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› [TP-Link](#) /

› TP-Link NX510v 5G AX3000 Wi-Fi 6 Router User Manual

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Model: NX510v | Brand: TP-Link

1. INTRODUCTION

The TP-Link NX510v is a high-performance 5G AX3000 Wi-Fi 6 Router designed to provide ultra-fast internet access and robust wireless connectivity for homes and small offices. It combines 5G cellular connectivity with the latest Wi-Fi 6 technology, offering enhanced capacity, lower latency, and faster speeds. This manual provides detailed instructions for setting up, operating, maintaining, and troubleshooting your NX510v router.

2. PRODUCT OVERVIEW

2.1 Front Panel

The front panel of the NX510v features LED indicators that provide status information about the router's operation.



Figure 2.1: Front view of the TP-Link NX510v router, showing the sleek white design and vertical LED indicator strip.

- **Signal Strength LEDs:** Indicate the strength of the 5G/4G cellular signal.
- **Internet LED:** Indicates internet connection status.
- **Wi-Fi LED:** Indicates Wi-Fi network status.
- **Power LED:** Indicates power status.

2.2 Rear Panel

The rear panel houses all the necessary ports for connecting the router to power, network devices, and external antennas.



Figure 2.2: Rear view of the TP-Link NX510v router, displaying the various ports including LAN, WAN/LAN, Voice, Reset/WPS, and power input.

- **EXT ANT:** Connectors for optional external 4G/5G antennas to improve signal reception.
- **RESET/WPS Button:** Press and hold to reset the router to factory settings; short press for WPS function.
- **VOICE Port (RJ11):** Connects to a telephone for VoLTE telephony services.
- **LAN1/LAN2 Ports (RJ45):** Gigabit Ethernet ports for connecting wired devices.
- **LAN/WAN Port (RJ45):** A multi-functional Gigabit Ethernet port that can act as either a LAN port or a WAN port for fiber/cable modem connection.
- **ON/OFF Button:** Powers the router on or off.
- **Power Port:** Connects to the provided power adapter.

3. SETUP GUIDE

3.1 Package Contents

Verify that your package contains the following items:

- 1 x TP-Link NX510v Router
- 1 x 12V 2A Mains Charger

- 1 x RJ45 Ethernet Cable
- Quick Installation Guide (not included in this digital manual)

3.2 Hardware Installation

1. **Insert SIM Card:** Locate the SIM card slot on the router (usually at the bottom or side, refer to the Quick Installation Guide for exact location). Gently insert your Nano SIM card until it clicks into place. Ensure the SIM card is correctly oriented.
2. **Connect External Antennas (Optional):** If you have external 4G/5G antennas, connect them to the "EXT ANT" connectors on the rear panel.
3. **Connect Power Adapter:** Connect the provided 12V 2A mains charger to the Power Port on the rear panel of the router and plug the other end into a power outlet. Press the ON/OFF button to power on the router.
4. **Connect Network Devices:**
 - For wired connections, connect your computer or other network devices to the LAN1, LAN2, or LAN/WAN ports using the provided RJ45 Ethernet cable.
 - For wireless connections, locate the Wi-Fi network name (SSID) and password printed on the label at the bottom of the router.
5. **Connect Telephone (Optional):** If using VoLTE telephony, connect your telephone to the VOICE port (RJ11).



Figure 3.1: The TP-Link NX510v supports connections for over 250 devices, including smartphones, laptops, smart home devices, and gaming consoles.

4. OPERATING INSTRUCTIONS

4.1 Internet Access via 5G/4G

Once the SIM card is inserted and the router is powered on, it will automatically attempt to establish a 5G/4G connection. The Internet LED on the front panel will indicate the connection status. If the connection is not established, ensure your SIM card is active and has a data plan.



Figure 4.1: The NX510v leverages 5G technology for significantly faster internet speeds compared to previous generations.

4.2 Wi-Fi Connection

To connect devices to the Wi-Fi network:

1. On your device (smartphone, laptop, tablet), open the Wi-Fi settings.
2. Select the Wi-Fi network name (SSID) found on the router's label.
3. Enter the Wi-Fi password (also on the router's label) when prompted.

