

[Manuals.plus](#) /

› [SONOFF](#) /

› SONOFF Zigbee 3.0 USB Dongle Plus Gateway Instruction Manual

SONOFF ZBDongle-P

SONOFF Zigbee 3.0 USB Dongle Plus Gateway Instruction Manual

Model: ZBDongle-P

1. INTRODUCTION

The SONOFF Zigbee 3.0 USB Dongle Plus (Model: ZBDongle-P) is a universal Zigbee USB adapter designed to function as a gateway for smart home systems. It enables local control of Zigbee sub-devices through open-source platforms such as Home Assistant (using ZHA) or Zigbee2MQTT, eliminating the need for multiple brand-specific Zigbee hubs.

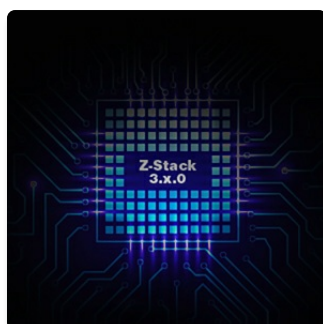


Image 1.1: The SONOFF Zigbee 3.0 USB Dongle Plus, its detachable antenna, and product packaging.

2. PRODUCT OVERVIEW

The ZBDongle-P is engineered for reliable and flexible smart home integration. Key features include:

- **Pre-Flashed Firmware:** Comes pre-flashed with Z-Stack 3.x.0 coordinator firmware, ready for immediate use.
- **Multi-Platform Compatibility:** Fully supports integration with ZHA in Home Assistant and is compatible with Zigbee2MQTT for diverse smart home setups.
- **Robust Chipset:** Built with the reliable TI CC2652P + CP2102(N) chipset for stable communication and performance.
- **Extended Range:** Delivers strong transmission power with +20dBm output for enhanced Zigbee network coverage.
- **Easy Firmware Management:** Facilitates quick firmware updates using the Dongle Flasher Web tool or Add-on.



3. PACKAGE CONTENTS

Upon opening the package, verify that all items are present and in good condition:

- SONOFF Zigbee 3.0 USB Dongle Plus (ZBDongle-P)
- Detachable Antenna
- Quick Start Guide / Instruction Manual (physical or digital)



Image 3.1: The SONOFF Zigbee 3.0 USB Dongle Plus, its antenna, and accompanying documentation.

4. HARDWARE DESCRIPTION

The ZBDongle-P features several key components for its operation:

