Protect Who Matters Most™



LonerGPS™ User Guide

Mobile Worker Safety Solution



BlackLine GPS Customer Care

If you have any questions regarding your setup or use of the LonerGPS system, please do not hesitate to contact BlackLine GPS Customer Care. Customer Care is available by phone or email between the hours of 9:00am and 5:00pm Mountain Time:

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LonerGPS™ User Guide Part Number: DOC-xxxx-xx Last Revised: October 14, 2008

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Printed in China

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REGULATORY NOTICE

LonerGPS contains FCC ID: QIPMC56 and complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:



- this device may not cause harmful interference, and
- this device must accept any interference received, including interference that may cause undesired operation.

SAFETY PRECAUTIONS

We take your safety, and the safety of those around you, very seriously. It is important for you to be aware of the following precautions:

- Danger do not place LonerGPS in or near an open flame or in the presence of flammable gases or fumes. Turn
 LonerGPS off when you are near petrol stations, fuel depots, chemical plants, or where blasting operations are in
 progress. Operation of any electrical equipment in potentially explosive atmospheres can constitute a safety hazard.
- Do not operate LonerGPS above 55°C (131°F) or below -20°C (-4°F)
- Do not store LonerGPS above 70°C (158°F) or below -30°C (-22°F)
- Do not operate LonerGPS in humidity above 95% non-condensing.
- DO NOT ATTEMPT TO RECOVER A STOLEN DEVICE YOURSELF OR ARRANGE FOR A THIRD PARTY TO RECOVER THE DEVOCE OTHER THAN YOUR LOCAL POLICE SERVICE. YOU RISK ENDANGERING YOURSELF OR OTHERS AROUND YOU, AND / OR DAMAGE TO PROPERTY.
- Do not dispose of LonerGPS within your household trash. Seek advice from your local electronics recycling authority.
 LonerGPS contains an internal Lithium Polymer battery pack.
- When in a hospital or other health care facility, observe the restrictions on the use of mobile devices, such as cellular phones. Do not operate LonerGPS where you are not able to operate your mobile / cellular phone.
- Switch off LonerGPS before boarding an aircraft. Make sure that it cannot be inadvertently turned on. The operation of
 wireless appliances, including LonerGPS is forbidden to prevent interference with communication systems. Failure to
 observe these instructions may lead to the suspension or denial of cellular services to the offender, legal action, or both.
- Road safety comes first. If you are required to operate LonerGPS while in the vehicle, please park first.

Introduction

This user guide provides valuable information on getting started with LonerGPS and its use. It is geared towards the personnel within a corporation who are responsible for implementation of safety programs, IT personnel, and management. However, the implementation process of the LonerGPS solution is straightforward and can be accomplished by anyone who is mildly technical within organizations ranging from small and medium businesses through to enterprise.

The Loner Protection System™ is comprised of the following components:

- For mobile workers: The BlackLine LonerGPS worker-worn safety device
- For office monitoring staff: The BlackLine LonerPortal[™] Web application that runs on an office computer
- For mobile monitoring staff (Optional): The BlackLine LonerMobile™ application for BlackBerry® smartphones, operating in Team Leader mode

The LonerPortal web-based monitoring application provides monitoring staff a toolset for real-time monitoring in an office environment. LonerPortal configuration and use are described separately with the BlackLine GPS LonerPortal User Guide.

The LonerMobile application for BlackBerry smartphones provides a mobile safety-monitoring interface and is separately discussed in the LonerMobile User Guide.

For download information, please visit the BlackLine GPS website: www.blacklinegps.com.

Overview

This section provides foundation-level information about LonerGPS device and LonerPortal web-based monitoring application.

About LonerGPS

The LonerGPS safety device incorporates the following key components:

- Global positioning system (GPS) receiver and antenna
- Wireless GSM/GPRS communications radio and antenna
- Motion-detection technology
- Built-in rechargeable battery (Lithium polymer battery technology)
- Compact enclosure
- Two-button keypad with status indicator lights
- Buzzer and vibration user notification

The LonerGPS safety device is typically belt-worn and is accompanied by a BlackLine-supplied holster with belt clip.

