INTERNATIONAL ARMOUR TM

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FIREFLY+

VTOL DRONE

FIREFLY PLUS VTOL Custom Build BTO (Build to order)

FIREFLY PLUS is a big VTOL (Vertical Take-Off and Landing) UAV that has a 3500 mm wingspan.

FIREFLY PLUS UAV designed to be the most efficient of its kind.

That means low stall speeds, high max efficiency, a large cruise window and payload capacity, self cooling fuselage, built in component bays and an entirely electric propulsion system.

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

The forward swept wing means its leading edge and trailing edge are swept forward, that is, the sweep angle is an acute angle.

The tip string is in front of the root string, and the left and right wings are projected in a plan view to form a V shape.

Since the airflow on the forward swept wing points to the wing root, the airflow is first split from the wing root at high angle of attack, which fundamentally overcomes the wing tip stall problem, so the low speed performance is excellent, the lift being increased and at the same time improving the aerodynamic efficiency of the wing panel.

- Full composite, carbon fiber / Honeycomb core structure
- Electric motor power
- Revolutionary huge fuselage design for carrying Hydrogen Liquid battery
- Cruise of 24m/s power consumption from 330-600 watt at 16.7kg MTOW
- Tough structure achieve industrial standard
- Dual battery power maximize the safety goal
- Compatible with full-featured PC-base, open source autopilot system
- Easy for assemble in the field, no need for expert skill
- VTOL suit for any mission

FF+
VTOL DRONE

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).

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.

THE TAIL

Inverted /--\ design improves efficiency while decreasing drag

VTOL features

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

VERSATILITY

The transformative design allows for dynamic use, making each FIREFLY PLUS truly unique.

You can use the FIREFL for search and rescue missions, inspections of pipelines, photography, filmmaking, thermal imaging, 3D terrain mapping, precision agriculture, surveillance, reconnaissance, FPV, live video links, humanitarian aid, fun and much, much more.

CAPABILITY

We are committed to integrating efficient design with modern technology in a robust, entirely composite platform.

The FIREFLY PLUS is nearly silent, can fly for 5 hours, reach speeds of up to 115 km/h and travel for over 200km.

The FIREFLY PLUS allow you to fly autonomously, capture stunning HD photos and video, complete aerial surveys, monitor crop health, and wirelessly transmit live video.

This is all achieved with incredible accuracy of an on board autopilot system.

CONTRUCTION

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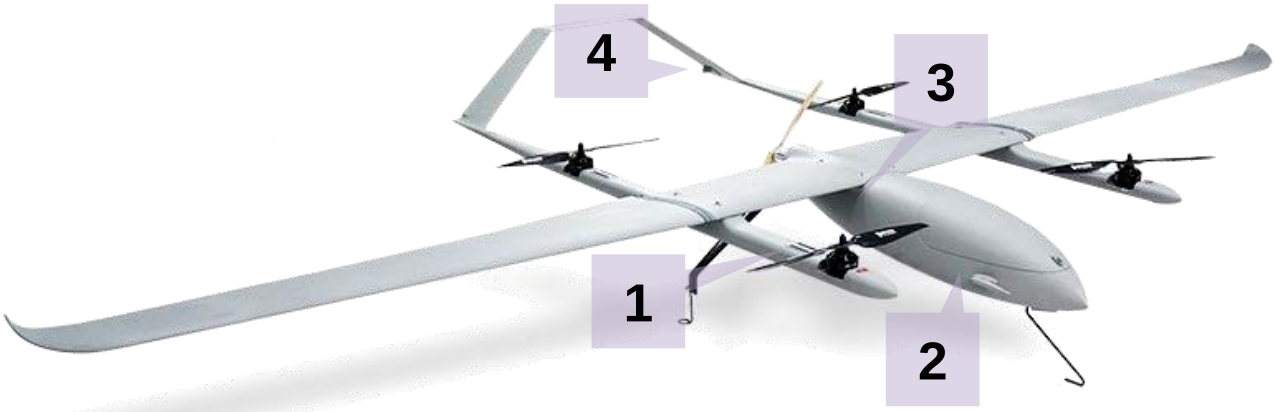


