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## **SAILOR VSAT** **SW ver. 1.66 Build 009**

### **Subject:**

Please be informed that new software, version 1.66 build 009, for the SAILOR 60 GX, the SAILOR 60 GX High Power, the SAILOR 100 GX, the SAILOR 100 GX High Power, the SAILOR 60 GX-R2 4.5W / 9.0W, and the SAILOR 100 GX-R2 4.5W / 9.0W has been released.

### **Priority:**

- **MEDIUM:** It is recommended to apply this change / initiative to all units in stock. For units sold it is recommended to apply this change / initiative next time the system(s) is inspected.

### **Changes from SW ver. 1.64 Build 016 to SW ver. 1.66 Build 009**

#### **New features and improvements:**

- Support for the SAILOR 407523A GMU (SMB3315)
  - New Modem profile for the 407523A.
  - Needs minimum GMU hardware revision D. See appendix I.
- Support for SAILOR 60 GX upgrade from 5W to 10W BUC.
  - Change in the UCLI. See appendix II.

#### **Related bug fixes:**

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## Release history

### Changes from SW ver. 1.64 Build 006 to SW ver. 1.64 Build 016

#### New features and improvements:

- Changed ID Timeout from 10 seconds to 25 seconds in OpenAMIP driver.
  - During the ACQ, ACU will wait 25 seconds for the RXLock, before testing the next 'hotspot'

#### Related bug fixes:

- Low memory leak in SNMP event list.
- IoT function improved.
  - Device Provisioning Service, match format for XTR, Updated request format
- BUC fan hysteresis change.
- Support for new rev. SMD.
- ADU fails to stay on satellite when running in heading mode None

### Changes from SW ver. 1.62 Build 037 to SW ver. 1.64 Build 006

#### New features and improvements:

- Support for IoT / MQTT
  - SAILOR VSAT reporting Status to The Cobham ConnectIT HUB
- Support for TLS 1.2 (HTTPS)
- Support for Inmarsat GX-R2 (SAILOR 100 GX and SAILOR 60 GX)
- Bearing test performed during the extended POST
  - A bearing test is now part of the extended POST.
- Use Carrier Lock State from modem if available as Rx Lock indication.
  - VMU>ACU: C 16.976591 16.976591 2583.925546 7 -27.306341

#### Related bug fixes:

- Azimuth blocking zone was disregarded if an elevation blocking zone, above 85°, was entered. Fixed
  - Both Azimuth and Elevation blocking zone will have to be entered before a blocking / No TX flag is set.
- Possible TX mute when tracking inclined orbit satellite. Fixed
  - 'Pointing offset buildup' causing TX mute.
- Pointing error filter for TX On/OFF improved.
  - Second order IIR filter to smooth out short duration spikes in pointing error before applying them in NAV TX ON/OFF control
- Incorrect Syslog message when importing ACU configuration.
  - Syslog indicates successful imported config file as failed.

## Changes from SW ver. 1.62 Build 035 to SW ver. 1.62 Build 037

### New features and improvements:

- Enable use of external GNSS / nmea 0183 input. Appendix I
  - Uses same interface as heading (I/O RS232 / RS422)

### Related bug fixes:

- None

## Changes from SW ver. 1.62 Build 031 to SW ver. 1.62 Build 035

### New features and improvements:

- Azimuth Calibration. Max Elevation limit changed to 85°.
- Enable SNR from OpenAMIP for all OpenAMIP modems
  - ACU>VMU: c 0.000 0.000 0.000 0.000 1
  - VMU>ACU: C 15.025813 14.693035 1687.632069 7 -34.700748

### Related bug fixes:

- ACU rebooting during power up. Fixed
  - Reception of corrupted NMEA 0183 sentences, during ACU power up, caused ACU to reboot.
- BUC mute when elevation is over 75° in heading mode 'None'. Fixed
  - Allow TRK up to 90° for heading mode 'None'.
- Inclined orbit satellite acquisition at high elevation. Fixed
  - Acquisition sometimes failing due to pointing error.
- Close socket to Slave when Slave connection is deemed lost. Fixed
  - Master / Slave connection sometimes lost

