

ABH-200-C

Cellular online monitor · No Wi-Fi required

[ABH-200 family](#) · [Online monitors & gateways](#) · [Data logger datasheet](#)

For sites without usable Wi-Fi: the same online monitor with an LTE Cat-1 radio card and its own SIM — depot, clinic or cold room anywhere.

2 channels	IP54 in use / IP65 capped	E-paper	409,600 readings	Battery: Always on when powered (calc.)
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Specifications

Product type	Online · cellular monitor
Sensing channels	2 — Temperature · Humidity
Temperature	SHT41 · $-40...+125\text{ °C}$ · $\pm 0.2\text{ °C typ}$
Humidity	SHT41 · $\pm 1.8\text{ %RH typ}$
Measurement accuracy	$\pm 0.2\text{ °C typ}$ · $\pm 0.4\text{ °C max}$ ($0-65\text{ °C}$) on-board SHT41
Display & indication	1.54" e-paper 200×200 · $-25...+50\text{ °C}$ · holds last reading while asleep
Connectivity	SIMCom A7672S (India) / A7672E (EU) LTE Cat-1 · MQTT over TLS 1.2 — LTE FPC (internal)
Power	USB 5 V ($\approx 50\text{ mA average}$) · CR2032 RTC $\approx 10\text{ yr}$
Battery life	Always on when powered · RTC cell $\approx 10\text{ yr}$ — Modem sleeps between upload windows
Memory	16 MB W25Q128JV · 409,600 readings · separate never-erased audit region
Sample interval	1 s minimum · upload window 15 min
Enclosure	$88.2 \times 69.9 \times 21.0\text{ mm}$ · Healthcare-grade disinfectant-resistant PC/ABS · UL94 V-0 · white
Ingress protection	IP54 in use / IP65 capped (design targets)
Mounting	Keyhole (2×) + bonded $10 \times 2\text{ mm}$ magnets
Operating band	$-25\text{ to }+50\text{ °C}$ (e-paper limit)
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 · MFF2 eUICC DNP option
Ports	USB-C power

Applications

Sites without power or Wi-Fi	≈3.5-year AA lithium offline logging, or an LTE monitor where Wi-Fi never reaches.
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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.

Neodrics Technologies · Vadodara & Gandhinagar, Gujarat, India · info@neodrics.com · <https://neodrics.com>