

# LANCOM 1803VA-4G

## SD-WAN VoIP gateway with VDSL and 4G



For companies with business-critical applications, a highly available Internet connection is crucial. Equipped with state-of-the-art SD-WAN technology, the LANCOM 1803VA-4G gives you "IT security made in Germany" and a high level of interface diversity. This means that even if the wired VDSL or fiber-optic connection fails, you always have a reliable backup via 4G for your applications. With IPsec VPN and SD-WAN, the LANCOM 1803VA-4G easily connects company sites and mobile employees. Combined with professional telephony functions and integration into the LANCOM Management Cloud, the LANCOM 1803VA-4G is ideal for site networking of small and medium-sized businesses.

- SD-WAN – incl. zero-touch deployment and Auto-VLAN via the LANCOM Management Cloud
- Integrated VDSL Supervectoring modem for up to 300 Mbps
- High-speed Internet via fiber optics (GPON and AON modules available separately) and Gigabit Ethernet for connection of external modems
- Integrated 4G modem with 300 Mbps LTE Advanced for intelligent backup scenarios and highest reliability
- Professional telephony features thanks to integrated LANCOM VCM (Voice Call Manager) & SBC (session border controller)
- Continued use of existing ISDN and analog components via 2x ISDN S0 (NT) for point-to-point or multipoint line configuration, 2 x analog (internal) / fax
- 5 integrated IPsec VPN channels (25 optional)
- Network virtualization with up to 16 networks on one device (ARF)
- USB ports for the integration of modern IoT radio systems
- Maximum future compatibility, reliability, and security "Engineered in Germany"



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# LANCOM 1803VA-4G

## **LANCOM SD-WAN – Next-level networking**

With LANCOM SD-WAN you can manage and monitor your entire corporate network centrally, cost-effectively, quickly, and stress-free! In combination with the LANCOM Management Cloud, the SD-WAN gateway gives you all the options for an automated setup of secure VPN connections (Auto-VPN) between sites, including network virtualization. Highlight features such as High Scalability VPN (HSVPN) and Advanced Mesh VPN offer you a significant plus in scalability and efficiency for a large number of branches and applications. Furthermore, if multiple WAN connections are defined, they are automatically operated in active/active mode (load balancing), thereby increasing the available total bandwidth. With Dynamic Path Selection and Dynamic Traffic Steering, applications are also dynamically routed via the best connection at any given time.

## **WAN connectivity with VDSL Supervectoring**

The LANCOM 1803VA-4G offers full VDSL Supervectoring support and is also backwards compatible with VDSL2 and ADSL2+. Data rates of up to 300 Mbps are possible on existing copper lines.

## **Maximum availability with 4G**

The LTE Advanced modem (Cat. 6) provides fast cellular access with up to 300 Mbps downstream. This makes the LANCOM 1803VA-4G ideal for intelligent backup scenarios to protect business-critical applications. With an upstream rate of up to 50 Mbps, the module offers high speed when transferring data within the company network or to external cloud services.

## **Modern housing with focus on sustainability**

Innovative technology meets forward-looking optics: the combination of matte black plastic and mirror-like acrylic glass front panel for interface information conveys a tangible feeling of security, reliability, and high quality. The housing of the SD-WAN branch router offers high installation flexibility thanks to possible table, rack, and wall mounting. Local production ensures short procurement routes with low CO2 emissions and thus scores particularly well in terms of sustainability.

## **Professional, comprehensive telephony functions**

Equipped with the LANCOM VCM (Voice Call Manager), the LANCOM SD-WAN VoIP gateway takes over classic telephony management tasks and integrates any type of telephony component such as SIP, ISDN, or analog. In addition, the LANCOM VCM provides common functions of a Session Border Controller (SBC): This ensures the secure separation of external (unsecure) and internal (secure) networks. For high call quality, voice packets are given preference thanks to bandwidth reservation (Quality of Service). In addition, as a SIP proxy, the VCM enables professional management of signaling and voice data for high security in the setup, implementation and teardown of telephone conversations, including any protocol conversion by means of transcoding. The VoIP gateway conveniently handles the translation between ISDN, analog, and VoIP.



