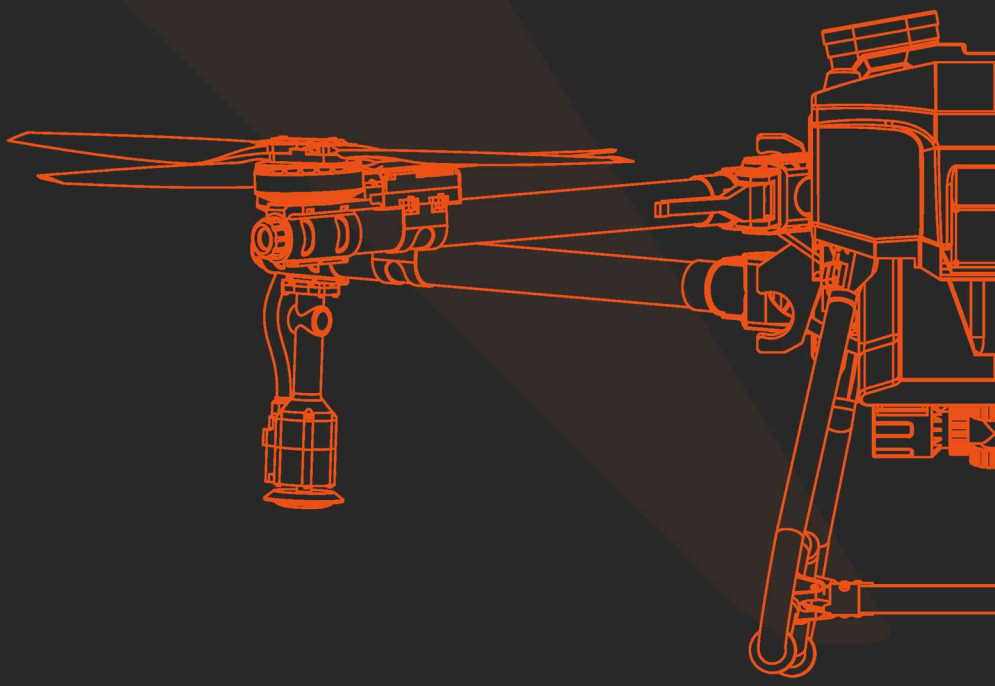
ABZ INNOVATION

WE BUILD DRONES.



SOFTWARE UPDATE GUIDE FOR ABZ INNOVATION L30

Version 1.1.0

Instructions:

During the update process, you will install the new firmware (1.1.3.apj) for the drone and the new version of the ABZ Control (1.1.0.apk) software on the Remote Controller.

Follow the steps in the precise order given in this manual.

Tools required for the process:

- Computer with Windows operating system
- USB-A – Micro-USB cable
- USB-C – USB-C cable (e.g. the cable for the Remote Controller)
- HEX 2.5mm screwdriver
- L10/L10 PRO/M12 drone
- ABZ Innovation MK15 controller
- MicroSD card
- Tweezer or thin and short pliers

Process preview

1. Preparing the computer for the update process
2. Preparing the drone for the update process
3. Deleting the Lua scripts
4. Updating the settings of the SIYI TX application
5. Updating the firmware of the drone
6. Updating the parameters of the drone
7. Uninstalling the ABZ Control application
8. Installing the ABZ Control application
9. Initial setup of the flight planning process
10. Safety test protocol

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I. Prepare the computer for the update process:

Download the Mission Planner application from here:

https://ardupilot.org/planner/docs/mission-planner-installation.html

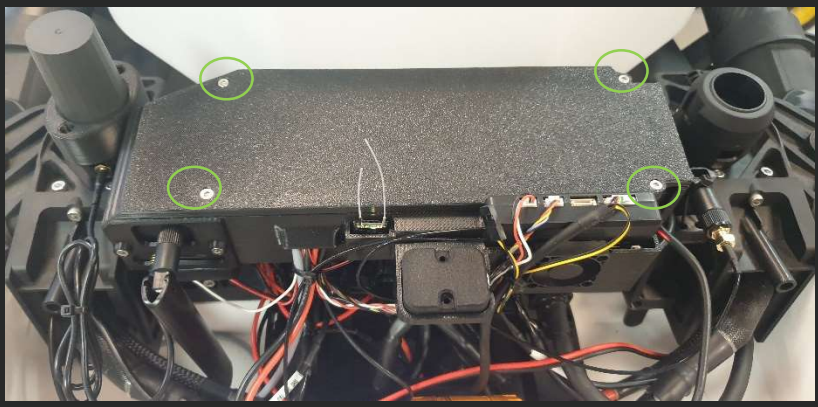
A guide for the installation is available at the same address.

II. Prepare the drone for the update process

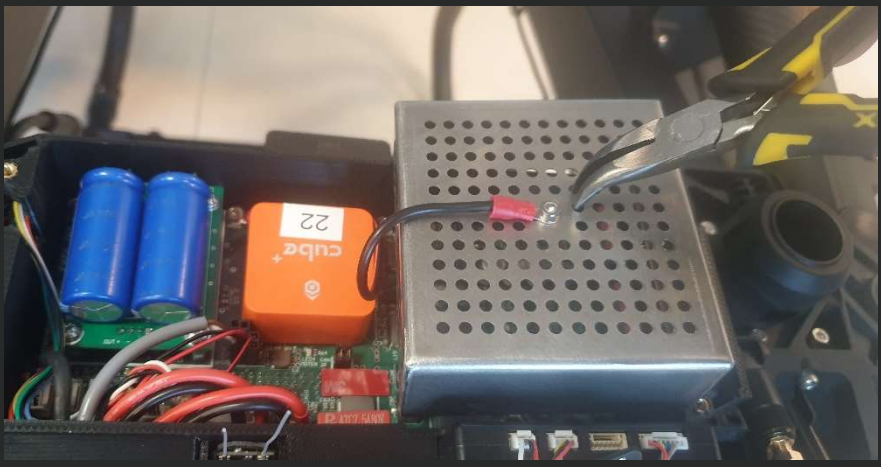
1. Make sure that the drone is NOT connected to the battery.
2. Remove the front cover of the drone. With a firm move, disconnect the plastic spring clips that fix the cover from the inside, beginning by the rear side of the cover.



