

# MFE



# PRODUCT BROCHURES

## 2024

MAKEFLYEASY



WeChat Public No.



bilibili



Tik Tok



YouTube



Facebook

Mianyang Tianyuhang Technology Co.  
No.43,BiyunRoad,QingyiTown,FuchengDistrict,Mianyang,China

[www.makeflyeasy.com](http://www.makeflyeasy.com)

marketing  
Cheng Fang 177-0902-7735

Technicalsupport  
Yang Gong

182-8254-3184



[doc.makeflyeasy.com](http://doc.makeflyeasy.com)



ABOUT US



About—

## Mianyang Tianyuhang Technology Co.

Mianyang Tianyuhang Technology Co., Ltd. is a science and technology enterprise engaged in the research and development, production and sales of aerial survey drone spare parts.

The company is committed to promoting the development and application of UAV technology, providing users with high quality products and services, and assisting in the continuous development of the UAV industry.

“

Aerial survey carrier system

**4**

Models

Aerial survey power system

**5**

Models

Aerial survey flight control system

**4**

Models

Navigation and Positioning System

**4**

Models

Aerospace Communication System

**2**

Models

Aerospace Sensor System

**2**

Models

”



MAKE FLIGHT EASY

# C ONTENTS

## CONTENTS—

### PART. 1 Flight Platform

Page 01-12

FIGHTER STRIVER mini  
HERO BELIEVER

### PART. 2 Unmanned Aerial Vehicle Power Systems

Page 13-16

Electrical machinery ESC Propellers  
Rudder UBEC

### PART. 3 Flight Control System

Page 17-20

PIXSURVEY A1 PIXPILOT V6  
PIXPILOT V3 PIXPILOT C3

### PART. 4 Navigation And Positioning System

Page 21-23

POS1 POS2  
POS3 PPK2

### PART. 5 Communication System

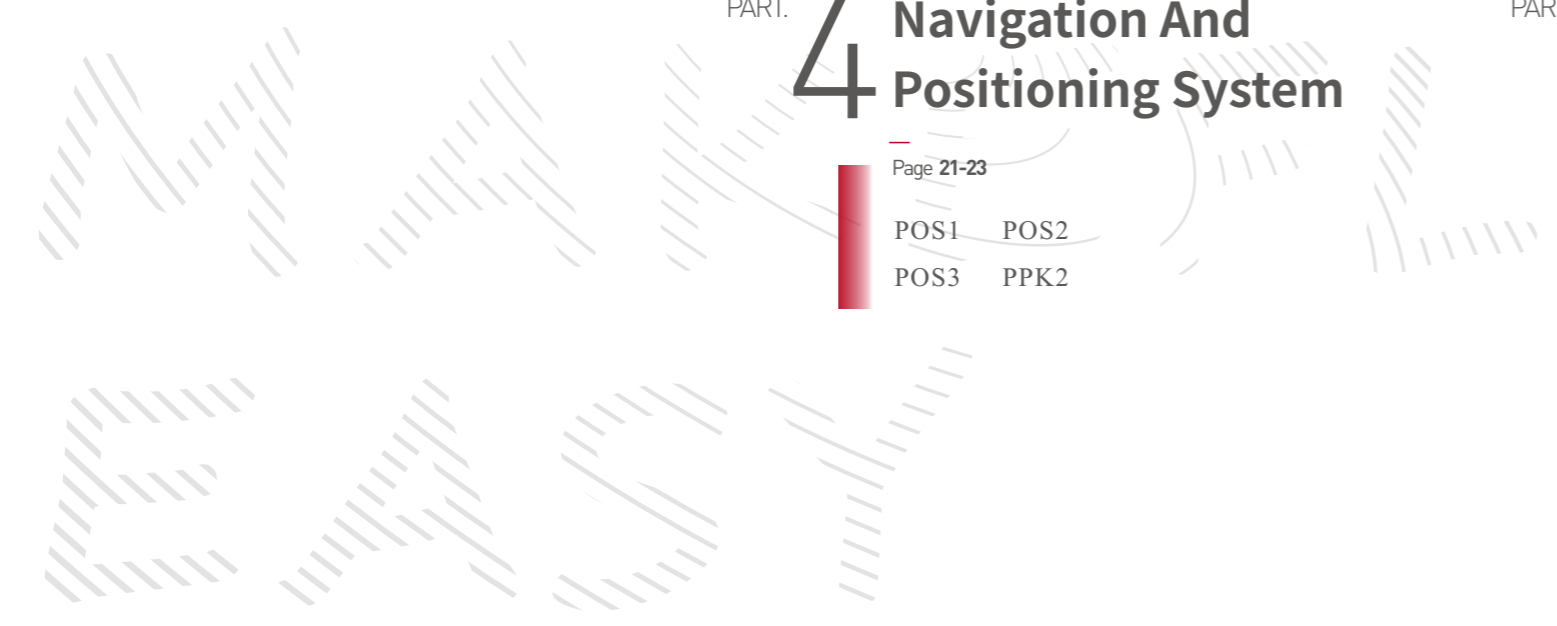
Page 24-25

T900 Pro Telemetry  
WiFi Moudles

### PART. 6 Transducers

Page 26

I2C tachymeter  
CAN tachymeter



# Flight platforms



## FIGHTER

### VTOL



FIGHTER VTOL is an 11kg-class vertical take-off and landing fixed-wing flying platform designed by MFE team "centered on the liberation of productivity" and "with safety and practicality as the two basic points", which has the features of easy-to-carry, friendly operation, stability and durability. It is easy to carry, friendly to operate, stable and durable.