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## LTE modem

|                                |                                                                                                                                                                                                                                         |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Supported standards            | LTE, UMTS and HSPA support (mode of transmission automatically or manually adjustable), 2G/GSM is not supported                                                                                                                         |
| Supported mobile bands (3G/4G) | Band 1 (2100 MHz), Band 3 (1800 MHz), Band 7 (2600 MHz), Band 8 (900 MHz), Band 20 (800 MHz), Band 28 (700 MHz), Band 32 (1500 MHz), Band 38 (2600 MHz), Band 40 (2300 MHz), Band 41 (2500 MHz), Band 42 (2500 MHz), Band 43 (3600 MHz) |
| Maximum transmission power     | +23 dBm                                                                                                                                                                                                                                 |
| Diversity support              | Receive diversity on the aux antenna (3G); MIMO (2x2) for LTE (4G)                                                                                                                                                                      |
| External antenna connectors    | Two SMA antenna connectors (SMA female) for external mobile radio antennas                                                                                                                                                              |
| Supported SIM card formats     | Micro-SIM (3FF), Nano-SIM (4FF) via adaptor                                                                                                                                                                                             |

## Layer 2 features

|           |                                                                                                                                                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VLAN      | 4.096 IDs based on IEEE 802.1q, dynamic assignment                                                                                                                                                                                            |
| Multicast | IGMP-Snooping, MLD-Snooping                                                                                                                                                                                                                   |
| Protocols | Ethernet over GRE-Tunnel (EoGRE), L2TPv3, 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, LACP |

## Layer 3 features

|                               |                                                                                                                                                                                                                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firewall                      | Stateful inspection firewall including packet filtering, extended port forwarding, N:N IP address mapping, packet tagging, support for DNS targets, 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                                                                                                                                                                                                                                                   |
| Router                        | IPv4-, IPv6-, NetBIOS/IP multiprotokoll router, IPv4/IPv6 dual stack                                                                                                                                                                                                                |
| SD-WAN Application Routing    | SD-WAN Application Routing in connection with the LANCOM Management Cloud                                                                                                                                                                                                           |
| SD-WAN dynamic path selection | SD-WAN dynamic path selection in connection with the LANCOM Management Cloud                                                                                                                                                                                                        |
| SD-WAN Zero Touch Deployment  | Zero touch commissioning of the device in conjunction with the LANCOM Management Cloud                                                                                                                                                                                              |
| 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, Bonjour-Proxy, RADIUS |



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## Layer 3 features

|                                 |                                                                                                                                                                                                                                                                     |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IPv6 services                   | HTTP and HTTPS server for configuration by web interface, DHCPv6 client, DHCPv6 server, DHCPv6 relay, DNS client, DNS server, dynamic DNS client, NTP client, SNTP server, Bonjour-Proxy, RADIUS                                                                    |
| Dynamic routing protocols       | RIPv2, BGPv4, OSPFv2, LISP (Locator/ID Separation Protocol)                                                                                                                                                                                                         |
| IPv4 protocols                  | DNS, HTTP, HTTPS, ICMP, NTP/SNTP, NetBIOS, PPPoE (server), RADIUS, RADSEC (secure RADIUS), RTP, SNMPv1,v2c,v3, TFTP, TACACS+, IGMPv3                                                                                                                                |
| IPv6 protocols                  | NDP, stateless address autoconfiguration (SLAAC), stateful address autoconfiguration (DHCPv6), router advertisements, ICMPv6, DHCPv6, DNS, HTTP, HTTPS, PPPoE, RADIUS, SMTP, NTP, BGP, LISP, Syslog, SNMPv1,v2c,v3, MLDv2, PIM, NPTv6 (NAT66)                       |
| Multicast Routing               | PIM (Protocol Independent Multicast), IGMP proxy, MLD proxy                                                                                                                                                                                                         |
| WAN operating mode              | VDSL, ADSL1, ADSL2 or ADSL2+ additional with external DSL modem at an ETH port                                                                                                                                                                                      |
| WAN protocols                   | PPPoE, Multi-PPPoE, GRE, EoGRE, PPTP (PAC or PNS), L2TPv2 (LAC or LNS), L2TPv3 with Ethernet-Pseudowire 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), 464XLAT                                                                                                                                                                              |

## Security

|                              |                                                                                                                          |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Intrusion Prevention         | Monitoring and blocking of login attempts and port scans                                                                 |
| IP spoofing                  | Source IP address check on all interfaces: only IP addresses belonging to the defined IP networks are allowed            |
| Access control lists         | Filtering of IP or MAC addresses and preset protocols for configuration access                                           |
| 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. Extended functionality with Content Filter Option |
| Password protection          | Password-protected configuration access can be set for each interface                                                    |
| Alerts                       | Alerts via e-mail, SNMP traps and SYSLOG                                                                                 |
| Authentication mechanisms    | PAP, CHAP, MS-CHAP and MS-CHAPv2 as PPP authentication mechanism                                                         |
| Adjustable reset button      | Adjustable reset button for 'ignore', 'boot-only' and 'reset-or-boot'                                                    |

