



LANCOM OAP-322

Dual-radio outdoor 11n WLAN access point for professional outdoor WLAN applications – simultaneously in the 2.4-GHz and 5-GHz frequency bands

The LANCOM OAP-322 features two radio modules for parallel operation in the 2.4-GHz and 5-GHz frequency bands. Connectors for external antennas mean that it offers maximum flexibility for outdoor wireless applications.

- Dual concurrent WLAN – parallel operation at 2.4 and 5 GHz with up to 300 Mbps with IEEE 802.11a/g/n
- Four external antenna connectors
- Robust IP66 protective housing – reliable even at extreme temperatures (-33°C to +70°C)
- Dynamic WLAN optimization thanks to LANCOM Active Radio Control (ARC)
- 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 LANCOM Public Spot Option

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Dual concurrent WLAN with up to 300 Mbps

The LANCOM OAP-322 features two WLAN radio modules for IEEE 802.11n and offers a wide range of options for outdoor applications: The quick and easy setup of modern outdoor hotspots, professional WLAN coverage of open spaces, or even high-speed P2P links for interconnecting buildings in the 5-GHz band.

Maximum reliability in all weathers

The LANCOM OAP-322 has a robust IP66 protective housing, making it fully dust proof and water-jet resistant. What's more, a temperature range of -33°C to +70°C guarantees reliable operation even under extreme conditions.

Active Radio Control for dynamic radio-field optimization

The LANCOM OAP-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.

LANCOM security for wireless networks

With numerous integrated security features, such as IEEE 802.1X, this outdoor access point provides optimal security for networks. Administrators and employees alike benefit from professional security policies on the network.

Support for zero-touch deployment

Quick and easy network integration of the access points as well as automatic assignment of the configuration - without manual configuration. For WLAN controller or LSR-based installations, 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 OAP-322 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 guest network.

Maximum future-proofing

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) and 5150-5825 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 (outdoor / P2P)	The actual range depends on the environmental conditions. The Antenna Distance Calculator on www.lancom.de provides information on the possible data rates and distances.
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.)
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 (Protected Management Frames), WME and U-APSD/WMM Power Save as defined in IEEE 802.11e, IEEE 802.11h, IEEE 802.11d
Standard IEEE 802.11n	
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
*) 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

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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
*) 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
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+ with external ADSL2+ 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), IPv6oE (autokonfiguration, DHCPv6 or static)
Tunneling protocols (IPv4/IPv6)	6to4, 6in4, 6rd (static and over DHCP), Dual Stack Lite (IPv4-in-IPv6-Tunnel)

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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)
External antenna connectors	Four N connectors
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	10 bis 28 V DC input voltage, optionally available: 24 V DC power supply unit LANCOM OAP-320 PSU
Environment	Temperature range -33° to +70 °C
Housing	Robust metal housing, IP 66 protection rating, ready for wall and pole mounting, 3 LEDs for status display, please note: device must not be mounted in salt water environments without a suitable protective housing; Dimensions 255 × 250 × 80 mm (length x width x depth)
Management and monitoring	
Management	LANconfig, WEBconfig, LSR (LANCOM Large Scale Rollout), WLAN controller, LANCOM Layer 2 management (emergency management)
Management functions	Alternative boot configuration, voluntary automatic updates for LCMS and LCOS
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
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/FR/ES/IT/PT/NL)
CD/DVD	Data medium with management software (LANconfig, LANmonitor, WLANmonitor, LANCAPI) and documentation
Cable	Water-resistant, UV-resistant Ethernet PoE cable with water-resistant screw connector, 15m
Mounting Kit	Mounting kit for wall and pole mounting
Antenna	Four 3 dBi dipole dual-band antennas
Power supply unit	Via Power over Ethernet compliant with IEEE 802.3af, 1 x PoE Injector supplied
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 L	Option to extend the manufacturer's warranty from 3 to 5 years, item no. 10712
LANCOM Warranty Advanced Option L	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. 10717
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

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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, outdoor use	AirLancer Extender O-D80g, item no. 61221, AirLancer Extender O-D60a, item no. 61222, AirLancer Extender O-D9a, item no. 61224
Antenna cable	AirLancer cable NJ-NP 3m, item no. 61230, AirLancer cable NJ-NP 6m, item no. 61231, AirLancer cable NJ-NP 9m, item no. 61232
Surge arrestor (antenna cable)	AirLancer Extender SA-5L surge arrestor (2.4 and 5 GHz), to be integrated between Access Point and antenna, item no. 61553
Surge arrestor (LAN cable)	AirLancer Extender SA-LAN surge arrestor (LAN cable), item no. 61213
LAN cable (outdoor)	LANCOM OAP Ethernet cable (30 m), item no. 61347
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)
*) Note	The polarization diversity antennas require 2 cables and surge arrestors
Item number(s)	
LANCOM OAP-382	61552
LANCOM OAP-320 PSU	61691 (UK), Power supply unit for LANCOM OAP-321-3G, LANCOM OAP-3G and LANCOM OAP-322

