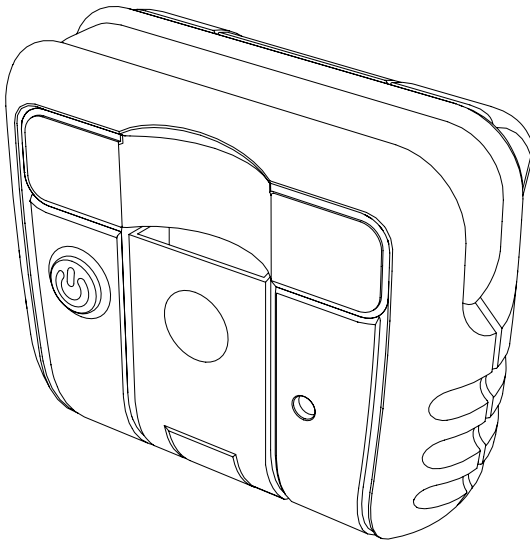


User Guide

Löner

FDU

A Mobile Worker Safety Device
Complementing Löner Mobile



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Warranty

Your Löner FDU™ powered by Blackline GPS is warranted against defects in materials and workmanship for up to one year from date of purchase. For further details regarding your Blackline GPS warranty, please refer to your Terms and Conditions of Service.

More Information and Support

Visit <http://blacklinesafety.com> for more information.

FCC Notice

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for further assistance.

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Safety Precautions

Blackline GPS takes 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 a Blackline GPS Product in or near an open flame or in the presence of flammable gases or fumes.

Operation of any electrical equipment in potentially explosive atmospheres can constitute a safety hazard.



WARNING

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 Blackline GPS Products where you are not able to operate your mobile/cellular phone.

Switch Blackline GPS Products off before boarding an aircraft and make sure that it cannot be inadvertently turned on. The operation of wireless appliances, including Blackline GPS Products is forbidden aboard aircraft to prevent interference with communication systems.

Road safety comes first. Do not operate a Blackline GPS Product while you are driving a vehicle. Park your vehicle before operating a Blackline GPS product, or using your mobile phone to interface to the Blackline GPS service.

Electrical equipment may be hazardous if misused. Operation of this Product, or similar Products, must always be supervised by an adult. Do not allow children access to the interior of any electrical Product and do not permit them to handle any cables.

Do Not:

Operate Blackline GPS products outside their specified operating temperature. Consult the specifications section.

Store Blackline GPS products outside their specified storage temperature. Consult the specifications section.

Operate Blackline GPS products outside their specified humidity rating. Consult the specifications section.

Dispose of Blackline GPS products in your household trash. Seek advice from your local electronics recycling authority. Blackline products may contain an internal lithium-ion battery pack.

Getting Started

Service Activation

Your Loner FDU requires a valid Loner Mobile application license operating on a supported smart phone. Contact your company's safety coordinator or Blackline GPS customer care at customercare@blacklinegps.com to obtain a license.

Please see Using the Loner FDU for detailed instructions.

NOTE: *Service activation requires a valid credit card or, a credit account setup with Blackline GPS.*

Overview

The Blackline GPS Loner FDU provides multi-layered safety for you as a mobile worker when it is connected via Bluetooth to a smartphone operating the Loner Mobile software. This guide provides information that you will find helpful to comfortably operate your Loner FDU. The unit contains the following internal components:

- Bluetooth radio
- 350 mAh rechargeable battery
- Tri-axis accelerometers
- Gyroscope
- Vibration motor
- Emergency Latch
- Power Button and Indicator Light
- Indicator Light Array
- Alarm Beeper
- USB interface for charging
- Integrated weather proof and dust proof case

Requirements

The Löner FDU promotes a safe work environment for you when:

- Bluetooth communication has been established with the smartphone running Löner Mobile.
 - The Löner FDU and the smart phone both have sufficient battery capacity to operate.
 - You are wearing the device and carrying the associated smartphone.
- ❖ The Löner Mobile application must be activated in a Löner Portal account. For complete protection Löner Mobile must have a cellular connection and good GPS signal strength.

