

ZMO-Z5

Perfect VTOL UAV

Solution for mapping &

surveying VTOL Fixed wing,

new type of drone, combines the

best of both worlds between traditional

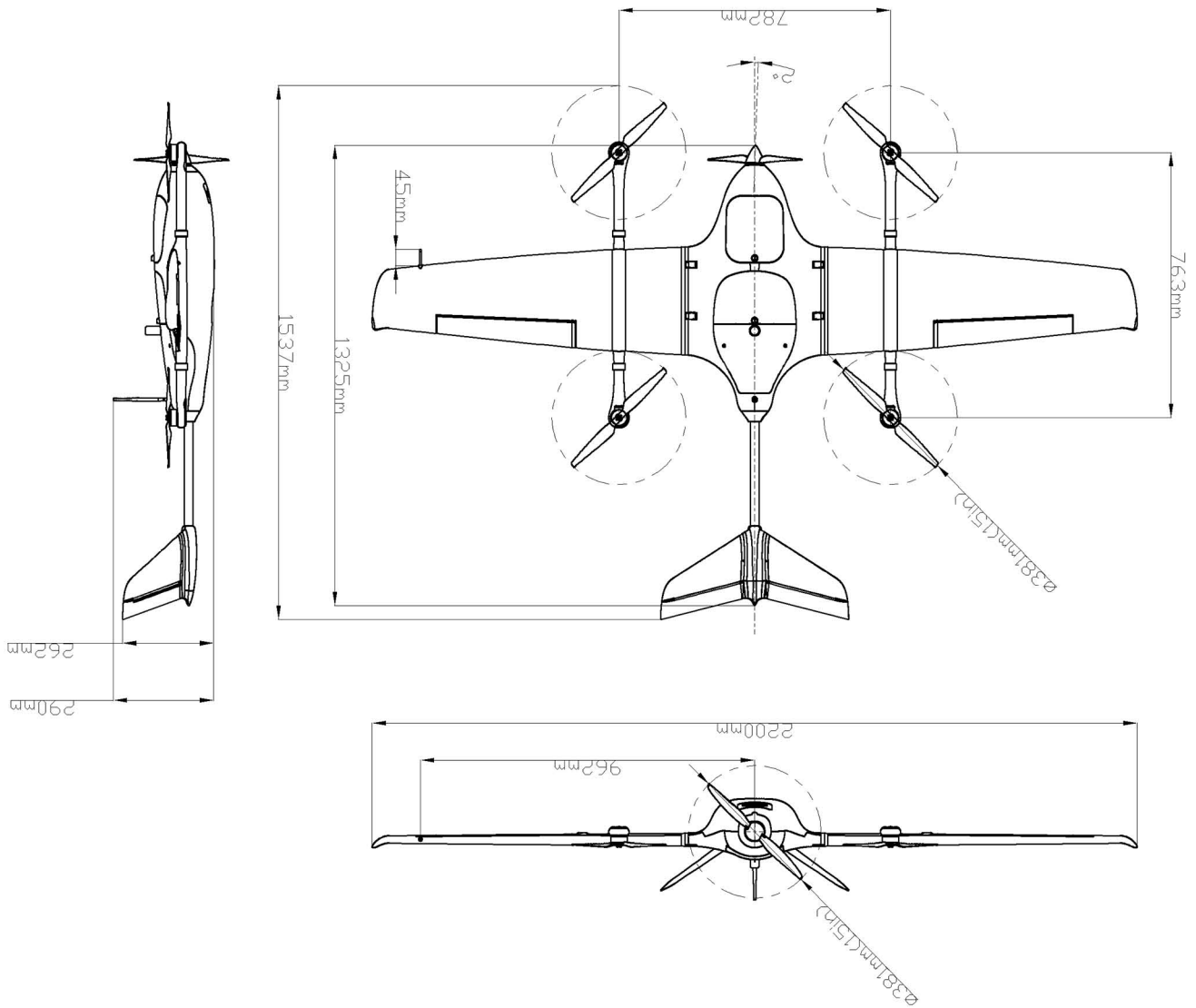
fixed-wing drones and quadcopters.



