D1000 SATCOM Terminal

User Guide

Email: support@blueskynetwork.com

Website: www.blueskynetwork.com

Blue Sky Network, LLC
5353 Mission Center Rd, Suite 222
San Diego, CA 92108

D1000 SATCOM Terminal

User Guide

Version 2.2

Part Number: 100160

PAGE INTENTIONALLY LEFT BLANK

NOTICE

This guide is published and copyrighted by Blue Sky Network (BSN). All information and specifications in this document are subject to change without notice. Nothing in this document is intended to create additional or separate warranties or guarantees.

Blue Sky Network, 5353 Mission Center Rd. #222, San Diego, CA 92108

Phone: +1 858-551-3894 | Fax: +1 858-225-0794

Email: support@blueskynetwork.com | Website: www.blueskynetwork.com

© 2021 Blue Sky Network, All Rights Reserved

TABLE OF CONTENTS

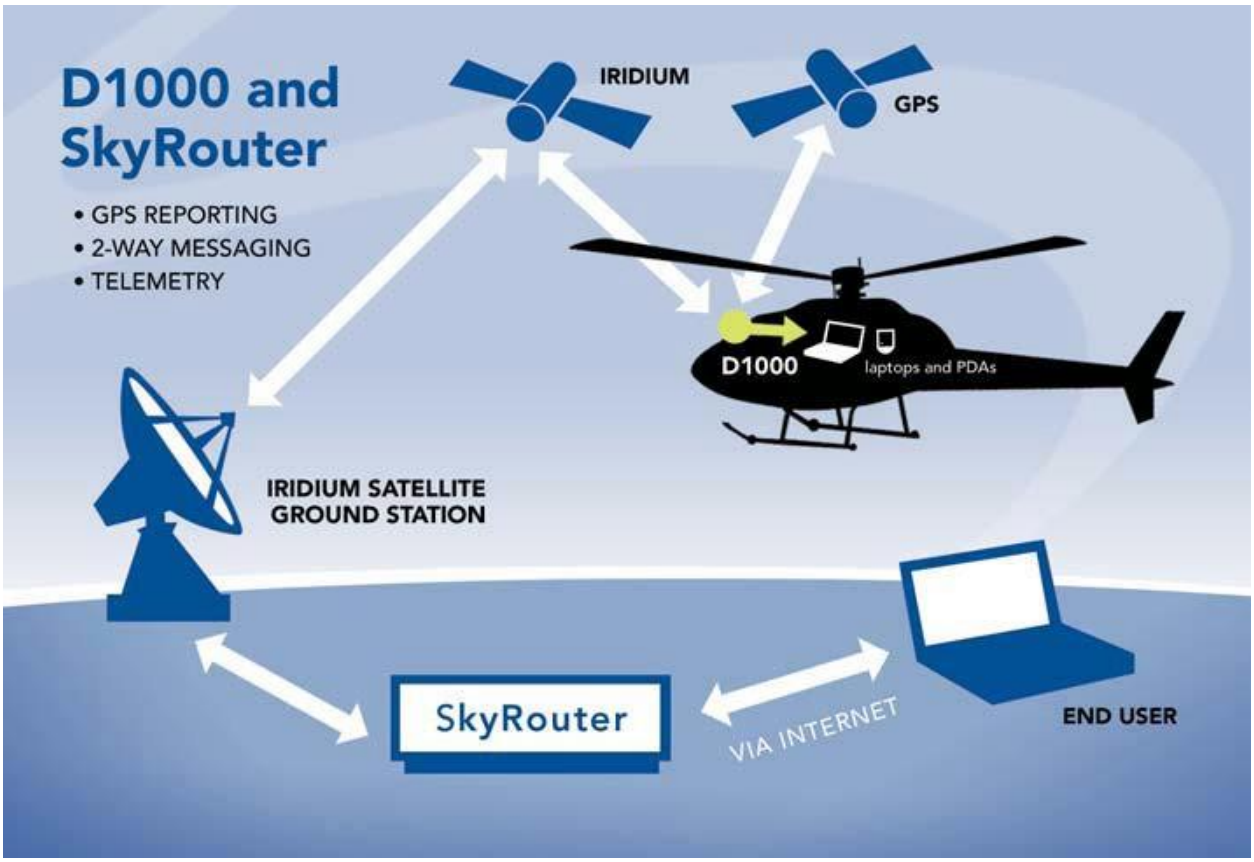
ABOUT THIS USER GUIDE

Thank you for purchasing the D1000 SATCOM Terminal by Blue Sky Network! This User Guide was designed to be easy to read and follow. It details the terminal's physical attributes and how to use its features. Information regarding SkyRouter can be found in the SkyRouter User Guides.

Please continue to read on or choose a starting point from the list below:

SYSTEM OVERVIEW

The Blue Sky Network D1000 terminal and the SkyRouter network provide position reporting and global flight tracking, 2-way messaging, and telemetry reporting.



NOTE: This image is for illustration only. SkyRouter works equally well with fixed wing aircrafts.

About the Terminal

D1000 terminals operate as either portable or fixed installed units. After the terminal has been connected with power and antenna signal (see the D1000 Installation Manual), the unit is ready for operation.

About SkyRouter

The SkyRouter network allows users to communicate with and operate D1000 terminals worldwide. It provides account management features, D1000 unit configurations, email, and web-based flight following. It also supports a web service interface for data extraction to third-party software. Please contact Blue Sky Network for more information.

Compatibility and System Requirements

To access a D1000 SATCOM terminal and the webpages that it hosts, you will need:

1) a PC, laptop, or PDA (e.g., an HP iPAQ) with an Ethernet interface
2) a web browser (e.g., Google Chrome, Mozilla Firefox) that supports HTML 5

