



One To Build

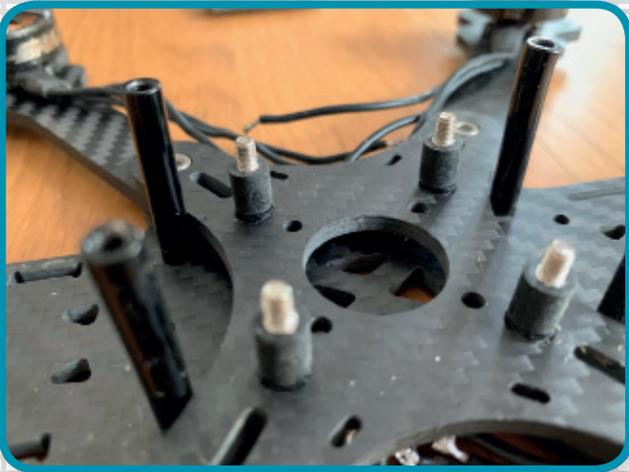
IN THIS GUIDE, WE RUN THROUGH THE STAGES OF BUILDING A QUAD USING THE SOURCE ONE FPV MODEL FROM UNMANNED TECH INCLUDING HELPFUL TIPS TO MAKE IT AS EASY AS POSSIBLE FOR THOSE TAKING ON THE TASK FOR THE FIRST TIME...

Building a quadcopter can seem daunting for someone new to the hobby, but the following guide takes it step-by-step with easy to follow instructions. The guide will show you how to build the Unmanned Tech Source One kit, which is a model using 5 inch props, and the finished result will be a quadcopter that is ready to be taken out and flown. Other kits are available but the fundamentals here will be applicable to any quad using similar components. The Source One kit includes everything you need to build a functional ready for receiver quadcopter. The parts for this build come from the Unmanned Tech Source One kit, available from www.unmannedtech.co.uk and includes include all the parts needed to construct the Source One model. To construct the frame the only thing you need to keep in mind is there are four longer screws that are used to attach the 4-in-1 electronic speed controller and flight controller stack.

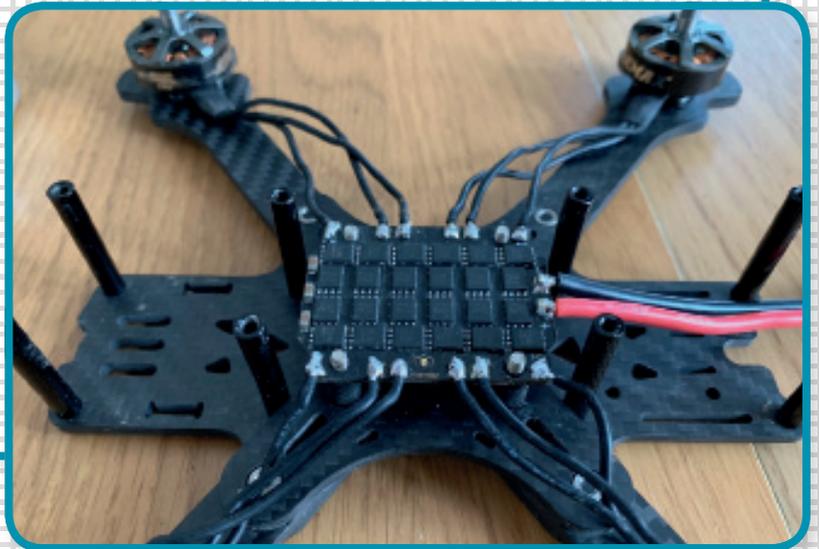


Once the frame is at this stage it's time to attach the motors using the provided screws. Each motor is held on with four screws and the wires should point towards the centre of the frame once they are attached.

