Datasheet

Handheld High Resolution Hyperspectral Imager (380-1000nm or 380-1700nm)

ATH2100

Features

- Wavelength：380 ~ 1700 nm
- Spectral resolution：1.5nm
- Maximum spatial resolution: 1200×1200 or 3000×3000
- Single Cube imaging time: 6 minutes
- Imaging Mode: Transmission Grating
- Android operating system
- 6.0 inch HD capacitive touch screen
- 5 million pixel visible light viewfinder camera
- red indicator laser
- Data format compatible with ENVI

Application

- Geology and mine exploration
- Precision Agriculture, Crop Condition and Yield Evaluation
- Forestery disease monitor and Fire monitor
- Coastline and sea environment monitor
- Pasture grass production and growth monitor
- Lake and river monitor
- Remote sensing teaching & research
- Ecosystem protection and mine monitor
- Water quality, soils monitor
- Agriculture and animal products quality
- Military, defense and land security
- Disaster prevention

Description

ATH2100 is a brand-new, optimized and designed handheld visible-near-infrared hyperspectral imaging system with breakthrough features, operating in the wavelength range of 400 ~ 1000 nm. It has beautiful appearance, small size, light weight, can be held with one hand, and is light and easy to use. ATH2100 built-in Android operating system, high-definition touch screen operation, and built-in large storage space, very easy to use. In addition to small size and light weight, ATH2100 has the characteristics of high spatial resolution, high spectral resolution, and wide imaging range. ATH2100 consists of two parts: imaging lens and hyperspectral imaging camera.

ATH2100 adopts 1920X1200 pixel or 4096X3000 or 640X512 high-performance CCD imaging device, with clear imaging, less noise and good linearity.

With its temperature-stabilized optical system, the ATH2100 provides very good stability and sensitivity required for visible and near-infrared applications, and meets the stringent requirements of laboratory, field, and industrial applications, making it ideal for agriculture, forestry, and meteorology, remote sensing and other application fields.

Model	Features
ATH2100	The wavelength range is 380~1000nm, and the spatial resolution is 1200×1200
ATH2100W	The wavelength range is 380~1000nm, and the spatial resolution is 3000×3000
ATH2100-4-17	The wavelength range is 380~1700nm, and the spatial resolution is 640×640

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1.Selection Guide

The main application fields of hyperspectral imagers in different Wavelength range

ATH2100 Series	Features	Main Application Areas
ATH2100	400~1000nm visible near-infrared hyperspectral imager	Precision agriculture, agricultural and forestry pests and diseases, vegetation analysis, planting area assessment, crop yield assessment, water quality analysis, artwork scanning, cultural relic identification, pattern scanning, industrial sorting, oil pollution detection, etc.
ATH2100W	Handheld hyperspectral imager with ultra-high spatial resolution and high spectral resolution	

2.Performance parameter

	performance	Parameter		
serial number	Model	ATH2100	ATH2100W	ATH2100-4-17
1	Spectral range	380 ~ 1000 nm	380 ~ 1000 nm	380 ~ 1700 nm
2	best spectral resolution	1.5nm	1.3nm	Visible near-infrared band：1.4nm SWIR band：3.5nm
3	Maximum number of spectral channels	1920	4096	640
4	Maximum Spatial Resolution	1200×1200	3000×3000	640×640
5	detector	High Sensitivity Visible Near Infrared Detector	High Sensitivity Visible Near Infrared Detector	High sensitivity visible near-infrared + cooling IGA detector
6	Detector native resolution	1920×1200	4096× 3000	Visible and near-infrared bands:1920×1200 Short wave infrared band:640X512
7	pixel depth	14 bits	14 bits	14 bits
8	Maximum frame rate	162 fps	65 fps	162 fps
9	imaging mode	transmission grating	transmission grating	transmission grating
9	Visible light viewfinder camera	5 million pixels CMOS		
10	pointing laser	635nm red laser，5mW（Class IIIB）		
11	operating system	Android 8.0		

