

NAL SHOUT tsM
(Touch-screen plus M-Code GPS)



Preliminary Product Description

The SHOUT tsM is a handheld, global, two-way satellite messaging and personal tracking device capable of obtaining Position-Location Information (PLI) in the presence of adversary and environmental threats to GPS signals. The SHOUT tsM contains an M-Code GPS receiver, a high-accuracy commercial L1 GNSS receiver, a USB interface, M-Code key fill interface, and several low-power microcontrollers to deliver automated functionality.

The SHOUT tsM is designed to maximize mission life with an internal 6.6 A-Hr rechargeable Li-Ion battery. The SHOUT tsM is equipped with a resistive high resolution color touchscreen supporting transmission of free-text, pre-defined messages, and a combination of the two. 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. Most SHOUT tsM operating parameters can be set via on-screen menus on the device. Additionally, NAL Research's SatTerm PC software is included for users or administrators to set up device operating parameters, geofences, contacts, and pre-defined messages.

Key Features

- **Body-worn Tracker and Messaging Device**
- **Real-time, Pole-to-Pole Coverage**
- **Commercial GNSS & M-Code A-PNT Capability**
- **Compatible with Iridium DoD or Commercial Gateways**
- **256-bit AES Encryption for Secure Messaging**
- **IP67 Rated**
- **Automated Location Reports**
- **Guarded 911 Alert Switch**
- **High Resolution Touchscreen**
- **Free-text & Pre-Defined Messages**
- **USB Interface and Internal Rechargeable Battery**
- **Compatible Airtime Service(s): SBD**

The SHOUT tsM offers a variety of capabilities including:

- **Tracking** — programmed to automatically wake up and send a position report at an interval ranging from once a minute to once a day.
- **Emergency Alert** — send alerts to a designated monitoring center using the 911 button. The monitoring center and the user can then communicate to define further specifics of the emergency.
- **Free-Text Messaging** — send free-text via four different sets of on-screen keyboards.
- **Canned Text Messaging** — sends pre-defined messages in short codes for quick response or to save bandwidth.
- **Waypoint Tracking** — send and/or save waypoints for later retrieval.
- **Check-In** — send a quick check-in message using a single soft key.



Preliminary Specifications (Subject to Change)

Mechanical

Dimensions:	4.76" L x 2.90" W x 1.20" D (122mm x 74 mm x 31 mm)
Weight:	16 oz (453 grams)
I/O Interface:	USB C
Cooling:	Convection
Enclosure:	Hard-Anodized Aluminum (EMI shielded)

Electrical

Input Voltage Range:	2.7VDC to 5.5VDC
Battery:	6.6A-Hr rechargeable Lithium Ion

Iridium Transceiver

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

GNSS Commercial GPS Receiver

Receiver Type:	1575.42 MHz (L1), 72 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

M-Code Receiver

Receiver Type:	Type II L1/L2 MPE-M with C/A, P(Y), and M Code / EKMS-308 compliant key fill
Accuracy:	< 5m CEP

Environmental

Operating Temperature:	-4°F to +140°F (-20°C to +60°C)
Operating Humidity:	< 75% RH
Environmental Resistance:	IP67 Rated