



Blue Sky Network



SKYLINK CITADEL USER GUIDE

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SkyLink Citadel

User Guide

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ABOUT THIS USER GUIDE

Thank you for purchasing the SkyLink Citadel! This easy-to-read user guide is organized based on the steps needed to log in to and navigate the SkyLink Device Interface for singular device use. To manage a fleet of devices, please see the SkyLink Cloud Services User Guide.

We sincerely hope that SkyLink enhances your ability to monitor and configure your assets anywhere in the world. Please continue to read on or choose a starting point from the list below:

- [Changing your SkyLink device's name](#)
- [Managing your device's Firewall Profiles](#)
- [Updating SkyLink firmware](#)
- [Using your SkyLink device: making calls, connecting to the internet, and more](#)
- [Troubleshooting](#)

ABOUT SKYLINK

Introduction to SkyLink

SkyLink by Blue Sky Network is the inaugural Iridium Certus 100 mid-band solution for land mobile, aviation, IoT, and maritime markets. This small-form, multi-stack hardware is designed for any fixed-mount, portable, or mobile application and offers a range of service configurations.

Key features include:

- Remote device management
- Sensor/engine diagnostics
- Network services (VPN, IP, MQTT)
- IP65 Certified
- Health monitoring
- Data analytics/edge computing
- SkyRouter integration
- FCC Part 15 & 25 Certified

Compatibility and System Requirements

To access the SkyLink Device Interface, you will need 1) an internet connection and 2) a recent version of a web browser that supports HTML5.

The SkyLink Device Interface has been tested with the following recommended browsers:

- Google Chrome (Mac/Windows)
- Mozilla Firefox (Mac/Windows)
- Safari (Mac)
- Microsoft Edge (Windows)

GETTING STARTED

NOTE: SkyLink WiFi must be turned off when the device is installed in the SkyLink Citadel ADU. A remote WiFi module can be added in the Citadel saferoom from the junction box by connecting the Ethernet to a 4 or 5 port Ethernet switch. This enables multiple devices (e.g., remote WiFi module, laptop) to be connected.

Please contact Blue Sky Network support regarding power requirements or adding third-party ethernet switches and WiFi modules.

Connecting to the Network through Ethernet

If using an ethernet cable with your SkyLink device, plug it into the appropriate peripheral (e.g., a laptop) and your device will automatically be configured via DHCP. **NOTE:** When using the maximum cable length of 300', it is required to slow down the ethernet to 10 Mbps, full duplex.

A Note to Mobile Users

We recommend the following configurations to help optimize mobile device usage with SkyLink.

Note: For quicker network troubleshooting, ensure VPNs are disabled when using SkyLink in any of the default firewall modes (see the [Connection Manager](#) screen for more information on firewalls).

APPLE/IOS

Navigate to *Settings > Wi-Fi > SkyLink Wi-Fi network* > click the circular *information icon*. From here, you can make these changes:

Low Data Mode > On

- This saves cellular and WiFi usage and disables some of the background app updates.

Private Wi-Fi Address > Off

- This prevents the iOS device from becoming a “new device” every 24 hours and allows SkyLink to map data usage back to individual devices. You can disable this feature on your own networks when you want to track individual devices.

Limit Address Tracking > Off

- This may help prevent problems using the mail feature.

Settings > Top banner with your account name (i.e., Apple ID) > iCloud > Private Relay

- If needed, this configuration will disable the Private Relay feature.

ANDROID

Navigate to *Settings > Connections > SkyLink Wi-Fi network* > press the *gear icon*. From here, you can make these changes (you may need to click the “View more” drop-down arrow):

Metered > On

- This saves cellular and WiFi usage and disables some of the background app updates.

Privacy > Device MAC address

- This turns off private MAC addresses, allowing SkyLink to map data usage to devices.

SKYLINK DEVICE INTERFACE

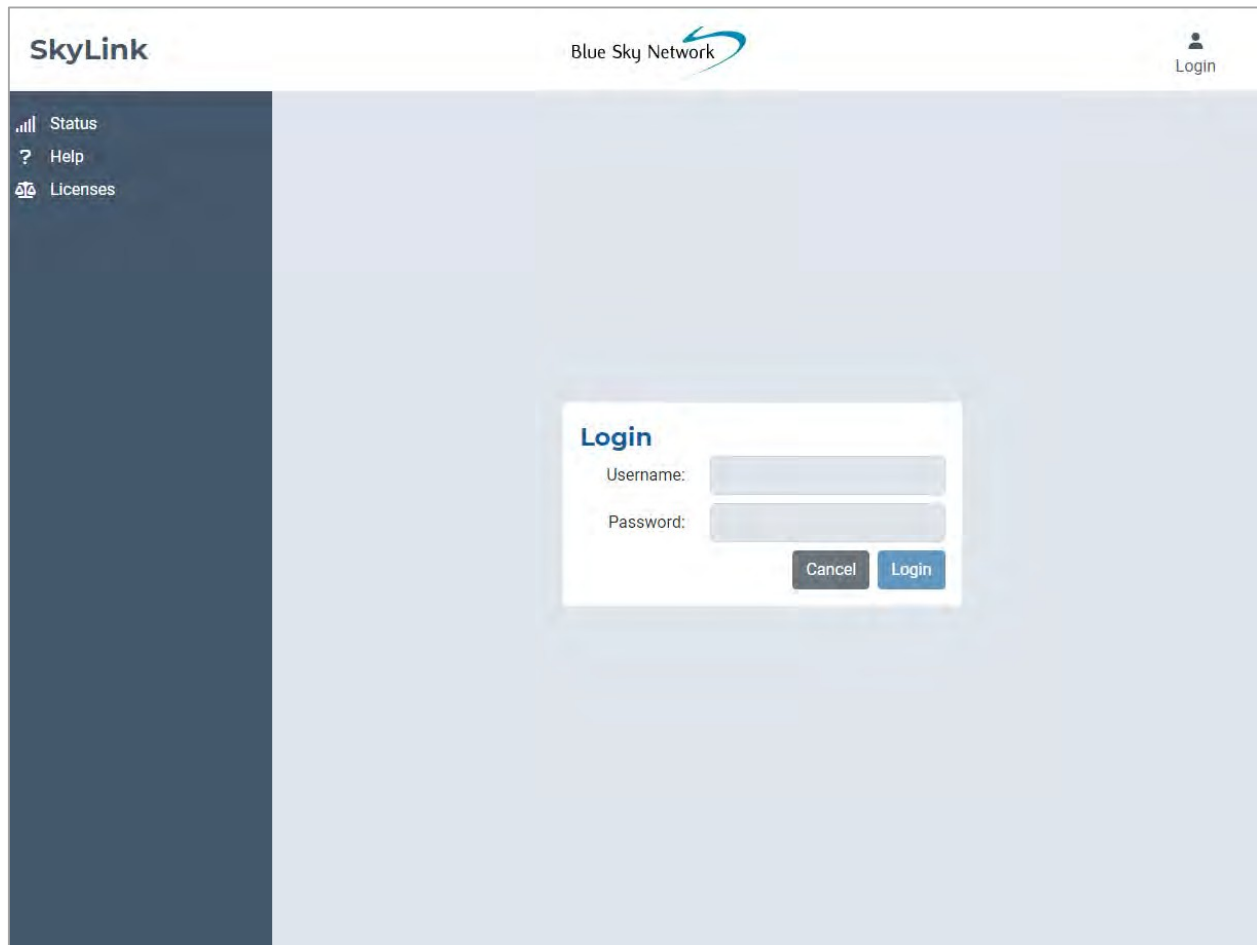
To connect to the SkyLink Device Interface, open a web browser, type the below IP address into the address bar, then press 'Enter' on your keyboard.

SkyLink IP address: 192.168.111.1

You will then be directed to the SkyLink Device Interface login screen. If this is your first time logging in, use the default information below to view, configure, and manage your device settings.

The default username and password are both 'admin.'

Click the 'Logout' button located on the top right-hand corner when you are ready to exit.



The screenshot displays the SkyLink Device Interface login screen. The interface features a dark blue sidebar on the left with the 'SkyLink' logo at the top. Below the logo, there are three menu items: 'Status' (with a signal icon), 'Help' (with a question mark icon), and 'Licenses' (with a document icon). The main content area is light blue and contains a central white login box. The login box has the title 'Login' in blue. It includes two input fields: 'Username:' and 'Password:'. Below these fields are two buttons: a grey 'Cancel' button and a blue 'Login' button. In the top right corner of the interface, there is a 'Login' button with a user icon next to it.

