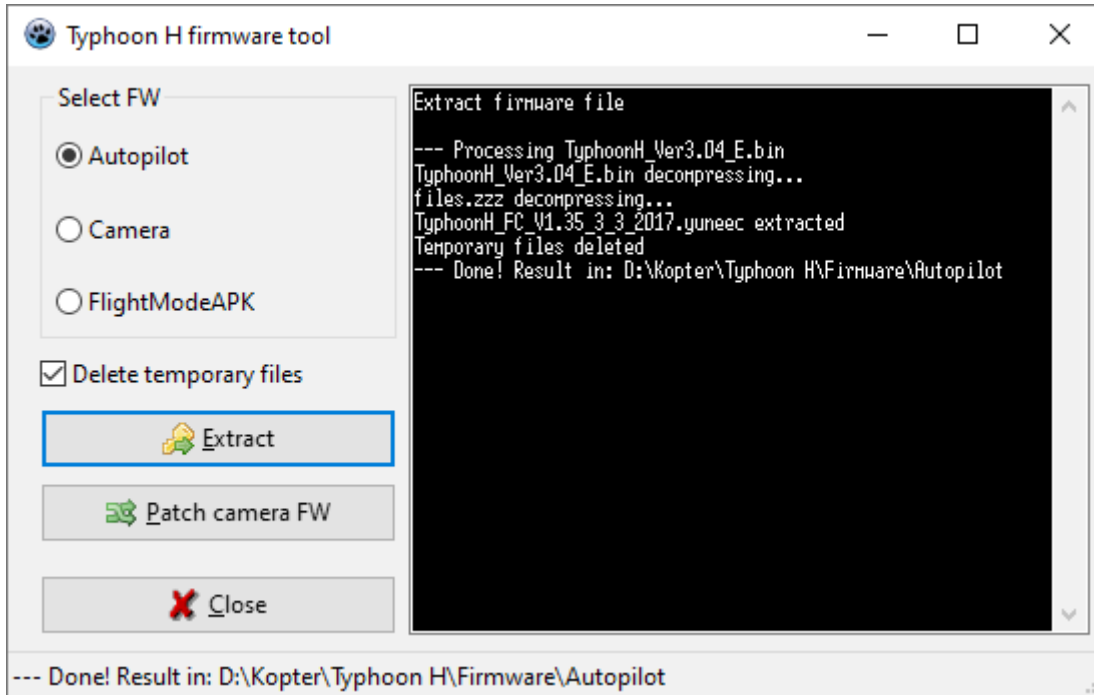# Typhoon H: Flashing a Flight Controller (MCU-board)

Extract flight controller autopilot from original FW file

Start Typhoon H Firmware Tool, select „Autopilot" and click on „Extract".

You will be prompted to select the Yuneec firmware from where you want to extract the Autopilot firmware. You can select more than one firmware file to extract many versions in one step.
Double click on the protocol window will open the file manager with the result folder.
If you not allow to delete the temporary files, you will get all unzipped files from the original firmware in the folder "/tmp". This also works with password-protected firmware files from Yuneec.

