R&S®LANCOM XS-5110F

Managed 10G fiber aggregation switch for smaller distributed networks

Due to its 8 future-proof fiber-optics SFP+ ports this 10G aggregation switch acts as a superordinated instance for connecting further access switches in smaller distributed networks. 2 further multi-Gigabit Ethernet ports (10/5/2,5/1G) enable a flexible and cost-efficient integration of high-performance network components. Thanks to the holistic R&S®LANCOM network management the device can be configured dynamicallyand automatically via the R&S®LANCOM Management Cloud (R&S®LMC) or via cloud-enabled web GUI as well as via cloud-enabled CLI.

- Multi-gigabit aggregation switch with 8x 10G SFP+ ports and 2x multi-gigabit ethernet ports (1G / 2.5G / 5G / 10G)
- Full layer 3 functionality through VRRP, DHCP, static and policy-based dynamic routing via OSPF v2/v3
- Security with configurable access control on all ports as per IEEE 802.1X and access control lists
- Secure remote management through TACACS+, SSH, SSL, and SNMPv3
- Including industry standard CLI
- Cloud-managed LAN and switch stacking for quick configuration and convenient management via the R&S®LANCOM Management Cloud
- Stacking support via downlink ports
- Including 2x 19" mounting brackets
- R&S®Limited Lifetime Warranty (LLW) included

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Flexible network topologies

The R&S®LANCOM XS-5110F is an ideal aggregation instance for the networking of access switches. Depending on the size of the installation, it integrates into the network topology either at the top level facing the WAN (2-tier design) or at the second level between a core switch and the access switches (3-tier design).

Maximum performance on all ports

With its fiber-optics and multi-Gigabit Ethernet (mGbE) ports, the R&S®LANCOM XS-5110F offers future-proof port performance for networks that meet the increasing demands occuring from increasingly powerful clients, a growing number of IoT devices, and cloud applications. Equipped with 8 SFP+ ports (10G) and 2 further backward-compatible 10G mGbE ports, this powerful networking device is used to connect access switches and is ideal for smaller distributed networks.

Flexibility thanks to stacking technology

Stacking makes child's play of expanding your network, as several physical switches combine into a single logical unit for convenient maintenance and management. When you expand your network, the new switch automatically receives a configuration from the stack master and is ready to use within seconds. Furthermore, device or network redundancies can be implemented with stacking to ensure maximum reliability. The R&S®LANCOM XS-5110F allows 2 of the SFP+ downlink ports to be specified as stacking ports to handle this task.

Configurable access control

The R&S®LANCOM XS-5110F stops rogue clients from gaining unauthorized access to the network. This is ensured by secured access control on all ports as per IEEE 802.1X (port-based, single, multi, and MAC-based) or by ACLs (access control lists).

Full layer 3 functionality

The R&S®LANCOM XS-5110F is capable of performing layer 3 tasks such as DHCP server functionality, i.e. IP address management, or the predefinition of network routes across one or more network segments. Thanks to dynamic routing, the switch can also react quickly to network changes. The optimal route for data traffic within the network is thus constantly redefined by the R&S®LANCOM XS-6128QF based on the load level. This results in a load reduction on the router, so that these capacities are then additionally available for handling external data traffic and increase the efficiency of the entire network.

Secure remote management

Secure communication protocols such as SSH, SSL and SNMPv3 mean that the R&S®LANCOM XS-5110F is ideal for the professional management of remote networks. The switch also supports the TACACS+ protocol for authentication, authorization and accounting. This optimized solution promises maximum security for multi-site network management and monitoring.

Cloud-managed LAN and switch stacking

With the R&S®LANCOM Management Cloud, the XS-5110F offers quick and easy network integration as well as automatic provision of the configuration across locations with the a click of a mouse. Cloud-managed LAN replaces the configuration of individual devices and enables automatic assignment of VLANs to switch ports. Cloud-managed switch stacking also enables convenient management and monitoring of the entire stack. Learn more in the Design guide switch stacking.