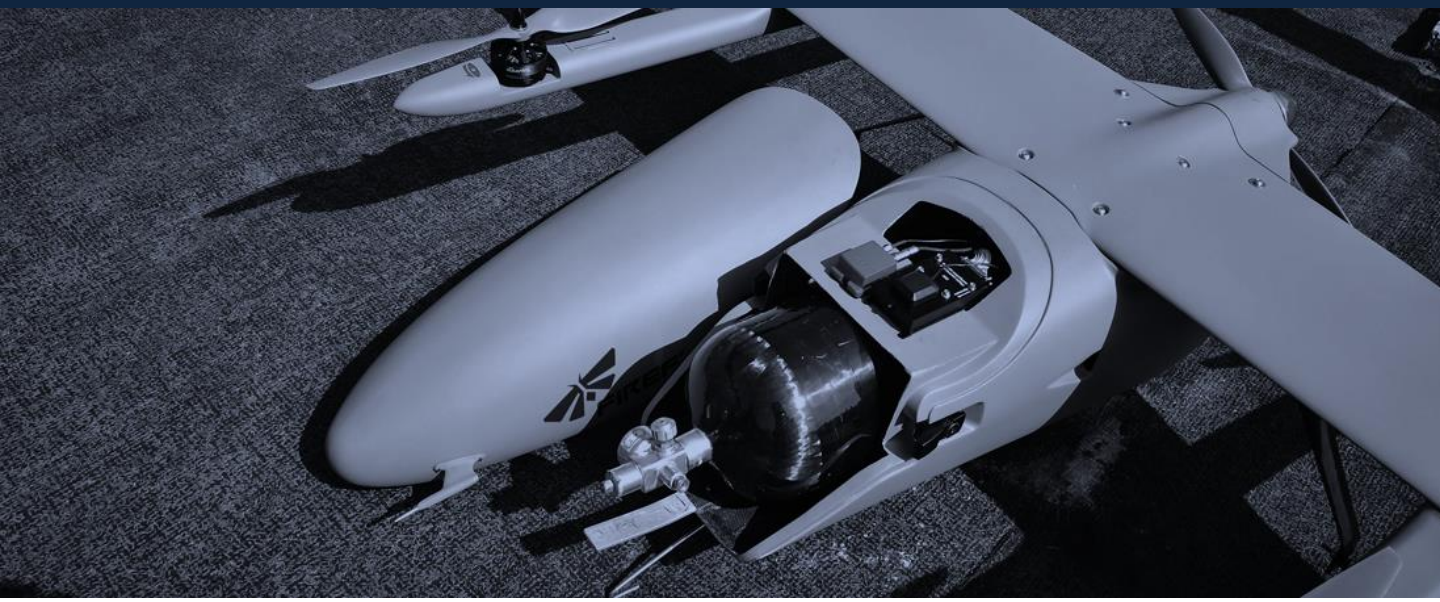
Heatsing

Air Speedometer

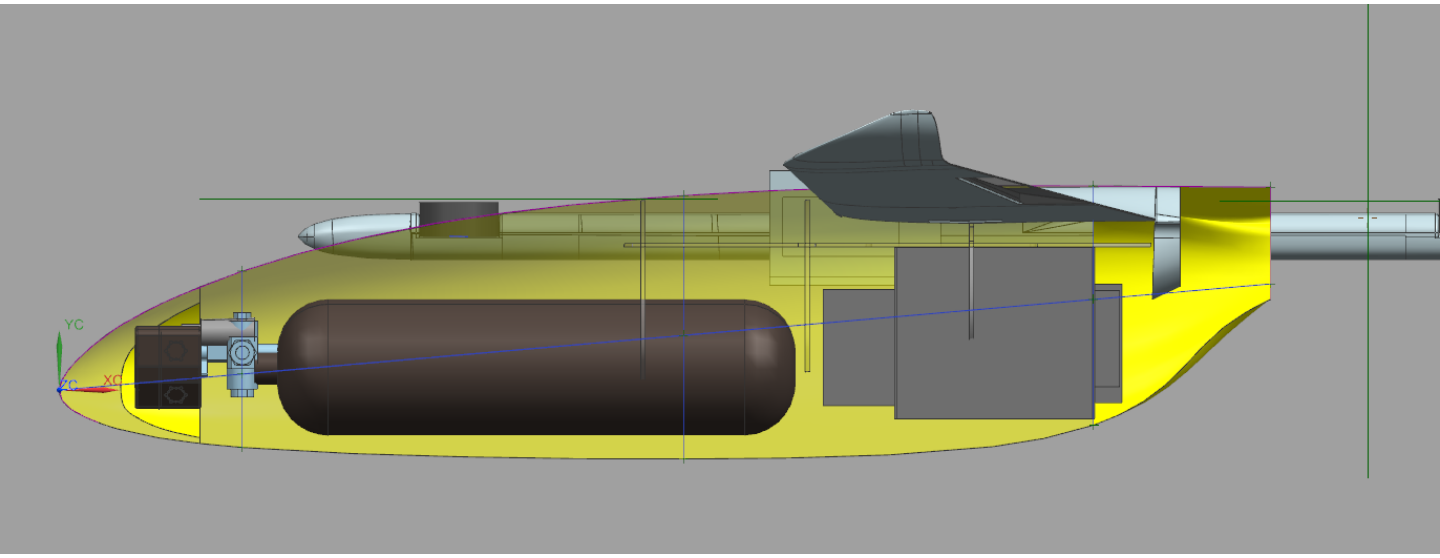
Heatsing

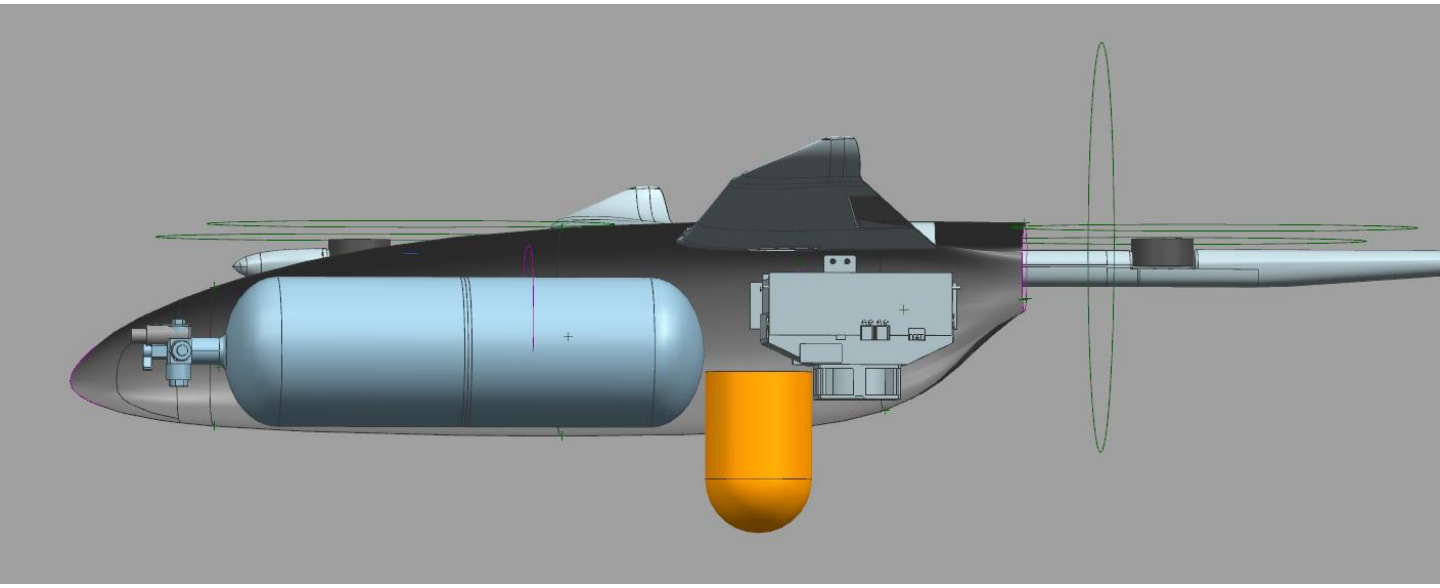