## High availability / redundancy

|          |                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------|
| VRRP     | VRRP (Virtual Router Redundancy Protocol) for backup in case of failure of a device or remote station.             |
| FirmSafe | For completely safe software upgrades thanks to two stored firmware versions, incl. test mode for firmware updates |



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## High availability / redundancy

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Load balancing  | Static and dynamic load balancing over up to 4 WAN connections (incl. client binding). Channel bundling with Multilink PPP (if supported by network operator)                                                                                                                                                                                                                                                                                                                                   |
| VPN redundancy  | Backup of VPN connections across different hierarchy levels, e.g. in case of failure of a central VPN concentrator and re-routing to multiple distributed remote sites. Any number of VPN remote sites can be defined (the tunnel limit applies only to active connections). Up to 32 alternative remote stations, each with its own routing tag, can be defined per VPN connection. Automatic selection may be sequential, or dependant on the last connection, or random (VPN load balancing) |
| Line monitoring | Line monitoring with LCP echo monitoring, dead-peer detection and up to 4 addresses for end-to-end monitoring with ICMP polling                                                                                                                                                                                                                                                                                                                                                                 |

## VPN

|                                    |                                                                                                                                                                                                                                                                                   |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IPSec over HTTPS                   | Enables IPSec VPN based on TCP (at port 443 like HTTPS) which can go through firewalls in networks where e. g. port 500 for IKE is blocked. Suitable for client-to-site connections and site-to-site connections. IPSec over HTTPS is based on the NCP VPN Path Finder technology |
| Number of VPN tunnels              | Max. number of concurrent active IPSec, PPTP (MPPE) and L2TPv2 tunnels: 5 (25 with VPN 25 Option). Unlimited configurable connections. Configuration of all remote sites via one configuration entry when using the RAS user template or Proadaptive VPN.                         |
| Hardware accelerator               | Integrated hardware accelerator for 3DES/AES encryption and decryption                                                                                                                                                                                                            |
| Realtime clock                     | Integrated, buffered realtime clock to save the date and time during power failure. Assures timely validation of certificates in any case                                                                                                                                         |
| Random number generator            | Generates real random numbers in hardware, e. g. for improved key generation for certificates immediately after switching-on                                                                                                                                                      |
| 1-Click-VPN Client assistant       | One click function in LANconfig to create VPN client connections, incl. automatic profile creation for the LANCOM Advanced VPN Client                                                                                                                                             |
| 1-Click-VPN Site-to-Site           | Creation of VPN connections between LANCOM routers via drag and drop in LANconfig                                                                                                                                                                                                 |
| IKE, IKEv2                         | IPSec key exchange with Preshared Key or certificate (RSA signature, ECDSA-Signature, digital signature)                                                                                                                                                                          |
| Smart Certificate*                 | Convenient generation of digital X.509 certificates via an own certification authority (SCEP-CA) on the webpage or via SCEP.                                                                                                                                                      |
| Certificates                       | X.509 digital multi-level certificate support, compatible with Microsoft Server / Enterprise Server and OpenSSL. Secure Key Storage protects a private key (PKCS#12) from theft.                                                                                                  |
| Certificate rollout                | Automatic creation, rollout and renewal of certificates via SCEP (Simple Certificate Enrollment Protocol) per certificate hierarchy                                                                                                                                               |
| Certificate revocation lists (CRL) | CRL retrieval via HTTP per certificate hierarchy                                                                                                                                                                                                                                  |
| OCSP Client                        | Check X.509 certifications by using OCSP (Online Certificate Status Protocol) in real time as an alternative to CRLs                                                                                                                                                              |
| OCSP Server/Responder*             | Offers validity information for certificates created with Smart Certificate via OCSP                                                                                                                                                                                              |



