LANCOM SYSTEMS

lancom-systems.com

LCOS LX 6.12

LANCOM LX-6400

Highly efficient Wi-Fi 6 for universal application purposes



Wi-Fi is omnipresent today, whether in office environments, schools, universities, shopping centres, sports stadiums or event locations. By using the LANCOM LX-6400 you get an excellent Wi-Fi experience. This Wi-Fi 6 access point offers low latency and high throughput per client even with high terminal device density. You can therefore trust the capabilities of High Efficiency Wireless – Made by LANCOM.

- → Dual concurrent Wi-Fi – parallel operation at 2.4 GHz and 5 GHz with Wi-Fi 6 (IEEE 802.11ax)
- → 4x4 multi-user MIMO for simultaneous beam-steering for multiple clients in down- an uplink mode
- → OFDMA for efficient Wi-Fi channel usage
- → Significantly longer battery life of connected devices thanks to TWT
- → 8 integrated 180° antennas
- → Support of the security standard WPA3
- → Zero-touch deployment with a LANCOM WLAN controller or LANCOM Management Cloud
- → Power supply optionally by Power over Ethernet (IEEE 802.3at) or power-supply unit (included)
- → 1x 2.5-Gigabit Ethernet PoE port (IEEE 802.3at for up to 30 Watt), 1x Gigabit Ethernet port

LANCOM SYSTEMS

lancom-systems.com

LCOS LX 6.12

LANCOM LX-6400

Dual concurrent Wi-Fi with an aggregated datarate of up to 3,550 Mbps

The LANCOM LX-6400 offers the Wi-Fi 6 standard (IEEE 802.11ax) for high-speed wireless LAN for clients in the 2.4- and 5-GHz bands. Wi-Fi 6 technology achieves transmission rates of up to 2.400 Mbps at 5 GHz and simultaneously up to 1.150 Mbps at 2.4 GHz.

4x4 Multi-User MIMO for downlinks and uplinks

Multi-user MIMO (MU-MIMO for short) simultaneously distributes all of the available spatial streams of the LANCOM LX-6400 between several different clients, rather than one after the other as was formerly the case. The available bandwidth is used efficiently and delays in the wireless network are substantially reduced. With Wi-Fi 6, MU-MIMO operates not only for the downlink but for the uplink as well.

OFDMA – carpooling in the radio field

Orthogonal Frequency Division Multiple Access (OFDMA) divides the frequency range of a Wi-Fi channel into a number of frequency blocks per unit of time. This creates subcarriers, which can be as narrow as just 2 MHz. Small data packets, so typical of IoT devices, no longer block entire 20-, 40- or even 80-MHz channels all by themselves. On the other hand, the Wi-Fi 6 access point is able to bundle multiple subcarriers. This is bit like carpooling, which stops the traffic being blocked by cars with just one occupant: Instead, the streets are freed up with just a few cars carrying several occupants.

160 MHz channel width

The access point can handle channel bandwidths of 20, 40, and 80 MHz (with 4 streams) and 160 MHz (with 2 streams). The channel width of 160 MHz enables a data throughput of up to 2.400 Mbps on appropriate terminals with two antennas that support the reception of two streams at 160 MHz in the 5 GHz frequency band.

Longer battery life thanks to TWT

Previously, smartphones, tablets and notebooks had to be ready to receive all the time so as not to miss their data packets. This can quickly use up battery charge. Wi-Fi 6 delivers a new technology to counteract power consumption on the client side. Target Wake Time, TWT for short, reduces consumption by allowing the access point and the client to negotiate exactly when the receiver should wake up to receive data packets.

Band steering

Optimized load balancing in your Wi-Fi by actively redirecting clients to the less congested and higher performance 5-GHz frequency band.

Operates via the LANCOM Management Cloud

The LANCOM LX-6400 offers unsurpassed user-friendliness: Managed through the LANCOM Management Cloud, it integrates into a holistic, automated network orchestration system based on software-defined networking technology.

