

LCOS 10.94

# R&S® LANCOM 1800VAW-4G

Secure SD-WAN over VDSL, fiber, Wi-Fi 6, and 4G



At company sites and branch offices with business-critical applications, a fast and at the same time highly available connection to the Internet is essential. The SD-WAN gateway R&S® LANCOM 1800VAW-4G offers flexible interface diversity with VDSL and fiber optics, and its additional 4G connectivity ensures reliable Internet backup in the event of a wired line failure. Complemented by high-performance dual-band concurrent Wi-Fi 6, mobile devices are also connected by radio. Automated network management in combination with the R&S® LANCOM Management Cloud (R&S® LMC) enables the R&S® LANCOM 1800VAW-4G to save valuable resources such as time and costs.

- ▶ Secure SD-WAN – centralized cloud management with secure network separation, automated provisioning, and intelligent path control
- ▶ 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
- ▶ Dual-band concurrent Wi-Fi 6 with up to 1,200 Mbps at 5 GHz and up to 575 Mbps at 2.4 GHz
- ▶ Integrated 4G modem with 300 Mbps LTE Advanced for intelligent backup scenarios and highest reliability
- ▶ 5 integrated VPN channels (25 optional)
- ▶ Network virtualization with up to 16 networks on one device (ARF)
- ▶ Extended protection with the content filter of the R&S® LANCOM Security Essentials Option

# R&S®LANCOM 1800VAW-4G

## Reliable, intelligent site connectivity with Secure SD-WAN

Secure SD-WAN enables centrally managed and secure networking of all sites. In combination with the R&S®LANCOM Management Cloud (R&S®LMC), it allows company-wide security and access policies to be implemented, while rollouts, configurations, and updates are automated and accelerated. Encrypted Auto VPNs, High Scalability and Advanced Mesh VPNs, Dynamic Path Selection, as well as active/active WAN with load balancing ensure resilient, fail-safe connections.

## Flexible WAN connectivity via VDSL, fiber, and 4G

Depending on availability, the VDSL Supervectoring modem (up to 300 Mbps, backward comp. with VDSL2/ADSL2+), the SFP/TP combo port with opt. GPON/AON module for fiber, the 4G modem, and Gigabit Ethernet for ext. modems can be used.

## Reliable integration of wireless clients with Wi-Fi 6

Mobile devices gain secure, direct network access via the Wi-Fi router. For stable coverage without additional hardware, Wi-Fi 6 (IEEE 802.11ax) supports simultaneous 2.4 GHz (up to 575 Mbps) and 5 GHz (up to 1,200 Mbps).

## Multi-layered security – automatically integrated

A SPI firewall is integrated into the LCOS operating system ex works (Built-in Security). Secure network segmentation is provided via ARF and VLAN, while PQ-PSKs protect against “store-now-decrypt-later” attacks and prepare for quantum resistance.

## Encrypted communication via VPN

The gateway enables secure Internet connections for mobile employees, home offices, and locations via 5 integrated VPN channels (IPsec and WireGuard) and can be expanded to up to 25 channels with the R&S®LANCOM VPN Option.

## Sustainably designed: housing made from 70% recycled material

The housing of the R&S®LANCOM 1800 blackline series is made of 70% post-consumer recycled material (PCR), is manufactured without coatings, paint, or adhesives, and is designed for resource-efficient continuous operation thanks to its cooling concept.

## Individually upgradeable security with content filter

The R&S®LANCOM Security Essentials Option enhances the router with a cloud-based web and content filter that protects against phishing, ransomware, and malicious websites. Thanks to its unlimited number of users, the option is ideally suited for growing networks.