Servo Protective Cover

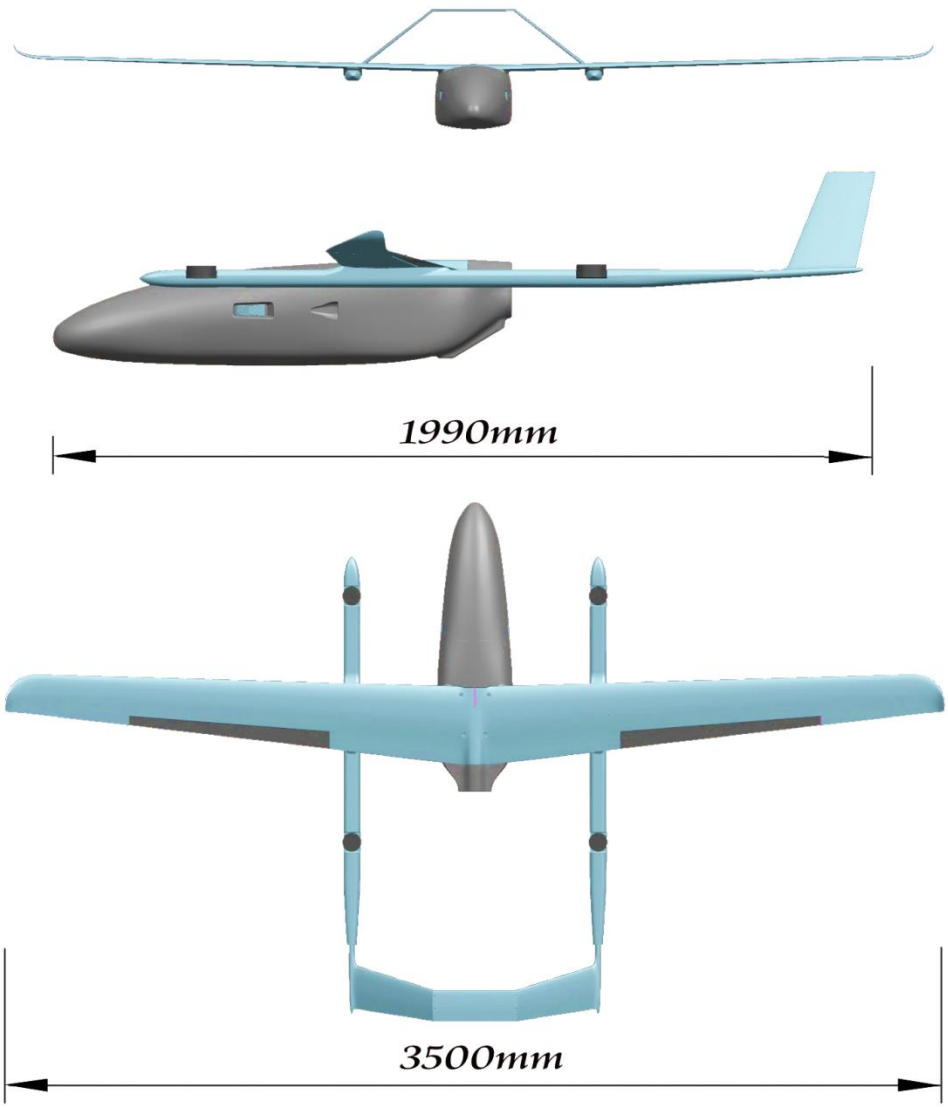
21Kg MTOW	12.5Kg Empty airframe (w/o battery, payload)
3500mm Wing Span	1990mm Length
300mm Height	70dm^2 Wing Area
10Kg Max Payload (With Battery)	500Kv MOTOR
8.5Kg Battery	5Hrs Endurance (MTOW 21Kg)
100Km/h Cruising Speed	115Km/h Maximum Speed
86Km/h Stall speed	5x5 Runway