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## VPN

|                              |                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| XAUTH                        | XAUTH client for registering LANCOM routers and access points at XAUTH servers incl. IKE-config mode. XAUTH server enables clients to register via XAUTH at LANCOM routers. Connection of the XAUTH server to RADIUS servers provides the central authentication of VPN-access with user name and password. Authentication of VPN-client access via XAUTH and RADIUS connection additionally by OTP token |
| RAS user template            | Configuration of all VPN client connections in IKE ConfigMode via a single configuration entry                                                                                                                                                                                                                                                                                                            |
| Proadaptive VPN              | Automated configuration and dynamic creation of all necessary VPN and routing entries based on a default entry for site-to-site connections.                                                                                                                                                                                                                                                              |
| Algorithms                   | 3DES (168 bit), AES-CBC and -GCM (128, 192 or 256 bit), RSA (1024-4096 bit), ECDSA (P-256-, P-384-, P-521-curves) and Chacha20-Poly 1305. OpenSSL implementation with FIPS-140 certified algorithms. MD-5, SHA-1, SHA-256, SHA-384 or SHA-512 hashes                                                                                                                                                      |
| NAT-Traversal                | NAT-Traversal (NAT-T) support for VPN over routes without VPN passthrough                                                                                                                                                                                                                                                                                                                                 |
| LANCOM Dynamic VPN           | Enables VPN connections from or to dynamic IP addresses. The IP address is communicated via the ICMP or UDP protocol in encrypted form. Dynamic dial-in for remote sites via connection template                                                                                                                                                                                                          |
| Dynamic DNS                  | Enables the registration of IP addresses with a Dynamic DNS 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 DNS servers in the VPN. External names are translated by Internet DNS servers                                                                                                                                                                                                                                   |
| Split DNS                    | Allows the selective forwarding of traffic for IKEv2 depending on the addressed DNS domain.                                                                                                                                                                                                                                                                                                               |
| IPv4 VPN                     | Connecting private IPv4 networks                                                                                                                                                                                                                                                                                                                                                                          |
| IPv4 VPN over IPv6 WAN       | Use of IPv4 VPN over IPv6 WAN connections                                                                                                                                                                                                                                                                                                                                                                 |
| IPv6 VPN                     | Connecting private IPv6 networks                                                                                                                                                                                                                                                                                                                                                                          |
| IPv6 VPN over IPv4 WAN       | Use of IPv6 VPN over IPv4 WAN connections                                                                                                                                                                                                                                                                                                                                                                 |
| Radius                       | RADIUS authorization and accounting, outsourcing of VPN configurations in external RADIUS server in IKEv2, RADIUS CoA (Change of Authorization)                                                                                                                                                                                                                                                           |
| High Scalability VPN (HSVPN) | Transmission of multiple, securely separated networks within a VPN tunnel                                                                                                                                                                                                                                                                                                                                 |
| Advanced Mesh VPN            | On demand dynamic VPN tunnel establishment between branches                                                                                                                                                                                                                                                                                                                                               |
| IKEv2-EAP*                   | VPN clients can be authenticated with IKEv2-EAP against a central database like Microsoft Windows Server or RADIUS Server                                                                                                                                                                                                                                                                                 |
| Two-factor authentication*   | Two-factor authentication with LANCOM Advanced VPN Client via IKEv2 EAP-OTP                                                                                                                                                                                                                                                                                                                               |
| *)                           | Only with VPN 25 option                                                                                                                                                                                                                                                                                                                                                                                   |



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## Performance

|                     |                                                                                                                                                                                      |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Routing-Performance | Data regarding the overall routing performance can be found inside the LANCOM tech paper "Routing-Performance" on <a href="http://www.lancom-systems.com">www.lancom-systems.com</a> |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## VoIP

|                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of local subscribers             | 10 (up to 40 with VoIP +10 Option)                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Number of local ISDN subscribers        | Up to 2 internal ISDN buses each with 2 parallel channels and each up to 10 telephone numbers                                                                                                                                                                                                                                                                                                                                                                             |
| Number of simultaneous VoIP connections | Up to 60 external VoIP connections depending on code conversion, echo canceling and load                                                                                                                                                                                                                                                                                                                                                                                  |
| Functionality                           | Hold/Request, Swap, Transfer, Call Forwarding (CFU, CFB, CFNR), number display/suppression (CLIP, CLIR), suppression of second call (Busy on Busy), immediate outgoing line, hunt groups, call diversion, overlap dialing                                                                                                                                                                                                                                                 |
| Hunt groups                             | Hunt group cascades, Call diversion, simultaneously or sequentially. Automatic forwarding after timeout or when busy/unreachable                                                                                                                                                                                                                                                                                                                                          |
| Call router                             | Central switching of all incoming and outgoing calls. Number translation by mapping, numeral replacement and number supplementation. Configuration of line and route selection incl. line backup. Routing based on calling and called number, SIP domain and line. Blocking of telephone numbers or blocks of telephone numbers. Inclusion of local subscribers into the number range of an upstream PBX. Supplement/remove line-related prefixes or switchboard numbers. |
| SIP proxy                               | Up to 25 SIP-provider accounts (up to 55 with VoIP +10 Option), up to 4 SIP PBXs incl. line backup. SIP connections from/to internal subscribers, SIP providers and SIP PBXs. Automatic bandwidth management and automatic configuration of the firewall for SIP connections.                                                                                                                                                                                             |
| SIP gateway                             | Conversion of analog or ISDN telephone calls to SIP calls, and vice versa. Local ISDN and analog subscribers register as local SIP users, and local ISDN/analog subscribers automatically register as SIP users at upstream SIP PBXs or SIP providers. Number translation between internal numbers and MSN/DDI                                                                                                                                                            |
| SIP trunk                               | Call switching based on extension numbers to/from VoIP PBXs/VoIP providers (support of the VoIP-DDI functions compliant with ITU-T Q.1912.5). Mapping of entire VoIP telephone number blocks                                                                                                                                                                                                                                                                              |
| Session Border Controller (SBC)         | Separation of insecure and secure networks, QoS, management of signaling and voice data, transcoding                                                                                                                                                                                                                                                                                                                                                                      |
| Media protocols                         | RTP, SIPs and SRTP                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| ISDN features                           | Provision of extension lines.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Analog features                         | Internal FXS ports for one analog terminal device each, or as an analog PBX exchange line.                                                                                                                                                                                                                                                                                                                                                                                |
| SIP-Codec support                       | SIP only: G.711 $\mu$ -law/A-law (64 kbps), G.722, G.723, G.726, G.729, iLBC, PCM (16, 20 und 24 Bit, Mono und Stereo), OPUS, AAC (LC, HE HEV2), MPEG Layer II, ADPCM 4SB. DTMF support (Inband, RFC2833, SIP-INFO)                                                                                                                                                                                                                                                       |
| Fax transmission                        | Transmission of fax via SIP on the LAN/WAN side with T.38 or G.711. Conversion of SIP fax with T.38 and break-in/break-out at the outside line to ISDN G.711 with service signalisation. Connection and conversion to SIP T.38 or G.711 for SIP, analog or ISDN fax machines. Compatible to SwyxFax on true G.711 SIP lines.                                                                                                                                              |
| Autoprovisioning                        | Automatic network and VoIP integration of LANCOM DECT 510 IP base station                                                                                                                                                                                                                                                                                                                                                                                                 |



