

SERVICE PROCEDURE

GALAXY® Real Time Clock Update



This document describes how to:

- Upgrade the real-time clock in a Galileo GALAXY or Bluehorn Network Processor;
- Install both the PCB and the embedded firmware from Compass Control Software.

This update is only required if your GALAXY or Bluehorn Processor serial number is smaller than:

- 18138357 - GALAXY 816
- 18138483 - GALAXY 816 AES
- 18138395 - GALAXY 408
- 18139315 - Bluehorn 816

Compass 4.3.3 Supported Firmware for AM824 network systems (required for this update):

- GALAXY v1.3.2 (All models)
- Bluehorn 816 v1.3.2

Compass 4.5.0 Supported Firmware for Milan network systems (required for this update):

- GALAXY v2.0.0 (All models)
- Bluehorn 816 v2.0.0.

This firmware, along with the field service kit, fixes an issue with the real time clock not remembering the time and date after a power cycle. This version of Compass Control Software allows the installation of updated embedded firmware to support the RTC hardware field service kit.


Parts List

The GALAXY RTC Field Service kit and included assembly part numbers are listed below. Please verify that you have all items before you begin. See photograph in “RTC Service Procedure” on page 2.

MSL KIT NUMBER	MSL PART NUMBER	DESCRIPTION	QUANTITY
40.230.029.01		GALAXY RTC Field Service Kit	1
	24.230.029.01	GALAXY RTC PCB	1
	113.041	Washer, Flat, 0.115-inch, IDX 0.209-inch, 0.016-inch thick	1
	122.072	Standoff, M-F, 4-40x0.313-inch, 3/16-inch hex, brass	1
	500.016	Coin Cell Battery, 3 V, 2 Pin, HOR, 48mAh	1
	101.026	Screw, Panhead PHL/SLT, 4-40x0.25-inch, stainless steel	1

Tools and Support Items Required

- Phillips #1 screwdriver
- 3/16-inch nut driver
- Computer with Compass software installed:
 - Version 4.3.3 AM824 systems
 - Version 4.5.0 or later Milan (AAF) systems


 **NOTE:** An online version of this document and the firmware required for the update may be downloaded from:
<https://meyersound.com/product/galileo-galaxy/#firmware>

Pre-Installation Checks

We recommend the following pre-installation checks and precautions:

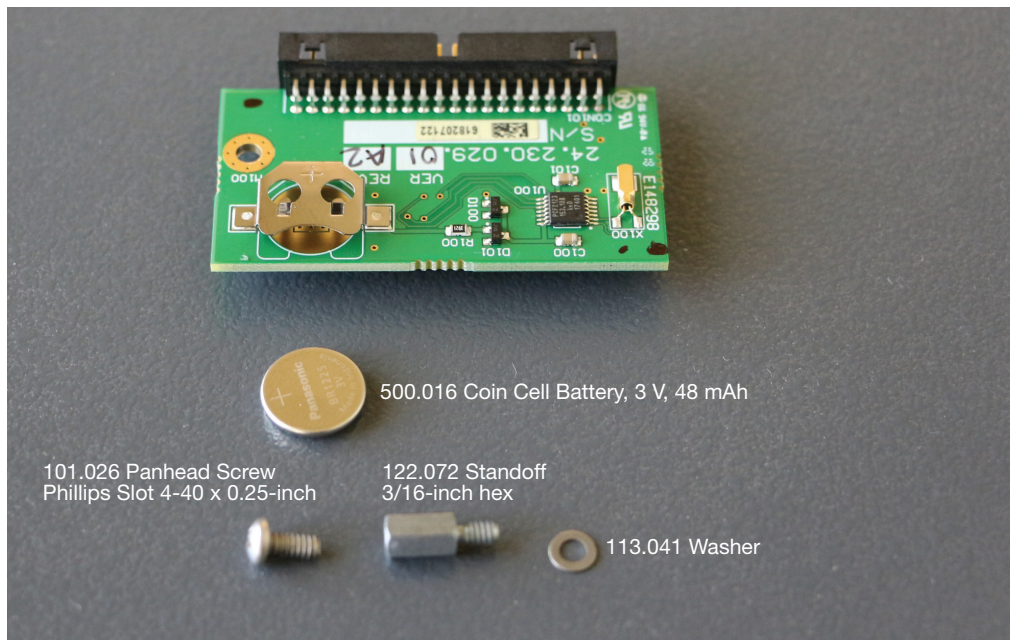
1. When servicing any electronic assembly, use a clean, low static bench and keep internal assemblies free of metallic debris.
2. Disconnect AC power before performing any work inside the chassis.
3. While individual electronic components are very sensitive to static electricity, the complete sub-assemblies and modules are relatively low in static sensitivity. It is always preferable to use a static control station, but in lieu of this, careful handling will minimize static damage. When reaching for an assembly (this is when the greatest static potential exists), never grab connector pins or component leads. Pick up and handle the assembly by its edges or mounting brackets. Always place assemblies on the same work surfaces, which should be a low static or semi-conductive surface. Avoid placing foam or plastic underneath objects as they hold capacitive/static charge.
4. Do not to bend any vertical components on the circuit boards as this stress can seriously shorten their life.
5. Clean any dirt, dust, or oil build-up in the chassis before reassembling.

