

AI-01860 Sonoff Motion Setup

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I finally setup my first Sonoff Motion Sensor and Light with the following setup and also setup 2 Scenes, one to turn on when motion is detected and the other when no motion: I'm using the eWelink app.

SNZB-06P

ZBMINIL2

ZBBridge-P

Questions:

1. Is it okay not to connect a switch to S1 and S2 in ZBMINIL2?

1. How can I make sure that the Light turns off if there are no manual switch in case of power failure that the SNZB-06P losses power.
2. If all my scenes are in eWelink app, can I use my Home Assistant to create the same automation?

It's great you're diving into smart home automation with Sonoff! Let's address your questions about your setup:

1. Is it okay not to connect a switch to S1 and S2 in ZBMINIL2?

Yes, it is absolutely okay not to connect a physical switch to the S1 and S2 terminals of the ZBMINIL2. The ZBMINIL2 is designed to be controlled wirelessly via Zigbee (through your ZBBridge-P) and the eWeLink app. The S1 and S2 terminals are provided for users who wish to retain the functionality of a traditional wall switch alongside the smart control. If you're planning to control the light solely through motion detection and the app, you don't need a physical switch connected to those terminals.

2. How can I make sure that the Light turns off if there are no manual switch in case of power failure that the SNZB-06P loses power?

This is a common and important consideration for smart lighting. The key here is to leverage the ZBMINIL2's "Power-on State" setting. The SNZB-06P motion sensor doesn't directly control the light's power in a power failure; it's the ZBMINIL2's behavior that matters.

Here's how you can address this:

- **Set the ZBMINIL2's "Power-on State" to "OFF" or "KEEP".**
 - **"OFF"**: This is generally the safest option if you want to ensure the light is off after a power outage. When power is restored, the ZBMINIL2 will default to the OFF state, regardless of its previous state.
 - **"KEEP"**: This option will restore the light to its state before the power outage. So, if the light was on when power failed, it will turn back on when power is restored. This might be desirable in some situations, but for a motion-controlled light where you want to ensure it's off if the sensor loses power, "OFF" is usually preferred.
 - **"ON"**: Avoid this for your use case, as it would always turn the light on after a power outage.

You can usually find this setting in the eWeLink app under the ZBMINIL2's device settings (tap on the ZBMINIL2 device, then look for a "Power-on State" or "Power-off State" option).

Even if the SNZB-06P loses power (which is less likely as it's battery-powered, unless its batteries die), the ZBMINIL2 will adhere to its "Power-on State" when power is restored to it. The motion sensor simply sends a signal; it doesn't maintain the light's state through a power outage.

3. If all my scenes are in eWeLink app, can I use my Home Assistant to create the same automation?

Yes, absolutely! This is one of the biggest advantages of using Home Assistant. While your eWeLink scenes work well within their ecosystem, Home Assistant allows you to centralize and customize your automations far beyond what eWeLink offers.

Here's how you'd generally approach this:

- **Integrate your Sonoff devices with Home Assistant:** You'll need to get your ZBBridge-P and connected Zigbee devices (SNZB-06P, ZBMINIL2) into Home Assistant. The most common and recommended way to do this is to "flash" your ZBBridge-P with custom firmware like Tasmota or ZHA (Zigbee Home Automation). This frees it from the eWeLink cloud and allows it to directly communicate with Home Assistant.
 - **Tasmota:** If you flash Tasmota onto your ZBBridge-P, you'll then use the ZHA integration or Zigbee2MQTT in Home Assistant to connect your Zigbee devices through the Tasmota-flashed bridge.
 - **ZHA (Zigbee Home Automation):** This is often a simpler path if you want to keep the ZBBridge-P as a dedicated Zigbee coordinator for Home Assistant.
- **Recreate your automations:** Once your devices are exposed to Home Assistant, you can recreate your "turn on when motion detected" and "turn off when no motion" automations using Home Assistant's powerful automation engine.
 - You'll define triggers (e.g., SNZB-06P detects motion, or SNZB-06P clears motion) and actions (e.g., turn on ZBMINIL2, turn off ZBMINIL2).
 - Home Assistant also gives you much more control, like adding conditions (e.g., only turn on if it's dark outside), delays, and more complex logic.

Why move to Home Assistant for automations?

- **Local Control:** Your automations will run locally on your Home Assistant instance, meaning they'll work even if your internet is down (after the initial setup). eWeLink scenes rely on their cloud.
- **Advanced Logic:** Home Assistant's automation capabilities are vastly more sophisticated, allowing for complex conditions, delays, and integrations with other smart devices or data sources.
- **Centralized Management:** All your smart devices and automations, regardless of brand, can be managed from one interface.

- **Privacy:** You retain more control over your data.

It's a bit of a learning curve to get started with flashing the bridge and setting up Home Assistant, but for serious smart home enthusiasts, it's highly recommended and incredibly rewarding. There are many excellent tutorials online for flashing the Sonoff ZBBridge-P and integrating it with Home Assistant.

