BIONICSENSE®

VISUAL SELF DRIVING SYSTEM

INTELLIFLEYE



INTRODUCTION

BIONICSENSE is a visual self driving system which independently developed by INTELLIFLEYE. It has the functions including control and navigation, three dimensional space perception and positioning, path planning and decision-making, and real-time autonomous obstacle avoidance.

Relying on powerful edge computing capabilities, BIONICSENSE can realize real-time perception and 3D map construction of the surrounding environment, and complete path planning and intelligent decision-making based on the spatial information of obstacles in the surrounding environment.

BIONICSENSE could be easily installed, integrated and used as a common sensor due to the highly integrated modular design; Flexible interface design and software configuration options provide users with maximum flexibility to adapt to different application scenarios; Due to the customized design the protocol can be directly used for existing unmanned devices such as drones, unmanned vehicles, unmanned boats, and robots.

Product Characteristic

- L4 Autonomous driving
- Multiple redundant system
- Indoor and outdoor navigation without GNSS
- Path planning and obstacle avoidance
- Anti-electromagnet interference
- WIFI+4G/5G double data link
- Simplified vehicle operation
- Real time 3D reconstruction and display
- Flexible software configuration
- Multiple application mode

- 6xcameras,3 groups of stereo cameras
- 1xUSB3.0OTG
- 1xUSB3.0 HOST
- 1xGigabit Ethernet port
- 1xSD card
- 2xUART,Baud rate up to 27 Mbit/s
- 16xGPIO

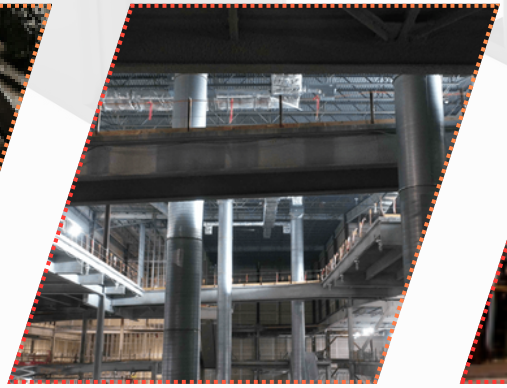


Application Scenario

Inspection



Outdoor with complex obstacles



Indoor with complex obstacles



Electromagnetic Interference



Without GNSS

Fulfill the requirements for the inspection in the strong electromagnetic interference environment, indoor complex environment, and no GNSS environment

Application Scenario

Search and Rescue



MIne/Cave



Hiighway Tunnel



Mall



Forest

Fulfill the requirements for the search and rescue in the strong electromagnetic interference environment, indoor complex environment, and no GNSS environment

Application Scenario

Mapping



Tunnel



Bridge



Grid Inspection



Underground Tunnel

Fulfill the requirements for the mapping in the strong electromagnetic interference environment, indoor complex environment, and no GNSS environment

Product Specification

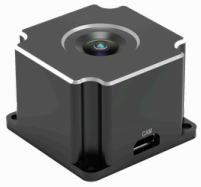
System Configuration

IMU	Triple IMU
Barometer	Triple Barometer
Compass	Triple Compass
GNSS	Double GNSS GPS, GLONASS, GALILEO and Beidou RTK Model and Single Mode High Performance Helical Cylindrical Antenna
Positioning Accuracy	-5cm ~ + 5 cm
Button	Rest and Recovery
Status Light	AMASS XT30UPB-F
Power In	DC 5.5V ~ 19.2V (35W)
Weight (System)	386g
Size (L x W x H) /mm	107mm*64mm*52mm



