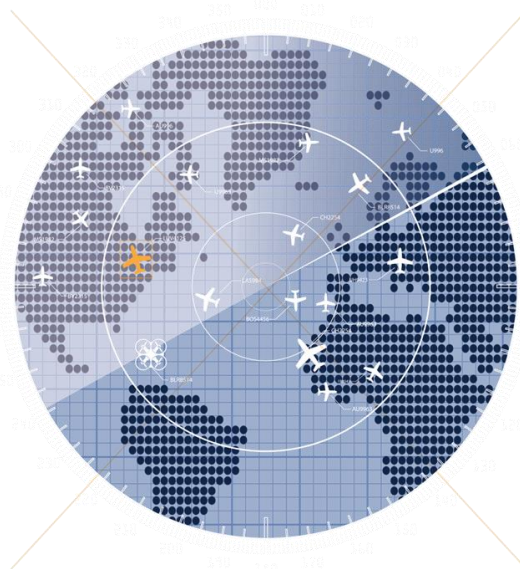




Sunhillo Technical Support Frequently Asked Questions



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Unrestricted

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FAQ 1: Topic – Providing Product Information to Sunhillo Support

Question:

What product information is needed by Sunhillo's support team, and how do I get the information?

Answer:

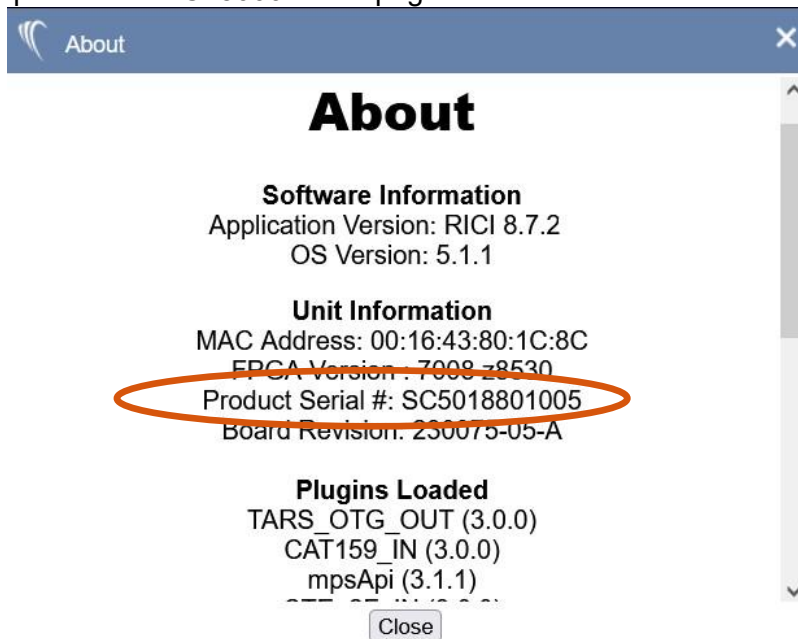
At a minimum, the support team needs the product serial number and the system's logfile. These two items can be obtained either through the GUI or via the USB connection.

Note

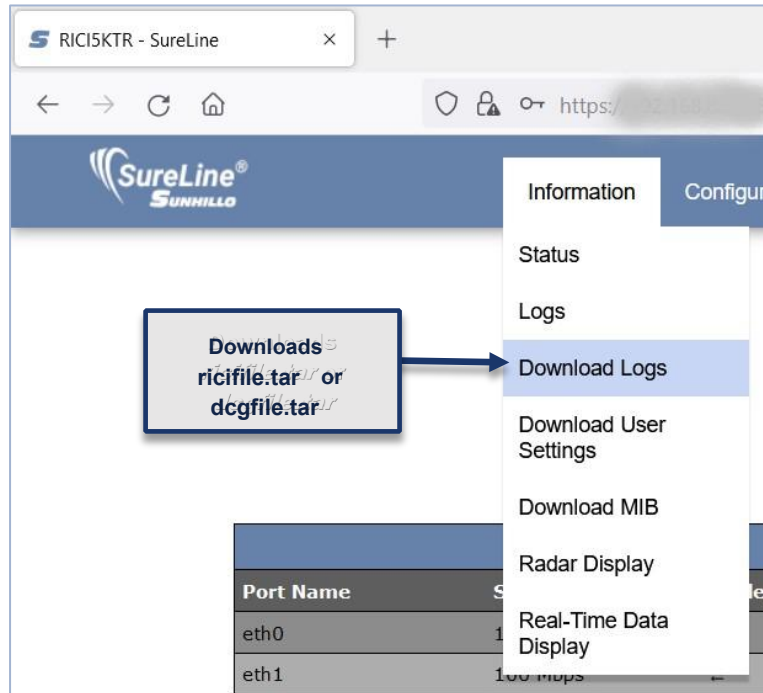
The RIC1 5000 and Margate II products do **not** provide USB support.

Using the GUI

The Product Serial number is located on the About page, under the **Unit Information** section. Below is an example from a RIC1 5000 About page:



To obtain the log file(s), select *Information*→*Download Logs* from the SureLine GUI menu (as shown below). The logfile is downloaded as a tarball file to your system's Downloads directory. The filename is *ricifile.tar* for all platforms except the SGP, which is *dcgfile.tar*.



Note

The Product Serial number gets downloaded with the *.tar file. The information on how to find it using the GUI simply provides another means of obtaining this information for the Support team.

Using the USB Drive

If the *platform_#_#_#.sun* and/or **.xml* files are not present on the USB flash drive, then the USB flash drive is in “download” mode. In download mode, the log files will automatically be written to the USB flash drive once it is inserted into the USB port. The file download process takes approximately 10 seconds, at which time the USB flash drive should be removed from the USB port.

The following image depicts the USB drive files (after download) for a Brigantine, SGP, and RICI 4500 (in that order).

> C: > Users > jacqui.lorenzo > Downloads > BrigantineUSB.zip > BrigantineUSB					
Name <	Type	Size	Packed	Date/time	
 netinfo.txt	.txt	9.6 KB	965 B	2021-10-25	
 ricifile.tar	.tar	1.0 MB	72.1 KB	2021-10-25	

> C: > Users > jacqui.lorenzo > Downloads > SGPUSB.zip > SGPUSB					
Name <	Type	Size	Packed	Date/time	
 dcgfile.tar	.tar	28.2 MB	1.1 MB	2021-10-25	
 netinfo.txt	.txt	5.3 KB	796 B	2021-10-25	

> C: > Users > jacqui.lorenzo > Downloads > RIC14500USB.zip > RIC14500USB					
Name <	Type	Size	Packed	Date/time	
 netinfo.txt	.txt	2.8 KB	583 B	2021-10-25	
 ricifile.tar	.tar	220.0 KB	15.7 KB	2021-10-25	

FAQ 2: Topic – Web GUI Signal 11

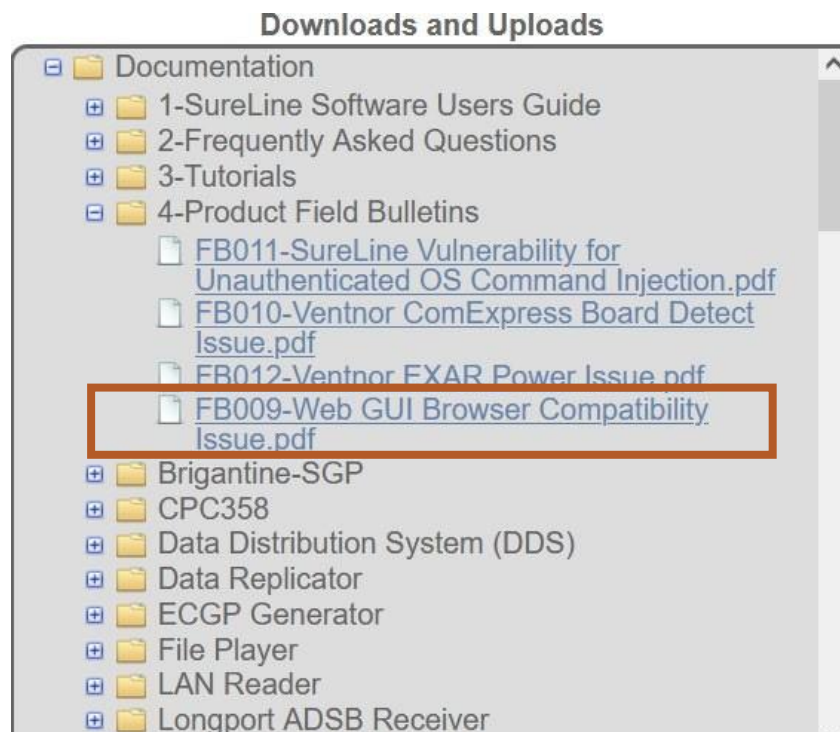
Question:

On my SureLine Web interface, when I create a dataflow, and click Save File or Save File As, I get this error on the “Web GUI: Signal 11 last debug line 0 aborting”. Why?

Answer:

Sunhillo’s SureLine software that runs on many of our products is compatible with Windows 7 through 10 and **Internet Explorer 11** and **Google Chrome version 97 or higher**. Earlier browser updates had caused an incompatibility with SureLine software’s web interface that causes many issues with our dataflow configuration functionality and with editing and saving the configuration file. Using any unsupported web browsers to create and save configurations could result in corrupted configuration files that may be unrecoverable by normal methods without contacting Sunhillo technical support.

This issue was resolved in SureLine release v7.6.1. If you encounter this error when editing or saving your configuration on a Sunhillo product running the SureLine Web Interface or other products running a legacy Sunhillo Web Interface, please try using the following web browsers on Windows 7 or Windows 10 for best results: **Internet Explorer 11** or **Google Chrome version 97 or higher**. There is also a field bulletin for this web interface compatibility issue, *FB009-Web GUI Browser Compatibility Issue*, that is available on your support account under Downloads and Uploads → Documentation → Product Field Bulletins.



FAQ 3: Topic – Account Password not Received

Question:

I created an account, but I never received an email to set up my password. Why?

Answer:

Some email servers may block our Support Portal's automated password registration email from password@sunhillo.com, or it may end up as junk mail or spam. If you do not receive the email in a timely fashion, please contact support@sunhillo.com and we will manually resend the link to setup your account password as soon as possible.

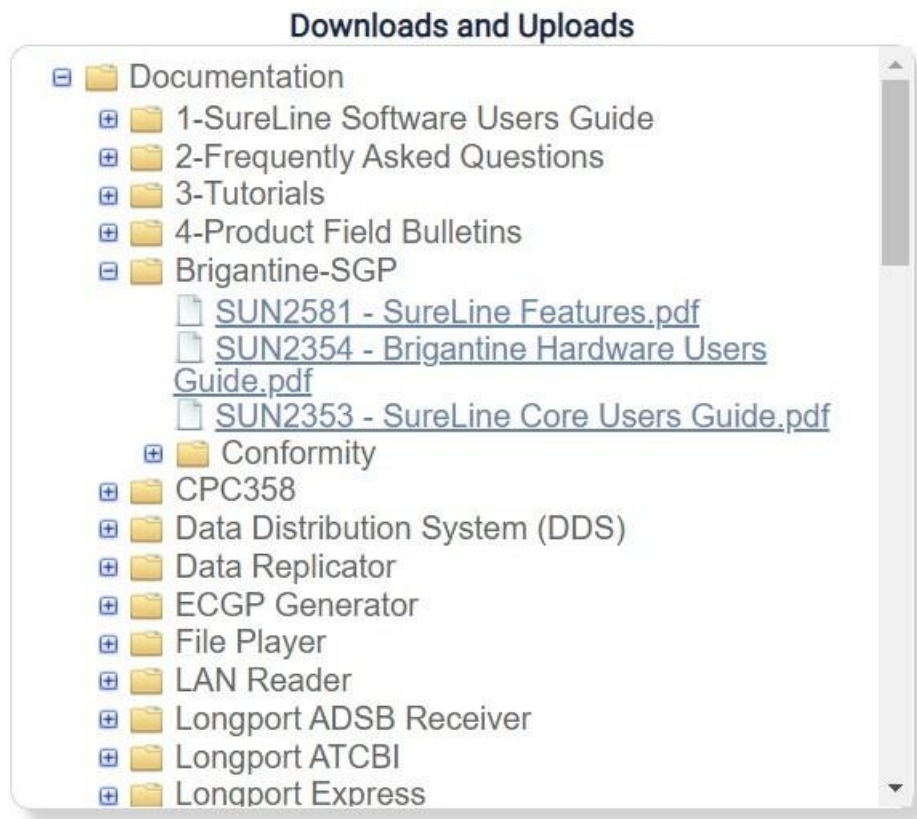
FAQ 4: Topic – Sunhillo Product Documentation

Question:

Where can I find the documentation for my Sunhillo product?

Answer:

1. Go to www.sunhillo.com/support
2. Create an account or login if you already have an account
3. Once logged in, under **Downloads and Uploads**, there is a Documentation folder and within it is a list of products. Inside each folder are links to all documentation corresponding to that product.
4. Click the appropriate link to download the documentation you need.



FAQ 5: Topic – Sunhillo Product Registration

Question:

How do I register my Sunhillo product on the Support Portal?

Answer:

1. Go to www.sunhillo.com/support
2. Create an account, or login if you already have an account
3. Register one of the following products by entering its serial number in this textbox:
 - a. The product serial number can be found on the About page of the Web GUI for SureLine products
 - b. Most, but not all, Sunhillo products can be registered through the Support Portal.

Registered Products

Products under a current maintenance contract are entitled to phone/email technical support and have access to our ongoing software development updates. Register your product(s) by entering each product's serial number below.

Register Product Serial Number

- c. The products that can be registered on the Support Portal by serial number entry are the following:
 - Brigantine-SGP
 - Longport Express
 - Longport Processor Card Module (ATCBI)
 - Longport Processor Card Module (COTS/SureLine)
 - Longport Processor Card Module (Mode 4 Interrogator)
 - Longport Processor Card Module (STARS)
 - Margate I
 - Margate II ADS-B Receiver
 - RIC1
 - RIC1 (Mode 4 Interrogator)
 - Ventnor
 - Asbury
- d. For support for any other Sunhillo products not on this list, email support@sunhillo.com and someone will assist you with whatever you need.

FAQ 6: Topic – Registered Product is Out of Warranty

Question:

I registered my Sunhillo Product, but Its Warranty status says, “Out of Warranty” and I cannot access any downloadable content such as the latest software, plugins or operating system releases. Why Not?

Answer:

You must have an active warranty or maintenance contract on all your products to access downloadable content such as software updates and operating system updates. You can see your warranty/maintenance status under the Registered Products area in the Warranty Status column. For extended maintenance on all your Sunhillo products, please contact

sales@sunhillo.com

Registered Products		
Products under a current maintenance contract are entitled to phone/email technical support and have access to our ongoing software development updates. Register your product(s) by entering each product's serial number below.		
Register Product Serial Number		
Register		
Product Name	Serial Number	Warranty Status
Longport SureLine	ST4414041450	In Warranty until 03/13/2027
RICI	ST2112011066	In Warranty until 03/13/2027
RICI	SC0416801001	In Warranty until 03/13/2027
Ventnor	SC0517871009	In Warranty until 03/13/2027
Longport Express	ST3913081012	In Warranty until 03/13/2027
SGP	AB1831267	In Warranty until 03/28/2027
Margate II ADS-B	SC2817851001	In Warranty until 12/11/2022

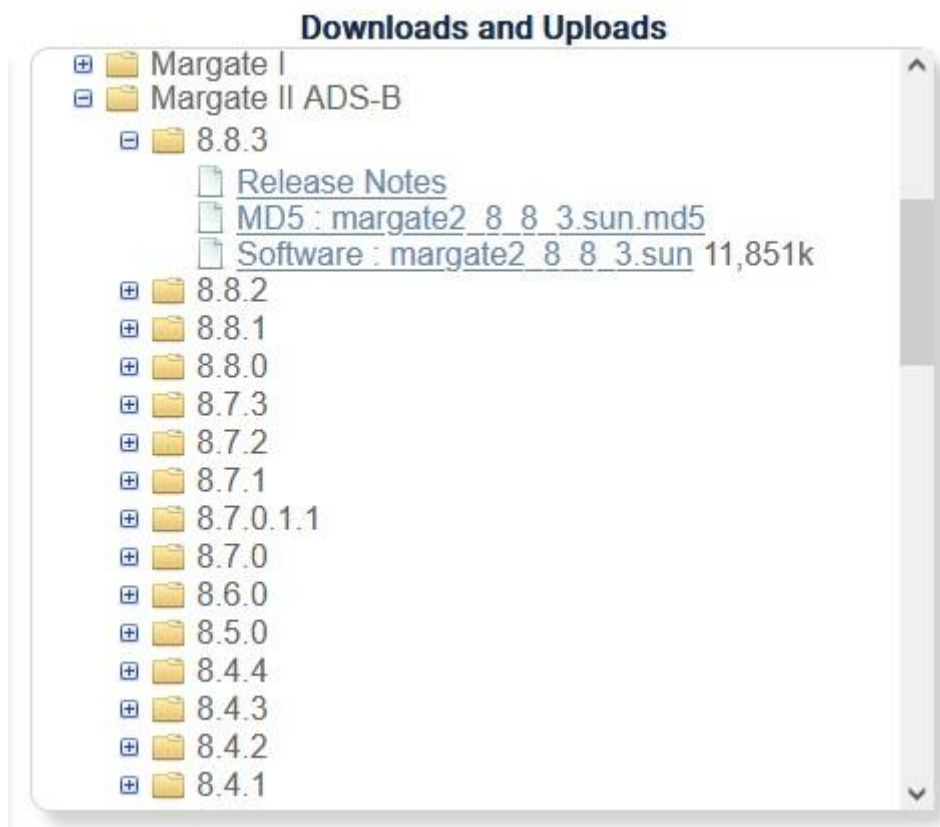
FAQ 7: Topic – Software, Plug-ins, OS Downloadable Updates

Question:

Where can I find the software, plugins, or operating system download links for updates to my inwarranty/maintenance Sunhillo product?

Answer:

1. Go to <https://support.sunhillo.com>
2. Create an account or login if you already have an account
3. Once logged in, under **Downloads and Uploads**, there is a list of Sunhillo products as folders. Inside each folder is the applicable download link(s) for each product.
4. Click the appropriate link to download the software you need.
5. MD5 checksum files are available for all software and operating systems for further download verification post-download from our support portal.



FAQ 8: Topic – New Software Release Notification

Question:

How would I know when a new release is available on the Sunhillo Support Portal for download for my Sunhillo product?

Answer:

1. Go to <https://support.sunhillo.com>
2. Create an account or login if you already have an account
3. Once logged in, under Email Notifications, there is a list of products with checkboxes. Select those products you wish to receive email notifications about.

Email Notifications

Check the products below for which you want to receive an email notification when a software update is available. Changes take effect immediately.

☐ Brigantine-SGP	☒ RICI
☐ Brigantine-SGP OS	☒ RICI/Longport/Ventnor Plugins
☐ Brigantine-SGP Plugins	☒ RICI OS
☐ Data Distribution System (DDS)	☐ SGP
☐ Data Replicator	☐ SGP Plugins
☐ Longport ADS-B Receiver	☐ Ventnor
☐ Longport ATCBI	☐ Ventnor OS
☐ Longport Express	☐ ECGP Generator
☐ Longport Mode 4 Interrogator	☐ File Player
☐ Longport STARS	☐ LAN Reader
☒ Longport SureLine	☐ SurveillanceMonitor
☒ Longport SureLine OS	☐ Track Generator
☐ Margate I	☐ RICI ATCBI
☐ Margate II ADS-B	☐ RICI5000 Gateway
☐ Margate II ADS-B OS	☐ Ventnor Concentrator

4. Look for emails from webmaster@sunhillo.com about new releases available on the Sunhillo Support Portal for download.
5. If you have a product not listed and would like information about it, please contact support@sunhillo.com

FAQ 9: Topic – Uploading Customer Files to Sunhillo Support Portal

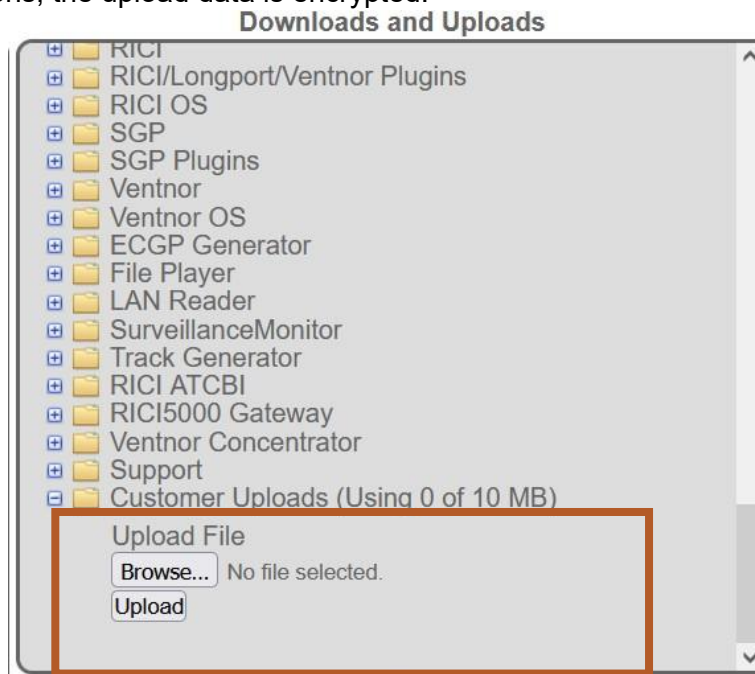
Question:

I need to upload files to Sunhillo. Is there a place on my Support Portal account where I can do that?

Answer:

Yes, there is. Under Downloads and Uploads, there is a folder titled “Customer Uploads” where you can upload files up to 10 MB by default. If you need more space, please contact support@sunhillo.com and we can increase your account’s upload area quota as needed.

