

<b>Number</b>	SB2006
<b>To</b>	T-Series Dealer and Customer Network
<b>Subject</b>	T-31X System Software Installation 3.1.4
<b>Revision</b>	Rev A
<b>Date</b>	5/21/2020

## AFFECTED ASTRONICS AEROSAT PRODUCT

USB Binary image load

<b>Description</b>	Software Release
<b>Part Number</b>	900-68651_REV_T_3.1.4.iso
<b>Part Number Revision</b>	T
<b>MD5 Sum</b>	147bed3b8ba768714271a76b98a0d5fc

Software Update Package

<b>Description</b>	Software Release
<b>Part Number</b>	900-68651_REV_T_3.1.4_update.pkg
<b>Part Number Revision</b>	T
<b>MD5 Sum</b>	b590354201e517d302f0206ec8874435

## **REFERENCE DOCUMENTATION**

<b>Part Number</b>	<b>Document Title</b>
000-2129-1004-IM	Installation Manual T-31X Series
SB1803	ACMU Networking Standards Defined

### **1.0 COMPLIANCE — MANDATORY**

Compliance with the Service Bulletin is mandatory with the T-31X installation only.

### **2.0 BACKGROUND**

This release supports implementation of the T-31X system and supporting network infrastructure. The system software update 3.1.4 ensures robust operation and integration with the Antenna Control Modem Unit (ACMU) software that will greatly enhance the customer experience with the T-31X system.

### **3.0 PURPOSE**

The purpose of this Service Bulletin is to authorize the installation of the new T-31X system software on aircraft with the Astronics T-Series Antenna system installed.

### **4.0 SCOPE**

The scope of this Service Bulletin is for all T-31X systems.

### **5.0 APPROVAL**

This document is approved by Astronics AeroSat Field Service Engineering. The software update has been deemed a minor alteration as it has no impact on weight and balance, structural strength, aircraft performance, flight characteristics, or airworthiness. It is ultimately the installing authority's responsibility to determine airworthiness as applied to their installation.

### **6.0 PROCEDURE**

#### **6.1 Personnel Requirements**

If the current software is version 3.0.X or earlier, this Service Bulletin requires one properly trained Aircraft Maintenance Technician to conduct the install with the supervision of an Astronics FSE. If the

current software version is 3.1.3, the software update can be loaded by trained personal via an update package.

## **6.2 Tooling Requirements**

Tooling requirements include:

- Laptop computer
- Serial cable and dongle (if required)
- Putty Software
- LAN cable with RJ45 connections
- General shop and electrical tools

## **6.3 Parts Requirements**

The Binary image package, 900-68651\_REV\_T\_3.1.4.iso or software update package 900-68651\_REV\_T\_3.1.4\_update.pkg

### **NOTE**

Modem firmware 1.6.1.3, 1.6.1.7, or 1.6.1.8 is required for this software.

## **6.4 Weight and Balance**

There is no effect to weight and balance.

## **6.5 Electrical Load**

There is no effect to electrical load.

## 7.0 INSTRUCTIONS

### USB Binary Image Load:

1. Open a Putty serial connection (MAC: Minicom serial session).
  - Baud rate 9600
  - Flow control: Off
  - 8N1
2. While the ACMU is powered off, insert a USB that has the T-31X ACMU software.

### NOTE

When the ACMU is powered on, it will pull the image from the USB and install it into the Flash memory of the ACMU.

3. Power-up the ACMU and watch the serial connection window. The AeroSat ACMU Install window appears.

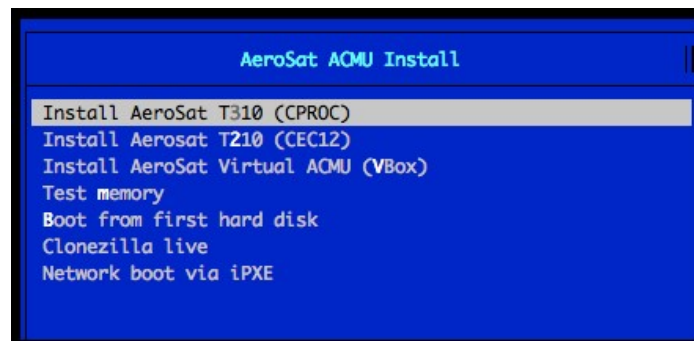


Figure 7.1 — AeroSat ACMU Install

4. Select **Install AeroSat T310 (CPROC)**, then press **Enter** to begin the install using the Install AeroSat T310 (CPROC) window. See Figure 7.1.
5. If you see the **Configure the network** screen as seen below in Figure 7.2 , choose <Continue> and press ENTER





