Tutorial: Flashing BTT EBB36 via USB for Octopus Pro Bridge Mode
Prerequisites

- **Octopus Pro:** Must already be flashed with Klipper in **"USB to CAN bus bridge"** mode.
- **Hardware:** BTT EBB36, USB-C Cable, 120R Jumper.

Step 1: Flash the Katapult Bootloader
Using a bootloader allows you to update the EBB36 later over the CAN wires without ever plugging in a USB cable again.

1. **Open your Pi terminal and enter the Katapult directory:**
   ```
   cd ~/katapult
   make menuconfig
   ```
2. **Configure these specific settings:**
   - **Micro-controller Architecture:** STMicroelectronics STM32
   - **Processor model:** STM32G0B1 **(Make sure your chip matches or select the correct one that matches your chip)**
   - **Build application bootloader:** 8KiB bootloader
   - **Clock Reference:** 8 MHz crystal
   - **Communication interface:** CAN bus (on PB0/PB1)
   - **CAN bus speed:** 1000000 (1M)
3. **Build the file:**
   ```
   make
   ```
4. **Put EBB36 into DFU Mode:**
   - Connect the EBB36 directly to your Pi via USB-C.
   - Place the **VUSB jumper** on the EBB36 pins.
   - Hold the **BOOT** button, press **RESET**, then release both.
5. **Flash the EBB36:**
   ```
   sudo dfu-util -a 0 -D ~/katapult/out/katapult.bin --dfuse-address
   0x08000000:force:mass-erase:leave -d 0483:df11
   ```

Step 2: Flash Klipper Firmware (via USB)
Now we flash the actual Klipper firmware while the board is still connected via USB-C.

1. **Configure Klipper:**
   ```
   cd ~/klipper
   make menuconfig
   ```
2. **Match these settings to your bootloader:**
   - **Micro-controller Architecture:** STMicroelectronics STM32
   - **Processor model:** STM32G0B1 **(Make sure your chip matches or select the correct one that matches your chip)**
   - **Bootloader offset:** 8KiB bootloader
   - **Communication interface:** CAN bus (on PB0/PB1)
   - **CAN bus speed:** 1000000

3. **Build the firmware:**
   `make`
4. **Find your Chip ID:**
   Run the following command to find the unique serial address for your chip:
   `ls /dev/serial/by-id/`
5. **Flash using Katapult:**
   `python3 ~/katapult/scripts/flashtool.py -f ~/klipper/out/klipper.bin -d /dev/serial/by-id/[INSERT_YOUR_ID_HERE]`

Step 3: Hardware Install & CAN Transition
Once flashed, the EBB36 will only communicate via the CAN pins.

1. **Disconnect USB:** Unplug the USB-C cable from the EBB36.
2. **Remove VUSB Jumper: CRITICAL.** Remove the VUSB jumper on the EBB36 before connecting 24V power.
3. **Set Termination Jumper:** Ensure the **120R jumper** is installed on the EBB36.
4. **Wiring:** Connect the EBB36 (CAN_H/CAN_L) to the Octopus Pro CAN port.
5. **Power:** Power the EBB36 via your 24V power supply.

Step 4: Update Your Configuration
To finish the install, you must find your unique ID and update the `printer.cfg` file provided in this project.

1. **Find your UUID:**
   Run this command in the terminal:
   `~/klippy-env/bin/python ~/klipper/scripts/canbus_query.py can0`
2. **Update printer.cfg:**
   Locate the `[mcu toolhead]` section in the provided file. Replace the example UUID with the one you just found.

It should look like this (but change it to YOUR ID):
text
```
[mcu toolhead]
canbus_uuid: b864fcd507c5
```