KEY SPECS

- Airplane Type: Electric composite wing type, VTOL FPV
- Flight time/speed: 110minutes, 120km/h
- Battery: 6S HV 23000mAh Recommended
- Wingspan: 220cm; Length: 130cm
- Wind resistance: Level 6 Max payload: 2kg
- Max takeoff weight: 6.7kg
- Material: industrial EPP, Reinforced carbon fiber
- Software: Mission Planner/QGC
- Dual RTK: the compass does not need to be calibrated, GPS real time differential system reach cm-level
- Payload: multispectral, five lens camera, security pod, orthophoto camera, LiDAR etc

ZMO Z5 DIMENSIONS



THE ZMO-Z5 VTOL UAV STRUCTURE

Item	Part	Structure
1	Fuselage	
2	Left/Right Wings Left/Right Arms	
3	Tail Wings	

POWER SYSTEM

- **Fixed wing motor:** EOLO X3525
- **Vertical motor:** EOLO 4112
- **Cruising propeller:** F15 x 10
- **Vertical propeller:** 15 x 5.5
- **Vertical ESC:** 50A
- **Fixed wing ESC:** 80A

APPLICATION CASES



The use of UAV can carry out large- area high-precision to pographic mapping project,different from the traditional engineering survey.



It is used for real estate publicity and purchase. It creates a real 3D model for the community, which makes the layout of the community clearer and improves the publicity scene.



To create a smart city, high-resolution remote sensing images from multiple angles of the city or key areas can be obtained by using UAV tilt photogrammetry, and the real 3D model of the city can be automatically generated.



The real-time monitoring of the target area can be completed by the payload carried with the aircraft, such as visible light camera, multispectralcamera and video sensor.



NEW GENERATION FLIGHT CONTROLLER



- RTK centimeter positioning
- Low frequency private network
- Built in high voltage converter
- Dual RTK position and heading
- Improved real time PPK processing

PARAMETER LIST

Processor	STM32F427	Gyroscope bias	0.05°/s
Acceleration bias	±30mg	Barometer Accuracy	5cm
UART	5	I2C	2
ADC IN	2, Support 0–3.3V	PWM OUT	14
RC IN	1, Support PPM SBUS CRSF	RSSI	1 PWM or 3.3V analog voltage
USB	Type-C x 1	ETH	1
Power interface	2	GPS Support	2
Buzzer	Built-in	TF Memory	4G
Communication Frequency	902–928MHZ	Communication Distance	10km
Operating Voltage	7V–60V	Servo output	5.6Vx4 way, 2A each way
Dimension	80 x 56 x 22mm	Page volume (including antenna)	150g
Case material	CNC Aluminum alloy	ArduPilot firmware	ArduPilot 4.1 or Later
RTK Frequency	GPS: L1C/A、L2P(Y)、L2C、L5 BDS: B1I B2I B3I GLONASS: L1 L2 Galileo: E1、E5a、E5b QZSS: L1、L2、L5		
RTK Positioning Accuracy	Level: 0.8 cm + 1 ppm; Range: 1.5 cm + 1 ppm		
RTK Direction Accuracy	0.2° / 1m Baseline		
RTK initialization Time	Cold Start: <20S; RTK Fixed: <5S		
Differential Data	RTCM 3.3 / 3.2 / 3.1 / 3.0 NMEA-0183		
Model support	Fixed Wing/3–8 axis multi-rotor/helicopter/fixed VTOL/unmanned vehicle/unmanned boat/submarine		