11. Select **install the package maintainer's version**, as shown in Figure 7.6.

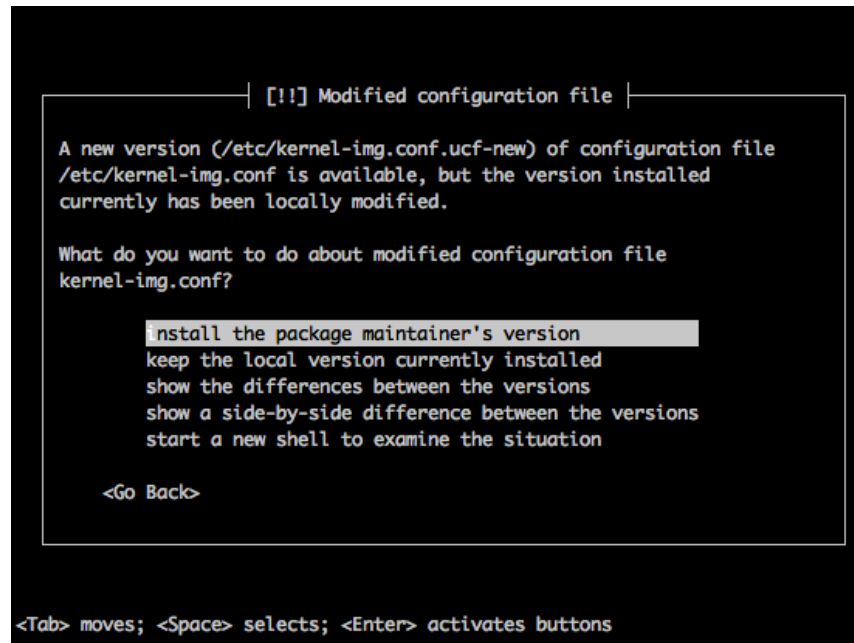


Figure 7.6 — Modified Configuration File

12. Select the following boot loader installation option, then press **ENTER**.

/dev/sda (ata-SATA\_SSD\_FEB46478120800676616)

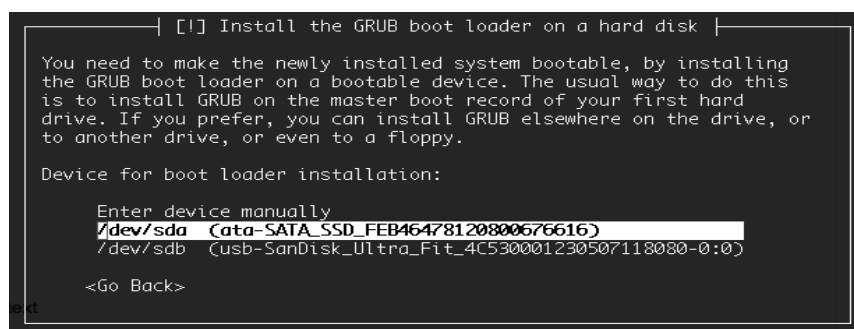


Figure 7.7 — Install the GRUB boot loader on a hard disk

When the install is complete, a confirmation screen appears, as shown in Figure 7.8.