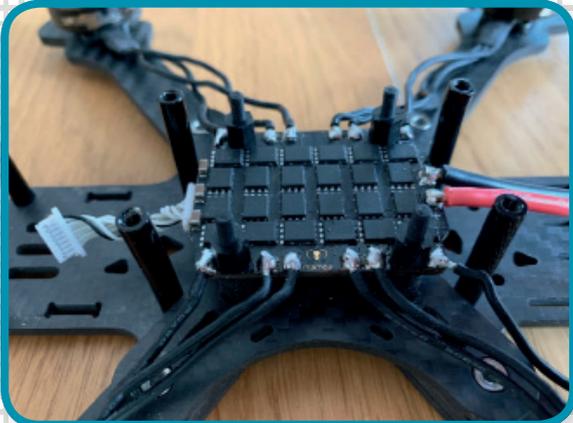




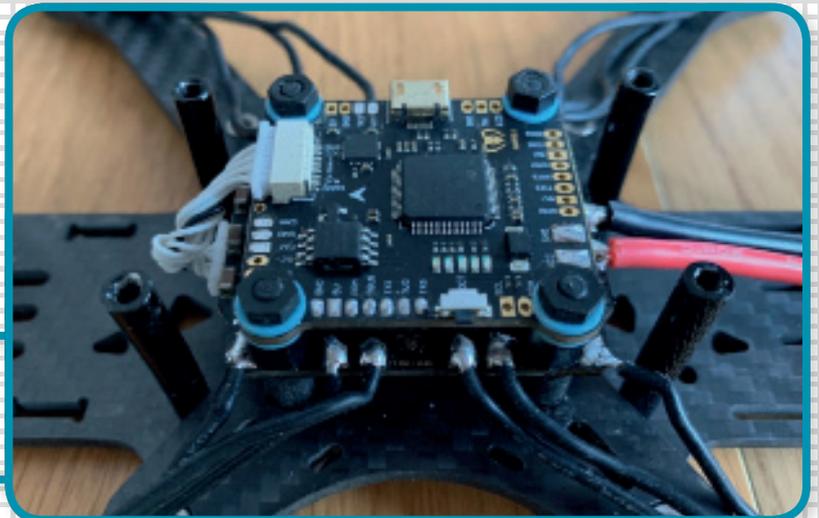
The next thing to do is to start attaching the flight stack. The best thing to do here is to take the two boards that make up the mamba stack apart so you have the flight controller and the electronic speed controller as two separate boards. Now you need to screw the rubber standoffs into the four screws in the middle.



Slide the electronic speed controller onto the standoffs and pre-tin all the connections. Pre-tinning is important as it makes soldering the cables easy. Make sure you use some flux to aid the heat transfer and this also helps to make a good joint. Solder each of the motor wires on as well as the battery connection cables. It doesn't matter what order the motor wires are connected to the electronic speed controller.



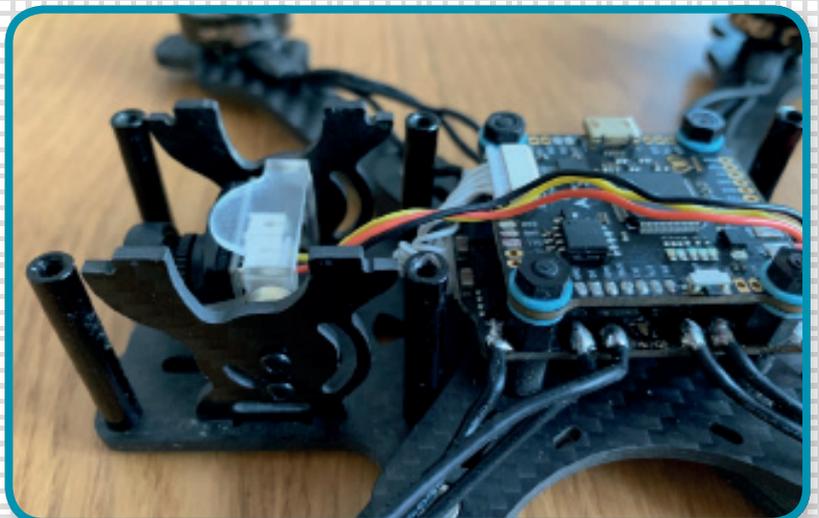
Attach the four plastic standoffs to the speed controller for the flight controller to sit on and plug in the connector at the front.



The flight controller will sit on the top of this stack. It's important to ensure that the little arrow at the front of the flight controller points to the front of the aircraft. Plug the cable into the front and you should end up with this.