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Secure Terminal Access

This function provides access to the command line of the R&S®LANCOM switch ("CLI tunneling") directly from the R&S®LANCOM Management Cloud—encrypted and without leaving the cloud interface. Be it trace or ping commands for rapid troubleshooting, access to low-level configuration parameters and detailed statistics in the LCOS SX operating system, or secure remote access to third-party devices in the local network via the integrated SSH client—Secure Terminal Access offers expert functions and extensive diagnostic and troubleshooting commands on your devices.

R&S®LANCOM Limited Lifetime Warranty (LLW)

This enterprise switch is reliably covered ex factory by a Limited Lifetime Warranty. Regardless of the switch's operating time, the replacement service is valid until the End of Life status of the device (max. 10 years). For perfect complement: Ensure minimal downtime in the event of a hardware defect with next-business-day delivery of a replacement device. We recommend R&S®NC NBD Replacement or in combination with guaranteed service times R&S®NC Support Direct Advanced 24/7 or 10/5.

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Security	
Secure Shell Protocol (SSH)	SSH for a secure remote configuration
Secure Sockets Layer (SSL)	SSL to encrypt HTTP connections; advanced security for browser-based configuration via web interface
IEEE 802.1X	IEEE 802.1X access control on all ports; RADIUS for authentication, authorization and accounting with e.g. MD5 hashing; guest VLAN; dynamic VLAN assignment
Private VLAN edge	Layer 2 isolation between clients in the same VLAN ("protected ports"); support multiple uplinks
Port security	Locking of MAC addresses to ports; limiting of the number of learned MAC addresses
IP source guard	Blocking access for illegal IP addresses on specific ports
Access-control-lists	Drop or rate limitation of connections based on source and destination MAC addresses, VLAN ID, IP address (IPv4/IPv6), protocol, port, DSCP/IP precedence, TCP/UDP source and destination ports, IEEE 802.1p priority, ICMP packets, IGMP packets, TCP flag. Support of 1023 ACEs (max. rules per list) per ACL and up to 2800 entries in total.
RADIUS/TACACS+	Authentication, authorization and accounting of configuration changes by RADIUS or TACACS+
Storm Control	Multicast/Broadcast/Unicast storm suppression
Isolated Group	Allows certain ports to be designated as protected. All other ports are non-isolated. Traffic between isolated group members is blocked. Traffic can only be sent from isolated group to non-isolated group.
DHCP Snooping	Protection against rogue DHCP servers on the network - Outgoing DHCP-server packets are only allowed on specific ports.
Dynamic ARP Inspection	Dynamic ARP Inspection to prevent man-in-the-middle attacks incl. proxy ARP
ARP Request Poisoning	Protection against ARP Request Poisoning (ARP Spoofing)
IPv6 First Hop	IPv6 First Hop Security by Snooping Guard, DHCPv6 Guard, Source Guard, Prefix Guard
Denial-of-Service	Protection against Denial-of-Service attacks to prevent the loss of important protocol functions
Performance	
Switching technology	Store and forward with latency less than 4 microseconds
MAC addresses	Support of max 32K MAC addresses
Throughput	Max. 200 Gbps on the backplane
Maximum packet processing	148 million packets per second (mpps) at 64-byte packets
VLAN	Port based and IEEE 802.1q tag based VLAN with up to 4,093 VLAN; Supports ingress and egress packet filter in port based VLAN
Jumbo frame support	Jumbo frame support with up to 12288 bytes
Packet Buffer	4 MB
Layer 3 features	
Number of L3 inferfaces	up to 128
Routing (IPv4/IPv6)	Hardware based routing (IPv4/IPv6 combined) with a number of 16,000 possible routes
DHCP Server	DHCP Server per VLAN, max. 16 pools
VRRP	Virtual Router Redundancy Protocol
Dynamic routing (IPv4/IPv6)	dynamic routing by OSPFv2 and OSPFv3
Protocol Independent Multicast	PIM-Sparse mode (PIM-SM) and PIM-Dense mode (PIM-DM)
Source specific multicast	Source specific multicast (SSM)for IP
Layer 2 switching	
Spanning Tree Protokoll (STP) / Rapid STP / Multiple STP / PVST	Standard Spanning Tree according to IEEE 802.1d with fast convergence support of IEEE 802.1w (RSTP); using Multiple Spanning Tree instances by default according to IEEE 802.1s (MSTP), PVST with up to 8 instances

