Agricultural Drone

Student Companion Manual

By Research & Development Laboratory

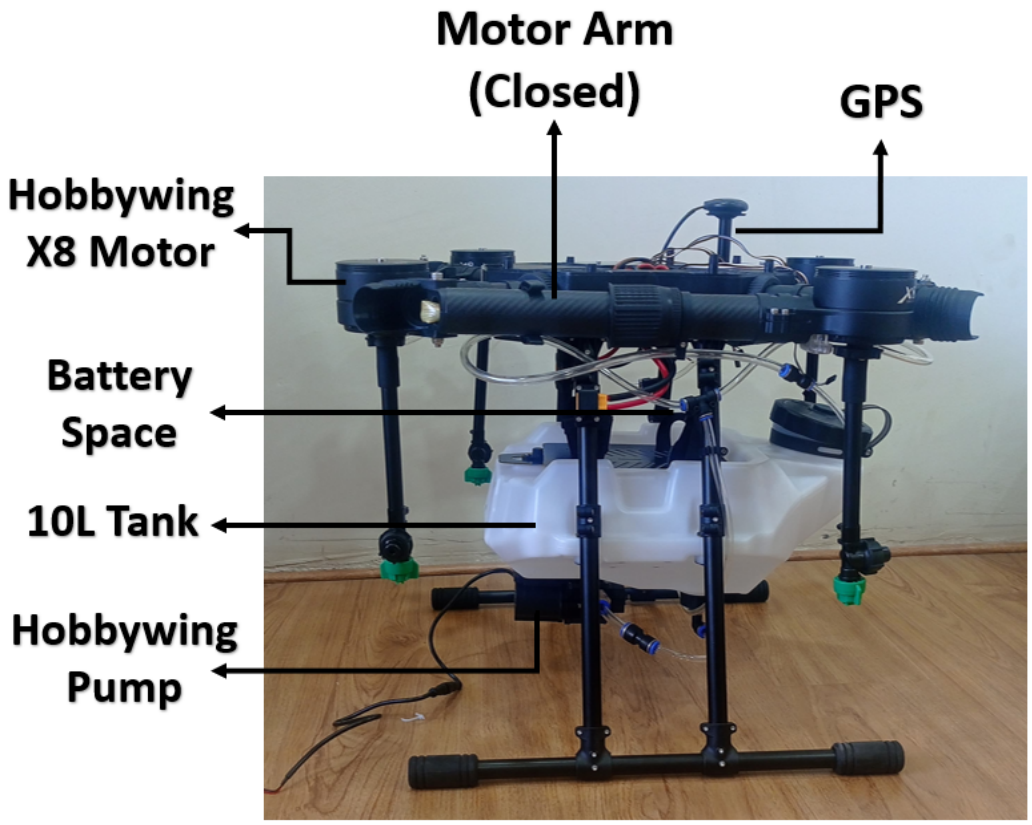
E410P DRONE KIT

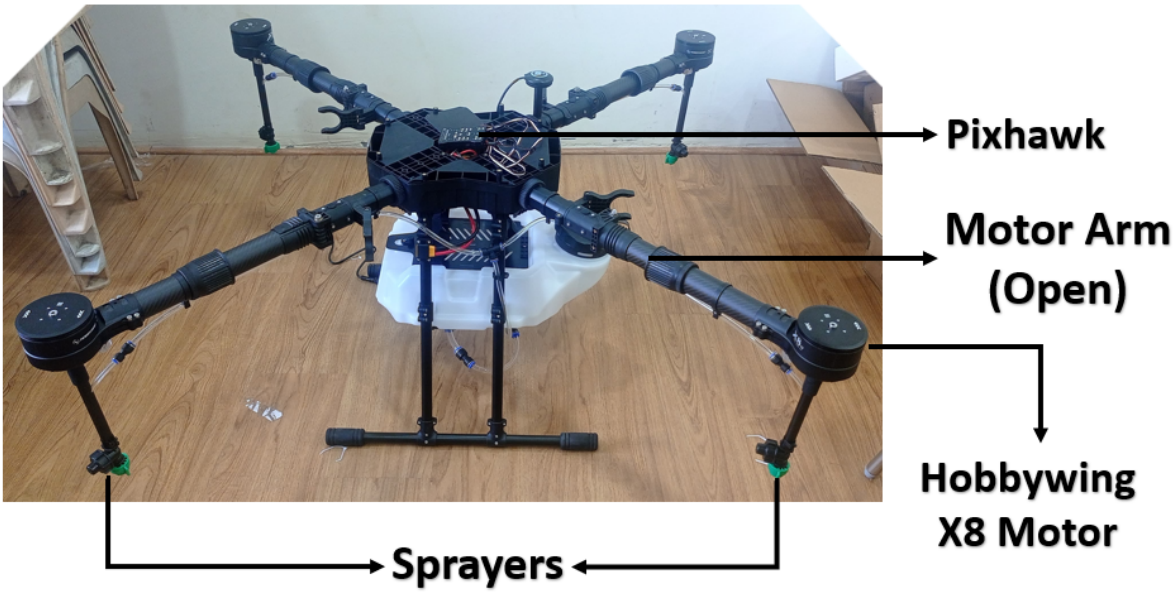
- **Please read the manual carefully before using the Drone kit.**
- **Follow the device specifications as mentioned in the manual.**
- **Please keep the manual after reading**

