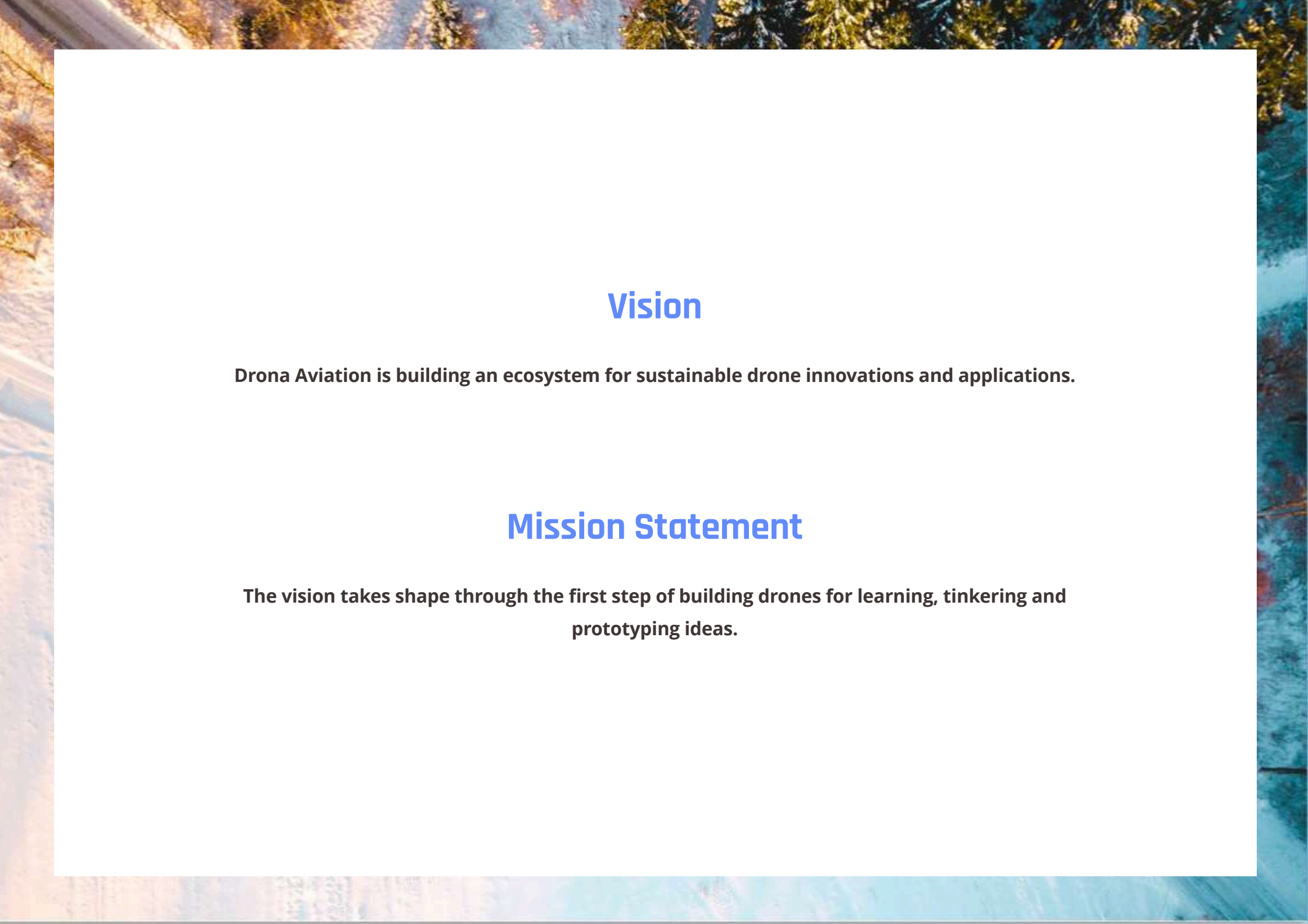
DRONA AVIATION

PRODUCT CATALOG



Vision

Drona Aviation is building an ecosystem for sustainable drone innovations and applications.