Contents

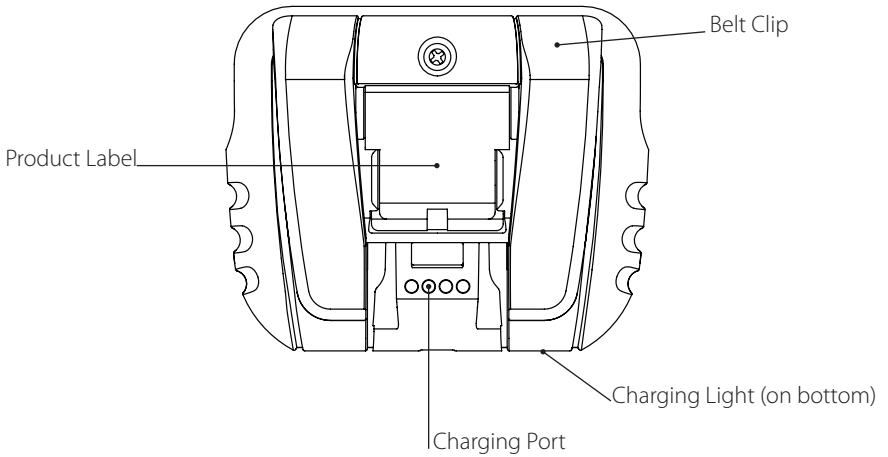
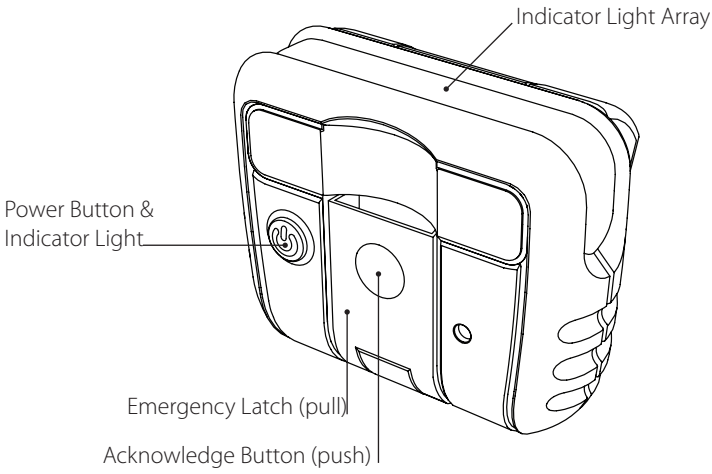
- Löner FDU™
- Micro USB charging clip
- Charging cable
- Wall charger

Using the Loner FDU

Loner FDU Hardware Details


The Loner FDU is rugged and purpose-built for monitoring you as a mobile worker. Physical details are outlined below.

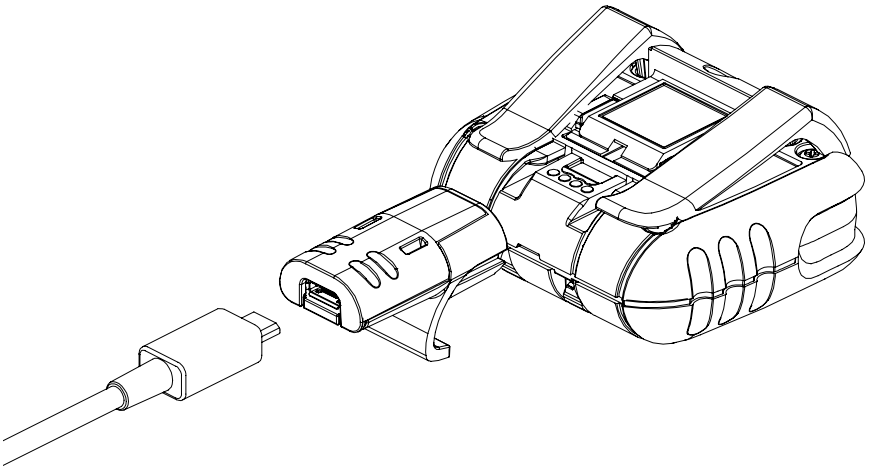
Physical Feature	Use
Charging Port	Charges the Loner FDU.
Power Button & Indicator Light	Powers the Loner FDU and indicates the Bluetooth connection status.
Acknowledge Button	Acknowledges alert messages on the Loner FDU.
Indicator Light Array	Indicates the Loner FDU is in an Alarm state.
Emergency Latch	Sends an emergency alert to monitoring personnel.
Charging Light	Indicates the charging state.
Product Label	Provides device information including serial number.
Belt Clip	Attaches the Loner FDU to a belt.