The **EFT E410P 10L 4 Axis Agricultural Drone Frame** is a sturdy, highly precise, and simple to install drone frame. High Duty Drone Uses due to its resilience to harsh environments.

PACKAGE LIST			
	Pixhawk 2.4.8		UBEC
	E410P Drone Frame		APM POWER MODULE
	Hobbywing X8 Pro Motors (2xCW, 2xCCW)		TELEMETRY
	SAFETY SWITCH		Li-PO BATTERY
	GPS M8N		RC Receiver
	BUZZER		EFT Carbon Plastic 3090 Propellers

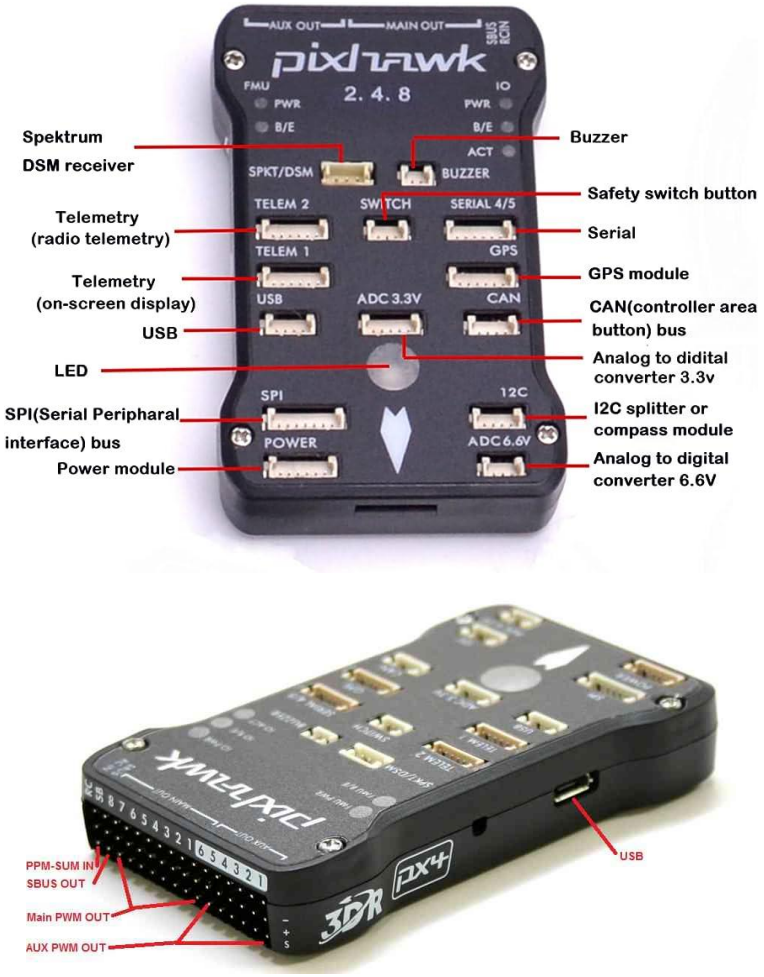
Assembled Drone-kit





Connections

PIXHAWK 2.4.8



Pixhawk is an open-source hardware and software platform designed for autonomous vehicles, specifically unmanned aerial vehicles (UAVs) or drones. It is widely used in the field of robotics and aerial robotics due to its reliability and versatility. The Pixhawk platform provides a high-performance autopilot system that can control the flight of a UAV, manage sensors and peripherals, and execute autonomous missions.

