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LCOS LX 7.10

Maximum power for Wi-Fi 7 access points

With LCOS LX 7.10, you get even more speed and stability for Wi-Fi 7 networks.
Thanks to support for multi-link operation (MLO), multiple frequency bands (e.g., 5 and 6 GHz) can be used simultaneously for parallel data transmission. The result: significantly higher speeds, lower latencies, and maximum reliability. If one link is affected by interference, the other takes over automatically—ensuring consistently stable connections. MLO also enables optimized load balancing and greater efficiency in environments with a high number of users.
Of course, all other access points* also benefit from LCOS LX 7.10: a series of improvements ensures greater stability and protection for your wireless network.

→ More performance and more stable connections for your Wi-Fi

* except LANCOM LW-500

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General function overview		
Wireless LAN	Adaptive Noise Immunity	Masking of noise sources in the radio environment
	Adjustable transmit power	Configurable EIRP
	ARP handling	ARP handling with automatic learning of MAC addresses from DHCP negotiations
	Bandwidth limitation	Configurable bandwidth limitation per Wi-Fi client or per SSID
	Band steering	Optimized load balancing by steering Wi-Fi clients to the best available frequency band (IEEE 802.11v).
	Client isolation	Allows individual clients to contact only the gateway (further user-defined exceptions possible)
	Closed network	Broadcast suppression for SSID name
	Configurable antenna interfaces	Antenna interfaces can be switched on and off individually (only for devices with external antenna interfaces; there may be limitations to the possible combinations)
	Configurable base data rates	Configurable data rates for beacons, broadcast and multicast frames Configurable data rates announced in the Wi-Fi beacons (‚supported rates')
	Environment scan	Display of adjacent Wi-Fi networks and channel allocation (available via WEBconfig)
	LEPS-MAC	Authentication of Wi-Fi clients via MAC address, incl. specific WPA2 PSK passphrase and VLAN assignment, locally or via RADIUS
	LEPS-U	Authentication of Wi-Fi clients using a WPA2 PSK passphrase specific to each client or client group, incl. VLAN assignment
	Limitation of the number of clients	Limitation of the maximum number of simultaneously connected clients per SSID
	Minimum client signal strength	Preventing probe responses to unconnected clients per SSID
	MLO	Multi Link Operation acc. to IEEE 802.11be
	Multi SSID	Up to 16 independent wireless networks per radio; depending on the specific access point model
	Multicasthandling	IGMP and MLD snooping, conversion of multicast to unicast packets
	Protected Management Frames	Support for protected management frames according to 802.11w
	QoS	WMM
	RADIUS accounting	Support for RADIUS accounting in conjunction with 802.1X
	Roaming	Switching between radio cells (seamless handover), support for IAPP (compatible to LCOS), Fast roaming as per IEEE 802.11r, Radio Resource Management (802.11k, Neighbor Reports)
	Security	WPA3, 802.11i (WPA2), WPA1/TKIP, WEP, 802.1X (RADIUS authentication) including PMK caching and preauthentication
	VLAN	Static VLAN assignment as per 802.1p/q based on Wi-Fi SSIDs, dynamic VLAN for VLAN allocation per IEEE 802.1X or LEPS-MAC / LEPS-U,use of additional Ethernet ports on access points as access ports (untagged VLAN)
	WDS / Point-to-point connections	Support for point-to-point as well as point-to-multipoint links between LCOS LX operated APs using WDS (Wireless Distribution System). With LCOS LX 6.10, WDS operation is validated over a maximum distance of 300m.
	Wi-Fi access point	Up to 512 Wi-Fi clients (depending on device model)
	Wi-Fi standards	IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11h, IEEE 802.11i, IEEE 802.11n, IEEE 802.11ac, IEEE 802.11ax, IEEE 802.11w, IEEE 802.11e, IEEE 802.11be
	Wi-Fi time control	Time-controlled SSID activation / deactivation

