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LANCOM OAP-54 Wireless

Dual-band outdoor access point for bridging large distances, campus coverage or for establishing hotspots

- Outdoor dual-band access point for 2.4- and 5-GHz operation
- Two integrated 54/108 Mbps wireless modules for simultaneous operations with IEEE 802.11a/b/g/h
- IP66 housing with heating and cooling for -30 °C to +70 °C
- Ideal for point-to-point connections over long distances, outdoor hotspots/campus coverage, or as a relay for optimal connections across difficult terrain
- No-problems installation even away from power-supply points with Power-over-Ethernet
- Optional connection of external antennas
- Secure wireless LAN through IEEE 802.11i, IEEE 802.1x/EAP, LEPS, with AES encryption in hardware
- Secure Internet access via the integrated DSL router with stateful inspection firewall with intrusion detection/denial-of-service protection
- Separation of user groups by Multi-SSID and VLAN
- Optional: VPN site coupling, Hotspot support



The outdoor access point LANCOM OAP-54 Wireless has an IP66 housing which is resistant to strong water jets, features integrated heating and cooling, and can be sturdily mounted on walls or poles, all of which makes it ideally suited for locations where the demands on stability and robustness are highest. Be it in a harbor, in mountainous terrain, or from roof to roof in the city—the LANCOM OAP-54 Wireless can support stable, high-performance, long-serving WLANs in any environment. It can be mounted easily, flexibly, and up to 50 m from the nearest power supply thanks to Power over Ethernet.

With two integrated 108-Mbps wireless modules that comply with the WLAN standards IEEE 802.11a/b/g/h, the LANCOM OAP-54 Wireless can be operated in parallel in the 2.4-GHz and 5-GHz frequency bands. This makes this access point ideal as a relay to extend point-to-point wireless connections, or as a wireless-connection end point that provides WLAN coverage to public spaces. With one LAN and one WAN connector each and the integrated DSL router, LANCOM OAP-54 Wireless also serves as a central firewall and Internet gateway, and optionally as a VPN gateway for secured site coupling.

More Security.

LANCOM sets the standards in WLAN security. A comprehensive range of security technologies is supported in wireless LAN including IEEE 802.11i, 802.1x, WPA, WPA2, WEP64/128/152, Access Control Lists or LEPS (LANCOM Enhanced Passphrase Security), which enables the configuration of an optimized solution, whatever the individual requirements. For example, Multi SSID allows the definition of up to 8 user groups, each with different levels of security.

The integrated firewall with the latest security functions such as stateful inspection, intrusion prevention and denial-of-service protection will screen your network safely and reliably from external attack. LANCOM routers and access points support VRRP (Virtual Router Redundancy Protocol) to assure high availability in case of hardware failure. Outstandingly flexible backup solutions can be realized simply by adding in alternative devices, which can be from any vendor as the technology is standardized.

More Management.

LANCOM developments focus on performance, security and on management, too. LANCOM's WLAN management tools offer real benefits to network administrators for the installation, control and monitoring of up to 250 access points. Settings for wireless, encryption, or access control lists can be grouped into partial configurations, which are then executed for multiple access points in one easy move. A group configuration is assigned to a group folder and the changes are automatically sent to all of the devices. Adding in new devices? Simply add them to the group folder by drag and drop. Different settings? WLAN group configuration offers an automatic update.

WLANmonitor visualizes the structures of the WLAN irrespective of physical location and facilitates the central surveillance of the entire wireless network. Which WLAN clients are logged on and where? How good are the connections? Which WLAN channel is in use? Were there failed authentications or attempts to break in? WLANmonitor provides the overview for reliable diagnosis. WLAN management can be so simple!

More Certainty for the Future.

From the very start, LANCOM products are designed for a product life of several years. They 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. LANCOM offers unbeatable protection of your investment!