## Changes from SW ver. 1.62 Build 026 to SW ver. 1.62 Build 031

### New features and improvements:

- Change RFTermtype for SAILOR GX in ADS mode. Appendix I
- Tx RF frequency field added to Generic satellite profile. Appendix I
- Write VMU Tx RF/IF frequency on Web MMI Dashboard. Appendix I
- Show Reference Oscillator type on Web MMI Dashboard. Appendix I
- Log login attempts to Web MMI to Diagnostics Report. Appendix II
- Allow download Diagnostics Report without System Log using cURL. Appendix III
- Allow download of custom Statistics Report using cURL. Appendix III
- Allow download of POST, active events and all events using cURL. Appendix III

### Related bug fixes:

- Copy of the XIM data from the UCLI
  - UCLI command "*antenna\_data select*".

## Changes from SW ver. 1.62 Build 012 to SW ver. 1.62 Build 026

### New features and improvements:

- Improvement of the Azimuth calibration accuracy.
- 50 MHz reference signal monitoring changed. Now starts along with the VMU connection monitoring.
- BCM event if the 50 MHz input from the VIM is lost.
- Performing sidelobe check on new pointing request.
- Increased ID timeout for GMU for better Rx Lock detection.  
Time testing each 'hot spot' during ACQ increased with from 20 to 30 sec.
- Improved handling of multiple spot beam configurations from GMU.  
If GMU sends more than three pointing updates in a row, a full acquisition is performed.
- Memory usage added to diagnostic report. Appendix I
- System uptime added to diagnostic report. Appendix I
- Increased the BUC voltage to 48Vdc (main ADU supply), on high power GX ADU's with VIM3.

### Related bug fixes:

- ADU type not showing (tt7006X/tt7009X) after a conversion from 600/900 Ka to 60/100GX and vice versa.
- Use average heading values when going into blocking zone. (The point when the ADU starts using the heading input again) Fixing 'false peak heading values' being used when going into blocking zone.
- Random ACU reboot caused by Linux crash.
- *0A063 BCM warning & 0A06A Missing BUC response*  
When the BCM PLL goes in unlock state the event "Missing BUC response" is also set, or vice versa.

## Changes from SW ver. 1.62 Build 007 to SW ver. 1.62 Build 012

### ○ New features and improvements:

- Support for "SAILOR 60 GX High Power" antenna type
- Disable Extra Diagnostics Log Modem/BUC at boot
- The logging of Modem and BUC communication will stop after a reboot. This is to avoid the diagnostic report to fill up with modem/BUC communication, overwriting events from the ADU.

### ○ Related bug fixes:

- LAN port 3  
Enable the 'Mode options' if the port is unused.
- LAN port 4:  
Only allow usage by custom VLANs, when 'Mode option' is set to "Switched with Port 1"  
Possible to change 'Mode option' when port is being used by customer VLANs.

#### **Changes from SW ver. 1.62 Build 006 to SW ver. 1.62 Build 007**

- **New features and improvements:**
  - Support for SAILOR 100 GX upgrade to SAILOR 100 GX High Power.
- **Related bug fixes:**
  - Possible reboot of the ADU when going in/out of blocking zone, and vessel is in a fast turn
- **Known problems:**

#### **Changes from SW ver. 1.60 Build 024 to SW ver. 1.62 Build 006**

- **New features and improvements:**
  - Support for S100 GX High Power antenna.
  - Support for Blocking statistics (Blocking Map) Appendix I.
  - ISM3 support.
  - Improvement of GNSS handling.
  - DUAL Antenna:
    - Dual Antenna Dashboard Master/Slave links.  
Access to Master/Slave via the WEB MMI links now independent of the Master/Slave ACU interconnection.
  - Inmarsat GX satellites predefined as satellite service profiles.
    - For azimuth calibration. Appendix II.
  - STATISTIC File:
    - Vibration's Avg\_Max\_Min, Ship's Rol-Pch, ADU Voltages, Tracking Receiver Power (SSI from ADU)  
(Not supported by the "SAILOR VSAT Statistic Report")
  - DIAGNOSTIC File:
    - Add Dual Antenna runtime info.
    - Sort events after date.
  - SNMP:
    - Add GEO pointing Azimuth and Elevation to SNMP.  
For more info see the MIB file. (Help desk)
  - OpenAMIP:
    - Antenna status flag added to S cmd. Appendix III.  
(OpenAMIP v1.14)
    - Heading, Velocity, Roll, Pitch, and Yaw added to W cmd.  
(OpenAMIP v1.9)