# R&S® LANCOM 1800VAW-4G

WLAN product specifications	
<b>Frequency band 2.4 GHz and 5 GHz</b>	2400-2483.5 MHz (ISM), 5150-5350 MHz and 5470-5725 MHz (depending on country-specific restrictions)
<b>Data rates IEEE 802.11ax</b>	<ul style="list-style-type: none"> <li>▶ up to 1200 Mbps according to IEEE 802.11ax with MCS11/QAM-1024 at 5 GHz, 2x2 MIMO and 80 MHz channel width</li> <li>▶ up to 575 Mbps according to IEEE 802.11ax with MCS11/QAM-1024 at 2.4 GHz, 2x2 MIMO and 40 MHz channel width</li> </ul>
<b>Data rates IEEE 802.11ac/n</b>	867 Mbps according to IEEE 802.11ac with MCS9 (fallback to 6.5 Mbps with MCS0). Compatible to IEEE 802.11ac/n/a, IEEE 802.11ac/n, IEEE 802.11n/a compatibility mode or pure IEEE 802.11ac, pure IEEE 802.11n, pure IEEE 802.11a mode and data rates selectable
<b>Data rates IEEE 802.11n</b>	300 Mbps according to IEEE 802.11n with MCS15 (fallback to 6.5 Mbps with MCS0). Compatible to IEEE 802.11a/n, IEEE 802.11g/n, IEEE 802.11b/g/n or IEEE 802.11b/g compatibility mode or pure IEEE 802.11n, pure IEEE 802.11a, IEEE 802.11g or pure IEEE 802.11b mode and data rates selectable
<b>Data rates IEEE 802.11a/ h</b>	54 Mbps (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection), fully compatible with TPC (adjustable power output) and DFS (automatic channel selection, radar detection) and data rates selectable
<b>Data rates IEEE 802.11b/g</b>	54 Mbps to IEEE 802.11g (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection) compatible to IEEE 802.11b (11, 5.5, 2, 1 Mbps, Automatic Rate Selection), IEEE 802.11b/g compatibility mode or pure IEEE 802.11g or pure IEEE 802.11b selectable
<b>Output power at radio module, 2.4 GHz and per chain</b>	<ul style="list-style-type: none"> <li>▶ IEEE 802.11b: +25 dBm @ 1 MBit/s, +25 dBm @ 11 MBit/s</li> <li>▶ IEEE 802.11g: +25 dBm @ 6 MBit/s, +24 dBm @ 54 MBit/s</li> <li>▶ IEEE 802.11n: +25 dBm @ MCS0/20 MHz, +23 dBm @ MCS7/20 MHz</li> <li>▶ IEEE 802.11ac/ax: +22 dBm @ MCS9/40 MHz, +20 dBm @ MCS11/40 MHz</li> </ul>
<b>Output power at radio module, 5 GHz and per chain</b>	<ul style="list-style-type: none"> <li>▶ IEEE 802.11a: +25 dBm @ 6 MBit/s, +22 dBm @ 54 MBit/s</li> <li>▶ IEEE 802.11n: +25 dBm @ MCS0/20 MHz, +22 dBm @ MCS7/20 MHz</li> <li>▶ IEEE 802.11ac/ax: +19 dBm @ MCS9/80 MHz, +18 dBm @ MCS11/80 MHz</li> </ul>
<b>Receiver sensitivity, 2.4 GHz</b>	<ul style="list-style-type: none"> <li>▶ IEEE 802.11b: -98 dBm @ 1 MBit/s, -90 dBm @ 11 MBit/s</li> <li>▶ IEEE 802.11g: -95 dBm @ 6 MBit/s, -76 dBm @ 54 MBit/s</li> <li>▶ IEEE 802.11n: -94 dBm @ MCS0/20 MHz, -74 dBm @ MCS7/20 MHz</li> <li>▶ IEEE 802.11ac/ax: -67 dBm @ MCS9/40 MHz, -61 dBm @ MCS11/40 MHz</li> </ul>
<b>Receiver sensitivity, 5 GHz</b>	<ul style="list-style-type: none"> <li>▶ IEEE 802.11a: -94 dBm @ 6 MBit/s, -75 dBm @ 54 MBit/s</li> <li>▶ IEEE 802.11n: -93 dBm @ MCS0/20 MHz, -73 dBm @ MCS7/20 MHz</li> <li>▶ IEEE 802.11ac/ax: -63 dBm @ MCS9/80 MHz, -57 dBm @ MCS11/80 MHz</li> </ul>
<b>Radio channels 5 GHz</b>	Up to 16 non-overlapping channels (available channels and further obligations such as automatic DFS dynamic channel selection depending on national regulations)
<b>Radio channels 2.4 GHz</b>	Up to 13 channels, max. 3 non-overlapping (depending on country-specific restrictions)
<b>antenna connectors</b>	Two internal WLAN dual band antennas
<b>Multi-SSID</b>	Up to 14 independent WLAN networks; time-controlled activation and deactivation of WLAN networks
<b>Concurrent WLAN clients</b>	Up to 127 clients (recommended)
Supported WLAN standards	
<b>IEEE standards</b>	IEEE 802.11ax (Wi-Fi 6), IEEE 802.11ac Wave 2 (Wi-Fi 5), IEEE 802.11n (Wi-Fi 4), IEEE 802.11a, IEEE 802.11g, IEEE 802.11b, IEEE 802.11i, IEEE 802.1X, IEEE 802.11h, IEEE 802.11d, IEEE 802.11v
Standard IEEE 802.11ax (Wi-Fi 6)	
<b>Supported features</b>	2x2 DL-/UL-MU-MIMO, DL-/UL-OFDMA, triggered target-wake-time, BSS coloring, QAM-1024, 80 MHz channels
Standard IEEE 802.11ac (Wi-Fi 5)	
<b>Supported features</b>	2x2 MIMO, 80 MHz channels, MU-MIMO, QAM-256
Standard IEEE 802.11n (Wi-Fi 4)	
<b>Supported features</b>	2x2 MIMO, 40 MHz channel, 20/40MHz coexistence mechanisms in the 2.4 GHz band, MAC aggregation, Block Acknowledgement, STBC (Space Time Block Coding), LDPC (Low Density Parity Check), MRC (Maximal Ratio Combining), Short Guard Interval