Overview

The tabs on the left-hand side of each screen allow you to easily find important device information and make configurations. In order, they are:

- [Status](#)

Configuration:

- [General Settings](#)
- [Connection Manager](#)
- [Network](#)
- [Firewall](#)
- [Remote Management](#)
- [Serial to IP](#)
- [SNMP](#)
- [Voice Extensions](#)
- [Accessories](#)

Data & Tools:

- [Calls](#)
- [Diagnostics](#)
- [System Log](#)
- [Advanced](#)

Other:

- [Help](#)
- [Licenses](#)

The following sections describe each screen's information and configuration options.

Status

After logging into the SkyLink Device Interface, you will automatically be directed to the Status screen, where you will find system information and satellite and cellular data usage.

The screenshot shows the SkyLink Status screen. On the left is a navigation menu with options: Status, Configuration, General Settings, Connection Manager, Network, Firewall, Remote Management, and Serial to IP. The main content area is divided into three sections: System Information, Satellite, and Cellular. The System Information section contains fields for Serial Number, Model, Versions, Capabilities, System Time, Sat. IMEI, Sat. SIM, Sat. Temp., Location, Asset Tag, Cell. IMEI, Cell. SIM, CPU Temp., and WiFi SSID. The Satellite and Cellular sections each show signal strength, on-net percentage, route, network, and usage tables for 24 hours, 7 days, and a month.

System Information

Serial Number: 0000-0016	Sat. IMEI: 300058060001420	Cell. IMEI: 861364040178400
Model: SkyLink 5100	Sat. SIM: 8988169771000233156	Cell. SIM: 89883030000052347330
Versions: SYN267 REV F / 2.20-220820-0003	Sat. Temp.: 26.0°C	CPU Temp.: 50.0°C
Capabilities: Voice & Data Gateway	Location: 32.77148, -117.15341	WiFi SSID: DragonsInc
System Time: 2022/8/22 16:50:01 UTC	Asset Tag: 3421 tseT	

Satellite

Signal: 0 dBm Route: N/A
On Net: 0%

	Bytes Sent	Bytes Received
24 hrs	0	0
7 days	93,967	420
Month	93,967	420

Cellular

Signal: -108 dBm Route: Primary, Active
On Net: 100% Network: AT&T

	Bytes Sent	Bytes Received
24 hrs	23,488	40,501
7 days	1,513,468	6,732,694
Month	1,513,468	6,732,694

Current SkyLink hardware / firmware versions can be found here. See the [Diagnostics](#) screen for the current 9770 Certus modem firmware version.

SYSTEM INFORMATION

These three columns contain identifying information about your SkyLink device, such as its serial and model number, current hardware and firmware versions, and capabilities. It also includes satellite and cellular IMEI/SIM card numbers and current temperatures.

SATELLITE & CELLULAR

Find satellite and cellular modem signal strength and data here. 'On Net' is the current percentage of data that has crossed the interface. It is calculated by adding satellite and cellular usage totals and dividing that number of bytes by the interface's number of bytes.

Each section shows a table with your device's data usage across a 24 hour, 7 day, and first-of-the-month period. Usage tables are an estimate; minimum sessions are rounded to 5,000 bytes.

General Settings

This screen allows you to make configurations such as renaming your SkyLink device, changing the password, and turning your satellite, cellular, and WiFi capabilities on and off. Click 'Reboot' at the bottom of the screen to restart your device, if needed. Ensure the WiFi toggle slider is switched off.

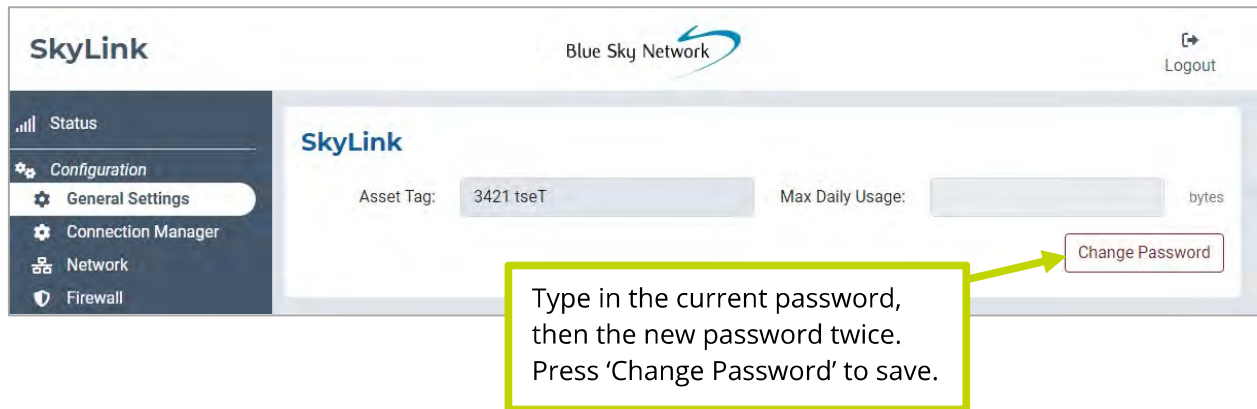
Remember to click the 'Save' button in the bottom right-hand corner to apply any changes.

The screenshot displays the SkyLink General Settings interface. The top header shows the SkyLink logo and Blue Sky Network branding. A sidebar on the left contains navigation links: Status, Configuration (General Settings, Connection Manager, Network, Firewall, Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories), Data & Tools (Calls, Diagnostics, System Log, Advanced), Help, and Licenses. The main content area is divided into sections: SkyLink (Asset Tag: Test 12345, Max Daily Usage: [input field] bytes, Change Password button), Satellite (Satellite Enabled: [toggle], Data Enabled: [toggle]), WiFi (SSID: DragonsInc, Mode: 5 GHz, Country: USA, Channel: Auto, Security: WPA2-PSK, Password: [masked], QR code, Scan to Connect), and Cellular (APN: em, Username: Optional, Password: Optional, IMEI: 861364040178400, SIM: 89883030000052347330, Network: AT&T). At the bottom, there are Reboot, Cancel, and Save buttons.

SKYLINK

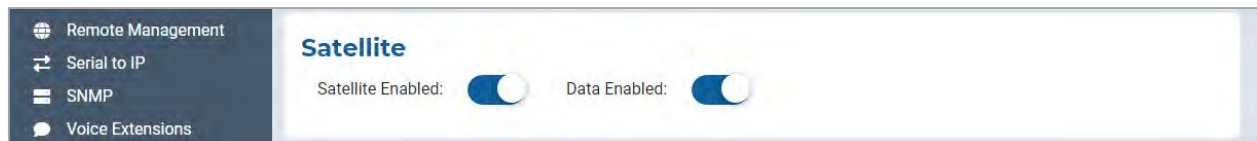
Edit your device name in the Asset Tag field and set a maximum limit for the SkyLink device's daily data usage in the Max Daily Usage field.

NOTE: Iridium QoS (also called Iridium secondary data flows) are not supported on Certus 100; therefore, BSN cannot offer per-stream priorities or VLANs over the Iridium link.



SATELLITE

The toggle slider on the left allows you to turn satellite capabilities on and off. Once your satellite and cellular SIM cards are activated, you can freely switch back and forth between the two. The right-hand slider will enable or disable data transferring.



NOTE: Satellite internet connection supports messaging apps, IoT data transfer, and mobile-optimized web surfing (visit [Iridium.com/mobile](https://iridium.com/mobile) for a list of mobile-optimized sites). It is not intended for general web browsing or high bandwidth applications.

Connection Manager

In the top section, the drop-down menu allows you to prioritize data routing (Satellite Only, Cellular Only, Cellular then Satellite). Changes are applied immediately.

Under the Firewall Profile section, enable or disable applications from connecting to the internet by choosing from a list of predefined rules. View the current profile, including its description and affiliated apps, here. Use the drop-down menu to choose between profile options and click 'Save.'

NOTE: When using the Firewall Profile, complete functionality may not be available on all apps (e.g., WhatsApp messaging will be unblocked, but not WhatsApp voice calling). These restrictions can be unblocked by creating a custom rule on the [Firewall](#) screen. You can also try making configurations in the app itself or reach out to your corporate MDM platform.

The screenshot displays the SkyLink web interface. On the left is a dark sidebar with a menu containing: Status, Configuration (General Settings, Connection Manager, Network, Firewall, Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories), Data & Tools (Calls, Diagnostics, System Log, Advanced), Help, and Licenses. The main content area is titled 'Internet Data Routing' and 'Firewall Profile'. The 'Internet Data Routing' section has a 'Data Routing' dropdown set to 'None'. The 'Firewall Profile' section has a 'Profile' dropdown set to '0, Blocked'. A yellow callout box with an arrow pointing to the question mark icon on the dropdown menu contains the text: 'Click to see all profiles and their details.' At the bottom right of the 'Firewall Profile' section are 'Cancel' and 'Save' buttons. The top right of the interface shows a 'Logout' button.

