SKYLINK

User Guide

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Blue Sky Network

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SkyLink

User Guide

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ABOUT THIS USER GUIDE

Thank you for purchasing the SkyLink device! 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:

- Connecting to the SkyLink device WiFi
- Changing your SkyLink device name and/or WiFi password
- Updating SkyLink and Iridium modem firmware
- Using your SkyLink device: making calls, connecting to the internet, and more
- Troubleshooting
- Frequently Asked Questions

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)

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GETTING STARTED

Connecting to Device WiFi

A label containing a QR code with a WiFi access point can be found on the back panel of your SkyLink Data Gateway. An extra label can also be found in the device's box. It is recommended that a wide screen device (e.g., laptop, PC, or tablet) be used for the initial configuration.

After properly installing and powering on the device (please see the SkyLink Installation Guide), you can connect to WiFi through one of two ways:

> *Option 1*: Use a mobile device or tablet to scan the QR code. Your phone/tablet will then be automatically connected to the WiFi. **NOTE**: If using a cellular device, it may be helpful to first switch into airplane mode before connecting to the SkyLink WiFi.
>
> *Option 2*: Use the WiFi SSID and password found on the label.

Connecting to the Network through Ethernet

If using an ethernet cable with your SkyLink device, simply plug the ethernet cable into the appropriate power source (e.g., a wall) and your device will automatically be configured via DHCP.

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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.

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SKYLINK DEVICE INTERFACE

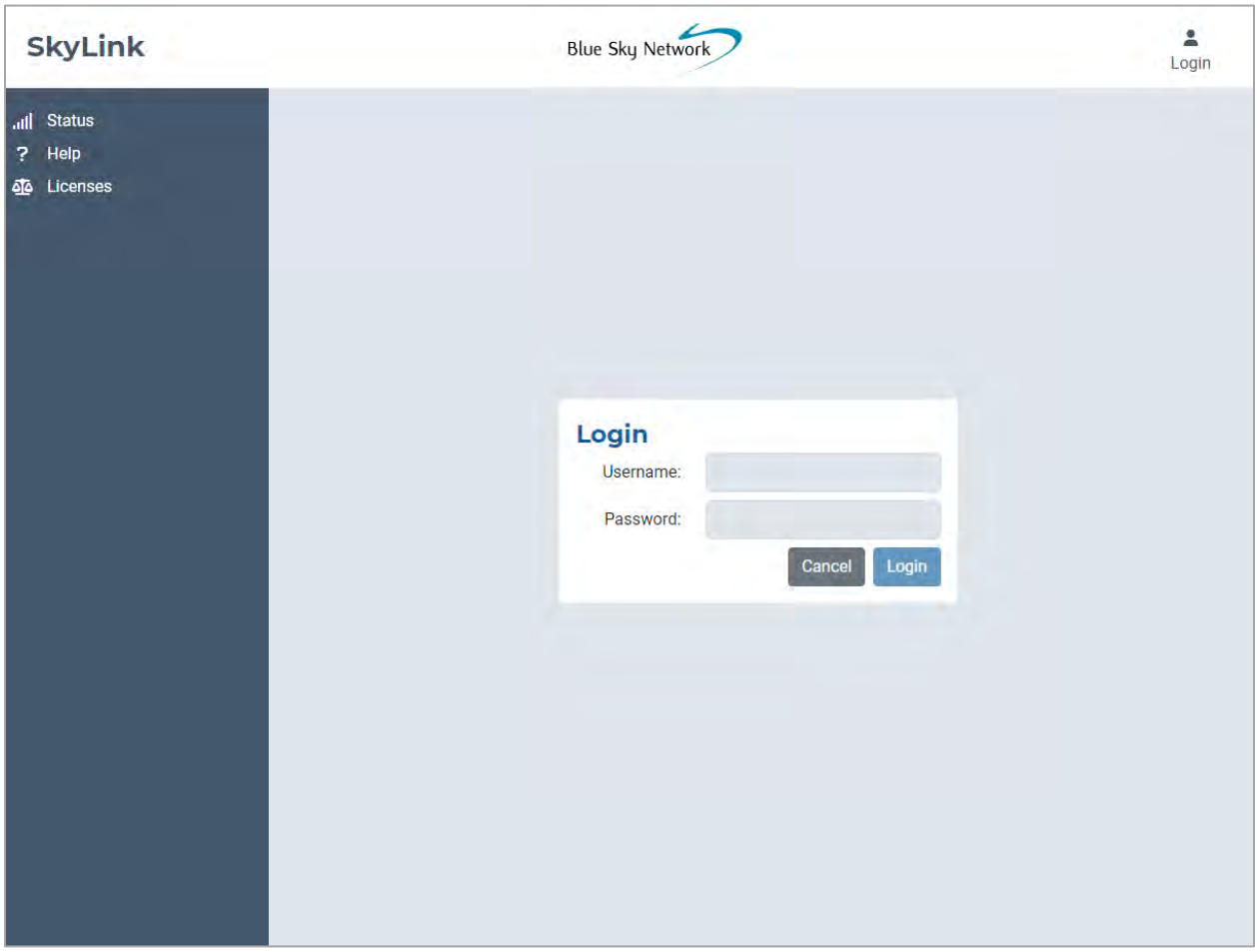
To connect to the SkyLink Device Interface, open a web browser, type the below IP address into the address bar, then press 'Enter' on your keyboard.

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 User ID and Password are both 'admin.'

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



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Overview

The left-hand side of each screen displays tabs for easy navigation to important information about your device. In order, they are:

- Status

Configuration:

- General Settings
- Connection Manager
- Network
- Firewall
- Remote Management
- Serial to IP
- Voice Extensions
- Accessories

Data & Tools:

- Calls
- Diagnostics
- System Log
- Advanced

Other:

- Help
- Licenses

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

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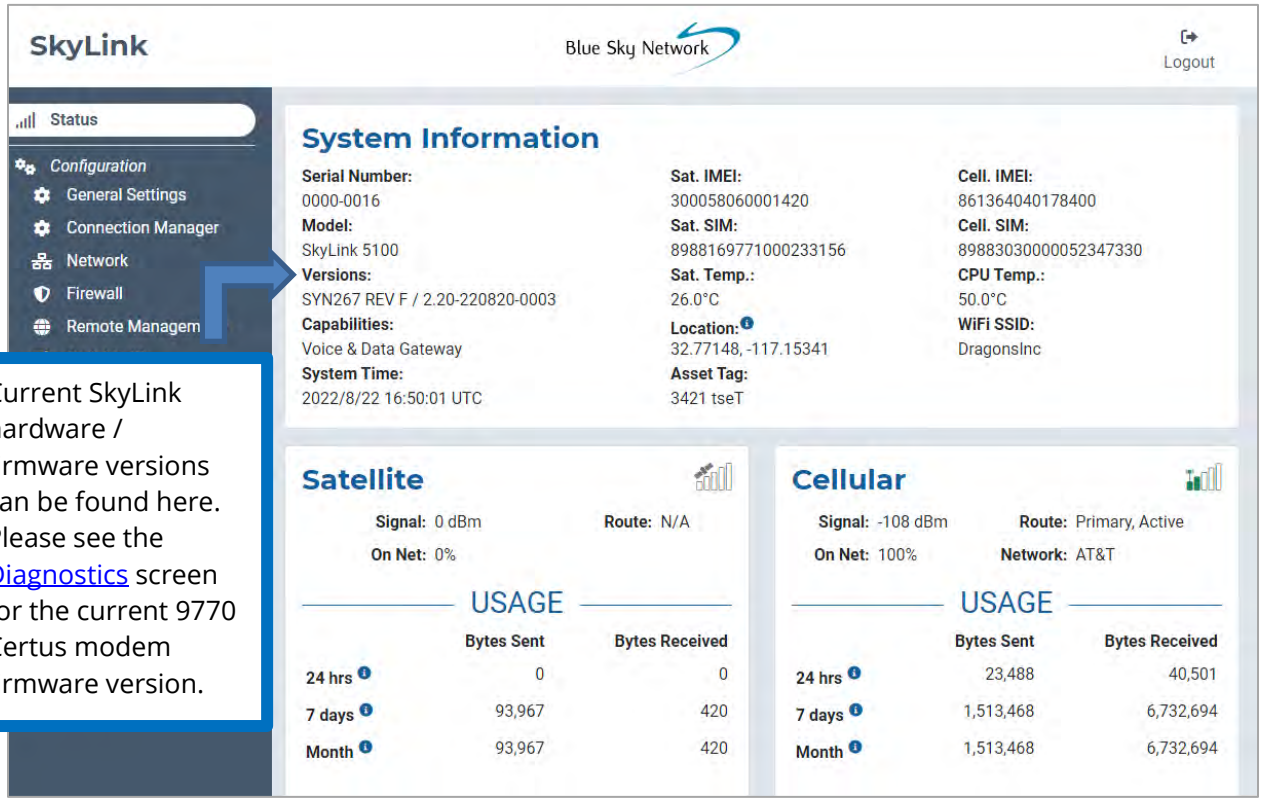
Status

When accessing the SkyLink Device Interface, you will automatically be directed to the Status screen. Here you will find details about your system as well as your satellite and cellular data usage.



Current SkyLink hardware / firmware versions can be found here. Please 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.

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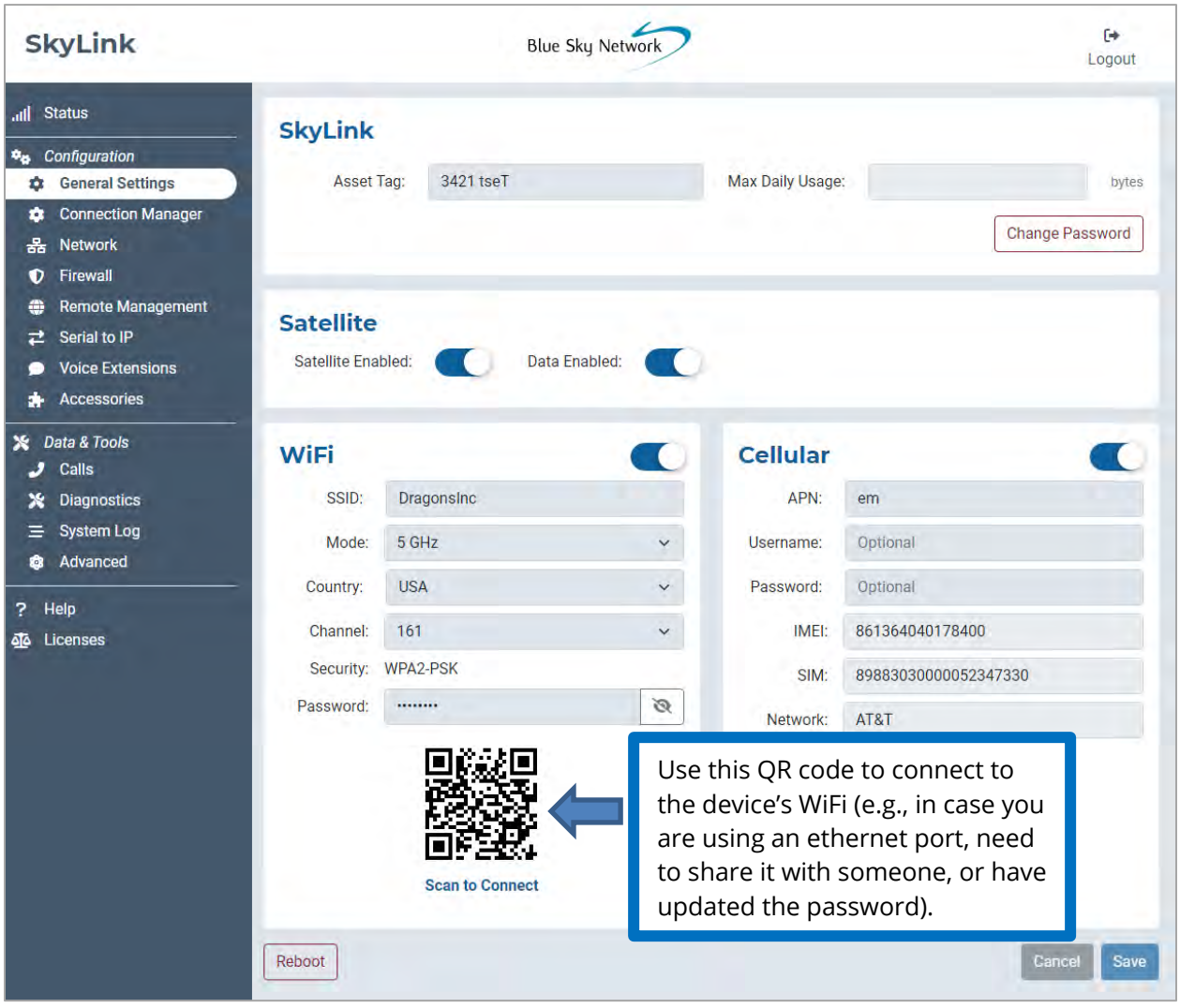
General Settings

This screen allows you to make setting 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.

