

Athena II – 16k 8-bit FPGA Board Swap Instructions

Overview

These instructions explain how to replace the existing **3-bit FPGA board** with the **16K 8-bit FPGA board** in the Athena II printer.

Please read the entire guide before starting. If you have any questions, please contact us at info@concepts3d.ca

Before You Begin

Important

- Power off the printer and unplug the power cable before starting.
 - Allow the printer to cool for several minutes before working inside the enclosure.
 - **Remove the resin vat and build plate from inside the print chamber before continuing.**
 - This prevents the vat or build plate from falling out and avoids resin spills when the printer is placed on its side.
 - Work on a clean, static-safe surface.
 - Take photos before disconnecting cables if you want a reference during reassembly.
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Required Tools

- **3 mm hex key** (for bottom cover screws)
- **2 mm hex key** (for FPGA board screws)

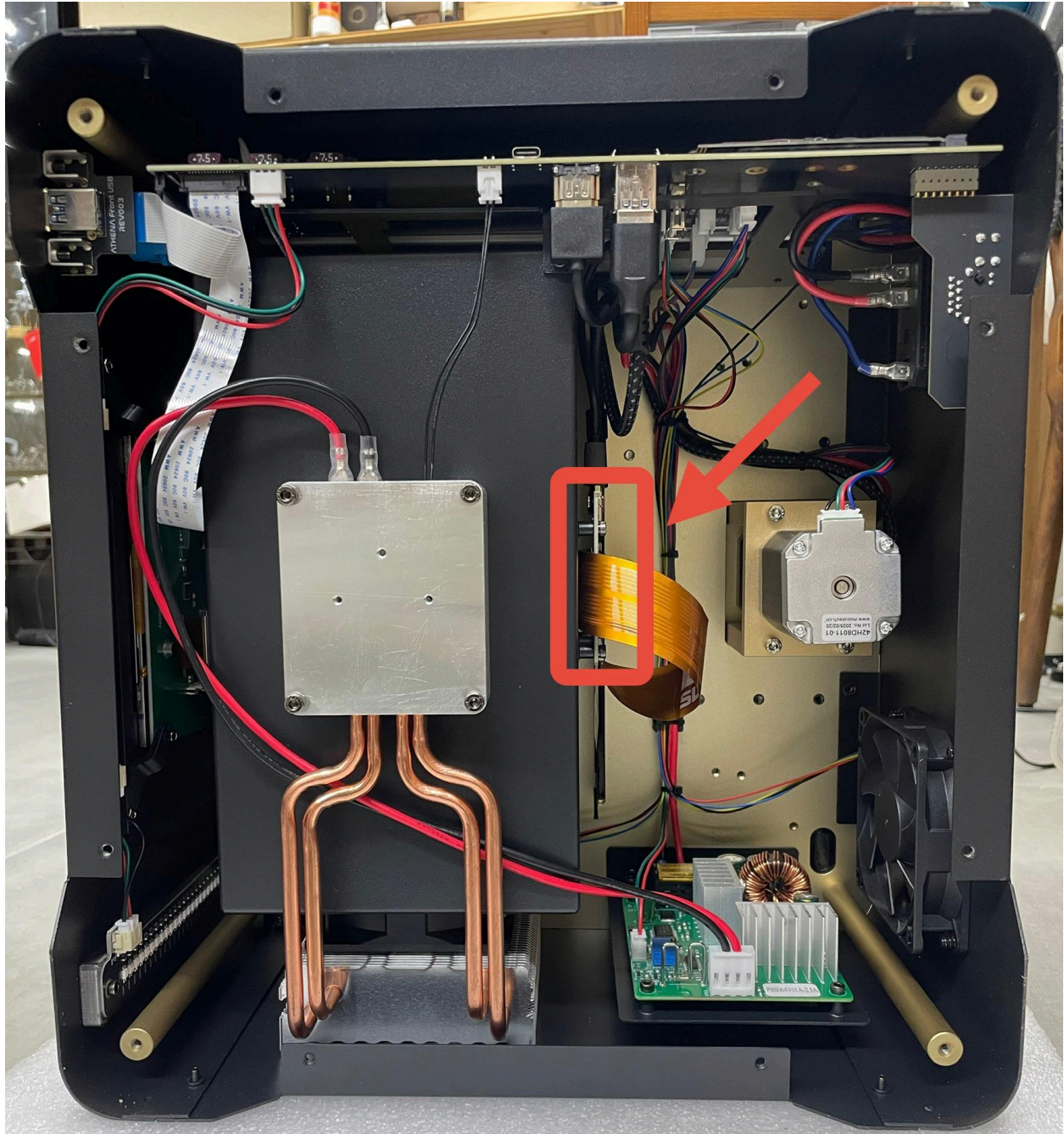
Step 1 – Remove the Bottom Cover

1. Lay the printer carefully on its side to access the bottom panel.
2. Remove the **feet** from the printer.
3. Remove the **8 × M4 socket head screws** securing the bottom cover.
 - These screws require a **3 mm hex key**.
4. Lift off the bottom cover and set it aside.



