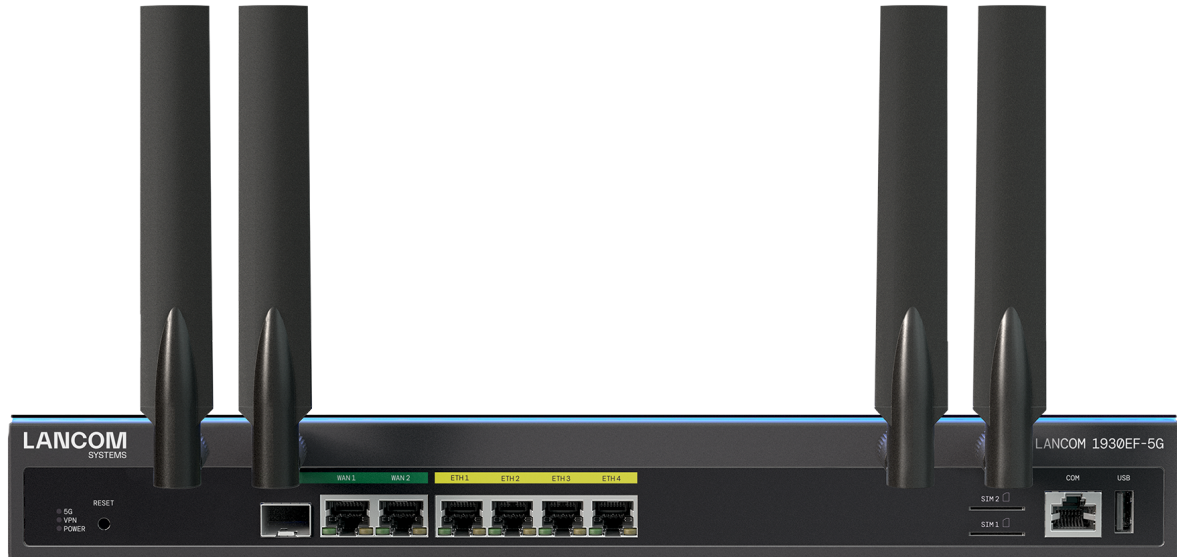


LCOS 10.94

# R&S® LANCOM 1930EF-5G

**Secure SD-WAN with multi-WAN over fiber and 5G**



The R&S® LANCOM 1930EF-5G is the first choice for realizing flexible and fail-safe site networking for high performance requirements on the branch office side. Equipped with dual SIM and eSIM-enabled 5G mobile radio, primary operation is possible for data-intensive and latency-critical real-time applications as well as intelligent backup scenarios. In addition, the connection to fiber-optic lines via an optional module ensures high-speed Internet for business-critical data traffic. The R&S® LANCOM 1930EF-5G can be configured and managed centrally together with other network components via the R&S® LANCOM Management Cloud (R&S® LMC).

- ▶ Secure SD-WAN – centralized cloud management with secure network separation, automated provisioning, and intelligent path control
- ▶ Multi-WAN – high-speed Internet via fiber optics (GPON and AON modules available separately) and Gigabit Ethernet for connection of external modems (1x WAN Ethernet), 1x SFP/TP combo
- ▶ Load balancing for the active/active operation of several Internet lines and maximization of the available bandwidth
- ▶ Integrated 5G modem, usable with 1x eSIM or 2x physical SIM cards (dual-SIM), for maximum network availability and low latencies in primary 4G/5G operation or in parallel with other access types
- ▶ Professional telephony features thanks to integrated R&S® LANCOM VCM (Voice Call Manager) & SBC (session border controller)
- ▶ 25 simultaneous VPN connections (100 optional)
- ▶ Network virtualization with up to 64 networks on one device (ARF)
- ▶ Full-metal housing with front-facing connections and integrated 230V power supply unit for mounting in a 19" rack
- ▶ Extended protection with the content filter of the R&S® LANCOM Security Essentials Option

# R&S® LANCOM 1930EF-5G

## 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.

## Optimal load balancing with multi-WAN via fiber

Multiple Internet connections can be used in parallel via the SFP/TP combo port with an optional GPON/AON module for fiber as well as via Gigabit Ethernet for external modems. Active/active load balancing optimizes utilization and increases the effectively available total bandwidth.