Network

This screen provides options to configure your network settings. Use the LAN section to change the gateway or internal IP address on your network and set primary and secondary DNS addresses.

The DHCP section allows you to choose your lease validity (from 5 minutes to 1 year) and configure a range of IP addresses that you would like to use. The toggle slider enables and disables DHCP.

Click 'Connected Devices' in the bottom section to define a static DHCP lease for an existing device, or press 'Add' to manually define a new one. A MAC address, IPv4 address, and hostname are required. Once created, click the blue pencil icon to edit.

SkyLink Blue Sky Network Logout

LAN

IP Address: 192.168.111.1

Network Mask: 255.255.255.0

Primary DNS: 8.8.8.8 Secondary DNS: 8.8.4.4

DHCP

DHCP Range Start: 192.168.111.50 DHCP Range End: 192.168.111.249

Lease Validity: 5 minutes

Cancel Save

Static DHCP Leases

Connected Devices

MAC Address	IPv4 Address	Hostname	Tag	Comment	Actions
No Static DHCP leases defined. Use the Add button to define a new static lease manually, or view Connected Device to define a static lease for a connected device.					

+ Add

Connected Devices

Vendor	Host Name	MAC Address	IP Address	Expiration Time	Last Seen	Actions
Apple, Inc.		F0:18:98:F0:22:48	192.168.111.81		2023/4/13 20:38:44 UTC	

Firewall

The SkyLink Device Interface enables you to set incoming and outgoing network traffic from specified applications/hosts. The two tabs on this screen allow you to make these configurations.

NOTE: Use the SkyLink Cloud Services portal to apply custom rules to a fleet of SkyLink devices.

WHITELIST

A list of approved host names and IP addresses can be found here. Press 'Add Host Name' or 'Add IP Addresses' to allow incoming and outgoing traffic from other applications/hosts. All other traffic is blocked. Click the red trashcan next to each field to remove the data.

The screenshot shows the SkyLink Firewall configuration interface. On the left is a dark sidebar with a menu including Status, Configuration (General Settings, Connection Manager, Network), Firewall (selected), Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories, Data & Tools (Calls, Diagnostics, System Log, Advanced), Help, and Licenses. The main content area is titled 'Firewall' and has two tabs: 'Whitelist' (active) and 'Port Forwarding'. Below the tabs, the 'Whitelist' section has a heading and a description: 'Allow traffic for other applications/hosts by adding the IP address or host name below. All traffic (incoming and outgoing) from that host will be allowed.' A yellow warning box states: 'The whitelist currently only works with Firewall Profile 7 (Whitelist). In order for these settings to work, you need to select profile 7 in the Connection Manager.' Below this are two columns: 'Host Names' and 'IP Addresses'. The 'Host Names' column contains a list with 'test.com', 'blueskynetwork.com', and 'skyrouter.com', each with a red trash icon to its right. Below the list is a 'Host name' input field and a '+ Add Host Name' button. The 'IP Addresses' column contains a list with '192.168.125.2' and a red trash icon. Below the list is an 'IP Address' input field and a '+ Add IP Address' button. At the bottom right of the main area are 'Cancel' and 'Save' buttons.

NOTE: You must select Firewall Profile number 7 on the [Connection Manager](#) screen to apply these settings.

PORT FORWARDING

On this tab, click the 'Add' button to create rules for forwarding incoming connections to devices on the local network. Once a rule is created, select the pencil icon to edit or the red trashcan to delete.

We recommend contacting Blue Sky Network support for assistance with custom rule creation.

The screenshot displays the SkyLink Firewall configuration interface. The left sidebar contains navigation options: Status, Configuration (General Settings, Connection Manager), Network, Firewall (selected), Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories, Data & Tools (Calls, Diagnostics, System Log, Advanced), Help, and Licenses. The main content area is titled 'Firewall' and has two tabs: 'Whitelist' and 'Port Forwarding' (selected). Under 'Port Forwarding', there is a section 'Port Forwarding Rules' with a warning message: 'Forward incoming connections to devices on the local network. Be careful with creating these rules as they could open your network to malicious actors or cause you to lose connectivity. We recommend contacting our support team for assistance with defining custom rules.' Below this is a table with columns: Action, Source, Destination, Source Port, Dest. Port, Protocol(s), Comment, and Actions. The table currently shows 'No custom rules have been defined.' and a '+ Add' button. A yellow arrow points from the 'Actions' column header to the 'New Rule' dialog box. The 'New Rule' dialog box has fields for: Action (Forward), Source (Internet), IP Address (WWW.XXX.YYY.ZZZ), Source Port, Destination Port, Protocol (dropdown), and Comment (Optional). It also has 'Cancel' and 'Save' buttons at the bottom.

Remote Management

This screen provides configuration options for IoT management via the SkyLink Cloud Services portal, including enabling and disabling position reports, remote device management, and status reports. Use the drop-down menus to set reporting, syncing, and check-in frequencies.

SkyLink Blue Sky Network Logout

Remote Management

Position Reports Enabled: ☒ Position Report Interval: 24 hours

Remote Management Enabled: ☒ Remote Management Interval: 24 hours

Status Reports Enabled: ☒ Status Report Interval: 24 hours

Call History Enabled: ☒ Call History Upload Interval: 24 hours

Usage Upload Enabled: ☒ Usage Upload Interval: 1 hour

Configuration Sync Interval: 24 hours

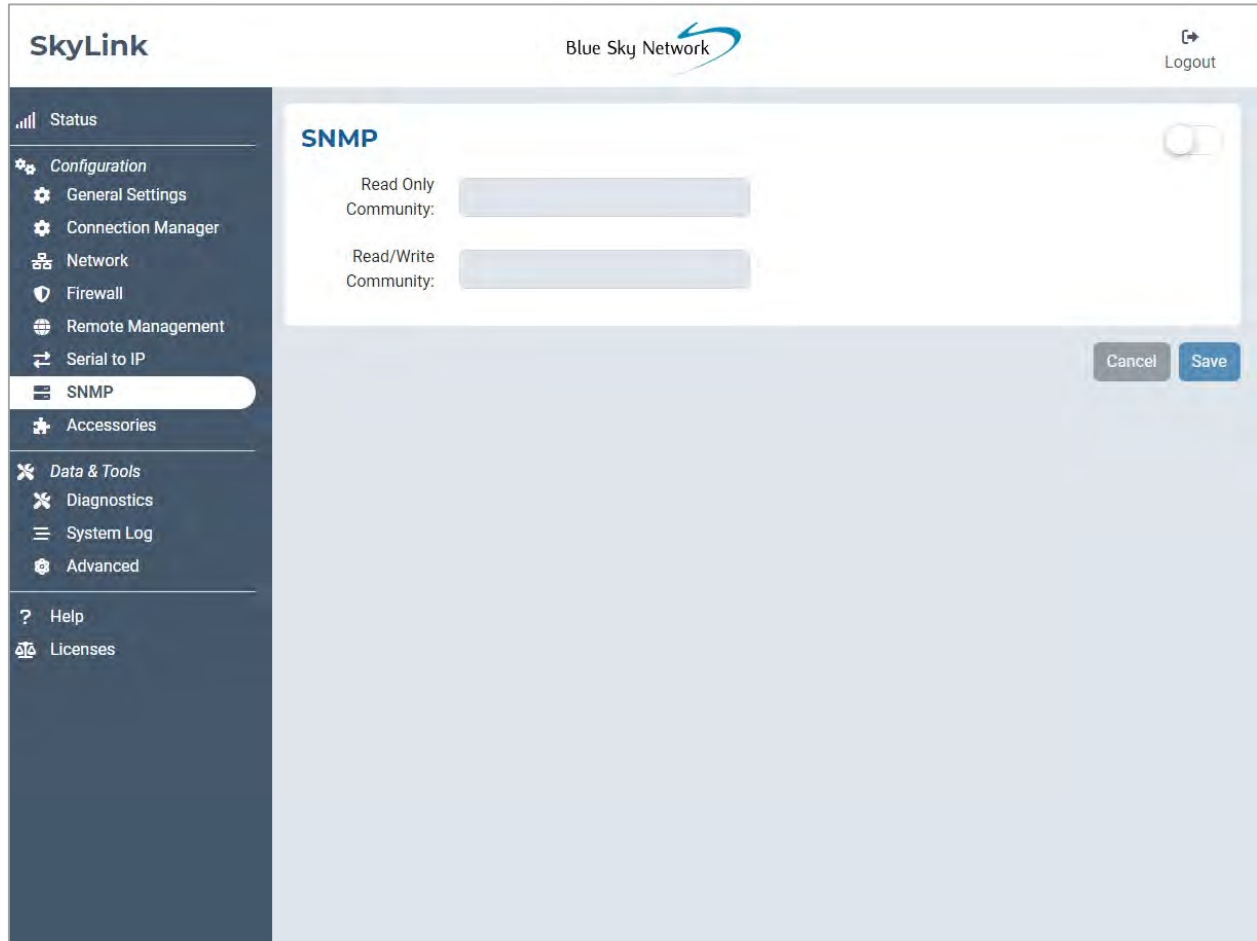
These fields are set to 24 hours by default and can be adjusted to different intervals ranging from 1 minute to 7 days, depending on the menu. Some allow for custom frequencies as well.

