

Sea Tel Media Xchange Point (LMXP) Operation manual



Sea Tel, Inc.
(trading as Cobham SATCOM)
4030 Nelson Avenue
Concord, CA 94520
Tel: +1 (925) 798-7979
Fax: +1 (925) 798-7986

Sea Tel
COBHAM

Thrane & Thrane A/S
(trading as Cobham SATCOM)
Lundtoftegaardsvej 93 D, 2800 Kgs.
Lyngby, Denmark
Tel: +45 3955 8800
Fax: +45 3955 8888

Web: <http://www.cobham.com/satcom>

Email: satcom.ohc@cobham.com

December 30, 2014

Document. No. 99-144633-A Revision A



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Sea Tel is an ISO 9001:2008 registered company. Certificate Number 13690 originally issued March 14, 2011 and was renewed/reissued on March 10, 2014.

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Revision History

REV	ECO#	Date	Description	By
A		December 30, 2014	Production Release	MDN

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1. Quick Start Operation

If your system has been set up correctly, and if the ship has not moved since the system was used last, the system should automatically acquire the satellite from a cold (power-up) start. Once the satellite has been acquired, the modem then should achieve lock and you should be able to use the system.

1.1. Turn Power ON

To apply power to the antenna system:

1. Energize the LMXP and the antenna pedestal by toggling the power switch on the front panel of the LMXP to the ON position.



2. Energize all other below decks receivers, distribution and audio/video equipment.
3. The antenna system will power up, go through its initialization process and then automatically target the last satellite that had been previously acquired.

1.2. If satellite signal is found AND network lock is achieved:

1. Tracking will take over (front panel Tracking LED will be ON) and automatically peak the antenna position for highest receive signal level from the satellite.
2. When the system has signal above threshold AND modem has network lock the antenna will continue to track the satellite.
3. Satellite Name (if entered), Tracking indicator, Modem Lock indicator and signal level (number value and bar graph) will be displayed in the header of the LMXP GUI pages.



Upon completion of the above, the system will continue to operate automatically, indefinitely until:

- AC power to the system is interrupted OR
- The satellite signal is blocked OR
- The ship sails into an area of insufficient satellite signal strength/level.

1.3. If no signal is found:

If the system does NOT automatically find the satellite from a cold start, log into the LMXP and follow the steps below:

1. The Tracking LED, on the front panel of the LMXP, will flash for a short period of time (Search Delay) followed by the Search LED coming ON.
2. The antenna will automatically be driven in a search pattern, attempting to relocate the desired satellite. The bar graph on the upper right will display red bars while the signal value is less than the threshold value (red bar in the bar graph).
3. Not finding a signal greater than Threshold, the bar graph will stay red and the antenna will reach the end of the prescribed search pattern.
4. The antenna will retarget and then the cycle (steps 1-3) until the satellite is found, or the operator intervenes.
5. Log into the LMXP GUI.
6. Access the Configuration - Communication Interfaces page.
7. Find the Latitude, Longitude and Heading displayed values. If they are correct skip to step 10.
8. If the Latitude & Longitude values are not correct, enter the ships Latitude & Longitude position in those fields.
9. If the Heading value is not correct, enter the correct value in the Heading field.
10. Select the Satellite Search – Auto page.

11. Verify that the correct satellite is selected. If it is correct skip to step 14.
12. If the selected satellite is not the desired satellite, click the dropdown list and select the satellite you wish to use.
13. Click Save.

If the desired satellite is still not found:

14. Check for blockage (this is the MOST common cause of not being able to acquire the desired satellite).
15. Check cable connections to assure that a cable has not been disconnected.

If you verify that the antenna is not blocked and all of the connections are good but the system still does NOT automatically find the satellite, contact your dealer.

1.4. To Target a different satellite

1. Log into the LMXP GUI.
1. To target a different satellite go to the Satellite Search - Auto page and select the desired satellite from the drop down list.
2. When you make that selection you will see the temporary message:
Acquiring Satellite Signal...Please Wait
3. Shortly after that you will see the temporary message:
Satellite Signal Found.
Lock: ON

1.5. Basic Description of the Front Panel Status LEDs



The basic description of the front panel LED states are:

ERROR -

ON [Solid or Flashing Red OR Solid or Flashing Amber] indicates that one, **or more**, discrete system errors have occurred. Refer to Status – Error Code information menu to determine which error(s) have occurred.

OFF indicates that no errors have occurred

INIT (Initializing) -

ON

- (Solid Green) indicates that the Antenna is initializing. Initialization of the antenna will take approximately two minutes.
- (Flashing Amber) indicates that a software update in progress, the system (ADE-BDE) is synchronizing or in service/out of service testing is in progress.

TARGET -

ON (Solid Green) indicates that the antenna is TARGETING (driving) to the specified Azimuth and/or Elevation position(s).

SEARCH (Searching) -

ON (Solid Green) indicates that the LMXP is actively searching for your satellite signal.

OFF indicates that SEARCH is OFF.

TRACK (Tracking) -

ON (Solid Green) indicates that the LMXP has identified and is actively tracking the desired satellite to optimize the signal level (AGC).

Blinking indicates that the LMXP is in search delay or that the system is analyzing a satellite signal.

OFF indicates that Tracking is OFF.

BLOCK -

ON (Solid Red) indicates that the antenna is within a defined blockage zone (therefore you should not have satellite signal until the antenna is no longer within the blockage zone).

OFF indicates that the antenna is not within a defined blockage zone). If no blockage zones have been entered, the antenna could be blocked causing loss of signal.

LINK - (Green LED)

ON (Solid Green) indicates that the LMXP has good communications with the antenna (therefore good antenna control). This is normal state for system operation.

ON (Solid Red) indicates LOSS of communications with the antenna (therefore, loss of antenna control). Check the coax connections on the LMXP and in the base of the radome.

STATUS - (Green LED)

ON (Solid Red) indicates that the signal is below threshold (satellite signal is low or lost).

OFF indicates that status is normal.