# LANCOM 1803VA-4G

## VoIP

|         |                                                                                                                                                                                                                               |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SIP ALG | The SIP ALG (Application Layer Gateway) acts as a proxy for SIP communication. For SIP calls the ALG opens the necessary ports for the corresponding media packets. Automatic address translation (STUN is no longer needed). |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Interfaces

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WAN: LTE/UMTS      | LTE advanced, LTE, UMTS or HSxPA with integrated LTE advanced modem                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| WAN: VDSL / ADSL2+ | → VDSL2 compliant with ITU G.993.2, profiles 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a, 35b<br>→ VDSL Supervectoring as per ITU G.993.2 (Annex Q)<br>→ VDSL2 Vectoring: as per ITU G.993.5 (G.Vector)<br>→ Certified for the use with Swisscom (CH) VDSL lines<br>→ ADSL2+ over ISDN as per ITU G.992.5 Annex B/J with DPBO, ITU G.992.3/5 and ITU G.992.1<br>→ ADSL2+ over POTS as per ITU G.992.5 Annex A/M with DPBO, ITU G.992.3 and ITU G.992.1<br>→ Supports one virtual ATM circuit (VPI, VCI pair) at a time |
| Ethernet ports     | 5 individual 10/100/1000 Mbps Ethernet ports, 1 of them is combo (TP/SFP), 1 port is set to WAN when delivered, up to 3 ports can be operated as additional WAN ports. Ethernet ports can be electrically disabled within LCOS configuration. The ports support energy saving according to IEEE 802.3az                                                                                                                                                                                                       |
| Port configuration | Each Ethernet port can be freely configured (LAN, DMZ, WAN, monitor port, off). LAN ports can be operated as a switch or separately. Additionally, external DSL modems or termination routers can be operated as a WAN port with load balancing and policy-based routing. DMZ ports can be operated with their own IP address range without NAT                                                                                                                                                               |
| USB 2.0 host port  | USB 2.0 hi-speed host port for connecting USB printers (USB print server), LANCOM Wireless ePaper USB stick, USB data storage (FAT file system); bi-directional data exchange is possible                                                                                                                                                                                                                                                                                                                     |
| ISDN               | 2x internal ISDN BRI port (NT)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Analog             | 2x internal FXS ports (Analog1, Analog2) each for one analog device                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Serial interface   | Serial configuration interface / COM port (USB-C): 9,600 - 115,000 baud.                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Management and monitoring

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Management                | LANCOM Management Cloud, LANconfig, WEBconfig, 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                                                                                                                                                                                                                                                                                                                                              |
| automatic firmware update | configurable automatic checking and installation of firmware updates                                                                                                                                                                                                                                                                                                                                            |
| Monitoring                | LANCOM Management Cloud, LANmonitor, WLANmonitor                                                                                                                                                                                                                                                                                                                                                                |
| 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                                                                                                                                                                                                                                       |