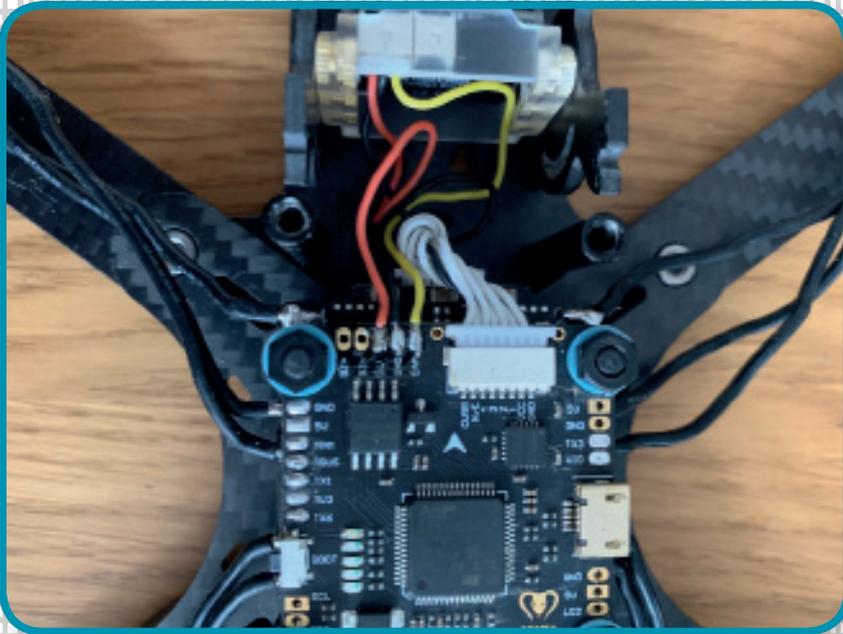
Next we need to assemble the camera assembly. You will need to use the spacing adapter and I recommend installing the cable before you put it together.



Insert the assembly into the slots on the frame.

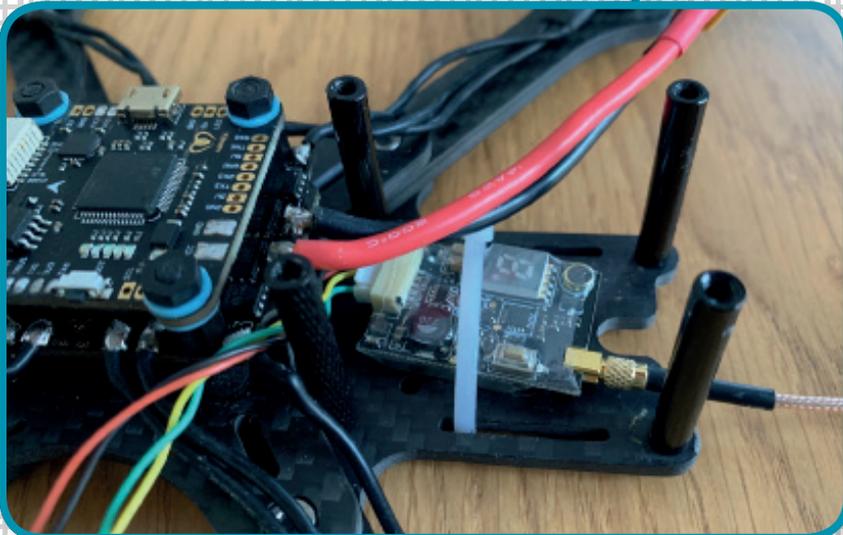
Once that's assembled you need to install the camera into the mounting plates being careful not to over-tighten the screws that hold the camera to the plates.



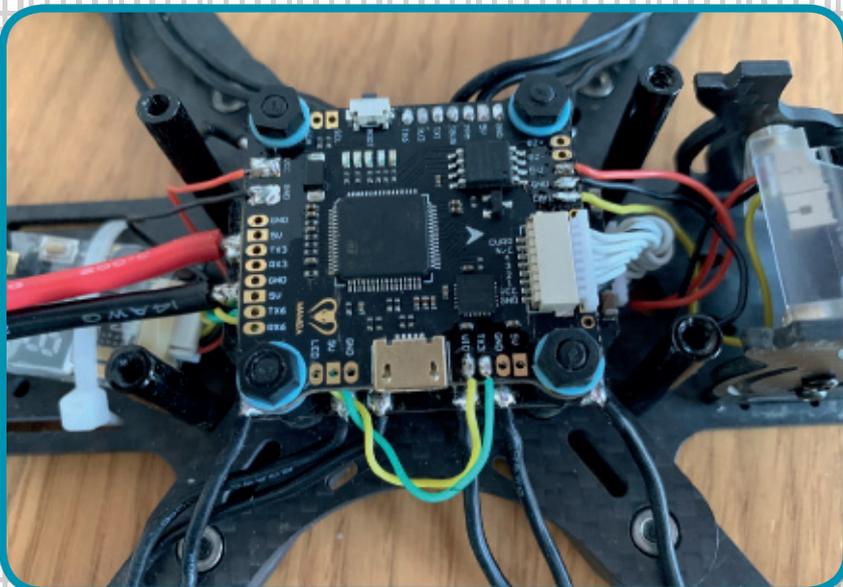


Now it's back to soldering. Cut the cable from the camera in half and solder the three wires to the flight controller. They are (from closest to the electronic speed controller connector):

- Video in (yellow wire) to CAM pad
- Ground (black wire) to GND pad
- 5V (red wire) to 5V pad



Secure the video transmitter to the frame using a suitably sized cable tie. Ensure that the button on the video transmitter is not covered by the cable tie.