Charging Loner FDU

Plug the wall charger into an electrical outlet.

1. Insert the Micro USB Cable Plug into the corresponding Micro USB Charging Jack on the charging clip ensuring the USB symbol  on the cable faces the flat side of the charging clip.
 2. Slide the charging clip onto the Loner FDU using the guides to align the clip with the Charging Port on the device.
 3. Completely charge the Loner FDU for two hours.
 4. Remove the charging clip from the Loner FDU.
- ❖ Charging status can be determined by observing the Charging Light. See the section Loner FDU Light Behaviour for more detailed information.



Pairing the Loner FDU with a Smartphone

The first time the Loner FDU powers on, you must pair it with a smartphone running the Loner Mobile application.

1. Press the Power Button to turn the Loner FDU on. The Loner FDU will turn on, the green Indicator Light will blink and the beeper, Indicator Light Array and vibration motor will announce the chirp pattern.
2. Ensure the Bluetooth is enabled on your smart phone.
3. In the Loner Mobile application, from the Menu select Loner FDU Status.
4. In the Loner FDU Status screen, from the Loner FDU menu select Enable Loner FDU Function.

5. In the Loner FDU search screen, select Search to search for available Bluetooth devices. This process may take a few minutes as all Bluetooth devices within range will be displayed.
 6. Select the Loner FDU from the list that corresponds to the Unit ID on the Product Label.
 7. The smart phone and the Loner FDU will establish communications.
 8. Once paired, the Loner FDU green Indicator Light will remain on continuously.
- ❖ If the Loner FDU fails to connect via Bluetooth to the smart phone, the device will enter the no Bluetooth alarm pattern.

Turning the Loner FDU On (previously paired)

If the Loner FDU has been previously paired, follow the steps below for turning on the device:

1. Press the Power Button to turn the Loner FDU on.
 2. The beeper, alarm status light and vibrator will announce the chirp pattern.
 3. The Power Button Indicator Light will blink as the Loner FDU connects to the paired Loner Mobile smartphone.
 4. While the Loner FDU retains a Bluetooth connection, the Power Button Indicator Light will remain on.
- ❖ If the Loner FDU fails to connect via Bluetooth to the smartphone, the device will enter the no Bluetooth alarm pattern.

Turning the Loner FDU Off

If the Loner FDU is no longer required, follow these steps for turning off the device:

1. Press and hold the Power Button for three seconds to power the unit off.
2. The beeper sounds for three long beeps during the time the Power Button is pressed.
3. The vibrator vibrates for three long pulses.
4. At the end of the three seconds the beeper, vibrator and Power Button Indicator Light turn off.

Loner FDU Light Behaviour

The Loner FDU features a Power Button Indicator Light and a Red Charging Light. Please see below for the light behaviour.

Light Behaviour	Power Button Indicator Light	Red Charging Light
Light Flashing	Indicates the Loner FDU is powered and connecting to the smartphone.	Indicates the Loner FDU is charging.
Light On	Indicates that the Loner FDU is powered and connected to the smartphone.	Indicates that the Loner FDU is fully charged.
Light Off	Indicates that the Loner FDU is powered off or the battery is depleted.	Indicates that the Loner FDU is not charging.

- ❖ The Loner FDU is referred to as having no Bluetooth connection when the Power Button Indicator Light is blinking or the device is powered off.
- ❖ The Loner FDU is referred to as having a Bluetooth connection when the Power Button Indicator Light is on continuously.
- ❖ The Red Charging Light functions when the device is connected to a micro USB cable for charging.

