

ABH-300-GPS

Roaming asset tracker · Industrial assets in motion

ABH-300 family — Industrial multi-channel · Data logger datasheet

LTE + GNSS in the industrial housing — cryogenic tanks, calibration standards and mobile assets that leave the facility and come back.

5 channels	IP65	E-paper	409,600 readings	Battery: ≈11.3 d per charge (calc.)
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Specifications

Product type	Industrial · cellular tracker
Sensing channels	5 — Position · Ambient T + RH
Position	GNSS lat/lon/speed (Exp-D)
Ambient T + RH	SHT41 · ±0.2 °C typ
Measurement accuracy	±0.2 °C typ · ±0.4 °C max (0–65 °C) on-board SHT41
Display & indication	1.54" e-paper 200 × 200 · –25...+50 °C · holds last reading while asleep
Connectivity	SIMCom A7672S / A7672E LTE Cat-1 · GNSS (Exp-D, u-blox MAX-M10S) — LTE FPC + GNSS patch
Power	Molicel P28A 18650 pack (2600 mAh min) · JEITA-gated charging
Battery life	≈11.3 d per charge (calculated, spec-compliant logging at firmware defaults; ≈2.9 d at –20 °C · sparse mode ≈43 d) — USB-C recharge between trips
Memory	16 MB W25Q128JV · 409,600 readings · separate never-erased audit region
Sample interval	60 s default · GNSS fix 300 s · upload window 15 min
Enclosure	106.4 × 150.0 × 29.3 mm · PC/ABS · UL94 V-0 · UV-stabilised · RAL 7035 grey · TPE bumper
Ingress protection	IP65 (design target)
Mounting	Keyhole (2×) + bonded magnets · M12 cable ports · bumper for vehicle duty
Operating band	–20 to +45 °C charging · discharge duty to –20 °C-class pack
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
SIM	Nano-SIM on the radio card
Ports	USB-C (charge + harvest)

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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