8-Band Multispectral Imager ATH1680

Features

- 8 bands in total: 6 multispectral bands + 1 infrared thermal imaging + visible light
- Infrared thermal imaging band can directly measure temperature data
- On-board real-time spectrum inversion and video output
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- Can be adapted to multiple models of drones
- Compact design and light weight (430g)
- Wide Applications: agriculture, forestry, surveying and mapping, etc
- Full channel fastest 0.5s photo interval
- GPS module, gyroscope module

Application

- Scientific research & Life Science Research： Climate research, ecology, archeology and remote sensing
- Agriculture & Forest Monitoring： Crop monitoring, growth assessment, pest and disease detection
- Irrigation management, land use and planning
- water quality in River & illegal discharge & Water stress
- Geology and mineral resource：Oil、Mining、Energy
- Environmental science： Natural disasters Monitoring and assessing the impact
- Pubilic Safety: Emergency rescue

Description

The ATH1680 8-band multispectral imager has a total of 8 bands, including 6 multispectral bands + 1 infrared thermal imaging + visible light. The infrared thermal imaging band can directly measure temperature data and find heat sources. Users can freely select the wavelength range of each channel according to application requirements to obtain the required spectral information. This flexibility makes the camera suitable for a variety of agricultural, environmental monitoring and resource management tasks.

The high-speed acquisition capability of the ATH1680 enables it to capture details of fast-moving targets and dynamic processes. The optimized data processing algorithm ensures high image quality and accuracy. Whether it is used for crop monitoring, soil analysis or vegetation coverage assessment, the ATH1680 can provide accurate spectral information and rich data support.

It meets the application needs of various industries such as agricultural monitoring, ecological protection, emergency search and rescue, and camouflage identification.

1. Parameter

Spectral Performance	Spectral Channel	450nm@30nm，555nm@27nm，660nm@22nm，720nm@10nm，840nm@30nm，RGB，LWIR：8μm~14μm
	Spectral Width	Multispectral：109m×82m@h120m；RGB：2.60cm@h120m，LWIR：71m×57m@h120
	Ground Resolution	Multispectral：5.28cm@h120m；RGB：2.60cm@h120m：LWIR：11cm@h120m
	Bits	Multispectral：12bit；RGB：8bit；LWIR：14bit
Imaging Lens*1	Shutter	Multispectral：Global Shutter；RGB：Global Shutter
	Camera Target	Multispectral: 1/1.8"; RGB: 1/2.3"
	Effective pixels	Multispectral：1.3Mpx；LWIR：0.3Mpx，Visible light：9Mpx
	FOV	Multispectral: 48.8°×37.5°; RGB: 47.4°×36.4°；LWIR：32.9°×26.5°
	Optical window	Sapphire optical glass window
Electrical Properties	Dimension	Φ7.8×100 mm
	Weight	≤430g
	Power	DC
	Power Consumption	9V~24V
	Interface	Drone Interface（type-c or DC），RS422， USB Device
	Image format	Multispectral: 16bit original TIFF & 8bit reflectivity JPEG RGB: 8bit JPEG
	Storage medium	SD card
	Shooting trigger	Overlap rate trigger, timing trigger
	Shooting frequency	Photo mode: 1Hz; Video mode: 20Hz
	Working temperature	-10℃~+50℃(Relative wind speed≥1m/s）
	Working humidity	RH(%)≤85%(non-condensing)

2.Application

1.Agriculture and Crop Management: Multispectral cameras can be used for crop monitoring, growth assessment, pest and disease detection, and irrigation management. By capturing different spectral bands reflected by plants, they can assess vegetation health, nutritional status, and water needs, optimizing crop growth and yield.

2. Environmental Monitoring: These cameras can monitor and assess pollution, soil quality, water quality, and vegetation cover in the environment. By analyzing image data from

different bands, they can monitor air pollution, water eutrophication, changes in forest cover, and other environmental parameters, aiding in environmental protection and sustainable development.

3. Land Use and Planning: Multispectral cameras provide high-resolution surface image data for land use planning, urban planning, and land resource management. By obtaining land use information, classifying land types, and monitoring surface changes, they assist decision-makers in making more accurate land management and planning decisions.

4. Water Resource Management: These cameras can monitor water quality, storage, and hydrodynamic characteristics of reservoirs, lakes, and rivers. By capturing the optical properties and color information of water bodies, they provide crucial data for water resource management, such as water quality changes, algae bloom monitoring, and water flow measurement.

5. Natural Disaster Monitoring: Multispectral cameras are useful in emergency response for monitoring and assessing the impact and damage of natural disasters like floods, earthquakes, and forest fires. By capturing image data of disaster areas, they help in disaster assessment, post-disaster reconstruction planning, and emergency response.

6. Resource Exploration: The cameras can be used in geological exploration, mineral resource exploration, and energy surveying. By analyzing surface images and spectral features, they help identify underground mineral resources, geological structures, and energy potential.

7. Camouflage Detection: Shortwave infrared has the ability to penetrate fog and smoke, and is highly sensitive to the spectral reflectance of different materials. With the help of multi-source remote sensing bands such as multi-spectral and long-wave infrared, it can identify sensitive targets such as camouflage.