COMPATIBLE WITH ARDUPILOT ECOLOGY

pixhawk

MAVLINK
MICRO AIR VEHICLE COMMUNICATION PROTOCOL

ROS

QGroundControl

ARDUPILOT

MAVSDK

HIGH RELIABILITY INERTIAL SENSOR

8°/h

Three-axis
Gyroscope

10mg

Three-axis
Acceleration

2°

Triaxial
Magnetic Field

2cm

Position
Accuracy

5cm

Height
Precision

1LSB

Noise Figure

±16g

Seismic ability

-40°

Minimum
Temperature

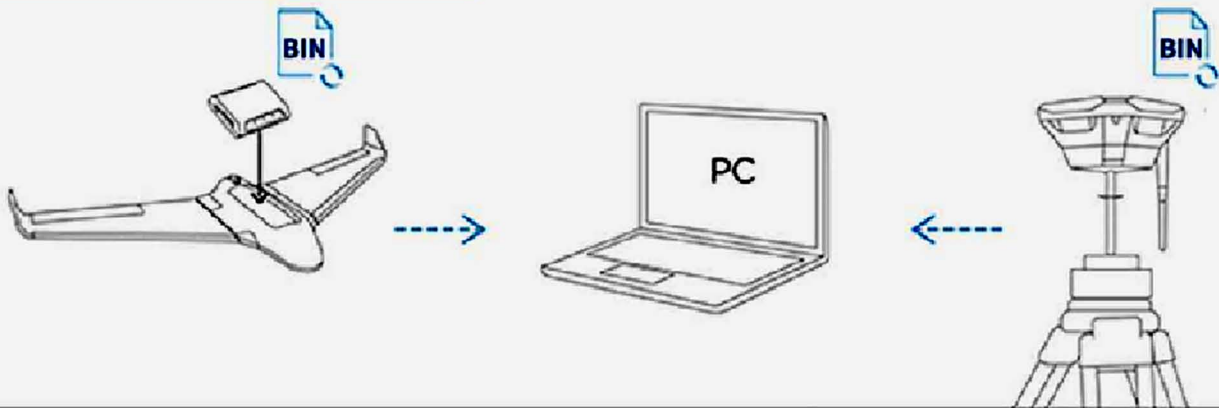
+85°C

Maximum
Temperature

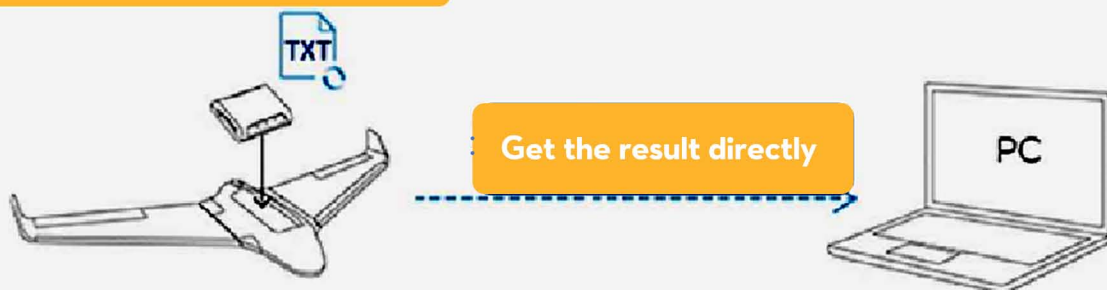
The sensor is one of the important indicators to evaluate the level of flight control. Our products use the industry's more advanced anti-seismic MEMS sensor. Compared with traditional devices, the noise figure is less than 1LSB, and the long-term zero drift is more stable, so as to ensure the highest accuracy under harsh working conditions.

IMPROVED REAL TIME PPK PROCESSING

Traditional Post-Processing PPK



IMPROVED REAL TIME PPK



In the field of aerial surveying and mapping, the traditional PPK post-processing technology is to record the data of the mobile terminal and the base station for calculation. This process depends on the quality and integrity of the satellite data. If there are problems that cannot be found in time, it may bring losses to users.

The new generation of airborne POS processing technology is based on the principle of PPK, which can accurately calculate the position of the photo in real time. The error between the test result and the PPK method is about 1cm, which meets the requirements of high-precision surveying and mapping.

