

Quick-Start Guide: Personal Air Monitor (PAM)

Please see the user manual for more detailed instructions.

A. Power Up and Measure

Do not remove the micro-SD card that comes installed in your PAM.

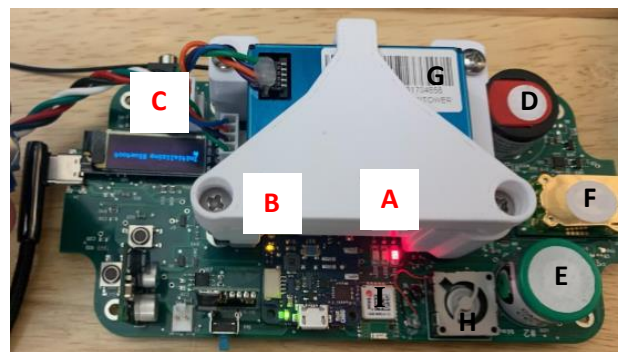
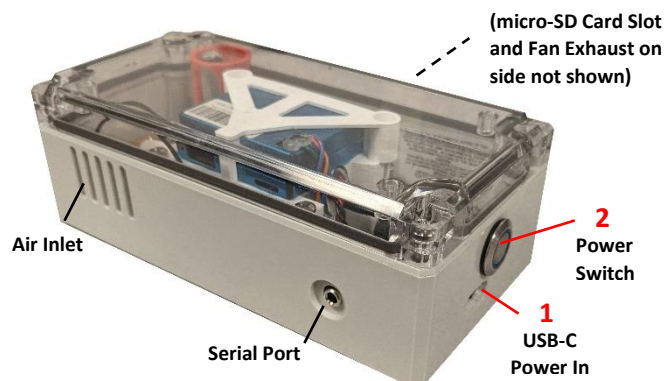
1 Plug in the PAM using the USB-C cable and charger.

- The red light (A) inside the PAM will go on, indicating power is supplied and batteries are charging.
- The PAM will operate on fully charged batteries for ~6-8 hours.

2 Power on the PAM. Press the button ONLY ONCE and wait (it will light up in a few seconds).

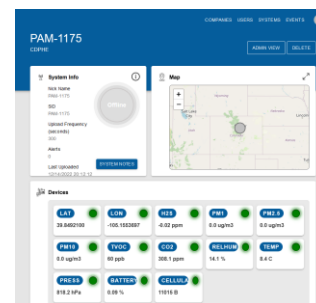
3 Begin Measuring!

- For PAMs purchased with cellular capability, a yellow light (B) on the PAM board indicates a cellular signal is present.
- The PAM's LED display (C) indicates the status of WiFi, Cellular, Bluetooth, batteries, GPS, and micro-SD card.
- Readings of CO and NO₂ are invalid until warmup (~20 min).
- Also shown: D – Sensor 1; E – Sensor 2; F – CO₂ sensor; G – PM sensor; H – Fan; I – GPS



B. How to See the Data

- **Smartphone:** Download the free app ("2B Connect") for Android or iOS to view real-time values of the PAM data via your phone's Bluetooth. Sign in and use the prompts to choose your PAM's identification.
- **Web:** If your PAM has cellular capability or WiFi access, the data can be accessed on the Web via the 2B Tech Data Portal located along the top menu bar of 2btech.io. (You must email us to set up an account, dataportal@twobotech.com.)
- **Computer:** Connect your computer to the PAM's USB port (1 in top photo) using the USB-C cable provided with the PAM and any USB converters you may need. Download a CP210X driver and data acquisition program such as TeraTerm to access data. www.silabs.com/developers/usb-to-uart-bridge-vcp-drivers?tab=downloads
[2B Tech Tera Term download](#)
- **Micro-SD Card:** Use an SD card reader or connect your computer to the USB port (1), to access the data on the card.



C. Measurements and What to Expect

- **CO₂:** Expect ~400-500 parts per million (ppm) outside, and higher readings inside.
- **CO:** Typically 0.1 – 1 ppm indoors. Readings should increase near combustion/emissions sources such as tailpipes and gas or wood stoves. The outdoor National Ambient Air Quality Standards (NAAQS) for CO are 35 ppm measured over 1 hour and 9 ppm measured over 8 hours. (Your PAM may have other sensors such as SO₂, NO₂, or TVOCs.)
- **Particulate Matter (PM):** Expect readings to increase where smoke is present. Test for response by lighting a match and blowing it out near the PAM inlet. The NAAQS 24-hr standard for PM_{2.5} is 35.0 µg/m³. Note that PM₁₀ readings in the PAM are less reliable because of the PAM's inlet configuration.
- **Temperature and Relative Humidity:** The values reflect conditions inside the PAM enclosure, and typically are not representative of the ambient environment.
- **GPS:** To get a good signal, the PAM must be outside in an area free of obstructions.
- Some of the PAM's settings can be specified (clock, upload frequency, WiFi, and cellular; see user manual).