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Hotspot	Cloud-managed Hotspot	Provision of a hotspot for Wi-Fi clients in combination with the LANCOM Management Cloud, incl. on-demand VLAN for secure network separation and roaming support. Configurable landing page, welcome text, GTC and login password, user-defined URL forwarding, and time-limited hotspot vouchers as PDF or CSV export in the hotspot portal. Connection of third-party portals possible.
LAN	L2TPv3	Support for L2TPv3 LAC operation. Transmission of Wi-Fi payload data via L2TPv3 Ethernet pseudowire to a central L2TPv3 LNS. Optional termination of L2TPv3 tunnels at WLC
	802.1X supplicant	Authentication on the connected Ethernet switch via 802.1X in supplicant mode
	Ethernet access port	Use of additional Ethernet ports on the access point as access ports (untagged VLAN)
Further radio technologies	BLE	Support for capturing BLE beacons; passive and active scanning; export captured data in JSON format to custom web servers for LBS applications. Exportable data: BLE name, -address type, -advertising data, -signal strength, -scan response data.
	Electronic Shelf Labeling	Support for LANCOM Wireless ePaper USB, Hanshow HS_C09978 ESL Controller, SoluM EGU200NA0X ESL GEN2 USB Gateway
Management protocols (management via IPv4 and IPv6)	HTTP / HTTPS	Only for WEBconfig access
	IPv4	Management via IPv4, DHCP (default setting), static IP configuration, parameterization of LMC connection settings via DHCP Option 43
	IPv6	Management via IPv6, SLAAC, DHCPv6, static IP configuration
	LL2M	Layer 2 emergency management
	SSH	CLI access for configuration and diagnostics via SSH
	SNMP	Read access via SNMPv1/2/3 (v3 active by default)
	Syslog	Internal syslog memory for system and diagnostic messages; export of syslog messages to external syslog servers
	TACACS+	Support of the TACACS+ protocol for AAA administrator access to LCOS LX-based access points
	TFTP	For device search in LANconfig
Management	Firmware update	Configurable automatic firmware update with different update policies
	LANCOM Management Cloud	Complete management via the LANCOM Management Cloud incl. the ability for Zero-Touch installation
	LANconfig	Complete configuration via LANconfig; configuration backup; firmware upload; configuration upload and -download
	WEBconfig	Intuitive web interface for the entire management and monitoring of devices in stand-alone operation
	WLAN controller	Management and monitoring via LANCOM WLAN controller (as per LCOS 10.40 on the WLAN controller)
Diagnostics	Comprehensive trace options per command line interface, historical trace data retrievable from the internal system log buffer. Retrieval of the device-internal syslog via WEBconfig as well as export to syslog servers possible.	

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Features as of LCOS LX 7.10 *	
Multi-link operation (MLO): More speed, more stability with Wi-Fi 7	By using multi-link operation (MLO), Wi-Fi 7 devices can be connected simultaneously on two frequency bands. Wi-Fi clients with a built-in radio module benefit from more stable connections, especially in environments with high signal density: packets are transferred via the frequency band with better quality (enhanced multi-link single-radio) without connection interruptions. Wi-Fi clients with more than one radio module installed, on the other hand, benefit from faster speeds thanks to the aggregation of both bands. In addition, the connection is maintained if one frequency band is temporarily unavailable. Alternatively, both frequency bands can be used simultaneously to send redundant data packets in order to ensure increased stability and reduced latency times of connections (multi-link multi-radio).

* Applies to all LCOS LX-based access points (except LW-500)