How to setup my Sonoff Motion in Home Assistant without touching the firmware?

You're looking for a way to integrate your Sonoff Motion Sensor (SNZB-06P) and the ZBMINIL2 into Home Assistant *without* flashing the firmware on your ZBBridge-P. This means you want to maintain the eWeLink ecosystem while still having some level of control or visibility in Home Assistant.

Here's how you can generally achieve this, focusing on the official eWeLink Home Assistant Add-on and a popular custom integration:

Method 1: Using the Official eWeLink Home Assistant Add-on

eWeLink offers an official Home Assistant add-on that allows you to connect your eWeLink account and control your devices.¹

1. Prerequisites:

- You must have Home Assistant installed (specifically Home Assistant OS or Home Assistant Supervised, as the add-on relies on the Supervisor).²
- Your Sonoff devices (SNZB-06P and ZBMINIL2) must be paired and working correctly within your eWeLink app, connected to your ZBBridge-P.
- Your Home Assistant instance needs internet access to communicate with the eWeLink cloud.

2. Installation of the eWeLink Add-on:

- In Home Assistant, go to **Settings > Add-ons**.
- Click on the **Add-on Store** tab.
- Click the three vertical dots in the upper right corner and select **Repositories**.

- Add the official eWeLink add-on repository URL: <https://github.com/CoolKit-Technologies/ha-addon>
- Close the "Manage add-on repositories" box.
- You should now see the "eWeLink Smart Home" add-on appear in the Add-on Store. Click on it.
- Click **Install** and wait for the installation to complete.

3. Configuration and Login:

- Once installed, go to the "eWeLink Smart Home" add-on page and click **Start**.
- Enable "Show in sidebar" for easy access.
- Click **OPEN WEB UI**.
- This will open a web interface where you'll need to **log in with your eWeLink account credentials**.³ This is how Home Assistant will access your devices through the eWeLink cloud.
- After logging in, your Sonoff devices should start appearing in Home Assistant as entities.

4. Important Considerations for the Official Add-on:

- **Cloud Dependency:** This method relies heavily on the eWeLink cloud. If your internet goes down, or eWeLink's servers are experiencing issues, your Home Assistant automations for these devices may not work.
- **Entity Mapping:** Devices connected through this add-on are often mapped as "entities" rather than full "devices" in Home Assistant. This can sometimes limit direct control within Home Assistant's automation builder.
- **Scenes for Automations:** For some eWeLink devices or actions, you might find that you need to **create a "Scene" in the eWeLink app** first, and then activate that eWeLink scene from Home Assistant's automations. To do this:
 - Enable **Advanced Mode** in Home Assistant (User Profile > Advanced Mode).

- When creating an automation, for the "Action Type," you might need to select "Activate Scenario" and choose the eWeLink scene you created.
- **LAN Mode Preference (where available):** The add-on claims to prioritize LAN control where devices support it, which would reduce cloud dependency for those specific devices.⁴ However, many Zigbee devices (like your SNZB-06P) rely on the bridge for communication, and the bridge itself might primarily communicate with the cloud.

Method 2: Using the AlexxIT/SonoffLAN Custom Integration (Highly Recommended for this approach)

This is a very popular and generally more robust community-developed integration for Sonoff devices without flashing. It aims to provide local control where possible and cloud fallback.

1. Prerequisites:

- Home Assistant with HACS (Home Assistant Community Store) installed. HACS is essential for easily installing custom integrations.
- Your Sonoff devices (SNZB-06P and ZBMINIL2) must be paired and working correctly within your eWeLink app, connected to your ZBBridge-P.
- Your Home Assistant instance needs internet access for initial setup and cloud fallback.

2. Installation of SonoffLAN via HACS:

- In Home Assistant, go to **HACS > Integrations**.
- Click the **+ Explore & Download Repositories** button.
- Search for "SonoffLAN" and select it.
- Click **Download** and follow the prompts.
- After downloading, **restart Home Assistant** (Settings > System > Restart).

3. Configuration of SonoffLAN:

- After Home Assistant restarts, go to **Settings > Devices & Services**.
- Click **+ Add Integration**.
- Search for "Sonoff" (it might appear as "Sonoff (LAN Mode)" or similar).

- You will be prompted to enter your **eWeLink account credentials**.
- The integration will then connect to your eWeLink account and discover your devices.
- It generally supports both LAN (local) and cloud control. The integration will try to prioritize LAN control for devices that support it, giving you more local reliability.

4. Benefits of SonoffLAN over the Official Add-on:

- **Better Device Support:** SonoffLAN tends to support a wider range of Sonoff devices and functionalities directly within Home Assistant.
- **More Granular Control:** It often exposes devices as proper "devices" in Home Assistant, allowing for easier use in automations, rather than relying on eWeLink scenes as much.
- **Local First (where applicable):** It actively tries to use local control, which is a significant advantage for speed and reliability, reducing dependence on the eWeLink cloud for day-to-day operations.
- **Active Development:** Being a community project, it often sees more frequent updates and bug fixes for new devices or issues.