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Firewall	
Stateful inspection firewall	Direction dependant check based on connection information
Paket filter	Check based on the header information of an IP packet (IP or MAC source/destination addresses; source/destination ports, DiffServ attribute); remote-site dependant, direction dependant, bandwidth dependant
Masquerading	Network Address Translation (NAT), N:N mapping for the translation or masking of IP addresses
Port mapping	Provision of services from behind masqueraded computers, for example, to make an internal web server available from the outside (inverse masquerading)
Tagging	The firewall marks packets with routing tags, e.g. for policy-based routing
Actions	Forward, drop, reject, block sender address, close destination port, disconnect
Alerting	Via e-mail, SYSLOG or SNMP trap
Quality of service	
Traffic shaping	Dynamic bandwidth management with IP traffic shaping
Load balancing	Dynamic reservation of minimum and maximum bandwidths, absolute or connection-related, separate settings for send and receive directions
DiffServ/TOS	Priority packet queuing based on DiffServ/TOS fields
Packet size control	Automatic packet size control by fragmentation or Path Maximum Transmission Unit (PMTU) adjustment
Security	
Intrusion prevention	Monitoring and blockage of login attempts and port scans
IP spoofing	Source IP address check on all interfaces: The only accepted IP addresses belong to the previously defined IP network
Access control lists	Filtering of IP or MAC addresses and preset protocols for configuration access and LANCAPI
Denial of service protection	Protection from fragmentation errors and SYN flooding
General	Detailed settings for handling reassembly, PING, stealth mode and AUTH port
URL blocker	Filtering of unwanted URLs based on DNS hitlists and wildcard filters
Password protection	Password-protected configuration access can be set for each interface
Alerting	Warning via e-mail, SNMP traps and SYSLOG
Authentication protocols	PAP, CHAP and MS-CHAP as PPP authentication mechanism
High availability / redundancy	
VRRP	VRRP (Virtual Router Redundancy Protocol) for vendor-independent backup in case of failure of a device or remote station. Enables passive standby groups or reciprocal backup between multiple active devices including load balancing and freely definable backup priorities
FirmSafe	For completely safe software upgrades thanks to two stored firmware versions, incl. test mode for firmware updates
VPN redundancy	Configuration of redundant WAN connections with optional load balancing
Line monitoring	Line monitoring with LCP echo monitoring, up to 4 addresses for end-to-end monitoring with ICMP polling
VPN	
IPSec (optional)	IPSec encryption (only with LANCOM VPN Option)
Hardware accelerator (optional)	Activated 3DES/AES hardware encryption with the VPN 25 option
IKE	IPSec key exchange with preshared key or certificate
Certificates	X.509 digital certificate support, compatible with Microsoft Server / Enterprise Server and OpenSSL, upload of PKCS#12 files via HTTPS interface
Algorithms	3DES (168 bit), AES (128, 192 or 256 bit), Blowfish (128 - 448 bit), RSA (128 or -448 bit) and CAST (128 bit); MD-5 or SHA-1 hashes
NAT traversal	NAT traversal (NAT-T) support for VPN over routes without VPN passthrough
IPCOMP	VPN data compression based on LZS or Deflate compression algorithms for higher IPSec throughput