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Layer 2 switching	
Link Aggregation Control Protocol (LACP)	Support of 64 groups containing up to 8 ports each according to IEEE 802.1ax
VLAN	Support for up to 4K VLANs simultaneously (out of 4093 VLAN Ids); matching due to port, IEEE 802.1q tagged VLANs, MAC adresses, IP subnet and Private VLAN Edge function ("protected ports")
Voice VLAN	Voice traffic is automatically assigned to a voice-specific VLAN and treated with appropriate levels of QoS
IGMP multicasts	IGMP v1, v2, v3 to limit bandwidth-intensive multicast traffic to ports with requesters; supports 1024 multicast groups; source-specific multicasting
IGMP querier	Support of multicast domains of snooping switches in the absence of a multicast router
IGMP Snooping	IGMP Snooping to identify multicast groups and prevent unnecessary traffic
IGMP proxy	IGMP proxy to pass IGMP messages through
MLD v1/v2	Multicast Listener Discovery - IPv6 multicast packets are transmitted to interested listeners only
Generic VLAN registration	VLAN registration with GVRP according to IEEE 802.1q for automatic delivery of VLANs in bridged domains
DHCP Relay Agent	Relay of DHCP broadcast request to different LANs
Supported DHCP options	all options listed in RFC2132
Stacking	
Stacking Option	Stacking via Downlink ports (Ports 7 & 8)
Interfaces	
Ethernet	► 8 SFP+-Ports 1/10 GBit/s ► 2 10mGbE-Ports 1000/2500/5000/10000 MBit/s Ethernet ► 10 concurrent Ethernet ports in total
Console port	Micro-USB and RJ45 configuration port for command line access
Management and monitoring	
Management	LANconfig, WEBconfig, R&S®LANCOM Management Cloud, Industry Standard CLI
Command Line Interface (CLI)	Configuration and status display from the command line with console application and direct connection to console port, via Telnet or SSH
Monitoring	LANmonitor, R&S®LANCOM Management Cloud
Remote Monitoring	Integrated RMON software agent supports 4 RMON groups (history, statistics, alarms and events) for enhanced traffic management, monitoring and analysis
Port Mirroring	Traffic can be mirrored from on port to another for investigation with network analyzer or RMON probe. Up to 9 ports can be mirrored to a single mirror port. Single sessions can be selected
Security	Access rights (read/write) can be set up separately, access control list
SNMP	SNMP management via SNMPv1, v2c or v3 with support of traps. User-based security model for SNMPv3 (USM)
Diagnosis	Diagnosis from the switch with PING and cable diagnosis
Firmware update	► Update via WEBconfig and browser (HTTP/HTTPS) ► Update via TFTP, SCP, and LANconfig ► Update via R&S®LANCOM Management Cloud ► Dual firmware image to update during operation
Secure Copy	Securely import and export files
DHCP client	Automatic assignement of the management IP address by DHCP
SNTP	Automatic time settings with Simple Network Time Protocol (SNTP)