POWER - (Green LED)

OFF indicates that LMXP Power switch is OFF (No power to the LMXP or the antenna).

ON (Flashing Green) indicates that the LMXP is booting up.

ON (Solid Green) indicates that the LMXP boot sequence is complete and the system power is ON (normal).

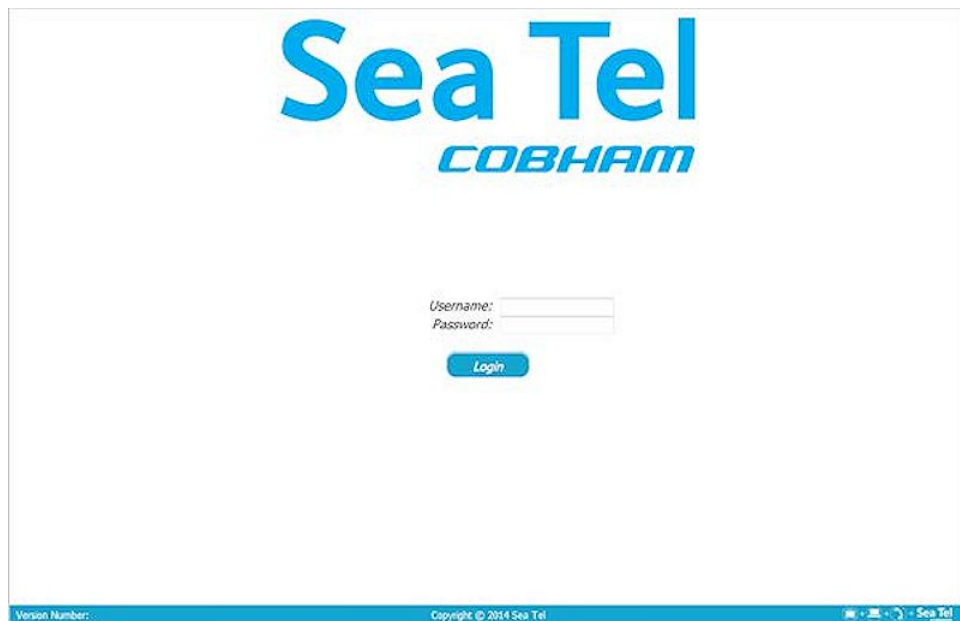
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2. User Login Pages – LMXP

2.1. Login Page

Log in to the LMXP from the computer. If the computer has not been set up for you by the dealer, refer to the installation manual for instructions. When you access the LMXP you will first see the login screen:

Enter the **Username** (User) and **Password** (seatel1). Both of these are case sensitive.



2.2. Layout of the GUI Pages

2.2.1. Top Banner (All Pages)

The banner across the top of every page is the same. It contains much of the information you would want about the system at a glance.



Sea Tel / Cobham – Our logo is presented in the Upper Left corner of the banner. The logo also doubles as a link to the Cobham Satcom site. But mostly it provides branding.



Login information is in the Left middle – Login Level is displayed followed by LOGOUT. Click on LOGOUT to log out of the GUI.

Ship Name is displayed on the left bottom. Ship Name is entered on the System Configuration page (refer to 1.7.2 below).



Ship & Compass Rose graphic is displayed middle left of the banner. This graphic is comprised of multiple image components. There are several selections one can make here in order to customize the look and function of this graphic.

The outer ring is a compass rose representing compass points, and indicating the heading of the ship. The compass follows the heading reading coming from the ships gyro compass or the fixed heading entered on the Navigation section of the **Configuration – Interfaces** page. The numeric heading value is displayed with more

accuracy in the small box near the stern of the ship.

The style of the compass rose graphic can be changed by clicking on the compass and then toggle it using “Shift” + “C” on the keyboard.

1. The default is the English ‘N’, ‘S’, ‘E’, and ‘W’ representing North, South, East and West directions.
2. The second set is pertinent to French or Spanish speakers with ‘N’, ‘S’, ‘E’, and ‘O’ representing Nord, Sud, Est, and Ouest (in French).
3. The third set displays the traditional Chinese ordinal directions.
4. The fourth set displays the Cyrillic ordinal directions.
5. The fifth set displays the universal circular degrees. Here 0 or 360 degrees represents North, 90 degrees represents East, 180 degrees represents South and 270 degrees represents West.
6. The sixth set displays the radian view of the angular direction. In this set 0 or 2*pi represents North.

The ship image within the compass rose can also be changed. To change the ‘ship’ click on the compass graphic and then select ‘Shift’ + ‘Q’ ” on the keyboard to change to the next available ship image.

1. The default image is a shaped needle typically found in a magnetic compass needle where the red part of the needle would be pointing due north. In this configuration the needle rotates around while the outer compass rose directions remain static.
2. The second image is of a standard sailboat silhouette. In this profile the compass rose rotates and the sailboat silhouette remains static.
3. The third image is a large ship silhouette. Much like the sailboat the large ship remains static while the compass rose rotates rotate around it.
4. The fourth image is intended to be a catamaran silhouette. Again, the ship remains static while the compass rose rotates rotate around it.

The Red Arrow indicates the position of the antenna, both relative to the bow of the ship and to the true azimuth pointing angle.

The final compass element is the representation of blockage zones. Blockage zones are represented on the compass as a transparent red wedge overlaying the entire blockage section on the compass (using the start and end positions entered on the

Configuration – System page. The drawing of the blockage zones can be turned off by clicking on the compass and pressing “Shift” + “B”.



The Pointing Information graphic is displayed middle right of the banner. This graphic is comprised of a list of values.

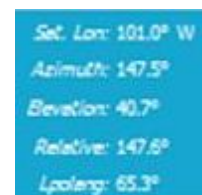
Sat Lon – is the satellite longitude of the current satellite.

Azimuth - is the true azimuth pointing angle of the antenna.

Elevation - is the elevation pointing angle of the antenna.

Relative - is the azimuth pointing angle of the antenna, relative to the bow of the ship.