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Features as of LCOS LX 6.20 *	
More performance and more stable connections for your Wi-Fi	LCOS LX 6.20 comes with updated Wi-Fi drivers, allowing clients to benefit from better data transfer speeds and more reliable transmissions. It also ensures compatibility with the latest Wi-Fi technologies. This update is therefore particularly beneficial for existing installations!
Support for Frederix Hotspot portal	The hotspot portal of the provider „Frederix“ is supported in conjunction with the LANCOM Management Cloud.
Support for LANCOM Sustainability Mode	Support of the LANCOM Sustainability Mode / Wi-Fi energy-saving mode in combination with the LANCOM Management Cloud
Faster Roaming	Faster roaming between individual access points in cloud-managed hotspot scenarios
Alignment wizard	Alignment wizard for Wi-Fi radio links in WEBconfig
Support for TACACS+ protocol	The TACACS+ protocol for authentication, authorization, and accounting (AAA) of administrator access to LCOS LX-based devices is supported.
Support for random channel selection	In addition to automatic Wi-Fi channel selection, which takes into account the quality of the Wi-Fi channels, random channel selection is now optionally possible. **
Digital Signage / ESL	A separate IP/VLAN interface can be configured for Digital Signage / ESL.
Script management	Script management in conjunction with LANCOM WLAN controllers makes it possible to set any configuration options for the access points directly from the WLAN controller using a script.
Support for L2TPv3 tunnel	In WLAN controller mode, L2TPv3 tunnels are supported as an alternative to WLC layer 3 tunnels.
Further improvements	Various other detailed improvements, including support for IEEE 802.3az, configurable DTIM period, configurable basic rate and supported rates, as well as configurable SSH hostkey length
Features as of LCOS LX 6.14 *	
Radio Resource Management (IEEE 802.11k)	Improved Wi-Fi user experience through accelerated roaming processes: An environment scan is used to identify neighboring access points that are suitable for roaming and detailed information (SSID, radio channels used, etc.) is distributed to the Wi-Fi clients via 802.11k. On this basis, roaming processes from one access point to another are noticeably optimized.
Configuration of antenna interfaces	Antenna connectors can now be switched on and off individually when using external Wi-Fi antennas
Power management for 6 GHz	Improved power management for the LANCOM LX-6500 to utilize the 6 GHz frequency band even with PoE operation via IEEE 802.3at. As of LCOS LX 6.14, the LANCOM LX-6500 can therefore also be operated almost comprehensively with IEEE 802.3at.
LANCOM UUID	LANCOM UUID enables site survey tools such as Ekahau to combine BSSIDs for multi-radio access points
Features as of LCOS LX 6.12 *	
Client mode for flexible integration of Ethernet-capable devices in wireless networks	Your LCOS LX-based access points now support the client mode. From now on, you can use your LCOS LX-based access points flexibly to integrate a wide range of Ethernet-capable devices into existing wireless networks – regardless of the operating system and thus regardless of the manufacturer. For tailored security, you can choose between certificate-based encrypted communication via IEEE 802.1X or via WPA2/3-PSK. Setup is conveniently carried out via the modern WEBconfig user interface.
Re-design of the ‚System configuration‘ tab in WEBconfig	For better clarity, the previous ‚System Configuration‘ tab has been expanded to include the submenus Wireless Management, Wireless ePaper, LBS and Network.
Adjustable speed for the Ethernet ports	The port speed of the access points can now be set to a fixed value.
Signaling in case of insufficient PoE power supply	If a LANCOOM LX-6500(E) receives PoE from the switch according to maximum 802.3at, or a LANCOM LX-640x or LX-6200(E) receives PoE from the switch according to maximum 802.3af, this is signaled by the left LED as soon as the wireless LAN has been configured. In this case, the LED is permanently yellow.
Capture extension (Wi-Fi header can be optionally captured)	For better analysis of wireless data, the Wi-Fi header can now also be recorded.
WLC configuration extensions	Scripts can now also be sent to the LCOS-LX access points via the WLC. In addition, LACP configuration is now possible via the WLC.

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** We recommend professional Wi-Fi coverage or the use of LANCOM Active Radio Control 2.0 to select suitable Wi-Fi channels.

