

# LANCOM LX-6500E

## Combined power for Wi-Fi 6E and ePaper



The LANCOM LX-6500E is your ticket to the VIP lounge in WLAN: In addition to the 2.4 GHz and 5 GHz frequency bands, you can now also access the 6 GHz band reserved exclusively for WLAN applications! The Wi-Fi 6E access point doubles the previously available radio spectrum, providing a power data rate of 8.4 GBit/s. Its integrated ePaper module enables digital signage solutions for electronic room signage, price tags, and more to coexist with your WLAN without any problems. Experience an exclusive, particularly low-latency, high-throughput, and stable Wi-Fi, which performs perfectly even with bandwidth-hungry applications such as video streaming and high end device densities!

- 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
- Integrated radio module for energy-saving communication with LANCOM ePaper displays or electronic price labels
- 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-6500E

## **Tri-band Wi-Fi 6E with up to 8,400 Mbps for your highest throughput and most reliable WLAN yet**

Wi-Fi 6E (IEEE 802.11ax standard) delivers multi-gigabit speeds and smooth WLAN operation. The LANCOM LX-6500E opens up the newly released, interference-free 6 GHz frequency band for your network. This makes it possible to integrate clients in the 2.4 GHz and 5 GHz frequency bands as well as modern end devices in the 6 GHz band. The better distribution of clients to the radio spectra and channels that suit them leads to 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 result: All available WLAN frequency bands are used efficiently and Wi-Fi operation remains stable and powerful.

## **Interference-free 6 GHz frequency band for even the most advanced devices and applications**

A dedicated frequency band just for WLAN, free of interference, and perfect for business-critical, modern applications such as augmented reality (AR), virtual reality (VR), 4K and 8K video streaming, and cloud and collaboration tools – sounds like an exclusive VIP club in WLAN? The LANCOM LX-6500E gives you access to use the 6 GHz frequency band. With an extra 480 MHz of radio spectrum and the 6 additional 80 MHz channels or the 3 additional 160 MHz channels, modern high-end devices operate undisturbed in 6 GHz and older, overcrowded radio frequencies are offloaded. Double your previously available WLAN spectrum with the LX-6500E: as a Wi-Fi 6E access point, it handles channel widths of 20, 40, 80 MHz as well as 160 MHz with 4 streams, ensuring the lowest possible latency.

## **Integrated ePaper radio module for digital signage with LANCOM Wireless ePaper Displays**

Companies, public buildings, and conference venues can use digital signage to speed up and automate their processes and present a modern and efficient image. Digital door signs with room assignments, electronic price labels or shelf labels in warehouses, ePaper menu cards or info displays – Wireless ePaper Displays from LANCOM offer a wide range of applications. The radio module integrated in the LANCOM LX-6500E for controlling LANCOM Wireless ePaper Displays allows such digital signage projects to be implemented smoothly and cost-effectively without additional access points. With its patented technology, the Wireless ePaper Access Point with Wi-Fi 6E provides both fast, reliable Wi-Fi and interference-free communication with the battery-operated Wireless ePaper Displays in parallel and without conflict.

## **Less data congestion with 4x4 multi-user MIMO in the downlink and uplink**

Applications with high data throughputs could run even smoother and more reliably for you? Then rely on the increased capacity of the LX-6500E! Thanks to Wi-Fi 6E, the effective multi-user MIMO (MU-MIMO for short) can be used in the downlink as well as in the uplink, making the best possible use of the available total capacity in the radio spectrum. Waiting clients are distributed across all available spatial streams, thus minimizing bottleneck effects.

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

Das Funkfeld lässt sich sogar noch optimaler nutzen: Orthogonal Frequency Division Multiple Access (OFDMA) teilt den Frequenzbereich eines WLAN-Kanals innerhalb einer Zeiteinheit in mehrere Frequenzblöcke auf und erzeugt so Unterkanäle (Sub Carrier) mit einer schmalen Kanalbreite von bis zu 2 MHz. Kleine Datenpakete, die u.a. oft von IoT-Geräten stammen, können so nicht mehr einen ganzen Kanal von 20-, 40- oder gar 80 MHz Breite in Anspruch nehmen und blockieren. Durch die Bündelung mehrere Unterkanäle erschafft der LX-6500E zusätzlich eine Art Fahrgemeinschaft für Datenpakete und ermöglicht so einen möglichst freien und flüssigen Funkverkehr.

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

Wi-Fi 6E significantly reduces the power consumption of clients such as smartphones, tablets, or notebooks with Target Wake Time (TWT): 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 in a battery-consuming permanent receive state.

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

You control your Wi-Fi and you choose how you manage it: Via the LANCOM Management Cloud, WEBconfig, or a WLAN controller. Cloud operation makes the LANCOM LX-6500E part of a user-friendly, holistic, and automated network orchestration. Stand-alone operation also offers fast configuration and comprehensive management and monitoring of the LX-6500E with an intuitive, clearly structured WEBconfig. As a third option, management can also be selected centrally via a WLAN controller.

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

The LANCOM LX-6500E 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.

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## 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
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### 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
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### Standard IEEE 802.11ac

Supported features	4x4 MIMO, 80 MHz channels, 160 MHz channels, MU-MIMO, QAM-256
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## 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
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## Operating modes

Modes	Standalone, WLC-managed or LANCOM Management Cloud managed
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## 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
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Encryption algorithms	AES-CCMP, AES-GCMP, TKIP, RC4
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EAP types (authenticator)	EAP-TLS, EAP-TTLS/MSCHAPv2, PEAPv0/EAP-MSCHAPv2, PEAPv1/EAP-GTC, EAP-FAST
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## Roaming

Roaming	IAPP (Inter Access Point Protocol), Fast Roaming (802.11r), OKC, Pre-Authentication
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## Wireless ePaper Displays

Support for LANCOM Wireless ePaper Displays	The device is equipped with a radio module to control LANCOM Wireless ePaper Displays in the 2.4 GHz frequency band.
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## LANCOM Active Radio Control

Band Steering	active steering of clients between the 2.4 GHz and 5 GHz band
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## 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.
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## Layer 2 functions

VLAN	4096 VLAN IDs, static assignment to SSIDs, dynamic Assignment via LEPS-U/LEPS-MAC or 802.1X (RADIUS)
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Quality of Service	WME based on IEEE 802.11e
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Bandwidth limitation	per SSID, per Client
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Multicast	IGMP-Snooping, Multicast-to-Unicast-conversion on WLAN interfaces
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Protocols	LLDP, Proxy ARP, LACP, L2TPv3
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## Network

Protocols IPv4, IPv6, dual stack

## Interfaces

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

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

## 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:  
[www.lancom-systems.com/doc](http://www.lancom-systems.com/doc)

## 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)

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## Accessories

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)
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## 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.

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## 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 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-6500E (WW)	61872
LANCOM LX-6500E (Bulk 10)	61873

