FPV Live

FPV Live is a firmware made specifically for Raspberry Pi4 4GB that transforms it into a DJI Smart Controller with more features focused for streaming applications. To make it simple this FW is capable of taking the HD FPV video feed from the USB C port of the DJI FPV Goggles and stream it via the Raspberry's HDMI port or wireless. The output had zero latency and no video compression.

The idea behind this firmware is to offer a cheaper alternative which can be improved, customized and with more functions compared to the DJI Smart Controller. FPV Live can be used for broadcast purposes or for showing what the pilot sees to other people on an external monitor in real time. Is a constantly evolving firmware. Rely on the _Release Notes_ document to find all the available functions.

Stay up to date:

Make sure to follow the official Instagram profile **_@fpvliveofficial_** to know when new features will be released. You can directly message this account if you need help or for any question.

Disclaimer:

The software was initially created for personal use before being made available for purchase. It has been tested and improved for a long time with excellent results. Despite this, operation is not guaranteed and use is at the user's own risk. We take no responsibility for malfunctions or problems when used for important jobs. We gladly accept feedback on things that could be improved or added but we cannot guarantee support. New firmware versions with additional features or with bug fixes released in the future can be downloaded and flashed via the FPV Live Installer application. We do not issue refunds after the purchase of the firmware. The manual may differ slightly between the different software versions.

Features:

Easy to install, plug and play, customizable and versatile. Currently the FPV Live firmware allows the use of a Raspberry Pi4 like an HDMI output for the DJI FPV Goggles and record the FPV HD DVR at the same time. The video outputted via HDMI and the recording has the same quality as the one displayed inside the DJI Goggles. It has zero latency and is not compressed. When no video signal is received, a background image chosen by the user will be shown on the HDMI output. The recording starts automatically when a signal is detected and stops when there is no signal. All this is possible by connecting the DJI FPV Goggles to the Raspberry Pi4 via a USB cable.

Compatibility:

- FPV Live currently runs **only** on **Raspberry Pi4 4GB**. It may work with other models as well but has not been tested.

- A micro SD card with at least 8GB of capacity is required. For the fw v1.0.1 which records DVRs a 64GB micro SD card or more is recommended.

- The FPV Live Installer app is currently available **only** for **Windows 10.**

- Works with all currently existing DJI FPV Digital System hardware. The DJI FPV Drone is also supported. You may need to update some devices or use specific fw versions to be able to use them.

    Here is a list of tested devices:

    - DJI FPV Goggles V2 in FPV Digital System mode *(fw v01.00.0606 or higher)*
    - DJI FPV Goggles V2 in DJI FPV Drone mode *(fw v01.02.0000 or higher)*
    - DJI FPV Goggles V1 *(fw v01.00.0600 or higher)*
    - DJI FPV Drone *(fw v01.00.0600 or higher)*
    - DJI Air Unit *(fw v01.00.0600 or higher)*
    - Caddx Vista *(fw v01.00.0600 or higher)*
    - All Caddx Digital HD cameras
    - Original DJI HD camera

Install FPV Live:

To install FPV Live on your Raspberry Pi4 you need to have a license associated with an email address. If you don't have a license and you want to buy one, message the official Instagram profile ***@fpvliveofficial*** or write an email at ***fpvlive.nicolafinke@gmail.com***.

Before starting make sure to have:

- A micro SD card with **at least 8GB** of capacity. More is better :)

- A license for FPV Live.

- An internet connection. Only needed for the installation process.

- The application FPV Live Installer installed. For the moment available only for Windows 10.

Installation process:

1) Launch the FPV Live Installer app on your computer and enter your email address if required.