Polang - is the polarization angle of the feed.



The LED / Status / Signal graphic is displayed far right of the banner. This graphic is comprised of Tracking (ON/OFF) on the top,

Satellite Lock or other status messages will be displayed in the center area.

If there are Errors, you can click on the “View” to see which errors are present in the system.

Signal - The bottom contains signal level information, displayed as a digital value of AGC and as a relative bar graph. Along the bar graph is an arrow marker, with a digital value, representing the current



Threshold value. When the signal level is greater than the Threshold value, the segments of the bar graph will be green and when signal is lower than Threshold they will be red.

2.2.2. Left Side Bar

Tracking ON/OFF radio buttons are on the top of the sidebar. Tracking can be turned ON, or OFF, by clicking on the button.

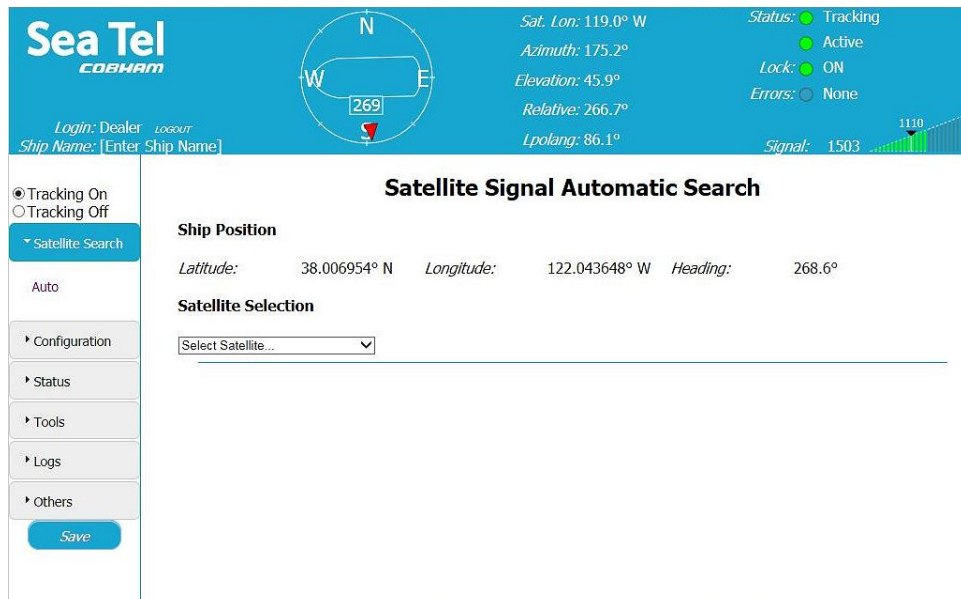
Each of the main menu selection tabs below the Tracking ON/OFF, have a small arrow on the left that will expand, or collapse the choices contained within it. The choices are listed here and are described in detail in the paragraphs below.



SAVE is on the bottom of the sidebar where it is available on every page the menu system. You can save the changes you have made on each page, as you go, or after all changes have been made on all pages (SAVE saves ALL parameters).

2.3. Satellite Search – Auto

For normal operation, it is expected that the Satellite Signal Automatic Search page will serve as the primary tool used to command the system to locate and track a desired satellite.

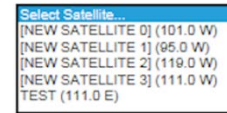


The ships location information is displayed across the top of the page. A dropdown list of “Favorite Satellites” that have been entered, and saved, into this system is below the ships location information.

This dropdown list is used by the operator to select a satellite that they want to use. If power to the system is cycled, the antenna will retarget the last satellite that was selected.

You should enter all of the satellites that the user would be able to use with this antenna and the supporting below decks receivers and other distribution equipment (refer to Configuration – Satellite page). Once set up the satellites will appear here in this simple list for the operator to select.

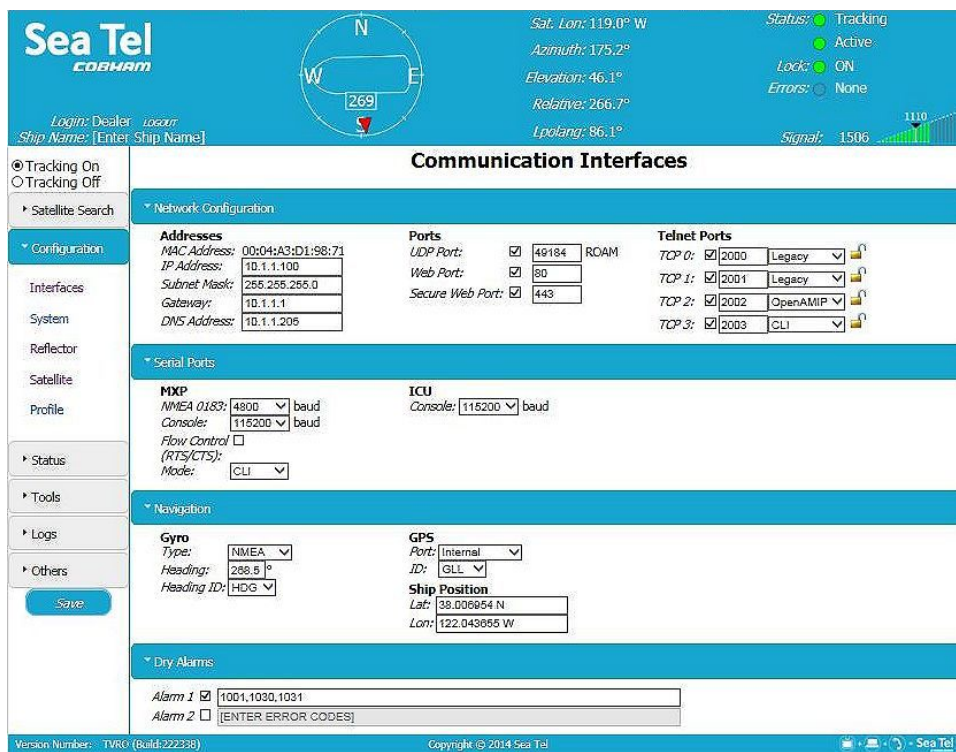
Satellite Selection



2.4. Configuration – Communication Interfaces

The Communication Interfaces page provides the ability for the dealer to define system settings to ensure the LMXP’s ability to properly communicate with all Above Decks and/or Below Decks Equipment, whether supplied by Cobham SATCOM or not, as a part of normal operation or system maintenance.

