Drone Forest Health Monitor | ATH9010SXC

Features

- Using hyperspectral imaging technology, pine nematode damage can be detected early;
- The inspection area is large, and the maximum inspection area can be 100 square kilometers/day;
- High spatial resolution, up to 50mm 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 with 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 per day;

Application

- Forest disease and fire monitoring
- Pasture Productivity and Pasture Monitoring
- Environmental protection and mine monitoring

Description

The ATH9010SXC series UAV-borne early pine nematode inspection system has the characteristics of strong early warning capability, large inspection area, and low cost of use. Especially suitable for forest pest control work.

ATH9010SXC is a series of small and lightweight UAV-borne micro-hyperspectral imagers. It consists of a six-rotor high-stability UAV, a high-stability gimbal, 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
ATH9010SXC	Multi-rotor drones patrol an area of about 3-10 square kilometers every day
ATH9010SXC-FW	Vertical take-off and landing fixed-wing UAV, patrolling an area of about 20-100 square kilometers every day

1. Ordering Guide

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

2. Parameter

	ATH9010SXC	ATH9010SXC-FW
Flight system		
Flight Platform	Customised long time high load capacity large 6-rotor drone	Vertical take-off and landing fixed wing drone
Gimbal	3-axis DC brushless motor high stability gimbal	High stability gimbal
Number of rotors	6 rotors	4 rotors
Take-off and landing mode	Vertical take-off and landing	
Wheelbase	1500 mm	NA
Maximum load	6KG	5KG
Maximum lift	5000m	100-5000m
Drone size	1650 X 1410 X 500 mm	3.8 X 1.95 m
GPS accuracy	0.5 m	
Modify imaging remotely parameter	NO	YES
Endurance flight time	>45 minutes	>2 hours
Data Interface	USB3.0	
Imaging mode		
Resolution (before Binning)	2048 (spectral dimension) $\times$ 2048 (spatial dimension)	
Resolution (after Binning)	512 (spectral dimension) $\times$ 2048 (spatial dimension)	
Maximum frame rate	130 Hz	
Onboard Computer	I7 high-performance onboard computer	
Onboard Storage	512 GB	
Power supply	12V，15W	
Reliability		
Operating Temperature	-10~45℃	
Storage Temperature	-20 ~ 65℃	
Operating Humidity	≤85% RH	
Software		

Basic Functions	Flexible settings for exposure, gain and speed, dynamic display of real-time hyperspectral images and hyperspectral curves;
Focusing	Dynamic real-time display of hyperspectral images, scientific dark and light focusing, avoiding human visualization of focusing errors
Software system	Data acquisition software, can real-time dynamic display of hyperspectral images and hyperspectral curves; can provide transmission, reflection and other measurement modes, can be flexibly set the exposure time, speed and other parameters, comes with a spectral library and the user's self-recorded library, can realize the image cropping, spectral recognition and other functions

3. Accessory list

NO.	Commodity	Number	Optional
1	Hyperspectral imager (400-1000nm) mainframe	1 unit	Standard
2	6 Rotor UAV or vertical take-off and landing fixed-wing UAV	1 unit	Standard
3	Highly reliable UAV gimbals and landing gears	1 unit	Standard
4	On-board data acquisition and high-capacity data storage system	1 set	Standard
5	Battery pack	1 piece	Standard
6	Objective lens	1 set	Standard
7	Hyperspectral imaging system workstation (including operator controller and control software)	1 set	Standard
8	50cm diameter field calibration whiteboard	1 piece	Standard
9	High precision indoor scanning head	1 set	Optional
10	High blue steady current halogen lamp	4 pieces	Optional
11	Standard calibration plate	1 set	Optional
12	Original imported field-specific calibration cloth (1.2m×1.2m)	1 piece	Optional

13	360 degree field rotating platform	1 piece	Optional
14	Tripod	1 piece	Optional
15	Field-specific high-capacity lithium battery	2 pieces	Optional
16	Measurement darkroom	1 piece	Optional
17	Field portable transport case	1 piece	Optional
18	Sweeping device	1 unit	Optional
19	Ground calibration spectrometer	1 unit	Optional
20	Full-band ground calibration spectrometer	1 unit	Optional