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Dynamic DNS (dynDNS)	Enables the registration of IP addresses with a dynDNS provider in the case that fixed IP addresses are not used for the VPN connection
Specific DNS forwarding	DNS forwarding according to DNS domain, e.g. internal names are translated by proprietary DSN servers in the VPN; external names are translated by Internet DNS servers
WLAN	
Frequency range 2.4 GHz or 5 GHz	2400-2483.5 MHz (ISM) or 5150-5750 MHz
Transfer rates 2.4 GHz	54 Mbps nach 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), 802.11 b/g compatibility mode or pure g or pure b adjustable, Super A/G with Turbo Mode (108 Mbps), bursting, compression
Transfer rates 5 GHz	54 Mbps compatible to IEEE 802.11a/h (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, automatic rate selection), Super A/G with Turbo Mode (108Mbps), bursting, compression, full compatibility to TPC (automatic Power Control) and DFS (automatic dynamic channel-selection, radar detection) to ETSI requirements
Transmission range *	Up to 150 m (up to 30 m indoor)
Transmission power maximum 2.4 GHz	802.11b: +19 dBm @ 1 and 2 Mbps, +19 dBm @ 5.5 and 11 Mbps
Transmission power maximum 2.4 GHz	802.11g: +19 dBm @ 6 Mbps, +14 dBm @ 54 Mbps
Transmission power maximum 5 GHz	802.11a/h: +18 dBm @ 6 Mbps, +12 dBm @ 54 Mbps with manually adjustable power output.
Transmission power minimum	Reduction of transmission power via software in 1dB steps down to 0,5 dBm minimum
Receiver sensitivity 2.4 GHz	802.11b: -87 dBm @ 11 Mbps, -94 dBm @ 1 Mbps
Receiver sensitivity 2.4 GHz	802.11g: -87 dBm @ 6 Mbps, -70 dBm @ 54 Mbps
Receiver sensitivity 5 GHz	802.11a/h: -87 dBm @ 6 Mbps, -67 dBm @ 54 Mbps
Radio channels 2.4 GHz	Up to 13 channels, max. 3 non-overlapping channels (2.4 GHz band)
Radio channels 5 GHz	Up to 19 non-overlapping channels (5 GHz band) with automatic dynamic channel-selection (DFS)
Roaming	Seamless handover, IAPP support, IEEE 802.11d support
VLAN	with up to 4094 VLAN IDs for WLAN connections. 32 simultaneous prioritized VLANs
Multi-SSID	Parallel 8 independent WLAN networks
Security	IEEE 802.11i / WPA2 with passphrase or 802.1x and hardware accelerated AES, IPSec-over-WLAN for encryption of WLAN connection, closed network, WEP64, WEP128, WEP152, access control lists, RADIUS client, user authentication, 802.1x /EAP
RADIUS server	Integrated RADIUS server for managing of MAC address lists
Operating modes	
WLAN access point	Infrastructure mode
WLAN bridge	Point-to-Multipoint-connection for up to 7 Ethernet LANs (mixed mode possible), broken link detection, blind mode, up to 32 VLAN parallel for WLAN connections
WLAN router	Parallel use of LAN ports for DSL-over-LAN, IP router, NAT/Reverse NAT (IP masquerading) DHCP server, DHCP client, DHCP relay server, DNS server, PPPoE client (incl. Multi-PPPoE), PPTP client and server, NetBIOS proxy, DynDNS client, NTP, port mapping, policy based routing based on routing tags, tagging with firewall rules, dynamic routing with RIPv2, VRRP, spanning tree protocol for supporting redundant routing in Ethernet networks
WLAN client	Transparent client mode for connecting printers or PCs by Ethernet, up to 64 MAC addresses
Quality of service	Support from Wireless Multimedia Extensions (WME, Part of IEEE802.11e) for priority of voice clients
Bandwidth limitation	Each WLAN client (MAC address) can be assigned maximum transmit and receive rates and an individual VLAN ID
Hint	*) The effective distance and transmission rate that can be achieved are depending of the given building conditions.
Routing functions	
Router	IP and NetBIOS/IP multiprotocol router
HTTP	HTTP and HTTPS server for configuration via Web interface
DNS	DNS client, DNS server, DNS relay, DNS proxy und Dynamic DNS client
DHCP	DHCP client, DHCP relay und DHCP server with autodetection
NetBIOS	NetBIOS/IP proxy
NTP	NTP client and SNTP server
Policy based routing	Policy-based routing with routing tags. Based on firewall rules, certain data types are marked for specific routing, e.g. to particular remote sites or lines
Dynamic routing	Dynamic routing with RIPv2. Learning and propagating of routes;; separate settings for LAN and WAN