The open flight control module is compatible with Pixhawk flight control, supports mounting Sony A7R2 4200W pixel full-frame camera/1.5kg lightweight LiDAR, and supports up to 12S@22000mah Li-polymer battery, which can realize ultra-long endurance and high-quality shooting effect.

It is widely used in topographic mapping, land survey, engineering survey, digital city, planning and construction, landscape planning, precision agriculture, environmental protection monitoring, ecological monitoring and other fields.

### • Product Features

- Conventional inverted T layout: optimized aerodynamic shape and relative position of wing, tail and fuselage, reasonable load distribution, increased lift and reduced drag, high flight efficiency.
- Flat-tail dual rudder redundancy: independent control for increased flight safety.
- Modular design: wing high current connector, arm folding and stowage, tail quick release, reduce transportation size, easy to carry, with portability and friendly user experience.
- Efficient and stable power system: the cruise motor is matched by multiple KV values, the rotor ESC has extremely fast response speed, and the motor mount adopts aerospace aluminium alloy CNC, which is conducive to heat dissipation, waterproof and dustproof, and is able to face different operating environments.

### • Specification Parameters

Material	EPO,EVA,carbon fiber,PC,engineering plastics and etc.	Wing Span	2430mm
Max take-off weight	<11.5kg	Fuselage height	180mm
Practical ceiling height	4000m	Fuselage length	1450mm
Wind resistance	Class 5	Wing area	72.5dm <sup>2</sup>
Take-off landing mode	Vertical take-off and landing	Suggested flight speed	19-20m/s
Disassembly	Tool-less disassembly	Max payload	>1.5kg
Transport box size	1.25×0.34×0.49m	Loadspace Size	280×160×110mm
Stall speed	10m/s (test conditions: 500m above sea level, 10.5kg take-off weight)		
Endurance	120min/137km(speed 19m/s load 600g, 2 batteries 6S16000mah in series, take-off weight 10KG, altitude 500m) 134min/155km (speed 19m/s load 600g, 2 batteries 6S22000mah in series, take-off weight 11.2KG, altitude 500m)		





# FIGHTER

## hand-thrown version



FIGHTER (hand-thrown version) is a 10kg class hand-thrown fixed-wing flying platform, with more load space and rich load weight, featuring long endurance and easy operation.

It adopts the conventional inverted T pneumatic layout for smoother take-off, and the powerful twin-engine power provides more than 10kg pulling force, which makes it easy to take off even under large weight.

With stable performance and excellent endurance, it can be widely used in topographic mapping, land survey, engineering survey, digital city, planning and construction, landscape planning, precision agriculture, environmental protection monitoring, ecological monitoring and other fields.

### • Product Features

- Conventional inverted T layout: optimised aerodynamic shape and relative position of wing, tail and fuselage, reasonable load distribution, increased lift and reduced drag, high flight efficiency.
- Stable and lightweight: the material uses a large number of lightweight PC boards and adopts embedded box structure to improve the structural strength and rigidity of the body.
- Quick disassembly: the wing and tail adopt tool-less quick-disassembly structure, which reduces the steps of loading and shortens the disassembly time, with portability and friendly user experience.
- IPX3 waterproof rating: the fuselage hatch is specially designed with water guiding grooves and water outlet holes to ensure normal flight capability in rainy days.
- The cabin is large and small resistance: the streamline shape is used to reduce flight resistance, the bottom is set up with cushion, shock absorption and wear-resistant, and the size of the rear handgrip and the spacing of the power are in the best ergonomic range.

### • Specification Parameters

Material	EPO, EVA, carbon fibre, engineering plastics, etc.	Wingspan	2430mm
Max take-off weight	<10.5kg	Fuselage height	180mm
Practical Lift	6000m	Fuselage length	1450mm
Wind Resistance	Class 5	Wing area	72.5dm <sup>2</sup>
Take-off landing method	Hand parachuting/gliding	Recommended flight speed	17-20m/s
Disassembly	Tool-less disassembly	Max Payload	>3kg
Transport box size	1.25×0.34×0.49m	Loadspace size	280×160×110mm
Stall speed	10m/s(Test condition: 500m above sea level, 10.5kg take-off weight)		
Max range	>250km(Test condition:Li-Po6S44000mah.0.6kg load)		



# STRIVER

## mini VTOL



STRIVER mini VTOL is a 7kg class vertical take-off and landing fixed wing, which inherits the safe and practical qualities of the Striver.

It adopts classic aerodynamic layout, redundant backup avionics system, the whole aircraft supports tool-less quick-disassembly, and has undergone 500+ take-off and landing durability tests and 4000+ plateau low-temperature tests.

With small storage volume, flexible and convenient use, it can be widely used in terrain mapping, land survey, engineering survey, digital city, planning and construction, landscape planning, precision agriculture, environmental protection monitoring, ecological monitoring and other fields.