Mission Statement

The vision takes shape through the first step of building drones for learning, tinkering and prototyping ideas.

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PRODUCTS

PRODUCT

PLUTO X

Pluto X is a RTF nano-drone which can be used for tinkering and learning. Using UniBus, you can add different accessories such as sensors, LEDs, Servos etc. It also allows you to do Image Processing using ROS package.

This product is for students (school and college), hobby electronics enthusiasts. If you want to learn drones, this is the product for you. If you have drone ideas and you want to learn and implement those ideas, Pluto X is here for you.

Pluto X is perfect for you to begin with zero knowledge and come to a place where you imagine your drone ideas and bring them to life.

Pluto X is ideal to learn drones. Pluto, with its HD (720p) wifi camera can take photos and videos which can be used for image processing. You can program Pluto X very easily to implement using very few lines of code with its APIs.

Pluto X, with its hardware modularity, allows you to integrate more sensors and hardware, from Drona Aviation, or the ones available in your local electronics store to implement new ideas on top.

Whats in the box

- **1 Pluto X Drone**
  Primus X Flight controller
  - 1 Frame
  - 4 Motors
  - 1 600mAH Lipo Battery
  - 4 Propeller
  - 4 Prop Guard
  - 4 Nylon Screw
  - 4 Dampers
  - 1 Canopy

- **4 Spare Propellers**
- **2 Spare Motors**
- **2 Spare Prop Guard**
- **1 Flag Holder**
- **1 Prop Tool**
- **1 Badge**
- **Project Book (Soft Copy)**
- **Instruction Manual**

- **1 X-Breakout with Cable**
- **1 Wifi Camera**
- **1 600mAH Lipo Spare Battery**

Features

- Expand your possibilities using UniBus
- Altitude Hold with an accuracy 10cm air column
- Auxiliary Port to attach Hardware
- API based programming in C++
- Wifi based control and OTA programming
- Modular Wifi-camera
- ROS Compatible
- 12 Ready Experiments

Tech Specs

- Dimensions: 16 cm X 16cm
- Weight : 60 gram
- Payload : 10 gram
- Range: 70-100m
- Flight Time: 8+ mins
- Microcontroller: STM32F303, 256kb
- Total 8 Motor drives: 4 MOSFET (unidirectional) & 4 H-Bridge drives (Bidirectional)
- 10 DOF Sensor Suite
- UniBus: 20-pin GPIOs: UART, I2C, SPI, ADC etc.
- Camera: Photo, Video@720p, SD Card,

PRODUCT

PLUTO 1.2

Pluto 1.2 is a DIY nano-drone which can be used for learning. It's a great drone for learning basics and how to fly. It can also help you understand the basics of drone programming.

This product is for those who want to begin their drone journey. Ideal for drone beginners and students of STEM education, Pluto 1.2 is an ideal DIY kit for you to build yourself, make mistakes and learn in the process. You can start with absolutely zero knowledge of drones or programming and master drone concepts through Pluto 1.2.

What can you do with the product?

Pluto 1.2 is a Do-It-Yourself kit i.e. you can build the drone yourself before flying it. With its robust frame and components, you can make a lot of mistakes and crashes without having to pay for it. Unlike other drones, it has available spares which you can replace in case of damage. Pluto 1.2 is programmable with an available set of programming experiments to get familiar with concepts of drones as well as drone programming.

It has different flight modes depending on your skill level:

- Altitude hold / Thrust Mode
- Tilt mode / joystick mode

You can also integrate a separate HD (720p) wifi camera that can take photos and videos.

