System Loco.

Quick Start Guide

LocoCard E1BL.



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Introduction.

How the system works

The LocoCard E1BL works flexibly with smartphones and handheld terminals, as well as with System Loco tracking and monitoring devices:

- **LocoGo Receiver app** (iOS and Android)

  LocoCards can be read at close range using our free LocoGo Receiver app, which can be installed on Bluetooth-enabled smartphones and handheld terminals.

- **LocoTrack devices**

  LocoCards also function as standard LocoTags, reporting to System Loco tracking devices (mobile gateways and fixed hubs) such as the LocoTrack HGD4 and LocoTrack HFR4.

LocoCards log temperature and humidity every 5 minutes, storing data locally until they can sync. Data can be logged for up to 90 days, before uploading the full log seamlessly and automatically at the end of the journey. Battery life is also up to 90 days, depending on your configuration and use case.

Logged data is available to view and download via the LocoGo Receiver app, the LocoAware website, or the LocoAware API. LocoCard E1BLs are compliant with FDA 21 CFR Part 11 and EU GMP Annex 11, and you can easily generate Cold Chain certificates for their journeys.

Immutable, read-only records are retained by System Loco for at least 5 years, in compliance with regulatory standards, and can be viewed at any time.

SDKs for System Loco mobile apps, including LocoGo Receiver, are available on request to our partners.

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Temperature-specific variants

The LocoCard E1BL is available in several variants, each of which has an *acceptable temperature range* designed to suit a specific application. This range is stated on each LocoCard's label, which also features a different color for each variant.



For example, the black LocoCard is designed to be used in refrigerated applications where the temperature is kept between 2°C (35.6°F) and 8°C (46.4°F).

Custom temperature ranges are available for bulk orders.

Temperature alarms

If a LocoCard detects too high or low a temperature (and it is not within a grace period) it flags a *temperature alarm* in all subsequent reports. If you receive a LocoCard with such an alarm, your shipment may have got either too hot or too cold during its journey – you should check its data carefully and act accordingly.

A LocoCard's temperature alarm status can be checked at any time by pressing the button at its top left corner. An LED indicates its status instantly:

- ✓ – no temperature alarms since the LocoCard was activated.
- ✗ – at least one temperature alarm since the LocoCard was activated.

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Note that there are 15-minute start and end *grace periods* on a LocoCard's upper temperature limit. This is so that LocoCards have time to get down to an acceptable temperature after being attached to a package, and then to allow time for unloading and scanning after that package has been received. Any high temperature excursions during these grace periods will not trigger an alarm. There is no grace period on the lower temperature limit.

Installation and asset association

LocoCards are easy to install and deploy – just snap off a LocoCard's activation tab and then place it inside a package, or attach it to a surface using its 3M adhesive backing.

Each LocoCard has a unique identifier that is presented as text and as a barcode on its label. It also has a QR code that links to its full details in LocoAware.

LocoCards can be associated with assets, shipments, or individual packages. When creating or editing an asset or shipment in LocoAware (or your own platform), you can simply scan the LocoCard's barcode to associate it with that asset or shipment.

Design considerations

Our system is developed under GAMP 5 and in alignment with GMP, ensuring validated performance and traceability throughout the product lifecycle. End-to-end security is built in, with protection against replay and masquerade attacks provided as standard.

LocoCards are designed for product integrity verification in cold chain and other regulated logistics applications. Each LocoCard is programmed with a unique cryptographic key during manufacture, and all communication is authenticated to meet strict regulatory standards including FDA 21 CFR Part 11 and EU GMP Annex 11.

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Applications include

LocoCards are ideal for a wide range of cold chain applications – supporting frozen, chilled, and ambient goods across pharmaceuticals, food, and beverage sectors. They can be used flexibly at item, package, or pallet level, working inside insulated containers, reefers, or temporary cold storage environments.

The ability to work flexibly with both LocoTrack devices and the LocoGo Receiver app enables three main use cases:

- **LocoCard + LocoGo**

  A user scans the LocoCard using the LocoGo Receiver app (installed on a smartphone or handheld terminal) at the end of its journey. The user can view the LocoCard's logged data and then accept or reject its shipment, as well as generating a Cold Chain certificate for the journey.

- **LocoCard + LocoTrack fixed hub(s)**

  The LocoCard is read automatically by a LocoTrack fixed hub at the end of its journey.

  This use case is likely for companies that already have System Loco infrastructure or require a high degree of automation.

