

Using ACEmanager to Upgrade Radio Module Firmware

APPLICATION NOTE

This application note, intended for Sierra Wireless customers and channel partners, describes how to update the radio module firmware (RMFW) manually as part of an ALEOS upgrade using ACEmanager. If you need to upgrade an existing inventory or prepare AirLink routers for deployment—without SIM cards installed—the necessary RMFW may not be automatically upgraded. After deployment, routers can be registered with ALMS and receive upgrades automatically.

Manual RMFW upgrades are especially important when new functionality is introduced, such as with the AT&T B14 Carrier Aggregation RMFW released in conjunction with ALEOS 4.14.0.

Important: *The radio module firmware upgrade must be performed using ACEmanager.*

The upgrade process includes the following steps:

1. Downloading new ALEOS software and RMFW firmware (see [Before You Begin](#) on page 1)
2. Upgrade ALEOS (see [Updating ALEOS and the Radio Module Firmware](#) on page 2)
3. Upgrade your existing radio module firmware (see [page 3](#))
4. If required, upgrade any radio module firmware stored on the router (see [page 4](#))
5. If required, install any new radio module firmware on the AirLink router (see [Installing New Radio Module Firmware](#) on page 6)
6. If required, enable radio firmware/network operator switching (see [page 7](#)).

Before You Begin

Note: If you are new to configuring and updating AirLink routers, see “Planning Your Update” and “Recommendations” in the applicable ALEOS Software Configuration User Guide, [available on the Source](#).

Download the latest ALEOS software:

1. Download the ALEOS software and required RMFW from the Source:
 - [MP70 software downloads page](#)
 - [LX60 and LX40 software downloads page](#)
 - [RV50 software downloads page](#)
 - [RV55 software downloads page](#)

Updating ALEOS and the Radio Module Firmware

This procedure shows you how to update your AirLink router's operating system (ALEOS) and how to update the current radio module firmware. If necessary, after completing this update, you can then add new RMFW for the radio module, as described in [Installing New Radio Module Firmware](#) on page 6.

Using ACEmanager to Update an AirLink Router

Note: For complete information, see the Configuration chapter in the ALEOS Software Configuration User Guide.

To update the ALEOS software and current RMFW:

1. Connect the AirLink router you want to update to your laptop, and log in to ACEmanager.
2. Click the Software and Firmware button.

The Software and Firmware update window opens.

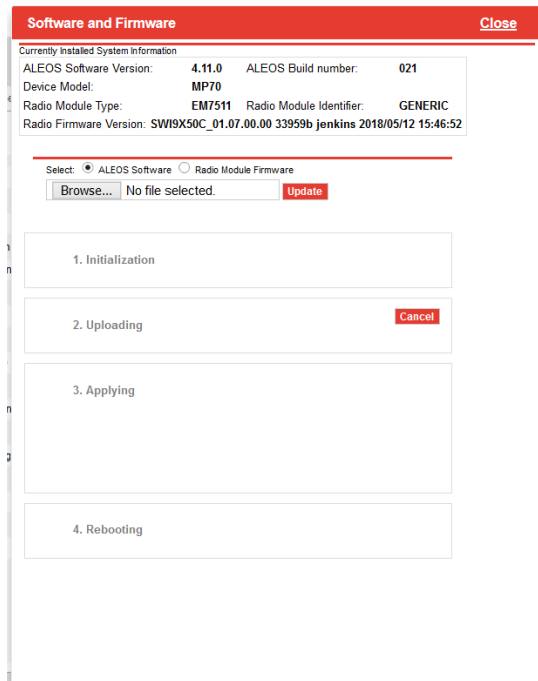


Figure 1: Software and Firmware update window

3. Click **Select ALEOS software** (which updates ALEOS and prompts you to update the RMFW if a newer version is available for your router).
4. Click Browse... and navigate to the ALEOS software you downloaded from the Sierra Wireless Web site. This is a .bin file named for the device and the ALEOS software version. For example, MP70_4.14.0.014.bin.
5. Click Update.

The ALEOS software update runs automatically and green check marks appear beside each step as it is completed.

Important: *Do not disconnect the router from the computer, and do not power cycle or reset the router during the update.*

You may be prompted to update the current RMFW.