Step 2 – Locate the FPGA Board

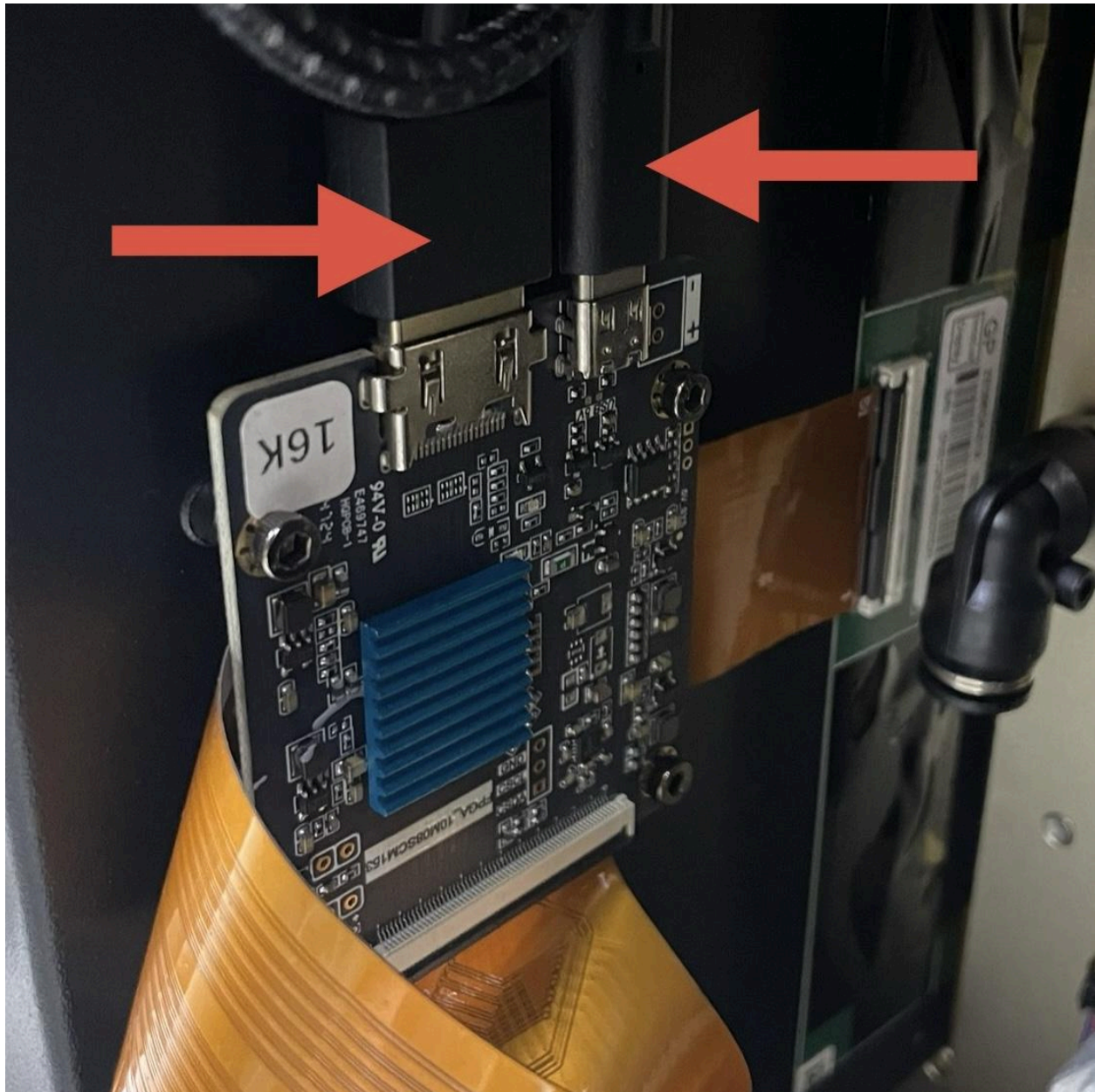
- The FPGA board is located **in the middle of the machine**, mounted on the **back of the light box**.
- The board is secured with **4 × M3 screws**.