RTK CENTIMETER POSITIONING

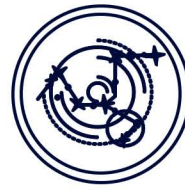
All Constellations | Full Frequency Band | High frequency



Satellites: 50 +



5 seconds

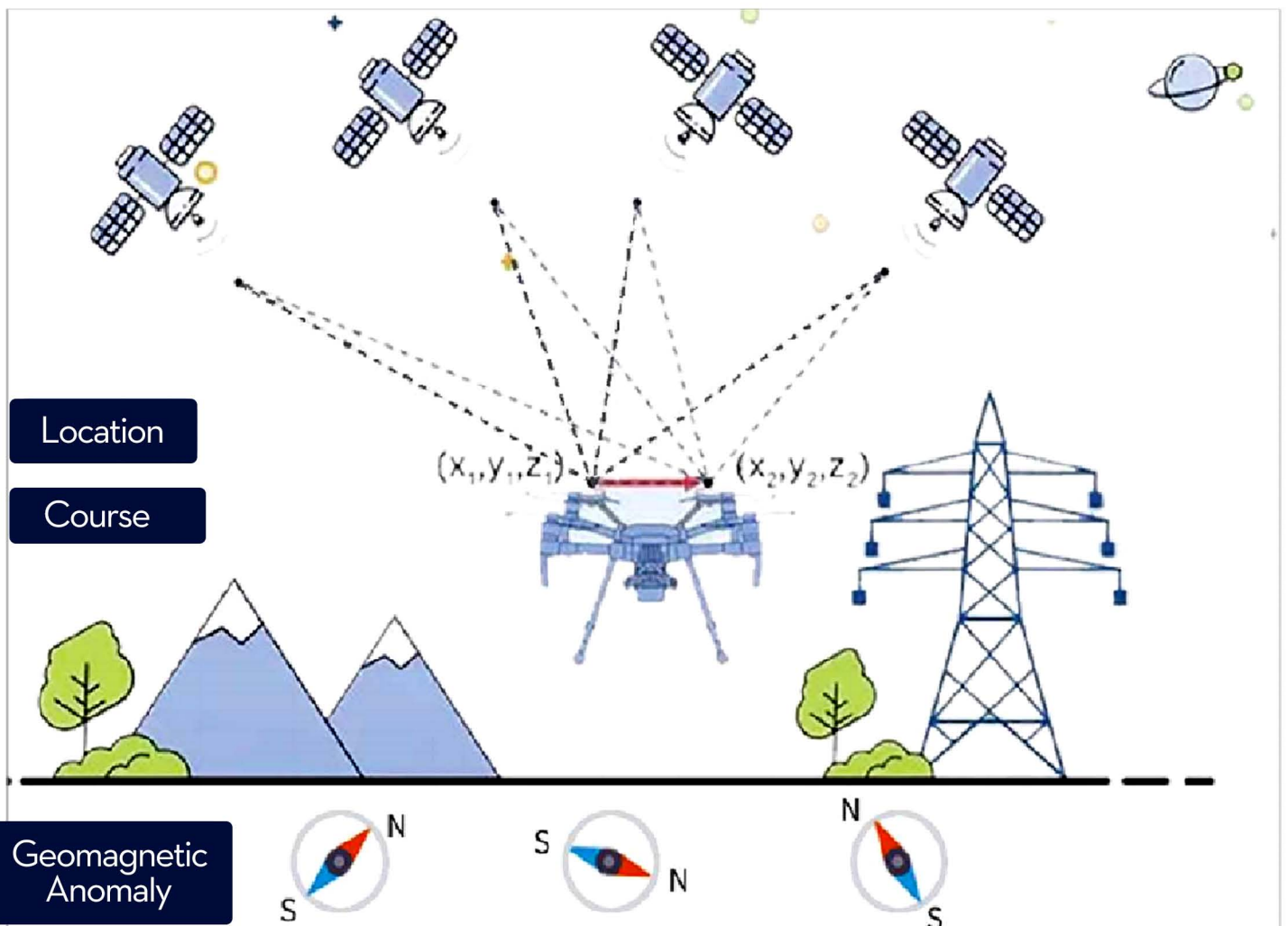


Big Dipper III



RTH When out of control:
10 Min

DUAL RTK POSITION AND HEADING



*Magnetic compass does not need to be calibrated to cope with complex spatial environments.