Loner FDU Annunciation Patterns

The Loner FDU features audible, tactile and visual indicators for annunciating different types of messages. Please see below for these patterns.

Type	Beeper	Vibration Motor	Indicator Light Array
Low Alarm	Slow alarm Pattern	Single repeating vibrate	Slow flash
High Alarm	Fast alarm pattern	Double repeating vibrate	Fast flash
Low Battery	Single beep once every 5 sec	Single vibrate once every 5 sec	Single flash once every 5 sec
Bluetooth	Slow double beep	Single repeating vibrate	Slow double flash
Chirp	Single beep	Single vibrate	Single flash

Using the Loner FDU

When safety monitoring is required, perform the following steps to ensure you are being protected.

1. Launch the Loner Mobile application on your smart phone.
2. Press the Power Button to turn on the Loner FDU.
3. The Power Button Indicator Light on the Loner FDU will blink while establishing a Bluetooth connection with the smart phone.
4. Wait for the device to establish a Bluetooth connection. The Power Button Indicator Light remains on continuously.
5. Wear the Loner FDU on your belt at your hip at all times that you require remote safety monitoring.
6. Perform your work duties as you normally would. The Loner FDU automates remote monitoring of your safety.
7. When remote monitoring of your safety is no longer required, power down the Loner FDU and close the Loner Mobile application.

About Bluetooth

Bluetooth is a low power communication protocol that requires the Loner FDU and the smart phone to be within close proximity of each other. To ensure constant communication between the Loner FDU and the smartphone, keep both devices with you.

Alerts

Alert messages are configured for Loner Mobile and Loner FDU through the Loner Portal web application. Alerts are displayed in Loner Portal and can be sent via email and SMS to safety monitoring personnel.

Alerts

An alert is a message that communicates a device or system level event such as an Emergency Alert or a Low Battery Alert. Depending on the priority level of the Alert, different action must be taken by safety-monitoring personnel.

Priority Level 1 = Immediate action – mobile worker may need assistance.

Priority Level 2 = No immediate action required, but future action may be necessary.

Priority Level 3 = No action required – informational message

Alert	Details	Priority Level
Emergency Alert	Loner FDU will send an Emergency Alert if the Emergency Latch has been opened, or the silent emergency alarm has been activated.	1
Fall Detected Alert	Loner FDU will send a Fall Detected Alert when the device has detected a fall <i>and</i> you have not canceled the pending message within 30 seconds.	1
No-motion Alert	Loner FDU will send a No-motion Alert when the device does not detect motion for 2 minutes <i>and</i> you have not canceled the pending message within 30 seconds.	1
Missed Check-in Alert	Loner FDU will initiate the pending Missed Check-in Alert if you have not checked in with Loner Mobile. You have 30 seconds to cancel before a Missed Check-in Alert is sent.	1
Low Battery	Loner FDU will send a Low Battery Alert if the internal battery level falls below 10%.	2

- ❖ For No-motion alert, options from 0 – 30 minutes are available. (0 Indicates the feature is disabled.)

Initiating an Emergency Alert (Emergency Latch Use)

If you are in an emergency situation, perform the following:

1. Open the Emergency Latch.
 2. Loner FDU will annunciate the alarm pattern to notify others nearby of the event.
 3. Loner FDU will instantly send an Emergency Message to Loner Mobile.
 4. Loner Mobile will acknowledge the message and instantly send the Emergency Message to monitoring personnel.
 5. Loner Mobile will annunciate the Emergency Alarm pattern based on the LonerMobile_Emergency Ring Tone configuration.
 6. The alarm pattern on the Loner FDU and Loner Mobile will continue until the Emergency Alert has been canceled on the Loner FDU, or in the Loner Mobile application, or the battery is depleted.
- ❖ Another Emergency Alert will not occur until the Emergency Alert has been canceled.

