

INDUSTRIAL PRODUCT DATASHEET

XIAO Logger HAT - A tiny temperature, humidity and light add-on module for XIAO with RTC and battery voltage monitoring

A tiny, low-power data logger HAT for XIAO with temperature, humidity, RTC, and battery monitoring.

SKU

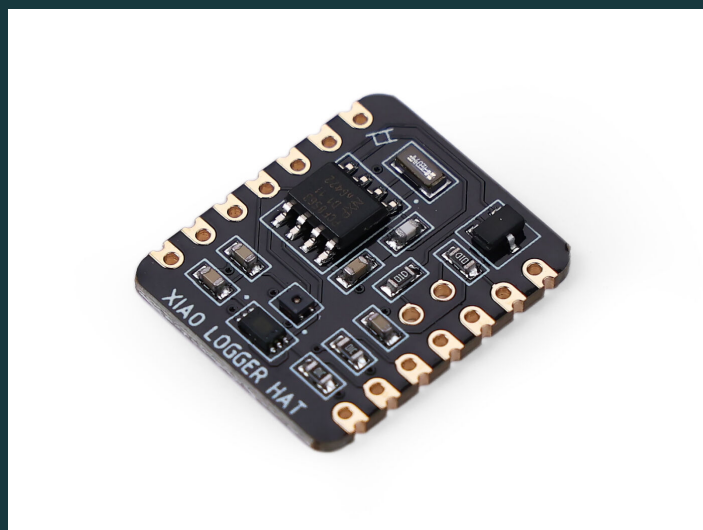
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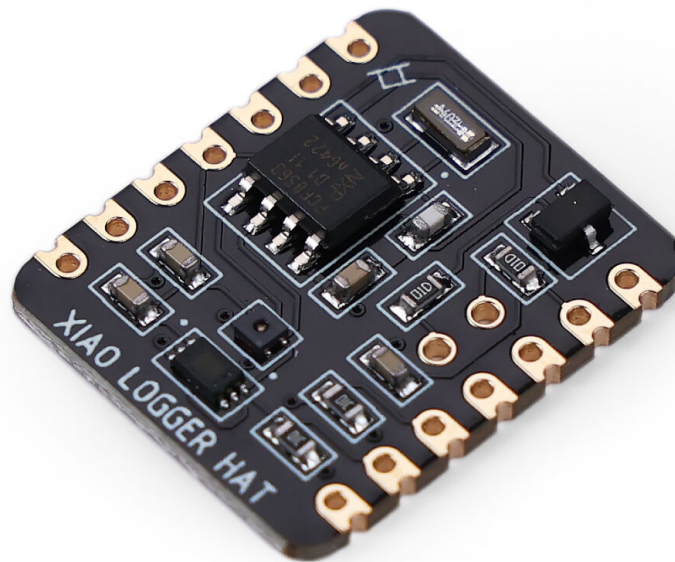
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PRICE

\$7.99(Excl. VAT)



Overview



The XIAO Logger HAT is a compact add-on module for Seeed Studio XIAO boards, featuring an SHT40 sensor for precise temperature (0.2°C accuracy) and humidity (1.8%RH) monitoring, a PCF8563 RTC for accurate timekeeping, and battery voltage monitoring. Ideal for low-power environmental data logging, it supports I2C communication and GPIO-controlled power for energy-efficient operation.

Key Features

Note:

This expansion board is currently not directly compatible with the XIAO nRF54L15 series because Arduino is not supported.

However, the hardware interface is fully compatible, and developers can manually adapt the software if needed.

Official software support from Seeed Studio is under development — stay tuned for updates!

- **Tiny footprint:** Fits neatly on all Seeed Studio XIAO microcontroller boards. With a small lithium-ion battery sandwiched between the dev board and its hat, the logger is well fitting for space limited projects.
- **Power supply enable:** The GPIO-powered sensors allow almost a no-power sleep mode when the sensors are not used. The always-on RTC consumes less than 1 uA making it suitable for battery-powered data loggers.
- **I2C communication:** Easy to program from existing libraries and supports adding more sensors on the same bus possible.
- **On-board RTC:** The PCF8563 chip with its oscillator provides timekeeping, essential for long-term data loggers, and a programmable interrupt for deep sleep wakeups.
- **Accurate Monitoring:** The SHT40 temperature sensor presents temperature readings with 0.2°C accuracy and humidity with 1.8%RH. The PCF8563 real-time clock has shown a 7 minute time shift over one year compared to 10 hours from the ESP32's internal RTC.
- **Battery Voltage Monitoring:** When connected with the lithium-ion battery, its status level can be safely monitored through a pin-enabled voltage divider.

A Community Design Scaled up by Fusion Co-Create

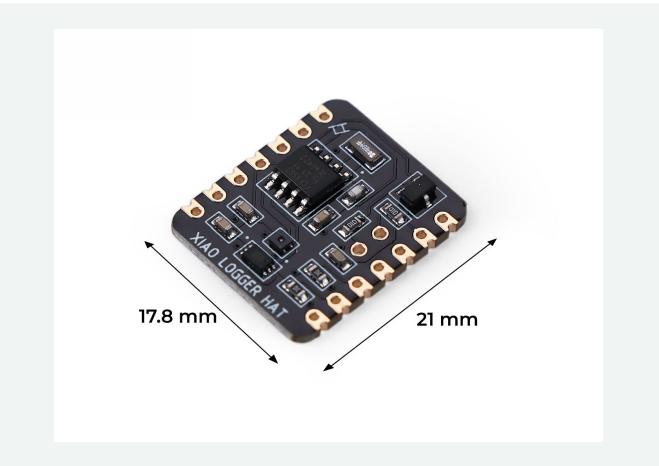
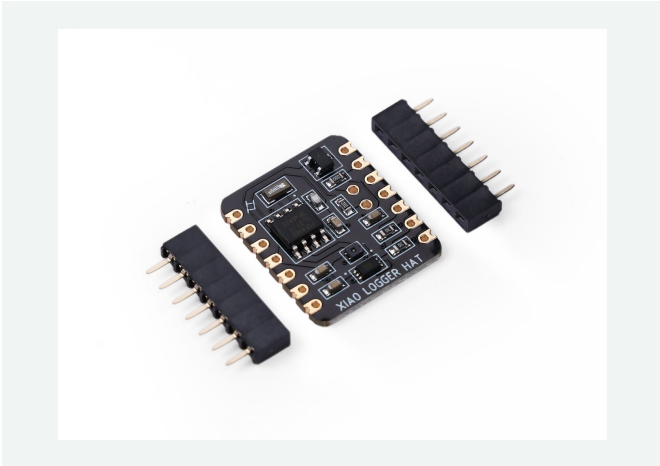
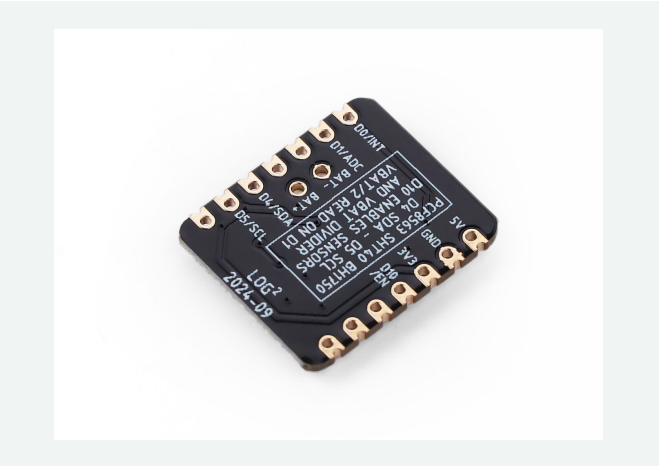
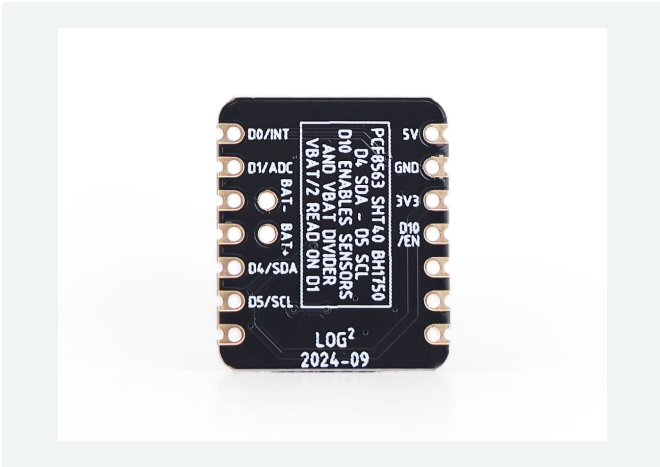
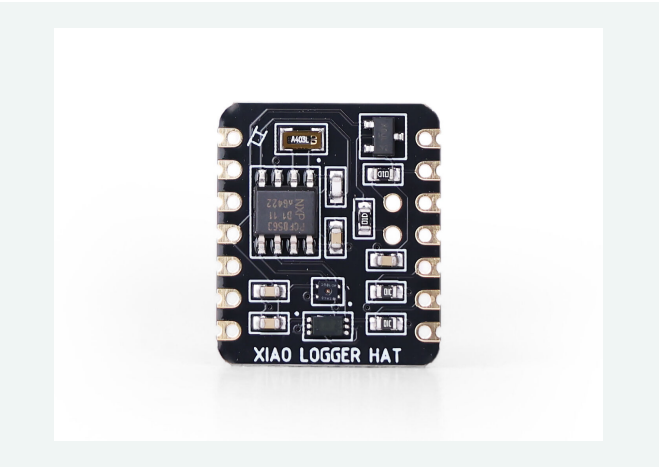
This cool creation is designed by [Westlake University's Marcel](#). We're excited to work with him to bring this impactful design to the market via our [Fusion Co-Create](#). It's a program where we applied the Fusion Prototype, Produce, and Promote services to scale up cool community projects, while the designers get a commission for each single piece sold.

