

XIP Instrument Operating System Update Procedure

Firmware updates for the XIP instruments are fast and easy, particularly when using a network connection to automatically download and apply the update. Operating system (OS) updates are more involved and require direct loading through a USB flash drive. This document explains the process of accessing the OS update files and loading them onto an instrument. Current XIP instruments are:

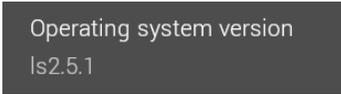
- MeasureReady™ 155 Precision I/V Source
- F71/F41 Teslameters
- MeasureReady™ M91 FastHall™ Measurement Controller
- MeasureReady™ M81 Synchronous Source Measure System

Please note that performing an operating system update should not be a common activity for users. Manually confirm that an update is required for your instrument before proceeding as there is no automated way for your instrument to know whether the OS requires the update.

View the XIP Instrument OS Version

To view your firmware version:

1. Open the System settings menu.
2. Click the About tab.
3. Click Firmware version.
4. Scroll to the bottom of the screen to see operating system version (for example, the OS version shown here is 2.5.1).



Operating system version
Is2.5.1

NOTE: After upgrading from version 2.4.3 or older to version 2.5.1 or newer, you will need to use hardware handshaking* to remotely communicate with the instrument’s USB serial port (virtual COM port). Flow control was added to enable stable high-speed data transfer. RTS/CTS flow control must be selected when communicating with the device after the update. **Connection setups that previously worked with the instrument will no longer connect.**

*The MeasureReady™ 155 Precision I/V Source does not require hardware handshaking.

OS Update Procedures

Starting with OS version 3.0.0, we have improved the OS update experience by implementing patch updates, which retain all prior instrument configurations, providing a much better update experience for our customers. However, this change may add some complication in determining which OS update to apply to your instrument.

- If your instrument is running OS version 3.0.0 or newer, you must apply the **OS Update Patch Procedure**.
- If your instrument is running an OS version prior to 3.0.0, for example, version 2.6.4 (shown as “Is2.6.4”), then you must apply the **OS Update Flash Procedure**.

To update the firmware, please follow the instructions provided on our website for installing typical firmware updates (without updating the OS). Firmware version information can also be found on the **Downloads** page of the instrument on our website: www.lakeshore.com.

OS Update Patch Procedure (OS versions 3.0.0 or newer)

Download the OS Update Patch

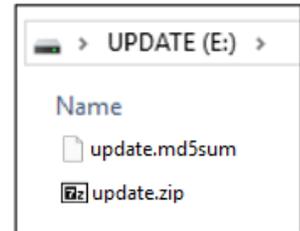
1. Find the latest OS update patch download link in the instrument changelog, which can be found under the instrument's Download tab on the Lake Shore website.

NOTE: The file may be several hundred megabytes in size.

2. Extract the zip file (unzip) to the root directory of an empty USB flash drive, formatted as "FAT32." There should be two files within the downloaded zip file named "update.zip" and "update.md5sum".

NOTE: Do not copy the downloaded zip file directly to the USB flash drive. The instrument is not capable of accessing files inside the zipped file.

3. Once complete, the files will be located in the highest-level directory of the USB flash drive (as an example, see the figure to the right).