# R&S® LANCOM 1800VAW-4G

WLAN operating modes	
<b>Modes</b>	WLAN access point (standalone or R&S® LANCOM Management Cloud managed)
Security	
<b>Encryption options</b>	WPA3-Personal, IEEE 802.1X (WPA3-Enterprise, WPA2-Enterprise), IEEE 802.11i (WPA2-Personal), WPA2™, WPA, WEP, IEEE 802.11w (Protected Management Frames), LEPS-MAC (R&S® LANCOM Enhanced Passphrase Security MAC), LEPS-U (R&S® LANCOM Enhanced Passphrase Security User)
<b>Encryption</b>	AES-CCMP AES-GCMP, TKIP, RC4 (only used by WEP)
<b>EAP types (authenticator)</b>	EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-FAST
<b>RADIUS/EAP-server</b>	User administration MAC-based, rate limiting, passphrases, VLAN user based, authentication of IEEE 802.1X clients via EAP-TLS, EAP-TTLS, EAP-MD5, EAP-GTC, PEAP, MSCHAP, MSCHAPv2, Dynamic Peer Discovery
<b>Others</b>	WLAN protocol filters, IP-redirection of any packet received over the WLAN interface, IEEE 802.1X supplicant, client detection ("rogue WLAN client detection"), Wireless Intrusion Detection System (WIDS), RADIUS CoA (Change of Authorization)
R&S® LANCOM Active Radio Control	
<b>Client Management</b>	Steering of WLAN clients to the ideal access point using 802.11k and 802.11v
<b>Band Steering</b>	Steering of 5GHz clients to the corresponding high-performance frequency band
<b>Managed RF Optimization*</b>	Selection of optimal WLAN channels by the administrator
<b>Airtime Fairness</b>	Improved utilization of the WLAN bandwidth
<b>Adaptive Transmission Power</b>	Automatic adjustment of the transmission power for Wi - Fi backup scenarios
<b>*) Note</b>	Only in installations with WLAN controller
Roaming	
<b>Roaming</b>	IAPP (Inter Access Point Protocol), IEEE 802.11r (Fast Roaming), OKC (Opportunistic Key Caching)
LTE modem	
<b>Supported standards</b>	LTE, UMTS and HSPA support (mode of transmission automatically or manually adjustable), 2G/GSM is not supported
<b>Supported mobile bands (3G/4G)</b>	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)
<b>Maximum transmission power</b>	+23 dBm
<b>Diversity support</b>	Receive diversity on the aux antenna (3G); MIMO (2x2) for LTE (4G)
<b>External antenna connectors</b>	Two SMA antenna connectors (SMA female) for external mobile radio antennas
<b>WWAN operating modes</b>	Router or bridge mode
<b>Supported SIM card formats</b>	Micro-SIM (3FF), Nano-SIM (4FF) via adaptor
<b>eSIM**</b>	Integrated SGP.22 Consumer eSIM/eUICC with storage option for up to 8 mobile profiles (from hardware revision D)
<b>***) Note</b>	It is not possible to actively use multiple profiles simultaneously.
Layer 2 features	
<b>VLAN</b>	4.096 IDs based on IEEE 802.1q, dynamic assignment
<b>Multicast</b>	IGMP-Snooping, MLD-Snooping
<b>Protocols</b>	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
<b>OAM</b>	Ethernet link OAM 802.3ah, IEEE 802.1ag CFM