PHYSICAL ATTRIBUTES

The D1000 unit has a front panel for user interaction; a back panel for attaching power, antenna, and serial connections; and a maintenance port for firmware updates. Users interact with the unit's features via webpages hosted on the unit. These can be accessed via the Ethernet port on the front panel.

Front Panel

POWER SWITCH

To turn the unit on or off, pull the power switch out and move it into the On/Off position.

LED INDICATORS

The front panel contains the following LEDS:

1) **Message (MSG)** – Displays message information. **NOTE**: Messages on the unit are not stored after power off.
2) **Iridium** – Indicates signal levels from 0-5 bars, similar to that of most mobile phones.
3) **GPS** – Shows GPS signal level.
4) **Power (PWR/Battery)** – Displays power information.

The following charts describe the different LEDs, their colors, and the meaning behind each color.

Message (MSG) LED

Color	Meaning
Blue Steady	There is a message in the unit's inbox. This indicator will show when ANY message in the inbox is read
Blue Blink	The D1000 unit is not able to connect to the Iridium modem (L-Band Transceiver). Please contact Blue Sky Network support if this error occurs

Iridium LED

Color	Meaning
None	The indicator will be off (i.e., not lit) when Iridium signal is unavailable
Amber	A weak signal is available from the Iridium network
Yellow	Good signal strength is available
Green	Excellent signal strength is available
Blinking	The unit is attempting to transmit or receive via the Iridium satellite network

GPS LED

Color	Meaning
None	The indicator will be off (i.e., not lit) when GPS signal is not available
Amber	A weak signal is available from the GPS satellites
Yellow	Good signal is available
Green	Excellent signal is available

PWR/Battery LED

Color	Meaning
Green	The unit is being powered by an outside power source (e.g., outside battery, generator, wall power, etc.)
Yellow	The unit is being powered by its internal rechargeable emergency battery

ETHERNET PORT

Software on the D1000 unit is accessed here, and a standard Ethernet cable is required. There are 2 LED indicators:

1) **LNK** – Indicates that a connection between the unit's Ethernet port and an attached device has been made.

2) **ACT** – Shows that there is data transmit activity over the Ethernet connection.

