

# LANCOM LX-6500

## Wi-Fi 6E—the VIP Wi-Fi experience



Be among the first to harness the full power of high-throughput, future-proof, interference-free Wi-Fi 6E. That means faster and continuously stable Wi-Fi, higher capacity for cutting-edge, bandwidth-hungry applications, and lower latency. As a tri-band access point, the LANCOM LX-6500 simultaneously uses the 2.4 GHz, 5 GHz and now, for the first time, the 6 GHz frequency band reserved exclusively for WLAN applications. With the resulting doubling of the radio spectrum and thus data rates of up to 8.4 Gbit/s, as well as the exclusivity of the WLAN in the 6 GHz range, the LANCOM LX-6500 creates a true VIP Wi-Fi experience in highly frequented WLAN networks.

- Wi-Fi 6E access point with tri-band Wi-Fi—parallel operation in 2.4 GHz, 5 GHz and 6 GHz for up to 8.4 Gbps
- 4x4 multi-user MIMO for simultaneous for simultaneous beam-steering for multiple clients in down- and uplink mode
- OFDMA for efficient Wi-Fi channel usage
- Significantly longer battery life thanks to TWT
- Support of the security standard WPA3
- IoT support: Bluetooth Low Energy (5.1) and USB 3.0
- Suitable wall mount included
- Integrated antennas
- Power supply via Power over Ethernet (IEEE 802.3bt, PoE++, 4PPoE) or an optionally available power supply unit
- 2x 2.5 Gigabit Ethernet ports (1x PoE IEEE 802.3bt)
- Automated operation via LANCOM Management Cloud (LMC)
- WLAN controller support (including layer-3 tunneling)

## LANCOM LX-6500

### **Your fastest and most stable Wi-Fi yet with tri-band Wi-Fi 6E at up to 8,400 Mbps**

Wi-Fi 6E (IEEE 802.11ax standard) means multi-gigabit speeds and reliable continuity of operation. The LANCOM LX-6500 opens up the newly released, interference-free 6 GHz frequency band for your network. It can thus integrate not only clients in the 2.4 GHz and 5 GHz frequency bands, but also modern end devices in the 6 GHz band. Better distribution of clients to the matching radio spectra and channels enables transmission rates of up to 4,800 Mbps in 6 GHz and, in parallel, up to 2,400 Mbps in 5 GHz and up to 1,150 Mbps in 2.4 GHz. The efficient use of all available WLAN frequency bands ensures consistently reliable and powerful Wi-Fi operation.

### **Interference-free use of the 6 GHz frequency band for modern and future applications**

Take a seat in the VIP lounge in Wi-Fi: The LANCOM LX-6500 opens up an exclusive WLAN radio field free of interference with the first-time use of the 6 GHz frequency band. The added 480 MHz of radio spectrum, the 6 additional 80 MHz channels, and the 3 additional 160 MHz channels allow modern high-end devices to operate undisturbed in 6 GHz and relieve the older, crowded radio frequencies. As a Wi-Fi 6E access point, the LX-6500 handles channel widths of 20, 40, 80 MHz as well as 160 MHz with 4 streams, doubling the previously available WLAN spectrum. Especially business-critical, modern applications such as augmented reality (AR), virtual reality (VR), 4K and 8K video streaming, as well as cloud and collaboration tools perform optimally with low latency times.

### **4x4 multi-user MIMO in downlink and uplink for more capacity and less data congestion**

Make the most of your available bandwidth and minimize delays in the radio field: Thanks to Wi-Fi 6E, effective multi-user MIMO (MU-MIMO for short) can be used in the downlink as well as in the uplink. The LANCOM LX-6500 distributes its available spatial streams to several different clients simultaneously, instead of serving them one after the other as was previously the case. Applications with high data throughputs thus run more smoothly and reliably.

### **Carpooling in the radio field—OFDMA for more efficient data traffic**

Orthogonal Frequency Division Multiple Access (OFDMA) also aims to optimize the use of the radio field: The frequency range of a Wi-Fi channel is divided into several frequency blocks within a time unit, thus creating subchannels (subcarriers) with a narrow channel width of up to 2 MHz. This prevents small data packets, which among other things often originate from IoT devices, from taking up and blocking an entire channel of 20, 40 or even 80 MHz width. In addition to this, the LX-6500 bundles several subchannels and transports them together like a kind of carpool to enable the most free and fluid radio traffic possible.