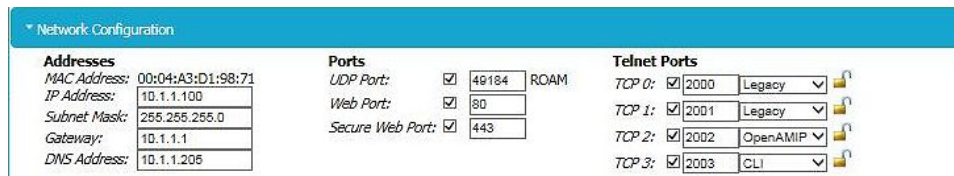
The Communication Interface page is divided into 4 sub-sections, each of which is described below.



2.4.1. Network Configuration

Network configuration is contained in this portion of the page. Defines the systems Ethernet based communication settings.

Addresses, Ports and Telnet – This information is typically left “as is” for a system which will only be accessed infrequently from a single computer. If the system will be connected to a LAN to allow access from multiple computers, then the addresses will need to be changed to be appropriate for the addresses in use in the existing network.



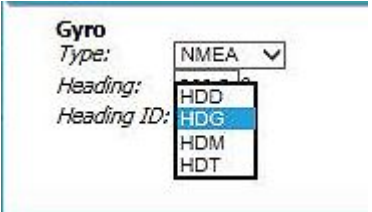

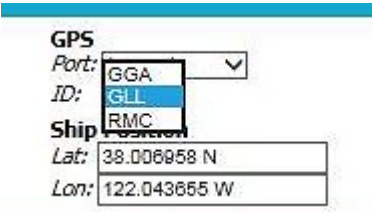
2.4.2. Serial Ports

Used to define the systems serial based communication settings. These are normally left at factory default and should only be changed if necessary.

1. MXP NMEA 0183 - Set the Baud Rate speed of the NMEA Gyro Compass input connected to the rear panel of the LMXP. Although the standard baud rate for NMEA 0183 is 4800, but your device may be different. Factory Default is 4800.
2. Console - If you will have a device connected to the Console port on the rear panel of the LMXP, set the speed for the port to the appropriate baud rate for your device. Factory Default is 115200.
3. Flow Control - Set flow control ON (box checked), or OFF (Box left Un-Checked), as appropriate for the input device. Factory Default is OFF (Unchecked).
4. Mode - Sets the CLI interface mode of either CLI or Legacy. Factory Default is CLI.
5. ICU Console - There is NO need to change the baud rate of the ICU Console port, leave it a factory default. Factory Default is 115200.

2.4.3. Navigation

1. Gyro - Select the type of Gyro Compass input that the system will use for heading of the ship. An NMEA 0183 Heading input is highly recommended for faster acquisition times of targeted satellites.
 Choose 'No Gyro' from the dropdown list if you have no gyro compass input. You will next have to enter the current ships heading. You must also turn ON Satellite Reference Mode (Miscellaneous section of the Configuration – System page).
 Choose 'Fixed' from the dropdown list if you have no gyro compass input and the ship remains at a fixed heading (like an oil platform). You will next have to enter the current ships heading. It is recommended that you turn ON Satellite Reference Mode for this selection (Miscellaneous section of the Configuration – System page).
 Choose 'NMEA' from the dropdown list if you have an NMEA 0183 Ships Gyro Compass input connected to the rear panel of the LMXP. You will not need to enter the current ships heading, as it will be automatically read from the ships gyro compass.

<p>2. Gyro - Select the type of NMEA0183 Gyro Compass data that is provided by your ships gyro compass. Choose 'HDD' from the dropdown list if your gyro compass outputs Heading – Digital HDD data. Choose 'HDG' from the dropdown list if your gyro compass outputs Heading Deviation & Variation data. Choose 'HDM' from the dropdown list if your gyro compass outputs Magnetic Heading data. Choose 'HDT' from the dropdown list if your gyro compass outputs True Heading data. This is the preferred heading input.</p>	
<p>3. GPS - There is a GPS mounted on the antenna (Internal) that provides automatic Latitude & Longitude input to the system. This ships position information is used for targeting any satellite you wish to use. Because a GPS is provided in the system, no external device is required, and these settings should be left at factory default (Port=Internal and ID=GLL). Should the Internal GPS fail, and external device must be connected or periodic manual Latitude & Longitude entry (in the LAT & LON fields) will be required to reacquire the satellite signal if it is lost. Manual entry is only required to a tenth of a degree. LAT entry format is ##.# followed by N or S for North or South (ie 38.0 N). LAT entry format is ###.# followed by E or W for East or West (ie 122.0 W). If an external device is connected for use; Set the Port to the correct selection for the device and the electrical connection on the rear panel of the LMXP. Then select the correct sentence type from the ID dropdown list.</p>	
<p>4. The GPS ID string is selected to match the NMEA0183 string provided by the GPS which is selected (factory default for the "Internal" GPS is GLL).</p>	