3. Remove the screws of the lid with a 2,5 mm hex key.

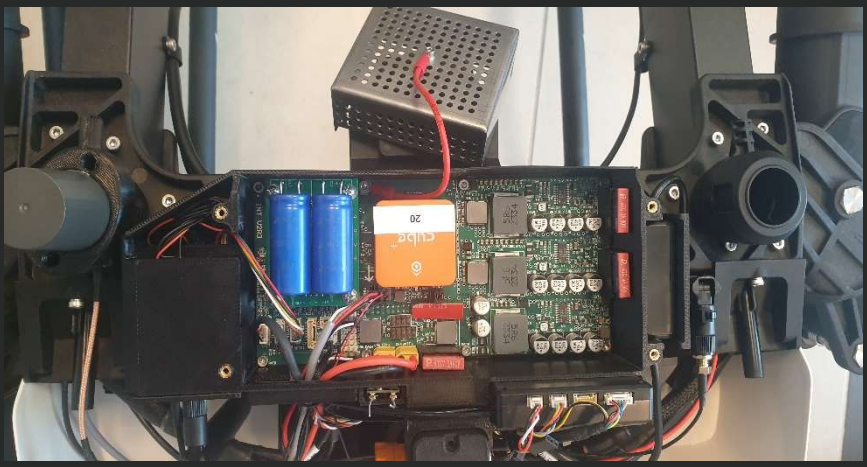


4. Use a Tweezer or a thin and short pliers to remove the shield. Be careful not to damage the electronics of the drone.

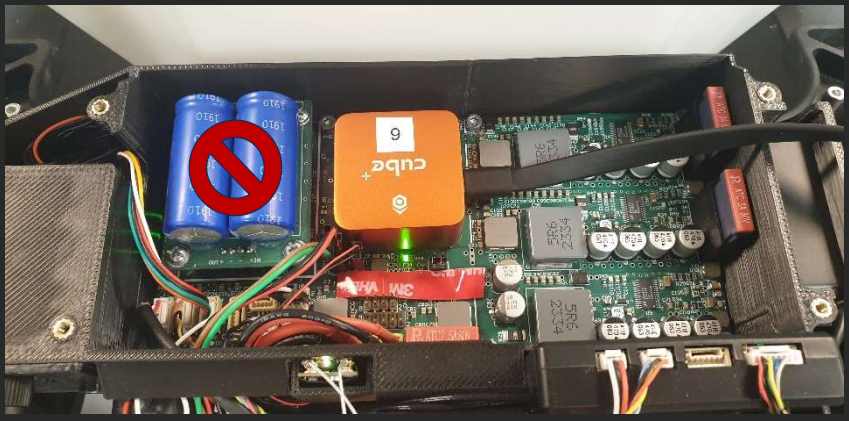


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5. Lean the shield on the scale to prevent pulling and damaging the cable.



6. Make sure not to touch the Uninterruptible Power Supply.
7. Connect the USB cable to the cube.

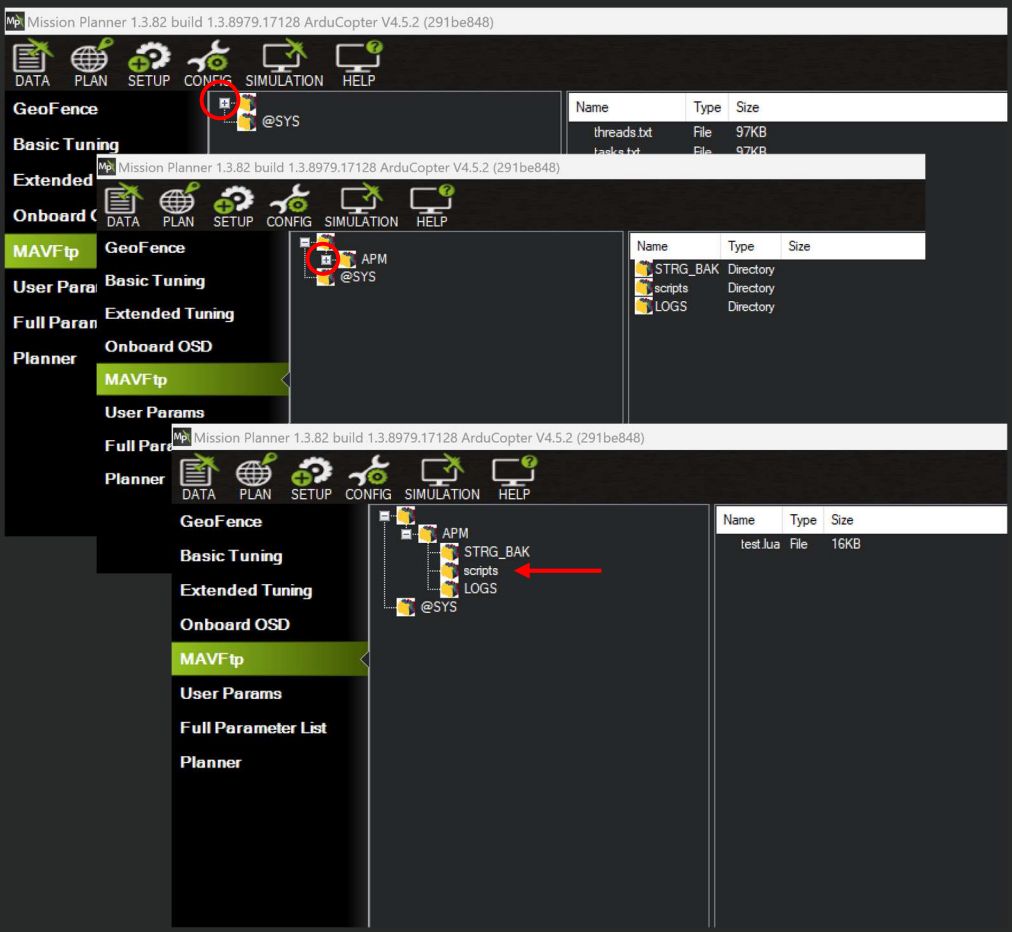


8. Connect the battery to the drone. Do not touch the electronics of the drone while it is connected to the battery!
9. Connect the USB cable to your laptop.
10. Choose the corresponding **COM (MavLink) por**t and hit **Connect** (in the top right corner of the application).

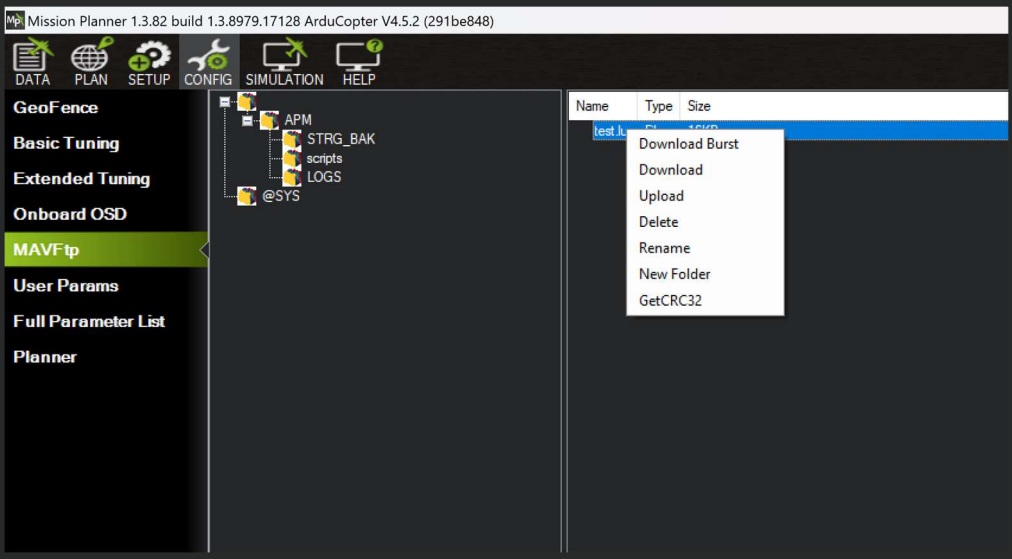
III. Deleting the Lua Scripts

Before you update the firmware of the drone, you need to check if there are any Lua scripts installed on the drone. If so, you must delete them.

1. Open the **Mission Planner** application.
2. Click on **Config > MAVFtp**.
3. Click on the + sign in the folder structure to reach the folder called **APM > Scripts**.



If you see any script files on the right side of the panel, select them, and delete them with a right-click.