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



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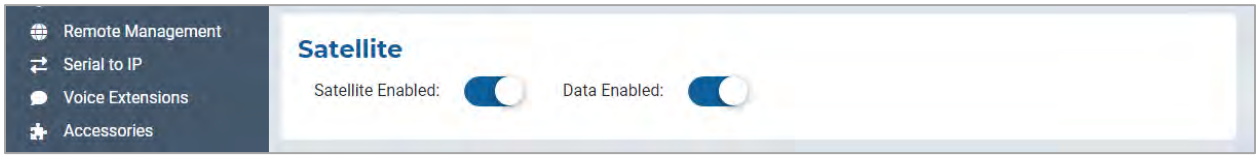
SKYLINK

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 for a list of mobile-optimized sites). It is not intended for general web browsing or high bandwidth applications.

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WIFI & CELLULAR

Once you are connected to the SkyLink device's WiFi, and cellular capabilities are enabled, you can use your personal device to browse any website and use all of your applications.

The default mode (out-of-box) is 'all internet OFF'—users must explicitly enable internet access. You also have the option to keep the built-in WiFi disabled and connect your own WiFi to an existing ethernet port (e.g., in a building or ship-wide).

The WiFi section allows you to edit the SSID, Mode, Channel, and randomly generated Password fields. It also contains a scannable QR code for automatic connectivity. When set to 2.4GHz, the Mode field will default to the radio channel with the strongest WiFi signal, and you can select among 11 channels. Changing it to 5GHz will provide you with a new set of channels to choose from.

In the Cellular section, you can fill in the optional Username and Password fields. **NOTE**: Some carriers require a Username and Password. Please contact your carrier if you have questions.

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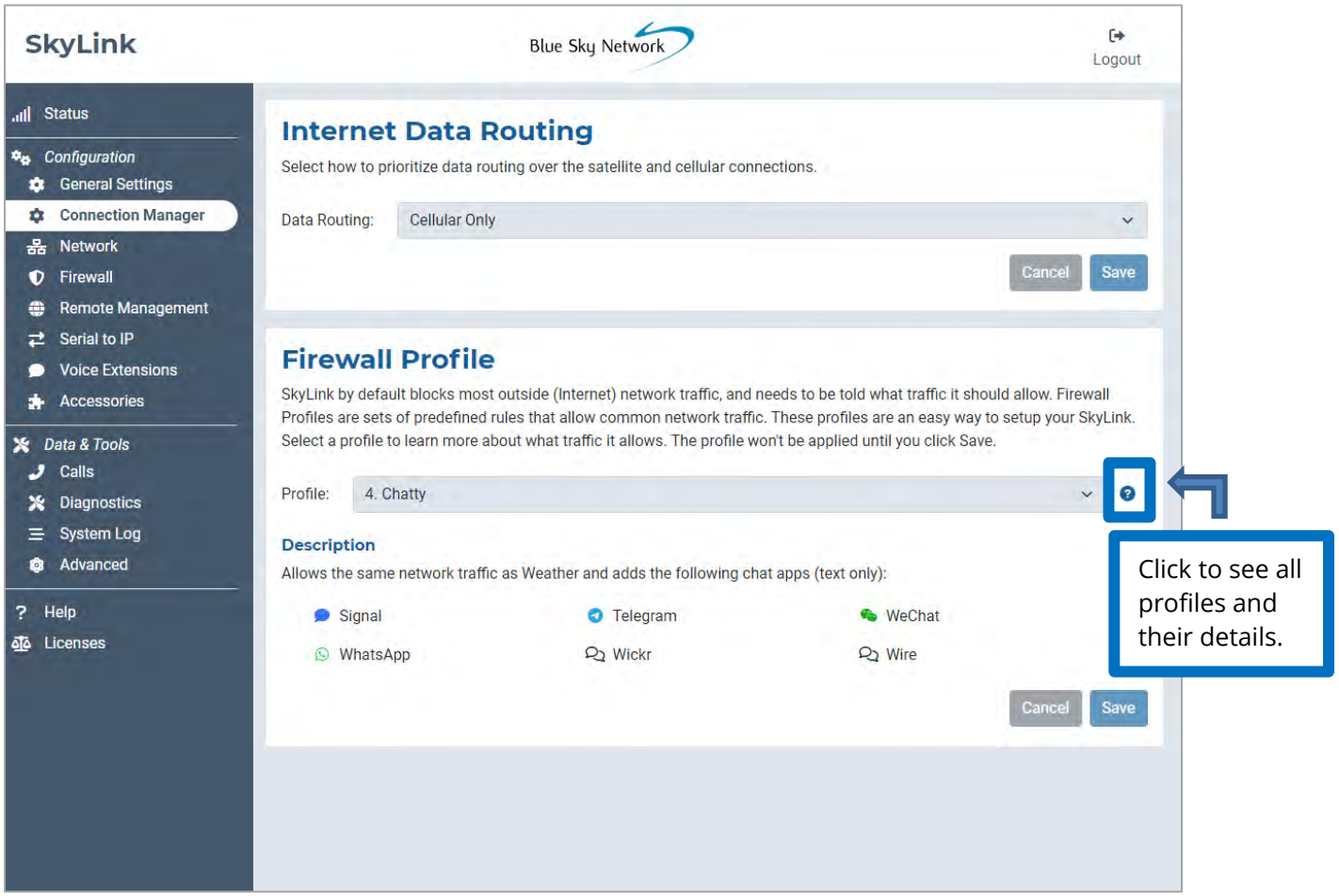
Connection Manager

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 rule in the Advanced Rules section on the Firewall screen. You can also try making configurations in the app itself or reach out to your corporate MDM platform.



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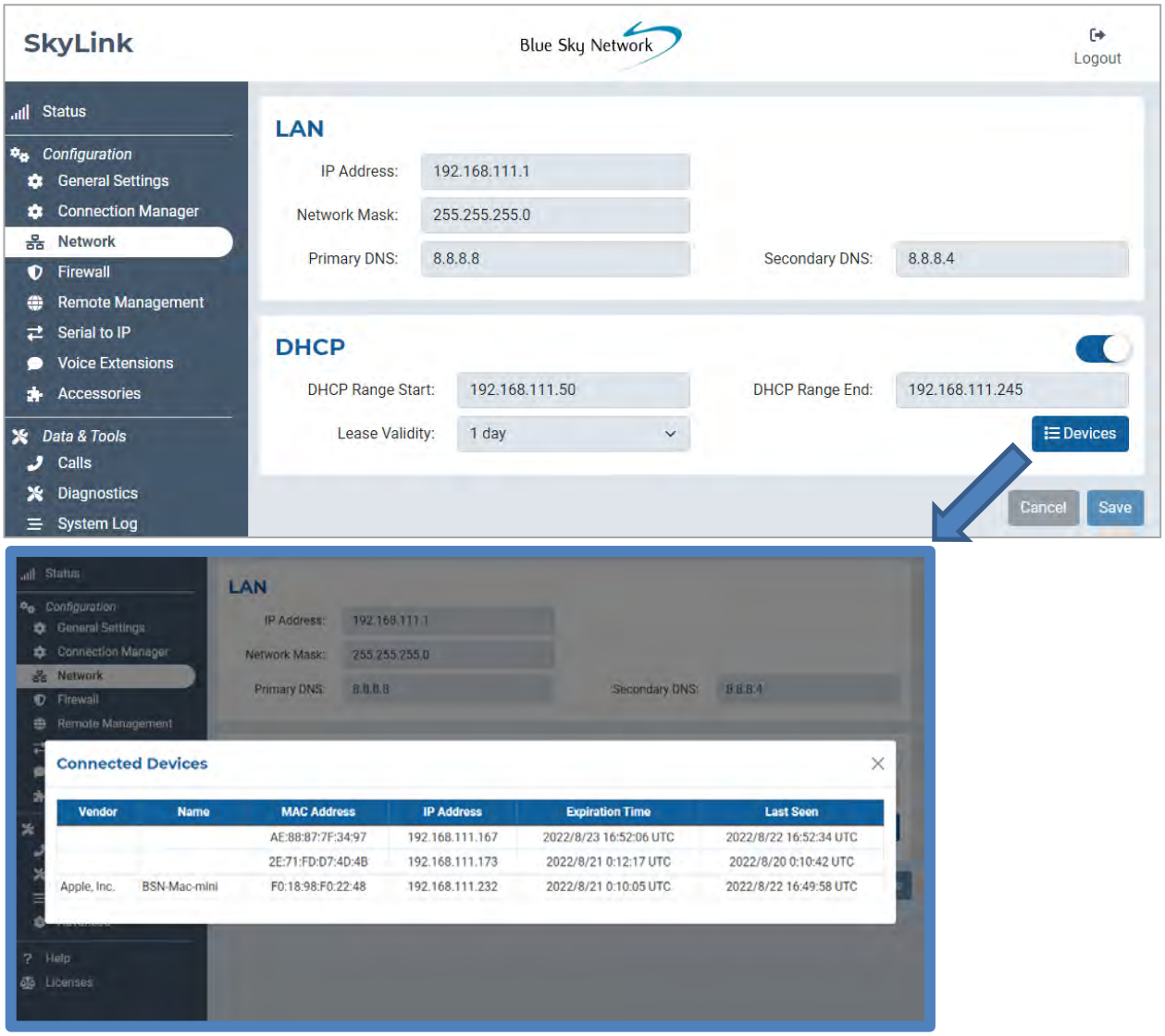
Network

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. Select the 'Devices' button for a list of connected devices, including identification and location details. The toggle slider enables and disables DHCP.



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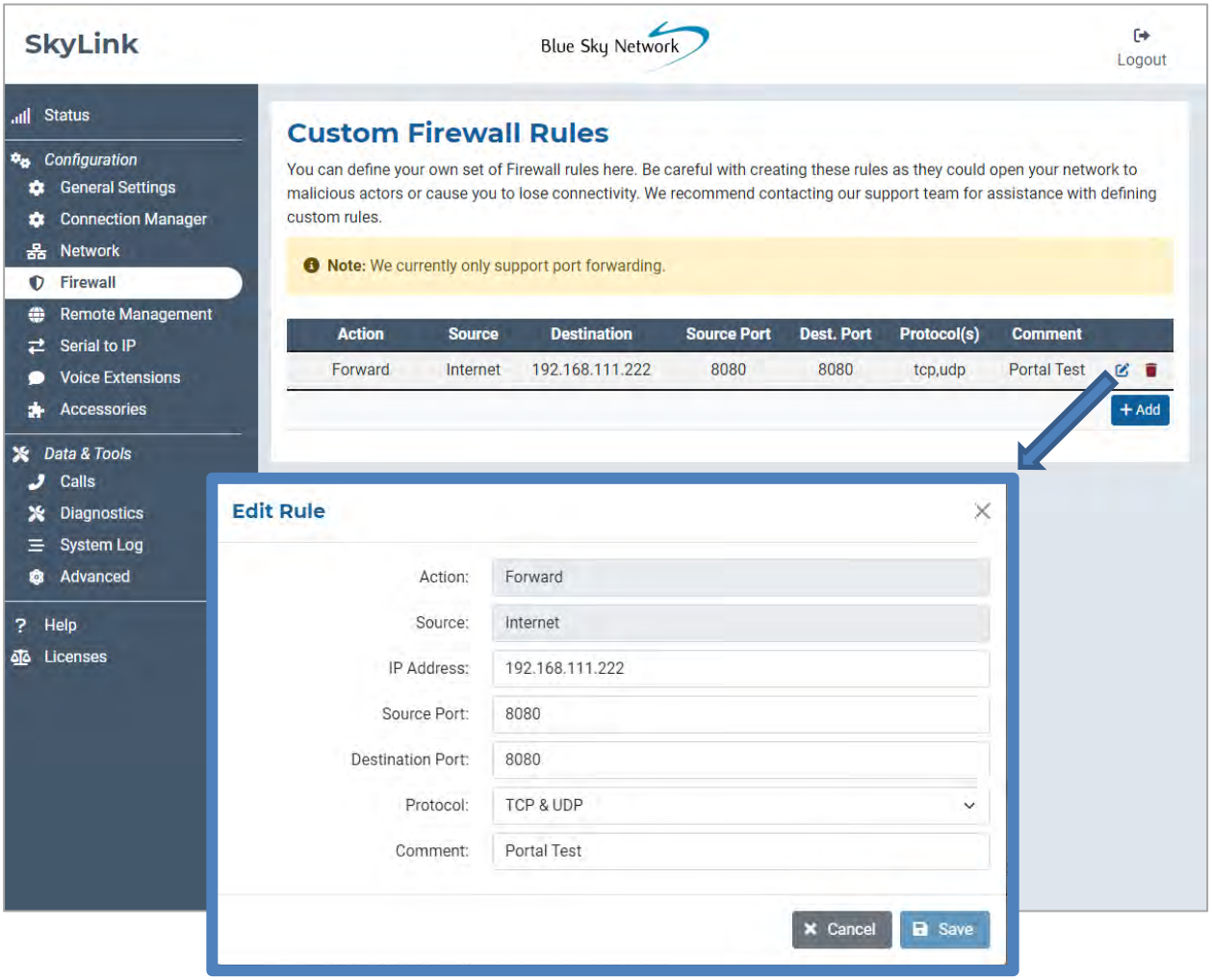
Firewall

The SkyLink Device Interface allows you to create custom rules and block all network traffic from an app affiliated with a certain profile. This screen shows all custom rules currently in the system.