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Features as of LCOS LX 6.10 *	
Preparation for LANCOM Active Radio Control 2.0 – Automated, self-learning Wi-Fi optimization	With the support of LANCOM Active Radio Control 2.0 (ARC 2.0), you radically simplify the optimization of your Wi-Fi networks. Based on computer-aided learning, the solution from the LANCOM Management Cloud uses real usage data to calculate the best configuration in each case to improve your wireless LAN. The result: Channel conflicts are resolved, external networks are taken into account, channel widths and transmission powers are automatically optimized, and available capacities are provided where they are needed based on the learned usage behavior.
Support for point-to-point connections thanks to Wireless Distribution System	Whenever Internet needs to be provided over longer distances or through obstacles such as walls and ceilings in entire office buildings, or legal requirements such as fire protection, do not allow cabling, point-to-point connections are an ideal solution. The advantage is that complex or perhaps even impossible cabling through the entire premises is no longer necessary. With support of WDS (Wireless Distribution System), your LX-based access points can pass on Wi-Fi signals to other access points and thus supply even hard-to-reach places with fast Internet. The access points can be used both as Wi-Fi repeaters for connecting Wi-Fi clients or for connecting wired networks via a radio link.
LACP for double speed and security	The supported LACP (Link Aggregation Control Protocol) standard offers you enormous added value in terms of performance and reliability. LACP enables Ethernet connections to be bundled into a virtual unit. This means that the transmission speed of redundantly connected devices is combined and subsequently greatly increased. In addition, LACP allows redundant connections to be set up between the access point and the switch infrastructure, giving you double protection: if one physical line fails, data traffic will continue to be transmitted via the other line.
L2TPv3 – more flexibility for Wi-Fi management	With L2TPv3 (Layer Two Tunneling Protocol Version 3), LANs can be interconnected across network and sites. If you operate your network via the LANCOM Management Cloud, this opens up the possibility for you to couple the traffic of the access points into an L2TPv3 Ethernet tunnel and decouple it again at a central concentrator without the need for a separate WLAN controller.
Client-Isolation	Prevents data traffic between Wi-Fi clients, for example for hotspot networks
Wi-Fi driver update	Allows increased stability and compatibility
Features as of LCOS LX 5.38	
Support for CLI and WEBconfig tunneling in the LANCOM Management Cloud	With LCOS LX 5.38, your LX-based access points now grow even more closely together with the LANCOM Management Cloud, providing network engineers with another tool for performing diagnostic activities in the infrastructure. The new feature allows direct access to the command line interface or the WEBconfig of your LANCOM access points – securely encrypted and directly from the LMC interface. The corresponding terminal opens in its own decoupled browser window so that you can continue working in the LMC in parallel.
Features as of LCOS LX 5.36	
LANCOM Layer 2 Management (LL2M)	Whenever a device in the network can no longer be reached and does not respond even via the LANCOM Management Cloud or LANconfig, LANCOM Layer 2 Management is the ideal solution to avoid the time-consuming on-site operations of technicians (e.g. for ceiling-mounted access points). To enable configuration access to a device without an IP connection, the LANCOM Layer 2 Management protocol (LL2M) is used. This integrates a client-server structure so that the inaccessible access point can be found, activated, and configured via another LANCOM device in the network.
Proxy ARP	With Proxy ARP (Address Resolution Protocol), the access point assumes responsibility for forwarding data packets to the receiving end device. In this way, the access point intercepts ARP requests for the WLAN client and answers them on its behalf. The advantage here: Valuable airtime is saved, because ARP requests do not place an unnecessary load on the wireless network. The end device can remain in power-saving mode until the data is forwarded to it.
Untagged VLAN for Ethernet-Port	Untagged VLAN gives you more flexibility by allowing you to connect an additional network client to all LX-based access points with two Ethernet ports. You determine the VLAN to be used as untagged VLAN for the port according to your requirements and use the function e.g. to integrate TVs, cash registers or also wired customer devices in the hotel.
Features as of LCOS LX 5.34	
Multicast Snooping	Multicast Snooping supports the targeted forwarding of multicast data packets between SSIDs or between the LAN and SSIDs so that they are not transmitted to the entire network, but only to explicit recipients. This leads to a significant reduction in the load on the entire Wi-Fi network and thus to a considerable increase in efficiency. This is made possible by the IGMP (Internet Group Management Protocol) through which the receivers can inform a multicast-capable router of their interest in certain multicasts by registering and deregistering. Multicast Snooping makes use of these messages to decide to which port (also to which Wi-Fi SSID) multicasts must be sent.