For security reasons, the upload data is encrypted.



Once the file has been successfully uploaded, the Web page will refresh, and your file(s) will be listed under the Customer Uploads folder.



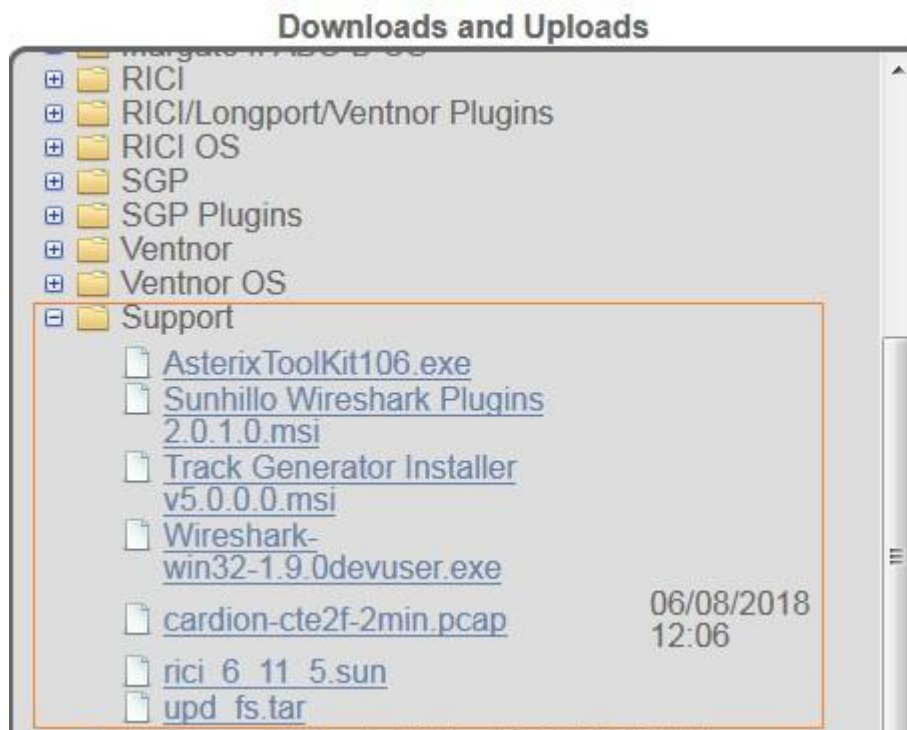
FAQ 10: Topic – How to Download Files from Sunhillo Support Portal

Question:

I need to download files from Sunhillo on my Support Portal. Is there a place on my Support Portal account where I can do that?

Answer:

Yes, there is. Under Downloads and Uploads, there is a folder titled “Support” where you can download files, we have placed there for you. You should receive email notifications when Sunhillo’s support staff has provided you with files in your Support folder.



FAQ 11: Topic – Serial Port Pinouts

Question:

Where can I find the pinout diagram for my Sunhillo Product's serial ports?

Answer:

Each product's specific pinout diagram is in the product's hardware user's guide which is available for download on the Support Portal. Create an account, login, and download the hardware user's guide to find the pinout diagram for your Sunhillo product.

FAQ 12: Topic – SureLine Serial Protocols and Radar Conversions

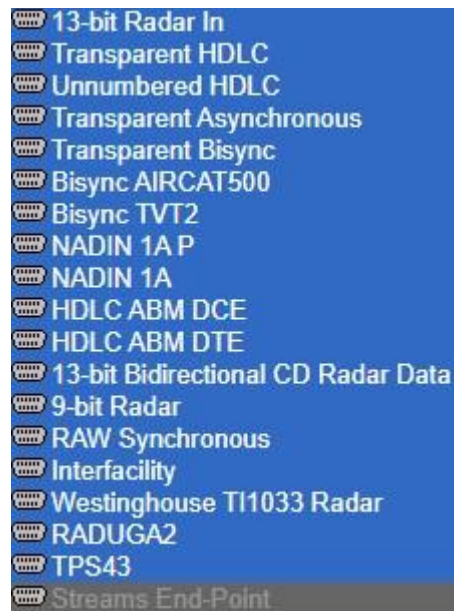
Question:

What Serial protocols and radar conversions are supported on Sunhillo SureLine products?

Answer:

The specific serial protocols supported on RICI/Longport/Ventnor are shown below. For more information on how these work with Sunhillo products, please reference *SUN2353 - SureLine User's Guide* or contact support@sunhillo.com

SureLine Serial Protocols



13-bit Radar In
Transparent HDLC
Unnumbered HDLC
Transparent Asynchronous
Transparent Bisync
Bisync AIRCAT500
Bisync TVT2
NADIN 1A P
NADIN 1A
HDLC ABM DCE
HDLC ABM DTE
13-bit Bidirectional CD Radar Data
9-bit Radar
RAW Synchronous
Interfacility
Westinghouse TI1033 Radar
RADUGA2
TPS43
Streams End-Point

The SureLine product datasheet contains a conversion chart found on Sunhillo's website that summarizes the radar conversions supported on SureLine products. Sunhillo is continually adding conversion support and offers custom conversions as an offering. For more information on custom conversions, please contact support@sunhillo.com

Here is a link to the SureLine Software Product Datasheet on Sunhillo's website: [SureLine Datasheet](#).

Further Information regarding the available serial protocols and other features can be found in *SUN2581 – SureLine Features* which is available via any Sunhillo Support Portal account or via support request.

FAQ 13: Topic – COTS vs. STARS Ethernet Switch Module

Question:

What Is the difference between a Longport STARS Ethernet Switch Module (ESM) and a Longport COTS ESM?

Answer:

A Longport STARS ESM has a single VLAN across all 4 Ethernet ports that map to eth0 only. This switch is meant to be used with Longport STARS processor card modules only; a Longport COTS ESM has 2 VLANS where the top 2 physical ports map to the eth0 LAN and the bottom 2 physical ports map to the eth1 LAN. This switch configuration is meant to be used with Longport ATCBI/COTS/SureLine processor card modules only. It should also be noted that the switch configuration can only be changed at Sunhillo's facility, and not in the field.

FAQ 14: Topic – Purpose of Maintenance Port on Longport ESM

Question:

Should I log into the Eth5 Maintenance Port on front of The Longport Ethernet Switch Module for configuration or connect it to live data connections?

Answer:

No, you should not use it to configure or for live data connections. It is a spanning port, and its only reliable purpose is for network monitoring of the Longport switch via Wireshark. It should not be relied on for individual PCM Web GUI access, or for live data connections. Do not connect this Eth5 maintenance port to your routers/switches/hubs for permanent field use cases!

FAQ 15: Topic – ADS-B Receiver Antenna and Cable Overview

Question:

What type of ADS-B antenna and ADS-B antenna cable is best to use with Sunhillo's ADS-B Receiver products (Margate II / Longport ADS-B Receiver)?

Answer:

We have tested numerous types of cables and found that low-loss LMR-600 in lengths up to 200 ft. work best with our products. We offer this cable with length options from 50 ft. to 200 ft. and an antenna kit as an additional option to our Longport and Margate II ADS-B Receiver products.

The RF antenna connection, located in the center of the front panel, is a 50 Ohm female TNC-type connector. This connection is an input for a UAT/1090MHz data signal from a UAT/ADS-B antenna.

An optional assembly is available for purchase from Sunhillo which include mounting hardware to a post or pipe on your roof or otherwise:

- P/N: 030-U-AAC–ADS-B Antenna and Cable

This item is tested equipment that guarantees the electrical and data transmission requirements for the connection.

This ADS-B Antenna and Cable kit is optional equipment. If your site currently has an ADS-B antenna installed and the required cabling available, no further equipment is needed from Sunhillo to receive and process this data. A low-loss LMR-600 cable is recommended for the data transmission path between the antenna and receiver.

External, or customer supplied UAT/1090MHz antenna systems should ensure that the lowest signal loss antenna cables are used to optimize ADS-B signal strength and target reception.

The use of low-loss, 50 Ohm cables like LMR-600 (for long antenna cable runs) and LMR-240 (for short antenna cable runs), can optimize antenna gain and minimize signal loss.

Sunhillo recommends the following cable connections at various lengths:

- Max length without amplifier: 200 feet (61 meters) - use only LMR-600 or equivalent.
- Typical length: 50–100 feet (15–30 meters) – use only LMR-600 or equivalent.
- Less than 50 feet (30 meters) - use LMR-240 or LMR-600 or equivalent.

FAQ 16: Topic – Margate II ADS-B Receiver Time Sync

Question:

How does the Margate II ADS-B Receiver synchronize time?

Answer:

It is best to use Global Positioning System (GPS) for timestamping accuracy with the Margate II ADS-B Receiver. Without a GPS present and functioning, setting up the product with a valid Network Time Protocol (NTP) server is strongly recommended for good accuracy results (though not as good as GPS).

Without a GPS, NTP can be up to 150 milliseconds off plus any latency through the Sunhillo product, which is minimal (approximately 2 milliseconds). Without either GPS or NTP, the latency can be off by quite a bit because the only timestamping source is the system time set by the user through the Web GUI, which may or may not be accurate.

FAQ 17: Topic – How Should I Configure ADSB Device with GPS vs. Without GPS

Question:

I am currently setting up my MargateII/Longport ADS-B unit and I would like to know how to properly configure the unit using the GPS functionality and aversely how to configure the unit if I elect to configure without the use of the GPS functionality?

Answer:

SureLine has configurable options for field applications of ADS-B that utilize the

GPS Configuration:

In a GPS configuration, the Margate II ADS-B Receiver uses a GPS antenna connected to the GPS port to automatically provide the antenna's latitude and longitude to the ADS-B receiver and SureLine software. The GPS antenna must be SMA-Male and conform to a 2.8VDC power requirement, drawing less than 19mA (ideally under 10–12mA) to avoid being identified as a short. This setup is recommended for field applications, as it ensures accurate location input without manual configuration. The GPS feature is independent of the system time, which is managed via NTP. In the image below the GPS option for Lat/Long has been configured in the ADS-B in node.

The screenshot shows the 'SureLine' configuration window with the 'copy from existing' dropdown set to 'NONE'. The 'Logical Name' is 'ADSB'. The 'Enable DF17 Messages', 'Enable DF18 Messages', and 'Enable UAT Messages' are all set to 'Enabled'. 'Use the Local Only Position Algorithm' is set to 'Don't Use'. 'Use GPS for Lat Lon' is selected and highlighted with a green box. 'Use 300 NM Range Filter' is set to 'Do Not Use 300 NM Range Filter'. 'Time Source' is set to 'System'. 'Latitude' is set to '-90 degrees' and 'Longitude' is set to '-180 degrees'. 'Minimum Signal Strength for Local Only Position' is set to '180'. 'Status Type' is set to 'None'. 'SIC' is set to '0'. 'SAC' is set to '0'. 'Status Interval' is set to '1 Seconds'. 'Status Location ID' is set to 'SNHLW'. 'Status Location Number' is set to '0'. 'Populate Missing Mode3A' is unchecked. The 'Cancel' and 'OK' buttons are at the bottom.

Setting	Value
Logical Name	ADSB
Enable DF17 Messages	Enabled
Enable DF18 Messages	Enabled
Enable UAT Messages	Enabled
Use the Local Only Position Algorithm	Don't Use
Use GPS for Lat Lon	Use GPS Lat Lon
Use 300 NM Range Filter	Do Not Use 300 NM Range Filter
Time Source	System
Latitude	-90 degrees
Longitude	-180 degrees
Minimum Signal Strength for Local Only Position	180
Status Type	None
SIC	0
SAC	0
Status Interval	1 Seconds
Status Location ID	SNHLW
Status Location Number	0
Populate Missing Mode3A	☐

Non-GPS Configuration:

In a non-GPS configuration, the user must manually enter the antenna's approximate latitude and longitude during the dataflow setup on the ADS-B input node. This is suitable when the antenna is in a fixed location. With software version 9.0.2.1.4, the Margate II can function without GPS input or manually entered coordinates, but it is generally recommended to enter location data manually if GPS is not used. This approach still allows reception of 1090MHz and 978MHz frequencies but may be less accurate for dynamic or mobile installations. In the image below is the manual configuration of the ADS-B in node for non-GPS lat/long.

The image shows the 'SureLine' configuration window for an ADS-B input node. The window has a title bar with the 'SureLine' logo and a close button. Below the title bar, there is a 'copy from existing' dropdown menu set to 'NONE'. The main area contains a list of configuration options on the left and their corresponding values on the right. The 'Logical Name' is 'ADSB'. 'Enable DF17 Messages', 'Enable DF18 Messages', and 'Enable UAT Messages' are all set to 'Enabled'. 'Use the Local Only Position Algorithm' is set to 'Don't Use'. 'Use GPS for Lat Lon' is set to 'Do Not Use GPS Lat Lon', which is highlighted with a green box. 'Use 300 NM Range Filter' is set to 'Use 300 NM Range Filter'. 'Time Source' is set to 'System'. 'Latitude' is '39.87' degrees and 'Longitude' is '-75.24' degrees, both highlighted with green boxes. 'Minimum Signal Strength for Local Only Position' is '180'. 'Status Type' is 'None'. 'SIC' and 'SAC' are both '0'. 'Status Interval' is '1' seconds. 'Status Location ID' is 'SNHLW'. 'Status Location Number' is '0'. 'Populate Missing Mode3A' is an unchecked checkbox. At the bottom, there are 'Cancel' and 'OK' buttons.

Configuration Option	Value
Logical Name	ADSB
Enable DF17 Messages	Enabled
Enable DF18 Messages	Enabled
Enable UAT Messages	Enabled
Use the Local Only Position Algorithm	Don't Use
Use GPS for Lat Lon	Do Not Use GPS Lat Lon
Use 300 NM Range Filter	Use 300 NM Range Filter
Time Source	System
Latitude	39.87 degrees
Longitude	-75.24 degrees
Minimum Signal Strength for Local Only Position	180
Status Type	None
SIC	0
SAC	0
Status Interval	1 Seconds
Status Location ID	SNHLW
Status Location Number	0
Populate Missing Mode3A	☐

In either case, once the settings are saved and the configuration has been made active, the latitude and longitude values can be verified by checking the output via a connected system or Wireshark capture. The alternate SureLine method to check the values would be the use of the Real Time Data Display functionality on the status page either at the ASTERIX output node, or at the output node given that there is no framer node present before it in the data flow.

An example of this use case of the Real Time Data Display can be seen in the image below.

ASTERIX CAT021 Out Detail

Stats Configuration Real Time Data Display Disable Node

Real-Time Data Display

Display Type
☐ Data ☐ Text ☐ Data+Text ☐ Generic Fields ☒ Asterix

Data Format
☒ ASCII ☐ EBCDIC

Data Length
☐ 16 ☐ 32 ☐ 64 ☒ Full

Asterix Categories

Category 0: EpochTest	Category 1: 1.1	Category 2: 1.0	Category 8: 1.1
Category 9: 2.1	Category 10: 1.1	Category 11: 1.2	Category 19: 1.3
Category 20: 1.8	Category 21: 2.4	Category 23: .13	Category 33: FAAv3
Category 34: 1.27	Category 48: 1.18	Category 62: 1.16	Category 63: 1.1
Category 65: 1.3	Category 247: 1.3		

Show/Hide Filters Resume

Messages

Timestamp	Asterix Categories	Message Data
04/11 12:15:08	Category 21 v2.4	▼ Message #1 Category 21 FSPEC: ED 19 7B 6B C1 C0 ► FRN: 1 DataItem: 10 Name: Data Source Identification ► FRN: 2 DataItem: 40 Name: Target Report Descriptor ► FRN: 3 DataItem: 161 Name: Track Number ► FRN: 5 DataItem: 71 Name: Time of Applicability for Position ▼ FRN: 6 DataItem: 130 Name: Position in WGS-84 co-ordinates Latitude in WGS-84: 39.285779 deg Longitude in WGS-84: -75.467598 deg ► FRN: 11 DataItem: 80 Name: Target Address ► FRN: 12 DataItem: 73 Name: Time of Message Reception of Position ► FRN: 16 DataItem: 140 Name: Geometric Height ► FRN: 17 DataItem: 90 Name: Quality Indicators ► FRN: 18 DataItem: 210 Name: MOPS Version ► FRN: 19 DataItem: 70 Name: Mode 3/A Code ► FRN: 21 DataItem: 145 Name: Flight Level ► FRN: 23 DataItem: 200 Name: Target Status

Close

FAQ 18: Topic – How to Login to Sunhillo Product when Unable to Access Web GUI

Question:

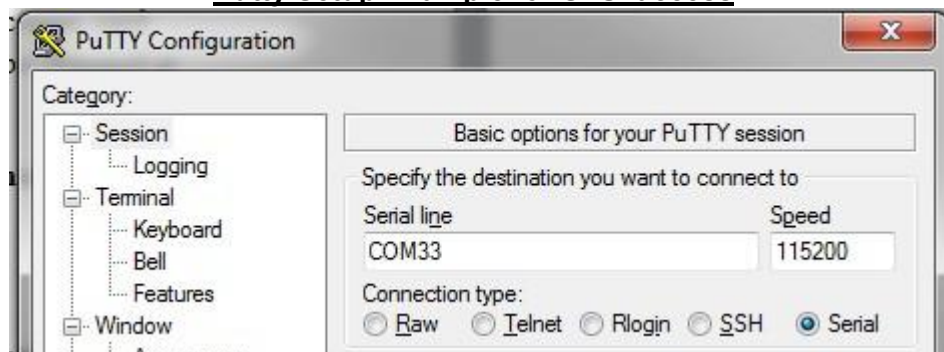
I cannot access the Web GUI of my SureLine product and don't know its network settings or IP address. How do I perform a factory reset to log in?

Answer:

The factory reset button feature commonly found for SureLine products ended with the introduction of the RIC14500. The RIC14500 and Longport PCM do still have a **Reset** button, but it only performs a reboot when depressed with an engineering paperclip and no longer resets the unit to factory default network settings as previous products such as the RIC1 4300 used to support. The removal of a factory reset button feature is due to ongoing security initiatives for all Sunhillo product lines.

A different feature is now supported to enable you to access your SureLine device using STUI (Sunhillo's Terminal User Interface). STUI is accessible via a USB to mini-USB cable. The PC can communicate with the unit through this cable using an application like **PuTTY** where Serial Line (COM33 in this case) is dependent on your PC's COM port settings in the Control Panel and the Speed is always 115200 for this interface:

Putty Setup Example for STUI access



Once logged into STUI using the default user credentials of **username:Admin** **password:Sunhillo**, there will be a text-based user interface where a limited set of configuration options similar to what can be found on the Web GUI can be configured and saved here, including the network settings. The SGP product does not support STUI but can be accessed via SSH or local terminal on the SGP GUI and the default login is: **Username: root** **Password: sunhillo**.

For more information on STUI, please refer to *SUN2353 – SureLine User's Guide*, which can be found on the Sunhillo Support Portal in the **Documentation** folder.

FAQ 19: Topic – Serial Console FTDI Driver Downloads

Question:

Where do I get the FTDI drivers for the console cable for connecting to Sunhillo Products such as the following?

- RICI 5000, 5000+, 6000
- Longport PCM 4500, 5000+, 6000
- Ventnor 5000, 6000
- Brigantine
- Margate I M4I
- Margate II ADS-B Receiver

Answer:

The latest FTDI drivers will normally install when you connect the cable either from the OS natively or from the Internet but in the case this does not occur, here is the link to FTDI's website for their driver support: <https://ftdichip.com/drivers/d2xx-drivers>.

FAQ 20: Topic – Operating System Upgrades and Application Software Pairing

Question:

How do I know what Operating System and what software releases go together and how do I upgrade to the next SureLine Operating System to use the latest software?

Answer:

Every SureLine operating system has release notes in the download area that includes a SureLine operating system upgrade path for the applicable SureLine software release. Each SureLine operating system series has a debut software release and a SureLine operating system upgrade path release is often required to migrate up to the next SureLine operating system and software revision as we add features and release new products. SureLine operating systems come with a SureLine software release embedded within it and subsequent SureLine software releases can be installed as they become available in that SureLine operating system series until the next SureLine operating system becomes available and a new series begins. At that time, a new SureLine operating system upgrade path release will become available for download.