RTC Service Procedure

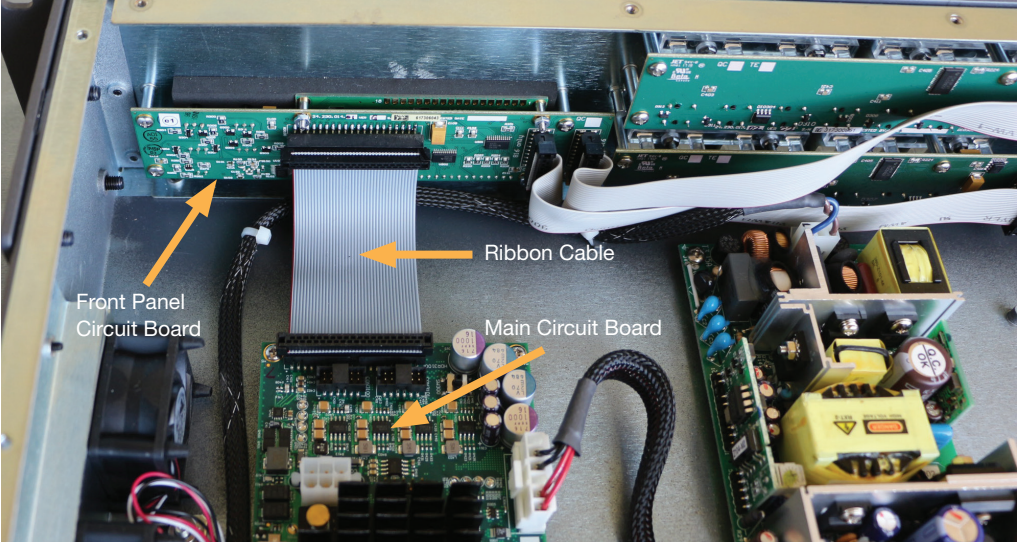
 **NOTE:** Each illustration pertains to the step above it.

To install the provided PCB and coin cell battery:

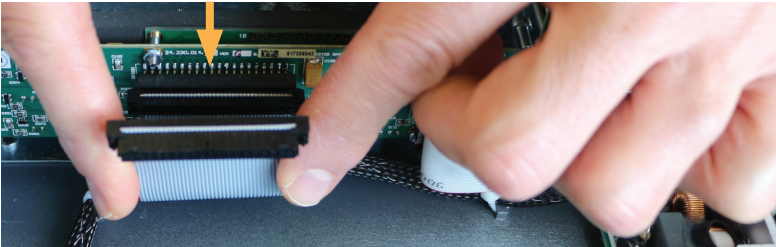
1. Identify the materials needed.



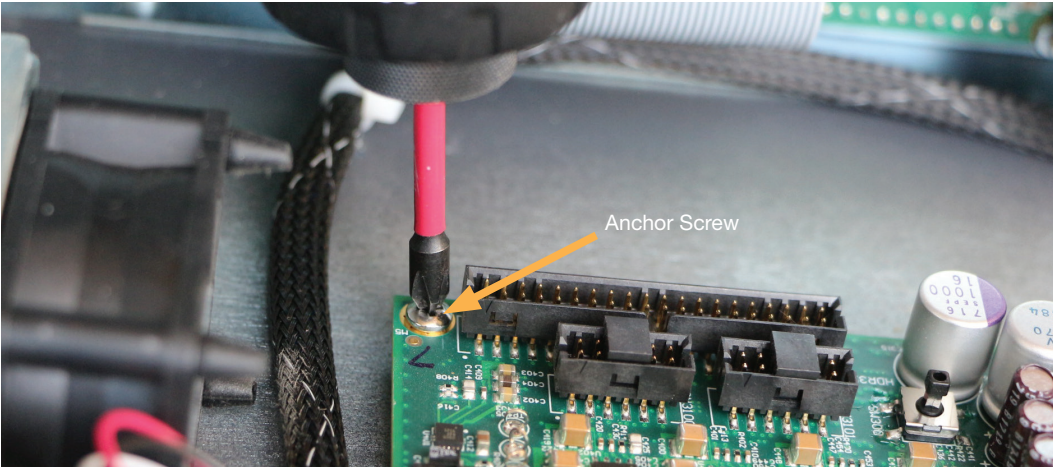
2. Use a #1 Phillips screw driver to carefully remove the top cover; locate the main PCB and the ribbon cable.