QUICK POSITION BUTTON

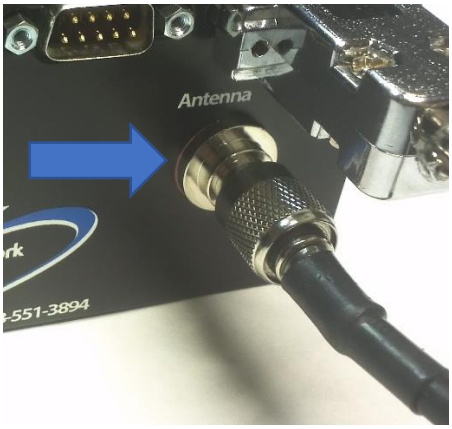
This On/Off button activates the unit's Quick Position GPS reporting capabilities. This is a standard GPS report with a flag that indicates the button was pressed. Once activated, the LED will show steady blue.

To turn off this feature, press the button again. The blue LED will shut off.

Back Panel

ANTENNA

The Blue Sky Network-provided antenna will receive GPS signals as well as transmit/receive Iridium signals through the same channel. Its connector attaches to the Iridium and GPS-tuned antenna.

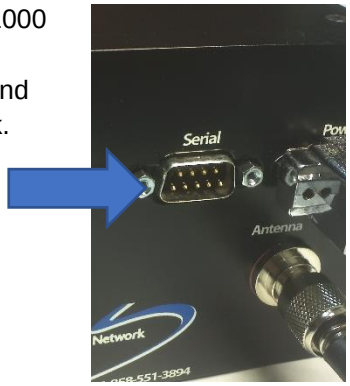


POWER PORT

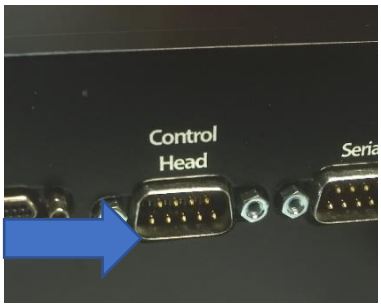
Plug the power cable into the port/power source. Please see the power wiring diagram for supplying power to the unit.

SERIAL 1 PORT

This port is for connecting data loggers to the D1000 unit so that data can be read and transmitted to SkyRouter. Sensor data is accessed on the ground through a web service on the SkyRouter network.



CONTROL HEAD / SERIAL 2 PORT

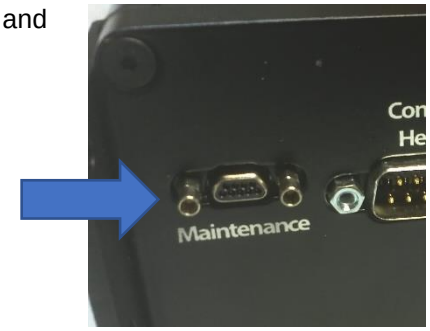


For D1000A units (i.e., serial numbers ending in “A”), this port is used to connect the ACH1000 Advanced Control Head that enables intercom-integrated global voice communication, configurable speed dialing & short code messaging, email message reading via an LCD display, and sending flight plans.

Please contact Blue Sky Network or visit us online at www.blueskynetwork.com for more information.

MAINTENANCE PORT

This port is used for firmware upgrades and general box maintenance.



EMBEDDED SOFTWARE

The D1000 system is capable of GPS position reporting, sending/receiving text messages, and telemetry data transmission. The user can use HTML webpages for:

- Access to the Flight Center and to 2-way email messaging functionality
- Checking the unit's status
- Changing unit parameters (password protected)

Accessing the Webpages

Upon attaching the external device to the D1000, the unit will make a best-effort attempt to reach the webpages. You can perform the steps in the following order below to access the pages:

1) Attach the Ethernet cable. Open the web browser and wait for it to resolve its home page to the D1000's default page, the Flight Center. If this does not work, try step 2.
2) If the web browser does not resolve to the default page, try entering "D1000" in the address bar. Move on to step 3 if this does not work.
3) Enter the D1000's IP address: **http://192.168.1.120** in the web browser's address bar.