NETWORKING COMMUNICATIONS LINK

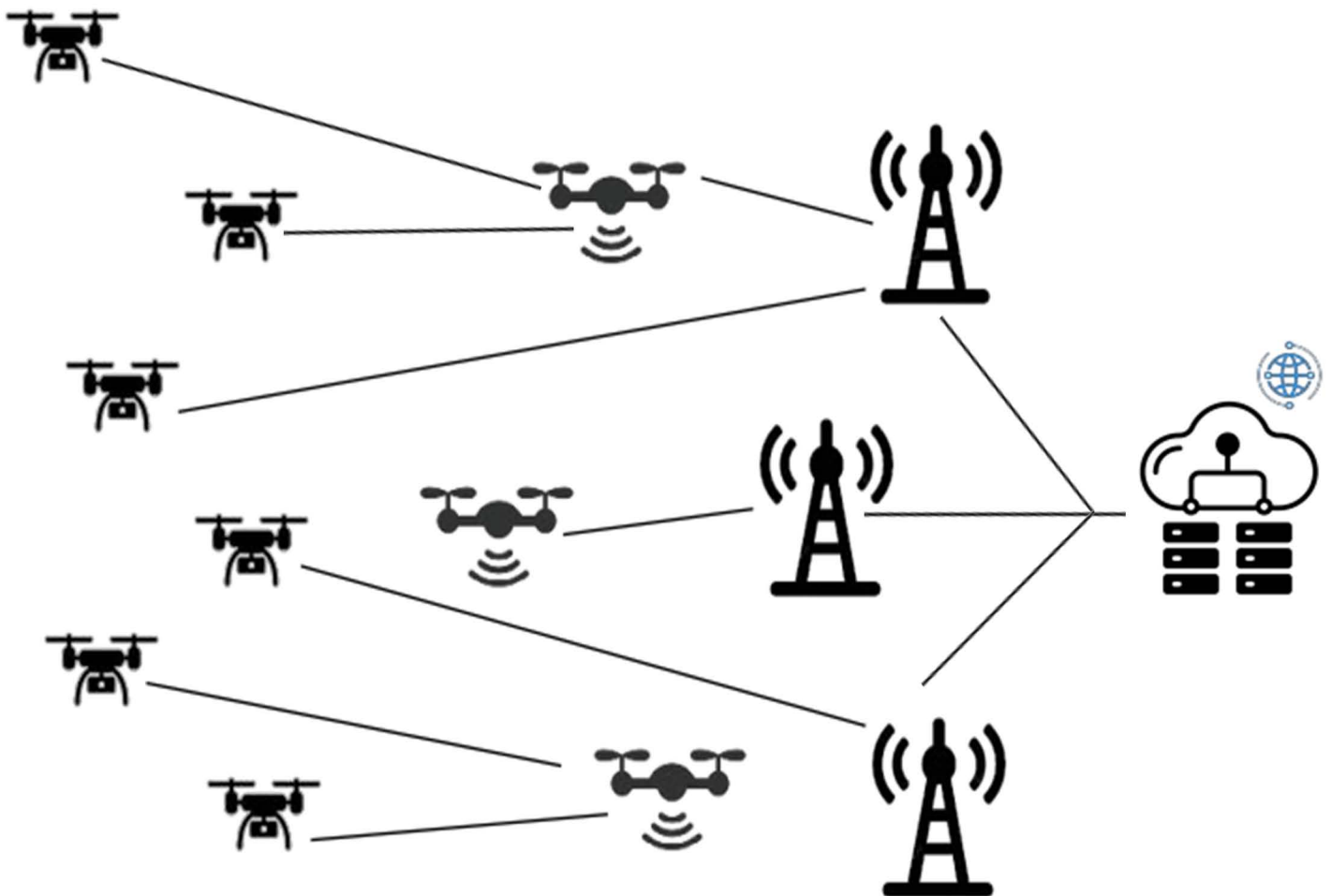
One Station 6 4 Machines | Intermediate relay | Seamless roaming

Drone

Intermediate relay

Station

Server



A single node supports communication with up to 64 devices. Users no longer depend on network operators, and can completely set up ground base stations and relay stations independently. The running devices can realize roaming communication between different base stations, so as to achieve full coverage of the area, which is especially applicable for scenarios that require batch deployment and cluster control.