#### **Changes from SW ver. 1.60 Build 015 to SW ver. 1.60 Build 024**

- **New features and improvements:**
  - New tracking algorithm.
    - Single system: When in blocking zone. Heading now part of the tracking algorithm.
    - Dual system: Inactive ADU. Heading now part of the tracking algorithm.
  - Network settings: LAN port: Switch LAN2 to LAN1 by default. (LAN2 in same Vlan as LAN1) See Appendix I

- Can be overruled by the GMU through SNMP
- Network settings: Switch LAN4 to LAN1 (LAN4 in same Vlan as LAN1)  
See Appendix I
  - Can be overrules by the GMU through SNMP
- New Modem page in the WEB MMI
  - Support for SSH / Telnet / HTTP / HTTPS access to LAN1  
(Tunnel to modem from service LAN port) See appendix II
- More robust Pointing error filter for TX ON/OFF control
- **Related bug fixes:**
  - Fix bug with LAN setup in Dual GX mode
  - Prevent the operator from loading software that not supported the new ACU 407016C in the unit
  - Fix bug with Chrome SSL certificate (update SSL certificate during Software upload)

#### **Changes from SW ver. 1.58 Build 025 to SW ver. 1.60 Build 015**

- **New features and improvements:**
  - Support for SAILOR 100 GX dual antenna. Appendix VIII
  - General improvements of security for "admin" account.
    - New 'Local Admin' activation. Appendix I
  - User defined system gain for Tx Cable calibration.
    - New functions in the Cable calibration. Appendix II
  - Reset of event list in Diagnostic report.
    - Event log reset without deleting config. Appendix. III
  - Bearings/friction test for all axis
    - Test added in User CLI. See appendix. IV
  - ADU & ACU temperature logged in the diagnostic file. Appendix. V
  - Readout from VIM power detector for debugging. Appendix. VI
  - Dual mode improvements.
    - If the GPS of the master is not functional, the GPS info from the slave is used.
  - Dual mode switching.
    - RSSI monitoring added. The master continuously monitor the RSSI of the two systems while tracking. Whenever the averaged RSSI of the inactive antenna exceeds RSSI of the active one (+4db) the dual mode handler performs a switch.
  - Improved Master/Slave and Active/Idle indicator. Appendix VII
  - Roll, pitch and yaw added as a max. avg. and min value in SNMP
- **User related bug fixes:**
  - SAILOR VSAT Ka, now working in "Heading mode NONE" above 75°
  - ACU3 – 407016C: Fix problem with false FAN / Temperature warnings.
- **Known problems:**

#### **Changes from SW ver. 1.58 Build 022 to SW ver. 1.58 Build 025**

- **New features and improvements:**
  - Support for 12 VLAN's managed via SNMP

#### **Changes from SW ver. 1.58 Build 019 to SW ver. 1.58 Build 022**

- **New features and improvements:**
  - Support for SAILOR 600 VSAT Ku

- Note: All SAILOR VSAT Ku - SAILOR VSAT Ka - SAILOR Gx system will, in the future, be delivered with software version 1.58B022.

#### **Changes from SW ver. 1.57 Build 024 to SW ver. 1.58 Build 019**

- **New features and improvements:**
  - Secure E-Mail support. (SMTPS and STARTTLS supported)
    - See appendix I.
  - Antenna Data selection with possible preference.
    - Copy of XIM (calibration) data now stored in the ACU, making it possible for the SAILOR to preselect right module after a VIM/PCM replacement. See appendix II.
  - Reboot time reduced with 70%.
    - All axis calibrated simultaneously.
  - New Self test menu with Extended POST for complete test. See appendix III.
  - New Shock / vibration statistic in diagnostic report. See appendix IV.
  - New GetRequest in SNMP: Modem signal strength, tracking receiver signal strength, modem rx lock and modem tx enable. See appendix V.
- **User related bug fixes:**
  - None
- **Known problems:**
  - None