## 5G connectivity for resilient WAN architectures

The 5G-enabled gateway features two SIM card slots with eSIM support and can be used for primary 5G operation, as a backup, or in active/active scenarios. Low latency and stable bandwidth for cloud, edge, and real-time applications make 5G mobile communications an ideal alternative to wired internet access.

## 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.

## Scalable VPN architecture with High Scalability VPN

R&S® LANCOM High Scalability VPN (HSVPN) aggregates multiple networks into an encrypted VPN tunnel, thereby reducing the number of VPN connections. This lowers administrative effort and enables fast failover recovery. The gateway provides xx integrated VPN channels (IPSec and WireGuard) for this purpose and can be expanded to up to 100 channels with the R&S® LANCOM VPN 100 Option.

## 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 1930EF-5G

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
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 64 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

# R&S® LANCOM 1930EF-5G

Security	
<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
<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>	25 tunnels active simultaneously (50 / 100 with VPN-50 / VPN-100 Option) when combining WireGuard or IPSec with PPTP (MPPE) and L2TPv2 tunnels, 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>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

# R&S® LANCOM 1930EF-5G

VPN	
<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
<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
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>Number of local subscribers</b>	10 (up to 40 with VoIP +10 Option)
<b>Number of simultaneous VoIP connections</b>	Up to 100 external VoIP connections depending on code conversion, echo canceling and load
<b>Functionality</b>	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
<b>Hunt groups</b>	Hunt group cascades, Call diversion, simultaneously or sequentially. Automatic forwarding after timeout or when busy/unreachable
<b>Call router</b>	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.

# R&S® LANCOM 1930EF-5G

VoIP	
<b>SIP proxy</b>	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.
<b>SIP trunk</b>	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
<b>Session Border Controller (SBC)</b>	Separation of insecure and secure networks, QoS, management of signaling and voice data, transcoding
<b>Media protocols</b>	RTP, SIPs and SRTP
<b>SIP-Codec support</b>	SIP only: G.711 µ-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)
<b>Autoprovisioning</b>	Automatic network and VoIP integration of R&S® LANCOM DECT N510/610 IP base station
<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).
Cellular radio	
<b>Supported standards</b>	5G, LTE, UMTS and HSPA support (mode of transmission automatically or manually adjustable), 2G/GSM is not supported
<b>Supported 5G modes</b>	5G standalone (SA), 5G non-standalone (NSA)
<b>Supported mobile bands (5G)</b>	n1 (2100 MHz), n2 (1900 MHz), n3 (1800 MHz), n5 (850 MHz), n7 (2600 MHz), n8 (900 MHz), n12 (700 MHz), n13 (700 MHz), n14 (700 MHz), n18 (850 MHz), n20 (800 MHz), n25 (1900 MHz), n26 (850 MHz), n28 (700 MHz), n29 (700 MHz), n30 (2300 MHz), n38 (2600 MHz), n40 (2300 MHz), n41 (2500 MHz), n48 (3500 MHz), n66 (2100 MHz), n70 (2000 MHz), n71 (600 MHz), n75 (1500 MHz), n76 (1500 MHz), n77 (3700 MHz), n78 (3500 MHz), n79 (4700 MHz)
<b>Supported mobile bands (4G)</b>	B1 (2100 MHz), B2 (1900 MHz), B3 (1800 MHz), B4 (1700 MHz), B5 (850 MHz), B7 (2600 MHz), B8 (900 MHz), B12 (700 MHz), B13 (700 MHz), B14 (700 MHz), B17 (700 MHz), B18 (850 MHz), B19 (850 MHz), B20 (800 MHz), B25 (1900 MHz), B26 (850 MHz), B28 (700 MHz), B29 (700 MHz), B30 (2300 MHz), B32 (1500 MHz), B34 (2000 MHz), B38 (2600 MHz), B39 (1900 MHz), B40 (2300 MHz), B41 (2500 MHz), B42 (3500 MHz), B43 (3700 MHz), B48 (3500 MHz), B66 (1700 MHz), B71 (600 MHz)
<b>Supported mobile bands (3G)</b>	Band 1 (2100 MHz), Band 2 (1900 MHz), Band 4 (1700 MHz), Band 5 (850 MHz), Band 8 (900 MHz), Band 19 (800 MHz)
<b>Diversity support</b>	Receive diversity on the aux antenna (3G); MIMO (4x4) for LTE (4G); MIMO (4x4) for 5G
<b>External antenna connectors</b>	Four 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>	Mini-SIM (2FF), Micro-SIM (3FF) via adaptor, Nano-SIM (4FF) via adaptor
<b>Dual-SIM support**</b>	Supported
<b>eSIM**</b>	Integrated SGP.22 Consumer eSIM/eUICC with storage option for up to 8 mobile profiles
<b>GPS</b>	GPS positioning via enclosed antennas
<b>*) Note</b>	R&S® LANCOM Systems recommends the use of a standard SIM (2FF / Mini-SIM)
<b>**) Note</b>	It is not possible to actively use multiple profiles simultaneously.
Interfaces	
<b>WAN: Ethernet</b>	10/100/1000 Mbps Gigabit Ethernet
<b>Ethernet ports</b>	6 individual 10/100/1000 Mbps Ethernet ports, 2 of them are set to WAN; 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
<b>SFP slot</b>	Slot for Small Form-factor Pluggable Gigabit Ethernet transceivers ('mini-GBIC'). Compatible to optional R&S® LANCOM SFP modules for fiber connections over short distances (SX) or long distances (LX). By default a WAN port that can be configured as a LAN port
<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