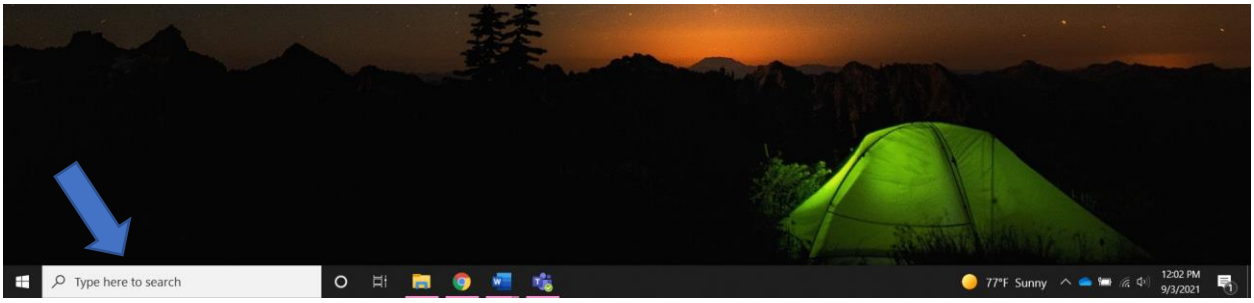
If the web browser still does not resolve to the Flight Center webpage, the access device's IP configuration may need to be renewed.

RENEWING THE IP CONFIGURATION

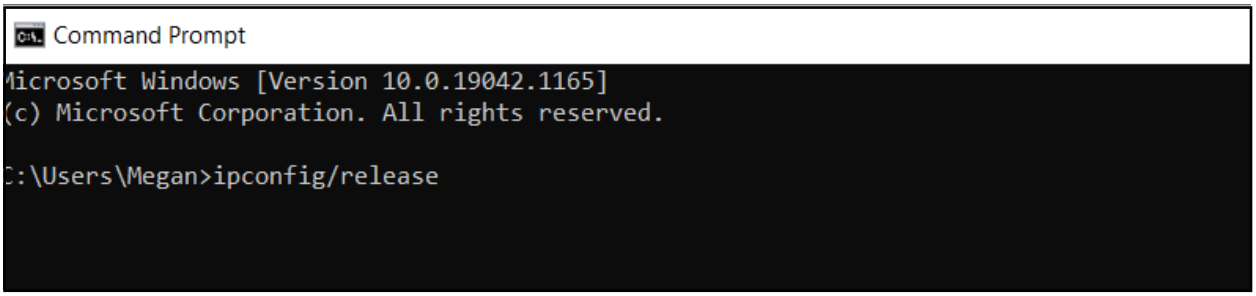
To renew the IP configuration of an access device, first open a command line window by doing the following based on your current Windows operating system. For other operating systems, please consult that system's documentation. For PDAs, please attempt a soft reset to renew the IP configuration.

Windows 10

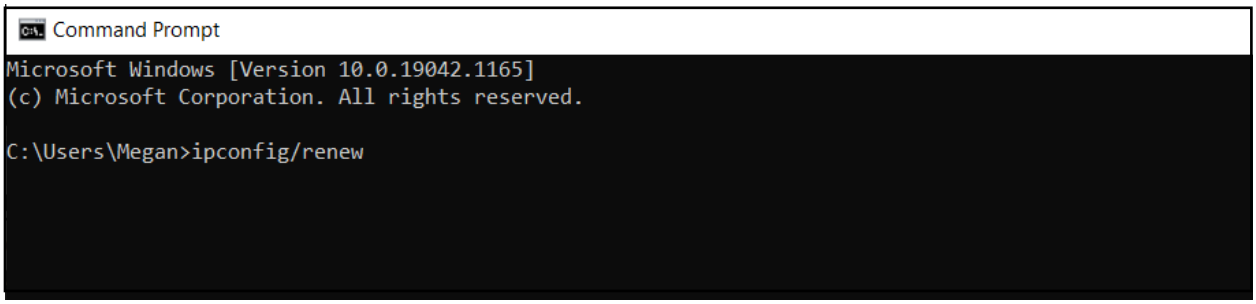
1) Type "cmd" into the search bar. Click 'Open' when the Command Prompt app appears.