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## Management and monitoring

|                       |                                                                                                                                                                                                                      |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monitoring statistics | Extensive Ethernet, IP and DNS statistics; SYSLOG error counter, accounting information exportable via LANmonitor and SYSLOG, Layer 7 Application Detection including application-centric tracking of traffic volume |
| IPerf                 | IPerf is a tool for measurements of the bandwidth on IP networks (integrated client and server)                                                                                                                      |
| SLA-Monitor (ICMP)    | Performance monitoring of connections                                                                                                                                                                                |
| Netflow               | Export of information about incoming and outgoing IP traffic                                                                                                                                                         |
| SD-LAN                | SD-LAN – automatic LAN configuration via the LANCOM Management Cloud                                                                                                                                                 |
| SD-WAN                | SD-WAN – automatic WAN configuration via the LANCOM Management Cloud                                                                                                                                                 |

## Hardware

|                               |                                                                                                   |
|-------------------------------|---------------------------------------------------------------------------------------------------|
| Weight                        | 1,68 lbs (760 g)                                                                                  |
| Environment                   | Temperature range 0–40°C; humidity 0–95%; non-condensing                                          |
| Housing                       | Robust synthetic housing, rear connectors, ready for wall mounting, 293 x 44 x 190 mm (W x H x D) |
| Fans                          | 1 silent fan                                                                                      |
| waste heat (max.)             | 112 BTU/h                                                                                         |
| Power consumption (max./idle) | 28 watt / 13 watt                                                                                 |

## Declarations of conformity\*

|                   |                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Europe/EFTA       | CE                                                                                                                                        |
| IPv6              | IPv6 Ready Gold                                                                                                                           |
| Country of Origin | Made in Germany                                                                                                                           |
| *) Note           | You will find all declarations of conformity on our website at <a href="http://www.lancom-systems.com/doc">www.lancom-systems.com/doc</a> |

## Scope of delivery

|          |                                                                       |
|----------|-----------------------------------------------------------------------|
| Manual   | Quick Installation Guide (DE/EN)                                      |
| Cable    | 1 Ethernet cable, 3 m                                                 |
| Cable    | DSL cable for IP based communications incl. galvanic signature, 4,25m |
| Adapter  | 2x TAE adapter (RJ11 to TAE)                                          |
| Antennas | Two 2 dBi LTE/UMTS-antennas                                           |



# LANCOM 1803VA-4G

## Scope of delivery

|                   |                                                                                                                                                           |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply unit | External power adapter (230 V), NEST 12 V/2.5 A DC/S, coaxial power connector 2.1/5.5 mm, temperature range from 0 to +40° C, LANCOM item no. 111884 (EU) |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|

## Support

|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warranty extension             | Free warranty extension up to 3 years (replacement service for defects)<br>For details, please refer to the service and support conditions at <a href="http://www.lancom-systems.com/support-conditions">www.lancom-systems.com/support-conditions</a> or at <a href="http://www.lancom.de/rma">www.lancom.de/rma</a> .                                                                                                                                          |
| Security updates               | Up to 2 years after End of Sale of the device (but min. 3 years, see <a href="http://www.lancom-systems.com/product-tables">www.lancom-systems.com/product-tables</a> ), can be extended by purchasing LANcare products                                                                                                                                                                                                                                          |
| Software updates               | Regular free updates including new features as part of the LANCOM Lifecycle Management ( <a href="http://www.lancom-systems.com/lifecycle">www.lancom-systems.com/lifecycle</a> )                                                                                                                                                                                                                                                                                |
| Manufacturer support           | For LANcommunity partners up to the End of Life of the device<br>For end customers with LANcare Direct or LANcare Premium Support during the LANcare validity                                                                                                                                                                                                                                                                                                    |
| LANcare Basic S                | Security updates until EOL (min. 5 years) and 5 years replacement service with shipment of the replacement device within 5 days after arrival of the defective device (8/5/5Days), item no. 10720                                                                                                                                                                                                                                                                |
| LANcare Advanced S             | Security updates until EOL (min. 5 years) and 5 years NBD advance replacement with delivery of the replacement device within one business day (8/5/NBD), item no. 10730                                                                                                                                                                                                                                                                                          |
| LANcare Direct Advanced 24/7 S | Direct, prioritized 10/5 manufacturer support incl. 24/7 emergency hotline and security updates for the device, NBD advance replacement with delivery of the device on the next business day (24/7/NBD), guaranteed first response times (SLA) of max. 30 minutes for reporting massive operational disruptions by telephone (priority 1) and max. 4 hours for all other concerns (priority 2), term-based for 1, 3, or 5 years (item no. 10776, 10777 or 10778) |
| LANcare Direct 24/7 S          | Direct, prioritized 10/5 manufacturer support incl. 24/7 emergency hotline and security updates for the device, guaranteed first response times (SLA) of max. 30 minutes for reporting massive operational disruptions by telephone (priority 1) and max. 4 hours for all other concerns (priority 2), term-based for 1, 3, or 5 years (item no. 10752, 10753 or 10754)                                                                                          |
| LANcare Direct Advanced 10/5 S | Direct, prioritized 10/5 manufacturer support and security updates for the device, NBD advance replacement with delivery of the device on the next business day (10/5/NBD), guaranteed first response times (SLA) of max. 2 hours for reporting massive operational disruptions by telephone (priority 1) and max. 4 hours for all other concerns (priority 2), term-based for 1, 3, or 5 years.(item no. 10764, 10765 or 10766)                                 |
| LANcare Direct 10/5 S          | Direct, prioritized 10/5 manufacturer support and security updates for the device, guaranteed first response times (SLA) of max. 2 hours for reporting massive operational disruptions by telephone (priority 1) and max. 4 hours for all other concerns (priority 2), term-based for 1, 3, or 5 years.(item no. 10740, 10741 or 10742)                                                                                                                          |