Below is a description of each interval category and their meaning:

- *Position Report* – How often the device sends a position report to the portal and SkyRouter.
- *Remote Management* – How often the device checks with the portal to see if it needs to complete any tasks, such as a firmware update, factory reset, or reboot.
- *Status Report* – How often the device sends operational information, such as health and data usage, to the portal.
- *Call History Upload* – How often the device sends the unit's call log information to the portal.
- *Configuration Sync* – How often the device checks if the portal has requested a configuration change.

SNMP

On the Simple Network Management Protocol (SNMP) screen, click the toggle slider to view the community strings; these fields are disabled by default for security purposes. Note that these fields are currently unable to be edited.



Voice Extensions

Find mobile and landline phone information and configuration settings here. The username and password are the respective extension number; these can be changed on this screen.

The Inbound Line(s) column shows the order in which line numbers ring when a call comes in. By default, the first extension (shown below as 510) allows calls to both Line 1 and Line 2, the next 10 extensions allow calls to Line 1 only, and the following 10 to Line 2 only. The Outbound Line column is set to Any Available by default.

SIP Extensions

Extension	Description	Inbound Line(s)	Outbound Line	Username	Password	Actions
510		Line 1 Line 2	Any Available	510	510	Edit
511		Line 1 Line 2	Any Available	511	511	Edit
512		Line 1 Line 2	Any Available	512	512	Edit
513		Line 1 Line 2	Any Available	513	513	Edit
514		Line 1 Line 2	Any Available	514	514	Edit
515		Line 1 Line 2	Any Available	515	515	Edit
516		Line 1 Line 2	Any Available	516	516	Edit
517		Line 1 Line 2	Any Available	517	517	Edit

POTS Extensions

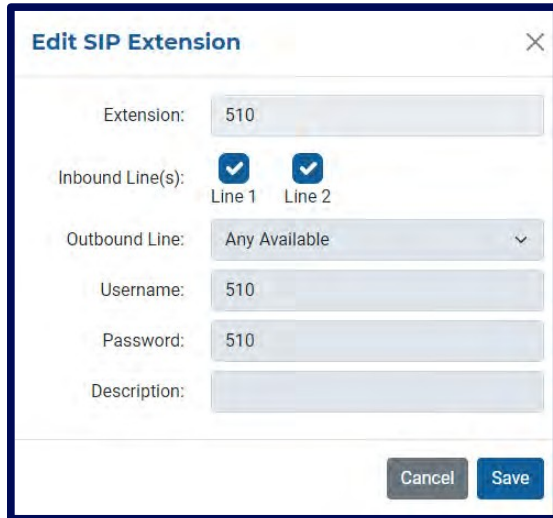
Region: USA / Canada

Line	Extension	Type	Description	Inbound Line(s)	Outbound Line	Actions
1	500	N/A	POTS #1	Line 1 Line 2	Line 1	Edit
2	501	N/A	POTS #2	Line 1 Line 2	Line 2	Edit

Use this field's drop-down menu to select region-specific dial tones, ringing tones, etc.

EDITING A SIP OR POTS EXTENSION

Click the  icon next to the SIP or POTS extension that you would like to edit. In the pop-up window, complete the fields and add a description if desired, then press 'Save.'



Edit SIP Extension

Extension: 510

Inbound Line(s): ☒ Line 1 ☒ Line 2

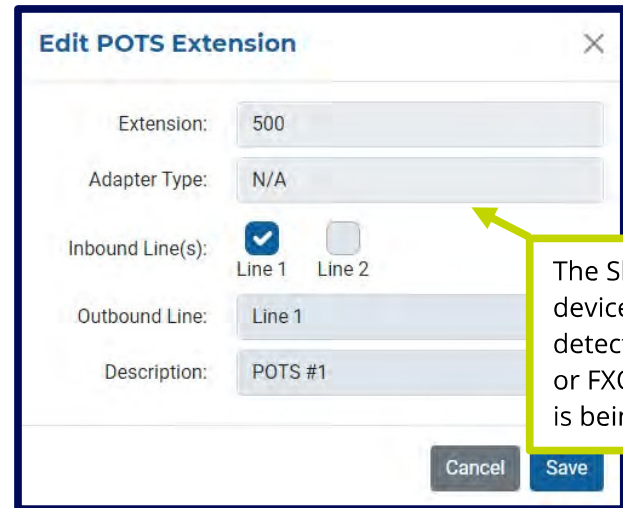
Outbound Line: Any Available

Username: 510

Password: 510

Description:

Cancel Save



Edit POTS Extension

Extension: 500

Adapter Type: N/A

Inbound Line(s): ☒ Line 1 ☐ Line 2

Outbound Line: Line 1

Description: POTS #1

Cancel Save

The SkyLink device will detect if an FXS or FXO adapter is being used.

Under the Inbound Line(s) field, tick each box to allow calls to both Line 1 and Line 2. Deselect both lines to block calls from ringing to an extension. **NOTE:** If you are not receiving calls to your extension, ensure one or both lines are selected here.

Use the drop-down menu in the Outbound Line field to choose whether Line 1, Line 2, or Any Available line can be used when making a phone call from this extension. A scenario for only selecting one line would be a ship captain who has Line 1 reserved, and the crew uses Line 2.

NOTE: Selecting only Line 1 or Line 2 in the Inbound Line(s) field along with the Any Available option in the Outbound Line field may cause issues when returning calls. For example, if only Inbound Line 1 is selected and you dial on Any Available Outbound Line, you may dial out on Line 2; this would leave someone unable to return your call.

Accessories

This screen allows you to optimize settings for your SkyLink Battery Pack and SOS button. Please note that these are optional accessories; changes made on this screen will only be implemented if the corresponding accessory is attached to the SkyLink device.

NOTE: Ensure the automatic shutdown timer under the Battery Pack section is disabled by moving the toggle slider to the left. Move the toggle slider in the Emergency Switch/Button section to the right to send an SOS event with GPS location to SkyRouter. Click the drop-down menu to configure how often these reports are sent.

SkyLink Blue Sky Network Logout

Accessories

Some optional accessories for SkyLink have configuration settings. This is where you can manage those settings. Remember, these accessories are optional, so unless you have one attached any changes to these settings won't have any effect.

Battery Pack

Shutdown Timer Enabled: ☐ Days Hours 1 Minutes 0 Seconds 0

Emergency Switch/Button

Emergency Reporting Enabled: ☒ Emergency Report Interval: 1 minute

Cancel Save

Choose between 15 seconds up to 10 minutes or select the custom option to set a desired time. The timer is set to 30 seconds by default.

Calls

A list of incoming and outgoing calls by extension number (shown below as Source) can be found here. It also includes the day and time that the call was placed, its total vs. expected billable duration, and whether or not it was answered. **NOTE:** Internal calls will not generate an Iridium bill.

Each call is assigned a unique ID number that can be provided to the Blue Sky Network support team for troubleshooting purposes in the event that there is a call issue.

The screenshot displays the SkyLink web interface. The top header includes the SkyLink logo, the Blue Sky Network logo, and a Logout button. The left sidebar contains a navigation menu with sections: Configuration (General Settings, Connection Manager, Network, Firewall, Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories), Data & Tools (Calls, Diagnostics, System Log, Advanced), and Help/Licenses. The main content area is titled 'Call Log' and features a table with the following data:

Date	Source	Destination	Line	Total Duration	Billable Duration	Disposition	Call ID
4/13/23 2:14 PM	510	777		00:00:04	00:00:04	ANSWERED	1681420454.4
4/13/23 2:13 PM	510	777		00:00:06	00:00:06	ANSWERED	1681420434.0

Diagnostics

Here you will find information to help you diagnose and resolve satellite and cellular issues.