Using Your Sonoff Motion Sensor (SNZB-06P) in Home Assistant with these Integrations:

Once your devices are added via either the official add-on or SonoffLAN, your SNZB-06P motion sensor should appear as a "binary sensor" entity (e.g., `binary_sensor.sonoff_motion_sensor_XXXX`).

- When motion is detected, its state will change (e.g., from `off` to `on`).
- When motion clears, its state will change back (e.g., from `on` to `off`).

You can then create Home Assistant automations based on these state changes:

Example Automation (Turn Light On with Motion):

YAML

```
automation:
  - alias: Turn on light with motion
    trigger:
```

```

- platform: state
  entity_id: binary_sensor.your_motion_sensor_name # Replace with your sensor's entity ID
  to: 'on' # Trigger when motion is detected
  action:
    - service: light.turn_on
      target:
        entity_id: light.your_zbminil2_name # Replace with your ZBMINIL2's light entity ID
      mode: single

```

Example Automation (Turn Light Off after No Motion):

YAML

```

automation:
  - alias: Turn off light after no motion
    trigger:
      - platform: state
        entity_id: binary_sensor.your_motion_sensor_name # Replace with your sensor's entity ID
        to: 'off' # Trigger when motion clears
      for:
        minutes: 2 # Adjust the delay as needed (e.g., 2 minutes of no motion)
    action:
      - service: light.turn_off
        target:
          entity_id: light.your_zbminil2_name # Replace with your ZBMINIL2's light entity ID
        mode: single

```

Remember to replace `binary_sensor.your_motion_sensor_name` and `light.your_zbminil2_name` with the actual entity IDs that Home Assistant assigns to your devices. You can find these by going to **Settings > Devices & Services**, then clicking on your Sonoff devices and checking the "Entities" section.

While flashing the ZBBridge-P offers the most robust and local solution, using the eWeLink add-on or SonoffLAN integration is the way to go if you want to avoid touching the firmware and still get your devices into Home Assistant.

My ZBMINIL2 is in the bathroom inside a metal switch box while the ZB Bridge is in another room, will this location inside the metal switch box a problem

Yes, placing the ZBMINIL2 inside a metal switch box will likely **significantly attenuate (weaken)** the Zigbee signal. Metal acts as a Faraday cage, blocking or severely impeding radio frequency (RF) signals, including Zigbee (which operates on the 2.4 GHz band).¹

Here's a breakdown of why this is a concern and what you can do:

Why a Metal Box is a Problem for Zigbee:

- **Faraday Cage Effect:** A metal enclosure creates a Faraday cage, which is designed to block electromagnetic fields.² While not a perfect seal in most real-world scenarios, it will still absorb and reflect a large portion of the Zigbee signal.
- **Signal Attenuation:** Zigbee signals, while generally good at penetrating common building materials like drywall and wood, are heavily affected by denser materials like concrete, brick, and especially metal.³
- **Reflection and Interference:** The metal box can also cause signal reflections, leading to multipath interference, where the signal arrives at the receiver via multiple paths, potentially causing data corruption or dropped connections.⁴
- **Distance Amplification:** Even if some signal escapes, the combination of attenuation from the metal box and the distance to your ZBBridge-P in another room can push the signal below a reliable threshold.

What Problems You Might Experience:

- **Unreliable Control:** The light might not turn on/off consistently when triggered by the motion sensor or the eWeLink app/Home Assistant.
- **Delayed Responses:** There might be noticeable delays between motion detection and the light reacting.
- **Dropped Connections:** The ZBMINIL2 might frequently go offline or become unresponsive.
- **Poor Mesh Performance:** Since the ZBMINIL2 is a mains-powered Zigbee device, it *should* act as a router in your Zigbee mesh network, helping to extend the signal for other battery-powered devices. If its signal is blocked, it won't be able to effectively route traffic.

What You Can Do:

1. **Test It (Initial Step):** Since you've already set it up, the first thing to do is simply test it thoroughly. See how reliable it is. Zigbee is a mesh network, and sometimes even with obstacles, a strong mesh can compensate.⁵
2. **Improve Zigbee Mesh Coverage:** This is the most crucial strategy.

- **Add More Zigbee Routers (Mains-Powered Devices):** Place other mains-powered Zigbee devices (like smart plugs, other ZBMINIL2s, or dedicated Zigbee repeaters/range extenders) between the ZBMINIL2 in the bathroom and your ZBBridge-P. These devices will pick up the weak signal from the ZBMINIL2, strengthen it, and repeat it further, creating a stronger path for communication. The more routers you have, the more robust and resilient your Zigbee network will be.
- **Optimal ZBBridge-P Placement:** Ensure your ZBBridge-P is in a central location, not tucked away in a corner or behind a lot of electronics that could also cause interference.

3. Consider a Plastic Switch Box (Ideal Solution for Signal):

- If possible and safe to do so (consult an electrician if you're unsure), replacing the metal switch box with a plastic one would be the most effective solution for signal integrity. This might involve some electrical work.

4. External Antenna (Advanced, Not for ZBMINIL2 directly):

- While you can't add an external antenna to the ZBMINIL2 itself, if you were to flash your ZBBridge-P and use a different Zigbee coordinator (like a USB dongle with an external antenna), you could potentially improve its reception from challenging locations. However, this deviates from your "no firmware touching" request.

In Summary:

Yes, the metal switch box is definitely a potential problem. It's like putting your phone in a metal box – the signal will struggle. However, Zigbee's mesh networking capability can often overcome some obstacles. Your best bet for reliable performance without replacing the box is to **build a strong Zigbee mesh network by adding more mains-powered Zigbee devices (routers) strategically between the bathroom and your ZBBridge-P.**

If my home wifi is offline, will my Zigbee scenes continue to trigger

This is a critical distinction in smart home technology! Let's break it down for your specific setup:

Zigbee's Nature: Local Communication

Zigbee is designed as a local mesh network. This means:

- Devices talk directly to each other (or through routers): Your SNZB-06P (motion sensor) communicates with your ZBBridge-P (Zigbee coordinator/hub), and the ZBBridge-P then communicates with your ZBMINIIL2 (light switch). This communication happens over Zigbee radio waves, not your home Wi-Fi network.
- Mesh Network: Mains-powered Zigbee devices (like your ZBMINIIL2) act as "routers" to extend the network's range and improve its reliability. Battery-powered devices (like your SNZB-06P) are "end devices" that communicate with the nearest router or the coordinator.

How Your Scenes/Automations Are Handled:

This is where the "offline" capability depends on where your scenes/automations are processed:

- eWeLink App Scenes (Cloud-Dependent):
 - If your "scenes" (what eWeLink calls automations) are created and stored only within the eWeLink app, then they will NOT trigger if your home Wi-Fi (and thus internet) is offline.
 - This is because the eWeLink app (on your phone) communicates with the eWeLink cloud servers over the internet. The eWeLink cloud then sends the command back down to your ZBBridge-P (which also needs internet to talk to the cloud), which then relays it to the Zigbee devices. This round-trip requires an active internet connection.
- Home Assistant Automations (Local or Cloud-Dependent, depending on setup):
 - If you integrate your Sonoff devices into Home Assistant without flashing the ZBBridge-P (using the eWeLink Add-on or SonoffLAN):
 - While Home Assistant can run locally, the communication to and from your Sonoff devices through these integrations will still rely on the eWeLink cloud in most cases.
 - Even if Home Assistant generates the automation locally, it often sends the command via the internet to the eWeLink cloud, which then sends

it back to your ZBBridge-P.

- Therefore, in this scenario, if your home Wi-Fi/internet is offline, your Home Assistant automations for these Sonoff devices will likely NOT trigger.
- Some aspects of SonoffLAN do attempt local control, but for the Zigbee devices via the stock ZBBridge-P, the primary communication path still involves the eWeLink cloud.
- If you "flash" your ZBBridge-P with Tasmota/ZHA and integrate it directly with Home Assistant (this is the key for local control):
 - In this setup, your ZBBridge-P becomes a local Zigbee coordinator for Home Assistant.
 - All communication between your SNZB-06P, ZBMINIL2, and the ZBBridge-P happens entirely within your local network (Zigbee itself, and then potentially Ethernet/Wi-Fi to your Home Assistant server).
 - Your Home Assistant server (e.g., Raspberry Pi) processes the automations locally.
 - In this ideal scenario, YES, your Home Assistant automations will continue to trigger even if your home Wi-Fi (and internet) is offline. The Zigbee devices will talk to the flashed bridge, and Home Assistant will control them directly.

Summary:

- Native eWeLink scenes (app-based): NO, they will not trigger without Wi-Fi/internet.
 - Home Assistant with unflashed ZBBridge-P (e.g., using eWeLink Add-on/SonoffLAN): Likely NO, as these integrations typically still rely on the eWeLink cloud for communication with your stock bridge.
 - Home Assistant with flashed ZBBridge-P (or other local Zigbee coordinator): YES, automations will continue to trigger locally.
- For true offline reliability for your Zigbee devices and automations, flashing your ZBBridge-P and managing everything through Home Assistant is the way to go.

If I switch from ZBBridge-P to NSPanel Pro 120, will my scenes be able to run if my home WiFi is down and no internet?

This is where the Sonoff NSPanel Pro 120 (and the 86 type) offers a significant advantage over the ZBBridge-P for local control and offline scene execution within the eWeLink ecosystem!

Yes, if you switch to the NSPanel Pro 120, your Zigbee scenes can continue to trigger even if your home Wi-Fi is down and you have no internet.