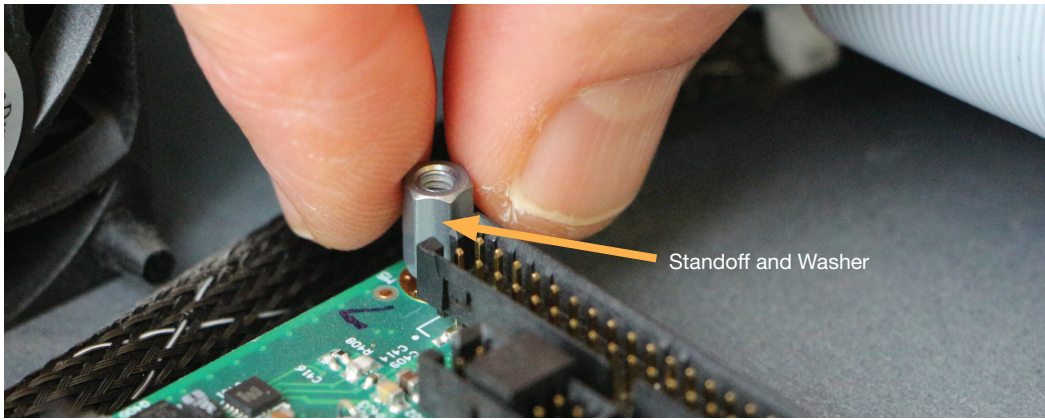
3. Disconnect the ribbon cable from the main PCB.



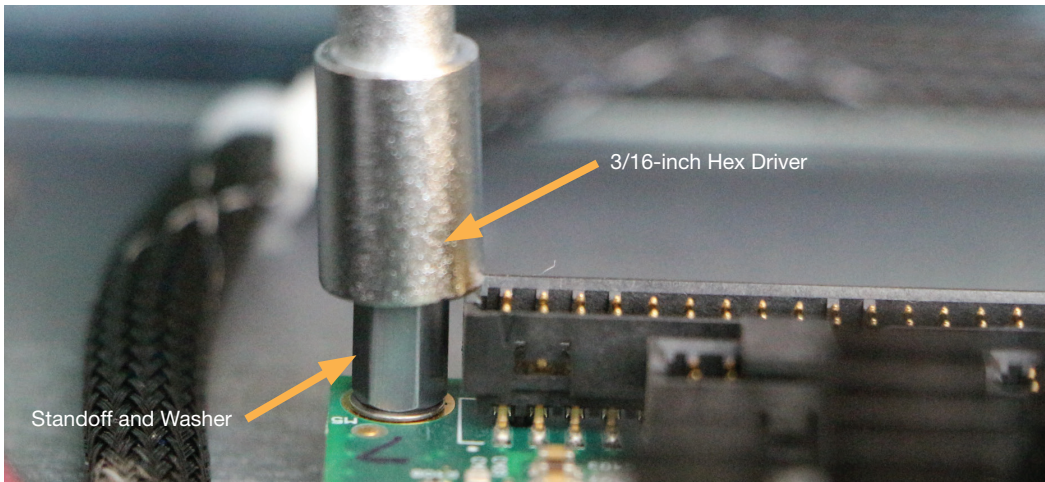
4. Remove the anchor screw next to the ribbon cable connector on the main PCB.