### • Product Features

- Conventional inverted T layout: the aerodynamic shape and relative positions of the wing, tail and fuselage are optimised for reasonable load distribution and high flight efficiency; streamlined shape is adopted to reduce drag.
- Stable and lightweight: the material makes extensive use of high-strength lightweight carbon fibre, wood panels, PC boards, embedded box structure to improve the structural strength and rigidity of the fuselage; the bottom adopts a three-point bracing mechanism with high ground clearance to improve the stability of the aircraft's heading.
- Quick disassembly: the wing and tail adopt tool-less quick-disassembly structure, which reduces the steps of loading and shortens the disassembly time; it is easy to carry, with portability and friendly user experience.
- Compatible with 2 flight modes: supports 4+1 mode and 4+2 mode.

### • Specification Parameters

Material	EPO, EVA, carbon fibre, engineering plastics, etc.	Wing span	2100mm
Max take-off weight	<7.5kg	Fuselage height	156mm(without feet)
Max take-off height	3000m	Dropped Boom	744mm
Practical ceiling	4500m	Fuselage length	1200mm
Wind Resistance	Class 5	Wing area	59dm <sup>2</sup>
Take-off landing mode	Vertical take-off and landing	Recommended Flight Speed	18-21m/s
Disassembling	Tool-less dismantling	Max payload	>1kg
Transport box size	1.08×0.35×0.48m	Loadspace Size	180×150×110mm
Stall speed	10m/s(Test condition:500m above sea level,7kg take-off weight)		
Endurance	4+1:82min/95km(speed 19m/s load 600g, battery 6S@16000mah, take-off weight 6.5kg, altitude 500m) 4+1:112min/127km(speed 19m/s load 600g, battery 6S@22000mah, take-off weight 7.1kg, altitude 500m) 4+2:96mini/105km(speed 19m/s load 600g, battery 6S@22000mah, take-off weight 7.3kg, altitude 500m)		



# STRIVER

## mini (hand-thrown version)



The STRIVER mini hand-thrown version is a 7kg hand-thrown fixed-wing platform, and the MFE team has been working hard on the areas of flight stability, power configuration, and quick-release portability, in order to pursue an airborne work of art that can stand the test of time.

After a new generation of aerodynamic optimisation, it has stronger anti-stall and anti-rotation performance, and is single- and twin-engine compatible.

With small storage volume, flexible and convenient use, it can be widely used in topographic mapping, land survey, engineering survey, digital city, planning and construction, landscape planning, precision agriculture, environmental monitoring, ecological monitoring and other fields.

### • Product Features

- Conventional inverted T layout: the aerodynamic shape and relative positions of the wing, tail and fuselage are optimised for reasonable load distribution and high flight efficiency; streamlined shape is adopted to reduce drag.
- Stable and lightweight: the material makes extensive use of high-strength and lightweight carbon fibre, wood panels and PC boards, and adopts an embedded box structure to improve the structural strength and rigidity of the body.
- Quick disassembly: the wing and tail adopt tool-less quick-disassembly structure, which reduces the steps of loading and shortens the disassembly time; it is easy to carry, with portability and friendly user experience.
- Hand-throwing take-off: the size of the hand grip at the end of the machine and the spacing of the force are in the optimal ergonomic range to achieve precise force and smooth throwing.

### • Specification Parameters

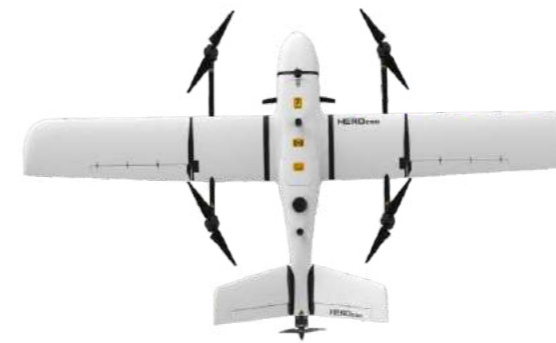
Material	EPO, EVA, carbon fibre, engineering plastics, etc.	Wingspan	2100mm
Max take-off weight	<7kg	Fuselage height	156mm(without footrest)
Practical ceiling	6000m	Fuselage length	1200mm
Wind Resistance	Class 5	Wing area	59dm <sup>2</sup>
Take-off landing mode	Hand throw take-off/parachute landing	Recommended Flight Speed	17-21m/s
Disassembling	Tool-less disassembly	Max payload	>1.2kg
Transport box size	1.08×0.35×0.48m	Loadspace Size	180×150×110mm
Stall speed	10m/s ( Test: 500m above sea level, 6kg take-off weight)	Max Range	>200km (Test condition:Li-Po6S30000mah.0.6kg load)
Twin-engin Endurance	145min/151km(speed 18m/s load 600g, battery 6S@22000mah, take-off weight 6kg, altitude 500m)		
Single-engin Endurance	157min/170km(speed 18m/s load 600g, battery 6S@22000mah, take-off weight 6kg, altitude 500m)		





# HERO2180

## VTOL



HERO2180 VTOL is a multi-purpose vertical take-off and landing fixed wing with interchangeable nose design, which can carry ortho or tilt camera for surveying and mapping field as well as optoelectronic pod for monitoring field.

The multi-purpose design expands the range of applications, reduces flight costs, further liberates and develops productivity, and supports a variety of payloads, covering both mapping and monitoring application scenarios.

With small stowage volume, flexible and convenient use, it can be widely used in topographic mapping, land survey, engineering survey, digital city, planning and construction, landscape planning, precision agriculture, environmental protection monitoring, ecological monitoring and other fields.

