



6 Rotors Spraying drone

6 rotors plant protection UAV 16KGS agriculture sprayer

Intelligent Agriculture is the trend of all over the world. And the intelligent drone act as a important role in this world plan.

Agriculture spraying drone can replace the traditional pesticide sprayer and it's speed is 40times of the traditional sprayer. It will save 90% water and 30%-40% pesticide.

Small droplet diameter make the pesticide more well-distribute and improve the effect.

At the same time, it will make the people faraway from the pesticide and reduce the pesticide remain of the crop.

FELIX system can also use the new T1 - A Flight Controller,

With a Radar Sensing System that provides additional reliability during flight.

T1 - A is a mature flight controller for agricultural UAV.

It provides rich and practical function that can meet the multiple requirements of the current agricultural UAV.

By the integration of high precision sensor, the application of advanced industrial precision calibration algorithm as well as reasonable intelligent Operation mode, the more efficient, accurate and convenient way of plant protection work can be realized.

6 Rotors Spraying drone

AIRCRAFT FRAME

Dimensions: 1720mm x1720mm x610mm (arm unfolded, without propellers)
925mm x925mm x610mm (arm folded)

SPRAY SYSTEM

LIQUID TANK

Volume:16 L
Standard Operating Payload: 16 kg

NOZZLE

Model: Germany ceramic nozzle (Max 1L/min adjustable)
Quantity: 6

FLIGHT PARAMETERS

Total Weight: 15.5 kg (without battery)
Standard Takeoff Weight: 37.5 kg
Max Takeoff Weight: 37.5 kg (at sea level)
Max Thrust-Weight Ratio: 1.41 (with 37.5 kg takeoff weight)
Power Battery: Battery (6S 22000mAh 25C 6S1P)
Max Power Consumption: 15774 W
Hovering Time*: 21 min (@22000 mAh & 16 kg takeoff weight)
10 min (@22000 mAh & 37.5 kg takeoff weight)
**Hovering time acquired at sea level, with wind speeds lower than 3m/s.*
Max Operating Speed: 8 m/s
Max Flying Speed: 10 m/s
Max Service Ceiling Above Sea Level: 2000 m
Recommended Operating Temperature: 0 °C to 40 °C

REMOTE CONTROLLER

Model: XT32
Operating Frequency: 2.400 GHz to 2.483 GHz
Max Transmission Range: 3 km (unobstructed, free of interference)
EIRP: ≤20 dBm
Built-in Battery: 3000 mAh, 3.7V
Operating Temperature Range: -10 °C to 40 °C
Storage Temperature Range: Less than 3 months: -20 to 45°C
More than 3 months: 22 to 28°C
Charge Temperature Range: 5 °C to 40 °C

RADAR MODULE

Detection Range: 1- 5 m
Working Range: 1.5 - 3.5 m
Precision: < 10 cm

PROPULSION SYSTEM

MOTOR

Stator Size: 81×20 mm
KV: 100 rpm/V
Max Thrust: 15.3 kg/Axis (48V, Sea Level)
Weight: 180g



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It will save 90% water and 30%-40% pesticide. Small droplet diameter make the pesticide more well-distribute and improve the effect.

At the same time, the drone sprayer will make the people faraway from the pesticide and reduce the pesticide remain of the crop.

Function:

- Foldable frame, easy to transport
- Intelligent flight with autopilot
- Intelligent flight memory, record break-point
- Adjustable spray flow rate
- Adjustable altitude and fly speed
- Fail-safe, auto fly when out of control
- Low voltage warning and auto return to base
- Empty tank warning and auto return to base
- Terrain following with MMW radar
- Software(ground station and manage platform)
- Obstacles avoidance
- Double GPS
- Multi-way charger
- Intelligent 14000mAh battery



