NAL SHOUT nano Handheld Tracker

Key Features:

- Low-cost tracker and messaging device
- Programmed for either DoD or commercial Iridium gateway
- Ultra-low power consumption
- Automatic location reports (>1200 reports)
- Guarded 911 alert switch
- Waypoint soft key
- Check-in soft key
- Free-text, canned messages, or combined free-text and canned messages
- Data logging (waypoints and tracking reports)
- 256-bit AES encryption
- Real-time, pole-to-pole coverage
- Weighs ~6.5 ounces
- Volume of 4.0" x 2.2" x 0.8"
- Internal rechargeable battery using AC adapter, USB port, or solar charger
- Integrated motion sensor
- USB interface
- 50-channel GPS receiver with -160 dBm sensitivity
- Compatible Airtime Service(s): SBD

General Description

The SHOUT nano is a handheld, global, two-way satellite messaging and personal tracking device. It utilizes Iridium's short burst data (SBD) service to provide location information determined by a GPS receiver, two-way inbound and outbound status, text messaging, and emergency/alert notifications. The SHOUT nano measures 4.0" x 2.2" x 0.8" and weighs ~6.5 ounces.

The SHOUT nano is designed with ultra-low power consumption electronics drawing less than 35 micro-A during sleep. With an internal 1.95 A-Hr rechargeable Li-Ion battery, it can send a position report every hour for up to two months (about 1,200 reports). The SHOUT nano is equipped with a high resolution color LCD and on-screen keyboards supporting transmission of free-text, canned messages and a combination of free-text and canned messages. The menu options are displayed as icons for quick access. The device can periodically wake up from sleep to send its position report to a command center. A 911 button is used for immediate emergency/alert notifications. Data are packaged in either standard or 256-bit AES encrypted format. Data can also be sent in encrypted PECOS formats to include Brevity codes.

The SHOUT nano offers a variety of services including:

- Normal Tracking — programmed to automatically wake up and send a position report at a set interval ranging from continuous to once every seven days.
- Emergency Alert — sends alerts to a designated monitoring center following completion of a 911 activation sequence. The monitoring center and the user can then communicate to define further specifics of the emergency.
- Free-Text Messaging — sends free-text via four different sets of on-screen keyboards.
- Canned Text Messaging — sends canned messages in short codes to save bandwidth instead of the entire message body.
- Waypoint Tracking – sends and/or saves waypoints for later retrieval
- Check-In – allows a quick check-in message to be sent using a single soft key.

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Iridium Antenna → ← **GPS Antenna**

LED:
Displays tracking and emergency statuses.

Switch Guard:
Protects emergency button from accidental activation.

USB Port: Used to charge the battery, update firmware, or set up operating parameters via a computer.

Emergency Button:
Used to send an emergency alert notification.

Check-In Soft Key:
Used to access the Check-In feature.

Directional Arrows:
Used to navigate the cursor. The left arrow can be used to go back to a previous menu.

Waypoint Soft Key:
Used to access the Waypoint features.

Power/Enter button:
Used to turn device ON/OFF when held down for two seconds or used to select highlighted item on the menu.

Specifications

Mechanical

Dimensions :	4.0" L x 2.2" W x 0.8" D (101mm x 56mm x 20mm)
Weight:	~6.5 ounces (184 grams)
I/O Interface:	Mini USB
Cooling:	Convection
Enclosure:	Hard-Anodized Aluminum

Electrical

Input Voltage Range:	2.7VDC to 5.5VDC
Battery:	1.95 A-Hr rechargeable Lithium-Ion
Sleep Mode:	< 35µA between reports
Transmission Mode:	1.12mA-Hr per report

Iridium RF Board

Operating Frequency:	1616 to 1626.5 MHz
Link Margin Downlink:	13 dB average
Link Margin Uplink:	7 dB average
Average Power Transmission:	1.0 W

GPS Receiver

Receiver Type:	1575.42 MHz (L1), 50-channel, C/A code
Accuracy:	2.5 m CEP
Update Rate:	4 Hz
Start-up Times:	< 1 sec hot start, 29 sec warm start, and 29 sec cold start
Sensitivity:	-160 dBm

Environmental

Operating Temperature:	-4ºF to +140ºF (-20ºC to +60ºC)
Operating Humidity:	< 75% RH
MIL-STD:	MIL-STD-810G, MIL-STD-461G, Rapid Decompression and Explosive Atmosphere

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