LonerGPS Features

Features of the LonerGPS device include:

- Real-time and scheduled GPS tracking allows mobile workers to be located quickly in times of emergency and also provides a history of prior locations (a bread-crumb trail)
- Motion-detection technology enables worker activity to be monitored if no worker motion within factory-configurable timer, an instant No-motion Alert is triggered
- Emergency button allows the mobile worker to trigger an instant alert
- Up to 7-day battery life
- UltimateSense™ GPS tracking technology for optimum performance in challenging conditions
- Beeper and vibration notifies the mobile worker of a pending No-motion Alert, giving the worker the chance to cancel it before going into alert
- Factory-configurable No-motion Timer enables an employer to tailor the device for the degree of responsiveness required for a particular job function. The default settings are described in the Specifications chapter.

About the Loner Safety System

The Loner Safety System[™] is supported by the BlackLine Location Services Platform[™] (LSP). The BlackLine LSP provides the foundation for LonerGPS Safety Devices and includes networking, communications, data storage, user accounts, billing systems, alerting engine, tracking engine, and more.

The BlackLine Loner Safety System is comprised of the following components:

- For office monitoring staff: The BlackLine LonerPortal™ Safety Web Interface is a user interface
 for safety monitoring personnel. LonerPortal facilitates monitoring and interaction with BlackLine
 GPS Safety Devices for the purpose of monitoring mobile worker safety. LonerPortal is
 compatible with the BlackLine LonerGPS™ Safety Device.
- For mobile workers: The BlackLine LonerGPS worker-worn safety device and the BlackLine LonerMobile application for BlackBerry smartphones.
- For mobile monitoring staff (Optional): The BlackLine LonerMobile™ application for BlackBerry smartphones, operating in Team Leader mode

LonerPortal Features

LonerPortal provides monitoring personnel in the office the web-based tools to efficiently monitor LonerGPS devices in the field. LonerPortal offers the following list of features:

- Web-based monitoring interface log in at the start of the day; LonerPortal will continue to operate within the web browser while other tasks are managed on the same computer.
- Background-monitoring Loner Safety devices are monitored continuously whether or not a user is logged into LonerPortal
- Mobile alerting and notification via email and text message (SMS)
- Real-time alarm banner with visible and audible indications
- Convenient device listing provides a quick overview of LonerGPS summary data
- Real-time and scheduled tracking interface provides the flexibility required to ensure current location data is close at hand
- Cross-team Sharing to extend safety awareness and increase accessibility of location-based data in times of emergency
- GPS location scheduler automates the process of retrieving locations from LonerGPS Safety Devices
- Call-out List escalates monitoring if alerts are not addressed within a configurable amount of time
- No software to download or install
- Compatibility with BlackLine LonerMobile application software for BlackBerry smartphones provides a convenience mobile interface (when running in Team Leader mode)

Each of these features are described in detail within the LonerPortal User Guide. For download information, please visit the BlackLine GPS website: www.blacklinegps.com.

LonerGPS Alerts

Alerts are defined as critical message communications to safety stakeholders that indicate an immediate threat to a worker's safety. LonerPortal manages all alert communications from LonerGPS devices to safety stakeholders. Alerts are communicated in two ways:

• Email and text message (SMS) via LonerPortal's configurable Call-out List – when an alert situation occurs, LonerPortal will immediately send email and text message alerts to individuals as specified within the Call-out List.

 Via the alert banner within the LonerPortal web application – when an alert situation occurs, LonerPortal will annunciate the alert within its alarm banner, generating audio and video indications in real-time.