## Software

|                      |                                                                                                                                                                                                                   |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lifecycle Management | After discontinuation (End of Sale), the device is subject to the LANCOM Lifecycle Management. Details can be found at:<br><a href="http://www.lancom-systems.com/lifecycle">www.lancom-systems.com/lifecycle</a> |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



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## Software

|                      |                                                                                                                                                                                                                                                                                                                                                          |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Anti-backdoor policy | Products from LANCOM are free of hidden access paths (backdoors) and other undesirable features for introducing, extracting or manipulating data. The trust seal "IT Security made in Germany" (ITSMIG) and certification by the German Federal Office for Information Security (BSI) confirm the trustworthiness and the outstanding level of security. |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Options

|                                        |                                                                                                                                                                                                                                                                                  |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VPN                                    | LANCOM VPN-25 Option (25 channels), item no. 60083                                                                                                                                                                                                                               |
| LANCOM Content Filter                  | LANCOM Content Filter +10 user (additive up to 100), 1 year subscription, item no. 61590                                                                                                                                                                                         |
| LANCOM Content Filter                  | LANCOM Content Filter +25 user (additive up to 100), 1 year subscription, item no. 61591                                                                                                                                                                                         |
| LANCOM Content Filter                  | LANCOM Content Filter +100 user (additive up to 100), 1 year subscription, item no. 61592                                                                                                                                                                                        |
| LANCOM Content Filter                  | LANCOM Content Filter +10 user (additive up to 100), 3 year subscription, item no. 61593                                                                                                                                                                                         |
| LANCOM Content Filter                  | LANCOM Content Filter +25 user (additive up to 100), 3 year subscription, item no. 61594                                                                                                                                                                                         |
| LANCOM Content Filter                  | LANCOM Content Filter +100 user (additive up to 100), 3 year subscription, item no. 61595                                                                                                                                                                                        |
| LANCOM BPjM Filter                     | LANCOM BPjM Filter Option, 5 years subscription, item no. 61418                                                                                                                                                                                                                  |
| LANCOM Public Spot                     | Hotspot option for LANCOM products, versatile access (via voucher, e-mail, SMS), including a comfortable setup wizard, secure separation of guest access and internal network, item no. 60642                                                                                    |
| LANCOM Public Spot (10 bulk)           | Hotspot option for LANCOM products, versatile access (via voucher, e-mail, SMS), including a comfortable setup wizard, secure separation of guest access and internal network (10 bulk), item no. 61312                                                                          |
| LANCOM Public Spot PMS Accounting Plus | Extension of the LANCOM Public Spot (XL) Option for the connection to hotel billing systems with FIAS interface (such as Micros Fidelio) for authentication and billing of guest accesses for 178x/19xx routers, 2100EF, WLCs, and current central-site gateways, item no. 61638 |
| LANCOM WLC Basic Option for Routers    | LANCOM WLC Basic Option for Routers for up to 6 managed LANCOM access points or WLAN routers, item no. 61639                                                                                                                                                                     |
| LANCOM WLC AP Upgrade +6               | LANCOM WLC AP Upgrade +6 Option, enables your WLC to manage 6 Access Points/WLAN router in addition, item no. 61629                                                                                                                                                              |
| LANCOM VoIP +10 Option                 | Upgrade for LANCOM VoIP router with 10 additional internal VoIP numbers (additionally up to 40) and 10 external SIP lines (additionally up to 55) item no. 61423                                                                                                                 |