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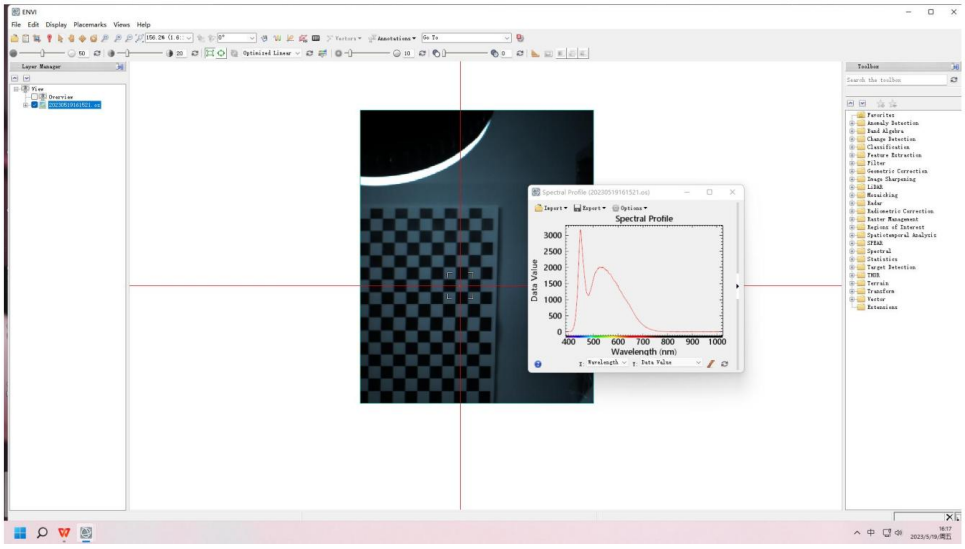
12	touch screen	5.5-inch capacitive touch screen (resolution 1920×1080)		
13	built-in storage system	32GB (default), 64GB, 128GB, 256GB optional		
14	External Interface	USB2.0、WIFI、Bluetooth		
15	physical interface	USB，memory card, tripod, strap		
16	physical button	Power button, Test button		
17	Waterproof level	IP54		
18	cooling method	passive cooling		
19	battery life	>4 hours with replaceable battery		>3hours with replaceable battery
20	Field of view (FOV)	15.2°@f=35mm, depends on lens		
21	Instantaneous field of view (IFOV)	0.7mrad@f=35mm，depends on lens		
22	Dimensions (without lens)	230X110X130mm	230X110X130mm	360X230X160mm
23	weight	1760g	1760g	7.6 Kg
24	Operating temperature	-20 ~ 50°C		
25	storage temperature	-30 ~ 70°C		

3.ATH2100 image instance



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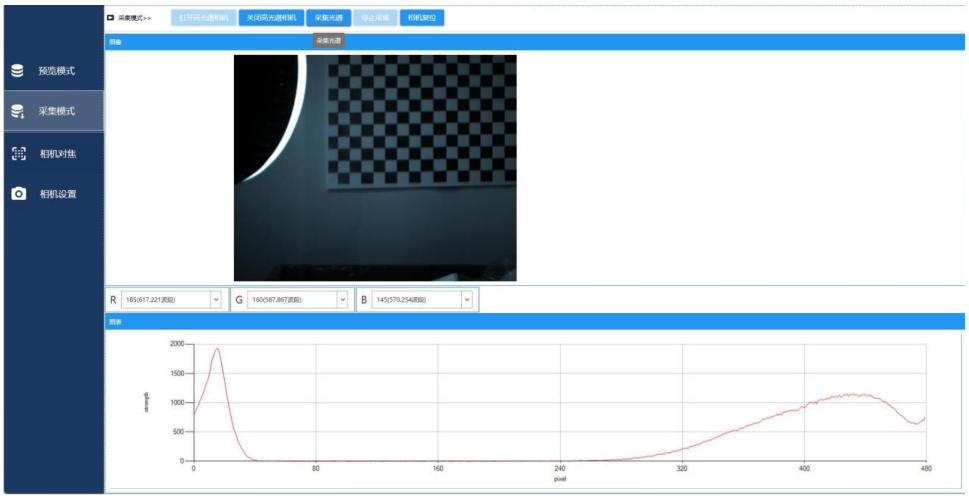

4.Examples of hyperspectral applications

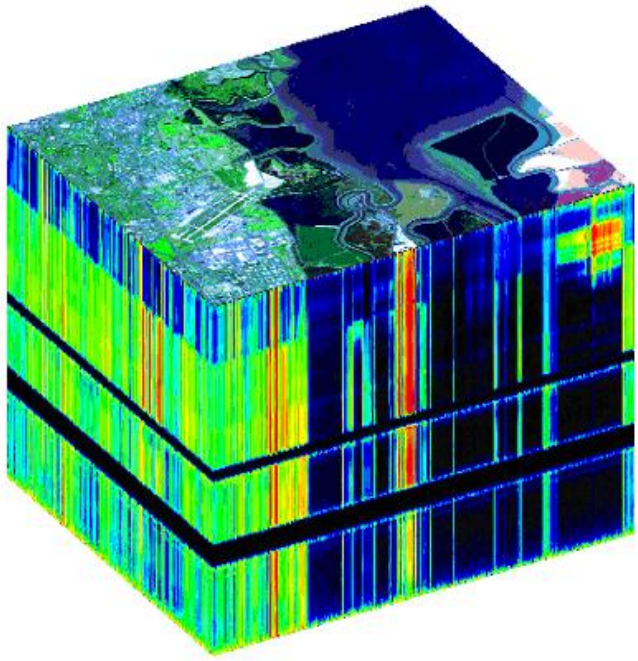

Fig 5 Data cube captured by hyperspectral imager

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Fig 7 ATH9010 series UAV-borne hyperspectral imager

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Fig 8 ATH9010 series UAV-borne hyperspectral imager

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