# R&S® LANCOM 1800VAW-4G

Layer 3 features	
<b>Firewall</b>	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
<b>Quality of Service</b>	Traffic shaping, bandwidth reservation, DiffServ/TOS, packet size control, layer-2-in-layer-3 tagging, support for 8 QoS queues (6 free configurable)
<b>Security</b>	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
<b>PPP authentication mechanisms</b>	PAP, CHAP, MS-CHAP, and MS-CHAPv2
<b>High availability / redundancy</b>	VRRP (Virtual Router Redundancy Protocol)
<b>Router</b>	IPv4-, IPv6-, IPv4/IPv6 dual stack
<b>SD-WAN Application Routing</b>	SD-WAN Application Routing in connection with the R&S® LANCOM Management Cloud
<b>SD-WAN dynamic path selection</b>	SD-WAN dynamic path selection in connection with the R&S® LANCOM Management Cloud
<b>SD-WAN Zero Touch Deployment</b>	Zero touch commissioning of the device in conjunction with the R&S® LANCOM Management Cloud
<b>Router virtualization</b>	ARF (Advanced Routing and Forwarding) up to separate processing of 16 contexts
<b>IPv4 services</b>	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, NTP client, SNTP server, policy-based routing, Bonjour-Proxy, RADIUS
<b>IPv6 services</b>	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
<b>Dynamic routing protocols</b>	RIPv2, BGPv4, OSPFv2, LISP (Locator/ID Separation Protocol)
<b>IPv4 protocols</b>	DNS, HTTP, HTTPS, ICMP, NTP/SNTP, PPPoE (server), RADIUS, RADSEC (secure RADIUS), RTP, SNMPv1,v2c,v3, TFTP, TACACS+, IGMPv3
<b>IPv6 protocols</b>	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), VRRPv3
<b>Multicast Routing</b>	PIM (Protocol Independent Multicast), IGMP proxy, MLD proxy
<b>WAN operating mode</b>	VDSL, ADSL1, ADSL2 or ADSL2+ additional with external DSL modem at an ETH port
<b>WAN protocols</b>	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)
<b>Tunneling protocols (IPv4/IPv6)</b>	6to4, 6in4, 6rd, Dual Stack Lite, 464XLAT
Security	
<b>Intrusion Prevention</b>	Monitoring and blocking of login attempts and port scans
<b>IP spoofing</b>	Source IP address check on all interfaces: only IP addresses belonging to the defined IP networks are allowed
<b>Access control lists</b>	Filtering of IP or MAC addresses and preset protocols for configuration access
<b>Denial of Service protection</b>	Protection from fragmentation errors and SYN flooding
<b>General</b>	Detailed settings for handling reassembly, PING, stealth mode and AUTH port
<b>URL blocker</b>	Filtering of unwanted URLs based on DNS hitlists and wildcard filters. Extended functionality with Security Essentials Option
<b>Password protection</b>	Password-protected configuration access can be set for each interface
<b>Two-factor authentication</b>	Two-factor authentication (2FA) for local device management via WEBconfig, SSH or Telnet with external Authenticator application
<b>Alerts</b>	Alerts via e-mail, SNMP traps and SYSLOG
<b>Authentication mechanisms</b>	PAP, CHAP, MS-CHAP and MS-CHAPv2 as PPP authentication mechanism