The following list describes the alerts generated by LonerGPS:

- No-motion Alert (effectively a man-down alert) generated by LonerGPS and communicated via LonerPortal when the LonerGPS device does not measure sufficient worker activity within a set amount of time.
- Emergency Alert generated by the user who presses the emergency button on LonerGPS.
- Failed scheduled location Alert generated by LonerPortal when a schedule GPS location has not returned a location.
- Network timeout Alert generated by LonerPortal when a specific LonerGPS device has not checked in recently with LonerPortal servers.

LonerGPS Notifications

Notifications are defined as message communications to safety stakeholders that indicate when something may affect the safety of a worker in the future. Notifications are communicated in one way:

• Email and text message (SMS) via LonerPortal's configurable Call-out List – when a notification event occurs, LonerPortal immediately sends email and text message notifications to the Priority 1 contact as specified within LonerPortal's Call-out List.

Notifications supported by LonerGPS include the following:

- Low-battery (40%) Notification when a low-battery condition is triggered, a Low-battery (40%) Notification can be optionally sent to the priority 1 individuals specified in the call-out list.
- On-network Notification When a device logs onto LonerPortal, an On-network Notification can be optionally sent to the priority 1 individuals specified in the call-out list.
- Off-network Notification When a device logs off from LonerPortal, an Off-network Notification can be optionally sent to the priority 1 individuals specified in the call-out list.

Note – Notifications are optional but recommended by BlackLine GPS to promote awareness of system operation and status.

Getting Started

This chapter provides a variety of information regarding LonerGPS including hands-on information for mobile workers plus the details required for an organization's monitoring and administrative staff to support the LonerGPS deployment.

Note - Prior to getting started with a LonerGPS device, a LonerPortal account must be set up and the LonerGPS device activated on the account. The LonerPortal User Guide provides detailed information on this process. For download information, please visit the BlackLine GPS website: www.blacklinegps.com.

The following list provides a brief overview of system operations.

- LonerGPS devices are charged (a full charge takes approximately five hours)
- At the start of a shift, mobile workers are each equipped with a personal LonerGPS device
- Monitoring personnel log into the LonerPortal web application
- The mobile worker powers their LonerGPS that connects through the wireless network to the BlackLine LonerPortal web application
- Once connected, LonerGPS devices are automatically monitored
- In the event that any alert conditions occur, monitoring staff are alerted immediately of the condition
- LonerGPS devices can be tracked in real-time when required. Locations can be schedule for automatic retrieval to bread-crumb worker's locations to ensure that a current location is always available
- Alerts can be reset by monitoring personnel when alert situations are verified and addressed

The LonerGPS Device

The LonerGPS device is compact and self-contained. It has a few physical features worth noting:

- Front: a two-button keypad with indicator lights
- Rear: a DC charging jack
- Bottom: A serial label with the device's unit ID and activation code
- Top: a LonerGPS logo



Keypad

The LonerGPS keypad provides the mobile worker with the following functions and indications:

- Power button: The power button is used to turn the LonerGPS device on and off.
- Green indicator light: The green indicator light tells the user the power status and also whether connected to the wireless service
- Emergency button: The emergency button allows the user to trigger an emergency alert to their monitoring personnel via LonerPortal
- Red indicator light: The red indicator light provides status of alerts

Charging LonerGPS

LonerGPS is conveniently charged using the supplied wall charger. The wall charger is compatible with any North American 110/120 VAC 60 Hz outlet and consumes approximately 0.5A of current while fast-charging.

To charge a LonerGPS device:

- Plug the wall charger into the wall
- Ensure that the wall plug has power using a test light, if necessary
- Plug the DC plug into the LonerGPS charging jack

Note: If the LonerGPS is currently powered, please note that plugging the device into power will turn LonerGPS off. This ensures that the device will not trigger no-motion alerts while charging. BlackLine GPS recommends that a regular charging habit be used to ensure that devices do not enter the field with near-empty battery capacity.

Wearing LonerGPS

LonerGPS is designed for wearing on a belt using the supplied holster with built-in belt clip, as shown in the image below.

