

User Manual

SMLIGHT SLZB-MR5U – adapter, Zigbee, Matter over Thread,
Ethernet, Wi-Fi, PoE, USB (EFR32MG24+EFR32MG24)



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About the device

The SMLIGHT SLZB-MR5U is a dual-radio Zigbee 3.0 coordinator and Thread Border Router with Ethernet, Wi-Fi, and USB connectivity.

The device contains two separate Silicon Labs EFR32MG24 radio SoCs. One radio can be used as a Zigbee coordinator or router, while the other can be used as a Thread Border Router, allowing the Zigbee and Thread networks to operate simultaneously on separate radios and separate channels. Both radios provide up to +20 dBm transmit power and have their own rotatable 5 dBi external antenna.

The SLZB-MR5U is designed primarily for Home Assistant systems, Zigbee2MQTT and ZHA integration, and for creating Matter over Thread networks. It can connect to the host via Ethernet, Wi-Fi, or USB. Power can be supplied via IEEE 802.3af PoE or the USB-C connector, with optoelectronic isolation handling simultaneous connection of both power sources.

The built-in USB-A host port can be used to forward supported USB-to-serial adapters over the network. SLZB-OS supports devices using controller chips including CP210x, PL2303, CH340, CH341, and CH9102, so, for example, a USB Z-Wave adapter can be accessed remotely over a TCP/IP connection. The device comes with SLZB-OS preinstalled and supports a local web interface, OTA updates, diagnostic functions, and installation of alternative firmware.

About the manufacturer

The SMLIGHT brand offers modern and reliable devices for efficient smart home control. SMLIGHT focuses in particular on developing devices that improve the stability and efficiency of smart home networks. Its product range centers on solutions that enable seamless communication and control between different smart home devices. These include Zigbee coordinators, which provide stable network connectivity for Zigbee devices, as well as PoE (Power over Ethernet) adapters, which provide both data connectivity and power over a single Ethernet cable, reducing cabling requirements.

In addition, SMLIGHT offers advanced smart home gateways that provide communication links between devices using different protocols, as well as RF signal amplifiers and converters to extend communication range and improve reliability.

Device overview



Device configuration

The SLZB-MR5U adapter can be configured in two ways: via the web interface or with the physical push button. When connecting to the Wi-Fi AP (Access Point), the device web server is available at 192.168.1.1.

Via the web interface

Steps:

1. Connect the device to your local network (LAN) via Ethernet or Wi-Fi.
2. Open a browser on a computer or phone and enter the device's IP address.

If you do not know the device's IP address, you can use the mDNS function if your router supports it. Enter the following in the browser address bar:

- ***<http://slzbMR5U.local>*** (for SLZB-MR5U)

Using the physical push button

The physical button can be used to perform the following actions:

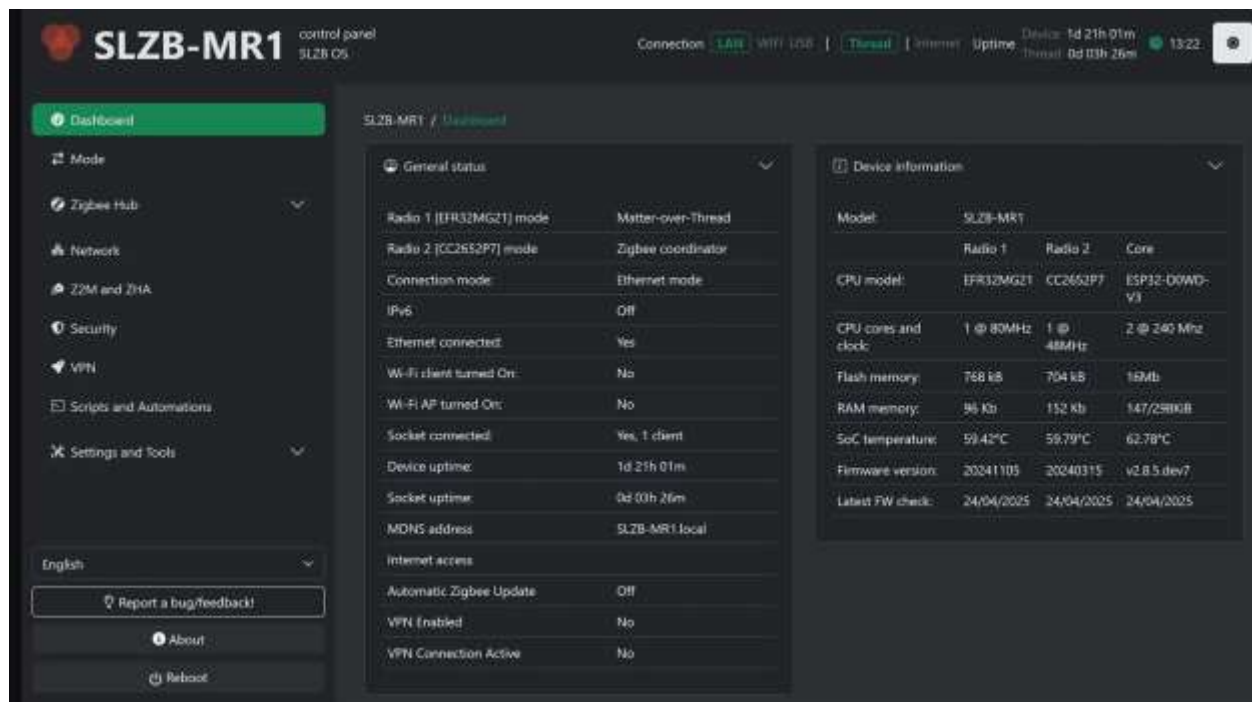
1. Switching operating mode
 - Short press: switches between Zigbee-to-Ethernet and Zigbee-to-USB modes.
2. LED control
 - Long press: Turns off the LEDs.
 - Repeated long press: Restores the LEDs to their default operating mode.

The LED status can also be changed via the web interface without restarting the device. The setting is available under System and Tools.

Firmware updates and settings

The SLZB-MR5U uses a web dashboard for configuration, settings, and firmware updates. The device must be configured correctly before the two radios can be used for Zigbee and Thread.

In addition, all firmware should be updated before making any configuration changes, starting with the core firmware.



Core firmware update

1. Open the SLZB-MR5U web interface (e.g. 192.168.0.110)
2. In the left-hand menu, click: Settings and Tools > Firmware update
3. In the center panel (SLZB OS Menu), select: Check for Core updates
4. Click the Flash v2.8.5.dev7 (latest version) button
5. Wait for the update to finish and for the device to restart
6. Done!

Thread firmware update

Next, update the Thread firmware and configure one radio for Matter-over-Thread mode.

1. Open the SLZB-MR5U web dashboard (e.g. 192.168.0.110)
2. In the left-hand menu, click: Settings and Tools > Firmware update
3. In the EFR32MG24 Zigbee OTA Menu on the right, select: Check for Zigbee updates
4. Expand the Matter-over-Thread menu
5. Click the Flash Matter-over-Thread 20241105 (latest version) button
6. Wait for the process to finish and for the device to restart
7. Done!

Zigbee firmware update

Finally, update the CC2674P10 chip's Zigbee firmware and set it to Zigbee mode. Choose Zigbee coordinator or Zigbee router mode.

1. Open the SLZB-MR5U web dashboard (e.g. 192.168.0.110)
2. In the left-hand menu, click: Settings and Tools > Firmware update
3. On the right, under CC2674P10 Zigbee OTA Menu, select: Check for Zigbee updates
4. Expand the Zigbee Coordinator menu
 - Click Flash Zigbee Coordinator 20240315 (latest stable version)
 - or click Flash Zigbee Coordinator 20250321 (latest development version)
5. OR expand the Zigbee Router menu
 - Click Flash Zigbee Router 20240716 (latest stable version)
6. Wait until the process finishes and the device restarts
7. Done!

Home Assistant configuration

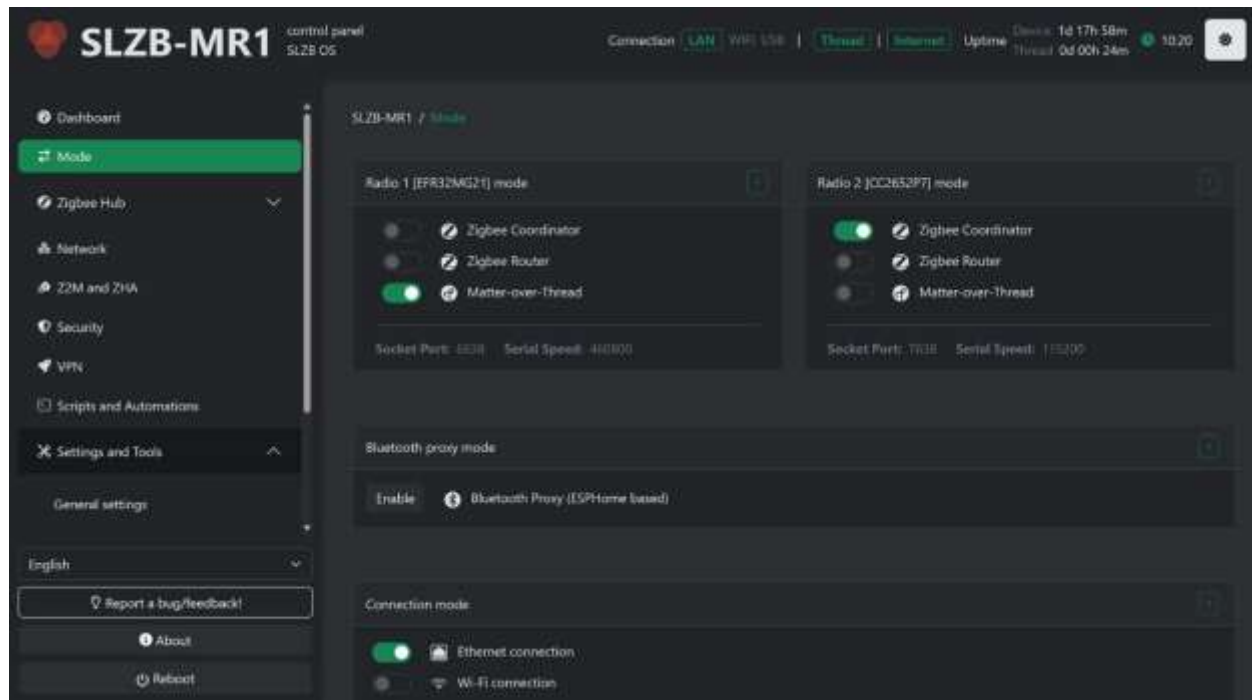
After all firmware on the SLZB-MR5U has been updated, you can begin configuring Thread and Zigbee in Home Assistant.