Hardware Description

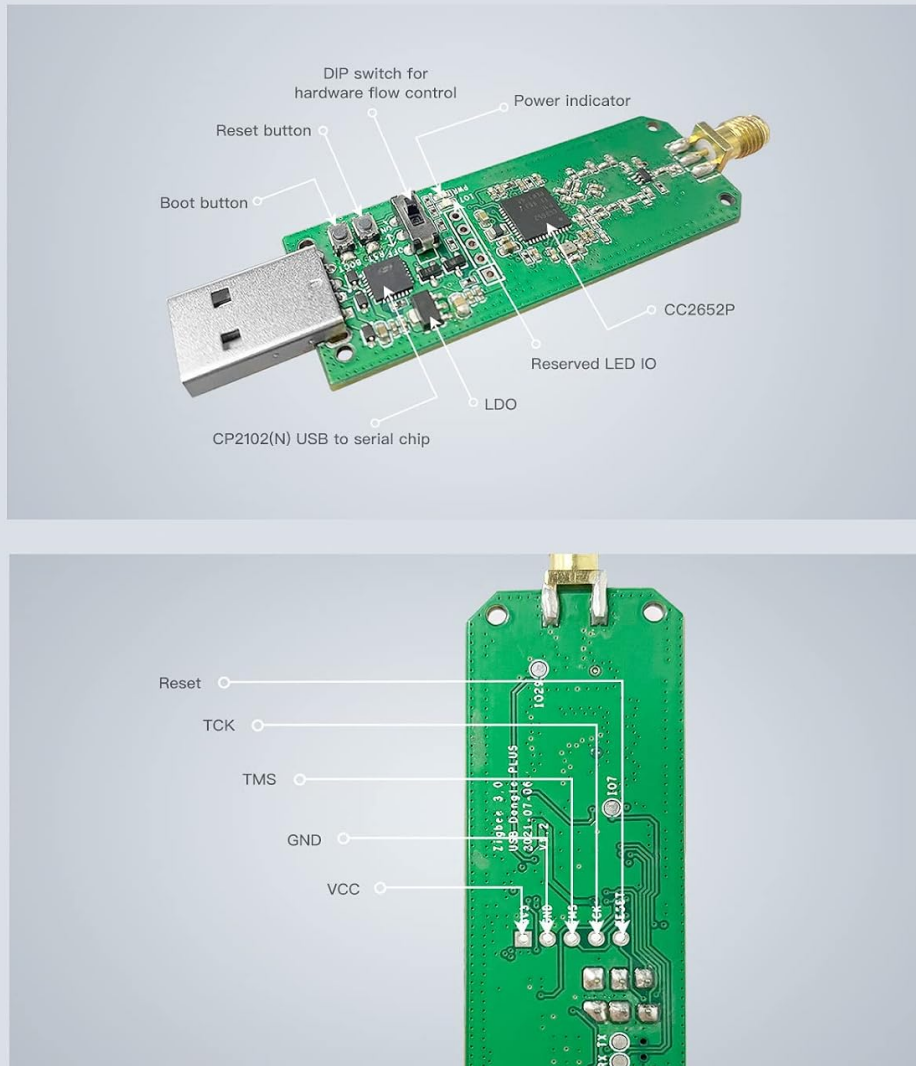


Image 4.1: Detailed view of the internal components of the ZBDongle-P, including the CC2652P chip, CP2102(N) USB to serial chip, reset button, boot button, DIP switch, and power indicator.

- **USB Connector:** Standard USB-A for connecting to a host device.
- **Antenna Connector:** SMA connector for the detachable antenna, ensuring optimal signal reception and transmission.
- **TI CC2652P Chipset:** The core Zigbee microcontroller responsible for network coordination.
- **CP2102(N) USB to Serial Chip:** Facilitates communication between the USB port and the Zigbee chipset.
- **Reset Button:** Used for resetting the dongle.
- **Boot Button:** Used for entering bootloader mode, typically for firmware flashing.
- **DIP Switch:** For hardware flow control.
- **Power Indicator:** LED to show power status.

5. SETUP

Follow these steps to set up your SONOFF Zigbee 3.0 USB Dongle Plus:

1. **Attach Antenna:** Carefully screw the provided antenna onto the SMA connector on the dongle. Ensure it is finger-tight.
2. **Connect to Host Device:** Insert the USB Dongle Plus into an available USB 2.0 port on your host device (e.g., Raspberry Pi, PC running Home Assistant or ioBroker). It is recommended to use a USB extension cable to avoid interference and improve signal quality, especially when connected directly to a Raspberry Pi.
3. **Software Configuration:**
 - **For Home Assistant (ZHA):** The dongle should be automatically detected. Navigate to *Settings > Devices & Services > Add Integration* and search for Zigbee Home Automation (ZHA). Follow the on-screen prompts to configure the dongle.
 - **For Zigbee2MQTT:** Refer to the official Zigbee2MQTT documentation for specific installation and configuration steps. You will typically need to specify the serial port path for the dongle in your Zigbee2MQTT configuration file.
4. **Verify Connection:** After configuration, check the logs or device list in your chosen platform to confirm the dongle is recognized and operating correctly.



Image 5.1: The ZBDongle-P connected to a Raspberry Pi and a USB hub, illustrating typical setup scenarios.

6. OPERATING INSTRUCTIONS

Once the dongle is successfully integrated into your smart home platform, it acts as the central coordinator for your Zigbee network.

1. Pairing Zigbee Devices:

- Initiate pairing mode on your smart home platform (e.g., 'Add device' in ZHA, or enable 'permit join' in Zigbee2MQTT).
- Put your Zigbee end-device into pairing mode (refer to the device's specific instructions).
- The device should appear in your platform and can then be configured.