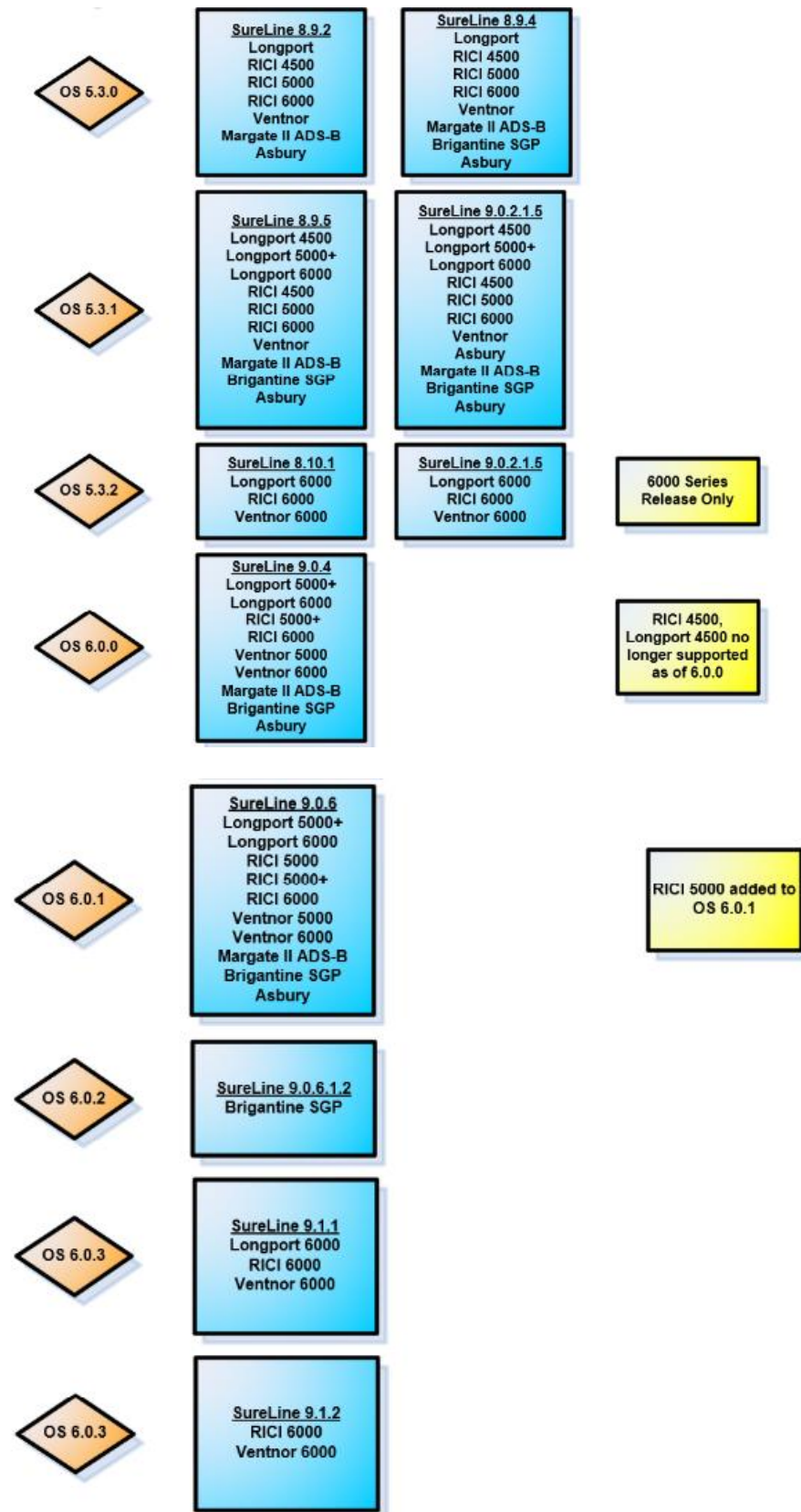
Each SureLine OS release applies to a set of board revisions and is listed within the name of the .sop SureLine OS filename which is downloaded from the Support Portal. Board revisions are listed on the About page of SureLine products. Make sure the SureLine OS you install on your SureLine product matches the supported board revision(s) of that SureLine OS package. The SureLine OS release notes include the prerequisite SureLine OS and SureLine software that must be installed prior to upgrading the SureLine OS via the Web GUI Flash OS feature.

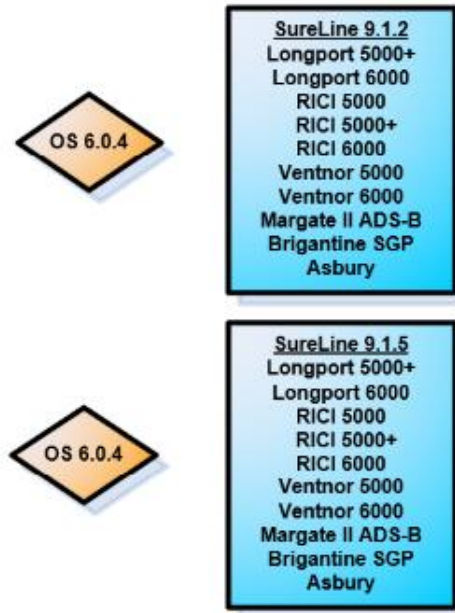
Running newer software on an older OS may cause software compatibility issues and is not recommended because the SureLine software may be expecting features within the latest SureLine OS to function properly that aren't present in the older SureLine OS. It is always recommended to install the latest SureLine OS and SureLine software pair and then upgrade the software once the latest operating system is installed on your SureLine product.

The following graphics depict the SureLine software series from the first software release to the latest software release for each SureLine OS revision before an OS update is required. The OS upgrade path prerequisites are in the OS release notes and it is not always necessary to upgrade incrementally. For example, one can upgrade from OS 4.1.1/SW 6.11.7 directly to OS 5.1.X and skip over the OS 5.0.X revisions.

Detailed instructions for updating to the latest OS can be found on page 23 (immediately after the OS upgrade graphics).

OS Revision	First SW Release	Last SW Release	Platform Info
OS 3.0.4	<u>SureLine 4.0.0</u> Longport RIC1 4500 RIC1 5000	<u>SureLine 5.4.6</u> Longport RIC1 4500 RIC1 5000	
OS 4.1.1	<u>SureLine 6.2.0</u> Longport RIC1 4500 RIC1 5000	<u>SureLine 6.11.7</u> Longport RIC1 4500 RIC1 5000	
OS 4.1.3	<u>SureLine 6.10.2</u> Ventnor	<u>SureLine 6.11.7</u> Ventnor	Ventnor Only
OS 5.0.0	<u>SureLine 7.0.0</u> Longport RIC1 4500 RIC1 5000 Ventnor		
OS 5.0.2	<u>SureLine 7.1.0</u> Longport RIC1 4500 RIC1 5000 Ventnor		
OS 5.0.3	<u>SureLine 7.2.0</u> Longport RIC1 4500 RIC1 5000 Ventnor		
OS 5.0.4	<u>SureLine 7.2.0</u> Longport RIC1 4500 RIC1 5000 Ventnor		
OS 5.0.5	<u>SureLine 7.3.0</u> Longport RIC1 4500 RIC1 5000 Ventnor	<u>SureLine 7.4.1</u> Longport RIC1 4500 RIC1 5000 Ventnor	
OS 5.1.1	<u>SureLine 7.5.0</u> Longport RIC1 4500 RIC1 5000 Ventnor Margate II ADS-B	<u>SureLine 8.7.3</u> Longport RIC1 4500 RIC1 5000 Ventnor Margate II ADS-B	
OS 5.1.2	<u>SureLine 7.5.0</u> Margate II ADS-B	<u>SureLine 8.7.3</u> Margate II ADS-B	Margate II ADS-B Only
OS 5.1.3	<u>SureLine 7.6.1</u> Brigantine SGP	<u>SureLine 8.7.3</u> Brigantine SGP	Brigantine-SGP Only
OS 5.1.5	<u>SureLine 7.6.1</u> Brigantine SGP	<u>SureLine 8.7.3</u> Brigantine SGP	Brigantine-SGP Only
OS 5.2.0	<u>SureLine 8.8.0</u> Longport RIC1 4500 RIC1 5000 Ventnor Margate II ADS-B Brigantine SGP Data Diode	<u>SureLine 8.9.1</u> Longport RIC1 4500 RIC1 5000 Ventnor Margate II ADS-B Brigantine SGP Data Diode	
OS 5.2.1	<u>SureLine 8.8.3</u> Ventnor	<u>SureLine 8.9.1</u> Ventnor	Ventnor Only
OS 5.2.2	<u>SureLine 8.8.3</u> Ventnor	<u>SureLine 8.9.1</u> Ventnor	Ventnor Only





The following instructions are for upgrading to the latest OS on Sunhillo devices using the SureLine Web GUI:

- 1) Update to SureLine version 5.4.6 via Upload Data on the Web GUI and reboot
- 2) For RIC1 and Longport, flash OS 4.1.1- SW 6.11.8 via Flash OS on the Web GUI. For Ventnor, flash OS 4.1.3-SW 6.10.2 via Flash OS on the Web GUI.

Note

You can go from Step 2 to Step 5 (skipping steps 3 & 4) if desired.

You can go from step 5 to 7|8|9 if desired, depending on platform.

- 3) Flash OS to OS 5.1.1 - SW 8.1.0 via Flash OS menu (optional step)
- 4) Update to SureLine v8.7.1 via Upload Data on the Web GUI and reboot (optional step)
- 5) Flash OS to OS 5.2.0 - SW 8.8.0 via Flash OS on the Web GUI
- 6) Update to SureLine v8.8.X via Upload Data on the Web GUI and reboot
- 7) Flash OS to OS 5.3.0 - SW 8.9.2 via Flash OS on the Web GUI (Initial RIC16000/Asbury OS)
 - a) Update to SureLine 9.0.2.1.5 via Upload Data on the Web GUI and reboot
- 8) Flash OS to OS 5.3.1 – SW 8.9.5 via Flash OS on the Web GUI
 - a) Update to SureLine 9.0.2.1.5 via Upload Data on the Web GUI and reboot
- 9) For 6000 Series: Flash OS to 5.3.2 – SW 8.10.1 via Flash OS on the Web GUI
 - a) Update to SureLine 9.0.2.1.5 via Upload Data on the Web GUI and reboot
- 10) For specific platforms, ONLY with SureLine 9.0.2.1.5 installed: Flash OS to 6.0.0 -SW 9.0.3 via Flash OS on the Web GUI (RIC1 4500 and Longport 4500 no longer supported as of 6.0.0, RIC1 5000 to be added in 6.0.1)
- 11) For specific platforms, only with SureLine OS 9.0.2.1.5 installed or starting at OS 6.0.0: Flash OS to 6.0.1 – SW 9.0.6 via Flash OS on the Web GUI

Web Browser Note

Use Microsoft Edge or Google Chrome v97 or higher. Clear cache and cookies, and close/reopen the browser after each step for best results.

Compatible plugin versions per OS/SW revision are:

- Plugin v 1.X.X - OS 3.0.4/SW 5.4.6 up to OS 4.X.X/SW 6.2.1
- Plugin v 2.X.X - OS 4.X.X/SW 6.3.0 up to OS 4.X.X/SW 6.11.8
- Plugin v 3.X.X - OS 5.X.X/SW 7.0.0 up to OS 5.X.X/SW 9.0.2.1.5
- Plugin v 3.0.3 – OS 6.X.X/SW 9.0.6 up to current OS /SW

FAQ 21: Topic – Sunhillo Single Sensor Tracker and Multi-Track Fuser Operation

Question:

How does Sunhillo's SureLine Single Sensor Tracker (SST) and Multi-Track Fuser (MTF) package work?

Answer:

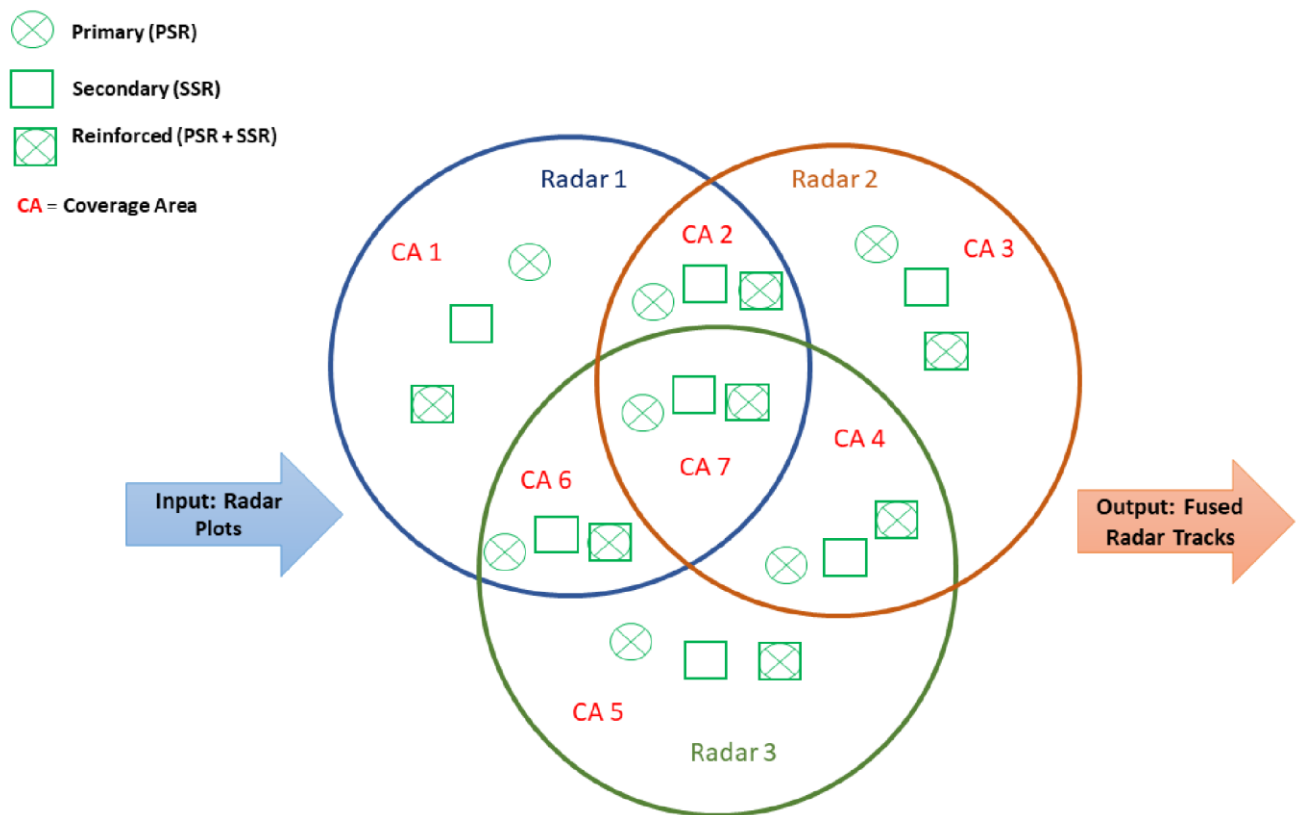
SureLine supports many radar Plot PSR, SSR, and PSR+SSR input formats **to** the SST and MTF including:

- AIRCAT 500
- ASTERIX CAT001/048/159
- ASR-9
- CD-1
- MAR-1
- ARSR-4
- Selenia
- TPS-70 13-bit
- TPS-75
- TSR-07C

Conversely, it supports numerous Track radar outputs **from** the SST and MTF, such as:

- XML SDO
- ASTERIX CAT021/033/062
- Comma-separated Values (CSV)

For a graphical depiction of the interoperation between SST and MTF, see the diagram on the next page.



Coverage Areas 1, 3 and 5 on Radars 1, 2 and 3 see only these three targets. SST converts three plots to three tracks: PSR track, SSR track and SSR+PSR (reinforced) track. MTF does **not** fuse these three because only one radar sees these targets and there are no duplicate radar reports.

Coverage Area 2 = Radar 1 and Radar 2; both see these three targets. SST converts all three plots to three tracks for Radar 1 and Radar 2 for a total of six targets. MTF receives these **six** targets, checks which Radar location (preconfigured latitude/longitude location of radar) is closest to these six targets and outputs only three tracks rather than six tracks. Thus, multi-track fusing its input to the clear output feed for situational awareness displays or systems.

Area 7 = Radars 1, 2 and 3; all three radars see these three targets. SST converts all three plots to three tracks for all three radars for a total of nine targets. MTF receives these **nine** targets, checks which Radar location (preconfigured latitude/longitude location of radar) is closest to these nine targets and outputs only three tracks rather than nine tracks. Thus, multitrack fusing its input to the clear output feed for situational awareness displays or systems.

FAQ 22: Topic – Dataflow Configuration Parameter Descriptions

Question:

How do I know what all the SureLine dataflow configuration parameters do since they are not all in *SUN2353 - SureLine User's Guide*?

Answer:

When you open a node in the dataflow to set its configuration parameters, you can hover over each parameter and a tooltip appears that gives more information on the purpose or definition of the configuration parameter. If this is still not enough information, please contact support@sunhillo.com with your specific node and configuration parameter in question and we will be happy to help explain how configuration parameter works for your dataflow.

Tooltip Example

The screenshot shows the 'SureLine' configuration window. At the top, there is a 'copy from existing' dropdown menu set to 'NONE'. Below this is a descriptive text: 'Assign radar identity to data that does not have this information within the data itself (for example, raw UDP packets)'. The configuration parameters are listed on the left, and their values are shown on the right. A tooltip is displayed over the 'Output Channel' parameter, which is currently set to 'None'. The tooltip title is 'The data type of the message. Supported SGF Format Identifiers:'. The tooltip contains a table with four columns: 'Format', 'Ident Format', 'Ident Format', and 'Ident'.

Format	Ident Format	Ident Format	Ident
TPS75	0x4C ARSR4	0x32 Async Radar	0x18
CD1	0x01 ASR9	0x06 Interfacility	0x19
CD2C	0x43 MAR4	0x3E ASR11 FAA	0x46
ARSR3	0x31 MAR6	0x3E CD3D	0x02
DTE2	0x47 TPS70 9 Bit	0x4A RADES ARSR4	0x3D
MAR1	0x3E ASR11 DOD	0x45 RADES ASR9	0x48
MAR3	0x3F ASR11	0x2C RADES CD1	0x42
MAR5	0x40 EMT	0x4D RADES ARSR3	0x41
TPS70 13 Bit	0x3A ASR9 BCN EXT	0x0C TPS70	0x28

At the bottom of the window are 'Cancel' and 'OK' buttons.

FAQ 23: Topic – UDP Unicast, Multicast and Broadcast Send/Receive in SureLine

Question:

How do I send/receive unicast, multicast, or broadcast UDP data in SureLine?

Answer:

The Ethernet UDP/Multicast node has evolved over time and, while it is titled “UDP/Multicast”, this same node is used for transmitting/receiving multicast, unicast, **and** broadcast data.

The type of UDP transmission or receipt is set by simply configuring this node’s **Multicast IP** (transmitting) or **Multicast Receive IP** (receiving) parameter to a valid multicast, unicast, or broadcast IP address. Note that for broadcast UDP, you can also leave this parameter’s entry blank.

As an example (for unicast), if your Eth0 IP address is 10.0.1.1, then the **Multicast Receive IP Address** parameter in the *Ethernet UDP/Multicast* node must be set to 10.0.1.1. If multiple unicast streams are required, then any additional Ethernet UDP/Multicast nodes must also have their **Multicast Receive IP Address** parameter set to 10.0.1.1; however, each **Multicast Port Number** parameter *must be unique*.

For Broadcast or Multicast, set the **Multicast Receive IP Address** parameter in the *Ethernet UDP/Multicast* node to a valid broadcast/multicast address. Consult your Network Administrator to obtain the valid addresses. Your unit’s Broadcast address can also be found by clicking the **Calculate Broadcast Address** button of the associated Ethernet port on the GUI’s *Network Configuration* page.

Port eth0

☐ DHCP

eth1 ▼ Bond

IP Address:	10	0	1	1
Netmask Address:	255	255	255	0
Broadcast Address:	10	0	1	255
Gateway Address:	10	0	1	253

☒ 10.0.1.253

Edit Aliases Add VLAN

Calculate Broadcast Address

An example of the configuration settings for an Ethernet UDP/Multicast node is shown on the following page.

SureLine

copy from existing NONE

The Ethernet UDP/Multicast object is used for sending/receiving multicast, unicast, and broadcast UDP traffic. To choose broadcast, simply leave the address blank. To choose a multicast address, set the address as a valid multicast address. To choose unicast, select a unicast address.

Logical Name	Multicast In
Multicast Aggregator ID	0
Primary and Redundant LAN Input	Disabled
Multicast Port Number	1970
Multicast NIC	eth0
IP Version	IPv4
Multicast Receive IP Address	10.0.1.1
Redundant Multicast Port Number	2000
Redundant Multicast Data Ethernet Port	eth1
Redundant Processor IP Version	IPv4
Redundant Receive Multicast Address	
Preferred Primary	Disabled
Dual LAN Data Filter	Disabled
Primary Receiver Timeout	7000 milliseconds
Data Format	Bytes
Filter by this Source IP Address	

Cancel OK

Set to 10.0.1.1 for unicast

Set to a valid multicast address for Multicast (e.g., 239.1.1.1)

Leave blank or set to broadcast address for Broadcast (e.g., 10.0.1.255)

Note

For **transmitting** unicast data using the Eth0 IP address of 10.0.1.1 example, set the **Multicast IP** parameter to 10.0.1.1 in the **output Ethernet UDP/Multicast** node. The **Multicast Port Number** parameter is used for both transmitting and receiving data and must also be unique for data transmission.

For Broadcast or Multicast transmission, set the **Multicast IP** parameter to a valid multicast/broadcast address (or you can also leave this blank for broadcast).

For users utilizing SureLine 9.0.0 or newer software, the unicast and broadcast settings have been enhanced for ease of use.

For the Primary and Redundant Receive IP Address fields have the dropdown options for Multicast, Broadcast and Unicast as was the functionality before SureLine 9.0.0. The new enhancements allow only the Multicast option to have a configurable address entry cell when changes are made to the ethernet/multicast nodes in the configurator. Unicast and Broadcast selections will use the proper addresses for either option based on the selected network interface.

In the image below, the result of choosing Broadcast or Unicast are shown as they would be configured in any ethernet/multicast node.

The Ethernet UDP/Multicast object is used for sending/receiving multicast, unicast, and broadcast UDP traffic. To choose broadcast, simply leave the address blank. To choose a multicast address, set the address as a valid multicast address. To choose unicast, select a unicast address.

Logical Name	Ethernet UDP-Multicast
Primary and Redundant LAN Input	Disabled
Multicast Port Number	9506
Multicast NIC	eth0
IP Version	IPv4
Multicast Receive IP Address	Unicast
Redundant Multicast Port Number	9506
Redundant Multicast Data Ethernet Port	eth1
Redundant Processor IP Version	IPv4
Redundant Receive Multicast Address	Broadcast
Preferred Primary	Disabled
Dual LAN Data Filter	Disabled
Primary Receiver Timeout	7000 milliseconds
Data Format	Bytes
Filter by this Source IP Address	
Input Message Recording Level	All
Output Message Recording Level	None

Cancel OK

FAQ 24: Topic – Brigantine SFP+ Modules Supported

Question:

What type of SFP+ modules are supported in the Brigantine product?

Answer:

In general, any basic 10GB SFP+ module should work in Brigantine. Customers should be aware that most 10GB SFP+ modules are compatible, while most 1GB modules are not. It is recommended that a 10G interface type be used. The end user will have to choose the external media type (multi-mode or single-mode fiber or copper).

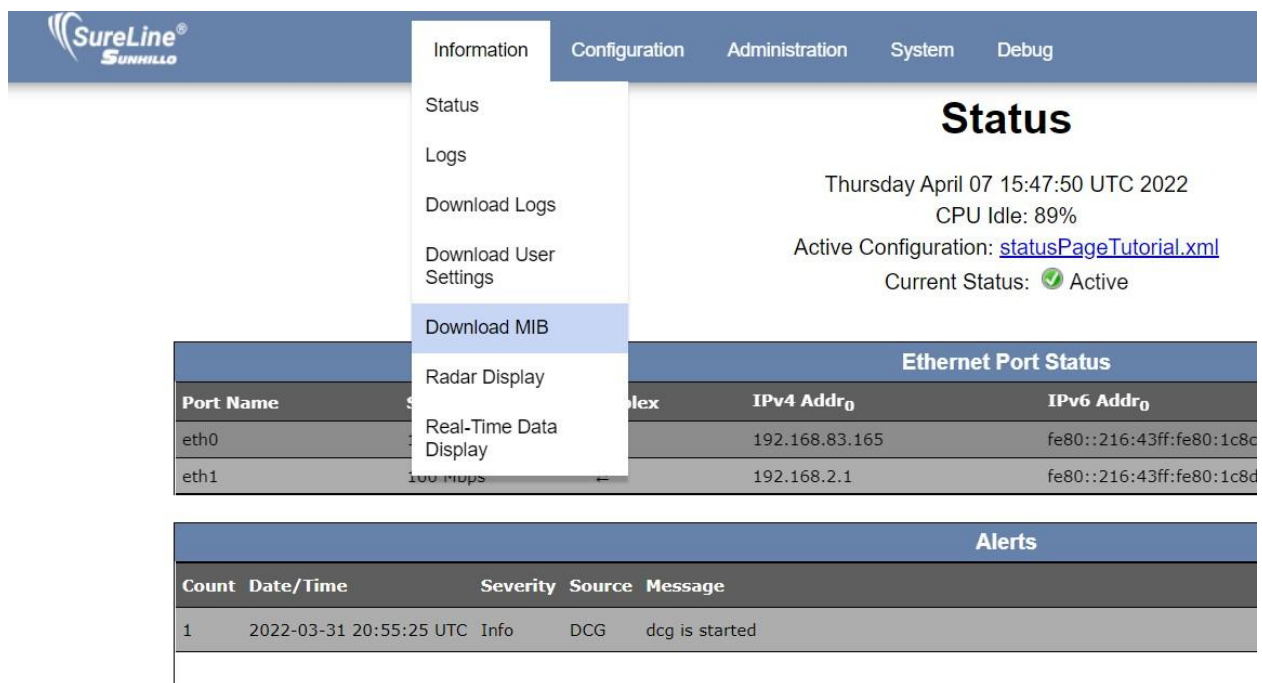
FAQ 25: Topic – Accessing the SNMP MIB with iReasoning

Question:

How do I access SureLine's SNMP MIB using the iReasoning MIB browser software tool?

Answer:

The SureLine SNMP MIB needs to first be downloaded from your Sunhillo product to your local PC. This is done using the web GUI interface by selecting "Download MIB" from the **Information** menu.

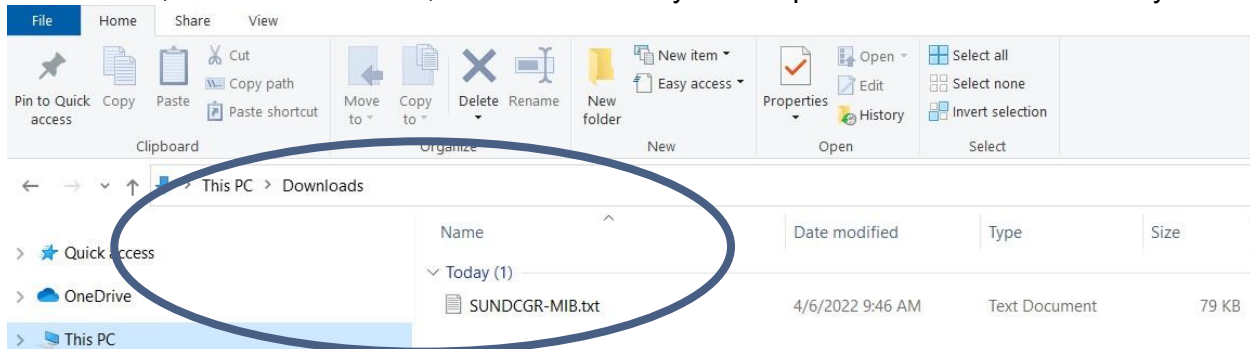


The screenshot shows the SureLine Sunhillo web interface. The 'Information' menu is open, and 'Download MIB' is highlighted. The background shows the 'Status' page with system information and a table of Ethernet Port Status.

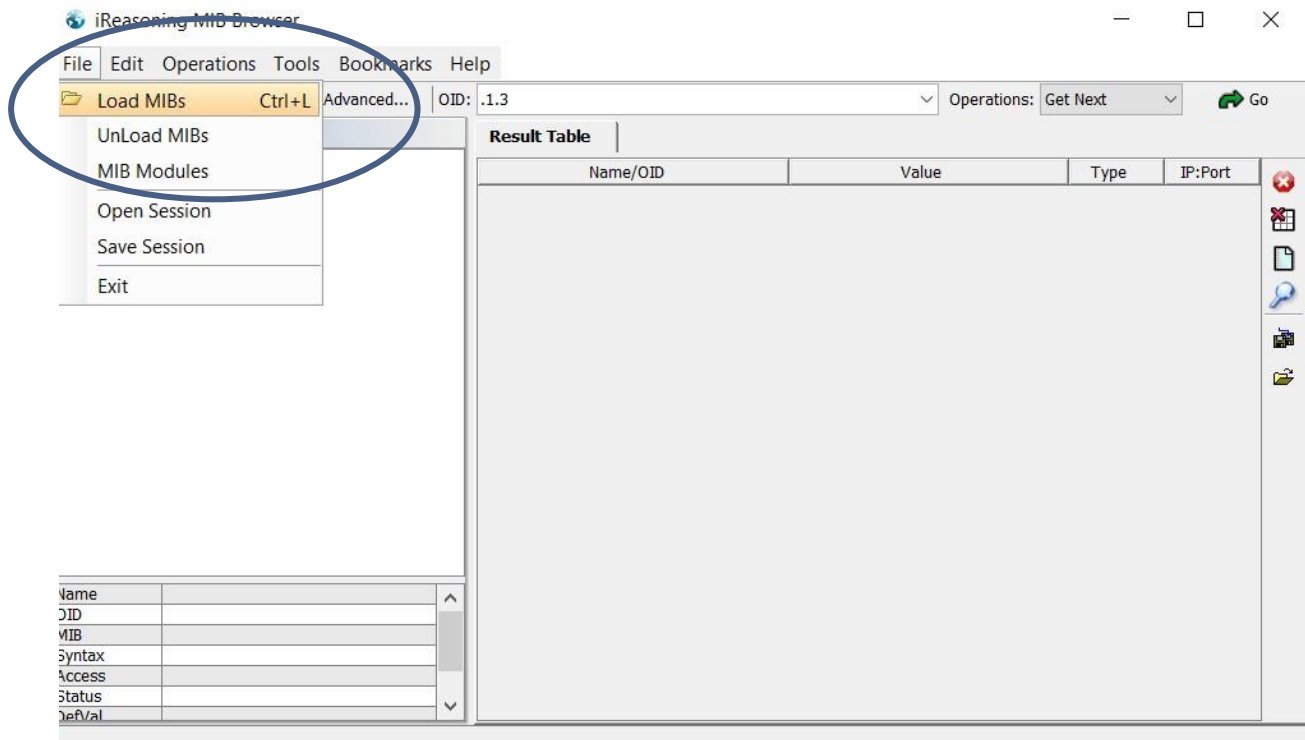
Port Name	Speed	Mode	IPv4 Addr ₀	IPv6 Addr ₀
eth0	100 Mbps	Full Duplex	192.168.83.165	fe80::216:43ff:fe80:1c8c
eth1	100 Mbps	Full Duplex	192.168.2.1	fe80::216:43ff:fe80:1c8c

Count	Date/Time	Severity	Source	Message
1	2022-03-31 20:55:25 UTC	Info	DCG	dcg is started

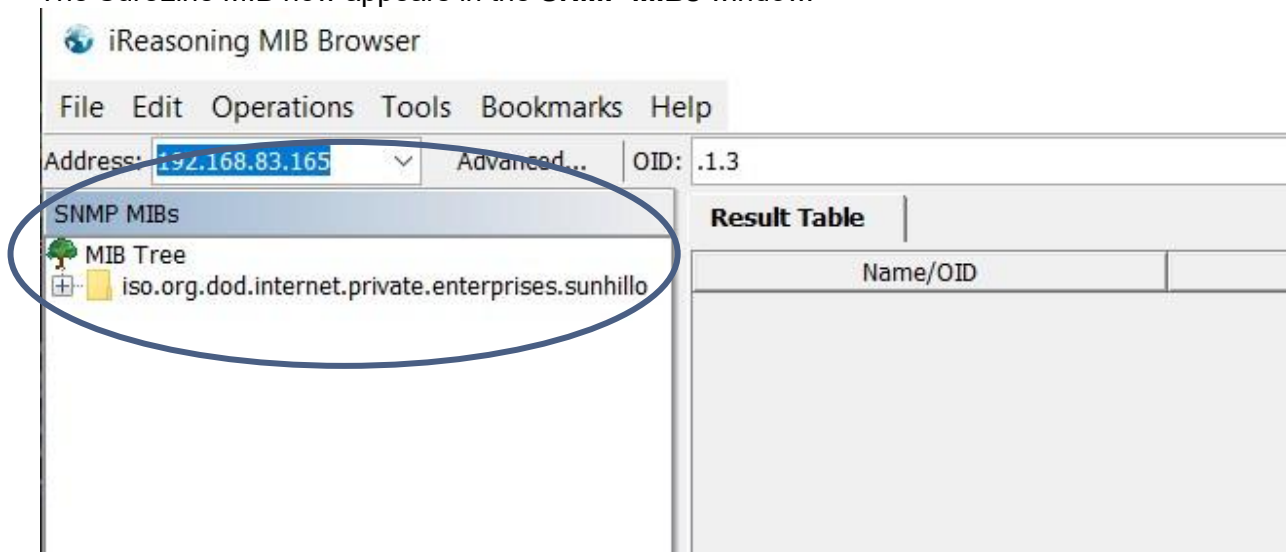
The MIB file, *SUNDCGR-MIB.txt*, is downloaded to your computer's **Downloads** directory.



In the iReasoning MIB browser software tool, select "Load MIBs" from the File menu dropdown and load the *SUNDCGR-MIB.txt* file.



The SureLine MIB now appears in the **SNMP MIBs** window.



Click on the **Advanced** tab and enter the following *Read/Write Community* strings:

Advanced Properties of SNMP Agent

Address: 192.168.83.165

Port: 161

Read Community:

Write Community:

SNMP Version: 2

Read = public
Write = sunhillo

Ok Cancel

The Values for the read and write community as they currently set on the device can be seen by navigating to Administration → SNMP Management → Operation: V2 - Communities on the SureLine web GUI. The other SNMP versions are selectable on this configuration page as well. The downloaded MIB will have the settings that we used at the time of the download.

To verify that the MIB is properly loaded, walk the MIB by selecting “Walk” from either of the **Operations** dropdown menus. Once complete, the full OID will appear in the bottom left of the iReasoning window.

Operations menus

iReasoning MIB Browser

File Edit Operations Tools Bookmarks Help

Address: 192.168.83.165 Advanced... OID: .1.3.6.1.6.3.16.1.5.2.1.6.8.118.105.101.119.85.83.77.51.1.1 Operations: Get Next Go

SNMP MIBs

MIB Tree

iso.org.dod.internet.private.enterprises.sunhillo

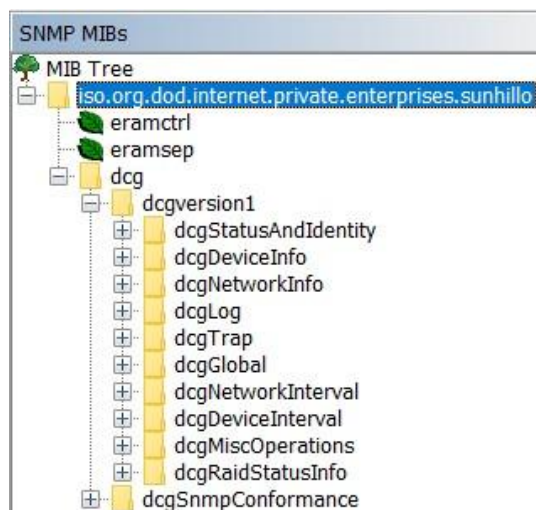
Name/OID	Value	Type	IP:Port
.1.3.6.1.6.3.16.1.5.2.1.3.5.95.97.108...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.3.6.95.110.111...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.3.6.95.110.111...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.3.6.95.110.111...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.3.8.118.105.10...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.5.95.97.108...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.5.95.97.108...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.5.95.97.108...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.6.95.110.111...	2	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.6.95.110.111...	2	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.6.95.110.111...	2	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.8.118.105.10...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.5.95.97.108...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.5.95.97.108...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.5.95.97.108...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.6.95.110.111...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.6.95.110.111...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.6.95.110.111...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.8.118.105.10...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.5.95.97.108...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.5.95.97.108...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.5.95.97.108...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.6.95.110.111...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.6.95.110.111...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.8.118.105.10...	1	Integer	192.168.8...

Name sunhillo
OID .1.3.6.1.4.1.15603
MIB SUNDCCR-MIB
Syntax
Access
Status
DefVal

.1.3.6.1.6.3.16.1.5.2.1.6.8.118.105.101.119.85.83.77.51.1.1

Full OID displayed

To perform operations on the MIB, expand the MIB tree by clicking on the plus sign to the left of the tree name.



Note

The SNMP objects listed under dcg, dcgversion1 are described in detail in *SUN2353 – SureLine Users Guide*.

You can now perform whatever allowable operations you wish on the SNMP objects in the SureLine MIB. Below is an example of a GET on both the *dcgStatus* and *dcgVersion* elements of the **dcgStatusAndIdentity** object.

iReasoning MIB Browser

File Edit Operations Tools Bookmarks Help

Address: 192.168.83.165 Advanced... OID: .1.3.6.1.4.1.15603.3.1.1.2.0 Operations: Get Go

SNMP MIBs

- dcgStatusAndIdentity
 - dcgStatus
 - dcgVersion**
 - dcgConfiguration
 - dcgUpTime
 - dcgCountReset
 - dcgSwitchOverMode
 - dcgSetOnline
 - dcgSetOffline
 - dcgRestart
 - dcgROCommunity
 - dcgRWCommunity
 - dcgTrapCommunity
 - dcgMessageThrottling
 - dcgTisThreshold
 - dcgPreoverloadThreshold
 - dcgOverloadThreshold
 - dcgReturnToNormalThreshold
 - dcgReturnToPreoverloadThreshc
 - dcgMessageThrottlingState

Result Table

Name/OID	Value	Type	IP:Port
.1.3.6.1.6.3.16.1.5.2.1.3.6.95.110.111...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.3.6.95.110.111...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.3.8.118.105.10...		OctetString	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.5.95.97.108....	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.5.95.97.108....	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.5.95.97.108....	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.6.95.110.111...	2	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.6.95.110.111...	2	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.6.95.110.111...	2	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.4.8.118.105.10...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.5.95.97.108....	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.5.95.97.108....	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.5.95.97.108....	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.6.95.110.111...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.6.95.110.111...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.6.95.110.111...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.5.8.118.105.10...	4	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.5.95.97.108....	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.5.95.97.108....	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.5.95.97.108....	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.6.95.110.111...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.6.95.110.111...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.6.95.110.111...	1	Integer	192.168.8...
.1.3.6.1.6.3.16.1.5.2.1.6.8.118.105.10...	1	Integer	192.168.8...
dcgStatus.0	dcgStatusOnline (2)	Integer	192.168.8...
dcgVersion.0	RCI 8.8.2	OctetString	192.168.8...

Name: dcgVersion
 OID: .1.3.6.1.4.1.15603.3.1.1.2
 MIB: SUNDGCR-MIB
 Syntax: DISPLAYSTRING
 Access: read-only
 Status: current
 DefVal:

iso.org.dod.internet.private.enterprises.sunhillo.dcg.dcoverload.dcgStatusAndIdentity.dcgVersion.0

The following example is for a SET command using the MIB object **dcdgOverloadThreshold**. Double-click on the object to see its current value, which is highlighted in blue at the bottom of the *Name/OID* window. Once you've clicked the SET operation, an SNMP SET window appears. Type the new value into the *Value* field.

SNMP Configuration

Command Processor

Disabled

SNMP Mgt Station IP Address

192.168.83.43

SNMP Mgt Station IP Address

SNMP Mgt Station IP Address

SNMP Mgt Station IP Address

SNMP Mgt Station IP Address

SNMP Mgt Station IP Address

SNMP Mgt Station IP Address

SNMP Mgt Station IP Address

SNMP System Status Trap

Enabled

SNMP Device State Change Trap

Enabled

SNMP NIC State Change Trap

Enabled

SNMP Primary/Redundant LAN Change Trap

Enabled

SNMP no Site Data Trap

Enabled

No Site Data Timeout

15

seconds

Cancel

OK

IP address of the computer running iReasoning.

On iReasoning, start the Trap Receiver. Any SNMP traps sent by the SureLine device are now displayed in iReasoning's *Trap Receiver* window.

Result Table			
Trap Receiver			
Operations			
Tools			
Description	Source	Time	Severity
dcgSystemStatusChange	192.168.83.165	2022-04-12 11:46:45	
dcgNICStateChange	192.168.83.165	2022-04-12 11:46:45	
dcgNICStateChange	192.168.83.165	2022-04-12 11:46:45	

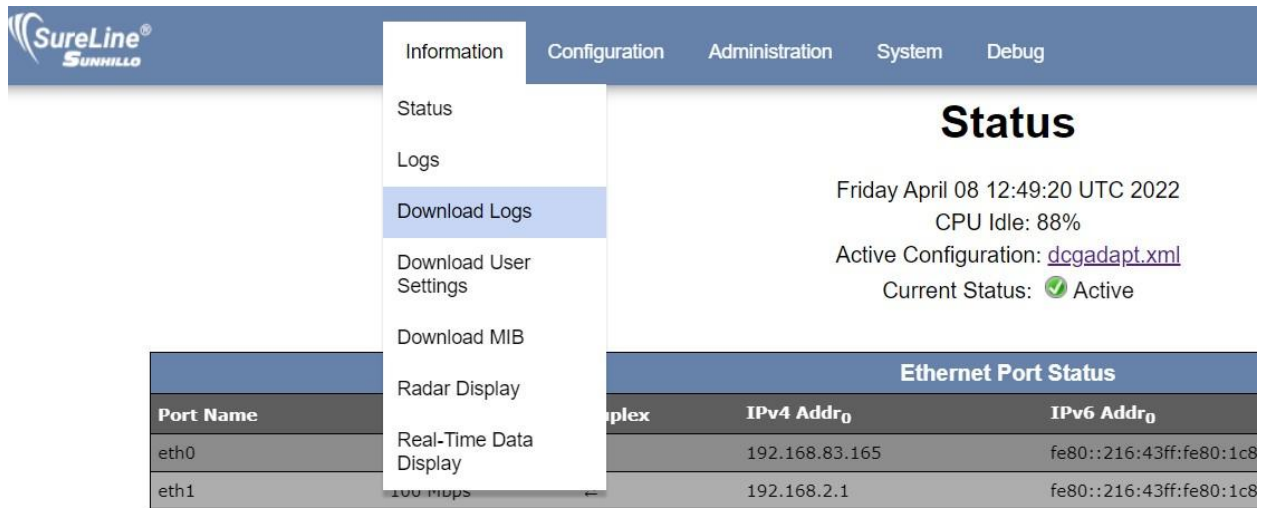
FAQ 26: Topic – What Information is Available in the Log Files

Question:

How do I download the system log files and what information is in the logs?

Answer:

To download the logs from the SureLine Web GUI, select “Download Logs” from the **Information** menu.



The screenshot shows the SureLine Web GUI interface. The 'Information' menu is open, and 'Download Logs' is highlighted. The main content area displays the 'Status' page, which includes system information such as the date and time (Friday April 08 12:49:20 UTC 2022), CPU idle percentage (88%), active configuration ([dcgadapt.xml](#)), and current status (Active). Below this, there is a table titled 'Ethernet Port Status' with columns for Port Name, IPv4 Address, and IPv6 Address. The table lists two ports: eth0 and eth1, with their respective IP addresses.

Port Name	IPv4 Address	IPv6 Address
eth0	192.168.83.165	fe80::216:43ff:fe80:1c8
eth1	192.168.2.1	fe80::216:43ff:fe80:1c8

The archive (.tar) file containing the logs, *ricifile.tar*, is downloaded to your computer's **Downloads** directory.



Note

On the first generation SGP, this file is named *dcgfile.tar*.

The archive file's contents can be viewed/extracted with any compatible archive extraction software – WinZip, 7-Zip, PeaZip, etc. Click on the archive file to view its contents.