LANCOM SYSTEMS

lancom-systems.com

LCOS LX 6.12

LANCOM LX-6400

Wi-Fi security standard WPA3

WPA3, the successor of WPA2, offers important upgrades and security features for small ("WPA3-Personal") and large networks ("WPA3-Enterprise").

LANCOM SYSTEMS

lancom-systems.com

LCOS LX 6.12

LANCOM LX-6400

Wi-Fi product specification	
Frequency band 2.4 GHz and 5 GHz	2400-2483.5 MHz (ISM), 5150-5700 MHz (depending on country-specific restrictions)
Integrated Antenna Gain	up to 6 dBi in 2.4 GHz, up to 7 dBi in 5 GHz
Data rates IEEE 802.11ax	→ up to 2400 MBit/s according to IEEE 802.11ax with MCS11/QAM-1024 at 5 GHz, 4x4 MIMO and 80 MHz channel width or 2x2 MIMO and 160 MHz channel width → up to 1150 MBit/s according to IEEE 802.11ax with MCS11/QAM-1024 at 2.4 GHz, 4x4 MIMO and 40 MHz channel width
Data rates IEEE 802.11ac/n	1733 Mbps according to IEEE 802.11ac (fallback to 6.5 Mbps).
Data rates IEEE 802.11n	600 Mbps according to IEEE 802.11n (fallback to 6.5 Mbps).
Data rates IEEE 802.11a/ h	54 Mbps (fallback to 48, 36 , 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection), fully compatible with TPC (adjustable power output) and DFS (automatic channel selection, radar detection)
Data rates IEEE 802.11b/g	54 Mbps to IEEE 802.11g (fallback to 48, 36, 24, 18, 12, 9, 6 Mbps, Automatic Rate Selection)
Radio channels 5 GHz	Up to 16 non-overlapping channels (available channels and further obligations such as automatic DFS dynamic channel selection depending on national regulations), configurable maximum transmit power
Radio channels 2.4 GHz	Up to 13 channels, max. 3 non-overlapping (depending on country-specific restrictions), configurable maximum transmit power
Multi-SSID	Up to 32 (simultaneous use of up to 16 independent Wi-Fi networks at WLAN interface 1 and up to 16 independent Wi-Fi networks at WLAN interface 2); time-controlled activation and deactivation of Wi-Fi networks
Concurrent Wi-Fi clients	Up to 512 clients
Hotspot	Support for the Cloud-managed Hotspot in combination with the LANCOM Management Cloud
Supported Wi-Fi standards	
IEEE standards	IEEE 802.11ax, IEEE 802.11ac Wave 2, IEEE 802.11n, IEEE 802.11a, IEEE 802.11g, IEEE 802.11b, IEEE 802.11i, IEEE 802.1X, IEEE 802.11h, IEEE 802.11d, IEEE 802.11v
Standard IEEE 802.11ax	
Supported features	4x4 DL-/UL-MU-MIMO, DL-/UL-OFDMA, triggered target-wake-time, BSS coloring, QAM-1024, 80 MHz channels, 160 MHz channels
Standard IEEE 802.11ac	
Supported features	4x4 MIMO, 80 MHz channels, 160 MHz channels, MU-MIMO, QAM-256
Standard IEEE 802.11n	
Supported features	4x4 MIMO, 40-MHz channels, 20/40MHz coexistence mechanisms in the 2.4 GHz band, MAC aggregation, Block Acknowledgement, STBC (Space Time Block Coding), LDPC (Low Density Parity Check), MRC (Maximal Ratio Combining), Short Guard Interval