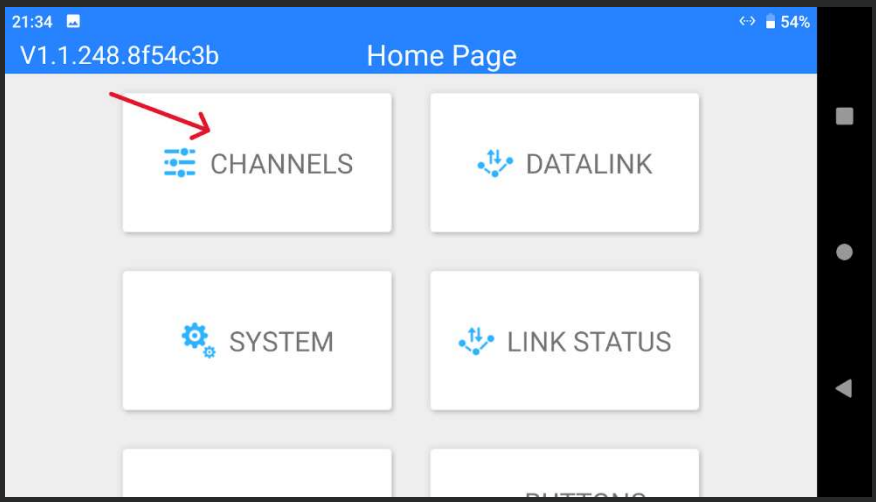


After deleting the scripts, disconnect the drone from Mission Planner (with the button in the right corner).

IV. SIYI TX application update

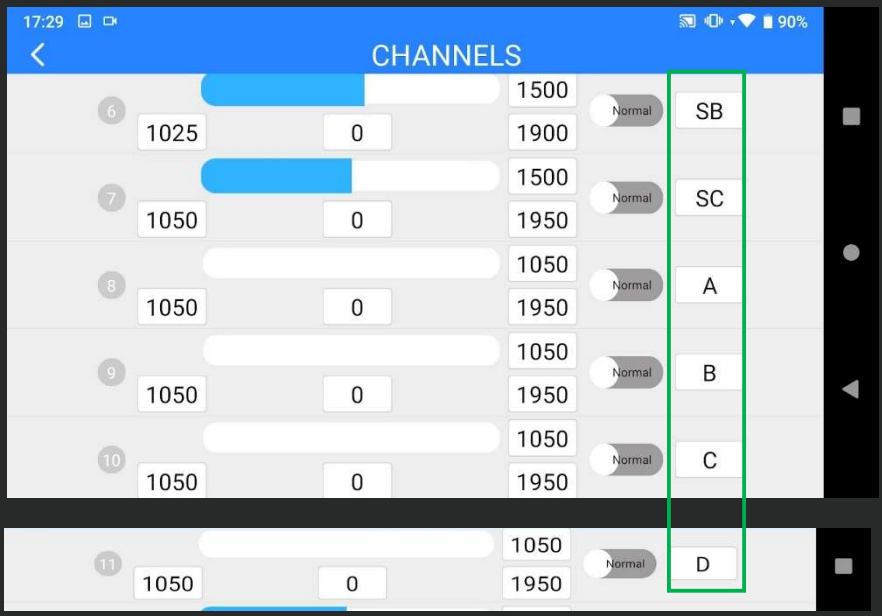
Before you update the ABZ Innovation software, you must check some settings on the Remote Controller.

1. Open the **SIYI TX** application and click on the **CHANNELS** tab.



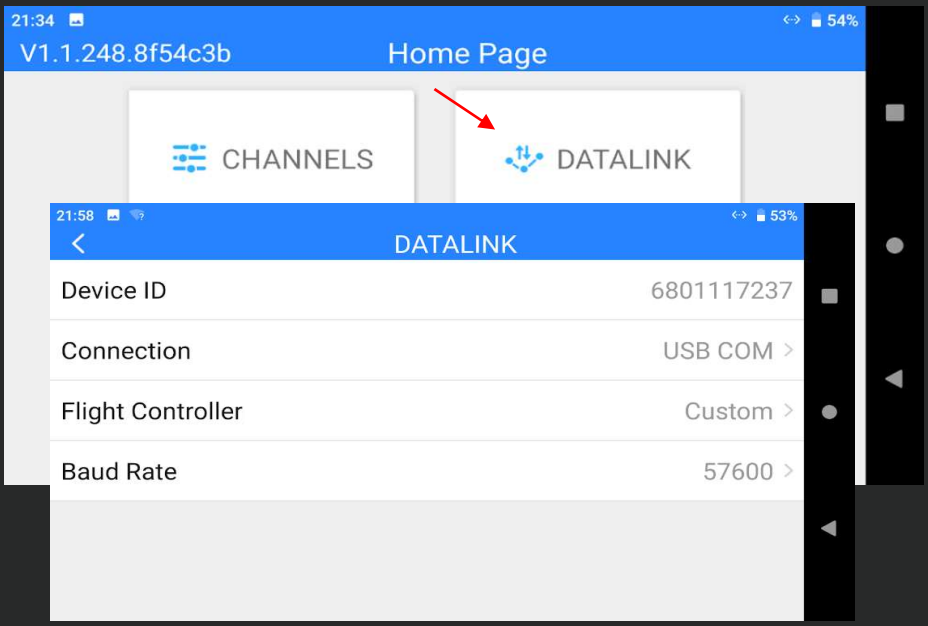
2. Please check if the 16 channels are set as follows, and if necessary, adjust the values in the right-hand column accordingly:



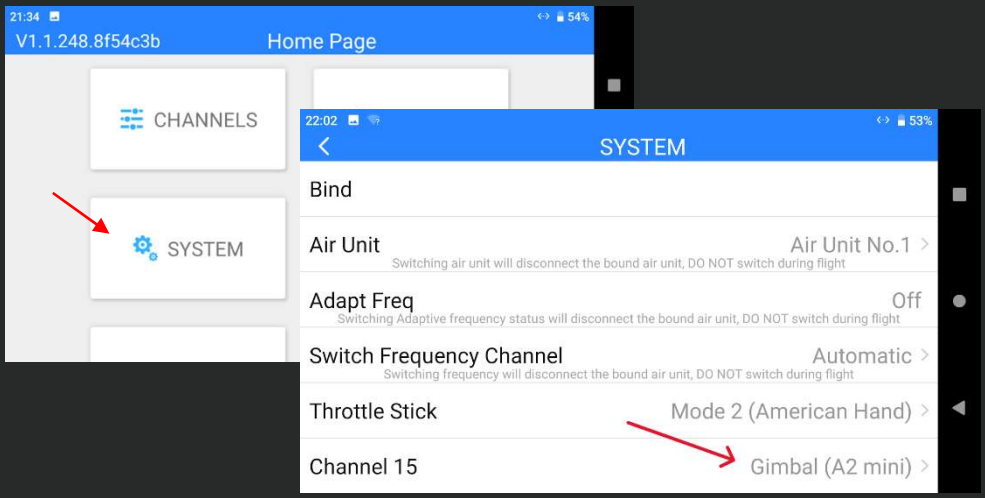

17:29
90%
CHANNELS
6
1025
0
1500
1900
Normal
SB
7
1050
0
1500
1950
Normal
SC
8
1050
0
1050
1950
Normal
A
9
1050
0
1050
1950
Normal
B
10
1050
0
1050
1950
Normal
C
11
1050
0
1050
1950
Normal
D