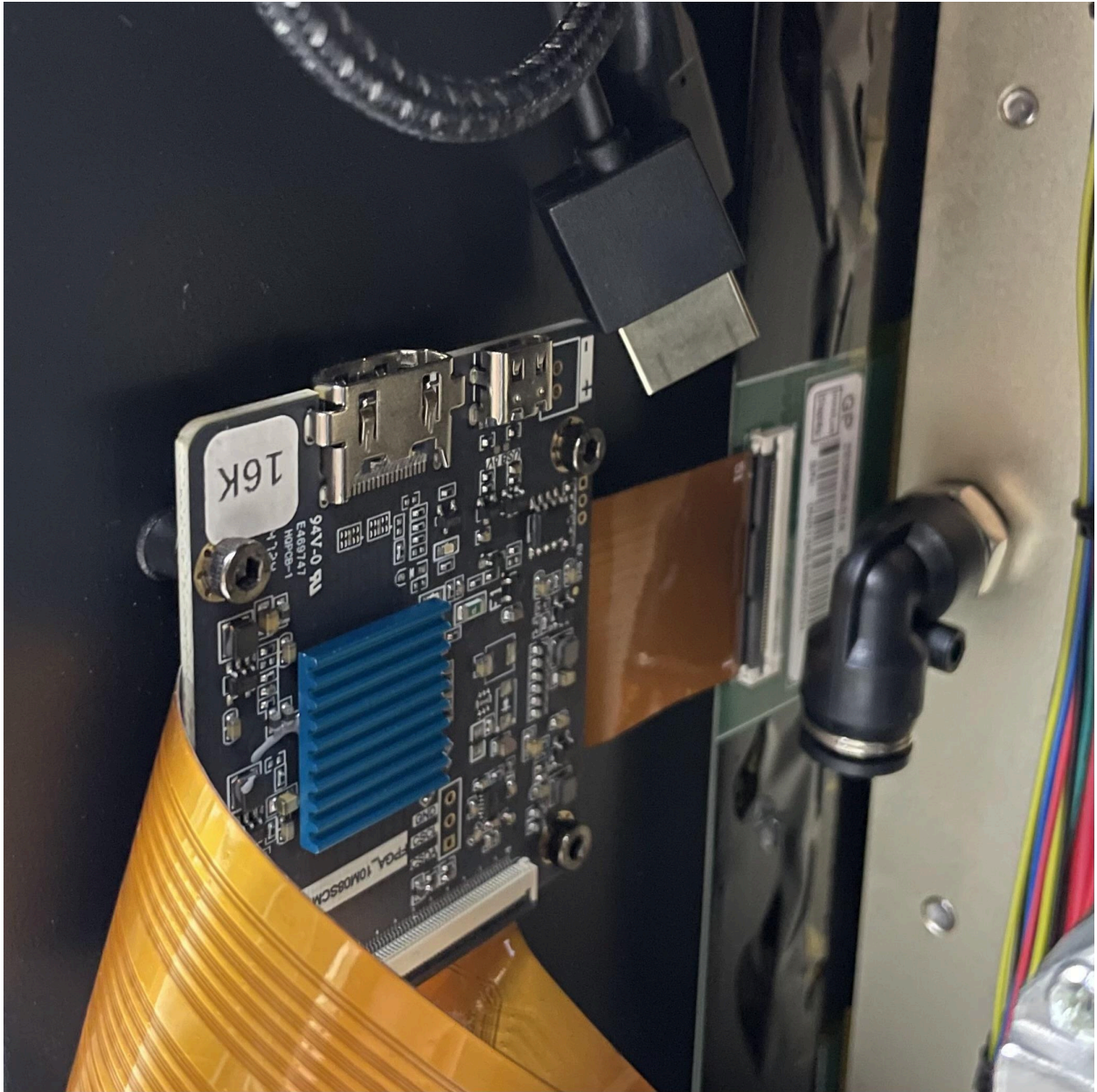
Step 3 – Disconnect the Cables

The FPGA board has three connections:

- **USB-C power cable**
- **HDMI cable**
- **FPGA flat cable** (orangish color) connecting the LCD to the board