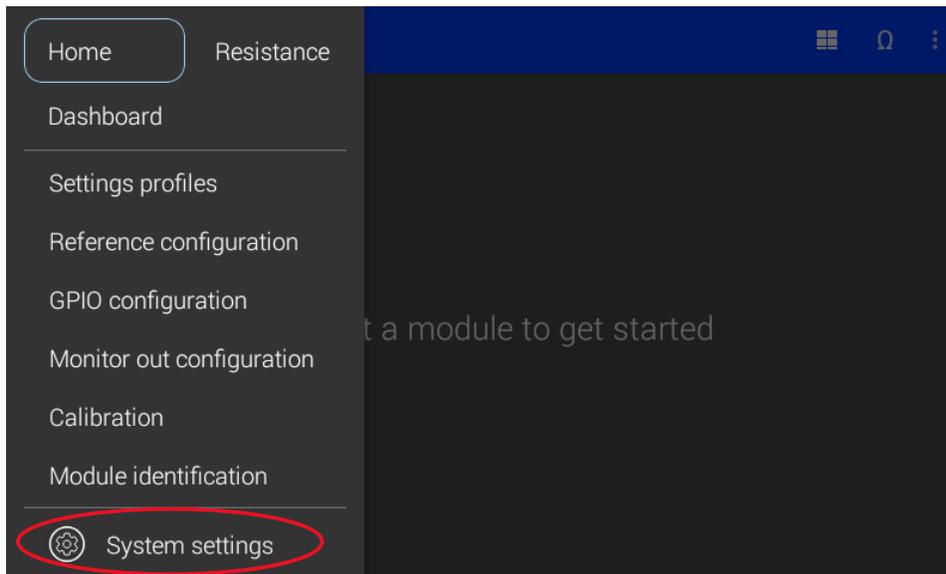


Install the OS Update Patch

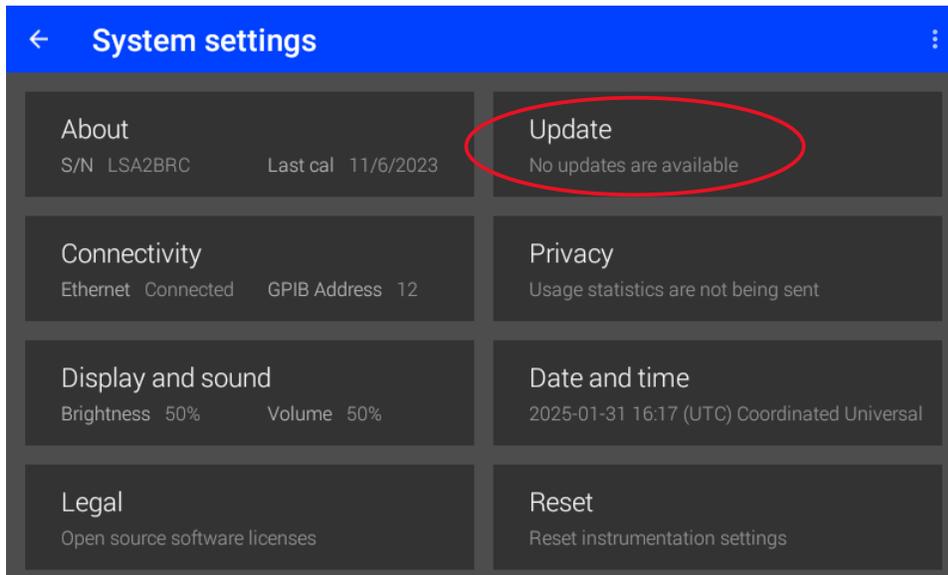
1. Plug the flash drive into the USB-C port in the back of the instrument. Use the provided adapter if you do not have a USB-C flash drive.

2. Open the System Settings menu on the front panel of your instrument (screenshots below are from the MeasureReady™ M81 synchronous source measure system, but other XIP instrument screens will look similar after opening the System Settings menu.)

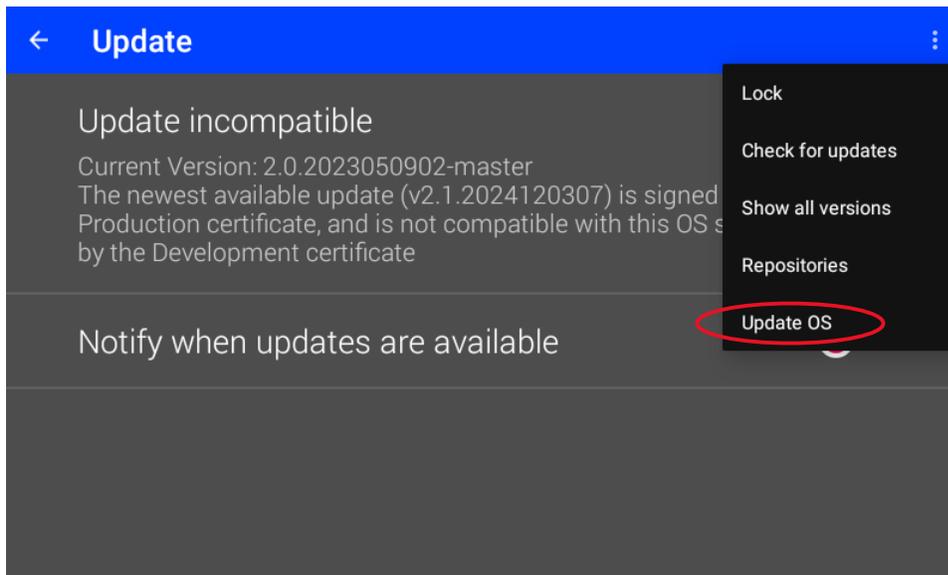
NOTE: The System Settings menu in the MeasureReady™ M81 FastHall™ measurement controller is opened from the gear icon at the top of the main display, rather than the slide-out menu on the other instruments.



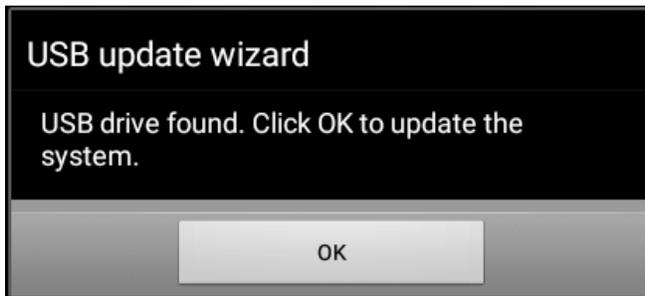
3. Click **Update** to open the update page.



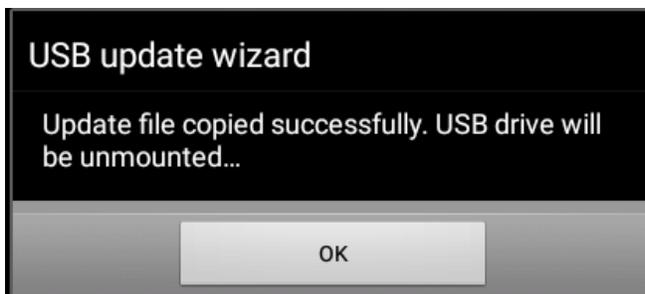
4. Click the three dots in the top right corner of the screen, then select **Update OS** from the drop-down menu.



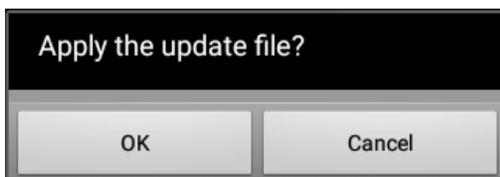
- The attached USB drive appears in the following OS update application dialog box.



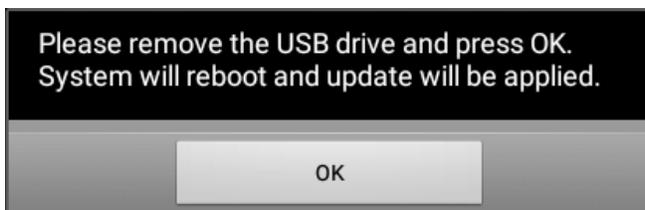
- Click **OK**. The file is copied from the USB drive, which could take up to a few minutes to complete.
- Click **OK** from the following dialog box.



- To apply the update, click **OK** from the next dialog box.

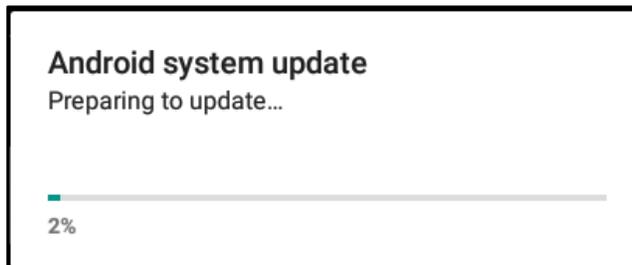


- To initiate the update, remove the USB drive and click **OK** from the following dialog box.



10. The update will begin.

NOTE: The instrument will cycle through a few screens and may reboot multiple times, eventually returning to the instrument main screen.