17:30
90%
CHANNELS
12
1050
0
1500
1950
Normal
13
1050
0
1500
1950
Normal
14
1050
0
1000
1950
Normal
RSSI
15
1050
0
1500
1950
Normal
RD
16
1050
0
1050
1950
Normal
B

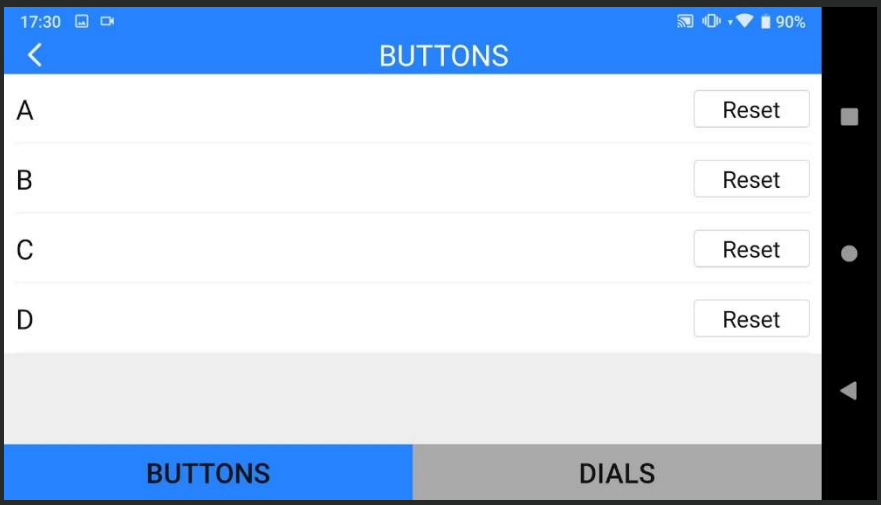
3. Open the **SIYI TX>Datalink** menu and check if the **Connection** (USB COM), **Flight Controller** (Custom), and **Baud Rate** (57600) are set properly:



4. Open the **SIYI TX > System**. Verify that Channel 15 is set to **Gimbal** (A2 mini).

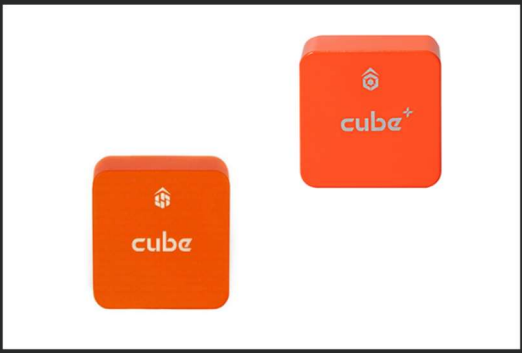


5. Open the **SIYI TX > Buttons** menu. The Buttons should all be set to **Reset**.

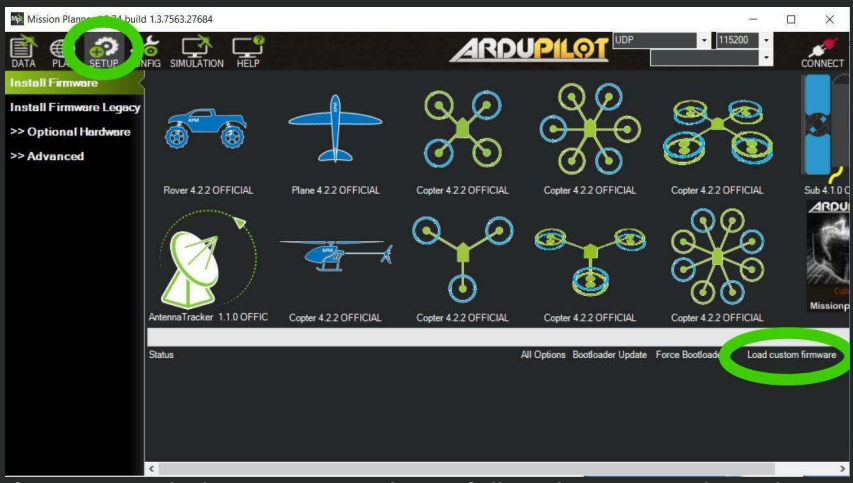


V. Update the firmware of the drone

1. Identify the flight controller model: take a look at the branding and note if it is Cube or Cube+.



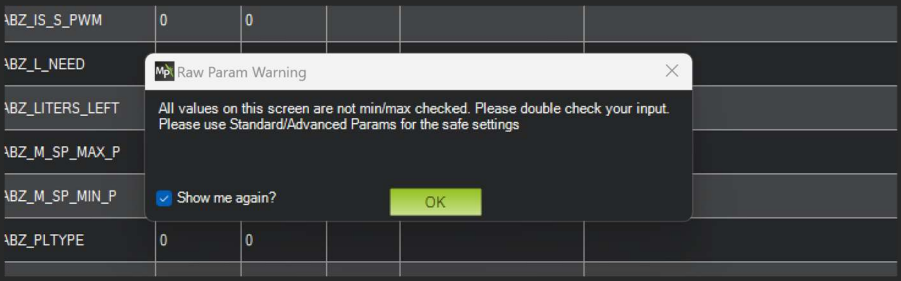
2. Open the MissionPlanner application, choose the upper left **Setup** menu, then the **Install Firmware** option. In the lower right corner click on **Load custom firmware**, then select the corresponding ***1.1.3_CubeOrange.apj*** - **OR** – ***1.1.3_CubeOrangePlus.apj*** file to the Cube version (Cube or CubePlus).



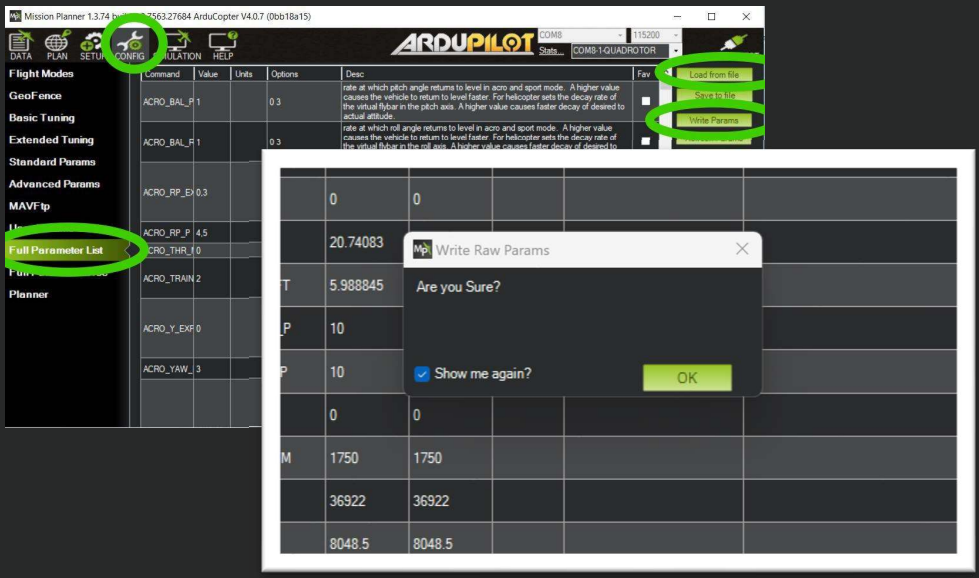
3. If a pop-up window appears, please follow the steps written there. A green status bar shows the progress. When ready, the **Upload Done** message will be displayed.

