

Hybrid VTOL UAV

UAVE



***Buzzard hybrid
Fixed wing/VTOL***





Technology

Combined with our other fixed wing UAV's the Prion Mk3 will integrate with the Buzzard and can be set up for mission specific capabilities. As the final step of a turnkey solution, we provide a well-established comprehensive user training program in Wales.

Built for Tough Missions

Our products are built to carry out professional missions not just over easier terrains, but also over high mountains, open seas, hot deserts, wet swamps, in day and night under windy, rainy and cold conditions. The breadth and depth of our experience is hard to be matched. We are well-equipped and confident to provide the best possible UAV solutions to challenging missions of clients all over the world.





Hybrid VTOL Drone

The new design of wing maximize the stabilities and heavy wing loading for the small VTOL platform. That means low stall speeds, high max efficiency, a large payload capacity and hot swap features, detachable equipment compartment and the long endurance gasoline engine power system.

This equates to less energy expended and more time in the air.

Product Introduction

- Ideal combination of high energy density gasoline and high efficiency electric motor
- Complete composite construction using carbon fiber and Kevlar on a rigid honeycomb core structure
- New fuselage design concept that conceals all avionics cables
- Robust structure engineered to industrial quality
- Redundant power system for flight controller to maximize safety
- Compatible with PC-based, full-featured, Prion Mk 3 autopilot system
- Built in 6 to 8L fuel tank.
- Easy to assemble in the field, no need for expert skill. Can be assembled in 15 minutes.
- VTOL to suit virtually most surveillance missions



Specification

40Kg
MTOW

20:1 ~ 23:1
Glide ratio (L / D)

4400mm
Wing Span

1940mm
Length

3 to 10 Kg
Payload

60Km
Control Radius

6.5Ltr
Gasoline Fuel Tank

13,120Ft
Maximum Ceiling

>5Hrs (Hybrid)
Endurance
(at 3Kg Payload)

<3Hrs (Motor)
Endurance
(at 1Kg Payload)

100Km/h
Cruising Speed

120Km/h
Maximum Speed

65Km/h
Stall speed

10x10
Runway



FUSELAGE

The trapezoidal shape of the fuselage minimizes the fuselage to wing interaction, drag and interference.

It was designed with a high-pressure region in the nose and a low pressure region behind the wing, on top and below the motor mounting area.

This acts to create a pressure differential, essentially "pulling" air through the fuselage. The layout allows for smarter cooling, by cooling off lower temperature components towards the front, and higher temperature components in the rear (motor). Hence good for high temperatures up to 55 degrees C.

The cooling exhaust placement was purposely in an area with turbulent airflow, so as to not disturb the otherwise laminar airflow over the rest of the fuselage.

VTOL FEATURES

Implement the mature quad motor concept achieve vertical takeoff and landing (VTOL) eliminating the restriction of the runway requirement in the field.

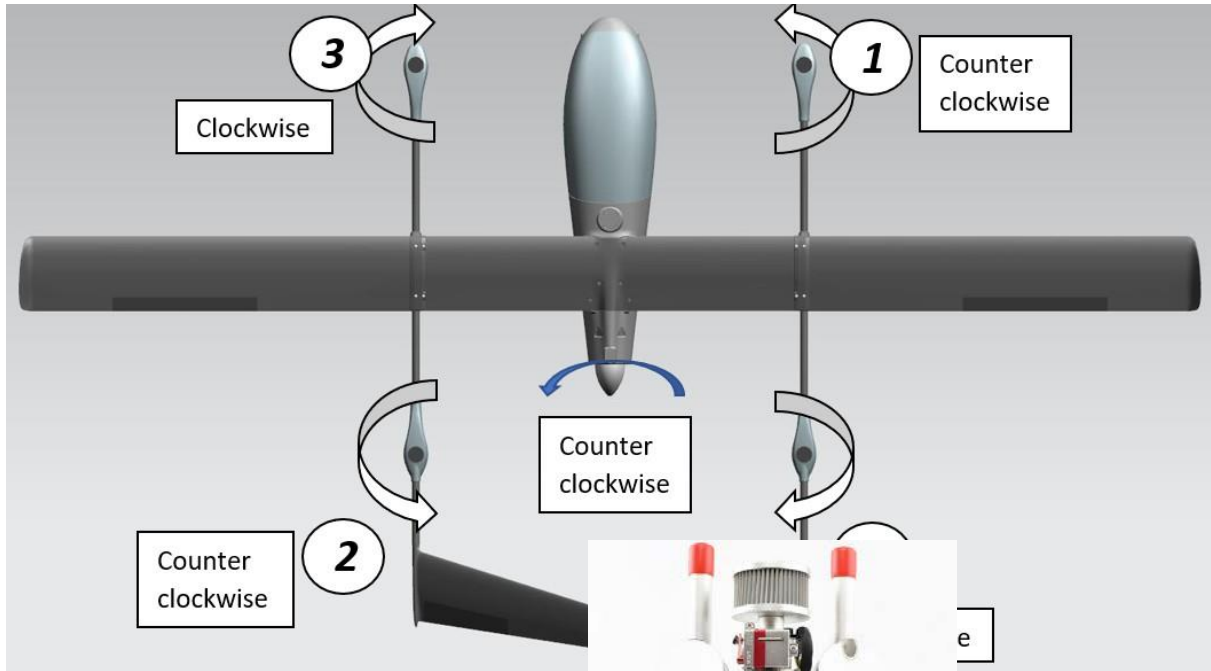
The quad motor also provides the maximum fail-safe protection against any malfunctions situation during the mission.