Then **press Install FPV Live** to start.
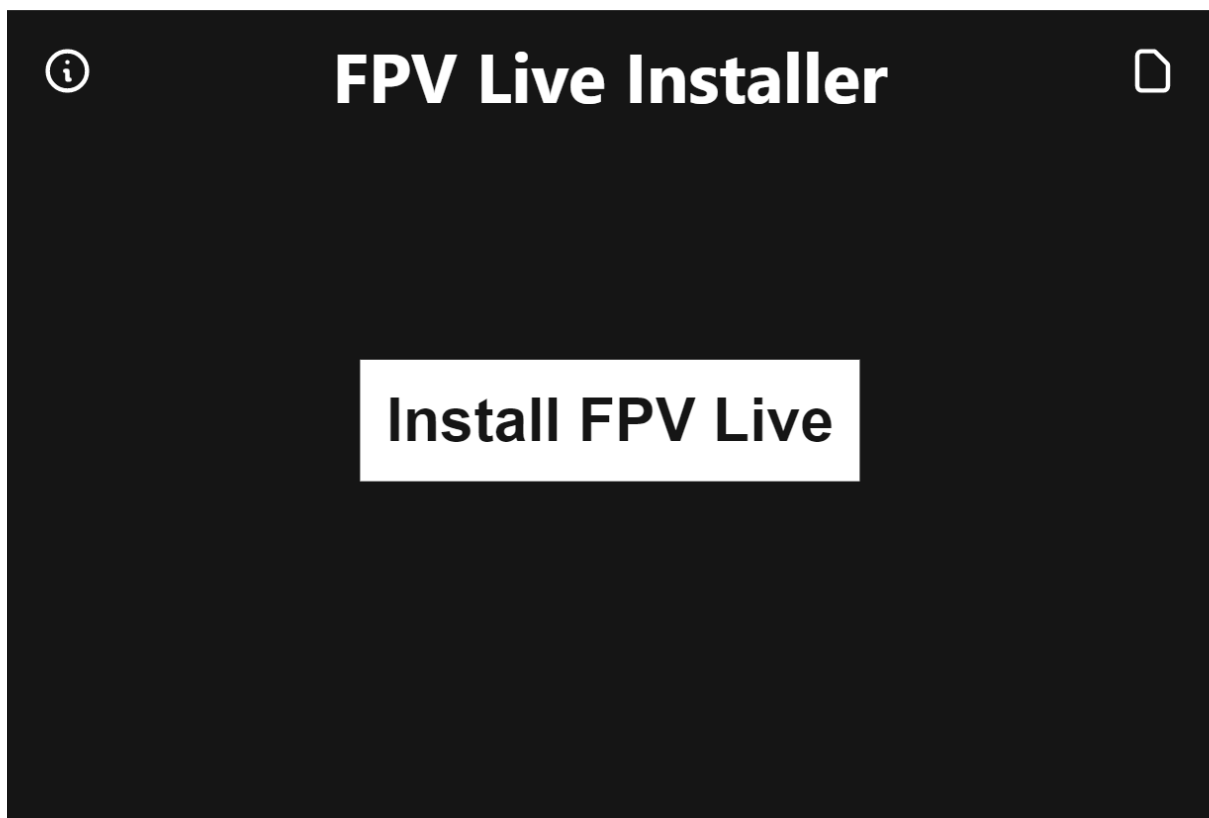
2) Select the firmware version you want to install.