Name <	Type	Size	Packed	Date/ti...	Attr...	Checksum...
 etc	[folder]	0 B	0 B		D	
 home	[folder]	0 B	0 B		D	
 proc	[folder]	0 B	0 B		D	
 tmp	[folder]	0 B	0 B		D	
 var	[folder]	0 B	0 B		D	

These directories contain useful information about SureLine and the platform on which it is running. The top-level folders contain the following files:

/etc – system files that assist Sunhillo personnel with troubleshooting

/home/dcg

radar.ini – created by Sunhillo for use with Tracker plug-ins
**.xml* (templates), *dcgdefin.xml*, *dcgdeflt.xml* – default SureLine configurations files
version – SureLine application version number *activeFile* – contains the Active configuration running on the SureLine unit *sys.ver* – lists details regarding active OS running on the unit, including build date *chksum.log* – checksum error log information

/home/dcg/SystemConfig

SystemConfig.xml – SureLine network and security configuration parameters; can be edited and uploaded to unit. See *SUN2353 - SureLine User's Guide* for details.

/home/dcg/userdata

**.xml* – user-defined configurations
**.pol* & **.dat* – geographic filter polygon files (*.pol*) and data recording files (*.dat*)

/proc/mpsprotom - MPS application/debug files

/tmp *sn.txt* – contains Board serial number and revision *netinfo.txt* – output from **ifconfig -a**

/var/log *messages* – SureLine's event log contents

/var/tmp *license.log* – contains list of licensed features on the unit *switch.txt* – dump of */home/dcg/switchMonitor* (if present)
**.psar*, **.pcap* – data recording files
POST_LOG.log – results from power-on self-test (POST)

Note

The directories and folders vary slightly based on the SureLine platform.

FAQ 27: Topic – How Can I Filter Specific Fields from my Surveillance Data?

Question:

Is there a way I can filter out specific fields from my input surveillance data?

Answer:

SureLine provides the following message filters, which are available from the configuration data flow editor:

- **ASR9 Filter** – Filter ASR-9 radar data fields
- **ASTERIX Filter** – Filter out ASTERIX categories
- **ASTERIX FRN Filter** – Filter specific FRNs from ASTERIX categories
- **CAT034 Status Filter** – Filters Status data items from CAT034 Sector messages
- **CD2 Filter** – Filter CD-2 radar data fields
- **Duplicate Message Filter** – Drop duplicate messages
- **Generic Filter** – Filter out a variety of message fields
- **Geo Filter** – Filter data based on geographic coordinates
- **Identity Filter** – Filter data by Mode 3A codes, Mode S codes, and/or Target IDs
- **Mode 3A Filter** – Filter specific Mode 3A codes
- **Mode 3A Range/Azimuth Filter** – Assign range/azimuth gate (RAG) filters to ASR/CD Beacon/BRTQC messages
- **Site Name/ID Filter** – Assigns site and channel filters for ECGP-encapsulated data
- **TI1033 Filter** – Filter TI1033 radar data fields

If you're unsure of what filter to use, the **Generic Filter** provides a comprehensive set of filters that can be applied to your data. The top portion of this filter's configuration window lists radar message fields that can be discarded by checking the checkbox next to the desired filter:

Discard All Beacon Messages	☐
Discard Non-Reinforced Beacon Messages	☐
Discard Reinforced Beacon Messages	☐
Discard BRTQC Messages	☐
Discard Beacon Sector Mark Messages	☐
Discard Fixed Beacon Messages	☐
Discard Search Messages	☐
Discard Search Correlated Messages	☐
Discard Search Uncorrelated Messages	☐
Discard Search Correlated RTQC Messages	☐
Discard SRTQC Messages	☐
Discard Search Sector Mark Messages	☐
Discard Weather Messages	☐
Discard Status Messages	☐
Discard Site ID Messages	☐
Discard CPC Messages	☐
Discard Plot Messages	☐
Discard Track Messages	☐
Discard Unknown Message Types	☐
Discard Messages with Invalid Mode C	☐
Discard Messages with Valid Mode 2	☐

The next set of checkboxes informs SureLine to perform various operations on the input data:

Zero Mode 2 Field		☐	
Zero Mode 4 Field		☐	
Stop Radar Mismatch Reporting		☐	

The next three entries are for SIC/SAC filtering. To do this, click the **SIC/SAC Filter** dropdown arrow and select "Filter by SIC/SAC", and then enter the **SIC** and/or **SAC** values that are being filtered. If neither the (input) SIC nor SAC match the filter values, the message will be dropped.

SIC/SAC Filter	Don't Filter ▾	
SIC	0	
SAC	0	

The next set of filters are for Altitude filtering. Checking the **Zero Negative Altitudes** checkbox will set any non-negative altitude values to zero, and it will **not** drop these messages. To only pass through messages within a given altitude range, select "Disabled" from the **Filter by Altitude** dropdown and then set the **Minimum Altitude** and **Maximum Altitude** parameters.

Zero Negative Altitudes	☐
Filter By Altitude	Disabled ▾
Minimum Altitude	-204700
Maximum Altitude	204700

Similarly, you can also filter by the Range value. To do so, select "Disabled" from the **Filter by Range** dropdown and then set the **Minimum Range** and **Maximum Range** parameters.

Filter By Range	Disabled ▾
Minimum Range	0
Maximum Range	255.875

The next two filters are for the Hit Count and Run Length fields. Set the **minimum** acceptable value for these fields. Any input message with a value that is below the set minimum(s) will be dropped.

Minimum Hit Count	0		
Minimum Run Length	0		ACPs

The last three entries potentially manipulate the output data.

Azimuth Adjustment	0		ACPs
FAA Bit Settings	Don't Override ▾		
AF Bit Settings	Don't Override ▾		

If the **Azimuth Adjustment** is set to any value other than '0', this value is added to the Azimuth in the outbound message. The dropdown values for the **FAA Bit Settings** and the **AF Bit Settings** are:

- **Don't Override** – FAA/AF bit will not be modified (default)
- **Force Disabled** – sets the bit to '0'
- **Force Enabled** – sets the bit to '1'

FAQ 28: Topic – How Do I Download Files from STUI using Zmodem?

Question:

How can I use a Zmodem connection to download log files from a SureLine product?

Answer:

SureLine utilizes its STUI (Sunhillo Terminal User Interface) feature to support a Zmodem connection. This connection is accessible using a USB to mini-USB serial console cable through the **Maint** port.

Zmodem Note

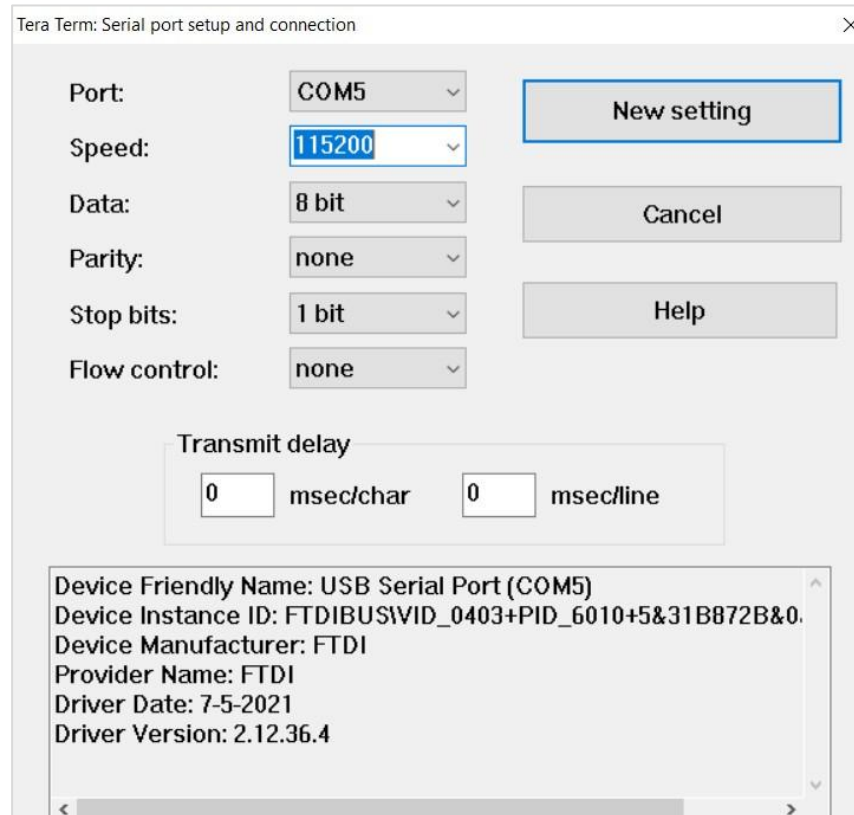
Neither PuTTY nor extraPuTTY support a Zmodem connection, which is why Tera Term is chosen for this example. Should you use a different utility that supports Zmodem, the concept for downloading files once you've made the connection to STUI should be similar.

Teraterm Note

Teraterm serial connections may show two com ports when a SureLine device is connected to the workstation via its Maint port. When selecting ports, select the port with the lower value of the two. Ex: Com 4 and Com 5 shown, select Com4

The steps required for downloading SureLine logs via Zmodem are:

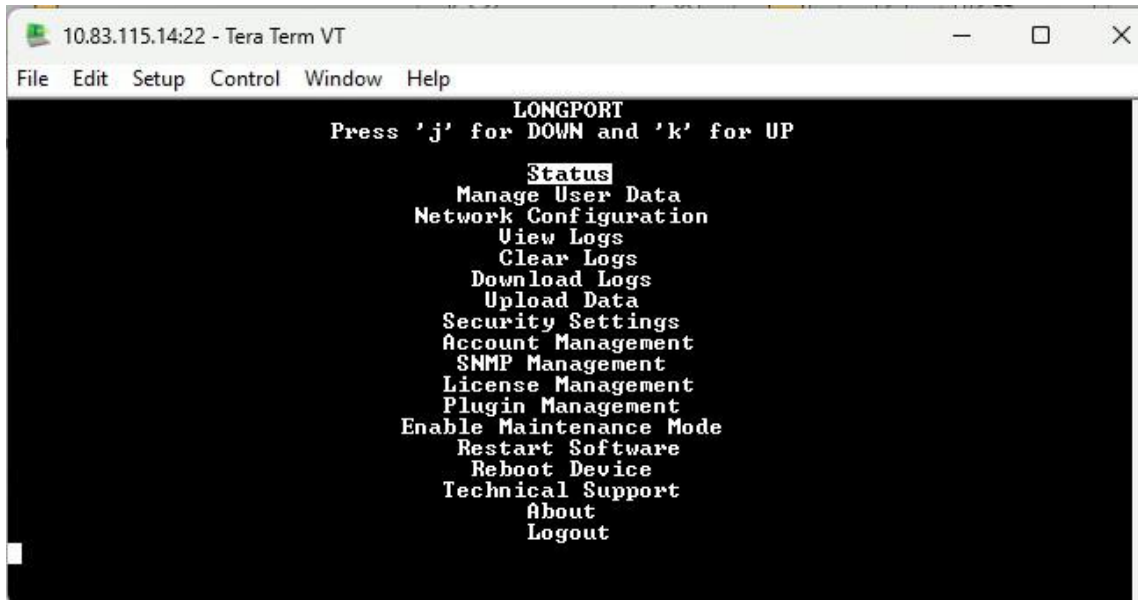
1. Connect a USB to mini-USB cable from your PC/laptop to the Maint port on the SureLine device.
2. Bring up the Tera Term application on your PC/laptop.
3. Tera Term Note
4. You must run Tera Term as Administrator for the connection to the SureLine device to work properly.
5. Tera Term's New Connection window displays by default. Click the Cancel button to dismiss this window.
6. From Tera Term's Setup dropdown menu, select "Serial port".
7. In the Serial port setup and connection window, select the USB port you will be using and set the Speed to 115200.



8. Click the New Setting button to save the settings.
9. From the Tera Term File dropdown menu, select “New connection”.
10. Click the Serial radio button and select the COM port from its dropdown menu. Once selected, click the OK button.



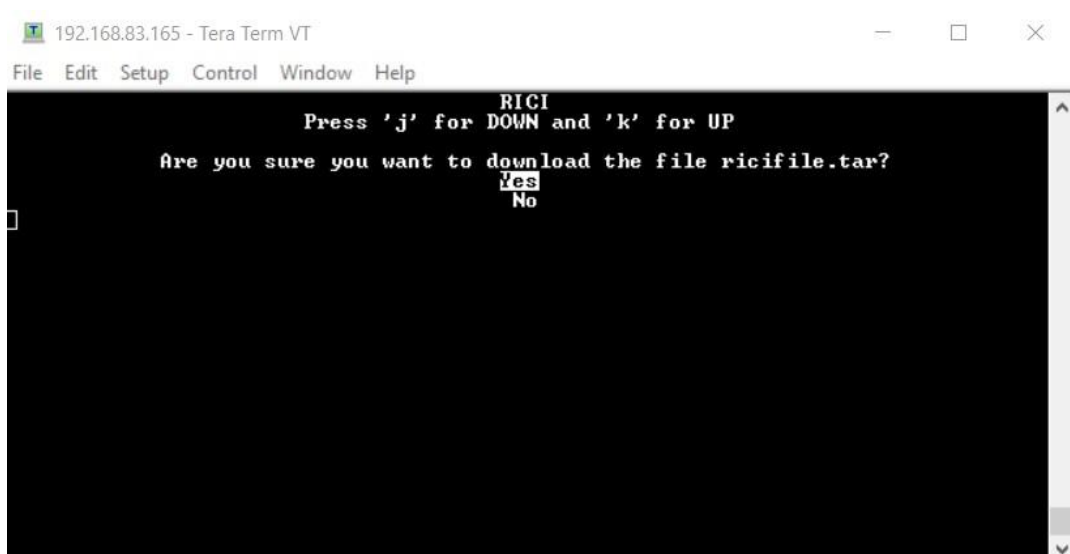
11. The STUI menu for the SureLine device displays with the “Status” option highlighted.



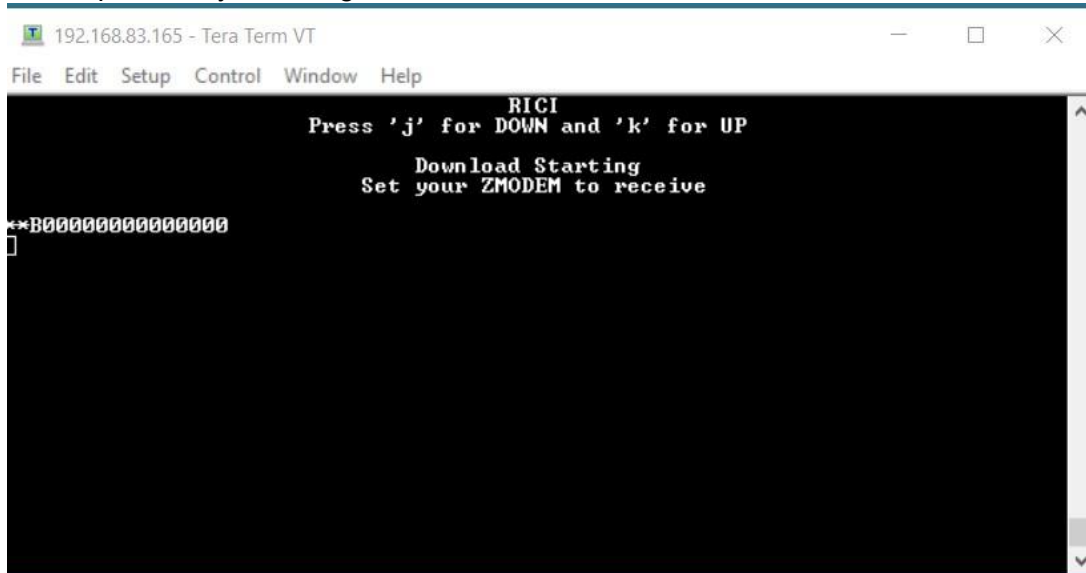
12. In Tera Term, Select File → Change Directory and configure the desired directory for the download
13. Press the Down arrow to the “Download Logs” option and hit Enter.
14. You will be queried as to whether you want to perform the download operation; select Yes (default) and hit Enter.

Tera Term Defaults Note

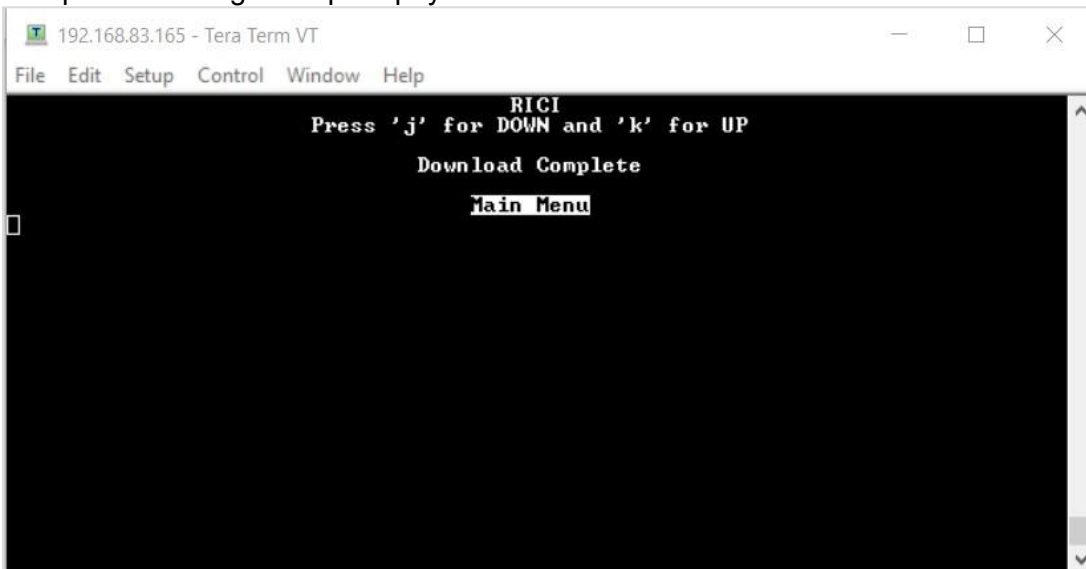
The default location for tera term downloads is directly influenced by the terminal application installation locale and is not suggested for use when downloading logs from SureLine devices. The steps in this section instruct the user to change this location BEFORE the logfile is downloaded.



16. You will be instructed to set your Zmodem to Receive. This is done from the Tera Term File dropdown, by selecting “Transfer → ZMODEM → Receive”.



17. The file transfer begins automatically. Upon completion, STUI will display the “Download Complete” message and prompt you to return to the Main Menu.



18. The downloaded log file (ricifile.tar), is in the selected download folder. The TeraTerm default file location is C:\ProgramFiles(x86)\teraterm and should not be used.

FAQ 29: Topic – How Can I Upload Files to my SureLine Device Using STUI?

Question:

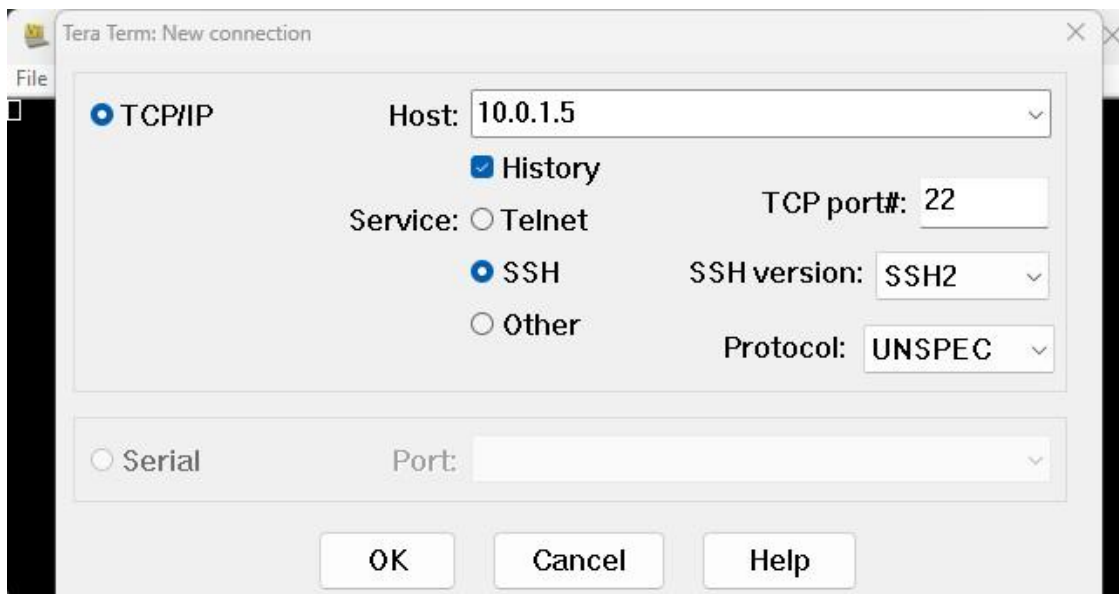
I currently have access to my SureLine device using STUI. How can I upload files, like configurations and .sun software updates, to the device?

Answer:

Using an application that allows a user to configure a ssh or serial session that also leverages Zmodem, any SureLine user can upload data to their unit using the STUI menu options.