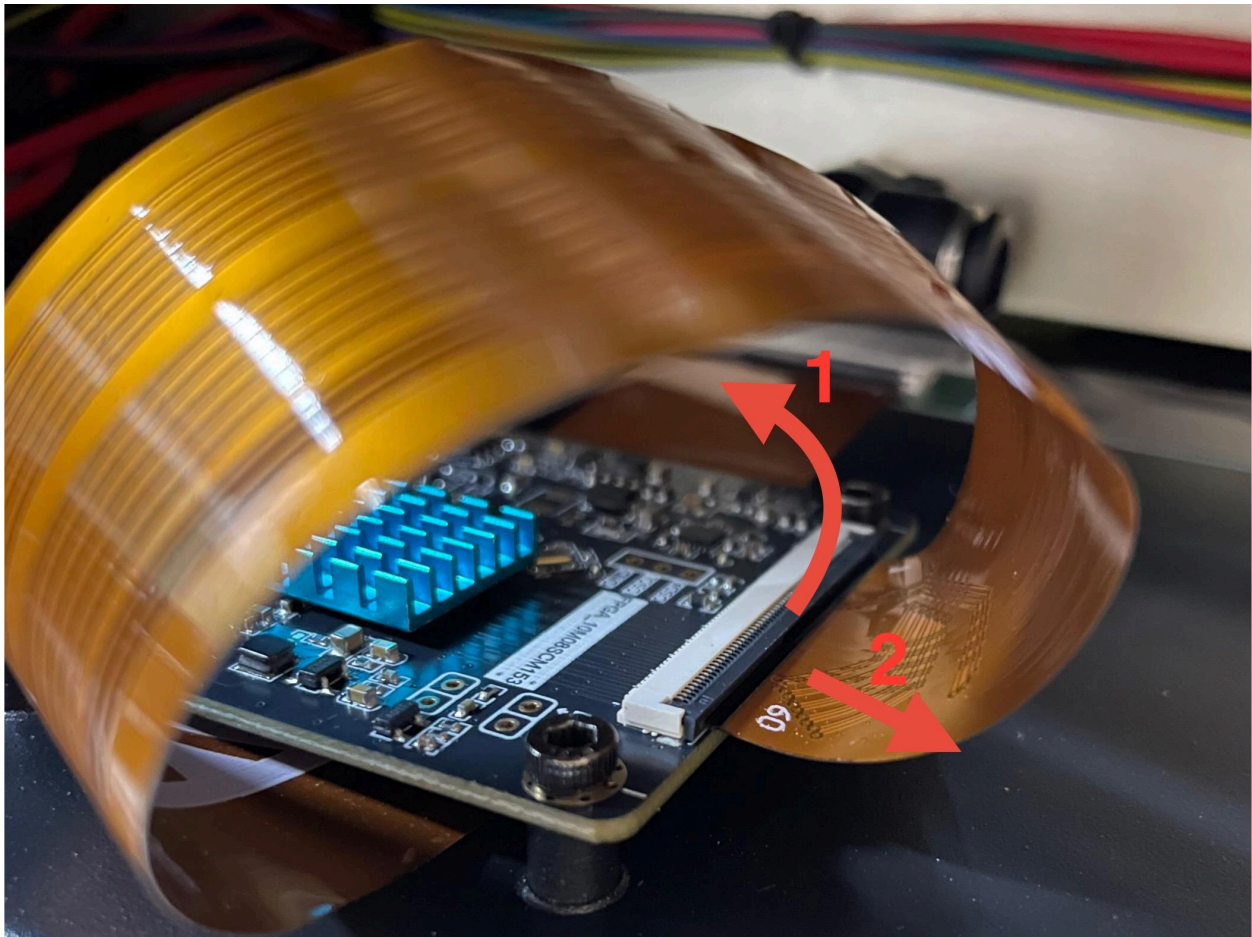
1. Gently pull out the **USB-C** and **HDMI** cables.



2. For the **flat cable**:

- Locate the small black latch on the connector.
- Carefully **lift the latch** to unlock the cable.
- Slide the flat cable out of the connector.

Do not force the flat cable. It should slide out easily once the latch is lifted.