2.4.4. Dry Alarms

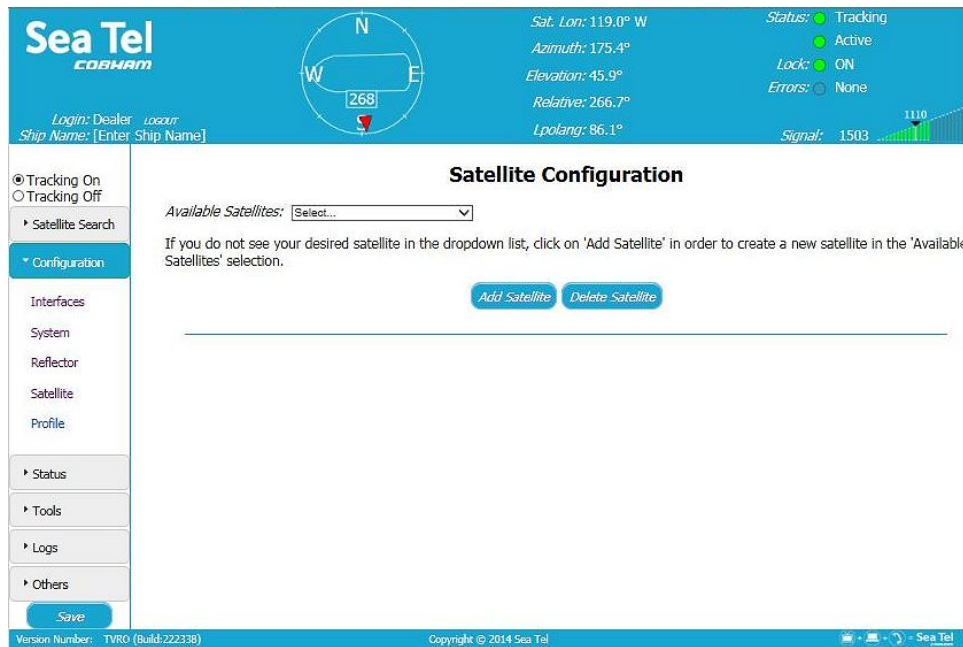
This section allows you to define what Error, Informational, or Warning Codes, (if any) will trigger one of two dry alarm contact sets accessed via the rear panel of the LMXP.



When configured, and electrically connected, the dry alarm contacts can be used to provide (programmable) alarm output to other equipment/systems. Switched outputs have ability to use 4.7K pull up or Pull Down and can provide Current sink of 0.5 amps max. Contacts are **Normally Open** for No Alarm state and are **Closed/Shorted** when the programmed alarm state exists.

2.5. Configuration - Satellite

The Satellite Configuration page provides the ability for the user to create and or edit a satellite preset.



2.5.1. Satellite Selection:

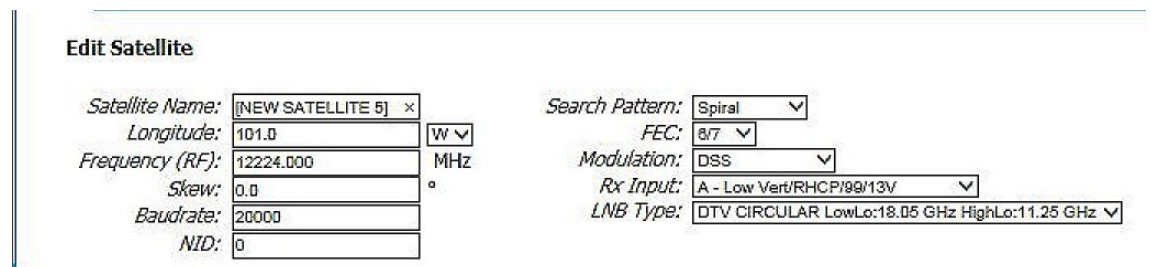
Use the drop down list of pre-saved “favorite” satellites to select the satellite you want to target. Once selected, the settings for that satellite will appear below, and can be edited.

The antenna will target and acquire the satellite you have just selected.



2.5.2. Add Satellite

Click on the Add Satellite button to add a new satellite to the favorites list. An Edit Satellite settings database record will appear below. Edit the settings for the new satellite and when completed click SAVE on the left sidebar.



2.5.2.1. Satellite Name:

Click in this field and type in the name you wish to use for this satellite.

2.5.2.2. Longitude:

Click in this field and type in the longitude position of this satellite.

2.5.2.3. E/W:

Use the dropdown to select the East or West longitude position of the satellite.

2.5.2.4. RF Frequency:

Enter the RF frequency of the signal you want the tracking receiver to use to track this satellite. This frequency is entered in MHz, so a tracking frequency of **12.224** (twelve point two-two-four) GHz would be entered as 12224 MHz.

2.5.2.5. Skew:

This setting is used to enter a known skew for **this** satellite. If the satellite is not skewed, this setting should be zero. Entered in degrees & tenths of degrees.

2.5.2.6. Baud Rate:

Enter the baud, or symbol, rate of the signal you will be tracking.

2.5.2.7. NID:

Enter the decimal format Network ID (NID) of the signal you will be tracking. If the listed NID value is provided in HEX format, it will have to be converted to DECIMAL for entry.

2.5.2.8. Search Pattern:

Select, from the dropdown list, the type of search pattern you want the antenna to perform when searching for this satellite.

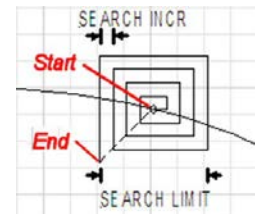


2.5.2.8.1. Default “Spiral” (Box) Search Pattern

The factory default search pattern in the LMXP is a “Spiral” pattern.

When a search begins;

The antenna will then search up in azimuth one Search Increment, search up one Search Increment in elevation, search down two Search Increments in azimuth, search down two Search Increments in elevation, etc until Search Limit is reached. When the end of the search pattern is reached, the MXP will retarget the antenna to the calculated Azimuth and Elevation position of the desired satellite (start point).



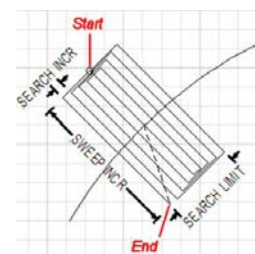
If the desired signal is found (AND network lock is achieved in the satellite modem) at this position, or anywhere within the search pattern, the MXP will terminate search and go into Tracking mode. If the desired signal is not found the MXP will wait SEARCH DELAY seconds and then begin the search pattern again. This cycle will repeat until the desired satellite signal is found or the operator intervenes.