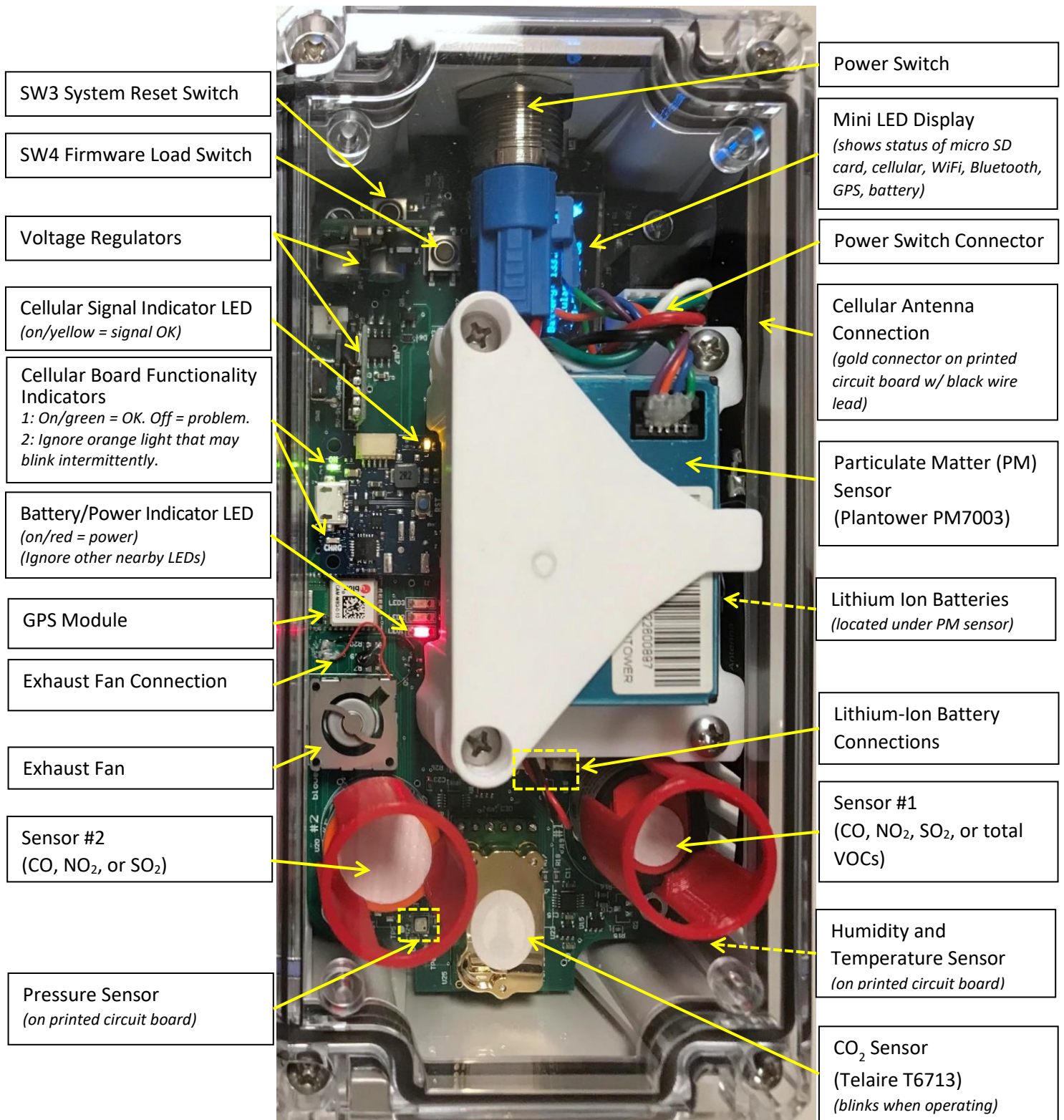


Figure: PAM Top View.