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LANCOM GS-3652X

Multi-Gigabit access switch for large-scale networking scenarios



Wherever a large number of network components are used, this multi-Gigabit access switch is the ideal product. With 12x 2.5 Gigabit Ethernet ports, for example, it provides the necessary high-performance basis for the operation of Wi-Fi 6 access points and other network components with high performance requirements. Additional 36x Gigabit Ethernet ports, 4x SFP+ ports, and basic Layer 3 features like static routing and DHCP server make this device a networking pro for large networks.

- → Multi-Gigabit access switch with 12x 2.5 Gigabit Ethernet, 36x Gigabit Ethernet ports and 4x SFP+
- → Basic layer 3 features like static routing and DHCP server
- → Ideal in combination with Wi-Fi 6 access points
- → Security with configurable access control on all ports as per IEEE 802.1X
- → Secure remote management through TACACS+, SSH, SSL, and SNMPv3
- → Cloud-managed LAN – for simple and fast configuration via the LANCOM Management Cloud
- → IPv6 and IPv4 support for modern enterprise networks
- → 5-year replacement service for all components

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High performance on 52 ports

The LANCOM GS-3652X is equipped with 12 2.5 Gigabit Ethernet ports, 36 Gigabit Ethernet ports, and 4 SFP+ ports supporting transfer rates of up to 10 Gbps In addition, with a data throughput of 212 Gbps on the backplane, it offers full performance even under heavy load. This makes the access switch a powerful foundation for large network infrastructures in all industries and areas of application.

A high-performance basis for Wi-Fi 6

Thanks to 12 high-performance 2.5 Gigabit Ethernet ports, the LANCOM GS-3652X is the ideal LAN-side basis for integrating the Wi-Fi 6 WLAN standard into modern infrastructures. The increased data rates when using Wi-Fi 6 require 2.5 Gigabit Ethernet, as the required performance demands exceed those of a simple Gigabit Ethernet port. This switch enables the operation of up to 12 Wi-Fi 6 access points or other network components with high-performance requirements.

Static routing for fast data exchange

The LANCOM GS-3652X supports the basic layer-3 feature static routing and thus the shift of certain routing tasks from the router to the switch. Administrator-predefined network routes, through one or multiple network segments, enable fast data transfer especially in scenarios with high data volumes and relieve the router accordingly. Newly available router capacities can then additionally be used to manage external data traffic. As a result, the entire network efficiency is increased.

DHCP server functionality

As a DHCP server, the switch is able to independently and automatically assign IP addresses to clients. The LANCOM GS-3652X supports this basic layer- 3 function and thus takes over the IP management of the connected network.

Cloud-managed LAN

With the LANCOM Management Cloud, the LANCOM GS-3652X offers fast and easy network integration as well as automatic configuration assignment. Cloud-managed LAN replaces individual device configuration with holistic network orchestration and enables automatic VLAN assignment to the desired switch ports. This allows all configurations to be rolled out at the click of a mouse, making even more complex networking scenarios easy to administer.

Configurable access control

The LANCOM GS-3652X excludes 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).

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Secure remote management

Secure communication protocols such as SSH, SSL and SNMPv3 mean that the LANCOM GS-3652X is ideal for professional remote network management. 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.

IPv6 and IPv4 support

Thanks to its dual-stack implementation, the LANCOM GS-3652X can be used in pure IPv4, pure IPv6, or mixed networks. Numerous applications such as SSL, SSH, Telnet, or TFTP can thus also be run over IPv6 networks. IPv6 features such as stateless autoconfiguration, neighbor device discovery, and MLD snooping round out the IPv6 features.

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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
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.

Performance	
Switching technology	Store and forward with latency less than 4 microseconds
MAC addresses	Support of max 32K MAC addresses
Throughput	Max. 212 Gbps on the backplane
Maximum packet processing	130 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 10240 bytes
Packet Buffer	4 MB

Energy efficiency (Green Ethernet)	
Energy detection	Energy efficiency according to IEEE 802.3az. Automatically turns off power on Gigabit Ethernet RJ-45 port when detecting link down or Idle of client. Active mode is resumed without loss of any packets when the switch detects the link up
Cable length detection	Adjusts the signal strength based on the cable length. Reduces the power consumption for short cable

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Layer 3 features	
Number of L3 inferfaces	up to 128
Static routing (IPv4/IPv6)	Hardware based static routing (IPv4/IPv6) with a number of 128 possible routes
DHCP Server	DHCP Server per VLAN, max. 16 pools

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 26 groups containing up to 4 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 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	→ DHCP option 66 → DHCP option 67 → DHCP option 82

Interfaces	
Ethernet	→ 48 TP ports 10/100/1000 Mbps → 4 SFP+ ports 1/10 Gbps → 52 concurrent Ethernet ports in total
Console port	RJ45 configuration port for command line access

Management and monitoring	
Management	LANconfig, WEBconfig, LANCOM Management Cloud, Industry Standard CLI

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Management and monitoring	
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 51 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 and LANconfig → 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	Standard for monitoring of high-speed-networks. Visualization of network use, accounting an analysation to protect your network against dangers