# R&S® LANCOM 1800VAW-4G

Security	
<b>Adjustable reset button</b>	Adjustable reset button for 'ignore', 'boot-only' and 'reset-or-boot'
High availability / redundancy	
<b>VRRP</b>	VRRP (Virtual Router Redundancy Protocol VRRPv2 and VRRPv3) for backup in case of failure of a device or remote station.
<b>FirmSafe</b>	For completely safe software upgrades thanks to two stored firmware versions, incl. test mode for firmware updates
<b>Load balancing</b>	Static and dynamic load balancing over up to 4 WAN connections (incl. client binding).
<b>VPN redundancy</b>	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)
<b>Line monitoring</b>	Line monitoring with LCP echo monitoring, dead-peer detection and up to 4 addresses for end-to-end monitoring with ICMP polling
VPN	
<b>IPSec over HTTPS</b>	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
<b>Number of VPN tunnels</b>	Max. number of concurrent active WireGuard or 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.
<b>Hardware accelerator</b>	Integrated hardware accelerator for 3DES/AES encryption and decryption
<b>Realtime clock</b>	Integrated, buffered realtime clock to save the date and time during power failure. Assures timely validation of certificates in any case
<b>Random number generator</b>	Generates real random numbers in hardware, e. g. for improved key generation for certificates immediately after switching-on
<b>1-Click-VPN Client assistant</b>	One click function in LANconfig to create VPN client connections, incl. automatic profile creation for the R&S® LANCOM Advanced VPN Client
<b>1-Click-VPN Site-to-Site</b>	Creation of VPN connections between R&S® LANCOM routers via drag and drop in LANconfig
<b>IKE, IKEv2</b>	IPSec key exchange with Preshared Key or certificate (RSA signature, ECDSA-Signature, digital signature)
<b>Smart Certificate*</b>	Convenient generation of digital X.509 certificates via an own certification authority (SCEP-CA) on the webpage or via SCEP.
<b>Certificates</b>	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.
<b>Certificate rollout</b>	Automatic creation, rollout and renewal of certificates via SCEP (Simple Certificate Enrollment Protocol) per certificate hierarchy
<b>Certificate revocation lists (CRL)</b>	CRL retrieval via HTTP per certificate hierarchy
<b>OCSP Client</b>	Check X.509 certifications by using OCSP (Online Certificate Status Protocol) in real time as an alternative to CRLs
<b>OCSP Server/Responder*</b>	Offers validity information for certificates created with Smart Certificate via OCSP
<b>XAUTH</b>	XAUTH client for registering R&S® LANCOM routers and access points at XAUTH servers incl. IKE-config mode. XAUTH server enables clients to register via XAUTH at R&S® 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
<b>RAS user template</b>	Configuration of all VPN client connections in IKE ConfigMode via a single configuration entry
<b>Proadaptive VPN</b>	Automated configuration and dynamic creation of all necessary VPN and routing entries based on a default entry for site-to-site connections.
<b>Algorithms</b>	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

# R&S® LANCOM 1800VAW-4G

VPN	
<b>Post-quantum security</b>	Post-quantum Preshared Keys (PPK) for IKEv2
<b>NAT-Traversal</b>	NAT-Traversal (NAT-T) support for VPN over routes without VPN passthrough
<b>MOBIKE</b>	IKEv2 VPN clients can seamlessly switch between different networks (e.g. from WLAN to mobile radio) without having to re-establish the VPN tunnel
<b>WireGuard</b>	Support of WireGuard
<b>R&amp;S® LANCOM Dynamic VPN</b>	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
<b>Dynamic DNS</b>	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
<b>Specific DNS forwarding</b>	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
<b>Split DNS</b>	Allows the selective forwarding of traffic for IKEv2 depending on the addressed DNS domain.
<b>IPv4 VPN</b>	Connecting private IPv4 networks
<b>IPv4 VPN over IPv6 WAN</b>	Use of IPv4 VPN over IPv6 WAN connections
<b>IPv6 VPN</b>	Connecting private IPv6 networks
<b>IPv6 VPN over IPv4 WAN</b>	Use of IPv6 VPN over IPv4 WAN connections
<b>Radius</b>	RADIUS authorization and accounting, outsourcing of VPN configurations in external RADIUS server in IKEv2, RADIUS CoA (Change of Authorization)
<b>High Scalability VPN (HSVPN)</b>	Transmission of multiple, securely separated networks within a VPN tunnel
<b>Advanced Mesh VPN</b>	On demand dynamic VPN tunnel establishment between branches
<b>IKEv2-EAP*</b>	VPN clients can be authenticated with IKEv2-EAP against a central database like Microsoft Windows Server or RADIUS Server
<b>Two-factor authentication*</b>	Two-factor authentication with R&S® LANCOM Advanced VPN Client via IKEv2 EAP-OTP
<b>*)</b>	Only with VPN 25 option
Performance	
<b>Routing-Performance</b>	Data regarding the overall routing performance can be found inside the R&S® NC tech paper "Routing-Performance" <a href="#">here</a> .
VoIP	
<b>SIP ALG</b>	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	
<b>WAN: LTE/UMTS</b>	LTE advanced, LTE, UMTS or HSxPA with integrated LTE advanced modem
<b>WAN: VDSL / ADSL2+</b>	<ul style="list-style-type: none"> <li>▶ VDSL2 compliant with ITU G.993.2, profiles 8a, 8b, 8c, 8d, 12a, 12b, 17a, 30a, 35b</li> <li>▶ VDSL Supervectoring as per ITU G.993.2 (Annex Q)</li> <li>▶ VDSL2 Vectoring: as per ITU G.993.5 (G.Vector)</li> <li>▶ Certified for the use with Swisscom (CH) VDSL lines</li> <li>▶ ADSL2+ over ISDN as per ITU G.992.5 Annex B/J with DPBO, ITU G.992.3/5 and ITU G.992.1</li> <li>▶ ADSL2+ over POTS as per ITU G.992.5 Annex A/M with DPBO, ITU G.992.3 and ITU G.992.1</li> <li>▶ Supports one virtual ATM circuit (VPI, VCI pair) at a time</li> </ul>
<b>Ethernet ports</b>	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