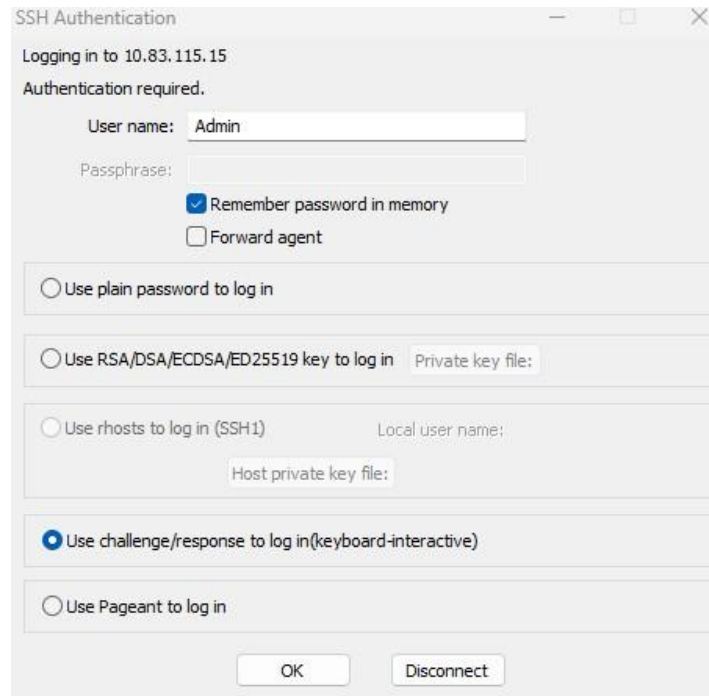
The recommended application to facilitate uploads to the SureLine Application is TeraTerm, which is a freeware third party software application available for download on the Internet. This terminal-based software allows users to create SSH or serial connections to a SureLine device. Once a connection is established to the unit, the user can login to their device and utilize the STUI menu paired with Zmodem to complete uploads.

1. Install Tera Term onto the PC that will be used to access the SureLine unit
2. If an SSH session is desired, disregard the following and move to the next step. If a serial connection is desired, connect a mini-USB to USB A cable from the maintenance (Maint) port on the unit to a USB port on the PC.
3. For an **SSH connection**, select the **TCP/IP** radio button and input any of the connected IP addresses for the device into the **Host** cell. Ensure that SSH is the selected **Service**. Press OK to start the connection. For a **Serial session**, select the **Serial** radio button and select the appropriate COM port from the **Port** dropdown menu. If there are two sequential COM port numbers, the correct choice is always the lower of the two numbers. For example, If COM3 and COM4 are displayed as options, COM3 is the option that should be selected. Press OK.



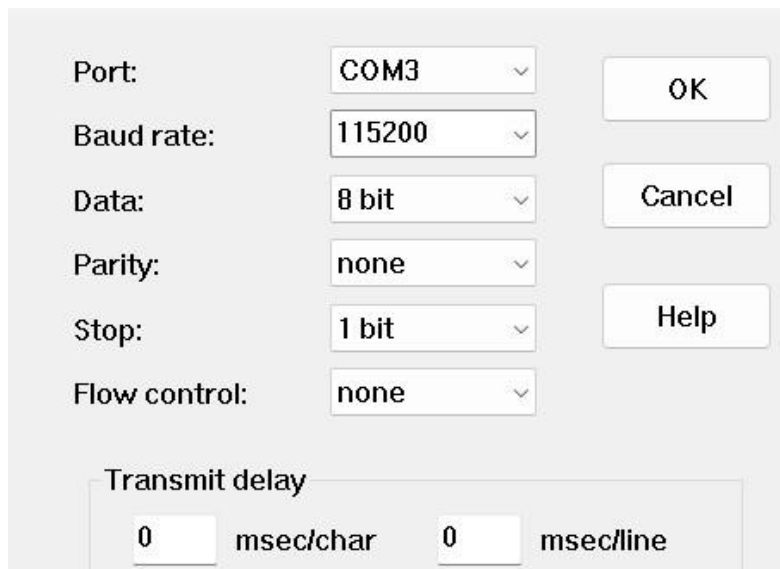
For the **SSH Connection**, the SSH Authentication wizard will display once OK is selected.

Enter the appropriate username and select the “Use challenge/response to log in(keyboardinteractive)” option and press OK. Enter the Password when prompted and select OK. The default login credentials for SureLine devices are Admin/Sunhillo.



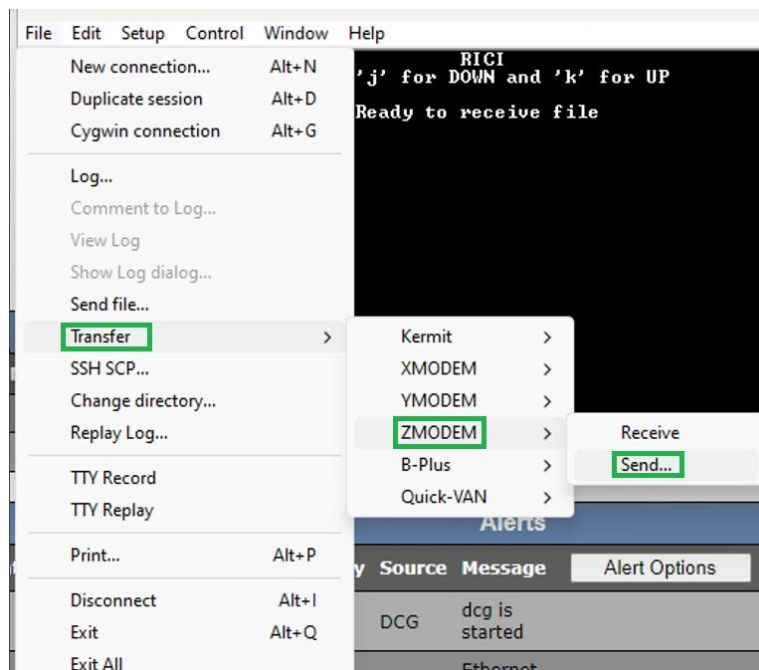
For the **serial connection** select the serial radio button and then the appropriate COM port. If two COM ports are shown for a single connection, choose the port with the lower numerical value. Once the session is opened, the serial baud rate will need to be set.

Select the Setup tab → Serial Port and set the Baud rate to 115200 and press OK.

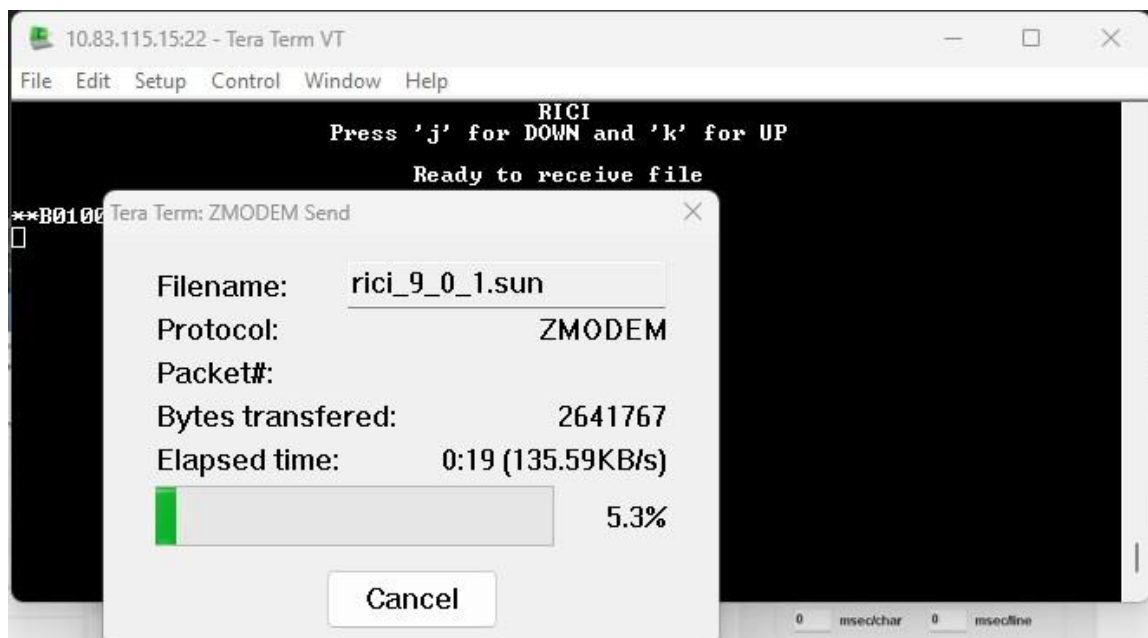


- Once the terminal session is open, if the STUI login is not immediately present, hit Enter once or twice and Login with credentials for serial sessions.

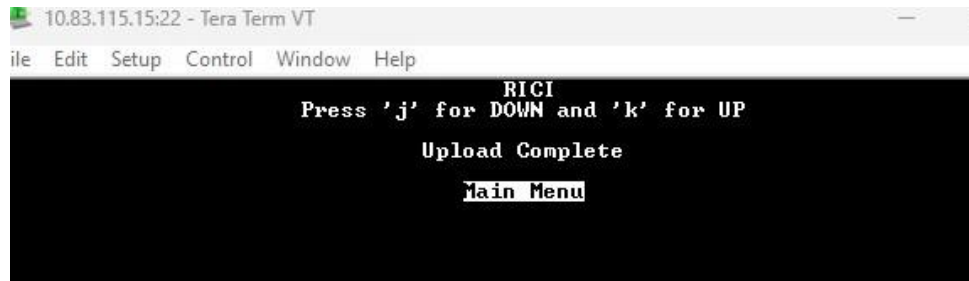
5. On the STUI menu, use the arrow keys to highlight 'Upload Data' and hit Enter
6. When the terminal shows 'Ready to receive file', navigate to File → Transfer → ZMODEM → Send. Find the File that you would like to upload and click OK



7. A popup window will display the status of the file being uploaded to the unit



8. When the Upload is finished, an Upload Complete message displays



9. If the file that was uploaded was a software package .sun file, a usersettings.tar file, or a Network Settings systemconfig.xml file, the user will need to Reboot the device to make the new changes take effect.
10. If the file that was uploaded was a Software Plugin .plg, Geographic Filter Polygon File .pol, SureLine configuration .xml, the software may be restarted after the upload is successful. If the file is a configuration, it will need to be set as the next active configuration before the software is restarted.

FAQ 30: Topic – How Do I Factory Reset my SureLine product?

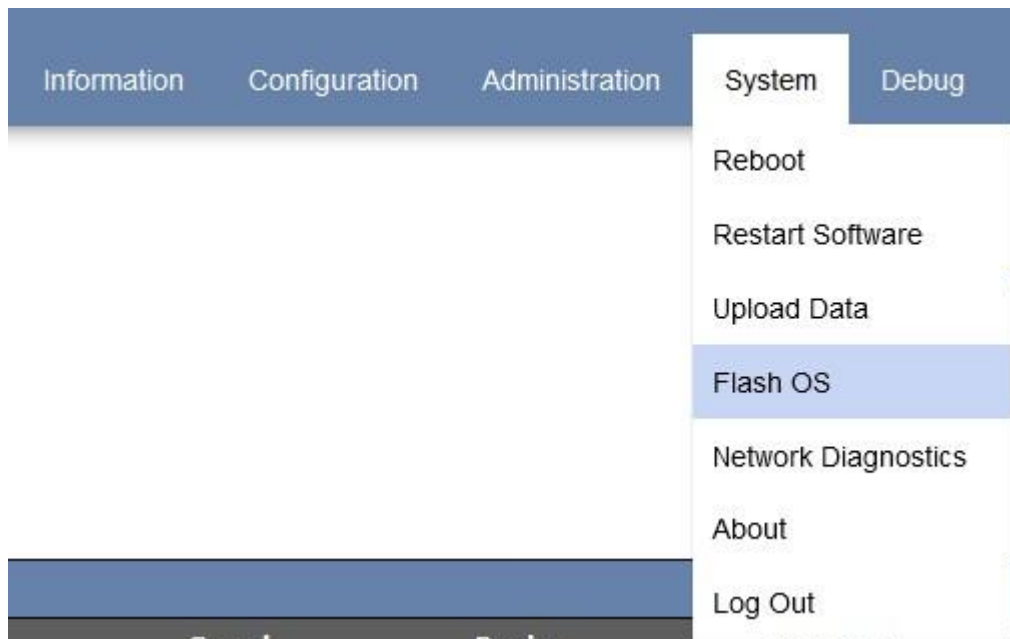
Question:

How do I factory reset my SureLine product?

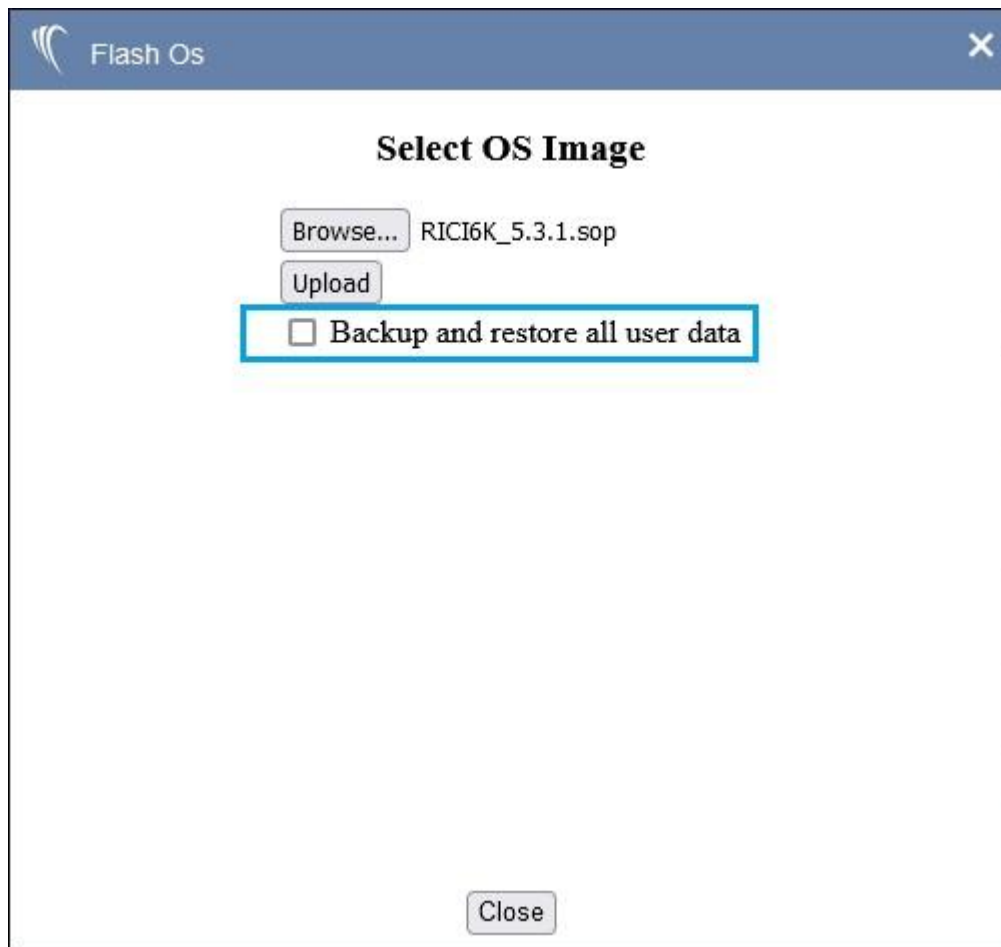
Answer:

SureLine products can be factory reset using the Flash OS feature. When logging in and navigating to the System → Flash OS menu, you are presented with a dialog box, a file upload option, and a checkbox with an option to **Backup and restore all user data**. This option is selected by default as most users want to retain their IP addressing and configuration files when performing a Flash OS operation. However, deselecting this option and flashing the appropriate operating system file (.sop) will effectively factory reset the unit once the Flash OS process has completed. The IP addresses will return to default settings and all configuration files will be erased, along with any other personal identifiable information you may have had on the unit. The operating system .sop downloadable content can be obtained from Sunhillo's Support Portal at <https://support.sunhillo.com/Login.php> for registered products currently in an active maintenance contract.

Below is the location of the Flash OS option on the SureLine Web GUI System menu of a RIC1 6000 running SureLine:



Below is the location of the Flash OS option using the same RIC1 6000:



FAQ 31: Topic – How Do I Use systemConfig.xml on SureLine?

Question:

I have a SureLine device, and I plan to use backup and restoration functionality at some point. Can you explain how I can use the systemConfig.xml to format my SureLine device?

Answer:

The systemConfig.xml file holds the basic networking and security settings utilized on a SureLine device. When a user Downloads Logs or User Settings from a SureLine device, the systemConfig.xml file is among the critical configuration files that are downloaded.

Depending on the SureLine device and the version of SureLine used, the systemConfig.xml file has specific fields that make up the device's networking and security profile.

When backing up a fielded unit, trying to restore a unit back to a particular setup or recovering it after a networking mistake, the systemConfig.xml is the file largely responsible for properly configuring the unit using built in functionality.

Two sections make up the systemConfig.xml in most cases on the latest SureLine releases.

The first section is the Networking section. Any information concerning the networking configuration on the interfaces on the SureLine device as well as the configurable server connections is stored in this section of the configuration. This includes, but is not limited to, the IPV4 configured interface IPs, NTP server IPs, syslog forwarding server IPs, VRRP configuration, FRAIHMWORK server configuration, SIU control server IPs, and DNS server IPs. Most settings that are configured in the Network Configuration page of SureLine are saved here in the systemConfig.xml for concise backup and restoration purposes.

The second section is the Security section which contains enabled or disabled security options that the SureLine unit leverages at the time of the backup. The configured options include but are not limited to FTP, SSH Access, SNMP, NTP, Complex Passwords, and Access Control Lists.

When changes are made on either the Network Config or the Security pages of the web GUI, or using the menus in STUI, the configured changes are saved to the systemConfig.xml file.

The systemConfig.xml is best accessed either by download via the Download Logs operation from the web GUI Information Menu, or via download utilizing the Download User Settings operation in the web GUI Information Menu. Once either folder has been downloaded and untarred/unzipped, you can find the systemConfig.xml using the following path
home→dcb→SystemConfig→ systemConfig.xml.

The systemConfig.xml file can be uploaded directly to a device of similar platform, software version, and operating system. The following steps outline that process.

1. Login to the Unit.
2. Navigate to System → Upload Data.

3. Find and select the systemConfig.xml.
4. Select "Upload Data"
5. The following notification will display in the Upload Data window if the upload was successful.
6. "systemConfig.xml uploaded successfully. Network and Security settings will now be applied. This may take a minute."
7. After waiting a minute or longer, refresh the web page *At this time if the IPs are different in the uploaded systemConfig.xml, the web page will not recover, and the user will have to navigate to the new IP.
8. Optionally once the update has been applied, navigate to the System menu and Reboot the unit.

FAQ 32: Topic – What Is the SureLine Logfile and Where Is It located?

Question:

I have a SureLine device, where is the logfile and what is the importance of its composition? How is this file useful to me or support?

Answer:

The logfile on a SureLine UUT is accessible via the Information menu on the SureLine Web GUI. There is the “View Logs” option where a user can view the current log messages and there is the “Download Logs” option which will allow a user to download the logfile containing many important unit files to the workstation where the Web GUI is accessed. Once downloaded, a logfile can be used to do a backup/restore of a unit at its current state, to locate/access configuration files/recorded captures, or to provide the Sunhillo Support team with files to troubleshoot anything on the unit.

The downloaded log file can be accessed in the workstation’s downloads folder in the format *.tar. Once untarred/unzipped using a preferred utility like winRAR or 7zip, the *.tar folder will have a few subfolders. Within these subfolders, important information can be accessed for the use of backups or for customer support cases. The following chart highlights some of the embedded files and their purposes:

Filename	File Location	File Purpose
sys.ver	/home/dcg	SureLine Operating System version running on unit
version	/home/dcg	SureLine Application/Software Version running on unit
systemConfig.xml	/home/dcg/SystemConfig	System Configuration XML configuration file for SureLine
activeFile	/home/dcg/userdata	Active running XML configuration file for SureLine
*.aml	/home/dcg/userdata	Custom AML files that have been uploaded separately to SureLine through the Web GUI or STUI
*.pol	/home/dcg/userdata	Polygon files for the SureLine Geographic Filter that have been uploaded separately to SureLine through the Web GUI or STUI
radar.ini	/home/dcg/userdata	Radar initialization file used for the Single Sensor Tracker and Multi Track Fuser within SureLine
sn.txt	/tmp	Contains unit's product and board serial number, board revision, and assembly number
netinfo	/tmp	Contains unit's network settings like IP addresses for network interface

messages	/var/log	Event Log content from the Event Log within SureLine. These rollover weekly and clear on reboot
Filename	File Location	File Purpose
license	/var/log	Lists all licenses installed on the unit
*.pcap	/var/log	Data Recording file from SureLine Data Recording feature (recording file clears/restarts on reboot)
*.dat	/var/log	Data Recording file from SureLine Data Recording feature (recording file clears/restarts on reboot)

FAQ 33: Topic – How Can I Check the UDP In Node Statistics from the Status Page

Question:

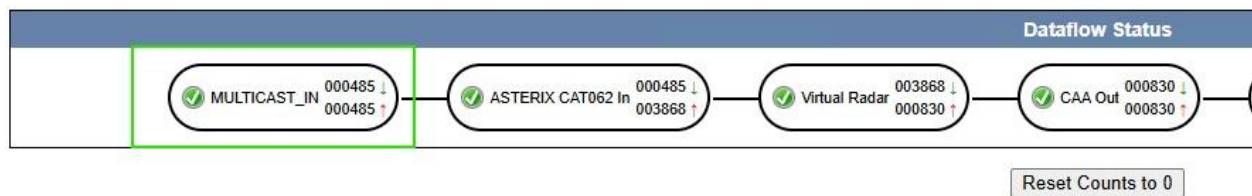
How can I check the statistics of the UDP Multicast input node on the unit from the status page? What options are there for statistics and how can they describe the flow of data to the unit?

Answer:

On the SureLine status page, there are many options for viewing the flow of data through the unit to identify system functionality, node compatibility, and real-time troubleshooting.

The examples below are from newer units using 8.0.0 and newer software. Some of the options may be available as described, but only devices running the latest releases will have all the features described.

Once a user is logged into a SureLine device, the status page is visible. If a user scrolls down to section labeled “Dataflow”, the flow of data is viewable in the displayed nodes and can be read from left to right. On the far left, there are a few new types that a configuration may start with. One of the most common input nodes is the Ethernet/Multicast UDP Input Node.



When the input node is selected, the node’s detailed status will enlarge showing the overall statistics.

The screenshot shows the 'MULTICAST_IN Detail' status page. It has three tabs: 'Stats', 'Configuration', and 'Real Time Data Display'. The 'Stats' tab is selected. Below the tabs is a table with the following data:

Name	Type	Messages In	Messages Out
MULTICAST_IN	MULTICASTIN	485	485

Below the table, the following statistics are displayed:

- Packets Per Second: 0
- Bytes Per Second: 0
- Primary/Redundant: PRIMARY

A 'Reset Counts to 0' button is located at the bottom of the page.

The node’s detailed status displays the first tab showing the name, type, and message counts of the node. It also displays the Packets Per Second, Bytes Per Second and whether the Multicast in node running is the primary or redundant multicast input if redundancy is configured.

Messages In will show counts if the connected interface is receiving data and will show no counts if there is no data being received by the configured interface.

The Configuration tab can be selected at the top of the node detail window.

MULTICAST_IN Detail

Stats

Configuration

Real Time Data Display

Disable Node

Attribute	Value
Node Type	Ethernet UDP/Multicast
Logical Name	MULTICAST_IN
Primary and Redundant LAN Input	Disabled
Multicast Port Number	1969
Multicast NIC	eth0
IP Version	IPv4
Multicast Receive IP Address	239.1.1.1
Redundant Multicast Port Number	1970
Redundant Multicast Data Ethernet Port	eth1
Redundant Processor IP Version	IPv4
Redundant Receive Multicast Address	239.1.1.1
Preferred Primary	Disabled
Dual LAN Data Filter	Disabled
Primary Receiver Timeout	7000
Data Format	Bytes
Filter by this Source IP Address	

The Configuration tab will display most of the configurable fields of the node if there are issues with the current configuration involving the multicast NIC, the port number, or a configured address. This can give a user a start on the necessary changes to make once the configuration is opened or to re-confirm that there are no issues with the current configuration.

The third tab at the top of the node detail window is the Real Time Data Display. This node allows a user to view the data as the node is currently processing the data. There are Data, Data+Text, and Generic Fields for most incoming data types. When those radio buttons are selected the most recent input data will be shown at the top of the messages chart lower in the window. The newest and most detailed option is for ASTERIX protocols where the protocol version can be selected via dropdowns and then used to decode the incoming messages in the message chart. The incoming feed can be paused, and a user can look through the fields of the incoming data based on the AML for the chosen category version. This can be very useful for choosing nodes to populate the data flow after the input data, to choose what needs to be filtered, or even to analyze the nature of incoming UDP data from a cable connected to the device's ethernet interface. Paused data can be resumed at which time the message chart will begin to update again.

Stats

Configuration

Real Time Data Display

Disable Node

Real-Time Data Display

Display Type

☐ Data

☐ Text

☐ Data+Text

☐ Generic Fields

☒ Asterix

Data Format

☒ ASCII

☐ EBCDIC

Data Length

☐ 16

☐ 32

☐ 64

☒ Full

Asterix Categories

Category 1: 1.1	Category 2: 1.0	Category 8: 1.1	Category 9: 2.1
Category 10: 1.1	Category 11: 1.2	Category 19: 1.3	Category 20: 1.8
Category 21: 0.23	Category 23: .13	Category 33: FAAv3	Category 34: 1.27
Category 48: 1.18	Category 62: 1.18	Category 63: 1.1	Category 65: 1.3
Category 247: 1.3			

Show/Hide Filters

Resume

Messages

Timestamp	Asterix Categories	Message Data
		▼ Message #1 Category 62 FSPEC: BF 5F EF 03 04 ► FRN: 1 DataItem: 10 Name: Data Source Identifier ► FRN: 3 DataItem: 15 Name: Service Identification ► FRN: 4 DataItem: 70 Name: Time Of Track Information ► FRN: 5 DataItem: 105 Name: Calculated Track Position (WGS-84) ► FRN: 6 DataItem: 100 Name: Calculated Track Position (Cartesian) ► FRN: 7 DataItem: 185 Name: Calculated Track Velocity (Cartesian) ► FRN: 9 DataItem: 60 Name: Track Mode 3/A Code ► FRN: 11 DataItem: 380 Name: Aircraft Derived Data ► FRN: 12 DataItem: 40 Name: Track Number ► FRN: 13 DataItem: 80 Name: Track Status ► FRN: 14 DataItem: 290 Name: System Track Update Ages ► FRN: 15 DataItem: 200 Name: Mode of Movement ► FRN: 16 DataItem: 295 Name: Track Data Ages ► FRN: 17 DataItem: 136 Name: Measured Flight Level ► FRN: 19 DataItem: 135 Name: Calculated Track Barometric Altitude ► FRN: 20 DataItem: 220 Name: Calculated Rate of Climb/Descent
06/17 06:01:13	Category 62 v1.18	

If a user wanted to stop the flow of data to the unit temporarily to make changes or in some cases force a switchover, the **Disable Node** option in the top right corner of the node detail window would allow a user to do so in which case data would not flow from the node to the next.

Ethernet UDP-Multicast Detail

Stats

Configuration

Real Time Data Display

Enable Node

Name	Type	Messages In	Messages Out
Ethernet UDP-Multicast	MULTICASTIN	0	0

Packets Per Second: 0
Bytes Per Second: 0
Primary/Redundant: PRIMARY

Reset Counts to 0

Once the detail node is closed the Status Page will be shown again and the running configuration will in most cases remain undisturbed.

FAQ 34: Topic – How Do I Access Step-by-Step and Video Tutorials on the Sunhillo Support Portal?

Once you are logged in to the Sunhillo Support Portal, navigate to the Downloads and Uploads section. Under Documentation, select either 3-Step by Step Tutorials for written instructions or 5-Video Tutorials for instructional videos.

Sunhillo Product Support Page

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contract are entitled to e access to our s. Register your erial number below.

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Warranty Status

Downloads and Uploads

- Support
- Customer Uploads (Using 0 of 10 MB)
- Documentation
 - 1-SureLine Documentation
 - 2-Frequently Asked Questions
 - 3-Step by Step Tutorials**
 - [REF183 - HDLC to IP-IP to HDLC SureLine Configuration.pdf](#)
 - [REF176 - Unit Redundancy Configuration.pdf](#)
 - [REF175 - Creating a Bidirectional Data Flow.pdf](#)
 - [REF179 - ADS-B to XML SDO Out \(for SMS\).pdf](#)
 - [REF187 - Using the ASTERIX Validator Utility node.pdf](#)
 - [SUN3102 - SureLine Field Application Examples.pdf](#)
 - [REF180 - ADS-B to ASTERIX CAT021.pdf](#)
 - [REF181 - ADS-B to CD-2 with Virtual Radar.pdf](#)
 - [REF177 - Virtual Radar Configuration.pdf](#)
 - [REF182 - 13 Bit Radar Serial to IP-IP to Serial SureLine Configuration.pdf](#)

Sunhillo Product Support Page

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contract are entitled to e access to our i. Register your erial number below.

ensed once the serial windows license to feature here.

Warranty Status

Downloads and Uploads

- Support
- Customer Uploads (Using 0 of 10 MB)
- Documentation
 - 1-SureLine Documentation
 - 2-Frequently Asked Questions
 - 3-Step by Step Tutorials
 - 4-Product Field Bulletins
 - 5-Video Tutorials**
 - [SureLine Dataflow Editor Video - IP to IP - Many Inputs to One Output.mp4](#)
 - [SureLine Dataflow Editor Video - Serial HDLC to UDP with ASTERIX conversion.mp4](#)
 - [SureLine - Dataflow Editor Demonstration.mp4](#)
 - [SureLine - ADSB to Virtual Radar to Radar Output - Map Display - Radar Display - Real Time Data Display Demonstration.mp4](#)
 - [SureLine Dataflow Editor Video - IP to Serial - ECGP Input With Conversion.mp4](#)
 - [Surveillance Monitoring System \(SMS\) Demonstration.mp4](#)
 - [SureLine Dataflow Editor Video - IP to IP - One](#)

FAQ 35: Topic – How Do I Set Up Multi-Factor Authentication (MFA) for Secure Messaging and Customer Uploads on the Sunhillo Support Portal?

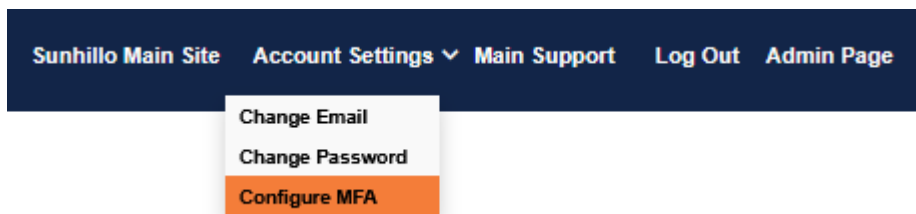
Question:

How do I set up Multi-Factor Authentication (**MFA**) for Secure Messaging and Customer Uploads on the Sunhillo Support Portal?

Answer:

Multi-Factor Authentication (MFA) must be configured before using the Secure Message Center and Customer Uploads features on the Sunhillo Support Portal.

1. Log in to the Sunhillo Support Portal.
2. From the top menu, select Account Settings > Configure MFA.



3. In the Configure MFA window, select the desired MFA Type from the drop-down menu:
 - Email
 - Authenticator App



4. If Authenticator App is selected:



Google Authenticator



Aegis

- Open an authenticator application that supports SHA256, such as Google Authenticator or Aegis.
- Scan the QR code displayed in the Configure MFA window. Alternatively, manually enter the code shown above the QR code into the authenticator application.
- Enter the security code generated by the authenticator application into the Enter Code field.

A screenshot of the 'Configure MFA' window. At the top, it says 'Configure MFA' and 'MFA Type : Authenticator App'. Below this, there is a section titled 'Manual Entry Code nrveoq:' with a QR code. To the right of the QR code, there is text that says 'Use an Authenticator app that support SHA256 such as:' followed by a list: 'Google Authenticator' and 'Aegis'. Below the QR code, there is a text input field labeled 'Enter Code' and a 'Verify Code' button. At the bottom, there are 'Save' and 'Cancel' buttons.

- Click Verify Code.

- If Email is selected, follow the on-screen instructions to receive and verify the MFA code sent to the email address associated with the Support Portal account.
After the MFA method has been successfully verified, click Save.
MFA is now configured and can be used when accessing Secure Messaging and Customer Uploads.

Manual Entry:

If you are unable to scan the QR code, manually enter the Manual Entry Code displayed in the Configure MFA window into your authenticator application.

Configure MFA

MFA Type : Authenticator App

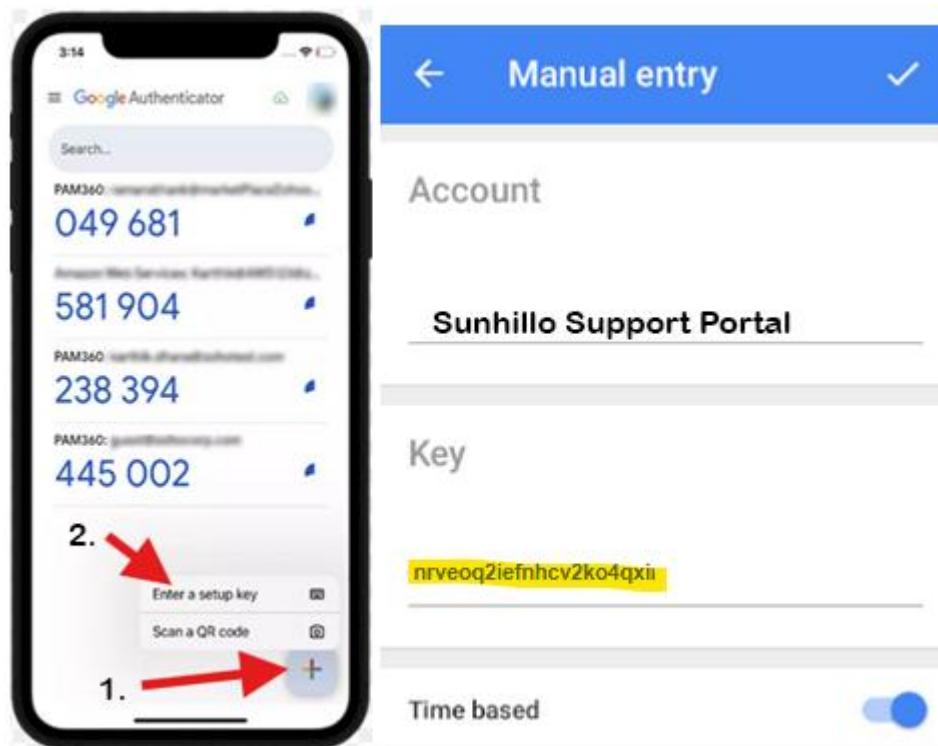
Manual Entry Code **nrveoq2iefnhcv2ko4qxii**



Use an Authenticator app that support SHA256 such as:

- Google Authenticator
- Ageis

The authenticator app will then generate a security code. Enter that code in the Enter Code field on the Support Portal and click Verify Code.



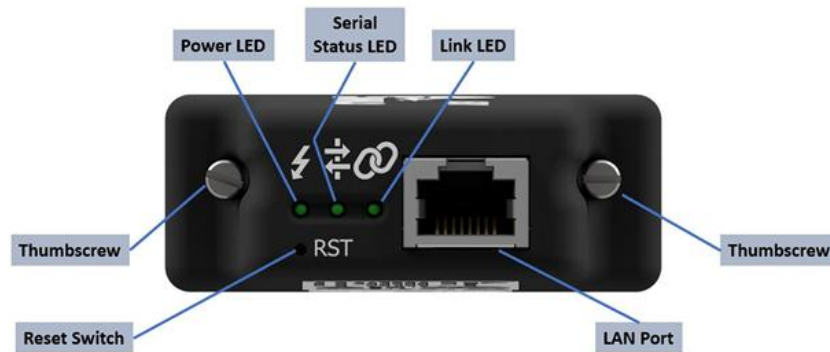
FAQ 36: Topic – How Do I Factory Reset an Asbury?

Question:

How do I perform a factory reset on an Asbury?

Answer:

To perform a factory reset on the Asbury, use the **RST** (Reset) switch located below the status LEDs



1. With the Asbury powered on and running, use a paper clip or similar tool to press and hold the RST switch for two seconds, then release it.
2. Press and hold the **RST** switch a second time.
3. Continue holding the switch until the Serial Status LED flashes.
4. Release the **RST** switch.

The Asbury will return to its factory default settings.

FAQ 37: Topic – How Do I Set Up and Use Map Display in SureLine?

Question:

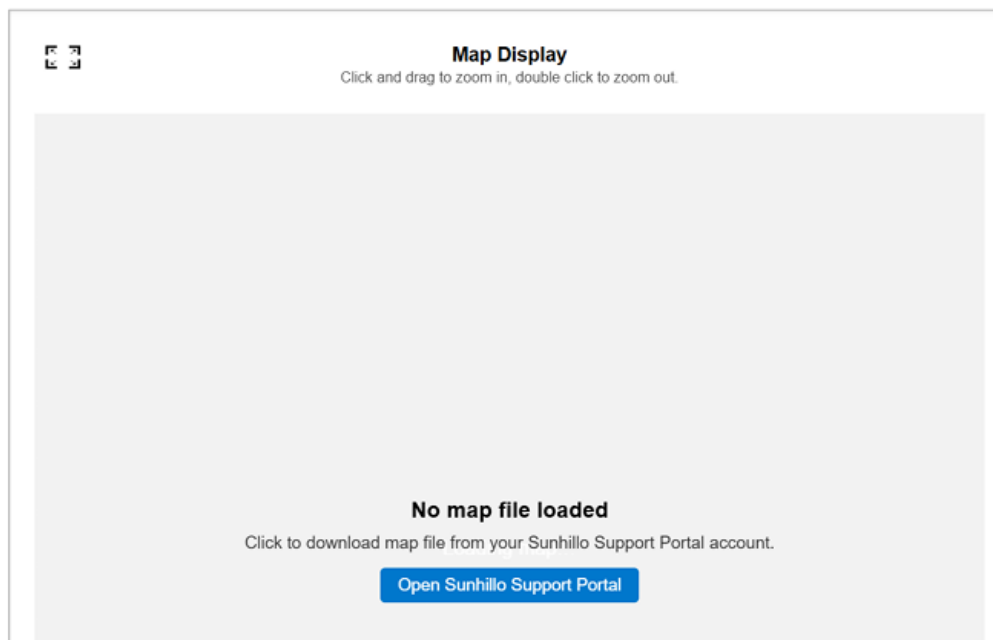
How do I set up the Map Display and use it within SureLine?

Answer:

The Map Display option visualizes targets, based on latitude and longitude, atop a previously uploaded data map. The map is contained in the file `map_drawing.dat`, which is obtained from Sunhillo's support portal. This file is located in the folder *SureLine Maps*, which is under the **Downloads and Uploads** tree.

Once the map file has been downloaded from the support portal to your target system, it must be uploaded to the SureLine device that will be used to display it via the Upload Data feature, which is described in Section 6.1.

If the map data file has not been uploaded to the SureLine device, the message “No map file loaded” will be displayed along with a button that links to Sunhillo's support portal as shown below.



In addition to accessing this feature from the Information menu, it can be accessed by clicking on the Map Display function node in the active data flow.

The image below provides an example of a map display with targets concentrated over England. Clicking the expand symbol in the upper left corner will create a full screen display of the map. To exit full screen mode, press the Esc key.

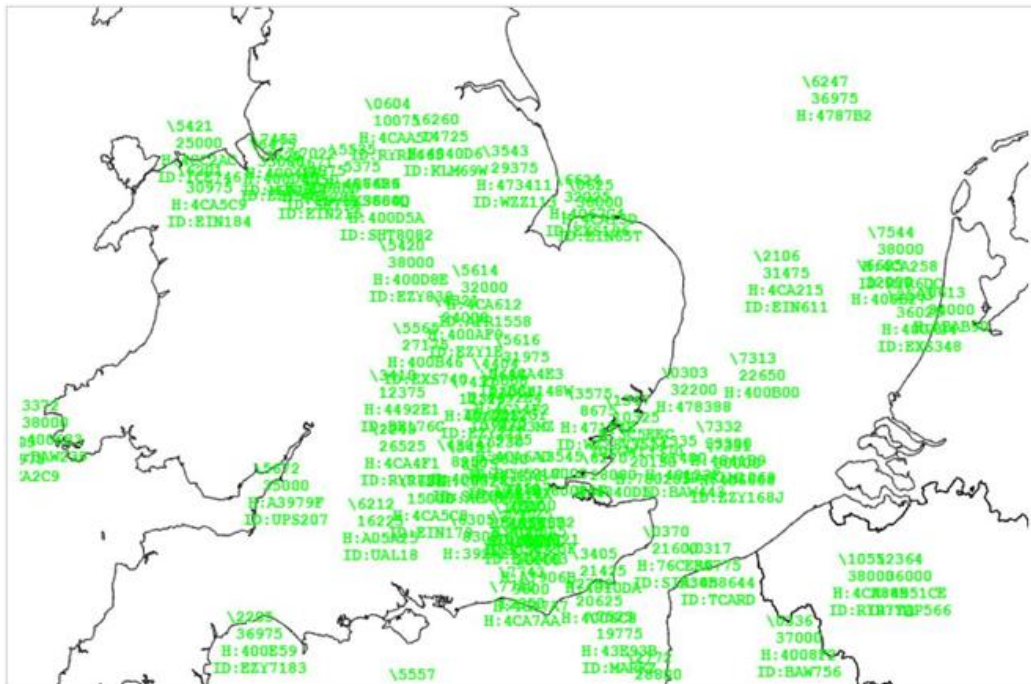


Beacon plots are displayed using a forward slash (/), denoting the location followed by the Beacon code. Tracks are displayed using a back slash (\), also denoting the location followed by the beacon code. Below the beacon code is the altitude indicator, which is measured in hundreds of feet.

Additional information includes target address and ID. An example of an ASTERIX CAT021 target showing Beacon code 2106, altitude 31475, target address 4CA215 (hex) and target identifier EIN611 would display as:

\2106
31475
H:4CA215
ID:EIN611

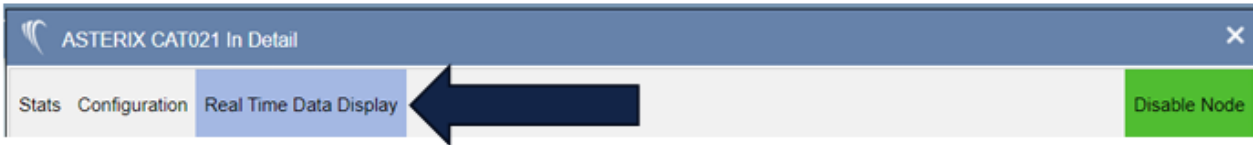
To zoom in on section of the map (with targets), click on the desired location and drag the cursor outward. To zoom back out, double click the mouse. The image below shows a zoomed in section of the targets displayed in the previous image.



FAQ 38: Topic – How Do Use the Real-Time Data Display (RTDD) in SureLine?

Question:
How do I use the Real-Time Data Display (RTDD) within SureLine?

Answer:
The *Real-Time Data Display* option allows the user to view generic message payloads in real-time when converting from one radar format to another.



This utility must be configured in between an input node and an output node in the configuration dataflow. The generic payload can be viewed in five ways on the GUI: Data, Text, Data+Text, Generic Fields, and ASTERIX format. The queue length, or maximum number of messages displayed on the GUI before filtering, is configurable from 1 to 1200.

The Real-Time Data Display screen image below is displayed in one of two ways. The recommended way is by clicking on a node in the Data Flow section of the screen and then clicking the Real-Time Data Display tab in the node’s Detail window.

