

ABH-100-M-BLE

BLE phone-app logger · Warehouse node

[ABH-100 family – Offline & transit loggers](#) · [Data logger datasheet](#)

Battery node that lives on shelves and cold-room doors — reads out over BLE to phones or to an ABH-200-BLE-hub for cloud upload.

2 channels	IP65	LED indication	409,600 readings	Battery: ≈2.6 yr standalone (calc.)
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Specifications

Product type	Offline · BLE node
Sensing channels	2 — Temperature · Humidity
Temperature	SHT41 · −40...+125 °C · ±0.2 °C typ
Humidity	SHT41 · ±1.8 %RH typ
Measurement accuracy	±0.2 °C typ · ±0.4 °C max (0–65 °C) on-board SHT41
Display & indication	LED status indicator (green = OK · blinking red = excursion · solid red = fault)
Connectivity	Bluetooth Low Energy (ESP32-C3) · ≤2.33 dBi
Power	ER14505M AA lithium-thionyl-chloride 3.6 V · 2.0 Ah
Battery life	≈2.6 yr standalone (calculated, spec-compliant logging at firmware defaults; hub-bound node ≈0.29 yr) — Adaptive BLE window: 6 h, 15 min only while a hub collects
Memory	16 MB W25Q128JV · 409,600 readings · separate never-erased audit region
Sample interval	300 s default · 1 s minimum
Enclosure	88.2 × 69.9 × 28.3 mm · Healthcare-grade disinfectant-resistant PC/ABS · UL94 V-0 · white
Ingress protection	IP65 (design target)
Mounting	Keyhole (2×) + bonded 10×2 mm magnets
Operating band	−40 to +70 °C (cell-limited band)
Firmware & transport	Signed .abhfw packages · dual-bank A/B · RSA-2048 · trial boot with automatic rollback · MQTT over TLS 1.2+ with per-device credentials (mTLS supported) · X.509 identity
Factory identity	ABH-[model]-[YYWW]-[5-digit sequence] — factory identity written to the ID EEPROM
Pairing	ABH-200-BLE-hub or the Abhilekh mobile app
Security	BLE LE Secure Connections; read-only tier over the air

Applications

Warehouses & humidity-critical storage	Many points, one record — T/RH monitors per zone, or low-cost BLE nodes collected by one hub.
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Part of the Abhilekh platform

One 80 × 50 mm 4-layer platform PCB — 145 parts, single-sided SMT — becomes 20 SKUs by BOM selection and a SKU record in the on-board ID EEPROM.

Firmware updates	Signed .abhfw packages · dual-bank A/B · RSA-2048 · trial boot with automatic rollback
Data transport	MQTT over TLS 1.2+ with per-device credentials (mTLS supported) · X.509 identity
Offline evidence	Plug an offline logger into a PC and it enumerates a FAT16 drive with README.TXT, DATA.CSV and an ECDSA P-256-signed REPORT.PDF — a self-verifying trip record.
Calibration	Probe channel templates live in the ID EEPROM; the platform tracks NIST-traceable calibration certificates, due dates and reminders per probe.
Certification roadmap	EN 12830:2018 — temperature recorders · CE — RED / EMC / safety · FCC Part 15 · WHO PQS E006 — vaccine cold chain · IEC 61010-1 / IEC 62368-1 · UN 38.3 / IEC 62133-2 — cells & packs — targets, not held certificates

The ABH line is at the design-frozen, pre-production stage: every enclosure has passed generated fit-check geometry (791/791 checks, 20/20 SKUs) and every battery-life, drop, thermal and IP figure shown is a calculated or simulated design estimate — measured values replace them as validation hardware runs. Regulatory marks above are the certification roadmap, not held certificates.

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