2) In the Command Prompt, type "ipconfig/release" and then press the Enter button on your keyboard.



3) Type “ipconfig/renew,” then press the Enter button on your keyboard.



Windows 8 or 8.1

1) Press the Windows key on your keyboard, then type “command prompt.” A search box on the right side of the screen will appear. Click Command Prompt.
2) In the Command Prompt, type “ipconfig /release” and press Enter. **Note**: Remember to include a space between “ipconfig” and “/.”
3) Type “ipconfig /renew,” then press Enter. **Note**: Remember to include a space between “ipconfig” and “/.”

Windows 7, Vista, or XP

1) Click the Windows Start button, type “cmd” in the Search bar and click the cmd result under Programs. In XP, open the Start menu, navigate to *All Programs > Accessories* and choose Command prompt.
2) In the Command Prompt, type “ipconfig/release” and press Enter.
3) Type “ipconfig/renew,” then press Enter.

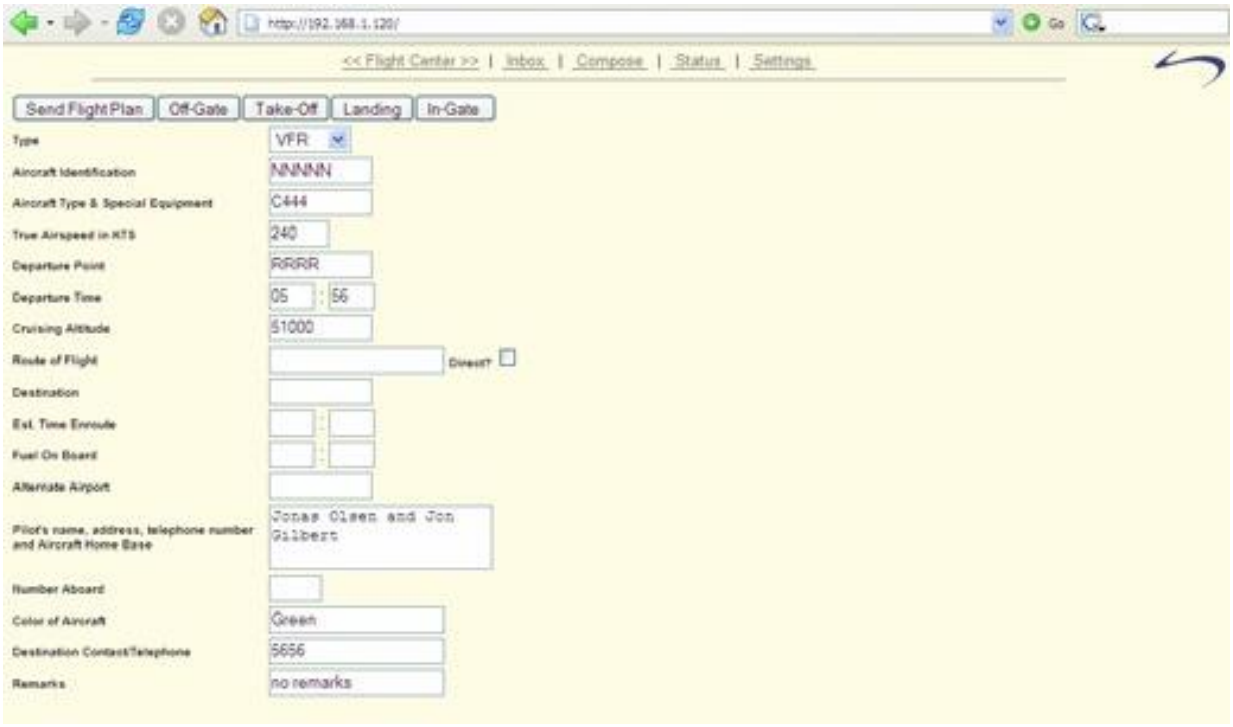
Webpages

FLIGHT CENTER

Here you can send 4 special types of GPS reports. After selecting the desired message, the D1000 unit will immediately attempt to send the report. If the message is successfully sent over the Iridium network, you will be returned to the Flight Plan page. If unsuccessful, you will see an error message.