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Multicast-to-unicast conversion	In addition, it is optionally possible to convert multicast data streams to unicast. Multicast data streams that are to be transmitted via Wi-Fi interfaces are converted into individual unicast data streams for each client after the feature is activated. The packets are duplicated per client, but since they are now unicasts, they can be transmitted at the highest possible data rate for this client. Even though the packets are now duplicated, the much faster transmission in most scenarios consumes significantly less airtime overall, which is then available for other transmissions.
Extension of IoT applications	With LCOS LX 5.34, the operation of selected USB Ethernet devices on LCOS LX-based access points with USB port is supported, so that the IoT application spectrum is successively expanded. The following USB Ethernet devices are qualified for operation with LCOS LX-based access points: Hanshow HS_C09978 ESL Controller SoluM EGU200NA0X ESL GEN2 USB Gateway
Features as of LCOS LX 5.32	
Layer-3 tunneling for LCOS LX-based access points	Layer-3 tunneling involves the extended application of the CAPWAP protocol (Control and Provisioning of Wireless Access Points) as used by wireless LAN (WLAN) controllers to manage WLAN access points. It allows WLAN data to be fed into the LAN from a central WLAN controller by establishing a data tunnel between the WLAN controller and the access point. Layer-3 tunneling is ideal for environments where unmanaged switches are used or where no further VLAN configuration of the switches is possible. Data tunnels are established easily and in a very short time without the need for a VLAN infrastructure between WLAN controller and access point. Note: To use this feature, the LANCOM WLAN controller requires LCOS 10.42 RU3 or higher.
Bandwidth limitation	Configurable bandwidth limit per Wi-Fi client
BLE API message buffering	Configurable buffering of BLE API messages via the LBS API
Features as of LCOS LX 5.30	
BLE API for the realization of innovative location-based services	Whether for indoor localization of patients in hospitals, evaluation of customer traffic in retail stores or asset tracking in the logistics sector: For all LANCOM access points with Bluetooth Low Energy Module (BLE), a new API interface (REST) is now available for the integration of location-based services. In cooperation with third-party providers, this enables the implementation of a wide range of location-based services (LBS) and innovative IoT applications.
LANCOM Wireless ePaper extension for your LX series access points	Now you can easily connect your existing LANCOM access points of the LX series to the Internet of Things (IoT), because with LCOS LX 5.30 your devices now support the extension module LANCOM Wireless ePaper USB. With this your access points can easily be upgraded with Wireless ePaper functionality. An ideal solution for the subsequent implementation of Wireless ePaper applications such as digital room signage or wireless price labeling.
Cloud-managed Hotspot	Create a simple Wi-Fi hotspot with a few clicks – directly from the LMC. No additional gateway or WLAN controller with LANCOM Public Spot Option is required. Intuitive menus provide you with the opportunity to customize your hotspot welcome screen with your logo and corporate colors and integrate important information such as imprint and usage guidelines for your hotspot users. Afterwards you can assign the new hotspot to the respective location and it will be available to your visitors.
Features as of LCOS LX 5.20	
WLAN controller functionality	Operate your WLAN now with maximum flexibility as you wish and as your network requires. For example, in very small installations the devices can be managed individually or stand-alone. Managed via the LANCOM Management Cloud, the access points are integrated into a holistic, automated network orchestration – ideal for WLAN infrastructures of any size. With the new LCOS LX 5.20, it is now also possible to operate access points of the LX and LW series via WLAN controller that handles the central configuration and control of the connected access points.
Full access control with LEPS-U and LEPS-MAC	Keep control of who is in your Wi-Fi. With LEPS-U (LANCOM Enhanced Passphrase Security - User) individual clients or entire groups each receive a unique Wi-Fi password for an SSID. In addition, with LCOS LX 5.20 you can now also use LEPS-MAC as a pure MAC filter or authenticate the clients beyond LEPS-U using their MAC address - ideal for secure corporate networks!
Dynamic VLAN	With Dynamic VLAN, only one SSID is now required for several user groups, such as guests or employees. The RADIUS server can issue the VLAN ID for the Wi-Fi client during an IEEE 802.1X login. This allows Wi-Fi devices to be assigned to the desired VLAN without having to provide a separate SSID for each VLAN. In addition, a VLAN can be specified for each Wi-Fi client via LEPS.
WLAN scheduling	Enables time-based activation and deactivation of SSIDs in the wireless LAN. Ideal for WLAN networks that should only be available at specific times, such as hotspots or Wi-Fi in educational institutions. You can individually determine the times and duration of Internet availability.