### **Higher battery runtimes of clients with TWT**

Wi-Fi 6E counteracts the battery-consuming always-on reception of clients such as smartphones, tablets, or notebooks with Target Wake Time (TWT): The access point and client now negotiate when exactly the receiver will wake up to receive the data packets, instead of assuming that the devices are always ready to receive. Power consumption is thus significantly reduced on the client side.

# LANCOM LX-6500

## **Flexible operation via LANCOM Management Cloud, modern web interface, or WLAN controller**

Choose freely between operation via the LANCOM Management Cloud, WEBconfig, or a WLAN controller! In cloud operation, the LANCOM LX-6500 becomes part of a user-friendly, holistic, and automated network orchestration. Even in stand-alone operation, the LX-6500 offers fast configuration and comprehensive management and monitoring thanks to the intuitive, clear web interface of the new WEBconfig. As a third option, management can also take place centrally via a WLAN controller.

## **Flexible power supply via PoE or power supply unit**

The LANCOM LX-6500 can be operated flexibly on any PoE-powered Ethernet port via Power over Ethernet (PoE) according to IEEE 802.3bt. For optimum operation, ideally a corresponding PoE switch (4PPoE, PoE++) is used. Alternatively, you can supply the access point with power via the optionally available power supply unit.

## **Professional IoT support**

With the LANCOM LX-6500, you can easily dive into the world of the Internet-of-Things (IoT). Support for Bluetooth Low Energy (5.1) and USB 3.0 opens up many possibilities for you to communicate with modern WLAN sensors in devices or objects and use innovative applications such as asset tracking, digital signage with Wireless ePaper, or iBeacon. In this way, you can easily operate solutions for digital room signage, electronic shelf labels, and other ePaper applications via the optionally available LANCOM Wireless ePaper USB.

LCOS LX 6.12

# LANCOM LX-6500

## Wi-Fi product specification

Frequency band 2.4 GHz, 5 GHz and 6 GHz	2400-2483.5 MHz (ISM), 5150-5700 MHz (depending on country-specific restrictions), 5925-6425 MHz (EU)
Integrated Antenna Gain (peak gain)	up to 6 dBi in 2.4 GHz, up to 5 dBi in 5 GHz and up to 6 dBi in 6 GHz
Data rates IEEE 802.11ax	→ up to 4800 MBit/s according to IEEE 802.11ax with MCS11/QAM-1024 at 6 GHz, 4x4 MIMO and 160 MHz channel width → 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 6 GHz	Up to 24 non-overlapping channels (EU; 20 MHz channel width)
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; 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
--------------------	---

# LANCOM LX-6500

## 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
--------------------	--

## 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	active steering of clients between the 2.4 GHz and 5 GHz band
---------------	---

## 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	→ 2x 10/100/1000/2.5GBASE-T (RJ45/8P8C), 1x PoE
----------------	---

LCOS LX 6.12

# LANCOM LX-6500

## Interfaces

USB 3.0 host port	USB 3.0 host port (USB-A)
-------------------	---------------------------

## Supported IoT Modules

IoT USB modules	LANCOM Wireless ePaper USB
-----------------	----------------------------

## Hardware

Power supply	optional: 12 V DC, external power adapter (230 V); PoE (Power over Ethernet), compliant with IEEE 802.3bt
--------------	---

Power consumption	max. 33W via optional 12V power adapter; max. 35W via PoE 802.3bt; idle power consumption approx. 10W
-------------------	---

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; 230 x 42 x 230 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
-------------	----

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: <a href="http://www.lancom-systems.com/doc">www.lancom-systems.com/doc</a>
---------	---

## Scope of delivery

Documentation	Installation Guide (DE/EN); Mounting Instructions (DE/EN)
---------------	---

Cable	Ethernet cable, 3 m
-------	---------------------

Mounting	Robust mounting plate for simple, theft-proof mounting
----------	--

## Accessories

LANCOM WLAN PSU 5A (Power supply unit)	External power adapter 100-240V auf 12V/5A DC, EU plug, item no. 61736 (EU) and 61808 (EU, bulk 10)
--	---

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)
-----------------------	---