1) **Off-Gate**: Reports that the aircraft has left the gate.
2) **Take-Off**: Send a special GPS report indicating aircraft take off.
3) **Landing**: Reports landing.
4) **In-Gate**: Indicates that the aircraft has arrived at the gate.

You are also able to fill out a complete FAA flight plan that can be sent to SkyRouter for dispatchers.

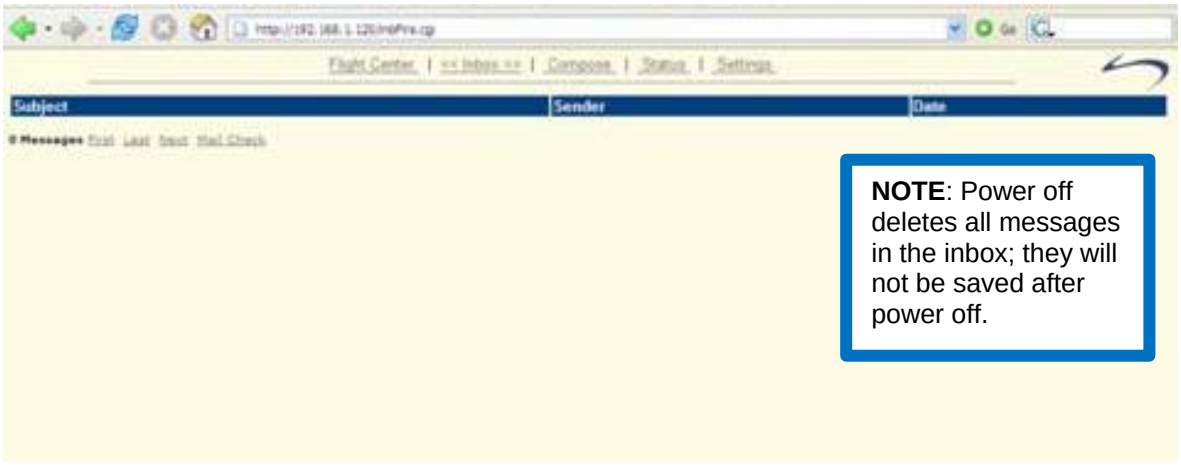


Please note that there is very limited input validation for these fields. All time fields should be filled out in this format: HH:MM with leading 0 (zero) for hours 0 through 9. This form will save some fields, such as Aircraft Identification, in flash memory.

Log in to your SkyRouter account to view the flight plans filed for each aircraft in your fleet.

INBOX

The Inbox screen displays information about the text messages currently stored in the D1000. Click on the Subject, Sender, and Date fields to see a message. The size is in 30-byte units. You can also view message subsets such as “next,” “first,” and “last,” by choosing the corresponding hyperlinked text.



Your Message Screen

Each text message line contains a hyperlink to the Your Message screen where the complete content is displayed, including the sender, subject, date, and time. You can delete and reply to messages here. Upon reading any text message, including previously read messages, the MSG LED will turn off.