- **LocoCard + LocoTrack mobile gateway(s)**

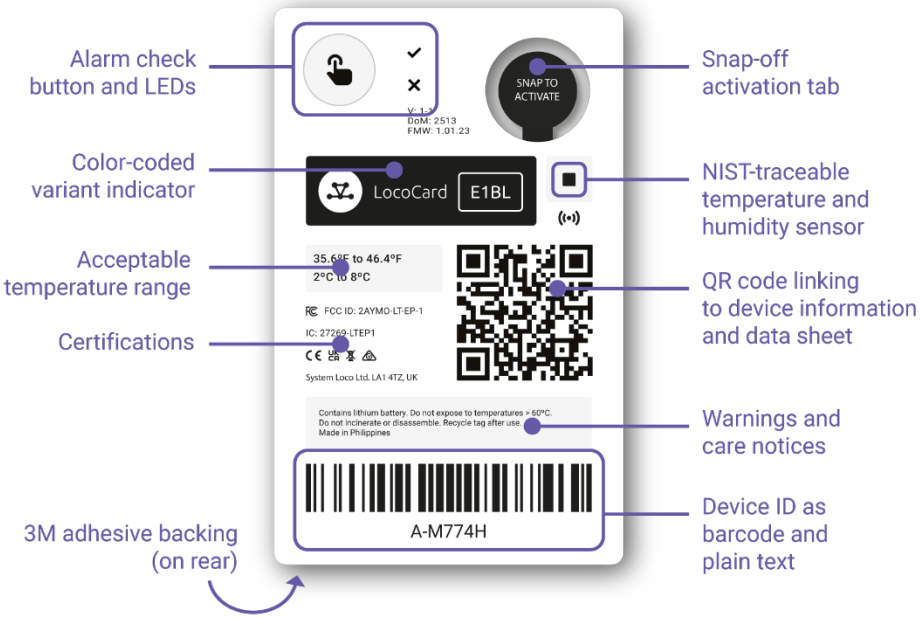
  The LocoCard is accompanied by a LocoTrack mobile gateway while in transit, providing active temperature and location monitoring. It may also be read by LocoTrack fixed hubs at different stages of its journey.

  This use case is for high-value items where live updates are needed.

Whether you are transporting vaccines, biologics, or temperature-sensitive groceries, LocoCards ensure traceable, tamper-evident monitoring throughout every journey.

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Device Characteristics.



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Device Activation and Usage – LocoGo.

While LocoCards are designed to work flexibly in a variety of different scenarios, the simplest use case is where LocoCards are scanned using the LocoGo Receiver app at the end of their journeys.

Step 1: Activate and associate the LocoCard

Snap off the LocoCard's activation tab. The LocoCard is now active and begins to log data immediately.

If required, associate the LocoCard with an asset or shipment in LocoAware (or your own platform).

Finally, place the LocoCard inside your package, or attach it to a surface using its 3M adhesive backing. The package is now ready for shipment.

A LocoCard cannot be switched off after its activation tab has been snapped off. It will run continuously until its battery has been depleted.

After a LocoCard has been attached to a surface, it may be difficult to remove and reattach.

Step 2: Ship your package

After the LocoCard has been activated and attached to (or put in) your package, you can ship it.

The LocoCard will log temperature and humidity data for up to 90 days, with battery life also up to 90 days, depending on your configuration and use case.

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Step 3: Scan the LocoCard and download its data

When your package reaches its destination:

1. Open the LocoGo Receiver app on your smartphone (or handheld terminal) and tap **Continue** to skip any introductory screens.

   LocoGo Receiver is a free app, available for iPhone and Android:

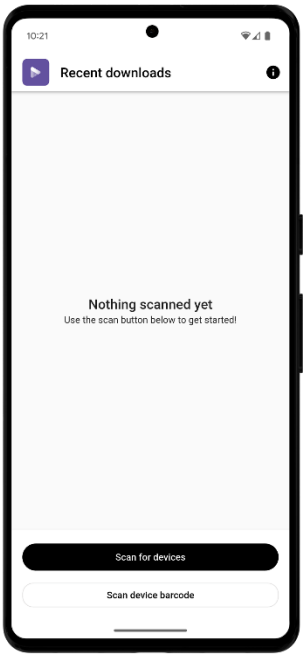
   Download on the App Store

   GET IT ON Google Play

   When installing the app, or using it for the first time, you will be prompted to allow access to location, Bluetooth, and so on. Follow the prompts to grant the required permissions. **You MUST allow all requested access, or the app will not be able to function properly.**

2. When you reach the **Recent downloads** screen, tap **Scan for devices**.

   *Rather than scanning for LocoCards and then choosing one from a list, you can scan your LocoCard's barcode directly. From the app's **Recent downloads** screen, tap **Scan device barcode** and point your smartphone's camera at the LocoCard's barcode. The app starts downloading your LocoCard's data immediately – proceed to step 6.*



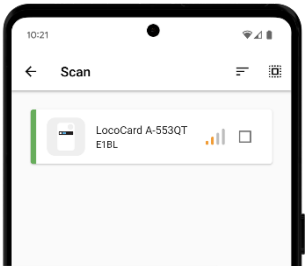
3. The app scans for nearby LocoCards.