LANCOM LX-6400

Operating modes	
Modes	Standalone, WLC-managed or LANCOM Management Cloud managed
Wi-Fi security	
Encryption options	IEEE 802.1X (WPA3-Enterprise, WPA2-Enterprise), WPA3-Personal, IEEE 802.11i (WPA2-Personal), WEP, LEPS-U (Private PSK, only possible with WPA2), LEPS-MAC
Encryption algorithms	AES-CCMP, AES-GCMP, TKIP, RC4
EAP types (authenticator)	EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-FAST
Roaming	
Roaming	IAPP (Inter Access Point Protocol), Fast Roaming (802.11r), OKC, Pre-Authentication
LANCOM Active Radio Control	
Band Steering	Steering of 5GHz clients to the corresponding high-performance frequency band; support for 802.11v
Bluetooth Low Energy (BLE)	
Support of Bluetooth Low Energy technology (BLE)	The device can scan the environment for BLE devices and can forward the resulting scan data via a REST API.
Layer 2 functions	
VLAN	4096 VLAN IDs, static assignment to SSIDs, dynamic Assignment via LEPS-U/LEPS-MAC or 802.1X (RADIUS)
Quality of Service	WME based on IEEE 802.11e
Bandwidth limitation	per SSID, per Client
Multicast	IGMP-Snooping, Multicast-to-Unicast-conversion on WLAN interfaces
Protocols	LLDP, Proxy ARP, LACP, L2TPv3
Network	
Protocols	IPv4, IPv6, dual stack
Interfaces	
Ethernet ports	→ 1x 10/100/1000/2.5GBASE-T (RJ-45), PoE (Power over Ethernet) → 1x 10/100/1000BASE-T (RJ-45), IEEE 802.3az
USB 3.0 host port	USB 3.0 host port (USB-A)
Internal antenna	Four internal antennas per radio interface (eight in total)

LANCOM LX-6400

Supported IoT Modules	
IoT USB modules	LANCOM Wireless ePaper USB
Hardware	
Power supply	12 V DC, external power adapter (230 V), PoE (Power over Ethernet), compliant with IEEE 802.3at
Power consumption	max. 22W via 12V power adapter; max. 24W via PoE 802.3at; idle power consumption approx. 8W
Environment	Temperature range 0–40 °C. Humidity 0–90 %; non-condensing
Housing	Robust synthetic housing with aluminum bottom, rear connectors, ready for wall mounting, Kensington lock; 205 x 42 x 205 mm (W x H x D)
Management and monitoring	
Management	LANCOM Management Cloud, WLAN-Controller, WEBconfig, LANconfig, LL2M, external Syslog, Packet Capturing
Monitoring	LANCOM Management Cloud, WLAN-Controller, WEBconfig, LANmonitor, SNMP
Conformity*	
Europe/EFTA	CE
North America	FCC/IC
Australia / New Zealand	RCM
Country of Origin	Software designed in Germany, Assembled in Malaysia or Assembled in China
*) Note	The full text of the specific Declaration of Conformity is available at the following Internet address: www.lancom-systems.com/doc
Scope of delivery	
Documentation	Installation Guide (DE/EN); Mounting Instructions (DE/EN)
Cable	Ethernet cable, 3 m
Power supply unit	External power adapter (100-240 V), 12 V/2,5A DC, EU plug (not included in bulk delivery)
Accessories	
LANCOM WLAN PSU 2.5A (EU, white, Bulk 10)	10x white LANCOM WLAN PSU 230V to 12V/2.5A DC power adapter, item no. 61809 (EU)
LANCOM PoE++ Injector	1-port PoE injector with up to 5 Gigabit support, integrated power supply, compatible with the standard IEEE 802.3af/at/bt (up to 65W), item no. 61779 (EU)
LANCOM Wall Mount LN	Robust mounting plate for simple, theft-proof mounting of LANCOM AP series LN-xxxx, LX-64xx, LX-62xx, Item no. 61342

LANCOM SYSTEMS

lancom-systems.com

LCOS LX 6.12

LANCOM LX-6400

Support	
Warranty	3 years For details, please refer to the General Warranty Conditions at: www.lancom-systems.com/warranty-conditions
Software updates	Regular free updates as part of the LANCOM Lifecycle Managements (www.lancom-systems.com/lifecycle)
Manufacturer support	Technical manufacturer support as part of a support contract (LANcommunity partner, LANcare Direct, or LANcare Premium Support)
LANcare Basic S	Security updates and manufacturer support until EOL status (min. 5 years, support contract required: LANcommunity partner, LANcare Direct, or LANcare Premium Support), 5 years replacement service with shipment of the device within 5 days after arrival of the faulty device (8/5/5Days), item no. 10720
LANcare Advanced S	Security updates and manufacturer support until EOL status (min. 5 years, support contract required: LANcommunity partner, LANcare Direct, or LANcare Premium Support), 5 years NBD advance replacement with delivery of the device on the next business day (8/5/NBD), item no. 10730
LANcare Direct Advanced 24/7 S	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. 10776, 10777 or 10778)
LANcare Direct 24/7 S	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. 10752, 10753 or 10754)
LANcare Direct Advanced 10/5 S	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. 10764, 10765 or 10766)
LANcare Direct 10/5 S	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. 10740, 10741 or 10742)

Software	
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.

