

Drone Hardware Assembly

Parts List:

1. Skystars Flight Stack
 - a. <https://www.getfpv.com/skystars-fly-stack-h743-single-gyro-hd-fc-ko60-60a-blheli-32-4-in-1-esc-30x30.html>
2. Holybro GPS
 - a. <https://www.getfpv.com/holybro-micro-m10-gps-w-case.html>
3. ExpressLRS 2.4GHz Receiver
 - a. <https://www.getfpv.com/radiomaster-expresslrs-2-4ghz-receiver-w-antennas-rp4td.html>
4. Radiomaster Boxer ExpressLRS Transmitter
 - a. <https://www.getfpv.com/radiomaster-boxer-radio-transmitter-4-in-1-multi-protocol-cc2500-elsr-2-ghz.html>
5. Holybro SiK Telemetry Radio
 - a. <https://www.getfpv.com/holybro-sik-telemetry-radio-v3-100mw-915mhz-2pcs.html>
6. Avatar Walksnail Moonlight
 - a. <https://www.getfpv.com/walksnail-moonlight-kit-4k-avatar-fpv-system.html>
7. Raspberry Pi Zero 2
 - a. <https://www.amazon.com/Raspberry-Quad-core-Bluetooth-onboard-Antenna>
8. IR Camera
 - a. <https://www.amazon.com/MLX90640-Interface-Compatible-Raspberry-MLX90640-D110>
9. 5" Drone Frame Kit
 - a. <https://www.getfpv.com/xilo-phreakstyle-slam-freestyle-quadcopter-frame-kit.html>
10. 4x Drone Motors
 - a. <https://www.getfpv.com/t-motor-velox-v2207-v3-motor-1500kv-1750kv-1950kv-2550kv.html>
11. 3-Blade Propellers
 - a. <https://www.getfpv.com/gemfan-hurricane-max-51377-3-blade-propeller-set-of-4.html>

Assembly

1. Assemble the 5" frame kit using the supplied instructions.
2. Attach the flight controller to the frame using anti-vibration rubber bearings.

3. Mount the HolybroGPS module onto front of the 5" frame and solder the gps's connectors to serial port 4 on the flight controller.
4. Mount the ExpressLRS rx on the front of the drone near the gps and solder the connectors to port 5 on the flight controller.
5. Mount the Avatar VTX module onto the back of the drone (far away from the gps module). Solder it to port 6.
6. Attach the camera to the front of the drone passing the wire underneath the flight controller.
7. Mount the SiK radio onto the back of the drone. The antenna should point backward toward the rear of the drone. Solder the SiK radio onto port 7.
8. Attach the Raspberry Pi in the undercarriage of the drone and connect the 5v power to the flight controller port 2.
9. Connect the IR camera to the RPi and attach it below the visual light camera.
10. Mount the motors on each arm of the drone and attach propellers to each of the motors.
11. Solder the motors to the power distribution board mounted below the flight controller.

Flight Controller Supplied Assembly