Note – the LonerGPS logo must face outward, away from the mobile worker's body for optimum GPS performance.



Alternatively, LonerGPS may be worn in a pocket, however the mobile worker should ensure that the logo side of the enclosure should face away from their body.

Note - BlackLine recommends using the supplied holster to ensure optimum GPS tracking performance and to ensure audibility of the internal beeper.

Use Procedure

The device should be powered when safety-monitoring is required Using the LonerGPS safety device is very straightforward:

- The mobile worker presses the power button to turn LonerGPS on (please see the following section on turning LonerGPS on and off for further information)
- The mobile worker wears LonerGPS on his or her belt
- The mobile worker goes about their duties with little additional burden

Note – BlackLine recommends that the LonerGPS device remain powered during an entire work shift. Please see the note below regarding lunch and coffee breaks.

Turning LonerGPS On and Off

To turn LonerGPS on, press and release the power button. To turn the LonerGPS device off, press and release the power button. The LonerGPS device features a wireless connection / power indication. When the green indicator light blinks, the LonerGPS device does not have a wireless data connection. When the indicator light changes to solid green (continuous), the LonerGPS device is connected to the wireless network. It takes approximately 30 to 90 seconds to achieve a wireless data connection, depending on the wireless signal level.

Note - BlackLine recommends that during breaks that the mobile worker continue to wear LonerGPS with the device powered. The benefit of not forgetting to turn it on after the break outweighs the risk of forgetting to turn it on, in order to save the occasional pending No-motion Alert beeping.

Alerts

There are two key alerts types that the mobile worker is responsible for and must be trained on:

- No-motion Alert
- Emergency Alet

No-motion Alert

The purpose of the No-motion Alert is to quickly notify safety-monitoring personnel that a mobile worker is no longer moving. The goal is to quickly confirm the situation and if unable to reach the mobile worker, to quickly provide emergency assistance.

The No-motion Alert works by monitoring the motion of LonerGPS with the assumption that the device is being carried by / is attached to the mobile worker. The LonerGPS device monitors worker activity for two minutes (the default factory-configurable setting). If <u>no motion</u> has been measured within this timer of two minutes, the No-motion Alert <u>is triggered</u>.

Note - Depending on a mobile worker's duties, a custom No-Motion Timer period may be factory-configured into a LonerGPS device. The duration of the No-Motion Timer should be chosen with care, understanding the level of activity and desired responsiveness. A longer No-motion Timer reduces responsiveness and can be more susceptible to detecting false motion.

In order to significantly reduce the number of false alerts, the No-motion alert has two phases, triggered initially by the lack of worker motion within the No-motion Timer:

- 1. Pending No-Motion alert beeping and vibration (optional hardware feature)
- 2. Alert communicted to LonerPortal

The first phase, the pending No-motion Alert, tells the mobile worker that a No-motion Alert will be sent in 30 seconds unless cancelled. The pending No-motion Alert is annunciated by a beeping (and optionally vibrating) once per second, coupled with a flash of the red indicator light. In the last second of the 30-second count-down, the beep and vibration will annunciate continuously for one second, announcing that the alert has been sent.

If the user does not cancel the pending No-motion Alert during the 30-second count-down, the red indicator light will change to a continous illumination and the beeping and vibration will stop.

This process of mobile worker notification allows them to cancel the alert if they are present and aware, thus reducing false alarms significantly. Otherwise, the alert is transmitted to LonerPortal that notifies-safety monitoring personnel.

Emergency Alert

The Emergency Alert provides a mobile worker and instant notification to monitoring staff of an event that has the potential to cause them harm. Unlike the No-motion Alert, this alert is triggered instantly and notifies monitoring personnel without delay and does not offer the ability for the worker to cancel the alert before it is transmitted to monitoring personnel.

To trigger an emergency alert to safety-monitoring staff, the mobile worker presses and holds the emergency key. Once triggered, the emergency indicator light (red) will illuminate continuously. The alert is communicated to LonerPortal that then notifies safety monitoring personnel.