#### **Changes from SW ver. 1.57 Build 021 to SW ver. 1.57 Build 024**

- **New features and improvements:**
  - Search window definition has been changed from +/-2 to +/-4 degrees. This change will allow the antenna to acquire the correct satellite even if the vessel gyro is imprecise.
  - Improved tracking algorithm. This improvement applies especially to smaller vessels operating in rough seas.
- **User related bug fixes:**
  - None
- **Known problems:**
  - None

#### **Changes from SW ver. 1.57 Build 017 to SW ver. 1.57 Build 023**

- **New features and improvements:**
  - Search window definition has been changed from +-2 to +-4 degrees. This change will allow the antenna to acquire the correct satellite even if the azimuth calibration is as offset as we have seen since the release of 1.57 b17. The acquisition time will only be extended by 5-10 seconds – so there should not be any drawbacks from this change.

#### **Changes from SW ver. 1.54 Build 020 to SW ver. 1.57 Build 017**

- **New features and improvements:**
  - Dual-Antenna BUC power fixes.
  - Added Cross-Elevation Bearing performance optimization. Appendix I.
    - Minimize friction by improving distribution of grease in bearing.
  - Added options for extra modem diagnostics. Appendix II.
    - Enabled in the help desk, shown in diagnostic report
  - Support for SAILOR 900 VSAT High Power.

- Self-refreshing Dashboard.
- “openAMIP” Without TX info supported. Newtec modem)
- **User related bug fixes:**
  - Auto recovery after antenna shutdown corrected
  - GNSS Position on dash board showing position with an offset to the D° M”. Appendix III.
    - Bug Fixed. GNSS Position now shown in degrees and decimal degrees

#### **Changes from SW ver. 1.54 Build 012 to SW ver. 1.54 Build 020**

- **New features and improvements:**
  - None
- **User related bug fixes:**
  - Improve the VIM to LNB interface to handle special situations that could lead to CRC errors in the Modem and unexpected loss of Rx lock in certain VSAT modem types
  - Autorecovery after antenna shutdown corrected
- **Known problems:**
  - None

#### **Changes from SW ver. 1.50 Build 036 to SW ver. 1.54 Build 012**

- **New features and improvements:**
  - New WEB MMI layout. (see appendix)
  - New Navigation menu.
    - Heading: External, Fixed, None
    - GPS: Possible to manually input GPS position. (see appendix)
  - Support for new GNNS module.
    - GPS, Glonass, BeiDu is supported with the new Hw installed. (see appendix)
  - SNMP Trap support (see appendix)
    - For info. See the MIB file.
  - Remote syslog (see appendix)
  - Improved heading handling (GPS compass)
  - SAILOR 60 GX support
- **User related bug fixes:**
  - EVENT LIST: UTC shows local time
- **Known problems:**
  - None

#### **Changes from SW ver. 1.50 Build 016 to SW ver. 1.50 Build 036**

- **New features and improvements:**
- **User related bug fixes:**
  - Antenna does not respond to a ‘jog command’ Fixed
- **Known problems:**
  - None

#### **Changes from SW ver. 1.48 Build 129 to SW ver. 1.50 Build 016**

- **New features and improvements:**
  - Complete support for SAILOR 100 GX and GX upgrade kit.
  - Azimuth calibration using active satellite profile.
    - “Just click and calibrate”
  - Stores previous sw ver. for easy roll back.
    - “Just click and roll back previous sw ver.”
  - Extra options on Generic modem setup (RSSI / Rx-LOCK)
    - Reacquisition based on RX-lock status (high / low - threshold)

- Additional RX Locked status on the Dash Board – VSAT Modem.
- **User related bug fixes:**
  - Reacquisition in 'Generic Modem mode' based on RX-lock status.
  - Recalibration of ZRM/encoders before acquisition to minimize influence of radar interference in the encoders.
    - *The fix will make the ADU more robust, but not fix the entire interference issue when the ADU is installed within the +/-15 deg radar beam.*
  - Occasional PMM POST failure after reboot.
  - Changing admin password using POST.
- **Known problems:**
  - Issues with iDirect Serial modem sw version 15.0.0.X.  
The SAILOR VSAT does not get the Tx frequency parameter from the modem. This will result in a warning on the SAILOR VSAT.  
The Tx frequency used for the cable calibration will then be set to 1.225Ghz for best possible performance.  
Note: With sw. ver. 1.48 build 114 and lower, the SAILOR VSAT will raise a permanent alarm, and will not be operative.