Spraying drone

Specification	Parameter
Package	
Package Size	Package Size 770*770*750mm
Net Weight	13.0kg
Gross Weight	21.0kg
Rack	
Symmetric Motor Wheel Base	1495mm
Length of Single Arm	643mm (Front) ; 623mm (Back)
Overall Dimension	1152*1152*630 (Unfold State) 666.4*666.4*630 (Fold State)
Motor	
Motor Type	P80
Motor Size	80x20mm
KV Value	100rpm/V
Max Tension	13.5KG
Max Power	2800W
Weight	680g
Motor Electronic Modulation	
Rated Operational Current	40A
Operating Voltage	50.4V (12S LiPo)
Highest Sginal Frequency	500Hz
Driving PWM Frequency	20KHz
Highest Control Frequency of Main Wire	2KHz
Collapsible Propeller (30R)	
Texture	Polymer + Carbon Fiber
Diameter	30 inches
Screw Pitch	10.9 inches
Ordinay Tension / Rotate Speed	4~8kg/2000~2800RPM
Weight	184g
Spray System	
<u>Operating Box</u>	
Volume	10L
Standard Operation Load	10kg
Volume of Storage Groove	0.37L
Battery Installation Position Size	242*180*135mm
Shower Nozzle	
Suggested Type	XR11001VS
Number	4↑
Max Spray Volume	2000ml/min (Applying XR110001VS shower nozzle, taking water as example)
Spray Swath	3.0~5.5 meters (depending on different objects)
Atomization Grain Size	XR11001VS : 130 – 250 μm (being related to the spraying preparation type, spraying flow and so forth)

Spraying drone

Specification	Parameter
Obstacle Avoidance Radar	
Perception Scope	2~12m
Application Condition	The relative altitude of the HAV is 1.5m and the speed is less than 6 m/s.
Security Distance	4m
Obstacle Avoidance Direction	Realizing the front and back obstacle avoidance in line with the flying direction
Protection Level	IP65
FPV Camera	
Visual Angle (FOV)	120°
Resolution Ratio	720P
LED Brightness	1000lux
LED power	8W
Flight Data	
Total Weight (not including battery)	11.6kg
Max effective flying weight	27.0kg
Hovering Precision (GNSS signal good)	Horizontal± 1.0m, Vertical ± 0.5 m Horizontal ± 10 cm, Vertical± 10 cm (Launching RTK) Vertical ± 0.1m (Launching radar)
Hovering Time*	> 10min (Full load) > 20min (No load)
<i>*The hovering time is tested when HAV is near to sea level, the wind speed is less than 3 m/s and the environment temperature is 25°C.</i>	
Max Flight Speed	10m/s
Max Flying Altitude	2000m
Recommended Operating Environment Temperature	0~40°C
Remote Control	
Type	T12-LC-TG
Operating Frequency	2.400-2.4833 GHz
Effective Distance of Signal (No Disturbance and No Resistance)	10km
Battery Voltage	3.7V (Li-On rechargeable)
Battery Capacity	4000 mAh
Weight	560g
Size	225x123x35mm
Support Language	Simplified Chinese / English
RTK System	
Usage Frequent Point	GPS : L1/L2 ; GLONASS : L1/L2 ; BDS : B1/B
Positioning Accuracy	Single Point : 1.5m Floating Solution : 0.4m Fixed Solution: Horizontal 1cm±1ppm/ Vertical 2cm±1ppm

Spraying drone

Specification	Parameter
Orientation Precision	0.4°
Speed Test Precision	0.03m/s
Communication Frequency Band	840MHz-845MHz
Base Station	
Support Mode	Base State Mode / Tapper Mode
Duration	8h
Signal Coverage Scope (No Disturbance, No Resistance)	4km
Protection Level	IP67
Size	136mm x 89mm
Weight	0.7kg
Charger	
Input	100V-240V~11A 50/60Hz
Output Power	800Wx2
Channel Number	Binary Channels
Support Language	Simplified Chinese / English
Size	312 x 228 x 145mm
Weight	3.05KG
Package Size	355 x 260 x 190mm
Battery (TG-14000S)	
Voltage	50.4V
Discharge Rate	15C
Protection Level	IP64
Battery Life Span	200 circulations
Capacity	14000mAh
Weight	4.15kg
Package Size	295x275mmx320mm (Package includes 2 pieces batteries)
Battery (TG-17000S)	
Voltage	50.4V
Discharge Rate	15C
Protection Level	IP64
Battery Life Span	200 circulations
Capacity	14000mAh
Weight	5.15kg
Package Size	295mmx275mmx320mm (Package includes 2 pieces batteries)