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Management and monitoring	
s-flow v5	Standard for monitoring of high-speed-networks. Visualization of network use, accounting an analysation to protect your network against dangers
Hardware	
Weight	10.80 lbs (4.9 kg)
Power supply	Internal power supply unit (100 – 240 V, 50 – 60 Hz)
Environment	Temperature range 0 – 40° C; humidity 10 – 90%; non-condensing
Housing	Robust metal housing, 19" 1U (442 x 44 x 300 mm > W x H x D) with removable mounting brackets, network connectors on the front
Fans	2
Mean time between failure	► at 25° C: 192 000 hours (MTBF) ► at 40° C: 92 000 hours (MTBF)
Power consumption (max)	34 W
Power consumption (idle)	20 W
Acoustic noise (typ)	32 dBa
Heat power (max)	116 BTU/h
Software	
LCOS version	based on LCOS SX 5.20
Lifecycle Management	After discontinuation (End of Sale), the device is subject to the R&S®NC Lifecycle Management. Details can be found at: Link
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" trust seal of the German IT Security Association attests to the level of security achieved.
Declarations of conformity*	
Europe/EFTA	CE
North America	FCC/IC
Australia / New Zealand	ACMA
***) Note**	The full text of the specific Declaration of Conformity is available here
Supported IEEE standards	
IEEE 802.1AB	Link Layer Discovery Protocol (LLDP)
IEEE 802.1AB	LLDP-MED
IEEE 802.1ad	Q-in-Q tagging
IEEE 802.1ak	MRP and MVRP - Multiple Registration Protocol and Multiple VLAN Registration Protocol
IEEE 802.1d	MAC Bridging
IEEE 802.1d	Spanning Tree
IEEE 802.1p	Class of Service
IEEE 802.1q	VLAN
IEEE 802.1s	Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1w	Rapid Spanning Tree Protocoll (RSTP)
IEEE 802.1X	Port Based Network Access Control

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Supported IEEE standards	
IEEE 802.3	10Base-T Ethernet
IEEE 802.3ab	1000Base-TX Ethernet
IEEE 802.1ax, incl. 802.3ad	Link Aggregation Control Protocol (LACP)
IEEE 802.3ae	10 Gigabit Ethernet over fiber
IEEE 802.3an	10GBASE-T Ethernet
IEEE 802.3u	100Base-T Ethernet
IEEE 802.3x	Flow Control
IEEE 802.3z	1000Base-X Ethernet
IEEE 802.3ac	VLAN tagging
IEEE 802.3bj-CL91	Forward Error Correction (FEC)
IEEE 802.1ak	Multiple Registration Protocol (MRP)
IEEE 802.1as	Timing and Synchronization for Time-Sensitive LANs
IEEE 802.1Qat	Multiple Stream Reservation Protocol (MSRP)
IEEE 802.1Qav	Forwarding and Queuing Enhancements for Time-Sensitive Streams
IEEE 802.1Qbb	Priority-based Flow control
IEEE 802.1v	Protocol-based VLANs
Supported RFC standards	
RFC 854	Telnet Protocol Specification
RFC 1213	MIB II
RFC 1493	Bridge MIB
RFC 1534	Interoperation between DHCP and BootP
RFC 2021	Remote Network Monitoring MIB v2 (RMONv2)
RFC 2233	Interface MIB
RFC 2453	Routing Information Protocol - RIPv2
RFC 2460	Internet Protocol Version 6 (IPv6)
RFC 2613	SMON MIB
RFC 2618	RADIUS Authentication Client MIB
RFC 2674	IEEE 802.1p and IEEE 802.1q Bridge MIB
RFC 2737	Entity MIB v2
RFC 2818	Hypertext Transfer Protocol Secure (HTTPS)
RFC 2819	Remote Network Monitoring MIB (RMON)
RFC 2863	Interface Group MIB using SMIv2
RFC 2933	IGMP MIB
RFC 3273	RMON Groups 1,2,3 and 9
RFC 3414	User based Security Model for SNMPv3
RFC 3415	View based Access Control Model for SNMP

