



# **D410/D410A**

IRIDIUM DATA TERMINAL

## **Getting Started Guide**

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Revision B

## Preface

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# INTRODUCTION

## Application

This guide is applicable to the following components:

<b>Part Number</b>	<b>Component Description</b>
D410	D410 Tracker
D410 Battery Charger	D410 Power Supply - Battery Charger
<b>Notes</b>	

## Overview

The information contained in this manual describes the features, functions, technical characteristics, components, and setup procedures for Blue Sky Network's D410 and D410A IRIDIUM DATA TERMINAL.

# SYSTEM DESCRIPTION & OPERATION

## D410/D410A General Description

Model D410/D410A is an all-in-one Iridium transponder with internal Lithium Ion (Li-ion) rechargeable batteries and an Iridium-GPS antenna. Designed for convenience and flexibility, the device can be configured over the network via the SkyRouter asset tracking Web-portal.

## IRIDIUM Network

The Iridium Satellite System is the only provider of truly global, mobile satellite voice and data solutions with complete coverage of the Earth including oceans, airways and polar regions. Through a constellation of 66 low-earth orbiting (LEO) satellites, Iridium delivers essential communications services to and from remote areas where terrestrial communications are not available. The service is perfectly suited for the transportation industry as well as industrial applications such as heavy construction, defense/military, emergency services, maritime, mining, forestry, oil and gas.

## GPS Satellite Navigation System

**The Global Positioning System (GPS)** is a worldwide radio-navigation system formed from a constellation of satellites and their ground stations.

GPS uses these "man-made stars" as reference points to calculate positions accurate to a few meters.

GPS satellite signals are processed in a GPS receiver, enabling the receiver to compute position, velocity and time. GPS receivers have been miniaturized to just a few integrated circuits, and are becoming very economical, which makes the technology accessible to virtually everyone.

While there are thousands of civil users of the GPS system world-wide, the system was designed for the U. S. military. GPS is funded and operated by the U. S. Department of Defense (DOD).

## SkyRouter Web-portal

All data services are managed by the customer through our web-based SkyRouter portal. SkyRouter offers global asset tracking, account management features, such as user authorization, asset settings, messaging and billing information. For more information on SkyRouter please visit: <http://www.blueskynetwork.com/Products/SkyRouter.php>

# D410/410A OVERVIEW

## Specifications

### MECHANICAL

Dimensions:	4.86" L x 2.94" W x 1.47" D
Weight:	1 pound
Enclosure:	Anodized aluminum housing and hard plastic top
Internal Batteries:	Two 920 mA-Hr Lilon cells
Internal Antennas:	Active GPS and passive Iridium
Interface Connector:	Hirose HR30-7R-12P (12-Pin Hirose Circular Connector)
ON/OFF Switch:	Button switch
Emergency LED:	Red Status LEDs: Red and Green LEDs (Power, GPS, Iridium, SBD status and Spare)
Avg. Current (Report):	~90mA
Input Power:	Lilon AC Charger (NAL Research P/N: SYN-FR-LiAH or SYN-RS-LiAH)
Operating Temp:	-31°F to +158°F
Operating Humidity:	< 75%

# HOW TO USE MODEL D410/D410A TRACKER

**STEP 1:** Before configuring the D410/D410A, its internal batteries must be fully charged. Follow the steps below to charge the internal batteries of the D410/D410A. **CAUTION:** Only use supplied Lilon chargers to charge the D410/D410A.

- Make sure the Power button switch of the D410/D410A is in the OFF position. The Power button switch must be pushed out and the red “P” LED does not light up.



- Plug the Hirose connector on the battery charger into the Hirose connector on the D410/D410A. Then apply AC power to the battery charger.



- The status LED light on the battery charger should illuminate to indicate the status of the internal battery:
  - Red: Charging
  - Green Solid: Fully Charged
  - Red Flashing: Error (RETURN BATTERY AND CHARGER FOR REPAIR)

The D410/D410A can begin tracking by:

- Push the Power button switch in once.
- The D410/D410A enters "Normal" tracking mode by default. The D410/D410A enters "Emergency" tracking mode when the Tracking button switch is pressed in. The red "Emergency" LED next to the Tracking button switch should light up when the D410/D410A is in the "Emergency" tracking mode.



Push the Emergency button switch in for "Emergency" and out for "Normal"

Push the Power button switch in to start tracking

"Emergency" mode starts continuous reporting, while "Normal" mode makes the device report at its scheduled interval.

# OPERATIONAL STATUS LEDS OF THE D410/D410A TRACKER

The D410/D410A has five status LEDs depicted as P for power indicator, G for GPS satellite availability, I for Iridium satellite signal strength, S for SBD transmission status and X for spare LED. They offer users a quick visual check to ensure proper tracker operations as well as a way to optimize antenna locations during field installation. These LEDs provide the following information during “Normal tracking mode:

- P (red LED): Bright = device is on and running; Dim = device battery is low
- G (green LED): LED stays solid when there is a valid GPS position fix, blinks when there is only 2D fix, and stays off when unable to obtain a position fix.
- I (green LED): LED stays solid when the Iridium signal strength is between 3–5 bars, blinks when the Iridium signal strength is between 1–2 bars, and stays off when the Iridium signal strength is at 0 bars.
- S (green LED): when first entering Tracking Mode, LED will not light up. LED stays solid if the last SBD transmission had a valid GPS fix and successfully received by the gateway, blinks if the last SBD transmission was unsuccessfully sent or did not have a valid GPS fix but one was sent since the unit was turned on, and stays off if no SBD transmission with a valid GPS fix was sent to the gateway.
- X (red LED): This LED is reserved for future use.

# ACTIVATION INSTRUCTIONS

The D410/D410A must be activated by Blue Sky Network before it is operational. To activate the device, please visit our website at <http://www.blueskynetwork.com/Support/ActivationForm.php> and complete the activation form. Please have the serial number(s) of your device(s) on hand. If you have more than one device to be activated, you may enter additional device serial numbers into the form by clicking on "Additional Data Activation" above the "Submit" button. Please be advised that the monthly service plan will go into effect the day of activation.

# TECHNICAL SUPPORT INFORMATION

For technical support, please contact us at: Phone: 858-551-3894 Ext. 200 or e-mail:  
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