Visual Sensor

Size (L x W x H) /mm	28mm * 28mm * 20 mm
Number	Maximum Six Visual Sensors



Product Specification

Interfaces

USB Type-C	Host Mode: USB 3.0 Super Speed Mode (5Gb/s), 5W Power In OTG Mode: USB 3.0 Super Speed Mode (5Gb/s)
USB Type-A	Host Mode: USB 3.0 Super Speed Mode (5Gb/s), 5W Power In
Ethernet Port	Gigabit Ethernet Port, 10/100/1000 Ethernet
3 in 2 Card	Nano, Micro SD Card 3 In 2, 1 Micro SD and 1 Nano 4G Card
Wireless Network (Optional)	WIFI, IEEE 802.11a/b/g/n/ac2 X 2 MIMO, Maximum Speed 886.7Mbps LTE, CAT4, Maximum Upload Speed 50Mbps, Maximum Download Speed 150Mbps (Available for Global Version) 2 Antenna, SMA Interface, WIFI & LTE 2 in 1 Antenna
UART	2, Baud Rate Up to 27 Mega bite/s
GPIO	16 x GPIO Channel, Configurable for PWM Out, In or others
RC Channel	SBUS, PPM Receiver



Ground Control Station

ASA(Autonomous System Assistant)

3D satellite map operation interface

The 3D satellite map cannot only reflect the latitude and longitude coordinate information, but also intuitively reflect the relative altitude information of the flight trajectory of the aircraft and the surrounding geographical environment. This allows ground station operators to more reasonably set waypoints and trajectory planning for flight missions, improve flight efficiency and reduce mission risks.



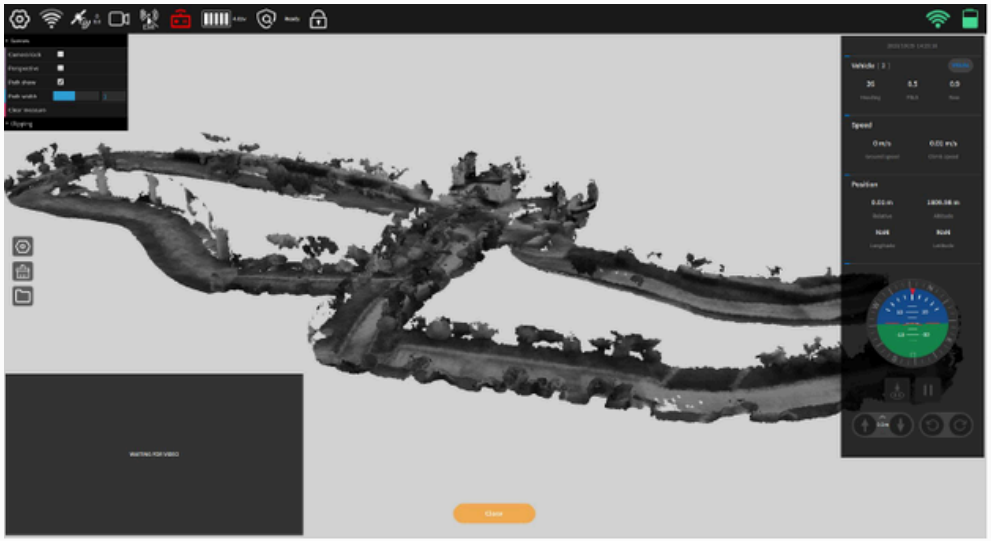
3D satellite map operation interface

Ground Control Station

ASA(Autonomous System Assistant)

Simplified Vehicle Operation Interface

With the help of Simplified Vehicle Operation (SVO),the flight control is simplified to just tap the target location, and the drone can automatically fly to the target. Even mission executives who have never had any experience in drone remote control can quickly get started. Due to the application of digital twin technology, SVO can display the 3D flight trajectory and the 3D reconstruction model of the surrounding environment in real time, providing visual information for different mission scenarios.



Simplified Vehicle Operation Interface

Contact us



Business inquires

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About Us

IntelliFleye is an independent drone technology developer and manufacturers. Since 2017, through its secure cooperation with Singapore, we have provided innovative security and high quality inspection solutions through ground-fixed networks, vehicle-mounted mobile systems, and drones/aerial networks. The company has built in-depth visual inspection technology and infrastructures with the, high qualified researchers, industries and academia etc.

VISIT OUR WEBSITE.

www.IntelliFleye.com