2. **Building a Mesh Network:** Zigbee devices form a mesh network. Mains-powered Zigbee devices (e.g., smart plugs, light bulbs) act as routers, extending the network range. Battery-powered devices are end-devices and do not route traffic. Strategically place mains-powered devices to strengthen your network.

3. **Controlling Devices:** Use your smart home platform's interface to control paired Zigbee devices, create automations, and monitor their status.

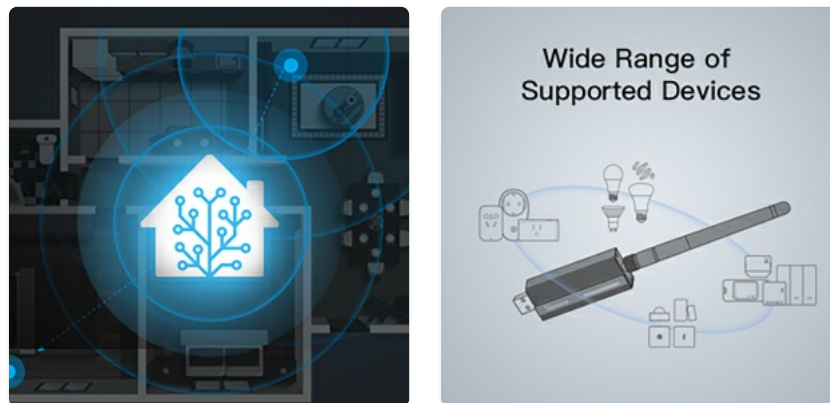


Image 6.1: Illustrations of a typical Zigbee mesh network and the variety of compatible devices.

7. FIRMWARE FLASHING

The ZBDongle-P comes pre-flashed as a coordinator. However, you may choose to flash different firmware (e.g., a router firmware to extend your Zigbee network) or update to a newer coordinator firmware version.

SONOFF provides a convenient web-based tool for flashing:

- **SONOFF Dongle Flasher Web Tool:** This tool allows you to flash firmware directly from your browser. Search online for "SONOFF Dongle Flasher Web" to find the official tool.
- **Process:** Typically involves connecting the dongle to your computer, selecting the desired firmware file, and initiating the flash process through the web interface. Detailed instructions are provided on the flasher tool's page.

Note: Flashing custom firmware carries inherent risks. Ensure you follow official guides carefully to avoid damaging the device. Always back up your configuration before flashing.

Quick & Easy Firmware Flash

Flash your firmware in just one minute using the official SONOFF Dongle Flasher directly in your browser. No complex setup, no extra tools – fast, simple, and beginner-friendly.