2.5.2.8.2. Inclined Orbit Search Pattern

Some older satellites, in order to save fuel to keep them exactly positioned over the Equator, are in an inclined geosynchronous orbit. The satellite remains geosynchronous but is no longer geostationary. From a fixed observation point on Earth, it would appear to trace out a figure-eight with lobes oriented north-southward once every twenty-four hours. The north-south excursions of the satellite may be too far off the center point for a default box search pattern to find that satellite at all times during the 24 hour period.

When a search begins;

Initially the antenna will go to a calculated position that is half of SWEEP INCR degrees above, and perpendicular to, the satellite arc (along the same angle as polarization for the desired satellite). This position is the “Start” of the search pattern in the graphic above. Then the antenna will drive down along the polarization angle SWEEP INCR degrees, step one Search Increment to the right (parallel to the satellite arc), search up along the polarization angle SWEEP INCR degrees, step two Search Increments to the left, search down, etc expanding out in the search pattern until Search Limit is reached. When the end of the search pattern is reached, the MXP will retarget the antenna to the calculated Azimuth and Elevation point.



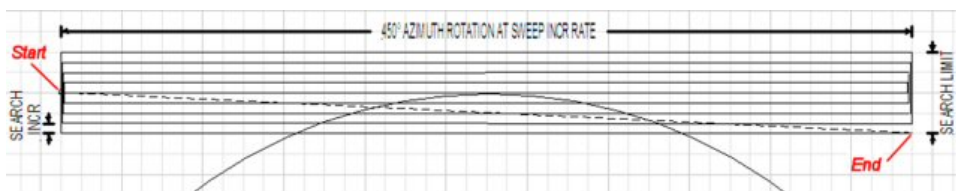
If the desired signal is found (AND network lock is achieved in the satellite modem) at this position, or anywhere within the search pattern, the MXP will terminate search and go into Tracking mode. If the desired signal is not found the MXP will wait SEARCH DELAY, then target the antenna to start point shown in the graphic above and begin the search pattern again. This cycle will repeat until the desired satellite signal is found or the operator intervenes.

2.5.2.8.3. Sky Search Pattern

A Sky Search pattern does a hemispheric pattern. Its behavior is different if you have a gyro compass input or not::

No Gyro - If you do not have gyro compass set the gyro type to “no gyro”. When in this mode, Sky Search drives the antenna to the calculated elevation angle and then drives azimuth CW 450 degrees, steps elevation up and then drives azimuth CCW 450 degrees and continues to alternately steps elevation up/down and drives azimuth alternately CW/CCW 450 degrees. Because of this large search area, acquiring the satellite will take longer than if you have valid heading input. If the end of the search pattern is reached, the MXP will retarget the antenna back to the start point shown in the graphic below.

With Gyro - If you have gyro compass set the gyro type to the appropriate selection. When in this mode, Sky Search drives the antenna to the calculated elevation angle and then drives azimuth CW 360 degrees, steps elevation up and then drives azimuth CCW 360 degrees and continues to alternately steps elevation up/down and drives azimuth alternately CW/CCW 360 degrees. Because of this large search area, acquiring the satellite will take less time because you have valid heading input. If the end of the search pattern is reached, the MXP will retarget the antenna back to the start point shown in the graphic below.

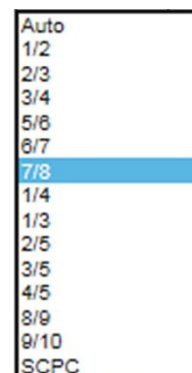


If the desired signal is found (AND network lock is achieved) at any position within the search pattern, the LMXP will terminate search and go into Tracking mode.

If the desired signal is not found within the search pattern the LMXP will wait SEARCH DELAY seconds and then begin the search pattern again. This cycle will repeat until the desired satellite signal is found or the operator intervenes.

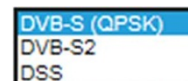
2.5.2.9. FEC:

Select, from the dropdown list, the Forward Error Correction rate of the desired tracking signal.



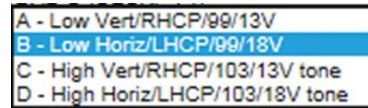
2.5.2.10. Modulation:

Select, from the dropdown list, the type of modulation that the desired tracking signal uses.



2.5.2.11. RX Input:

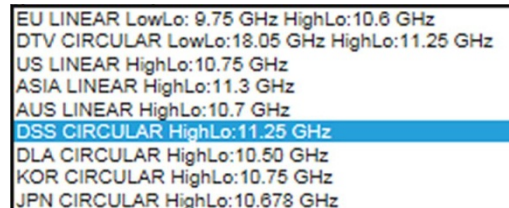
This setting is used to select the Band & polarity of the LNB output which is routed to the tracking receiver. This MUST be the band and polarity which contains the desired tracking frequency/signal.



EXAMPLE: If the signal you wish to track is LHCP (or Horizontal) at 12.224 GHz (high band), you would select “D –High Horiz/LHCP/103/18Vtone” from the dropdown.

2.5.2.12. LNB Type:

The TVRO LNB is capable of operating in a variety of modes and frequency bands. This setting selects the Local Oscillator frequency (therefore the RF frequency band), linear or circular polarization and whether the LNB will output dual or quad IF outputs.