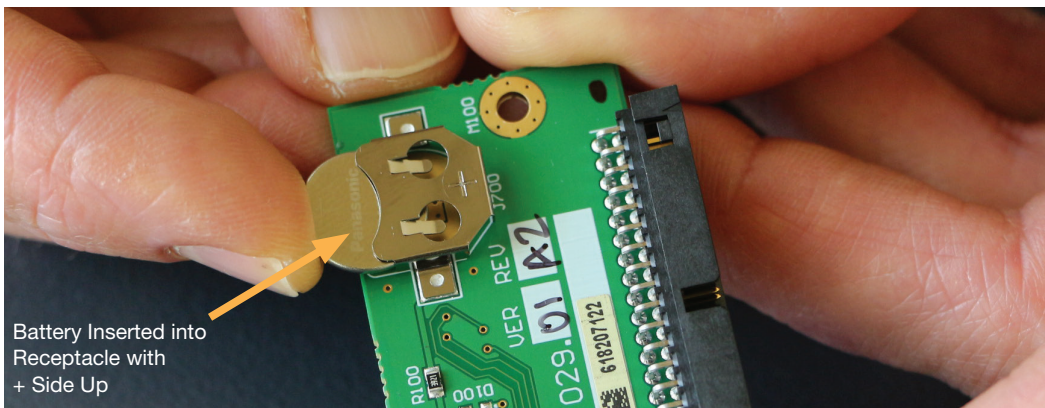
5. Install the washer and standoff on the main PCB where the anchor screw was located.



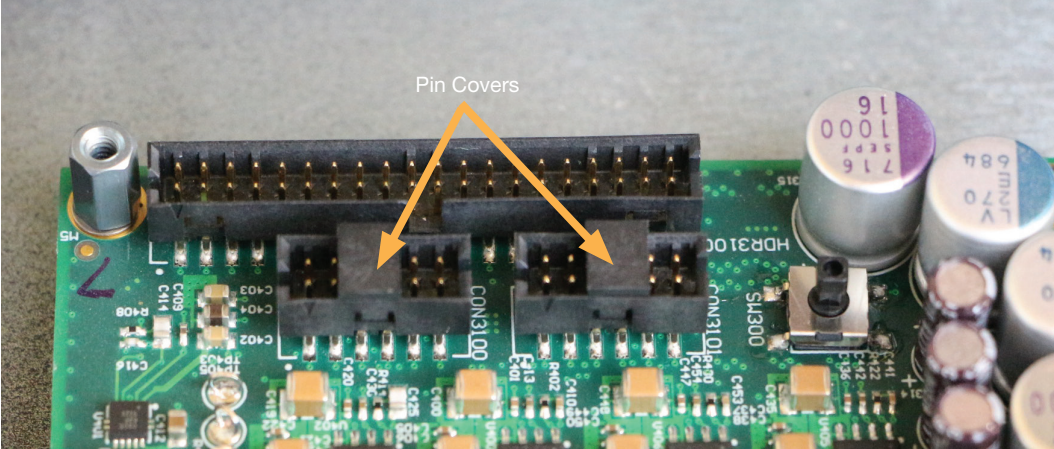
6. Loosely hand tighten the standoff using a 3/16-in nut-driver to 5–6 in-lbs (0.56–0.68 N·m) torque.



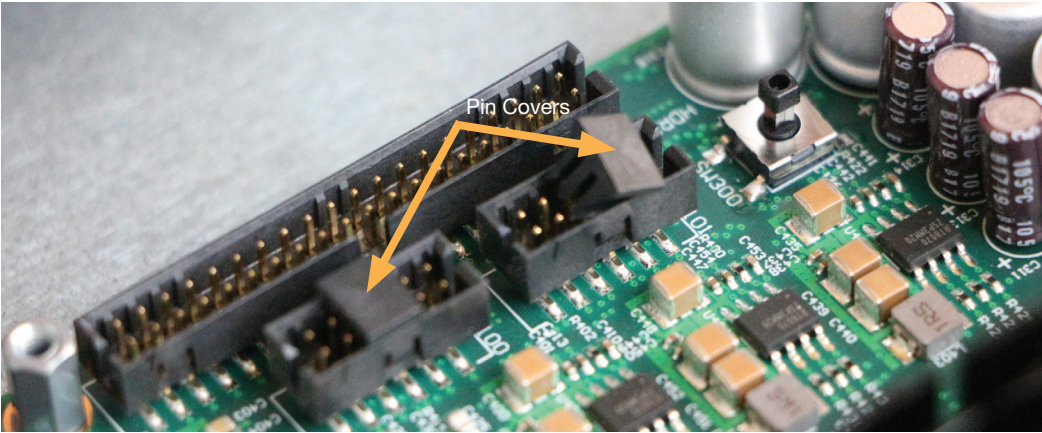
7. Before attaching the provided PCB to the main PCB, insert the battery into its receptacle. Make sure the battery is positive side up as shown below.