Supported Firmware

- ✓ Zigbee Coordinator
- ✓ Zigbee Router

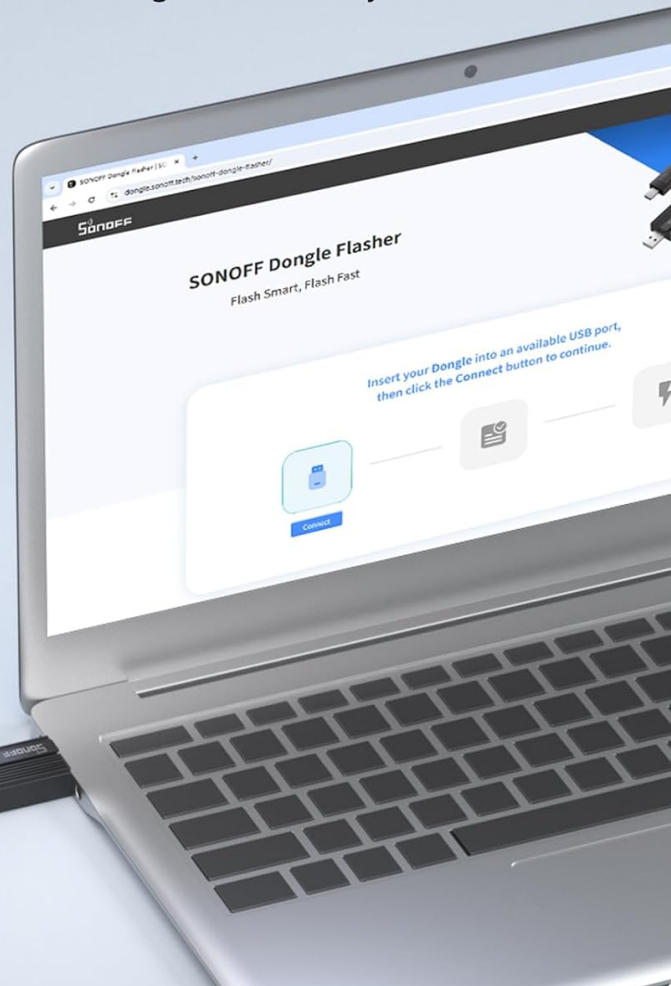


Image 7.1: The SONOFF Dongle Flasher web tool interface, showing options for Zigbee Coordinator and Zigbee Router firmware.

8. MAINTENANCE

To ensure the longevity and optimal performance of your ZBDongle-P:

- **Keep Clean:** Periodically wipe the dongle with a dry, soft cloth. Avoid using liquid cleaners.
- **Environmental Conditions:** Operate the dongle within its specified temperature range (-10°C to 40°C). Avoid extreme heat, cold, or humidity.
- **Secure Connection:** Ensure the antenna is securely attached and the dongle is firmly seated in the USB port.
- **Firmware Updates:** Regularly check for and apply official firmware updates to benefit from performance improvements and bug fixes.

9. TROUBLESHOOTING

If you encounter issues with your SONOFF Zigbee 3.0 USB Dongle Plus, consider the following:

- **Dongle Not Detected:**

- Try a different USB port.
- Ensure the host device's operating system has the necessary USB serial drivers (CP2102N).
- Reboot your host device.

- **Zigbee Devices Not Pairing:**

- Ensure the dongle is in pairing mode and the device is in its pairing mode.
- Bring the device closer to the dongle during the initial pairing process.
- Check for interference from Wi-Fi routers or other 2.4GHz devices. Use a USB extension cable to move the dongle away from the host device.
- Verify the dongle's firmware is up-to-date and compatible with your platform.

- **Poor Network Range/Connectivity:**

- Utilize mains-powered Zigbee devices as routers to extend your mesh network.
- Ensure the antenna is properly attached and oriented.
- Consider the physical environment; thick walls or metal objects can impede Zigbee signals.

- **Firmware Flashing Issues:**

- Ensure a stable USB connection and power supply during the flashing process.
- Follow the specific instructions for the flashing tool precisely.

For more detailed troubleshooting and community support, refer to the official SONOFF website, Home Assistant forums, or Zigbee2MQTT documentation.

10. SPECIFICATIONS

Technical specifications for the SONOFF Zigbee 3.0 USB Dongle Plus (ZBDongle-P):

Specifications



Model
ZBDongle-P

Working temperature
-10°C~40°C

Shell material
Aluminum alloy

Input
DC 5V (100mA Max)

Wireless
Zigbee 3.0

Dimension
87x25.5x13.5mm

Image 10.1: Visual representation of the ZBDongle-P's dimensions and key specifications.

Feature	Detail
Model	ZBDongle-P
Brand	SONOFF
Wireless Protocol	Zigbee 3.0
Hardware Interface	USB 2.0
Chipset	TI CC2652P + CP2102(N)
Output Gain	+20dBm
Input Power	DC 5V (100mA Max)
Product Dimensions	87 x 25.5 x 13.5 mm (3.4 x 1 x 0.53 inches)
Item Weight	0.09 Kilograms (3.06 ounces)

Feature	Detail
Operating Temperature	-10°C to 40°C
Shell Material	Aluminum alloy
Compatible OS Family	Windows (and various Linux-based systems for Home Assistant/IoBroker)

11. WARRANTY AND SUPPORT

For warranty information, technical support, or further assistance, please refer to the official SONOFF website or contact their customer service directly. Keep your purchase receipt for warranty claims.

Official SONOFF Website: www.sonoff.com