# R&S® LANCOM 1800VAW-4G

Interfaces	
<b>Port configuration</b>	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
<b>USB 2.0 host port</b>	USB 2.0 hi-speed host port for connecting USB printers (USB print server), USB data storage (FAT file system); bi-directional data exchange is possible
<b>Serial interface</b>	Serial configuration interface / COM port (USB-C): 9,600 - 115,000 baud.
Management and monitoring	
<b>Management</b>	R&S® LANCOM Management Cloud, LANconfig, WEBconfig, R&S® LANCOM Layer 2 management (emergency management)
<b>Management functions</b>	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
<b>FirmSafe</b>	Two stored firmware versions, incl. test mode for firmware updates
<b>automatic firmware update</b>	configurable automatic checking and installation of firmware updates
<b>Monitoring</b>	R&S® LANCOM Management Cloud, LANmonitor, WLANmonitor
<b>Monitoring functions</b>	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
<b>Monitoring statistics</b>	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
<b>IPerf</b>	IPerf is a tool for measurements of the bandwidth on IP networks (integrated client and server)
<b>SLA-Monitor (ICMP)</b>	Performance monitoring of connections
<b>Netflow</b>	Export of information about incoming and outgoing IP traffic
<b>SD-LAN</b>	SD-LAN – automatic LAN configuration via the R&S® LANCOM Management Cloud
<b>SD-WAN</b>	SD-WAN – automatic WAN configuration via the R&S® LANCOM Management Cloud
Hardware	
<b>Weight</b>	1,83 lbs (830 g)
<b>Environment</b>	Temperature range 0–40°C; humidity 0–95%; non-condensing
<b>Housing</b>	Robust synthetic housing, rear connectors, ready for wall mounting, 293 x 44 x 190 mm (W x H x D)
<b>Fans</b>	1 silent fan
<b>waste heat (max.)</b>	144 BTU/h
<b>Power consumption (max./idle)</b>	36 watt / 18 watt
Declarations of conformity*	
<b>Europe/EFTA</b>	CE
<b>Country of Origin</b>	Made in Germany
<b>*) Note</b>	The full text of the specific Declaration of Conformity is available <a href="#">here</a>
Scope of delivery	
<b>Manual</b>	Quick Installation Guide (DE/EN)
<b>Cable</b>	1 Ethernet cable, 3 m
<b>Cable</b>	DSL cable for IP based communications incl. galvanic signature, 4,25m