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Features as of LCOS LX 5.10	
Wi-Fi 6 for LANCOM access points of the LX series	Wi-Fi is everywhere these days—the number of users is increasing just as rapidly as the potential applications. Wi-Fi 6 provides not only more speed, but above all a real increase in average throughput per Wi-Fi client. Thanks to a more efficient use of the available bandwidths and channels, Wi-Fi 6 brings more stability and reliability to intensively used wireless LANs.
Wi-Fi security standard WPA3	WPA3, the successor to WPA2, offers important enhancements and security features for small (“WPA3-Personal”) and large networks (“WPA3-Enterprise”). You benefit from significant improvements in authentication and encryption in your wireless LAN.
SNMPv3 with LANmonitor support	SNMPv3 (Simple Network Management Protocol Version 3) provides professional network monitoring. It offers convenient and yet high-security device monitoring thanks to encrypted data communication in LANmonitor.
Auto Updater – always up-to-date	The Auto Updater automatically keeps your installations up-to-date: LCOS LX-based devices can search for new software updates, and download and install them without any user interaction. You can choose whether to install only security updates, release updates, or all updates automatically. If automatic updates are not desired, the feature can still be used to check for new updates, which can then be installed with a single click.
Band steering – full bandwidth through intelligent client steering	Band steering offers optimized load balancing across the Wi-Fi by actively redirecting clients to the less congested and higher performance 5-GHz frequency band. Depending on the capabilities of the Wi-Fi client, the access point steers it to the best available frequency band—almost seamlessly thanks to the modern IEEE 802.11v technology.
Fast Wi-Fi roaming	Fast roaming as per the WLAN standard IEEE 802.11r allows clients to roam quickly between access points for an optimal wireless LAN user experience.
Features as of LCOS LX 4.00	
Future-proof Wi-Fi performance	More and more users, a high density of devices, and mobile applications constantly present wireless infrastructures with new challenges. Low bandwidth and long loading times are often the result. LCOS LX 4.0 enables high-performance Wi-Fi and is also prepared to support future wireless LAN standards. This way users enjoy wireless freedom combined with the speed of wired networks - for a unique Wi-Fi experience.
Secure access control to the wireless network (IEEE 802.1X)	With integrated security functions such as IEEE 802.1X, LANCOM devices based on the LCOS LX 4.0 ensure optimum security in networks. Thus both administrators and employees benefit from professional security policies in the network.
Multi-SSID	Thanks to Multi-SSID, LCOS LX 4.0-based WLAN access points can set up to 32 different wireless networks in parallel and securely separated from each other. Individual bandwidth limits can be defined for each SSID for download and upload.
Modern web interface	Devices based on LCOS LX 4.0 can be set up in just a few moments via the intuitive web interface of the new WEBconfig. It offers the best overview for comprehensive management and monitoring. A modern dashboard clearly displays the current Wi-Fi status and enables easy setup of individual WLAN networks (SSID) and the associated network keys. Or simply integrate new clients by using convenient QR codes.
Support of the LANCOM Management Cloud	The LANCOM Management Cloud is the world’s first hyper-integrated management system that intelligently organizes, optimizes, and controls your entire network architecture. State-of-the-art „software-defined technology“ dramatically simplifies the deployment of an integrated network, eliminating the need for manual device configuration.

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