LANCOM OAP-822

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

The LANCOM OAP-822 features two radio modules for parallel operation in the 2.4- 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 802.11n and 867 Mbps with IEEE 802.11ac

> 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

> IPSec-VPN support with LANCOM OAP VPN Option

> Zero-touch deployment with a LANCOM WLAN controller or LSR

> Easy and secure integration of external users with the LANCOM Public Spot option

> Connectors for Gigabit Ethernet with Power over Ethernet as per IEEE 802.3af and Fast Ethernet

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Dual concurrent WLAN

The LANCOM OAP-822 features one WLAN radio module for IEEE 802.11ac and another 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 connecting buildings in the 5-GHz band with up to 250 Mbps.

Maximum reliability in all weathers

The LANCOM OAP-822 has a robust IP-66 protective housing, making it fully dust proof and water-jet resistant. It withstands temperatures between -33°C and +70°C to guarantee reliable operations even under extreme conditions.

Dynamic radio-field optimization from Active Radio Control

The LANCOM OAP-822 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, 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.

Optional VPN functionality

The LANCOM OAP VPN Option upgrades the outdoor access points of the OAP-8xx series with VPN functionality. This way, maintanance and management can be conducted remotely via an encrypted IPSec VPN tunnel. Furthermore, a trusted WLAN can be provided via a securely encrypted VPN tunnel to the company headquarters.

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-822 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 guest network.

Wireless freedom

Thanks to IEEE 802.11ac, the LANCOM OAP-822 supports highly powerful point-to-point links with up to 867 Mbps for wide coverage of open spaces and secure interconnection of remote buildings. Setting up a wireless network of this type spares you the need for laborious cable installations and expensive leased lines.

Maximum future-proofing

The LANCOM OAP-822 supports the high-speed WLAN standard IEEE 802.11ac, so that you are well equipped for future challenges. 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 5150-5825 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 802.11 ac/n/a, IEEE 802.11 ac/n, IEEE 802.11 n/a or pure IEEE 802.11ac, pure IEEE 802.11n, pure IEEE 802.11a 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 and IEEE 802.11b/g compatibility mode or pure IEEE 802.11n, pure IEEE 802.11a, pure 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 802.11 b/g compatibility mode or pure IEEE802.11g or pure IEEE802.11b 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: +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. radiated power (EIRP), 2.4 GHz band	IEEE 802.11b/g: Up to 20 dBm / 100 mW EIRP (transmission power control according to TPC)
Max. radiated power (EIRP), 5 GHz band	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)
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 2.4 GHz	Up to 13 channels, max. 3 non-overlapping (depending on country-specific restrictions)
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)
Concurrent WLAN clients	Up to 65 clients (recommended), 512 clients (max.)**
**) 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 2.4GHz 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 architektur managed), WLAN Bridge (P2P or P2MP) (standalone or AutoWDS*), (standalone, WLC or Lightweight Controller architektur 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)

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Security	
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)

Layer 2 features	
VLAN	4.096 IDs based on IEEE 802.1q, dynamische 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

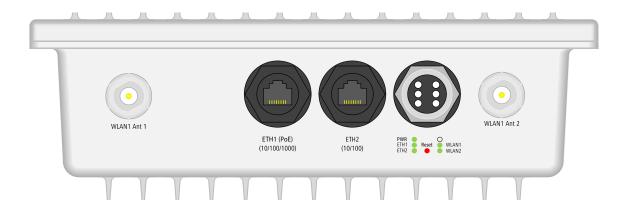| Layer 3 features	
Firewall	Stateful inspection firewall including paketfiltering, extended port forwarding, N:N IP address mapping, paket tagging, user-defined rules and notifications
Quality of Service	Traffic shaping, Bandwidth reservation, DiffServ/TOS, Packet-size control, Layer 2-in-Layer 3-Tagging
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 virtualisation	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

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Layer 3 features	
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), 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 10/100/1000BASE-T Autosensing (RJ-45)
External antenna connectors	Four N connectors
Power consumption (max)	12,95 Watts, incl. PoE-Injector
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
Management and monitoring	
Management	LANconfig, WEBconfig, LSR (LANCOM Large Scale Rollout), WLAN-Controller, LANCOM Layer 2 Management (emergency management)
Management funktions	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 funktions	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
2.4 GHz WLAN	EN 300 328
5 GHz WLAN	EN 301 893
IPv6	IPv6 Ready Gold
*) Note	You will find all declarations of conformity in the products section of our website at www.lancom-systems.de/en
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
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	
Warranty Extension	LANCOM Warranty Basic Option L, item no. 10712
Warranty Extension & Advanced Replacement	LANCOM Warranty Advanced Option L, item no. 10717
LANCOM OAP VPN	61635
Public Spot	LANCOM Public Spot Option (authentication and accounting software for hotspots, incl. Voucher printing through Standard PC printer), item no. 60642

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Accessories	
LANCOM WLC-4006+ (EU/UK)	LANCOM WLAN controller for central management of 6 (opt. up to 30) LANCOM access points and WLAN routers, item no. 62035 (EU) and item no. 62036 (UK)
LANCOM WLC-4025+ (EU/UK)	LANCOM WLAN controller for central management of 25 (opt. up to 100) LANCOM access points and WLAN routers, item no. 61378 and item no. Art.-Nr. 61379
LANCOM WLC-4100 (EU/UK)	LANCOM WLAN controller for central management of 100 (opt. up to 1000) LANCOM access points and WLAN routers, item no. 61369 (EU) and item no. 61377 (UK)
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 antenna cable extension for connection with LANCOM outdoor antennas, item no. 61230
Antenna cable	AirLancer cable NJ-NP 6m antenna cable extension for connection with LANCOM outdoor antennas, item no. 61231
Antenna cable	AirLancer cable NJ-NP 9m antenna cable extension for connection with LANCOM outdoor antennas, 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
Item number(s)	
LANCOM OAP-822	61662

WLAN1 Ant 1

ETH1 (PoE)
(10/100/1000)

ETH2
(10/100)

PWR
ETH1
ETH2
Reset
WLAN1
WLAN2

WLAN1 Ant 2

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