### • Product Features

- It adopts high-efficiency V-tail layout, optimises the aerodynamic shape and relative position of the wing, tail and fuselage, with reasonable load distribution, increased lift and reduced drag, and adopts streamlined shape to reduce flight resistance.
- Stable and lightweight: the material uses a lot of high-strength and lightweight carbon fibre, wood board, and PC board, and adopts embedded box structure to improve the structural strength and rigidity of the fuselage; the bottom of the fuselage adopts the three-point landing gear, with a high clearance from the ground, a large space for mounting, and the tail rotor doesn't touch the ground.
- Quick disassembly and assembly: the wing and tail adopt quick-disassembly structure to reduce the steps of loading; the wing can be split into wing root and wing tip to reduce the storage volume.

### • Specification Parameters

Material	EPO, EVA, carbon fibre, engineering plastics, etc.	Wing span	2180mm
Max take-off weight	<7kg	Fuselage height	255mm(with landing gear)
Max take-off height	3000m	Dropped Boom	755mm(including motor mount)
Practical ceiling	4500m	Fuselage length	1140mm
Wind Resistance	Class 5	Wing area	53dm <sup>2</sup>
Aircraft Angle of Approach	0-2°	Wing Mounting Angle	2.9°
Airspeed	14m/s	Max Roll Angle	30°
Max Climbing Angle	3.5°	Max Dive Angle	5°
Take-off landing mode	Vertical take-off and landing	Recommended Flight Speed	17-22m/s
Disassembling	Tool-less dismantling	Max payload	>1kg
Transport box size	1.08*0.35*0.48m	Loadspace Size	180×150×110mm
Stall speed	10m/s (test: 500m above sea level, 7kg take-off weight)	Working Temp.	-10°C-50°C
V-tail angle	28°up20°down	Aileron Angle	Up 22° Down 28
Mapping Endurance	136min/144km(speed 19m/s, load 600g, battery 6S@22000mah, take-off weight 6.65kg)		
Monitoring range	125min/126km (speed 18m/s, load 450g, battery 6S@22000mah, take-off weight 6.5kg)		





# BELIEVER



BELIEVER is positioned as a smaller take-off weight entry-level handheld carrier with good portability and excellent user experience.

The layered design of the flight control compartment can carry a 4200W pixel camera compartment, and the battery compartment can hold 6S@22000mah, which brings ultra-long endurance and high quality shooting effect.

Combined with the flight control system, telemetry system, power system and imaging system, it can obtain stable and safe flight performance, and can be widely used in the fields of topographic mapping, land survey, engineering survey, digital city, planning and construction, landscape planning, precision agriculture, environmental protection monitoring, ecological monitoring and so on.

## • Product Features

- V-tail aerodynamic layout, efficient and smooth flight, more suitable for aerial survey operations, reasonable aerodynamic load distribution, significant lift and drag reduction, high flight efficiency; the overall streamline shape, reducing flight resistance.
- Stable and lightweight: the bottom of the fuselage is equipped with a large landing cushion, double generators upward, avoiding the propeller hitting the ground when taxiing and landing, and the belly of the fuselage damps the vibration and releases the energy.
- Quick disassembly and assembly: tool-less disassembly and assembly, the wing and tail can be inserted without additional wires, the structure and electrical synchronous separation of the disassembly of the space occupied by the small, can be easily carried.
- Hand-throwing take-off: The tail section of the fuselage makes the ergonomic standard size range of hand-holding while guaranteeing strength, making it easier to lift and more stable to throw.

## • Specification Parameters

Material	EPO, EVA, carbon fibre, engineering plastics, etc.	Wingspan	1960mm
Max take-off weight	<5.5kg	Fuselage height	180mm(including footrest)
Practical Lift	6000m	Fuselage length	1070mm
Wind Resistance	Class 5	Wing area	51.4dm <sup>2</sup>
Take-off landing mode	Hand-carried take-off/parachute/skid landing	Recommended Flight Speed	17-21m/s
Disassembly	Tool-less disassembly	Max payload	>1kg
Transport box size	1.11×0.28×0.45m	Loadspace Size	120×150×119mm
Stall speed	10m/s (Test: 500m above sea level, 5kg take-off weight)	Max Range	>150km (Test:Li-Po6S22000mah, 500g load)
Max range	111min/116km(speed 17m/s load 500g, battery 6S@16000mah, take-off weight 5.2kg, altitude 500m)		

# Unmanned Aerial Vehicle Power Systems

UAV power system is mainly for different models of vertical take-off and landing flight platforms optimised for custom power packages, including the corresponding multi-rotor brushless motors, multi-rotor ESCs, multi-rotor propellers, cruise motors, cruise ESCs, cruise propellers, rudder, UBEC, etc.