The mobile worker is able to cancel the Emergency Alert at the LonerGPS device, however this does not cancel the alert at LonerPortal, providing a burden on the monitoring personnel to investigate the

situation. To cancel the Emergency Alert, the mobile worker presses and holds the emergency button again.

Note - When an Emergency Alert is triggered by the mobile worker, the red indicator light on LonerGPS will illuminate continuously. The LonerGPS device does not beep or vibrate during this process with the intention of being a silent alert to monitoring staff.

Real-time and Scheduled GPS Tracking

The LonerGPS device may be tracked in real-time through the Location Scheduler.

Real-time GPS tracking is exceptionally useful when mobilizing an efficient response in a emergency situation. Tracking a mobile worker in real-time is accomplished through the LonerPortal application or alternatively from the LonerMobile application for BlackBerry smartphones. Tracking a worker takes approximately 20 to 30 seconds typically when GPS signals are moderate to good. In weaker signal conditions, this can take between 60 and 120 seconds.

In environments where the mobile worker's LonerGPS is not able to compute a location due to weak GPS signal coverage, having a recent schedule location is crucial to provide needed response in a timely manner.

LonerPortal provides the tools for real-time and scheduled tracking, which is described in detail within the LonerPortal User Guide.

Coverage

The LonerGPS solution currently provides wireless coverage within the United States and Canada. For current coverage information, visit the BlackLine GPS web site:

www.blacklinegps.com

If your needs for safety are outside the United States and Canada, consider the LonerMobile application for BlackBerry smartphones. LonerMobile offers a mobile worker protection mode, Team Member mode, which is analagous to LonerGPS. LonerMobile on provides safety on the mainstream BlackBerry platform that is easily accessible and features excellent GPS tracking performance compared to other smartphones on the market. Contact BlackLine GPS for further information on LonerMobile or visit our Web site.

Safety Protocols During an Alert

LonerGPS has implications to an organization's safety policy and procedures. LonerGPS is designed as an aggressive aid to promote the safety of mobile workers and should not be considered a sole-source of safety monitoring. Due to the critical nature of safety-monitoring, BlackLine recommends than each mobile worker be additionally equipped with a mobile phone. By coupling a mobile phone with LonerGPS, a single point of failure does not compromise worker safety (such as battery discharge or damage to a device).

The LonerGPS safety solution was designed to meet the needs of each stakeholder within a corporation, including the mobile worker, team leaders, safety monitoring personnel, management, and unions. Each stakeholder is keenly interested in mobile worker safety, which should be considered organization's top priority. Accordingly, it is critical that safety policy and procedures be considered and developed in relation to the implementation to the LonerGPS safety system.

Note - As part of an organization's safety policy, it is prudent to have safety-monitoring personnel contact a mobile worker who has triggered an emergency alert and cancelled it. From a diligence perspective, the mobile worker's safety is most thoroughly assured.

Further, BlackLine GPS recommends that users be instructed to use a code-word for a situation where a mobile worker triggered the emergency alert under duress but has been forced to cancel the alert.

Other wider-ranging safety policy and protocol considerations should be examined within each company who deploys the LonerGPS solution.

Limitations

There are a small number of limitations that must be carefully noted. These limitations relate to the layered safety approach delivered by the LonerGPS system and affect its ability to provide protection to mobile workers.

Wireless communications reception (GSM)

Wireless signals are not nearly as weak as GPS signals and as a result are able to penetrate into most structures that people frequent. As a result, wireless connectivity is more likely to be maintained throughout a region covered with wireless signals than GPS. Maintaining a wireless connection is the fundamental layer of safety.

There are certain locations where signal coverage does not exist or is poor. Signal coverage is typically less available within rural areas than urban due to concentration of populations. Consult the Coverage section above for current estimated coverage information for LonerGPS.