Step 4 – Remove the Existing FPGA Board

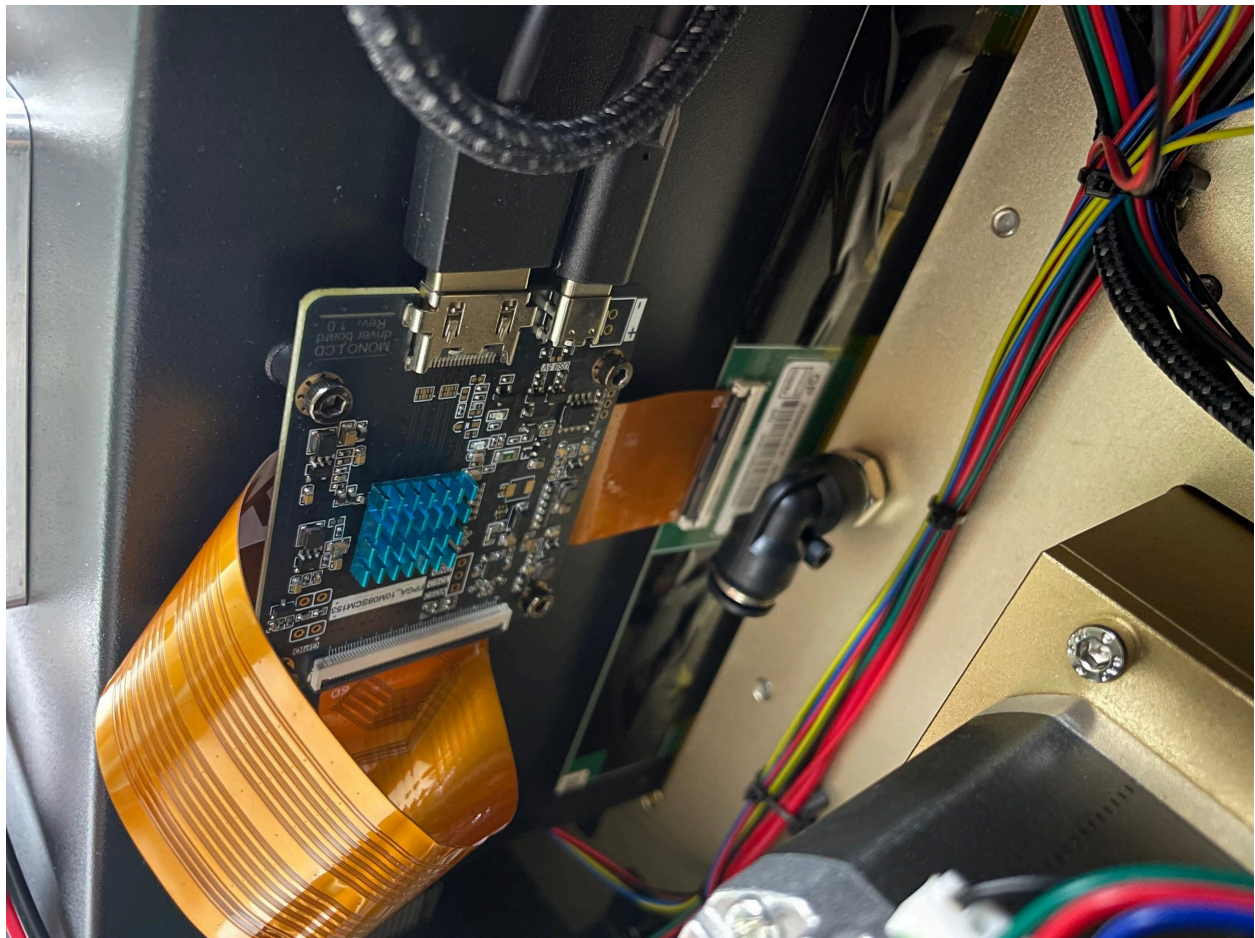
1. Remove the **4 × M3 screws** securing the board.
 - These screws require a **2 mm hex key**.
2. Carefully remove the old 3-bit FPGA board.