## ● MFE5008 KV400 BLDC Motor



KV value	400	Working Voltage	Li-Po 6s
Max power	730W	Motor weight	141g
Max Pulling	3900g	Max Current	31A
Match ESC	MFE 650	Match propeller	1755 carbon fibre paddle
Match Model	HERO2180		

## ● MFE5120S KV190 BLDC Motor



KV value	190	Working Voltage	Li-Po 12s
Max power	2150W	Motor weight	324g
Max Pulling	7400g	Max Current	44.8A
Match ESC	MFE 1260 (12S ESC)	Match propeller	APC 1912E
Match Model	FIGHTER VTOL-Cruise		

## ● MFE5008 KV450 BLDC Motor



KV value	450	Working Voltage	Li-Po 6s
Max power	860W	Motor weight	144g
Max Pulling	3600g	Max Current	35A
Match ESC	MFE 650	Match propeller	1555 carbon fibre paddle
Match Model	FIGHTER mini VTOL		

## ● MFE4120 KV430 BLDC Motor



KV value	430	Working Voltage	Li-Po 6s
Max power	2425W	Motor weight	307g
Max Pulling	5800g	Max Current	79A
Match ESC	MFE 6100	Match propeller	APC 1612E
Match Model	FIGHTER mini VTOL-Cruise		

## ● MFE5015S KV220 BLDC Motor



KV value	220	Working Voltage	Li-Po 12s
Max power	1740W	Motor weight	221g
Max Pulling	7600g	Max Current	36A
Match ESC	MFE 1240 (12S ESC)	Match propeller	1862 carbon fibre paddle
Match Model	FIGHTER VTOL		

## ● MFE3520 KV500 BLDC Motor



KV value	500	Working Voltage	Li-Po 6s
Max power	1750W	Motor weight	207g
Max Pulling	5400g	Max Current	70A
Match ESC	MFE 6100	Match propeller	APC 1510E
Match Model	HERO-Cruise/FIGHTER (Hand-thrown version)		

● MFE1260 BLDC ESC



Continuous Max Current	60A	Working Voltage	Li-Po 12s
Instantaneous Max Current(10S)	80A	ESC Weight	128g
Match Motor	MFE 5020	Match Propeller	APC 1812E
Match Model	FIGHTER VTOL-Cruise		

● MFE1240 BLDC ESC



Continuous Max Current	40A	Working Voltage	Li-Po 12s
Instantaneous Max Current	60A	ESC Weight	53g
Match Motor	MFE 5015	Match Propeller	2068 carbon fibre paddle
Match Model	FIGHTERVTOL		

● MFE650 BLDC ESC



Continuous Max Current	50A	Working Voltage	Li-Po 6s
Instantaneous Max Current	70A	ESC Weight	49g
Match Motor	MFE5008/MFE5006	Match Propeller	1755 carbon fibre paddle 1555 carbon fibre paddle
Match Model	FIGHTER mini VTOL/HERO		

● MFE6100 BLDC ESC



Continuous Max Current	100A	Working Voltage	Li-Po 6s
Instantaneous Max Current	120A	ESC Weight	85g
Match Motor	MFE4120/MFE3520	Match Propeller	APC 1612E/APC 1510E
Match Model	FIGHTER mini VTOL-Cruise/HERO-Cruise FIGHTER Dual Shot Hand Throwing		

● UBEC 6V 10A



Continuous current	10A	Working Voltage	3S-14S LiPo
Instantaneous Current	15A	Weight	57g
Dimension	55*33*13mm	Input Power Cord	Red-Black-18AWG-60cm
Output Power Cord	Two-way Red-Black-22AWG-15cm-with Servo Female Head		

● MFE2068 Propeller



Length	20 Inch	Centre Hole I.D.	4mm
Mounting Pitch	12mm	Weight	39g
Dynamically balanced	yes	Paddle Material	Carbon fibre composite paddle

● MFE1755 Propeller



Length	17 Inch	Centre Hole I.D.	4mm
Mounting Pitch	12mm	Weight	26g
Dynamically balanced	yes	Paddle Material	Carbon Fibre Paddle

● MFE1555 Propeller



Length	15 Inch	Centre Hole I.D.	4mm
Mounting Pitch	12mm	Weight	23g
Dynamically balanced	yes	Paddle Material	Carbon Fibre Paddle

● MFE3054 Electronic Metal Servo



Operating Voltage	4.8V-6.0V	Signal Range	1000-1900
Max. torque (4.8V)	3.1Kgf·cm	No-load speed(4.8V)	0.15 Sec/60°
Max. torque (6V)	3.6Kgf·cm	No-load speed(6V)	0.13 Sec/60°
Size	28.5*13*31.1mm	Weight	23g



# flight control system

## PIXSURVEY (A1)

### Industrial Grade Flight Controls

Pixsurvey A1 flight control is a 4+1 vertical take-off and landing fixed-wing flight control integrated with optimised flight characteristics on the basis of Pixhawk hardware platform, adopting ChibiOS embedded operating system and running Ardupilot custom firmware, which is safe, reliable, and precise in control, and meets the stringent requirements of industry applications.



# PIXPILOT (V6)

## Professional Flight Controls



PixPilot V6 flight controller is equipped with powerful H7 main processor, the main frequency is up to 480Mhz. 2MBFlash, 1MBRAM, with faster code execution speed, to achieve higher control precision, rich peripheral expansion function, can meet a variety of applications.

### • Product Features

- Dual processor with powerful processing performance, extremely fast data computing, safe and stable flight architecture.
- Contains 3 sets of IMU and 2 sets of barometer redundancy combination, real-time monitoring of multiple sensor data, automatic brother surplus switching, to enhance flight safety and stability.
- Built-in IMU independent heating, avoid temperature drift, improve flight control stability; independent shock absorption system, efficiently filter out motor vibration, enhance the adaptability of the flight control to the carrier.
- The centre version adjusts the interface position to clarify the direction of wiring, avoiding cross-winding of wires, and includes a redundant system consisting of 2-way flight control power supply for the flight control power supply, improving system integration and reducing the probability of failure.
- The shell is made of aerospace aluminium alloy CNC one-piece moulding, which is durable and anti-interference.