# R&S® LANCOM 1930EF-5G

Interfaces	
<b>USB 2.0 host port</b>	USB 2.0 hi-speed host port for connecting USB printers (USB print server), serial devices (COM port server), USB data storage (FAT file system); bi-directional data exchange is possible
<b>Serial interface</b>	Serial configuration interface / COM port (RJ45): 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>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>	5,50 lbs (2,50 kg)
<b>Power supply</b>	Internal power supply unit (110–230 V, 50-60 Hz)
<b>Environment</b>	Temperature range 0–40°C; humidity 0–95%; non-condensing
<b>Housing</b>	Robust metal housing, network connectors on the front, 1U (345 x 44 x 253 mm > W x H x D) with removable mounting brackets
<b>Fans</b>	1 silent fan
<b>waste heat (max.)</b>	92 BTU/h
<b>Power consumption (max)</b>	27 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>	EU version: IEC power cord, WW version: country-specific IEC power cords are separately available
<b>Antennas</b>	Four 2 dBi 5G/LTE/UMTS-antennas

# R&S® LANCOM 1930EF-5G

Support	
<b>Warranty extension</b>	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.
<b>Security updates</b>	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
<b>Software updates</b>	Regular free updates including new features as part of the R&S®NC Lifecycle Management ( <a href="#">Link</a> )
<b>Information on the EU Data Act</b>	For details on product data and data on connected services, please refer to: <a href="#">Link</a>
<b>Manufacturer support</b>	Available with R&S®NC products such as Support Access (for R&S®NC Community Partners only), Direct, or Premium
<b>R&amp;S®NC Replacement Basic M</b>	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. 10721
<b>R&amp;S®NC Replacement Advanced M</b>	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. 10731
<b>R&amp;S®NC Support Direct 24/7 M</b>	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. 10755, 10756 or 10757)
<b>R&amp;S®NC Support Direct Advanced 24/7 M</b>	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. 10779, 10780 or 10781)
<b>R&amp;S®NC Support Direct 10/5 M</b>	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. 10743, 10744 or 10745)
<b>R&amp;S®NC Support Direct Advanced 10/5 M</b>	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. 10767, 10768 or 10769)
Software	
<b>Lifecycle Management</b>	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>
<b>IT Security made in Germany</b>	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	
<b>VPN</b>	R&S®LANCOM VPN-50 Option (50 channels), item no. 61405
<b>VPN</b>	R&S®LANCOM VPN-100 Option (100 channels), item no. 61407
<b>R&amp;S®LANCOM Security Essentials</b>	R&S®LANCOM Security Essentials C Option 1-Year (for R&S®LANCOM SD-WAN gateways of the 1900 series and R&S®LANCOM 2100EF), item no. 62171
<b>R&amp;S®LANCOM Security Essentials</b>	R&S®LANCOM Security Essentials C Option 3-Years (for R&S®LANCOM SD-WAN gateways of the 1900 series and R&S®LANCOM 2100EF), item no. 62172
<b>R&amp;S®LANCOM Security Essentials</b>	R&S®LANCOM Security Essentials C Option 5-Years (for R&S®LANCOM SD-WAN gateways of the 1900 series and R&S®LANCOM 2100EF), item no. 62173
<b>R&amp;S®LANCOM BPjM Filter</b>	R&S®LANCOM BPjM Filter Option, 5 years subscription, item no. 61418
<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

# R&S® LANCOM 1930EF-5G

Options	
<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 WLC Basic Option for Routers</b>	R&S® LANCOM WLC Basic Option for Routers for up to 6 managed R&S® LANCOM access points or WLAN routers, item no. 61639
<b>R&amp;S® LANCOM WLC AP Upgrade +6</b>	R&S® LANCOM WLC AP Upgrade +6 Option, enables your WLC to manage 6 Access Points/WLAN router (additive up to 30) in addition, item no. 61629
<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
<b>R&amp;S® LANCOM VPN High Availability Clustering L Option</b>	Comfortable administration of cluster devices like one single device — even at networks across locations, item no. 61658
R&S® LANCOM Management Cloud	
<b>R&amp;S® LANCOM Management Cloud</b>	R&S® LMC-C-1Y License (1 Year), enables the management of one category C device for one year via the R&S® LANCOM Management Cloud, item no. 50106
<b>R&amp;S® LANCOM Management Cloud</b>	R&S® LMC-C-3Y License (3 Years), enables the management of one category C device for three years via the R&S® LANCOM Management Cloud, item no. 50107
<b>R&amp;S® LANCOM Management Cloud</b>	R&S® LMC-C-5Y License (5 Years), enables the management of one category C device for five years via the R&S® LANCOM Management Cloud, item no. 50108
Accessories	
<b>R&amp;S® LANCOM DECT N610 IP (EU)</b>	Professional DECT base station for up to 8 DECT phones, network integration and configuration via R&S® LANCOM VoIP router, 8 simultaneous calls possible, highest voice quality, power supply via PoE or power supply unit, item no. 61926
<b>External antenna</b>	R&S® AirLancer O-360Q-5G, omnidirectional outdoor antenna MIMO (4x4), for all 4G/5G bands (700-3800 MHz), item no. 61234
<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>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
<b>VPN Client Software</b>	R&S® LANCOM Advanced VPN Client for Mac OS X, 10 licenses, item no. 61607

LCOS 10.94

# R&S® LANCOM 1930EF-5G

Accessories	
R&S® LANCOM Power Cord (UK)	IEC power cord, UK plug, item no. 61650
R&S® LANCOM Power Cord (US)	IEC power cord, US plug, item no. 61651
R&S® LANCOM Power Cord (CH)	IEC power cord, CH plug, item no. 61652
R&S® LANCOM Power Cord (AU)	IEC power cord, AU plug, item no. 61653
<b>*) Note</b>	Support for third-party accessories (SFP and DAC) is excluded and cannot be granted
Item number(s)	
R&S® LANCOM 1930EF-5G (EU)	62145

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