VI. Update the parameters of the drone

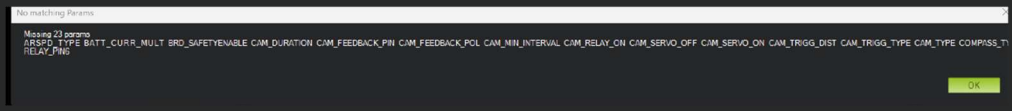
1. Disconnect the USB, then reconnect it. At the top right corner, choose the **COM port** showing **Cube Orange Mavlink** stream, then click on the **Connect** button. The button's icon will be green if the connection is successful.
2. In the upper left section, choose the **Config** menu item, then the "**Full Parameter List**" in the left column. You might receive a Raw param warning message. You can click on OK.

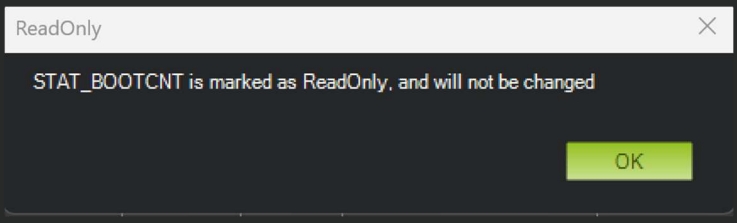


3. On the right side, click on the **Load from file** button. Select the **1.1.param** file. Click on **Write params** button, and if asked, confirm with OK.

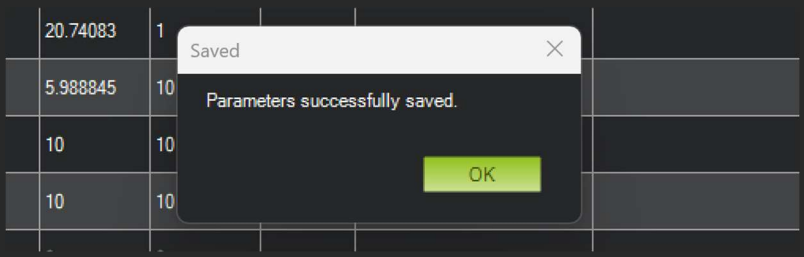


4. You might receive a few pop-up windows (“No matching params” or “Read only”). You can click on OK for all of them.

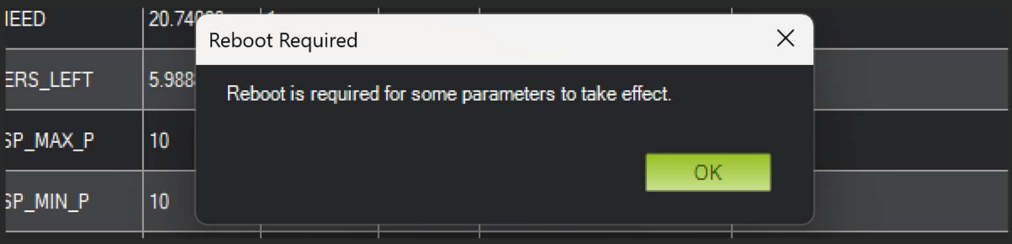




5. Wait for a pop-up message showing that the process is done.



6. The Mission Planner will ask you to reboot.



Disconnect the USB, then reconnect it. At the top right corner, choose the COM port **showing Cube Orange Mavlink** stream, then click on the **Connect** button. The button’s icon will be green if the connection is successful.

7. Check the drone’s motion through the upper left Data menu's attitude indicator screen. Tilt the drone in all directions and rotate it a couple of degrees around its **vertical axis. Check if the movements are all shown correctly on the screen.**

When ready and working properly, remove the USB cable and assemble the drone’s shield with the cable. Reinstall the lid with the 4 pc HEX 2.5 screws. Do not over-torque the screws, as they are only for fixing the plastic cover. Reinstall the cover by reconnecting the plastic spring clips.

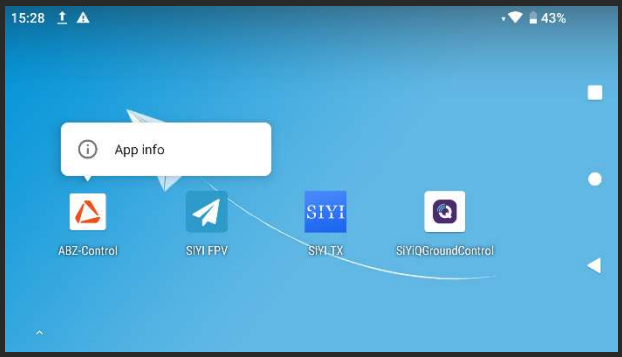
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8. Uninstall the old ABZ Control application

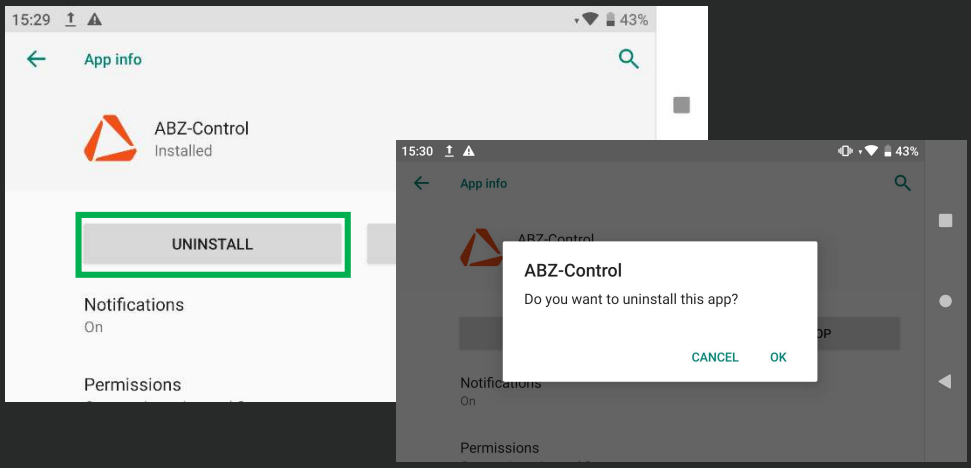
As the first step of the Remote Controller update process, you should uninstall the ABZ Control application from your phone.

If necessary, copy your shape files and mission plans saved on your Remote Controller. You can reach them from **Files > MK15 > ABZ Control > Missions.**

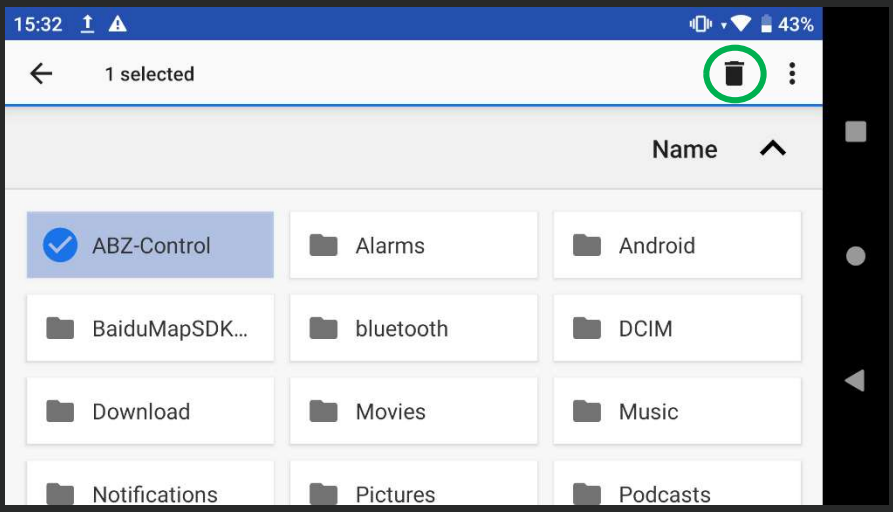
1. Long-press the icon of the **ABZ Control** application until the **App info** option appears on the screen and click on it.