Typical Hydrogen tank installation



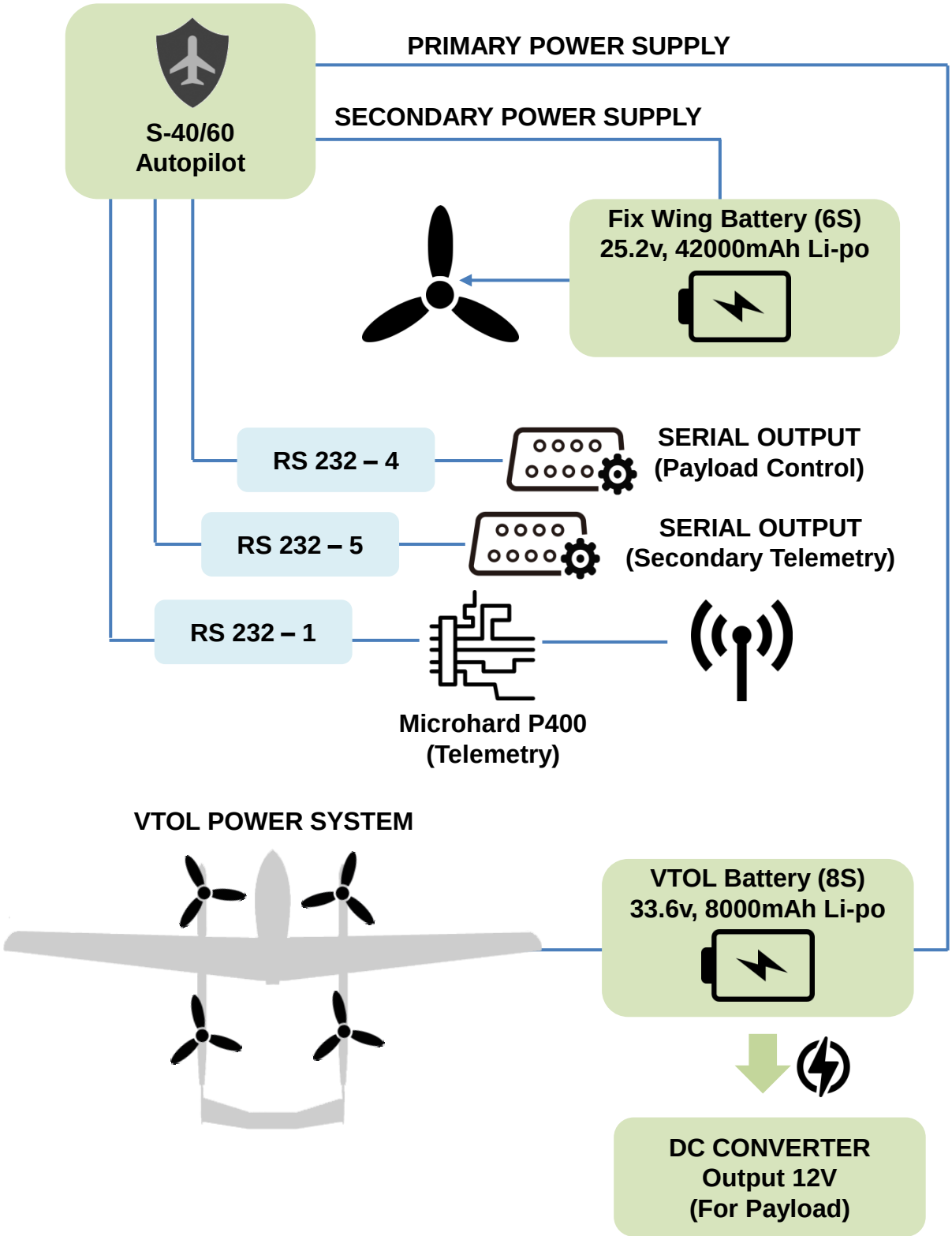




Autopilot support VTOL for electric / gasoline aircraft
Compact Carrying case1600x350x360mm, 20kg
Microhard telemetry system 840mHz, 1w.Range up to 40-50km
800M CDMA(870-960MHZ), 1.8m,10dbRange being tested 40-50km

ASSEMBLY

POWER SYSTEM
(DIAGRAM)



FS 18-Channel 2.4GHz Computer Radio System

The FlySky Paladin PL18 Remote Control Radio is designed for precision flying. It was engineered to be intuitive with a powerful touch screen setup. The Paladin comes with 18 channels and AFHDS 3 protocol. There are six model types to choose from Airplane, Helicopter, Glider, Delta Wing, Multicopter and Engineering Vehicles making for a truly versatile Radio. The package also comes with two receivers, the FTr10 and FTr16s.

AFHDS 3 is a third-generation RF technology that was developed by FlySky with the PL18 in mind. It is designed to have low latency (5ms), a stable protocol for use at longer ranges (up to 3.6km), even in the presence of interference. The PL18 is designed to be compatible with many detachable RF modules to make the Paladin extremely flexible. There are dual omnidirectional antennas to ensure you have the best, stable signal even at longer ranges.

Setup is simple with an easy to understand touch screen interface combined with FlySkyOS. The screen is a 320x480 capacitive color touch screen. There are multiple switches (rotary, slide, 2-position and 3-position) that you can configure just the way you want and with 18 channels you should be able to set up any configuration you need.

The Paladin comes with adjustable, high-precision Hall gimbals that can be easily set up for the four different modes of operation. Plus, you can choose between self-return or non-self returning sticks. Both gimbals have adjustable spring tension, as well as adjustment for dampening and max/min movement angle..

FS 18-Channel 2.4GHz Computer Radio System

Features:
• AFHDS 3 Protocol
• FTr10 and FTr16s receivers
• Metal Hall Gimbals
• 18 channels
• Six different model (Airplane, Helicopter, Glider, Delta Wing, Multi Copter)
• 4300mAh battery (built-in), over 8 hours between charges
• Wireless charging, USB charging
• Voice/vibration prompts
• USB simulator (For use with flight simulation software)
• Copy and paste model data
• Customizable switches
• Trainer function
• Stable signal even with over 40 transmitters being used at the same time