The first thing to check is whether both radios are set to the correct operating mode.

After the previous update steps, the radios have already been configured as follows:

- Thread: EFR32MG24
- Zigbee: EFR32MG24

You can verify this status by opening the Mode menu in the left-hand menu:



BY DEFAULT, ALL RADIOS ARE ACCESSIBLE AT THE SLZB-MR5U IP ADDRESS USING INDIVIDUAL PORT NUMBERS.

Zigbee2MQTT setup

1. Plug the RJ45 cable into the device.

The device has optoelectronic isolation, allowing it to be connected to the computer's USB port and an Ethernet/PoE cable at the same time!

2. Follow the official Zigbee2MQTT installation guide. You can set it up as a Linux package, Docker container, or Home Assistant add-on.
3. Use the following lines in the port: settings:

```
serial:
  port: tcp://192.168.0.248:7638
  adapter: zstack
  baudrate: 115200
  rtscts: false
  disable_led: false
advanced:
  transmit_power: 20
```

4. Where:
 - **192.168.0.348** is the device's IP address on your network.
 - **7638** is the adapter's default port (can be changed in the firmware).

ZHA setup

Navigate to:

Home Assistant > Settings > Devices & Services > Add Integration > Zigbee Home Automation

For the radio type, select ZNP, then on the next screen enter the IP address in the following format:

socket://192.168.0.248:7638

Click Submit, then select "Erase network settings and create a new network" to set up ZHA.

Thread and Matter setup

For the RCP (Radio Co-Processor) to operate correctly, a stable, low-latency UART or SPI connection is required.

1. Install the Matter add-on in Home Assistant
2. Install the OpenThread Border Router add-on in Home Assistant
3. Open the Configuration tab of the OTBR add-on and set the following:
 - Device: `/dev/serial/by-id/xxx...` (*THIS must be selected as a dummy port!*)
 - Baudrate: 460800
 - Network Device: 192.168.0.248:6638
 - Hardware flow control: *off*
 - Automatically flash firmware: *off*
 - OTBR Firewall: *off*
 - NAT64: *off*
4. Start the OpenThread Border Router add-on
5. In Home Assistant, navigate to: Settings > Devices & Services
6. Click Configure for the OpenThread Border Router, Thread, and Matter integrations
7. Open the Thread integration and click Configure
8. Click the three dots next to OpenThread Border Router and select Add to preferred network
9. Click the three dots again, then select Use router for Android and iOS Credentials
10. Done!

Factory reset

The device can be reset to factory settings at any time if problems occur or if you want to configure it again. To perform a manual reset, power off the device (e.g. disconnect the power), then press and hold the function button while powering it back on. Wait until the yellow and blue indicator LEDs start flashing to indicate that the factory reset was successful, then release the button.

Product specifications

Model	SLZB-MR5U
Adapter dimensions	160 x 24 x 28 mm
Antenna dimensions	195 x 12 x 12 mm
Wireless protocols	Zigbee 3.0 Thread (Matter-over-Thread) Wi-Fi Bluetooth Ethernet
Radio SoC 1	EFR32MG24
Radio SoC 2	EFR32MG24
Core SoC	ESP32
PoE 48 support	Yes
Flashed & Plug-and-Play	Yes
Input voltage	5 VDC (USB-C), 48 VDC (PoE)