OS Update Flash Procedure (OS versions prior to 3.0.0)

Download the OS Update

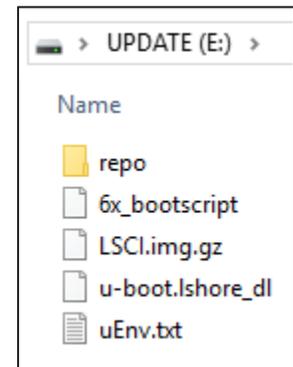
1. Find the latest OS download link in the instrument changelog, which can be found under the instrument's download tab on the Lake Shore website.

NOTE: The file may be several hundred megabytes in size.

2. Extract the zip file (unzip) to the root directory of an empty USB flash drive, formatted as "FAT32."

NOTE: Do not copy the downloaded zip file directly to the USB flash drive. The instrument is not capable of accessing files inside the zipped file.

3. Once complete, you should see files in the highest-level directory of the USB flash drive (as an example, see the figure to the right).



Install the OS Update

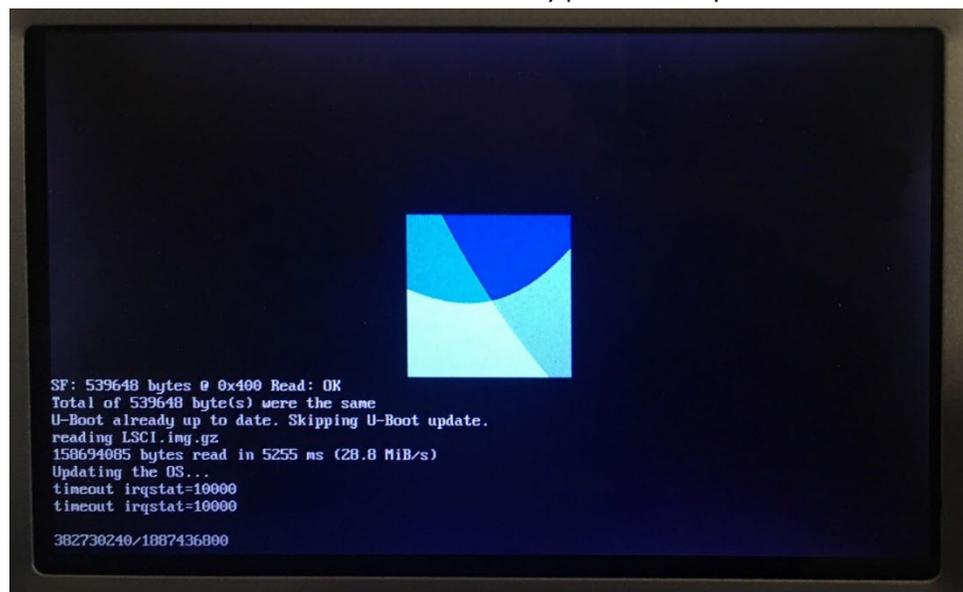
1. Plug the flash drive into the USB-C port in the back of the instrument. Use the provided adapter if you do not have a USB-C flash drive.
2. Reboot the instrument by firmly holding down the power button for 5 seconds until it turns off. Make sure the instrument is fully off. If the power light is blinking slowly, it is only in sleep mode. Turn the instrument off again, or unplug the instrument from its power source.



3. Press the power button again until it turns on, or return power to the instrument. The update process will begin automatically. The update process should take 5 to 10 minutes. None of the standard instrument functionality is available during the update.

NOTE: Do not turn the instrument off or remove the USB flash drive at any point in this process.

4. If the instrument reboots normally or skips the steps shown in the images below, your USB flash drive might not be compatible with this process. Try a newer flash drive to see if the problem is resolved. Also, make sure that the files are in the root directory of the flash drive. The top-level folder when opening the flash drive is the "root" folder.



5. Once the OS is updated, the instrument will automatically install the firmware that is specific to that instrument.



6. When complete, the instrument will return to its home screen and be fully functional again. Remove the USB flash drive, otherwise the operating system will be reinstalled every time the instrument boots up.

NOTE: The instrument firmware installed during the update may not be the most recent version available. Firmware version information can also be found on the **Downloads** page of the instrument on our website: www.lakeshore.com.