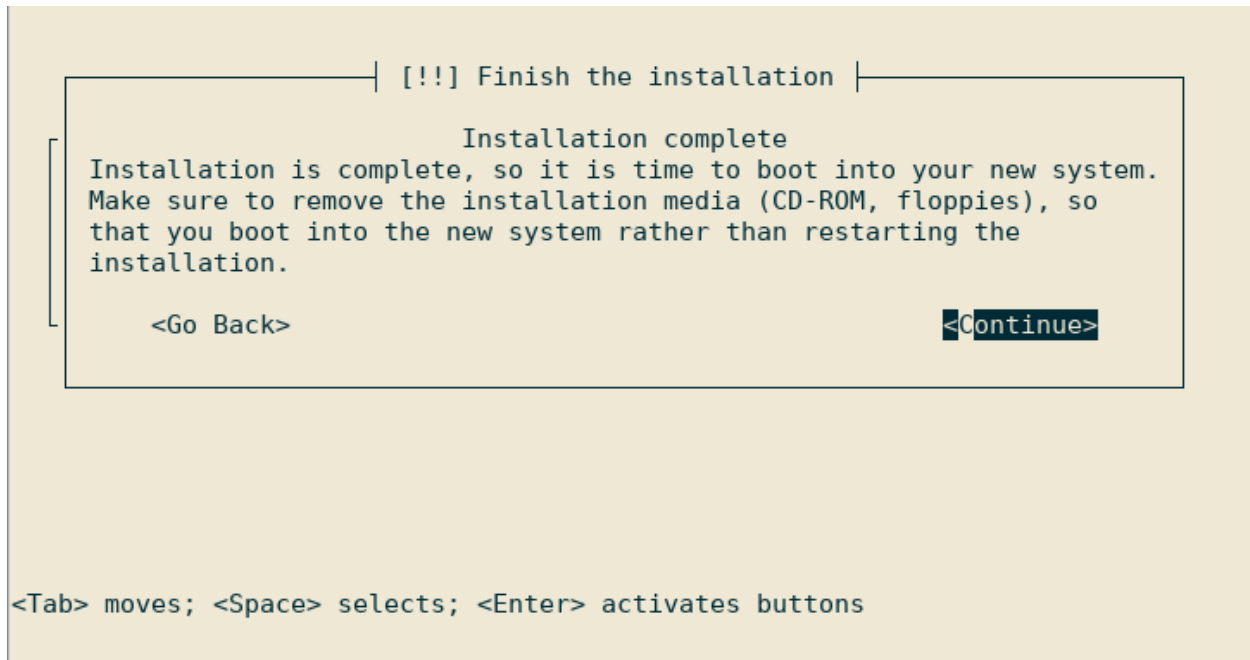


Figure 7.8 — Confirmation Screen

13. Select **<Continue>**.
14. The System shuts down, displaying the screen as shown in Figure 7.9.

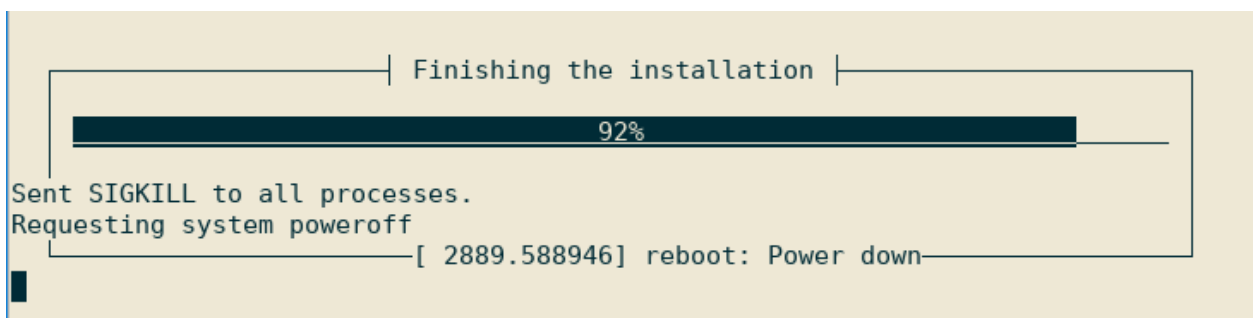


Figure 7.9 Finishing Screen

15. After the system stops displaying new information, wait 5 minutes. Then continue to the next step.
16. Remove the USB from the ACMU.
17. Cycle the power switch to reboot the ACMU.



18. Log into the system as “root”
19. Check that SysCheck is running `tail -f /var/log/aerosat/system_check.log #`
20. Wait 10 minutes for System Check to complete.
21. Cycle the power switch again to reboot the ACMU. After 7 to 10 minutes, the ACMU is ready for you to continue with the steps required per *000-2129-1004-IM section 4.3*.
22. Perform the Ground Checkout procedures, as per *000-2129-1004-IM*, Cable Calibration, Alignment, and section 7.1 of this document.

### 7.1 Verification of Software Install

Note: images are for reference only and may diff slightly during process.

1. Connect to the ACMU front panel RJ45 port (A2J8).
2. Log in to the ACMU user interface at its assigned IP.
3. Wait for “system\_check” to complete. The “Please wait - BIT RUNNING” message will disappear when system\_check is complete. Reference figure 7.1.1.