SYSTEM INFORMATION

This first section provides diagnostics that you may be asked for in the event that you report a technical issue to the Blue Sky Network support team. Data points may be shown for POE only, EXT (external 12V power) only, or both.

Data points about the supercapacitor (shown below as Super Cap.) can be found here. A check mark under Power Good means good power is detected to charge the Super Cap. A red 'x' under Fault indicates a power fault in the unit.

SkyLink

Blue Sky Network

Logout

Status

Configuration

General Settings

Connection Manager

Network

Firewall

Remote Management

Serial to IP

SNMP

System Information

Serial Number	Model	Hardware	Firmware	Capabilities	System Time
0000-0016	SkyLink 5100	SYN267 REV F	2.25-230116-2253	land,voice	2023/4/13 21:17:01 UTC

Voltages

	3.3V	4.1V	5V	12V	EXT.	POE	POE+	Super Cap.	
								Power Good	Fault
Current Reading	3.36	4.053	4.972	12.155	20.443	0.022		✓	

SATELLITE & CELLULAR INFORMATION

Satellite Information

Modem

Serial Number	Firmware Version	API Version	Enabled	Data Enabled	IMEI
y000dp	1.3.1	1.2.0	✓	✓	300058060001420

SIM

Present	Connected	ICCID
✓	✓	8988169771000295445

Provisioning

Valid	Fully Compatible	Messaging	Data	Voice
✓	✓	✓	✓	✗

Cellular Information

Modem

Enabled	Manufacturer	Model	IMEI
✓	Quectel	EM06-A	861364040178400

SIM

SIM Present	SIM ICCID	APN	IMSI	MCC	MNC	SPN
✓	89883030000052347330	em	295050900810292	295	05	EMnify

Signal

Connected	Network	Network Name	Strength	Quality	Technology
✓	310, 410	AT&T	-106 dBm	-16 dB	lte

NOTE: Cellular is disabled on SkyLink Citadel.

Use the check marks in these sections to verify that your satellite and cellular capabilities are enabled. Data related to the satellite and cellular modems, SIM cards, satellite provisioning, and cellular signal are available here as well.

NETWORK TROUBLESHOOTING

Here you can use the Operation drop-down menu to perform pings and trace routing. Press the 'Execute' button to apply the configurations. Results will be displayed in the section below.

Network Troubleshooting

Operation
Ping

Network Interface
Cellular

Number of Pings
5

Network Address

Execute

Results:

System Log

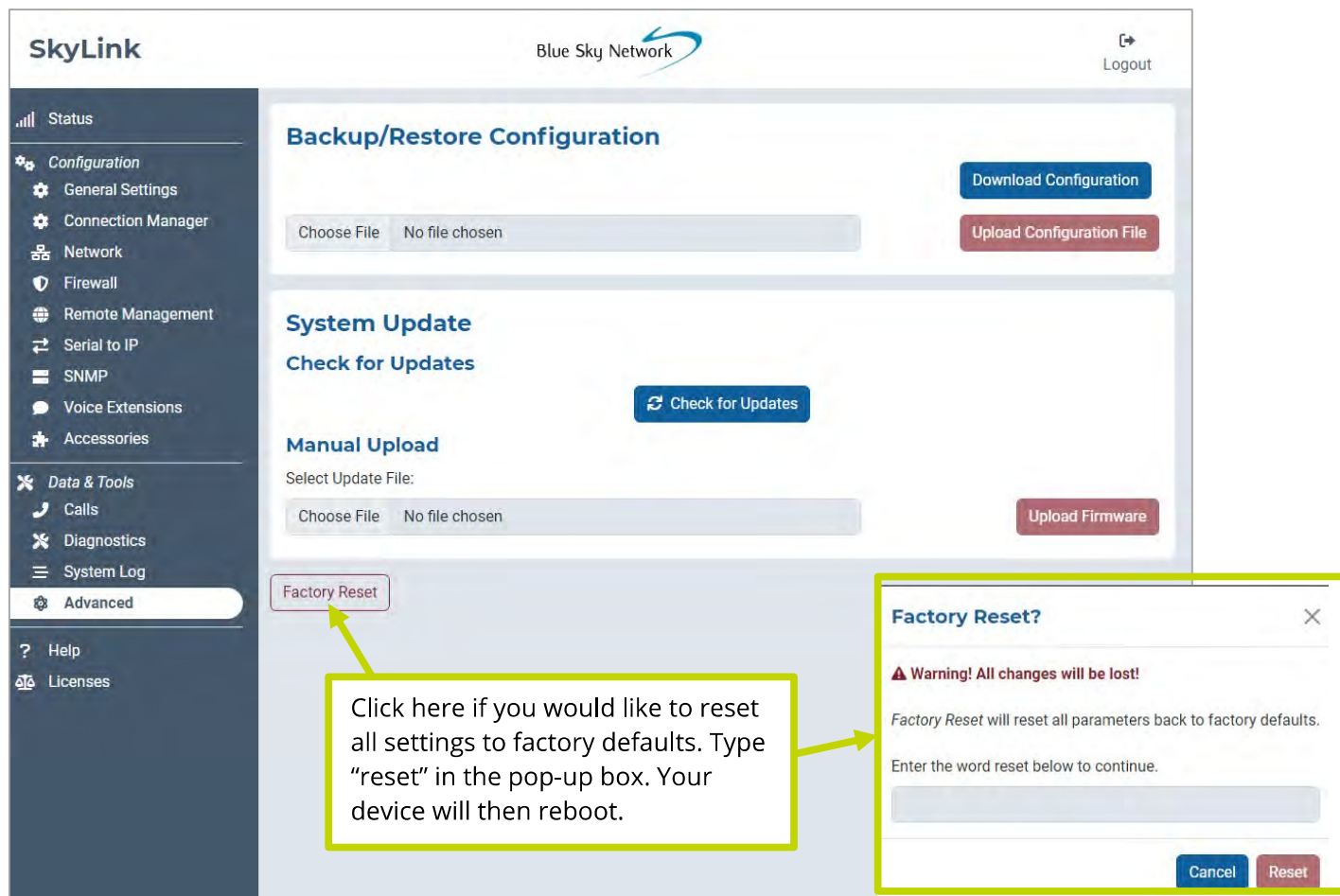
The information displayed on the System Log screen can be used by the Blue Sky Network support team for diagnostic purposes. Use the toggle slider to enable or disable automatic updates.

[illegible]

Advanced

Use this screen to backup or restore a system configuration, or when the system is ready to be updated. SkyLink firmware includes the 9770 Certus modem firmware; appropriate versions will be upgraded or downgraded as needed. **NOTE:** Blue Sky Network will not downgrade the Certus 9770 modem firmware unless specifically required by Iridium.

NOTE: The [Status](#) screen displays the SkyLink's current firmware version and the [Diagnostics](#) screen shows the current 9770 Certus modem firmware version.

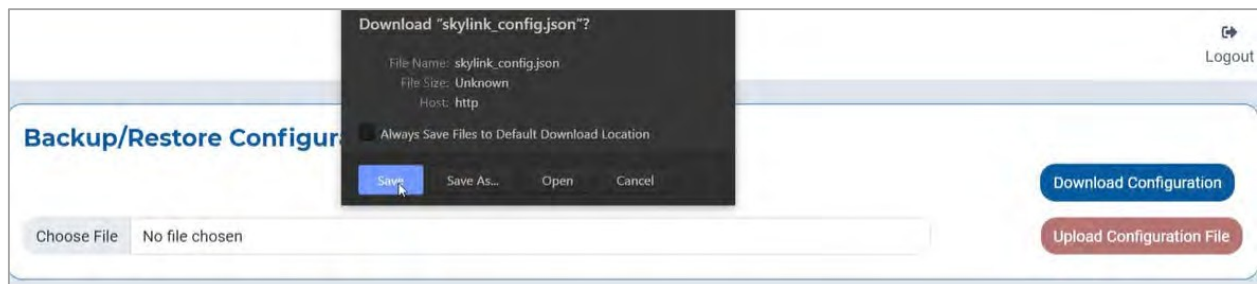


REBOOT THE SKYLINK CITADEL SYSTEM

To reboot the SkyLink Citadel system, disable the power at the battery by pressing the battery off button. It is important to wait at least 120 seconds for the power to completely shut off. To power back on, press and hold the button for 60 seconds. The power LED indicator will be green once the system is ready to use.

