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 LANCOM network management the device can be configured dynamicallyand automatically via the LANCOM Management Cloud (SD-LAN) or via cloud-enabled web GUI as well as via cloud-enabled CLI.

> Multi-gigabit aggregation switch with 8x SFP+ ports (10G) and 2x multi-gigabit ethernet (10/5/2.5/1G)
> Layer-3 features such as static routing and DHCP server
> 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
> SD-LAN – for quick and easy configuration via the LANCOM Management Cloud
> Stacking support via downlink ports
> 5-year warranty on all components

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Flexible network topologies

The 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 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.

Configurable access control

The 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).

Static routing & DHCP server

The LANCOM XS-5110F can handle layer-3 tasks to offer, for example, a DHCP server for IP-address management or to define fixed network routes across one or more network segments. This takes load off of the router or firewall and increases the overall speed of data exchange. Capacities are freed up to handle the external data traffic and improve the overall network efficiency.

Software Lifecycle Management with update guarantee

LANCOM regularly offers free updates for maximum investment protection. Major releases with new features, release updates with minor improvements and bug fixes are available not only for the entire product life cycle, but also for a period of two years after the product's discontinuation. With a warranty in place, critical security fixes and the associated support are also guaranteed for two years after the announced end-of-sales.

Security "Made in Germany"

As a holder of the "IT Security made in Germany" trust mark, LANCOM is committed to keeping its products free of secret backdoors. This makes the LANCOM switches ideal for operation in sensitive environments and always in accordance with General Data Protection Regulations (GDPR).

Secure remote management

Secure communication protocols such as SSH, SSL and SNMPv3 mean that the 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.

SD-LAN – easy management of complex networking scenarios

With the LANCOM Management Cloud, the LANCOM XS-5110F offers quick and easy network integration as well as automatic provision of the configuration. With SD-LAN, holistic network orchestration replaces the configuration of individual devices and allows the automatic assignment of VLANs to the required switch ports. Configurations are customized to the multi-site network architecture and, with a click of a mouse, they are rolled-out or updated simultaneously to every site.

Secure Terminal Access

This function provides access to the command line of the LANCOM switch ("CLI tunneling") directly from the 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

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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.

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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 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 up to 16384 entries
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 ist blocked. Traffic can only be sent from isolated group to non-isolalted 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. inkl. 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 4,096 VLAN and up to 4,000 active VLANs; Supports ingress and egress packet filter in port based VLAN
Jumbo frame support	Jumbo frame support with up to 12000 bytes
6in4 Tunneling	Support of encapsulation of IPv6 traffic in IPv4 packets
Layer 3 features	
Static routing (IPv4/IPv6)	Hardware based static routing (IPv4/IPv6)
DHCP Server	DHCP Server per VLAN
Dynamic routing	ready for policy-based dynamic routing (activation by future software upgrade)
Layer 2 switching	
Spanning Tree Protokoll (STP) / Rapid STP / Multiple STP	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)
Link Aggregation Control Protocol (LACP)	Support of 32 groups containing up to 8 ports each according to IEEE 802.3ad
VLAN	Support for up to 4K VLANs simultaneously (out of 4096 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 proxy	IGMP proxy to pass IGMP messages through

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Layer 2 switching	
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, LANCOM Management Cloud
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, 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 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)
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
Power consumption (max)	34 W
Power consumption (idle)	20 W
Acoustic noise (typ.)	32 dBa
Heat power (max)	116 BTU/h

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Software	
Software Lifecycle Management	Following the official announcement of a product's discontinuation by means of the LANCOM price list, during an existing LANCOM warranty you will receive: > For 2 years: free updates to the operating system, including new features and other updates with general improvements > For 2 years: critical security fixes based on the last applicable firmware version > For 5 years: free technical manufacturer support
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

Declarations of conformity*	
CE	EN 62368-1, EN 55032, EN 55024
FCC	FCC Part 15 (CFR47) Class A
Country of origin	Software designed in Germany, Assembled in Taiwan
*) Note	You will find all declarations of conformity in the products section of our website at www.lancom-systems.com

Supported IEEE standards	
IEEE 802.1AB	Link Layer Discovery Protocol (LLDP)
IEEE 802.1AB	LLDP-MED
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
IEEE 802.3	10Base-T Ethernet
IEEE 802.3ab	1000Base-TX Ethernet
IEEE 802.3ad	Link Aggregation Control Protocol (LACP)
IEEE 802.3ae	10 Gigabit Ethernet over fiber
IEEE 802.3x	Flow Control
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 2021	Remote Network Monitoring MIB v2 (RMONv2)
RFC 2233	Interface MIB

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Supported RFC standards	
RFC 2460	Internet Protocol Version 6 (IPv6)
RFC 2613	SMON MIB
RFC 2674	IEEE 802.1p and IEEE 802.1q Bridge MIB
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 3414	User based Security Model for SNMPv3
RFC 3415	View based Access Control Model for SNMP
RFC 3587	IPv6 Global Unicast Address Format
RFC 3636	IEEE 802.3 MAU MIB
RFC 4251	The Secure Shell Protocol Architecture (SSH)
RFC 4291	IP Version 6 Addressing Architecture
RFC 4443	Internet Control Message Protocol (ICMPv6)
RFC 5519	Multicast Group Membership Discovery MIB
RFC 5519	IGMP- and MLD-Snooping
RFC 5519	Unidirectional Link Detection Protocol (UDLD)
RFC 2618	RADIUS Authentication Client MIB
RFC 2737	Entity MIB v2
RFC 3276	RMON Groups 1,2,3 and 9
RFC 1534	Interoperation between DHCP and BootP

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	5 years, support via hotline and Internet KnowledgeBase
LANCOM Warranty Advanced Option L	Option for replacement of a defective device within one working day, item no. 10717

LANCOM Management Cloud	
LANCOM LMC-C-1Y LMC License	LANCOM LMC-C-1Y License (1 Year), enables the management of one category C device for one year via the LANCOM Management Cloud, item no. 50106
LANCOM LMC-C-3Y LMC License	LANCOM LMC-C-3Y License (3 Years), enables the management of one category C device for three years via the LANCOM Management Cloud, item no. 50107
LANCOM LMC-C-5Y LMC License	LANCOM LMC-C-5Y License (5 Years), enables the management of one category C device for five years via the LANCOM Management Cloud, item no. 50108

Accessories	
1000Base-SX SFP module	LANCOM SFP-SX-LC1, item no. 61556
1000Base-LX SFP module	LANCOM SFP-LX-LC1, item no. 61557
10GBase-SX SFP module	LANCOM SFP-SX-LC10, item no. 61485
10GBase-LX SFP module	LANCOM SFP-LX-LC10, item no. 61497

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Accessories	
10G multi gigabit Ethernet Copper Module	LANCOM SFP-CO10-mG, Art.-Nr.: 60170
10G Direct Attach Cable 1m	LANCOM SFP-DAC10-1m, Art.-Nr.: 61495
10G Direct Attach Cable 3m	LANCOM SFP-DAC10-3m, Art.-Nr.: 60175
LANCOM Power Cord (UK)	IEC power cord, UK plug, item no. 61650
LANCOM Power Cord (CH)	IEC power cord, CH plug, item no. 61652
LANCOM Power Cord (US)	IEC power cord, US plug, item no. 61651
LANCOM Power Cord (AU)	IEC power cord, AU plug, item no. 61653
Item number(s)	
LANCOM XS-5110F	61858

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