Here's why:

- **Built-in Zigbee Hub (Coordinator):** The NSPanel Pro has its own integrated Zigbee 3.0 gateway. This means it acts as the central coordinator for your Zigbee devices (like your SNZB-06P and ZBMINIL2). Your Zigbee devices will directly communicate with the NSPanel Pro over the Zigbee radio frequency, without needing to go through your Wi-Fi router.
- **Local Scene Processing:** Crucially, the NSPanel Pro is designed to run "Local Scenes" directly on the device itself. When you create a scene in the eWeLink app that involves only devices connected to the NSPanel Pro's Zigbee hub, the NSPanel Pro stores and processes that scene locally.
 - **Example:** Your "Motion detected → Light on" and "No motion → Light off" scenes will be stored and executed directly by the NSPanel Pro.
 - When the SNZB-06P detects motion, it sends a Zigbee signal to the NSPanel Pro. The NSPanel Pro then processes the scene logic locally and sends a Zigbee command to the ZBMINIL2 to turn on the light. This entire process happens without touching the internet or your Wi-Fi router (other than the initial setup and any cloud-based features you might use).

Key Advantages of NSPanel Pro for Offline Operation:

- **Reliability:** Your core Zigbee automations (like motion lighting) will remain functional during internet outages. This is a huge benefit for critical functions.
- **Speed:** Local processing means faster response times for your automations.
- **Centralized Local Control:** It acts as a local hub for all your Zigbee devices, and also allows direct control of synced Wi-Fi devices (if they support LAN mode) from its touchscreen.

Important Considerations:

- Initial Setup and Cloud Sync: You will still need an internet connection and the eWeLink app for the initial setup of the NSPanel Pro, pairing Zigbee devices to it, and creating/syncing your scenes. Once the scenes are created and downloaded to the NSPanel Pro, they will run locally.
 - Wi-Fi Devices (LAN Control): While the NSPanel Pro excels with Zigbee devices offline, for Wi-Fi devices that are synced to it, their offline control capability depends on whether those specific Wi-Fi devices support eWeLink's "LAN Control" feature. If they do, the NSPanel Pro can control them locally over your Wi-Fi network without internet. If they don't, controlling them will still require the cloud. Your ZBMINIL2 is a Zigbee device, so this is less of a concern for your current setup.
 - Firmware Updates: You'll need internet to download and apply firmware updates to the NSPanel Pro.
 - Remote Access & Notifications: Naturally, if your internet is down, you won't be able to control devices remotely via the eWeLink app (when you're away from home) or receive push notifications on your phone.
- In conclusion, if local, offline execution of your Zigbee scenes is a priority, the NSPanel Pro 120 is a significant upgrade from the ZBBridge-P in terms of its capabilities within the eWeLink ecosystem. It effectively brings the automation logic closer to the devices themselves, reducing dependence on the cloud and your internet connection for core functions.

My condo internet in Cebu is from PLDT, I found out the hard way from a duckdns no connection troubleshooting that PLDT uses CGNAT and restrict me to use HA/duckdns, will I have issues accessing the NSPanel Pro from outside my home? Is NSPanelPro good enough or near enough to HA setup?

You've hit on a very common and frustrating issue for smart home users in the Philippines with PLDT and their CGNAT implementation! It effectively blocks inbound connections, making it extremely difficult to access anything hosted on your home network from outside (like Home Assistant, CCTV, or even sometimes certain gaming services).

Let's break down your questions regarding the NSPanel Pro and Home Assistant in light of PLDT's CGNAT:

Will you have issues accessing the NSPanel Pro from outside your home?

Yes, you will still have issues accessing the NSPanel Pro from outside your home

if your only connection method relies on direct inbound connections to your home IP, and you are under CGNAT.

Here's why:

- **eWeLink Cloud for Remote Access:** The primary way to access your NSPanel Pro (and any eWeLink device) from outside your home is through the eWeLink cloud. When you open the eWeLink app on your phone away from home, your phone talks to the eWeLink cloud servers, which then relay commands to your NSPanel Pro (and other devices) through the internet connection at your condo.
- **CGNAT's Impact:** CGNAT doesn't prevent outbound connections from your home to the internet (which is how your NSPanel Pro connects to the eWeLink cloud). However, it prevents inbound connections from outside reaching a specific device on your home network. Since the eWeLink cloud acts as an intermediary, it can usually establish a connection to your NSPanel Pro even behind CGNAT, because the NSPanel Pro initiated the connection outbound to the cloud.
- **The Nuance:** So, you should generally be able to control your NSPanel Pro and its paired devices remotely via the eWeLink app even with PLDT's CGNAT, because the eWeLink cloud handles the complex networking. The NSPanel Pro makes an outbound connection to the eWeLink servers, and those servers can then push commands back.
- **Where CGNAT does cause issues for NSPanel Pro:**
 - **Direct Local API Access:** If you wanted to directly access the NSPanel Pro's local API (which it has) from outside your network without going through the eWeLink cloud, CGNAT would block that.
 - **RTSP Camera Streams (Direct):** If you add RTSP camera streams to your NSPanel Pro and want to view them remotely without cloud relay (if the camera supports it), CGNAT would likely prevent direct access.
 - **Home Assistant Remote Access (if NSPanel Pro is displaying HA):** If you configure your NSPanel Pro to display your Home Assistant dashboard (which is a popular feature), you'd still need a way to access your Home Assistant instance remotely. If your Home Assistant instance is hosted in your condo and you're still under CGNAT, you'd face the same remote

access issues for Home Assistant itself.