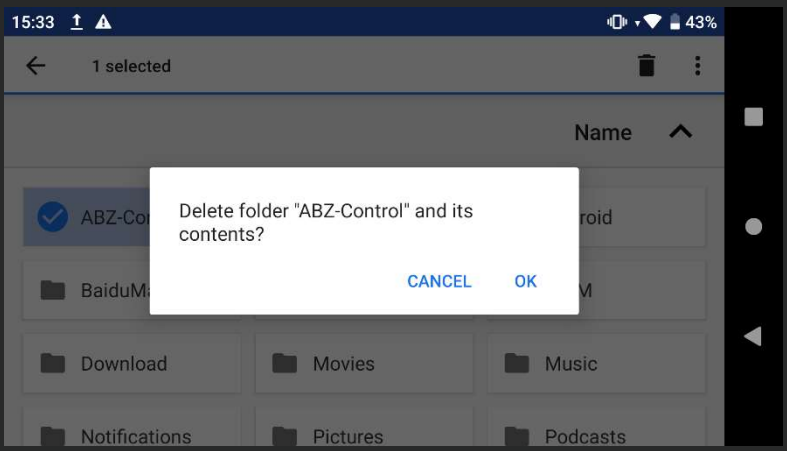


2. Click on **Uninstall** and confirm the process with OK.



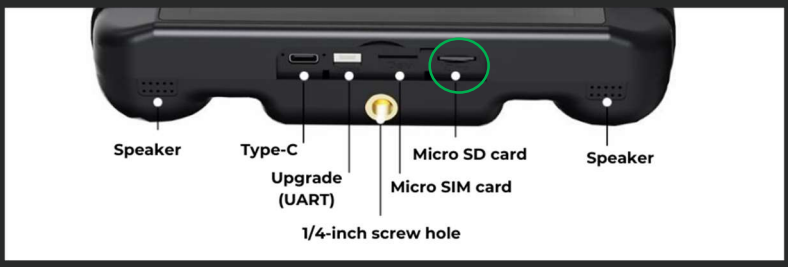
3. Open the **Files** application. Navigate to the **ABZ Control** folder (**MK15 > Apps**) and delete it.



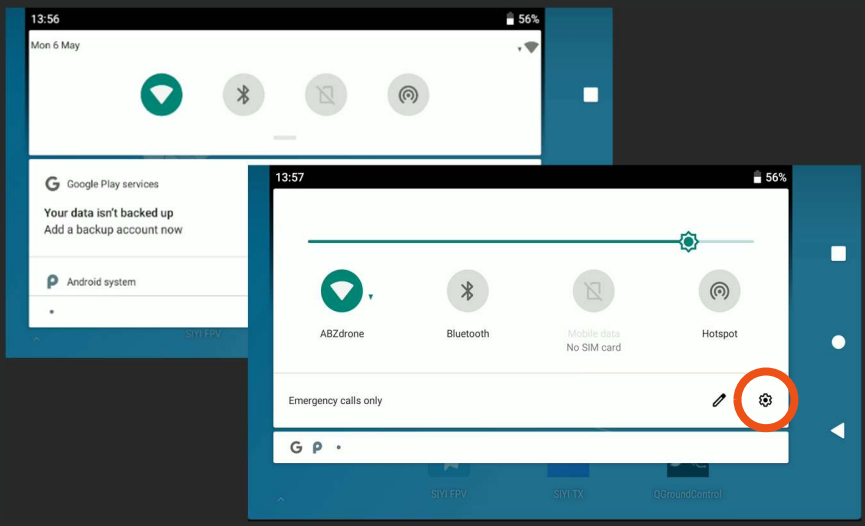


9. Install the ABZ Control application

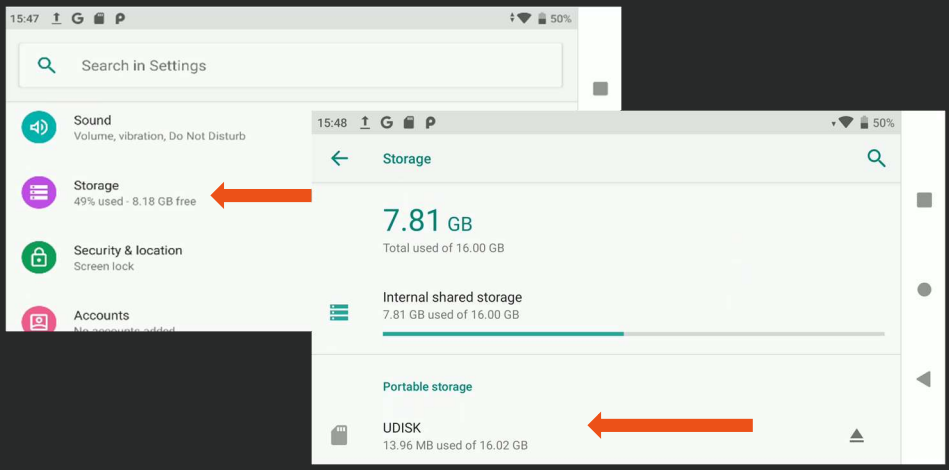
1. Copy the 1.1.0**.apk** file to a MicroSD card. (Alternatively, you can use a cable connection. For further instructions, see step 11). If Windows displays a pop-up window asking to copy without attributes, copy it anyway.
2. Insert the MicroSD card into the controller.



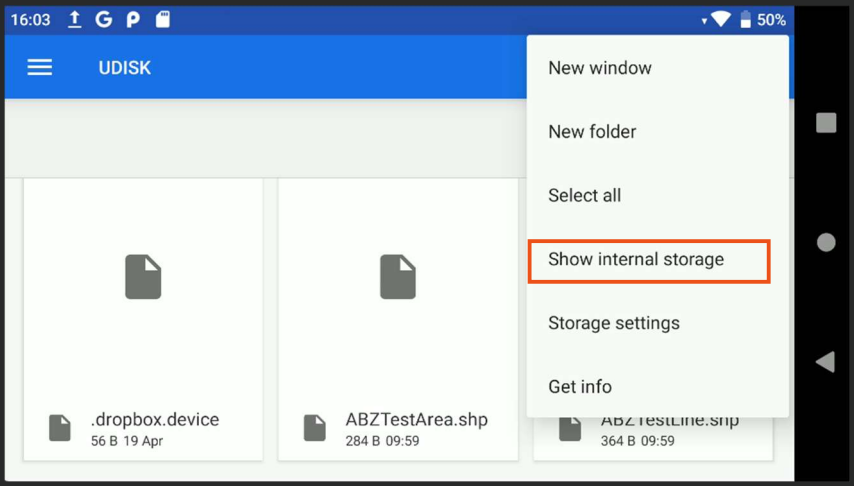
3. Swipe down on the screen to see the Android menu. Select the gear icon (**Settings**) at the top right.