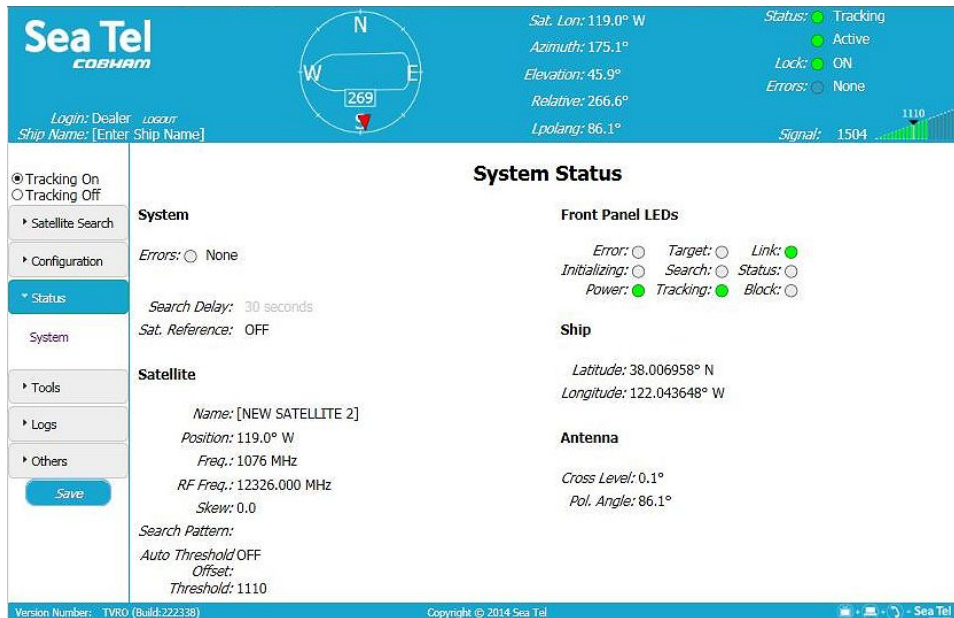
This selection sets the LNB into the listed modes (each emulating an individual LNB for the cited satellite/service) This MUST be set correctly for the desired satellite/service.

SAVE: When editing of all of these settings has been completed, click SAVE on the left sidebar to save this satellite to the “favorites” satellite database. Up to 40 favorite satellites may be saved.

2.5.3. Delete Satellite

Click Delete Satellite if you want to delete the satellite which is currently displayed for editing.

2.6. Status – System



The System Status page presents the user with all relevant system information on a single page, including but not limited to Modem State, Satellite Configuration, Geo Location and, if present Error reporting information.

NOTE: If the Error LED is illuminated solid red, mouse click “**ERRORS**” text in red to redirect to the reported system errors page.

Satellite: Provides the user with a read only display of the target satellite settings currently being utilized by the system.

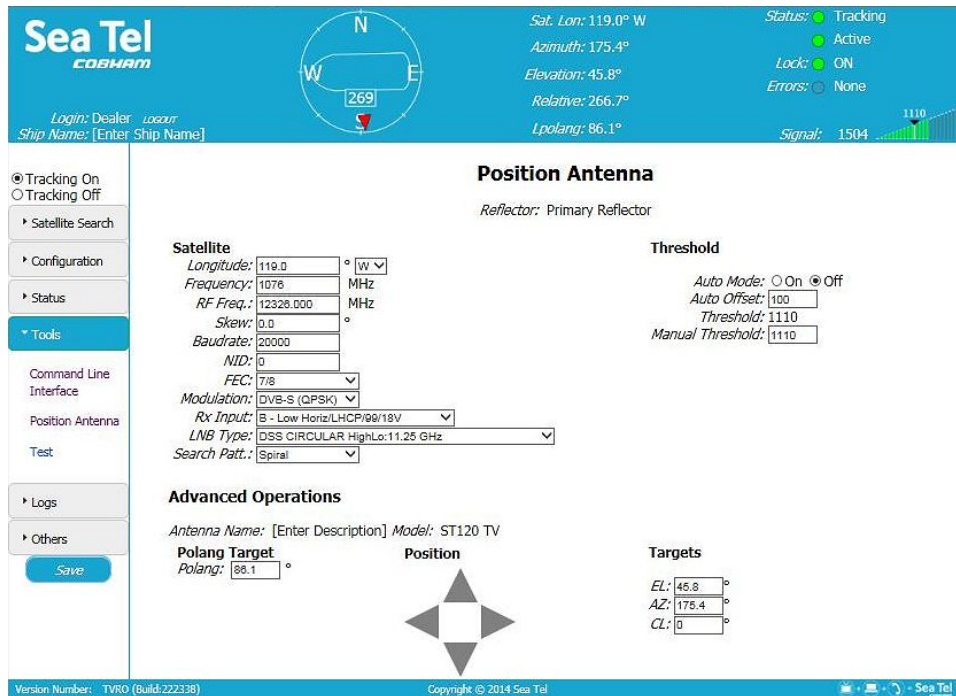
Front Panel LEDs: Provides the user with a mirror image of the diagnostic LED’s located on the front plate of the LMXP.

Ship: Provides the user with a read only display of the systems current GEO location information as provided by the integrated GPS.

Antenna: Provides the user with a read only display of the systems Cross Level and Polarization angles.

2.7. Tools – Position Antenna

The Position Antenna page provides the ability for the user to edit the current target satellite parameter settings as well as manual control of the systems angular positions and operational states.



2.7.1. Satellite -

This section is used to display, or set up, the satellite information required for the antenna to be able to acquire the chosen satellite.

2.7.1.1. Longitude:

Click in this field and type in the longitude position of this satellite.

2.7.1.2. E/W:

Use the dropdown to select the East or West longitude position of the satellite.

2.7.1.3. Frequency (IF):

Enter the IF frequency of the signal you want the tracking receiver to use to track this satellite. This frequency is entered in whole MHz,

Entry in this field will automatically calculate the **RF Frequency** field based on the LO of the LNB Type currently selected.

2.7.1.4. RF Frequency:

Enter the RF frequency of the signal you want the tracking receiver to use to track this satellite. This frequency is entered in MHz, so a tracking frequency of **12.224** (twelve point two-two-four) GHz would be entered as 12224 MHz.

Entry in this field will automatically calculate the **Frequency** field based on the LO of the LNB Type currently selected.

2.7.1.5. Skew:

This setting is used to enter a known skew for **this** satellite. If the satellite is not skewed, this setting should be zero. Entered in degrees & tenths of degrees.