Is NSPanel Pro good enough or near enough to HA setup?

This is a "depends on your goals" answer. The NSPanel Pro is an excellent device, but it serves a different primary purpose than Home Assistant:

NSPanel Pro's Strengths:

- **Appliance-like Experience:** It's an all-in-one control panel with a user-friendly touch screen. It's designed for quick, visual control and local execution of basic Zigbee scenes.
- **Built-in Zigbee Hub:** This is a big plus, providing reliable local Zigbee control and automation within the eWeLink ecosystem.
- **Local Scene Execution (for Zigbee):** As discussed, this is a major advantage for offline reliability for your motion lighting scenes.
- **Security Features:** It offers basic security modes, alarm functions, and camera viewing (for compatible cameras).
- **Ecosystem Integration:** It's tightly integrated with the eWeLink ecosystem, making it easy to set up for users already invested in Sonoff.
- **Open API / Android Base:** It runs on Android, offering some flexibility for advanced users (e.g., sideloading apps, potentially integrating with Home Assistant as a display).

Where Home Assistant Excels (and where NSPanel Pro falls short as a replacement for HA):

- **True Centralization & Brand Agnostic:** Home Assistant is designed to be the ultimate universal smart home hub. It can integrate with thousands of devices from hundreds of brands (Sonoff, Tuya, Philips Hue, Shelly, Aqara, SmartThings, etc.), allowing them all to work together seamlessly. The NSPanel Pro, while a good eWeLink hub, won't integrate other brand Zigbee devices as seamlessly as HA.
- **Unlimited Automation Logic:** HA's automation engine is vastly more powerful and flexible. You can create extremely complex automations with multiple conditions, delays, scripts, templates, and integrations with external data sources (weather, calendars, presence detection, etc.). The NSPanel Pro's local scene capabilities are simpler by comparison.

- **Deep Customization & Dashboards:** HA's Lovelace UI allows for endlessly customizable dashboards. You can display any sensor data, create custom cards, and tailor the interface precisely to your needs. While NSPanel Pro has some customization, it's limited to pre-defined widgets and layouts.
- **Data Logging & Analytics:** HA provides robust data logging and visualization tools, allowing you to track sensor data over time, identify trends, and analyze your energy consumption.
- **Local First (Core Philosophy):** Home Assistant's fundamental design prioritizes local control, reducing reliance on the internet and third-party clouds for core functionality. This requires more setup, but offers maximum reliability and privacy.
- **Developer Friendly:** HA has a massive, active community and extensive developer tools, allowing for custom integrations and functionalities.

Using NSPanel Pro with Home Assistant:

Many Home Assistant users actually purchase the NSPanel Pro not as a replacement for HA, but as a display and control panel for their existing Home Assistant instance.

- You can set up the NSPanel Pro to essentially be a web browser or Home Assistant companion app viewer for your Home Assistant dashboard. This allows you to interact with your entire HA setup directly from the panel.
- However, if your Home Assistant instance is running inside your condo and you're behind PLDT's CGNAT, you will still need a solution to access Home Assistant remotely. Common solutions for CGNAT with HA are:
 - **Nabu Casa Cloud Service:** The official, paid cloud service for Home Assistant. It handles remote access for you, bypassing CGNAT. This is the easiest and most recommended solution.
 - **VPN (e.g., Tailscale):** A free and very popular solution. You set up a VPN server (often on your HA machine itself or another device on your network) and connect your phone/laptop to it when you're away. This creates a secure tunnel to your home network, bypassing CGNAT.
 - **VPS + Reverse Proxy/Tunnel:** More advanced, involving a small virtual private server outside your home to act as a bridge.

Conclusion:

The NSPanel Pro is excellent for enhancing your eWeLink smart home with local Zigbee scene execution and a convenient wall-mounted control panel. It will significantly improve the reliability of your motion lighting within the eWeLink ecosystem during internet outages.

However, the NSPanel Pro is NOT a full replacement for Home Assistant. Home Assistant offers unparalleled flexibility, integration, and customization across a vast array of devices and services. If you want truly centralized control, advanced automations, and a future-proof smart home that isn't locked into one brand, Home Assistant is the way to go. Regarding your PLDT CGNAT issue for remote access to Home Assistant, Nabu Casa or Tailscale are your best bets. They are designed to bypass CGNAT by establishing outbound connections from your home to their respective services, allowing you to connect back in.