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Supported RFC standards	
RFC 3587	IPv6 Global Unicast Address Format
RFC 3636	IEEE 802.3 MAU MIB
RFC 3973	Protocol Independent Multicast -Dense mode (PIM-DM) (supports both IPv4 and IPv6)
RFC 4251	The Secure Shell Protocol Architecture (SSH)
RFC 4291	IP Version 6 Addressing Architecture
RFC 4443	Internet Control Message Protocol (ICMPv6)
RFC 4541	IGMP Snooping and MLD Snooping
RFC 4541	IGMP- and MLD-Snooping
RFC 4601	Protocol Independent Multicast -Sparse mode (PIM-SM) (supports both IPv4 and IPv6)
RFC 5171	Unidirectional Link Detection Protocol (UDLD)
RFC 5519	Multicast Group Membership Discovery MIB
Scope of delivery	
Manual	Hardware Quick Reference (DE/EN), Installation Guide (DE/EN)
Cable	Serial configuration cable, 1.5m
Cable	Micro-USB configuration cable, 1.0m
Cable	IEC power cord
19" brackets	Two 19" brackets for rackmounting
Support	
Warranty extension	R&S®LANCOM Limited Lifetime Warranty – replacement service up to the End of Life status of the device (maximum 10 years). Find details here. The service and support conditions valid as of July 01, 2026, available at rs-nc.rohde-schwarz.com/fileadmin/pdf/LCS/ServiceSupportConditions/Rohde-Schwarz-Networks-and-Cybersecurity-GmbH-Service-and-Support-Conditions-20260701.pdf, apply.
Security updates	Up to the End of Life date of the device (see Link), 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 (Link)
Information on the EU Data Act	For details on product data and data on connected services, please refer to: Link
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 Support Access	Exclusively forR&S®NC Community partners: Personal manufacturer support (best effort) and security updates for the device, valid for all service categories, term-based (starting at the beginning of each quarter) for 1, 3, or 5 years (item no. 10804, 10805, or 10806)
R&S®NC Support Direct Advanced 24/7 L	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. 10782, 10783 or 10784)
R&S®NC Support Direct 24/7 L	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. 10758, 10759 or 10760)
R&S®NC Support Direct Advanced 10/5 L	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. 10770, 10771 or 10772)
R&S®NC Support Direct 10/5 L	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. 10746, 10747 or 10748)

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Support	
R&S®LANCOM Next Business Day Replacement option L	In addition to the R&S®LANCOM Limited Lifetime Warranty replacement option for a defective device, item no. 61321
R&S®LANCOM Management Cloud	
R&S®LANCOM Management Cloud	R&S®LANCOM 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
R&S®LANCOM Management Cloud	R&S®LANCOM 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
R&S®LANCOM Management Cloud	R&S®LANCOM 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*	
1000Base-SX SFP transceiver module	R&S®LANCOM SFP-SX-LC1, item no. 61556
1000Base-SX SFP transceiver module	R&S®LANCOM SFP-SX2-LC1, item no. 60183
1000Base-LX SFP transceiver module	R&S®LANCOM SFP-LX-LC1, item no. 61557
1000Base-LX SFP BiDi transceiver module	R&S®LANCOM SFP-BiDi1550-SC1, item no. 60201
10GBase-SX SFP transceiver module	R&S®LANCOM SFP-SX-LC10, item no. 61485
10GBase-LX SFP transceiver module	R&S®LANCOM SFP-LX-LC10, item no. 61497
10GBase-LX SFP transceiver module	R&S®LANCOM SFP-LR40-LC10, item no. 60182
10GBase-LX SFP BiDi transceiver module	R&S®LANCOM SFP-BiDi1310-LC10, item no. 60202
10G multi gigabit Ethernet copper module	R&S®LANCOM SFP-CO10-MG, Art.-Nr.: 60170, max. 4 modules to be used simultaneously due to increased power consumption and associated heat
10G Direct Attach Cable 1m	R&S®LANCOM SFP-DAC10-1m, Art.-Nr.: 61495
10G Direct Attach Cable 3m	R&S®LANCOM SFP-DAC10-3m, Art.-Nr.: 60175
IEC power cord (UK)	R&S®LANCOM Power Cord, UK plug, item no. 61650
IEC power cord (CH)	R&S®LANCOM Power Cord, CH plug, item no. 61652
IEC power cord (US)	R&S®LANCOM Power Cord , US plug, item no. 61651
IEC power cord (AU)	R&S®LANCOM Power Cord, AU plug, item no. 61653
***) Note**	Support for third-party accessories (SFP and DAC) is excluded and cannot be granted
Item number(s)	
R&S®LANCOM XS-5110F	61858

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