LANCOM Management Cloud	
LANCOM LMC-A-1Y LMC License	LANCOM LMC-A-1Y License (1 Year), enables the management of one category A device for one year via the LANCOM Management Cloud, item no. 50100

LANCOM LX-6400

LANCOM Management Cloud	
LANCOM LMC-A-3Y LMC License	LANCOM LMC-A-3Y License (3 Years), enables the management of one category A device for three years via the LANCOM Management Cloud, item no. 50101
LANCOM LMC-A-5Y LMC License	LANCOM LMC-A-5Y License (5 Years), enables the management of one category A device for five years via the LANCOM Management Cloud, item no. 50102

Item number(s)	
LANCOM LX-6400 (EU)	61821
LANCOM LX-6400 (WW)	61822
LANCOM LX-6400 (US)	61823
LANCOM LX-6400 (WW, Bulk 10)	61824

LANCOM LX-6400

transmit power and receiver sensitivity

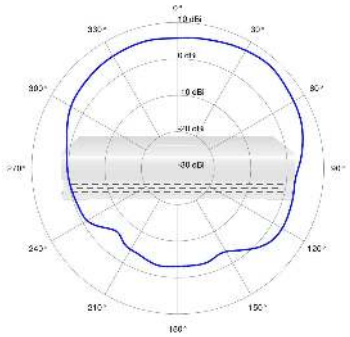
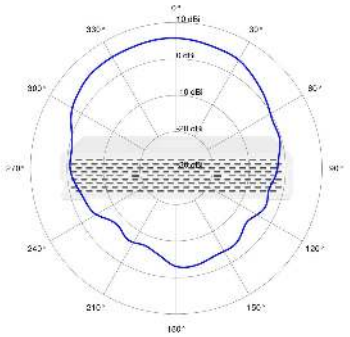
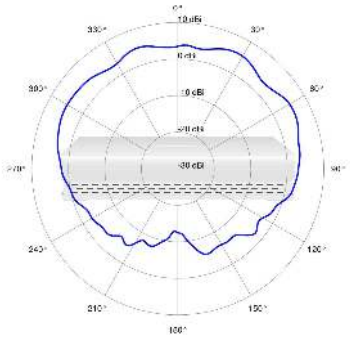
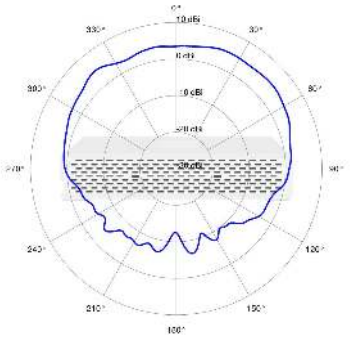
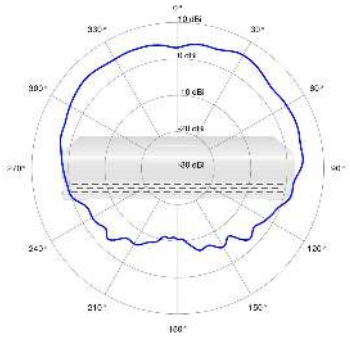
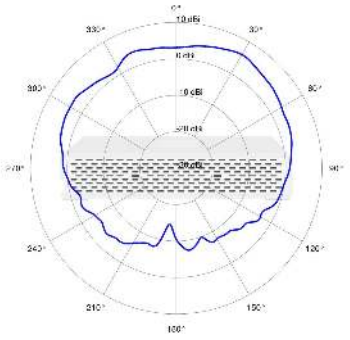
		per chain	four MIMO chains	including internal antenna	receiver sensitivity
802.11b (2,4 GHz)	1 Mbps	17	23	28	-102
	11 Mbps	17	23	28	-95
802.11g (2,4 GHz)	6 Mbps	17	23	28	-97
	54 Mbps	15	21	26	-83
802.11n (2,4 GHz)	MCS0 HT20	17	23	28	-95
	MCS7 HT20	15	21	26	-78
802.11ax (2,4 GHz)	MCS9 HE40	14	20	25	-72
	MCS11 HE40 (2,4 GHz)	11	17	22	-66
802.11a (5 GHz)	6 Mbps	17	23	28	-97
	54 Mbps	16	22	27	-82
802.11n (5 GHz)	MCS0 HT20	17	23	28	-97
	MCS7 HT20	16	22	27	-83
802.11ax (5 GHz)	MCS9 HE80	13	19	24	-71
	MCS11 HE80	10	16	21	-66
	MCS9 HE160	11	17	22	-65
	MCS11 HE160	10	16	21	-59