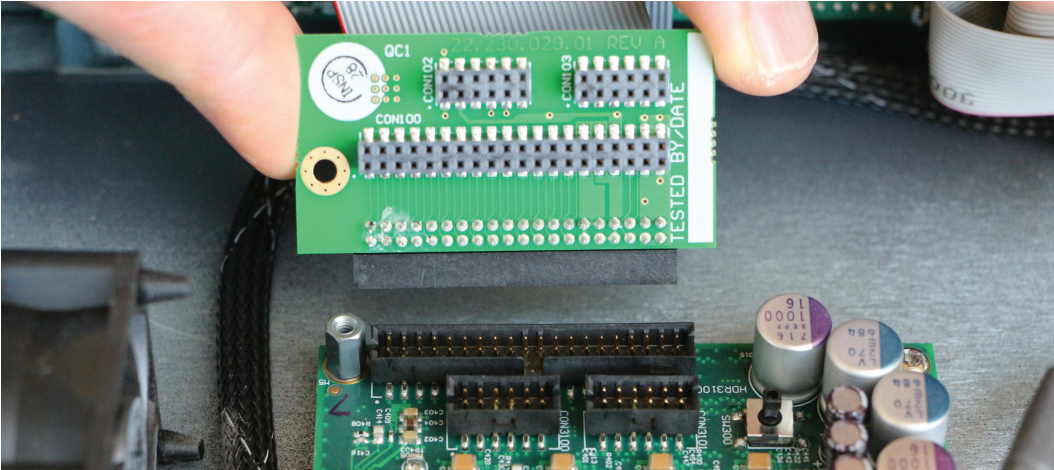
8. Locate the pin covers on the main PCB, adjacent to where the standoff was installed. These are the two plastic pieces that protect the unused pins and connectors.



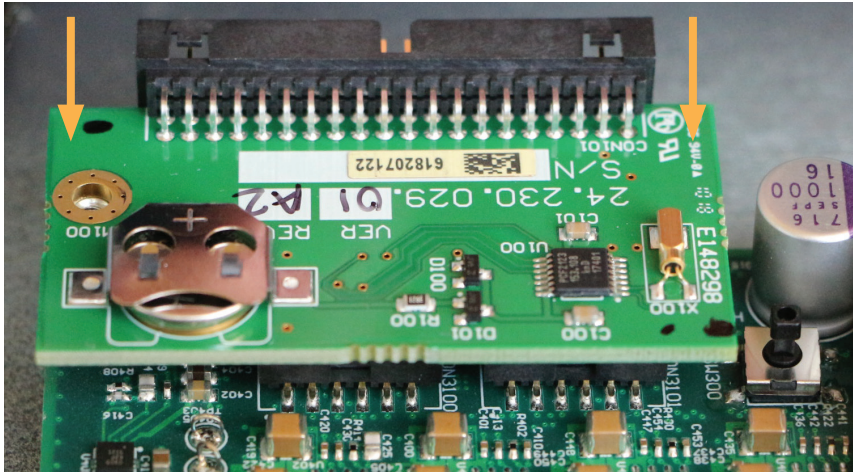
9. Remove the pin covers from each connector plug.



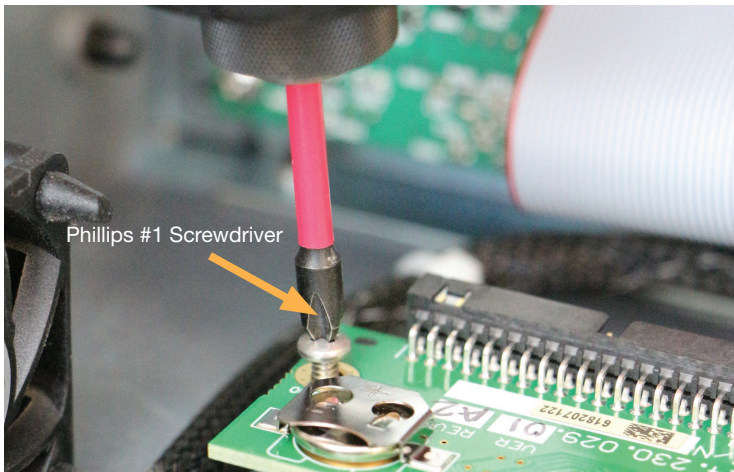
10. Orient the provided GALAXY RTC PCB as shown relative to the main PCB.