# R&S® LANCOM 1800VAW-4G

Scope of delivery	
Antennas	Two 2 dBi LTE/UMTS-antennas
Power supply unit	External power adapter (230 V), NEST 12 V/3.5 A DC/S, coaxial power connector 2.1/5.5 mm, temperature range from 0 to +40° C, R&S®LANCOM item no. 112098
Support	
Warranty extension	Free warranty extension up to 3 years (replacement service for defects) Find details <a href="#">here</a> . The service and support conditions valid as of July 1, 2026, available at <a href="https://rs-nc.rohde-schwarz.com/fileadmin/pdf/LCS/ServiceSupportConditions/Rohde-Schwarz-Networks-and-Cybersecurity-GmbH-Service-and-Support-Conditions-20260701.pdf">rs-nc.rohde-schwarz.com/fileadmin/pdf/LCS/ServiceSupportConditions/Rohde-Schwarz-Networks-and-Cybersecurity-GmbH-Service-and-Support-Conditions-20260701.pdf</a> , apply.
Security updates	Up to 2 years after End of Sale of the device (but min. 3 years, see <a href="#">Link</a> ), can be extended by purchasing R&S®NC Support products
Software updates	Regular free updates including new features as part of the R&S®NC Lifecycle Management ( <a href="#">Link</a> )
Information on the EU Data Act	For details on product data and data on connected services, please refer to: <a href="#">Link</a>
Manufacturer support	Available with R&S®NC products such as Support Access (for R&S®NC Community Partners only), Direct, or Premium
R&S®NC Replacement 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
R&S®NC Replacement 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
R&S®NC Support 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)
R&S®NC Support 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)
R&S®NC Support 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)
R&S®NC Support 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)
Software	
Lifecycle Management	After discontinuation (End of Sale), the device is subject to the R&S®NC Lifecycle Management. Details can be found at: <a href="#">Link</a>
IT Security made in Germany	The development and quality assurance take place in Germany in accordance with high security standards. The „IT Security made in Germany“ quality label of the German IT Security Association attests to the level of security achieved.
Options	
VPN	R&S®LANCOM VPN-25 Option (25 channels), item no. 60083
R&S®LANCOM Security Essentials	R&S®LANCOM Security Essentials B Option 1-Year (for R&S®LANCOM SD-WAN gateways of the 700, 800, 1600, 1700, 1800, IAP, and OAP series as well as WLAN controller R&S®LANCOM WLC-60), item no. 62168
R&S®LANCOM Security Essentials	R&S®LANCOM Security Essentials B Option 3-Years (for R&S®LANCOM SD-WAN gateways of the 700, 800, 1600, 1700, 1800, IAP, and OAP series as well as WLAN controller R&S®LANCOM WLC-60), item no. 62169
R&S®LANCOM Security Essentials	R&S®LANCOM Security Essentials B Option 5-Years (for R&S®LANCOM SD-WAN gateways of the 700, 800, 1600, 1700, 1800, IAP, and OAP series as well as WLAN controller R&S®LANCOM WLC-60), item no. 62170
R&S®LANCOM BPjM Filter	R&S®LANCOM BPjM Filter Option, 5 years subscription, item no. 61418