Canceling an Emergency Alert (Emergency Latch Use):

1. Return the Emergency Latch to the closed position.
 2. Press and hold the Acknowledge Button for 3 seconds.
 3. Cancel the alert in Loner Mobile.
- ❖ After three seconds, the alarm pattern will be silenced and the Loner FDU will return to regular operation.
- ❖ If the user cancels an Emergency Alert, this does not clear the alert within the Loner Portal user account. Monitoring personnel are required to address the safety incident.

Initiating a Silent Emergency Alert

If you are in an emergency situation, where you prefer to not alert others in the area (a silent emergency), perform the following:

1. Push and hold the Acknowledge Button for 10 seconds.
2. Loner FDU will vibrate for 5 seconds, pause and then vibrate for 5 more seconds.
3. A Silent Emergency Message will be sent to Loner Mobile.
4. Loner FDU will NOT annunciate the alarm pattern (it will remain silent).

5. Loner Mobile will acknowledge the message and instantly send the Emergency Message to monitoring personnel.
 6. Loner Mobile will NOT annunciate the Emergency Alarm pattern (it will remain silent).
 7. The Silent Alarm can be canceled in Loner Mobile at any time.
- ❖ The Loner FDU will return to normal operation. If the user cancels a Silent Emergency Alert in Loner Mobile, this does not clear the alert within the Loner Portal user account. Monitoring personnel are required to address the safety incident.

About Activity/Motion Monitoring

The Loner FDU is constantly monitoring your motion. If the Loner FDU has not detected motion for two minutes, it will enter the alarm mode and annunciate the low alarm pattern to indicate a pending No-motion alert. If you do not require assistance, you have 30 seconds to cancel the alert.

Canceling a pending No-motion Alert:

1. Press the Acknowledge Button for 1 second.
2. After one second, the alarm pattern will be silenced and the Loner FDU will return to regular operation.

If you have not cancelled the alert within 30 seconds, the No-motion Alert is sent, initiating the alert escalation process. The Loner FDU will annunciate the high alarm pattern until the alert is canceled or the battery is depleted.

Canceling a No-motion Alert:

1. Press and hold the Acknowledge Button for 3 seconds.
2. After three seconds, the alarm pattern will be silenced and the Loner FDU will return to regular operation.

- ❖ If the user cancels a No-motion Alert, this does not clear the alert within the Loner Portal user account. Monitoring personnel are required to address the safety incident.

About Fall Detection

The Loner FDU is constantly monitoring your motion for falls. If the Loner FDU detects a fall, it will enter the alarm mode and annunciate the low alarm pattern to indicate a pending Fall Detected alert. If you do not require assistance, you have 30 seconds to cancel the alert.

Cancelling a pending Fall Detected Alert:

1. Press the Acknowledge Button for 1 second.
2. After one second, the alarm pattern will be silenced and the Loner FDU will return to regular operation.

- ❖ If you have not cancelled the alert within 30 seconds, the Fall Detected Alert is sent, initiating the alert escalation process. The Löner FDU will annunciate the high alarm pattern until the alert is canceled or the battery is depleted.

Cancelling a Fall Detected Alert:

1. Press and hold the Acknowledge Button for 3 seconds.
 2. After three seconds, the alarm pattern will be silenced and the Löner FDU will return to regular operation.
- ❖ If the user cancels a Fall Detection Alert, this does not clear the alert within the Löner Portal user account. Monitoring personnel are required to address the safety incident.

Missed Check-in Alert

The Löner FDU will receive a Missed Check-in Alert if the Löner Mobile application is configured to have you periodically check in. If the Löner FDU receives a Missed Check-in Alert, it will enter the alarm mode and annunciate the low alarm pattern to indicate a pending Missed Check-in Alert. If you do not require assistance, you have 30 seconds to cancel the alert.

Canceling a pending Missed Check-in Alert:

1. Press the Acknowledge Button for 1 second.
2. After one second, the alarm pattern will be silenced and the Löner FDU will return to regular operation.

If you have not cancelled the alert within 30 seconds, the Missed Check-in Alert is sent, initiating the alert escalation process. The Löner FDU will annunciate the high alarm pattern until the alert is cancelled or the battery is depleted.