Whats in the box

- 1 Primus v4
- 8 Propellers
- 1 Frame
- 6 Prop Guards
- 4 Motors
- 4 Nylon Screws
- 4 Dampers
- 1 Prop Tool
- 1 Canopy
- 1 Badge
- Project Book (Soft Copy)
- Instruction Manual

Features

- DIY Kit - Easy to Assemble
- Block Programming Compatible
- Altitude Hold with an accuracy 10cm air column
- Wifi based control and OTA programming
- 16 hrs of Learning Content
- 5 Programming Project Ready

Tech Specs

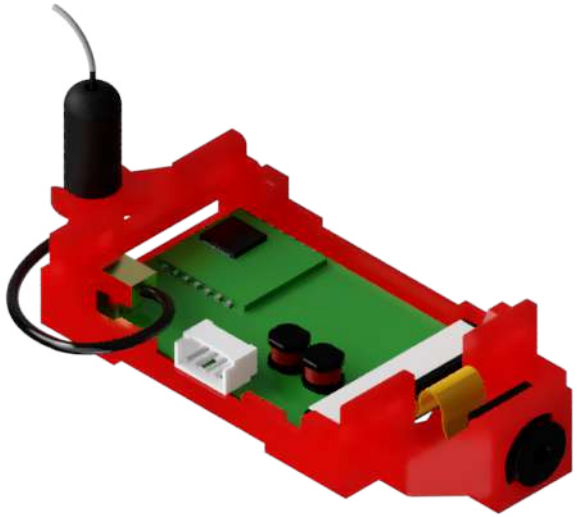
- **Dimensions: 16 cm X 16cm**
- **Weight: 55 gram**
- **Payload:10 gram**
- **Range: 70-100m**
- **Flight Time: 8+ mins**
- **Microcontroller: STM32F303, 128kb**
- **Total 4 Motor drives: 4 MOSFET (unidirectional)**
- **10 DOF Sensor Suite**

ADD ON

ADD ON

WiFi Camera

This is a Wifi camera addon available with Pluto 1.2 and Pluto X. When this camera is attached, Pluto's Wifi shuts down inorder to avoid interference. The data is also routed through the camera.



Features

- Video : 720p / 1080p
- Photo : 1MP / 2MP
- Range : 30m
- SD card supported
- Frame rate :
  - Live transmission video :~18 FPS
  - On-board card : 25 FPS
- Weight : 8g (With casing)

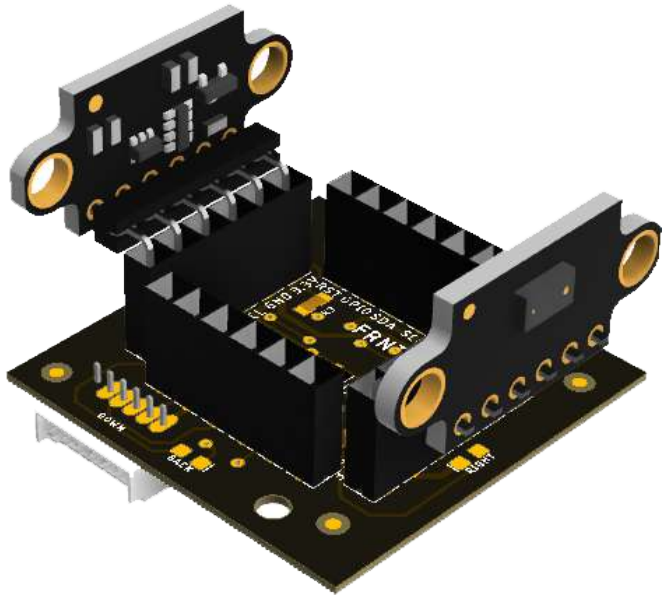
Tech Specs

- **Minimum supply voltage (+V) : 3.4V**
- **UART : 115200 bps**
- **Current rating : 270mA (720p) / 450mA (1080p)**

ADD ON

X-Ranging

X-Ranging is a shield which can be used to integrate Ranging sensors directly on to the Primus X board.
It has slots available to directly insert 4 Ranging sensors and an extra pinout if you need to connect a Ranging sensor at the bottom of the drone.