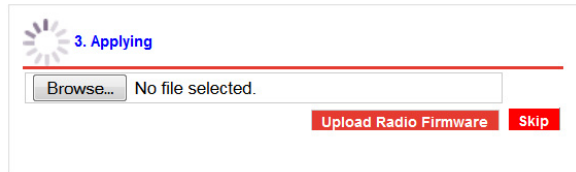


Figure 2: Prompt for Radio Module Firmware

6. Under Applying, click Browse... and navigate to the RMFW file you downloaded. This is an .iso file named for the gateway's radio module and the operator's network. For example, EM7511_01.14.02.00_GENERIC_002.035_000.iso.

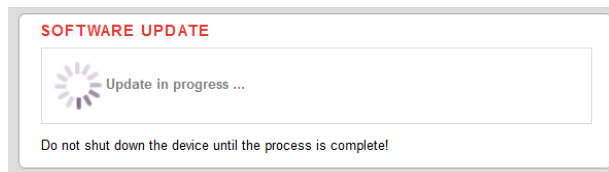
Note: To use FirstNet Carrier aggregation on the AT&T network, upload EM7511_01.14.02.00_ATT_002.047_000.

7. Click Upload Radio Firmware.

A message appears on the window indicating that the firmware has been successfully uploaded. Once the radio module firmware is uploaded, the router begins applying the firmware upgrade.

Important: *Do not disconnect the AirLink router from the computer or reboot the device while the firmware update is in progress. During the RMFW update, the router LEDs flash rapidly in sequence (an LED chase or caterpillar). When the RMFW update is complete, the router reboots automatically.*

8. When the update is complete, the AirLink router reboots. The Software Update progress window appears.



When the reboot is complete, you are returned to the Login screen.

9. After you log in, go to Status > About (see [Figure 3](#)).
10. Click Refresh.
11. Check the ALEOS Software Version, Radio Firmware Version and Carrier PRI ID fields to confirm that the ALEOS software and the RMFW have been updated.

Note: The Carrier PRI ID is often the most important update indicator. With some updates, the Radio Firmware Version may not change.

If you intend to deploy the router with the RMFW and carrier shown on the Status > About screen, no further action is required. If you need to add RMFW for a different carrier, please see the next section.

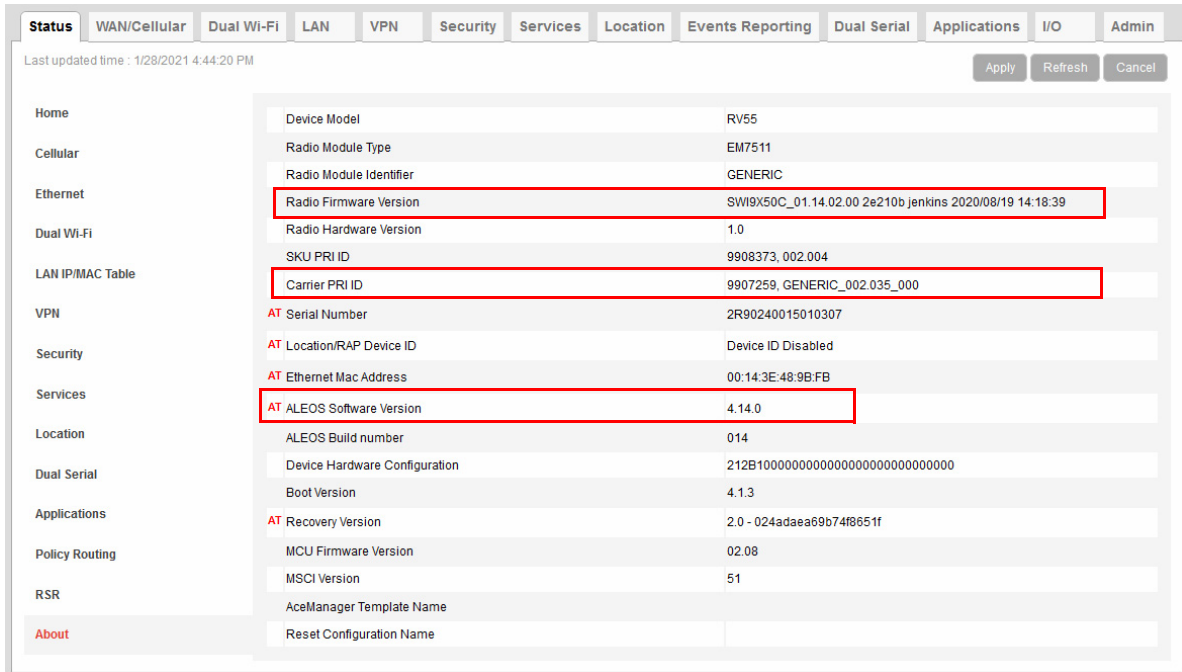


Figure 3: ACeManager: Status > About

Updating Radio Module Firmware Stored on the Router

After an ALEOS update, you may need to update RMFW that is already stored on the router, but is not currently in use. You might use this stored RMFW for another carrier's SIM card when the router is eventually deployed.

To update RMFW stored on the router:

1. In ACeManager, go to Admin > Radio Module Firmware.
2. Under Firmware, check the list of firmware stored on the router. In the example shown in [Figure 4](#), we are interested in AT&T RMFW.

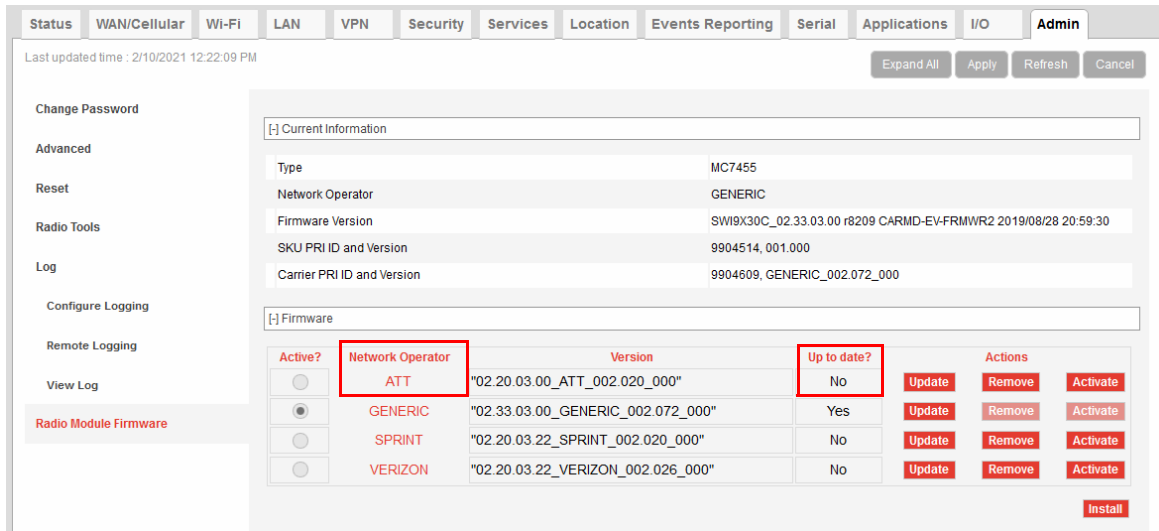
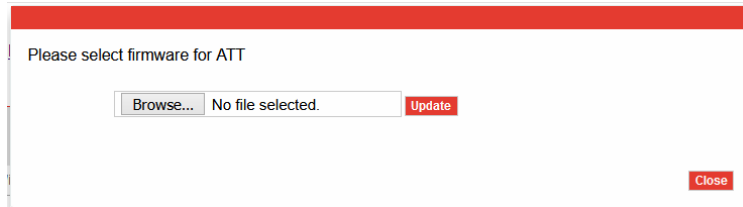
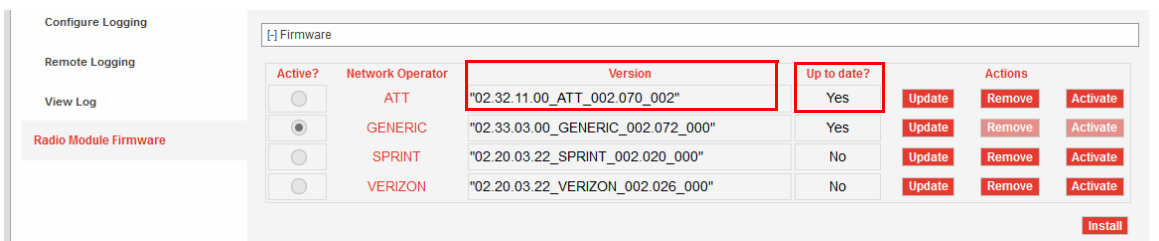


Figure 4: Radio Module Firmware List

3. If you see the desired Network Operator, check the **Up to date?** column.
 - a. If you don't see the desired Network Operator, see [Installing New Radio Module Firmware](#) on page 6.
 - b. If the **Up to date?** status is **No** for the desired RMFW, proceed to Step 4.
4. If you have not already done so, download the latest RMFW for the radio module and Network Operator. See [Before You Begin](#) on page 1.
5. Click **Update** for the desired Network Operator. A file upload window appears.



6. Click **Browse...** and navigate to the desired RMFW file, and then click **Update**. The RMFW and the **Up to date?** status are updated.



Installing New Radio Module Firmware

To install new RMFW on the AirLink router:

1. In ACEmanager, go to Admin > Radio Module Firmware.

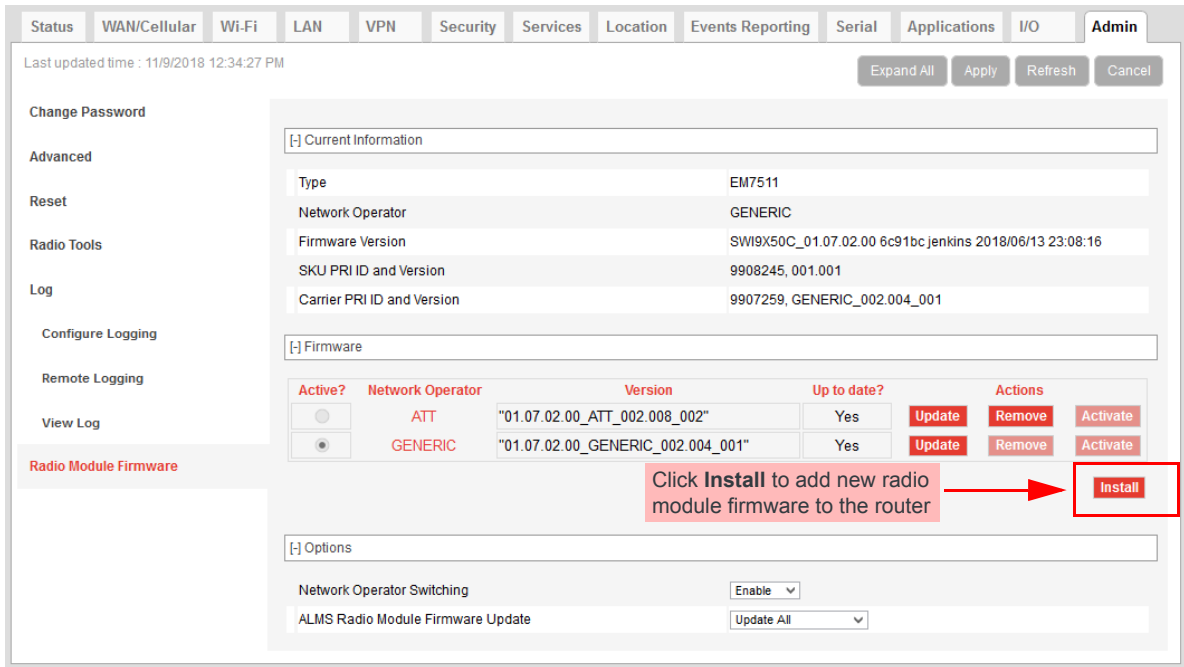
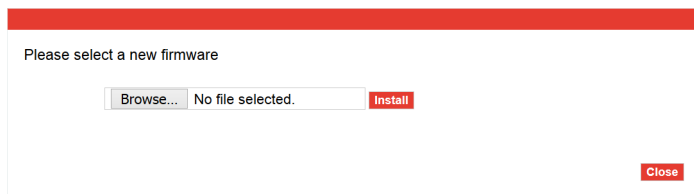


Figure 5: ACEmanager: Admin > Radio Module Firmware

2. Click **Install** to add new RMFW image to the router storage. The “Please select a new firmware” window appears.



3. Click **Browse...** and navigate to the desired RMFW file that you downloaded earlier (see [Before You Begin](#) on page 1).
4. Click **Install**.

Note: When the maximum number of radio module firmware versions are stored on the router, the Install button is not available. To free up space to add another version, remove one of the firmware versions on the router.

After installing the new firmware, you can confirm that it has been added to the firmware list as shown in [Figure 6](#).

Figure 6: ACEmanager: Admin > Radio Module Firmware

Figure 6: ACEmanager: Admin > Radio Module Firmware

- Under **Options**, enable Network Operator Switching. When Network Operator Switching is enabled, the router automatically selects and uses the appropriate RMFW for the installed SIM card. For multi-SIM routers, if there is no SIM card installed in the primary SIM card slot, the router switches to the SIM card in the secondary SIM card slot.

Document History

Revision number	Release date	Changes
1	February 2021	First release

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