Specs Paladin PL18:
Channels: 18
Model Type: fixed-wing, helicopter, crossing machine, multi-axis, engineering vehicle
RF: 2.4GHz
RF Power: < 20 dBm
2.4GHz Protocol: AFHDS3
Distance: >3km
Channel Resolution: 4096
Battery: 1S (3.7V) 4300mAh (built-in)
Charging Interface: Micro USB / wireless charging
Charging Time: 6h@5V/7h@2A (wireless charging)
Lifetime: > 8h
Low Voltage Warning: <3.7V
Antenna Type: Dual antenna
Display: HVGA 3.5" TFT, 320x480
Language: Chinese and English
Simulator: USB Simulator
Data Interface: USB, Non-standard interface (USART), PHJACK (PPM)
Temperature Range: -10 ° C - + 60 ° C
Humidity Range: 20%-95%
Online Update: support
Dimensions: 214x86.5x192 mm
Weight: 946g
Certification: CE, FCC ID: N4ZFT1800, RCM

Specs FTR10:
PWM channels: 10
RF: 2.4GHz
Protocol: AFHDS 3
Distance: >3500m
Antenna type: 103mm x 2
Power input: 3.5v-18V
RSSI: Yes
Data port: i-BUS/S-BUS/PPM/PWM/UART
Temperature: -15℃—+60℃
Humidity: 20%-95%
Update online: Yes
Size: 52x28x22mm
Weight: 22g
Certificate: CE, FCC ID: N4ZFTR1000

Specs FTr16S:
Channels: 16
Model type: Racing Drone
Data port: i-BUS/S-BUS/PPM
PWM channels: NO
RF: 2.4GHz
Protocol: AFHDS 3
Distance: 3500m
Antenna type: Dual antenna
Power input: 3.5v-8.4V
RSSI: Yes
Temperature: -15℃—+60℃
Humidity: 20%-95%
Update online: Yes
Size: 20x12x3.1mm
Weight: 2g
Certificate: CE, FCC ID：N4ZFTR16S00

ITEM No	QTY	STANDARD PARTS
FF-1040-PLUS	1	FF+ VTOL bundle - Quad motor system installed - Main motor installed - Servo installed - Avionics installed
FF-S40-V1	1	Flight controller
FF-PL-18	1	FlySky radio control (18 channel) - used for ground setting
FF-8S10000	2	8S 10000mAh Li-po for FF (1 Set as spare part)
FF-6S42000	1+1	42000mAh (18650, Li-ion) battery (6s, 25.2v) Weight 3.6kg For FF fix wing (1 Set as spare part)
FF-1200W-12S	1	Dual output charger 6-12S x 2 1200w
FF-D04	1	Telemetry 900mMhz - Range 30-50km - Built in battery 6000mAh for 6 hours - Sbus x 1, Serial x 1 - Wi-Fi, Bluetooth
FF-ANT-900	1	1.8m fiberglass antenna, 2 section 10db, 902 - 928 mHz
FF-FPV-cam	1	Nose FPV camera, AV output
FF-SP-10	1	Analog video link with AV input, Range 10km Receiver & Antenna
FF-CC	1	Compact carrying case 1270 x 360 x 460mm, 5kg
FF-GCS-19	1	Integrated ground control system - Intel i5 CPU computer - 4G Ram, SSD 128G - 19" 1440x900, 16:10 HD monitor - USB x 4, IP port x 2, HDMI x 1 - Built in UPS system - Internal battery for 4 hours operation - 12V power output/input - Weight 13Kg - Measurement: 479 x 415 x 217mm - Material: Plastic - Floating factor (kg): 19.7 - Storage temperature: -40℃~90℃ - Water resistance: IP67
CAMERA(S)		As per request
VIDEO LINK		Subject to Camera

OPTIONAL
WE SUGGEST

COLIBRI 2 CAMERA

The Colibri2 is a dual EO-IR stabilized camera built for professionals needing a quality camera for day and night use. Weighing in at 180 grams [6.3 oz], the Colibri2 offers excellent image quality and sharpness to capture detailed imagery, such as license plates and faces.

Zoom : x20 + x2 digital (total x40)
FOV : 60° WFOV – 3° WFOV – 1.5° DFOV
Thermal Resolution : 640x480
Pitch FOR: -45° to +90°
Roll FOR: -180° to +180°
Weight : 180 grams [6.3 oz.]
Dimensions : 53mm [2.099”] x Height=81mm [3.2”]

ZX-P-IV-D-GL80 Dual-light Gimbal

Integrating 10X RGB camera and un-cooled thermal camera inside, the dual-light gimbal outputs HD image with outstanding auto-zooming and target tracking capabilities.