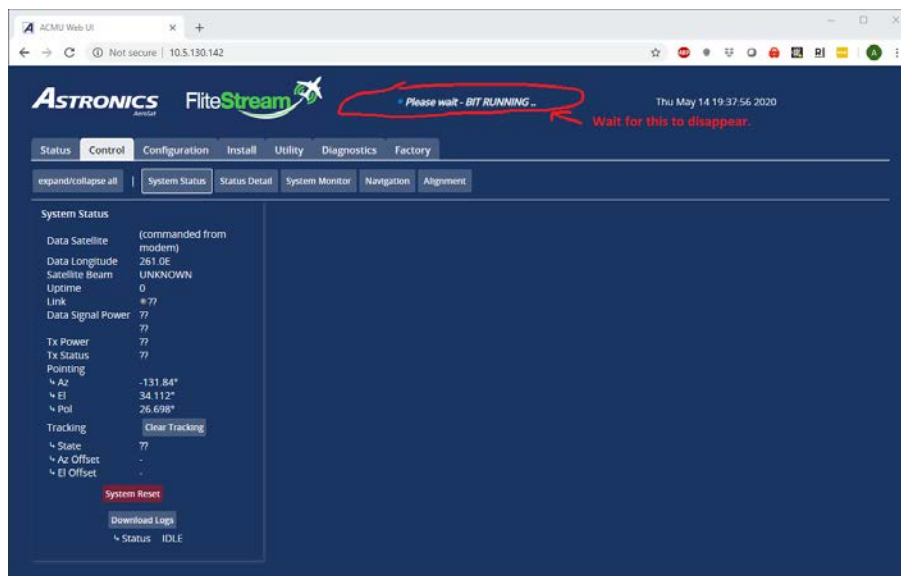


Figure 7.1.1 System Check

4. Open the **Configuration** tab, **System SW File Panel**.
5. Uncheck *“reboot system?”*.
6. Check *“test only?”*

### NOTE

If this is left unchecked, the system will boot of the other partition and can be rendered inoperative.

7. Click inside the SW Update file box.
8. Browse to and select the software update file that matches the currently installed version.
9. Select *“apply”*. This will run a test install of the software ensuring that future software updates will complete successfully. It may take up to 10 minutes for the software update to upload to the ACMU. Upon completion of the upload it may take an additional 15 minutes after *“\*\*\* Create sandbox”* is displayed in the terminal window for this step to complete.
10. If the test is successful, the following output will be displayed as shown in figure 7.1.2:

```
*** "Test Only" was selected. Update is possible.
*** Restoring /repo
[task completed]
```

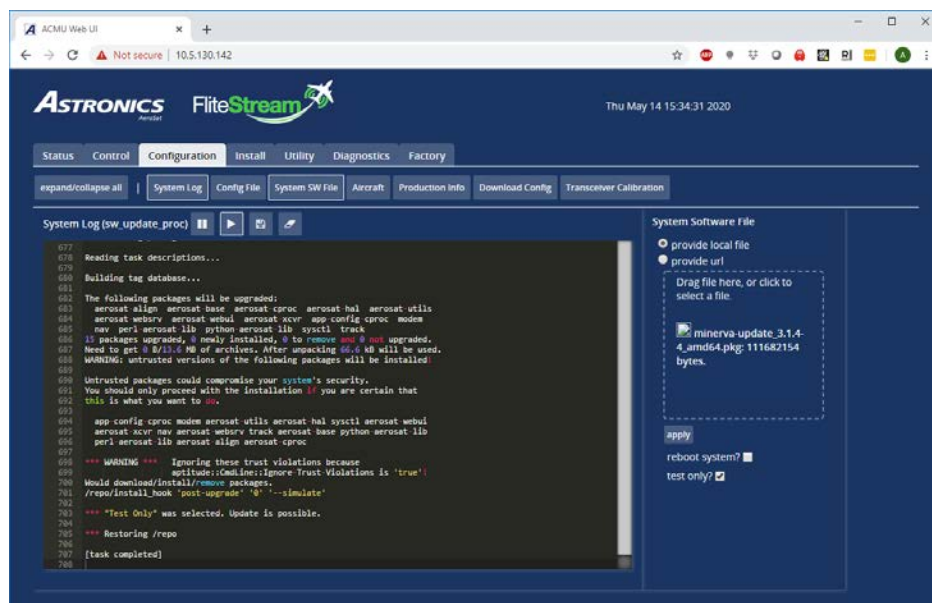


Figure 7.1.2 Test Completed

11. If the output described in step 11 of this section is not displayed or one of the following outputs is displayed re-accomplished section 7 USB Binary Load of this document.

```
E: Syntax error /etc/apt/apt.conf.d/01autoremove-kernels:2: Extra junk at end
of file
*** FAILED: apt-cache error 256
apt-cache error 256
at /usr/local/bin/software_update line 125.
main::exit_error("apt-cache error 256\x{a}") called at
/usr/local/bin/software_update line 488
```