### • Specification Parameters

Processor	Main processor STM32F427, Co-processor STM32F100			
A1 IND Sensor	Accelerometer 3	IIM42652/IIM42652/ICM42688-P	PM Voltage	4.8-5.8V
	Gyro 3	IIM42652/IIM42652/ICM42688-P	USB Voltage	5.0V±0.25V
	Barometer 2	MS5611 ×2	Operation Temp.	-20-80°C
Size	47×47×23mm		Weight	52g
Interface	Mavlink UART Serial Port	2	I2C	2
	GPS UARTSerial Port	2	CAN Standard Bus	2
	Remote control signal input protocol	PPM/SBUS/DSM/DSM2	PWM Output	Standard 8 PWM IO + 6programmable IO

### • Product Features

- Dual processors with powerful processing performance, extremely fast data operation, safe and stable flight architecture.
- IMU is fully upgraded to ICM-4 series sensor, with higher measurement sensitivity and smaller error: Optimised flight control damping system reduces medium and high frequency vibration, and improves the accuracy of flight control attitude; Built-in temperature compensation in IMU ensures the sensor has continuous stability and accuracy in both high and low temperature environments.
- The flight control monitors multiple sensor data in real time, and immediately performs redundant switching in case of failure, improving flight safety.
- The three power inputs have over-voltage and low-voltage protection, forming a redundant power supply system, automatically switching the power supply according to the priority level, improving the reliability of the power supply system.

### • Specification Parameters

Hardware Configuration				
Main Processor	STM32H743(32 Bit Arm Cortex-M7 480Mhz 2M Flash 1M RAM)	Sensor	ICM-42688-P*2(Acceleration & Gyroscope) ICM-40605*1(Acceleration & Gyroscope) MS5611*2(Barometer) IST8310(Magnetic Compass)	
Co-processor	STM32F103(32 Bit Arm Cortex-M3 72Mhz 64K Flash 20K RAM)			
Basic Parameters				
UART	5	I2C	2	
CAN	2	PWM	8+6	
SBUS-OUT	1	PPM/SBUS-IN	1	
Power 1	1	Power 2	1	
TF-card	1	USB-TYPE-C	1	
Case Material	CNC aircraft aluminium alloy		Operating Temp.	-10 °C~55°C
Size	76*45*19(mm)		Weight	62g

# PIXPILOT V3

## Professional Flight Controls



PixPilot V3 flight control system is a general-purpose flight control developed on the basis of the open source flight control FMUV3, adopting the stable and reliable F427 processor, comprehensively improving the performance of IMU sensors, and adapting to more working environments. It has the features of stable performance, simple installation and user-friendly.

# PIXPILOT C3

## Entry-level flight control



PixPilot C3 is a high-performance, small-size, lightweight autopilot, suitable for small fixed-wing vertical take-off and landing fixed-wing and multi-rotor autopilot systems, with stable and reliable, simple installation and user-friendly features.

### • Product Features

- Powerful processing performance, extremely fast data computing, safe and stable flight architecture; dual processors work together efficiently, heat transfer through the thermal conductive silicone, reducing the heat dissipation on the IMU thermostat system interference, increasing the safety of flight control.
- IMU is fully upgraded to ICM-4 sensor, which has higher measurement sensitivity and smaller zero-bias error; optimised flight control damping system to improve the accuracy of flight control attitude detection; built-in high-precision temperature compensation system in the IMU ensures that the sensors have continuous stability and accuracy in high and low temperature environments.
- Real-time monitoring of multi-channel sensor data, the emergence of faults immediately perform redundant switching to improve flight safety; power supply over-voltage, low-voltage protection, the composition of redundant power supply system, automatic switching of power supply to improve the reliability of the power supply system.
- I2C/CANHUB supports a variety of peripherals, enriching the flight control functions and creating unlimited possibilities.

### • Specification Parameters

Hardware Configuration				
Main Processor	STM32F427(32 Bit Arm Cortex-M4 180Mhz 2M Flash 265K RAM)	Sensor	ICM-42688-P*2(Acceleration & Gyroscope) ICM-40605*1(Acceleration & Gyroscope) MS5611*2(Barometer) IST8310(Magnetic Compass)	
Co-processor	STM32F103(32 Bit Arm Cortex-M3 72Mhz 64K Flash 20K RAM)			
Basic Parameters				
UART	5	I2C	2	
CAN	2	PWM	8+6	
SBUS-OUT	1	PPM/SBUS-IN	1	
Power 1	1	Power 2	1	
TF-card	1	USB-TYPE-C	1	
Case Material	CNC aircraft aluminium alloy		Operating Temp.	-10 °C~55°C
Size	76*45*19(mm)		Weight	60g

### • Product Features

- Dual processor, provide safety redundancy and peripheral expansion for flight control, stable and reliable performance; row of pins and connector interfaces all use three-dimensional design, USB and SD card is located on the top, easy to load.
- Peripheral dual backup, support two peripherals at the same time, two sets of PMU, GPS, compass, airspeed meter, digital transmission to form a dual-redundant autopilot system, to enhance the reliability of the aircraft.
- Strong impact resistance, high consistency, suitable for parachute fixed-wing large overload landing; signal voltage switching, complex electromagnetic environment to enhance the anti-interference ability of servo and ESC signals.
- AP custom firmware, MFE models are recommended to use MFE stable firmware, integrated MFE models PID parameters and default configuration and other commonly used functional parameters; only need to calibrate the accelerometer, compass, remote control, battery monitor, ESC can be flight-tested to reduce the difficulty of debugging and reduce the risk of blowing up the aircraft.