Press 'Add' to create a new rule or the pencil icon to edit an existing one. Fill out the open fields, then press 'Save.' If successful, it will appear in the table. Select the red trashcan to delete a rule.

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

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



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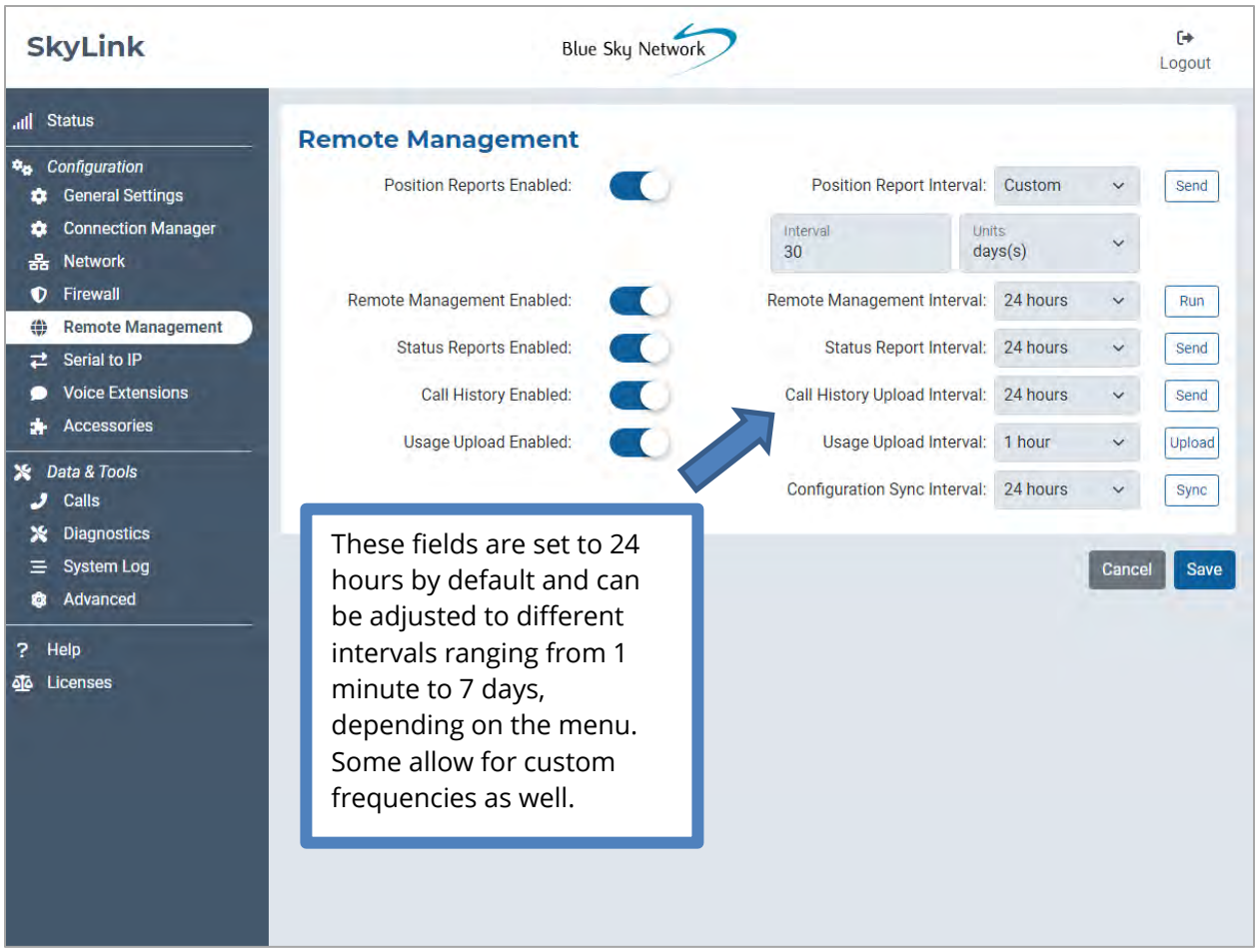
Remote Management

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.



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.

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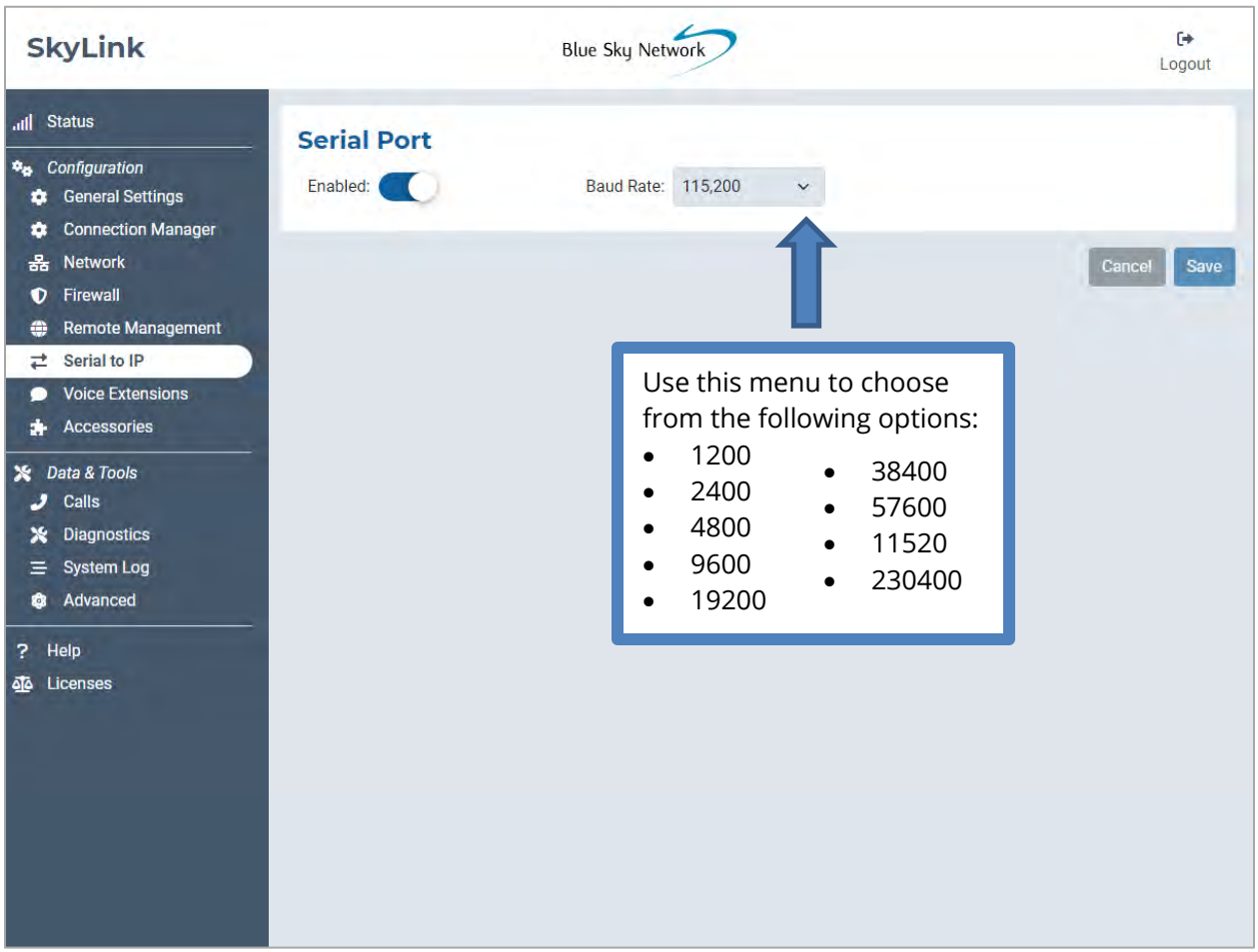
Serial to IP

The SkyLink device supports modem dialing to IP addresses. Enable or disable the serial port on this screen. Click 'Save' to apply the changes.



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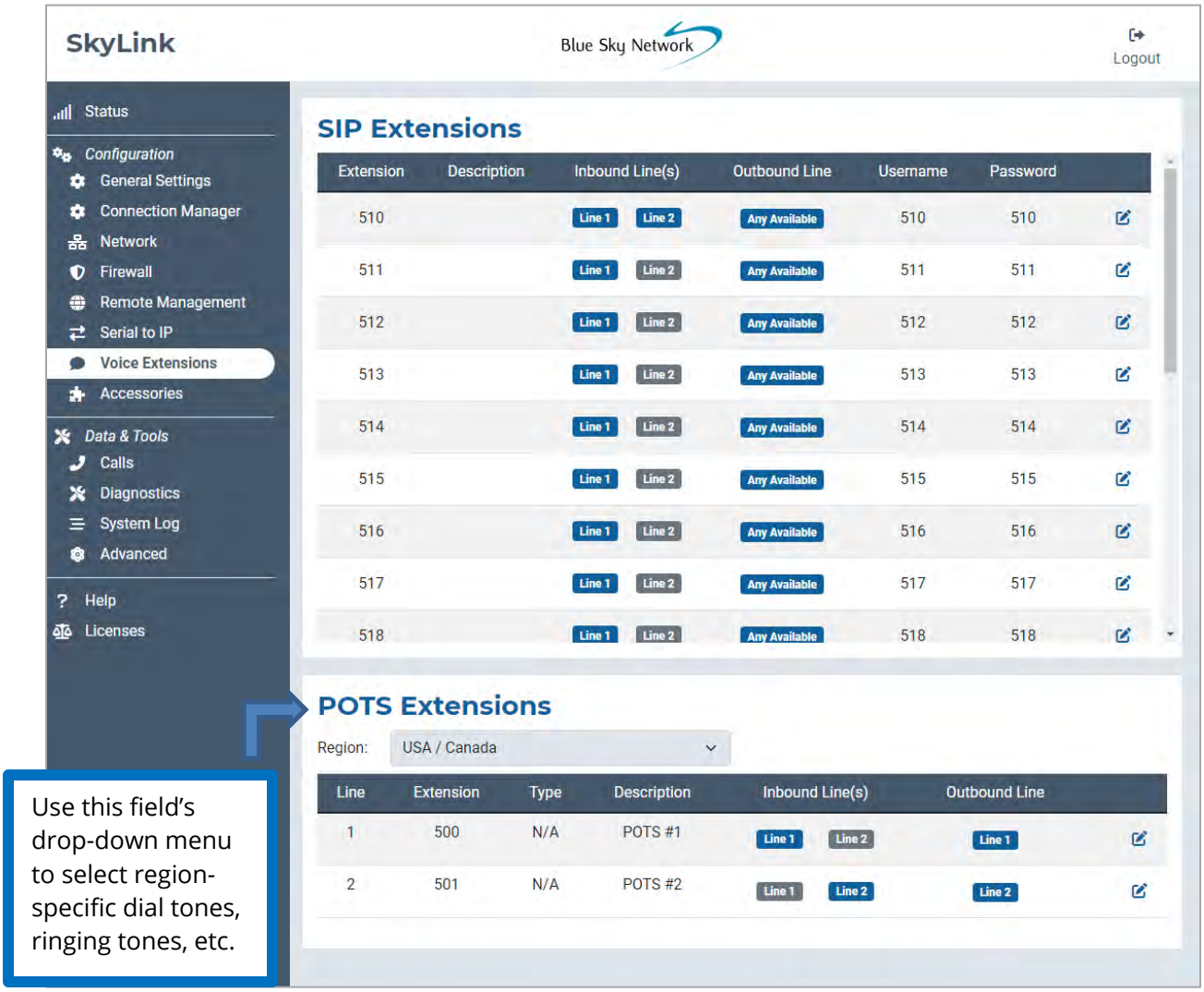
Voice Extensions

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.



