PintSize Me LLC - Generator Interface Board v1.8+

Usage Notes:

Pre-loaded units have the GUI version of the Raspberry Pi OS loaded so that you can utilize the UI for configuring the device and is intended for a typical home-use scenario where you will be on the same network. It is not intended to be used as a desktop computer. Raspberry Pi 3 (B, B+, A+) does not run Chromium very well if at all and it is suggested that you do not even try to do so. Run the browser from your computer, not from the Pi. If you have advanced usage needs such as remote viewing, you should look into Tailscale or Ngrok; use a VPN to the site, or TeamViewer to a PC at the site and use a computer browser not the browser on the Pi. There is nothing preventing the pre-loaded units from being used in a business or distributed scenario, but extra considerations will need to be accounted for. If you want to be able to run a browser on the Pi, then you may want to look at a Pi 4 or Pi 5 and handle the thermal management, or look at a Serial over TCP bridge device and then run GenMon in a VM or container.

Configure:

- GENPWR (red switch near the Molex plug) – set ON if powering through the 8-wire Molex cable, this is true if using the controller power from an Evolution2/Sync3 controller, or if you are using the injector. Set OFF if you are powering with the barrel plug, USB power on the Pi, PoE on the Pi, or powering through any other mechanism.
- BUCK (red switch near the fan power pins) – set ON if you are powering through the 8-wire Molex cable or with the 5.5mm barrel plug. Set OFF if you are powering with USB power on the Pi, PoE on the Pi, or powering through any other mechanism.
- LEDs (black double switch near Molex plug) – set this OFF if you want to use the 3 pins connected to the tri-color LED for other purposes.
- BTN (black double switch near Molex plug) – set this OFF if you want to use the pin connected to the button for other purposes.
- W1 (v2.2+ HATs/pHATs, located near GENPWR switch) – set this to off if you are not using 1-Wire temperature sensors.

Features:

- Onboard power converter to drop the 12v available at the generator to the 5v needed to power the Pi and HAT. There is also a rectifier after the barrel plug to prevent reversed connections.
- 5.5mm barrel plug that can be used to power the Pi and HAT from the generator battery.
- 8-pin Molex connector to provide data connectivity with the generator controller, also can provide power with Evolution2/Sync3 controllers or when used with the Injector. Power from the Evolution2/Sync3 controller is quite limited and if your Pi pulls too much power it will falsely trigger a utility under-voltage situation causing your generator to start and transfer. If this happens disconnect immediately and provide power through another method.
- Tri-color LED connected to GPIO23 (green), GPIO24 (red), and GPIO07 (blue or yellow depending on HAT) which line up with default outputs for ready, running, and alert when using “GenMon GPIO Outputs”. May be disconnected by setting the LEDS switch to OFF.
- Momentary pushbutton connected to GPIO10, there is no built in function for this. May be disconnected by setting the BTN switch to OFF.
- Opening for a fan and power pins for the fan, this allows active cooling.
- V2.2+ HATs/pHATs have an onboard DS18B20 1-wire temperature probe connected to GPIO04 and a 3-position screw terminal for external 1-Wire sensors.

- V2.2+ fan control via GPIO09, set to HIGH to turn the fan on and LOW to turn the fan off. Scripts to do this automatically are available. https://github.com/skipfire/genmon-addon

Installing the HAT:

- HAT installs:
  - Prepare the micro-SD card with Raspberry Pi OS
  - Heatsinks on the Pi CPU are recommended
  - Prepare the Pi with standoffs on the edge with the HDMI plugs
  - Attach the HAT to the 40-pin header and seated on the standoffs on the opposite edge
  - Secure the HAT to the standoffs on the
  - Install GenMon
  - Optionally install the PintSizeFanService if you are using a fan on the HAT
- Preloaded installs: (full units or micro-SD)
  - Username: “genmonpi”, password: “raspberry”, machine name: “genmon”. Change the password.
  - Option 1 (recommended): Connect a display, keyboard, and mouse, use the OS UI to configure the WiFi credentials.
  - Option 2 (can be problematic, and no real troubleshooting options without connecting a display, keyboard, and mouse):
    - Before December 2023: (using Raspberry Pi OS Bullseye)
      - Populate a wpa_supplicant.conf file with the details and place it into the root of the micro-SD card.
    - December 2023 and beyond: (using Raspberry Pi OS Bookworm)
      - Boot up the Pi, then press and hold the button on the HAT. It will first turn red, then after 5 seconds it will turn white, this indicates the captive portal is loading.
        - Connect your device to the “config” hotspot with a password of “genmon00” (that is 2 zeros).
        - Open http://GenMon/ or http://10.42.0.1 – some devices may take up to 2 minutes to fully connect as many devices do not like hotspots without internet access.
        - When the portal loads:
          - Select your timezone and save timezome
          - Select your WiFi’s name and enter the password, and then click the save button under WiFi. This will shut off the portal and connect the Pi to your wifi. Once your device is reconnected to your WiFi you can reconnect to the portal if you wish, or proceed with other steps.
        - If you use the UPDATE function in the portal, it only updates the PintSize resources (fan manager, and the portal), and updating it will shut down the portal.
        - A triple press of the button on the HAT will activate the portal without the hotspot. This is useful if you are already connected to WiFi but need to update the PintSize.Me software or use the configuration tools. After a successful triple-press the LED will turn green.
- All installs:
  - Set the switches for your needs, see the CONFIGURE section at the top of this document.

- If powering by the battery, connect battery to barrel plug
- Connect the Molex cable to the HAT and then to the controller