LCOS LX 6.12

# LANCOM LX-6500

## Support

Warranty	3 years For details, please refer to the General Warranty Conditions at: <a href="http://www.lancom-systems.com/warranty-conditions">www.lancom-systems.com/warranty-conditions</a>
Software updates	Regular free updates as part of the LANCOM Lifecycle Managements ( <a href="http://www.lancom-systems.com/lifecycle">www.lancom-systems.com/lifecycle</a> )
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: <a href="http://www.lancom-systems.com/lifecycle">www.lancom-systems.com/lifecycle</a>
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
-----------------------------	--

LCOS LX 6.12

# LANCOM LX-6500

## 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

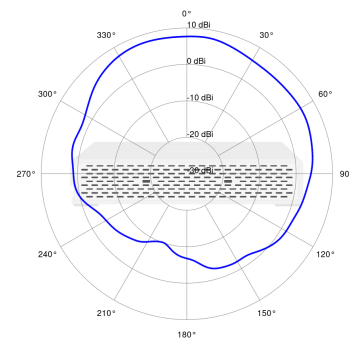
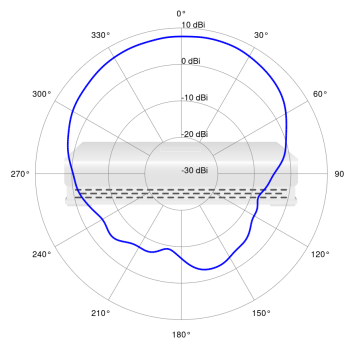
## Item number(s)

LANCOM LX-6500                    61861

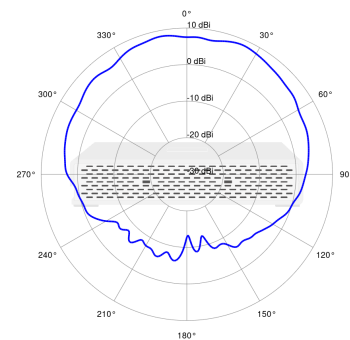
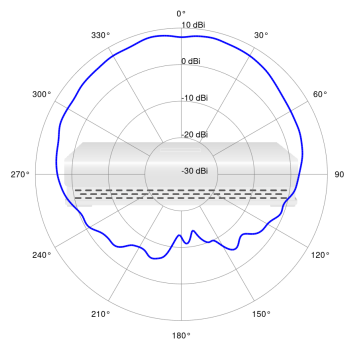
LANCOM LX-6500 (Bulk 10)        61863

## Antenna Gain

antenna pattern, 2.4 GHz



antenna pattern, 5.2 GHz

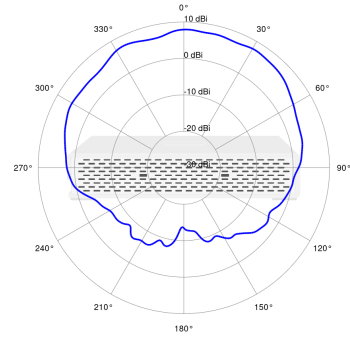
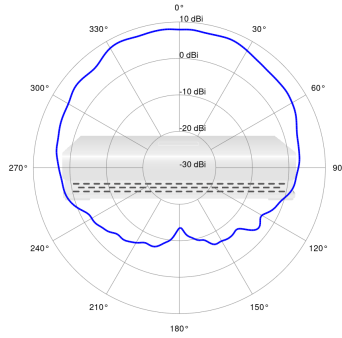




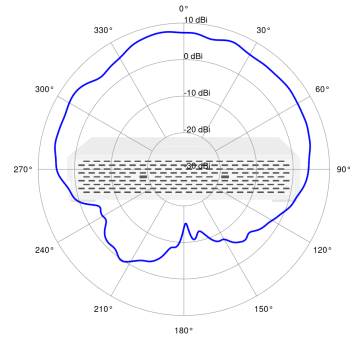
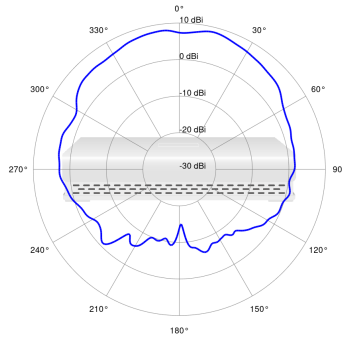
# LANCOM LX-6500

## Antenna Gain

antenna pattern, 5.6 GHz



antenna pattern, 6 GHz



LCOS LX 6.12

# LANCOM LX-6500

## Antenna Gain

antenna pattern, BLE

