

Application Note AN017

Fox ESS H1-G2 Firmware Update Guide

Updating firmware on the Fox ESS H1-G2 hybrid inverter using a USB drive

Overview

The Fox ESS H1-G2 inverter uses three separate firmware components: Master ("Main CPU"), Slave ("Slave CPU"), and Manager (sometimes referred to as "HMI" or "Comm" on the inverter display). Each controls a distinct aspect of inverter operation and must be updated individually. Firmware files are supplied by Fox ESS Support as a ZIP archive and must be extracted onto a correctly prepared USB drive before the update can be performed. Alternatively a pre-prepared update USB drive can be requested from Levelise at support@levelise.com.

This note covers how to obtain the firmware, prepare the USB drive, and perform the update safely. If you have been provided with a USB drive and have performed the process before, please feel free to follow the **Quick Summary** section.

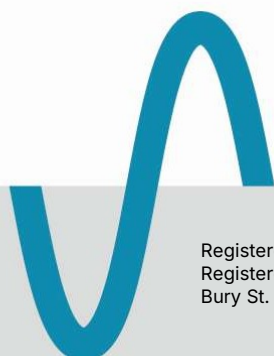
When troubleshooting this process, first review any text marked **Important**.

What You'll Need

- USB drive – 32 GB or smaller, formatted FAT16 or FAT32 (provided on request)
- Fox ESS firmware files (ZIP archive from Levelise Support if creating your own drive)
- PC or laptop with internet access
- Small flathead screwdriver (to remove USB port cover on inverter)

Compatibility

- H1-3.0-E-G2 / H1-3.7-E-G2 / H1-4.6-E-G2 / H1-5.0-E-G2 / H1-6.0-E-G2
- AC1-3.0-E-G2 / AC1-3.7-E-G2 / AC1-4.6-E-G2 / AC1-5.0-E-G2 / AC1-6.0-E-G2



Quick Summary for Experienced Users

Important: If connected, unplug the Hub 2-Inverter RS485 cable from the Hub 2 port before starting the update as this can interfere with the update process.

1. Insert the update USB drive into the USB port on the inverter (port F, labelled "WiFi/4G/USB"). The LCD display will automatically detect the drive and show the "FW Upgrade" menu.
2. Select the component to update starting with "Main CPU", as follows:
 - a. Use the Up (^) and Down (v) buttons to highlight the component you wish to update (e.g. "Main CPU").
 - b. Press OK (✓) to confirm the selection.
 - c. Confirm to proceed.

WARNING: Always update in the order: Master ("Main CPU") first, then Slave ("Slave CPU"), then Manager ("HMI"). Updating Manager before Master can cause firmware incompatibilities that may require specialist recovery.

3. Wait for the update to complete - the LCD will display progress.

Important: Do not remove the USB drive or power off the inverter while the update is in progress.

4. When the update is complete the LCD will show a success message and return to the "FW Upgrade" menu.

Important: After updating the each component, allow the inverter to restart fully before moving on to the next step.

5. Repeat the steps 2-4 above to update the next component in the following order: Main CPU → Slave CPU → HMI,
6. After updating the final component ("HMI"), remove the USB drive and replace the waterproof port cover.
7. If disconnected, reconnect the Hub 2-Inverter RS485 cable to the Hub 2 port.



Detailed Steps-by-Step Guide

1. Check Current Firmware Versions

Before starting, note the currently installed versions so you can confirm the update was successful afterwards.

- On the inverter control panel, navigate to Menu → About → Inv Ver
- Record the current Master, Slave, and Manager (Comm) version numbers

Note: Version numbers are displayed as Vx.xx (e.g. V1.47). Compare these to the versions in the firmware ZIP filename or Fox ESS release notes to confirm an update is needed.

2. Obtain the Firmware Files

- Contact Levelise Support to request the latest compatible firmware package

Important: Files must be requested from Levelise Support, not Fox ESS, to ensure compatible versions are used.

3. Prepare the USB Drive

This step must be completed on a PC or laptop before going to the inverter.

Verify or reformat the USB drive:

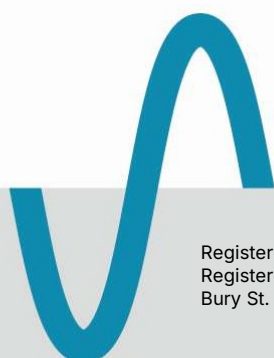
- Use a USB 2.0 drive of 32 GB or smaller. **USB 3.0 drives are NOT supported.**
- The drive must be formatted as FAT16 or FAT32. **exFAT, NTFS and APFS will not work.**

To reformat on Windows:

- Right-click the drive in File Explorer → Format
- Set File system to FAT32, leave Allocation unit size at Default
- Tick Quick Format, then click Start

To reformat on macOS:

- Open Disk Utility → select the drive → Erase



- Set Format to MS-DOS (FAT).

Create the folder structure and copy firmware files:

- On the root of the USB drive, create a folder named 'update' (lowercase).
- Inside 'update', create a subfolder for each component you are updating: 'master', 'slave', and/or 'manager' (all lowercase).
- Copy the firmware .bin file for each component into its corresponding subfolder. Do not rename the files unless downgrading the installed firmware version, as described below:
 - It is sometimes necessary to downgrade the inverter firmware to an earlier version — for example, to restore compatibility with Hub 2.
 - When downgrading, the filename must be modified so that its version number is greater than the currently installed version. Only change the version number portion of the filename.
- Example – downgrading Manager from V1.58 to V1.44

Filename	
Original file	10-300-13007-14_H1_G2_Manager_V1.44.bin
Renamed for downgrade	10-300-13007-14_H1_G2_Manager_V1.58.bin ← version changed to value > currently installed

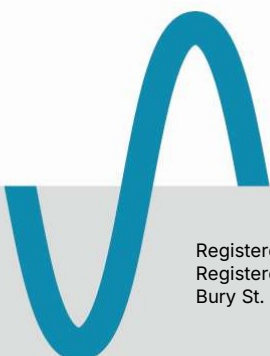
- Safely eject the USB drive from the PC before proceeding.

Important: Ensure the firmware files are unzipped — placing the original ZIP file or a nested ZIP inside the folder will not work.

4. Verify the Inverter is Ready

- Confirm the inverter is operating normally (green LED indicator).
- Confirm the battery is connected and has sufficient charge. Do not begin an update if the battery is nearly depleted.
- Do not schedule the update during periods of likely power interruption.

WARNING: The inverter must remain powered on and the battery must remain connected for the entire duration of the firmware update. A power loss or battery disconnection during an update can corrupt the firmware and may require specialist recovery.



Important: If connected, unplug the Hub 2-Inverter RS485 cable from the Hub 2 port for the duration of the update process as this can interfere with the update process.

5. Perform the Firmware Update

Repeat this process for each component, starting with Master, then Slave, then Manager (HMI).

Insert the USB drive:

- Locate the USB port (port F, labelled 'WiFi/4G/USB').
- Unscrew or lever off the waterproof port cover or remove any dongle plugged into it.
- Insert the USB drive. The LCD display will automatically detect the drive and show the "FW Upgrade" menu.

Note: If the LCD does not show the "FW Upgrade" menu, check that the drive is correctly formatted (FAT16/FAT32) and that the 'update' folder and component subfolders exist at the root of the drive.

Select the component to update:

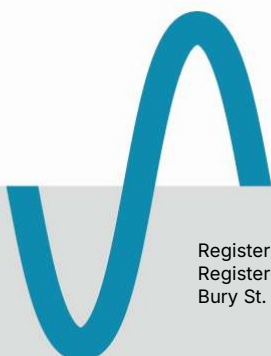
- Use the Up (^) and Down (v) buttons to highlight the component you wish to update (e.g. Main CPU).
- Press OK (✓) to confirm the selection.
- Confirm to proceed.

Important: The 'Main CPU' menu item corresponds to the 'Master' component, Slave CPU to 'Slave' and HMI to 'Manager'.

Wait for the update to complete:

- The LCD will display progress.
- When the update is complete the LCD will show a success message.
- Remove the USB drive and replace the waterproof port cover.

Important: Do not remove the USB drive or power off the inverter while the update is in progress.



Update the next component:

- Repeat steps 6 above for the Slave component, then again for the Manager (HMI) component.

Important: After updating the Master firmware, allow the inverter to restart fully before inserting the USB drive again to update Slave or Manager (HMI).

6. Verify the Update

- On the inverter control panel, navigate to Menu → About → Inv Ver.
- Confirm that the Master, Slave, and Manager (Comm) version numbers now match the versions supplied in the firmware package.
- Check that the inverter returns to normal operation (green LED, no fault codes on the display).

Note: If a component shows its previous version number after the update, re-check the folder name and file name on the USB drive, then repeat the update for that component.

Additional Resources

- Fox ESS H1-G2 User Manual — available at fox-ess.com/downloads
- Fox ESS Firmware Release Notes — fox-ess.tech/firmware-release-notes
- Fox ESS Technical Support — support@fox-ess.com
- Fox ESS Community Forum — foxesscommunity.com