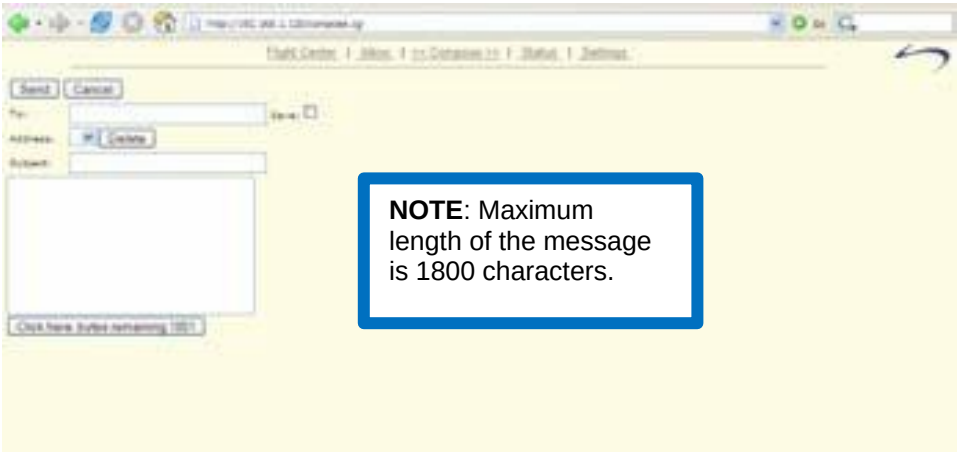
COMPOSE

Create text messages on this screen by completing 4 fields: To, Address, Subject, and message body.

If sending a message to a user on the Blue Sky Network website, type userID@skyrouter.com in the To field (future versions of the firmware will feature an address book). Example: user1@skyrouter.com.

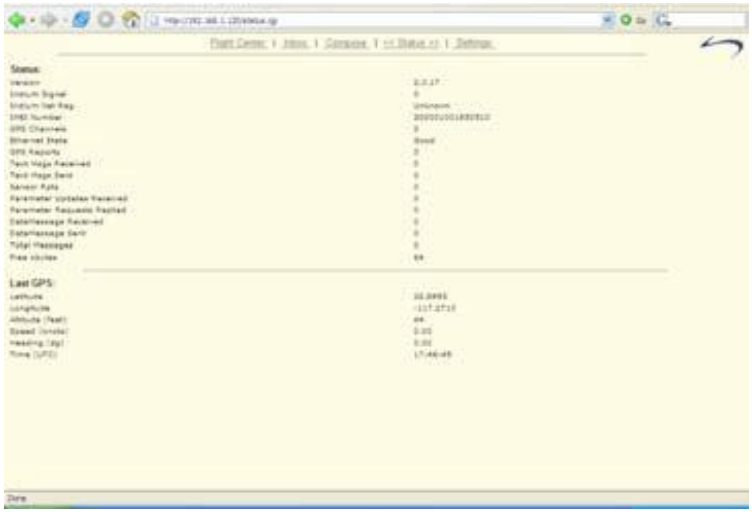
When sending a message to any other email address, simply enter the address in the To field.

Tick the ‘Save’ checkbox before you send a message to save an email address in the internal address book. You can save up to 10 email addresses, and they will remain stored even after power off.



STATUS

This screen provides information about the unit's current status.