With two-axis two-frame structure and electronic stabilization, the gimbal achieves high stabilization performance and 360°rolling that are suitable for wide range of applications including monitoring, anti-terrorism pipeline examination etc. carried under fixed-wing, single-rotor and multi-rotor UAVs.

Features

- Dual-mode: 10X RGB camera + thermal camera
- Low-illumination imaging
- Small in size, light in weight
- Auto target tracking
- Temperature measurement (optional)
- Video recording
- Qualified for fixed-wing, single-rotor, multi-rotor and other aircraft

Application

- Powerline inspection
- Forest fire prevention
- Investigation monitoring
- Border defense
- Pipeline examination
- Intelligent transportation
- Disaster rescue

- 2-axis gimbal
- 10x optical zoom
- Visible camera 1920x1080, 30 fps
- Thermal camera 640x480
- Auto Target lock
- Weight 820g

3 axis stabilizer UAV gimbal optical zoom video camera

3 axis stabilizer UAV gimbal optical zoom video camera

3 axis stabilizer UAV gimbal is for whom want to take some awesome shots without having any shaky videos or blurry photos?

You can buy one that’s handheld or a gimbal which is mounted to a drone.

Putting a gimbal on a drone gives you as the camera operator the freedom of taking photos and videos without any vibration or shake.

The photo above shows you an example of a gimbal.

A gimbal holds anything from a small GoPro up to a DSLR for much larger gimbals.

Drones shake, wobble, and vibrate.

Gimbals hold the camera and reduce the shakiness.

Gimbals ensure that the camera always stays horizontal or at a set position.

Advantages

* Highly competitive cost
* DJI’s strategic partner
* Leading in the field for UAV payload of advanced technology.
* Certified by CE/ROHS authoritative institution.

Aeronav

The core of the Aeronav is a reliable Panasonic Toughpad , a professional tablet that helps drive efficiency and productivity in ways that were never previously possible; Aeronav is capable of operating outdoors in a variety of extreme and remote environments.

The Aeronav is especially suitable for field application in markets such as aviation, defense, or construction due to its capability to perform under exposure to extreme and constantly changing environments.

Since its release in 2015, we have continuously improved Aeronav's performance in close cooperation with our more than 100 customers worldwide. The Aeronav is a well-proven, secure, and reliable solution, which is easily extendable with your hardware and software requirements. Its production version can be delivered fully customized according to **your specifications**, **including custom software, firmware, engraving, joystick configuration, and radio/control modules.**

The Aeronav is combined with the Panasonic Toughpad, incorporating an 800cd/m² IPSα display. The capacitive 10-finger multi-touch display and digitizer pen makes it extremely user-friendly.

The Aeronav runs on Windows 10 Pro, Windows 8, or Ubuntu and is equipped with the Intel® Core™ i5 Processor. It also benefits from connectivity options to ensure data is available to the user whenever needed.

Compatible with;

UgCS pixhawk 3DR MicroPilot

MP microhard SYSTEMS INC. Windows ubuntu

IA-18 Ground Control Station

FPV video screen

Diversity receiver 5.8Ghz integrated.
HD LED screen of 10.1″ high definition, high contrast and anti-glare.
Resolution: 1366 × 768
Aspect ratio: 16: 9
Brightness: 550cd / m2
Contrast: 800: 1.
Controlled temperature.
Speakers.
1 Audio/Video output with RCA connector.

RC Control

Radio Control independent of the PC.
Processor RC control.
Processor each RC Joysticks.
Start-up Key.
Digital voltmeter.
Output 11,1V power
Fuse 5A.
OLED Mini Displays.
Rotary encoders.
Rotary encoders with push buttons.
Joystick Radio Control.

D4 Transmitter

5th generation radio.
Multi band ICM: 866Mhz, 868Mhz, 902, 915Mhz, 950Mhz or 433Mhz (optional).
Power: 500 or 1000mW
Sensitivity: -110 or -116dBm
Modulation: 50 or 100Kb. FHSS (Frequency Hopping Spread Spectrum).
Controlled temperature.