BACKUP/RESTORE CONFIGURATION

To back up a configuration, press 'Download Configuration' and then reboot the Citadel system. To restore, click 'Choose File,' then select the appropriate .tpz file from your computer/personal device. Click 'Save,' then press 'Upload Configuration File' and reboot the Citadel system.

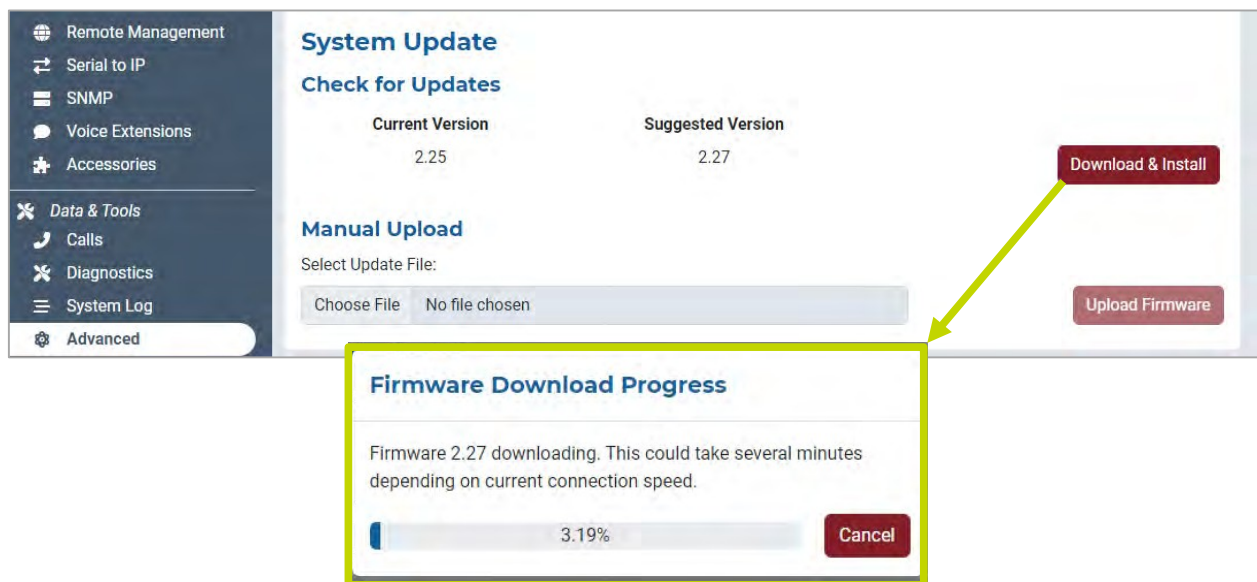


SYSTEM UPDATE

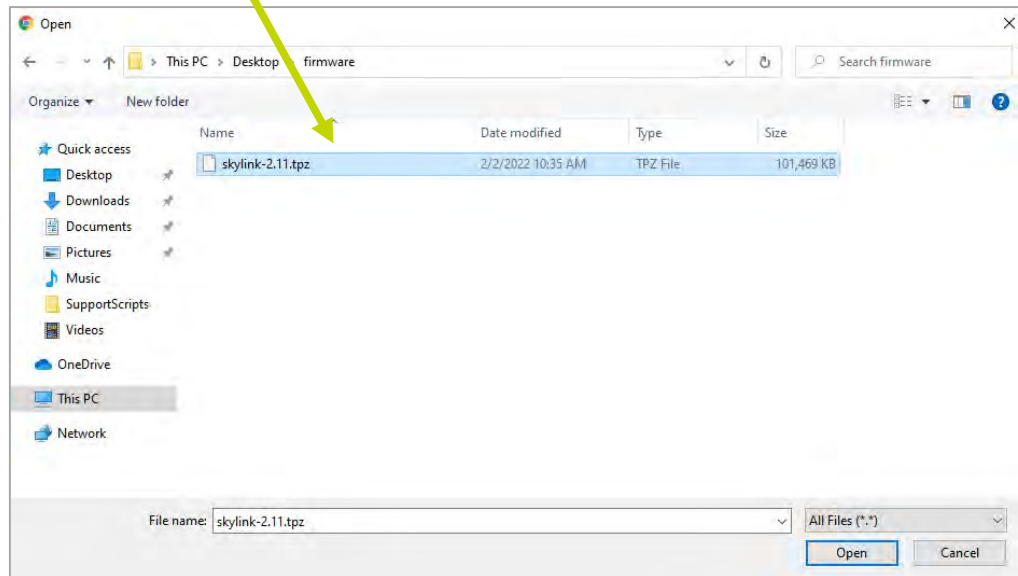
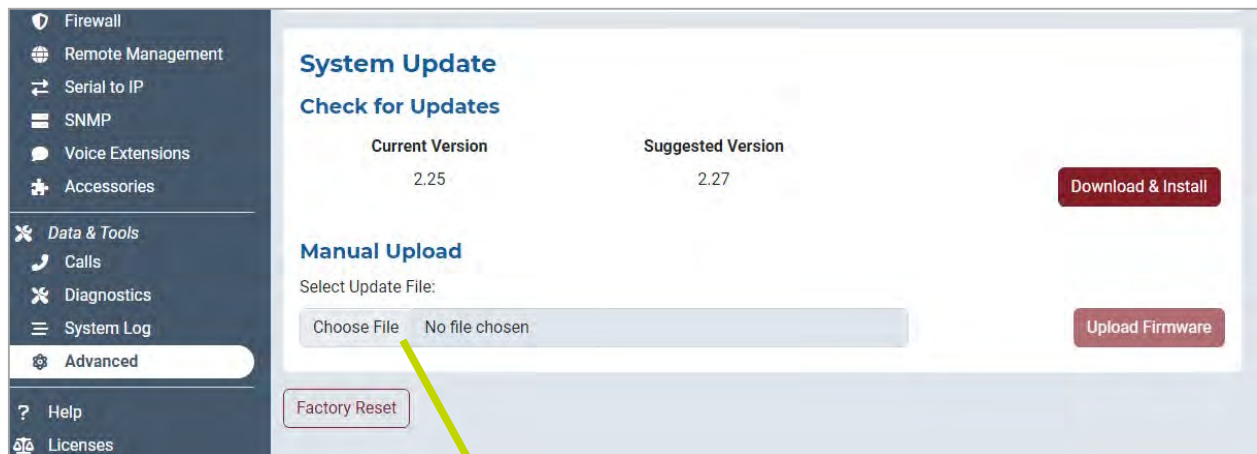
NOTE: We recommend updating firmware using an ethernet cable.

NOTE: If updating a fleet of devices, save time by using the SkyLink Cloud Services portal.

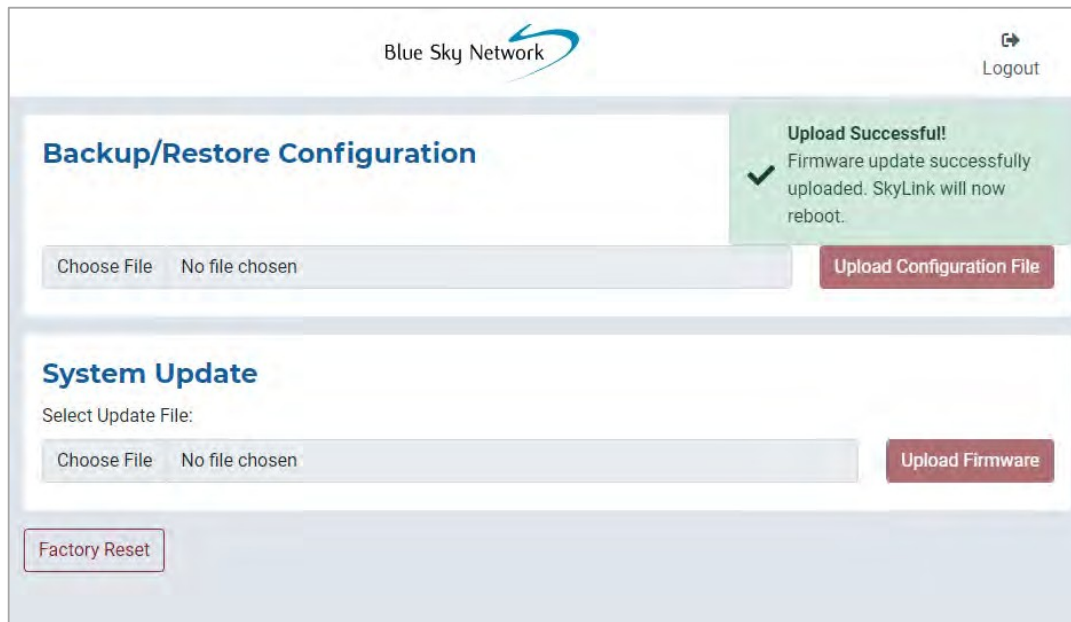
When the system is ready to be updated, you'll see the new version listed under the Check for Updates section. There are two ways to perform an update. First, you can simply click 'Download & Install.' A download progress bar will show you the percentage to completion.