Last month when I setup my notebook to run Hyper-v and HA, I did not realize the can of worms (exciting worms). I now learned so much about HA, eWeLink, zigbee 3.0, CGNAT, duckdns, NSPanel pro, zigbee coordinators, no neutral switches etc.

You enlightened me in all that I mentioned. Before that, I have zero knowledge about smart homes.

That's fantastic to hear! It sounds like you've gone on quite the learning journey in a short amount of time. The world of smart homes, especially when you start diving into Home Assistant, can certainly feel like opening a "can of worms," but as you've discovered, they're often very exciting and rewarding worms!

It's impressive how much you've absorbed, from the specifics of Zigbee and eWeLink devices to the complexities of networking with CGNAT and the powerful capabilities of Home Assistant. Many people get into smart homes and never really understand the underlying technologies, but your approach of digging deeper will undoubtedly lead to a more robust, reliable, and customized setup for your condo in Cebu.

I'm glad I could help shed some light on these topics and clarify the distinctions between cloud-dependent and local control, which is often a major point of confusion for beginners.

What's next on your smart home adventure? Are you planning to implement the NSPanel Pro, tackle the Home Assistant remote access with Nabu Casa or

Tailscale, or perhaps explore other types of smart devices? There's always more to learn and optimize!

You're very welcome! It's genuinely rewarding to help people navigate the sometimes overwhelming but ultimately empowering world of smart home technology. Going from "zero knowledge" to understanding concepts like CGNAT and Zigbee coordinators in such a short time is a testament to your curiosity and dedication.

It sounds like you're well on your way to building a truly robust and reliable smart home in Cebu. Knowing the "why" behind things like local control versus cloud dependency is key to making informed decisions and avoiding future headaches. Regarding your next steps, it seems like you have a couple of exciting paths ahead:

- **Enhancing Local Control with NSPanel Pro:** If you choose to go this route, you'll gain the benefit of local Zigbee scene execution even without internet, which is fantastic for reliability in a condo setting (especially for something as critical as bathroom lighting).
- **Unlocking Full Home Assistant Potential (and Remote Access):** Since you've already started with Home Assistant on Hyper-V, resolving the CGNAT issue for remote access will truly unlock its full power. This is where you'll be able to:
 - **Integrate everything:** Not just Sonoff, but potentially other brands of smart devices you might acquire down the line.
 - **Advanced Automations:** Create complex automations that leverage multiple devices, conditions (like time of day, presence, even weather data), and custom logic that no single hub can offer.
 - **Centralized Dashboards:** Build personalized control panels that give you a single view of your entire home.

For Home Assistant remote access with PLDT's CGNAT, as discussed, Nabu Casa (the paid Home Assistant Cloud service) and Tailscale (a free, easy-to-use VPN solution) are your primary and most recommended options. Both effectively bypass CGNAT by establishing an outbound connection from your home to their respective services, allowing you to securely connect back in. Nabu Casa is easier and directly supports voice assistants like Google Home/Alexa, while Tailscale is free and excellent for

direct access to your HA interface and local network services.
Keep learning and experimenting! The beauty of Home Assistant is its flexibility and the vast community support available for almost any scenario you encounter. Don't hesitate to dive into more details when you're ready, whether it's optimizing your Zigbee mesh, exploring specific automations, or integrating new types of devices.

My next step is to fine tune my motion sensor setup and make all my hardware professionally mounted in the ceiling with no wires floating around like Medusa. Wife is already enjoying the prototype/test of my hallway and kitchen led light without touching a switch. I will buy an NSPanel Pro for testing and to get experience with it. I will also continue using HA for can of worms hunting. I'm retired (58M) and money is not an issue. It's my curiosity in electronics, software, windows, networking, prototyping etc as my intrinsic motivation of quest. I think this Zigbee journey is limitless and or long endeavor.

Oh, do you have a memory recall of our previous conversation, I'm just curious!

It's wonderful to hear that your smart home journey is driven by such a strong intrinsic motivation! That blend of electronics, software, networking, and prototyping curiosity is exactly what makes Home Assistant and the broader smart home world so engaging. It truly is a "limitless and long endeavor," and at 58, you've found a fantastic, ever-evolving hobby.

Yes, I absolutely have a memory recall of our previous conversation! We've discussed quite a range of topics, starting from your initial Sonoff Motion Sensor and Light setup with the SNZB-06P, ZBMINIL2, and ZBBridge-P. We covered:

- The flexibility of the ZBMINIL2's S1/S2 terminals.
- Ensuring lights turn off after power failure using the "Power-on State."
- Integrating Sonoff devices into Home Assistant without flashing firmware (using the official add-on or SonoffLAN).
- The potential issues of placing Zigbee devices in metal switch boxes.
- The critical difference between cloud-dependent (eWeLink app scenes) and local (flashed bridge HA automations) for offline functionality.
- The NSPanel Pro's ability to run local Zigbee scenes offline.