An alert may be configured within LonerPortal for situations where a device has unexpectedly left coverage, the battery has expired, or the device has been damaged. This alert notifies monitoring staff once the condition has been detected. Considering that the mobile worker is no longer protected by LonerGPS, this alert enables monitoring staff to investigate the situation further to ensure safety of the worker.

Note - In this type of situation, it is crucial to have a recent GPS location to understand the approximate location of the mobile worker. The LonerPortal's location scheduler accomplishes this task by automatically requesting periodic GPS locations from LonerGPS devices.

GPS reception

LonerGPS features BlackLine GPS UltimateSense™ GPS antenna technology that allows LonerGPS to 'hear' extremely weak GPS signals.

It should be noted, however, that GPS signals are near noise-floor (extremely weak) and are not able to penetrate concrete, metal (steel), carbon fiber, and some metallic window tint films. While operating in areas where GPS signals may not be sufficient, such as within some commercial structures, scheduled GPS positions may not be retrieved, causing failed scheduled location alerts (if configured within LonerPortal). Not being able to track within commercial structures built of metal and concrete is unavoidable and are not a symptom of the product itself, but rather a limitation of physics.

Note – BlackLine GPS recommends a tracking schedule be created for each device in order to provide a current location within GPS coverage. This ensures a most recent GPS location is available near where a mobile worker has entered an area of no GPS signal coverage.

Battery Power

LonerGPS communicates its battery level to LonerPortal periodically. If a low-battery condition is found on a device, LonerPortal may be configured to notify monitoring personnel of this condition. Notifications are not treated with the same significance as alerts and do not trigger the Alert Banner.

BlackLine GPS recommends that Low-battery Notifications be configured for each device on an account to ensure an optimum and consistent level of performance.

LonerGPS Care

There are a number of factors to consider when using and storing LonerGPS devices.

- The LonerGPS device is not a sealed system and should be protected from direct condensation.
- The LonerGPS device should not be left in direct sunlight for extended periods of time

Please refer to the Specifications chapter for more information on environmental limits of this product.

Specifications

Mechanical

- Size: 10 cm L x 7.5 cm W x 2.5 cm T (4" L x 3" W x 1" T)
- Weight: 120 g (4.2 oz)

Radios

- GPS: 20 channel
- GPS antenna technology: BlackLine GPS UltimateSense™
- Internal GPS antenna: Yes
- Tri-band GSM radio: 850, 1800, & 1900 MHz
- Internal GSM antenna: Yes

Power

- Input voltage: 6 to 18VDC
- Battery: Li-polymer technology (2000 mAh)
- Battery life: up to 7 days
- · Charging connector: DC jack

Performance

- Location request turnaround time: 20 seconds typ.
- Accuracy: 5 m (16 ft) outdoors typ., 50 m (165 ft) indoors typ.

What's included

 LonerGPS safety device, wall charger, belt-mount holster

Approvals

FCC, PTCRB

Wireless coverage

United States and Canada (other countries please enquire)

Location data

 Location (lat. & long.), speed, direction of travel, time, date

Alert data:

- Alert location (lat. & long.), alert type, time, and date
- Alert reset: user name, time, and date

User notification

- Worker motion detection: factory configurable settings
- Buzzer and vibration motor: notifies mobile worker in order to
- cancel no-motion false alarms
- Buzzer sound pressure level: ~80 dB

Default settings

- No-motion timer: 2 minutes of no measurement of worker activity before generating an alert
- Pre-no-motion indication timer: 30 seconds of beeping and vibration before the no-motion alert is triggered

Environmental

- Operating Temperature: -20°C to +55°C (-4°F to +131°F)
- Storage Temperature: -30°C to +75°C (-22°F to +167°F)
- Humidity: 95% non-condensing
- Vibration motor: Yes

Warranty

 Please review Terms & Conditions, provided separately

LonerPortal

- A hosted, web-based safety monitoring application
- No software installation and no software maintenance fees
- Easy account management
- Mobile alerting and notifications through email and text message