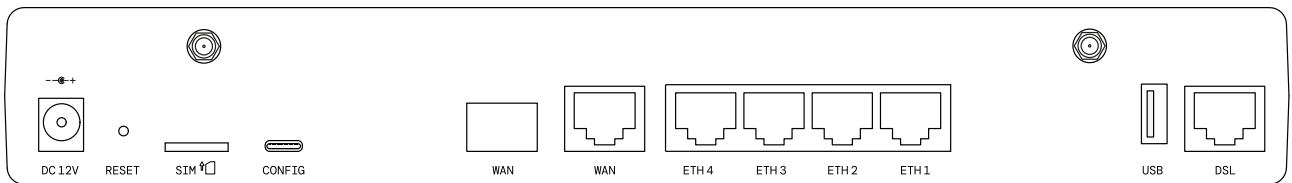
# R&S® LANCOM 1800VAW-4G

Options	
<b>R&amp;S® LANCOM Public Spot</b>	Hotspot option for R&S® 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
<b>R&amp;S® LANCOM Public Spot (10 bulk)</b>	Hotspot option for R&S® 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
<b>R&amp;S® LANCOM All-IP Lizenz Option</b>	Upgrade option for the operation of the R&S® LANCOM routers with All-IP connections, support of PBX systems and telephony devices as well as voice & fax services, incl. Voice Call Manager, item no. 61419
<b>R&amp;S® LANCOM Public Spot PMS Accounting Plus</b>	Extension of the R&S® 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
<b>R&amp;S® LANCOM VoIP +10 Option</b>	Upgrade for R&S® 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
R&S® LANCOM Management Cloud	
<b>R&amp;S® LANCOM Management Cloud</b>	R&S® LMC-B-1Y License (1 Year), enables the management of one category B device for one year via the R&S® LANCOM Management Cloud, item no. 50103
<b>R&amp;S® LANCOM Management Cloud</b>	R&S® LMC-B-3Y License (3 Years), enables the management of one category B device for three years via the R&S® LANCOM Management Cloud, item no. 50104
<b>R&amp;S® LANCOM Management Cloud</b>	R&S® LMC-B-5Y License (5 Years), enables the management of one category B device for five years via the R&S® LANCOM Management Cloud, item no. 50105
Accessories	
<b>External antenna</b>	R&S® AirLancer I-360D-5G, omnidirectional outdoor antenna MIMO (2x2), for all 4G/5G bands (698-3800 MHz), item no. 60919
<b>External antenna</b>	R&S® AirLancer O-360D-5G, omnidirectional outdoor antenna MIMO (2x2), for all 4G/5G bands (698-3800 MHz), item no. 61233
<b>1000Base-BX20-U SFP module</b>	R&S® LANCOM SFP-AON-1, item no. 60200
<b>GPON ONT SFP module</b>	R&S® LANCOM SFP-GPON-1, Compatible for the use on FTTH-lines of Deutsche Telekom, item no. 60199
<b>XGS-PON ONT SFP module</b>	R&S® LANCOM SFP-XGSPON-1, Compatible for the use on FTTH-lines of Deutsche Telekom, item no. 60207
<b>1000Base-BX20 SFP module pair</b>	R&S® LANCOM SFP-BiDi1550-SC1, item no. 60201
<b>1000Base-SX SFP module, 550 m</b>	R&S® LANCOM SFP-SX-LC1, item no. 61556
<b>1000Base-SX SFP module, 550 m (Bulk 10)</b>	R&S® LANCOM SFP-SX-LC1 (Bulk 10), item no. 60184
<b>1000Base-SX SFP module, 2 km</b>	R&S® LANCOM SFP-SX2-LC1, item no. 60183
<b>1000Base-LX SFP module</b>	R&S® LANCOM SFP-LX-LC1, item no. 61557
<b>1000Base-LX SFP module (Bulk 10)</b>	R&S® LANCOM SFP-LX-LC1 (Bulk 10), item no. 60185
<b>SFP copper module 1G</b>	R&S® LANCOM SFP-CO1, item no. 61494
<b>SFP copper module 1G (Bulk 10)</b>	R&S® LANCOM SFP-CO1 (Bulk 10), item no. 60186
<b>19" Rack Mount</b>	19" R&S® LANCOM CPE blackline rack mount, item no. 61990
<b>19" Rack Mount</b>	19" R&S® LANCOM CPE blackline rack mount plus, item no. 61991
<b>VPN Client Software</b>	R&S® LANCOM Advanced VPN Client for Windows - single license, item no. 61600
<b>VPN Client Software</b>	R&S® LANCOM Advanced VPN Client for Windows - 10 licenses, item no. 61601
<b>VPN Client Software</b>	R&S® LANCOM Advanced VPN Client for Windows - 25 licenses, item no. 61602
<b>VPN Client Software</b>	R&S® LANCOM Advanced VPN Client for Mac OS X, single license, item no. 61606

LCOS 10.94

# R&S® LANCOM 1800VAW-4G

Accessories	
<b>VPN Client Software</b>	R&S® LANCOM Advanced VPN Client for Mac OS X, 10 licenses, item no. 61607
<b>*) Note</b>	Support for third-party accessories (SFP and DAC) is excluded and cannot be granted
Item number(s)	
<b>R&amp;S® LANCOM 1800VAW-4G (EU)</b>	62147



Rohde & Schwarz Networks and Cybersecurity GmbH  
 Adenauerstr. 20/B2  
 52146 Wuerselen | Germany  
[info.rs-nc@rohde-schwarz.com](mailto:info.rs-nc@rohde-schwarz.com) | [www.rohde-schwarz.com/networks-and-cybersecurity](http://www.rohde-schwarz.com/networks-and-cybersecurity)

R&S and Rohde & Schwarz are trademarks of Rohde & Schwarz GmbH & Co. KG, registered or used, among others, in Germany, the EU, the USA, China, and other countries. Other names or designations used may be registered trademarks of different companies or owners. This document contains forward-looking statements regarding products and product features. The publisher reserves the right to change these at any time without stating reasons. No liability is accepted for technical inaccuracies or omissions. 06/2026

**ROHDE & SCHWARZ**  
 Make ideas real