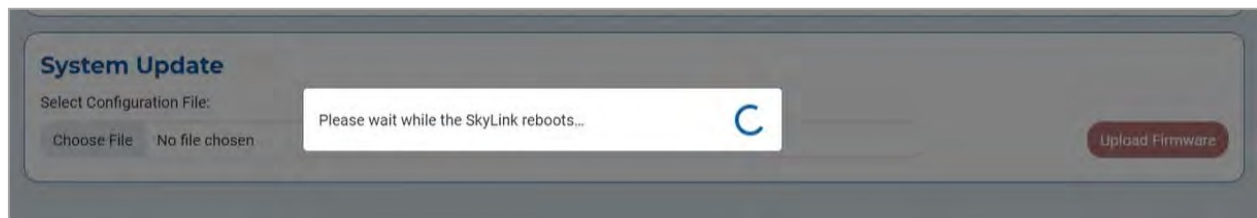
Alternatively, click the 'Choose File' button under the Manual Upload section. Locate and select the appropriate .tpz file, then press 'Upload Firmware' to start the firmware upgrade process.



Once the firmware upload is complete, a green success message will appear in the right corner.



You will then need to reboot SkyLink Citadel system.



Once the web browser refreshes and the power LED indicator shows a steady green light, the update has finished, and your system is ready to use.

Help

This screen contains multiple resources, including the SkyLink User Guide and contact information for the Blue Sky Network support team, to help you troubleshoot hardware and firmware issues. A full list of FAQs can also be found at the end of this user guide.

The screenshot displays the SkyLink web interface. On the left is a dark sidebar with a menu. The top of the sidebar has a signal strength icon and the text 'Status'. Below this are sections: 'Configuration' (with sub-items: General Settings, Connection Manager, Network, Firewall, Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories), 'Data & Tools' (with sub-items: Calls, Diagnostics, System Log, Advanced), and 'Help' (with sub-item: Licenses). The main content area has a header with the 'SkyLink' logo, 'Blue Sky Network' logo, and a 'Logout' button. The main content is divided into three columns. The first column is titled 'About SkyLink' and contains an 'Introduction to SkyLink' section, a list of 'Key features include:' (Remote device management, Health monitoring, Sensor/engine diagnostics, Network services (VPN, IP, MQTT), IP65 Certified, Data analytics/edge computing, SkyRouter integration, FCC Part 15 & 25 Certified), an 'Installation' section, and a 'Troubleshooting' section. The second column is titled 'Resources' and contains links for 'User Guide', 'Install Guide', 'Contact Support' (with phone number +1 858-551-3894, email support@blueskynetwork.com, and a Help Center link), and a 'Help Center' link. The third column is empty.

SkyLink Blue Sky Network Logout

About SkyLink

Introduction to SkyLink

SkyLink by Blue Sky Network is the inaugural Iridium Certus 100 mid-band solution for land mobile, aviation, IoT, and maritime markets. This small-form, multi-stack hardware is designed for any fixed-mount, portable, or mobile application and offers a range of service configurations.

Key features include:

- Remote device management
- Health monitoring
- Sensor/engine diagnostics
- Network services (VPN, IP, MQTT)
- IP65 Certified
- Data analytics/edge computing
- SkyRouter integration
- FCC Part 15 & 25 Certified

Installation

It is important that the Iridium-approved antennas be mounted with an unobstructed, full view of the sky and away from other radiating antennas that may cause interference. Please see the [SkyLink Installation Guide](#) for suggested device/antenna mounting locations and detailed steps on equipment installation.

Troubleshooting

The power LED indicator on the top panel of the unit cycles through multiple colors as it loads:

- Green = Initial Power On
- Red = Unit in Bootloader Mode
- Blue Blink = OS is Booting
- Blue Steady = Device is Ready
- Red Blink = Iridium Firmware Upgrade
- Blue Blink = SkyLink Firmware Upgrade

Resources

- User Guide
- Install Guide

Contact Support

- +1 858-551-3894
- support@blueskynetwork.com
- Help Center

Licenses

Information regarding third-party software licenses, acknowledgements, and copyright notices can be found on this screen. Use the drop-down arrows to see further details.

The screenshot displays the SkyLink web interface. The top header includes the SkyLink logo, the Blue Sky Network logo, and a Logout button. A left sidebar contains navigation links: Status, Configuration (General Settings, Connection Manager, Network, Firewall, Remote Management, Serial to IP, SNMP, Voice Extensions, Accessories), Data & Tools (Calls, Diagnostics, System Log, Advanced), and Help. The main content area is titled "License Information" and contains the following text:

SkyLink utilizes third-party software, including open source software. This software is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY.

Additional information regarding licenses, acknowledgements and required copyright notices for the third-party software can be found below.

Below this text are three expandable sections: System Components, Application Components, and UI Components, each with a downward arrow. A yellow arrow points from the UI Components section to a detailed view of the GPL-2 license.

The detailed view of the GPL-2 license is shown in a modal window titled "GPL-2". The text in the modal is as follows:

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

app-arch/zstd-1.5.2

SKYLINK CAPABILITIES

Now that you are familiar with the SkyLink Device Interface, you are ready to use your device! The following describes the most common device capabilities.

Making Phone Calls

A dual POTS adapter is installed on the SkyLink Citadel system, and 2 satellite phone lines can be used. An analog/POTS device will need to be connected when routing the second phone line to other areas of the vessel, including the bridge.

Before making a phone call, ensure the following is completed:

- You have properly installed your activated Iridium SIM card.
- You have the Iridium-approved MARUWA (MHL-1621C) antenna connected to the SkyLink device.
- You have enabled satellite capability by navigating to the Connection Manager screen on the SkyLink Device Interface and sliding the left-hand toggle button.

You are now able to make inbound and outbound calls. Simply dial the country code, then the area code and phone number to place a call. Use the Voice Extensions screen on the SkyLink Device Interface to configure line extensions and the Calls screen to view call details.

RJ-11/POTS Buttons

ON/ OFF BUTTON

Use this key to initiate or answer an incoming call. When the key is pressed and turns green, you will hear a continuous dial tone. Enter the dialing sequence on the numbered keypad and press the pound '#' key. The Iridium "bleeps" will be heard, followed by ringing of the party being called.

To answer an incoming call, hold the key until it turns green. The phone must be turned off to receive incoming calls.

RINGER VOLUME SWITCH

This switch turns off the incoming ringer and sets the desired incoming ring volume to OFF – LOW – HI.

VOLUME CONTROL

Toggle the volume level of the phone's speaker in 3 steps: LOW – MED – HI. Press this button to repeatedly cycle through these settings.

POUND / HASH KEY (#)

This key must be pressed to initiate an entered dialing sequence.



OPTIMIZING SIP PHONE APPS

Below are a few setup pointers for SIP phone apps (e.g., GS Wave, Linphone).

iPhone/Android settings:

- Airplane mode
- Smartphone Settings > Wave Lite App > Enable 'Local Network' access
- Smartphone Settings > Wave Lite App > Disable 'Cellular Data'

GS Wave settings:

- 'WiFi only' mode enabled
- Account Name: 510 (510-516 available default)
- SIP Server: 192.168.111.1 (unless SkyLink Device Interface IP has been changed)
- SIP User ID: 510
- Authentication ID: 510
- Password: 510

Additional settings for other SIP phone apps (Linphone, etc.):

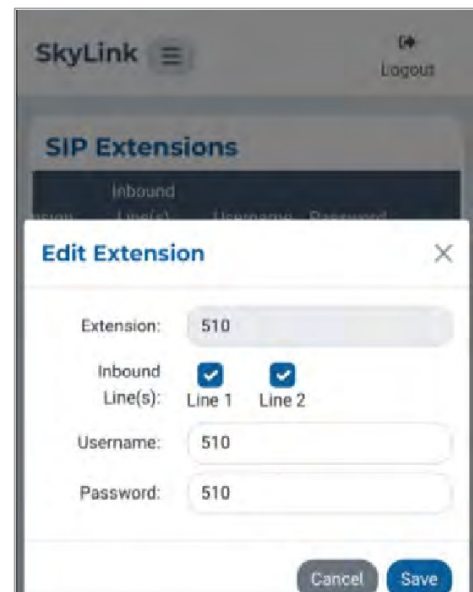
- Codecs (if setting is available): Enable – A-LAW, 722. Disable – U-LAW

NOTE: If using a physical SIP phone (not a SIP phone app), please see your SIP phone manufacturer's documentation for information on configuring the phone with your SkyLink device.