**Rely on the *Release Notes* document to discover all the available functions for each firmware version.**

3) Select a background image that will be displayed when there is no video signal coming from the DJI FPV Goggles. **This step can be skipped** and a default background will be loaded. The background can be added or changed later without having to reinstall everything from zero if needed. Go to the *Change the background* section of this document to find out how to do it.
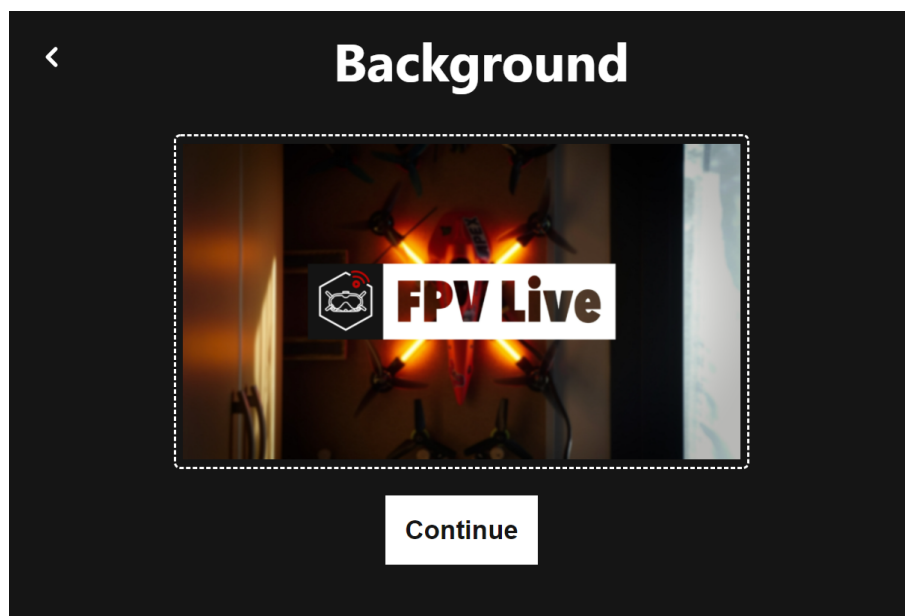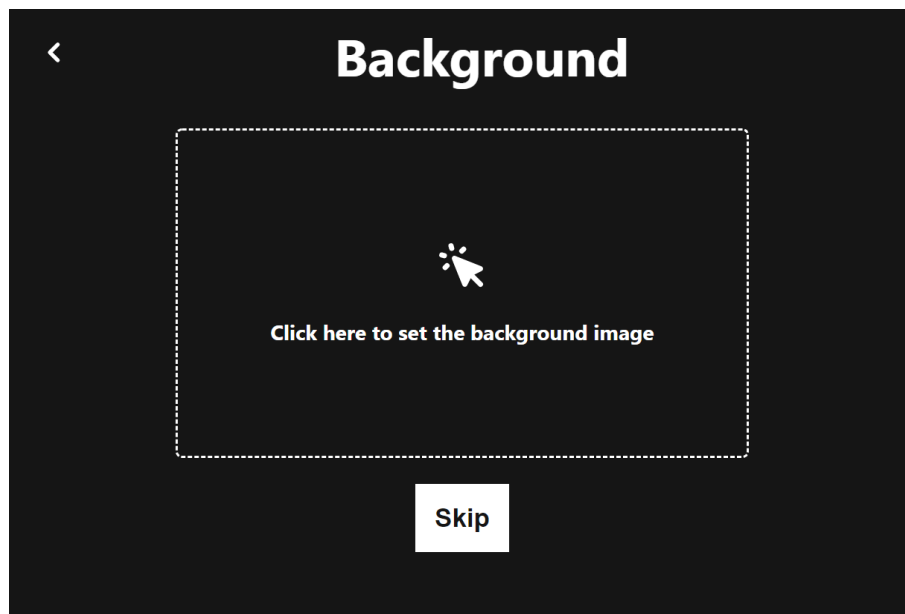
Press continue or **skip** to proceed and wait for the drives to be loaded.
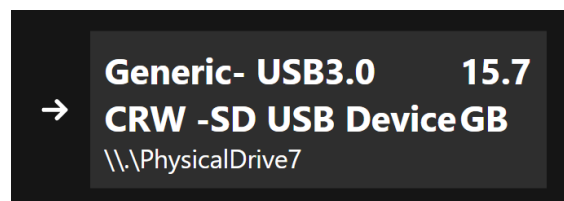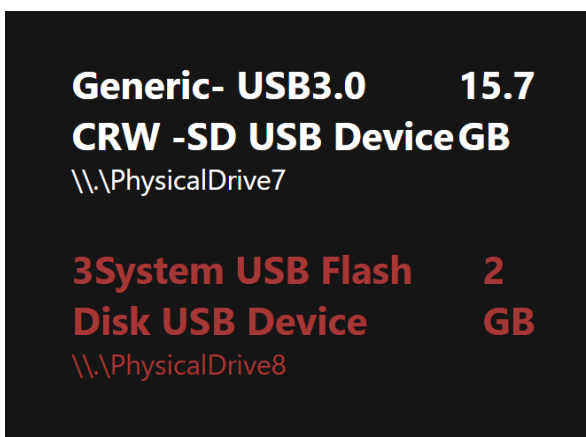
Loading drives...