Battery

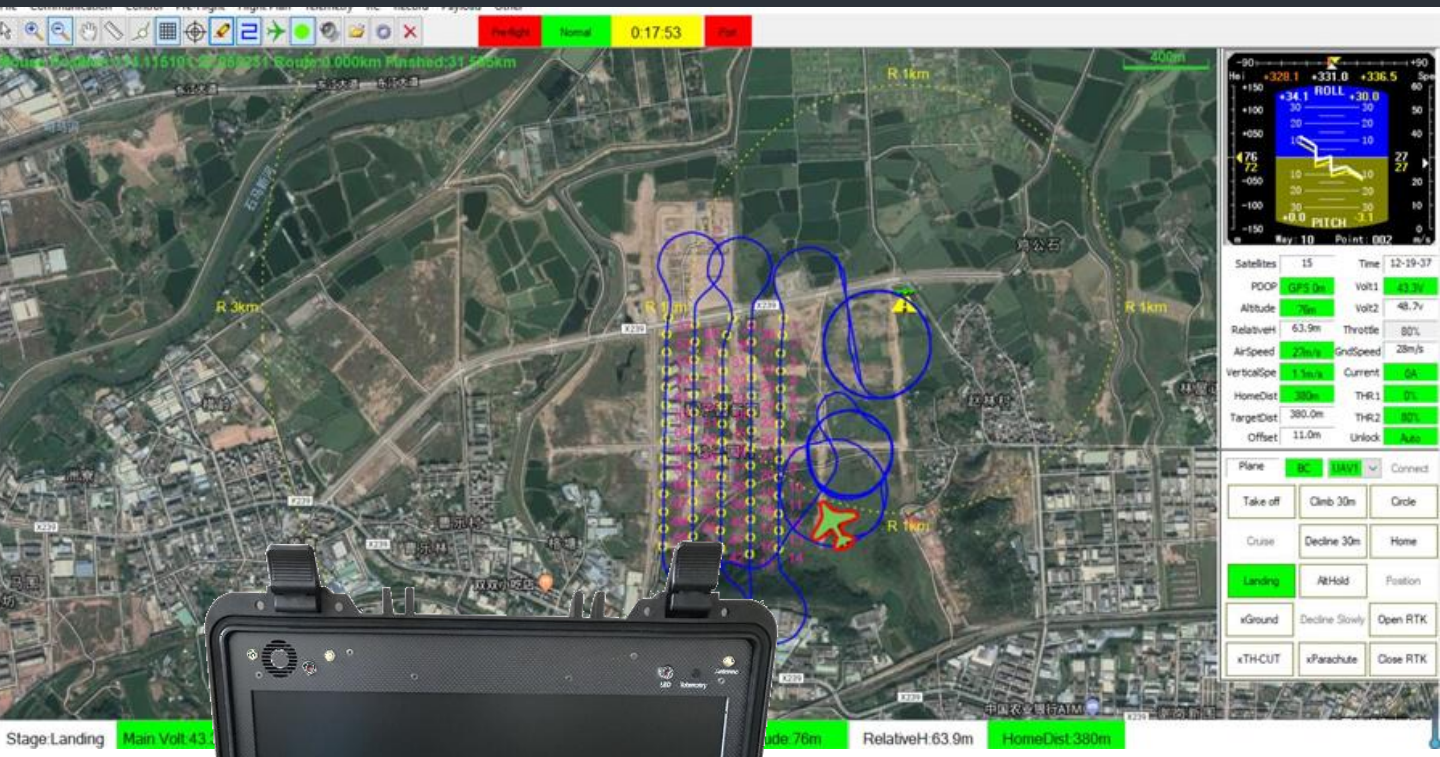
Lipo 3S/11.1V/5Ah.
Duration approx: 2'5-3h.
Charger 1A.
Input 12-24V.

Embedded PC

Windows 10
Processor: Intel Quad Core of 1.8GHz
4GB RAM and 64GB flash
Touch screen 7″.
Mini Keyboard Bluetooth.
USB 3.0.
USB 2.0.
HDMI
Ethernet 100Mbps (Optional).
Wifi.
Bluetooth 4.0.

Suitcase

Robust, dustproof, water resistant (IP67 certified).
Temperature controlled with fans.
Certified with STANAG 4280, DEF STAN 81-41 and ATA 300 standards.
Automatic air pressure compensation valve.
Temperature resistant from -30 ° to + 80 ° C.
Rubber handle.
2 eyelets for padlocks (Ø 7.62 millimeters).
Optional accessories: transport belt.
Dimensions: 36.5 x 29.4 x 17 centimeters



GCS-19 Ground Control Station

- Intel i5 CPU computer
- 4G Ram, SSD 128G
- 19" 1440x900, 16:10 HD monitor
- USB x 4, IP port x 2, HDMI x 1
- Internal battery for 4 hours operation
- 12V power output/input
- Full battery operating : 5 hours
- Weight 13kg

Measurement : 479 x 415 x 217mm
Material: Plastic
Floating factor (kg) : 19.7
Storage temperature : -40℃~90℃
Water resistance: IP67

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