LED -

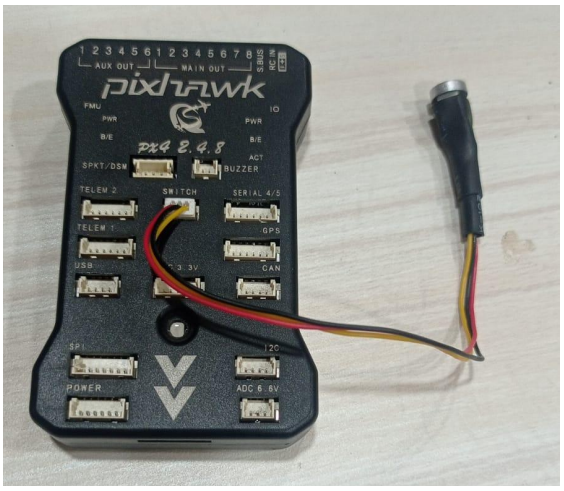
- **Solid Green**- flight controller is powered on and functioning properly.
- **Solid Red**- indicates an error or issue. It could be due to a failure in initialization or a problem with the system.
- **Blinking Blue**- system is in the process of initialising or calibrating. It might blink rapidly during GPS acquisition.
- **Blinking Yellow/Amber**- system is armed and ready for flight. It might also indicate that the system is in a "guided" mode.
- **Blinking Red**- indicates a warning or error. It could be due to a variety of issues, such as low battery, GPS signal loss, or a safety switch trigger.
- **Blinking Green**- system is disarmed or in a non-flight mode.
- **Blinking Purple**- indicates a problem with the compass or magnetometer.

Pixhawk Connections:

GPS

GPS has 2 pins, connect 2 wired pins to I2C of Pixhawk and 4 wired pins to GPS of Pixhawk.
Place GPS on the Chassis of the Drone for navigation.

Safety Switch

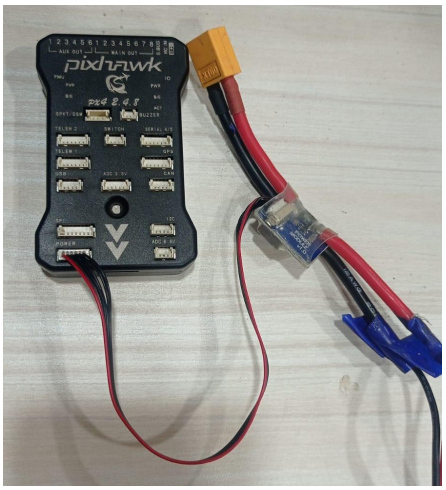


Connect the 3 wired pins of Safety Switch to SWITCH on Pixhawk. Safety switch is used to ARM the vehicle by turning it OFF.
Long Press & hold Safety Switch for 2 seconds to turn it OFF.

Buzzer

Connect the 2 wired pins of Buzzer to BUZZER on Pixhawk. Place the buzzer on the Chassis of the Drone.
It indicates when the Drone is Armed, Disarmed, Power On, Power Off.

Power Module



Connect the 5 wired pin of Power Module to POWER on Pixhawk to send power/power up the Pixhawk.

RC Receiver

Connect the 3 wired pins (s,+,-) of RC receiver to the Receiver pins (s,+,-) on Pixhawk.

Telemetry

Telemetry refers to the transmission and reception of real-time data wirelessly from remote or inaccessible locations. In the context of electronics and technology, telemetry is commonly used to monitor and transmit data from sensors, devices, or systems to a central control station or monitoring system.

Telemetry Receiver

Connect the 4 wired pin of Remote control Telemetry to TELEM 2 on the Pixhawk.

Telemetry Transmitter

Connect the Ground Control telemetry to your computer which contains the Ground Control Station.

Hobbywing X8 Motors to Pixhawk

There are 4 motors each consisting of 3-wired pins (+,-,signal). Connect all the 3-wired pins to Main Output Pins of Pixhawk in 1, 2, 3 & 4 respectively.

Overall Connections of Pixhawk & Drone: