), (standalone, WLC or Lightweight Controller architectur managed), WLAN client mode, transparent WLAN client mode
*) Note	Only in installations with WLAN controller
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

LANCOM IAP-322

LCOS 9.20

Security	
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
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 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
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, 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

LANCOM IAP-322

LCOS 9.20

Layer 3 features	
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), PoE (Power over Ethernet)
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
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 www.lancom-systems.eu
Hardware	
Power supply	12 V DC, external power adapter (230 V) with bayonet cap. PoE (Power over Ethernet), compliant with IEEE 802.3af
Power supply	24 V DC, input voltage range 10 - 28 V
Environment	Temperature range -20° to +50 °C; humidity up to 95%; non-condensing
Power consumption (max)	Approx. 12 Watts with 12 V/ 1 A power supply adapter (total power consumption of access point and power supply adapter), approx. 12.95 Watts via PoE
Housing	Robust metal housing, IP 50 protection class, for wall, mast and top-hat rail mounting, 210 x 152 x 45 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 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, 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
UL	UL-2043
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 www.lancom-systems.eu
Scope of delivery	
Manual	Hardware Quick Reference (EN, DE), Installation Guide (DE/EN)
CD/DVD	Data medium with management software (LANconfig, LANmonitor, WLANmonitor, LANCAPI) and documentation
Cable	1 Ethernet cable, 3 m

LANCOM IAP-322

LCOS 9.20

Scope of delivery	
Plug	2-pin plug to connect with multi-voltage power supply unit with screwed connection
Mounting Kit	Mounting kit for wall, pole and top hat rail mounting
Antennas	Four 4-5 dBi dipole antennas (Gain depends on frequency.)
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)
Ferrite	The ferrite (order number 74272722 at Würth Elektronik) must be attached to the Ethernet cable. Please mind the bend radius of the Ethernet cable.
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
Surge arrestor (LAN cable)	AirLancer Extender SA-LAN surge arrestor (LAN cable), item no. 61213
LANCOM IAP PSU (EU, bulk 5)	5 x 230 V Power Supply Units for IAP-321/IAP-322, EU variant, item no. 61812
LANCOM IAP PSU (UK, bulk 5)	5 x 230 V Power Supply Units for IAP-321/IAP-322, UK variant, item no. 61813
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-322 (EU)	61388
LANCOM IAP-322 (UK)	61389

LANCOM IAP-322

LCOS 9.20

Item number(s)	
LANCOM IAP-322, 5-piece bulk (Ethernet cables, power supply, DVD and documentation are not included in package content)	61399