If the micro SD card has not yet been connected to the computer, do it now and **press scan for drives.**

‹ Chose the micro SD card

No drives found!

Scan for drives
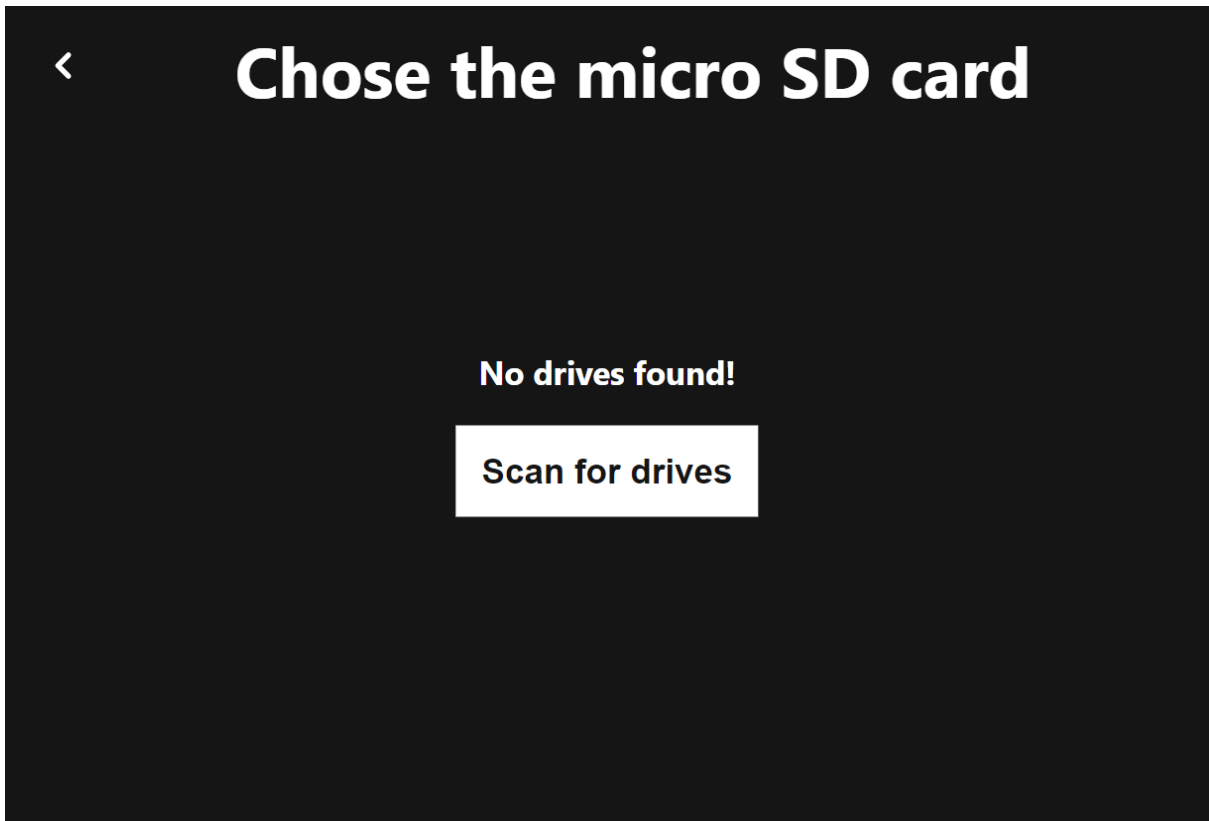
4) Now **choose where to install** the FPV Live firmware. Disks that do not have enough space are highlighted in red and cannot be selected.