Flash flight controller by GUI

1. Start Typhoon H GUI > Tools > FW update > select firmware file "TyphoonH_FC_Vxxx_d_m_yyyy.yuneec".
2. Switch off drone.
3. Connect drone to PC via USB – firmware update starts automatically. Wait until flashing is finished.
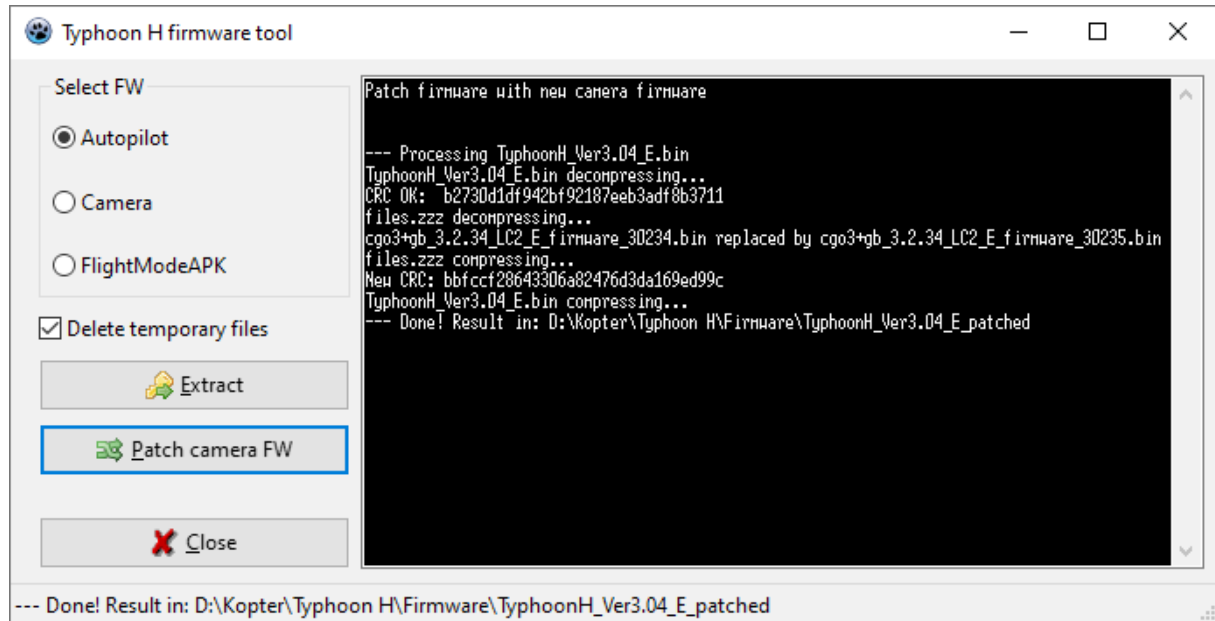4. Remove USB cable and restart drone.

Post processing

1. Delete Flight Data in ST16: Pad mode > Applications > Settings > Apps > Scroll down to Flightmode > Clear my data
2. Calibrate Accelerometer (see Manual)
3. Calibrate Compass (see Manual)
4. Best to start first flight without camera.

Update or exchange CGO3+ Firmware

If you want to update again or exchange a country-specific camera firmware you will find it hard to process. Update is only possible if the version number is higher than the already installed on. To change the version number of the camera firmware needs a new checksum.

This tool will do this process automatically.

The same does the Firmware-Patcher from "fux" offered some years ago. But because it meets the functionality of my Typhoon H firmware tool I couldn't resist to recreate and add this part.

Reset and re-flash Flight controller

In case firmware update went wrong or other unexpected things happen with the drone and there is no more access to it, we can reset and re-flash the flight controller.
Yuneec has prepared a solution here: https://www.youtube.com/watch?v=E9hHUSRl2tI
You need have an extracted Autopilot firmware file. Yuneec offered version V1.28 for this procedure but it is not available anymore. That's why it is attached here.

A) Reset and re-flash flight controller by Typhoon H GUI

1. Start Typhoon H GUI > Tools > FW update > select firmware file
   "**TyphoonH-FC_V1.28_24_9_2016.yuneec** ".
2. Switch off drone!
3. Connect drone to PC via USB – firmware update starts automatically. Wait until flashing is finished.
4. Remove USB cable and restart drone. **Do not fly with this firmware!**

Note: This Autopilot-FW from „TyphoonH_FC_V1.28_24_9_2016.yuneec" was withdrawn and should only used to reset the Flight Controller somehow.

B) Post processing

1. Do normal update procedure with latest firmware „**TyphoonH_Ver3.04_E.bin**".
2. Delete Flight Data in ST16: Pad mode > Applications > Settings > Apps > Scroll down to Flightmode > Clear my data
3. Calibrate Accelerometer (see Manual)
4. Calibrate Compass (see Manual)
5. Best to start first flight without camera.

My thoughts to item A):

Usually after firmware update went wrong it is enough to re-flash the flight controller with the latest Autopilot firmware.
But Yuneec seems to have deliberately chosen a faulty firmware in order to reset or initialize the flight controller. Possibly this is also the trick to overcome the well-known "GPS-Acquiring-fault". However, the version 1.28 is not released. **That's why do never fly with it**.

The flight controller can only be flashed when it is not powered on. It will be powered via USB 5V output and runs proper but without peripheral devices. All this can be done also if the flight controller was removed from the ESC-board.

Typhoon H drone firmware archive:
https://mega.nz/folder/kZVHzDqb#82N4m7OPw0B0QILwgyNbEw