The special propeller blade align features resulting in less drag while quad motor stop in operating during fixed wing cruise.

ENGINE

DLE60 engine being used which widely implement on the small UAV platform. The engine is noted for its reliability and terrific performance.

Awesome VTOL system eliminate the restriction of take off and landing condition. This system being well proved for the reliability of thousands hour flight. Simple, reliable and easy of maintenance.



Parameters	Dimensions	FAQ	Download
Performance :	7HP/8500rpm		
Idle Speed :	1400 rmp/min		
Static Thrust :	15.2kg/100 meters Altitude		
Static Thrust :	13.5kg/1800 meters Altitude		
Recommended Propeller :	22x10 ; 23x8 ; 23x10 ; 24x8 ;		
Spark Plug Type:	NGK CM6		
Displacement :		61cm ³	
Diameter × Stroke :		36mm×30mm	
Compression Ratio :		7.6 : 1	
Lubrication Ratio :		30:1	
Weight of Main Engine :		1560g	
Weight of Exhaust:		200g	
Weight of Ignition:		190g	
Ignition voltage :		4.8V-8.4V	



Gasoline engine

Customize Auto engine starter.

Unique modular engine mount for plug and play for several minutes to replace the engine module in the field.



VERSATILITY

Our transformative design allows for dynamic use, making each system truly unique.

The Buzzards integrated efficient design, and use of modern carbon fiber technology gives a robust, high performance platform.

CAPABILITY

The Buzzard will:

- Fly for up to 6 hours, and can reach speeds of up to 120 km/h.
- Will fly autonomously, capture stunning HD photos and video, day and night.
- Transmit wirelessly transmit live encrypted video over 50 Km.
- Transmits over military frequency bands, as used by our Prion Mk3.
- Automatic pilot, and return home features.
- Is normally fitted with a 6.5 lt fuel tank but will be fitted with an 8 Lt. fuel tank.
- Working temperature: - 20 to + 55 degrees Celsius
- Radio range 100 km
- 30 x zoom camera



50KM TELEMETARY / VIDEO LINK SYSTEM

Two-way wireless image transmission equipment is a wireless image transmission transceiver. Aiming at the complex ground environment, it adopts leading multi-carrier modulation technology, has strong anti-interference and penetration ability, and realizes the transmission of high-definition, stable, low-latency real-time video image signals on the move.



AUTOPILOT SYSTEM

Full autonomous flight controller and navigation system which is also compatible with our Prion Mk3 fixed wing UAV

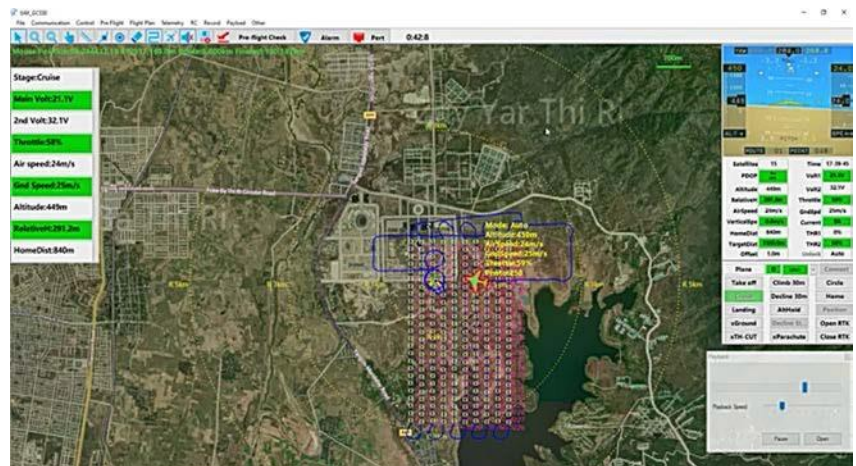
It internally integrates the flight control computer and micro-assembly navigation system(GPS/INS).