### • Specification Parameters

Hardware Configuration				
Main Processor	STM32F427(32 Bit Arm Cortex-M4 180Mhz 2M Flash 265K RAM)	Sensor	ICM-42688-P*2(Acceleration & Gyroscope) BMP388*2(Barometer)	
Co-processor	STM32F103(32 Bit Arm Cortex-M3 72Mhz 64K Flash 20K RAM)			
Basic Parameters				
UART	5	I2C	2	
CAN	2	PWM	8+6	
SBUS-OUT	1	PPM/SBUS-IN	1	
Power 1	1	USB-TYPE-C	1	
TF-card	1	Operating Temp.	-10 °C~55°C	
Case Material	engineering plastics		Weight	37g
Size	76*45*16(mm)			



# Navigation and Positioning Systems



## PPK 2

### Dynamic Post-Processing Kinematic Module

PPK is short for Post-Processing Kinematic (GPS Dynamic Post-Processing Kinematic) GPS positioning technology that uses carrier phase for post-processing kinematic, and its system also consists of a reference station and a mobile station, so that there is no need to establish a real-time communication link between the mobile station and the reference station during the field measurements, and with a large operation radius, a short observation period on the mobile station can be solved with centimetre-level accuracy.

## POS

### Global Satellite Navigation Modules



### Product Features

- Choose the multi-band board with fast convergence time and reliable performance, support TF card hot-swappable function, and support to take out the card without power.
- Compact design, easy to assemble on fixed-wing or multi-rotor flight platform; OLED LCD display, can directly display the time, the number of satellites, the number of camera triggers.
- Support mainstream GNSS signal reception: BeiDou, GPS, Galileo, GLONASS (can receive 3 GNSS at the same time).
- Positioning accuracy, through the PPK post-decoder processing, can achieve centimetre-level accuracy error.

### Specification Parameters

Number of tracking channels	184	Starting Speed	Cold start 24s; Hot start 2s
Operating Channel Frequency Band	GPS L1C/A;L2C	Positioning accuracy	Single point horizontal 1.5m
	BDS B1I;B2L		Single point vertical 3m
	GLONASS L1OF;L2OF		PPK Horizontal 0.01m±1ppm
	GALILEO E1-BC;E5B		PPK Vertical 0.01m±1ppm
Processor	ARM 32-bit High Performance Processor	SD Card	16G High Speed Card
Refresh frequency	10Hz	Display	OOLED LCD
Antenna Interface	SMA Male Bore	Power connector	3-Pin Reversible Interface
Signal Trigger Interface	3-Pin Connector	Operating Voltage	LiPo 3S-6S
Operating Temp.	-40°C~+75°C	Storage Temp.	-40°C~+85°C
Size	67.5*51.5*12.5mm	Weight	52.5g

- POS1 has built-in Ublox NEO-M8N module and IST8310 magnetic compass, featuring high sensitivity, low power consumption and small size. POS2 is built-in Ublox NEO-M9N module and IST8310 magnetic compass, with more dual-frequency star search and higher positioning accuracy. POS3 is built-in Ublox NEO-M9N module and RM3100 magnetic compass, which has the features of high positioning accuracy and strong anti-interference. Translated with [www.DeepL.com/Translator](http://www.DeepL.com/Translator) (free version)

### POS Configuration Comparison

Model	POS1	POS2	POS3
GPS	M8N	M9N	M9N
Compass	IST8310	IST8310	RM3100

### POS1 Global Satellite Navigation Module



Satellite Receiver	U-blox M8N	Magnetic Compass	IST8310
Communication Interface	UART / I <sup>2</sup> C	Positioning accuracy	2.5m
Navigation Refresh Rate	10Hz(max)	Capture Speed	cold start 26s; hot start 1s
Number of searches	22+	Tracking Sensitivity	-167dBm
Magnetic Compass Accuracy	1°-2°	Magnetic Compass Resolution	3milli-gauss
Operating Voltage	5V	Operating Temp.	-10°C~+70°C
Size	60*60*17mm	Weight	54g



## ● POS2 Global satellite navigation module



Satellite Receiver	U-blox M9N
Magnetic Compass	IST8310
Positioning accuracy	1.5m (with SBAS)
Communication Interface	UART / I <sup>2</sup> C
Navigation Refresh Rate	25Hz(max)
Capture Speed	Cold start 24s; Hot start 2s
Tracking Sensitivity	-167dBm
Number of searches	32+
Magnetic Compass Accuracy	1°-2°
Magnetic Compass Resolution	3milli-gauss
Operating Temp.	-10°C—+70°C
Operating Voltage	5V
Size	60*60*17mm
Weight	54g

## ● POS3 Global satellite navigation module



Satellite Receiver	U-blox M9N
Magnetic Compass	RM3100
Positioning accuracy	1.5m (with SBAS)
Navigation Refresh Rate	25Hz(max)
Capture Speed	Cold start 24s; Hot start 2s
Tracking Sensitivity	-167dBm
Number of searches	32+
Magnetic Compass Accuracy	±0.1°
Magnetic Compass Resolution	22nT/LSB
Operating Temp.	-10°C—+70°C
Operating Voltage	5V
Size	60*60*17mm
Weight	54g

# Communication Systems

## T900 Pro UAV Telemetry

T900 Pro is a cost-effective long-distance UAV telemetry, frequency range 902-928Mhz, full-duplex serial link supports Mavlink or pass-through mode, supports serial port, WiFi or Bluetooth forwarding, you can monitor the flight control data on the computer side and mobile side. T900 Pro telemetry sky side and the ground side of the same hardware and software design, can be switched at will, It can be switched arbitrarily, which is convenient for pairing and replacement, thus reducing the cost of use.