Press the drive name to begin the installation.

Generic- USB3.0   15.7
CRW -SD USB Device GB
\\.\PhysicalDrive7

3System USB Flash   2
Disk USB Device   GB
\\.\PhysicalDrive8

→ **Generic- USB3.0   15.7**
CRW -SD USB Device GB
\\.\PhysicalDrive7

5) Wait for the firmware to be downloaded and installed on your micro SD card. This process may take several minutes depending on your internet connection and micro SD speed.

Ignore and do not touch any windows or popup messages that may appear during this process.

A message will appear **at the end** of the installation process.

6) At this point the FPV Live Installer app can be closed and **the micro SD card can be ejected from the computer**.
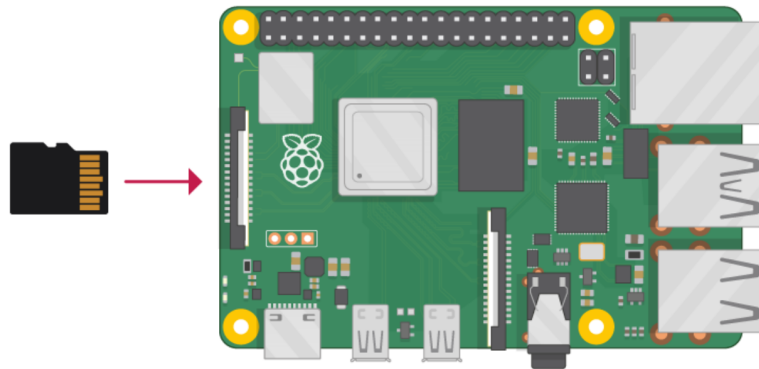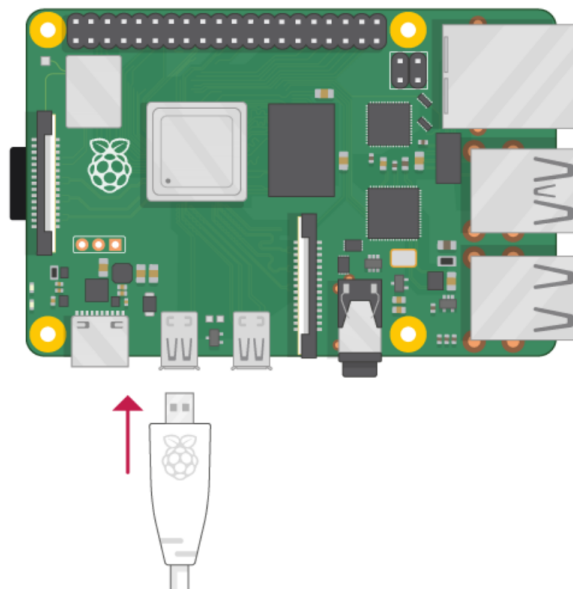

In case of errors, please try again.
Contact the official Instagram profile ***@fpvliveofficial*** for help if necessary.
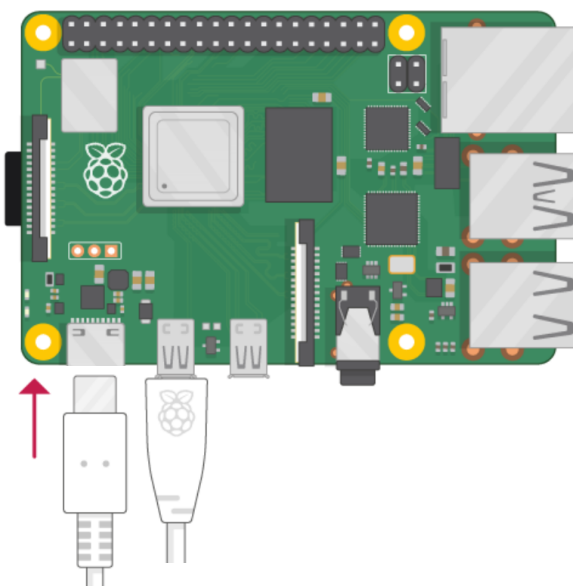
First boot:

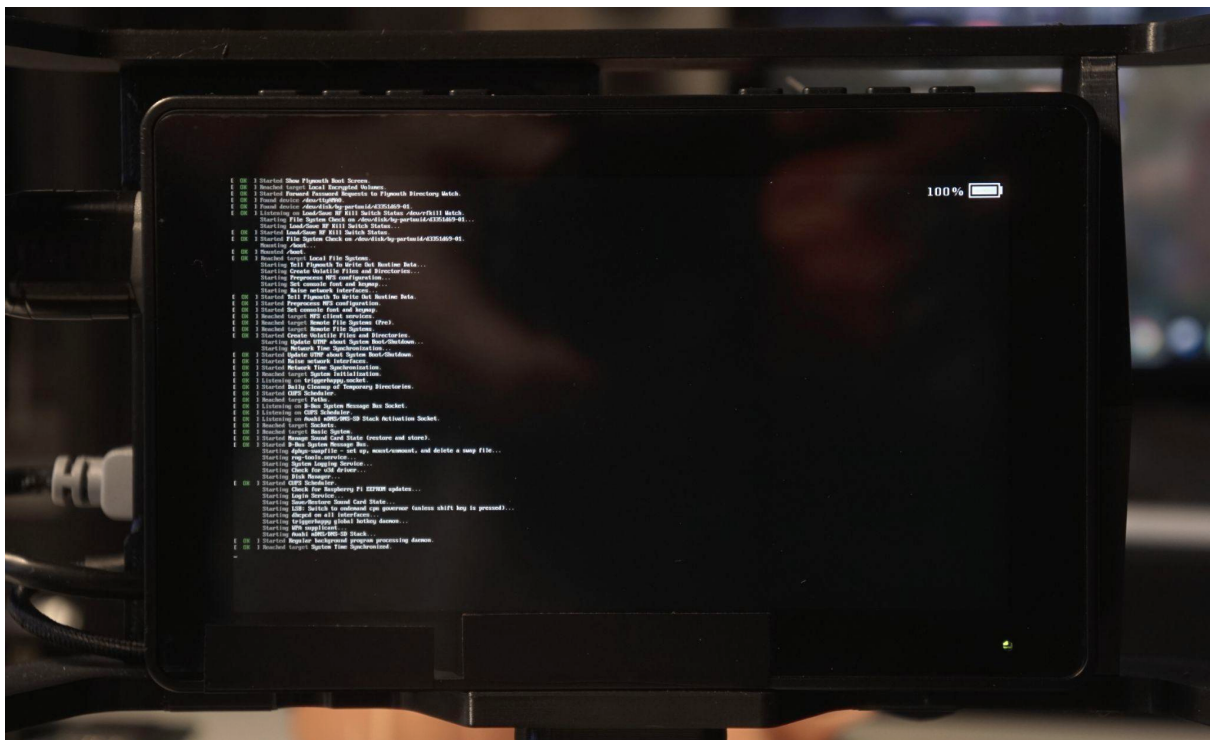**1) Insert the micro SD** card into the Raspberry Pi 4 4GB.

2) Plug in and turn on HDMI devices.

3) Power up the Raspberry. (A power supply that can provide at least 3A is recommended)

4) Wait for the system to boot. It may take some time. When you see the background it means that the system is ready to use.

In case of problems try to reinstall the FPV Live firmware on the micro SD card. Contact the official Instagram profile ***@fpvliveofficial*** for help.

Use the system:

Using FPV Live is very simple and fast. Connect and turn on HDMI devices first, then power up the Raspberry Pi and wait for it to boot. When the background shows up the DJI FPV Goggles can be connected via a USB C to USB A cable to one of the four USB ports on the Raspberry Pi 4. If the drone is already on the live image should already appear instead of the background. Otherwise the live FPV video feed will appear when a drone is turned on and recognized by the DJI FPV Goggles. By unplugging the DJI FPV Goggles the background will appear. If the video stream is interrupted (by turning off the drone for exemple) when the DJI FPV Goggles are connected to the Raspberry the last frame received will be displayed. The recording of the DVR starts automatically when a signal is detected and stops when the signal is stopped.

If the FPV feed is not detected, make sure that the "auto temp control" setting is set to off or unplug and replug the USB cable that connects the DJI FPV Goggles to the Raspberry Pi.

Turn off the system:

To turn off the system simply remove the power to the Raspberry.
There is no need to shut down any operating system :)

Change the background:

To change the background take the micro SD out of the Raspberry Pi and plug it into a computer. Then open the disk called **boot.**
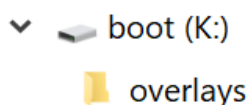
Now simply drag the image to set as the background into the micro SD. This **must be named** in **desktop.png** to be recognized by the system.

config.txt	15.09.2021 20:47	Documento di testo	2 KB
COPYING.linux	12.09.2021 20:50	File LINUX	19 KB
desktop.png	16.09.2021 19:05	File PNG	897 KB
fixup.dat	12.09.2021 20:52	File DAT	8 KB
fixup_cd.dat	12.09.2021 20:52	File DAT	4 KB
fixup_db.dat	12.09.2021 20:52	File DAT	11 KB

The next time the Raspberry powers up the new background should appear.

Download the recordings:

To watch or save the DVR recordings take the **micro SD out of the Raspberry Pi** and **plug it into a computer**. Then **open** the **disk called FPV Live.** In that folder there are all the DVRs recordings.

General notes:

- Before turning on the Raspberry Pi it's recommended to connect the HDMI outputs that you want to use.

- It's recommended to install a heatsink on the Raspberry Pi to keep it cool and to avoid drops in performance due to overheating.

- Ignore any windows or warning popups that could appear during the installation process.

- The system takes about 10 seconds before having a video feed with almost zero latency since the first frame of the video that comes from the drone is displayed on HDMI.

- The camera format used is recognized and adjusted automatically. If the camera on the drone is set to 4:3 the output image on the HDMI will be in 16:9 format with black bands on the sides to keep the original 4:3 aspect ratio. If the camera on the drone is set to 16:9 the output image displayed on the HDMI will be in 16:9.

- If the drone is turned off while the DJI FPV Goggles are still connected to the Raspberry Pi the last frame that was received will be displayed. By turning on the drone again a new video stream will start automatically.

- In order to use the DJI FPV Drone with the system, this one and the DJI Goggles v2 must have at least the firmware v01.02.0000 or higher.

- It's recommended to have at least the firmware v01.00.0600 or higher on the Air Units and Caddx Vistas. For DJI FPV Goggles v2 it's recommended to have installed v01.00.0606 or higher.

- If there is no image coming from the drone, make sure that the "auto temp control" setting is set to off or unplug and replug the USB cable that connects the DJI FPV Goggles to the Raspberry Pi.

- The email address provided at the time of purchase becomes your key that will allow you to install FPV Live through the FPV Live Installer application.

- If the download and installation of the FPV Live Installer application are blocked because they are considered dangerous for the system, ignore them and proceed without worrying. This thing will be fixed in future versions.

- The email address provided at the time of purchase that is the key can only be used on the computer where the program was activated the first time. To change computer contact support.

Manual written by Nicola Finke