Automatic takeoff, landing, hovering, circling, homing, altitude hold. Meanwhile, it is also capable of various autonomous cruise functions based on the pre-set route.

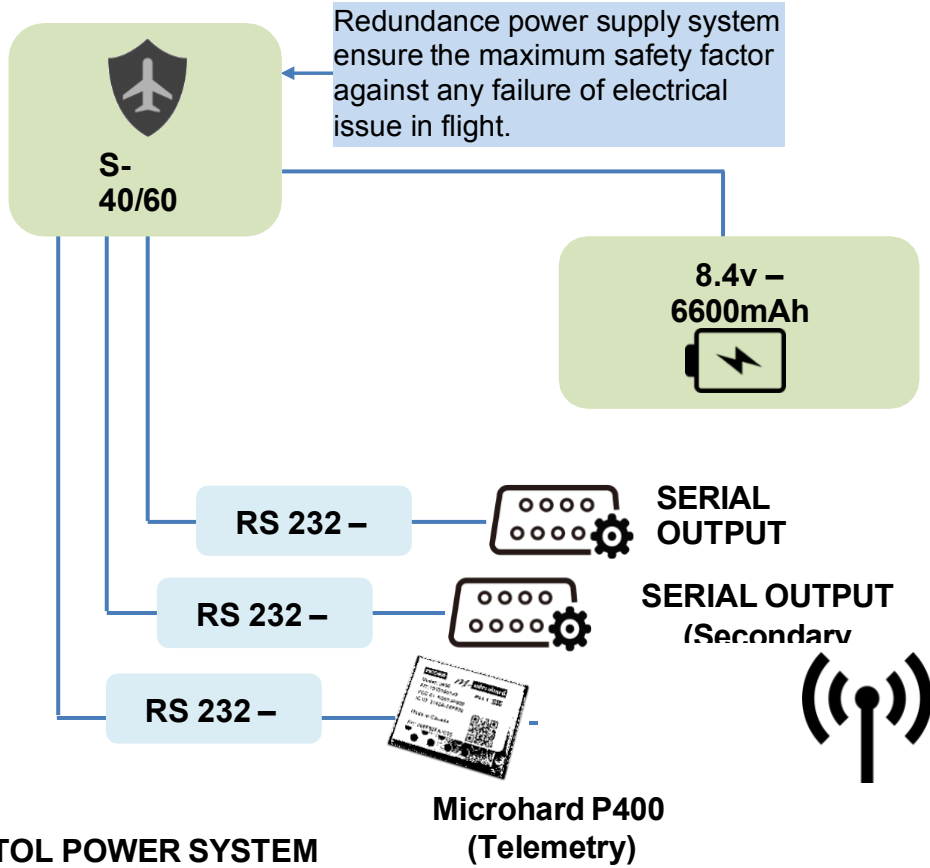
Also has flight status monitoring & alarm functions and a sophisticated emergency protection mechanism, to ensure operational safety of the system.