Real-Time Data Display

Display Type

☒ Data ☐ Text ☐ Data+Text ☐ Generic Fields ☐ Asterix

Data Format

☒ ASCII ☐ EBCDIC

Data Length

☐ 16 ☐ 32 ☐ 64 ☒ Full

Show/Hide Filters

Pause

Messages

Timestamp	Message Payload
+0 ms	0000 0B 20 00 40 00 00
+2560 ms	0000 0B 20 00 C0 00 00
+5120 ms	0000 0B 20 00 20 00 00

FAQ 39: Topic – How Do I Add and Use a Radar Display in SureLine?

Question:

How do I add a Radar Display to a SureLine configuration and use it to view radar data?

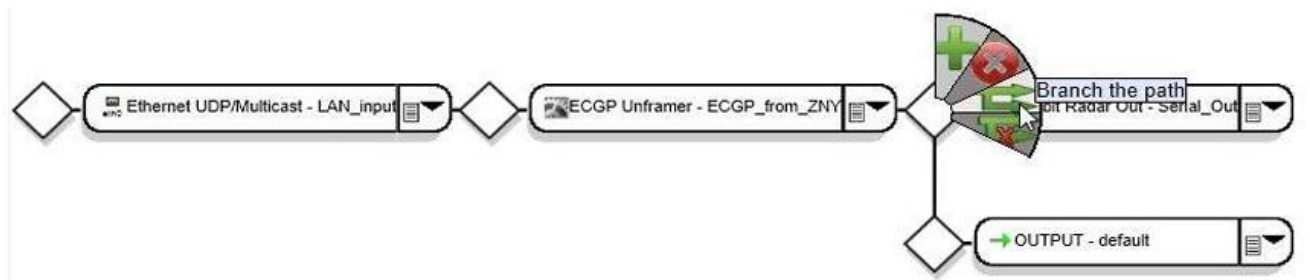
Answer:

The Radar Display utility provides a graphical view of radar data and available weather data within SureLine. It is recommended that the Radar Display be placed on a separate branch of the data flow so that it is not part of the critical data-processing path.

Note:

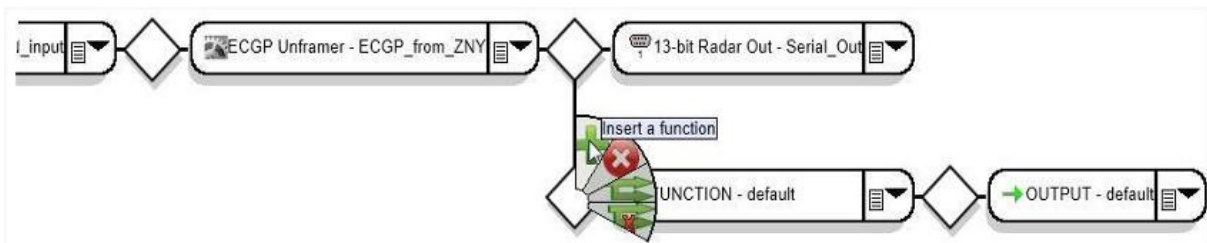
The current data flow does not have a Radar Display node type; therefore, another node must be added to the existing data flow. It is recommended that a graphical display type node, such as Radar Display, be added to the data flow in a separate branch of data path that is not in the critical data processing stream.

1. Mouse-over on the diamond connector after ECGP Unframer node. Select the “Branch the path” option. A duplicate of the data path from where the branch was initiated is created. This path is populated with “dummy” nodes, which must be configured.



Note: The new data path does not have a FUNCTION node type; therefore, another node must be added to the existing data path.

2. Mouse-over on the diamond connector before the OUTPUT node. Select the “Insert a function” option. A generic node of FUNCTION type with default name is inserted in the data flow.



Note: The Radar Display node type requires a prerequisite node type prior to it in the data flow. Before a Radar Display can be added to the data flow, the node type CD2 In must be configured.

3. Select the node dropdown list on the new node. Choose **Input Radar Types > CD2 In**.
4. Click on the node. Enter “for display” for **Logical Name**. Click **OK** to exit the configuration parameter screen and save the settings.

Note: The Radar Display node can be inserted into the data flow now. You may have to scroll to the right to see all the nodes in the data flow path.

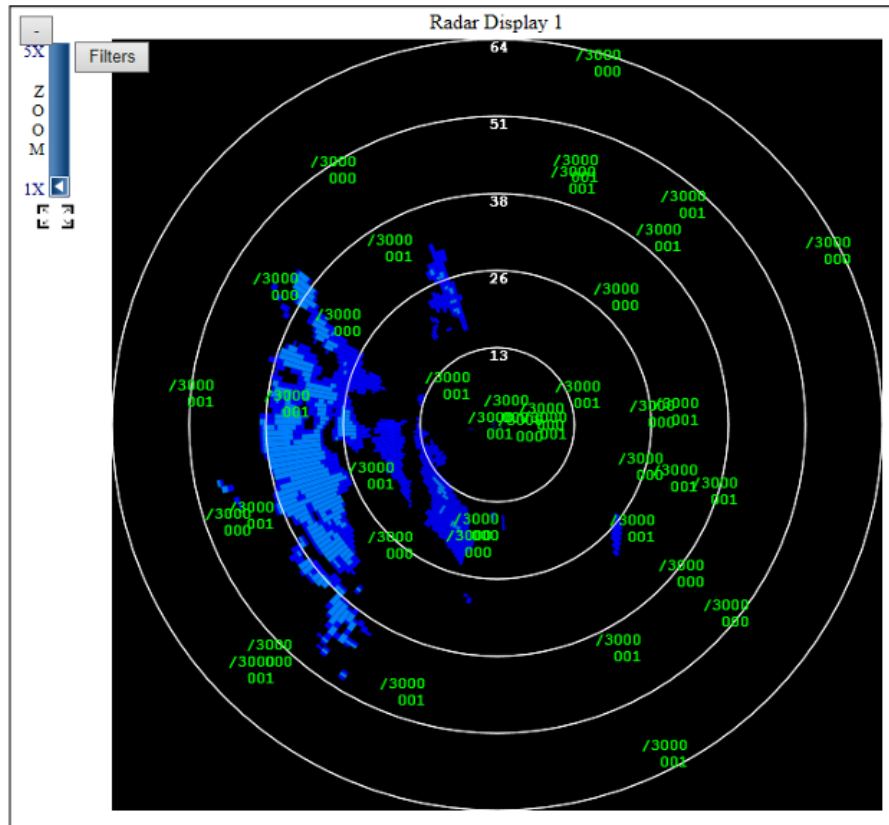
5. Mouse-over on the diamond connector after “CD2 In” node. Select the “Insert a Function” option. A generic node of FUNCTION type with default name is inserted in the data flow.
6. Select the node dropdown list on the new node. Choose **Utilities > Radar Display**.
7. Click on the node. Enter “site_xyz” for **Logical Name**. Click **OK** to exit the configuration parameter screen and save the settings.

Note: For this data path there is no actual data output. Though, by design, each data path must have an OUTPUT node. In this case, the OUTPUT node type must be set to “NONE” to indicate this is the end of this data path

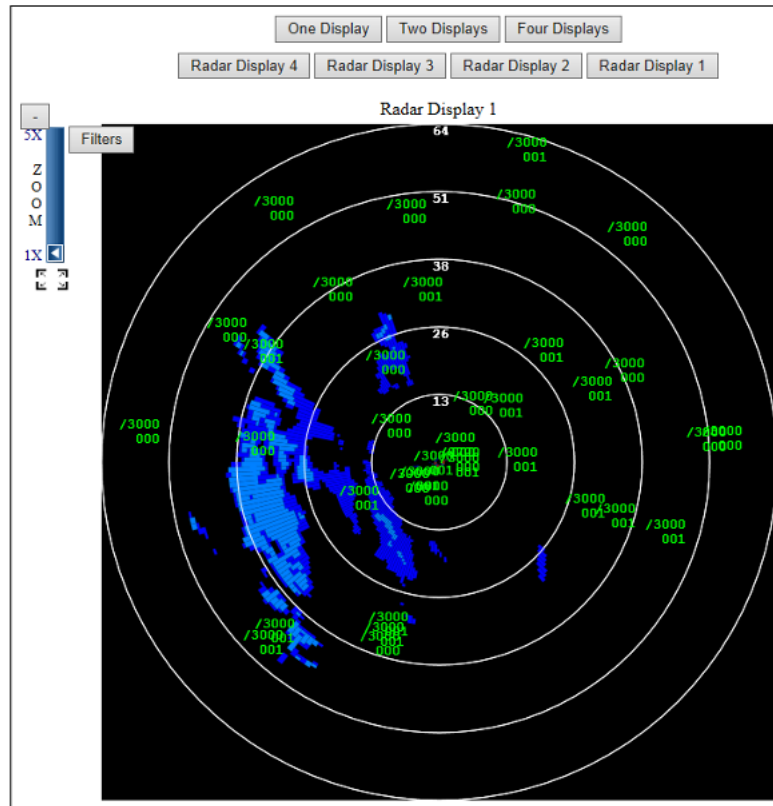
8. On the OUTPUT node, select the node dropdown list. Choose **Other > NONE**.
9. Select Save File button at the bottom of the screen and click OK.

Part 2: **Using the Radar Display** → opening it, selecting displays, zoom, filters, etc.

The Radar Display option is used to provide a graphical image of radar and weather data (if available). The radar screen in the image example below is displayed when the View button for a specific radar display is selected or when the Information, Radar Display menu option is selected. The information on this screen is assigned via the Radar Display utility function. The image example below shows an example of an unfiltered, single radar display with weather.



When multiple radar sites are available, additional button options for one, two, and four displays are shown, like in the image below:

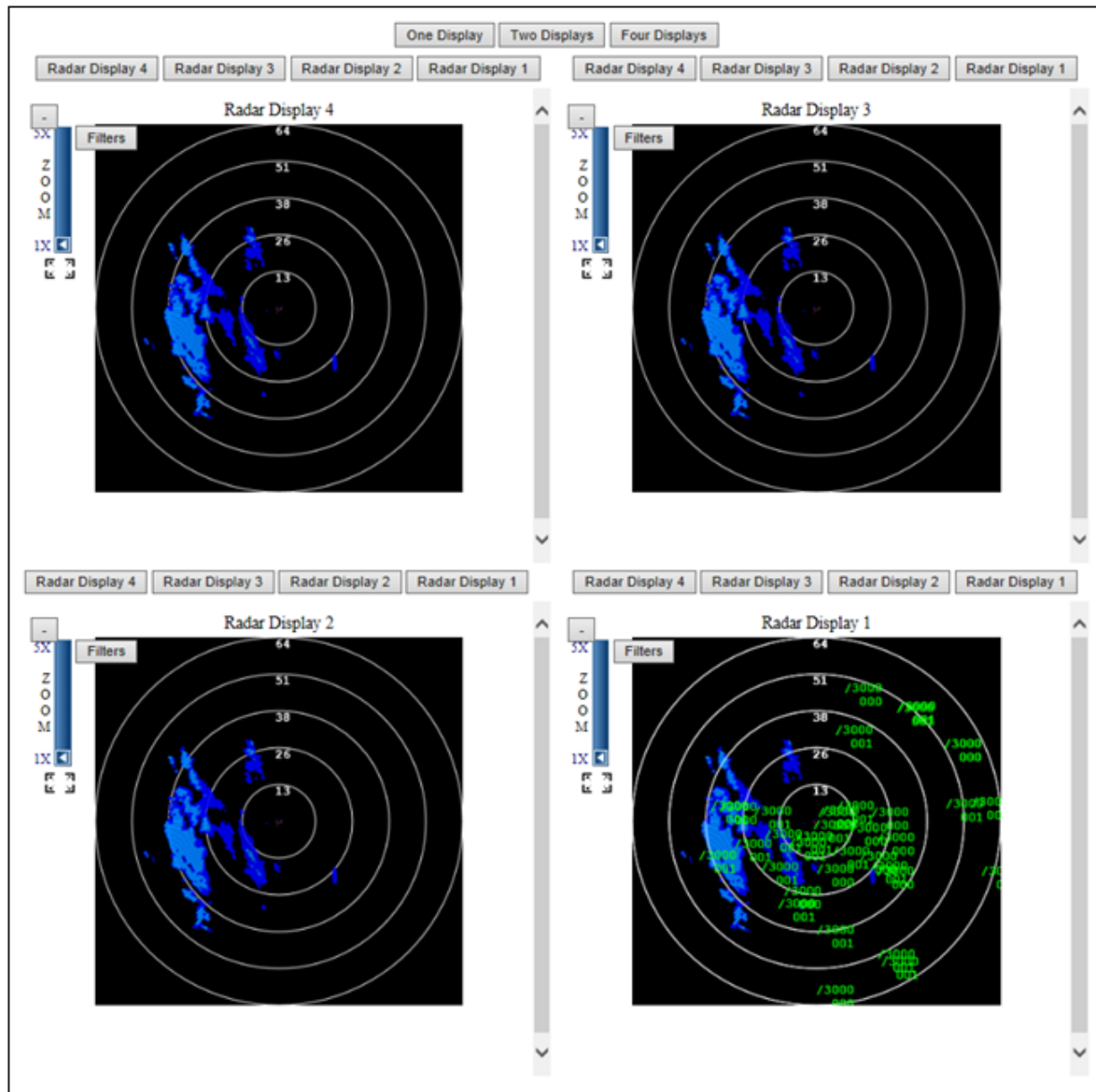


The Radar Display uses symbology like the Federal Aviation Administration (FAA) Enroute systems. Search and Primary plots are displayed using the plus symbol (+). Beacon plots are displayed using a forward slash symbol (/), denoting the location followed by the Beacon code. Below the beacon code is the altitude indicator, which is measured in hundreds of feet. For example, Beacon code 1301 with an altitude of 56500 feet is displayed as:

```
/1301
565
```

Tracks are displayed using a back slash (\), denoting the location followed by the beacon code. Below the beacon code is the altitude indicator. The third line of the track display is the track number, X Velocity, Y Velocity.

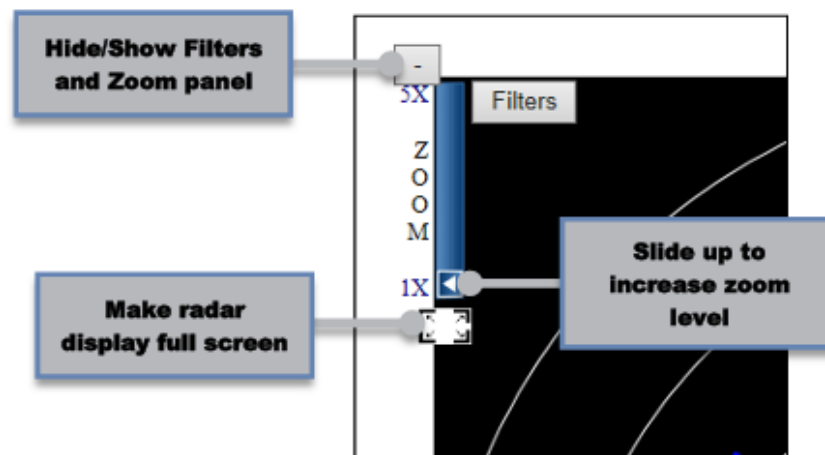
An example of Four Displays selected in the example below:



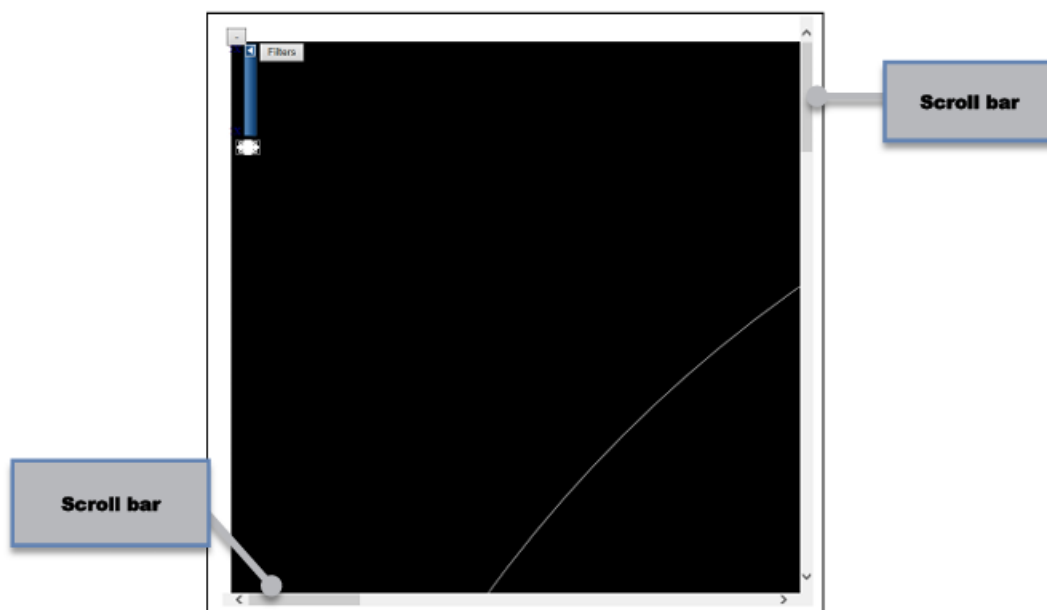
To change the site being displayed on a radar screen, click the associated site button, as extracted from the previous image in the example that follows:



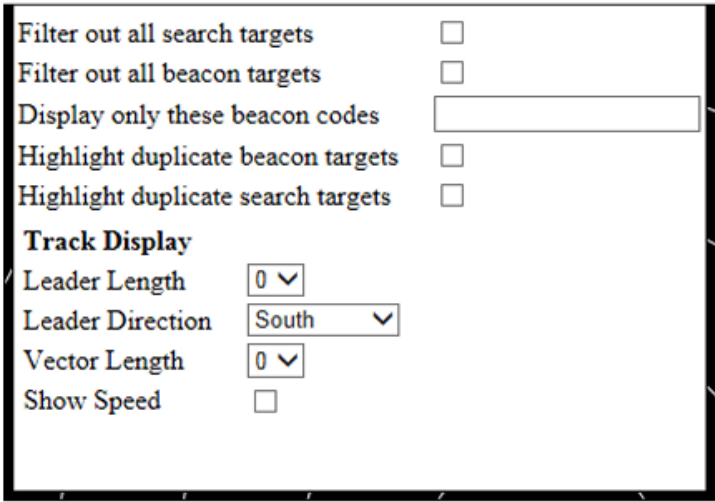
Located in the upper left corner of the active radar display is the **Filters** and **Zoom** panel (image below), which consists of a zoom slider that can zoom up to five times the base resolution, a Filters button, and a full screen button (only available for browsers that support HTML5).



When zoomed greater than 1X, scroll bars appear at the bottom and right of the radar display to facilitate navigation, as shown in the image below.



Clicking the Filters button displays a dialog box, shown in the image below.

The image shows a 'Filter Options' dialog box with a black border. It contains several settings: 'Filter out all search targets' and 'Filter out all beacon targets' are at the top, each with an unchecked checkbox. Below them is a text entry box labeled 'Display only these beacon codes'. This is followed by 'Highlight duplicate beacon targets' and 'Highlight duplicate search targets', both with unchecked checkboxes. A section header 'Track Display' is in bold. Under it, 'Leader Length' has a dropdown menu showing '0', 'Leader Direction' has a dropdown menu showing 'South', and 'Vector Length' has a dropdown menu showing '0'. At the bottom is 'Show Speed' with an unchecked checkbox.

The top two checkboxes in the **Filter Options** dialog box are used to filter out search and beacon targets, respectively, from the output radar display data. The **Display only these beacon codes** text entry box is used to enter one or more beacon codes that is shown on the radar output display. Multiple beacon codes must be separated by a space character. If used, only the entered beacon codes will appear on the radar display. The two checkboxes that follow cause duplicate beacon or search targets, respectively, to be highlighted in red on the output radar display.

The remaining options are under Track Display. These options include **Leader Length** (0 – 5), **Leader Direction** (any cardinal or ordinal direction), **Vector Length** (0 – 5), and a checkbox for **Show Speed**.

To close the Filter Options dialog box, click the X button in the upper right corner of the box.

FAQ 40: Topic – How Do I Disable a Node from the SureLine Status Page?

Question:

How do I disable a node from the SureLine Status page in real time?

Answer:

A node can be disabled directly from the **Dataflow Status** section of the SureLine Status page.

The screenshot shows the 'Serial_Out-site Detail' window with three tabs: 'Stats', 'Configuration', and 'Real Time Data Display'. The 'Stats' tab is active, and a 'Disable Node' button is visible in the top right corner. The window displays two tables of node statistics.

Name	Type	Messages In	Messages Out
Serial_Out-site	SITEOUT	49	49

Port	Data Underrun	Data Overrun	Clock Loss	Parity Error	Checksum Error	Out Of Sync Error	Err1 Count	Err2 Count	Err3 Count
1	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0

Serial Port Status							
Port #	Name	Type	Messages In	Bytes In	Messages Out	Bytes Out	Status Errors
1	Serial_Out-1	RADAROUT	0	0	49	686	No Errors
2	Serial_Out-2	RADAROUT	0	0	0	0	No Errors
3	Serial_Out-3	RADAROUT	0	0	0	0	No Errors
4	Serial_Out-4	RADAROUT	0	0	0	0	No Errors

At the bottom of the window, there are two buttons: 'Reset Counts to 0' and 'Close'.

the **Disable Node** button at the far right of the **Detail Status** screen disables data from passing through this node. Any node “downstream” of a disabled node will not receive any messages. This button is a toggle button with the **Enable Node** feature.

Enable/Disable Node Note: The enabled/disabled status of a node persists when a device is rebooted. Use extreme caution when disabling a node.