OPTOSKY Spectroscopy Solutions

Datasheet

Drone crop monitoring system ATH9010NY

Features

- Using hyperspectral imaging technology, crop damage can be detected early;
- Parameters that can be inspected:
  - Plant growth
  - Pests and diseases
  - Chlorophyll and leaf pigment analysis
  - Short of water
  - Fat deficiency
  - Output forecast, etc.
- High spatial resolution, up to 5mm spatial resolution;
- Flight altitude: 50~1000 meters, 100m recommended
- I7 onboard computer supports up to 2T storage and can store up to 100 hours of map data
- Equipped tools:
  - Large multi-rotor UAV: 1.5m wheelbase, high load capacity, strong scalability; long flight time of about 45 minutes, large cruising area
  - Vertical take-off and landing fixed-wing UAV: easy to operate, high load capacity, long flight time of about 2 hours, cruising area up to 100 square kilometers/day;

Description

The ATH9010NY series drone-borne early crop inspection system is based on the third-generation drone hyperspectral imager launched by Optosky. It has the characteristics of strong early warning capability, large inspection area, and low cost of use.Especially suitable for forest pest control work.

It is a series of small and lightweight UAV-borne micro-hyperspectral imagers, consisting of a six-rotor high-stability UAV, a high-stability pan/tilt, a hyperspectral imager, a large-capacity storage system, a wireless image system, It is composed of GPS navigation system, ground receiving workstation, ground control system, etc.

Model	Description
ATH9010NY	Multi-rotor UAV，the inspection area is about 3-10 square kilometers every day
ATH9010NY-FW	ATH9010NY-FW vertical take-off and landing fixed-wing UAV, the inspection area is about 20-100 square kilometers

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1. Parameter

	ATH9010NY	ATH9010NY-FW
Flight system		
Flying platform	customized version of long-duration, high-load, large-scale 6-rotor UAV	customized version of long-duration, high-load, large-scale 6-rotor UAV
Gimbal	Three-axis brushless DC motor high gimbal stabilizer	Highly stable gimbal
Number of rotors	6 rotors	4 rotors
Take-off and landing mode	vertical takeoff and landing	vertical takeoff and landing
Wheelbase	1500 mm	NA
Maximum load	6 Kg	5 Kg
Maximum ceiling	5000 m	100-5000m
Size	1650×1410×500 mm	3.8×1.95 m
GPS accuracy	0.5 m	0.5 m
Modify imaging remotely parameter	No	Yes
Endurance flight time	>45 minutes	>2 hours
Data interface	USB3.0	USB3.0
Imaging method		
Resolution (before Binning)	2048 (spectral dimension) × 2048 (spatial dimension)	2048 (spectral dimension) × 2048 (spatial dimension)
Resolution (after Binning)	512 (spectral dimension) × 2048 (spatial dimension)	512 (spectral dimension) × 2048 (spatial dimension)
Maximum frame rate	130 Hz	130 Hz
Onboard computer	I7 High Performance Onboard Computer	I7 High Performance Onboard Computer
Onboard storage	512 GB	512 GB
Power supply	12V，15W	12V，15W
Reliability		
Operating temperature	-10 ~ 45℃	
Storage temperature range	-20 ~ 65℃	-20 ~ 65℃
Working humidity range	≤85% RH	≤85% RH
Software		
Basic functions	Flexible exposure setting, gain, speed can be flexibly set, and real-time hyperspectral images and hyperspectral curves can be dynamically displayed;	Flexible exposure setting, gain, speed can be flexibly set, and real-time hyperspectral
Focus	Dynamically display hyperspectral images in real time, perform scientific light and dark focusing, and avoid artificial visual focusing errors	Dynamically display hyperspectral images in real time, perform scientific light and dark focusing, and avoid artificial visual focusing errors
Software system	Data acquisition software can dynamically display hyperspectral images and hyperspectral curves in real time; it can provide measurement modes such as transmission and reflection, and can flexibly set parameters such as exposure time and	Data acquisition software can dynamically display hyperspectral images and hyperspectral curves in real time; it can provide measurement modes such as transmission and reflection, and can flexibly set parameters such as exposure time and speed. It has its own spectral library

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	speed. It has its own spectral library and user-recorded library, which can realize image cropping, Spectrum identification and other functions	and user-recorded library, which can realize image cropping, Spectrum identification and other functions

2. Ordering Guide

model	feature
ATH9010	Standard configuration type
ATH9010P	High signal-to-noise ratio type
ATH9010W	Wide field of view type

3. Accessories list

serial number	Product	quanti ty	Optional
1	Hyperspectral imager (400-1000nm) host computer	1	Standard
2	6-rotor UAV or vertical take-off and landing fixed-wing UAV	1	Standard
3	Highly reliable UAV gimbal and landing gear	1	Standard
4	Airborne data acquisition and large-capacity data storage system	1	Standard
5	Battery	1	Standard
6	Objective lens	1 set	Standard
7	Hyperspectral imaging system workstation (including operation controller and control software)	1 set	Standard
8	50cm diameter field calibration whiteboard	1 set	Standard
9	High-precision indoor scanning pan/tilt	1 set	Optional
10	High blue steady flow halogen lamp	4	Optional
11	Standard calibration plate	1	Optional
12	Original imported field calibration cloth (1.2m×1.2m)	1	Optional
13	360 degree outdoor rotating platform	1	Optional
14	Tripod	1	Optional
15	Large-capacity lithium battery for outdoor use	2	Optional
16	Measuring darkroom	1	Optional
17	Outdoor portable transport box	1	Optional
18	Push broom device	1	Optional
19	Ground calibration spectrometer	1	Optional
20	Full-band ground calibration spectrometer	1	Optional

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