Compatible Hardware

- **Pluto X**

Whats in the Box

- **1 PCB**
- **2 x VL53L0x sensor module**

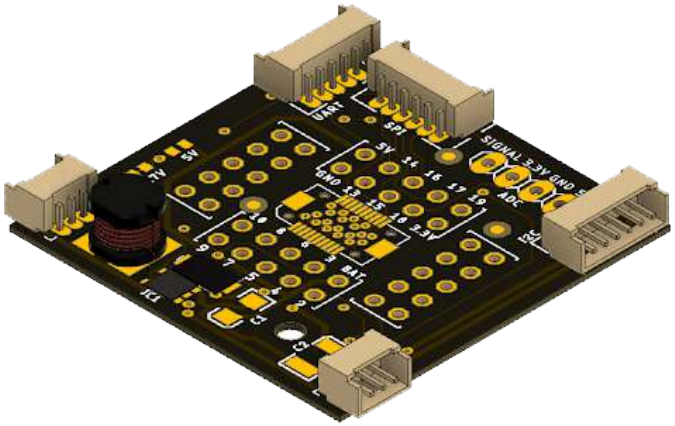
Tech Specs

- **Weight - 6g**
- **Can add up to 5 sensors in the shield**
- **Range upto 200cm.**

ADD ON

X-Breakout

To improve upon your flying experience(especially for FPV), this accessory is useful. This is an RC receiver which is integrated with Pluto using PPM.



Compatible Hardware

- Pluto X

Tech Specs

- Weight - 3g
- 5V boost converter
- Space for prototyping.
- 1 UART port
- 1 SPI port
- 1 I2C port
- 2 x PWM ports

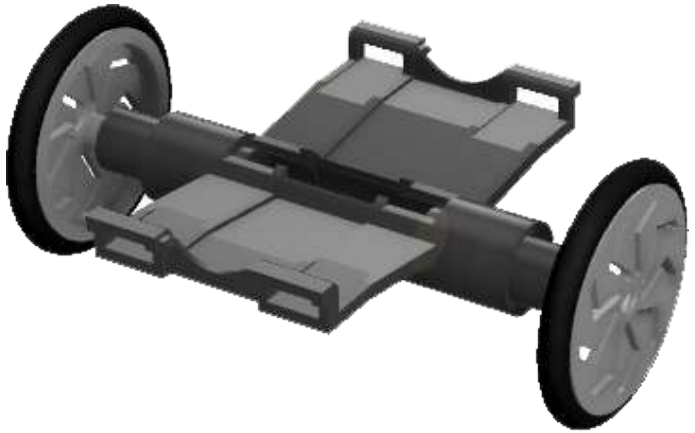
ADD ON

X-Hybrid

X-Hybrid is an attachment which helps the drone move on ground as well as fly. This is possible due to light weight motors and wheels.

Compatible Hardware

- **Pluto X**



Tech Specs

- **Weight - 6g**
- **Motor 6mm 400 RPM brushed**

ACCESSORIES

Accessory

Rover-X

This is a Rover created using a Primus X board. The primary advantage of building a Rover using Primus X is a complete sensor suite. Due to this various experiments related to automotive engineering like stabilisation, drift compensation, autonomous cars etc become possible. This Rover can also be attached with a wifi camera or a FPV camera for racing. Currently we have developed two algorithms for stabilisation

Compatible Hardware

- PrimusX Flight controller (Comes with Pluto X)

Whats in the Box

- 4 x 800 RPM motors
- 4 x Wheels
- 3D Printed Rover Frame

Accessory

BigQuad

This is a bigquad is designed using the Primus X Flight controller. It is used for carrying more payload using payload.

Features

- Higher Payload (Upto 50g)

Compatible Hardware

- Primus X Flight controller (Comes with Pluto X)
- Primus V4 Flight controller (Comes with Pluto 1.2)

Whats in the Box

- 4 x geared Motors + Propellers
- 1 Hub
- 1 x 1200 mAH battery

Thank You

DRONA AVIATION

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