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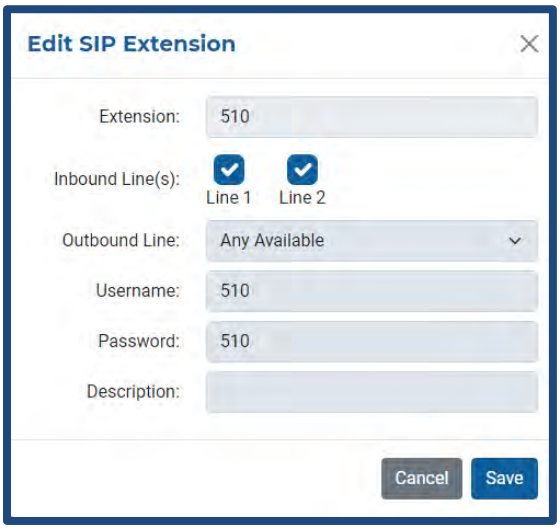
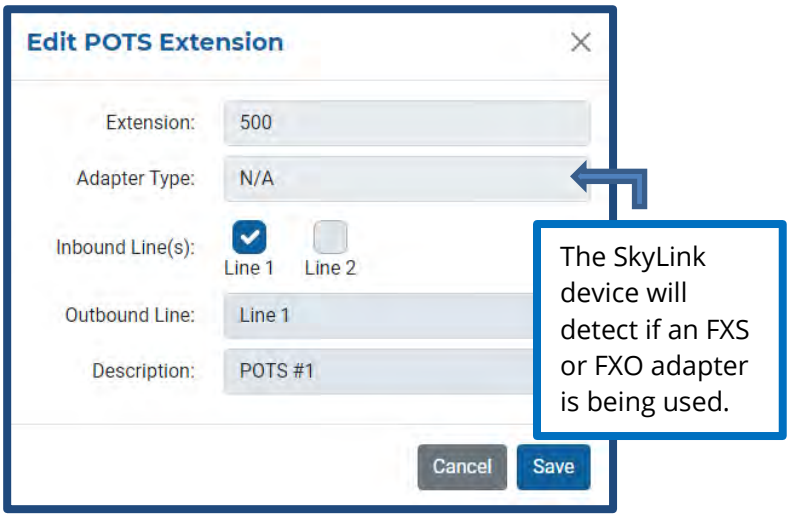
EDITING A SIP OR POTS EXTENSION

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.'





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.

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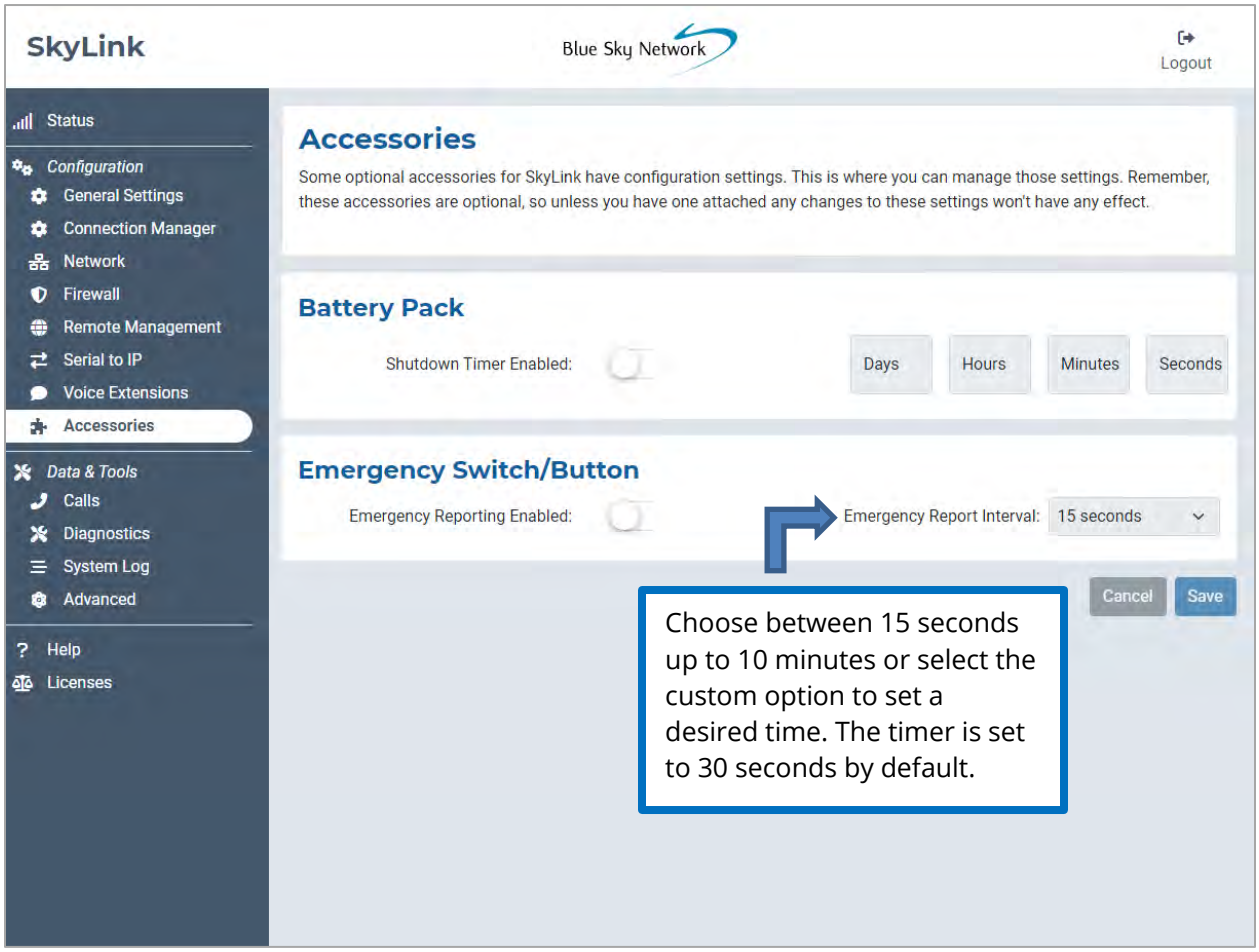
Accessories

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.

Under the Battery Pack section, use the toggle slider to enable an automatic shutdown timer. The buttons to the right allow you to determine precisely when the battery will turn off.

When enabled, the slider in the Emergency Switch/Button section sends an SOS event with GPS location to SkyRouter. Click the drop-down menu to configure how often these reports get sent.



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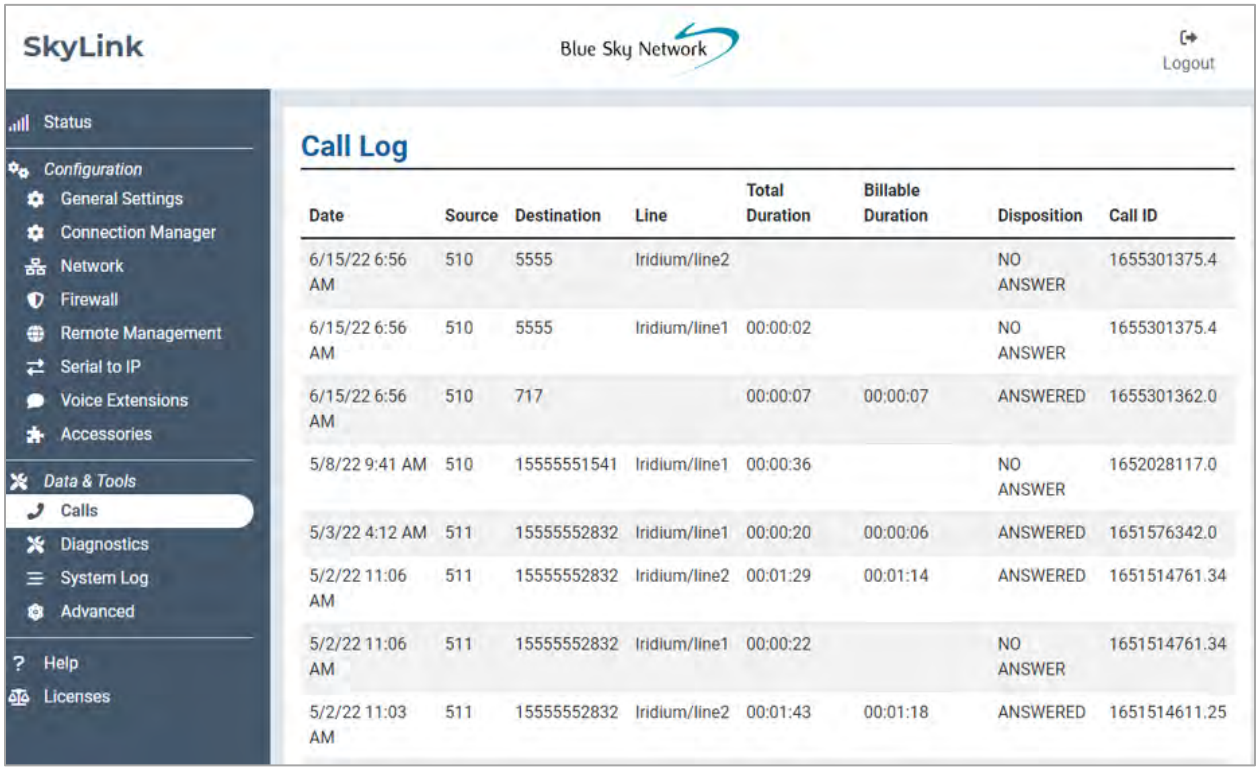
Calls

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.



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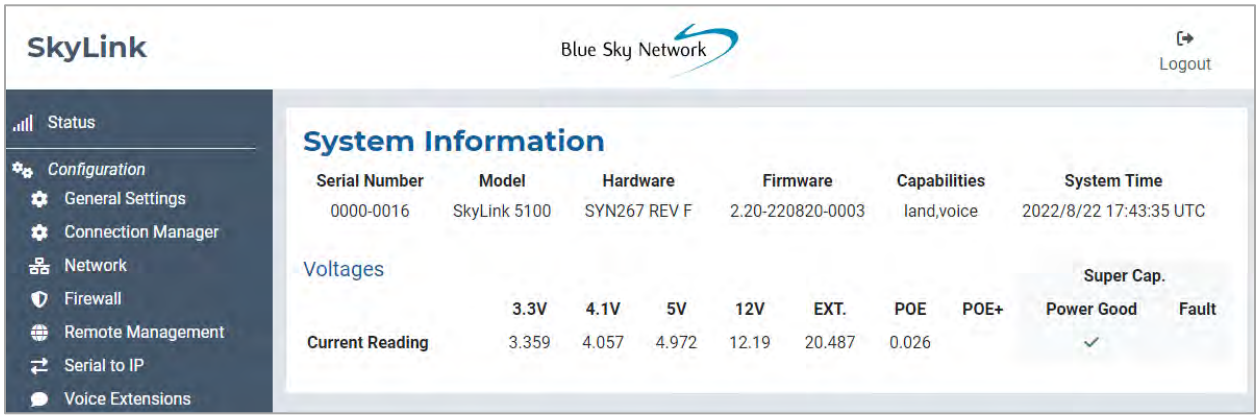
Diagnostics

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.



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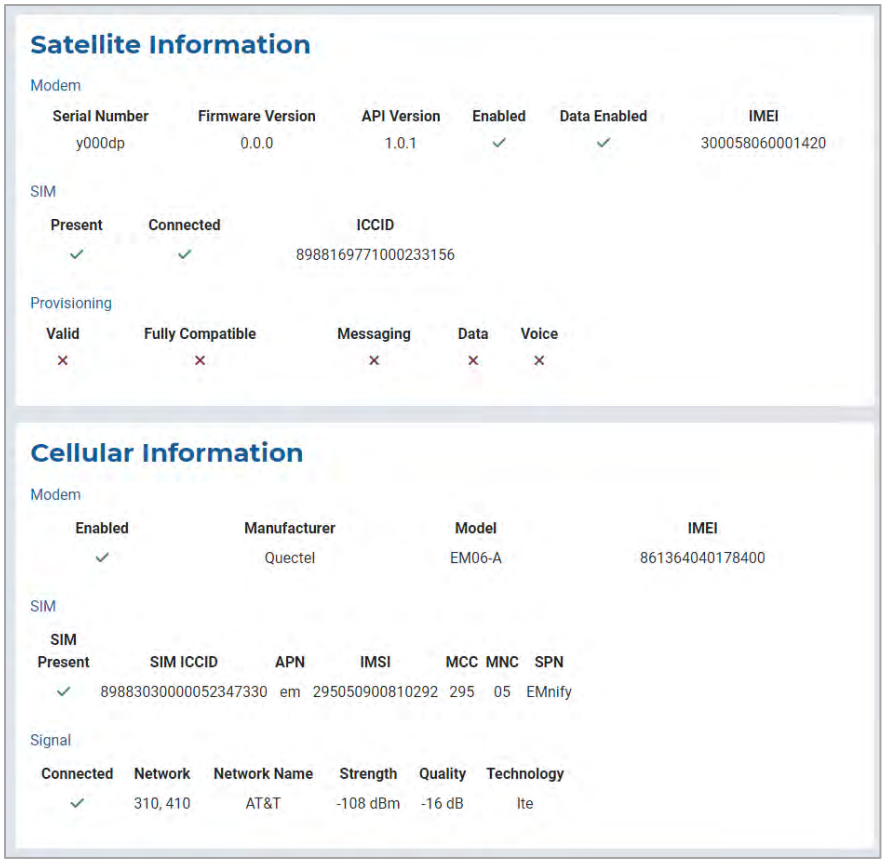
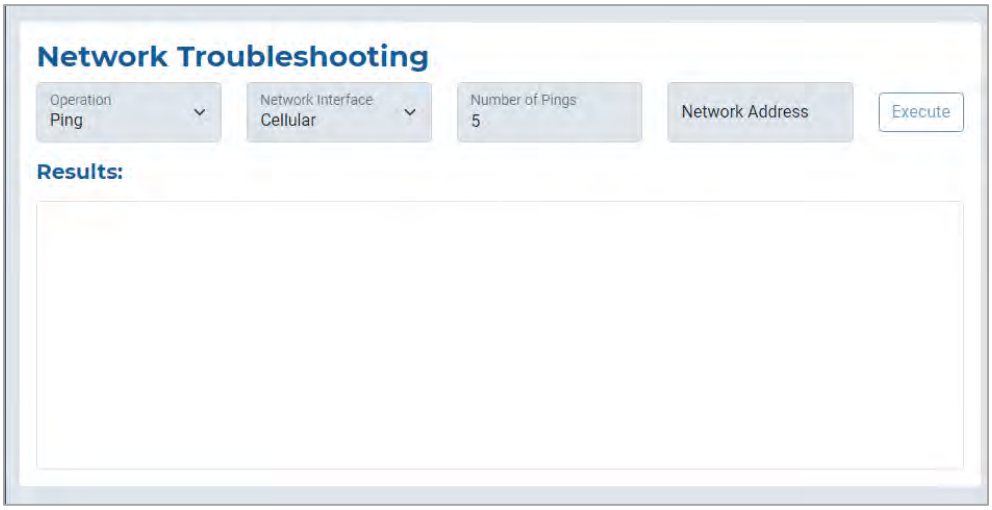
SATELLITE & CELLULAR INFORMATION



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. The results will be displayed in the section below.



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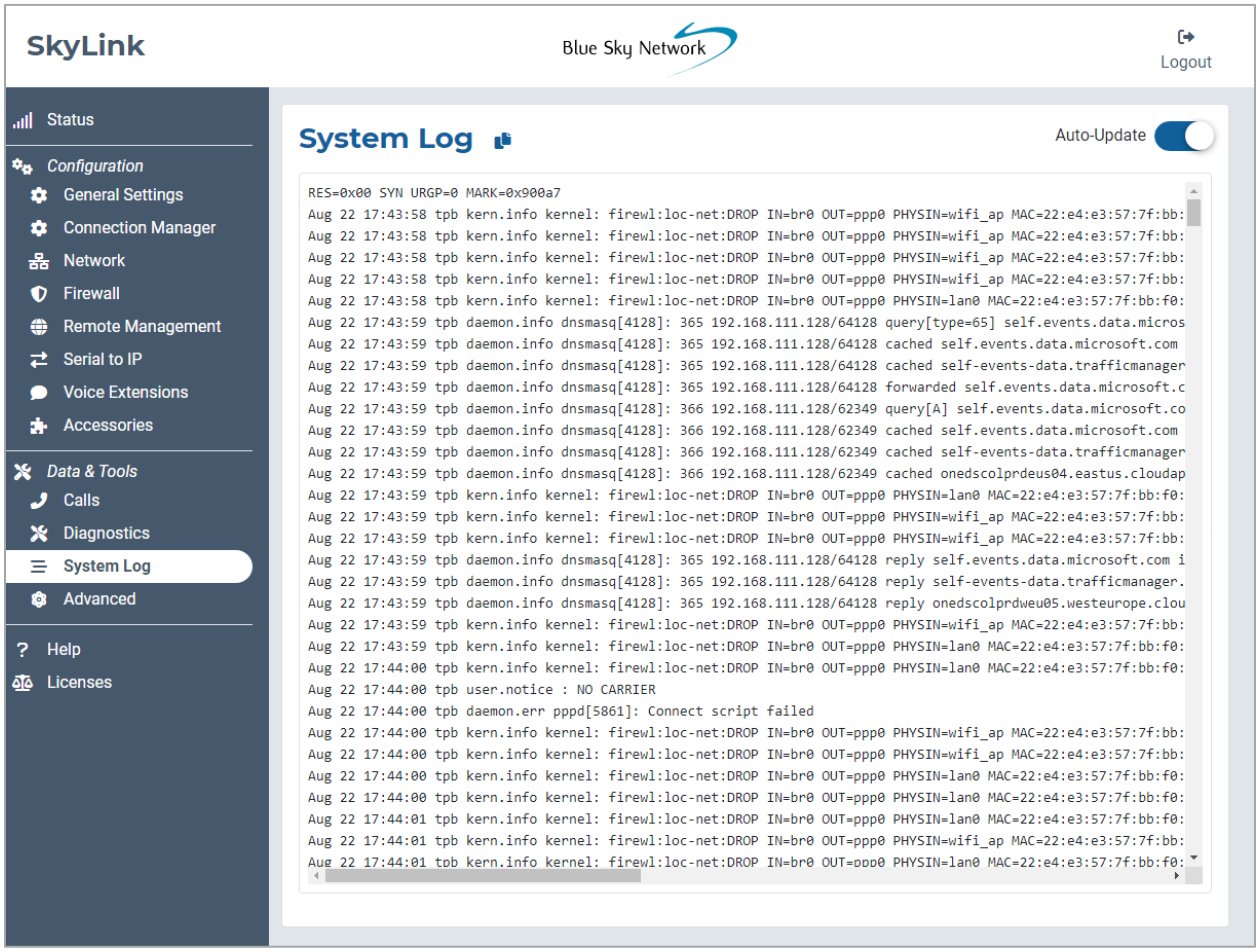
System Log

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.



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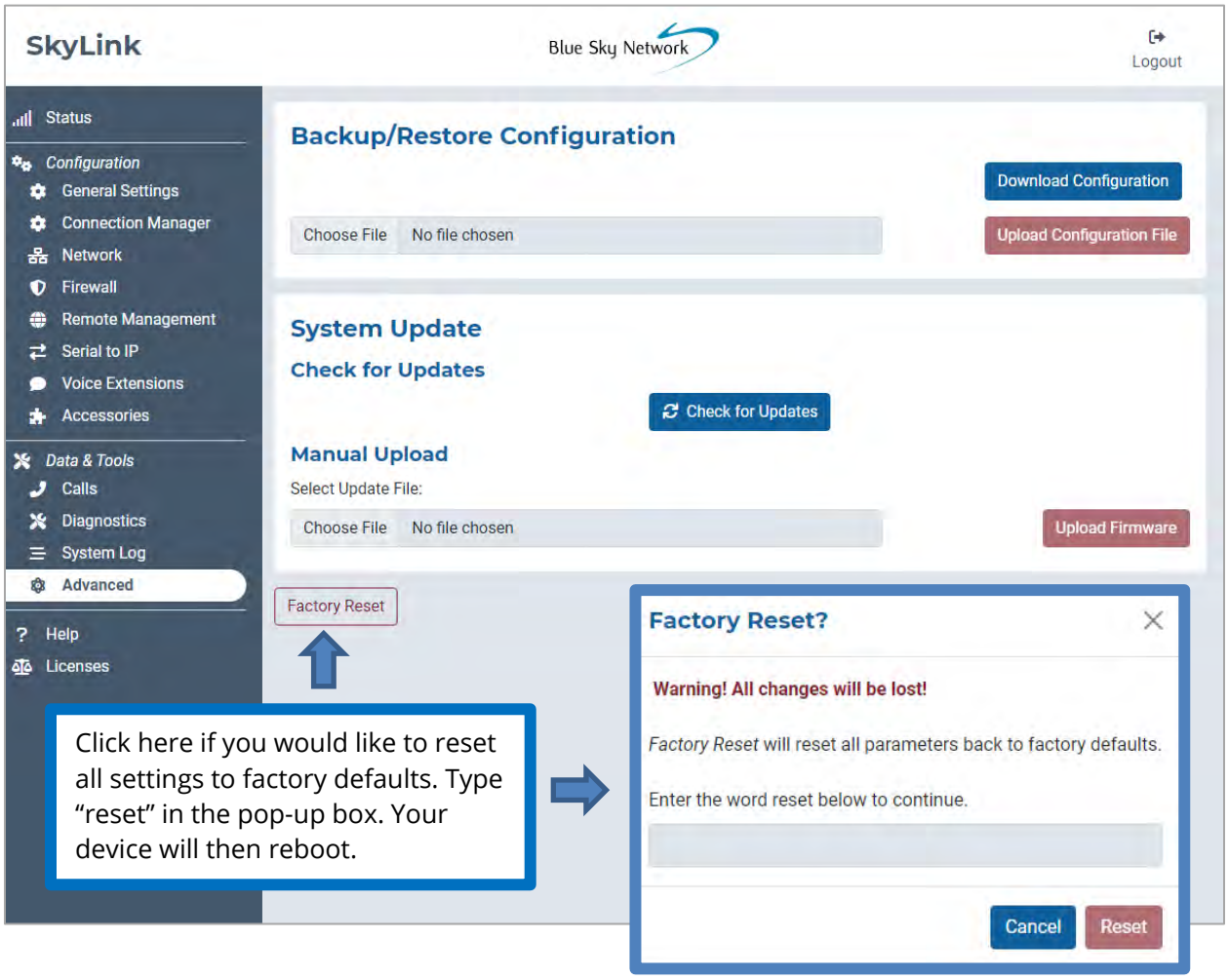
Advanced

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 will display the SkyLink's current firmware version, and the Diagnostics screen will display the current 9770 Certus modem firmware version.



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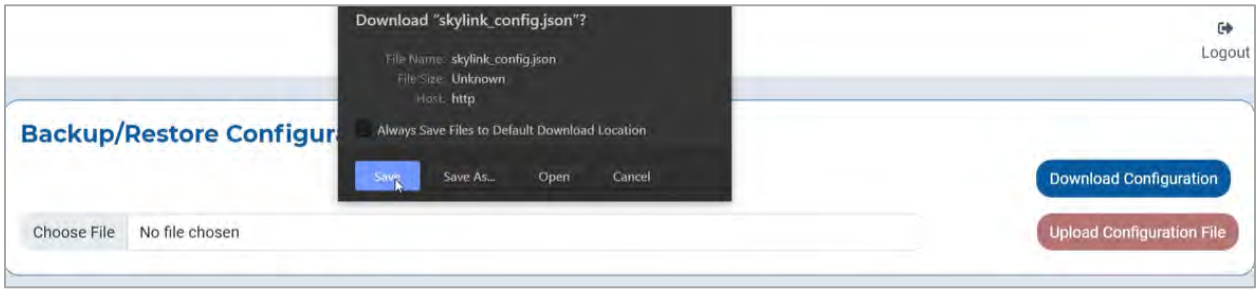
BACKUP/RESTORE CONFIGURATION

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

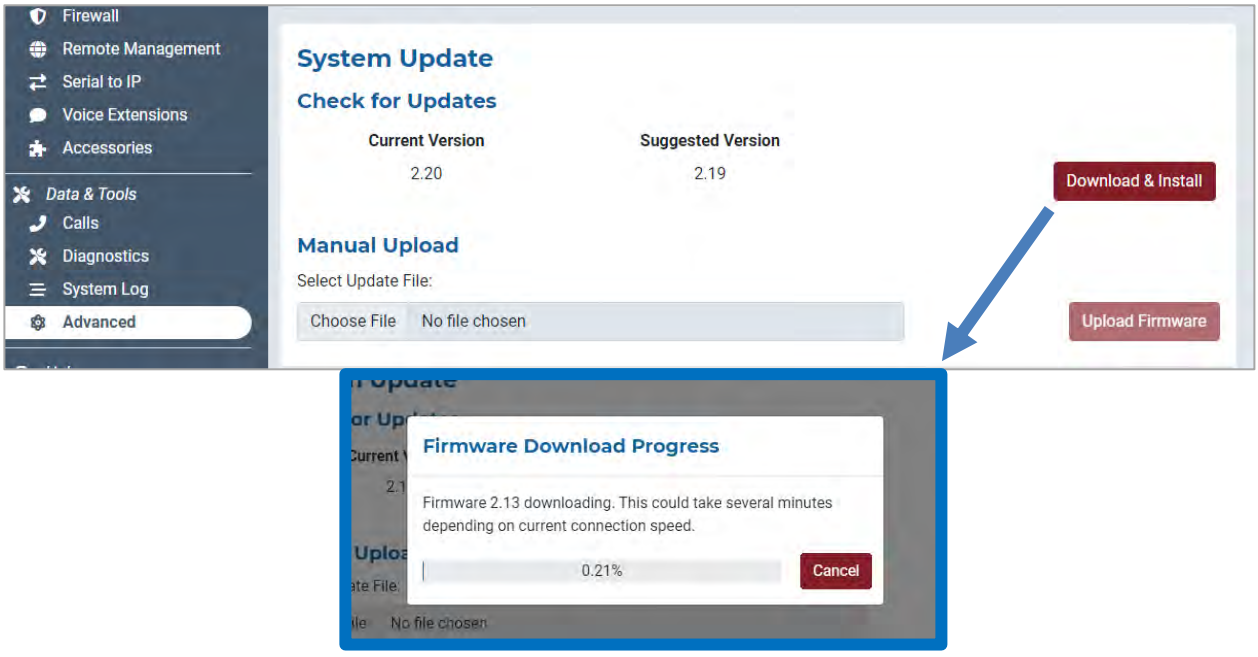


SYSTEM UPDATE

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 percent to completion.



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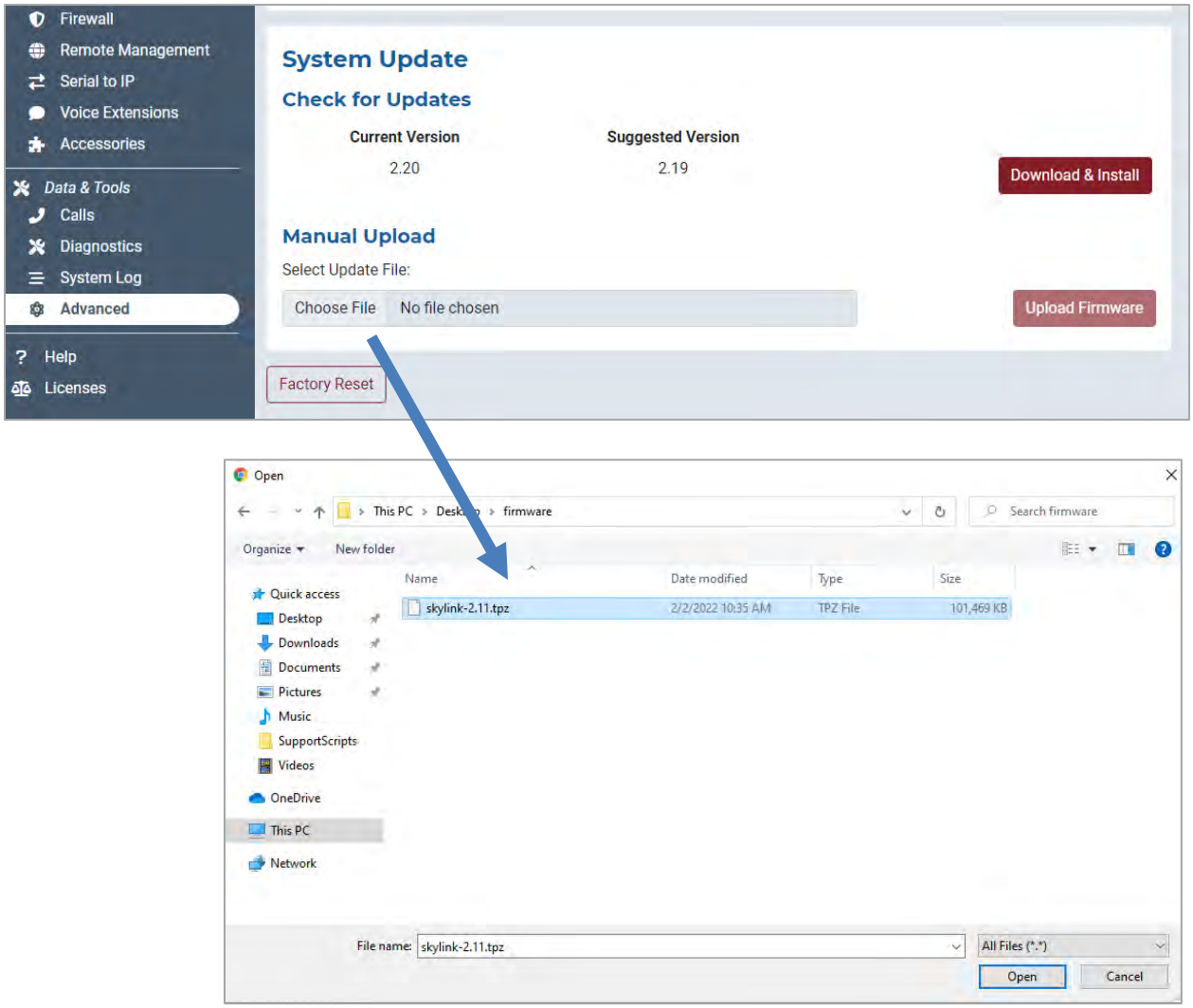
Alternatively, click the 'Choose File' button under the Manual Upload section. Locate and select the appropriate .tpz file, then press 'Upload Firmware' to start the firmware upgrade process.



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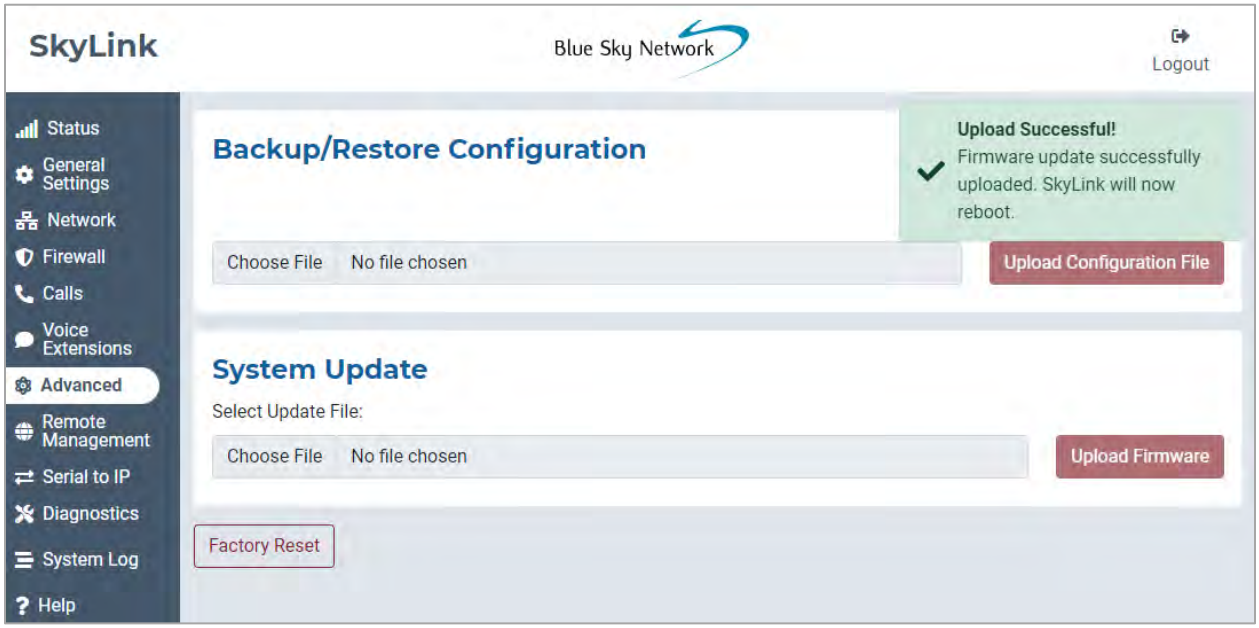
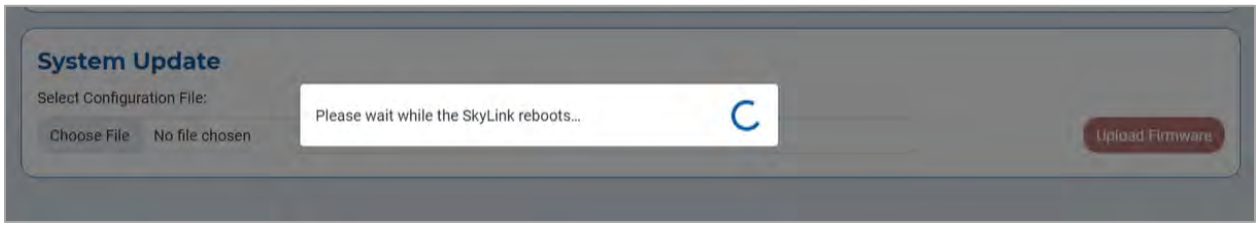
Once the firmware upload is complete, a green success message will appear in the right corner.



You will then be prompted to wait while the SkyLink device reboots. This may take several minutes.

As it updates, the power LED indicator located on the top panel of the device will blink blue. A red blink indicates an Iridium firmware upgrade or downgrade. ***The SkyLink device should not be powered off while the power LED indicator is blinking blue or red.***



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

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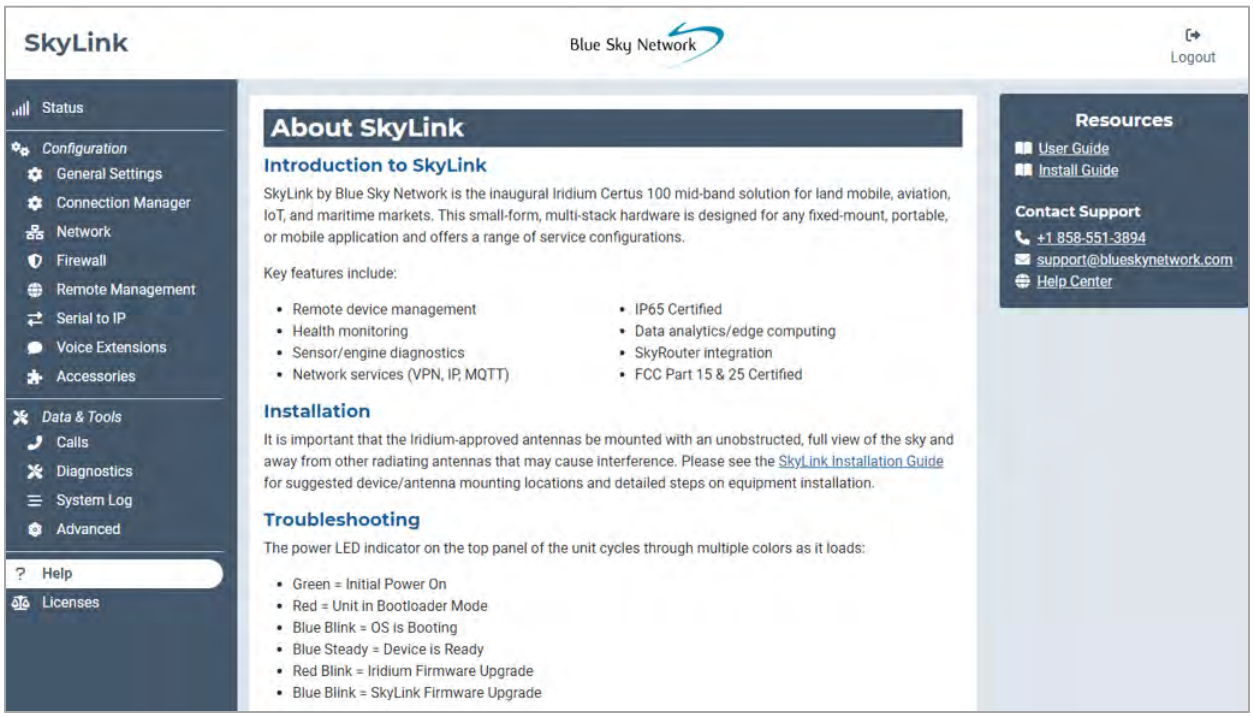
Help

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.



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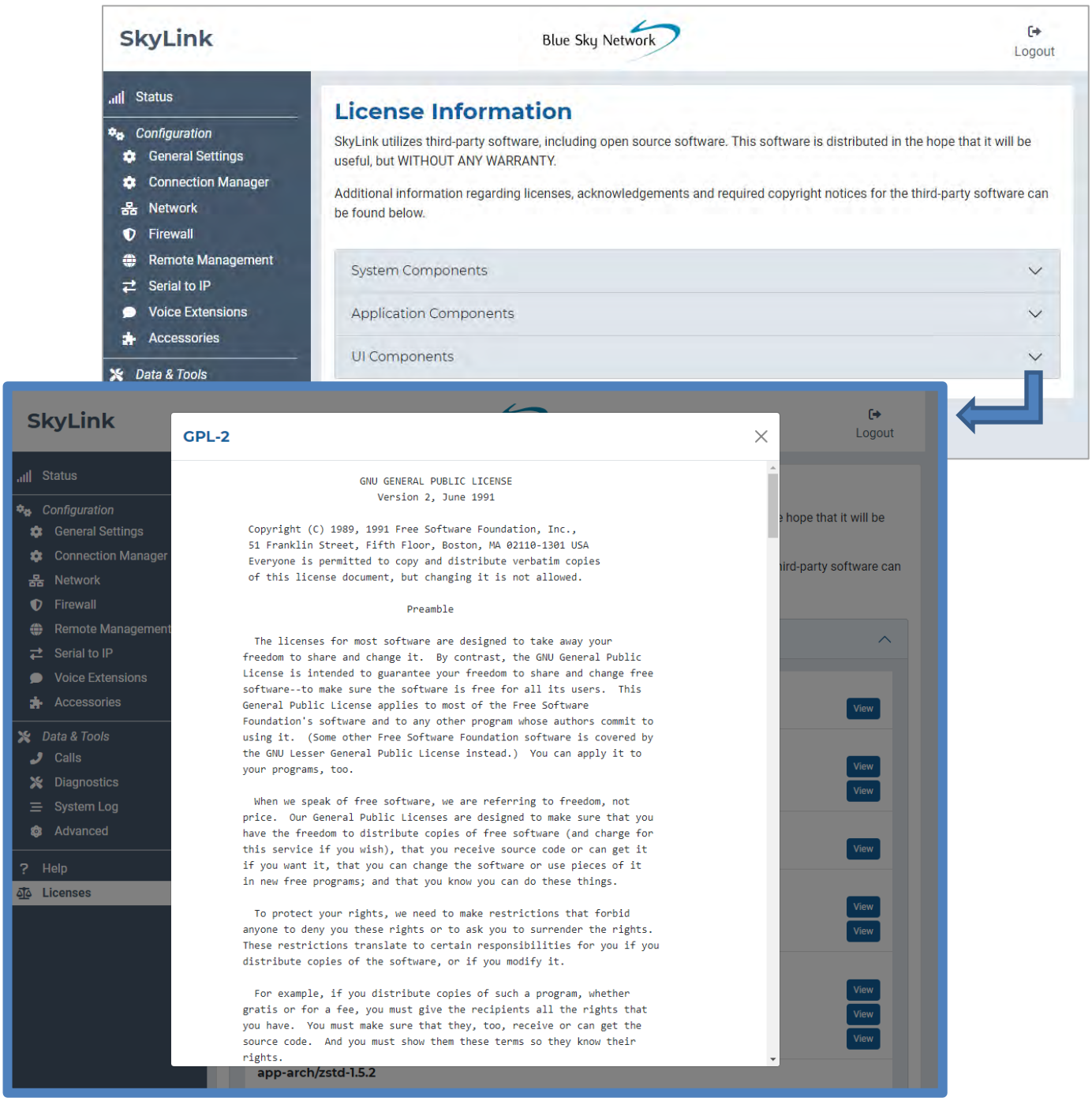

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SKYLINK CAPABILITIES

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

The SkyLink device supports 2 phone lines and a network connection that accepts SIP, providing users with multiple voice options. Each option offers 2 Iridium inbound and outbound lines. POTS customers also have FXS and FXO options to choose from.

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

- You have properly installed your activated Iridium SIM card.
- You have connected one of the following Iridium-approved antennas to the SkyLink device:
    - MARUWA (MHL-1621C)
    - High-Profile Maxtena (M1621HCT-HP)
    - Sensor Systems (S67-1575-414)
    - SCAN (65020-000)

  NOTE: Please see the SkyLink Installation Guide for detailed information on installing the SIM card and antennas.
- 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/outbound calls via your landline phone or personal device, including third-party apps on computers, smart phones, or tablets. Use the Voice Extensions screen on the SkyLink Device Interface to configure line extensions and the Calls screen to view call details.

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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.):

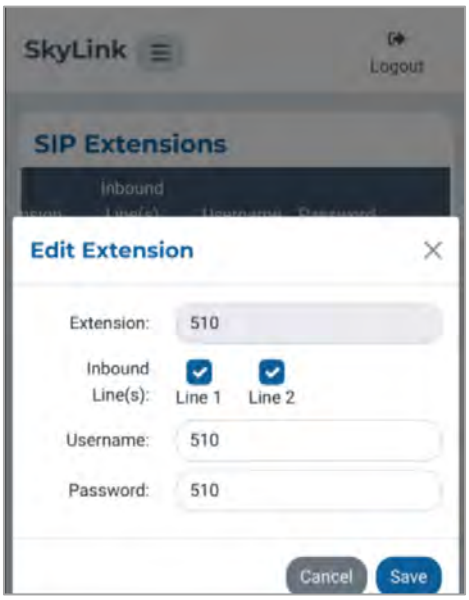
- Codecs (if setting is available): Enable – A-LAW, 722. Disable – U-LAW

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.'



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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 LTE antenna or an Iridium-approved antenna to the SkyLink device (full list included in above section on Making Phone Calls).
- You are connected to the SkyLink device WiFi or are using an ethernet cable.
- Satellite or cellular capabilities have been enabled via the toggle sliders on the Connection Manager screen of the SkyLink Device Interface.

You are now able to use your personal device to browse the internet and use mobile applications.

NOTE: Satellite internet connection supports messaging apps, mobile-optimized web surfing, 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.

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Using the Serial Port

The SkyLink device supports AT Command Set emulation via the serial port, enabling legacy sensor connection to the cloud. Default port settings are 230400 8N1 (Baud: 230400; Data bits: 8; Parity: none; Stop bits: 1).

- You can dial an IP address by using one of the following formats:

Format:	**Will Dial:**
ATD1.2.3.4:777	IP 1.2.3.4 tcp port 777
ATD010000000005068	IP 10.0.0.5 tcp port 68
ATD192168111003#777	IP 192.168.111.3 tcp port 777

- SSL/TLS are also supported (using ! operator), as shown below:

Format:	**Will Dial:**
ATD!1921681110003#777	IP 192.168.111.3 TLS port 777

NOTE: Separator for 'port' can be ':' or '#'

- Other AT commands implemented include:

  A, D, E, H, I, L, M, N, O, P, Q, T, V, X, Z, &C, &D, &F, and S registers.

  Default S registers are:

  S0 = 1
  S1 = 0
  S2 = 43
  S3 = 13
  S4 = 10
  S5 = 8
  S7 = 60
  S12 = 50
  S25 = 5
  S30 = 0
  S38 = 0

  NOTE: S0 = 1 enables auto answer for an incoming connection. This can be changed in command mode via ATS0 = 0

- To run a custom test command: +MARCO - returns "POLO"

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INCOMING CONNECTIONS

A TCP listener runs on port 4011. To receive a connection, one device should issue an “ATD…” to establish an outgoing TCP connection, and the remote device will need to set up a “port forward” from an external port to the internal 4011.

Upon receiving the external TCP connection, the default will be to auto answer, and the devices will be connected as long as there are no other active connections.

On incoming, please note the following:

- With auto answer on, “CONNECT” is displayed just before the connection is made.
- If auto answer is off, “RING” is displayed to alert the serial port of the incoming connection.
- Incoming rings can be answered via ATA.
- If another connection is in progress, the second incoming connection will be rejected.
- If multiple attempts to connect happen simultaneously and auto answer is off, the last connection seen will be answered by ATA.

On disconnect of the remote connection, “NO CARRIER” is displayed to alert the local serial port that the link is lost.

NOTE: If you are interested in SkyLink to SkyLink on-net communication, we recommend contacting your Blue Sky Network account manager to learn more about the Virtual Closed User Group (vCUG) feature.

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Basic command functionality is available to query signal strength, connection strength, and model number. An unsupported command will return ERROR but can be implemented upon request.

