

IoTREADY

ColdTag

BLE sensor tag — real-time and offline cold-chain monitoring

Product Datasheet



-40 to 85 °C
SENSING RANGE

±0.5 °C
ACCURACY

25,000
BUFFERED
READINGS OFFLINE

12 months
COIN-CELL
BATTERY LIFE

OVERVIEW

The IoTReady ColdTag is a coin-cell-powered BLE sensor tag built on an nRF52-series SoC, sized to travel with a sample rather than a fixed installation. It advertises in either **Eddystone** or **iBeacon** format — specified at time of purchase — to match the host discovery library in use, and runs in a dual mode built for cold-chain custody: while connected, temperature streams in real time over a BLE notify characteristic; whether connected or not, every reading is also written to an on-device buffer holding up to **25,000 readings**, so a network gap, a phone left behind or a disconnection never loses data — the buffer is pulled back over BLE the next time a host reconnects.

That combination is built for the home-visit collection round-trip: a tag travels with the vial from doorstep to lab, streams temperature to the collector's phone whenever it's in range, and still has a complete, timestamped log to hand over at the lab or to an auditor if the connection ever dropped along the way.

APPLICATIONS

Home-visit sample transport

- Blood-vial and specimen carriers on doorstep collection rounds
- Continuous chain-of-custody from pickup to lab drop-off

Cold-chain audit trail

- Complete on-device log survives phone or network gaps
- Pull the buffer on reconnect for after-the-fact verification

General reefer / logistics

- Reefer bags, insulated totes and last-mile cold shipments
- Any BLE host app, via the same GATT contract

KEY FEATURES

Realtime + offline, always logging

Temperature streams live over BLE notify whenever connected, and is written to the on-device buffer on every reading regardless of connection state — no gap in the record.

Eddystone or iBeacon advertising

Broadcasts the format specified at time of purchase, so it matches the host discovery library in use — no proprietary scanner required.

Android SDK, GATT abstracted

The Android SDK wraps both the live-notify and log-pull characteristics behind a simple API — the integrator reads temperature events and pulled log entries, never raw GATT bytes.

25,000-reading non-volatile buffer

Sized to outlast a single collection round or a multi-day dispatch gap; readings are retained across a disconnect or a dead host app.

Compact, mountable form factor

65 × 41 × 17 mm with 2 mounting holes — small enough to travel with a single vial carrier or bag, and easy to fix in place.

CR2477 coin cell, 12-month life

Standard, field-replaceable 3 V lithium coin cell — no charging routine mid-deployment.

INTEGRATION

Live Notify

BLE GATT · NOTIFY CHARACTERISTIC

```
{ "temp_c": 4.2,  
  "ts": 1721160000000,  
  "batt_mv": 2950 }
```

Streams the current reading to a connected host the instant it's taken. Subscribe and read — no polling.

Offline Log Pull

BLE GATT · PAGED READ CHARACTERISTIC

```
{ "entries": [  
  { "temp_c": 4.1, "ts": 1721159940000 },  
  { "temp_c": 4.2, "ts": 1721160000000 }  
], "more": true }
```

Bulk-reads the buffered log in pages on reconnect, oldest first, until the buffer is drained — covers any gap since the last pull.

The Android SDK wraps both characteristics behind a single API — connect, receive live temperature events, and drain the offline log on reconnect — so the integrating app never handles GATT directly.

TECHNICAL SPECIFICATIONS

SoC	nRF52-series	Battery	CR2477 lithium coin cell, 3 V, 12 months typical
Connectivity	Bluetooth LE, Eddystone or iBeacon advertising (specified at purchase)	Dimensions	65 × 41 × 17 mm
Sensing range	-40 °C to +85 °C	Mounting	2 mounting holes; adhesive or strap to carrier
Accuracy	±0.5 °C	Platform support	Android SDK
Offline log capacity	25,000 readings, non-volatile		

Specifications are subject to change without notice. Accuracy and sensing range are as specified by the underlying sensor module; battery life depends on advertising interval, notify frequency and operating temperature. © 2026 IoTReady Solutions. All rights reserved.