Fully Open Source on GitHub

This product is fully [open-sourced with schematics, layout, and Gerber files on GitHub](#), and Marcel will maintain all the firmware, software updates, and tech support over there too. We highly recommend you to follow the GitHub repo to stay updated.

[\[Github Repo\]](#)

Product Gallery



Specification

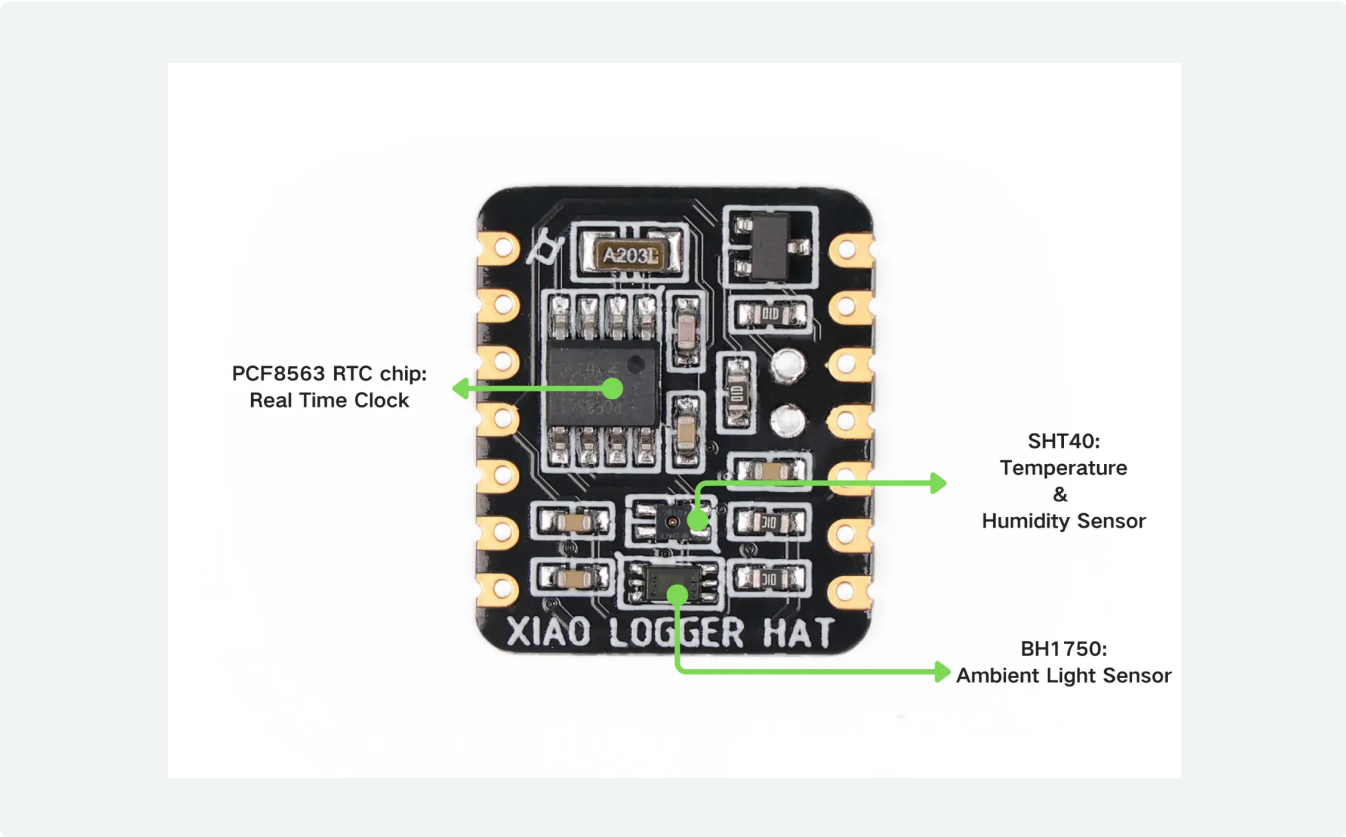
Size	21 x 17.8 mm
Operating Temperature	-40°C to 85°C
Power Supply Range	2.4V ~ 3.6V

Current consumption	~ 500uA
Idle current consumption	~ 0.25uA
Communication Interface	I2C • SHT40 Temperature & Humidity Sensor • BH1750 Ambient Light Sensor • PCF8563 Real-Time Clock ADC • Battery Voltage Read
SHT40 temperature & humidity sensor read time	~ 2ms
BH1750 ambient light sensor read time	~ 120ms
Compatible Hardware Platforms	• Seeed Studio XIAO
Battery	EEMB 3.7V Lithium Polymer Battery (500mAh)

XIAO Boards	I2C	INT	ADC	B A T
XIAO SAMD21	yes	yes	yes	y e s
XIAO nRF52840 (Sense)	yes	yes	yes	y e s
XIAO RP2040	yes	yes	yes	y e s
XIAO RP2350	yes	yes	yes	y e s b u t n o t a l l i g n e d
XIAO ESP32C3	yes	yes	yes	y e s
XIAO ESP32S3 (Sense)	yes	yes	yes	y e s
XIAO ESP32C6	yes	yes	yes	y e s b u t n o t a l l i g n e d

XIAO RA4M1	yes	yes	yes	yes but not aligned
XIAO MG24 (Sense)	yes	yes	yes	yes but not aligned

Hardware Overview



Applications

- Real-time temperature and humidity monitoring
- Connected home automation node
- Low-power environmental data logger
- Wearable devices
- Programming and monitoring education

Part List

XIAO Logger Hat board	x1
7-pin female header	x2

Compliance & Logistics



HSCODE	9025900090
USHSCODE	8517180050
UPC	
EUHSCODE	9013101000
COO	CHINA

Resource Links

- <https://www.seeedstudio.com/XIAO-LOG-p-6341.html>
- [XIAO Logger Hat schematics](#)
- [XIAO Logger Hat layout](#)
- [XIAO Logger Hat gerber](#)
- [SHT40 temperature & humidity sensor datasheet](#)
- [BH1750 ambient light sensor datasheet](#)
- [PCF8563 datasheet](#)
- [XIAO Logger Hat project GitHub](#)

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