Cancelling a Missed Check-in Alert

1. Press and hold the Acknowledge Button for 3 seconds.
 2. After three seconds, the alarm pattern will be silenced and the Löner FDU will return to regular operation.
- ❖ If the user cancels a Missed Check-in Alert, this does not clear the alert within the Löner Portal user account. Monitoring personnel are required to address the safety incident.

About Low Battery Detection

The Loner FDU monitors the battery level of the device. If the battery level drops below 10% of battery capacity, a Low Battery Alert will be sent and the Loner FDU will announce the low battery alarm pattern.

The Loner FDU will continue all of the alarms until one of the following occurs:

- The Loner FDU is powered off.
 - The Loner FDU automatically shuts down with a depleted battery.
 - The Loner FDU is plugged in for recharging.
- ❖ The Loner FDU sends a Loner FDU Powered Off by Low Battery message via Bluetooth to the paired smartphone before finally powering off.

Performance Expectations of the Fall Detection System:

The Loner FDU utilizes gyroscope and accelerometers to determine the motion of normal human activity and thus determine when an extreme event, such as a fall, occurs. Accuracy of the system depends on the user wearing the Loner FDU correctly on the belt at the hip.

Specifications

Specifications for Löner FDU

Software Compatibility

Löner Mobile version 3.x for BlackBerry

Size & Weight

Size: 51 mm W x 32 mm H x 62 mm L (2.01" W x 1.26" H x 2.44" L)

Weight: 75 g (2.65 oz)

Safety Features

Fall detection technology: Tri-axis accelerometers, tri-axis gyros, plus software processing

Emergency latch: Release latch to trigger alert

Silent emergency: Press and hold Acknowledge Button to trigger alert

Worker motion monitoring: Configurable time window (1 – 30 min or off)

Worker check-in (optional): Required check-in period (5 – 180 min)

Buttons & Indicator Lights

Power button: Power on/off

Acknowledge button: Check-in/Silent emergency/cancel pending alerts/acknowledge alerts

Emergency latch: Send emergency alert

Red indicator light array plus vibration & buzzer:

Safety alert triggered

Green indicator light: Blinking (powered), continuous (connected)

User Notification

Indicators: Acoustic buzzer, LEDs, and vibration motor

Acoustic buzzer sound pressure level: 90 dB @ 10 cm (90 dB @ 3.94")

Wireless Communication

Bluetooth version 2, Class 2

Alert Messages

Fall detected

Emergency

No-motion

Missed check-in

Low battery

Power off

Power & Battery

Rechargeable Li-ion battery: 350 mAh capacity

Battery life: 12 hours continuous operation

Charging connector: 4-pin sealed connection

Environmental

Storage temperature: -30° C to 75° C (-22° F to 167° F)

Operating temperature: -20° C to 55° C (-4° F to 131° F)

Charging temperature: 0 to 45° C (32 to 113° F)

Ingress protection: Designed to meet IP65

Approvals

FCC Part 15 Subpart J

Device Requirements

Bluetooth communication must be paired to smartphone

Löner Mobile must be installed on smartphone

Löner Mobile must be activated within Löner Portal web app

Warranty

One year limited factory warranty

Löner Portal Web Application

Features include: Alarm banner, event history, device location mapping, device management, alert & notification settings and more.

Loner FDU Care

Considerations Regarding Use and Storage of the Loner FDU

The Loner FDU meets IP65 ingress protection ensuring that under normal operation no dirt or water can enter the device.

Storage temperature range of: -30 to 75°C (-22 to 167°F).

Operating temperature range of: -20 to 55°C (-4 to 131°F).

Charging temperature: 0 to 45° C (32 to 113° F).

❖ More details can be found in the specifications section.

Customer Care

Customer Care for the Loner FDU

Customer Care for the Loner FDU is available between the hours of 8 AM and 5 PM Mountain Time.

North America toll-free: **1-877-869-7212** | International: **+1-403-451-0327**

Email: **support@blacklinegps.com**

www.blacklinetracking.com

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