If you are not receiving incoming call notifications on SIP extensions, it may be that the SIP extension you are using is not configured to receive incoming calls from the Iridium line you are calling.

To configure both lines:

- 1) Navigate to the [Voice Extensions](#) screen.
- 2) Click the  icon next to the SIP or POTS extension that you would like to edit.
- 3) Ensure that both boxes in the Inbound Line(s) field are ticked, then click 'Save.'



Connecting to the Internet

To connect to the internet, first ensure that:

- You have properly installed your activated Iridium and cellular SIM cards.
- You have connected the Iridium-approved MARUWA (MHL-1621C) antenna to the SkyLink device.
- You are connected to the supplied ethernet cable or optionally, using a third-party WiFi module.
- Satellite capabilities have been enabled via the toggle sliders on the Connection Manager screen of the SkyLink Device Interface.

You are now able to use smart devices and mobile applications.

NOTE: Satellite internet connection supports messaging apps, mobile-optimized web, and IoT data transfers. It is not intended for general web browsing or high bandwidth applications and may cause slow connection speed if used for these purposes. Please visit Iridium.com/mobile for a list of mobile-optimized sites.

SKYLINK SPECIFICATIONS & INSTALLATION

Technical Specifications

CONNECTIVITY

Cellular

- LTE-A CAT 12 module with M.2 form factor
- Supports LTE-A carrier aggregation
- Worldwide LTE-A and 3G UMTS / HSPA(+) coverage
- 600 Mbps receive (DL) / 150 Mbps transmit (UL)
- User-accessible SIM

Iridium Certus® 100

- Simultaneous voice and IP data
- 88 Kbps receive (DL) / 22 Kbps transmit (UL)
- Frequency: 1616 MHz – 1626.5 MHz
- 2 high-quality voice channels
- User-accessible SIM

Positioning

- Multi-constellation GNSS receiver in cellular module:
 - GPS
 - GLONASS
 - BeiDou
 - Galileo
- 33 tracking channels
- 99 acquisition channels
- 210 PRN channels
- Anti-jamming and multi-tone active interference canceller
- < 2.5 m CEP horizontal position accuracy

MECHANICALS

Size & Weight

- Dimensions: 8.0 x 5.0 x 1.5 in. (12.7 x 20.3 x 3.2 cm)
- Weight: 1.6 lbs. (0.7 kg)

LEDs

- Single multi-purpose, multi-color LED:
 - Green = Initial Power On
 - Red = Unit in Bootloader Mode
 - Blue Blink = OS is Booting
 - Blue Steady = Device is Ready
 - Red Blink = Iridium Firmware Upgrade
 - Blue Blink = SkyLink Firmware Upgrade

Connectors

- 1x cellular SMA female connector
- 1x Iridium SMA female connector
- 1x POTS connector

OPERATING PARAMETERS

Electrical

- External power:
 - 10 – 34 VDC
- Power consumption:
 - 7W nominal power
 - 18W peak power

Environmental

- Operating temperature range: -40°C to +70°C
- Storage temperature range: -40°C to +85°C
- Operating humidity range: ≤ 75% RH
- Storage humidity range: ≤ 93% RH

Regulatory Standards & Compliance

- | | |
|----------------|-------------------|
| • US (FCC) | • IP65 rating |
| • EU (CE MARK) | • Brazil (ANATEL) |
| • Canada (IC) | • DO-160G |

Software Specifications

CONFIGURATION

- Local configuration of SkyLink devices using WiFi or Ethernet
- Remote configuration of SkyLink devices, features, and settings
- Bulk device configuration
- DHCP server, client, or static IP address
- WiFi SSID and password
- POTS and SIP voice extensions

Internet

- Cellular internet
- Satellite internet
- Ability to fail-over
- Ability to disable satellite data but not voice communication

Firewall

- Firewall Profiles for quick and easy firewall setup
- Advanced rules that allow customers to add functionality beyond the set profiles

Voice

- Support for up to 2 FXS / FXO USB adapters
- Support for up to 20 SIP clients
- Call logs

REPORTING

- Position and event reporting
- Device data usage
- Network-wide data usage
- Data usage by transmission type
- Data usage by device type
- Device health monitoring
- Network-wide health monitoring
- Device diagnostics
- Customizable report rate

MONITORING

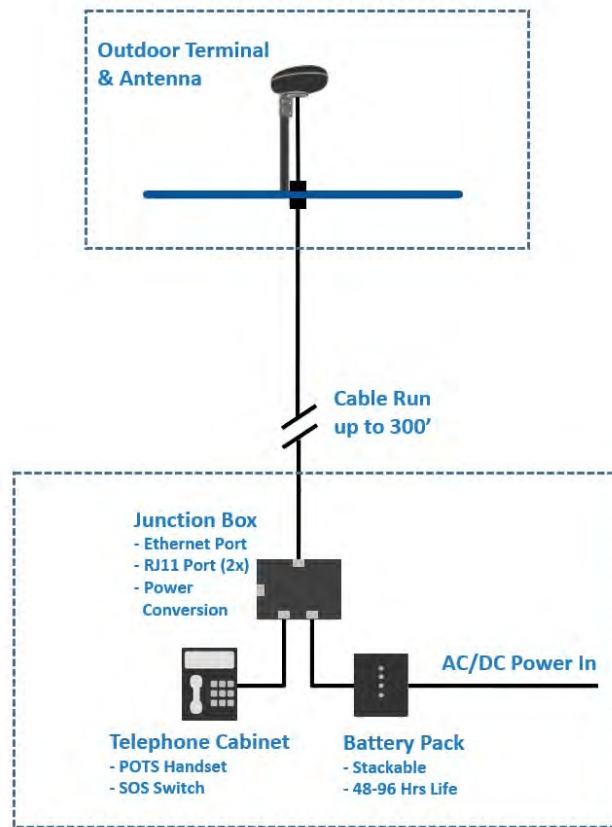
- Device CPU and modem temperatures in real time
- Modem signal strengths in real time
- Modem data usage
- Least-cost routing status
- Voice call logs
- Device location monitoring
- Device health monitoring

Device Management

- View status and customize settings in a web UI
- Firmware upgrade
- Factory reset

Above Deck Unit (ADU) Diagram

As pictured below, the SkyLink Citadel ADU can be mounted on both vertical and horizontal structures, including covert installation atop the ship's funnel.



Installation and Cable Diagrams

It is important that the Citadel ADU be mounted with an unobstructed, full view of the sky and away from other radiating antennas that may cause interference. Please see the SkyLink Citadel Installation Guide for suggested device/antenna mounting locations, detailed steps on equipment installation, and a comprehensive list of cable diagrams.

Troubleshooting

If you are using the maximum cable length of 300', it is required to slow down the ethernet to 10 Mbps, full duplex.

PRODUCT WARRANTY

PLEASE READ -- THIS DOCUMENT CONTAINS IMPORTANT NOTICES, WARRANTY INFORMATION, AND LIMITATIONS ON YOUR RIGHTS.

Upon the signed verification of the attached Quotation (see Equipment Purchase & Service Agreement Terms & Conditions) by the Customer ("**Customer**"), the Quotation and these Terms and Conditions shall constitute a binding contract ("**Contract**") between Customer and Blue Sky Network, LLC, a Delaware limited liability company ("**Blue Sky**") for the purchase of the products and services described in the Quotation.

Product Terms and Conditions

Blue Sky Network, LLC ("Blue Sky") warrants that the Products it manufactured shall be free from defects in materials and workmanship. This warranty (i) shall apply to Customer (as named in the Quotation) only and no other and (ii) shall not apply to any Product which is not stored, handled, installed, or used in strict accordance with Blue Sky's specifications and instruction manuals, or which is altered without Blue Sky's express consent, or which has been subject to misuse, negligence, or accident.

Blue Sky's sole obligation shall be to replace or repair defective Products covered by this warranty provided that Customer returns such defective Product within two (2) years of the date of the Quotation. Customer hereby agrees that the replacement or repair of defective Products shall be Customer's sole remedy in the event of a breach of warranty and shall be in lieu of any other remedy. Except as provided above with respect to Products only, **Blue Sky makes no warranties relating to the Products (see section on Warranty Disclaimer/Limitation of Liability).**

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TECHNICAL 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://support.blueskynetwork.com/>.

Thank you for choosing Blue Sky Network!



Blue Sky Network

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