LANCOM SYSTEMS

lancom-systems.com

LANCOM LX-6400

Antenna Gain

antenna pattern, 2.4 GHz		
antenna pattern, 5.2 GHz		
antenna pattern, 5.6 GHz		

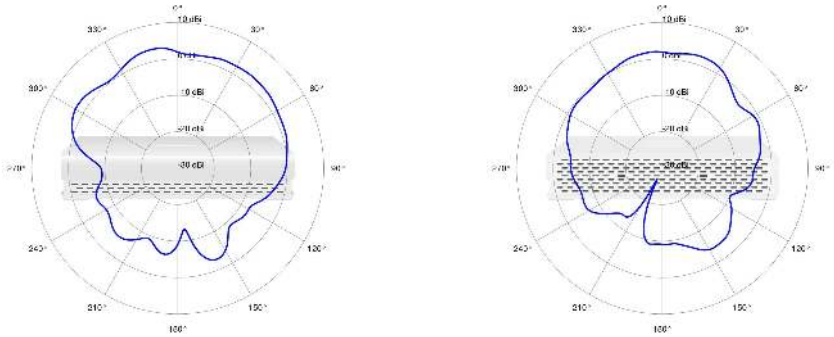
LANCOM SYSTEMS

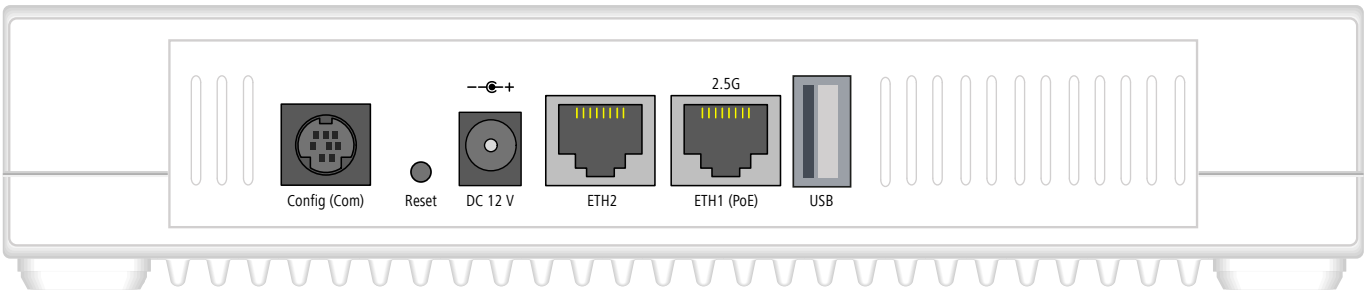
lancom-systems.com

LANCOM LX-6400

Antenna Gain

antenna pattern, BLE





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

LANCOM, LANCOM Systems, LCOS, LANcommunity and Hyper Integration are registered trademarks. All other names or descriptions used may be trademarks or registered trademarks of their owners. This document contains statements relating to future products and their attributes. LANCOM Systems reserves the right to change these without notice. No liability for technical errors and/or omissions. 10/23