- The challenges of PLDT's CGNAT for remote access to Home Assistant and how the NSPanel Pro handles its remote access.
- And finally, your realization that this is an exciting "can of worms" with a steep but rewarding learning curve!

It sounds like your plans for professional mounting and testing the NSPanel Pro are excellent next steps. The NSPanel Pro will give you valuable hands-on experience with an integrated Zigbee hub and local scene processing, complementing your Home Assistant exploration.

Now, let's get some current information that might be useful for your next steps:

That's an excellent plan! Combining the practical, "wife-approved" local automation of the NSPanel Pro with the deep dive into Home Assistant's "can of worms" is a perfect strategy for someone with your interests and resources. Here's some additional information and considerations based on your goals, particularly the professional mounting and NSPanel Pro:

NSPanel Pro Considerations

- **Local Scene Capacity:** While the NSPanel Pro excels at local scene processing for Zigbee devices, there isn't a hard, widely published number for the exact maximum number of local scenes it can store. Community discussions sometimes mention figures around 16, but this can vary with firmware updates. For your motion lighting, this shouldn't be an issue as those are typically simple, few-line scenes.
- **Zigbee Device Limit:** The NSPanel Pro is advertised to support a good number of Zigbee devices. Sonoff documentation indicates it can "quickly add Zigbee devices on the screen in batches" and supports "all SONOFF Zigbee devices such as Zigbee Sensors, ZBMINI, and BASICZBR3." While there might not be an explicit maximum listed (like 30-60 for many consumer hubs), it should comfortably handle your condo's needs.
- **Matter Compatibility:** A great feature of the NSPanel Pro is its Matter compatibility. This means it can act as a Matter bridge, allowing you to connect Matter-enabled devices from other brands and control them directly from the NSPanel Pro screen, further expanding its local control capabilities beyond just eWeLink Zigbee devices. This is a significant step towards brand agnosticism in a single hub.

- Integrating with Home Assistant (The "Can of Worms" Continues):
 - As a Dashboard: As we discussed, a very popular use case for the NSPanel Pro among Home Assistant users is to have it display a Home Assistant dashboard. You can essentially point its web browser function to your HA instance's URL, turning it into a beautiful, wall-mounted touch screen for your entire smart home, managed by HA's powerful backend.
 - Local Control to HA: There are community integrations for Home Assistant (e.g., via ESPHome if you're willing to flash the NSPanel Pro itself, or other integrations that communicate via its local API or cloud integration) that can bring NSPanel Pro controls and sensor data into HA. This means HA can be aware of actions taken on the panel and incorporate the panel's sensors (temp, light) into broader automations.
- Professional LED Strip Mounting & Wire Concealment
- Since "no wires floating around like Medusa" is a priority, here are some best practices for ceiling-mounted LED strips:
- Aluminum Channels (Profiles) with Diffusers: This is the gold standard for a professional, clean look and also helps with heat dissipation (extending LED lifespan) and light diffusion (eliminating "dotting").
 - Recessed: If you're undertaking major renovations or can cut into your ceiling, recessed channels offer the most seamless look, where the channel is embedded into the drywall/ceiling material.
 - Surface-Mounted: Less invasive, these channels are mounted directly onto the ceiling surface. They come in various finishes to blend in.
 - Corner Profiles: Specifically designed for mounting in ceiling-to-wall corners.
 - Strategic Placement:
 - Cove Lighting: Ideal for indirect, ambient light. LED strips are placed within a "cove" or a dropped ceiling lip, shining the light upwards or towards a wall, so the light source itself is hidden. This creates a soft, diffused glow.
 - Behind Architectural Features: Beams, ledges, or decorative molding can serve as natural hiding spots for strips and wires.
 - Wire Management:

- Concealed Channels/Raceways: For running wires along walls or ceilings to power supplies, use paintable wire channels or raceways that blend with your decor.
 - Behind Drywall/In-Wall: The most invisible solution, but requires opening walls/ceilings and is best done during construction or major renovation. Consult an electrician for safety and code compliance.
 - Power Supply Placement: Strategically hide the LED strip power supply (driver) in an accessible but out-of-sight location, such as inside a cabinet, behind furniture, or within a junction box/ceiling cavity. Ensure adequate ventilation to prevent overheating.
 - Soldering vs. Connectors: For permanent installations, soldering connections between LED strip segments and to the power wires provides the most reliable connection, though quality solderless connectors can also work if properly secured.
 - Planning is Key:
 - Measure Twice, Cut Once: Crucial for LED strips as they can only be cut at designated points.
 - Test Everything: Before permanent installation, test all LED strips and connections to ensure they work correctly and consistently.
 - Power Budget: Calculate the total power draw of your LED strips to ensure your power supply is appropriately sized and that you're not overloading any circuits.
- Given your background and motivation, this "quest" will undoubtedly be a fulfilling one. Enjoy the process of designing, prototyping, and ultimately living in a truly smart, finely-tuned home!