Hardware	
Weight	9,05 lbs (4,1 kg)
Power supply	Internal power supply unit (100 – 240 V, 50 – 60 Hz)
Environment	Temperature range 0 – 40° C; short term temperature conditions 0 – 50°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	1
Power consumption (max)	55 W
Power consumption (idle)	28 W
Heat power (max)	188 BTU/h
Acoustic noise (typ)	45 dBa

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Software	
LCOS version	based on LCOS SX 4.30
Lifecycle Management	After discontinuation (End of Sale), the device is subject to the LANCOM Lifecycle Management. Details can be found at: www.lancom-systems.com/lifecycle
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*	
Europe/EFTA	CE
North America	FCC/IC
Australia / New Zealand	ACMA
*) Note	The full text of the specific Declaration of Conformity is available at the following Internet address: www.lancom-systems.com/doc

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
IEEE 802.3	10Base-T Ethernet
IEEE 802.3ab	1000Base-TX Ethernet
IEEE 802.1ax, incl. 802.3ad	Link Aggregation Control Protocol (LACP)

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Supported IEEE standards	
IEEE 802.3ae	10 Gigabit Ethernet over fiber
IEEE 802.3az	Energy Efficient Ethernet
IEEE 802.3u	100Base-T Ethernet
IEEE 802.3x	Flow Control
IEEE 802.3z	1000Base-X Ethernet

Supported RFC standards	
RFC 854	Telnet Protocol Specification
RFC 1213	MIB II
RFC 1215	SNMP Generic Traps
RFC 1493	Bridge MIB
RFC 1769	Simple Network Time Protocol (SNTP)
RFC 2021	Remote Network Monitoring MIB v2 (RMONv2)
RFC 2233	Interface MIB
RFC 2460	Internet Protocol Version 6 (IPv6)
RFC 2613	SMON MIB
RFC 2617	HTTP Authentication
RFC 2665	Ethernet-Like 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 3019	MLDv1 MIB
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 3621	Power Ethernet MIB
RFC 3635	Ethernet-Like MIB
RFC 3636	IEEE 802.3 MAU MIB
RFC 4133	Entity MIBv3
RFC 4188	Bridge MIB
RFC 4251	The Secure Shell Protocol Architecture (SSH)
RFC 4291	IP Version 6 Addressing Architecture
RFC 4443	Internet Control Message Protocol (ICMPv6)
RFC 4668	RADIUS Authentication Client MIB
RFC 4670	RADIUS Accounting MIB
RFC 5519	Multicast Group Membership Discovery MIB
RFC 7513	DHCP Snooping
RFC 5519	IGMP- and MLD-Snooping

Scope of delivery	
Manual	Hardware Quick Reference (DE/EN), Installation Guide (DE/EN)
Cable	Serial configuration cable, 1.5m
Cable	IEC power cord
19" brackets	Two 19" brackets for rackmounting

Support	
Warranty extension	Free warranty extension up to 5 years (replacement service for defects), for details, please refer to the service and support conditions at: www.lancom-systems.com/support-conditions or at www.lancom-systems.com/rma
Security updates	Up to 2 years after End of Sale of the device (but min. 5 years, see www.lancom-systems.com/product-tables), can be extended by purchasing LANcare products
Software Updates	Regular free updates including new features as part of the LANCOM Lifecycle Management www.lancom-systems.com/lifecycle)

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Support	
Manufacturer support	For LANcommunity partners up to the End of Life of the device. For end customers with LANcare Direct or LANcare Premium Support during the LANcare validity
LANcare Advanced L	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. 10732
LANcare 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)
LANcare 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)
LANcare 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)
LANcare 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)

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 transceiver module	LANCOM SFP-SX-LC1, item no. 61556
1000Base-SX SFP transceiver module	LANCOM SFP-SX2-LC1, item no. 60183
1000Base-LX SFP transceiver module	LANCOM SFP-LX-LC1, item no. 61557
1000Base-LX SFP BiDi transceiver module	LANCOM SFP-BiDi1550-SC1, item no. 60201
10GBase-SX SFP transceiver module	LANCOM SFP-SX-LC10, item no. 61485
10GBase-LX SFP transceiver module	LANCOM SFP-LX-LC10, item no. 61497

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Accessories*	
10GBase-LX SFP transceiver module	LANCOM SFP-LR40-LC10, item no. 60182
10GBase-LX SFP BiDi transceiver module	LANCOM SFP-BiDi1310-LC10, item no. 60202
10G multi gigabit Ethernet copper module	LANCOM SFP-CO10-MG, Art.-Nr.: 60170, max. 1 module usable due to increased power consumption and associated heat
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
*) Note	Support for third-party accessories (SFP and DAC) is excluded and cannot be granted

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Item number(s)	
LANCOM GS-3652X	61877



LANCOM Systems GmbH
A Rohde & Schwarz Company
Adenauerstr. 20/B2
52146 Wuerselen | Germany
info@lancom.de | www.lancom-systems.com

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