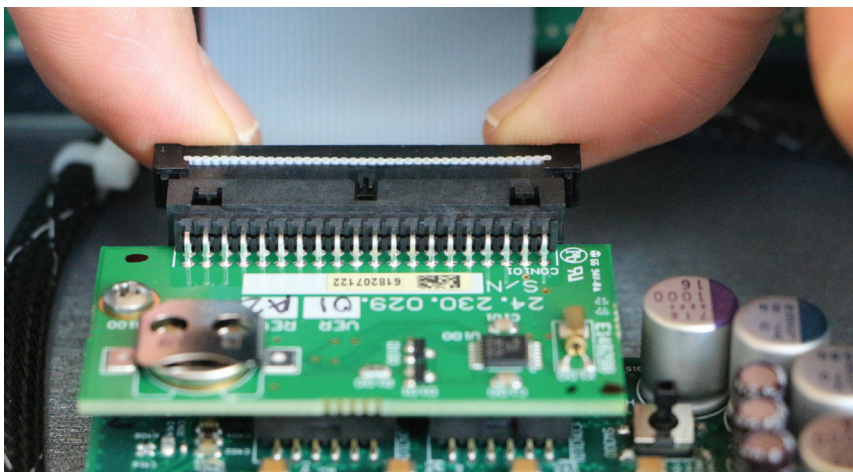
11. Insert the provided PCB into the main PCB, connecting all three connector plugs. Press down firmly to ensure all pins are properly seated in the connector plugs.



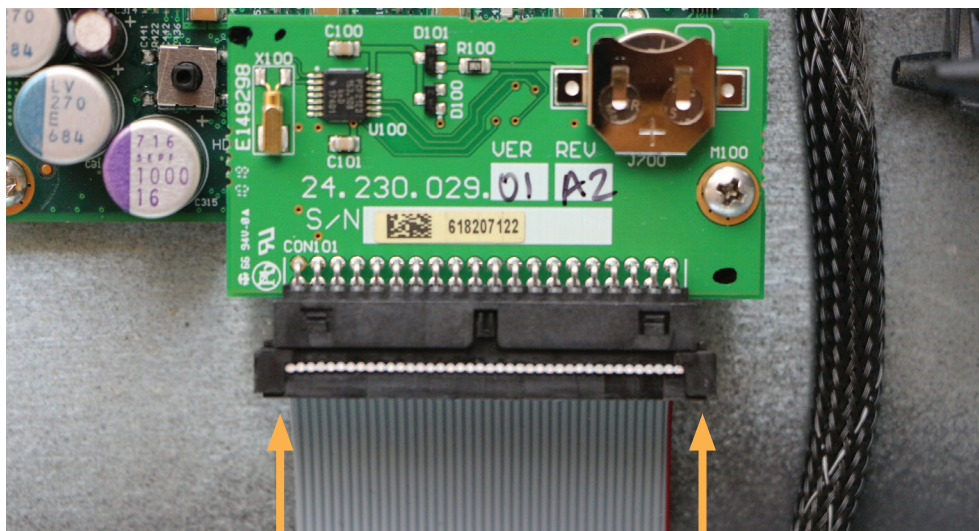
12. Fasten the provided PCB to the main PCB using the provided screw, applying 5–6 in-lbs (0.56–0.68 N·m) of torque.



13. Attach the ribbon cable to the provided PCB.



- Verify that the provided PCB is firmly attached to the main PCB and the ribbon cable is properly seated.



- Re-attach the top cover of the GALAXY device, applying 5–6 in-lbs (0.56–0.68 N·m) of torque.

Updating the Firmware

The GALAXY Network Processor must have updated embedded firmware uploaded to it so the new module can be activated. Please download the firmware from: <https://meyersound.com/product/galileo-galaxy/#firmware>.

Place the firmware file in one of the following locations:

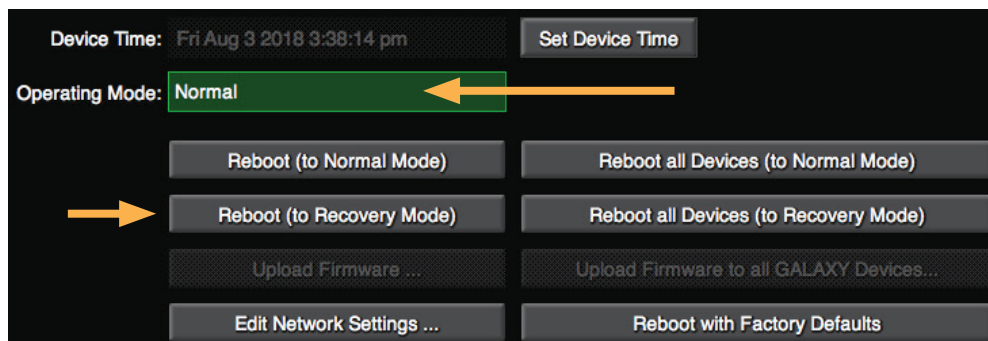
- Apple computer: /Applications/Compass v4.3.3.
- Windows computer: \Program Files (x86)\Meyer Sound\Compass 4.3.3

The GALAXY Network Processor requires device firmware version 1.3.2 or later loaded prior to this update.

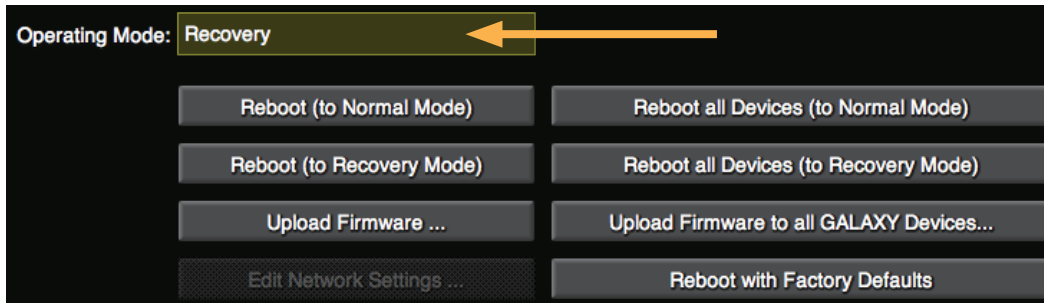
- Launch Compass 4.3.3 or later.

Skip to Step 7 if 1.3.2 firmware is already installed.

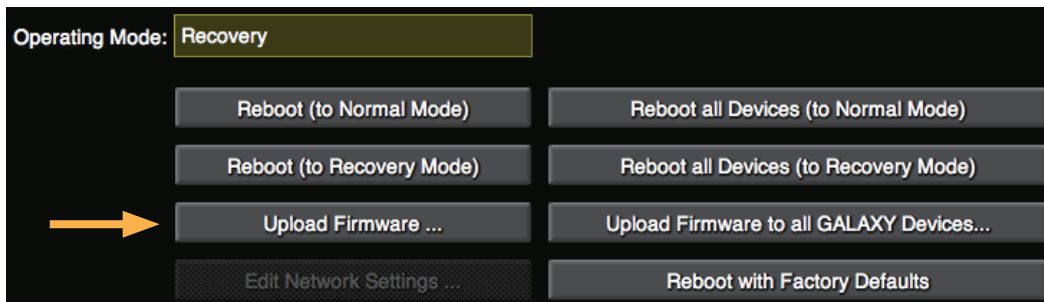
- Connect to the processor and go to **Settings > Network** and select **Reboot (to Recovery Mode)**.