DEVICES

XT 32

All in One Design

Advanced SHTT Spread-spectrum Technology

16-Channel Multi-Functional, compatible with most RC models

Extraordinary Handling & Accurate Operating Experience

High Brightness Colorful LCD Touch Screen

Voice Broadcast & Vibration Alert



Extraordinary Handling & Accurate Operating Experience

Perfectly fits operators palm by applying a fashionably streamlined industrial design style and ergonomics design.

A sweet-hearted matte silicone pad as additional protection.

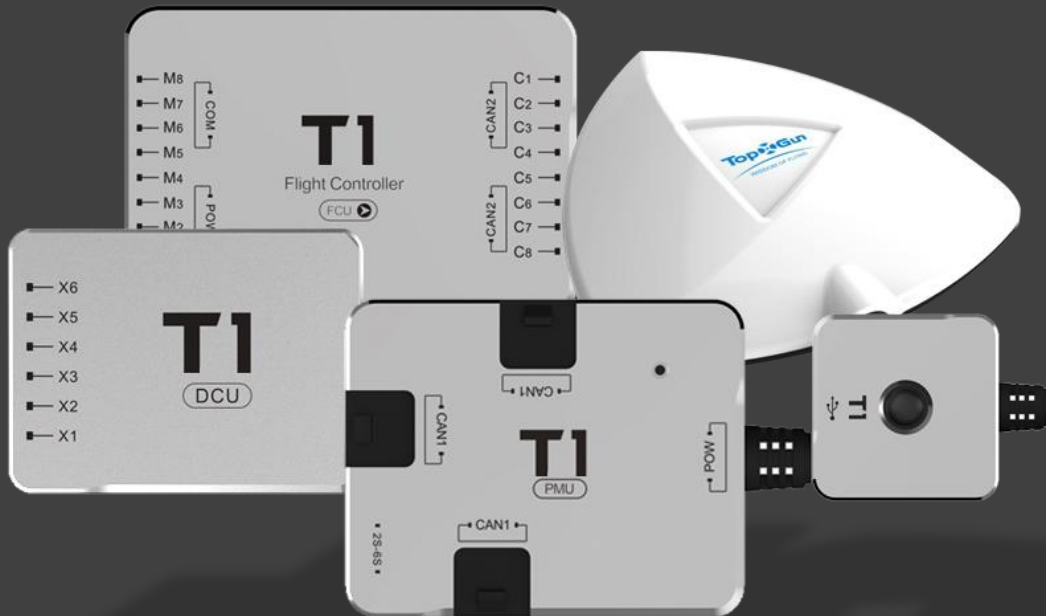
Advanced SHTT Spread spectrum Technology

Applies the latest bidirectional 2.4G spread spectrum technology named as SHTT (SIYI HOPPING TELEMETRY Technology).

3km effectively stable control & transmission distance(unobstructed, free of interference).

Both controller and receiver are linked by a unique matching code.

With the fast hopping telemetry technology, the anti-jamming capability is enhanced to prevent interfering from other devices, allows multiple remote controllers working stably at same time.



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It provides rich and practical function that can meet the multiple requirements of the current agricultural UAV.

By the integration of high precision sensor, the application of advanced industrial precision calibration algorithm as well as reasonable intelligent Operation mode, the more efficient, accurate and convenient way of plant protection work can be realized.

T1-A will be an expert flight controller joining fundamental elements of agrarian UAV in current market, it very well may be introduced on an assortment of model structures.

For Agriculture perspective and short range activities, it tends to be considered as a best alternative for the Aviator.