   The LocoGo Receiver app is limited by the Bluetooth scanning range of your smartphone and the broadcast range of the LocoCard. This is typically up to 80m (260ft) outdoors (with line of sight) and up to 20m (65ft) indoors (depending on room layout, presence of metal objects, and so on).

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4. The app shows any LocoCards that it finds on its **Scan** screen.

   The colored indicator on the left side of each tile shows whether a LocoCard has flagged *any* temperature alarms since it was first activated – green if there have been no alarms, or red if there have been.

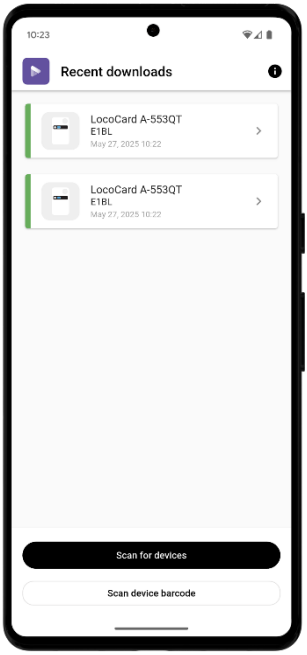


5. Tap your LocoCard to select it, and then tap **Continue** to download its data.

   The app downloads data from the LocoCard, with progress shown on the **Download Device Data** screen. It then reports to LocoAware automatically, sending its own location as well as the LocoCard's details.

6. When the download is complete, tap **Continue** and then **View my downloads**.

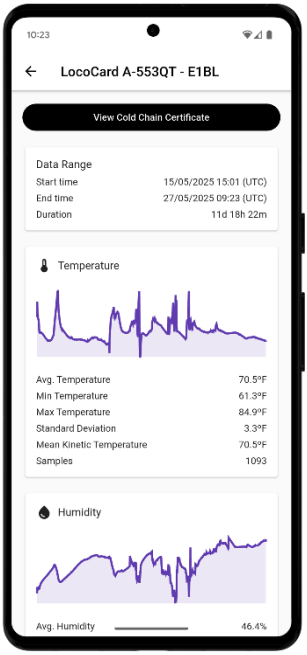
   The **Recent downloads** screen now shows a list of LocoCard downloads available on your current smartphone.



The LocoGo Receiver app only shows downloads from the last 48 hours. You can view older downloads using LocoAware's Devices app.

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7. Tap a download to view a summary of its data.



8. If you need a Cold Chain certificate for your shipment, tap **View Cold Chain Certificate**, at the top of the device data screen.

   When viewing the certificate, you can tap  or  to share it as a PDF to any destination set up on your smartphone.

Step 4: Check status in LocoAware (optional)

If your LocoCard was associated with an asset or shipment, you can now check its progress in LocoAware (or your own platform). A shipment may have completed automatically based on the LocoCard's location, for example. You (or your users) may also be notified automatically, depending on how your system has been set up.

You can view the LocoCard's data in LocoAware – open it in LocoAware's Devices app to see its most recently reported status, location history, and so on. You can also view and generate Cold Chain certificates for the LocoCard.

If you have LocoAware API integrations set up, you may be able to view LocoCard data in your own platform instead.

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Device Activation and Usage – LocoTrack.

LocoCards can also function as standard LocoTags, reporting via LocoTrack devices (rather than being scanned using the LocoGo Receiver app):

- LocoCards should be activated and associated as usual – snap off their activation tags and, if required, associate them with assets or shipments in LocoAware (or your own platform).
- When a LocoCard comes within range of a suitably configured LocoTrack device, that device will detect the LocoCard, receive its data, and report it to LocoAware automatically. LocoCards have a broadcast range of up to 80m (260ft) outdoors and up to 20m (65ft) indoors.
- Compatible LocoTrack devices include fixed hubs (such as the LocoTrack HFR4) and mobile gateways (such as the LocoTrack HGD4). They must have tag detection enabled.
- The location of a LocoTrack device will be assigned to any LocoCards that it detects, building a history of where those LocoCards have been.
- If a LocoCard is shipped with a LocoTrack mobile gateway, LocoAware will receive live updates of that LocoCard's location, temperature, and so on.
- A typical system (whether using LocoAware or your own platform) will be set up to process LocoCard reports and act accordingly – flagging shipments as completed, for example, or alerting users of temperature excursions.



LocoTrack devices receive and report LocoCard data according to their configured reporting intervals. Note that frequent reporting will reduce a LocoCard's battery life significantly.

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Batteries.

The unit uses a 3V 120mAh non-rechargeable lithium battery:

- Do not expose to temperatures over 60°C (140°F).
- Do not incinerate or disassemble.
- Recycle after use.

Certifications.

This product has been certified to the following standards:

FCC, IC, CE, RTCA DO-160

Environmental Considerations.

The equipment may contain substances that are harmful to the environment or human health. Please recycle this unit appropriately. Please contact your local authority for disposal or recycling information.