3. Navigate to **Settings > Network**, and confirm Operating Mode is **Recovery**.

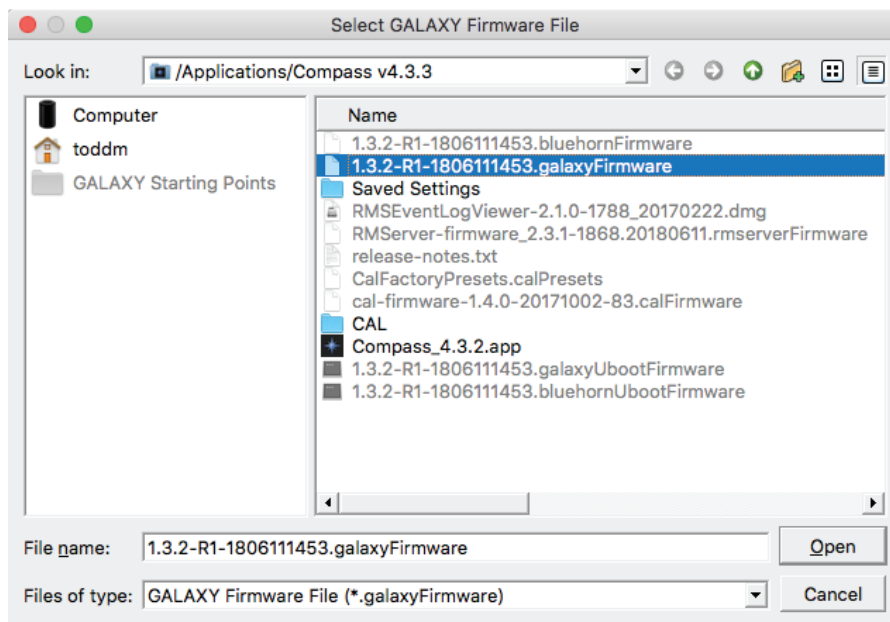


4. If 1.3.2 firmware is already loaded, skip to Step 7. Otherwise, click the **Upload Firmware** button

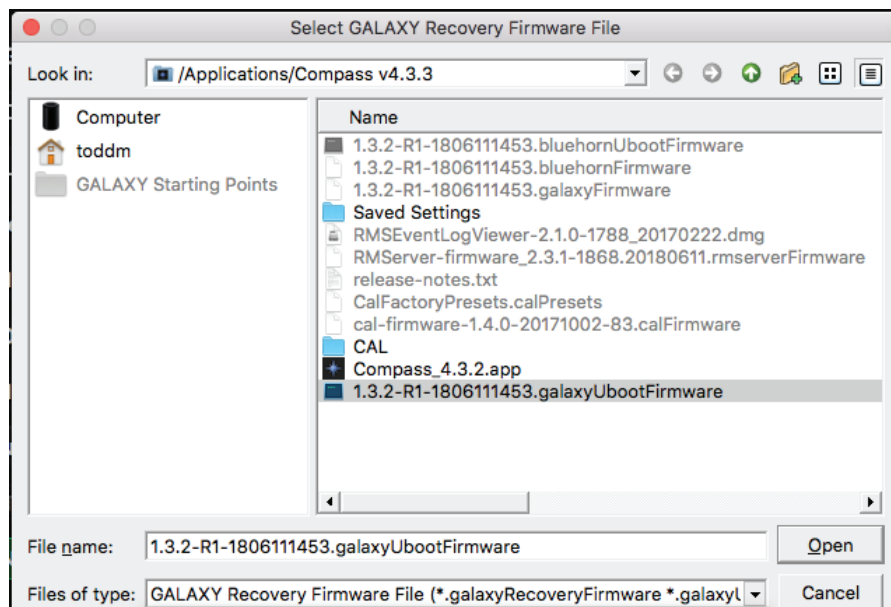


5. Select the 1.3.2 or later firmware file: **1.3.2-R1-1806111453.galaxyFirmware** for GALAXY processors or **1.3.2-R1-1806111453.bluehornFirmware** for Bluehorn processors. Firmware 2.0.0 or later will begin with “2.0.0-R.”

Once selected, the processor will begin the update process and automatically restart when completed.

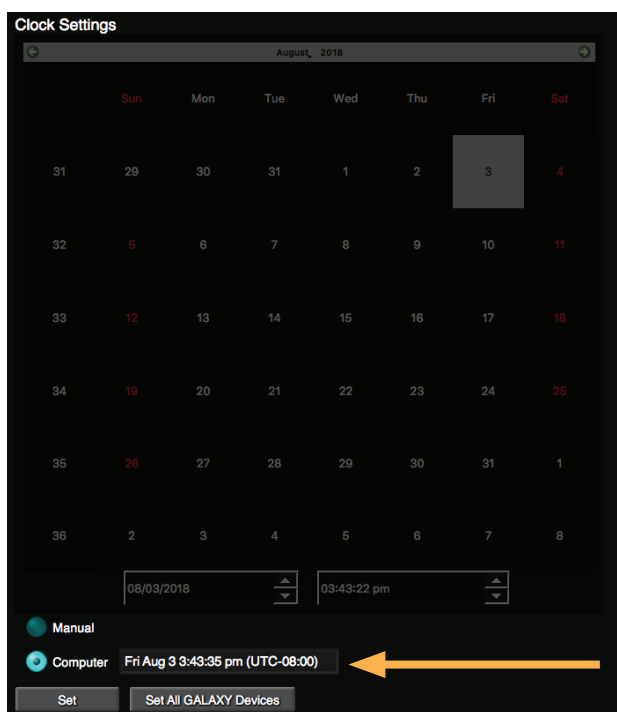


- Repeat Step 2 to **Reboot (to Recovery Mode)** and Step 3 to verify.
- Click the **Upload Firmware** button and select the U-boot firmware file from your computer to upload.



When loaded, the GALAXY automatically reboots into **Normal** Operating Mode, and the newly installed circuit board module will be enabled.

- With the new firmware installed, the date will default to **12/08/28**. In Compass, navigate to **Settings > Network**, click **Set Device Time**, and select Computer. Click **Set** or **Set All GALAXY Devices** to update this GALAXY device or all devices to the current time.



-
9. To verify the date is stored correctly in the system, you must restart the device. Wait 30 seconds for the old RTC circuit to discharge before rebooting.

The unit is now ready to use.