+ Points:

- Way-points Operation
- Dose Detection
- Precision Spray Function
- Resume Spray Function
- Support Multiple types of Models Configuration
- Low Voltage Protection
- Fail-safe and Go Home
- Motor Failures and Broken airscrew blade protection (For Hexa-copter and Above it)
- Minimum Set-up Parameters (Beneficial for Autonomous Operations)



Using GROUND STATION, the user can select the operation area and set operation distance, flight speed, altitude, and other information.

The drone will automatically fly back and forth according to the specified distance and traverse the entire area to complete the work and the land operation is more convenient.

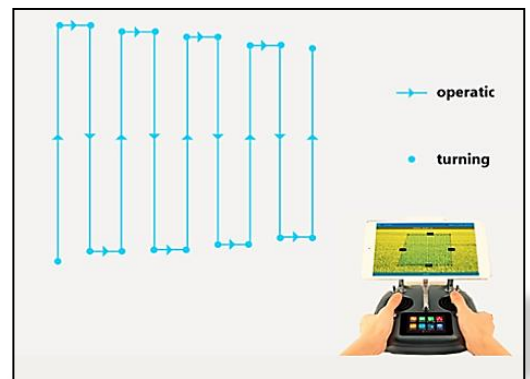
A/B Points automatically control

In the A / B point control, the drone can automatically spray pesticides in accordance with the established route, which is suitable for large regular areas.

Semi-automatic mode

In the semi-automatic operation mode, the user can control the uav flying in parallel, forward and backward.

The aircraft automatically sprays pesticides, which is suitable for operation in the irregular areas.