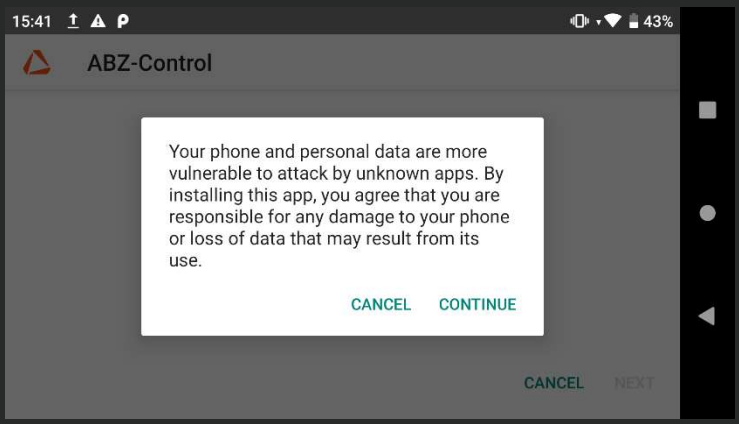
4. Scroll down to **Storage** and tap on it. Open the **SD Card**.



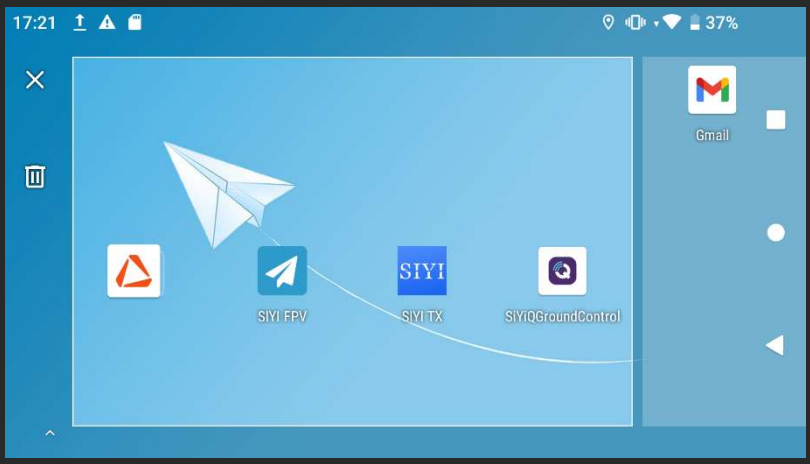
5. Tap the top right **Others** (3 vertical dots icon) menu, then **Show internal storage.**



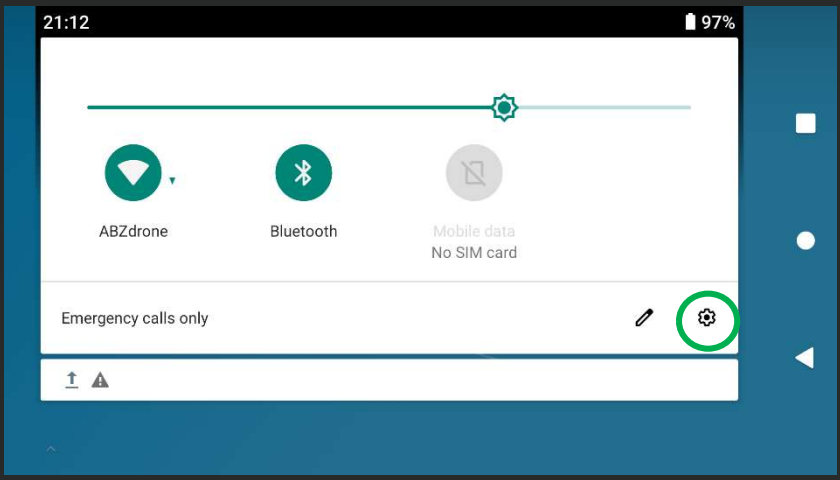
6. Click on the ***1.1.0.apk*** file. Confirm the installation with **Continue**.



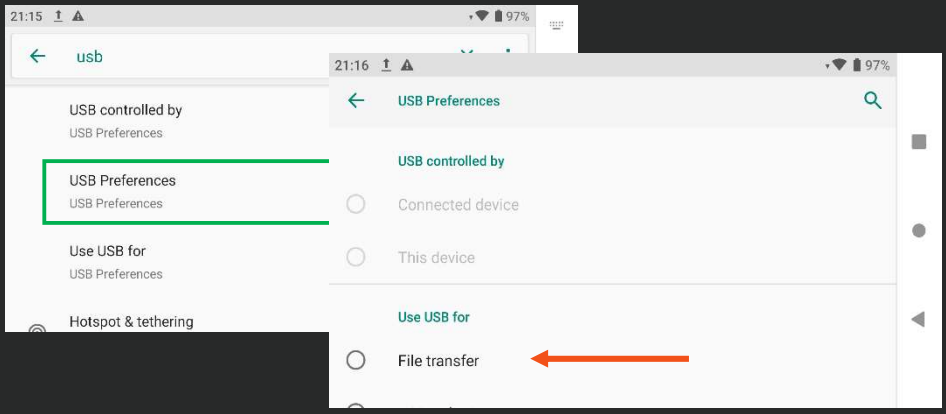
7. Allow the ABZ Control application
    a. to access photos, media and files;
    b. access the device's location
    c. take pictures and record video.
8. Remove the MicroSD card from the controller.
9. Power off the remote controller.
10. After reboot, open the list of the applications by swiping up on the screen. Long-press the icon of the **ABZ Control** and drag it to the home screen.



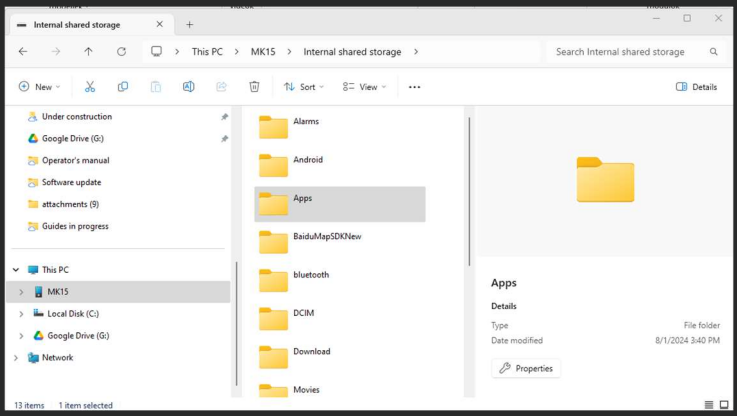
11. You can copy the files to the Remote controller with its cable, too.
    - Connect the cable to the USB-C port of the remote controller and the computer.
    - Open the Android settings by swiping down from the top of the screen.



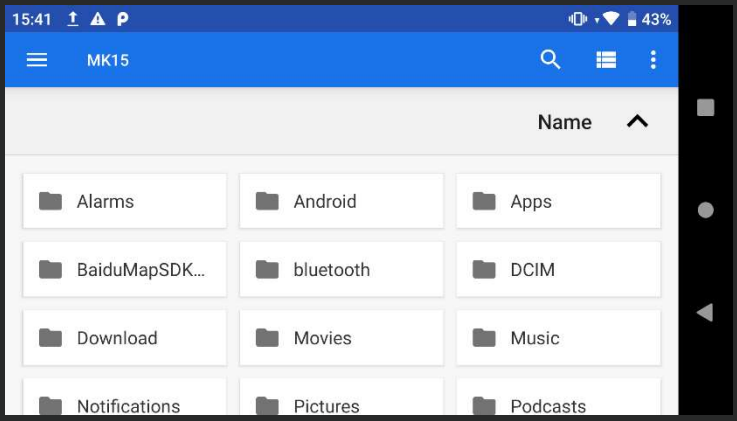
    - In the search bar enter “USB”. Look for the option USB preferences. Click on File transfer.