### Update Package Image Load:

1. Log in to the ACMU user interface at its assigned IP.
2. Navigate to the **Configuration tab, Production Information** panel and confirm the system Software is 3.1.3. If System Software is 3.1.3 only, you can perform the update package.
3. Open the **System SW File** window. Drag and drop the **900-68651\_REV\_T\_3.1.4\_update.pkg** file into the window as shown in Figure 7.10.

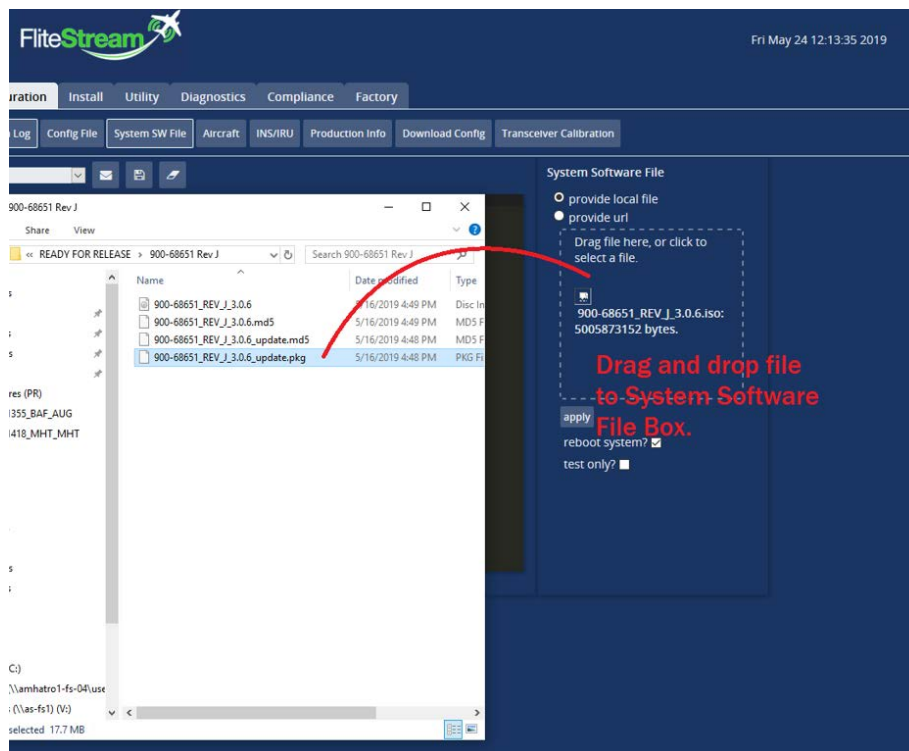


Figure 7.10 S/W Image Load

4. Confirm the **reboot system** checkbox is checked and click **apply**.  
The **System Log** window displays the S/W load. When finished, the ACMU reboots.
5. Cycle the power switch to reboot the ACMU. Wait 7 to 10 minutes for the ACMU to fully reboot.
6. Cycle the power switch again to reboot the ACMU a third time. After 7 to 10 minutes, the ACMU is ready for you to continue with the steps required per *000-2129-1004-IM section 4.3*.
7. Perform the following post load: Ground Checkout procedures per *000-2129-1004-IM*, cable calibration, and alignment.

## 8.0 ACCEPTANCE/REJECTION CRITERIA

Acceptance of this installation is achieved upon passing a ground checkout performed by qualified personnel, and completing the proper documentation.

## 9.0 RECORD OF COMPLIANCE

When you complete the maintenance action, make sure to make an entry in the appropriate aircraft log or operator's maintenance documentation system.

## CONTACT INFORMATION

For questions regarding this Service Bulletin, please contact Astronics AeroSat Product Support.

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