NEX-G
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NEX-G AUTOMATION LLP

LONE WORKER SAFETY TRACKER

Compact 4G GPS Personal Safety & Fall Detection System

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Installation Configuration Operation Integration Maintenance

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1. Product Overview

The **Nex-G Lone Worker Safety Tracker** is a compact 4G GPS personal safety wearable engineered to protect workers in isolated, remote, or high-risk industrial environments. Featuring dual-constellation GPS/GLONASS positioning, an integrated 3-axis accelerometer for automatic fall detection, and a dedicated panic SOS button, this device enables continuous real-time worker tracking and immediate emergency response dispatch.

Core Deployment Areas:

- Industrial plants, utilities, and high-voltage power infrastructure.
- Oil, gas, mining, and remote exploration fields.
- Construction sites, logistics hubs, and night-shift facility security.
- Healthcare, home services, and lone field-maintenance personnel.

2. Safety Information

> **Important Use Limitation:** While the tracker provides automated fall detection and emergency broadcasting, it must be deployed as part of an integrated organizational lone-worker protocol. Always test cellular and GPS reception before entering remote zones.

- **Sim Card & Network:** Ensure a valid 4G LTE SIM card with data and SMS capabilities is active before device assignment.
- **Wearable Placement:** For accurate fall detection, attach the tracker securely to the worker's belt or PPE vest using the supplied clip.
- **Environmental Rating:** Enclosure options carry IP54/IP65 ingress protection. Ensure charging port covers are securely sealed.

3. Product Features & Specifications

Parameter	Specification Details	Notes
Cellular Connectivity	4G LTE with 2G Fallback	Wide-area cellular coverage for remote operations
Positioning Engine	GPS / GLONASS / AGPS	Dual-constellation real-time location accuracy
Emergency Alert	Dedicated One-Touch SOS Button	Instant manual panic alert broadcast
Motion Sensors	3-Axis Accelerometer	Automatic fall, violent impact & man-down detection
Alert Notification Channels	Dashboard, Email, SMS, Mobile App	Simultaneous multi-channel emergency dispatch
Internal Battery	1000–1500 mAh Li-ion Rechargeable	Optimized for long shift durations
Charging Method	USB-C or Magnetic Connector	Industrial charging interface options
Dimensions & Weight	65 × 45 × 20 mm / < 90 grams	Ultra-compact, non-intrusive wearable form factor
Enclosure Material	Rugged ABS Polymer (IP54 / IP65)	Dust, splash, and high-impact resistance
System Protocols	HTTPS, MQTT, TCP	Enterprise API integration with SCADA, ERP & Fleet
Operating Temperature	−10°C to +60°C	Industrial-grade ambient operating range

4. Emergency Event Flow

How an emergency event moves from the isolated worker to the response team:

01. Worker Wears
Compact device attached to belt clip or PPE harness.

02. Safety Event
Manual SOS press or detected 3-axis fall impact.

03. 4G Transmission
GPS coordinates & telemetry sent over 4G LTE network.

04. Multi-Channel
Dashboard, App, SMS & Email notify supervisors.

5. Alert Modes & Configuration Options

Alert Mode	Trigger & Functionality Description
SOS Emergency Panic Button	Dedicated central button press immediately broadcasts real-time GPS coordinates and worker ID to all configured channels.
Automatic Fall Detection	3-axis accelerometer measures sudden acceleration and impact forces, triggering an automated emergency alert without manual input.
Geofence Boundary Alert	Triggers location-based notifications if a worker enters prohibited hazardous zones or strays outside designated safe work areas.
Inactivity & Man-Down Monitoring	Configurable motionlessness timer alerts control teams if a worker remains completely still past defined safety thresholds.

6. Enterprise Integration & Capabilities

Web-Based Monitoring Panel
Browser dashboard displaying live GPS tracking, active emergency alerts, and historical movement routes.

API & Cloud Integration
HTTPS REST APIs, MQTT messaging, and TCP streaming for direct integration into SCADA, ERP, and Fleet management.

Multi-Zone Management
Group and manage dozens of devices across different facility sectors, campuses, or regional work squads.

Secure Data Pipelines
Enterprise-grade encrypted transmission protocols ensuring complete worker privacy and data security.

7. Frequently Asked Questions (FAQ)

- **What connectivity does the tracker use?** Cellular 4G LTE with automatic 2G fallback for wide-area coverage.
- **Which positioning systems are supported?** GPS, GLONASS, and AGPS for high-precision location tracking.
- **Does it support automatic fall detection?** Yes, the integrated 3-axis accelerometer detects sudden impacts and falls.
- **What are the dimensions and weight?** Compact 65 × 45 × 20 mm form factor weighing under 90 grams.

8. Troubleshooting Guide

Symptom	Possible Cause	Recommended Action
No GPS signal lock on dashboard	Indoor obstruction / cold start	Move to an open outdoor area or near windows to obtain initial GPS constellation lock.
SOS alert fails to send SMS/Email	SIM card balance / weak cellular link	Verify 4G cellular signal bar status and check that the SIM card data/SMS plan is active.
False fall detection triggered	High-impact movement / loose clip	Ensure the tracker is snugly secured to the belt/PPE; adjust sensitivity threshold via Web UI.
Battery depletes rapidly	Frequent GPS reporting interval	Adjust continuous tracking update interval from 10s to 60s in non-critical zones via software settings.

9. Maintenance & Battery Care

- Recharge the 1000–1500 mAh battery using the supplied magnetic/USB-C charger at the end of each work shift.
- Clean the housing and charging terminals with a dry cloth. Keep charging ports free of oil, mud, and dust.
- Regularly inspect the ABS polymer enclosure and IP54/IP65 rubber gaskets for physical wear or cracks.
- Perform weekly manual SOS test runs in coordination with supervisors to confirm active alert response channels.

10. Support and Service Contact

For technical assistance, SIM configuration guides, API keys, or repair queries, contact Nex-G Automation LLP:

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