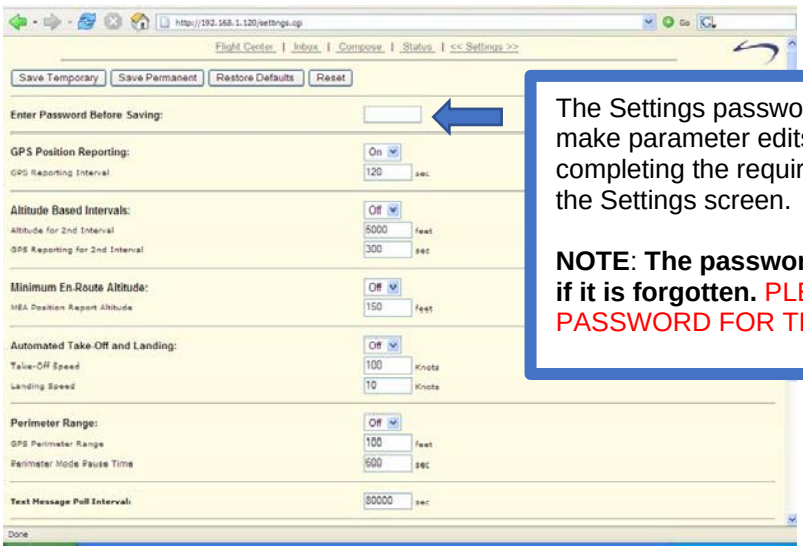


Explanation of Fields

Field	Meaning
Version	The D1000 firmware's current version
Iridium Signal	Iridium signal strength
Iridium Net Reg	The modem's indicated registration on the Iridium satellite network
IMEI Number	The Iridium modem's identification number
GPS Channels	Indicates GPS satellites in range
Ethernet State	Returns either "Good" or "Bad"
GPS Reports	The number of GPS reports since power cycle
Text Msgs Received	The number of text messages received since power cycle
Text Msgs Sent	The number of text messages sent since power cycle
Sensor Rpts	The number of sensor reports sent since power cycle
Parameter Updates Received	The number of parameter updates received
Parameter Requests Replied	Number of parameter requests replied to
DataMessages Received	The number of DataMessages (API) received
DataMessages Sent	The number of DataMessages (API) sent
Total Messages	The total number of messages sent since power cycle
Free Kbytes	Available memory for messages
Last GPS	Indicates latest GPS report parameters

SETTINGS

The Settings screen displays various D1000 parameters. A user may change these parameters, then enter the correct password and choose a save option.



The Settings password is required in order to make parameter edits on the unit. Change it by completing the required fields on the bottom of the Settings screen.

NOTE: **The password is unable to be reset if it is forgotten.** PLEASE REMEMBER THE PASSWORD FOR THE UNIT(S).

Explanation of Parameters

Parameter	Meaning
GPS Position Report	Turn GPS position reporting On/Off
Interval	Set regular GPS reporting interval
Message Polling	Ensures that other messages get to the unit (**NOTE**: This feature is important if GPS reporting is turned OFF
Interval (sec)	Interval for text message checking
Quick Position	Quick Position is always ON
Interval (sec)	Reporting interval when Quick Position is activated
Count	Number of Quick Position messages to be sent
Altitude Based	Turn Altitude-based reporting On/Off
Trigger Altitude (ft)	Determine the altitude above which a different GPS reporting interval should be in effect
Interval (sec)	GPS reporting interval above trigger altitude
Min. En-Router Altitude	Turn MEA alert On/Off
Altitude	At this set altitude, the unit will send a special-type GPS report to SkyRouter to identify that the aircraft has broken through the MEA
Auto. Take-Off/Landing	Turn automatic take-off and landing On/Off
Take-Off Speed (knots)	When accelerating through this speed, the unit will send a Take-Off message

Landing Speed (knots)	When decelerating through this speed, the unit will send a Landing message
Perimeter Range	Turn perimeter range GPS reporting On/Off
Range (ft)	Determine the range within which the unit will start reporting at the perimeter range interval. The unit will check every “regular GPS reporting interval” to determine whether the unit has moved more than the perimeter range distance from the previous measurement. If it has not, the perimeter range interval will be in effect
Interval (sec)	Perimeter range interval
Serial Ports 1/2	Turn serial ports ON/OFF

After changing unit settings, enter the password (the default is **1111**) and then select either the ‘Save Settings’ or the ‘Save to Flash’ buttons.

‘Save Temporary’ will save the settings until the next power cycle. ‘Save Permanent’ will save the settings to Flash memory to keep them after a power cycle. Click ‘Restore Defaults’ to reset the settings to factory defaults. Selecting ‘Reset’ will reset all input fields.

SkyRouter API

Blue Sky Network has developed a packet data API for third-party developers, enabling them to develop messaging applications on top of the SkyRouter platform. Applications, such as Windows XP or Linux, can be developed for sending and receiving messages through the D1000 Ethernet interface. On the ground, SkyRouter provides an interface for sending and retrieving messages.

Please contact Blue Sky Network for more information.

SUPPORT

Blue Sky Network is committed to providing the highest level of service and support. If you have any questions or concerns, please feel free to contact us by email or phone; contact information is available at the bottom of this page. For self-help, please visit https://blueskynetwork.com/support.

Thank you for choosing Blue Sky Network!

Blue Sky Network, 5353 Mission Center Rd, Suite 222, San Diego, CA 92108

Phone: +1 858-551-3894

Email: support@blueskynetwork.com | Website: www.blueskynetwork.com