4. Your device should now be connected to the internet via Wi-Fi 6.



Figure 4.2: The NX510v features AX3000 Wi-Fi 6, providing dual-band speeds of 574Mbps at 2.4GHz and 2402Mbps at 5GHz.

4.3 VoLTE Telephony

The NX510v supports Voice over LTE (VoLTE) telephony. Connect a standard telephone to the RJ11 VOICE port on the rear panel. Ensure your SIM card and service provider support VoLTE for this feature to function.

4.4 EasyMesh Support

The NX510v is EasyMesh compatible, allowing it to collaborate with other EasyMesh products to create a seamless mesh Wi-Fi network. This provides extended coverage and a single Wi-Fi name throughout your home. Refer to the TP-Link website or EasyMesh product documentation for detailed setup instructions.

4.5 Remote Management

The router supports TR-069/181/111/143 protocols, enabling Internet Service Providers (ISPs) to remotely configure and manage the device. This feature is typically managed by your ISP and does not require direct user configuration.

5. MAINTENANCE

- **Placement:** Place the router in a central location, away from obstructions and sources of interference (e.g., microwaves, cordless phones).
- **Cleaning:** Use a soft, dry cloth to clean the router. Do not use liquid cleaners or aerosols.
- **Ventilation:** Ensure the router's ventilation holes are not blocked to prevent overheating.

5.1 Firmware Update

Regularly check the TP-Link official website for firmware updates. Firmware updates can improve performance, add new features, and fix bugs. Follow the instructions provided on the website for updating the firmware.

5.2 Factory Reset

If the router is not functioning correctly, or if you forget the login password, you can perform a factory reset. With the router powered on, press and hold the RESET/WPS button on the rear panel for approximately 5-10 seconds until the LEDs flash. The router will restart with factory default settings.

6. TROUBLESHOOTING

- **No Internet Access:**
 - Check the Internet LED on the front panel. If it's off or red, ensure your SIM card is properly inserted and active.
 - Verify your cellular data plan is active and has sufficient data.
 - Try restarting the router by unplugging and re-plugging the power adapter.
 - Contact your ISP to confirm network availability in your area.

- **Wi-Fi Connection Issues:**
 - Ensure the Wi-Fi LED is on.
 - Verify you are entering the correct Wi-Fi password.
 - Move closer to the router to improve signal strength.
 - Try restarting both the router and your Wi-Fi device.
- **Slow Internet Speed:**
 - Check the signal strength LEDs on the front panel. Low signal strength can lead to slow speeds. Consider repositioning the router or using external antennas.
 - Ensure no other devices are heavily utilizing bandwidth (e.g., large downloads, streaming).
 - Perform a speed test to confirm the actual speed you are receiving.
 - Contact your ISP if speeds are consistently below expectations.
- **VoLTE Not Working:**
 - Ensure your SIM card and mobile plan support VoLTE.
 - Verify the telephone is correctly connected to the VOICE port.
 - Check the router's web management interface for VoLTE settings.

7. TECHNICAL SPECIFICATIONS

Feature	Description
Model	NX510v
Wireless Standard	802.11ax (Wi-Fi 6), 802.11ac/a/b/g/n
Wi-Fi Speeds	574 Mbps (2.4 GHz) + 2402 Mbps (5 GHz)
Cellular Connectivity	5G NR, 4G LTE-FDD/TDD
Ports	1x 1000Mbps WAN/LAN Port, 2x 1000Mbps LAN Ports, 1x RJ11 VOICE Port, 2x External Antenna Connectors (SMA)
VoIP Features	VoLTE telephony via RJ11 port
Management Protocols	TR-069/181/111/143
Mesh Support	EasyMesh compatible
Dimensions (W x D x H)	9.9 x 9.9 x 19.2 cm
Power Supply	12V 2A
Operating System	RouterOS (TP-Link's proprietary OS)
Special Features	WPA3 Encryption, SMA Connectors for 4G/5G External Antenna

8. WARRANTY AND SUPPORT

For warranty information, technical support, and additional resources, please visit the official TP-Link website. You can find FAQs, firmware downloads, and contact information for customer service.

TP-Link Official Website: www.tp-link.com

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page’s manual context to help answer it.

Name

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question