SkyLink AT Command	Expected Response
D	Dial a number
+++	End your session
BREAK	Issue a new command
H	End a current call
#FACTORYRESET	Perform a factory reset of entire device configuration and reboot device
i0	Model
i1	“0000”
i2	“PASSED”
i3	“iridium”
i4	Make
i5	Software_version
i6	Hw_revision
“+CGMI”	“Iridium”
“+CGMM”	Make
“+CGMR”	“Software_version hardware_revision”
“+GMI”	“Iridium”
“+GMM”	Make
“+GMR”	“Software_version hardware_revision”
+GSN	Serial number
+CGSN	Serial number
+CGSN=n	See GSM docs, gives variously IMEI, software version, etc.
+CGDCONT	Ignored
+CSQ	Signal
+CSQF	Currently identical to +CSQ

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SkyLink AT Command	Expected Response
&V	Shows current internal status of AT modem and its registers
&K	Set flow control (e.g., AT+K0) Legal values: * 0: No flow control * 3: Hardware bidirectional (factory default) * 4: Software bidirectional with filtering **Note**: If parameter is omitted, the command has the same behaviors as &K0 **Note**: &K has no Read Command. To verify the current setting of &K, check the settings of the active profile with AT&V
+IFC	Set flow control (e.g., AT+IFC=1,1) **Note**: We limit legal responses to matching flow control type in both directions Legal values: 0: None 1: Software XON/XOFF (filtered) 2: Hardware

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SKYLINK SPECIFICATIONS & INSTALLATION

Technical Specifications

CONNECTIVITY

Cellular

- LTE-A CAT 6 module with M.2 form factor
- Supports LTE-A carrier aggregation
- Worldwide LTE-A and 3G UMTS / HSPA(+) coverage
- 300 Mbps receive (DL) / 50 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

WiFi

- 2.4 / 5 GHz
- IEEE 802.11 ac / a / b / g / n
- Certifications with multiple antennas:
  - FCC (USA)

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
- 2x M12 connectors (1x Ethernet & Power, 1x USB & RS232)

OPERATING PARAMETERS

Electrical

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

Environmental

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

Regulatory Standards and Compliance

- US (FCC)
- EU (CE MARK)
- Canada (IC)
- IP65 rating

Software Specifications

CONFIGURATION

- Local configuration of SkyLink devices using Wi-Fi or Ethernet
- Remote configuration of SkyLink devices, features, and settings
- Bulk device configuration
- DHCP server, client, or static IP address
- Wi-Fi 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
- Ability to apply different profiles per interface (satellite vs. cellular)
- Advanced Rules that allow customers

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
- Customizable schedule

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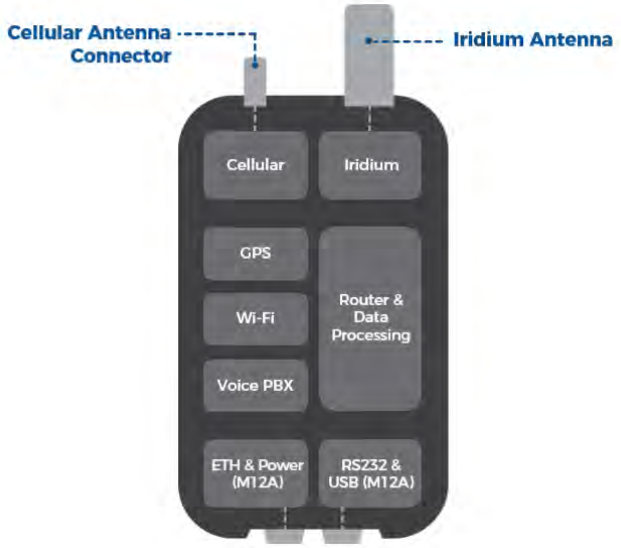
Diagram



Installation & Cable Diagrams

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, detailed steps on equipment installation, and a comprehensive list of cable diagrams.

Troubleshooting

The power LED indicator located on the top panel of the unit will cycle 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

If the power LED indicator becomes stuck on red, remove the power cable from the power port and wait approximately 60 seconds, until the light fades from green to dark. Once the unit has completely shut down, reapply power. If the device continues to display red, please contact Blue Sky Network for technical support.

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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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SOME STATES DO NOT ALLOW DISCLAIMERS OF IMPLIED WARRANTIES OR LIMITS ON REMEDIES FOR BREACH; THEREFORE, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY. THIS CONTRACT SETS FORTH SPECIFIC LEGAL RIGHTS AND CUSTOMER MAY HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

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FREQUENTLY ASKED QUESTIONS

The following questions pertain only to the SkyLink device and Device Interface. Please see the SkyLink Cloud Services User Guide for questions related to the secure online portal.

If you are still unable to resolve your issue, please contact the Blue Sky Network support team and we will be happy to help!

Connectivity

1. **Why can I not connect to the SkyLink WiFi?**
   - Verify that the WiFi SSID (located on the box or back panel of the device) matches the WiFi network shown on your personal device. If they match, try one (or all) of the following:
     - If typing in the WiFi password, use the number zero instead of the letter "O".
     - If you did not previously, use a phone or tablet to scan the QR code found on the label to automatically connect to the WiFi.
     - Switch your mobile device into airplane mode before connecting to the SkyLink WiFi.
     - If you used a mobile device, try using a tablet (or vice versa) to log in.

   If you are still unable to connect to the SkyLink device's WiFi, please contact the Blue Sky Network support team for further assistance.

2. **What are the cellular modem options? Can they be exchanged?**
   - Yes, Blue Sky Network can support any Key B M.2 cellular card with advanced notice. Currently, the cellular modem options are:
     - Quectel EM06-A (North America / Mexico)
     - Quectel EM06-B (Europe / Middle East / Africa / Asia Pacific / Brazil)
     - Quectel EM12G (Brazil)

3. **Which WiFi frequencies are used for the SkyLink Data Gateway?**
   - The WiFi uses 2.4Ghz and 5Ghz; the channels depend on the regulatory domain selected (more information can be found in the User Guide under General Settings > WiFi & Cellular). If using a more capable Companion WiFi option, you will want to disable the Gateway WiFi.

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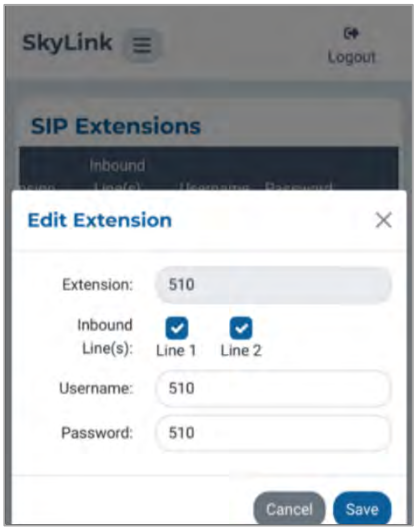
4. **I am not receiving incoming call notifications on SIP extensions.**
   - The SkyLink device has 2 incoming Iridium phone lines. It is possible that you are not receiving call notifications because the SIP extension you are using is not configured to receive incoming calls from the Iridium line you are calling.

     In the SkyLink Device Interface:
     1) Navigate to the Voice Extensions screen.
     2) Click 'Edit' on your extension.
     3) Ensure that both boxes in the Inbound Line(s) fields are ticked, then click 'Save.'



Antennas / Cables / Power Sources

5. **Why did my device not power on after I connected the power cable?**
   - Confirm that the correct cable is attached to the power port located on the left-hand side of the device's bottom panel. Your SkyLink kit comes with one of the following power adapters:
     - 12V Cigarette Lighter Adapter
     - SkyLink DC Pigtail Harness
     - POE Injector (self-assembly kit)
     - AC/DC Power Supply (self-assembly kit)

   After verifying the correct cable and port, disconnect and then re-apply the power cable into the port. Connect the adapter into the appropriate power source (e.g., a wall or vehicle outlet).

   The power LED indicator located on the top panel of the device will show a steady blue light when the device is ready to use. For additional information, please see the SkyLink Installation Guide.

   NOTE: If self-installing cellular and Iridium SIM cards, verify that they are in the correct holders. Additionally, ensure they are not placed in the micro SD slot also present in the connectivity port.

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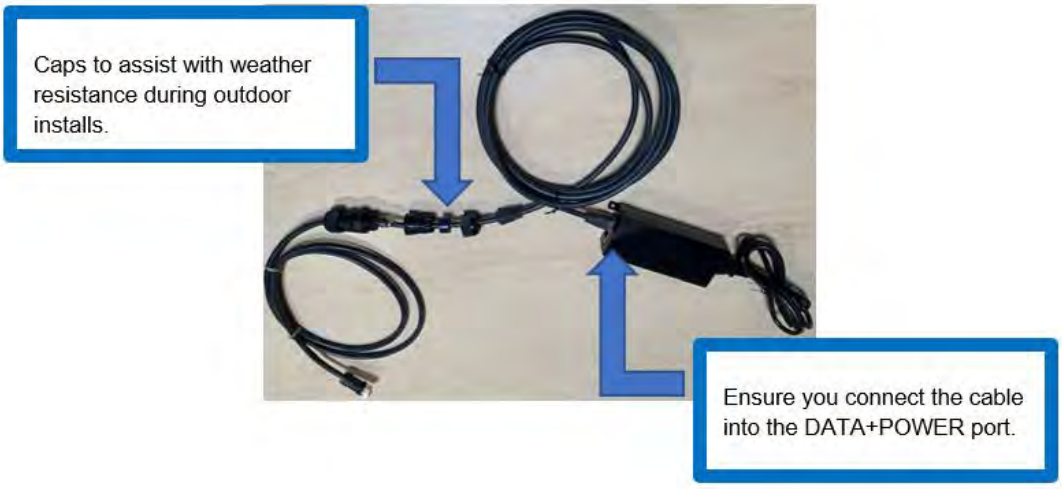
6. **My kit came with a Power Over Ethernet (POE) power source. What is it and how do I use it?**
   - Power over Ethernet (POE) is a technology that passes electric power to your device over an Ethernet cable, powering it without the need for a traditional AC power supply.

     To use this technology, you will need the POE Injector (which adds power to a non-powered ethernet connection) included in your kit or a POE-enabled switch (which is a network switch that provides power to connected devices).

     We support both common standards: regular POE (sometimes referred to as 802.3at) and POE+ (sometimes referred to as 802.3af).



7. **Can I use an alternative cellular antenna?**
   - Yes. The SkyLink device has 3 antennas:
     - 1 internal GPS
     - 1 internal LTE diversity
     - 1 external LTE main

     The LTE main antenna can be replaced with any proper LTE antenna that you wish to use.

8. **Can I use the existing Iridium antenna installed in my building with my Data Gateway device?**
   - No, Certus antennas for SkyLink are required. The following are acceptable to use:
     - MARUWA (MHL-1621C)
     - High-Profile Maxtena (M1621HCT-HP)
     - Sensor Systems (S67-1575-414)
     - SCAN (65020-000)

9. **What is included in an RS232 cable kit?**
   - The SkyLink RS232 cable kit comes with a DB9F connector and conforms to the RS232 standard pinout for a DB9. **Note**: RS232 cables for SkyLink are proprietary and available only from Blue Sky Network. Contact sales@blueskynetwork.com or your reseller to purchase.

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10. I received a SkyLink DC Pigtail Harness. What are its specs?

- This is the cable you receive if you request the currently labeled 'SL100-IS, SkyLink 10' Power Interface Cable with QuickPosition (QPos).' The specs are as follows:

OPERATING PARAMETERS

Electrical

- External power:
  - 10-34 VDC (12V nominal power)
  - POE
- Wiring

Function	Color
+Vin	Brown
GND	Green
SOS	White

Device Management

11. How do I prioritize data routing to use GSM or SAT first?

- Navigate to the Connection Manager screen on the SkyLink Device Interface. Choose your desired configuration from the Data Routing drop-down menu and save your selection. Settings are applied immediately.

  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.

12. Where can I find the current SkyLink and satellite firmware versions?

- The Status screen on the SkyLink Device Interface has the unit's current hardware and software versions. 'SYN267 REV F' refers to the chipsets/hardware revision and '2.02-210627-0009' refers to the firmware revision/date/time. The Diagnostics screen contains the Certus 9770 modem's current version.

13. How can I manage a fleet of SkyLink devices?

- The SkyLink Cloud Services portal allows you to configure, monitor, and manage fleets of devices. Use the SkyLink Device Interface for local management of a particular device.

14. How do I set up my apps to low bandwidth?

- Navigate to the Settings page in the app and select the option to use less data. Please note that not all apps have this capability. On iPhone, 'Low Data Mode' is available on the WiFi Config screen for each WiFi network.

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15. How can I optimize the use of my SIP phone apps (e.g., GS Wave, Linphone)?

- Below are a few setup pointers for SIP phone apps:

  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

TOC BOX & Battery Pack

16. What is the battery performance of the SkyLink Battery Pack?

- The SkyLink Battery Pack has a run-time of up to 48 hours based on a typical 80/20 (standby/transmitting) duty cycle (specifications subject to change).

17. What is the battery performance of the SkyLink TOC BOX?

- The 2 batteries attached to the system provide up to 28 hours of continuous operation in normal mode and up to 10 hours in peak mode (specifications subject to change).

18. Is the SkyLink Battery Pack safe/approved for aviation carry-on luggage?

- Yes, the Battery Pack meets current TSA requirements for carry-on luggage.

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Other

19. What is the safety distance between the Data Gateway and human interaction?

- To avoid exposure to antenna radiation, personnel should maintain a safe distance of 30 cm. (11.8 in.) minimum from the unit while it is in operation.

20. Why is there a billing discrepancy between the data usage seen on my SkyLink device versus my invoice?

- The SkyLink device's billing feature is only an approximation, similar to what you see on your cellphone versus a bill from your service provider.

21. Will my device overheat if left outside for too long?

- The SkyLink device operates normally in temperatures between -40°C - +70°C. Prolonged exposure to temperatures outside of this range may cause the device to lose functionality.

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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://blueskynetwork.com/support.

Thank you for choosing Blue Sky Network!

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