## Software upload procedure.

1. Extract the "SAILOR GX software 166B006.zip" file  
Open an Internet browser on the PC and enter the web address to the SAILOR VSAT/GX at <http://192.168.0.1>.

2. To login as ADMIN  
Select **ADMINISTRATION**.  
Enter **ADMINISTRATOR LOGIN**:  
**User name:** (default = admin (case sensitive))  
**Password:** (default = \*\*\*\*\*)

Or

Press the ACU left keypad for 5 sec. to enable the '**local administration function**'.

Logs in as admin without the use of a password. *ACU will automatic log out after 1 hour*

Note: Accessing the ACU with 'local administration function' does not change the current admin account password.

3. Locate UPLOAD SOFTWARE TO TERMINAL , Browse, and select the new software file tt7xxx\_1.66-6-acu.tiif
4. The SAILOR VSAT/GX system will reboot,
5. Verify that the page shows the new software version numbers currently loaded in the ACU.

This concludes the SW upload procedure

## Appendix I

New modem profile for the SAILOR 407523A.

**MODEM PROFILES**  
**ADD MODEM PROFILE**  

Profile name

Modem

Modem username

Modem password

Minimum hardware revision.

ACU / BDU	Modem Unit		
	<b>407023A-00500</b> SAILOR GX GMU All revisions	<b>407523A-00500</b> SAILOR GX GMU Rev. A-C*	<b>407523A-00510</b> SAILOR GX GMU Rev. D and higher*
<b>407016X</b> <b>7016X SAILOR ACU</b>	<b>X</b>	<b>Invalid</b>	<b>X</b>

\* The revision can be found on the label, on the back of the GMU.

Note:

The combination of a 407523A-**00500** rev. A-C SAILOR GMU and a 407016X SAILOR ACU will cause a level 3 reset of the GMU. This will make the GMU / Core module to revert to default software partition 1 – 1.0.0.0

This causing the TERMINAL\_OPT (falcon.json) and TERMINAL\_LAN\_OPT (lanconfig.json) file to corrupt and further operation to fail.

The Rev. D unit no. is: 407523A-**00510**

## Appendix II

How to convert antenna type from 5W BUC to 10W BUC.

login as: *admin*

admin@ass-60gx's password: *admin passwd*

UCLI:/\$

UCLI:/\$ ***antenna\_data***

type [<type> [<param>]]:     Get/Set antenna type for RF conversion

<type>:	<param>:
Ku:	[<pol_zero>]     Ku band RF
Ka:	Ka band RF
GX:	Inmarsat Global Express Ka band RF
GX:	<gx_id> As above, but also update GX id
GX:	<gx_id> <lbn_ids> As above, but also update GX and LNB ids
GX_R2_4W :	Inmarsat Global Express R2 4.5W
GX_R2_9W:	Inmarsat Global Express R2 9.0W
eTRIA:	eTRIA Ka band RF
mPower:	SES mPower Ka band RF
KuHP:	Ku High Power
<b>GXHP:</b>	<gx_id> [<lbn_ids>] <b>GX High Power</b>
KaHP:	Ka High Power

UCLI:/\$ ***antenna\_data type GXHP***

Warning! Changing the antenna type may render the system unless the correct conversion kit is mounted on the system.

Press 'y' within 10 seconds to confirm or any other key to cancel.

UCLI:/\$

Reboot ACU and check antenna type is now *TT-7006F - SAILOR GX High Power*

COBHAM	
ass-60GX - SAILOR 60 GX High Power	
ACU part name	TT-7016B
Antenna part name	TT-7006F
ACU serial number	81003087
Antenna serial number	81102605
Software version	1.66 build 6

Note: It is not possible to convert back to 5W (TT-7006A), once converted to 10W.