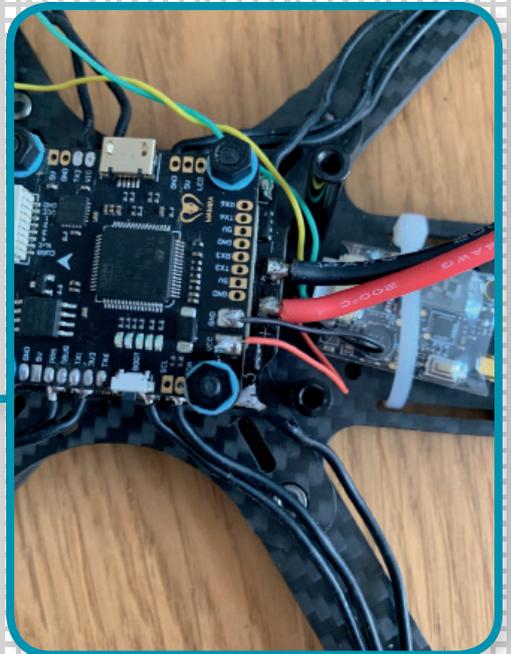
Route the yellow and green wires between the two boards of the flight stack then connect them as follows:

- Green to TX3
- Yellow to VID

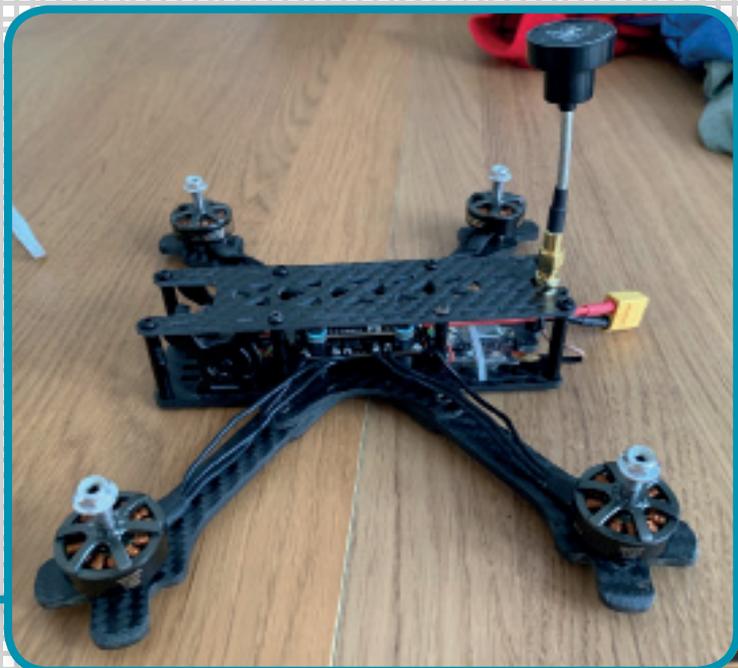


INSTALLING THE VIDEO TRANSMITTER

The first thing to do will be to remove any cables that are not required from the wiring plug for the video transmitter. To do this use a sharp modelling knife, lift the tabs on the connector then remove the 5V out and ground cables.



You will need to cut the connectors off the cables from the video transmitter. The red will be connected to the VCC pad and the black to the GND pad.



Thread the battery straps through the slots in the top plate and then this can be fitted. Mount the pigtail from the video transmitter to the frame and then screw the FPV antenna into the end of the pigtail. The last thing to do is to secure the motor wires to the frame using cable ties to ensure that they don't get caught in the props.

RECEIVER REQUIRED

That covers the connections for the parts included in the kit although to complete the build you will require a receiver. For this build I chose an FrSky XM+ which is a small size full-range receiver, but for the number of different receivers and connection/mounting options this guide is not suitable to cover.

Some things to note when working on a quadcopter for the first time are that you must never power the video transmitter without an antenna connected. Doing so will cause permanent damage to the transmitter. You should also never attach propellers unless you are ready to fly. Remember when a battery is connected and the props are on a quadcopter can cause you or the people around you serious harm. Be safe!



SUMMARY

This is one of the easier quadcopter builds and everything here is aimed at someone who is eager to make a start building their own quadcopter. Once this is completed you will have an unprogrammed quadcopter so will require some software set-up before it is able to fly. [n](#)