User friendly Ground control software

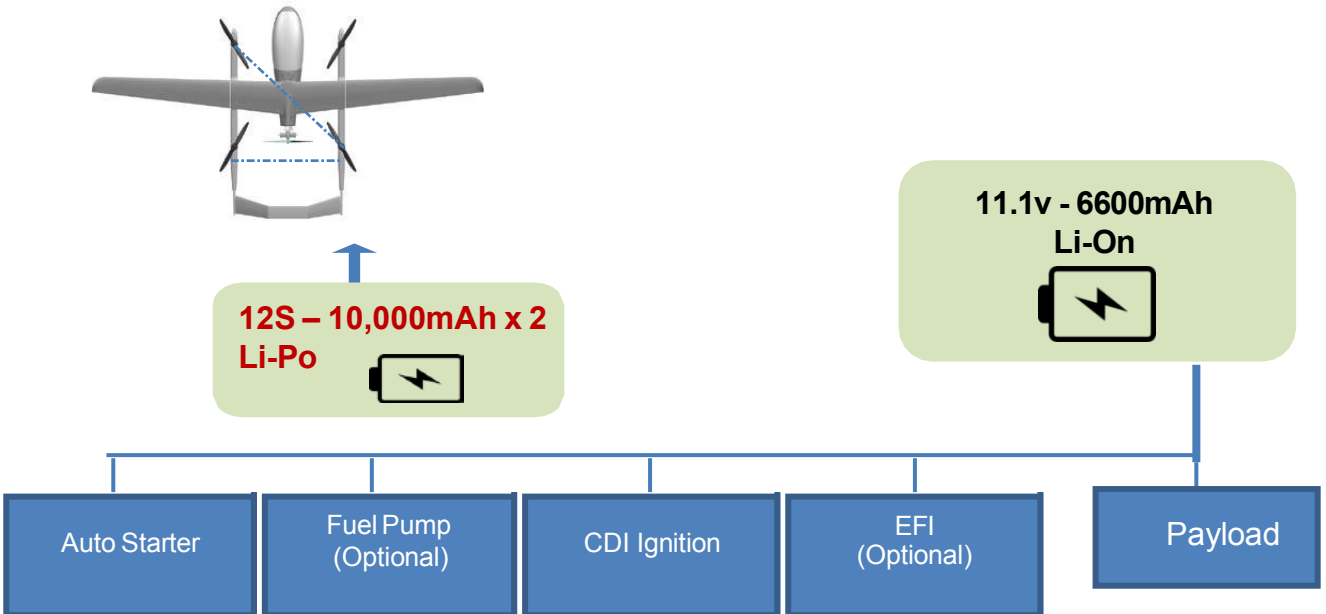
Software design for user friendly Interface. System will hide the unused command from screen.



POWER SYSTEM (DIAGRAM)



VTOL POWER SYSTEM



Portable 18CH Radio Transmitter Receiver



Support Model: Glider Fixed Wing Helicopter Crossing Engineer Vehicle

Working current: 130 mA

Charging Interface: Micro USB/Wireless Charging Low

Voltage Alarm: <3.7V

Support for firmware updates: Yes

Simulator: Built-in USB simulator

Duration: More than 8 hours Antenna

type: dual antenna

Working temperature: - 15 C - + 60 C

Signal output: ibus/sbus/PPM/PWM signal output is optional Frequency: 2.4
GHz

Model memory: 20 Working

Voltage: 5V DC

Display screen: 3.5 inch TFT LCD, 320*480 Fuselage weight:
946g

Working humidity: 20-95%

Channel resolution: 4096

Power input: 1 * 3.7V 4300mAh Lipo battery



Number of channels: 18

AFHDS 3 protocol: low delay (< 5ms), long distance, strong anti-jamming ability

Emission power: <20 dBm Remote

control distance: > 3000m Size:

214*39*192mm

Receiver High Voltage Support: FTr10 (3.5-12V) can directly return battery voltage to remote control display

Charging time: 6H@5V/2A (USB connection) 7H@5V/2A (wireless charging)

Data Interface: USB. Bluetooth Interface (USART). Headset Port (PPM)

Package includes:

PL18 remote control *1 FTr10

receiver *1

FRM301 high frequency head *1 Fs-

fr16s receiver *1

Sunshade cap * 1 Hand

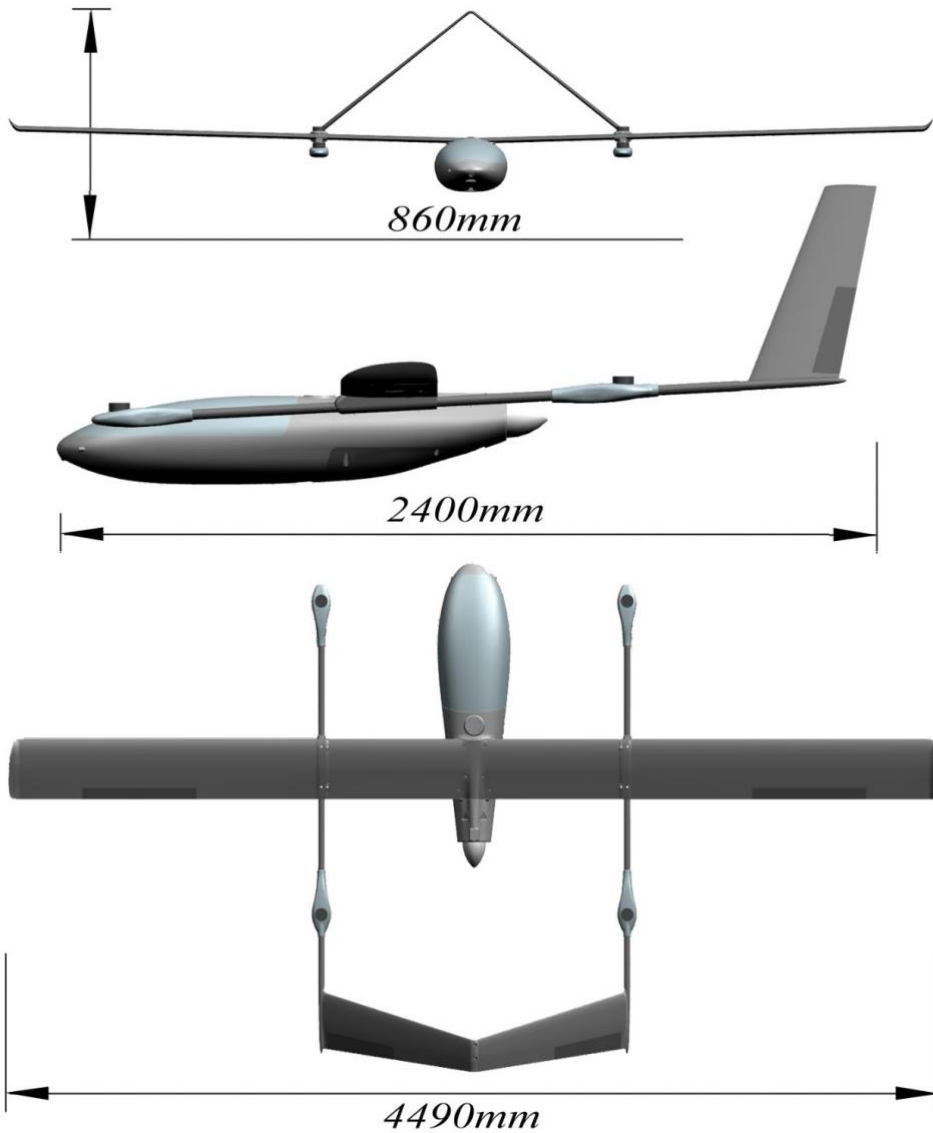
glue * 2 Double handle

*2 Micro USB cable * 1

Nub switch assembly



Special design of payload compartment sport installing on the Center of Gravity (CG) position. Swap variety of weight of payload not affect the balancing.



TH30 camera and gimbal system

30 x Optical Zoom + 640x512 Thermal + 1500LRF

- 30x Optical Zoom + 640x512 Thermal
- Thermal pseudo switch
- Picture in picture mode
- 1080P IP output, two-way communicate
- 1500m laser distance measuring
- Ground software display & control
- Single TF card, two video recording
- 3-Axis lightweight gimbal

A 3-axis stabilized gimbal integrating 10x optical zoom camera, 640x512 thermal imaging camera and 1500m laser range finding, it's a high- precision professional triple light integrated system. This gimbal adopts compact design and has the characteristics of high stability, small volume, light weight and low power consumption. The visible light camera adopts HD sensor with effective pixels of 2 million. The thermal imaging adopts vanadium oxide 640x512 resolution detector with baffle inside. The laser range finder provides 1500 meter high-precision distance measuring function. The ground control software developed which can support picture in picture display of two-way video, network direct control of PTZ and camera, local TF storage, network file reading and writing operation, two-way synchronous video recording, a variety of picture in picture modes and pseudo colour switching etc.



This portable ground station is easy to carry and applicable with any Window 10 system.

Com port number: Simply plug-in USB to your laptop, which will automatically set up required software, then launch the Buzzard software after the set up.

Built in dual high bright LCD display provided integrate system operated by single pilot in mission. Once screen design for flight control command and another one screen for live video monitor and gimbal control.



TRANSPORTATION

Compact and light weight composite material carrying case providing the flexible mobility. Carrying case measurement is 1270mm x 360mm x 460mm. Weight 5Kg. Total weight of system < 20kg