- On your computer the device MK15 appears. Copy the 1.1.0.apk file to the **MK15 > Apps** folder. You can disconnect the cable.



- Start the **Files** application on the remote controller and open the **Apps** folder.

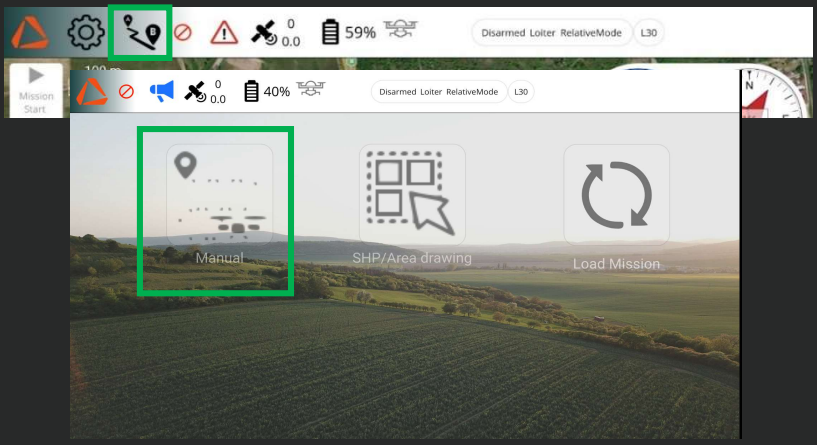


- Click on the 1.1.0.apk and in the pop-up window agree to the installation.

10.Initial setup of the flight planning process

After the software installation, some steps are necessary to set up the flight planning function. Take the drone to the field. Open the ABZ Control application and connect the battery to the drone.

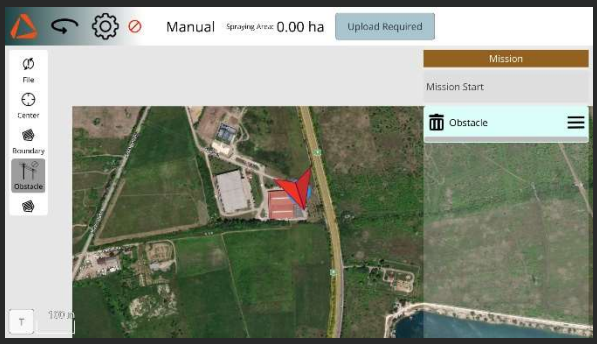
Open the **Flight planning** page with the A to B icon. Click on the manual planning.



Click on the **Obstacle** option on the left side of the screen**.** At this point, the software might crash. If this happens, try again.

If an obstacle was successfully added to the right side panel of the Planning window, you can delete it. The initial setup is ready.

If you have any questions, please contact us at support@abzinnovation.com.

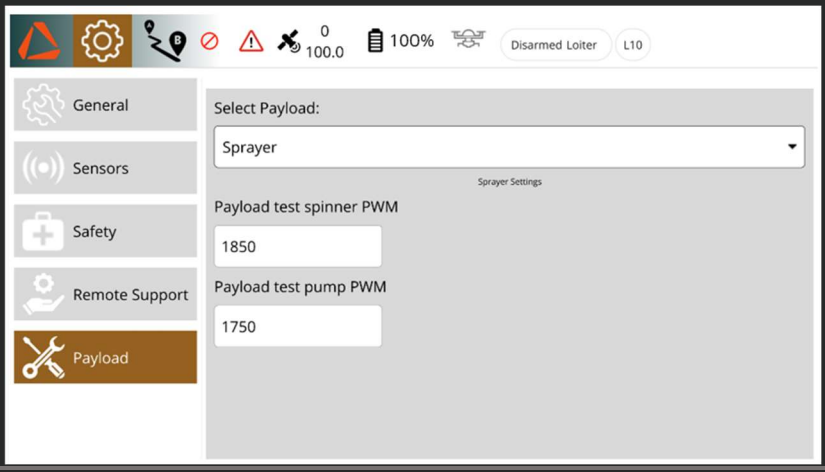


11.Safety tests

Ground safety check

After finishing the update process, it is essential to check the drone's proper operation on the ground. Bring the drone outside so it can establish GPS connections.

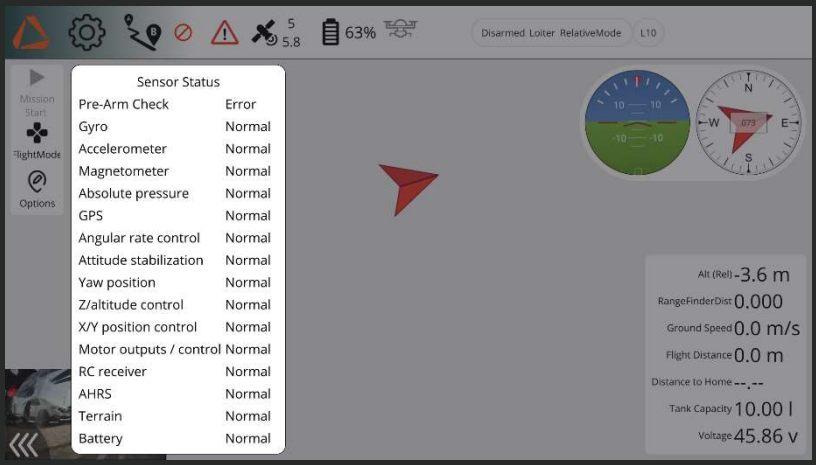
1. Turn on the drone by connecting the battery. Do not arm the drone! Press the buttons and check if the corresponding flight mode appears in the top bar. (**A button - Loiter** flight mode, **B button - Return to Launch** flight mode, **C button - AltHold** flight mode).
   - Fill the tank with water and place a bucket under the CDAs to test if the pumps and the test spray function can be operated correctly. Open the **ABZ Control** application, go to **Settings > Payloads,**



and select **Sprayer** as the payload. Set the Test Pump PWM to 1900 and the Test Spinner PWM to 1100 (the lowest CDA rotation).

- Activate the function by flipping the three-position switch on the right-hand side of the Remote Controller backward.

2. Click on the **Ready to fly status indicator** (green checkmark) to see if the sensor's state is normal.



Test flight

After a ground safety check, perform a testflight:

1. **Ascend to a Safe Altitude**: Take off and bring the drone to a safe height.
2. **Hover Test**: Ensure the drone can hover steadily in Loiter Mode.
3. **Joystick Response Check**: Confirm that the drone responds correctly to all joystick inputs.
4. **Directional Movement**: Carefully move the drone in all four directions—left, right, forward, and backward—then test its ascent and descent.
5. **360-Degree Turn**: Perform a 360-degree turn to test the compass; the drone should not wobble during this maneuver.

By following these steps, you can ensure your drone is functioning correctly and is safe to use again.

Getting to know the new ABZ Control

The update is done, and the drone and the controller are ready to use. You can find the description of the software and the new features in the Operator's manual beginning from page 19.

You can read about the most important new functions on the following pages:

- Emergency jump.....27
- Manual flight planning with the Remote Controller.....32