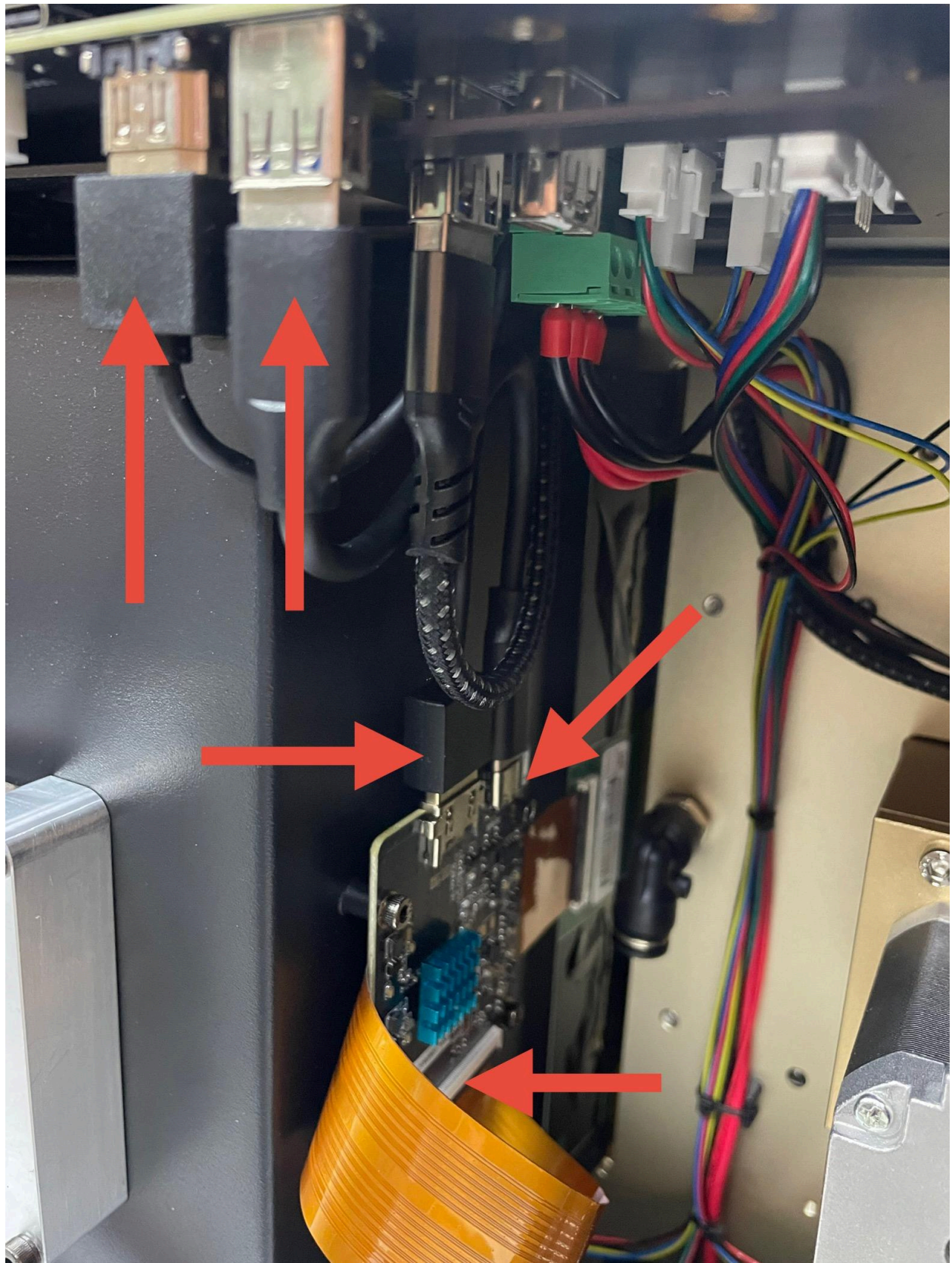


Step 5 – Install the 16K 8-Bit FPGA Board

1. Position the new **16K 8-bit FPGA board** in the same orientation as the original board.
(The orange flat cable is guided beneath the board)
2. Secure it using the same **4 × M3 screws**.
3. Reconnect all cables exactly as they were:
 - Insert the **flat cable** fully (contacts at the bottom side), then press the latch down to lock it.
 - Reconnect the **HDMI** cable.
 - Reconnect the **USB-C** power cable.

Double-check that all connectors are fully seated and secure. Check also if the HDMI plug at the mainboard is still fully seated. Give all the connectors a good wiggle as sometimes they can feel fully seated, but slightly stuck. Especially the HDMI cable.





Step 6 – Reinstall the Bottom Cover

1. Reinstall the bottom cover.
 2. Secure it with the **8 × M4 socket head screws**.
 3. Reinstall the **feet**.
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Final Checks

- Return the printer to its normal upright position.
- Plug the power cable back in.
- Power on the printer and confirm normal startup.
- Powercycle the printer again, after that the new FPGA board will be autodetected
- Put a blank sheet of printer paper on the screen and check if the screen tests are displayed normal (C3D logo is not working at the moment 16.12.2025)

If the printer does not power on or the LCD does not initialize correctly, power off immediately and recheck all connections.

Notes

- No firmware changes are required unless otherwise instructed.
- If you encounter any issues, contact Concepts 3D support before continuing to use the printer.

See help.concepts3d.ca for more guides and videos