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LAN protocols	
IP	ARP, Proxy ARP, BOOTP, LANCAPI, DHCP, DNS, HTTP, HTTPS, IP, ICMP, NTP/SNTP, NetBIOS, PPPoE (Server), RADIUS, RIP-1, RIP-2, SIP, SNMP, TCP, TFTP, UDP, VRRP
WAN protocols	
Ethernet	PPPoE, PPPoA, IPoA, Multi-PPPoE, ML-PPP, PPTP (PAC or PNS) and Plain Ethernet (with and without DHCP), RIP-1, RIP-2
Interfaces	
LAN	10/100Base-TX, autosensing, auto node hub
WAN	10/100Base-TX, autosensing, auto node hub, PoE
Management	
LANconfig	Configuration program for Microsoft Windows, incl. convenient setup wizards. Optional group configuration, simultaneous remote configuration and management of multiple devices over IP connection (HTTPS, HTTP, TFTP)
LANmonitor	Monitoring application for Microsoft Windows for (remote) surveillance and logging of the status of LANCOM devices and connections
Webconfig	Integrated web server for the configuration of LANCOM devices via Internet browser with HTTPS or HTTP
Access control	Individual access and function rights for up to 16 administrators
User management	RADIUS user administration for dial-in access (PPP/PPTP and ISDN CLIP)
Remote control	Remote configuration with Telnet/SSL, SSH, browser (HTTP/HTTPS), TFTP or SNMP, firmware upload via HTTP/HTTPS or TFTP
Security	Access rights (read/write) over WAN, LAN or WLAN can be set up separately (VPN only, Telnet/SSL, SSH, SNMP, HTTPS/HTTP), access control list
Scripting	Scripting function for batch execution of all command line parameters and for transferring (partial) configurations, irrespective of software versions and device types, incl. test mode for parameter changes
SNMP	SNMP management via SNMP V2, private MIB exportable by WEBconfig, MIB II
Scheduling	Scheduled control of parameters and actions (e.g. firewall rules or connection establishment) with CRON service
TFTP	TFTP client and server with variable file names (name, MAC/IP address, serial number)
Diagnosis	Extensive LOG and TRACE options, PING and TRACEROUTE for checking connections, LANmonitor status display, internal logging buffer for SYSLOG and firewall events, monitor mode for Ethernet ports
AirWave	Supported from LANCOM Enterprise Management System (AirWave AMP, Site Planner, RAPIDS, client)
Statistics	
Statistics	Extensive Ethernet, IP and DNS statistics; SYSLOG error counter
Accounting	Connecting and online time as well as transfer quantity per station
Export	Accounting information exportable via LANmonitor and SYSLOG
Hardware	
Power supply	Via Power over Ethernet**, 1 x PoE Injector included
Environment	-30 °C - +70 °C at 95 % max. humidity (non condensing)
Housing	235 mm x 210 mm x 80 mm (B x H x T), 3,4 kg, robust metal housing, protection class IP66, prepared for wall and top-hat rail mounting, 6 LED for status signalling
Antenna connectors	Three dual-band-Dipol antennas included. 3 reverse N to N adapter cable included for connection of all AirLancer Extender outdoor antennas or antennas of other vendors. Please respect the restrictions given in your country when setting up an antenna system. For help with calculating the correct antenna setup, please refer www.lancom.de
Hint	** only with included PoE adapter, max. cable length 50 m
Approvals	
Certificates	CE compliant (ETS 300 328, EN 55022, EN 301489-1, EN301 489-17, EN 60950, EN 301 893)
Notification	Germany, Belgium, Netherlands, Luxembourg, Austria, Switzerland, Great Britain, Italy, Spain, France, Portugal, Czech Republic, Denmark, Malta

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Scope of delivery	
Manual	Printed manual (English, German) and Quick Installation Guide (DE/EN/FR/ES/IT)
CD	CD with firmware and management software (LANconfig, LANmonitor, LANCAPI) and documentation
Cable	PoE LAN cable with waterresist connector, 15m
Antenna	2 x 360° dual band antennas
Power adapter	Via Power over Ethernet, 1-port PoE Injector with internal wide range power supply
Support	
Warranty	3 years, support via hotline and Internet knowledgebase
Software updates	Regular free LCOS, LANconfig, LANmonitor updates
Options	
	LANCOM VPN-25 Option (25 channels, incl. VPN HW accelerator), item no. 60083
	LANCOM Service Option (advanced replacement, 4 years warranty (only available in Germany), item no. 61401
	LANCOM Public Spot Option (authentication and accounting software for hotspots), item no. 60642
Accessories	
	AirLancer Extender O-30 2.4 GHz outdoor antenna, item no. 60478
	AirLancer Extender O-70 2.4 GHz outdoor antenna, item no. 60469
	AirLancer Extender O-9a 5 GHz outdoor antenna, item no. 61220
	AirLancer Extender O-18a 5 GHz outdoor antenna, item no. 61210
	AirLancer Extender O-D80g 2.4 GHz sector antenna with polarization diversity, item no. 61221
	AirLancer Extender O-D60a 5 GHz sector antenna with polarization diversity, item no. 61222
	AirLancer Extender O-360ag dualband outdoor antenna, item no. 61223
	AirLancer Cable NJ-NP 3m, item no. 61230
	AirLancer Cable NJ-NP 6m, item no. 61231
	AirLancer Cable NJ-NP 9m, item no. 61232
	AirLancer Extender SA-5 surge protector (2.4 and 5 GHz), item no. 61212
	AirLancer Extender SA-LAN surge protector for LAN (PoE) cable, item no. 61213
	LANCOM LCOS Reference manual (DE), item no. 61700
	LANCOM Advanced VPN Client for Windows 98SE-XP, single user licence, item no. 61600
	LANCOM Advanced VPN Client for Windows 98SE-XP, 10 user licences, item no. 61601
	LANCOM Advanced VPN Client for Windows 98SE-XP, 25 user licences, item no. 61602
Item no.	
LANCOM OAP-54 Wireless	61507

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