2.7.1.6. Baud Rate:

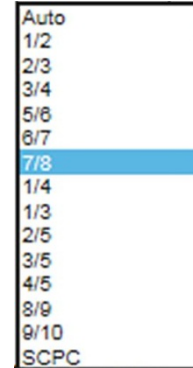
Enter the baud, or symbol, rate of the signal you will be tracking.

2.7.1.7. NID:

Enter the decimal format Network ID (NID) of the signal you will be tracking. If the listed NID value is provided in HEX format, it will have to be converted to DECIMAL for entry.

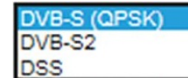
2.7.1.8. FEC:

Select, from the dropdown list, the **Forward Error Correction** rate of the desired tracking signal.



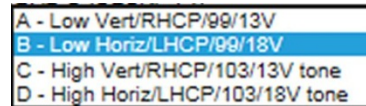
2.7.1.9. Modulation:

Select, from the dropdown list, the type of modulation that the desired tracking signal uses.



2.7.1.10. RX Input:

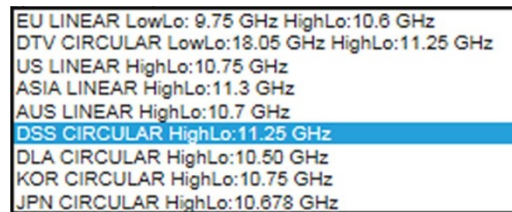
This setting is used to select the Band & polarity of the LNB output which is routed to the tracking receiver. This **MUST** be the band and polarity which contains the desired tracking frequency/signal.



EXAMPLE: If the signal you wish to track is LHCP (or Horizontal) at 12.224 GHz (high band), you would select "D –High Horiz/LHCP/103/18Vtone" from the dropdown.

2.7.1.11. LNB Type:

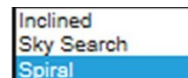
The TVRO LNB is capable of operating in a variety of modes and frequency bands. This setting selects the Local Oscillator frequency (therefore the RF frequency band), linear or circular polarization and whether the LNB will output dual or quad IF outputs.



This selection sets the LNB into the listed modes (each emulating an individual LNB for the cited satellite/service). This **MUST** be set correctly for the desired satellite/service.

2.7.1.12. Search Pattern:

Select, from the dropdown list, the type of search pattern you want the antenna to perform when searching for this satellite.



Inclined is used to acquire a satellite that is known to be in an inclined orbit.

Sky Search is used for acquiring satellite when you have no gyro compass input to the system (Gyro type parameter is set to "No Gyro").

Spiral is the **default**, and is best for most satellites if you have gyro compass input to the system.

SAVE: When editing of all of these settings has been completed, click **SAVE** on the left sidebar to save this satellite to the "favorites" satellite database. Up to 40 favorite satellites may be saved.

2.7.2. Threshold

This is used for setting the Threshold parameters.

2.7.2.1. Auto Mode

View, or set, threshold Auto Mode. For normal operation it should always be set to **ON**.

2.7.2.2. Auto Offset

View, or set, threshold Auto Offset. Typically it is left at factory default. If you wish to optimize it, record the peak "ON Satellite" AGC value displayed in the Signal bar graph of the banner. Turn Tracking OFF and use the UP arrow on the Position graphic below to move the antenna OFF satellite and read the "OFF Satellite" AGC value. Subtract the OFF Satellite AGC from the peak ON Satellite AGC to find out the difference in signal ON/OFF satellite. Divide the difference value in half and enter that value in the Auto Offset field. Use the DOWN arrow to return to ON satellite and turn Tracking back ON.

2.7.2.3. Threshold

View the current threshold value in the Threshold field.

2.7.2.4. Manual Threshold

View, or set, a Manual Threshold value in that field. Manually setting threshold is NOT recommended because the system cannot automatically adjust the Threshold value as atmospheric changes occur.

2.7.3. Advanced Operations

2.7.3.1. Antenna Name

View, or enter an Antenna Name (ie Port Antenna) if desired.

2.7.3.2. Model

Display of the model based on the Profile setting of the system.

2.7.3.3. Polang Target

View, or set, Polang Target. View the current polarization target value for the current satellite. The only reason to target a polarization is for testing feed polarity drive.

2.7.3.4. Position Graphic

Use the UP/DOWN/LEFT/RIGHT arrows to manually move the dish. Each click on an arrow will move the dish 0.3 degrees. This would most commonly used for four quadrant tracking test or checking ON/OFF satellite signal levels. For larger AZ or EL movement, use the Targets field.

2.7.3.5. Targets

For larger antenna movements, use the AZ & EL targets fields.

2.9. Others – Help

The Help page provides some general knowledge items in regards to the LMXP’s operational capabilities and restrictions.

HELP: The Help page is separated into 6 major groups; Overview, Access Permission, Browsers, Configuration Tips, Operation Tips, and Tech Contact. Scroll down the page use slider at right hand side of screen or use your keyboards Page up/down keys.

The screenshot displays the Sea Tel COBHAM web interface. At the top, there is a blue header with the logo on the left, a compass rose in the center showing a heading of 269, and tracking data on the right including Sat. Lon: 119.0° W, Azimuth: 175.3°, Elevation: 45.8°, Relative: 266.6°, Lpolang: 86.1°, Status: Tracking, Active, Lock: ON, Errors: None, and Signal: 1504. Below the header is a login section with fields for Dealer/Logout and Ship Name. A left-hand navigation menu includes options for Tracking On/Off, Satellite Search, Configuration, Status, Tools, Logs, Others (selected), Admin, and Help, with a Save button at the bottom. The main content area is titled 'Overview' and contains text about the Media Xchange Point (MXP) interface and a list of functions such as configuring parameters, backup configurations, operating the antenna, adding/removing satellites, editing parameters, tracking satellites, diagnosing problems, viewing reports, and firmware upgrades. Below this is the 'Access Permission' section, which explains user roles (Dealer vs. User) and their access levels to the system. The 'Browsers' section is also visible at the bottom.

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