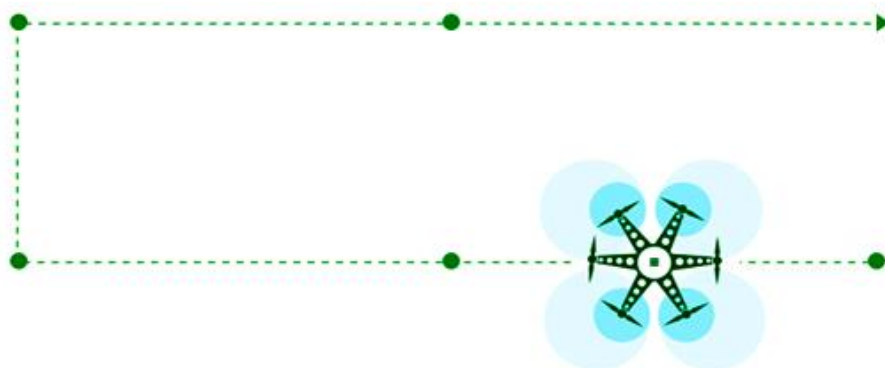


Precise Spraying

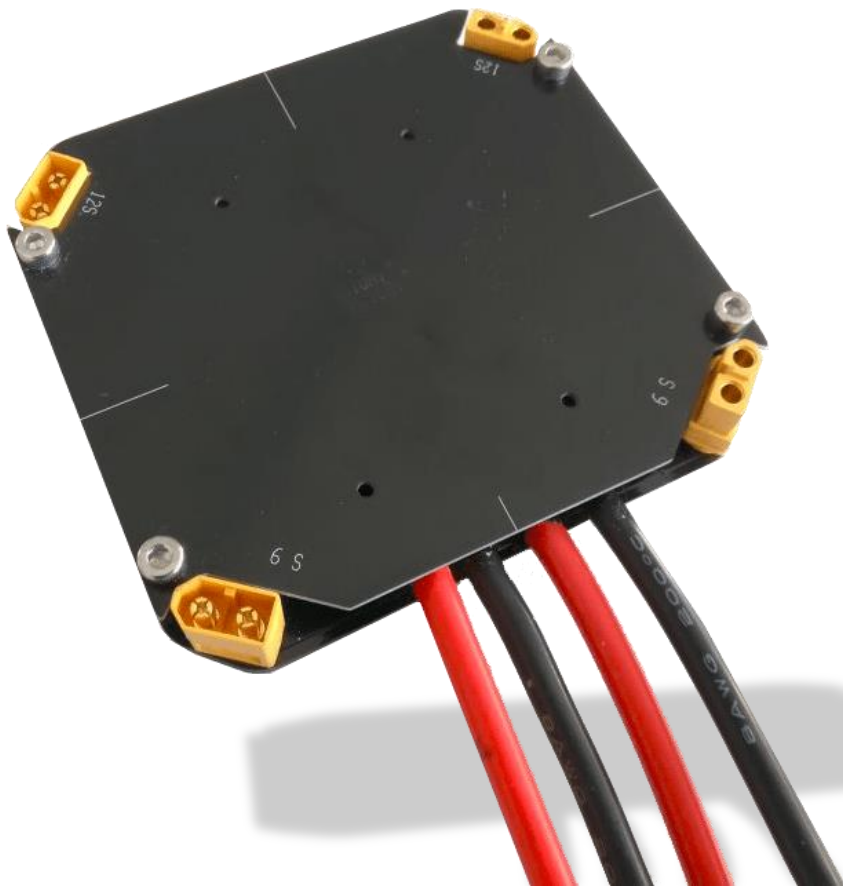
You can set the spraying range, independent planning the path of changing working lines, also implements the constant situation of height, speed and flow spraying.

The function of intelligent spraying flow can be controlled which is associated with the flight speed: the faster the speed, the greater the flow; Speed is lower than 0.5 m/s, pump will shut off independently.

It not only ensure the uniformity of spray, but also save agrochemicals.



Power Distribution Boards for 16L



Power Distribution Boards(PDB) are one of the simplest components on a Multi-rotor and therefore are one of the easiest to choose.

There are 3 main points that should be considered when choosing a PDB for your multi-rotor: Size and layout Voltages and Current Capability (on board voltage regulators).

Additional features It is necessary to have a good idea of what parts you will be using in your multi-rotor build in order to make sure that you choose a PDB that will have the right features and be able to support the power consumption of all the components.

Size is relatively straight forward, however is worth mentioning because PDB come in all shapes and sizes.

Some are made specifically for certain frames while the majority use a 30×30 standardized mounting.

Depending on the frame you have chosen, there may be a custom Power Distribution Boards available which may replace a Carbon component in the frame and greatly simplify the wiring and cleanliness of the build.

If your frame does not have a dedicated Power Distribution Boards available, you need to choose one that will suit your intended build.

This is where it is necessary to have a good idea of what other components you intend to use.

Ground Station / Portable



Ground Control Station is designed for controlling unmanned vehicles

Ground station is typically a software application, running on a ground-based computer, that communicates with your UAV via wireless telemetry.

It displays real-time data on the UAVs performance and position and can serve as a “virtual cockpit”, showing many of the same instruments that you would have if you were flying a real plane.

A GCS can also be used to control a UAV in flight, uploading new mission commands and setting parameters. It is often also used to monitor the live video streams from a UAV's cameras. portable Ground Control Station (GCS) is a flexible and universal solution for controlling unmanned vehicles and payloads.

By using a unique, modular electronics compartment (MEC), application specific hardware can be quickly installed. This flexibility allows the GCS to be configured to control unmanned aircraft vehicles (UAV), ground robots, bomb disposal robots, remotely operated vehicles (ROV) and other robotic devices. The GCS can also be configured to control and monitor measurement and sensing equipment.

Specification:

Size: 462*256*70MM

CPU: Intel I7 7500U

Graphics card: Intel HD Graphics 620

Screen: Dual 13.3" LED

Display resolution: 1920*1080

Touch screen: 10 points

Connector: 2*USB2.0/ 3*USB3.0/ 1*LAN/ 1*HDMI/ 1*MIC-OUT/ LINE-OUT/DC

Remote joystick : 2 Back to the Hall remote control lever

Gimbal Rocker: 2 Back to the Hall remote control lever

Channels: 14