### • Product Features

- Adopt 32-bit MCU, faster processing speed, reduce data delay; active temperature complementary crystal, long time working frequency without drift.
- Adopt FHSS frequency hopping spread spectrum, strong anti-interference ability, long transmission distance; high uplink rate, support long-distance fast uploading control commands, no lag.
- Support data WiFi or Bluetooth forwarding, ground station placement more flexible; support wide voltage 3S-12S input, eliminating the need for UBEC independent power supply module.
- Aviation aluminium alloy shell, electromagnetic shielding, rugged, efficient heat dissipation; support DC port, USB, serial port three-way redundant power supply, the sky side of the recommended serial power supply, ground side of the recommended USB power supply.

### • Specification Parameters

Working frequency	902-928Mhz	Frequency tolerance	+5ppm
Transmit power	1W	Overall power consumption	2.2W-2.5W
Transmission distance	60km (air-to-ground, no interference, good antenna performance)	Serial port level	3.3V TTL
Serial speed	57600bps	Way of working	FHSS
Data protocol	Mavlink	Operating Voltage	12V-60V(3S-12S)
Power supply interface	XT30PW-M(Male)	Antenna interface	SMA External thread inner needle
Serial interface	GH1.25-4P	USB Interface	Type-C
Operating Temp.	-40°C~+85°C	Size	63*39*14.5mm
Weight	108g		

# TW\_LINK

## Wireless Data Transmission/WiFi Module



TW LINK is a 2.4G wireless data transmission module, built-in high-performance ESP8266 processor, UDP broadcast mode, transmission distance of about 300 m. TW LINK supports two kinds of use scenarios; installed on the aircraft side to facilitate the ground station software to adjust the parameter, and installed on the ground side with the ground module of the digital transmission for data forwarding, and can be used to monitor the status of the flight control information on the computer side or mobile side.

### • Product Features

- Adopt high performance ESP8266 module with built-in 32Mbit Flash.
- High quality copper tube antenna, low standing wave, increase transmission distance.
- Positive and negative anti-short-circuit design, to avoid misconnection and burning.
- Aviation aluminium alloy shell is sturdy and durable with good heat dissipation.

### • Specification Parameters

Transmission distance	300m
Communication Standard	IEEE802.11b; IEEE802.11g; IEEE802.11n;
Transmit power	11b:16±2dBm; 11g:14±2dBm; 11n:13±2dBm;
Wireless rate	11b:11Mbps; 11g:54Mbps; 11n:72Mbps;
Spectrum range	2412~2484MHz
Operating Voltage	5V
Baud rate	57600bps
Transmission Protocol	UDP14550
Antenna Gain	3dBi
Antenna VSWR	<1.2
Operating Temp.	-20°C~+85°C
Size	32*21*10mm
Weight	12g

# Transducers

# I<sup>2</sup>C/CAN

## Airspeedometer



The airspeedometer measures the dynamic pressure of airspeed and the static pressure of the atmosphere at the altitude where it is located. The pressure signal is converted into an electrical signal in the differential pressure sensor, processed by an amplification circuit, and then converted into a digital signal by the A/D, which is finally converted into airspeed.

### • Product Features

- I<sup>2</sup>C digital airspeed meter with TE's MS4525DO sensor, fully calibrated and temperature-compensated, with a total error band (TEB) of less than 1% of the compensated pressure range, and an output with an I<sup>2</sup>C digital interface.
- CAN digital airspeed meter with TE's MS4525DO sensor, fully calibrated and temperature-compensated, with a total error band (TEB) of less than 1% of the compensated pressure range, and a CAN digital interface for the output.
- The shell is made of aviation aluminium alloy CNC machining, rugged and durable, to prevent static electricity damage to the sensor; power input internal anti-reverse connection design to avoid reversal of the positive and negative poles, permanent damage to the sensor.
- The top of the module is designed with a status indicator, which is easy to observe the working status of the airspeed meter. Compared with the traditional analogue signal, it has lower power consumption, stronger anti-jamming, and longer transmission distance, which is suitable for all kinds of small fixed-wing aircraft.

### • Specification Parameters

#### ● I<sup>2</sup>C Airspeedometer



Sensors	MS4525DO	Communication Bus	I <sup>2</sup> C
Pressure range	0-1 psi	Measurement Accuracy	0.25% / 1% TEB
Input Voltage	5V	Interface Type	GH1.25-AWB
Operating Temp.	-25°C~+105°C	Dimension	27.5*19.6*15.1mm Weight: 10g

#### ● CAN Airspeedometer



Sensors	MS4525DO	Communication Bus	CAN
Pressure range	0-1 psi	Measurement Accuracy	0.25% / 1% TEB
Input Voltage	5V	Interface Type	GH1.25-AWB
Operating Temp.	-25°C~+105°C	Dimension	27.5*19.6*15.1mm Weight: 12g