## LANCOM Management Cloud

|                             |                                                                                                                                                    |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| LANCOM LMC-B-1Y LMC License | LANCOM LMC-B-1Y License (1 Year), enables the management of one category B device for one year via the LANCOM Management Cloud, item no. 50103     |
| LANCOM LMC-B-3Y LMC License | LANCOM LMC-B-3Y License (3 Years), enables the management of one category B device for three years via the LANCOM Management Cloud, item no. 50104 |



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## LANCOM Management Cloud

|                             |                                                                                                                                                   |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| LANCOM LMC-B-5Y LMC License | LANCOM LMC-B-5Y License (5 Years), enables the management of one category B device for five years via the LANCOM Management Cloud, item no. 50105 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|

## Accessories

|                                         |                                                                                                                                                                                                                                       |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LANCOM DECT 510 IP (EU)                 | Professional DECT base station for up to 6 DECT phones, network integration and configuration via LANCOM VoIP router, 4 simultaneous calls possible, highest voice quality, power supply via PoE or power supply unit, item no. 61901 |
| External antenna                        | AirLancer I-360D-5G, omnidirectional outdoor antenna MIMO (2x2), for all 4G/5G bands (698-3800 MHz), item no. 60919                                                                                                                   |
| External antenna                        | AirLancer O-360D-5G, omnidirectional outdoor antenna MIMO (2x2), for all 4G/5G bands (698-3800 MHz), item no. 61233                                                                                                                   |
| 1000Base-BX20-U SFP module              | LANCOM SFP-AON-1, item no. 60200                                                                                                                                                                                                      |
| GPON ONT SFP module                     | LANCOM SFP-GPON-1, Compatible for the use on FTTH-lines of Deutsche Telekom, item no. 60199                                                                                                                                           |
| XGS-PON ONT SFP module                  | LANCOM SFP-XGSPON-1, item no. 60207                                                                                                                                                                                                   |
| 1000Base-BX20 SFP module pair           | LANCOM SFP-BiDi1550-SC1, item no. 60201                                                                                                                                                                                               |
| 1000Base-SX SFP module, 550 m           | LANCOM SFP-SX-LC1, item no. 61556                                                                                                                                                                                                     |
| 1000Base-SX SFP module, 550 m (Bulk 10) | LANCOM SFP-SX-LC1 (Bulk 10), item no. 60184                                                                                                                                                                                           |
| 1000Base-SX SFP module, 2 km            | LANCOM SFP-SX2-LC1, item no. 60183                                                                                                                                                                                                    |
| 1000Base-LX SFP module                  | LANCOM SFP-LX-LC1, item no. 61557                                                                                                                                                                                                     |
| 1000Base-LX SFP module (Bulk 10)        | LANCOM SFP-LX-LC1 (Bulk 10), item no. 60185                                                                                                                                                                                           |
| SFP copper module 1G                    | LANCOM SFP-CO1, item no. 61494                                                                                                                                                                                                        |
| SFP copper module 1G (Bulk 10)          | LANCOM SFP-CO1 (Bulk 10), item no. 60186                                                                                                                                                                                              |
| 19" Rack Mount                          | 19" LANCOM CPE blackline rack mount, item no. 61990                                                                                                                                                                                   |
| 19" Rack Mount                          | 19" LANCOM CPE blackline rack mount plus, item no. 61991                                                                                                                                                                              |
| LANCOM Wireless ePaper USB              | Control of ESL displays from the manufacturer SES-imagotag in the 2.4 GHz frequency band, item no. 62225                                                                                                                              |
| VPN Client Software                     | LANCOM Advanced VPN Client for Windows 7,8/8.1,10,11 - single license, item no. 61600                                                                                                                                                 |
| VPN Client Software                     | LANCOM Advanced VPN Client for Windows 7,8/8.1,10,11 - 10 licenses, item no. 61601                                                                                                                                                    |
| VPN Client Software                     | LANCOM Advanced VPN Client for Windows 7,8/8.1,10,11 - 25 licenses, item no. 61602                                                                                                                                                    |



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Accessories

VPN Client Software                      LANCOM Advanced VPN Client for Mac OS X (10.5 Intel only, 10.6 or higher), single license, item no. 61606

VPN Client Software                      LANCOM Advanced VPN Client for Mac OS X (10.5 Intel only, 10.6 or higher), 10 licenses, item no. 61607

\*) Note                                              Support for third-party accessories (SFP and DAC) is excluded and cannot be granted

Item number(s)

LANCOM 1803VA-4G (EU)                      62155

